NV9000-SE
Utilities

User's Guide

NV9000-SE Utilities — User's Guide

- **Revision**: 3.0

- **Software Version**: 6.0.0

- **Part Number**: UG0007-05

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Note	Return Material Authorization (RMA) required for all returns.

Change History

The table below lists the changes to the NV9000-SE User's Guide.

- User's Guide Part # UG0007-05
- Software version: 6.0.0

Rev	Date	ECO	Description	Approved By
1.0	28 Aug 06	—	Initial Release	D.Cox
2.0	17 Oct 08	14426	Created online help system. Updated to match product updates.	PG, JE, DM, et al
2.1	18 Feb 09	15573	Updates	PG, JE, DM, et al
2.2	31 Mar 09	15703	Format change.	D.Cox
2.3	12 Jan 10	16272	Added NV9642, dynamic configuration updates, serial control of SMS7000 (and bridges), global navigation buttons, Klotz serial protocol, remote machine control routing.	DM, KL, MN
3.0	18 Aug 10	17186	Updated for versions 5.3.x, 5.4.x and 6.0.0; tieline groups; import and export data; changes to system management; name sets	DEM D. Galbraith I. Godfrey K. Lyons

Important Safeguards and Notices

This section provides important safety guidelines for operators and service personnel. Specific warnings and cautions appear throughout the manual where they apply. Please read and follow this important information, especially those instructions related to the risk of electric shock or injury to persons.

Warning

> Any instructions in this manual that require opening the equipment cover or enclosure are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any service other than that contained in the operating instructions unless you are qualified to do so.

Symbols and Their Meanings

The lightning flash with arrowhead symbol within an equilateral triangle alerts the user to the presence of dangerous voltages within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle alerts the user to the presence of important operating and maintenance/service instructions.

The Ground symbol represents a protective grounding terminal. Such a terminal must be connected to earth ground prior to making any other connections to the equipment.

The fuse symbol indicates that the fuse referenced in the text must be replaced with one having the ratings indicated.

The presence of this symbol in or on Miranda equipment means that it has been designed, tested and certified as complying with applicable Underwriter's Laboratory (USA) regulations and recommendations.

The presence of this symbol in or on Miranda equipment means that it has been designed, tested and certified as essentially complying with all applicable European Union (CE) regulations and recommendations.

General Warnings

A warning indicates a possible hazard to personnel which may cause injury or death. Observe the following general warnings when using or working on this equipment:

- Heed all warnings on the unit and in the operating instructions.

- Do not use this equipment in or near water.

- This equipment is grounded through the grounding conductor of the power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting the equipment inputs or outputs.

- Route power cords and other cables so they are not likely to be damaged.

- Disconnect power before cleaning the equipment. Do not use liquid or aerosol cleaners; use only a damp cloth.

- Dangerous voltages may exist at several points in this equipment. To avoid injury, do not touch exposed connections and components while power is on.

- Do not wear rings or wristwatches when troubleshooting high current circuits such as the power supplies.

- To avoid fire hazard, use only the specified fuse(s) with the correct type number, voltage and current ratings as referenced in the appropriate locations in the service instructions or on the equipment. Always refer fuse replacements to qualified service personnel.

- To avoid explosion, do not operate this equipment in an explosive atmosphere.

- Have qualified service personnel perform safety checks after any service.

General Cautions

A caution indicates a possible hazard to equipment that could result in equipment damage. Observe the following cautions when operating or working on this equipment:

- When installing this equipment, do not attach the power cord to building surfaces.

- To prevent damage to equipment when replacing fuses, locate and correct the problem that caused the fuse to blow before re-applying power.

- Use only the specified replacement parts.

- Follow static precautions at all times when handling this equipment.

- This product should only be powered as described in the manual. To prevent equipment damage, select the proper line voltage on the power supply(ies) as described in the installation documentation.

- To prevent damage to the equipment, read the instructions in the equipment manual for proper input voltage range selection.

- Some products include a backup battery. There is a risk of explosion if the battery is replaced by a battery of an incorrect type. Dispose of batteries according to instructions.

- Products that have (1) no on/off switch and (2) use an external power supply must be installed in proximity to a main power output that is easily accessible.

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

1. Getting Started

The NV9000-SE Utilities (hereafter called NV9000-SE) is a stand-alone, Java-based application used in conjunction with the NV9000 system controller to configure Miranda routing systems. NV9000-SE can be used remotely—detached—from the Miranda system controller to create configuration files that are later uploaded when connected to the system controller. Or, NV9000-SE can be used connected to the system controller to make real-time changes.

Before using the NV9000-SE, it is important to understand how it interacts with the control systems, routers, attached devices, and control panels. It is recommended that you read this section before beginning any configuration tasks to ensure a thorough understanding of how each tool is configured.

What is New

Version 6.0.0 of NV9000-SE provides new features and enhancements that make router management easier and more flexible. The following is a list of changes for the current release.

Version 6.0.0 of NV9000-SE is not backward compatible. Configurations created in version 6.0.0 cannot be ported to earlier versions. However, configurations created in earlier versions 5.x.x can be imported into 6.0.0.

Tielines

Old tieline functionality is no longer supported. However, the current release enables you to easily manage tielines using the graphical representation interface. Multi-hop tielines are supported.

Dynamic Configuration Updates

SE-Utilities now includes a new 'Reboot Database' feature on the 'System Management' page that allows you to copy a new configuration to a system controller, and cause that system to begin using the new configuration immediately, without restarting the system controller. For more information, see

Configurations can be dynamically updated in the following instances:

The dynamic changes supported include:

- Add/change/delete devices and their physical I/O connections
- Add/change/delete categories & suffixes
- Add/change/delete virtual levels and level set definitions
- Add/change/delete tielines
- Add/change/delete hardware control panels and their configurations
- Add/change/delete virtual panels and their configurations
- Adding GUIs

- Add/change/delete salvos
- Add/change/delete Aliases
- Adding Users

Configurations can be dynamically updated in all instances, *except* the following:

- Adding/removing/resizing a router or physical level.
- Adding/removing/changing the protocols used for router control or external interfaces.

NV9462 Control Panel

The NV9642 control panel can now be configured using NV9000-SE.

SMS7000

NV9000-SE now allows for serial control of SMS7000 series routers with either standard node controllers or enhanced node controllers.This enables you to completely replace an existing SMS7000 system controller while keeping legacy routers in place, making the transition to a new system far less costly.

Integration with existing SMS7000 systems is supported in two ways:

- With the SMS7000MCPU service, a single SMS7000 system can be mated with a single NV9000 system allowing for full breakaway operation and panel inter-operability.
- Using the SMS7000FEEDS service multiple SMS7000 systems can be integrated with an NV9000 such that the SMS7000 systems may control the NV9000 system controller as if it were another SMS7000 system. This enables tieline operation between the SMS7000 systems and the NV9000 but is subject to the limitations of the SMS7000 system, most importantly the restriction against breakaways.

Sony ROT-16 SBus

The NV9000 controller can now integrate with a Sony SBus system through a Sony R80/R81 controller. Integration functionality includes:

- Multilevel NV9000 crosspoint control from Sony control panels.
- Multilevel Sony crosspoint control from NV9000.
- Seamless publishing of mnemonics from the NV9000 database to Sony control panels.

Global Navigation Buttons

Users can now create a global navigation button that can be applied across multiple control panel configurations. Changes to the global navigation button and its attendant sub-pages are automatically reflected across all panels using that global navigation button. For more information, see Global Navigate on page 361.

Klotz Serial Protocol

The NV9000 controller now supports control of Klotz audio switchers through the Klotz protocol and Vadis control software.

NV9000-SE Write Timing

The configuration write process has been optimized, reducing the time it takes to write a new configuration by up to 90%.

Remote Networked Control Systems

Networked NV9000 control systems now support machine control routing from a remote NV9000 system.

What to Do and When to Do it

The NV9000-SE is an integral part of getting your system controller up and running effectively and efficiently. Before using NV9000-SE, determine how data is going to be managed in your facility and decide what inputs and outputs can be grouped together. Inputs and outputs can be grouped together if they have a common attribute, such as a signal type, facility room, and so on. In general, signal type is the best grouping to use. Figuring this out from the start will make configuration easier, faster and help minimize having to make changes in the future.

Before using NV9000-SE, all routers should be configured using the UniConfig configuration software for Miranda routers, or for third-party routers, configured according to the manufacturer's directions.

Important! The levels entered for the routers (for Miranda routers, the levels are entered in UniConfig) will later be matched to the physical levels entered in NV9000-SE. There should be a one-to-one correlation between router physical levels and NV9000-SE physical levels.

NV9000-SE saves all initial configurations and configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement configuration changes, the NV9000 system controller must write the configuration and then be restarted. For more information, see <u>Implementing Configuration Changes</u> on page 17.

Configuration Steps

All changes can be made offline and later implemented, or changes may also be made dynamically if NV9000-SE is currently connected to the system controller.

First, if necessary, add system controllers to NV9000-SE. See <u>Managing System Controllers</u> on page 35.

Second, add routers to NV9000-SE. Using NV9000-SE, add all routers. Routers are added by entering the physical levels (partitions) to NV9000-SE. At this time, virtual levels can be mapped to physical levels. Virtual levels are abstractions that can be applied to any device or router and allow for inter-device communication. See <u>Routers</u> on page 61.

Third, create level sets in NV9000-SE. Level sets are a set of virtual levels, which are applied to devices. See <u>Level Sets</u> on page 111.

Fourth, add devices to NV9000-SE. Describe each device connected to the routers: what is sending a signal to the router and what is receiving signals from the router. Devices can only be added *after* level sets have been created. When added, each device must be assigned to a level set. The level sets should reflect the signals used by the device. NV9000-SE has no way of determining what sig-

nal type is being used by a device without assigning it a virtual level within a level set. See Devices on page 157.

Device information may also be imported from a spreadsheet. For more information, see Importing and Exporting Data on page 53.

Fifth, group devices by category in NV9000-SE. Organize devices into categories. Categories are groupings of devices with common attributes, such as device type (e.g., monitor), or location (e.g., studio A), or use (e.g., editing). Category labels display on control panels for operators, making selection quick and easy. See Categories on page 189.

A category can only be added *after* devices have been added to the NV9000-SE system. Not all devices must be added, but adding as many devices as possible before creating categories ensures that the categories accurately define the devices in your facility.

Category information may also be imported from a spreadsheet. For more information, see Importing and Exporting Data on page 53.

Sixth, add control panels to NV9000-SE. Control panels, both hardware and software, are configured using NV9000-SE. Configuration interfaces mimic the control panel layout and display what the operator will see on the screen or panel. See Control Panels on page 231 and EC9700 and EC9710 Panels on page 385.

Seventh, add or manage additional features in NV9000-SE. Depending on your facility needs, you can:

- Create salvos. (See Salvos on page 431.)
- Create tielines. (See Tielines on page 457.)
- Update hosts.
- Add Master Control. (See Master Control on page 367.)
- Manage users. (See Managing User Names on page 509.)

An Overview

NV9000-SE is designed to follow, as closely as possible, common tasks and facility structure to create a more intuitive configuration process.

NV9000-SE fits into the routing control scheme as follows:
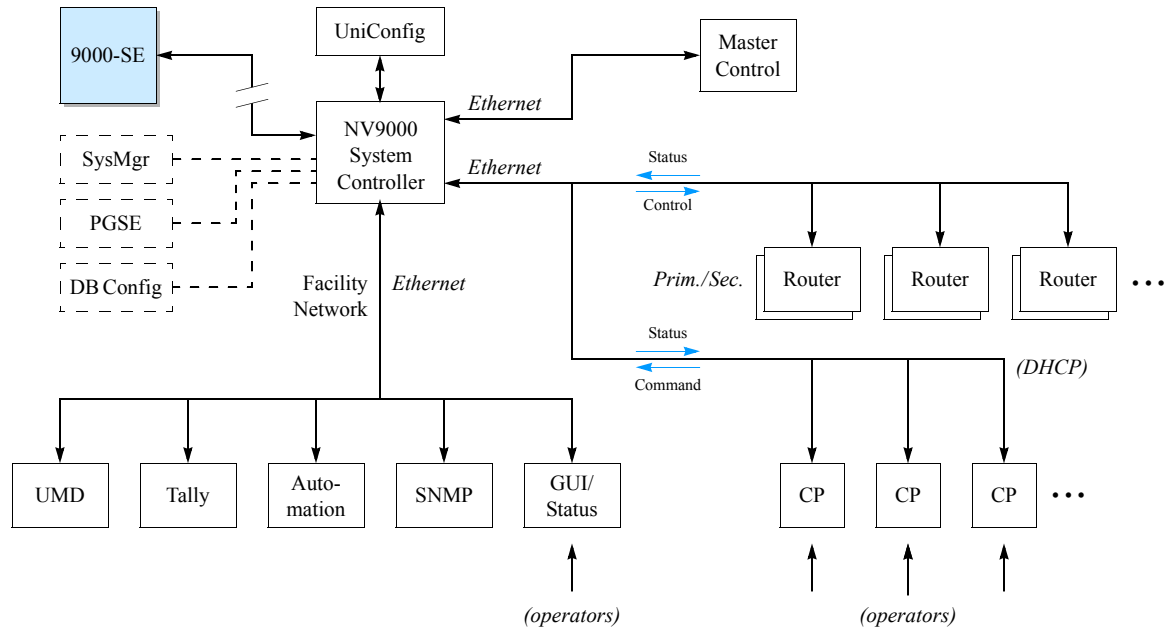
If using a previous version of NV9000-SE or older configuration software, contact Customer Support for information on using legacy applications.

The NV9000 system controller is comprised of a mixture of hardware and software components that must be configured by the user before the system is placed into service.

Please note:

- Configuration—The configuration process requires that certain conventions are followed. As an important prerequisite, read this guide thoroughly before powering up the system for the first time.

- Planning—As with any configuration system, the more planning, the smoother the installation. Prior to installation, spend time deciding on device naming conventions, where (and how) the various system routers will be connected, and how panels will be laid out. These factors will save time during the configuration "editing" process.

Understanding the NV9000-SE Concept

This section provides a high-level overview that simplifies the understanding of how NV9000-SE fits into routing in general.

Configuration

Configuration (using NV9000-SE) is the process of creating a comprehensive database of your inputs, outputs and devices. Initial configuration steps involve defining device interfaces, what

ports on the NV9000 system controller the devices are connected to, and which protocols are used to communicate with the NV9000 system controller. It is recommended that you have this "interface" information available before starting configuration.

At any time, you can easily add protocols to the NV9000 system controller if requirements change.

Unlike most control systems, NV9000-SE allows you to configure duplicate entries. For example, you can configure three edit bays, each bay can have a VTR1, VTR2, VTR3, etc. instead of creating nine unique VTR names. Or, you can configure all physical routers as "level 1," or have two "SDI" routers. As you think about configuration details, this unique feature may provide a solution to an operation problem.

Organizing Sources and Destinations

Depending upon your specific configuration, a device can be designated as a "source" or a "destination"—or even both. For more information, see Devices on page 157.

To make selecting devices from a control panel easy and intuitive, devices are grouped in "categories." A category can be used to group devices in any manner desired: by signal type, function, or even by location within the facility. Categories may also be used as a way to create "exclusions." For more information, see Categories on page 189.

The NV9000 system controller also supports "input fan out" mode where a single input (e.g., Tone) may be used across many devices. For example, SD bars, HD bars and test can all share a common tone (physical) input. However, unique to the NV9000 system controller, "output fan out" is also supported. This means that a physical router output port may have more than one device name. This is useful in situations where "multi-rate" equipment, such as a VTR that can play out SD or HD, is used.

Control Panels

Control panels are the interface between operators and the routing hardware. How the control panel is configured can have a major impact how well this interaction takes place. Minimizing the number of keystrokes needed to establish routes and using device mnemonics to help operators select devices can help reduce possible operator errors. Control panels are programmable and use a configuration file to define attributes. These attributes include button names, operating modes and feature sets.

2. Using the Interface

The NV9000-SE interface is designed to help you quickly and easily perform configuration tasks. The three panes used to manage configurations—Configuration, Tasks and Views—share database tables. A change in one pane is reflected in the other panes. This means that you can make changes using the interface that best suits your needs or comfort level. For example, when first creating configurations, wizards accessed through the 'Tasks' pane provide step-by-step guidance for entering necessary data. Windows in the 'Configuration' pane enable you to manage existing information. As you become an advanced user, tables accessed through the 'Views' pane enable you to adjust configuration information in a specific database. In addition, the tables in the 'Views' pane provide you with easy access to specific lists of information, such as currently connected routers, level set assignments, currently added devices, and so on.

Changes in Configuration pages appear in related tables in the Views pane

Wizards in the Tasks pane populate pages in the Configuration pane

and related tables in the Views pane

Changes in tables in the Views pane appear in related Configuration pages
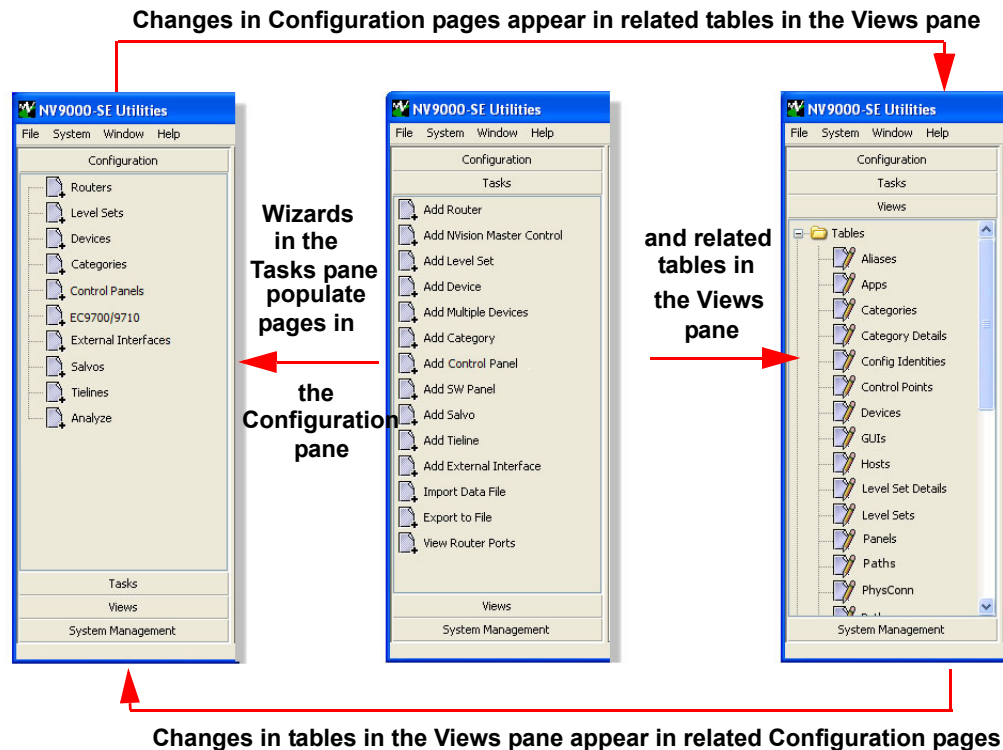
Configuration data can be updated through both pages and tables. The pages accessed through the 'Configuration' pane and the tables accessed through the 'Views' pane share databases. Changes made in one interface appear in other interfaces that share that database. For example, if the name of a level set is updated in the 'Level Sets' page, the name is automatically updated in the 'Level Sets' table and the 'Level Set Details' table.

Although both a page and table may update the same information, each interface enables you to perform specific tasks more efficiently. Pages enable you to update several pieces of information for a single item through a single interface; tables are useful for updating a limited, specific amount of information for several items at once. Not all pages and tables update the same information; different interfaces manage different, specific level set information.

The SE Utilities Window

The NV9000-SE interface is divided into two main areas: a navigation area and a work area, as shown in Figure 2-1. When the application first launches, the work area is blank. A menu bar at the top of the screen provides quick access to general tasks, such as opening, closing and saving files.
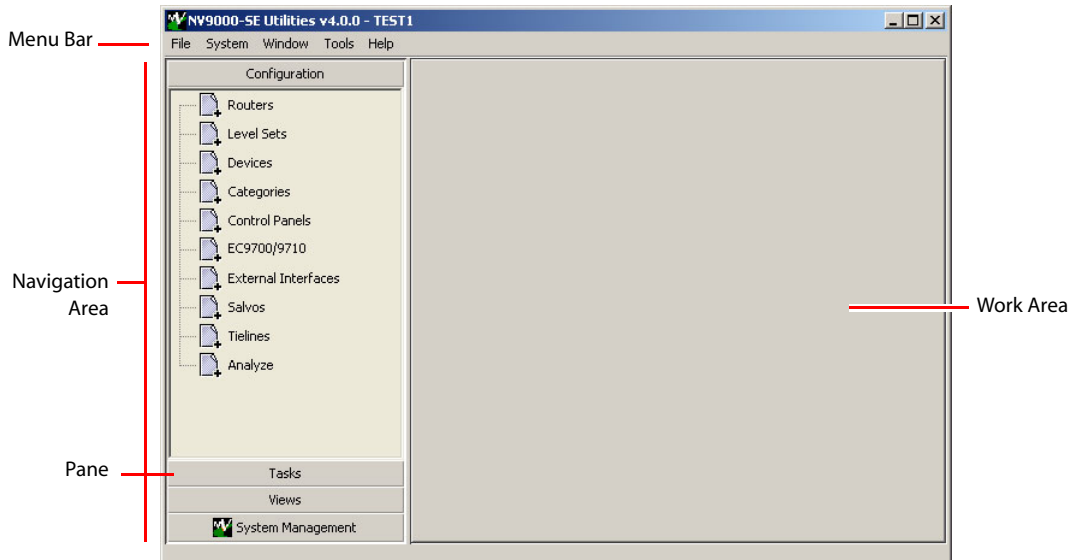
Figure 2-1. NV9000-SE Window

Navigation Area

The navigation area features four sections, called "panes." Clicking on a pane slides it up to the top of the navigation area to display a list of options. In Figure 2-1, the 'Configuration' pane has been clicked, displaying a list of options related to configuration tasks. Clicking on an option title opens related tabbed pages in the work area.

To scroll through panes in the navigation area, press CTRL+Tab on your keyboard.

Work Area

The work area displays tabbed windows (pages). In general, there are three types of windows that display:

- Pages—Lists all items of a selected type in the system or details for a selected item. Manages almost all information for a selected, single item.
- Table—Lists all items of a selected type in the system, based on specific, limited criteria, and manages very specific information.
- Wizard—A step-by-step guide that helps you perform a specific configuration task quickly and accurately.

Pages, tables and wizards share databases so that changes in one interface updates all corresponding fields in all related interfaces.

To advance from field to field on a page, press TAB on your keyboard. To move between fields, but in reverse, press SHIFT+TAB.

Common Commands

Throughout the work area certain common commands appear. These commands perform the same action no matter where they appear. On multi-destination display areas, you can press 'Esc' on your keyboard to cancel an action or press 'Enter' on your keyboard to accept a change.

Many tabbed windows have Previous, Next, Finish and Cancel buttons at the bottom of the screen. These buttons become enabled or disabled (grey-out) on a moment-by-moment basis depending on whether the current page and data entry require the button. Click a button to perform the related function.

- Previous — Opens the previous page in the data entry cycle.
- Next — Continues to the next page in the sequence.
- Finish — Saves the current information and completes the procedure; clears all fields so that new information can be entered immediately.
- Save — Saves the current information and completes the procedure.
- Revert to Saved — Ignores any current changes and restores data to the last time it was saved.
- Cancel — Clears the fields without saving any information.
- X — Closes the window or dialog box. If clicked before Finish or Save is clicked, the window closes without saving any changes.

Tabs

Information is organized into tabbed windows. Clicking a tab brings the related window forward. The tab that is currently forward is active. All other tabs in the background are inactive.

To close the currently active tab (and window), from the menu bar, select 'Window > Close Active Tab'. The active tab closes.

To close all inactive tabs, from the menu bar, select 'Window > Close Inactive Tabs'. The inactive tabbed windows close, but the active tab remains open.

Tables

Data entered in a page or wizard is saved in tables. Tables are accessed through the 'Views' pane. Tables can be adjusted to make viewing information easier:

- Adjust the position and width of the table columns by sliding the column dividers between the column headers.
- Sort the table based on the data in a specific column by clicking the column header. Clicking once gives an ascending sort (Z to A); clicking again gives a descending sort (A to Z).
- Some dialog boxes or pages have check boxes. When a check box is checked, the corresponding item is selected; if a check box is unchecked, the item is deselected.

Entering Data

Data is entered in fields. Fields can be "free text" in which you type in the data, or fields have drop-down lists from which an entry is selected.

Menu Bar

The menu bar displays near the top of the window and is always present. The menu bar provides access to menu options that perform system tasks. To open a menu, click on title on the menu bar. A

list of additional commands or a dialog box appears. Select the command or enter information in the dialog box as directed. For more information on using each menu bar option, see the related task in this User's Guide.

There are 4 menus:

File	Provides commands for creating new configurations, opening existing configurations, saving a configuration with a new name, importing and exporting configurations to zip files, and exiting. (See Control Panels on page 231.)
System	Opens the 'Add Control System' dialog box. See Managing System Parameters on page 48.
Window	Closes active or inactive windows in the work area.
Help	Lists the software revision number and launches the online Help system.

Filters

Several pages have drop-down lists located at the top of the window, called "filters." These filters enable you to reduce the number of items listed to only those matching characters entered in the filter fields. For example, a Name filter returns only items whose name matches the characters entered in the filter field.

Shortcuts

NV9000-SE has several shortcut commands. Shortcuts allow you to perform a task without having to select a menu from the menu bar and then a menu option. Some of these shortcut commands are listed on the menus while others are performed anywhere in the interface by using keyboard strokes.

All shortcuts are performed using keys on your keyboard. 'Ctrl' represents the Control key, 'Shift' the Shift key, 'S' the S key, and so on. A plus sign—'+'—between keys indicates that you press the first key, and while keeping it depressed, press the second key. You can use the 'Shift' key to select a contiguous items or use the 'Ctrl' key to select non-contiguous items in a list.

Double-click Option

To select and open any item in any page listed in the 'Configuration' pane, simply double-click on it. A page opens displaying details for that item.

File Menu

Instead of selecting the 'File' menu from the menu bar and then a menu option, you can use the following keyboard strokes:

- 'Ctrl' + 'N' — Creates a new configuration.
- 'Ctrl' + 'O' — Opens a new configuration.
- 'Ctrl' + 'S — Saves the current configuration.

- 'Ctrl' + 'Shift' + 'S' — A "save as" command that saves the current configuration and prompts you to enter a new name.

Control Panel Keyboard

These shortcuts are used when a keyboard is attached to a virtual control panel:

- 'D' or 'd' — Selects a destination button type for the currently selected button. If the previous button is also a destination button, the new destination button is assigned the next destination in the list.

- 'S' or 's' — Selects a source button type for the currently selected button. If the previous button is also a source button, the new source button is assigned the next source in the list.

- 'L' or 'l' — Selects a level button type for the currently selected button. If the previous button is also a level button, the new level button is assigned the next level in the list.

- 'C' or 'c' — Selects a category button type for the currently selected button. If the previous button is also a category button, the new category button is assigned the next category in the list.

- 'U' or 'u' — Changes the currently selected button type to "Undefined."

- 'Delete' — The same as pressing 'U' or 'u'.

- 'T' or 't' — Changes the panel selection focus to the 'Button Type' drop-down list. Same as clicking in the 'Button Type' field.

- '1', '2', '3' or '4' — Places focus in the first, second, third or fourth (as applicable) drop-down list. Note that the drop-down list labeled 'Button Type', which is always the first drop-down list, is skipped so pressing '1'. Pressing '1' moves the selection focus to the next drop-down list *after* the 'Button Type' drop-down list.

- 'Alt' + 'b' — Returns selection focus to the button being configured.

- 'Alt' + 'Shift' + 'b' — Same as 'Alt' + 'b'.

- 'Tab' — If a button is selected, focus is advanced to the next button. If a drop-down box is selected, focus is advanced to the next drop-down box in rotation.

- 'Shift' + 'Tab' — If a button is selected, focus is reverted to the previous button. If a drop-down box is selected, focus is reverted to the previous drop-down box in rotation.

Keyboard Shortcut Best Practices

When configuring source or destination buttons for control panels that incorporate a source or destination shift, it is recommended that devices be assigned so that the "Device 1" drop-down lists for consecutive buttons in a row are assigned to contiguous devices in that drop-down box. Similarly for the "Device 2" drop-down list, and so on.

For example, consider an NV9605 in limited XY mode, with the top row of buttons assigned as sources and the bottom row assigned as destinations and there are 32 VTRs named VTR-1 through VTR-32. Button 1 is configured for VTR-1 on Source Device 1 and VTR-17 on Source Device 2. By doing this, the user can use the 'Tab' and 'S' keyboard shortcuts to quickly and effectively assign the remaining 15 buttons on the top row. When completed, buttons 1 through 16 will have VTR-1 through VTR-16 assigned to Source Device 1 and VTR-17 through VTR-32 assigned to Source Device 2.

Exiting Level Mode

To quickly exit level mode, select a category button.

Launching and Exiting the Application

To launch NV9000-SE, from your desktop double-click on the shortcut icon. The shortcut icon is located where designated when installing the application. See Installation on page 13.

Or

From the 'Start' menu, select 'Programs > Miranda > NV9000-SE Utilities'.

To exit and close NV9000-SE, from the menu bar, select 'File' and then "Exit".

3. Installation

Installation of the NV9000-SE is automated and easy to perform. Depending on your operating system, exact procedures for starting the installation process may vary. In general, locate and open the 'NV9000-SE Utilities.exe' file on the CD provided to start installation. The 'NV9000-SE Utilities Installer' window guides you through the installation process, step-by-step. At any time during the installation process, click Previous to return to the prior screen.

NV9000-SE can be installed on the system controller if desired, as well as on a customer-supplied computer.

Adding to a Network

NV9000-SE can be run on a computer that is part of a network. For networking purposes, Miranda products use the IP address 192.168.x. Due to Miranda's architecture, changes to this IP address are generally not allowed. Changes to the IP address require changes to the registry and cannot be changes through the NV9000-SE system.

Installing the Application

Follow these steps to install the NV9000-SE application. If you have any questions, contact Miranda technical support.

How to Install the NV9000-SE Application

1 Place the CD provided in the CD-Rom drive of a computer hosting the application or on a network.

2 Locate and open the 'NV9000-SE Utilities.exe' file. For detailed instructions, refer to your operating system's Help. The 'NV9000-SE Utilities Installer' window appears with the 'Introduction' screen displaying:
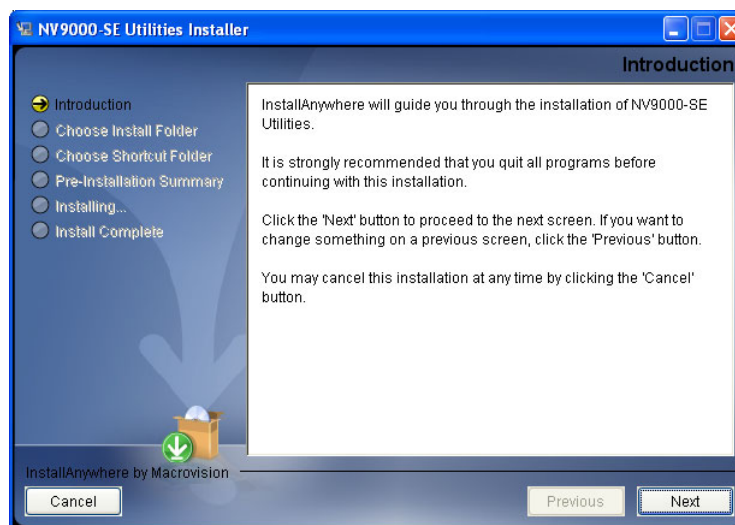
Figure 3-1. NV9000-SE Utilities Installer Window - Introduction Screen

3 Make sure all applications are closed while installation is proceeding. Read the introductory information and click Next. The 'Choose Install Folder' screen appears:
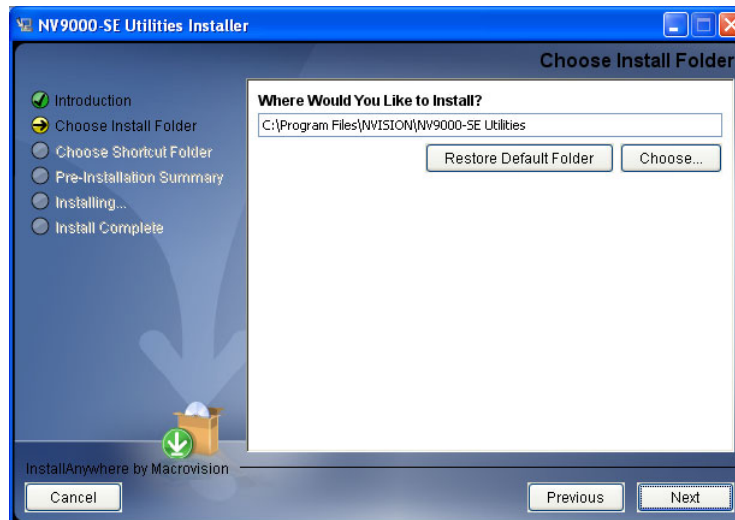
Figure 3-2. NV9000-SE Utilities Installer Window - Choose Install Folder Screen

4 Choose the folder where the application will be installed:

By default, the NV9000-SE is installed at: C:\Program Files\Miranda\NV9000-SE Utilities\. To select this folder, make no changes and click Next.

Or

Click Choose and browse to the folder location you want.

At any time, click Restore Default Folder to restore the default folder location.

5 On the 'Choose Shortcut Folder' screen, select where the shortcut icon for launching the NV9000-SE will appear:
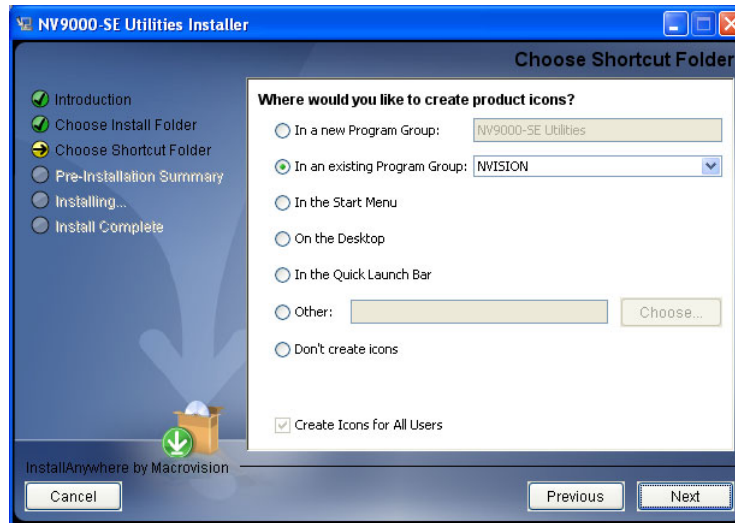
Figure 3-3. NV9000-SE Utilities Installer Window, Choose Install Folder Screen

Click the corresponding radio button to select a shortcut folder location or to have no shortcut folder. If placing the shortcut folder in a program group, select a group from the drop-down lists provided. When selected, click Next.

6 Verify that the information on the 'Pre-Installation Summary' screen is correct:
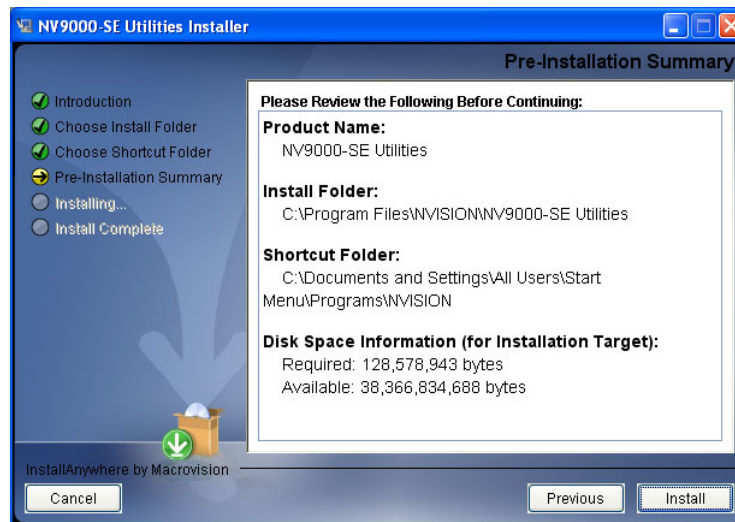
Figure 3-4. NV9000-SE Utilities Installer Window, Pre-Installation Summary Screen

To update the information that displays, click Previous to return to the related screen, updating information as needed. When done updating, click Next on each screen until the 'Pre-Installation Summary' screen appears. When done verifying installation information, on the 'Pre-Installation Screen', click Next.

7 The 'Installing NV9000-SE Utilities' screen appears:
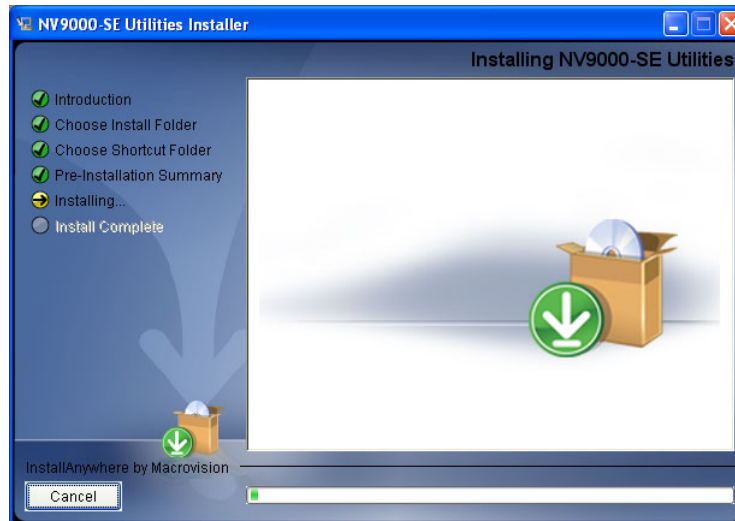
Figure 3-5. NV9000-SE Utilities Installer Window, Installing NV9000-SE Utilities Screen

Installation proceeds automatically.

Or

Click Cancel to cancel installation.

8 When installation is complete, the 'Installation Complete' screen appears:
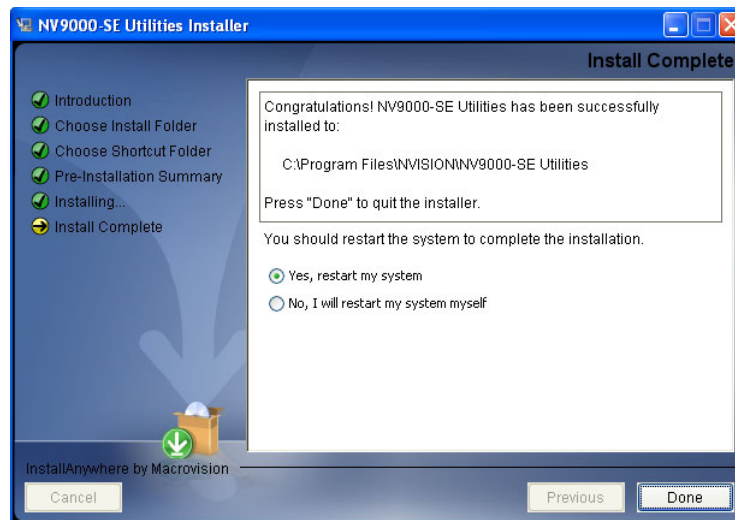
Figure 3-6. NV9000-SE Utilities Installer Window, Install Complete Screen

Click the radio button to restart your computer now or at a laster time, then click Done. It is recommended that you restart your computer at this time. The 'NV9000-SE Utilities Installer' window closes. The NV9000-SE is now installed.

4. Configurations

Using NV9000-SE you create configurations for control panels and manage data for routers, devices, salvos, tielines, and other switching related information. Configurations are written to system controllers, such as the NV9000, which in turn forward configuration information to connected routers, control panels, and other devices. A system controller is the physical frame on which a router control system application is loaded. For convenience, the combination—hardware and software—are referred to as the system controller. For details on managing system controllers, see System Management on page 33.

Configurations are saved as files, which in turn are saved in folders. A configuration folder is automatically created for each user that logs into NV9000-SE. Each configuration folder contains subfolders that store configuration data. Subfolders are titled to match the name of the configuration it contains. A default subfolder titled 'ControlSysDB' is a prototype containing an "empty" default configuration and opens the first time NV9000-SE is launched. Configurations can be manually or dynamically updated.

Note About Networking

The system controller and NV9000-SE communicate using Ethernet connections and as part of a network. Miranda products use the IP address 192.168.x.x. Due to Miranda's product architecture, changes to this IP address are generally not allowed. Changes to the IP address require changes to the registry and cannot be changed through the NV9000-SE system. (See Changing System Controller IP Address or Name on page 39.)

Implementing Configuration Changes

Using the 'System Management' pane, you can write configurations to system controllers in the NV9000-SE system. Saving configuration changes on the NV9000-SE page or table in which the changes were made only saves the changes to the database. To have configuration changes implemented and appear to control panel operators, the configuration must be written to a system controller. There are two ways to do this: 1) Write to the system controller and then reboot it separately or 2) dynamically apply changes to the system controller, which in turn sends changes to the control panels and other devices without having to first write and then reboot the system controller.

Any physical changes to connections (e.g., cabling) require that the changes be written to the system controller and then the system controller rebooted. Physical changes include adding, removing or changing any protocols used for router control or external interfaces and adding, removing or changing routers and/or physical levels on routers.

Changes to configurations that do not include any physical connection changes may be written to the system dynamically; no rebooting is required.

How to Implement Configuration Changes

1 Click the 'System Management' pane to expand it and select the system controller you want to manage. The 'System Controller' page appears:
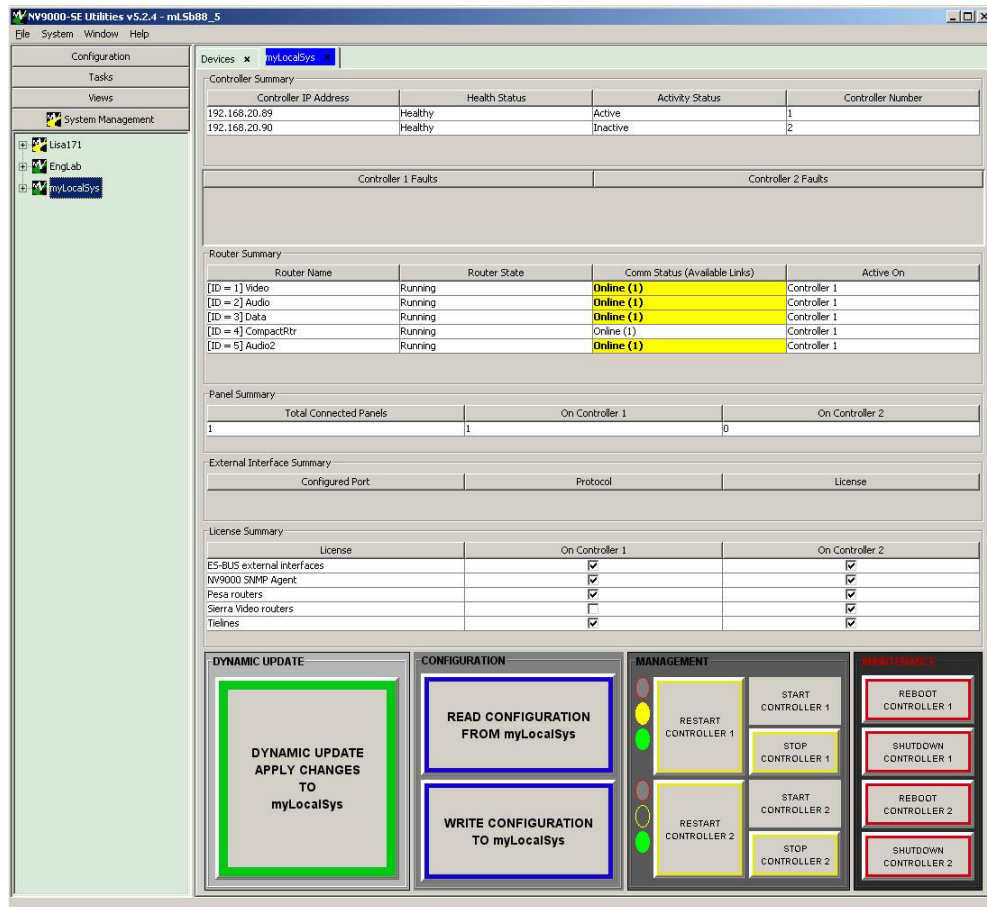
Figure 4-1. Example of System Controller Page

2 In the 'Control' section:

a Click Write Configuration to write saved configuration changes to the control panel.

b Click Reboot to stop the control system software and system controller and then restart the system controller.

Or

Click Dynamic Update to write and update the database and send changes to the system controller dynamically. (This can only be used for configuration changes, not changes to physical connections on devices.)

Working With Configuration Files

Configuration files are a powerful tool when setting up facility control panels.

The control panel configuration file can be:

- Unique to each control panel.
- Shared if you want multiple control panels to have identical settings.
- Shared if you want multiple control panels to have common settings, which can then later be individualized.

The configuration file used by a particular panel is defined by its assigned ID number. If desired, the ID number can be changed "on the fly," enabling a control panel's configuration settings to vary.

A control panel configuration file is created when a control panel is added to the NV9000-SE system. By default, NV9000-SE creates a default pathname for the configuration file by concatenating `\nvision\envy\bin\usersys\live\` and the configuration file name. The pathname is expressed relative to the hard disk of any NV9000 server.

Normally, the file name extensions reflect the control panel type. For instance, an NV9601 configuration file has a `601` extension. Control panel configuration files can be used by one or multiple control panels of the same type.

Different control panel pages and tables manage specific information. The information that displays differs from control panel to control panel.

Opening a Configuration

Configurations can be opened at any time. Configurations can be imported from a directory location or from a zip (compressed) file, such an archived file.

How to Open a Configuration from a Directory Location

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the menu bar, select 'File' and then 'Open'. The 'Select a Config to Open' dialog appears:

Figure 4-2. Select a Config to Open Dialog Box

3 Click on a name to open the corresponding configuration and click OK.

  Or

  Click Cancel to close the dialog box without opening a configuration.

  The configuration data populates pages and tables in NV9000-SE Utilities.

Creating or Changing a Configuration File

A control panel configuration file is created whenever a control panel is configured using NV9000-SE Utilities. (See Adding a Control Panel on page 240.) By default, NV9000-SE creates a default pathname for the configuration file by concatenating "`\nvision\envy\bin\usersys\live\`" and the configuration file name. The pathname is expressed relative to the hard disk of the system controller.

New "blank" configuration files can be created as needed. Essentially a new configuration file is "empty," having structure but no content. When a configuration is created, a new subfolder is added for the user currently logged in and the configuration file stored at that location. The new subfolder is titled the same name entered for the 'Configuration Name' when the new configuration is created.

Normally, the file name extensions reflect the control panel type. For instance, an NV9601 configuration file has a `601` extension. Panel configuration files can be used by one or multiple panels of the same type.

The configuration file assigned to a control panel can be updated at any time using the 'Panels' table. Pathnames for specific configuration files can be added, updated or deleted using the 'Paths' table. Both tables are accessed through the 'View' pane. For instructions on managing pathnames, see Creating, Updating and Deleting Configuration File Pathnames on page 24.

How to Create a New "Empty" Configuration File

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the menu bar, select 'File' and then 'New'. The 'Input' dialog appears:
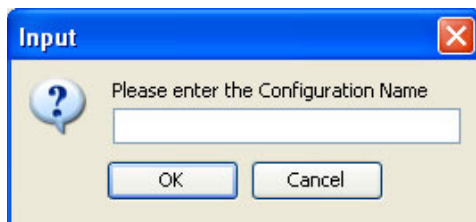
Figure 4-3. Input Dialog Box for New Configuration

3 Enter a name for the configuration in the field provided and click **OK**.

Or

Click Cancel to close the dialog box without creating a new configuration.

A "blank" configuration opens. Fields in pages and tables within NV9000-SE Utilities are blank, reflecting that no configuration data has been selected or saved.

How to Associate a Different Configuration File with a Control Panel

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Panels'. The 'Panels' table appears, as shown in Figure 4-4.

To narrow the list of panels that display, enter the first characters of a control panel name in the 'Name Filter' field. The list is automatically reduced to display only panels matching that character string.

Or
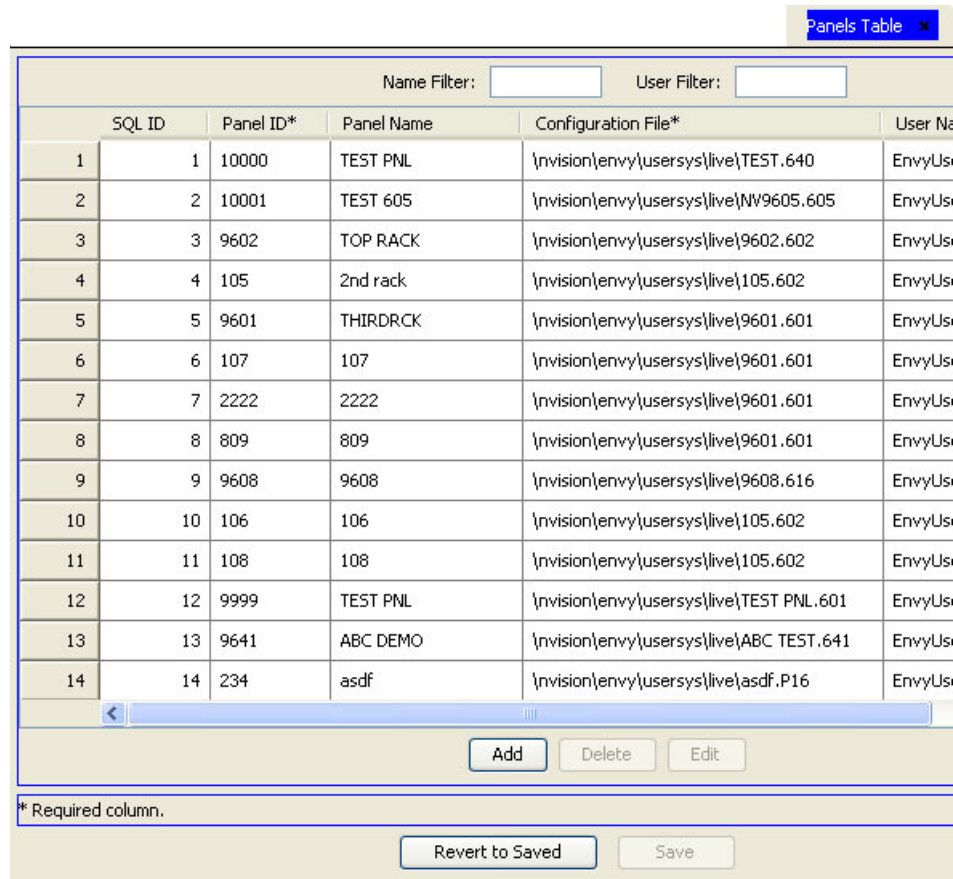
Enter the first characters of a user name in the 'User Filter' field. The list only displays panels with that assigned user.

Figure 4-4. Panels Table

3 Locate the row listing the control panel being updated.

4 Click on the 'Configuration File' field to activate it, and from the drop-down list, select a new configuration file.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Saving Configuration Changes

A configuration is created whenever a control panel is added using the NV9000-SE. Similarly, configurations are updated whenever an existing control panel is modified. To save an updated configuration, click Save located at the bottom of any control panel configuration page. (See Adding a

Control Panel on page 240 or Updating Control Panel Details on page 349.) The Revert to Saved button discards current changes and reverts to the previously saved changes.

Important	Saving a configuration changes does *not* write the configuration to the system controller for distribution to control panels. For more information, see Implementing Configuration Changes on page 17.

Configurations are always "saved" whenever Save is clicked. If you open a different configuration, close a page without "saving" changes, or click Revert to Saved, the current changes are discarded. This feature enables you to easily clear mistakes.

Deleting or Renaming Configuration Folders

To delete or rename a configuration folder, you must locate the folder in your local operating system and use file system commands to delete or rename the folder. Be careful! Certain file system commands may make the folder inaccessible to NV9000-SE. Refer to your local operating system for instructions on managing files and folders.

Adding Computers to Existing EC9700 or EC9710 Configurations

EC9700 and EC9710 are virtual control panels that run on a computer. (See EC9700 and EC9710 Panels on page 385.) Using the 'GUIs' table accessed through the 'Views' pane, a new computer can be associated with an existing EC9700 or EC9710 control panel. The computer, or Windows user, is associated by adding a new control panel and selecting the configuration file for the EC9700/EC9710 control panel you want. Using this table, associations can also be removed. Selecting an existing configuration is similar to performing a "Save As" function. An identical copy of the configuration is saved on the newly assigned computer.

How to Add an EC9700/EC9710 Control Panel to an Existing Configuration

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'GUIs'. The 'GUIs' table appears, as shown in Figure 4-5.

To narrow the list of EC9700/EC9710 panels that display, enter the first characters of a control panel name in the 'Computer (or Windows User) Name Filter' field. The list is automatically reduced to display only control panels matching that character string.

Figure 4-5. GUIs Table

3 Click Add. A blank row appears at the bottom of the list of EC9700/EC9710 panels.

4 In the blank row, click on a cell in a column to activate it and enter information, as follows:

Section	Description
Computer (or Windows User) Name	Enter the name of the computer of the user's name on the network where the control panel application resides.
User Name	From the drop-down list, select a user name. User names are managed through the 'User' table. (See Managing User Names on page 509.)
Configuration	From the drop-down list, select a configuration file. A control panel configuration file is created when a control panel is added to the NV9000-SE system. By default, NV9000-SE creates a default pathname for the configuration file by concatenating "\nvision\envy\bin\usersys\live\" and the configuration file name. The pathname is expressed relative to the hard disk of any NV9000 server.
Language	From the drop-down list, select a language. Currently, only English is supported.
Description	Enter an optional description of the control panel.

5 Click Save to save your changes.

6 (Optional) Add further details using the 'EC9700/9710' page accessed through the 'Configuration' pane. To add details to the control panel, locate the control panel and perform steps 5 through 14 as described in Adding an EC9700/EC9710 Panel on page 385. (See Locating and Viewing Existing EC9700/EC9710 Panels on page 399.)

7 Click **X** on the window title tab to close the table.

Creating, Updating and Deleting Configuration File Pathnames

A control panel configuration file is created when a control panel is added to the NV9000-SE system. By default, NV9000-SE creates a default pathname for the configuration file by concatenating `\nvision\envy\bin\usersys\live\` and the configuration file name. The pathname is expressed relative to the hard disk of the system controller. Normally, the file name extensions reflect the control panel type. For instance, an EC700 configuration file has a `700` extension. Control panel configuration files can be used by one or multiple panels of the same type. Changing the configuration file changes the configuration for the selected control panel, which may impact what the operator sees and the functions allowed.

To update the configuration file associated with any control panel, you change the pathname that points the control panel to the configuration file.

Every control panel configuration and salvo file defined in a configuration are listed on the 'Paths' table accessed through the 'Views' path. Do *not* use this table for data entry. Although this table allows pathnames to be added, updated or deleted, entries in this table are normally defined elsewhere.

In addition, the 'GUIs' table, accessed through the 'Views' pane, may be used to associate a new configuration file with an EC9700 or EC9710 panel.

How to Update the Configuration File Pathname for an EC9700 or EC9710
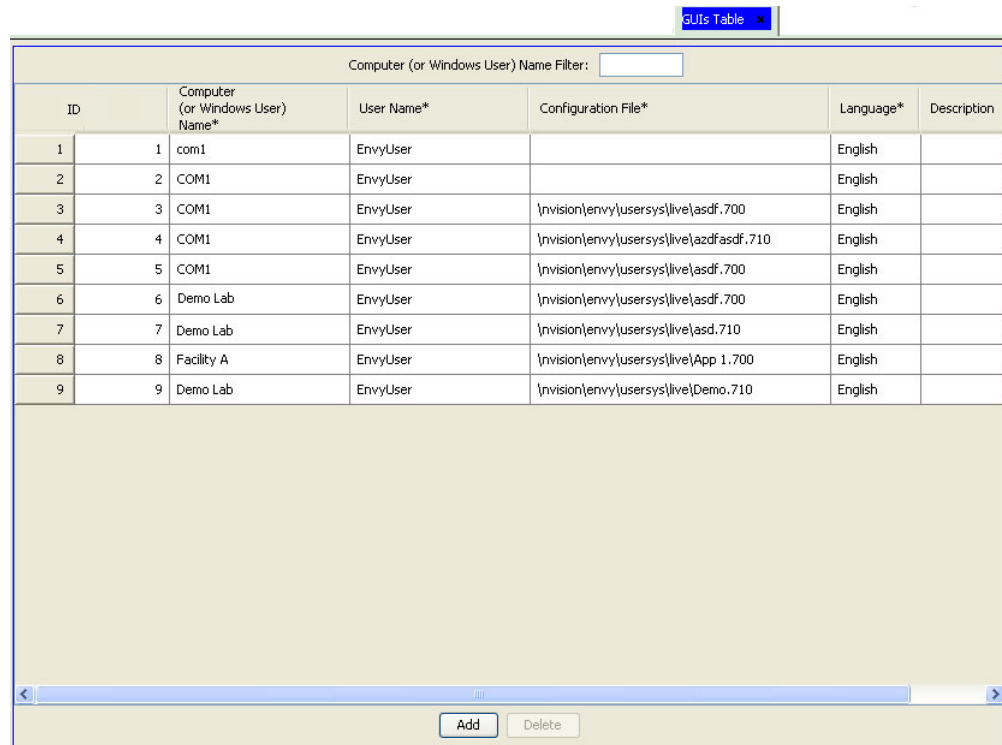
The following are instructions for changing the configuration file associations with an EC9700 or EC9710 control panel. For all other panels, see How to Update a Configuration File Pathname on page 26.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'GUIs'. The GUIs' table appears, as shown in Figure 4-4.

To narrow the list of panels that display, enter the first characters of a control panel name in the 'Computer (or Window User) Name Filter' field. The list is automatically reduced to display only control panels matching that character string.

Figure 4-6. GUIs Table

3 Locate the row listing the control panel being updated.

4 Click on the 'Configuration File' field to activate it, and from the drop-down list, select a new configuration file.

5 Click Save.

   Or

   To revert to previously saved configuration, click Revert to Saved.

6 Click **X** on the window title tab to close the table.

How to Create a New Configuration File Pathname

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Paths'. The 'Paths' table appears:
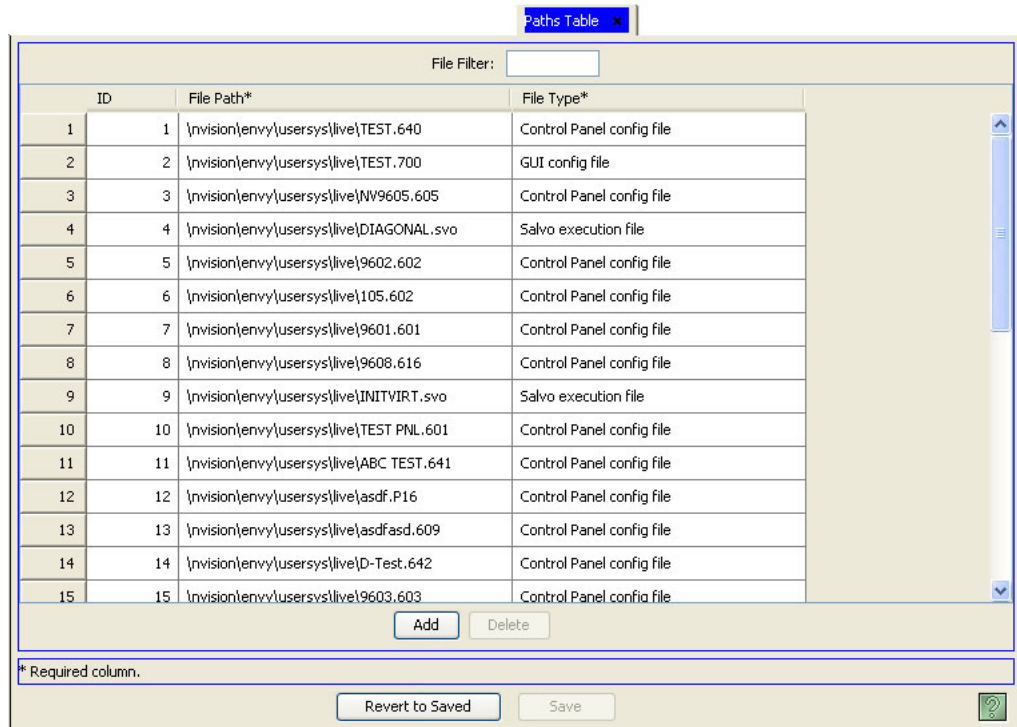
Figure 4-7. Paths Tables

3 Click Add. A blank row is added to the list of pathnames.

4 In the blank row, in the 'File Path' column, click in the field to activate it and enter the full location path for the new configuration pathname.

5 In the same row, in the 'File Type' column, click in the field to activate it and from the drop-down list choose a configuration file type.

6 Click Save. An 'ID' number automatically appears for the newly added pathname.

Or

To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the table.

How to Update a Configuration File Pathname

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Paths'. The 'Paths' table appears, as shown in Figure 4-8.

To narrow the list of panels that display, enter the first characters of a pathname the 'File Filter' field. The list is automatically reduced to display only pathnames matching that character string.
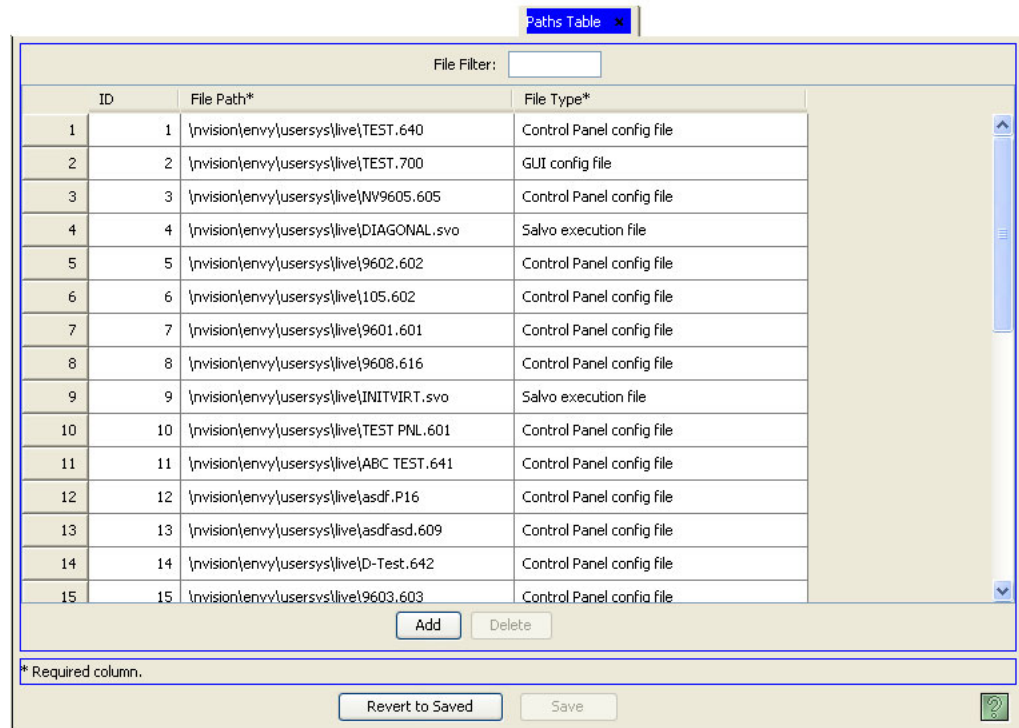
Figure 4-8. Paths Tables

3 Locate the row listing the pathname being updated.

4 In the 'File Path' column, click in the field to activate it and enter a new location for the pathname. Be sure to enter the full pathname.

5 In the 'File Type' column, click in the field to activate it and from the drop-down list choose a new configuration file type.

6 Click Save.

   Or

   To revert to the previously saved configuration, click Revert to Saved.

7 Click **X** on the window title tab to close the table.

How to Delete a Configuration File Pathname

1 Launch NV9000-SE. (See)

2 From the Navigation area, select the 'Views' pane and then 'Paths'. The 'Paths' table appears, as shown in Figure 4-9.

To narrow the list of pathnames that display, enter the first characters of a pathnames name in the 'File Filter' field. The list is automatically reduced to display only pathnames matching that character string.
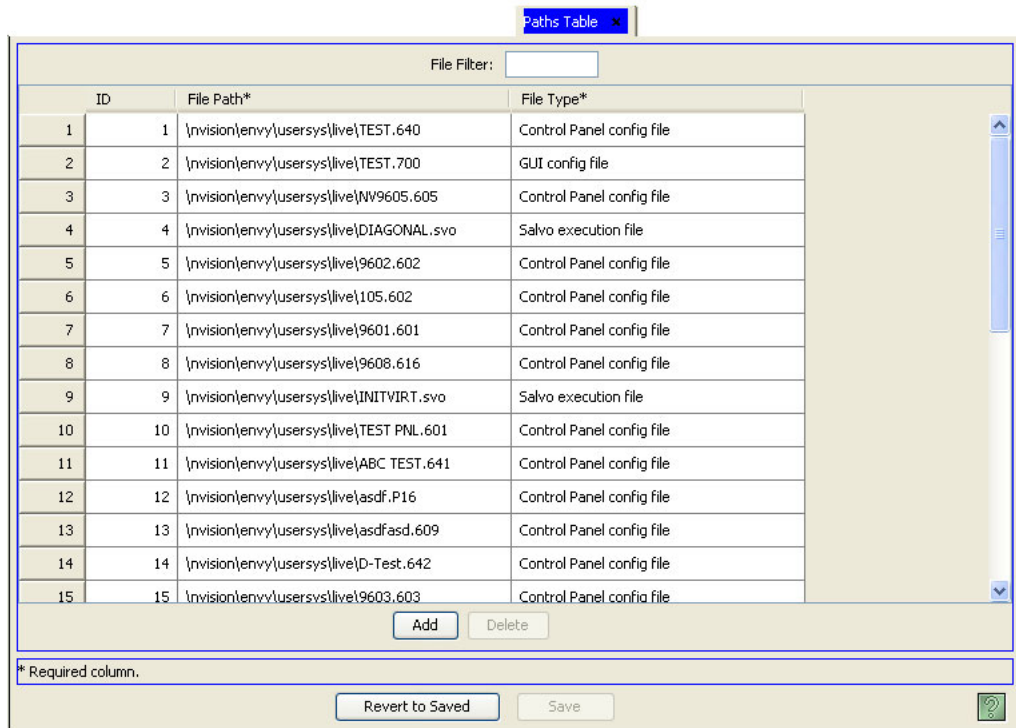
Figure 4-9. Paths Tables

3 Click anywhere in the row listing the pathname being deleted.

4 Click Delete. The row is removed from the table.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Importing and Exporting Configurations

Configurations can be imported and exported. The configuration may be one created using NV9000-SE or a non-NV9000-SE configuration.

Configurations can be exported as compressed files, such as Zip files. This is convenient when archiving configurations or moving configurations between computers. At any time, compressed files can be imported and decompressed for viewing or updating. When a compressed file is imported it is not opened, instead a new configuration is created from the contents of the compressed file. This ensures that the archived copy remains intact and all changes are made to a new, separate configuration file.

Warning Do not import or export compressed files created outside NV9000-SE.

By default, archived compressed files are located in `C:\Documents and Settings\ [current user]\My Documents.`

How to Import from a Compressed Configuration File

1 Launch NV9000-SE. (See [Launching and Exiting the Application](#) on page 12.)

2 From the menu bar, select 'File' and then 'Import from Zip Archive'. The 'Open' dialog box appears:
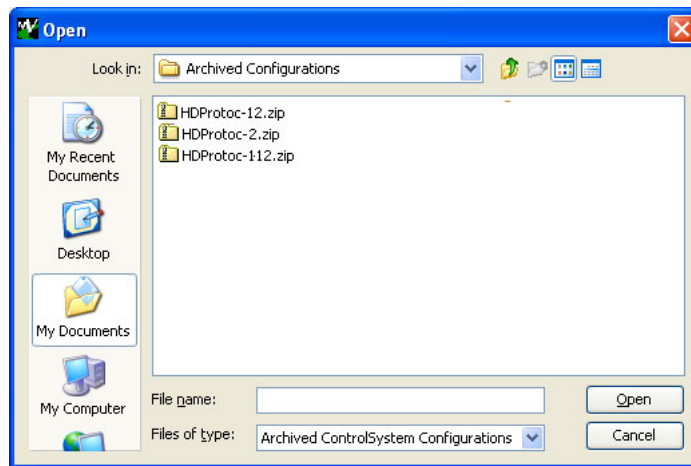
Figure 4-10. Open Dialog Box

3 Select the compressed file to be opened and click Open. The 'Input' dialog box appears, as shown in Figure 4-3.

4 Enter a name for the new configuration in the field provided and click OK. The compressed file contents are decompressed and copied to a new configuration folder. Go to Step 4.

Or

Click Cancel to close the dialog box without creating a new configuration.

The configuration data appears in fields on pages when a pane is selected.

How to Export to a Compressed File

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the menu bar, select 'File > Export to Zip Archive'. The 'Save' dialog appears:
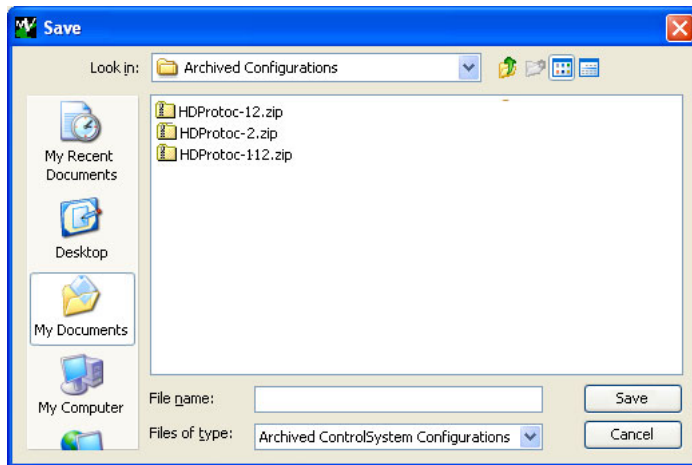
Figure 4-11. Save Dialog Box

3 Enter a 'File Name' for the exported file in the field provided and click Save. The file is compressed and saved.

Or

Click Cancel to close the dialog box without exporting the configuration.

How to Import a Non-NV9000-SE Configuration

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 Save the configuration being imported as a zip archive file and save it to:

`NVISION\ENVY\USERSYS\SAVED\xxx.ZIP`

3 Copy the zip file onto the computer or system controller running NV9000-SE. (If needed, copy the zip file to a removable medium, such as an USB stick.)

4 From the menu bar, select 'File' and then 'Import from Old Configuration Archive'.

5 On the 'Open' dialog box that appears, browse and locate the Zip file, and then click Open.

The file is imported and the configuration read into NV9000-SE. Be sure to save this file to preserve the formatting.

6 Update NV9000 system controller software to use NV9000-SE and the newly uploaded configuration file. For more information and support, contact Miranda technical support.

Analyzing Configurations

Using the 'Analyze' page, different diagnostic analyses of the current configurations can be performed. When an analysis is performed, the results display in a separate tabbed window titled 'Analyze Results'. Analyses are based on functionality. Each functionality lists what is diagnosed when a report is run. You can choose to run all reports, or just selected ones.

How to Analyze a Configuration

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Analyze'. The 'Analyze' page displays, as shown in Figure 4-12. To view the entire page, scroll up and down using the scroll bar on the right-hand side.

Figure 4-12. Analyze Page (Partial View)

3 Check the check box next to the report you want to run, and then click Run.

To check all check boxes, click Set All.

Or

Click Clear All to remove all check marks in all check boxes. Analyses are only performed on those categories with checked check boxes.

For details of what is analyzed for each option, refer to the 'Analyze' page. Each check box is followed by a list of what is analyzed for that grouping.

4 The results of the analysis displays on the 'Analyze Report' page in a 'tree', as shown in Figure 4-13. Click the 'Analyze Report' page window tab to bring the page forward.
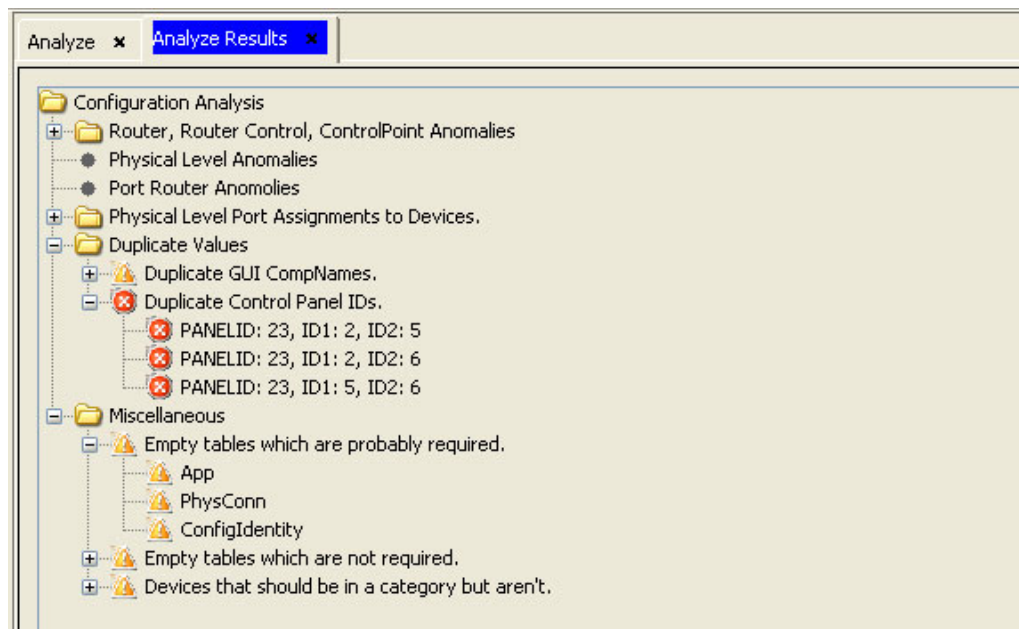
Figure 4-13. Analyze Report Page

5 To view details, click on the + to expand a level in the 'tree'.

Or

Click Expand All to expand all levels.

Or

Click Collapse All to contract all levels.

6 To print a report, exactly as it displays, click Print. A report is sent to the printer connected to the computer running NV9000-SE Utilities. The levels appear in the print out, either expanded or collapsed, exactly as they appear on the 'Analyze Report' page.

7 Click X on the window title tab to close the page.

5. System Management

System controllers, such as the NV9000, write configuration changes to control panels and other routing devices. Configurations cannot be applied to devices until a system controller has been added to NV9000-SE. To view all currently added system controllers, from the 'Navigation' pane select 'System Management'. System controllers display in the left-hand pane. Click on a system controller name to view details, which display in the right-hand page.

A system controller is the physical frame on which the router control system software is loaded. For convenience, the combination—hardware and software—are referred to as the system controller.

System controllers currently communicating with NV9000-SE display with a green icon. When communication is disrupted, the icon is red. A yellow icon indicates that communication exists, but it is of poor quality. All tasks performed in NV9000-SE should be done when communication with the system controller is good, indicated by a green icon.

About System Controllers

System controllers communicate changes made in NV9000-SE Utilities to all control panels, routers and other connected devices. Each system controller has a separate server application. Depending on the NV9000 server, up to 16 routers, 4,096 destinations, 256 EC9700/EC9710 panels, and 128 control panels can be supported. Optional panel network cards to extend the number of control panels to 1,024 are available.

Router control systems are software applications that reside on the system controller and communicate with NV9000-SE Utilities through Ethernet (NIC) ports. Each port has a unique IP address.

IP Addresses

An IP address is a 32-bit number given by four 8-bit values (octets) separated by periods: 192.168.97.87 (for example). The number is comprised of a subnet and a frame address.

Each network must be a distinct subnet. In NV9000-SE Utilities, the subnet mask is typically 255.255.255.0. Using that subnet mask, a device's address is the last octet in the address. For example, if the router's full IP address is 192.168.97.87, the router's frame address is 87 and the subnet is 192.168.97. A frame address can range from 1 to 254. The values 0 and 255 are not allowed because they have special functional meaning.

Together the subnet and the frame address form an IP address which identifies a device or system controller on its subnet. For frames to be distinguishable on the network, all IP addresses must be distinct.

Your subnet masks need not be 255.255.255.0. If yours differ, the frame address range will be something other than 1–254.

System controllers are assigned a specific IP address. Do not change the IP address without first contacting Technical Support. System controllers are assigned the following IP addresses:

- NV9000 system controllers – 192.168.97.1 for the primary controller and 192.168.97.2 for a secondary (redundant) controller.
- NV915 system controllers – 192.168.2.1 for the primary controller and 192.168.2.2 for the secondary controller.

The computer running NV9000-SE Utilities must be on the same subnet (255.255.255.0) and have the same subnet mask (e.g., 192.168.97 for NV9000 system controllers). However, the last number, the frame address, must be anything else but the number assigned to the system controller (1 or 2). For example, the computer running NV9000-SE Utilities may have the IP address 192.168.97.24, but not 192.168.97.1 (or 192.168.97.2 if running a secondary, redundant system controller).

IP addresses for the ports communicating with routers start at 192.168.1.5 (could vary slightly) to 192.168.1.40.

IP addresses for the ports communicating with control panels are divided into two pools of addresses (DHCP is used to determine the address):

- Primary server pool — 192.168.1.41 through 192.168.1.150
- Redundant or secondary server pool — 192.168.1.151 through 192.168.1.254

Important	Do not use any other IP addresses. Other addresses are reserved for other purposes.

Logs

The system controller maintains extensive logs of all system processes. These logs are used for troubleshooting throughout the system. You can set a variety of logging "levels" as desired. Logs are located in the NVISION\envy\userlocal folder on the server's C:\ or D:\ drive.

Descriptions of each logging level are listed below:

No logging	No error logging is performed.
Log errors	Only critical system errors are logged (e.g., loss of a server).
Log warnings	Only warnings and errors are logged, (e.g., loss of a backup control card).
Log system events	This level of logging includes the two previous levels, plus system events (e.g., a panel or a router dropping off line).
Log transactions	This level includes the three previous levels, plus a record of all messages between all system components (e.g., each time a panel sends a request).
Log all events	*All* system activity is written to the logs.
Log debugging info	Extensive information about errors. (Use this option only under Miranda direction.)
Log verbose debugging info	*Use caution: it quickly fills the hard drive with data.*(Use this option only under Miranda direction.)

Managing System Controllers

The 'System Management' page displays information about a system controller in addition to providing access to system controller controls.

Figure 5-1. Example of System Management Page

The 'System Management' page displays the following information:

Section	Description	Related Topic
Controller Summary	Lists the IP address currently assigned to each system controller added to NV9000-SE, including the "health" of the connection and whether the system controller is currently active. Each system controller is assigned an identification number, listed in the 'Controller Number' field. Any faults or issues are listed in the 'Controller Faults' area below the summary fields.	Changing System Controller IP Address or Name on page 39
Router Summary	Lists all routers currently added to NV9000-SE. The 'Active On' column lists which system controller is assigned to each router.	Routers on page 61
Panel Summary	Lists all control panels currently added and which system controller it is connected to. A "0" denotes no connection.	Control Panels on page 231

Section	Description	Related Topic
External Interface Summary	Lists all external applications currently added to the system.	External Interfaces on page 409
License Summary	Lists any protocols being used and onto which system controller the protocol is loaded.	Protocols on page 515

At the bottom of the page are several buttons grouped by function. Each button performs a specific configuration, management or maintenance task. The button lists either the current computer system running NV9000-SE or 'Controller 1' or 'Controller 2'. Controller 1 refers to the primary system controller. If a second, redundant system controller is running, that is referred to as Controller 2.

When a button option is not available, the button is dimmed (greyed-out). System management buttons are as follows:

- Dynamic Update — Can be used to 1) write to and update the database and, 2) send changes to the system controller dynamically. (This can only be used for configuration changes, not changes to physical connections on devices. For updating the database after making physical connection changes click Write Configuration).

- Read Configuration — Reads the configuration currently on the system controller and enters it into the NV9000-SE database.

- Write Configuration — Writes saved configuration changes to the system controller.

- Restart — Stops the system controller and then starts it again.

- Start — Starts the system controller if it has been stopped.

- Stop — Stops the control system software on the system controller, but leaves the system controller running.

- Reboot — Stops the control system software and system controller and then restarts the system controller.

- Shutdown — Stops the control system software and system controller.

Adding System Controllers

System controllers can be added at any time using the 'Add Control System' dialog box accessed from the 'System' menu on the menu bar. (See Menu Bar on page 9.) The computer running NV9000-SE must be on the same subnet and have the same IP settings as the system controller in order to have the system controller added. (See About System Controllers on page 33.)

How to Add a System Controller

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the menu bar, select 'System'. The 'Add Control System' dialog box appears:
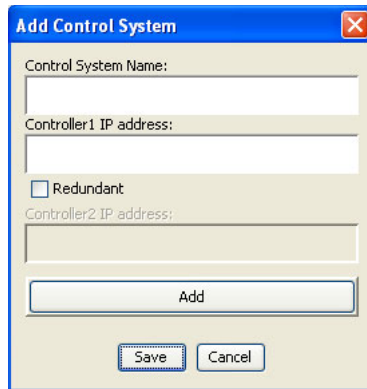
Figure 5-2. Add Control System Dialog Box

3 Enter a 'Control System Name' in the field provided. The name must have fewer than 256 characters. While there is no restriction on the characters used, it is recommended that you use alphanumeric characters only and no symbols or punctuation marks.

4 Enter a 'Controller1 IP address' for the system controller's primary server in the field provided. If the address has been used already, NV9000-SE displays an alert.

The IP address for NV9000 system controllers is 192.168.97.1 for the primary controller and 192.168.97.2 for a secondary (redundant) controller. NV915 system controllers the IP address is 192.168.2.1 for the primary controller and 192.168.2.2 for the secondary controller. If running NV9000-SE remotely, connections are usually made using the "house" net.

5 If the system controller has a redundant server, check the 'Redundant' check box and enter the redundant server's IP address in the 'Controller2 IP address' field that appears.

6 Click Add. The system controller is added and all fields cleared.

7 Repeat steps 2 though 5 until all system controllers are added.

8 Click Save to save all added system controllers and close the dialog box.

Or

Click Cancel to close the dialog box without saving changes.

9 Click X on the window title tab to close the dialog box.

Starting, Stopping or Shutting Down

System controllers can be started, stopped or completely shut down at any time.

• *Shutting down* a system controller immediately stops all communication between the system controller and associated devices.

• *Stopping* a system controller stops all communication between the system controller and associated devices in addition to temporarily stopping the control system software, but leaves the system controller running.

How to Start, Stop or Shut Down a System Controller

1 Launch NV9000-SE. (See [Launching and Exiting the Application](#) on page 12.)

2 From the Navigation area, select the 'System Management' pane and then select the system controller you want to manage.

3 In the 'Control' section at the bottom of the page, click Start, Stop or Shutdown to perform that action:

- Start — Starts the system controller if it has been stopped.

- Stop — Stops the control system software on the system controller, but leaves the system controller running.

- Shutdown — Stops the control system software and system controller.

Rebooting a System Controller

Depending on the configuration change, you may need to reboot the system controller in order to have the configuration communicated to attached devices. If making changes to physical connections (e.g., cabling), you must first *write* changes to the system controller and then *reboot* the system controller in order to save your changes. If making virtual changes (e.g., no changes to cabling), you do not need to write changes and then reboot. Instead, you can select **Dynamic Update** to save your changes dynamically without rebooting. See [Implementing Configuration Changes](#) on page 17.

How to Reboot a System Controller

1 Launch NV9000-SE. (See [Launching and Exiting the Application](#) on page 12.)

2 From the Navigation area, select the 'System Management' pane and then select the system controller you want to manage.

3 In the 'Control' section at the bottom of the page, click Reboot. The system controller stops current activity, shuts down and then restarts.

Selecting a System Controller to "Ignore"

Ignoring a system controller tells NV9000-SE to not include the system controller in status reports, and logs. This can be helpful when running multiple system controllers.

How to Ignore a System Controller

1 Launch NV9000-SE. (See [Launching and Exiting the Application](#) on page 12.)

2 From the Navigation area, select the 'System Management' pane and then select the system controller you want to manage.

3 Right-click on the system controller and from the pop-up menu that displays and select 'Ignore Control System'.

Removing a System Controller

Removing a system controller removes it from the 'System Management' pane in NV9000-SE and stops all communication between the system controller and all devices. Be careful! When removing a system controller there is no confirmation dialog box; this action cannot be undone. If a system

controller is removed by accident, it must be added again to restore communication. See Adding System Controllers on page 36.

How to Remove a System Controller

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'System Management' pane and then select the system controller you want to manage.

3 Right-click on the system controller and from the pop-up menu that displays and select 'Remove Control System'. The system controller is removed and all communication with the controller immediately ceases.

Managing System Controller Communication

System controllers communicate through a network. System controller names and IP addresses can be updated at any time. However, it is important to remember that any changes may have an immediate impact on communication. Changing the name of a system controller immediately updates the name in all tables and display fields in the NV9000-SE in which the name appears.

System controllers are assigned a specific IP address. For NV9000 system controllers the IP address is 192.168.97.1 for the primary controller and 192.168.97.2 for a secondary (redundant) controller. For NV915 system controllers IP address is 192.168.2.1 for the primary controller and 192.168.2.2 for the secondary controller. If running NV9000-SE remotely, connections are usually made using the "house" net.

Changing System Controller IP Address or Name

The IP address or name assigned to a system controller can be changed at any time. However, changes to IP addresses immediately impact communication between the system controller and NV9000-SE. Make sure that the computer running NV9000-SE and the system controller are on the same subnet mask and do not have the same frame address. (See About System Controllers on page 33.)

Changing the name of a system controller immediately updates the name in all tables and display fields in NV9000-SE in which the name appears.

How to Change IP Address or Name

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'System Management' pane.

3 Select a system controller and right-click to display a pop-up menu.

4 Select 'Edit Control System'. The 'Edit Control System' dialog box appears:
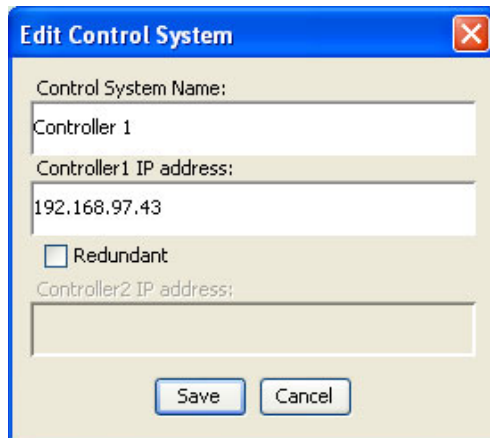
Figure 5-3. Edit Control System Dialog Box

5 Update the 'Control System Name' in the field provided. The name must have fewer than 256 characters. While there is no restriction on the characters used, it is recommended that you use alphanumeric characters only and no symbols or punctuation marks.

6 Update the 'Controller1 IP address' of the system controller's primary server in the field provided. If the address has been used already, NV9000-SE displays an alert.

The IP address for NV9000 system controller is 192.168.97.1 for the primary controller and 192.168.97.2 for a secondary (redundant) controller. NV915 system controllers the IP address is 192.168.2.1 for the primary controller and 192.168.2.2 for the secondary controller. If running NV9000-SE remotely, connections are usually made using the "house" net.

7 If the system controller has a redundant server, update the redundant server's IP address in the 'Controller2 IP address' field that appears.

8 Click Save to save your changes and close the dialog box.

Or

Click Cancel to close the dialog box without saving changes.

9 Click X on the window title tab to close the dialog box.

Changing or Viewing DHCP

The Dynamic Host Configuration Protocol (DHCP) is a computer networking protocol used by hosts (DHCP clients) to retrieve IP address assignments and other configuration information. If using a DHCP host, you can update the DHCP at any time.

How to Change or View the DHCP

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'System Management' pane.

3 Select a system controller and right-click to display a pop-up menu.

4 Select 'Edit/View DHCP'. Current DHCP information displays.

5 Update the DHCP as needed and click Save to save your changes and close the dialog box.

Or

Click Cancel to close the dialog box without saving changes.

6 Click **X** on the window title tab to close the dialog box.

Changing or Viewing SNMP

Simple Network Management Protocol (SNMP) is a UDP-based network protocol. It is often used in network management systems to monitor network-attached devices for statuses that may require administrative attention.

How to Change or View the SNMP

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'System Management' pane.

3 Select a system controller and right-click to display a pop-up menu.

4 Select 'Edit/View SNMP'. Current SNMP information displays.

5 Update the SNMP as needed and click Save to save your changes and close the dialog box.

Or

Click Cancel to close the dialog box without saving changes.

6 Click X on the window title tab to close the dialog box.

Changing or Setting a Virtual IP

A virtual IP is a single IP address that two system controllers can share. This is helpful in systems using a primary system controller and a secondary system controller, for redundancy. The active system controller is always assigned the virtual IP. This means that should one of the system controllers becomes inactive (e.g., power failure), the other system controller already has an IP address assigned that is currently connected to NV9000-SE. There is no disruption in communication between the system controller and NV9000-SE.

This function is only available when a redundant system controller is present.

To remove a virtual IP, simply change the IP address assigned to the system controllers. (See Changing System Controller IP Address or Name on page 39.)

How to Change or Set a Virtual IP

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'System Management' pane.

3 Select a system controller and right-click to display a pop-up menu.

4 Select 'Set/Change Virtual IP' and enter the IP address you want to use as the virtual IP address to be shared by the primary and secondary system controller.

5 Click Save to save your changes and close the dialog box.

Or

Click Cancel to close the dialog box without saving changes.

6 Click X on the window title tab to close the dialog box.

Loading and Saving Snapshots

Snapshots are a way of packaging a configuration and the state of the routers at a point in time. When a snapshot is loaded the system controller restarts with the saved configuration and then sets the router crosspoints to the state specified in the snapshot. This is useful for trucks or production environments where a particular "setup" may be needed before an event begins.

To update a saved snapshot, load the snapshot, make changes as needed, and then save it again.

How to Save and Load a Snapshot

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'System Management' pane.

3 Select a system controller and right-click to display a pop-up menu.

4 Select 'Save Snapshot To'. In the dialog box that appears, enter a name for the snapshot and click Save.

Or

Select 'Load Snapshot From' to load a snapshot. Browse and select the configuration.

Generating a Difference Report

Using the 'Generate Difference Report' you can compare configurations, physical level by physical level. (See Physical Levels vs. Virtual Levels on page 112.) This is helpful when running multiple system controllers. The Difference Report enables you to compare the configurations to make sure the I/O assignments are in agreement.

How to Run a Difference Report

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'System Management' pane.

3 Select a system controller and right-click to display a pop-up menu.

4 Select 'Generate Difference Report' and select physical levels as directed in the dialog boxes that display, clicking OK when done.

5 Choose to use an 'ignore' file to ignore selected data, or not.

6 Select to Save as Ignore List for future reports or to Save as a standalone report.

Managing Host Computers

The 'Hosts' table lists the host computers defined in your configuration. Using this table, hosts can be added, updated or deleted. By default there is only one host, named: NVCONFIG. A backup host can be specified as needed, by default named NVCONFIG2, and a logging mode selected.

In addition to displaying in the 'Hosts' table, the host is also listed in the 'Routers' table for selection as the host computer for the router. (See)

Adding a Host

A host can be added to the NV9000-SE system at any time. Hosts are added using the 'Hosts' table accessed through the 'Views' pane. In general, there is one primary host, by default named NVCONFIG. An optional backup host can be selected, by default named NVCONFIG2.

NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the system controller for dispersal to connected routers. For information on implementing changes, see

How to Add a Host

1 Launch NV9000-SE. (See)

2 From the Navigation area, select the 'Views' pane and then 'Hosts'. The 'Hosts' table appears, as shown in Figure 5-4.

All hosts currently defined in the system are listed. To narrow the list, enter the first characters of the host's name in the 'Computer Name Filter' field. The list is automatically reduced to display only hosts matching that character string.

Figure 5-4. Hosts Table

Asterisks denote required fields.

3 Click Add. A blank row appears.

4 In the blank row, click in the 'Computer Name' column to activate it and enter a name for the new host or accept the default name 'NVCONFIG'.

5 In the same row, click in the 'Log Mode' column and select a log mode from the drop-down list. The log mode determines how host activities are logged and recorded. Logs are located in the `NVISION\envy\userlocal` folder on the server's C:\ or D:\ drive.

Descriptions of each logging level are listed below:

Log Mode	Description
No logging	No error logging is performed.
Log errors	Only critical system errors are logged (e.g., loss of a server).
Log warnings	Only warnings and errors are logged, (e.g., loss of a backup control card).
Log system events	This level of logging includes the two previous levels, plus system events (e.g., a panel or a router dropping off line).
Log transactions	This level includes the three previous levels, plus a record of all messages between all system components (e.g., each time a panel sends a request).
Log all events	*All* system activity is written to the logs.
Log debugging info	Extensive information about errors. (Use this option only under Miranda direction.)
Log verbose debugging info	*Use caution: it quickly fills the hard drive with data.*(Use this option only under Miranda direction.)

6 (Optional) In the same row, click in the 'Parameters' column and enter parameters for the host computer. These are system wide parameters (special rules) that the NV9000 system will follow.

7 (Optional) In the same row, click in the 'Backup Computer Name' column and enter the name of the computer acting as backup for the host computer or accept the default name 'NVCONFIG2'.

8 Click Save. The host is saved to the system.

9 Click X on the window title tab to close the table.

Locating and Viewing Hosts

The 'Hosts' table, accessed through the 'Views' pane, lists all hosts in one convenient interface.

How to Locate and View Hosts

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Hosts'. The 'Hosts' table appears, as shown in Figure 5-5.

All hosts currently defined in the system are listed. To narrow the list, enter the first characters of the host's name in the 'Computer Name Filter' field. The list is automatically reduced to display only hosts matching that character string.
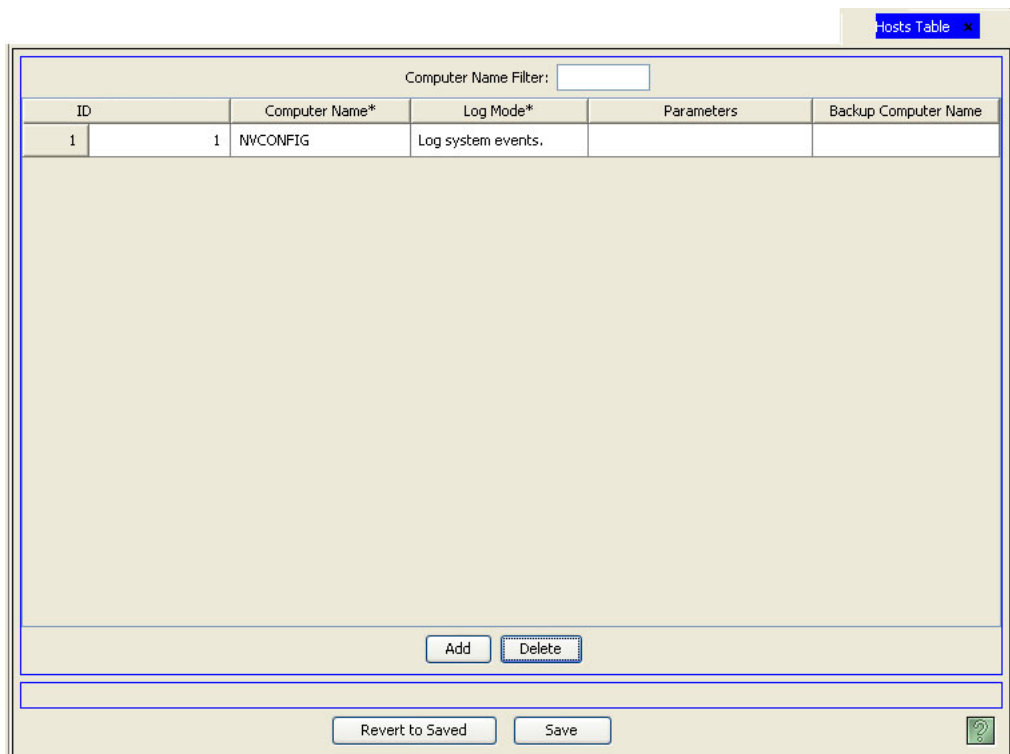
Figure 5-5. Hosts Table

3 Each host is listed, one host per row. Each column displays information about the host, as follows:

Field	Description
ID	Lists the ID number associated with the host computer
Computer Name	Lists the name associated with the host computer. By default the computer is named 'NVCONFIG".
Log Mode	Which activities are logged for the host computer.
	No logging
	Log errors
	Log warnings
	Log system events
	Log transactions
	Log all events
	Log debugging info
	Log verbose debugging info
Parameters	System wide parameters (special rules) that the system controller will follow.
Backup Computer Name	The name of the computer acting as backup (if any) for the host computer, as needed. By default, the computer is named 'NVCONFIG2'.

4 Click **X** on the window title tab to close the table.

Updating a Host

When host information is updated, all related host data is updated throughout the NV9000-SE system. For example, if the host name is updated in the 'Hosts' table, the host name is also immediately updated in the 'Routers' table that also lists hosts. NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

Using the 'Hosts' table accessed through the 'Views' pane, the host name, backup host name, parameters and logging mode can be updated.

By default, the primary host computer is named 'NVCONFIG' and the backup host computer is named 'NVCONFIG2'.

How to Edit Host Information

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Hosts'. The 'Hosts' table appears, as shown in Figure 5-6.

All hosts currently defined in the system are listed. To narrow the list, enter the first characters of the host's name in the 'Computer Name Filter' field. The list is automatically reduced to display only hosts matching that character string.
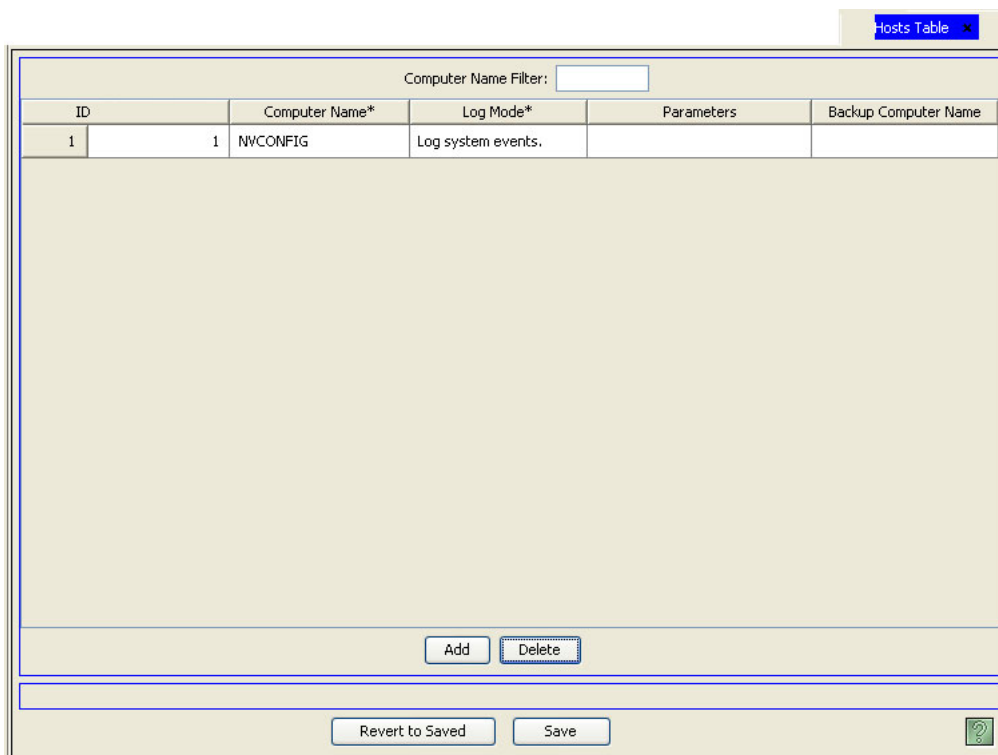
Figure 5-6. Hosts Table

Asterisks denote required fields.

3 Locate the row listing the host being updated.

4 On the row, click in the 'Computer Name' column to activate it and update the host name. By default, the host is named 'NVCONFIG'.

5 On the same row, click in the 'Log Mode' column and select a a new log mode from the drop-down list. The log mode determines how host activities are logged and recorded. Logs are located in the `NVISION\envy\userlocal` folder on the server's C:\ or D:\ drive.

Descriptions of each logging level are listed below:

Log Mode	Description
No logging	No error logging is performed.
Log errors	Only critical system errors are logged (e.g., loss of a server).
Log warnings	Only warnings and errors are logged, (e.g., loss of a backup control card).
Log system events	This level of logging includes the two previous levels, plus system events (e.g., a panel or a router dropping off line).
Log transactions	This level includes the three previous levels, plus a record of all messages between all system components (e.g., each time a panel sends a request).
Log all events	*All* system activity is written to the logs.
Log debugging info	Extensive information about errors. (Use this option only under Miranda direction.)
Log verbose debugging info	*Use caution: it quickly fills the hard drive with data.* (Use this option only under Miranda direction.)

6 (Optional) In the same row, click on the row in the 'Parameters' column and enter system wide parameters (special rules) that the system controller will follow.

7 (Optional) In the same row, click on the row in the 'Backup Computer Name' column and enter the name of the new computer acting as backup for the host computer, as needed. By default, the computer is named 'NVCONFIG2'.

8 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

9 Click **X** on the window title tab to close the table.

Deleting a Host

A host can be deleted at any time using the 'Hosts' table accessed through the 'Views' pane. Be careful when deleting a host. If the host is actively being referenced by a router, communication with that router will terminate.

NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependences, when the deletion is attempted, NV9000-SE informs you of the dependencies. Delete the dependencies first, then delete the originally selected record.

How to Delete a Host

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Hosts'. The 'Hosts' table appears, as shown in Figure 5-7.

All hosts currently defined in the system are listed. To narrow the list, enter the first characters of the host's name in the 'Computer Name Filter' field. The list is automatically reduced to display only hosts matching that character string.
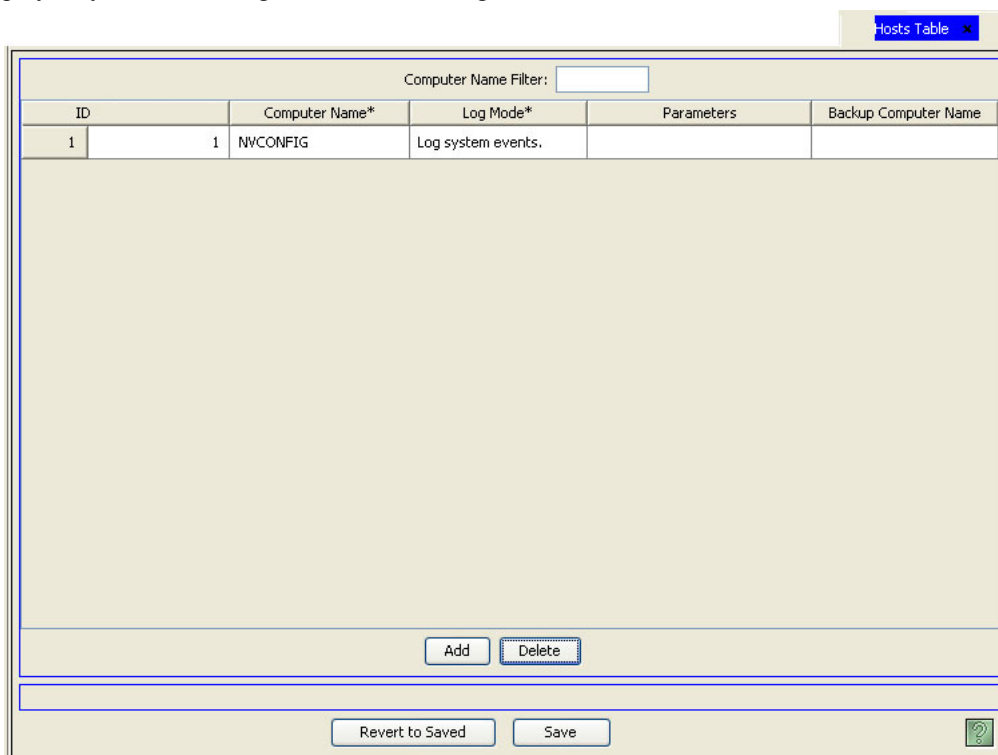
Figure 5-7. Hosts Table

3 Click anywhere in the row listing the host being deleted.

4 Click Delete. The row is removed.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Managing System Parameters

The 'SysParams' table accessed through the 'Views' pane enables you to view current system parameters for the NV9000-SE system. System parameters include values for system wide settings, such as default time out to lock a control panel when the panel is inactive.

Adding System Parameters

Using the 'SysParams' table, new system parameters can be added at any time. NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

How to Add a System Parameter

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane, then 'SysParams'. The 'SysParams' table appears:

Figure 5-8. SysParams Table

3 Click Add. A blank row appears at the bottom of the table.

4 In the blank row, enter a 'Name' for the parameter in the field provided.

5 In the same row, enter a 'Value' in the field provided.

6 (Optional) Enter a 'Description' of the parameter in the field provided.

7 Click Save.

8 Click X on the window title tab to close the table.

Viewing System Parameters

System parameters are viewed using the 'SysParams' table, accessed through the 'Views' pane. By default, the parameter PANEL_PRESET_TIMEOUT appears. The parameter set the time-out delay in seconds for preset blanking on NV9601 panels when using semiautomatic data routing.
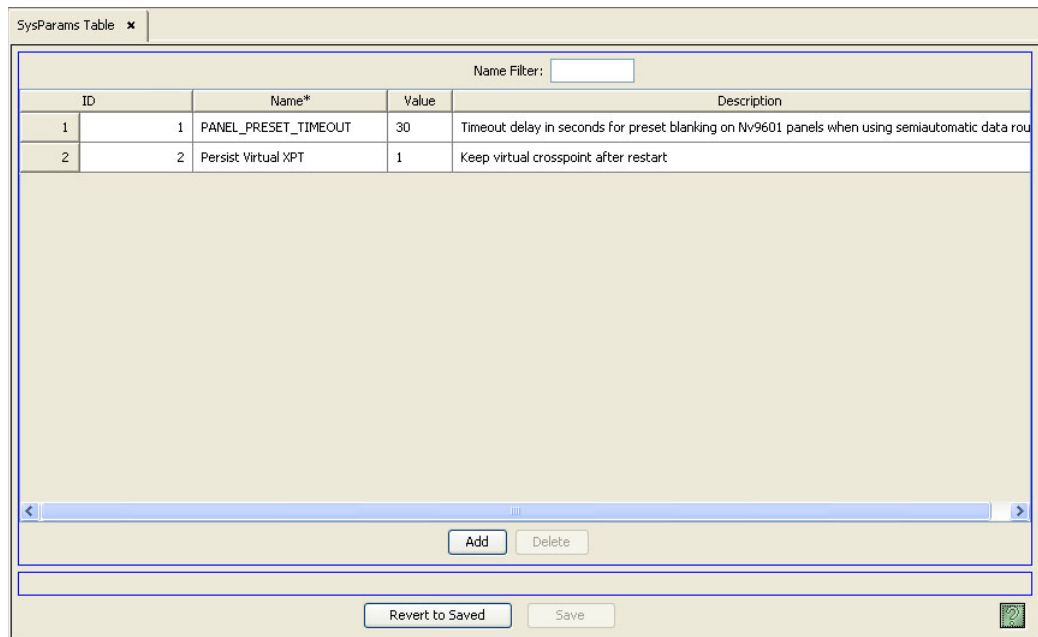
How to View a System Parameter

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane, then 'SysParams'. The 'SysParams' table displays, as shown in Figure 5-9.

To narrow the list of system parameters that display, enter the first characters of a system parameters name in the 'Name Filter' field. The list is automatically reduced to display only system parameters matching that character string.

Figure 5-9. SysParams Table

Parameters are listed by 'Name', 'Value' and 'Description'.

3 Click X on the window title tab to close the table.

Updating System Parameters

Using the 'SysParams' table, system parameters can be updated at any time. NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

How to Update a System Parameter

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane, then 'SysParams'. The 'SysParams' table displays, as shown in Figure 5-10.

To narrow the list of system parameters that display, enter the first characters of a system parameters name in the 'Name Filter' field. The list is automatically reduced to display only system parameters matching that character string.
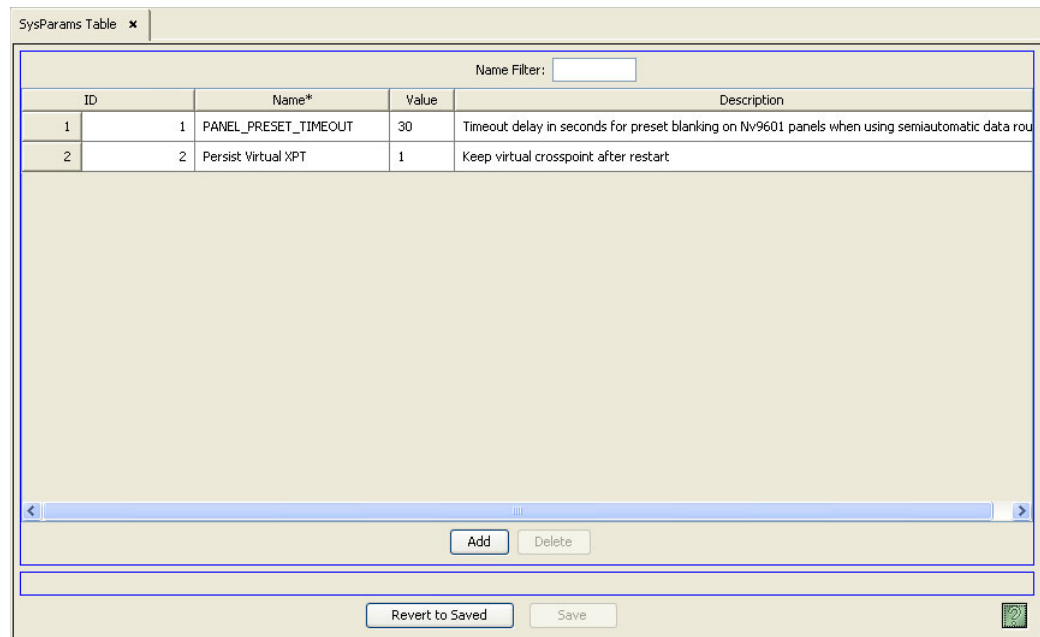
Figure 5-10. SysParams Table

3 Locate the system parameter being updated.

4 In the row listing the system parameter, enter a new 'Name' for the parameter in the field provided.

5 In the same row, enter a new 'Value' in the field provided.

6 (Optional) Update the 'Description' of the parameter in the field provided.

7 Click Save.

   Or

   To revert to previously saved configuration, click Revert to Saved.

8 Click **X** on the window title tab to close the page.

Deleting a System Parameter

System parameters can be deleted using the 'SysParams' table. Once deleted, the parameters no longer have any effect on the NV9000-SE system. NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependences, when the deletion is attempted, NV9000-SE informs you of the dependencies. Delete the dependencies first, then delete the originally selected record.

How to Delete a System Parameter

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane, then 'SysParams'. The 'SysParams' table displays, as shown in Figure 5-11.

To narrow the list of system parameters that display, enter the first characters of a system parameters name in the 'Name Filter' field. The list is automatically reduced to display only system parameters matching that character string.
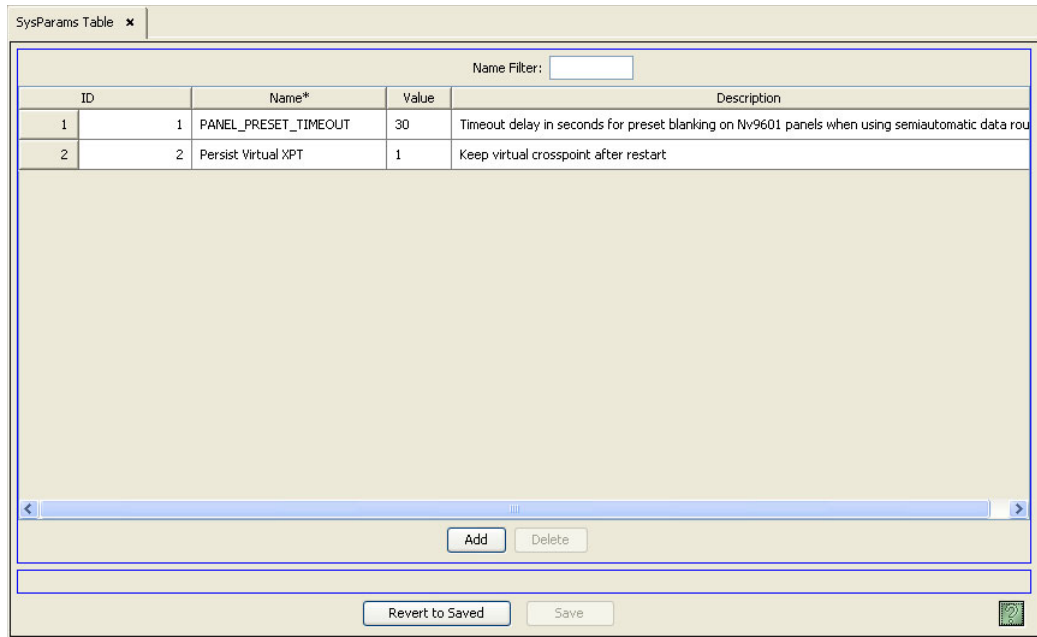
Figure 5-11. SysParams Table

3 Locate the system parameter being updated.

4 Click anywhere in the row listing the system parameter and then click Delete. The row is removed from the table.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

6. Importing and Exporting Data

When first setting up NV9000-SE, or making major changes, a great deal of data must be entered into the NV9000-SE system. A large part of this information is comprised of devices, physical connections, and the categories into which devices are organized. This data is managed in various databases in the NV9000-SE, accessible through different tables. However, adding the information bit by bit to tables can be a cumbersome task. Similarly, organizing the data, such as which level sets or categories are used for certain devices, can be time consuming. To make entering and organizing device and physical connection data relatively quick and easy, the NV9000-SE enables you to import data contained in a .csv (fundamental spreadsheet file type) or .xls (Microsoft Excel) file. The data can be imported from the spreadsheet file into specific tables or applied to selected level sets.

Similarly, it is often easier to manipulate data in a spreadsheet format. The export feature enables you to export specific data from NV9000-SE tables to spreadsheets.

Data is imported using the 'Import Data File' page and exported using the 'Export to File' page. Both are access through the 'Tasks' pane. Data can be imported to one of several tables, depending on the information being used. For example, a list of devices in your facility can be imported to the 'Devices' table.

In general, data is imported into tables and physical I/O connection data is exported.

Before importing a file, you must properly format the columns and rows in the file to match the table into which it is being imported. If you import an improperly constructed file, one that contains incorrect data, or inadvertently import the wrong file, the import will fail and may not report any errors.

Before importing data it is import to understand how the data is used in the NV9000-SE. It is recommended that you review About Devices on page 158 and Using Categories and Suffixes on page 190.

Importing Data

Using the 'Import Data File' page, you can import a spreadsheet file (either .csv or .xls) and then use the information to populate specific tables in NVISION. The information being imported must correspond to the rows and columns in the table being populated. Construct the column headings and data to match the table into which the data will be imported. However, if the column headings in the spreadsheet do not need to exactly match the column headings of the table it is being imported into, NVISION enables you to choose how to map from the spreadsheet headings to table columns.

When data is imported you can choose a specific NV9000-SE table to populate or add data to an existing level set. However, in general data is imported into tables only.

Please note that the 'Import Mapping File' feature is for future applications and not currently supported.

How to Import Data to a Table

Be sure to organize the spreadsheet into rows and columns that match the table into which the data is being imported.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 Click the 'Tasks' pane and select 'Import Data File'. The 'Import Data File' page appears:
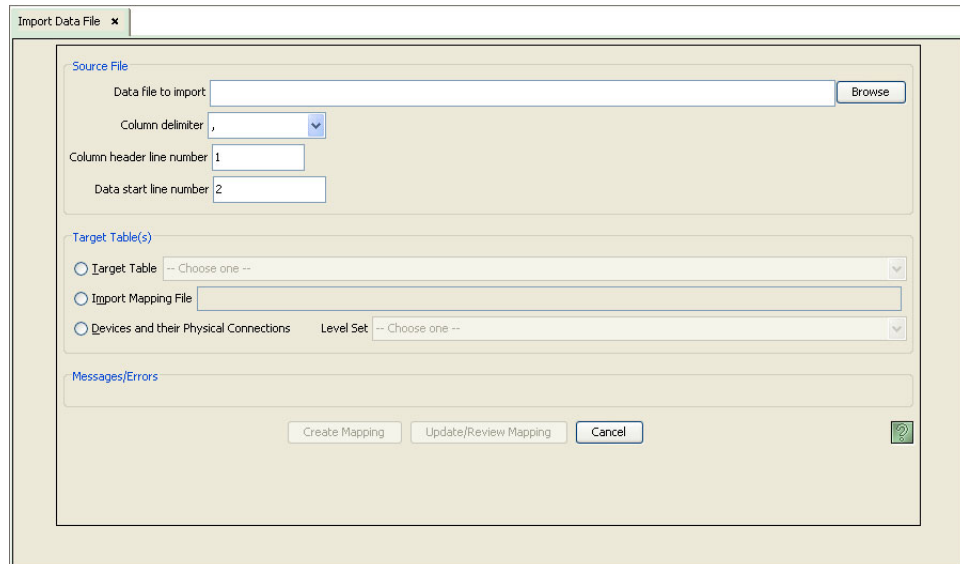
Figure 6-1. Import Data File Page

3 In the 'Source File' section, click Browse and select the spreadsheet you want to import. The spreadsheet must be a .csv or .xls file.

4 From the 'Column delimiter' drop-down list, select how the columns in the file with be delineated. When imported, the file is converted to text and the columns are separated by the delimiter you choose: comma (,), tab <tab>, or slash (/).

5 Enter the 'Column header line number' and the 'Data start line number' in the fields provided to determine which columns and rows will be imported. For example, if you want only columns 55 and greater to be included, enter 55. You can only enter a single number and not a range. For example, you can enter 4, but not 4 - 15. Every column or line that matches the number entered, and all those following it sequentially, will be imported.

6 In the 'Target Table(s)' section, select a table into which the data will be imported.

Click the 'Target Table' radio button and from the drop-down list select a table:

- 'Devices'—A list of level sets and associated devices, one level set per row, with name and description. See Devices on page 157.

- 'Categories'—A list of existing categories, one per row, with name and description. See Categories on page 189.

- 'Category Details'—A list of existing devices and the associated category, one device per row, with ID and suffixes. See Categories on page 189.

- 'PhysConns'—A list of all physical connections for all devices in the NV9000-SE system. See Adding, Updating or Deleting Physical Connections on page 177.

7 Click Create Mapping. The 'Category to Source File Mapping' page appears, as shown in Figure 6-2.

Or

Click Cancel to end the current session.

Note: The Update/Review Mapping feature is for future applications and not currently supported.

In the example below, a spreadsheet is being imported to the 'Categories' table. The 'Target Column' lists the columns in the 'Categories' table. The 'File Column' lists the columns in the spreadsheet data being imported. Each row represents a column in the table and the column in the spreadsheet to which it is being mapped.
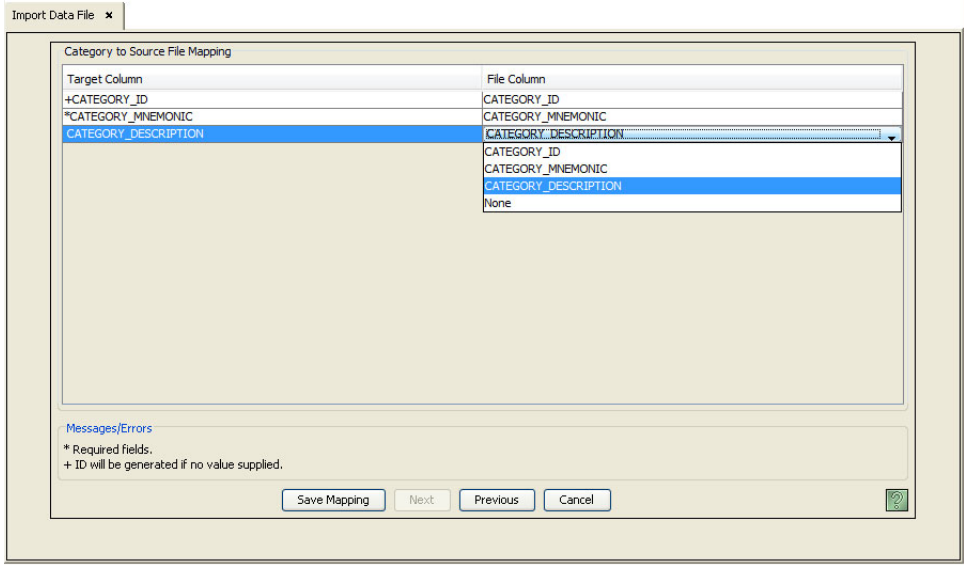
Figure 6-2. Category to Source File Mapping Page

8 To choose a 'Target Column' to map to a 'File Column', click on the corresponding 'File Column' row and then select a column from the drop-down list.

If any column headings do not map, the page displays "blank" fields and an additional 'Reference Type' column. Right-click on a blank field and select a 'File Column' from the drop-down list. You can also enter a mnemonic/name in the 'Reference Type' column.
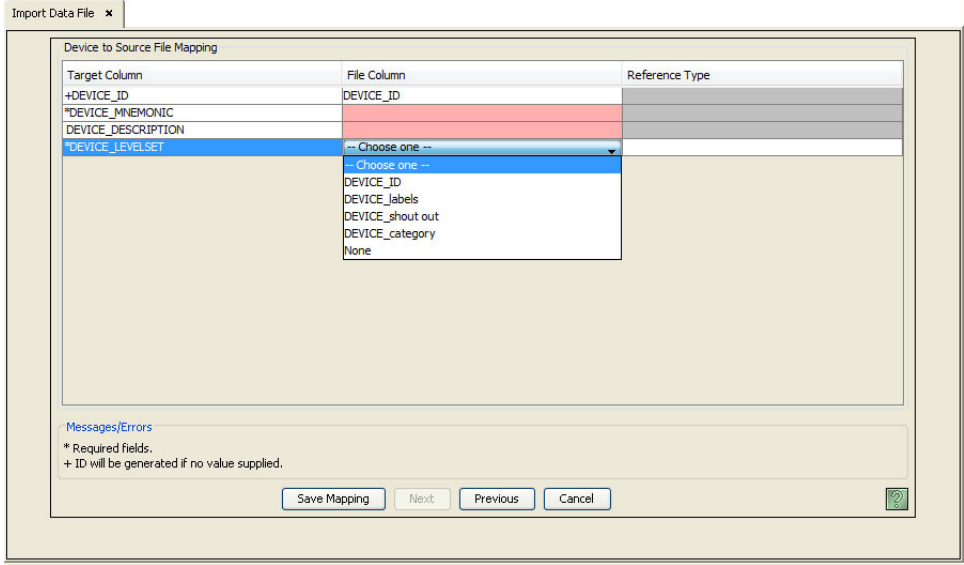
Figure 6-3. Category to Source File Mapping Page (not linked)

9 Click **Next** to map the columns. The 'Run Condition' page appears, as shown in Figure 6-4. You can choose to:

- Undo import on error(s) — All data is imported if no errors exist; no data is imported if any errors exist.
- Save import on error(s) — Save the entire import, whether errors exist or not. Displays any errors.
- Test — Run a test import to make sure the data imports correctly. Displays any errors.

Note: The Save **Mapping** feature is not recommended for this application.
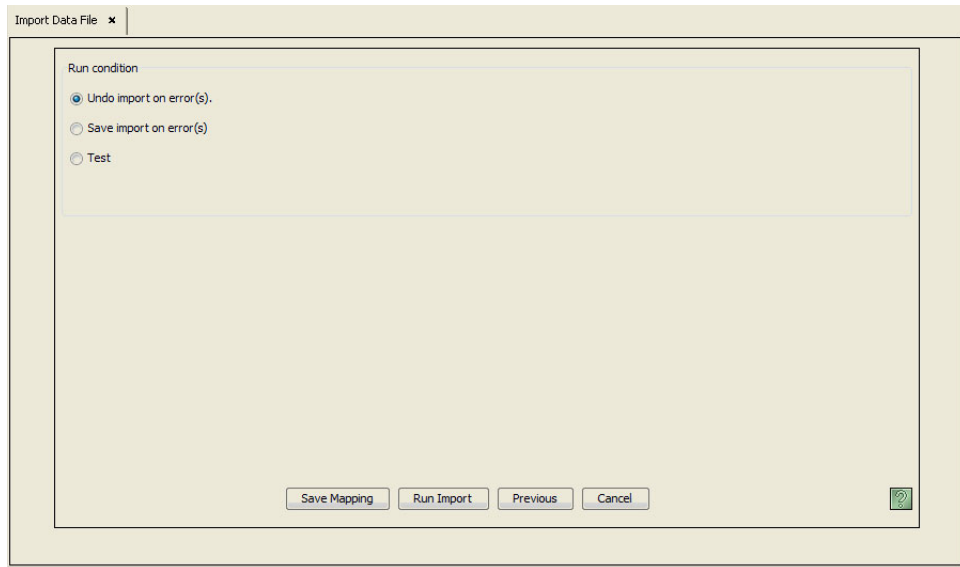
Figure 6-4. Run Condition Page

10 Click Run Import to import the data.

Exporting Data

Using the 'Export to File' page, certain data in NVISION can be exported to spreadsheet files. In general, data regarding I/O connections are exportedNVISION, but information from tables may also be exported. Exporting the data enables you to manage the information offline and in formats that are easy to manipulate.

How to Export Data from Tables

1 Click the 'Tasks' pane and select 'Export to File'. The 'Export to File' page appears:
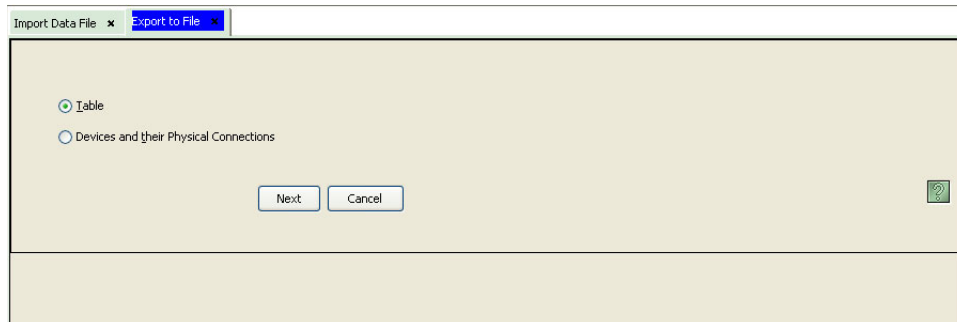
Figure 6-5. Export to File Page

2 Select the 'Table' radio button and then click Next. The 'Export table to file' section appears:
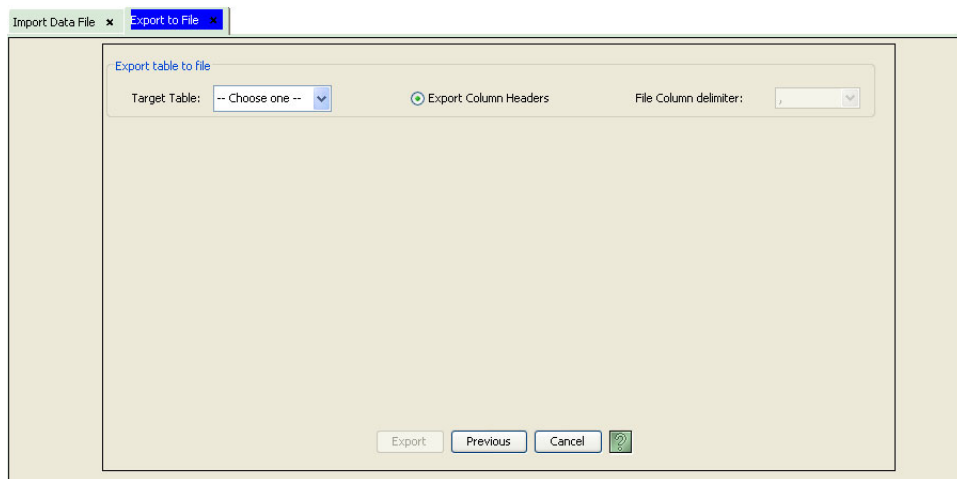
Figure 6-6. Export Table to File Page

3 Select a 'Target Table' from the drop-down list:

- Devices'—A list of level sets and associated devices, one level set per row, with name and description.
- 'Categories'—A list of existing categories, one per row, with name and description.
- 'Category Details'—A list of existing devices and the associated category, one device per row, with ID and suffixes.
- 'PhysConns'—A list of all physical connections for all devices in the NV9000-SE system.

4 The 'Export table to file' page appears displaying the columns for the selected table, as shown in Figure 6-7. To pick a different table, select one from the 'Target Table' drop-down list.
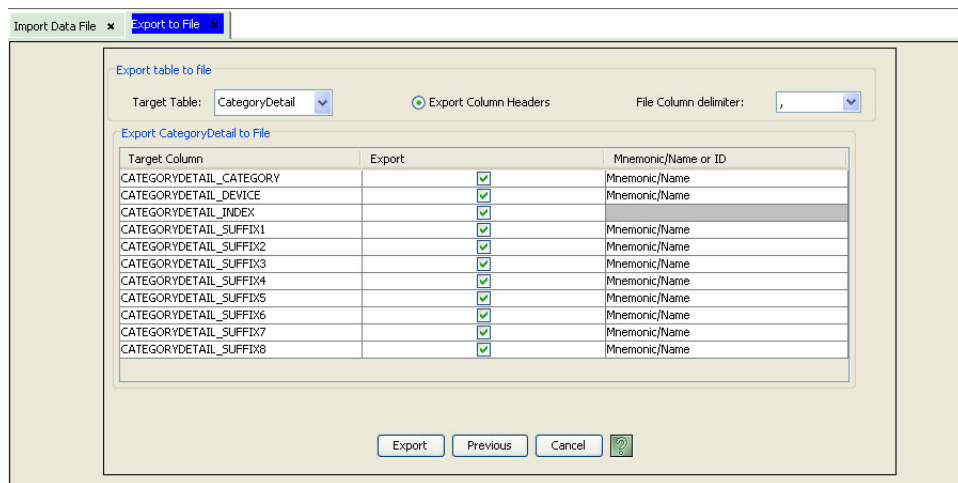
Figure 6-7. Example of the Export Table to File Page

Each column in the table is listed on a single row. By default, the 'Export' check box is checked. Uncheck the 'Export' check box to *not* import that row's data. The 'Mnemonic/Name or ID' column displays the name associated with the type of data being imported.

5 Select the 'Export Column Headers' to have those exported into the spreadsheet. By default, this option is selected.

6 From the 'File Column delimiter' drop-down list, select a delimiter. When imported, the file is converted to text and no table cells exist. You can choose to have data that appears in a column separated from data in other columns by a delimiter: comma (,), tab <tab>, or slash (/). By default, a comma is selected. When converting the data to a spreadsheet, the delimiter is used to define columns.

7 Click Export. The 'Save' dialog box appears. Browse to the location where you want to save the export data file and enter a 'File name' and then click Save.

Or

Click Previous to return to the previous page without saving the exported data.

Or

Click Cancel to cancel without saving changes and close the page.

How to Export Devices and Physical Connection Data

1 Click the 'Tasks' pane and select 'Export to File'. The 'Export to File' page appears:
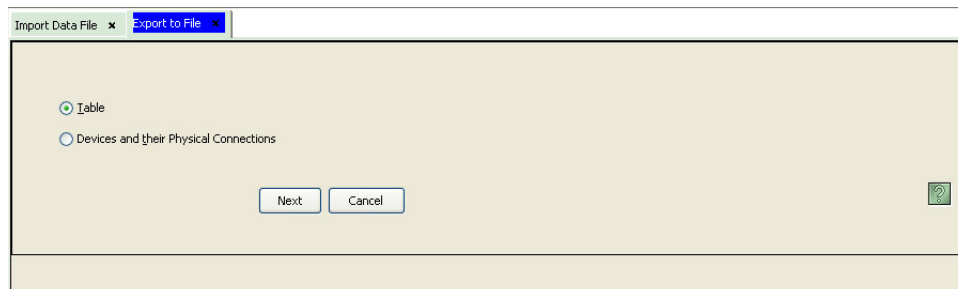
Figure 6-8. Export to File Page

2 Select the 'Devices and their Physical Connections' radio button and then click Next. The 'Export Devices and their Physical Connections to a file' section appears:
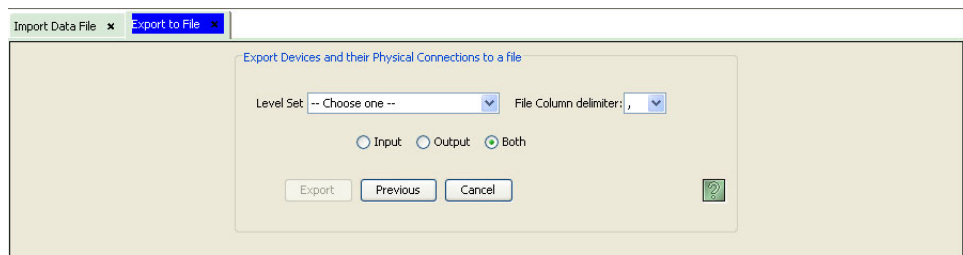
Figure 6-9. Export Devices and their Physical Connections to a File Page

3 Select a 'Level Set' from the drop-down list. The level sets that display are those currently in the system. You must choose from and existing level set.

4 From the 'File Column delimiter' drop-down list, select a delimiter. When imported, the file is converted to text and no table cells exist. You can choose to have data that appears in a column separated from data in other columns by a delimiter: comma (,), tab <tab>, or slash (/). By default, a comma is selected.

5 Select whether to import 'Input', 'Output', or 'Both' input and output connections by clicking the corresponding radio button.

6 Click Export. The 'Save' dialog box appears. Browse to the location where you want to save the export data file and enter a 'File name' and then click Save.

Or

Click Previous to return to the previous page without saving the export data.

Or

Click Cancel to cancel without saving changes and close the page.

6. Importing and Exporting Data
Exporting Data

7. Routers

NV9000-SE Utilities is used to configure how routers switch signals when a command is initiated from a control panel. Configurations are uploaded to the system controller, which in turn communicates with all associated routers and control panels.

In general, routers are added using the 'Add Router' wizard and then managed through the 'Routers' page or individual tables. All pages and tables share information so that data entered or updated in one interface is added or updated in corresponding data fields in other interfaces.

Routers are managed using the following interfaces:

- 'Add Router' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add a single router. Opens the 'Router Details' page through which router physical levels are defined. See Adding a Router on page 63.

- 'Routers' page (accessed through the 'Configuration' pane)—A list of existing routers. Opens the 'Router Details' page through which router physical levels can be updated, and routers are added or deleted. See Adding a Router on page 63 and Updating Router Details on page 78.

- 'View Router Ports' page (accessed through the 'Tasks' pane)—lets you to quickly locate router ports by attribute, such as virtual level or device. See Viewing Router Ports on page 77.

- Four tables (accessed through the 'Views' pane):

  'Routers' table—A list of existing routers, one per row, with name and host. Using this table, the router name and host can be updated, and a router file can be added with name and host. However, no physical or virtual levels can be defined. That must be done through the 'Routers Details' page accessed through 'Routers' page. See Updating Router Details on page 78.

  'Router Control' table—A list of existing routers and corresponding control points, one control point per row. Using this table, router name, control point, protocols, parameters and control mode can be updated. See Updating Router Details on page 78.

  'PhysLevel' table—(accessed through the 'Views' pane) A list of defined physical levels, one per row, with I/O starts, ends, locks, chops and virtual crosspoint information. Using this table, all information related to physical levels can be added, removed or updated. See Updating Router Physical Levels on page 87.

  'XPTExlcusions' table—(accessed through the 'Views' pane) Enables you to exclude crosspoints. An exclusion prevents certain sources from being connected to certain destinations. Using this table, crosspoint exclusions can be added, deleted or edited. See Excluding Crosspoints on page 101.

About Routers

A router is a switching matrix that enables you to connect any input to any output dynamically, rapidly making new connections. A switching matrix allows fanout, but not mixing. That is, an input (a source) can be directed to multiple outputs (destinations). However, several inputs cannot be sent to a single output.

Here is an example of a 4 × 3 switching matrix:
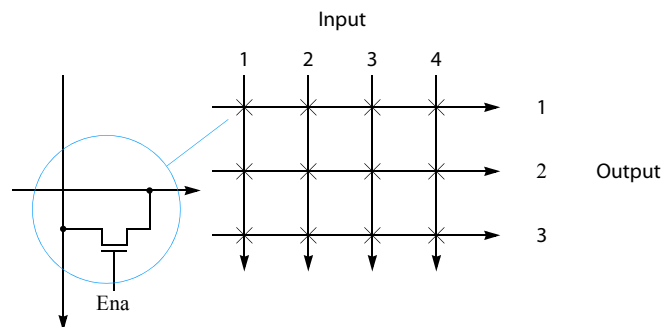
An X marks each point (a crosspoint) in the matrix. At the most basic level, each crosspoint has an enable circuit that permits the signal to connect from the input to the output.

Some routers do extensive signal processing. For such routers, this diagram is overly simplified.

The following example shows input 3 connected to outputs 1 and 2, and input 4 connected to output 3:

(Circles represent connections.)
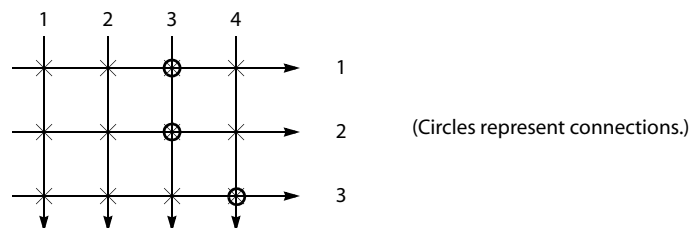
In general, a matrix for switching inputs and outputs is called a *crosspoint matrix* because signals switch at the crosspoint from input to output. A routing system is a *set* of crosspoint matrices. Using routers, different types of signals can be switched: video, HD, SD, AES, analog audio, timecode, machine control, and others. Different routers support different signal types.

In a router, each signal type has its own crosspoint matrix. If you think of a crosspoint matrix as a 3-D representation, each signal is a separate crosspoint matrix, and each matrix exists as a separate level. This concept is extremely important to remember when configuring routers in the NV9000-SE.

The following is an example of how each crosspoint matrix can be considered a "level" of a 3-D matrix:

HD
AES1/2
AES3/4
• • •
TC
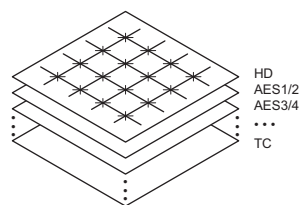
Figure 7-1. Crosspoint Matrices as Levels

For more information on levels, see

Machine Control Port Routers

Unlike video or audio routers, machine control routers (also called port routers or data routers) allow only point-to-point connections. For editing, Miranda port routers also allow point-to-multiple-point connections.

Note	Machine control connections are used for dubbing, cue tone distribution, to roll a backup VTR, etc.

When connections are point-to-point, there are some operational issues. For example, if an editor in one suite selects a VTR that is currently in use in another edit bay, he or she will break the RS-422 data connection to the edit controller, and disrupt the edit. It would be better if the control level could be separated from the other levels. The NV9000 system provides this separation in two of the three different data modes, semi-automatic and manual.

These are the modes:

- *Automatic* mode. Control level switches automatically follow with the other configured levels.

- *Semi-automatic* mode. The new source will be routed on all levels—except control. The operator will be prompted to press Take again, if the route on the control level is desired. Pressing Clear Preset or waiting for the preset to time out will cancel the control level route. This is the recommended mode for most applications.

- *Manual* mode. All switches performed on the control level between ports that are currently in use are performed as separate "takes," providing some degree of safety.

Adding a Router

A router can be added and configured at any time. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see

Routers can be added using a wizard, page or table, as follows:

- 'Add Router' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add a single router. Opens the 'Router Details' page through which router physical and virtual levels are defined.

- 'Routers' page (accessed through the 'Configuration' pane)—A list of existing routers to which a new router can be added. Opens the 'Router Details' page through which router physical and virtual levels are defined.

- 'Routers' table (accessed through the 'Views' pane)—A list of existing routers, one per row, with name and host. A router file can be added using this table, with name and host, but no physical or virtual levels can be defined. That must be done through the 'Routers Details' page accessed through 'Routers' page. (Not recommended for adding new routers.)

To quickly add several routers, minimal information for each router can be entered in the 'Add Router' wizard and then the Finish button pressed. This adds the router name and clears all fields so that another router can be added immediately. However, no details for the router, such as physical

levels, are added. Router details are added using the 'Routers' page accessed through the 'Configuration' pane.

How to Add a Router Using the 'Add Router' Wizard or 'Routers' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Tasks' pane and then 'Add Router'.

Or

From the Navigation area, select the 'Configuration' pane and then 'Routers'. The 'Routers' page displays. On the 'Routers' page, click Add Router.

The 'Add Router' page appears:

Figure 7-2. Add Router Page

3 Enter information in the fields provided (Red titles denote required fields):

Field	Description
Name	Enter the name used to describe the router. Be sure to use a unique name that is descriptive. The name is limited to 8 characters. Do not use punctuation marks or symbols.
Router Host	From the drop-down list, select the router's host. There is generally only one: NVCONFIG.

Field	Description
Protocol	If using a Miranda router, from the drop-down list, select whether the router is using an Ethernet or serial protocol to communicate with NV9000-SE. For a list of protocols, see Protocols on page 515.
	Note: If the router is an NV5128 Multi-Format Router, choose 'NV Ethernet' or 'NV Serial Private'. 'NV Serial Public' is a simplified protocol for third-party drivers or for legacy Miranda routers.
Primary Control Port	Control ports (also called control points) are serial or Ethernet ports in the NV9000 system controller through which routers, panels and other devices are connected.
Secondary Control Port	The serial port settings differ depending on which protocol you have selected. The Miranda router standard is 38.4 K baud, 8 data bits, no parity, and 1 stop bit. Some protocols do not have a secondary control point. For more information on control points, see Managing Control Points on page 96.
	Important: Leave the control ports field set to '-New-'. Control ports are specified in the 'Router Details' page.
	The coded control points in the drop-down menus begin with "E" for an Ethernet control point and "S" for a serial control point.

4 Click Next. The 'Router Details' page appears. Continue to Step 5.

Or

Click Finish to save minimal router information, clear all fields, and immediately add another router. The routers are added in name only and without defining details, such as physical levels. To add details, locate the router and perform steps 5 through 10 as described in this procedure.

Or

Click Cancel to clear the fields without saving any information.

(See How to Locate and View Existing Router Using the 'Routers' Page on page 71.)

5 In the 'Router Connection Info' section, enter either Ethernet or serial connection data, depending on the protocol selected:

- For Ethernet, enter the 'IP Address' for the 'Primary Control Point' and the 'Secondary Control Point' (if applicable) in the fields provided (Figure 7-3). Control points are ports on the NV9000 system controller. For more information on control points, see Managing Control Points on page 96.

'Master Control Ethernet' protocol is used for adding Master Control Processors. For more information, see Master Control on page 367.

Figure 7-3. Router Page for Ethernet Protocol

- For serial, from the drop-down fields select the serial port settings for the router. The settings differ depending on which protocol was selected.

Figure 7-4. Router Details Page for Serial Protocol

Field	Description	Options
Port	Select the COM port for the router, between 1–48. By default COM1 is selected.	Choices depend on the options installed.
Baud Rate	Select the baud rate for the port. The default is '38400'.	300, 1200, and so on.
Parity	Select the parity for the port. The default is 'None'.	Even, Odd, None
Stop	Select the stop bit for the port. The default is '1'.	1,2
Data	Select the data bits for the port. The default is '8'.	7,8

6 The 'Physical Levels' section has two parts. On the left is a table of physical levels. (See About Levels and Level Sets on page 112.) On the right are miscellaneous parameters and options.

Click Add to add a level, as shown in Figure 7-5. Click in the row under each column heading to activate that field and enter information as follows:

Field	Description	Values
Name	Enter a descriptive name for the router. Up to 24 alphanumeric characters may be entered. Do not use punctuation marks or symbols. This name is not seen by the operators; only by the NV9000-SE user.	Alphanumeric
#	Numeric value identifying a particular physical level (partition) in the router. Enter a number for the router signal type for each physical level. If multiple signal types are managed by the router, enter additional, unique numbers, one for each signal type, creating a new row for each signal. Each signal type is a separate, unique physical level.	0 through 250
Input Start Input End	The logical number this physical level (partition) starts and ends with for inputs. **Important:** These numbers must match the number entered as the 'Controller Input' 'start' and 'end' in UniConfig when configuring the router. For more information, see the UniConfig User's Guide.	Typically 0 or 1
Output Start Output End	The logical number this physical level starts and ends with for outputs. **Important:** These numbers must match the numbers entered as the 'Controller Output' 'start' and 'end' in UniConfig when configuring the router. For more information, see the UniConfig User's Guide.	Typically 0 or 1

Figure 7-5. Physical Level Section - Router Details Page

7 Repeat Step 6 until all physical levels in the router have been entered. To remove a row, select the row and then click Delete.

8 In the right-hand area of the 'Physical Levels' section, enter options in the fields provided:

Field	Description
Input Protect	Protects and/or locks inputs or outputs. When locked it cannot be changed. When protected, it can be changed, but only with proper authorization.
Input Lock	From the drop-down list, select 'Disabled' to remove protect or unlock, or 'In Server' to enable protect or lock in the server. For more information, see Locking and Protecting Panels on page 232.
Output Protect	
Output Lock	
Shared Control	Informs the NV9000 system controller whether another control system is connected to this physical level. From the drop-down list, select 'True' to verify that another control system is connected to the router control card and that it can initiate crosspoint changes. The NV9000 allows it and updates its tables periodically with these changes. (Unexpected changes are not logged as errors.).
	If 'False' is selected, the NV9000 manages this physical level exclusively, and does not permit crosspoint changes that it does not initiate.
Signal Type	Distinguishes whether the router is used for switching signals or for machine control. From the drop-down list, select 'Machine Control' for machine control or 'XY or standard' for signal switching.
Number Virtual XPTS	Enter the number of virtual crosspoints. For more information, see Managing Virtual Crosspoints on page 103.
Chop Interval	Enter the number of frames for the chop interval. The default is 6 frames.
	When supported by the router, 'chop' rapidly switches the selected destination between its current source and the preset source.
Virtual XPT Default Input	Enter the default input for virtual crosspoint. For more information, see Managing Virtual Crosspoints on page 103.

9 Click Save.

10 Click X on the window title tab to close the page.

How to Add a Router Using the 'Routers' Table

Using the 'Routers' table, router names can be added to the NV9000-SE system, but no router details.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Routers'. The 'Routers' table appears:

Figure 7-6. Routers Table

3 Click Add Router. A blank row appears.

4 On the blank row, click in the 'Name' column to activate it and enter a name for the new router.

5 On the same row, click in the 'Host' column and select a system controller from the drop-down list.

6 Click Save. The router is saved to the system and the next sequential identification number assigned.

7 The router is added without defining details, such as physical levels. To add details, locate the router and perform steps 5 through 10 as described in How to Add a Router Using the 'Add Router' Wizard or 'Routers' Page on page 64. (See How to Locate and View Existing Router Using the 'Routers' Page on page 71.)

8 Click X on the window title tab to close the table.

Locating and Viewing Existing Router Details

Depending on the information you want to view, different pages or tables present different router information:

- 'Routers' page (accessed through the 'Configuration' pane)—A list of existing routers. Opens the 'Router Details' page which displays all details for an individual, selected router. Locate routers by name or host.
- Two router tables (accessed through the 'Views' pane):
    - 'Routers' table—A list of all existing routers, one per row, with name and host. Locate routers by name.
    - 'Router Control' table—A list of existing routers and associated control point, one control point per row. Locate routers by name or control point.

How to Locate and View Existing Router Using the 'Routers' Page

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Routers'. The 'Routers' page displays, as shown in Figure 7-7. All routers currently defined in the system are listed.

To narrow the list, enter the first characters of the router's name in the 'Name Filter' field. The list is automatically reduced to display only routers matching that character string.

Or

From the 'Hosts Filter' drop-down list, select the router's host. The list is automatically reduced to display only routers having the same host as the one selected.

Figure 7-7. Routers Page

The 'Router' column lists the name assigned the router in NV9000-SE. The 'Host' column lists the primary host associated with the router.

3 Double click on a single row to open router details for that router.

Or

Click anywhere in the row listing the router for which you want to view router details and click Edit Selected Router. To select multiple routers, use the 'Shift' or 'CTRL' key on your keyboard. Each router opens in a separate tabbed window. Click the tab to bring the window forward.

The 'Router Details' page that appears depends on whether the router is using an Ethernet or serial protocol, as shown in Figure 7-8 and Figure 7-9.

Figure 7-8. Router Details Page for Ethernet Protocol
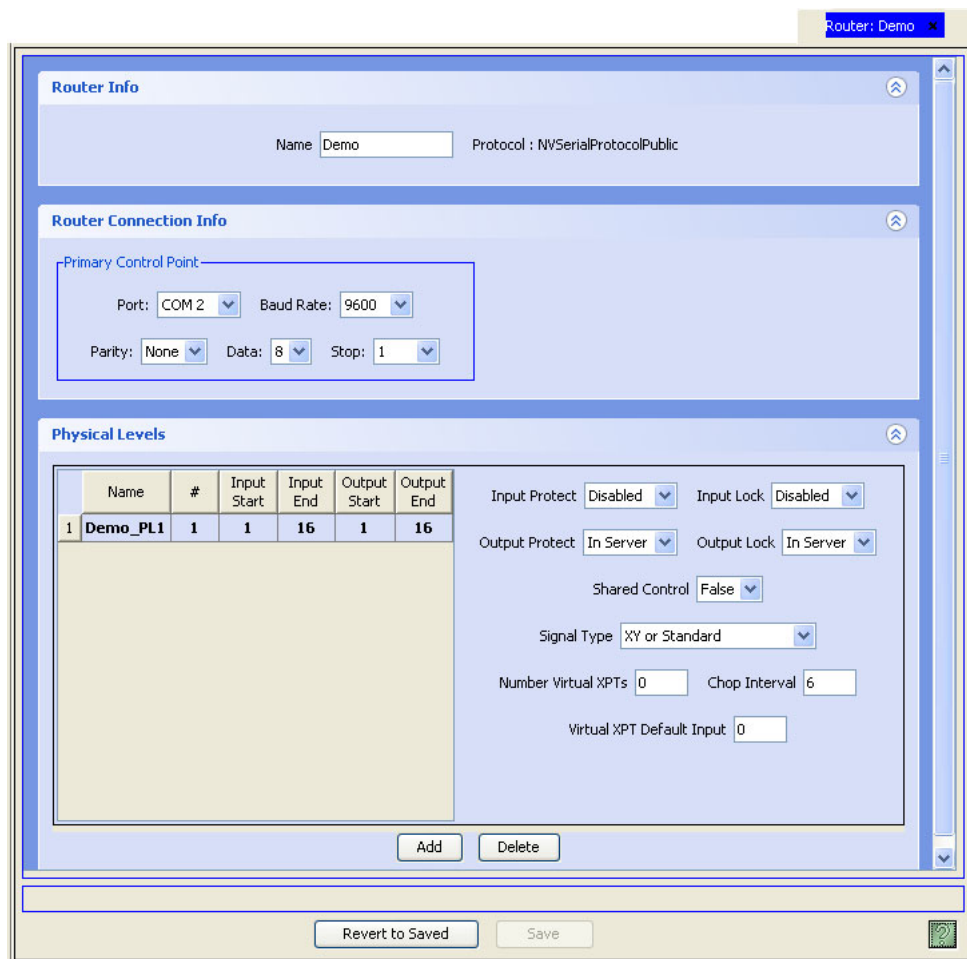
Figure 7-9. Router Details Page for Serial Protocol

Each section displays specific information, as follows:

Section	Sub-section	Description
Router Connection Info	Primary Control Point	Control points (also called control ports) are serial or Ethernet ports on the NV9000 system controller through which routers, panels, and other devices are connected. (See Managing Control Points on page 96.)
	Secondary Control Point	Lists 'IP address' of connection to the control system if using an Ethernet protocol. Or Lists 'Port', 'Baud Rate', 'Parity', 'Stop' and 'Data' if using a serial connection to the control system.
Physical Levels		Lists the input start and end, and the output start and end for each physical level defined in the router. Fields to the right list if an input or output has been locked, the type of signal, and additional information. For a complete description of each field, see Adding a Router on page 63.

4 Click X on the window title tab to close the page.

How to Locate and View Existing Routers Using the 'Routers' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Routers'. The 'Routers' table appears, as shown in Figure 7-10.

To narrow the list of routers that display, enter the first characters of a router name in the 'Name Filter' field. The list is automatically reduced to display only routers matching that character string.
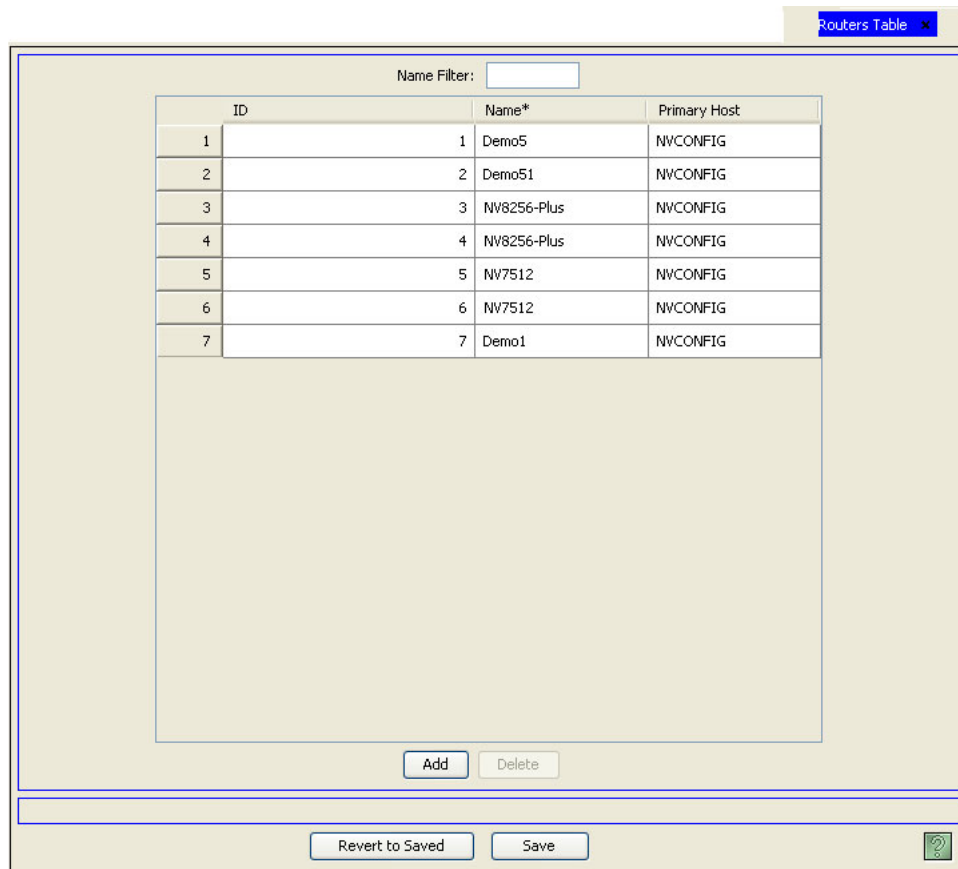
Figure 7-10. Routers Table

Four columns display router information. Each row represents a single router.

Column	Description
ID	Lists the ID number associated with the router.
Name	Lists the name associated with the router.
Primary Host	Lists the primary host for the router.

3 Click X on the window title tab to close the table.

How to Locate and View Existing Routers Using the 'Router Controls' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Router Controls'. The 'Router Controls' table appears, as shown in Figure 7-11.

To narrow the list, enter the first characters of the router's name in the 'Router Filter' field. The list is automatically reduced to display only routers matching that character string.

Or

Enter the first characters of the control point's identification in the 'Control Point Filter' field. The list is automatically reduced to display only control points matching that character string.

Figure 7-11. Router Controls Table

Several columns display router information. Each row represents a single control point (also called control port) and the associated router. Control points are serial or Ethernet ports on the NV9000 system controller through which routers, panels, and other devices are connected. (See Managing Control Points on page 96.)

Column	Description
Router Name	Lists the router name.
Control Point Description	Lists the control point associated with the router (listed in the same row).
Protocol	The router protocol associated with the router. (See Protocols on page 515.)
Parameters	Optional parameters for third-party protocols.
Control Mode	Lists if the 'Primary control card' or the 'Secondary control card' is acting as the primary control. These are *not* the primary and secondary routers, but the control cards of a router.

3 Click X on the window title tab to close the table.

Viewing Router Ports

Using the 'View Router Ports' page, you can easily and quickly view all ports for a selected router. The page is for informational purposes only. To update ports, go to the section of this manual that describes how to perform that task for that specific port (i.e., device ports would be discussed in the Managing Devices section).

Viewable ports are:

- Devices
- Virtual Levels
- Physical Levels
- Level Sets
- Crosspoint Exclusions
- Input Ports/Output Ports

How to View Router Ports

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Tasks' pane and then 'View Router Ports'. The 'View Router Ports' page appears:
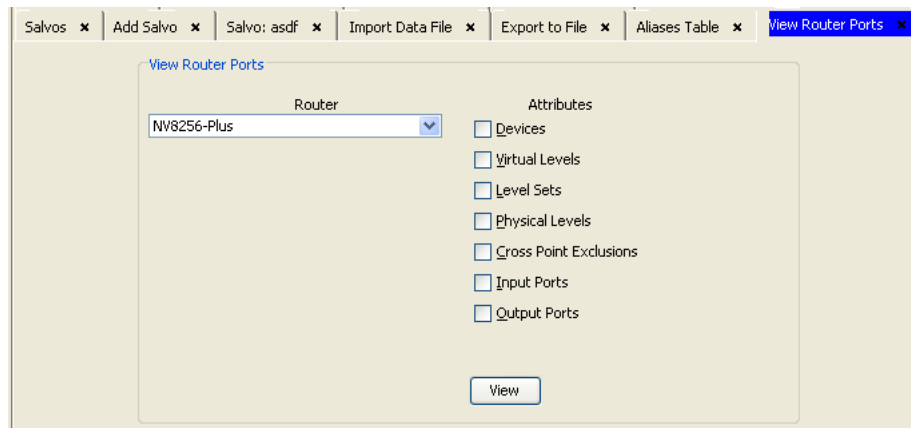
Figure 7-12. View Router Ports Page

3 Select a 'Router' from the drop-down list.

4 Check each check box in the 'Attributes' section corresponding to the ports you want to view and click View. The 'Router Ports' page appears, listing each attribute selected in same-titled

columns, as shown in Figure 7-13. If there is no information to display for that attribute, the column fields are blank.

Figure 7-13. Router Ports Page

5 Click X on the window title tab to close the table.

Updating Router Details

Router information can be updated at any time. It is recommended that routers be updated off-line. That ensures that all settings are correct before you go "live." NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement configuration changes, the NV9000 system controller must write the configuration to the system controller. For more information, see Implementing Configuration Changes on page 17.

Router information can be updated using either pages or tables. Pages and tables share databases. Changes made in one interface appear in other interfaces that share that database. For example, if the name of a router is updated in the 'Router Details' page, the name is automatically updated in the 'Routers' table.

Although both a page and table may update the same information, each interface enables you to perform specific tasks more efficiently. Pages enable you to update several pieces of information for a single router through a single interface. Tables are useful for updating a limited, specific amount of information for several routers at once. In addition, not all tables update the same information; different tables manage different, specific router information.

Different NV9000-SE interfaces perform specific tasks, as follows:

Task	Interface	Pane
Changing a Router Name on page 79	Routers Page Routers Table	Configuration Views
Updating a Router Host on page 82	Routers Table	Views

Task	Interface	Pane
Updating Router Control Points on page 83	Router Controls Table	Views
Updating Router Protocol on page 84	Router Controls Table	Views
Updating Router Control Mode on page 86	Router Controls Table	Views
Updating Router Physical Levels on page 87	Routers Page PhysLevel Table	Configuration Views
Updating Protects and Locks on page 91	Routers Page PhysLevel Table	Configuration Views
Updating Signal Type (Standard or Machine Control) on page 94	Routers Page	Configuration

Changing a Router Name

It is important that router names are unique and descriptive in order to avoid confusion. Once changed, the new router name populates all instances of that name throughout the system.

Router names can be changed using the 'Routers' page accessed through the 'Configuration' pane or the 'Routers' table accessed through the 'Views' pane.

How to Changes a Router Name Using the 'Routers' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Routers'. The 'Routers' page displays, as shown in Figure 7-14.

   To narrow the list, enter the first characters of the router's name in the 'Name Filter' field. The list is automatically reduced to display only routers matching that character string.

   Or

From the 'Hosts Filter' drop-down list, select the router's host. The list is automatically reduced to display only routers having the same host as the one selected.
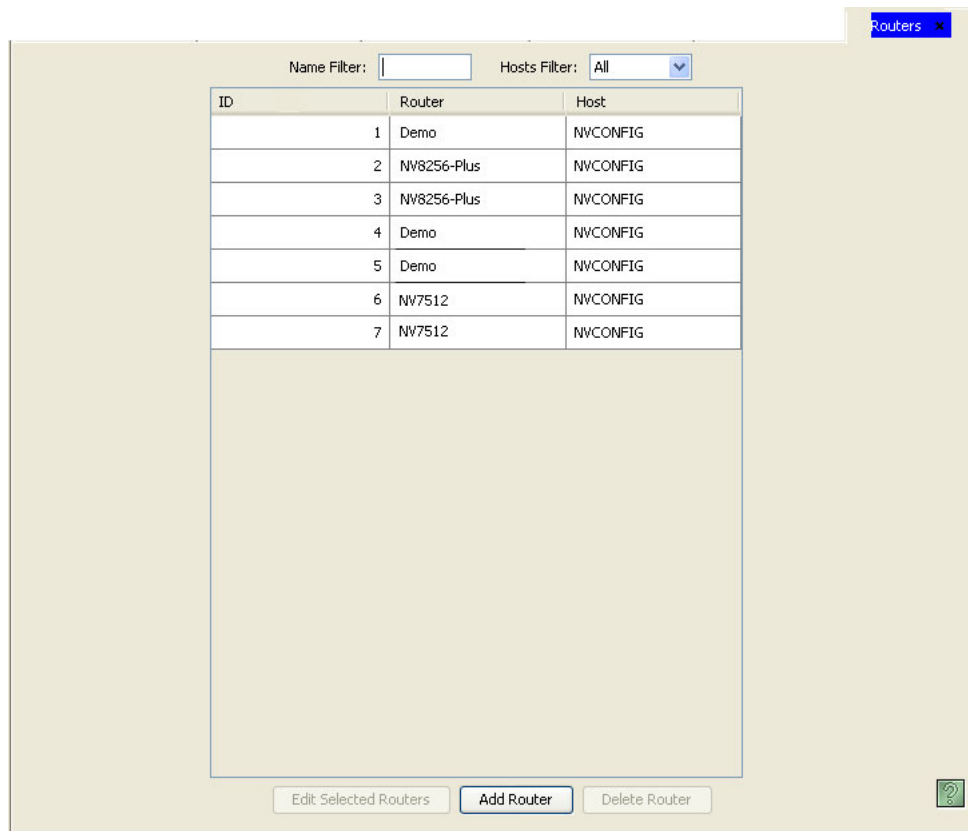
Figure 7-14. Routers Page

3 Double-click on the row listing the router being updated.

Or

Click anywhere in the row listing the router being updated and click **Edit Selected Routers**. The 'Router Details' page appears:
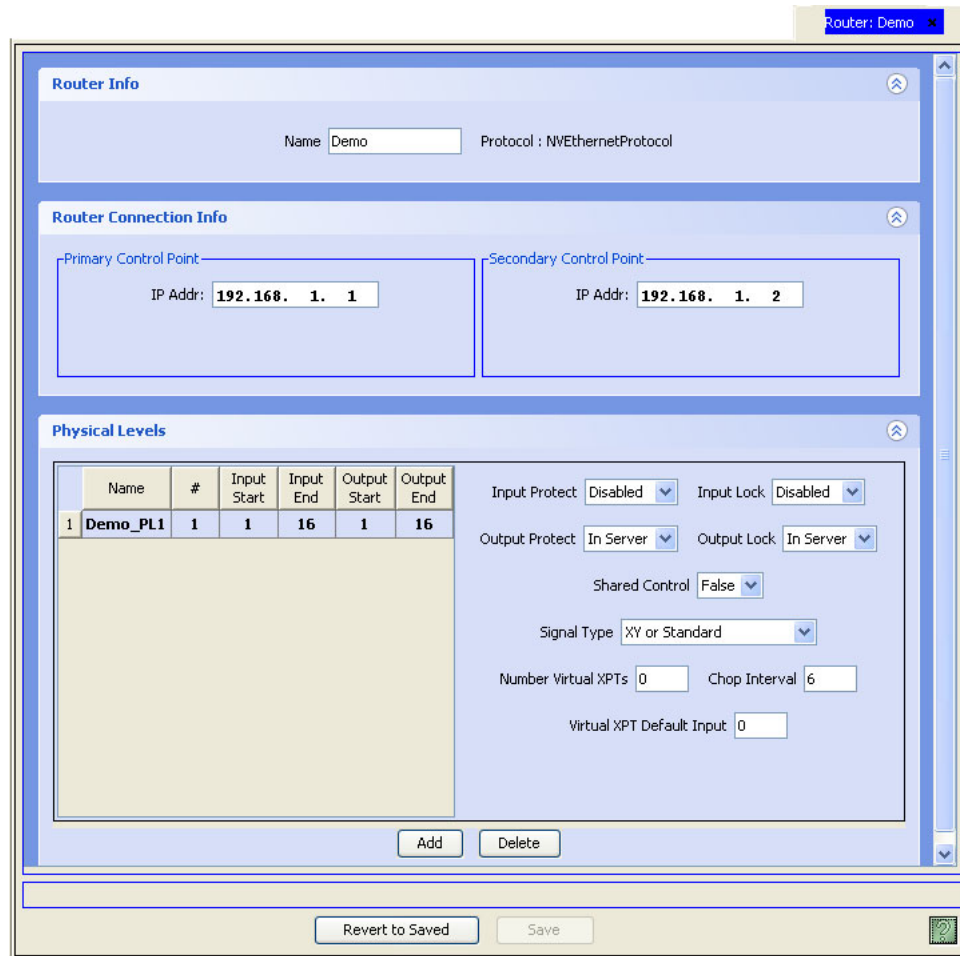
Figure 7-15. Router Details Page - Ethernet Protocol Example

If multiple routers are selected, one router displays its details and each additional router opens in a separate tabbed window. Click the tab to bring that window forward. If one router is selected, the details for that router automatically display.

4 Update the 'Name' in the field provided.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

How to Change a Router Name Using the 'Routers' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Routers'. The 'Routers' table appears, as shown in Figure 7-16.

To narrow the list of routers that display, enter the first characters of a router name in the 'Name Filter' field. The list is automatically reduced to display only routers matching that character string.
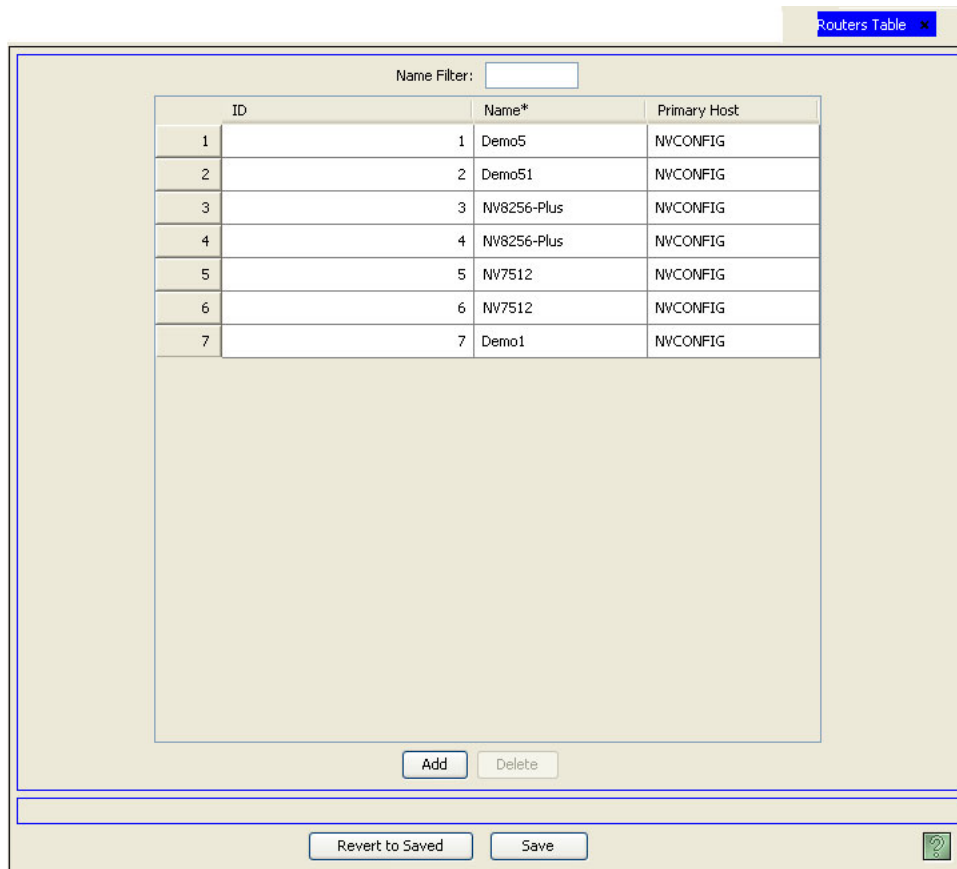
Figure 7-16. Routers Table

3 Locate the row listing the router being updated.

4 Click on the 'Name' field to activate it and enter a new name.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Updating a Router Host

The router's host (also called a "server") can be changed using the 'Routers' table accessed through the 'Views' pane. You can only select from a list of existing hosts.

How to update a router host

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Routers'. The 'Routers' table appears, as shown in Figure 7-17.

To narrow the list of routers that display, enter the first characters of a router name in the 'Name Filter' field. The list is automatically reduced to display only routers matching that character string.
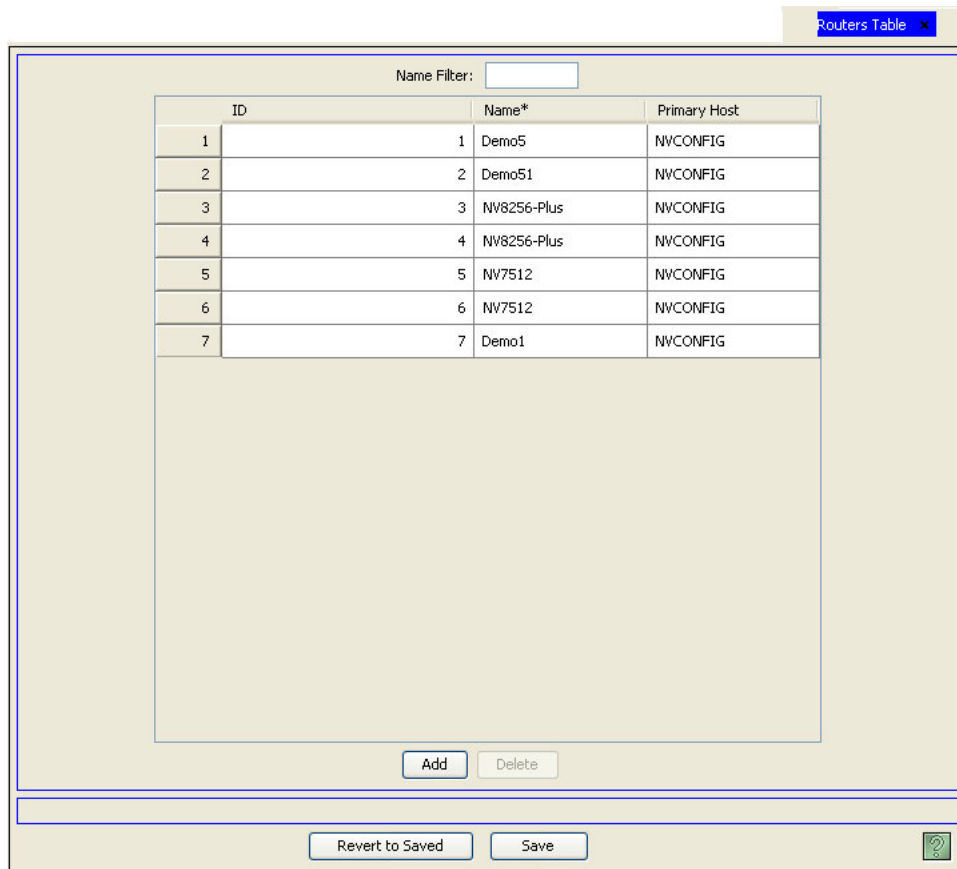
Figure 7-17. Routers Table

3 On the row listing the router being updated, click in the 'Primary Host' column to activate it and select a new host from the drop-down list.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Updating Router Control Points

Control points (also called control ports) are serial or Ethernet ports on the NV9000 system controller through which routers, panels and other devices are connected. At any time, the control point associated with a router can be updated. However, the updated control point must be a legitimate control point for the router to successfully communicate with the rest of the control system. If you change a router Ethernet connection, you must update the without updating control point information on the 'Control Point' table to enable the router and system controller to communicate.

The router's control point can be changed using the 'Router Controls' table accessed through the 'Views' pane. You can only select from a list of existing control points. For instructions on adding

or updating control points, see <u>Managing Control Points</u> on page 96. To view a list of current control points, from the 'Views' pane select 'Control Points'.

How to Update Router Control Points

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Router Controls'. The 'Router Controls' table appears, as shown in Figure 7-18.

 To narrow the list, enter the first characters of the router's name in the 'Router Filter' field. The list is automatically reduced to display only routers matching that character string.

 Or

 Enter the first characters of the control point's description in the 'Control Point Filter' field. The list is automatically reduced to display only control points matching that character string.

	Router	Control Point Description*	Protocol*	Parameters	Control Mode*
1	Demo5	E,192.168.1.1 DEFAULT DESC, ID: 9	NV Ethernet		Primary control card
2	Demo5	E,192.168.1.2 DEFAULT DESC, ID: 10	NV Ethernet		Secondary control card
3	Demo51	Enet Addr 192.168.1.1 DEFAULT DESC, ID: 11	NV Master Control Ethernet		Primary control card
4	NV8256	E,192.168.1.1 DEFAULT DESC, ID: 12	NV Master Control Ethernet		Primary control card
5	NV8256-Pk	E,192.168.1.1 DEFAULT DESC, ID: 13	NV Master Control Ethernet		Primary control card
6	NV8256-Pk	E,192.168.1.1 DEFAULT DESC, ID: 14	NV Master Control Ethernet		Primary control card
7	NV7512	S,2,9600,N81 DEFAULT DESC, ID: 15	NV Serial-Public		Primary control card
8	NV7512	E,192.168.1.1 DEFAULT DESC, ID: 16	NV Ethernet		Primary control card
9	Demo1	E,192.168.1.2 DEFAULT DESC, ID: 17	NV Ethernet		Secondary control card

Router Filter: [ ]   ControlPoint Filter: [ ]

Add   Delete

* Required column.

Revert to Saved   Save

Figure 7-18. Router Controls Table

3 On the row listing the router being updated, click in the 'Control Point Description' column to activate it and select a new control point from the drop-down list.

4 Click Save.

 Or

 To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Updating Router Protocol

The NV9000 server supports several protocols for both Miranda and third-party routers. Protocols are applications that run on the router control cards. At any time, the protocol associated with a

router can be updated. The protocol selected must match the protocol currently installed on the router.

The router's protocol can be changed using the 'Router Controls' table accessed through the 'Views' pane. You can only select from a list of existing protocols. For a list of available protocols, see <u>Protocols</u> on page 515.

How to Update Router Protocol Information

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Router Controls'. The 'Router Controls' table appears, as shown in Figure 7-19.

To narrow the list, enter the first characters of the router's name in the 'Router Filter' field. The list is automatically reduced to display only routers matching that character string.

Or

Enter the first characters of the control point's description in the 'Control Point Filter' field. The list is automatically reduced to display only routers associated with that control point.

	Router	Control Point Description*	Protocol*	Parameters	Control Mode*
1	Demo5	E,192.168.1.1 DEFAULT DESC, ID: 9	NV Ethernet		Primary control card
2	Demo5	E,192.168.1.2 DEFAULT DESC, ID: 10	NV Ethernet		Secondary control card
3	Demo51	Enet Addr 192.168.1.1 DEFAULT DESC, ID: 11	NV Master Control Ethernet		Primary control card
4	NV8256	E,192.168.1.1 DEFAULT DESC, ID: 12	NV Master Control Ethernet		Primary control card
5	NV8256-Plk	E,192.168.1.1 DEFAULT DESC, ID: 13	NV Master Control Ethernet		Primary control card
6	NV8256-Plk	E,192.168.1.1 DEFAULT DESC, ID: 14	NV Master Control Ethernet		Primary control card
7	NV7512	S,2,9600,N81 DEFAULT DESC, ID: 15	NV Serial-Public		Primary control card
8	NV7512	E,192.168.1.1 DEFAULT DESC, ID: 16	NV Ethernet		Primary control card
9	Demo1	E,192.168.1.2 DEFAULT DESC, ID: 17	NV Ethernet		Secondary control card

Figure 7-19. Router Controls Table

3 On the row listing the router being updated, click in the 'Protocol' column to activate it and select a new protocol from the drop-down list.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

The new protocol also displays in the 'Router Info' section on the 'Router Details' page (select 'Routers' from the 'Configuration' pane).

5 Click X on the window title tab to close the table.

Updating Router Control Mode

The system controller communicates with routers through the router control cards. Most routers have a primary control card and a secondary control card (for redundancy). By default, NV9000-SE communicates with the router through the primary control card. However, this can be overridden and communication directed through the secondary control card.

The router control card selected for communication with the NV9000-SE system can be changed using the 'Router Controls' table accessed through the 'Views' pane.

How to update router control mode

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Router Controls'. The 'Router Controls' table appears, as shown in Figure 7-20.

To narrow the list, enter the first characters of the router's name in the 'Router Filter' field. The list is automatically reduced to display only routers matching that character string.

Or

Enter the first characters of the control point's description in the 'Control Point Filter' field. The list is automatically reduced to display only control points matching that character string.

	Router	Control Point Description*	Protocol*	Parameters	Control Mode*
1	Demo5	E,192.168.1.1 DEFAULT DESC, ID: 9	NV Ethernet		Primary control card
2	Demo5	E,192.168.1.2 DEFAULT DESC, ID: 10	NV Ethernet		Secondary control card
3	Demo51	Enet Addr 192.168.1.1 DEFAULT DESC, ID: 11	NV Master Control Ethernet		Primary control card
4	NV8256	E,192.168.1.1 DEFAULT DESC, ID: 12	NV Master Control Ethernet		Primary control card
5	NV8256-Plt	E,192.168.1.1 DEFAULT DESC, ID: 13	NV Master Control Ethernet		Primary control card
6	NV8256-Plt	E,192.168.1.1 DEFAULT DESC, ID: 14	NV Master Control Ethernet		Primary control card
7	NV7512	S,2,9600,N81 DEFAULT DESC, ID: 15	NV Serial-Public		Primary control card
8	NV7512	E,192.168.1.1 DEFAULT DESC, ID: 16	NV Ethernet		Primary control card
9	Demo1	E,192.168.1.2 DEFAULT DESC, ID: 17	NV Ethernet		Secondary control card

Router Filter: ControlPoint Filter:

Add   Delete

* Required column.

Revert to Saved   Save

Router Controls Table

Figure 7-20. Router Controls Table

3 On the row listing the router being updated, click in the 'Control Mode' column to activate it and select if the mode is 'Primary control card' or 'Secondary control card' from the drop-down list. These are *not* the primary and secondary routers, but the control cards in the router.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Updating Router Physical Levels

A physical level represents both a physical partition and a group of one or more specific signal types in the router. Each physical level typically represents a signal type, such as AES or HD. For more information on routers and levels, see <u>About Levels and Level Sets</u> on page 112.

Router physical levels can be changed using the 'Routers' page accessed through the 'Configuration' pane, or the 'PhysLevels' table accessed through the 'Views' pane.

How to update router physical levels using the 'Routers' page

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Routers'. The 'Routers' page displays, as shown in Figure 7-21.

To narrow the list of routers that display, enter the first characters of a router name in the 'Name Filter' field. The list is automatically reduced to display only routers matching that character string.

Or

From the 'Hosts Filter' drop-down list, select a host. The list is automatically reduced to display only routers matching that host.
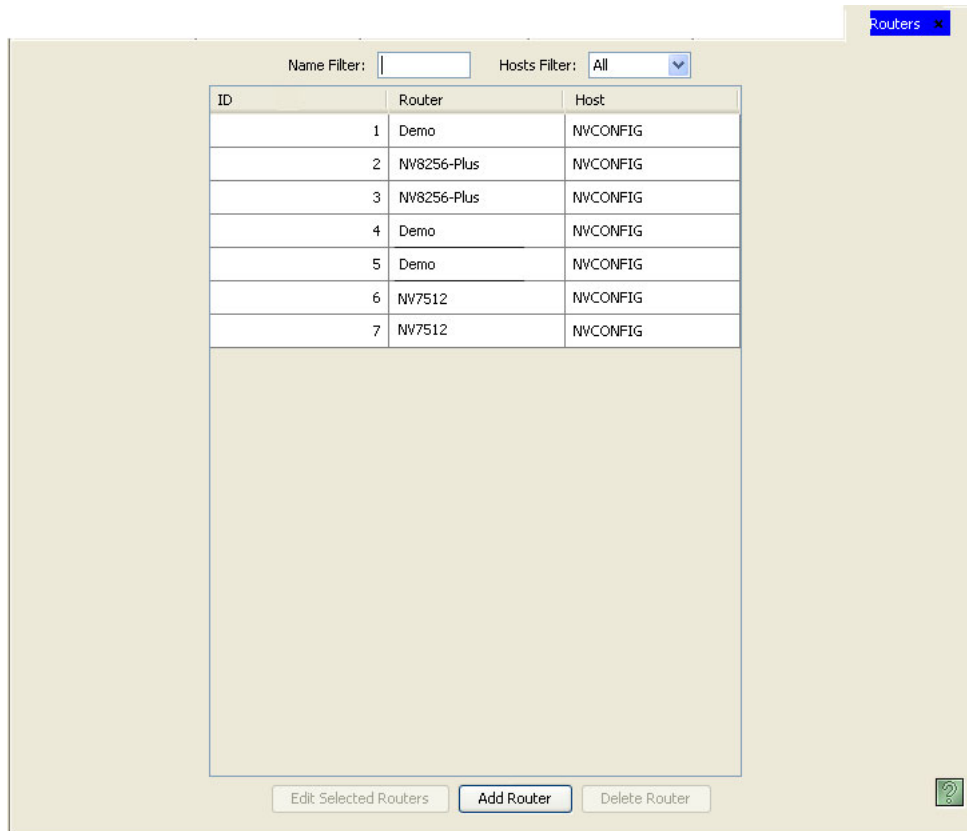
Figure 7-21. Routers Page

3 Click anywhere in the row listing the router being updated and click **Edit Selected Routers**. The 'Router Details' page appears, as shown in Figure 7-15.

If multiple routers are selected, one router displays its details and each additional router opens in a separate tabbed window. Click the tab to bring that window forward. If one router is selected, the details for that router automatically display.

4 The 'Physical Levels' section has two parts, as shown in Figure 7-22. On the left is a table of physical levels. On the right are miscellaneous parameters and options.

Click Add to add a new level. A blank row appears.
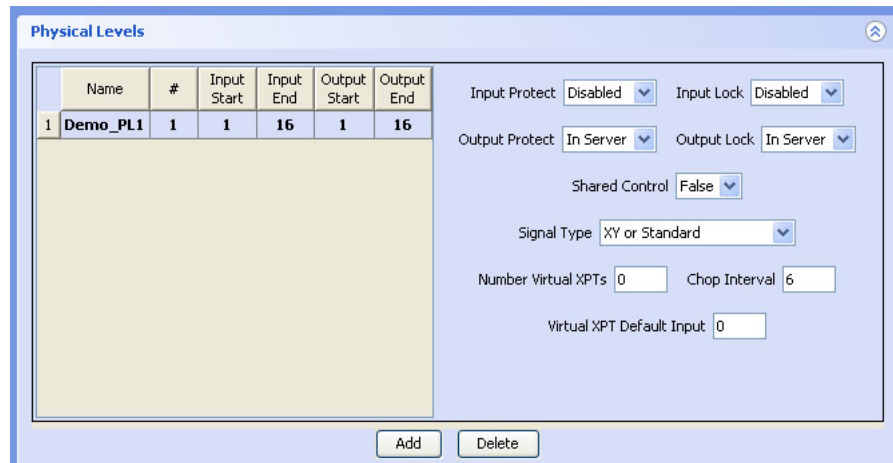
Figure 7-22. Physical Level Section - Levels Area

5 Click on the row under each column heading to activate it and enter or update information for that column:

Field	Description	Values
Name	Enter a descriptive name for the router. Up to 24 alphanumeric characters may be entered. Do not use punctuation marks or symbols. This name is not seen by the operators; only by the NV9000-SE user.	Alphanumeric
#	Numeric value identifying a particular physical level (partition) in the router. Enter a number for the router signal type. If multiple signal types are managed by the router, enter additional, unique numbers, one for each signal type, creating a new row for each signal.	0 through 250
Input Start Input End	The logical number this physical level starts and ends with for inputs. **Important:** These numbers must match the number entered as the 'Controller Input' 'start' and 'end' in UniConfig when the router was configured. For more information, see the UniConfig User's Guide.	Typically 0 or 1
Output Start Output End	The logical number this physical level starts and ends with for outputs. **Important:** These numbers must match the number entered as the 'Controller Output' 'start' and 'end' in UniConfig when the router was configured. For more information, see the UniConfig User's Guide.	Typically 0 or 1

6 Repeat steps 4 and 5 until all levels in the router have been entered or updated. To remove a row, select the row and click Delete.

7 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

8 Click X on the window title tab to close the page.

How to Update Router Physical Levels Using the 'PhysLevel' Table

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'PhysLevels'. The 'PhysLevels' table appears, as shown in Figure 7-23.

   To narrow the list of physical levels that display, enter the first characters of a physical level name in the 'Name Filter' field. The list is automatically reduced to display only levels matching that character string.

Figure 7-23. PhysLevels Table

Not all of the columns display in one screen. Use the scroll bar at the bottom of the screen to view columns to the right or left.

3 Click on the row under each column heading to activate the field and enter or update information for that column:

Field	Description	Values
Input Start Input End	Logical number this physical level starts and ends with for inputs. **Important:** These numbers must match the number entered as the 'Controller Input' 'start' and 'end' in UniConfig when the router was configured. For more information, see the UniConfig User's Guide.	Typically 0 or 1
Output Start Output End	Logical number this physical level starts and ends with for outputs. **Important:** These numbers must match the number entered as the 'Controller Output' 'start' and 'end' in UniConfig when the router was configured. For more information, see the UniConfig User's Guide.	Typically 0 or 1
Input Protect Input Lock	Protects and/or locks inputs. When locked it cannot be changed. When protected, changes can only be made with proper authorization. See <u>Locking and Protecting Panels</u> on page 232.	From the drop-down list, select: Disabled—Removes protection and unlock. In Server—Enables protection and lock in the server.

Field	Description	Values
Output Protect Output Lock	Protects and/or locks outputs. When locked it cannot be changed. When protected, changes can only be made with proper authorization. See Locking and Protecting Panels on page 232.	From the drop-down list, select: Disabled—Removes protect and unlocks. In Server—Enables protect and lock in the server. In Router—Enables protect and lock in the router.
Shared Control	Informs the NV9000 whether another control system is connected to this physical level.	From the drop-down list, select: True—Another control system is connected to the router control card that can initiate crosspoint changes. The NV9000 allows it and updates its tables periodically with these changes. (Unexpected changes are not logged as errors.) False—The NV9000 manages this physical level exclusively, and does not permit crosspoint changes that it does not initiate.

4 Click Save.

   Or

   To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Updating Protects and Locks

Inputs and outputs can be protected or locked. When protected, changes can only be made by persons with proper authorization. When locked, no one can make changes, even those persons who have authorization to make changes under a protect status.

Router protects and locks are updated using the 'Routers' page accessed through the 'Configuration' pane or the 'PhyLevels' table accessed through the 'Views' pane.

How to update router protects and locks using the 'Routers' page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Routers'. The 'Routers' page displays, as shown in Figure 7-24.

   To narrow the list of routers that display, enter the first characters of a router name in the 'Name Filter' field. The list is automatically reduced to display only routers matching that character string.

   Or

From the 'Hosts Filter' drop-down list, select a host. The list is automatically reduced to display only routers matching that host.
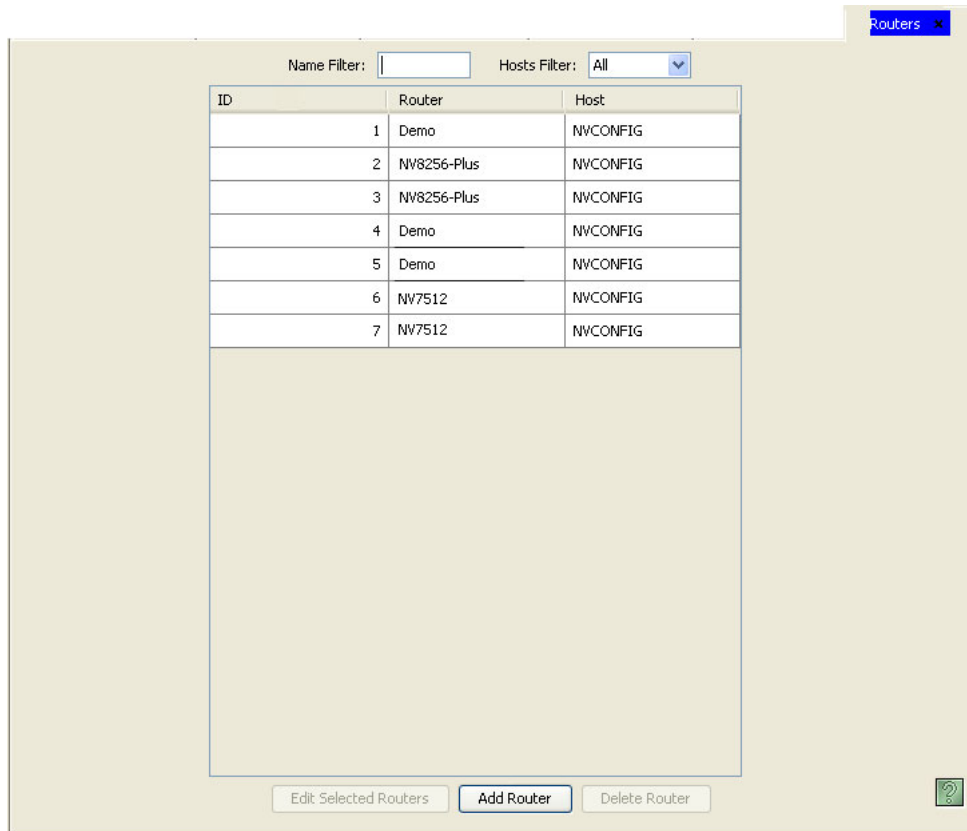
Figure 7-24. Routers Page

3 Click anywhere in the row listing the router you want to update and click Edit Selected Routers. The 'Router Details' page appears, as shown in Figure 7-15.

If multiple routers are selected, one router displays its details and each additional router opens in a separate tabbed window. Click the tab to bring that window forward. If one router is selected, the details for that router automatically display.

4 In the right-hand area of the 'Physical Levels' section, update options in the fields provided:

Field	Description	Values
Input Protect Input Lock	Protects and/or locks inputs. When locked it cannot be changed. When protected, changes can only be made with proper authorization. See Locking and Protecting Panels on page 232.	From the drop-down list, select: Disabled — Removes protection and unlock. In Server — Enables protection and lock in the server.
Output Protect Output Lock	Protects and/or locks outputs. When locked it cannot be changed. When protected, changes can only be made with proper authorization. See Locking and Protecting Panels on page 232.	From the drop-down list, select: Disabled — Removes protection and unlock. In Server — Enables protection and lock in the server. In Router — Enables protection and lock in the router.

Figure 7-25. Physical Levels Section

5 Click Save to save your changes.

6 Click X on the window title tab to close the page.

How to Update Router Protects and Locks Using the 'PhysLevel' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'PhysLevels'. The 'PhysLevels' table appears, as shown in Figure 7-26.

To narrow the list of physical levels that display, enter the first characters of a physical level name in the 'Name Filter' field. The list is automatically reduced to display only levels matching that character string.


Figure 7-26. PhysLevels Table

Not all of the columns display in one screen. Use the scroll bar at the bottom of the screen to view columns to the right or left.

3 Click on the row under each column heading to activate the field and enter or update information for that column:

Field	Description	Values
Input Protect Input Lock	Protects and/or locks inputs. When locked it cannot be changed. When protected, changes can only be made with proper authorization. See Locking and Protecting Panels on page 232.	From the drop-down list, select: Disabled—Removes protection and unlock. In Server—Enables protection and lock in the server.
Output Protect Output Lock	Protects and/or locks outputs. When locked it cannot be changed. When protected, changes can only be made with proper authorization. See Locking and Protecting Panels on page 232.	From the drop-down list, select: Disabled—Removes protection and unlock. In Server—Enables protection and lock in the server. In Router—Enables protection and lock in the router.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Updating Signal Type (Standard or Machine Control)

There are two general classes of routers: those that route signals and those that route data (machine control). The router signal type can be updated at any time, but it must match the actual signals the router is switching to allow routing. Router signal types are updated using the 'Routers' page accessed through the 'Configuration' pane.

How to Update Router Signal Type (Standard or Machine Control)

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Routers'. The 'Routers' page displays, as shown in Figure 7-27.

To narrow the list of routers that display, enter the first characters of a router name in the 'Name Filter' field. The list is automatically reduced to display only routers matching that character string.

Or

From the 'Hosts Filter' drop-down list, select a host. The list is automatically reduced to display only routers matching that host.

Figure 7-27. Routers Page

3 Click anywhere in the row listing the router you want to update and click Edit Selected Routers. The 'Router Details' page appears, as shown in Figure 7-15.

If multiple routers are selected, one router displays its details and each additional router opens in a separate tabbed window. Click the tab to bring that window forward. If one router is selected, the details for that router automatically display.

4 In the right-hand area of the 'Physical Levels' section select from the drop-down list 'Machine Control' for machine control switching or 'XY or standard' for general signal switching.
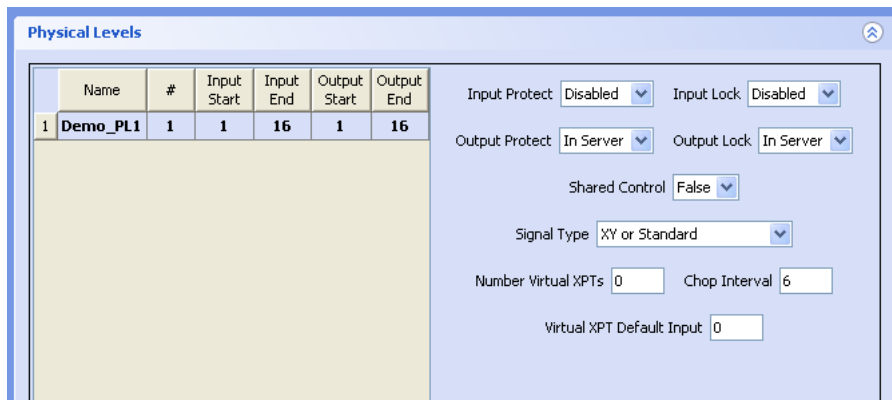
Figure 7-28. Physical Levels Section

5 Click Save to save your changes.

6 Click X on the window title tab to close the page.

Managing Control Points

Control points (also called control ports) are serial or Ethernet ports on the NV9000 system control-ler through which you connect routers, control panels and other devices. You can connect other net-works too. Control points are added, updated and removed using the 'Control Points' table accessed through the 'Views' pane.

Adding Control Points

Control points can be added and configured at any time. Changes take effect when the configura-tion is written to the system controller. For more information, see Implementing Configuration Changes on page 17.

Controls points can be added using the 'Control Points' table accessed through the 'Views' pane.

How to Add Control Points

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Control Points'. The 'Control Points' table appears:

	ID		Computer Name	Parameters	Description
1	☐	1	NVCONFIG	S,3,38400,N81	COM3 P0 NVCONFIG
2	☐	2	NVCONFIG	S,4,38400,N81	COM4 P1 NVCONFIG
3	☐	3	NVCONFIG	S,5,38400,N81	COM5 P2 NVCONFIG
4	☐	4	NVCONFIG	S,6,38400,N81	COM6 P3 NVCONFIG
5	☐	5	NVCONFIG	S,7,38400,N81	COM7 P4 NVCONFIG
6	☐	6	NVCONFIG	S,8,38400,N81	COM8 P5 NVCONFIG
7	☐	7	NVCONFIG	S,9,38400,N81	COM9 P6 NVCONFIG
8	☐	8	NVCONFIG	S,10,38400,N81	COM10 P7 NVCONFIG
9	☐	9	NVCONFIG	E,192.168.1.1	E,192.168.1.1 DEFAULT D...
10	☐	10	NVCONFIG	E,192.168.1.2	E,192.168.1.2 DEFAULT D...
11	☐	11	NVCONFIG	E,192.168.1.1	Enet Addr 192.168.1.1 DE...
12	☐	12	NVCONFIG	E,192.168.1.1	E,192.168.1.1 DEFAULT D...
13	☐	13	NVCONFIG	E,192.168.1.1	E,192.168.1.1 DEFAULT D...
14	☐	14	NVCONFIG	E,192.168.1.1	E,192.168.1.1 DEFAULT D...
15	☐	15	NVCONFIG	S,2,9600,N81	S,2,9600,N81 DEFAULT DESC
16	☐	16	NVCONFIG	E,192.168.1.1	E,192.168.1.1 DEFAULT D...
17	☐	17	NVCONFIG	E,192.168.1.2	E,192.168.1.2 DEFAULT D...

Computer Name Filter: [   ]

Add   Delete

Revert to Saved   Save

Figure 7-29. Control Points Table

3 Click Add. A new blank row is added to the bottom of the list of existing rows, if any.

4 Enter information in the fields provided:

Column	Description	Values
Computer Name	The computer name is the name of the host this control point resides in, typically 'NVCONFIG'.	From the drop-down list, select the computer name.
Parameters	Descriptions of the protocols at the control points. "S" implies a serial port and "E" implies Ethernet. The numbers beside an "S" are the port number, the Baud rate, and a code indicating parity, number of data bits, and number of stop bits. The numbers beside the "E" represent the port's IP address. "N" means no parity; "O" means odd parity; and "E" means even parity.	Alphanumeric
Description	Some of the descriptions (such as for the COM ports) are assigned by default, but.any description can be overwritten at any time. *Important:* the descriptions in this column appear in the 'Control Point Description' column of the 'Router Controls' table.	Alphanumeric

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Viewing Control Points

The 'Control Points' table provides an easy way to view all control points in the NV9000-SE system.

How to View Control Points

1 Launch NV9000-SE. (See)

2 From the Navigation area, select the 'Views' pane and then 'Control Points'. The 'Control Points' table appears, as shown in Figure 7-30.

To narrow the list of control points that display, enter the first characters of a computer name in the 'Computer Name Filter' field. The list is automatically reduced to display only computers matching that character string.

Figure 7-30. Control Points Table

Information displays in the following columns:

Column	Description
Computer Name	The computer name is the name of the primary host and is 'NVCONFIG' by default.
Parameters	Descriptions of the protocols at the control points. "S" implies a serial port and "E" implies Ethernet. The numbers beside an "S" are the port number, the Baud rate, and a code indicating parity, number of data bits, and number of stop bits. The numbers beside the "E" represent the port's IP address. "N" means no parity; "O" means odd parity; and "E" means even parity.
Description	Some of the descriptions (such as for the COM ports) are assigned by default, but.any description can be overwritten at any time. **Important:** the descriptions in this column appear in the 'Control Point Description' column of the 'Router Controls' table, accessed through the 'Views' pane.

3 Click X on the window title tab to close the table.

Updating Control Points

Control point information can be updated at any time. Changes made to a control point effect all routers associated with that control point.

NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement configuration changes, the NV9000 system controller must write the configuration changes to the system controller. For more information, see Implementing Configuration Changes on page 17.

The computer name selected as a control point, parameters, and description are all updated using the 'Control Points' table accessed through the 'Views' pane.

How to Update Control Points

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Control Points'. The 'Control Points' table appears, as shown in Figure 7-31.

To narrow the list of control points that display, enter the first characters of a computer name in the 'Computer Name Filter' field. The list is automatically reduced to display only computers matching that character string.

	ID		Computer Name	Parameters	Description
1	1	☐	NVCONFIG	S,3,38400,N81	COM3 P0 NVCONFIG
2	2	☐	NVCONFIG	S,4,38400,N81	COM4 P1 NVCONFIG
3	3	☐	NVCONFIG	S,5,38400,N81	COM5 P2 NVCONFIG
4	4	☐	NVCONFIG	S,6,38400,N81	COM6 P3 NVCONFIG
5	5	☐	NVCONFIG	S,7,38400,N81	COM7 P4 NVCONFIG
6	6	☐	NVCONFIG	S,8,38400,N81	COM8 P5 NVCONFIG
7	7	☐	NVCONFIG	S,9,38400,N81	COM9 P6 NVCONFIG
8	8	☐	NVCONFIG	S,10,38400,N81	COM10 P7 NVCONFIG
9	9	☐	NVCONFIG	E,192.168.1.1	E,192.168.1.1 DEFAULT D...
10	10	☐	NVCONFIG	E,192.168.1.2	E,192.168.1.2 DEFAULT D...
11	11	☐	NVCONFIG	E,192.168.1.1	Enet Addr 192.168.1.1 DE...
12	12	☐	NVCONFIG	E,192.168.1.1	E,192.168.1.1 DEFAULT D...
13	13	☐	NVCONFIG	E,192.168.1.1	E,192.168.1.1 DEFAULT D...
14	14	☐	NVCONFIG	E,192.168.1.1	E,192.168.1.1 DEFAULT D...
15	15	☐	NVCONFIG	S,2,9600,N81	S,2,9600,N81 DEFAULT DESC
16	16	☐	NVCONFIG	E,192.168.1.1	E,192.168.1.1 DEFAULT D...
17	17	☐	NVCONFIG	E,192.168.1.2	E,192.168.1.2 DEFAULT D...

Figure 7-31. Control Points Table

3 Enter information in the fields provided:

Column	Description	Values
Computer Name	The computer name is the name of the primary host and is 'NVCONFIG' by default.	From the drop-down list, select the computer name.
Parameters	Descriptions of the protocols at the control points. "S" implies a serial port and "E" implies Ethernet. The numbers beside an "S" are the port number, the Baud rate, and a code indicating parity, number of data bits, and number of stop bits. The numbers beside the "E" represent the port's IP address. "N" means no parity; "O" means odd parity; and "E" means even parity.	Alphanumeric
Description	Some of the descriptions (such as for the COM ports) are assigned by default, but.any description can be overwritten at any time. *Important:* the descriptions in this column appear in the 'Control Point Description' column of the 'Router Controls' table.	Alphanumeric

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Deleting Control Points

Control points can be deleted from the NV9000-SE system at any time. Deleting a control point may disrupt the ability of the system controller to communicate with routers. Be sure the control point is not currently in use before deleting.

Control points can be deleted using the 'Control Points' table accessed through the 'Views' pane.

How to Delete a Control Point

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Control Points'. The 'Control Points' table appears, as shown in Figure 7-31.

To narrow the list of control points that display, enter the first characters of a computer name in the 'Computer Name Filter' field. The list is automatically reduced to display only computers matching that character string.

3 Click anywhere in the row listing the control point(s) being deleted and click Delete.

4 Click Save.

Or

Click Revert to Saved to revert to previously saved information.

5 Click X on the window title tab to close the table.

Excluding Crosspoints

Crosspoint exclusions prevent certain sources from being connected to certain destinations. The 'XPTExclusions' table lists all crosspoint exclusions defined in your configuration. Using this table, crosspoint exclusions can be added, deleted or changed.

Crosspoint exclusions must be defined in low-level detail. The exclusion connectivity is point-to-point and port-to-port. To completely exclude a source from a destination, all physical levels of that source must be excluded.

▲ Example: You want to completely exclude 6 sources from 12 destinations on 5 virtual levels (SD, AES1/2, AES3/4, AES5/6, and AES7/8), which means there would be $6 \times 12 \times 5 = 360$ exclusions. Each exclusion specifies two ports, so there are 720 ports to manage!

How to Add a Crosspoint Exclusion

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'XPTExclusions'. The 'XPTExclusions' table appears:
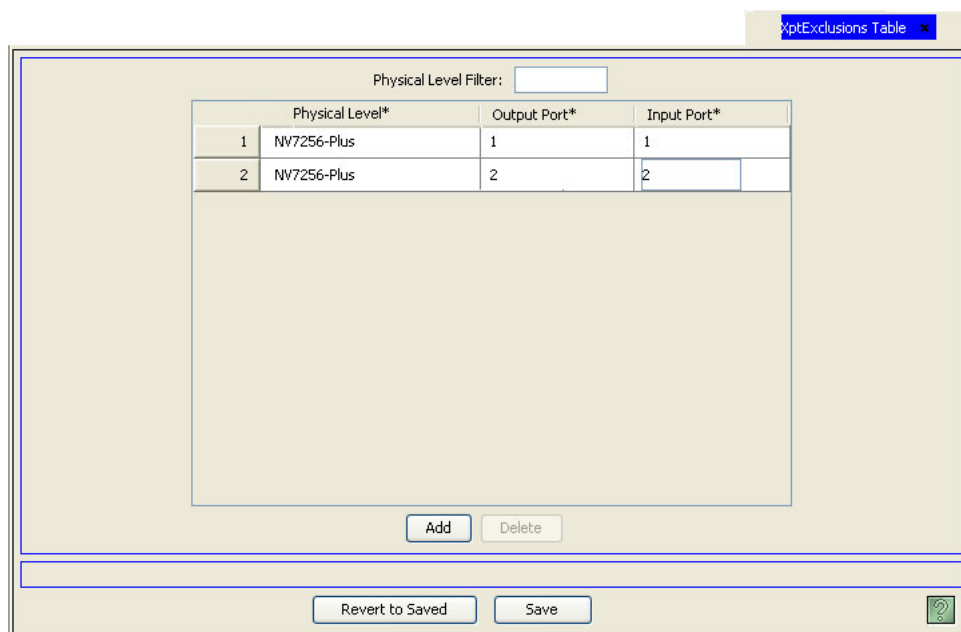
Figure 7-32. XPT Exclusion Table

3 Click Add. A blank row is added to the bottom of the list of existing exclusions.

4 On the blank row, click in the 'Physical Level' field to activate it and select a physical level from the drop-down list. (See Physical Levels vs. Virtual Levels on page 112.)

5 On the same row, enter the 'Output Port' in the field provided. The port number is the specified physical level, corresponding to the *destination* you want to protect.

6 On the same row, enter the 'Input Port' in the field provided. The port number is the specified physical level, corresponding to the *source* you want to exclude.

7 Repeat steps 3 through 6 until all ports are excluded as needed.

8 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

9 Click X on the window title tab to close the table.

How to Update a Crosspoint Exclusion

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'XPTExclusions'. The 'XPTExclusions' table displays, as shown in Figure 7-33.

To narrow the list of physical levels that display, enter the first characters of a physical level in the 'Physical Level Filter' field. The list is automatically reduced to display only levels matching that character string.
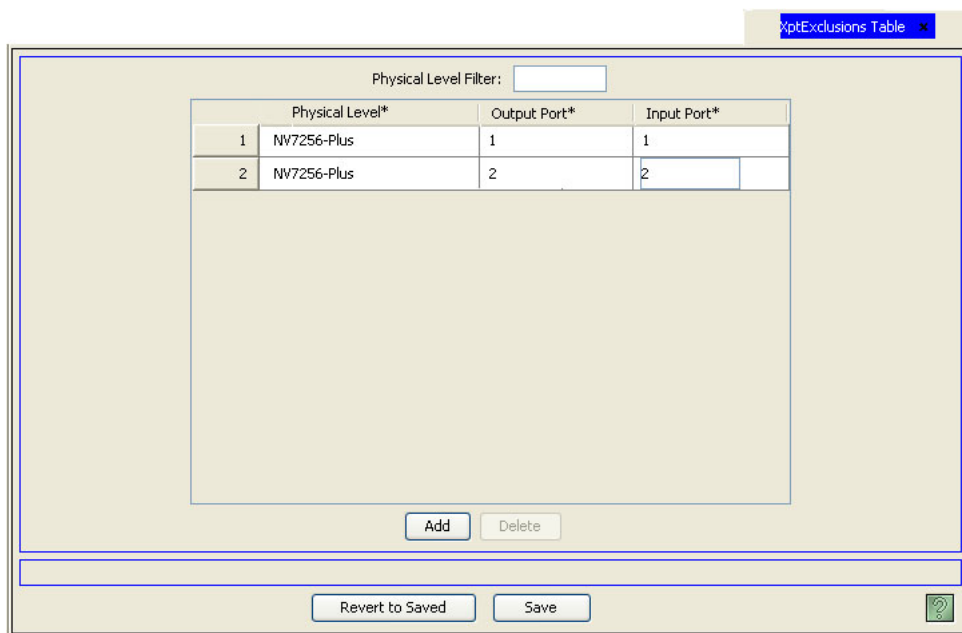
Figure 7-33. XPT Exclusion Table

3 On the row listing the crosspoint exclusion being updated, click in the 'Physical Level' column and select a new physical level from the drop-down list. (See Physical Levels vs. Virtual Levels on page 112.)

4 Enter a new 'Output Port' in the field provided. The port number is the specified physical level, corresponding to the *destination* you want to protect.

5 Enter a new 'Input Port' in the field provided. The port number is the specified physical level, corresponding to the *source* you want to exclude.

6 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the table.

How to Remove a Crosspoint Exclusion

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'XPTExclusions'. The 'XPTExclu-
sions' table displays, as shown in Figure 7-34.

To narrow the list of physical levels that display, enter the first characters of a physical level in
the 'Physical Level Filter' field. The list is automatically reduced to display only levels match-
ing that character string.
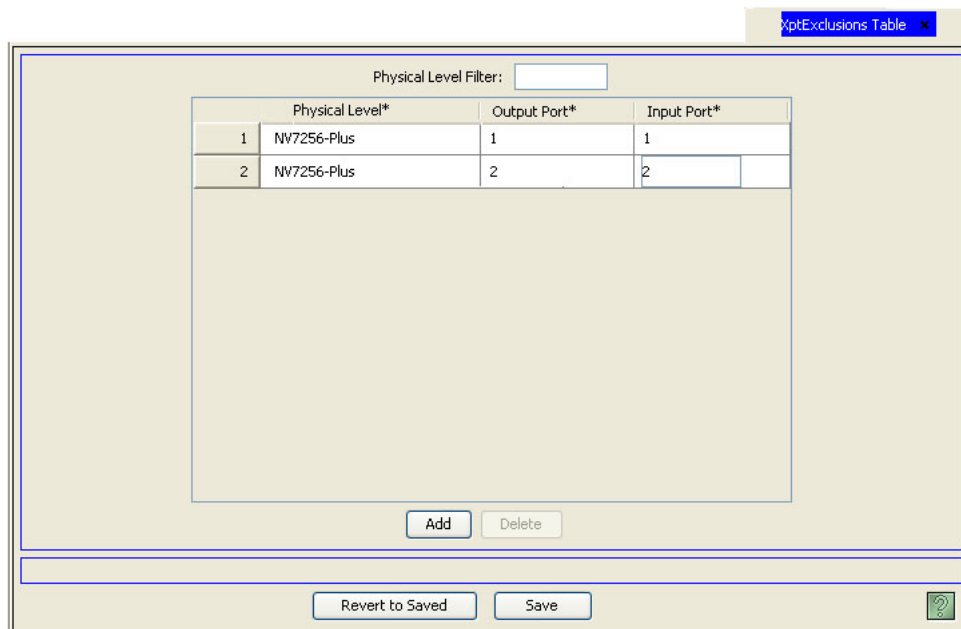
Figure 7-34. XPT Exclusion Table

3 Click anywhere in the row listing the crosspoint exclusion being deleted.

4 Click Delete. The row is removed from the table.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Managing Virtual Crosspoints

Virtual crosspoints allow the implementation of *re-entry* without actually consuming any physical
inputs or outputs. The server software simulates re-entry internally. NVISION calls this *virtual re-
entry*. (Physical, or real, re-entry is where an output of a router is physically connected to an input
of the same router.)

The primary purpose of re-entry is to copy the route made to a given output to other router outputs.
Virtual re-entry allows an output to be routed to a re-entered output. The physical output repre-
sented by a virtual output is normally routed to the re-entered input fed by the virtual output. Any
other router output can be routed to the same re-entry. When the physical input routed to the virtual
output is changed, all outputs routed from the re-entered input change to the same new source.

Virtual crosspoints merely simulate re-entry. No actual re-entry takes place. This means that it is possible to have as many multiple levels of indirection as desired. In other words, with virtual crosspoints (1) there is no physical connection from an output to an input, (2) there is no delay as with physical re-entry, and (3) virtual output N is coupled only with virtual input N, unlike physical re-entry where the physical output can be connected to any physical input.

Although complicated, there are several benefits to virtual crosspoints:

- Multiple-destination takes (monitoring, for instance).
- Controlling the device names that appear on the display of a control panel.
- Concealing implementation details from the operator. For example, the normal route could be be changed to another source and bars could be routed to the virtual output. This would indicate to anyone monitoring the virtual re-entry source that they are not allowed to view this particular program, and the private source can be routed directly to LATX PHY.

▲ Example: The following illustrates a simple virtual route.
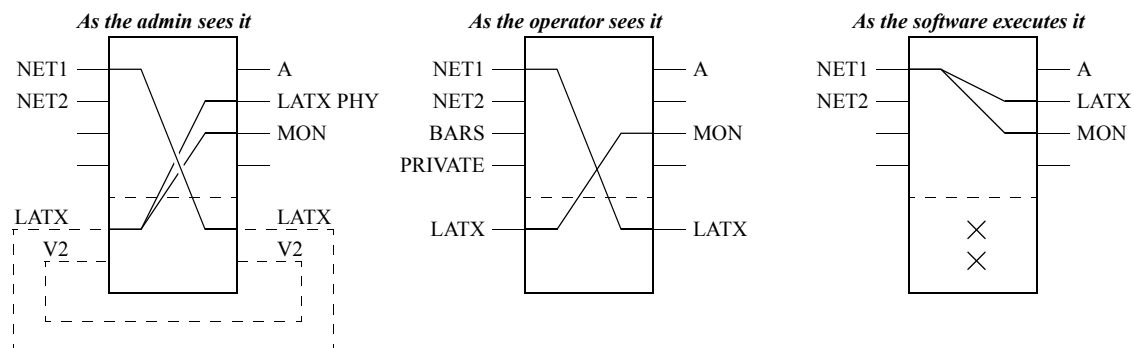
In the example above, virtual input 1 is named LATX and NET1 and NET2 are satellite feeds. 'LATX PHY' is the physical output feeding LATX, and MON is the studio monitor. An operator could route NET1 to LATX or NET2 to LATX and MON in a single take (if the studio monitor is routed to LATX at V1).

Virtual crosspoints exist on a router and apply to each of the physical level(s) of that router. If virtual crosspoints exist on one router, it is likely that you will want to have corresponding virtual crosspoints on other routers in your system. For example, if your SDI router has 4 virtual crosspoints, your AES router might require 16 virtual crosspoints and your machine control router might require 4 virtual crosspoints.

How Create a Virtual Crosspoint

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Routers'. The 'Routers' page displays, as shown in Figure 7-35.

To narrow the list of routers that display, enter the first characters of a router name in the 'Name Filter' field. The list is automatically reduced to display only routers matching that character string.

Or

From the 'Hosts Filter' drop-down list, select a host. The list is automatically reduced to display only routers matching that host.
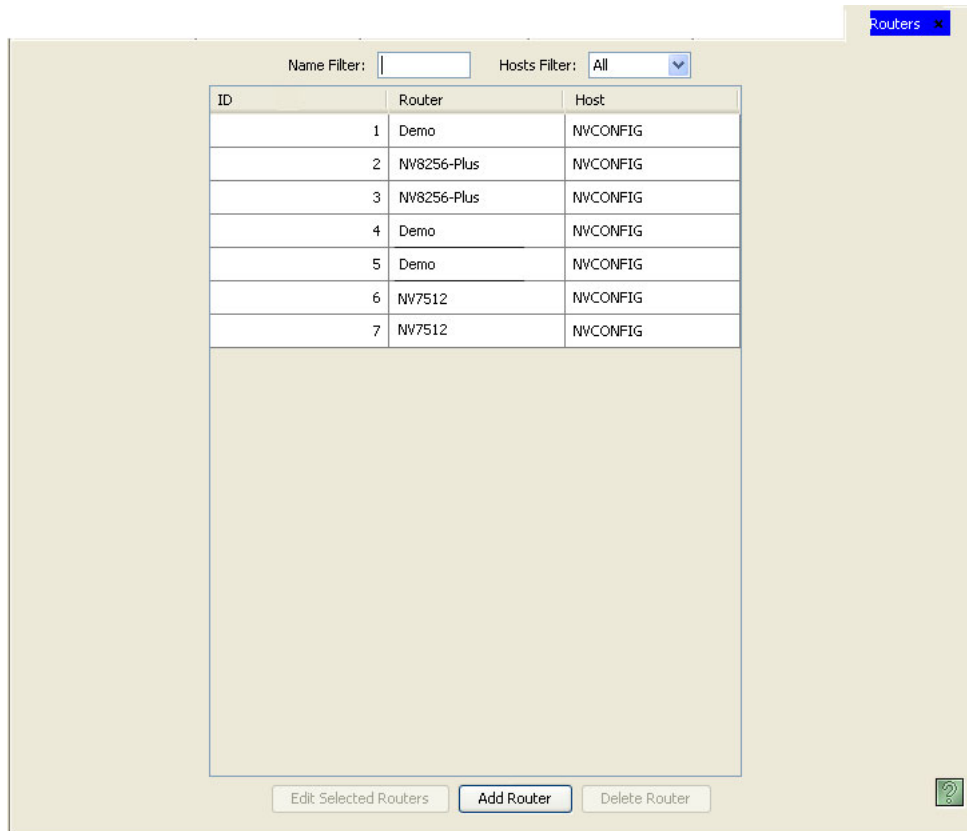

Figure 7-35. Routers Page

3 Click anywhere in the row listing the router being updated and click **Edit Selected Routers**. The 'Router Details' page appears:

Figure 7-36. Router Details Page, Example of Ethernet Connection

4 In the 'Physical Levels' section, enter the number of virtual crosspoints for the router in the 'Number Virtual XPTs' field.

Each physical level defined for the router can have a distinct number of virtual crosspoints. *All* the options to the right of the physical level table apply to the selected physical level if the router has more than one, and to the single physical level if the router has only one.

The crosspoint numbering extends the range of inputs and outputs declared for the physical levels. If the input range is 1–64 and the output range is 1–32, and the number of virtual crosspoints is 4, the virtual input numbers are 65–68 and 33–36 for virtual outputs. In this example, we would say that output 33 re-enters on input 65. (Keep in mind that this effect is simulated.)

5 In the 'Physical Levels' section, enter the 'Virtual XPT Default Input' in the field provided. Route a physical input to a virtual output. Route the re-entered virtual input to an actual output.

This effectively routes the physical input to the physical output and allows any other output to be routed to the re-entered input as well.

6 Repeat steps 4 and 5 for as many "virtual routes" as you need.

7 Click **Save**.

Or

To revert to previously saved configuration, click Revert to Saved.

8 Click X on the window title tab to close the page.

Deleting Routers

Routers can be deleted from the NV9000-SE system at any time. NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement configuration changes, the NV9000 control system must write the configuration to the system controller. For more information, see <u>Implementing Configuration Changes</u> on page 17.

NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependences, when the deletion is attempted, NV9000-SE informs you of the dependencies. You can accept the deletion as it is currently or delete the dependencies first, then delete the originally selected record.

Routers can be deleted using the 'Routers' page accessed through the 'Configuration' pane or using the 'Routers' table accessed through the 'Views' pane.

How to Delete a Router Using the 'Routers' Page

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Routers'. The 'Routers' page displays, as shown in Figure 7-37.

To narrow the list, enter the first characters of the router's name in the 'Name Filter' field. The list is automatically reduced to display only routers matching that character string.

Or

From the 'Hosts Filter' drop-down list, select the router's host. The list is automatically reduced to display only routers having the same host as the one selected.
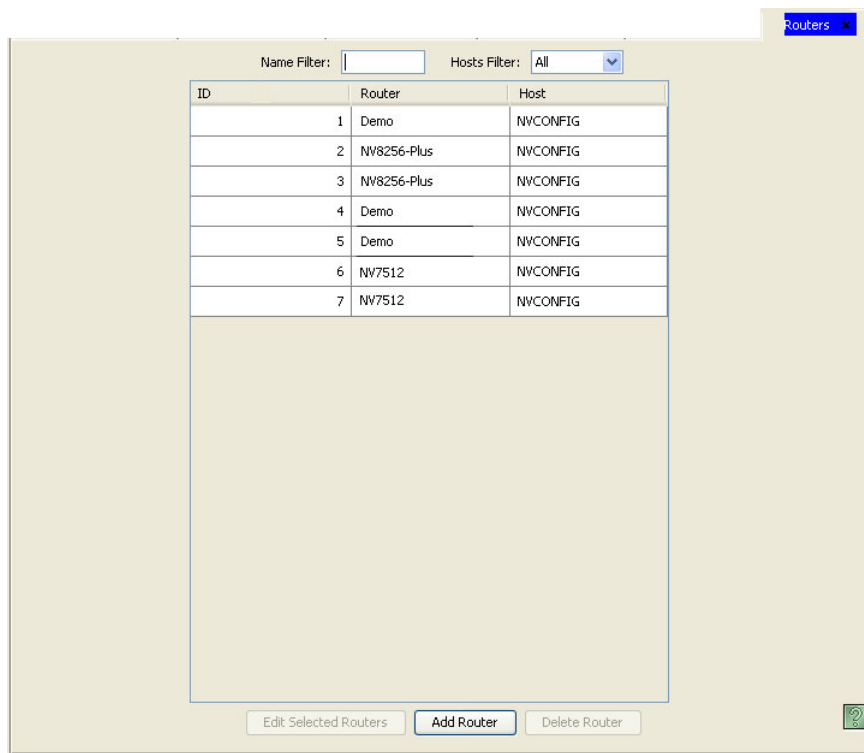
Figure 7-37. Routers Page

3 Click anywhere in the row listing the router(s) being deleted and click Delete Router.

4 On the confirmation dialog box, click Delete.

5 Click X on the window title tab to close the page.

How to Delete a Router Using the 'Routers' Table

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Routers'. The 'Routers' table appears, as shown in Figure 7-38.

To narrow the list of router s that display, enter the first characters of a router name in the 'Name Filter' field. The list is automatically reduced to display only routers matching that character string.
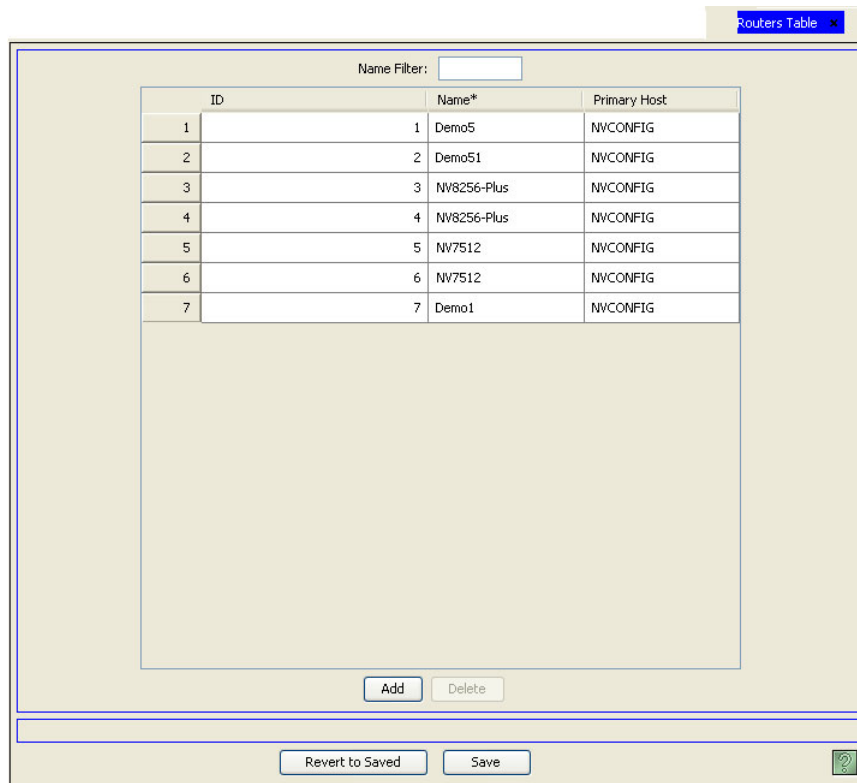
Figure 7-38. Routers Table

3 Click anywhere in the row listing the router being deleted and click Delete. The row is removed from the list.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

8. Level Sets

Level sets are powerful tools used for organizing *virtual* levels. (See Physical Levels vs. Virtual Levels on page 112.) A virtual level is representative of a single signal type, such as HD or AES. Virtual levels are not limited to a single router or device and can be applied to all devices managing that signal type. Once added to the NV9000-SE system, virtual levels can be combined to create *level sets*: a set of virtual levels representing several different signal types. In turn, level sets can be applied to a large variety of devices that utilize one or more virtual levels in the level set. Devices cannot be configured and added to the NV9000 system without first being assigned to a level set. For more information on routers, see About Levels and Level Sets on page 112.

The NV9000-SE features tielines, a powerful tool that enables routing between physical levels on routers. Without a tieline, signals cannot be routed between different physical levels. For more information, see Tielines on page 457.

In general, level sets are added using the 'Add Level Set' wizard. Level set information can then be managed through the 'Level Sets' page or through individual tables. All pages and tables share information so that data entered or updated in one interface is simultaneously added or updated in corresponding data fields in other interfaces.

Level Sets are managed using the following interfaces:

- Add Level Set' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to create a single level set. Opens the 'Level Set Details' page through which level sets are created. See Creating a Level Set on page 114.
- 'Level Sets' page (accessed through the 'Configuration' pane)—A list of existing level sets. Opens the 'Level Set Details' page through which level sets can be added or updated. See Updating Level Sets on page 124.
- Two level set tables (accessed through the 'Views' pane):

  'Level Sets' table—A list of existing level sets, one per row, with name and ID. A level set name can be added or updated using this table, but no virtual levels that compose the level set can be added or changed. That must be done through the 'Level Set Details' page accessed through 'Level Sets' page. See Updating Level Set Name on page 125.

  'Level Set Details' table—A list of virtual levels and associated level sets, one virtual level per row, with associated physical level and free source. Using this table, existing virtual and physical levels can be added to or removed from an existing level set and level set index numbers changed. See Updating Level Set Name on page 125.

- 'Virtual Levels' table—(accessed through the 'Views' pane) A list of all virtual levels, one per row, by name and ID number. Using this table, virtual level names can be updated. See Creating and Deleting Virtual Levels on page 135.

There are two additional table provided that manage signal types. These signal types are pre-populated so that when level sets are created the signals associated with a virtual level are available to select. These tables are designed for high-level administrative purposes and should not be altered without first contacting Technical Support.

- 'Signal Type' table (accessed through the 'Views' pane)—A list of pre-populated signal types used when creating level sets. Using this table, signals can be added or deleted. However, it is recommended that no changes be made to this table without first contacting Technical Support. See [Managing Signal Types and Signal Binding](#) on page 148.

- 'Virtual Level Signal Binding' table (accessed through the 'Views' pane)—A list of virtual levels and the corresponding signal to which the level is "bound." Using this table, virtual levels can be "tied" to a signal so that the signal types cannot be altered. See [Managing Signal Types and Signal Binding](#) on page 148.

About Levels and Level Sets

Both router crosspoint matrices and devices are organized by *virtual levels* in NV9000-SE. Virtual levels represent a signal type with a single level representing a single signal type, such as AES or HD:

Levels are assigned to crosspoint matrices and devices, as follows:

- For router crosspoint matrices, each matrix in a crosspoint is assigned to a level.

- For devices, each device routes a specific signal type, therefore each device is assigned to the level matching the signal type the device manages. Depending on the device, several levels may be assigned. For example, a camera might have a single SD output (one level), a microphone might have one mono output (one level), and a VTR might have SD, HD, AES 1/2, 3/4, 5/6, 7/8, and a control port output (7 levels).

Because a single device can manage several types of signals, each of which is a unique level, NV9000-SE enables you to combine a number of levels together as a *level set*. The level set should define the devices in your facility. When entering device settings, you specify which level(s) in the level set applies to the device. Some systems may have more than one level set.

Physical Levels vs. Virtual Levels

A level set is comprised of *virtual* levels. A virtual level typically represents a signal type used in your system, such as AES or HD. Unlike physical levels that represent physical divisions and are specific to a router or device, virtual levels are signal type abstractions that can be applied to all routers and devices. Physical levels are associated with a physical router and apply only to that router; virtual levels are not associated with a physical router and can be applied to any router. A virtual level is, however, *linked with* a physical level. (We say that it *maps* to a physical level).

Note	In this situation, the term "virtual" means "logical" or "abstract"—that is, non-physical.

Level sets are applied to routers and devices differently. For routers, first the router's physical levels for the crosspoint matrices are added to NV9000-SE Utilities. (See [Adding a Router](#) on page 63.) Next you create virtual levels and a level set, and then apply the level set to the router. For devices, the level set is created first and then each device is associated with the appropriate levels in the level set.

Depending on your system, you may have more than one level set. The level set(s) should accurately reflect all signal types managed by the routers and devices in your facility. Although many

level sets can be defined, typically configurations use just one level set that includes all virtual levels (all signal types) because system management is easier. However, different level sets are useful in systems that include signals of different types. For instance, a configuration might include both analog and digital level sets. Multiple specific level sets tend to be more concise when viewed on control panel displays.

Important	Devices in one level set generally cannot be accessed by devices in another level set without the use of inter-level set mapping or tielines. See Tielines on page 457. At a minimum, one level set *must* be created.

For example, a router may have a physical level for HD signals. A virtual level for HD signals can be applied (mapped) to this router *and* to any other router or device managing HD signals.

In summary, physical and virtual levels play the following roles when configuring routers:

- Physical Levels — A physical level is a router matrix — inputs, outputs, and crosspoints — that, depending on the router, can include one or more signal types. In NV9000-SE, physical levels are defined in the 'Router' page.

- Virtual Levels — Virtual levels within a level set serve two primary functions:

    - Partition the (different) signal types in the same physical matrix. For example, virtual levels HD, SD, and ASI partition the physical level SDI.

    - "Marry" multiple crosspoints from the same physical matrix on same device. For example, virtual levels AES 1/2, 3/4, 5/6, 7/8 are joined in the physical level AES.

In NV9000-SE, virtual levels are defined in the 'Level Set Details' page.

Example: Consider a system of 3 routers, as listed below.

NV8256-Plus — a 512×512 video matrix, consisting of two NV8256-Plus frames.

NV7512 — a 2048×2048 AES matrix, consisting of four NV7512 frames.

NV5256 — a 512-port machine control matrix, consisting of two NV5256 frames.

Each router has one physical level, that is, one crosspoint matrix, which switches the following signals:

The video router routes HD and SD signals. Assume that half of the signals can be SD and the other half HD.

The AES matrix switches 8 audio channels (4 AES pairs): AES 1/2, AES 3/4, AES 5/6, and AES 7/8.

The NV5256 switches control data ports.

This means that in this system there are 7 virtual levels: HD, SD (NV8256-Plus router), 4 AES levels (NV7512 router) and control data ports (NV5256 router).

Virtual Level	Maps to Physical Level
HD	SDI (8256)
SD	SDI (8256)
Control	Control (5256)
AES 1/2	AES (7512)
AES 3/4	AES (7512)
AES 5/6	AES (7512)
AES 7/8	AES (7512)

Control Panel Viewing

Control panel operators see only virtual levels, never physical levels. Virtual levels in a level set are ordered according to sequence number. The lowest number in the sequence is called the primary level. The primary level is typically an HD or SD video level. Some control panels cannot display all members of a level set. In those instances, the primary level is used to represent the entire set and show breakaway status on level buttons.

For control panels that display multiple levels (e.g., the NV9601), it is the sequence number that determines the order in which levels are displayed (called a "display index"). Refer to the control panel documentation for specific displays for your control panel.

Creating a Level Set

A level set can be created at any time. NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement configuration changes, the configuration must be written to the system controller. For instructions, see Implementing Configuration Changes on page 17.

Before creating a level set, physical levels must have been previously added to NV9000-SE. Physical levels are specific to a physical crosspoint matrix in a particular router, with each physical level representing a single signal type. Virtual levels within a level set map to these physical levels. If the physical levels have not been added, there is nothing for the virtual levels, and the resulting level set, to map to. For information on adding physical levels, see Updating Router Physical Levels on page 87.

When you have finished creating a level set, the list of virtual levels should encompass all signal types in your facility.

Note	Control panel operators see only virtual levels, never physical levels.

Level sets can be added using a wizard, page or table. Each performs specific tasks:

- 'Add Level Set' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to create a single level set. Opens the 'Level Set Details' page through which level sets are defined.
- 'Level Sets' page (accessed through the 'Configuration' pane)—A list of existing level sets through which the 'Level Set Details' page can be accessed and a new level set defined.
- 'Level Sets' table (accessed through the 'Views' pane)—A list of existing level sets, one per row, with name and ID. A level set name can be added using this table, but no virtual levels that compose the level set can be added. That must be done through the 'Level Set Details' page accessed through 'Level Sets' page.

To quickly add several level sets, the name of each level set being added can be entered in the 'Add Level Set' wizard and then the Finish button pressed. This adds the level set name and clears all fields so that another level set can be added immediately. However, no virtual levels are defined. Details for the level set can be added a later date using the 'Level Sets' page accessed through the 'Configuration' pane.

How to Create a Level Set

Use the 'Add Level Set' Wizard or 'Level Sets' page.

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Tasks' pane and then 'Add Level Set'.

Or

From the Navigation area, select the 'Configuration' pane and then 'Level Sets'. The 'Level Sets' page displays. On the 'Level Sets' page, click Add Level Set.

The 'Add Level Set' page appears:
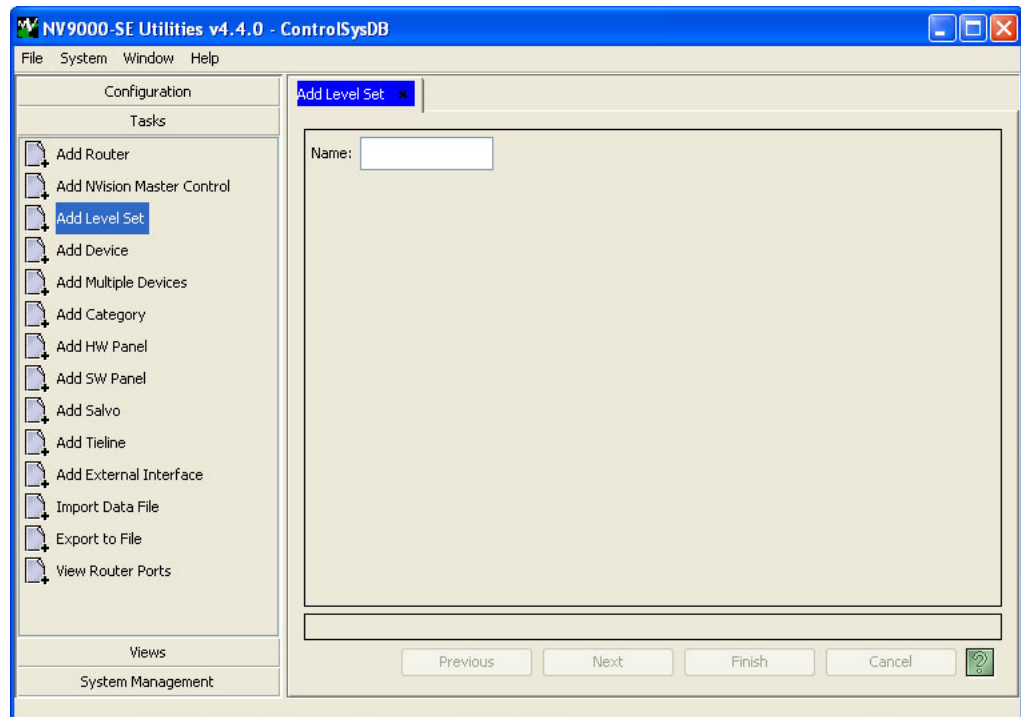
Figure 8-1. Add Level Set Page

3 Enter a 'Name' for the level set in the field provided and:

Click Next. The 'Level Set Details' page appears, as shown in Figure 8-2.

Or

Click Finish to save the new level set name in the system. The fields are cleared so that another level set can be added immediately. The level set name is saved, but no virtual and physical levels are defined. To define levels, locate the level set and perform steps 4 through 8 as described in this procedure. (See <u>How to Locate and View Level Sets Using the 'Level Sets' Page</u> on page 119.)

Or

Click Cancel to clear the fields without saving any information.

Figure 8-2. Level Set Details Page

4 In the 'Virtual Levels' section, add virtual levels to the NV9000-SE system. The virtual level will be mapped to a physical level(s) and represents a signal type, such as HD or AES. (See Physical Levels vs. Virtual Levels on page 112.)

a Click Add Level. The 'Add Level' dialog box appears:
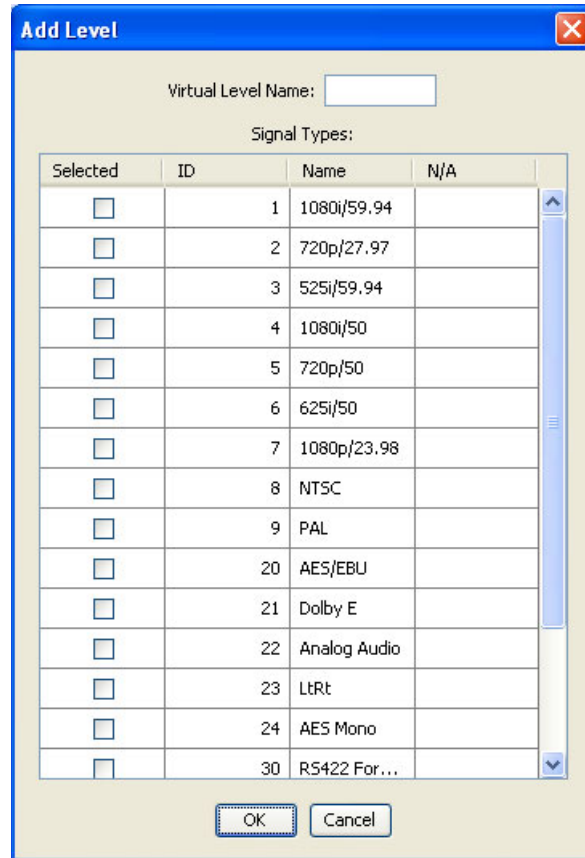
Figure 8-3. Input Dialog Box, Virtual Levels Section

b Enter the 'Virtual Level Name' in the field provided. You can enter up to eight alphanumeric characters.

c Select signal types to be included in the virtual level by clicking on the corresponding check box. To deselect a signal type, click on the check box again to remove the check mark.

d Click OK. A new row appears in the 'Virtual Level' section displaying the newly added virtual level name and an automatically generated ID number, as shown in Figure 8-2.

e Repeat steps a through d until all virtual levels you want have been added.

5 In the 'Level Set Details' section, select virtual levels for the level set. Click on a row under each column heading to activate it and enter information for that column:

Field	Description
Display Index	The index number determines how the levels display on a control panel. The lowest level (lowest index number) in the level set is considered the "primary" level and is shown first or at the top. See Updating the Level Set Index Number on page 143.
Virtual Level	Select a virtual level from the drop-down list. The virtual levels added in Step 4 are listed. If virtual levels were previously added (such as, for another level set), those levels also display.

Field	Description
Physical Level	Select a physical level from the drop-down list to associate with the virtual level (that is, the virtual level maps to the physical level). Physical levels are entered when router information is added. See Updating Router Physical Levels on page 87.
Free Source	(Optional) Select a free source from the drop-down list to associate with the virtual level. A free source is a source, usually black and silence, that can be routed to a destination to free up that destination.
	The drop-down list displays all devices defined as being associated with the current level set, if any. From these devices you can choose a free source.
	To add a free source device, you must first create the level set, add devices to it, and then return to the level set and select the free source. See Devices on page 157.

6 Repeat Step 5 until all levels in the level set have been defined.

7 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

8 Click X on the window title tab to close the page.

How to Add Level Sets Using the 'Level Sets' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Level Sets'. The 'Level Sets' table appears:
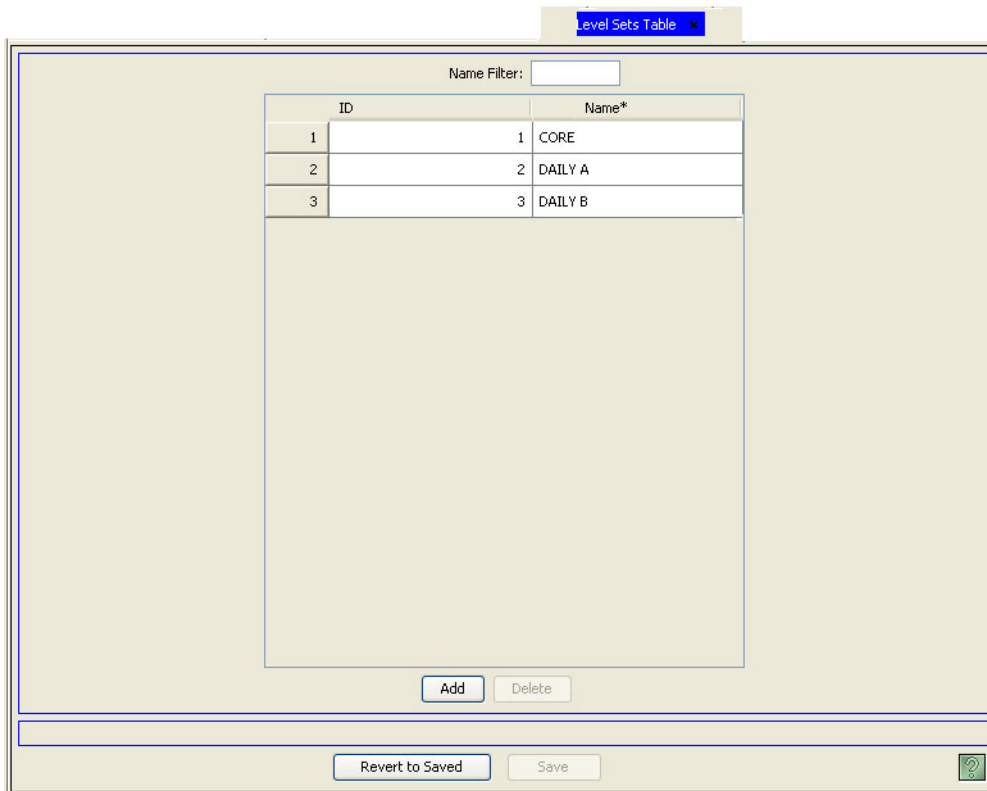
Figure 8-4. Level Sets Table

3 Click Add. A new, blank row appears below the existing rows. An ID number is automatically assigned and appears in the 'ID' column.

4 Click on the 'Name' field to activate it and enter the name of the new level set.

5 Click Save to save your changes.

The level set name and ID is added to the NV9000-SE system, but the virtual and physical levels are not defined. To add levels, locate the level set and perform steps 4 through 8 as described in How to Create a Level Set on page 115. (See How to Locate and View Level Sets Using the 'Level Sets' Page on page 119.)

6 Click X on the window title tab to close the table.

Locating and Viewing Level Sets

Depending on the information you want to view, different pages or tables present different level set information:

- 'Level Sets' page (accessed through the 'Configuration' pane)—A list of existing level sets. Opens the 'Level Set Details' page through which virtual level and physical level details for a selected level set can be viewed. Locate level sets by name.

- Two level set tables (accessed through the 'Views' pane):

  - 'Level Sets' table—A list of existing level sets, one per row, with name and ID. Locate level sets by Name.

  - 'Level Set Details' table—A list of virtual levels and associated level set, one virtual level per row, with physical levels, free source and index number. Locate level sets by name, virtual levels or by physical levels.

- 'Virtual Levels' table (accessed through the 'Views' pane)—A list of all virtual levels, whether or not associated with a level set, one virtual level per row, with name and ID. Locate level sets by virtual levels.

How to Locate and View Level Sets Using the 'Level Sets' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Level Sets'. The 'Level Sets' page displays, as shown in Figure 8-5.

All level sets currently defined in the system are listed. To narrow the list, enter the first characters of the level set name in the 'Name Filter' field. The list is automatically reduced to display only level sets matching that character string.


Figure 8-5. Level Sets Page

3 Double click on a single row to open the 'Level Set Details' page for that level set, as shown in Figure 8-6.

Or

Click anywhere in the row listing the level set you want to view and click Edit Selected Level Sets. Each level set opens in a separate tabbed window. Click a tab to bring that window forward.
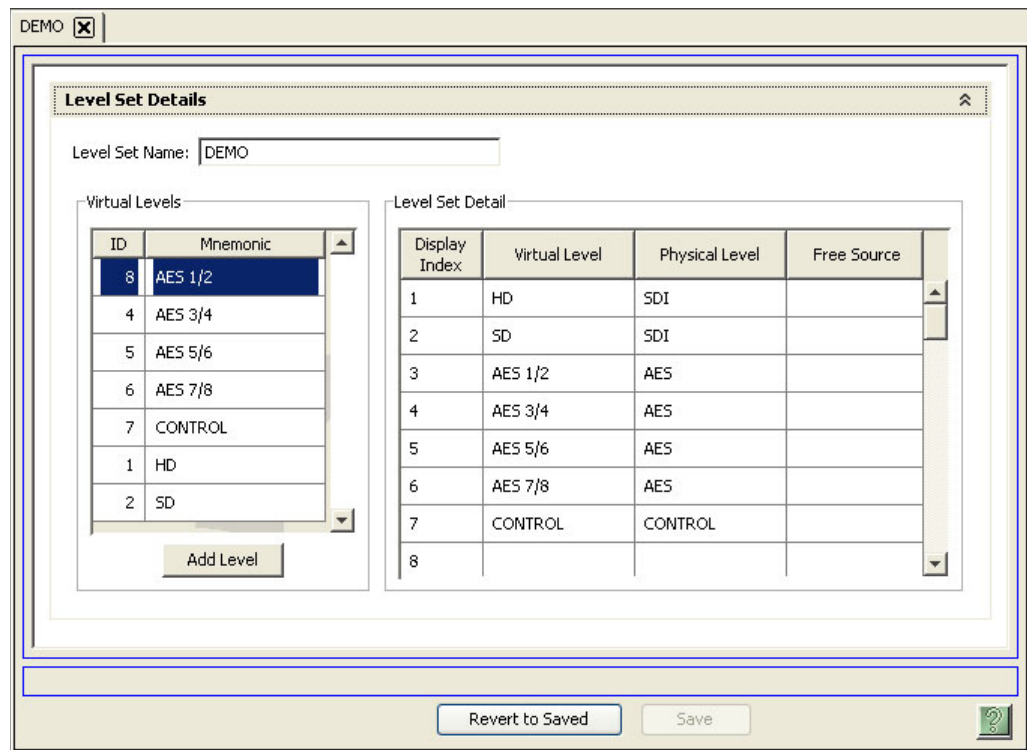
Figure 8-6. Level Set Details Page

4 There are three sections. The 'Level Set Name' field displays the name currently assigned to the level set. The 'Virtual Level' section displays the ID and mnemonic (name) assigned to each

virtual level currently in the system. The 'Level Set Detail' section displays the following detailed information about the level set:

Field	Description
Display Index	The display index number determines the order of display on a control panel. The lowest level in the level set is considered the "primary" level. See Updating the Level Set Index Number on page 143.
Virtual Level	The virtual levels that compose the level set.
Physical Level	The physical level associated with each virtual level.
Free Source	A free source is a source, usually black and silence, that can be routed to a destination to free up that destination. The column lists any free sources that have been assigned to the corresponding virtual level and physical level on the same row.

5 Click X on the window title tab to close the table.

How to Locate and View Level Sets Using the 'Level Sets' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Level Sets'. The 'Level Sets' table appears, as shown in Figure 8-7.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Name Filter' field. The list is automatically reduced to display only level sets matching that character string.
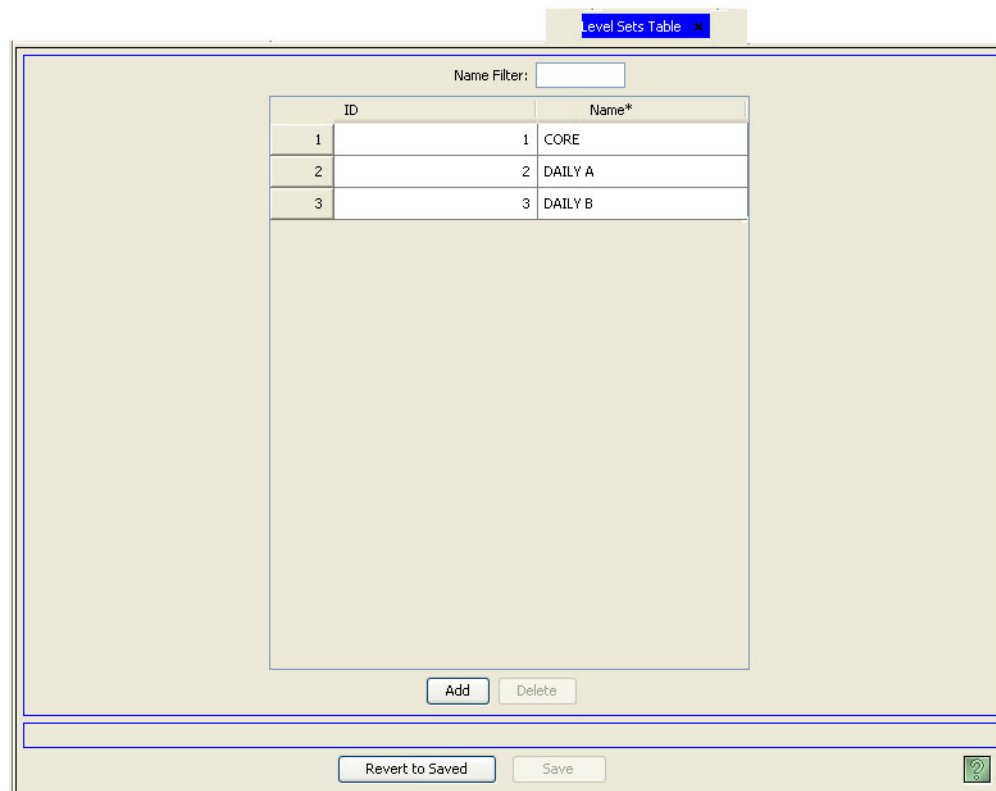
Figure 8-7. Level Sets Table

Three columns display level set information. Each row represents a single level set.

Column	Description
ID	Lists the ID number associated with the level set.
Name	Lists the name associated with the level set.

3 Click **X** on the window title tab to close the table.

How to Locate Level Sets Using the 'Level Set Details' Table

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Level Set Details'. The 'Level Set Details' table appears, as shown in Figure 8-8.

All level sets currently defined in the system are listed. To narrow the list, enter the first characters of the level set name in the 'Level Set Filter' field.

Or

Enter the first characters of a virtual level contained in the level set in the 'Virtual Level Filter' field.

Or

Enter the first characters of a physical level mapped to a virtual level in the level set in the 'Phys Level Filter' field.

The list is automatically reduced to display only level sets matching that character string.

Figure 8-8. Level Set Details Table

Several columns display level set information. Each row represents a single virtual level and the associated level set and physical levels.

Column	Description
Level Set	Lists the level set name.
Virtual Level	Lists the virtual level associated with the corresponding level set listed on that row. One virtual level is listed per row.
Physical Level	Lists the physical level associated with the virtual level that is, in turn, associated with the corresponding level set.
Index	The index number assigned to each virtual level in a level set. A single level set may be composed of several virtual levels, each with its own index number. The index number determines how the levels display on a control panel. The lowest level (lowest index number) in the level set is considered the "primary" level and is shown first or at the top. See Updating the Level Set Index Number on page 143.
Free Source	Lists any free source associated with the virtual level in the level set. A free source is a source, usually black and silence, that can be routed to a destination to free up that destination.

3 Click X on the window title tab to close the table.

Locating and Viewing Virtual Levels

Level sets are composed of virtual levels (Physical Levels vs. Virtual Levels on page 112). A list of all virtual levels in the NV9000-SE system can be quickly and easily viewed using the 'Virtual Levels' table accessed through the 'Views' pane.

How to Locate and View Virtual Levels Using the 'Virtual Levels' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Virtual Levels'. The 'Virtual Levels' table appears, as shown in Figure 8-9.

To narrow the list of virtual levels that display, enter the first characters of a virtual level name in the 'Mnemonic Filter' field. The list is automatically reduced to display only virtual levels matching that character string.
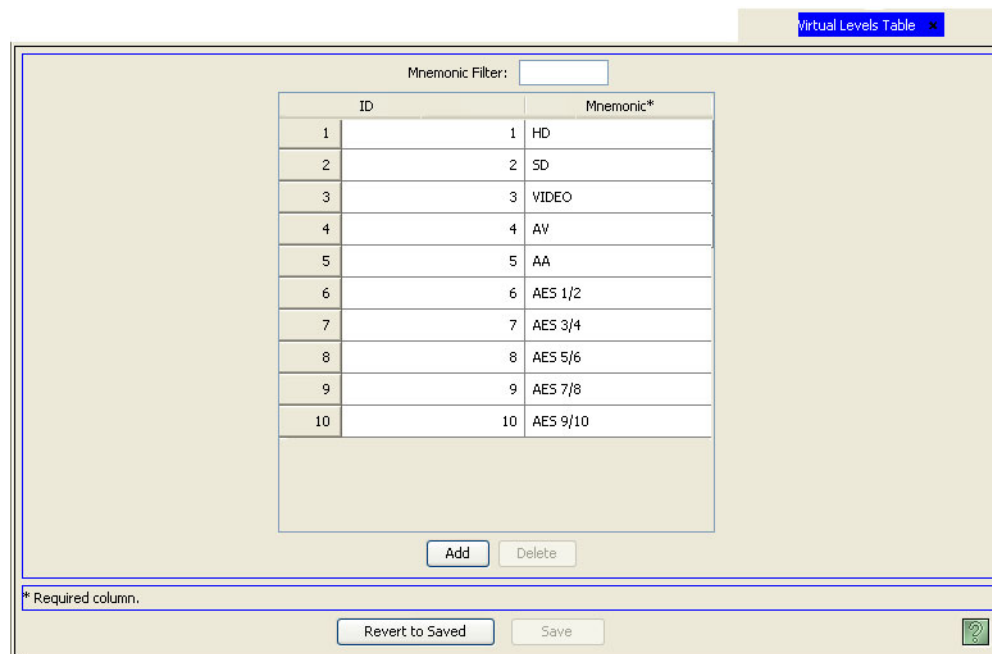
Figure 8-9. Virtual Levels Tables

Columns display virtual level information. Each row represents a single virtual level.

Column	Description
ID	The ID number assigned.
Mnemonic	Lists the name of the virtual level.

3 Click X on the window title tab to close the table.

Updating Level Sets

Level sets can be redefined any time. To implement configuration changes, the configuration must be written to the system controller. For instructions, see Implementing Configuration Changes on page 17.

Level set information can be updated through both pages and tables. The pages accessed through the 'Configuration' pane and the tables accessed through the 'Views' pane share databases. Changes made in one interface, appear in other interfaces that share that database. For example, if the name of a level set is updated in the 'Level Sets' page, the name is automatically updated in the 'Level Sets' table and the 'Level Set Details' table.

Although both a page and table may update the same information, each interface enables you to perform specific tasks more efficiently. Pages enable you to update several pieces of information for a single level set through a single interface. Tables are useful for updating a limited, specific

amount of information for several level sets at once. In addition, not all pages and tables update the same information; different interfaces manage different, specific level set information.

Different NV9000-SE interfaces perform specific tasks, as follow:

Task	Interface	Pane
Updating Level Set Name on page 125	Level Sets Page, Level Sets Table	Configuration, Views
Adding Virtual Levels and Removing Virtual Levels on page 127	Level Sets Page, Level Set Details Table	Configuration, Views
Creating and Deleting Virtual Levels on page 135	Level Sets Page, Virtual Levels Table	Configuration, Views
Changing the Physical Level Mapping in a Level Set on page 137	Level Sets Page, Level Set Details Table	Configuration, Views
Updating the Free Source Associated with a Level Set on page 140	Level Sets Page, Level Set Details Table	Configuration, Views
Updating the Level Set Index Number on page 143	Level Sets Page	Configuration
Updating the Level Set Index Number on page 143	Level Set Details Table	Views

Updating Level Set Name

The name assigned to a level set can be updated at any time using the 'Level Sets' page accessed through the 'Configuration' pane or through the 'Level Sets' table accessed through the 'Views' pane. Once updated, the new name appears instantly wherever the old name previously displayed.

How to Update a Level Set Name Using the 'Level Sets' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Level Sets'. The 'Level Sets' page appears, as shown in Figure 8-10.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Name Filter' field. The list is automatically reduced to display only level sets matching that character string.
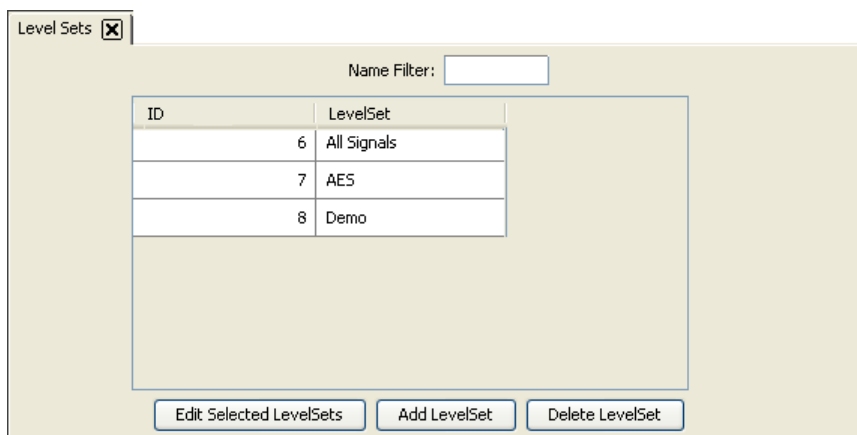
Figure 8-10. Level Sets Page

3 Double-click on the row listing the level set being updated.

Or

Click anywhere in the row listing the level set being updated and click Edit Selected Level Sets.
The 'Level Set Details' page appears:
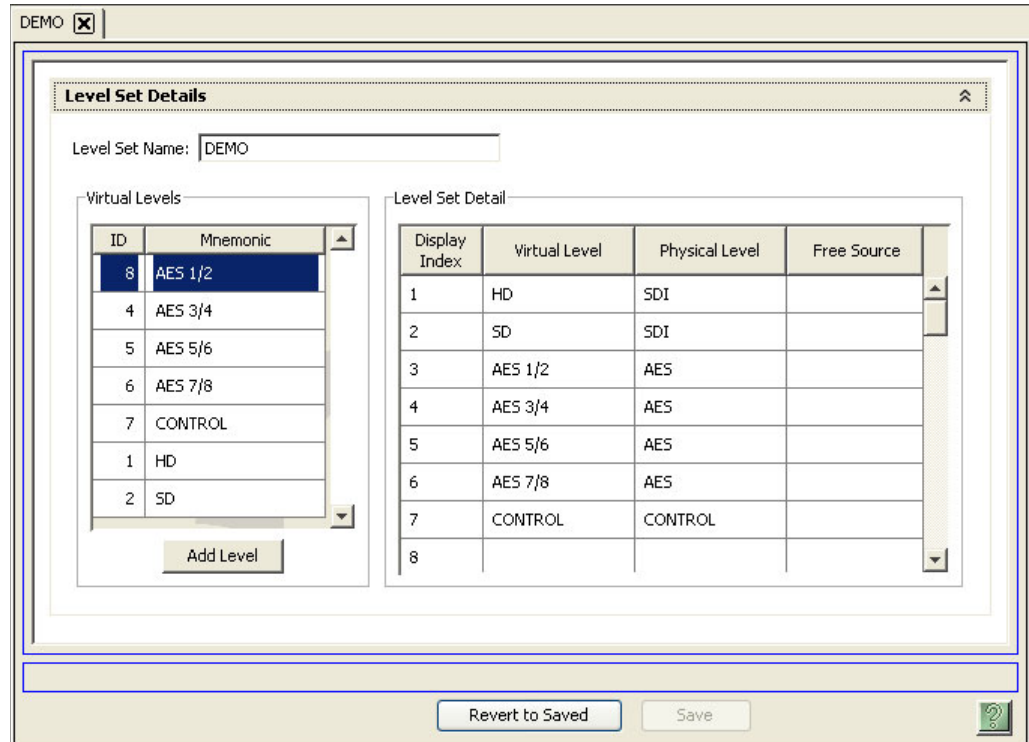
Figure 8-11. Level Set Details Page

If multiple level sets are selected, one level set displays its details and each additional level set
opens in a separate tabbed window. Click the tab to bring that window forward. If one level set
is selected, the details for that level set automatically display.

4 Update the 'Level Set Name' in the field provided.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

How to Update a Level Set Name Using the 'Level Sets' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Level Sets'. The 'Level Sets' table
appears, as shown in Figure 8-12.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Name Filter' field. The list is automatically reduced to display only level sets matching that character string.
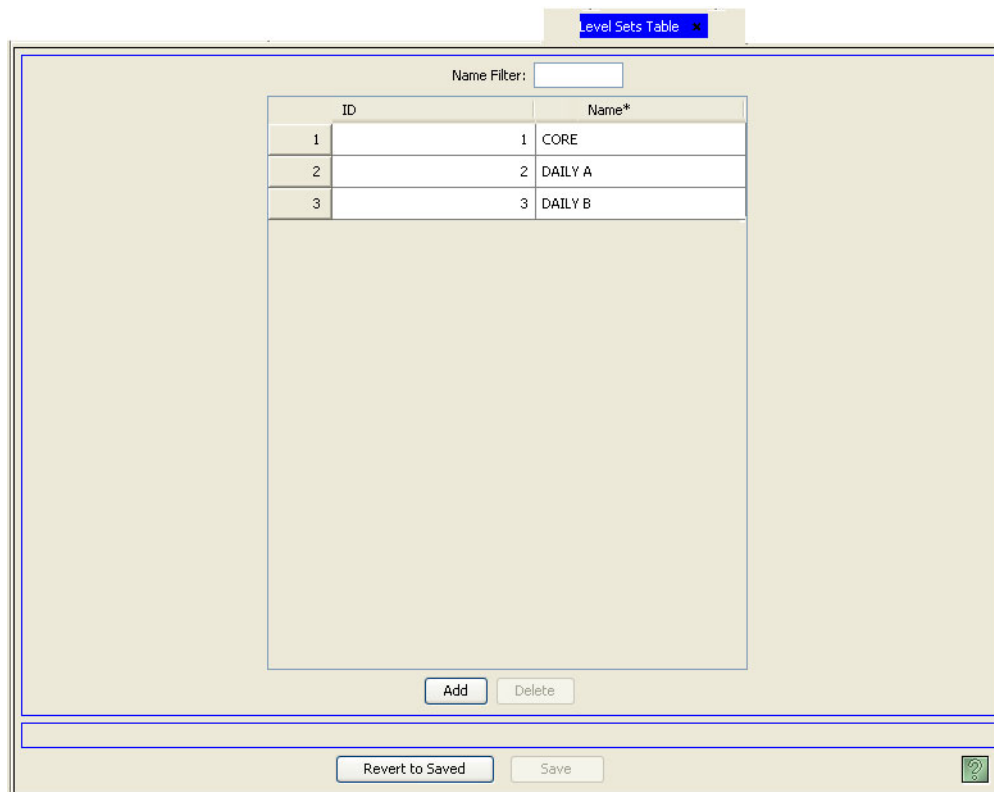
Figure 8-12. Level Sets Table

3 Locate the row listing the level set being updated.

4 Click in the 'Name' field to activate it and enter a new level set name.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Adding Virtual Levels and Removing Virtual Levels

Virtual levels are created as part of the procedure for creating a level set. A virtual level represents a signal type used in your system, such as AES or HD. Unlike physical levels that represent physical divisions and are specific to a router or device, virtual levels are signal type abstractions that can be applied to all routers and devices. (See Physical Levels vs. Virtual Levels on page 112.)

Virtual levels can be created and added to a level set, or removed from a level set, at any time. Once created, a virtual level is available for addition to any level set in the NV9000-SE system. When removed from a level set, the virtual level is disassociated with that level set, but remains in the NV9000-SE system and associated with all other level sets to which it was previously added.

When a virtual level is removed from a level set, if no other virtual level in the level set is mapped to a signal type, all devices managing that signal type may no longer function correctly. Be sure

when removing a virtual level that all devices, routers and control panels using that virtual level are not negatively impacted.

Virtual levels can be created and added, but not removed, using the 'Level Sets' page accessed through the 'Configuration' pane. Virtual levels can be added and removed, but not created, using the 'Level Set Details' table accessed through the 'Views' pane.

Warning	Renaming or reconfiguring virtual levels in a level set will radically alter the configuration of any devices in the level set and should be done with *extreme* caution.

How to Create and Add Virtual Levels to a Level Set Using the 'Level Sets' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Level Sets'. The 'Level Sets' page appears, as shown in Figure 8-13.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Name Filter' field. The list is automatically reduced to display only level sets matching that character string.
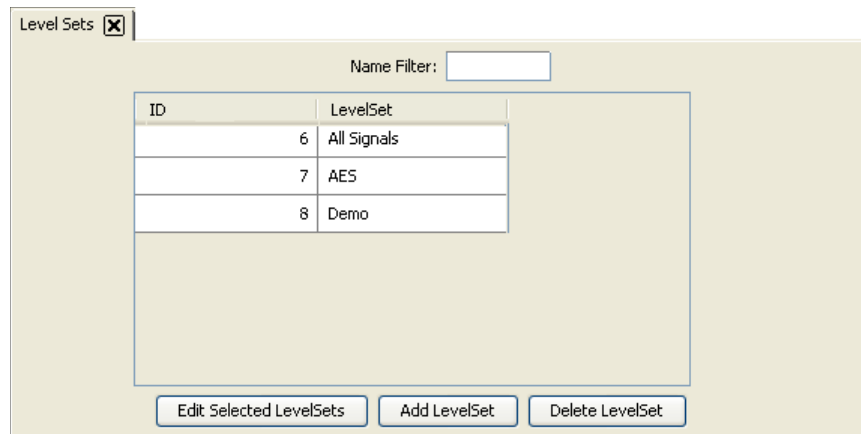
Figure 8-13. Level Sets Page

3 Double-click on the row listing the level set being updated.

Or

Click anywhere in the row listing the level set to which a virtual level is being added and click Edit Selected Level Sets. The 'Level Set Details' Page appears:

Figure 8-14. Level Set Details Page

If multiple level sets are selected, one level set displays its details and each additional level set opens in a separate tabbed window. Click the tab to bring that window forward. If one level set is selected, the details for that level set automatically display.

4 In the 'Virtual Levels' section, add virtual levels to the NV9000-SE system. The virtual level will be mapped to a physical level(s) and represents a signal type, such as HD or AES. (See Physical Levels vs. Virtual Levels on page 112.)

a Click Add Level. The 'Add Level' dialog box appears:

Figure 8-15. Input Dialog Box - Virtual Levels Section

b Enter the 'Virtual Level Name' in the field provided. You can enter up to eight alphanumeric characters.

c Select signal types to be included in the virtual level by clicking on the corresponding check box. To deselect a signal type, click on the check box again to remove the check mark.

d Click OK. A new row appears in the 'Virtual Level' section displaying the newly added virtual level name and an automatically generated ID number, as shown in Figure 8-2.

e Repeat steps a through d until all virtual levels you want have been added.

5 In the 'Level Set Details' section, select virtual levels for the level set. Click on a row under each column heading to activate it and enter information for that column:

Field	Description
Display Index	The index number determines how the levels display on a control panel. The lowest level (lowest index number) in the level set is considered the "primary" level and is shown first or at the top. See Updating the Level Set Index Number on page 143.
Virtual Level	Select a virtual level from the drop-down list. The virtual levels added in Step 4 are listed. If virtual levels were previously added (such as, for another level set), those levels also display.

Field	Description
Physical Level	Select a physical level from the drop-down list to associate with the virtual level (that is, the virtual level maps to the physical level). Physical levels are entered when router information is added. (See Updating Router Physical Levels on page 87.)
Free Source	(Optional) Select a free source from the drop-down list to associate with the virtual level. A free source is a source, usually black and silence, that can be routed to a destination to free up that destination.
	The drop-down list displays all devices defined as being associated with the current level set, if any. From these devices you can choose a free source.
	To add a free source device, you must first create the level set, add devices to it, and then return to the level set and select the free source. See Devices on page 157.

6 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the page.

How to Add Virtual Levels to a Level Set Using the 'Level Set Details' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Level Set Details'. The 'Level Set Details' table appears, as shown in Figure 8-16.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Level Set Filter' field.

Or

Enter the first characters of a virtual level name in the 'Virtual Level Filter' field.

Or

Enter the first characters of a physical level name in the 'Phys Level Filter' field.

The list is The list is automatically reduced to display only level sets matching that character string.
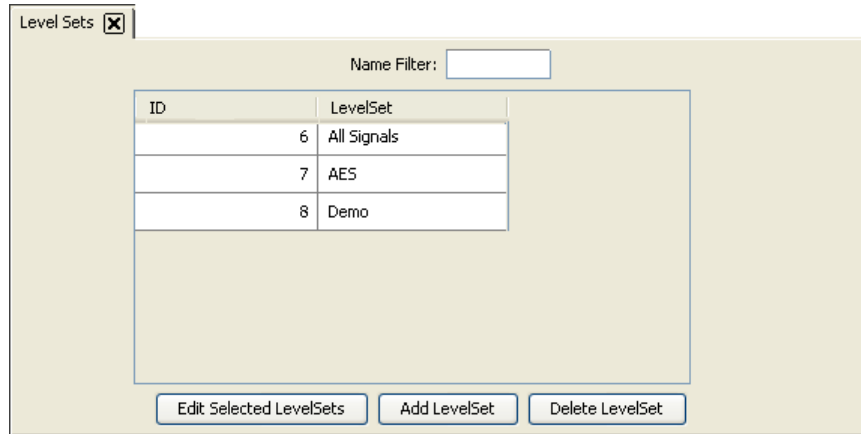
	Level Set*	Virtual Level*	Physical Level*	Index*	Free Source
1	CORE	HD	CORE CR-HD_PL1	1	
2	CORE	SD	CORE CR-HD_PL1	2	
3	CORE	AES 1/2	CORE AES_PL1	3	
4	CORE	AES 3/4	CORE AES_PL1	4	
5	CORE	AES 5/6	CORE AES_PL1	5	
6	CORE	AES 7/8	CORE AES_PL1	6	
7	DAILY A	HD	DAILY A CR-HD_PL1	1	
8	DAILY A	SD	DAILY A CR-HD_PL1	2	
9	DAILY A	AES 1/2	DLY A AES_PL1	3	
10	DAILY A	AES 3/4	DLY A AES_PL1	4	
11	DAILY B	HD	DAILY B CR-HD_PL1	1	
12	DAILY B	SD	DAILY B CR-HD_PL1	2	
13	DAILY B	AES 1/2	DLY B AES_PL1	3	
14	DAILY B	AES 3/4	DLY B AES_PL1	4	

LevelSet Filter: ____ VirtualLevel Filter: ____ PhysLevel Filter: ____

Add   Delete

* Required column.

Revert to Saved   Save

Figure 8-16. Level Set Details Tables

3 Click Add. A blank row is added to the list of level sets.

4 In the blank row, click in the 'Level Set' column to activate it and from the drop-down list, select a level set.

5 In the same row, click in the 'Virtual Level' column to activate it and from the drop-down list, select the virtual level being added to the level set.

6 In the same row, in the 'Index' column, click on the field to activate it and enter an index number. The number must be unique.

The index number determines how the levels display on a control panel. The lowest level (lowest index number) in the level set is considered the "primary" level and is shown first or at the top in the control panel.

7 (Optional) In the same row, click in the 'Free Source' column to activate it and from the drop-down list, select if a free source is to be associated with the virtual level. A free source is a source, usually black and silence, that can be routed to a destination to free up that destination.

8 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

9 Click X on the window title tab to close the table.

How to Remove Virtual Levels from a Level Set Using the 'Level Sets' Page

Warning	When a virtual level is removed, the mapping between the virtual level and physical level(s) is unmapped. This means that if no other virtual level is mapped to a signal type, all devices managing that signal type may no longer function correctly. Be sure when removing a virtual level that all devices, routers and control panels using that virtual level are not negatively impacted.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Level Sets'. The 'Level Sets' page appears, as shown in Figure 8-17.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Name Filter' field. The list is automatically reduced to display only level sets matching that character string.
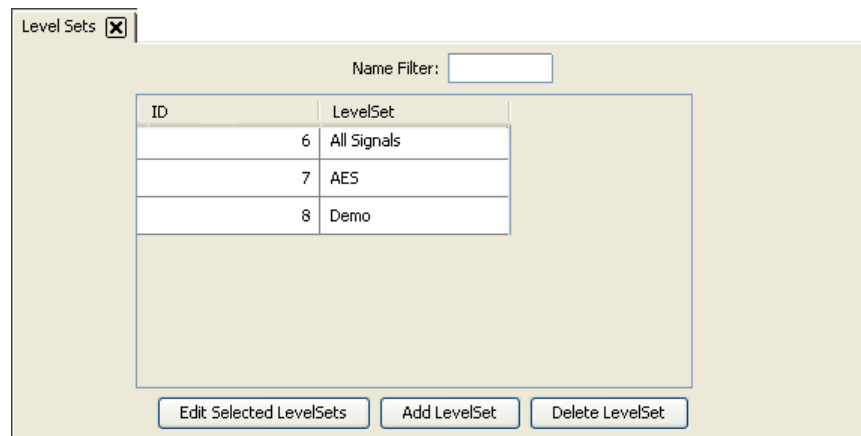
Figure 8-17. Level Sets Page

3 Double-click on the row listing the level set being updated.

Or

Click anywhere in the row listing the level set to which a virtual level is being added and click Edit Selected Level Sets. The 'Level Set Details' Page appears:
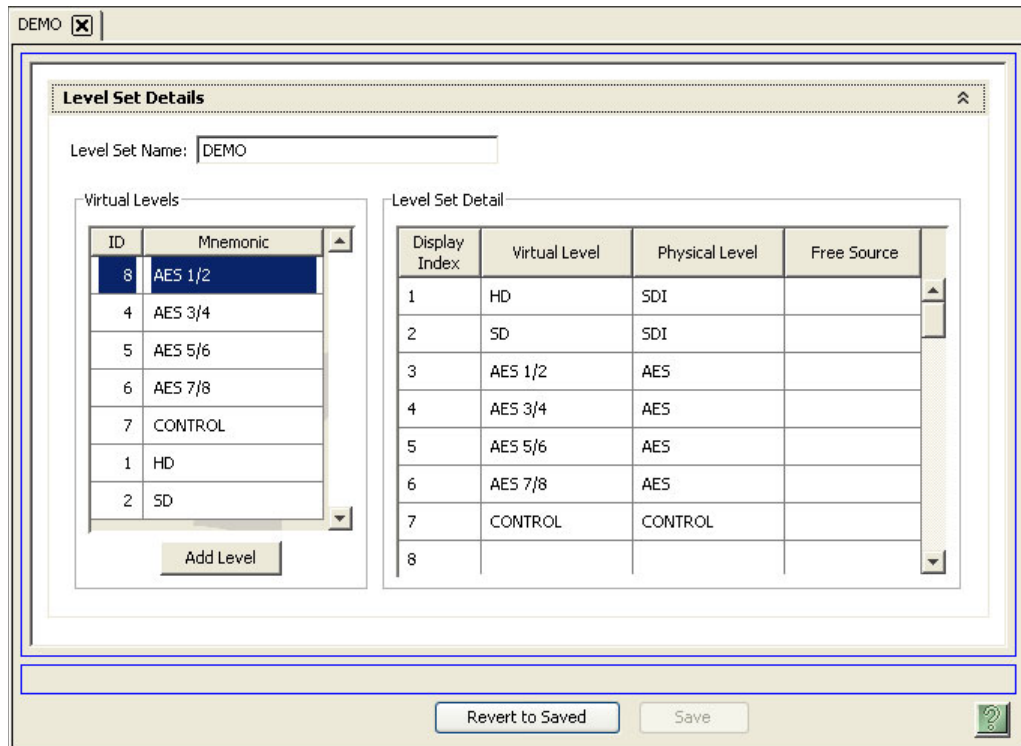
Figure 8-18. Level Set Details Page

If multiple level sets are selected, one level set displays its details and each additional level set opens in a separate tabbed window. Click the tab to bring that window forward. If one level set is selected, the details for that level set automatically display.

4 In the 'Level Set Details' section, in the row listing the virtual level to be removed, click in each column to activate it ('Virtual Level', 'Physical Level' and 'Free Source') and from the drop-down list, select 'None'. 'Display Index' remains unchanged.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

How to Remove Virtual Levels from a Level Set Using the 'Level Set Details' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Level Set Details'. The 'Level Set Details' table appears, as shown in Figure 8-19.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Level Set Filter' field.

Or

Enter the first characters of a virtual level name in the 'Virtual Level Filter' field.

Or

Enter the first characters of a physical level name in the 'Phys Level Filter' field.

The list is The list is automatically reduced to display only level sets matching that character string.

Figure 8-19. Level Set Details Tables

3 Click anywhere in he row listing the virtual level being removed from the level set.

4 Click Delete. The row is removed from the table.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Creating and Deleting Virtual Levels

A virtual level is a signal type abstraction that can be applied to all routers and devices. (See Physical Levels vs. Virtual Levels on page 112.) Each virtual level represents a signal type, such as HD or AES. Virtual levels can be created using the 'Level Sets' page accessed through the 'Configuration' pane or the 'Virtual Levels' table accessed through the 'Views' pane. Virtual levels can only be deleted from the NV9000-SE system using the 'Virtual Levels' table. Once a virtual level is deleted, it is automatically removed from all level sets to which it was previously added.

Warning	When a virtual level is removed, the mapping between the virtual level and physical level(s) is unmapped. This means that if no other virtual level is mapped to a signal type, all devices managing that signal type may no longer function correctly. Be sure when removing a virtual level that all devices, routers and control panels using that virtual level are not negatively impacted.

If creating virtual levels, but not adding them to level sets, it is recommended that the 'Virtual Levels' table be used, as described in How to Create a Virtual Level Using the 'Virtual Levels' Table on page 136. Virtual levels can be created through the 'Level Sets' page, but it must be done as part of creating a new level set or updating an existing level set.

How to Create a Virtual Level Using the 'Virtual Levels' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Virtual Levels'. The 'Virtual Levels' table appears:

Figure 8-20. Virtual Levels Tables

3 Click Add. A blank row is added to the list of virtual levels.

4 In the blank row, click in the field in the 'Mnemonic' column to activate it and enter a name for the virtual level. The name must be unique.

5 Click Save. An 'ID' number automatically appears for the newly added virtual level.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

How to delete a virtual level using the 'Virtual Levels' table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Virtual Levels'. The 'Virtual Levels' table appears, as shown in Figure 8-21.

To narrow the list of virtual levels that display, enter the first characters of a virtual level name in the 'Mnemonic Filter' field. The list is automatically reduced to display only virtual levels matching that character string.
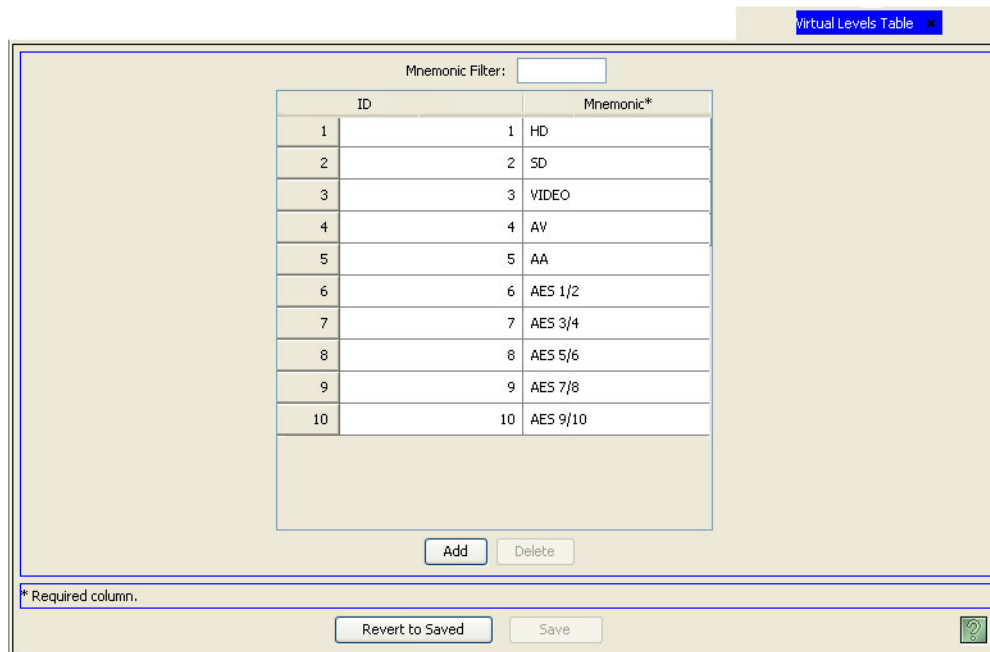

Figure 8-21. Virtual Levels Tables

3 Click anywhere in the row listing the virtual level being deleted.

4 Click Delete. The row is removed from the table.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Changing the Physical Level Mapping in a Level Set

Physical levels represent physical divisions within a specific router and represent a single signal type. Virtual levels are a logical abstraction that represent a signal type and may be assigned to any physical router. (See Physical Levels vs. Virtual Levels on page 112.) Virtual levels that compose a level set are mapped to physical levels. Changing the physical level a virtual level is mapped to can potentially change the signal type the virtual level is managing and dramatically effect devices configured within it. For example, if a virtual level is mapped to a physical level routing HD signals, the virtual level can manage HD signals. However, if the mapping is changed to a physical level routing AES signals, the virtual level no longer manages HD signals. Instead it manages AES signals.

Physical level mappings can be changed using the 'Level Sets' page accessed through the 'Configuration' pane or the 'Level Set Details' table accessed through the 'Views' pane.
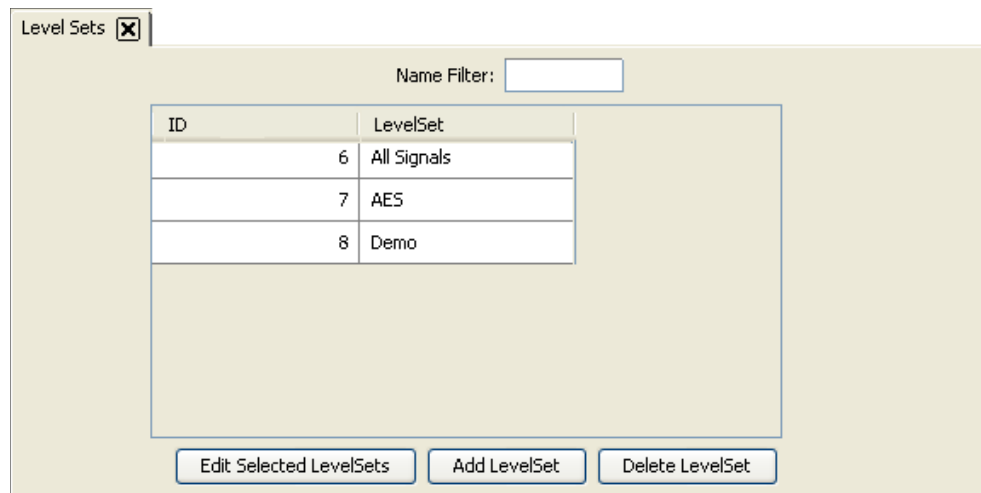
Warning	This will redirect all crosspoints currently in use from the "old" physical router to the "new" router with potentially dire consequences. Do NOT do this while "live".

Physical levels are created when router information is entered. For more information, see Updating Router Physical Levels on page 87.

How to Change Physical Levels Associated with a Level Set Using the 'Level Sets' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Level Sets'. The 'Level Sets' page appears, as shown in Figure 8-22.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Name Filter' field. The list is automatically reduced to display only level sets matching that character string.


Figure 8-22. Level Sets Page

3 Double-click on the row listing the level set being updated.

Or

Click anywhere in the row listing the level set being updated and click Edit Selected Level Sets. The 'Level Set Details' Page appears:
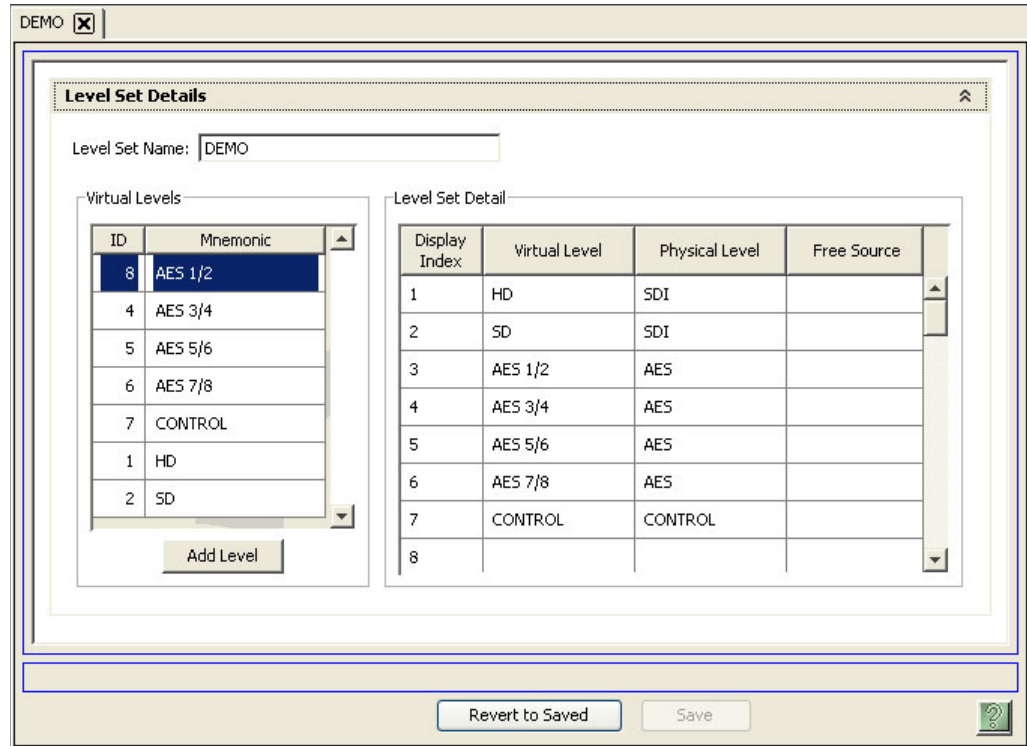
Figure 8-23. Level Set Details Page

If multiple level sets are selected, one level set displays its details and each additional level set opens in a separate tabbed window. Click the tab to bring that window forward. If one level set is selected, the details for that level set automatically display.

4 In the 'Level Set Details' section, click on a cell in the 'Physical Level' column to activate it and select a new physical level from the drop-down list. The physical level is mapped to the virtual level listed on the same row.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

How to Change Physical Levels Associated with a Level Set

Use the 'Level Set Details' table.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Level Set Details'. The 'Level Set Details' table appears, as shown in Figure 8-24.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Level Set Filter' field.

Or

Enter the first characters of a virtual level name in the 'Virtual Level Filter' field.

Or

Enter the first characters of a physical level name in the 'Phys Level Filter' field.

The list is automatically reduced to display only level sets matching that character string.

	Level Set*	Virtual Level*	Physical Level*	Index*	Free Source
1	CORE	HD	CORE CR-HD_PL1	1	
2	CORE	SD	CORE CR-HD_PL1	2	
3	CORE	AES 1/2	CORE AES_PL1	3	
4	CORE	AES 3/4	CORE AES_PL1	4	
5	CORE	AES 5/6	CORE AES_PL1	5	
6	CORE	AES 7/8	CORE AES_PL1	6	
7	DAILY A	HD	DAILY A CR-HD_PL1	1	
8	DAILY A	SD	DAILY A CR-HD_PL1	2	
9	DAILY A	AES 1/2	DLY A AES_PL1	3	
10	DAILY A	AES 3/4	DLY A AES_PL1	4	
11	DAILY B	HD	DAILY B CR-HD_PL1	1	
12	DAILY B	SD	DAILY B CR-HD_PL1	2	
13	DAILY B	AES 1/2	DLY B AES_PL1	3	
14	DAILY B	AES 3/4	DLY B AES_PL1	4	

Figure 8-24. Level Set Details Tables

3 On the row listing the level set being updated, in the 'Physical Level' column select a new physical level from the drop-down list. The physical level is mapped to the virtual level listed on the same row.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Updating the Free Source Associated with a Level Set

A free source is a source, usually black and silence, that can be routed to a destination to free up that destination. When you route a free source to a destination fed from a tieline or control port, it frees that tieline or control port. If you are not using a tieline or a port router, the free source may be left blank.

The free source associated with a virtual level in a level set can be updated using the 'Level Sets' page accessed through the 'Configuration' pane. Using the 'Level Set Details' table accessed through the 'Views' pane, a free source can be updated and/or associated with an entire level set, not just individual virtual levels.

You can only associate a free source from a list of devices that have been defined as *belonging to that level set*. To enter a free source in a level set, you must first create the level set, then define a list of devices associated with that level set, and then return to the level set and select a device as the free source from the list of devices defined. (See Devices on page 157.)

How to Update the Free Source Associated with a Virtual Level

Use the 'Level Sets' page.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Level Sets'. The 'Level Sets' page appears, as shown in Figure 8-25.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Name Filter' field. The list is automatically reduced to display only level sets matching that character string.
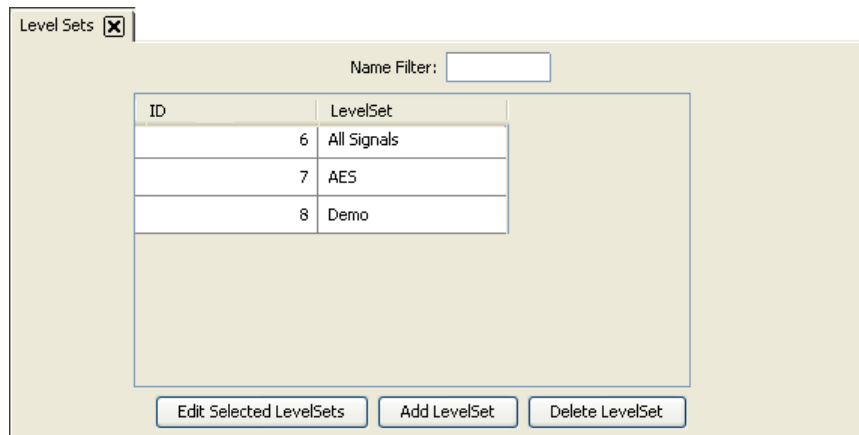
Figure 8-25. Level Sets Page

3 Double-click on the row listing the level set being updated.

Or

Click anywhere in the row listing the level set being updated and click Edit Selected Level Sets. The 'Level Set Details' Page appears:
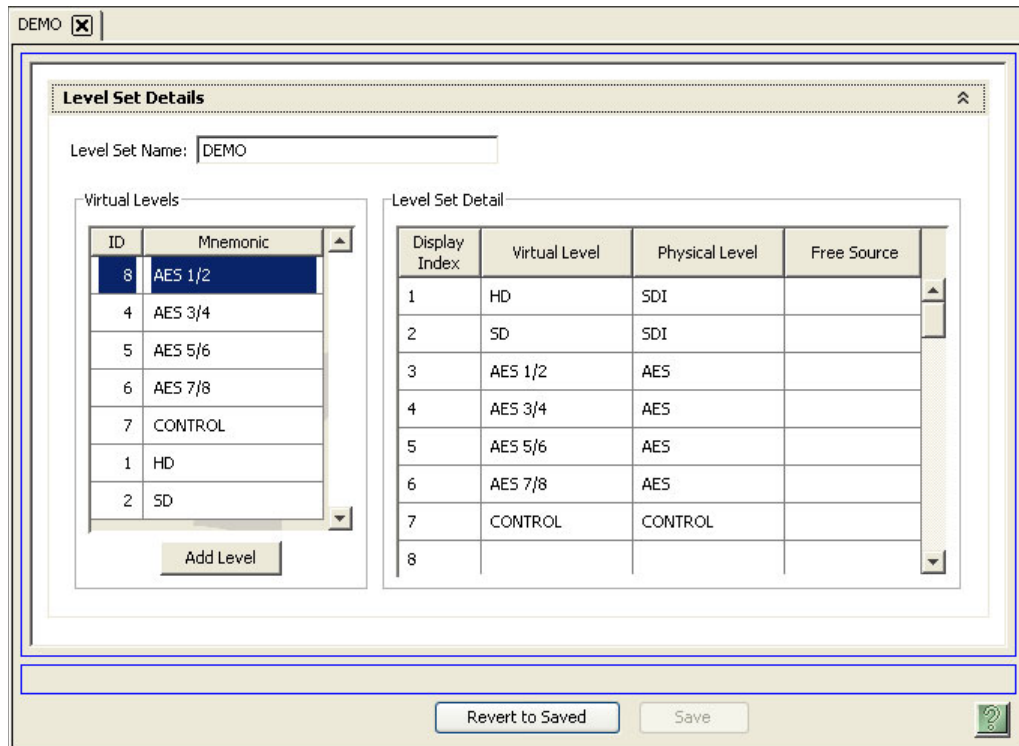
Figure 8-26. Level Set Details Page

If multiple level sets are selected, one level set displays its details and each additional level set opens in a separate tabbed window. Click the tab to bring that window forward. If one level set is selected, the details for that level set automatically display.

4 In the 'Level Set Details' section, click on a cell in the 'Free Source' column to activate it and select a free source from the drop-down list. The free source is associated with the virtual level listed in the same row.

Or

Select 'None' to have no free source associated with the level set.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

How to Update the Free Source Associated with a Level Set

Use the 'Level Set Details' table.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Level Set Details'. The 'Level Set Details' table appears, as shown in Figure 8-27.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Level Set Filter' field.

Or

Enter the first characters of a virtual level name in the 'Virtual Level Filter' field.

Or

Enter the first characters of a physical level name in the 'Phys Level Filter' field.

The list is The list is automatically reduced to display only level sets matching that character string.

	Level Set*	Virtual Level*	Physical Level*	Index*	Free Source
1	CORE	HD	CORE CR-HD_PL1	1	
2	CORE	SD	CORE CR-HD_PL1	2	
3	CORE	AES 1/2	CORE AES_PL1	3	
4	CORE	AES 3/4	CORE AES_PL1	4	
5	CORE	AES 5/6	CORE AES_PL1	5	
6	CORE	AES 7/8	CORE AES_PL1	6	
7	DAILY A	HD	DAILY A CR-HD_PL1	1	
8	DAILY A	SD	DAILY A CR-HD_PL1	2	
9	DAILY A	AES 1/2	DLY A AES_PL1	3	
10	DAILY A	AES 3/4	DLY A AES_PL1	4	
11	DAILY B	HD	DAILY B CR-HD_PL1	1	
12	DAILY B	SD	DAILY B CR-HD_PL1	2	
13	DAILY B	AES 1/2	DLY B AES_PL1	3	
14	DAILY B	AES 3/4	DLY B AES_PL1	4	

Figure 8-27. Level Set Details Tables

3 Click on a cell in the 'Free Source' column to activate it and select a free source from the drop-down list. The free source is associated with the level set listed on the same row.

Or

From the drop-down list, select 'None' to have no free source associated with the level set.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Updating the Level Set Index Number

The index numbers assigned to a virtual level in a level set determine how the levels display on a control panel. The index number can be changed to reorder the levels as desired. The lowest level (lowest index number) in the level set is considered the "primary" level.

Index numbers must be unique (no duplicates) within a level set. Gaps within an index numbering sequence are allowed. Gaps appear as "spaces" between lines in the display. For example, HD can be assigned index number 1, SD assigned 2, AES 1/2 assigned 4, and AES 3/4 assigned 5, creating a "space" between video and audio signals on the display.

Index numbers are updated using the 'Level Sets' page accessed through the 'Configuration' pane.

How to Update the Level Set Index Number

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Level Set Details'. The 'Level Set Details' table appears, as shown in Figure 8-28.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Level Set Filter' field.

Or

Enter the first characters of a virtual level name in the 'Virtual Level Filter' field.

Or

Enter the first characters of a physical level name in the 'Phys Level Filter' field.

The list is The list is automatically reduced to display only level sets matching that character string.

	Level Set*	Virtual Level*	Physical Level*	Index*	Free Source
	LevelSet Filter:	VirtualLevel Filter:	PhysLevel Filter:		
1	CORE	HD	CORE CR-HD_PL1	1	
2	CORE	SD	CORE CR-HD_PL1	2	
3	CORE	AES 1/2	CORE AES_PL1	3	
4	CORE	AES 3/4	CORE AES_PL1	4	
5	CORE	AES 5/6	CORE AES_PL1	5	
6	CORE	AES 7/8	CORE AES_PL1	6	
7	DAILY A	HD	DAILY A CR-HD_PL1	1	
8	DAILY A	SD	DAILY A CR-HD_PL1	2	
9	DAILY A	AES 1/2	DLY A AES_PL1	3	
10	DAILY A	AES 3/4	DLY A AES_PL1	4	
11	DAILY B	HD	DAILY B CR-HD_PL1	1	
12	DAILY B	SD	DAILY B CR-HD_PL1	2	
13	DAILY B	AES 1/2	DLY B AES_PL1	3	
14	DAILY B	AES 3/4	DLY B AES_PL1	4	

Add   Delete

* Required column.

Revert to Saved   Save

Figure 8-28. Level Set Details Tables

3 On the row listing the level set being updated, click in the 'Index' column to activate it and enter a new index number. The number must be numeric (no letters or characters) and limited to 9 digits.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Deleting Level Sets

Level sets can be deleted at any time. Deleting a level set removes it completely from the NV9000-SE system. Any routers or devices associated with a level set remain in the system unless individually and separately deleted. Once deleted, there is no "undo" function; the configuration is permanently removed. To implement configuration changes, including deletions, the configuration must be written to the system controller. For instructions, see Implementing Configuration Changes on page 17.

NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependences, when the deletion is attempted, NV9000-SE informs you of the dependencies. Delete the dependencies first, then delete the originally selected record.

Be careful when deleting level sets. Level sets enable a large number and wide variety of devices to communicate with each other. Removing a level set currently in use can disrupt inter-device communication.

Level sets can be deleted using the 'Level Sets' page accessed through the 'Configuration' pane or using the 'Level Sets' table or 'Level Set Details' table accessed through the 'Views' pane.

How to Delete a Level Set Using the 'Level Sets' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Level Sets'. The 'Level Sets' page displays, as shown in Figure 8-29.

All level sets currently defined in the system are listed. To narrow the list, enter the first characters of the level set name in the 'Name Filter' field. The list is automatically reduced to display only level sets matching that character string.

Figure 8-29. Level Sets Page

3 From the list of level sets that display, click anywhere in the row listing the level set being deleted and click Delete Level Set. The row is removed from the list.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the page.

How to Delete a Level Set Using the 'Level Sets' Table

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Level Sets'. The 'Level Sets' table appears, as shown in Figure 8-30.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Name Filter' field. The list is automatically reduced to display only level sets matching that character string.
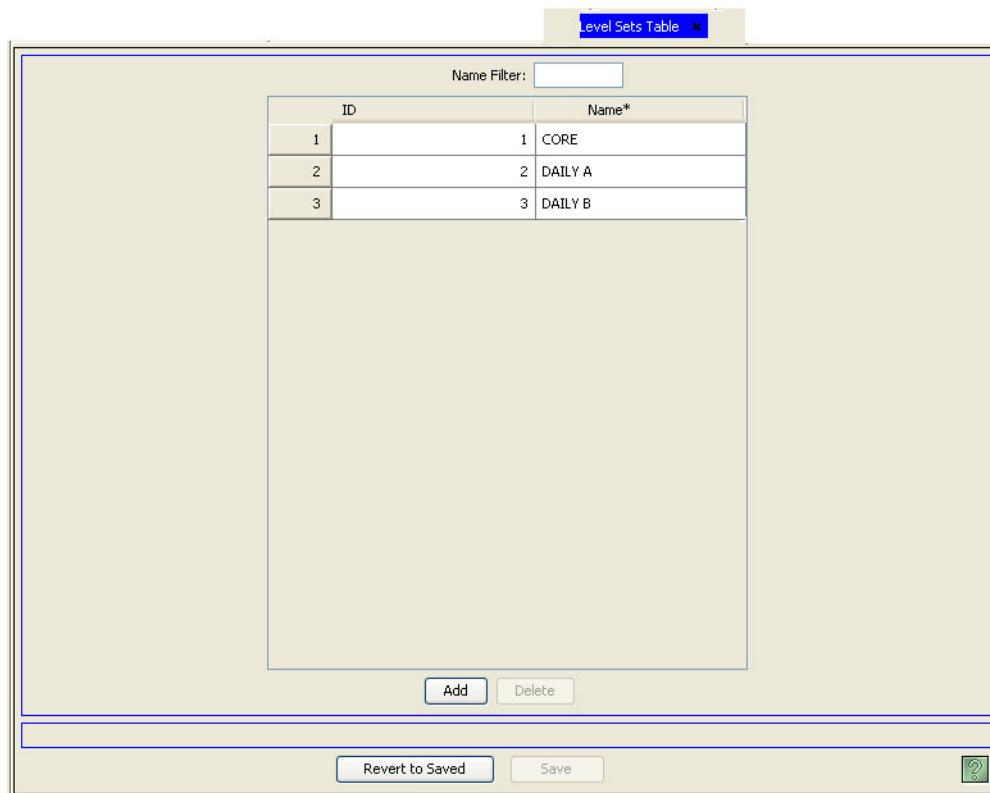
Figure 8-30. Level Sets Table

3 From the list of level sets that display, click anywhere in the row listing the level set being deleted and click Delete. The row is removed from the list.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

How to Delete a Level Set Using the 'Level Set Details' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Level Set Details'. The 'Level Set Details' table appears, as shown in Figure 8-31.

To narrow the list of level sets that display, enter the first characters of a level set name in the 'Level Set Filter' field.

Or

Enter the first characters of a virtual level name in the 'Virtual Level Filter' field.

Or

Enter the first characters of a physical level name in the 'Phys Level Filter' field.

The list is The list is automatically reduced to display only level sets matching that character string.

Figure 8-31. Level Set Details Table

3 From the list of level sets that display, click anywhere in the row listing the level set being deleted and click Delete. Be sure to select *all* rows listing the level set. The row(s) is removed from the list.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Managing Signal Types and Signal Binding

The NV9000-SE provides a pre-populated list of common signal types. This list is used when creating virtual levels to add to levels sets. (See Creating a Level Set on page 114.) In general, devices must be in the same level set in order to successfully complete a route. There are two tables, accessed through the 'Views' pane, that manage signal types. These tables are designed for high-level administrative purposes and should not be altered without first contacting Technical Support.

The 'Signal Type' table manages all signal types. Using this table, signals can be added or deleted. The 'Virtual Level Signal Binding' table enables you to "bind" signals to virtual levels. By binding a signal and virtual level together, the signal type cannot be altered. This ensures that the signal types are consistent and that the right signal is selected for that virtual level.

Adding or Binding Signals

Signals can be added or "bound" to a virtual level at any time. When binding a signal to a virtual level, that signal is always associated with that virtual level until changed. Whenever that virtual level is added to a level set, the bound signal type will also be added. One virtual level may be bound to several signal types. Binding signals to virtual levels is an added security feature by ensuring that the right signal type is selected when creating level sets and associating a device with that level set.

Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement configuration changes, the configuration must be written to the system controller. For instructions, see Implementing Configuration Changes on page 17.

Signal types are added using the 'Signal Type' table accessed through the 'Views' pane. Signals are bound to levels using the 'Virtual Level Signal Binding' table, also access through the 'Views' pane.

How to Add a Signal Type

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Signal Types'. The 'Signal Types' table appears, as shown in Figure 8-32.

   To narrow the list of signals that display, enter the first characters of a signal type in the 'Name Filer' field. The list is automatically reduced to display only signal types matching that character string.

	ID*	Name*	Description
1	1	1080i/59.94	SMPTE 292M High Definition Video
2	2	720p/27.97	SMPTE 292M High Definition Video
3	3	525i/59.94	SMPTE 259M Standard Definition Vi...
4	4	1080i/50	SMPTE 292M High Definition Video
5	5	720p/50	SMPTE 292M High Definition Video
6	6	625i/50	SMPTE 259M Standard Definition Vi...
7	7	1080p/23.98	SMPTE 292M High Definition Video
8	8	NTSC	NTSC Analog Video
9	9	PAL	PAL Analog Video
10	20	AES/EBU	AES/EBU Digital Audio Interface
11	21	Dolby E	Dolby E Encoded Digital Audio
12	22	Analog Audio	Analog Monoaural Audio
13	23	LtRt	Left Total/Right Total Analog Audio
14	24	AES Mono	NVISION TDM AES
15	30	RS422 Forward	RS422 Serial Data Forward
16	31	RS422 Reverse	RS422 Serial Data Reverse
17	32	RS232 DCE	RS232 Data Circuit-Terminating Equ...
18	33	RS232 DTE	RS232 Data Terminal Equipment
19	40	Timecode	SMPTE Timecode

Figure 8-32. Signal Types Table

3 Click Add. A blank row is added to the bottom of the list.

4 In the blank row, click on a cell in a column to activate it and enter information as follows:

Column	Description
ID	Automatically assigned.
Name	Enter a name for the signal type. Be sure the name is unique. Do not use any punctuation marks or symbols.
Description	Enter a description of the signal. It is strongly recommended that you use a description commonly used in the industry.

5 Click Save.

6 Click X on the window title tab to close the table.

How to Bind a Signal Type to a Virtual Level

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Signal Types'. The 'Signal Types' table appears, as shown in Figure 8-33.

To narrow the list of virtual levels that display, enter the first characters of a virtual level in the 'Virtual Level Filter' field. The list is automatically reduced to display only virtual levels matching that character string.

Or

Enter the first characters of a signal type in the 'Signal Type Filer' field. The list is automatically reduced to display only signal types matching that character string.
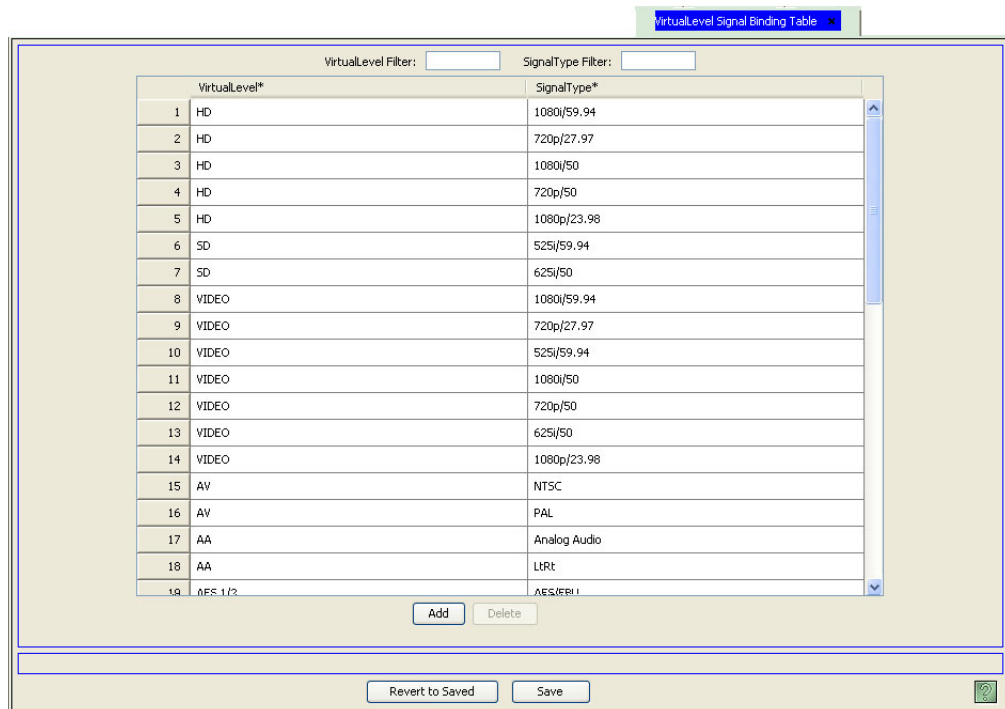
Figure 8-33. Virtual Level Signal Binding Table

3 Click Add. A blank row is added to the bottom of the list.

4 In the blank row, click on a cell in a column to activate it and select information as follows:

Column	Description
Virtual Level	From the drop-down list, select a virtual level.
Signal Type	From the drop-down list, select a signal type to bind to the virtual level selected.

5 Click Save.

6 Click X on the window title tab to close the table.

Viewing Signal Type Information

Depending on the information you want to view, different tables present different signal type information.

Tables are accessed through the 'Views' pane:

- The 'Signal Type' table lists all signals currently available in the NV9000-SE system.

- The 'Virtual Level Signal Binding' table lists all virtual levels that have been bound to a signal type and the type of signal.

How to View a Signal Type

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Signal Types'. The 'Signal Types' table appears, as shown in Figure 8-34.

To narrow the list of signals that display, enter the first characters of a signal type in the 'Name Filer' field. The list is automatically reduced to display only signal types matching that character string.
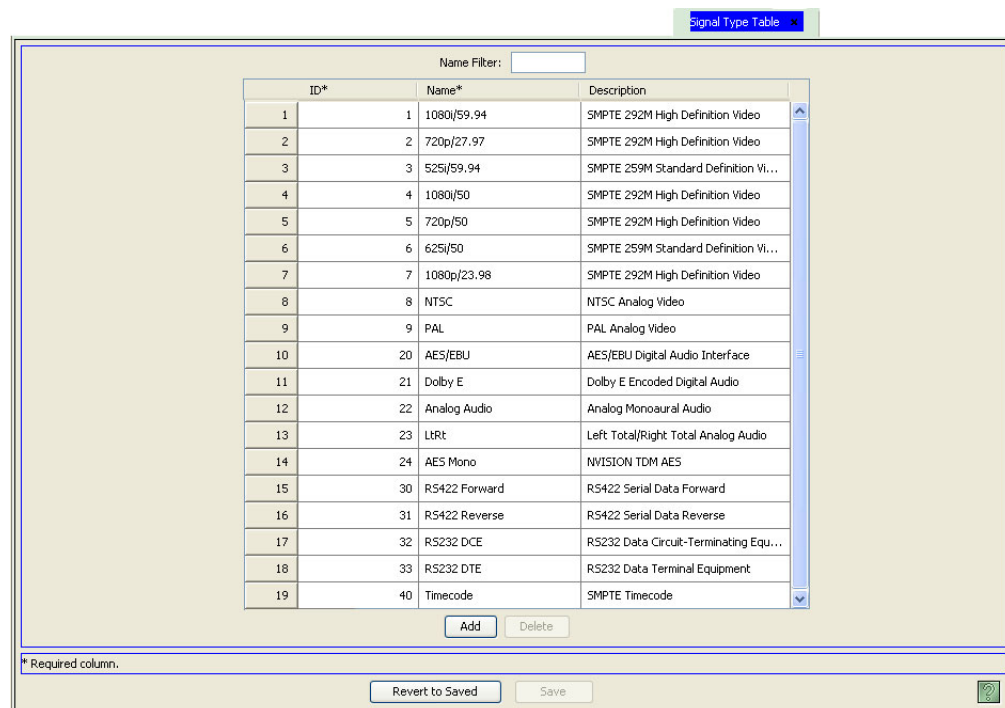

Figure 8-34. Signal Types Table

3 The 'Name' column lists the name of the signal type as it appears throughout the NV9000-SE system.

4 The 'Description' column provides a brief description of the signal type.

5 Click X on the window title tab to close the table.
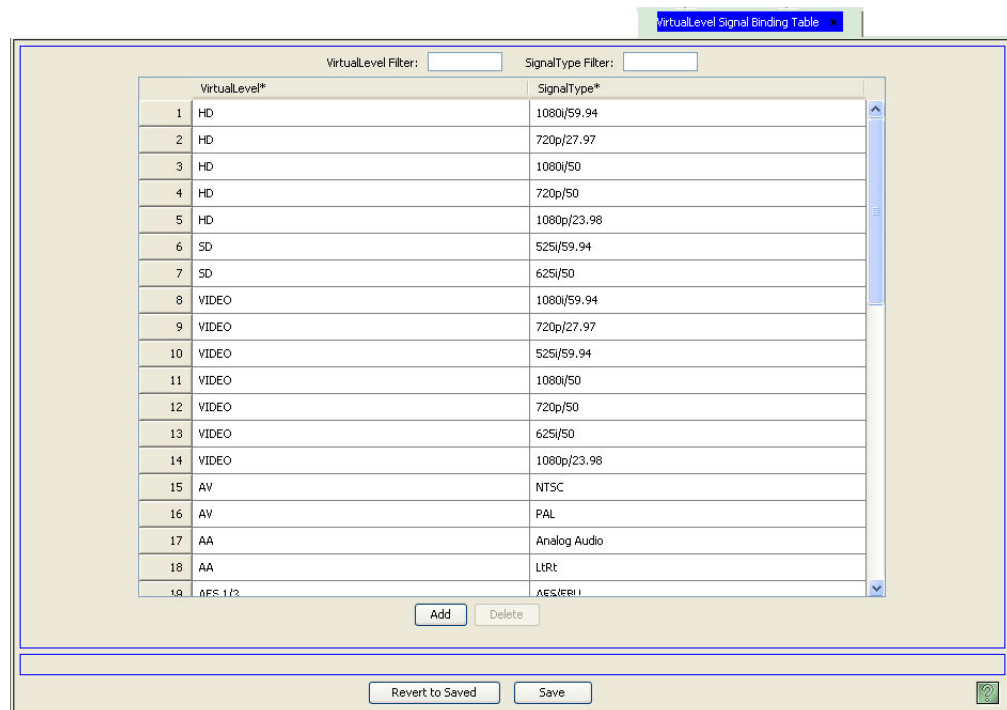
How to View a Bound Signal Type and the Virtual Level

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Signal Types'. The 'Signal Types' table appears, as shown in Figure 8-35.

To narrow the list of virtual levels that display, enter the first characters of a virtual level in the 'Virtual Level Filter' field. The list is automatically reduced to display only virtual levels matching that character string.

Or

Enter the first characters of a signal type in the 'Signal Type Filer' field. The list is automatically reduced to display only signal types matching that character string.

Figure 8-35. Virtual Level Signal Binding Table

3 The 'Virtual Level' column list the virtual level bound to the signal in the 'Signal Type' column. One virtual level may be bound to several signal types.

4 Click X on the window title tab to close the table.

Updating Signal Types and Signal Binding

Signal type and signal binding information can be updated at any time. It is recommended that signal information be updated off-line. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement configuration changes, the configuration must be

written to the system controller. For instructions, see <u>Implementing Configuration Changes</u> on page 17.

How to Update a Signal Type

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Signal Types'. The 'Signal Types' table appears, as shown in Figure 8-36.

To narrow the list of signals that display, enter the first characters of a signal type in the 'Name Filer' field. The list is automatically reduced to display only signal types matching that character string.

Figure 8-36. Signal Types Table

3 To change the signal type name, click on the name being updated in the 'Name' column to activate that cell and enter a new name.

4 To change the signal type description, click on the description being updated in the 'Description' column to activate that cell and enter a new description.

5 Click Save.

6 Click X on the window title tab to close the table.

How to Update a Signal Binding

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Signal Types'. The 'Signal Types' table appears, as shown in Figure 8-37.

To narrow the list of virtual levels that display, enter the first characters of a virtual level in the 'Virtual Level Filter' field. The list is automatically reduced to display only virtual levels matching that character string.

Or

Enter the first characters of a signal type in the 'Signal Type Filer' field. The list is automatically reduced to display only signal types matching that character string.
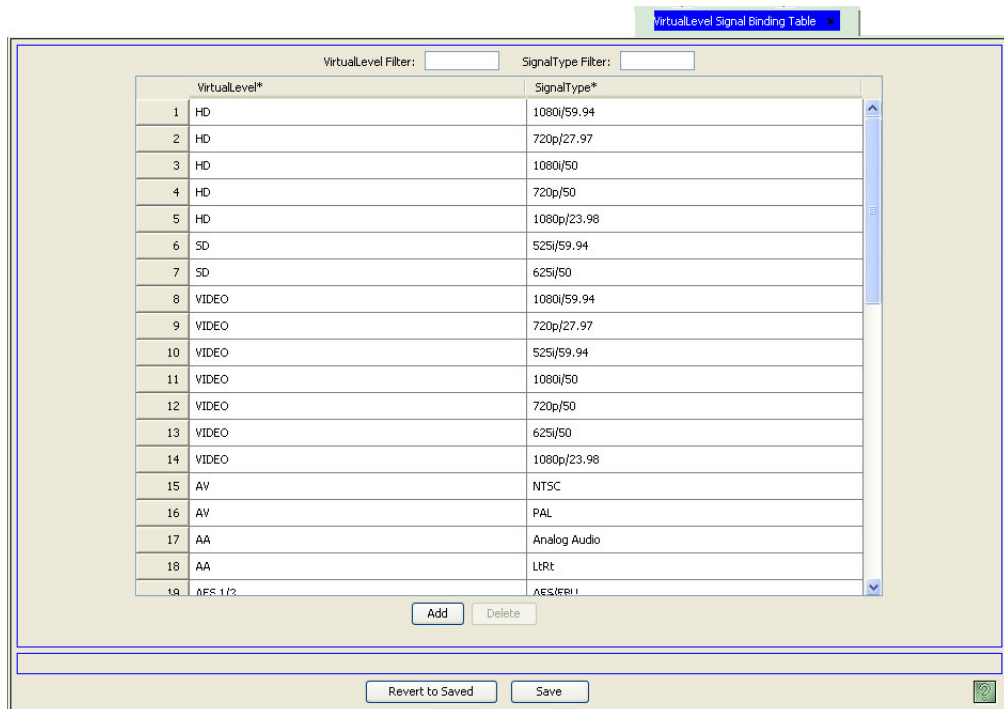
Figure 8-37. Virtual Level Signal Binding Table

3 To change the signal type, click in the cell listing the signal type and from the drop-down list, select a new signal type.

4 To change the virtual level to which the signal is bound, click in the cell listing the virtual level and from the drop-down list, select a new virtual level.

5 Click Save.

6 Click X on the window title tab to close the table.

Deleting Signal Types and Signal Bindings

Signal types and signal bindings can be deleted from the at NV9000-SE system at any time. It is recommended that any deletions be done offline. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement configuration changes, the configuration must be written to the system controller. For instructions, see Implementing Configuration Changes on page 17.

When a signal type is deleted, all virtual levels that are associated with that signal type, and the devices associated with that virtual level, may no longer be able to communicate.

Caution	It is strongly recommended that no signal types be deleted.

Signal types that are bound to a virtual level can be "unbound" at any time. Removing a binding allows the virtual level to be associated with other signal types.

How to Delete a Signal Type

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Signal Types'. The 'Signal Types' table appears, as shown in Figure 8-32.

To narrow the list of signals that display, enter the first characters of a signal type in the 'Name Filer' field. The list is automatically reduced to display only signal types matching that character string.

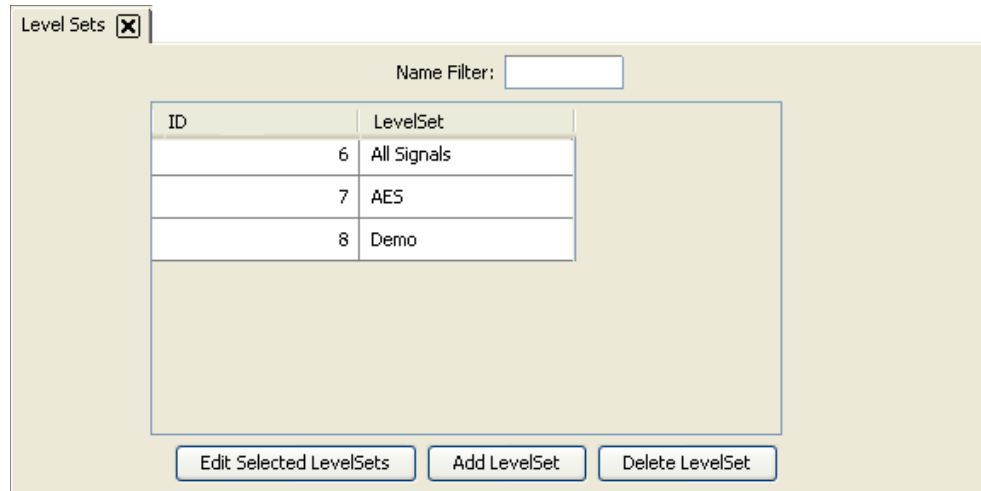3 Click anywhere in the row listing the signal type(s) being deleted and click Delete.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

How to Delete a Signal Type Binding to a Virtual Level

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Signal Types'. The 'Signal Types' table appears, as shown in Figure 8-33.

To narrow the list of virtual levels that display, enter the first characters of a virtual level in the 'Virtual Level Filter' field. The list is automatically reduced to display only virtual levels matching that character string.

Or

Enter the first characters of a signal type in the 'Signal Type Filer' field. The list is automatically reduced to display only signal types matching that character string.

3 Click anywhere in the row listing the virtual level/signal binding(s) being deleted and click Delete.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

8. Level Sets

Managing Signal Types and Signal Binding

9. Devices

A device is an external unit that provides inputs to a router or distributes outputs from a router, such as a VTR, monitor, and so on. Devices that deliver outputs to router inputs are called sources. Devices that receive inputs from router outputs are called destinations. Some devices can function as both sources and destinations.

Devices are organized by category and level set. No device can be added to the NV9000-SE system until level sets have been created to which the device can be assigned. (See Categories on page 189 and Creating a Level Set on page 114.)

In general, devices are added using the 'Add Device' wizard or 'Add Multiple Devices' wizard. Device information can then be managed through the 'Devices' page or through individual tables. Wizards, pages and tables share databases so that information entered in one interface appears in all related interfaces.

Device information may also be imported from a spreadsheet. For more information, see Importing and Exporting Data on page 53.

Physical device connections currently being used in the NV9000-SE system can be viewed at any time and a report exported. In addition, any "orphaned" connections can be deleted. For more information, see Device Connections Queries on page 183.

Devices are managed using the following interfaces:

- 'Add Device' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add a single device. Opens the 'Device Details' page through which devices are defined. See Adding a Device on page 159.

- 'Add Multiple Devices' wizard (accessed through the 'Tasks' pane)—A time saving interface that enables several devices belonging to the same category to be added in a single session. See Adding a Device on page 159.

- 'Devices' page (accessed through the 'Configuration' pane)—A list of existing devices. Opens the 'Device Details' page through which devices can be added, updated and associated with level sets. See Updating Devices on page 171.

- 'Devices' table – (accessed through the 'Views' pane)—A list of level sets and associated devices, one level set per row, with name and description. See Locating and Viewing Device Details on page 167.

- 'PhysConns' table (accessed through the 'Views' pane)—A list of all physical connections for all devices in the NV9000-SE system. Using this table, connection ports for devices can be added, edited, or removed. See Adding, Updating or Deleting Physical Connections on page 177.

- 'Query Phys Conns' table (accessed through the 'Tasks' pane)—A list of all devices, by level set, and the virtual levels assigned to inputs and outputs. Using this table, devices can be added. For more information, see Device Connections Queries on page 183.

About Devices

Devices are exterior units that either feed inputs into the routing system, or distribute outputs from the routing system. A variety of video, audio, and control devices exist that interact with routers: VTRs, video and audio monitors, transmitters, editing stations, DVDs, video servers, cameras, satellite, broadcast feeds, embedders, disembedders, and others. Each device creates a specific signal, such as AES3 or HD.

Devices that deliver outputs and connect to router inputs are called "sources". Devices that have inputs that connect to router outputs are called "destinations". Some devices can function as both sources and destinations.

A router connects a source device to one or more destination devices by changing the pathway through the crosspoint matrix upon receipt of a command from an operator using a control panel. With the exception of port routers, the router input connector numbers are separate from the output connector numbers.

In NV9000-SE, a device is assigned a set of router connections: one for each of its input levels (if any) and one for each of its output levels (if any). If a device has no signal for a particular level, this is indicated by assigning no connections for that level. However, if a device is defined with no connectors at all, NV9000-SE ignores it. Router connections are assigned in the 'Device' page and in the 'Add Multiple Devices' page. For more information, see Devices on page 157.

Level Sets and Devices

Similar to router crosspoints, devices are organized by *levels* in NV9000-SE. (See About Routers on page 62.) A level set is composed of *virtual* levels. A virtual level typically represents a signal type used in your facility, such as AES or HD. Unlike physical levels that represent physical divisions are specific to a router or device, virtual levels are signal type abstractions that can be applied to any router or device.

Each device is assigned to the virtual level matching the signal type the device manages. Depending on the device, several virtual levels may be assigned. For example, a camera might have a single SD output (one level), a microphone might have one mono output (one level), and a VTR might have SD, HD, AES 1/2, 3/4, 5/6, 7/8, and a control port output (7 levels).

Because a single device can manage several types of signals as output, each of which is a unique virtual level, NV9000-SE enables you to combine a number of virtual levels together to create a "level set". The level set should define the signals in your facility. When entering device settings, you specify which level(s) in the level set the device is applied to. Some systems may have more than one level set.

In general, devices in one level set may not connect to devices in different level set. This restriction can be overridden by creating inter-level set mapping. For more information, see Tielines on page 457.

When a device is defined on more than one level, it is possible to take a source from one device on one level and a source from a different device on another level. Taking multiple sources on different levels is called "level mapping."

Categories

Devices can be organized by general categories: monitor, VTR, DVD, etc. Operators can select a category to narrow the list of devices to choose from when selecting destinations or sources. Each category can be abbreviated, such as MON for monitor. This means that most control panel buttons can be assigned a category to help define the device being selected. To further define a device, a number can also be added. In NV9000-SE, up to 8 characters can be used to define a device. This can greatly help the control panel operator.

> **Example**: There two monitors, one for HD and one for SD. Each control panel button can be assigned a set of characters that define which device is which:
>
> **A:** Press MON, Press # [1 of 24]   vs.
>
> **B:** Press MON, press SD (or HD), press # [1 of 12]

Although with **B** there is one more button press, the operator does not have to remember which of the 24 monitors is HD and which is SD.

Another reason for using a combination of letters and numbers is that perhaps the devices are more easily identified by something other than a simple index number. Consider a facility that has 3 VTRs and 2 monitors in each of 20 rooms on 5 floors of 3 buildings. A well thought out combination of characters can identify the device groups by building number, floor number, and room number. Then, VTRs and monitors can have the same device numbers in each room.

Adding a Device

A device can be added and configured at any time after level sets have been configured (See Level Sets on page 111). Devices cannot be added until level sets have been defined; devices must be associated with level sets. For more information, see Creating a Level Set on page 114. It is recommended that devices be added off-line. That ensures that all settings are correct before you go "live." Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement configuration changes, the NV9000 control system must write the configuration and then be restarted. For more information, see the NV9000 User's Guide.

Devices can be added using a wizard, a page, or tables. Each performs specific tasks:

- 'Add Device' wizard (accessed through the 'Tasks' pane) — A step-by-step guide to add a single device. Opens the 'Device Details' page through which devices are defined.
- 'Add Multiple Devices' wizard (accessed through the 'Tasks' pane) — A step-by-step guide that enables several devices belonging to the same category to be added quickly in one session.
- 'Devices' page (accessed through the 'Configuration' pane) — A list of existing devices to which a new device can be added. Opens the 'Device Details' page through which devices are defined.
- 'Devices' table (accessed through the 'Views' pane) — A list of level sets and associated devices, one level set per row, with name, description and filepath. A device can be added using this table. However, no connection information can be added. I/O connector information is added using the 'Devices' page accessed through the 'Configuration' pane.

To quickly add several different devices, minimal information for each router can be entered in the 'Add Device' wizard and then the **Finish** button pressed. This adds the device name and clears all fields so that another device can be added immediately. However, no level sets, categories or other

details are added. Device details are added using the 'Devices' page accessed through the 'Config-uration' pane.

How to Add a Single Device

Use the 'Add Device' wizard or 'Devices' page.

This procedure is used to add a single device, not a class of devices. NV9000-SE provides an effi-cient way to add multiple devices and all their inputs and outputs. See How to Add a Class of Devices Using the 'Add Multiple Devices' Wizard on page 162.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Tasks' pane and then 'Add Device'.

Or

From the Navigation area, select the 'Configuration' pane and then 'Devices'. The 'Devices' page display. On the 'Devices' page, click Add Devices.

The 'Add Device' page appears:

Figure 9-1. Add Device Page

3 Enter information in the fields provided. Red titles denote required fields.

Field	Description
Mnemonic	Enter a name for the device. Be sure to use a name that is descriptive. The name is limited to 8 characters. Do not use punctuation marks or symbols.
Description	(Optional) Enter a description of the device.
Level Set	From the drop-down list, select a level set to associate with the device. The level set should accurately describe the signals managed by the device.
	If an appropriate level set does not exist, stop the procedure and create a new, appropriate level set as described in Creating a Level Set on page 114).
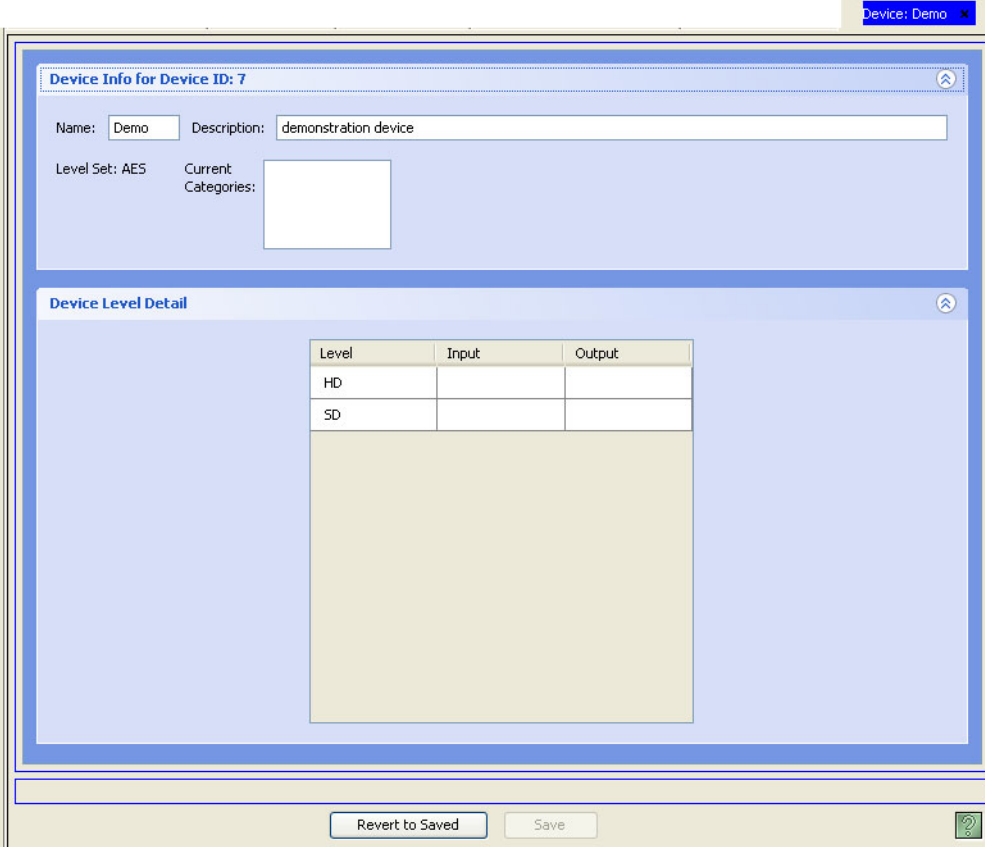
4 Click Next. The 'Device Details' page appears, as shown in Figure 9-2. The virtual levels that compose the assigned level set display in the 'Device Level Detail' section.

Or

Click Finish. The device name is saved, but level sets, categories and other details are not selected. To add details, locate the device and perform steps 5 through 7 as described in this procedure. (See How to Locate and View Devices Using the 'Devices' Page on page 168.)

Or

Click Cancel to clear the fields without saving any information.

Figure 9-2. Device Details Page

5 Enter information in the fields provided. (See Figure 9-2.) At least one input/output connector must be selected; connectors only need to be specified for the virtual levels the device is using.

There are two sections: 'Device Info' and 'Device Level Detail'. Enter information in the fields provided, as follows:

Section	Field	Description
Device Info	Name	The name assigned to the device. The information entered in the 'Add Device' page displays. You can change it here at this time.
	Description	A brief description of the device, such as VTR, etc. The information entered in the 'Add Device' page displays. You can change it here at this time.
	Level Sets	The level set assigned to the device. Level sets are composed of virtual levels that define signal types. The information entered in the 'Add Device' page displays. You can change it here at this time. For more information on level sets, see About Levels and Level Sets on page 112.
	Categories	The categories assigned to the device. When adding a device for the first time, this field will be blank. For instructions on how to assign categories, see Adding Categories on page 190.
Device Level Detail	Level	Displays each virtual level in the level set assigned to the device. For more information on virtual levels, see Physical Levels vs. Virtual Levels on page 112.
	Input	Enter the router's input or output number associated with the virtual level. The number is the number of the physical port where the cable connects from the device to the router.
	Output	
		Source devices are connected to router inputs; destination devices are connected to router outputs. Some devices have both inputs and outputs, in which case an entry appears in both columns.

6 Click Save to save your changes.

7 Click X on the window title tab to close the page.

How to Add a Class of Devices Using the 'Add Multiple Devices' Wizard

The process for adding a class of devices involves two general tasks:

- First, the name for the class of devices, the number of devices, and the level set to which the devices belong are specified.

- Second, the input and output connector numbers for the virtual levels of the devices are specified.

All devices must be of the same type. For example, 6 monitors can be added at one time, or 8 VTRs can be added at one time. However, both monitors and VTRs cannot be added at the same time.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Tasks' pane and then 'Add Multiple Devices'.

The 'Add Multiple Devices' page appears:

3 Enter information in the fields provided. Red titles denote required fields:

Field	Description
Prefix	Enter a name that will act as a prefix for all devices being added as part of this class. Do not use any punctuation marks or symbols. For example, if adding several monitors, the prefix could be MON.
Description	(Optional) Enter a description of the class of devices. For example, "Monitors in Facility A."
Suffix Start Value	Enter a number with which to start numbering the devices. The number appears after the prefix and in sequential order. For example, if the prefix is MON, and "1" is the starting suffix value, then the devices are labeled MON 1, MON 2, and so on.
Fill Character	From the drop-down list, choose a fill character. The fill character appears between the prefix and the suffix start value. For example, if a dash is selected, the devices would be labeled MON-1, MON-2, and so on. Selecting 'space' would display MON 1, MON 2, and so on.
Number of Devices	Enter the total number of devices being added.
Suffix Width	The suffix width is the number of characters the suffix value requires. For example, if the total number of devices being added equals 50, your suffix values will go from 1 to 50, requiring up to two spaces. If your number of devices is 102, then your suffix width would be three spaces.
Level Set	From the drop-down list, select a level to associate with the devices. The level set should accurately describe the signals managed by the device. If an appropriate level set does not exist, create a new, appropriate level set. (See Creating a Level Set on page 114.)

4 Click Next. The 'Multiple Devices Details' page appears, as shown in Figure 9-4.

Or

Click Finish to save the new device information to the system.

Or

Click Cancel to clear the fields without saving any information.

Figure 9-4. Multiple Devices Details Page

5 The 'Enter Level Assignment Info' section displays the virtual levels that make up the level set selected in the previous page (Step 3). Enter information as needed:

Column	Description
Max	The maximum number of inputs and outputs are listed. Enter new maximums if needed to match the type of device being added.
Create	Check the check box in each 'Input' and 'Output' column as they apply to each virtual level. (See Physical Levels vs. Virtual Levels on page 112.)
	For example, if adding monitors, all connections will be to outputs, with the exception of the control level. Therefore the output column for that level must be checked.

Column	Description
Start	Enter connector numbers in the 'Input' and 'Output' fields, as appropriate. The number is the number of the physical port where the cable connects from the device to the router.
	Source devices are connected to router inputs; destination devices are connected to router outputs. Some devices have both inputs and outputs, in which case an entry appears in both columns.
	For example, if adding monitors, the HD connectors start at 263, the SD connectors start at 1, and the four AES levels start at 25, 26, 27, and 28.
Increment	NV9000-SE uses the values in the 'Input' and 'Output' columns to generate a complete set of connector numbers for the device range specified. The increment values are added to the values entered in the 'Start' column.
	For example, if adding monitors as described in the 'Start' example, the increment for the HD and SD levels is 1. However, because the AES levels occur in groups of 4, the increment must be 4, for each AES level.
	The increment for the unused control level is immaterial.

Example: The system connects to monitor number 1 (MON 1) on output ports 263 and 1 (SDI), and output ports 25, 26, 27, and 28 (AES). Other monitors in the set connect similarly. Ports 263–268, and 1–6 are ports on an SDI router, and ports 25–48 are ports on an AES router. Seemingly identical port ranges are actually distinct if they apply to different routers. This example could have started the AES range at 1 and no conflict would have occurred because SD connector 1 is on a different router.

6 In the 'Select Categories for New Devices' section, select categories for the devices using the fields provided. (See Figure 9-4.) For more information on categories, see Using Categories and Suffixes on page 190.

Field	Description
Selected	Check the check box to apply the category listed in that row to the class of devices. More than one category can be applied.
Mnemonic	Lists the name of the category.
Description	Provides a brief description of the category.

7 Click Next. The 'Add Multiple Devices Verification' page appears, as shown in Figure 9-5.

Or

Click Finish to save the new device information to the system.

Or

Click Cancel to clear the fields without saving any information.
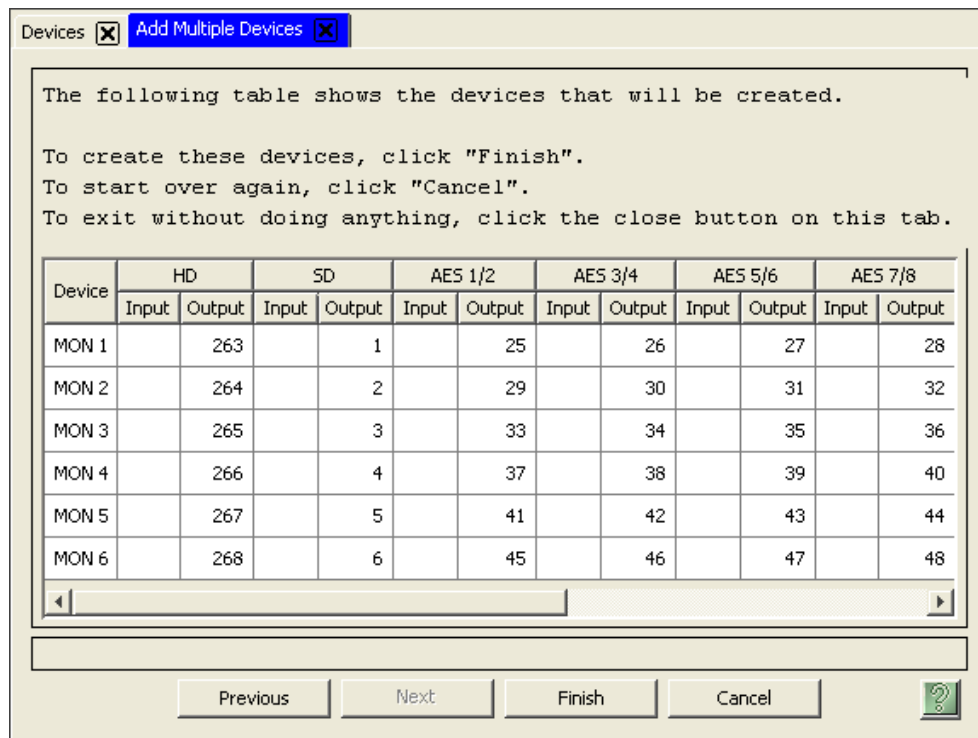
Figure 9-5. Add Multiple Devices Verification Page

8 Click Finish to save the new devices information to the system.

Or

Click Cancel to return to the 'Add Multiple Devices' page without saving any changes.

9 Click X on the window title tab to close the page.

How to Add a Single Device Using the 'Devices' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Devices'. The 'Devices' table appears:

Figure 9-6. Devices Table

3 Click Add Device. A blank row appears.

4 In the blank row, click on the row in the 'Mnemonic' column to activate it and enter a name for the new device.

5 In the same row, click on the row in the 'Level Set' column and select a system controller from the drop-down list.

6 Click Save. The device name is saved and the next sequential identification number assigned, but categories and other details are not defined. To add details, locate the device and perform steps 5 through 7 as described in How to Add a Single Device on page 160. (See How to Locate and View Devices Using the 'Devices' Page on page 168.)

7 Click X on the window title tab to close the table.

Locating and Viewing Device Details

Depending on the information you want to view, different pages or tables present different device information:

- 'Devices' page (accessed through the 'Configuration' pane)—A list of existing devices, one device per row, and associated level sets and categories. Locate devices by name or level set.

- 'Devices' table (accessed through the 'Views' pane)—A list of level sets and associated devices, one level set per row, with name, description and filepath. Locate devices by mnemonic or level set.

How to Locate and View Devices Using the 'Devices' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Devices'. The 'Devices' page displays, as shown in Figure 9-7.

All devices currently defined in the system are listed. To narrow the list, enter the first characters of the device's name in the 'Device Filter' field. The list is automatically reduced to display only devices matching that character string.

Or

From the 'Level Set Filter' drop-down list, select the level set associated with the device. The list is automatically reduced to display only devices assigned to the same level set as the one selected.
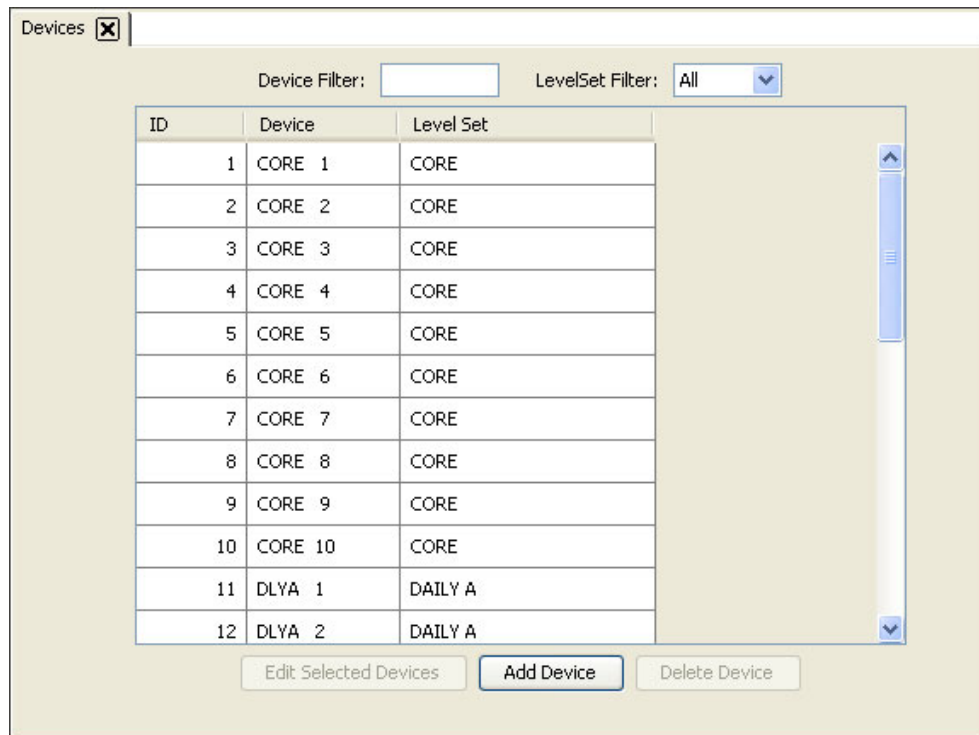
Figure 9-7. Devices Page

The 'Device' column lists the name assigned the device in NV9000-SE. The 'Level Set' column lists the level set associated with the device.

3 Double click on a single row to open details for that device.

Or

Click anywhere in the row listing the device you want to view and click Edit Selected Devices. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple devices. Each device opens in a separate tabbed window. Click a tab to bring that page to the front.

The 'Device Details' page appears:
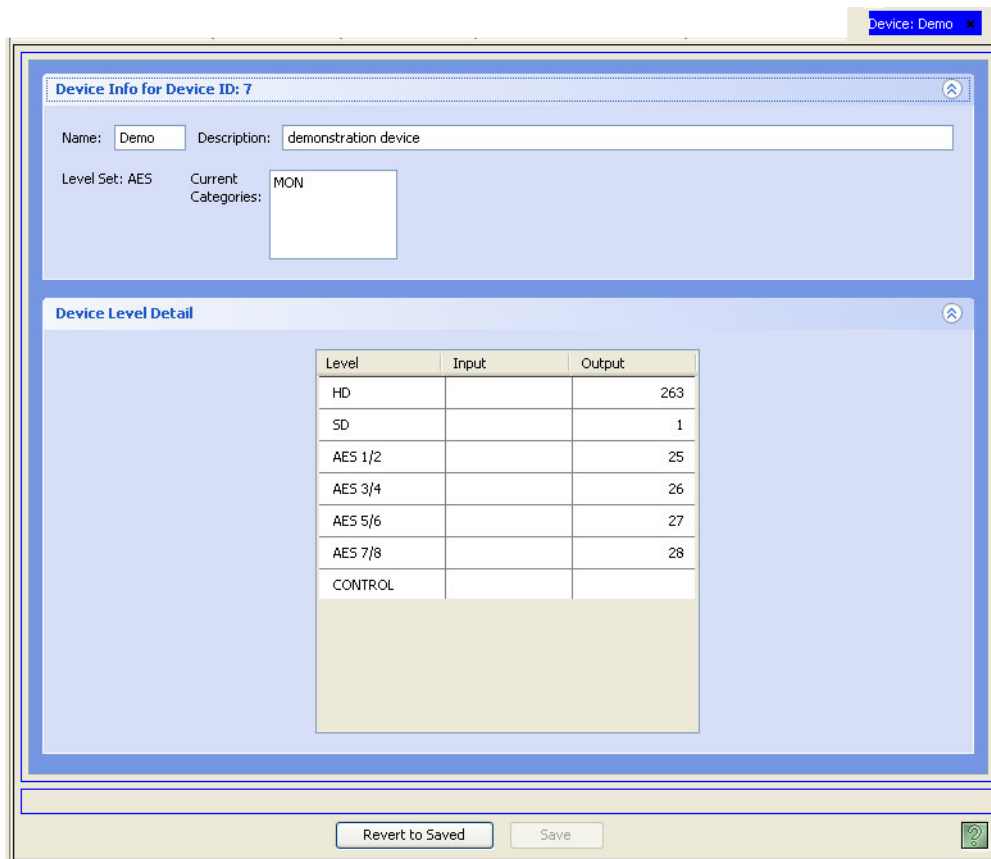
Figure 9-8. Device Details Page

There are two sections: 'Device Info' and 'Device Level Detail'. Each section displays specific information, as follows:

Device Info	Name	The name assigned to the device.
	Description	A brief description of the device, such as VTR, etc.
	Level Sets	The level sets assigned to the device. Level sets are composed of virtual levels that define signal types. (See About Levels and Level Sets on page 112.)
	Categories	The categories assigned to the device. (See Using Categories and Suffixes on page 190.)
Device Level Detail	Level	The name of each virtual level in the level set assigned to the device. (See Physical Levels vs. Virtual Levels on page 112.)
	Input	The router's input or output number associated with the virtual level. The number is the number of the physical port where the cable connects from the device to the router.
	Output	
		Source devices are connected to router inputs; destination devices are connected to router outputs. Some devices have both inputs and outputs, in which case an entry appears in both columns.

4 Click X on the window title tab to close the page.

How to Locate and View Devices Using the 'Devices' Table

1 Launch NV9000-SE. (See [Launching and Exiting the Application](#) on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Devices'. The 'Devices' table appears, as shown in Figure 9-9.

To narrow the list of devices that display, enter the first characters of a device name in the 'Mnemonic Filter' field. The list is automatically reduced to display only devices matching that character string.

And/Or

Enter the first characters of a level set name in the 'Level Set Filter' field. The list is automatically reduced to display only level sets matching that character string.

Figure 9-9. Devices Table

Five columns display device information. Each row represents a single level set and the device assigned. If a level set is assigned to more than one device, a row displays for each separate device.

Column	Description
ID	Lists the ID number associated with the device.
Mnemonic	Lists the name associated with the device.
Description	A brief description of the device.
Level Set	The level set assigned to the device. (See [About Levels and Level Sets](#) on page 112.)

3 Click X on the window title tab to close the table.

Updating Devices

Device information can be updated at any time. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

Device information can be updated using either pages or tables. The pages accessed through the 'Configuration' pane and the tables accessed through the 'Views' pane share databases. Changes made in one interface appear in other interfaces that share that database. For example, if the name of a router is updated in the 'Devices' page, the name is automatically updated in the 'Devices' table.

Although both a page and table may update the same information, each interface enables you to perform specific tasks more efficiently. Pages enable you to update several pieces of information for a single device through a single interface. Tables are useful for updating a limited, specific amount of information for several devices at once. In addition, not all tables update the same information; different tables manage different, specific device information.

Different NV9000-SE interfaces perform specific tasks, as follow:

Task	Interface	Pane
Changing a Device Name or Description on page 171	Devices Page, Devices Table	Configuration, Views
Updating the Device's Assigned Level Set on page 174	Devices Table	Views
Adding or Removing an Associated Category on page 175	Devices Table	Views
Updating Input/Output Connection Numbers on page 176	Devices Page	Configuration
Adding, Updating or Deleting Physical Connections on page 177	PhysConns Table	Views

Changing a Device Name or Description

It is important that device names are unique and descriptive in order to avoid confusion. Once changed, the new device name populates all instances of that name throughout the system.

Device names and descriptions can be changed using the 'Devices' page accessed through the 'Configuration' pane or the 'Devices' table accessed through the 'Views' pane.

How to Update a Device Name or Description Using the 'Devices' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 Locate and select the device being updated. (See How to Locate and View Devices Using the 'Devices' Page on page 168.)

3 From the Navigation area, select the 'Configuration' pane and then 'Devices'. The 'Devices' page displays, as shown in Figure 9-10.

To narrow the list of devices that display, enter the first characters of a device name in the 'Device Filter' field. The list is automatically reduced to display only devices matching that character string.

Or

Select a level set from the 'Level Set Filter' drop-down list. The list is automatically reduced to display only devices matching that level set.

Figure 9-10. Devices Page

4 Double-click on the row listing the device being updated.

Or

Click anywhere in row listing the device being updated and click Edit Selected Devices. The 'Device Details' page appears:

Figure 9-11. Device Details Page

5 Update the 'Name' in the field provided.

6 Update the 'Description' in the field provided.

7 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

8 Click X on the window title tab to close the page.

How to Update a Device Name or Description Using the 'Devices' Table

1 Launch NV9000-SE. (See

2 From the Navigation area, select the 'Views' pane and then 'Devices'. The 'Devices' table appears, as shown in Figure 9-12.

To narrow the list of devices that display, enter the first characters of a device name in the 'Mnemonic Filter' field. The list is automatically reduced to display only devices matching that character string.

Or

Enter the first characters of a level set name in the 'Level Set Filter' field. The list is automatically reduced to display only level sets matching that character string.

Figure 9-12. Devices Table

3 Locate the row listing the device being updated.

4 Click on the 'Mnemonic' field to activate it and enter a new name.

5 Click on the 'Description' field to activate it and enter a new description.

6 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the table.

Updating the Device's Assigned Level Set

A level set is composed of *virtual* levels. A virtual level typically represents a signal type used in your system, such as AES or HD. Unlike physical levels that represent physical divisions and are specific to a router or device, virtual levels are signal type abstractions that can be applied to all routers and devices. Virtual levels are grouped together as level sets. Every device must have a level set assigned and that level set must include virtual levels that encompass the signal types managed by the device.

The level set(s) assigned to a device can be changed using the 'Devices' table accessed through the 'Views' pane. You can only select from a list of existing level sets. For instructions on adding or updating level sets, see Level Sets on page 111.

To view a list of existing level sets, from the 'Views' pane, select 'Level Sets'.

How to Update Device Level Sets

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Devices'. The 'Devices' table displays, as shown in Figure 9-13.

To narrow the list of devices that display, enter the first characters of a device name in the 'Mnemonic Filter' field. The list is automatically reduced to display only devices matching that character string.

And/Or

Enter the first characters of a level set name in the 'Level Set Filter' field. The list is automatically reduced to display only level sets matching that character string.

Figure 9-13. Devices Table

3 On the row listing the device being updated, click in the 'Level Set' column to activate it and select a new level set from the drop-down list.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Adding or Removing an Associated Category

A category is a class of devices, such as Monitor, VTR, and so on. Devices are associated with categories to make management of the devices easier. For example, if your facility has 58 monitors, it is easier to add all monitors to the category MON and then assign a sequential number to each (MON 1, MON 2, and so on up to MON 58), rather than coming up with a unique name for each of the 58 monitors.

The categories assigned to a device can be changed using the 'Devices' table accessed through the 'Views' pane. You can only select from a list of existing categories.

To view a list of current coteries, from the 'Views' pane, select 'Categories'.

For instructions on adding a device to a category, see Adding Devices to Existing Categories on page 216.

For instructions on removing a device from a category, see Removing Devices from Categories on page 221.

Updating Input/Output Connection Numbers

I/O connectors on devices are assigned numbers. Each connector is either a source (providing an input) or a destination (receiving an output). At any time, the numbers assigned each connector can be updated to meet your facility switching needs.

The numbers assigned to connectors on a device can be changed using the 'Devices' page accessed through the 'Configuration' pane.

How to Update I/O Connection Numbers

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Devices'. The 'Devices' page displays, as shown in Figure 9-14.

To narrow the list of devices that display, enter the first characters of a device name in the 'Device Filter' field. The list is automatically reduced to display only devices matching that character string.

Or

Select a level set from the 'Level Set Filter' drop-down list. The list is automatically reduced to display only devices matching that level set.
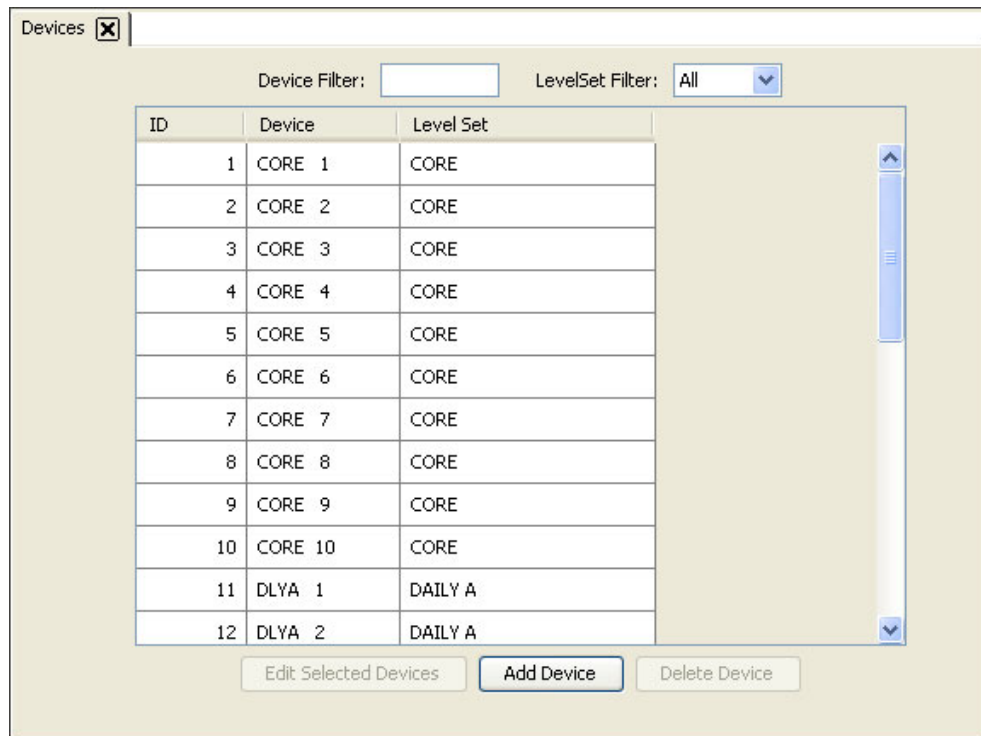
Figure 9-14. Devices Page

3 Double-click on the row listing the device being updated.

Or

Click anywhere in the row listing the device being updated and click **Edit Selected Devices**. The 'Device Details' page appears:
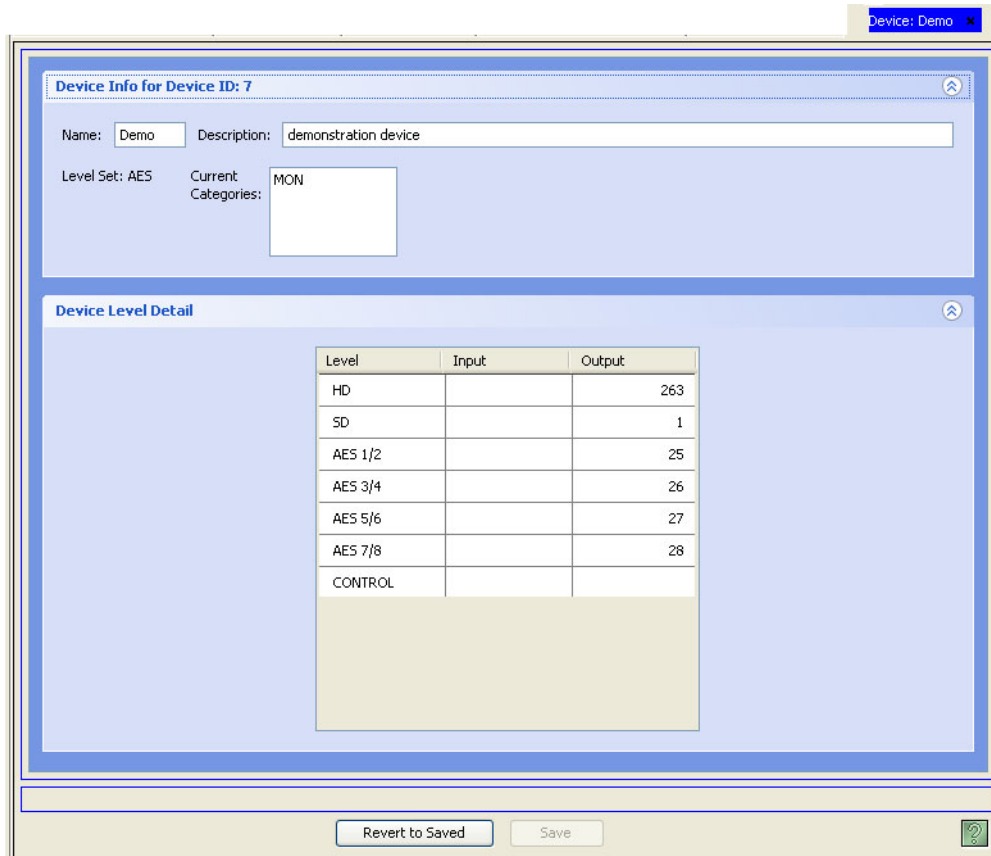
Figure 9-15. Device Details Page

4 In the 'Devices Level Detail' section, click in the 'Input' and/or 'Output' fields to activate it and enter updated input connector and/or output connector numbers.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

Adding, Updating or Deleting Physical Connections

All physical connections of all devices in the NV9000-SE system are conveniently listed in one location: the 'PhysConns' table accessed through the 'Views' pane. Using this table, connection ports for devices can be added, edited, or removed. However this table cannot be used to added devices themselves or virtual levels. For information on adding devices, see Adding a Device on page 159.

How to Add a Physical Connection

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'PhysConns'. The 'PhysConns' table appears:

Figure 9-16. PhysConns Table

3 Click Add. A blank row is added to the list of physical connections.

4 In the blank row, enter information in each column. Asterisks denote required fields:

Column	Description
Description	Enter an optional description of the connectors.
Device	From the drop-down list, select the type of device for which the physical connections are being added. For information on adding a device not currently listed, see Adding a Device on page 159.
Virtual Level	From the drop-down list, select the virtual level being associated with the physical connections. The virtual level corresponds to the type of signal the connection carries. For information on adding a virtual level not currently listed, see Creating a Level Set on page 114.
Port Number	Enter a unique port number for the connection. The number must be number (no letters or symbols) and limited to 8 characters.
Port Type	From the drop-down list, select if the port is an 'Output Port', 'Input Port' or 'Bidirectional Port' (i.e., both input and output).

5 Click Save. An 'ID' number automatically appears for the newly added physical connection.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

How to Update a Physical Connection

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'PhysConns'. The 'PhysConns'

To narrow the list of connections that display, enter the first characters of a device name in the 'Device Filter' field. The list is automatically reduced to display only devices matching that character string.

Or

Enter the first characters of a virtual level name in the 'Virtual Level Filter' field. The list is automatically reduced to display only virtual levels matching that character string.
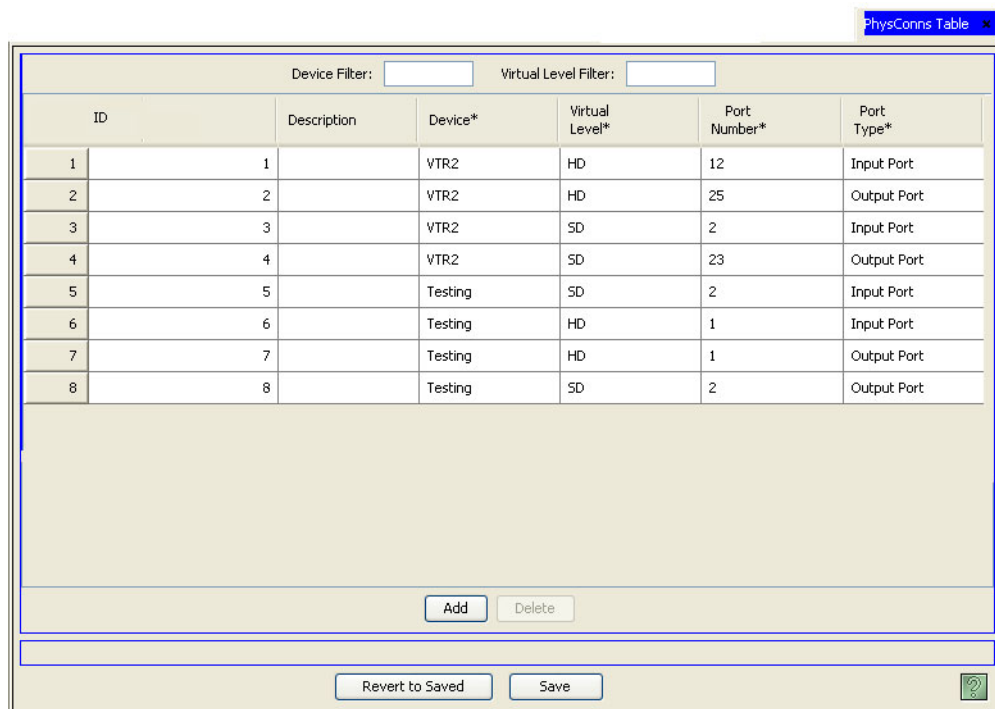
Figure 9-17. PhysConns Table

3 In the row listing the physical connection being updated, click in a column to activate it and update information as follows:

Column	Description
Description	Update the description of the connectors.
Device	From the drop-down list, select a new type of device for the physical connection.
Virtual Level	From the drop-down list, select a new virtual level to be associated with the physical connection.
Port Number	Update the unique port number for the connection. The number must be number (no letters or symbols) and limited to 8 characters.
Port Type	From the drop-down list, update if the port is an 'Output Port', 'Input Port' or 'Bidirectional Port'.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

How to Delete a Physical Connection
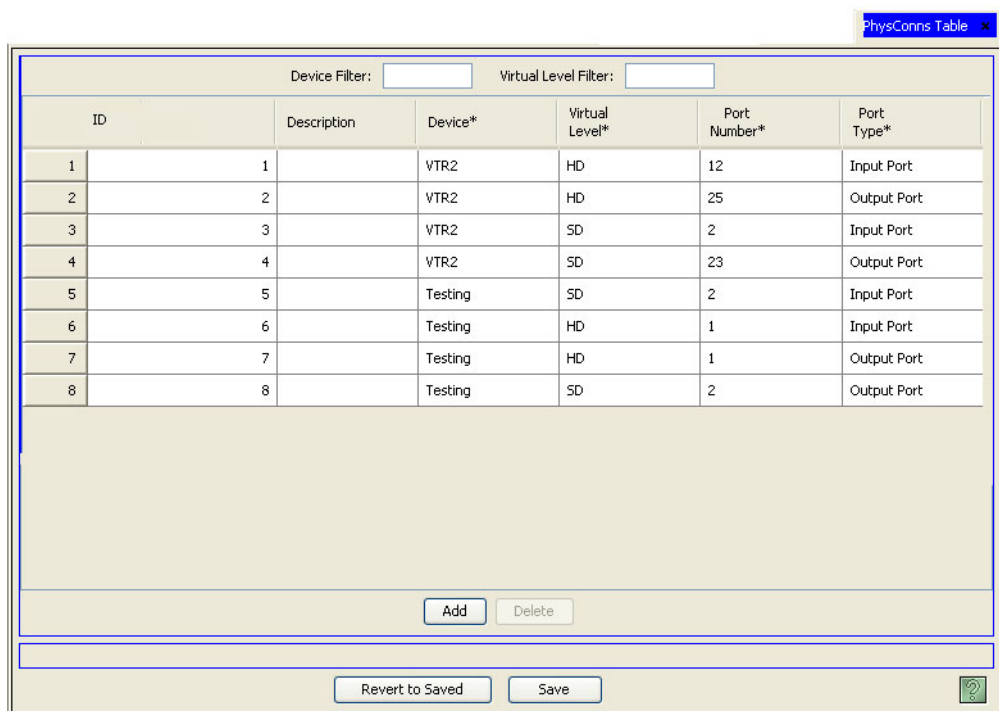
1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'PhysConns'. The 'PhysConns' table appears, as shown in Figure 9-18.

To narrow the list of connections that display, enter the first characters of a device name in the 'Device Filter' field. The list is automatically reduced to display only devices matching that character string.

Or

Enter the first characters of a virtual level name in the 'Virtual Level Filter' field. The list is automatically reduced to display only virtual levels matching that character string.

					PhysConns Table x

Device Filter: _____   Virtual Level Filter: _____

ID	Description	Device*	Virtual Level*	Port Number*	Port Type*
1	1	VTR2	HD	12	Input Port
2	2	VTR2	HD	25	Output Port
3	3	VTR2	SD	2	Input Port
4	4	VTR2	SD	23	Output Port
5	5	Testing	SD	2	Input Port
6	6	Testing	HD	1	Input Port
7	7	Testing	HD	1	Output Port
8	8	Testing	SD	2	Output Port

[Add]   [Delete]

[Revert to Saved]   [Save]

Figure 9-18. PysConns Table

3 Click anywhere in the row listing the physical connection being deleted.

4 Click Delete. The row is removed from the table.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Deleting Devices

Devices can be deleted at any time. Deleting a device removes it completely from the system. Devices can be deleted using the 'Devices' page accessed through the 'Configuration' pane or using the 'Devices' table accessed through the 'Views' pane.

NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependences when the deletion is attempted, NV9000-SE informs you of the dependencies. Delete the dependencies first, then delete the originally selected record.

How to Delete a Device Using the 'Devices' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Devices'. The 'Devices' page displays, as shown in Figure 9-19.

All devices currently defined in the system are listed. To narrow the list, enter the first characters of the device's name in the 'Device Filter' field. The list is automatically reduced to display only devices matching that character string.

Or

From the 'Level Set Filter' drop-down list, select the level set associated with the device. The list is automatically reduced to display only devices assigned to the same level set as the one selected.
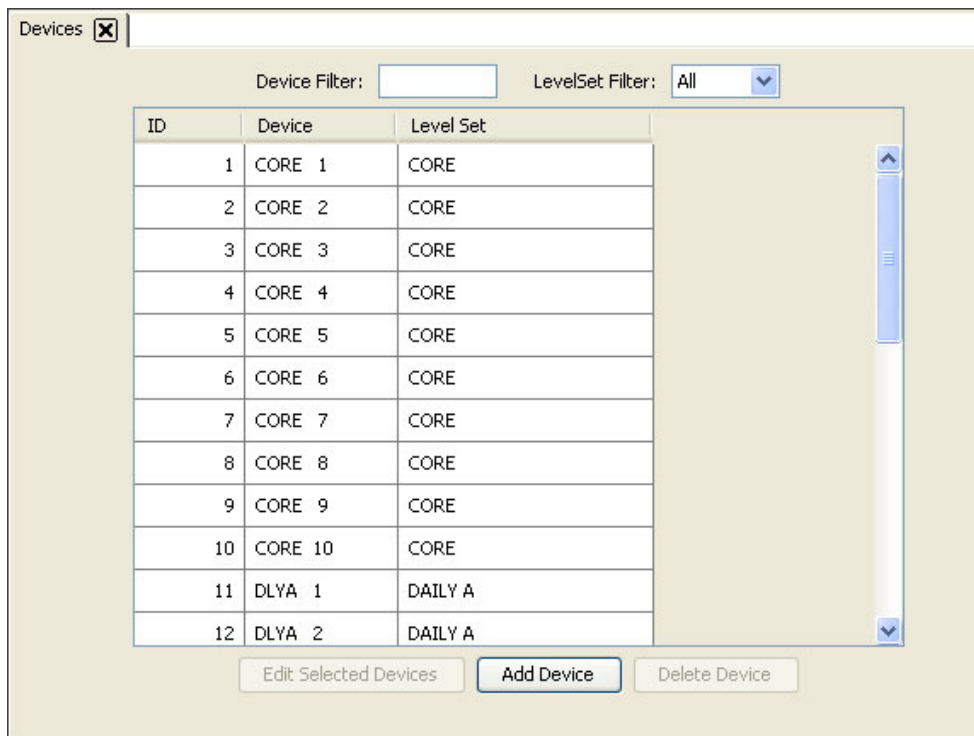
Figure 9-19. Devices Page

3 Click anywhere in the row listing the device(s) being deleted and click Delete Device.

4 On the confirmation dialog box, click Delete.

5 Click X on the window title tab to close the page.
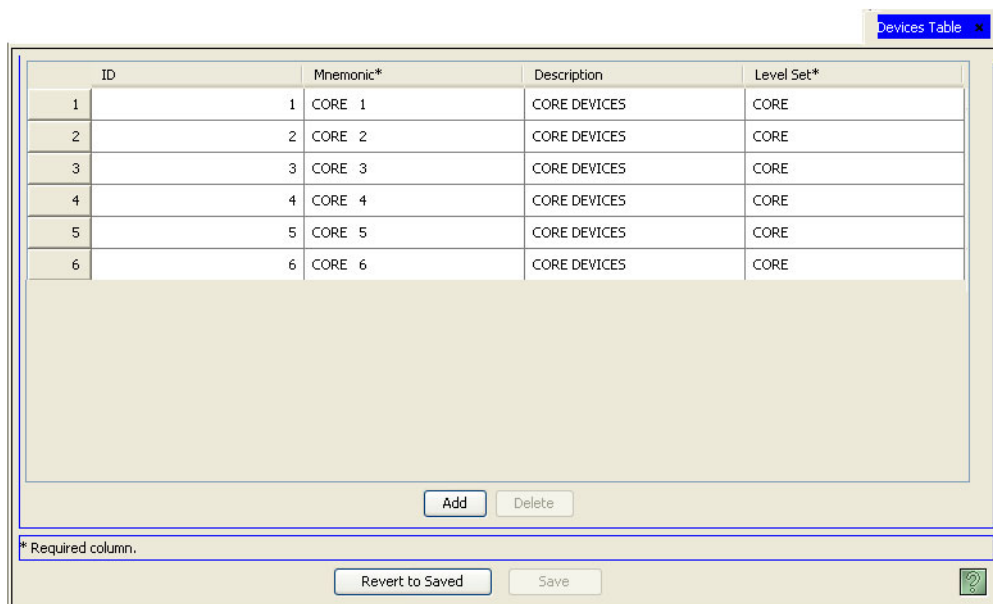
How to Delete a Device Using the 'Devices' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Devices'. The 'Devices' table appears, as shown in Figure 9-20.
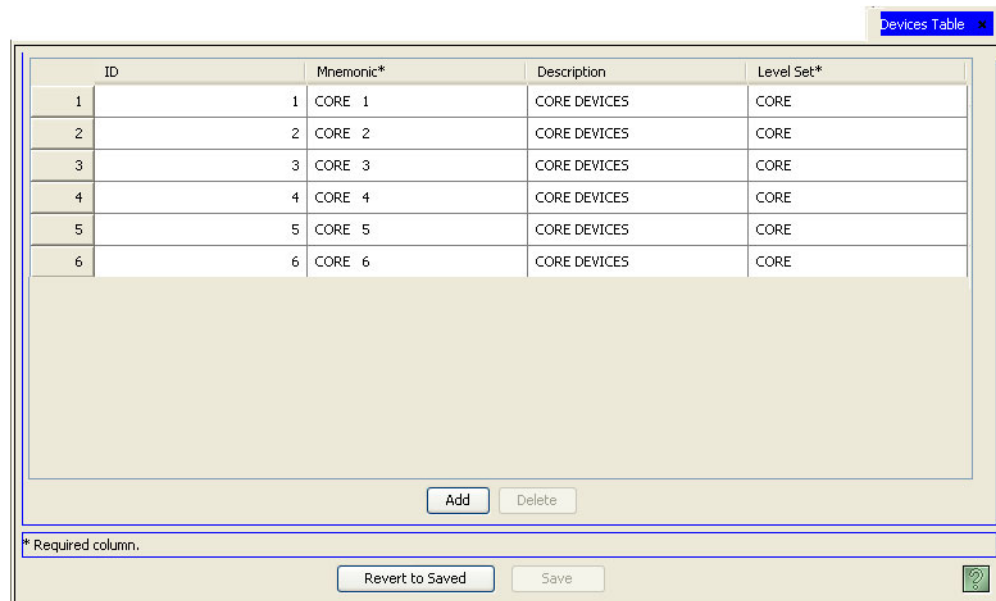
To narrow the list of devices that display, enter the first characters of a device name in the 'Mnemonic Filter' field. The list is automatically reduced to display only devices matching that character string.

Or

Enter the first characters of a level set name in the 'Level Set Filter' field. The list is automatically reduced to display only level sets matching that character string.

	ID	Mnemonic*	Description	Level Set*
1	1	CORE 1	CORE DEVICES	CORE
2	2	CORE 2	CORE DEVICES	CORE
3	3	CORE 3	CORE DEVICES	CORE
4	4	CORE 4	CORE DEVICES	CORE
5	5	CORE 5	CORE DEVICES	CORE
6	6	CORE 6	CORE DEVICES	CORE

Add   Delete

* Required column.

Revert to Saved   Save

Figure 9-20. Devices Table

3 From the list of devices that display, click anywhere in the row listing the device being deleted and click Delete. The row is removed from the list.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Device Connections Queries

The 'Queries & Advanced Operations' folder, accessed through the 'Views' pane, performs queries on device connections in the NV9000-SE system. Using the tables provided you can view a list of device connections or a list of orphaned connections (those without an associated device). Devices are grouped by level set, and connections (ports) are listed by the virtual level associated with a port. Using the 'Device Phys Conns' table, files listing each device input and output connections can be exported for reference outside the NV9000-SE system.

Device Physical Connections Query

The 'Device Physical Connections' table enables you to add devices, query device connections and export the query for viewing. Physical connections queries list all devices included in the NV9000-SE system.

How to Query Device Physical Connections

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane, then 'Queries & Advanced Operations' and then 'Device Physical Connections'. The 'Device Physical Connections' table displays, as shown in Device Physical Connections Table with Results on page 184.

3 Select a level set from the 'Select Level Set for Query' drop-down list. All devices within that level set display, as shown in Figure 9-21. For more information on virtual levels, see About Levels and Level Sets on page 112.

Figure 9-21. Device Physical Connections Table with Results

Each device is listed by name in the 'Device' column, one device per row. 'Inputs' and 'Outputs' list the virtual levels and the corresponding port numbers. If there is an entry in a column, the device has a port for that virtual level. For more information on virtual levels, see Physical Levels vs. Virtual Levels on page 112.

4 (Optional) To change a name or port number, in the row listing the device, click on the name or port number to activate the field and enter a new name or port number. Click **Save** to save your changes.

5 Click X on the window title tab to close the table.

Adding a Device to Queries

Using the 'Device Physical Connections' table, a device can be added to the NV9000-SE system. Added devices appear in the 'Devices' page accessed through the 'Configuration' pane and the 'Devices' table accessed through the 'Views' pane.

Once added, a device can be updated at any time. For more information, see Updating Devices on page 171.

How to Add a Device Using the 'Query Phys Conns' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane, then 'Queries & Advanced Operations' and then 'Device Physical Connections'. The 'Device Physical Connections' table displays, as shown in Device Phys Conns Table with Results on page 185.

3 Select a level set from the 'Select Level Set for Query' drop-down list. All devices within that level set display, as shown in Figure 9-22. For more information on virtual levels, see About Levels and Level Sets on page 112.

Figure 9-22. Device Phys Conns Table with Results

4 In the blank row, in the 'Device' column enter the name of the device.

5 In the same row, enter the device's input or output number associated with a virtual level. Each virtual level displays as a single column in the table, divided into 'Inputs' and 'Outputs'. The number is the number of the physical port where the cable connects from the device to the router. For more information on virtual levels, see Physical Levels vs. Virtual Levels on page 112.

6 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the table.

Exporting a Device Query

Queries run using the 'Device Physical Connections' table can be exported for viewing outside the NV9000-SE system. Each device is exported as a separate file. For example, if five devices are listed in the table, five files will be created and exported.

How to Export a Device Query

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane, then 'Queries & Advanced Operations' and then 'Device Physical Connections'. The 'Device Physical Connections' table displays, as shown in Device Phys Conns Table with Results on page 186.

3 Select a level set from the 'Select Level Set for Query' drop-down list. All devices within that level set display, as shown in Figure 9-23. For more information on virtual levels, see About Levels and Level Sets on page 112.

Figure 9-23. Device Phys Conns Table with Results

4 Click Export. The 'Save' dialog box appears.

5 On the dialog box, browse to the location where you want the exported files saved.

6 Enter a 'File Name' for the exported files in the field provided and click Save. The files are created at saved to the location selected. All files are titled with the name entered in Step 5, with the addition of a sequencing number.

7 Click X on the window title tab to close the table.

Orphaned Physical Connections Query

The 'Orphaned Physical Connections' table enables you to view a list of virtual levels that are no longer associated with any physical connections on any device in the NVISION system.

How to Query Orphaned Physical Connections

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane, then 'Queries & Advanced Operations' and then 'Orphaned Physical Connections'. The 'Orphaned Physical Connections' table displays a list of orphaned connections, if any.

   To narrow the list, enter the first characters of a device name in the 'Device Filter' field.

   And/Or

   Enter the first characters of a level set name in the 'Level Set Filter' field.

   And/Or

   Enter the first characters of a virtual level name in the 'Virtual Level Filter' field.

   The list is automatically reduced to display only corresponding information matching the character string entered.

3 Each device is listed by name in the 'Device' column, one device per row. 'Level Set', 'Virtual Level', 'Port' and 'Direction' columns lists the corresponding information for that device. If there is an entry in a column, the device has a port for that virtual level or level set. For more information on virtual levels, see <u>Physical Levels vs. Virtual Levels</u> on page 112.

4 Click X on the window title tab to close the table.

Deleting an Orphaned Connection

Using the 'Orphaned Physical Connections' table, a virtual level that is no longer associated with any device's level set can be deleted.

How to Delete and Orphaned Connection

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane, then 'Queries & Advanced Operations' and then 'Orphaned Physical Connections'. The 'Orphaned Physical Connections' table displays a list of orphaned connections, if any.

   To narrow the list, enter the first characters of a device name in the 'Device Filter' field.

   And/Or

   Enter the first characters of a level set name in the 'Level Set Filter' field.

   And/Or

   Enter the first characters of a virtual level name in the 'Virtual Level Filter' field.

   The list is automatically reduced to display only corresponding information matching the character string entered.

3 Click anywhere in the row listing the connection being deleted.

4 Click Delete. The row is removed from the table.

5 Click Save.

   Or to revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

9. Devices

Device Connections Queries

10. Categories

Most systems incorporate a large number of devices. Creating unique names for each device can be cumbersome. Because most devices fall within a category (or class of items), NV9000-SE simplifies device naming by enabling you to organize devices by *category*. To further define devices within a category, an identifying number and/or suffix can also be assigned.

Categories are easily added using the 'Add Category' wizard. Once added, categories can be updated using the 'Categories' page or through individual tables. All wizards, pages and tables share databases so that information entered in one interface is instantly updated in all corresponding fields in all related interfaces. This provides a quick and flexible means of managing data in the NV9000-SE by enabling you to use the interface most suited to the task at hand.

Category information may also be imported from a spreadsheet. For more information, see Importing and Exporting Data on page 53.

Categories are managed using the following interfaces:

- 'Add Category' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add a single category. Opens the 'Category Details' page through which categories are created. See Adding Categories on page 190.

- 'Categories' page (accessed through the 'Configuration' pane)—A list of existing categories. Opens the 'Category Details' page through which categories can be added or updated. See Updating Categories on page 213.

- Two category tables (accessed through the 'Views' pane):

  - 'Categories' table—A list of existing categories, one per row, with name and description. A category name and description can be added using this table, but the devices included in the category cannot be defined. Category configurations are entered using the 'Category Details' page accessed through 'Categories' page. See Updating Category Name and Description on page 213.

  - 'Category Details' table—A list of existing devices and the associated category, one device per row, with ID and suffixes. Using this table, existing categories can be added to devices, and individually or globally removed. See Adding Categories on page 190 and Removing Devices from Categories on page 221.

- 'Suffixes' table (accessed through the 'Views' pane)—A list of existing suffixes, one per row with ID number. Using this table suffixes can be added, edited or deleted. See Creating and Adding Suffixes on page 223 and Removing Suffixes on page 226.

Using Categories and Suffixes

A category is a broad classification of devices, such as monitors, VTRs, and so on. In NV9000-SE, when a category is defined additional suffixes can also be added for that category to further define device names. NV9000-SE allows a total of up to 8 suffixes per device and up to 4 characters per suffix. The characters are limited because the typical control panel can only display up to 4 characters at any one time.

> **Example**: There are 12 monitors in a facility, 6 for HD signals and 6 for SD signals. The monitors can be named by category—**MON** for monitor. Within the category, each monitor is assigned a unique number, 1 through 12. In addition to the category name and number, a suffix is added to further define the category—**HD** or **SD**—indicating the signal type for each monitor, enabling an operator to select the correct monitor more easily.
>
> Compare:
>
> The operator can press **MON**, and then press the monitor number, 1 through 12.
>
> *or*
>
> The operator can press **MON**, and then press **SD** (or HD), and then press, 1 through 12.

Notice that in the first comparison the operator presses only two buttons, but does not readily know which of the 12 monitors is for HD or SD. Although there is one more button press, by adding the HD or SD suffix, the operator does not have to remember which of the 12 monitors is HD and which is SD.

Another use for suffixes is that devices may be more easily identified by something other than a number. For example, a facility has 3 VTRs and 2 monitors in each of 20 rooms on 5 floors of 3 buildings. Suffixes can identify the device groups by building number, floor number, and room number. (Then, VTRs and monitors can have the same device numbers in each room.)

Adding Categories

Adding as many devices as possible before creating categories ensures that the categories created accurately define the devices in your facility. When adding a category you define the category's basic characteristics, such as a name (mnemonic) and description and to which devices the category is being applied. When a device is added to a category, the category is listed in the 'Category' field on the 'Device' page. A device can belong to multiple categories.

NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement configuration changes, the NV9000 control system must write the configuration and then be restarted. For more information, see the NV9000 User's Guide.

Categories can be added using a wizard, page, or table. Each performs specific tasks:

- 'Add Category' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add a single category. Opens the 'Category Details' page through which categories are created.

- 'Categories' page (accessed through the 'Configuration' pane)—A list of existing categories to which a new category can be added. Opens the 'Category Details' page through which categories are defined.

- 'Categories' table (accessed through the 'Views' pane)—A list of existing categories, one per row, with name and description. A category file can be added using this table, with name and description, but the category cannot be defined. That must be done through the 'Category Details' page accessed through 'Categories' page.

Categories are added in two steps. First the category is created; second the suffixes are defined for the category. (See Adding Suffixes to Categories on page 195.)

How to Add a Category

Use the 'Add Category' wizard or 'Categories' page.

Note	Devices must first be added before a category can be created. See Adding a Device on page 159.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Tasks' pane and then 'Add Category'.

Or

From the Navigation area, select the 'Configuration' pane and then 'Categories'. The 'Categories' page displays. On the 'Categories' page, click Add Category.

The 'Add Category' page appears:

Figure 10-1. Add Category Page

3 Enter a 'Mnemonic' for the category in the field provided. A mnemonic is a short, descriptive word or words for the category, such as Monitor, Studio A, and so on.

4 (Optional) Enter a brief 'Description' of the category in the field provided. This description only displays in NV9000-SE Utilities.

5 Click Next. The 'Select Device' page appears:

Figure 10-2. Select Device Page

6 Click anywhere in the row listing the device being associated with the category and click Next. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple devices. The category has now been defined and created.

7 Click Finish to exit the page.

Or

Click Next to exit the current page and return to the 'Add Category' page.

Or

Click Previous to return to the previous page without saving any changes.

8 (Optional) Define suffixes for the category. See Adding Suffixes to Categories on page 195.

9 Click X on the window title tab to close the page.

How to Add a Category Using the 'Categories' Table

Note	A category cannot be added until devices have been defined. See Adding a Device on page 159.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Categories'. The 'Categories' table appears:
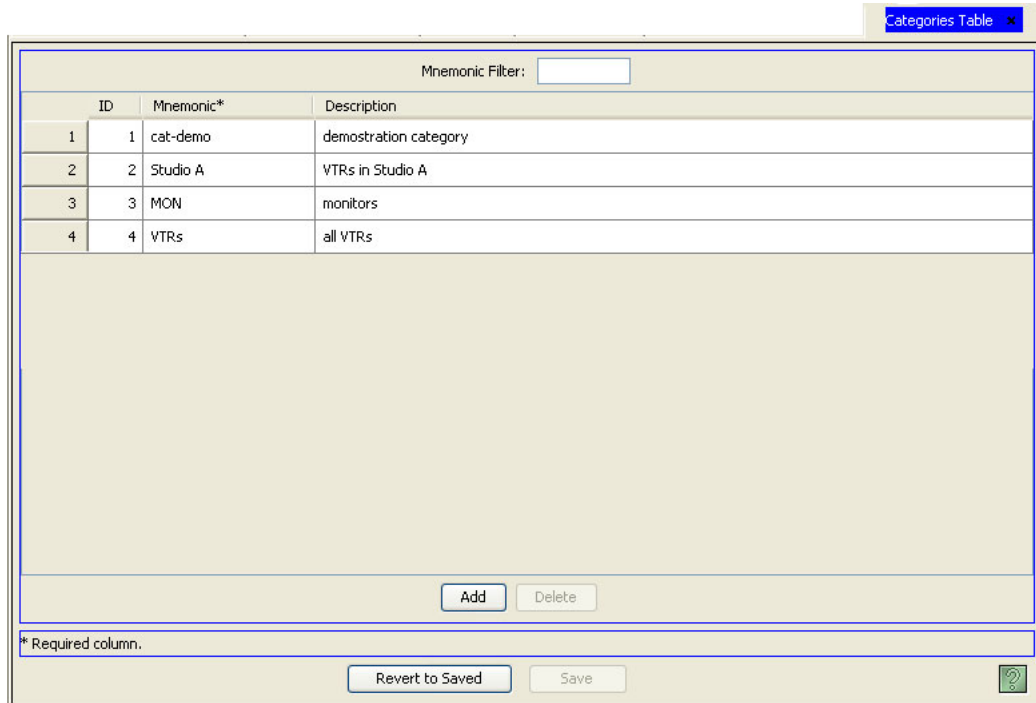
Figure 10-3. Categories Tables

3 Click Add. A new row appears in the table.

4 In the blank row, click in the 'Mnemonic' column to activate it and enter a name for the category. A mnemonic is a short, descriptive word or words for the category, such as Monitor, Studio A, and so on

5 In the same row, click in the 'Description' column to activate it and enter a description. This description only displays in NV9000-SE Utilities.

6 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

7 (Optional) Associate devices with the category. See Adding Devices to Existing Categories on page 216.

8 (Optional) Define suffixes for the category. See Adding Suffixes to Categories on page 195.

9 Click X on the window title tab to close the table.

Adding Suffixes to Categories

After a category has been created, suffixes can be added. Suffixes further define a category enabling operators to easily select the correct device by selecting the corresponding control panel button. For example, if on the control panel a button lists a category as MON for monitors, the suffix HD or SD can be added to define the type of video signal. In general, suffixes can be used for all control panels and can be either letters or numbers. There is one exception: NV5128-MC Master Control Panel, which uses index numbers only.

Suffixes can be created and added to categories at any time or deleted globally. (See Creating and Adding Suffixes on page 223 and Removing Suffixes on page 226.) Suffixes are associated with categories using the 'Categories Detail' page.

For more information on suffixes, see Using Categories and Suffixes on page 190.

NV5128 Indexes

The NV5128-MC Master Control Panel does not recognize suffixes. However, NV9000-SE enables the operator to select up to 10 categories and *indexes* in the category that mimic suffixes. Instead of a suffix being defined, a device index number is used to further define a category. See How to Define Category Indexes for NV5128-MC Master Control Panel on page 198.

Auto-Fill Suffixes

The Auto-Fill Suffix button located on the 'Categories Details' page is a shortcut that enables you to assign suffixes to devices within a single category automatically instead of selecting values one-by-one. Suffixes can be "auto-fill" selected based on a "rule." All suffixes that match the rule are automatically added to the category you are defining.

The auto-fill suffix function is separate from the 'Set Selected Suffixes' function found on the 'Category Details' page. Both this function and the auto-fill suffix function overwrite any previously assigned suffix values.

Global Suffix Pages

Global Suffix Pages are a predetermined set of suffixes that you can add to an NV9640, NV9641 or NV9642 control panel configuration. This page enables you to add the same suffixes to multiple control panels quickly and easily. For details, see Using Global Suffix Pages on page 202.

How to Add Suffixes to a Category

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Categories'. The 'Categories' page appears:
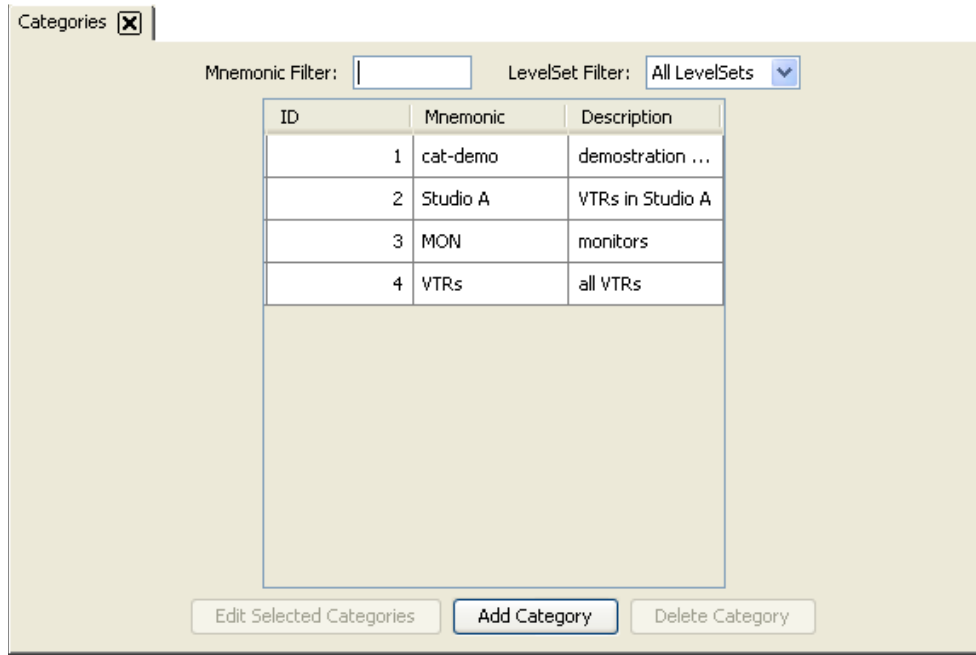
Figure 10-4. Categories Page

3 Double-click on a single row to open details for that category. The 'Category Details' page appears, as shown in Figure 10-5.

Or

Click anywhere in the row listing the category being updated. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple categories. Each category opens in a separate tabbed window. Click the tab to bring that window forward.

Figure 10-5. Category Details Page

4 Add suffixes to the category device-by-device. If using a NV5128-MC Master Control Panel, suffixes cannot be defined. Instead, the device index number is used. See How to Define Category Indexes for NV5128-MC Master Control Panel on page 198.

   a From the list of devices, click anywhere in the row listing the device you want to select. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple devices. If more than one device is selected, the suffix will be applied to all selected devices.

   b In the 'Set Selected Suffixes' section, click in a column to activate it and select a suffix from the drop-down list. Up to 8 suffixes can be selected.

   c Click Set to apply the suffixes to all selected devices.

5 Click Save to apply the suffixes to all selected devices.

Or

To revert to the previously saved category definition, click Revert to Saved.

How to Define Category Indexes for NV5128-MC Master Control Panel

If you are using a master control panel, suffixes cannot be used. Instead the device index number is used to define the device on the control panel.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Categories'. The 'Categories' page displays, as shown in Figure 10-6.

All categories currently defined in the system are listed. To narrow the list, enter the first characters of the category's name in the 'Mnemonic Filter' field. The list is automatically reduced to display only categories matching that character string.

Or

From the 'Level Set Filter' drop-down list, select a level set. The list is automatically reduced to display only categories associated with the selected level set.

Figure 10-6. Categories Page

3 Double-click on a single row to open details for that category. The 'Category Details' page appears, as shown in Figure 10-7.

Or

Click anywhere in the row listing the category being updated. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple categories. Each category opens in a separate tabbed window. Click the tab to bring that window forward.
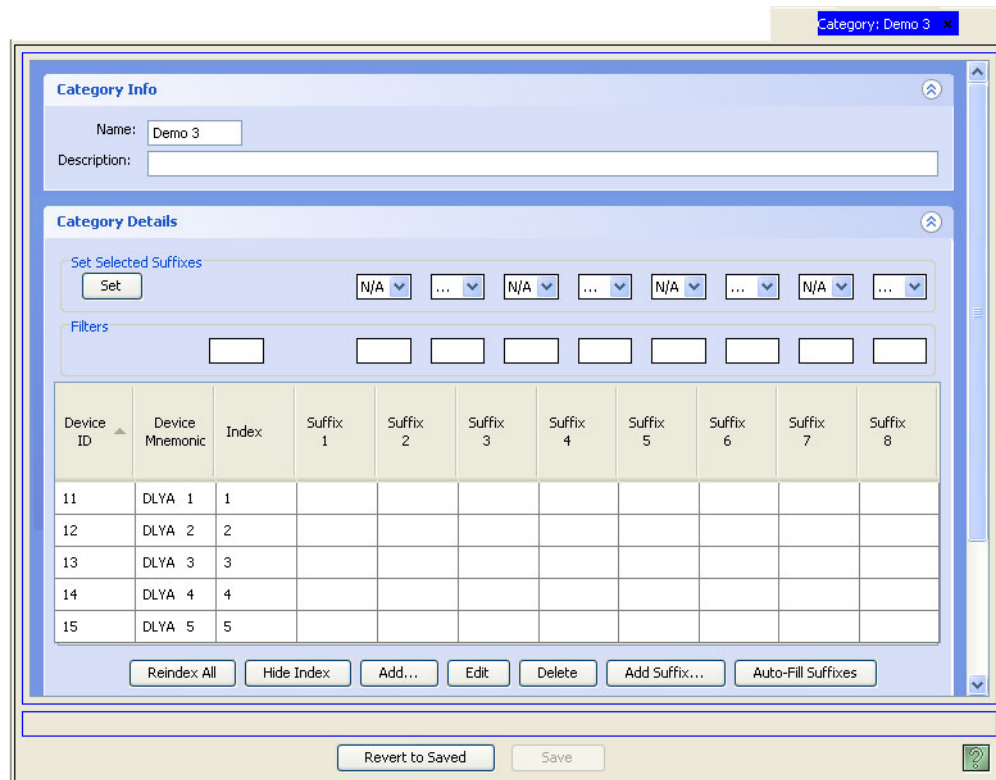
Figure 10-7. Category Details Page

4 If using a NV5128-MC Master Control Panel, suffixes cannot be used. Instead the device 'Index' number is used to define the device on the control panel. To display the 'Index' column, click Show Index, located at the bottom of the page. You may need to scroll down to see the button.

5 (Optional) Click in the 'Index' field to activate it and change the index number.

6 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

How to Add Suffixes to Categories Using Auto-Fill

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Categories'. The 'Categories' page appears:

Figure 10-8. Categories Page

3 Double-click on a single row to open details for that category. The 'Category Details' page appears, as shown in Figure 10-5.

Or

Click anywhere in the row listing the category being updated. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple categories. Each category opens in a separate tabbed window. Click the tab to bring that window forward.

Figure 10-9. Category Details Page

4 Add suffixes to the category device-by-device. If using a NV5128-MC Master Control Panel, suffixes cannot be defined. Instead, the device index number is used. See How to Define Category Indexes for NV5128-MC Master Control Panel on page 198.

5 Click Auto-Fill Suffixes located at the bottom of the page. The 'Auto-Fill Suffixes' dialog box appears.

6 Click the radio button that corresponds to the "rule" you want to use to select suffixes. Each rule divides the suffixes into separate groups, as follows:

   • Parse by prefix — Parses suffixes by the prefix entered in the field provided. Prefixes can include spaces or fill characters; prefixes are not case sensitive.

   • Parse by fill character — Parses suffixes by selecting a fill character from the drop-down list: space, zero, dash, or underline.

7 Click OK. The tables automatically applies all valid suffixes that match the selected rule to the associated devices. Suffixes display on the row listing the corresponding device.

8 Click Save to apply the suffixes to all selected devices.

Or

To revert to the previously saved category definition, click Revert to Saved.

Using Global Suffix Pages

Global Suffix pages are a set of predefined suffixes that can be used to select devices for a control panel configuration without having to select each suffix separately. Global Suffix pages are only available in the NV9640, NV9641 or NV9642 control panels. Once created, a Global Suffix page can be added to multiple control panels, however the control panels must be the same control panel type as the Global Suffix page. For example, if a Global Suffix page is created for NV9640 it can only be applied to NV9640 control panels.

Creating Global Suffix Pages

Global Suffix pages are created using an "editor" which is a configuration page similar to that used to configure control panels. However, the page contains many fewer button types: Back, Category, Clear Preset, Hold, Take and Undefined. (See Button Functions on page 359 for a definition of each button function.) Any of these buttons can be added to the Global Suffix page and made available to the control panel operator. All buttons are optional, except the Back button. Every Global Suffix page must have a Back button so that the operator can navigate back to a previous page. Any other buttons added, or the layout of the buttons, is at your discretion.

Using the Global Suffix page editor you can create a page of buttons where each button is assigned a suffix. When the page is added to a control panel configuration, an operator can navigate to the page and press a suffix button to select a corresponding device.

Once created, the Global Suffix editor appears in the list of control panels (select 'Configuration' and then 'Control Panels') and the 'Panel Type' column appends "Suffix" to the panel type. Select the editor and either double-click or click 'Edit Selected Panel' to open the Global Suffix page editor and make changes. Global Suffix pages can only be edited using this editor.

Applying Global Suffix Pages

Global Suffix pages are applied using the control panel configuration pages. To apply a Global Suffix page, when creating a control panel configuration for an NV9640, NV9641 or NV9642 control panel, select 'Category' in the 'Button Type' section. The 'Use global suffix page to select devices' check box appears. After selecting a source or destination category, the check box becomes active. If checked, a 'Suffix Page' drop-down list appears listing all Global Suffix pages. Choose a page to have it copied into the current control panel configuration as a separate page. The page appears in the 'Page Table' section. (See Creating a "Tree" of Pages on page 342.)

When selecting a Global Suffix page you are applying a copy to the current control panel configuration. You are not linking to the actual Global Suffix page.

Managing Global Suffix Pages

Global Suffix pages can be updated at any time. Once updated, the Global Suffix page changes are not immediately seen on the associated control panels. First the changes must be saved in the Global Suffix page editor, then sent (i.e., "pushed") to the control panels themselves, and finally implemented through the system controller. For instructions, see Implementing Configuration Changes on page 17.

When a Global Suffix page is deleted the page is also deleted from any control panel to which it has been added.

How to Create a Global Suffix Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

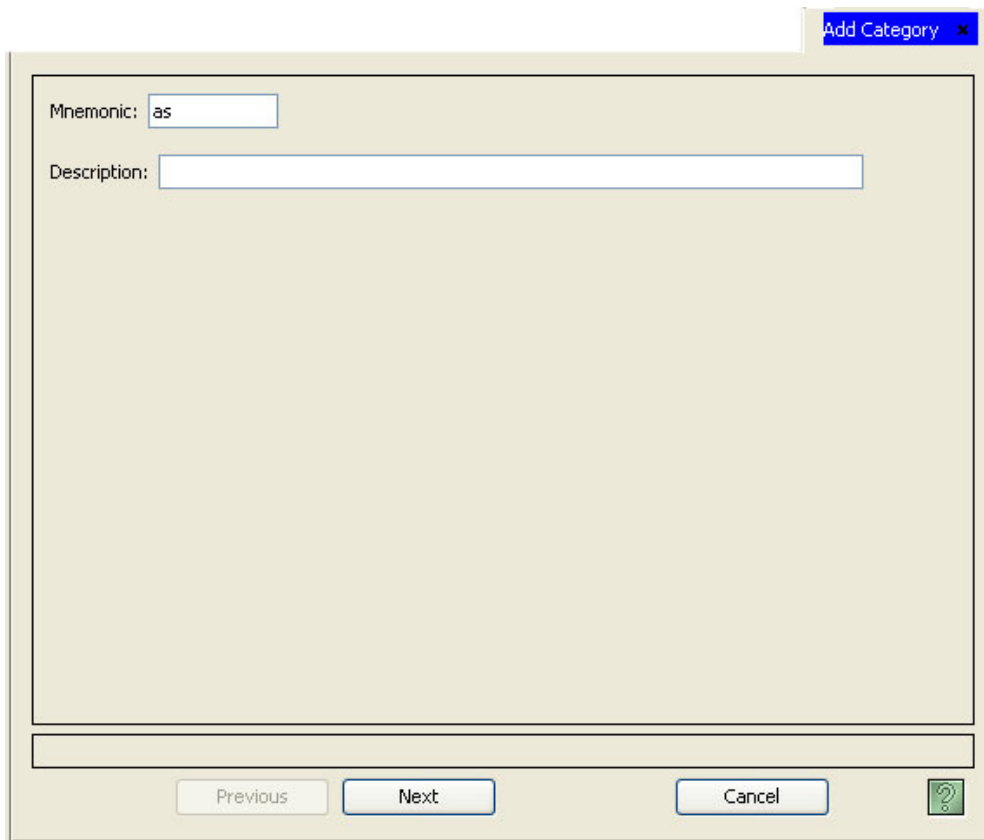2 From the Navigation area, select the 'Tasks' pane and then 'Add Control Panel'.

Or

From the Navigation area, select the 'Configuration' pane and then 'Control Panels'. The 'Control Panels' page displays. On the 'Control Panels' page, click Add Control Panel.

The 'Add Control Panel' page appears:

Figure 10-10. Add Control Panel Page

3 Enter information in the fields provided. Entries must be entered in all active fields:

Field	Description
Type	From the drop-down list, select either NV9640, NV9641 or NV9642.When saved, the Global Suffix page can be applied to other control panels of the same type.
ID	Enter a *unique* identification number up to five digits long. Do not use punctuation marks or symbols.
Name	Enter a unique and descriptive name for the Global Suffix page, up to 8 characters long. Do not use punctuation marks or symbols.
User	By default, only the user type 'EnvyUser' is supported at this time. For more information, see Managing User Names on page 509.
Configuration Options	Select 'New (default), named' and enter the name of the Global Suffix page you are creating.

4 Click Suffix. The 'Control Panel Details' page for the type of control panel selected in Step 2 appears, but with unique fields:
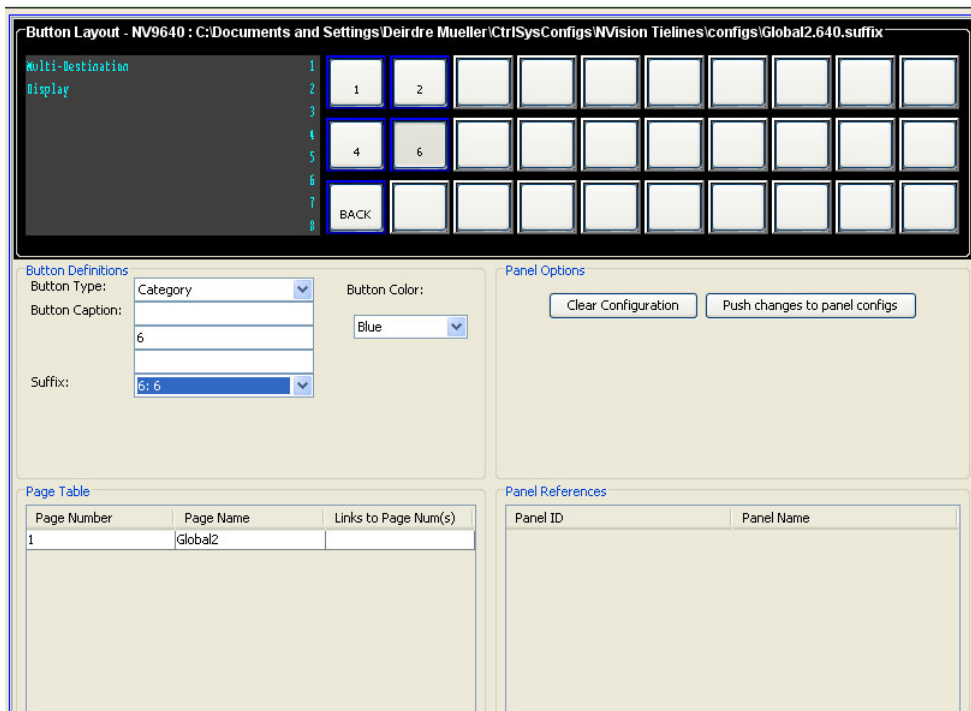
Figure 10-11. Global Suffix Page template

5 Select a button in the 'Button Layout' section.

6 In the 'Button Type' section, select 'Category'. The 'Suffix' field appears.

7 From the 'Suffix' drop-down list, select a suffix.

8 Repeat steps 5 through 7 until all suffixes you want have been assigned.

9 In the 'Button Layout' section, select buttons and button definitions. Remember that Aa Global Suffix page must have a Back button.

To select a button definition, do the following:

a Select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

b Choose the 'Button Color' from the drop-down list.

c Select a button function from the 'Button Type' drop-down list. (See the options below.)

d Enter up to 8 characters in each 'Button Caption' field. The top field appears as the top line of text on the button, the next field, the second line of text, and the bottom field as the third line of text.

Select from the following button options:

Button	Description	Related Topic
Back (mandatory)	Returns the control panel user to the previous "page" in the "tree." A Global Suffix page must have a Back button.	Creating a "Tree" of Pages on page 342
Category	Unlike in other control panel configuration pages, this button is used to select suffixes and add them to the control panel. A 'Suffix' drop-down list appears. Select a suffix from the list.	Using Categories and Suffixes on page 190\ and Using Global Suffix Pages on page 202
Clear Preset	Erases entries in the control panel's 'Preset' column, while leaving the control panel in the same mode. Recommended as a "safety" button.	Clear Preset on page 360
Hold	Retains preset information after **Take** is pressed. Useful when routing the same source to many destinations.	Hold on page 361
Take	Switches the loaded preset source device(s) to the selected destination device on all levels that have a preset loaded. The 'Status' column changes to the new device(s).	Take on page 366
Undefined	Makes the button undefined and inactive. It will remain unlit.	—

10 Click Save. When creating a control configuration of that same type as selected for the Global Suffix page — NV9640, NV9641 or NV9642 — the 'Use global suffix page to select devices' check box can be selected to apply the Global Suffix page to the control panel.

How to Update a Global Suffix Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Control Panels'. The 'Control Panels' page appears:


Figure 10-12. Add Control Panel Page

3 Locate the control panel with the word "Suffix" appended, which denotes a Global Suffix page. Click anywhere in the row and then Edit Selected Control Panels. The Global Suffix page editor appears displaying current Global Page details, as shown in Figure 10-13.
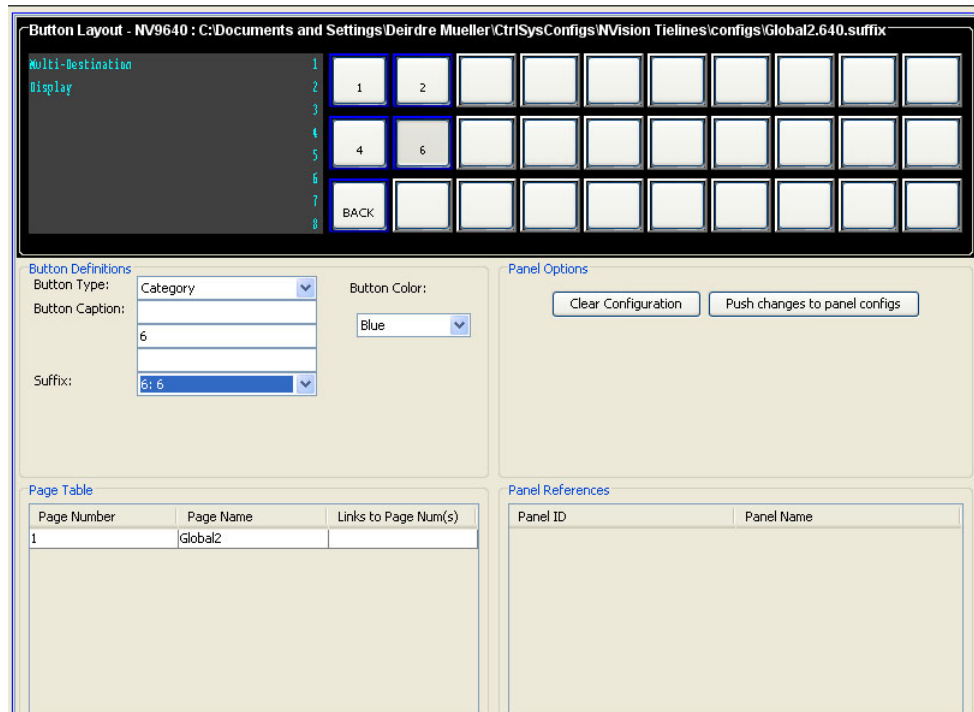
Figure 10-13. Global Suffix Page template

4 Select a button in the 'Button Layout' section.

5 In the 'Button Type' section, select 'Category'. The 'Suffix' field appears.

6 From the 'Suffix' drop-down list, select a suffix.

7 Repeat steps 5 through 7 until all suffixes you want have been assigned.

8 In the 'Button Layout' section, update buttons and button definitions. Remember that a Global Suffix page must have a Back button.

To update a button definition, do the following:

a Select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

b Choose the 'Button Color' from the drop-down list.

c Select a button function from the 'Button Type' drop-down list. (See options below.)

d Enter up to 8 characters in each 'Button Caption' field. The top field appears as the top line of text on the button, the next field, the second line of text, and the bottom field as the third line of text.

Select from the following button options:

Button	Description	Related Topic
Back (mandatory)	Returns the control panel user to the previous "page" in the "tree." A Global Suffix page must have a **Back** button.	Creating a "Tree" of Pages on page 342
Category	Unlike in other control panel configuration pages, this button is used to select suffixes and add them to the control panel. A 'Suffix' drop-down list appears. Select a suffix from the list.	Using Categories and Suffixes on page 190\ and Using Global Suffix Pages on page 202
Clear Preset	Erases entries in the control panel's 'Preset' column, while leaving the control panel in the same mode. Recommended as a "safety" button.	Clear Preset on page 360
Hold	Retains preset information after **Take** is pressed. Useful when routing the same source to many destinations.	Hold on page 361
Take	Switches the loaded preset source device(s) to the selected destination device on all levels that have a preset loaded. The 'Status' column changes to the new device(s).	Take on page 366
Undefined	Makes the button undefined and inactive. It will remain unlit.	—

9 Click Save.

10 Click Push changes to panel configs. This sends the updated Global Suffix page to all appropriate control panels.

11 Implement changes in the control panels. For instructions, see Implementing Configuration Changes on page 17.

How to Delete a Global Suffix Page

Global Suffix pages are deleted just like any other control panel configuration. See Deleting Panels on page 354 for instructions. Deleting a Global Suffix page removes the Global Suffix page from any control panel to which it was added.

Locating and Viewing Existing Categories

Depending on the information you want to view, different pages or tables present different category information.

- 'Categories' page (accessed through the 'Configuration' pane)—A list of existing categories. Opens the 'Category Details' page, which displays all details for the selected category. Locate a category by name or level set.

- Two category tables (accessed through the 'Views' pane):

  - 'Categories' table—A list of existing categories, one per row, with name and description. Using this table, you can locate a category by name.

  - 'Category Details' table—A list of existing devices and the associated category, one row per device, with ID and suffixes. Using this table you can locate a category by name or device.

How to Locate and View Categories Using the 'Categories' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Categories'. The 'Categories' page appears, as shown in Figure 10-14.
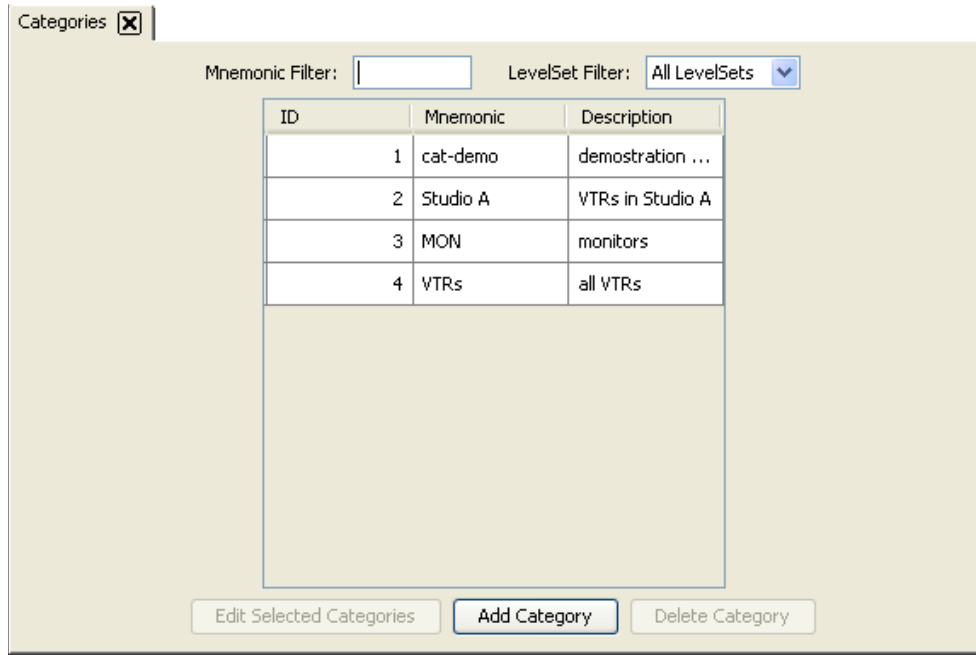
   All categories currently defined in the system are listed. To narrow the list, enter the first characters of the category's name in the 'Mnemonic Filter' field. The list is automatically reduced to display only categories matching that character string.

   Or

   From the 'Level Set Filter' drop-down list, select a level set. The list is automatically reduced to display only level sets matching the one selected.

Figure 10-14. Categories Page

3 Double-click on a single row to open details for that category.

   Or

   Click anywhere in Click anywhere in row listing the category you want to view. Each category opens in a separate tab. Click a tab to bring that page to the front.

The 'Category Details' page appears:

Figure 10-15. Category Details Page

There are two sections: 'Category Info' displays the category name and a brief description, if any, of the category. 'Category Details' provides a list of all devices associated with the category and each suffix assigned to the device.

4 To narrow the list of devices that display, enter the first characters of the device's name in the field above the 'Device Mnemonic' column. The list is automatically reduced to display only devices matching that character string.

Or

Enter the first characters of a suffix assigned to a device in the field above any of the 'Suffix' columns. The list is automatically reduced to display only devices matching that character string.

5 To display the 'Index' column, click Show Index, located at the bottom of the page. (You may need to scroll down to see the button.)

6 Click X on the window title tab to close the page.

How to Locate and View Categories Using the 'Categories' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Categories'. The 'Categories' table appears, as shown in Figure 10-16.

To narrow the list of categories that display, enter the first characters of a category name in the 'Mnemonic Filter' field. The list is automatically reduced to display only categories matching that character string.
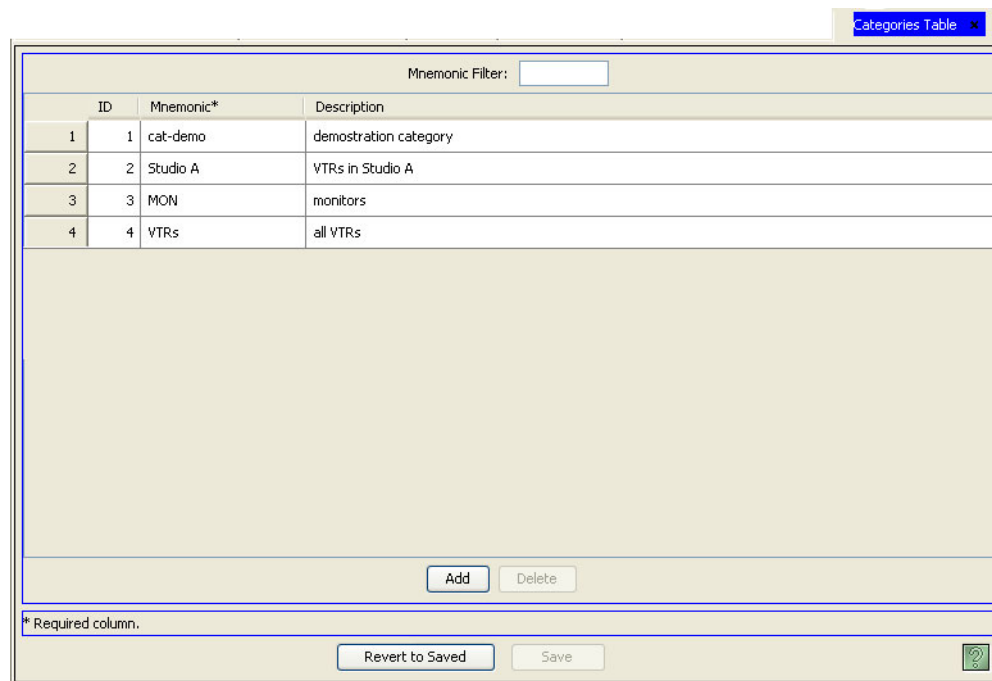
Figure 10-16. Categories Tables

Four columns display category information. Each row represents a single category.

Column	Description
ID	Lists the ID number associated with the category.
Mnemonic	Lists the name associated with the category.
Description	An optional, brief description of the category.

3 Click X on the window title tab to close the table.

How to locate and view categories using the 'Category Details' table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Category Details'. The 'Category Details' table appears, as shown in Figure 10-17.

All categories currently defined in the system are listed. To narrow the list, enter the first characters of the category's name in the 'Category Filter' field. The list is automatically reduced to display only categories matching that character string.

Or

Enter the first characters of a device name in the 'Device Filter' field. The list is automatically reduced to display only devices matching that character string.

Figure 10-17. Category Details Table

Several columns display category information. Each row represents a single device and its assigned category.

Column	Description
Category	Lists the category name (mnemonic).
Device	Lists the device associated with the category. For more information on devices, see Devices on page 157.
Index	The number to be used on a control panel in a category-index button combination. Control panels that use categories and indexes must be configured to do so—it is not automatic. Device selection on NV5128-MC Master Control panels and GUIs require *category-index* selection. Master Control does not recognize suffixes. Router control (those that support category selection) accepts either indexes or suffixes.
Suffix (1-8)	Each column lists the suffixes assigned to that device in that category. Up to 8 suffixes can be assigned.

3 Click X on the window title tab to close the table.

Updating Categories

Category information can be updated at any time. It is recommended that categories be updated off-line. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

Category information can be updated through both pages and tables. Pages and tables share databases: changes made in one interface, such as a page, appear in interfaces that share that database, such as tables.

Although both a page and table may update the same information, each interface enables you to perform specific tasks more efficiently. Pages enable you to update several pieces of information for a single category through a single interface. Tables are useful for updating a limited, specific amount of information for several categories at once. In addition, not all pages and tables update the same information; different interfaces manage different information.

Different NV9000-SE interfaces perform specific tasks, as follow:

Task	Interface	Pane
Updating Category Name and Description on page 213	Categories Details Page, Categories Table	Configuration, Views
Adding Devices to Existing Categories on page 216	Categories Details Page, Categories Details Table	Configuration, Views
Removing Devices from Categories on page 221	Categories Details Page, Categories Details Table	Configuration, Views
Creating and Adding Suffixes on page 223	Categories Details Page, Suffixes Table	Configuration, Views
Removing Suffixes on page 226	Suffixes Table	Views

Updating Category Name and Description

Category names and descriptions can be updated using the 'Categories' page accessed through the 'Configuration' pane or through the 'Categories' table accessed through the 'Views' pane. The updated name appears on all control panels displaying that information.

How to Update Category Name and Description

Use the 'Category Details' page.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Categories'. The 'Categories' page appears, as shown in Figure 10-18.

All categories currently defined in the system are listed. To narrow the list, enter the first characters of the category's name in the 'Mnemonic Filter' field. The list is automatically reduced to display only categories matching that character string.

Or

From the 'Level Set Filter' drop-down list, select a level set. The list is automatically reduced to display only level sets matching the one selected.

Figure 10-18. Categories Page

3 Double-click on a single row to open details for that category.

Or

Click anywhere in the row listing the category being updated. Using the 'Shift' or 'CTRL' key on your keyboard' you can select multiple categories. Each category opens in a separate tab. Click a tab to bring the page forward.

The 'Category Details' page appears:

Figure 10-19. Category Details Page

There are two sections: 'Category Info' and 'Category Details'. The 'Category Info' section displays the category name and a brief description, if any, of the category. The 'Category Details' section lists all devices associated with the category.

4 Update the 'Name' and 'Description' in the fields provided.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

How to Update Category Name and Description

Use the 'Categories' table.

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Categories'. The 'Categories' table appears, as shown in Figure 10-20.

All categories currently defined in the system are listed. To narrow the list, enter the first characters of the category's name in the 'Mnemonic Filter' field. The list is automatically reduced to display only categories matching that character string.
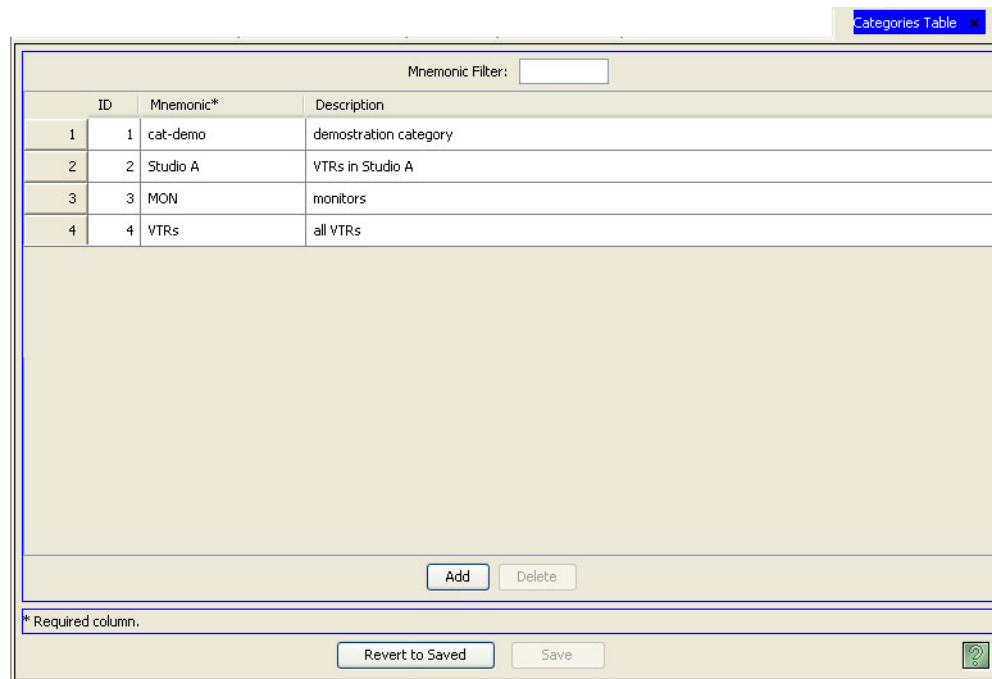
Figure 10-20. Categories Table

3 Locate the row listing the category being updated.

4 Click in the 'Mnemonic' field to activate it and enter a new category name.

5 Click in the 'Description' field to activate it and enter a new category description.

6 Click Save.

   Or

   To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the table.

Adding Devices to Existing Categories

Devices can be added to multiple categories. Devices can be added to categories using the 'Categories' page accessed through the 'Configuration' pane or using the 'Category Details' table accessed through the 'Views' pane.

Device details can be updated directly from the 'Categories' page. Device details cannot be updated from the 'Categories' table or the 'Category Details' table. For more information on devices, see Devices on page 157.

How to Add a Device to a Category Using the 'Category Details' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Categories'. The 'Categories' page appears, as shown in Figure 10-21.

All categories currently defined in the system are listed. To narrow the list, enter the first characters of the category's name in the 'Mnemonic Filter' field. The list is automatically reduced to display only categories matching that character string.

Or

From the 'Level Set Filter' drop-down list, select a level set. The list is automatically reduced to display only level sets matching the one selected.

Figure 10-21. Categories Page

3 Double-click on a single row to view details for that category.

Or

Click anywhere in the row listing the category being updated. Using the 'Shift' or 'CTRL' key on your keyboard' you can select multiple categories. Each category opens in a separate tab. Click a tab to bring the page forward.

The 'Category Details' page appears:
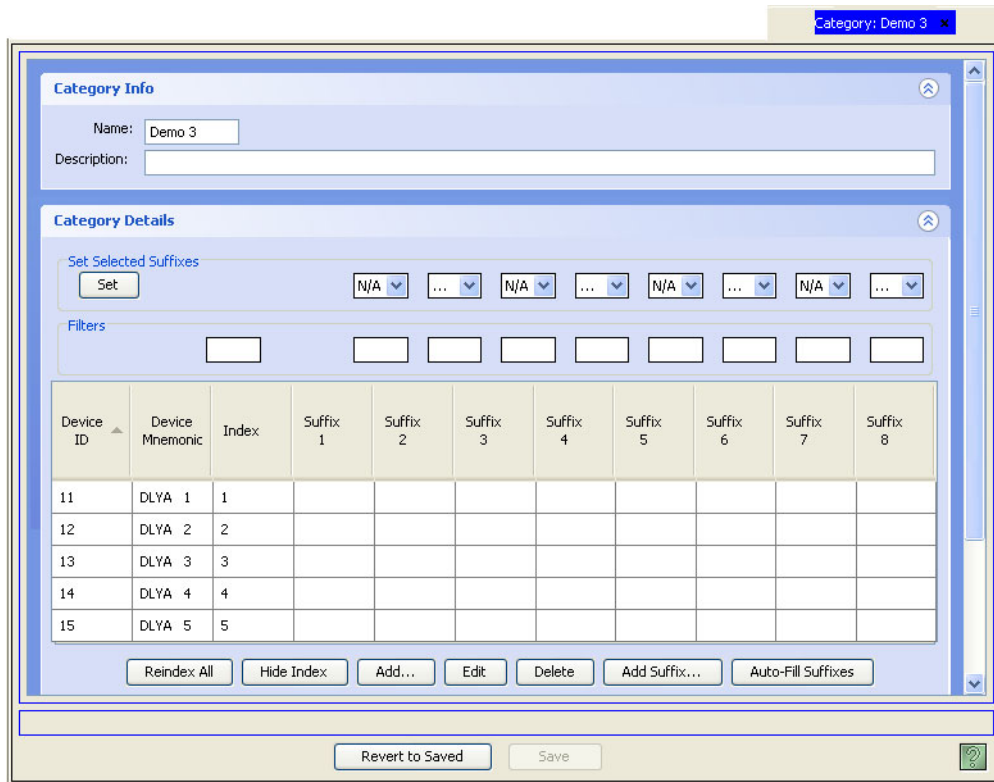
Figure 10-22. Category Details Page

4 Click Add..., located at the bottom of the page. The 'Select Devices to Add to Category' dialog box appears:
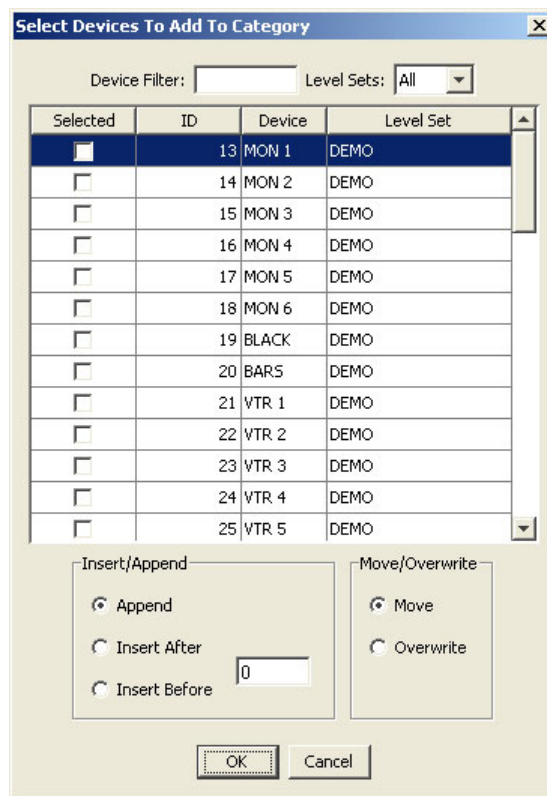
Figure 10-23. Select Devices to Add to Category Dialog Box

The dialog box lists all devices and the level set(s) to which the devices belong. To limit the list of devices, enter the first characters of a device's name in the 'Device Filter' field.

And/Or

From the 'Level Sets' drop-down list, select a level set.

The list is automatically limited to only those devices matching the character string and/or the level set selected.

5 Click anywhere in the row listing the device being added. Using the 'Shift' or 'CTRL' key on your keyboard' you can select multiple devices.

6 Select how the device is inserted or appended to the category by selecting the corresponding radio button:

- Append—Add the selected device(s) at the end of the device list.

- Insert After—Add the selected device(s) in the row immediately below a specific device. Enter the index number of a specific device in the field provided. The device(s) being added is listed in the next row *after* that device.

- Insert Before—Specify a device *index* in the associated text box. NV9000-SE will add the selected devices before that row.

7 If a large number of devices already exist in the category, select how the row added to the existing list of devices is managed by selecting the corresponding radio button:

- Move—The new row for the device being added displaces existing rows (if necessary) to make room for new rows.

> • Overwrite — The new row for the device being added does not displace existing rows. Instead, the new entries overwrite existing rows.

8 Click OK to save changes and close the dialog box. (You may need to scroll down to see the button.)

Or

Click Cancel to close the dialog box without saving changes.

9 (Optional) Update device connector information. (See How to Update a Physical Connection on page 179.)

10 On the 'Categories' page, click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

11 Click **X** on the window title tab to close the page.

How to Add a Device Using the 'Category Details' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Category Details'. The 'Category Details' table appears:

	Category*	Device*	Index	Suffix 1	Suffix 2	Suffix 3	S
1	1	CORE 1	CORE	1			
2	1	CORE 2	DAILY A	2			
3	1	CORE 3	DAILY B	3			
4	1	CORE 4	TEST_CAM	4			
5	1	CORE 5	TEST_VTR	5			
6	1	CORE 6		6			
7	1	CORE 7		7			
8	1	CORE 8		8			

Category Filter: ___   Device Filter: ___

Add   Delete

Revert to Saved   Save

Figure 10-24. Category Details Table

3 Click Add. A blank row is added to the list of categories.

4 In the blank row, from the drop-down list in the 'Category' column select the category to which you want to add a device.

5 In the same row, select the device being added to the category from the drop-down list in the 'Device' column.

6 (Optional) In the 'Suffix' columns, select suffixes from the drop-down list.

If the suffix you want is not listed, you can define new suffixes using the 'Categories' page, returning to this procedure once the suffix has been created and saved. (See <u>Adding Suffixes to Categories</u> on page 195.)

7 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

8 Click X on the window title tab to close the table.

Removing Devices from Categories

Removing a device disassociates it from the category; the device remains in the system.

Devices can be removed from categories using the 'Categories' page accessed through the 'Configuration' pane or using the 'Category Details' table accessed through the 'Views' pane.

How to Remove a Device Using the 'Category Details' Page

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Categories'. The 'Categories' page appears, as shown in Figure 10-25.

All categories currently defined in the system are listed. To narrow the list, enter the first characters of the category's name in the 'Mnemonic Filter' field. The list is automatically reduced to display only categories matching that character string.

Or

From the 'Level Set Filter' drop-down list, select a level set. The list is automatically reduced to display only level sets matching the one selected.
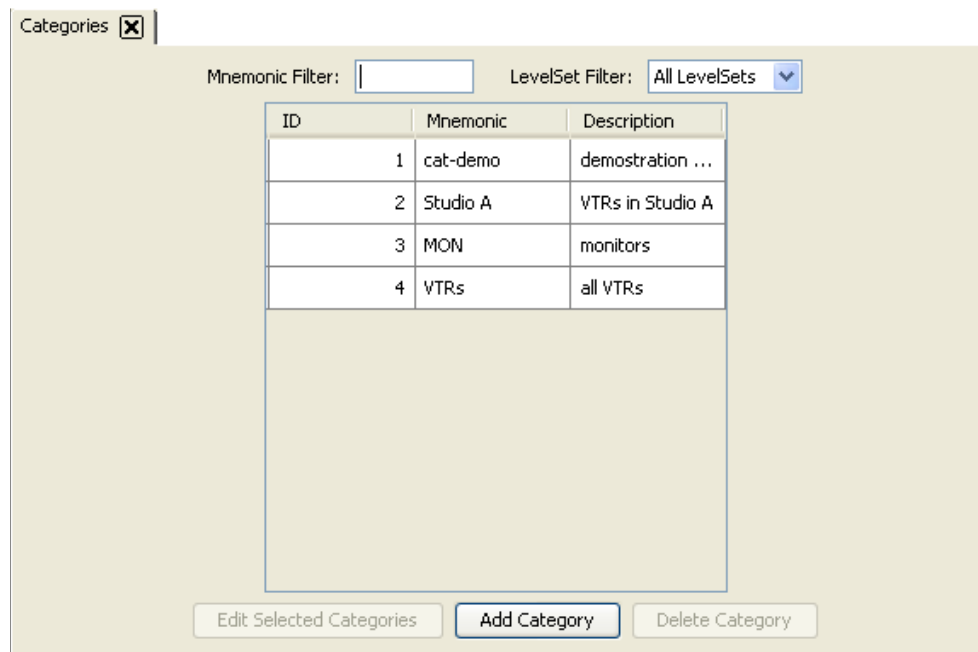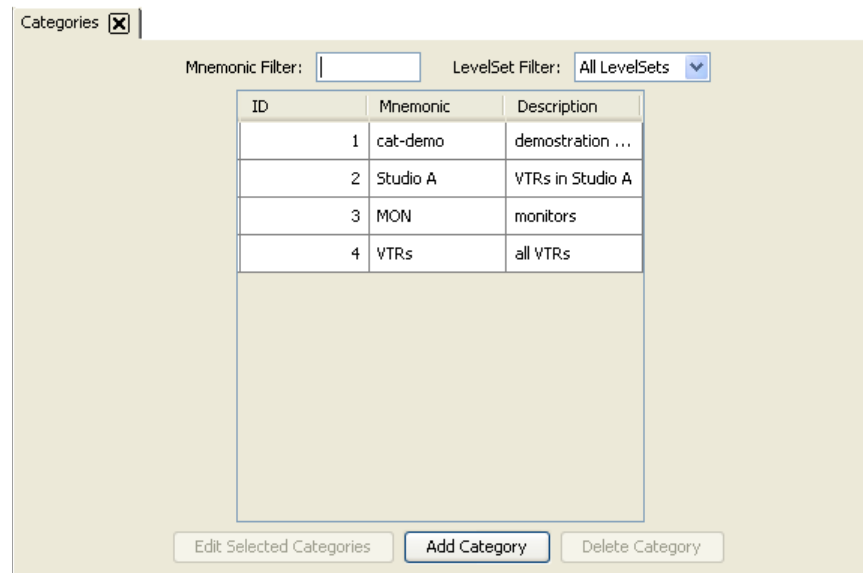

Figure 10-25. Categories Page

3 Double-click on a single row to open details for that category.

Or

Click anywhere in the row listing the category being updated. Using the 'Shift' or 'CTRL' key on your keyboard' you can select multiple categories. Each category opens in a separate tab. Click a tab to bring the page forward.

The 'Category Details' page appears:

Figure 10-26. Category Details Page

4 Click anywhere in the row listing the device being removed. Using the 'Shift' or 'CTRL' key on your keyboard' you can select multiple devices.

5 Click Delete, located at the bottom of the devices list. (You may need to scroll down to see the button.) The device is removed from the list.

6 Click Save, located on the 'Categories' page.

Or

To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the page.

How to Remove a Device Using the 'Category Details' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Category Details'. The 'Category Details' table appears, as shown in Figure 10-27.

All categories currently defined in the system are listed. To narrow the list, enter the first characters of the category's name in the 'Category Filter' field. The list is automatically reduced to display only categories matching that character string.

Or

Enter the first characters of a device name in the 'Device Filter' field. The list is automatically reduced to display only devices matching that character string.

Figure 10-27. Category Details Table

3 Click anywhere in the row listing the category *and* device being removed. Using the 'Shift' or 'CTRL' key on your keyboard' you can select multiple categories.

4 Click Delete. The row is removed from the list and the device is disassociated with the category.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Creating and Adding Suffixes

The suffixes used to further define categories are numbered 1 through 8 by default. Additional suffixes, up to 4 characters long, can be created. Added suffixes are available for use in all categories, not just the category that is open when the suffix is created. By default, suffixes are numbers, but can be changed to characters at any time.

Suffixes can be added using the 'Categories Details' page accessed through the 'Configuration' pane or using the 'Suffixes' table accessed through the 'Views' pane.

How to Create a Suffix Using the 'Category Details' Page

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Categories'. The 'Categories' page appears, as shown in Figure 10-28.

All categories currently defined in the system are listed. To narrow the list, enter the first characters of the category's name in the 'Mnemonic Filter' field. The list is automatically reduced to display only categories matching that character string.

Or

From the 'Level Set Filter' drop-down list, select a level set. The list is automatically reduced to display only level sets matching the one selected.
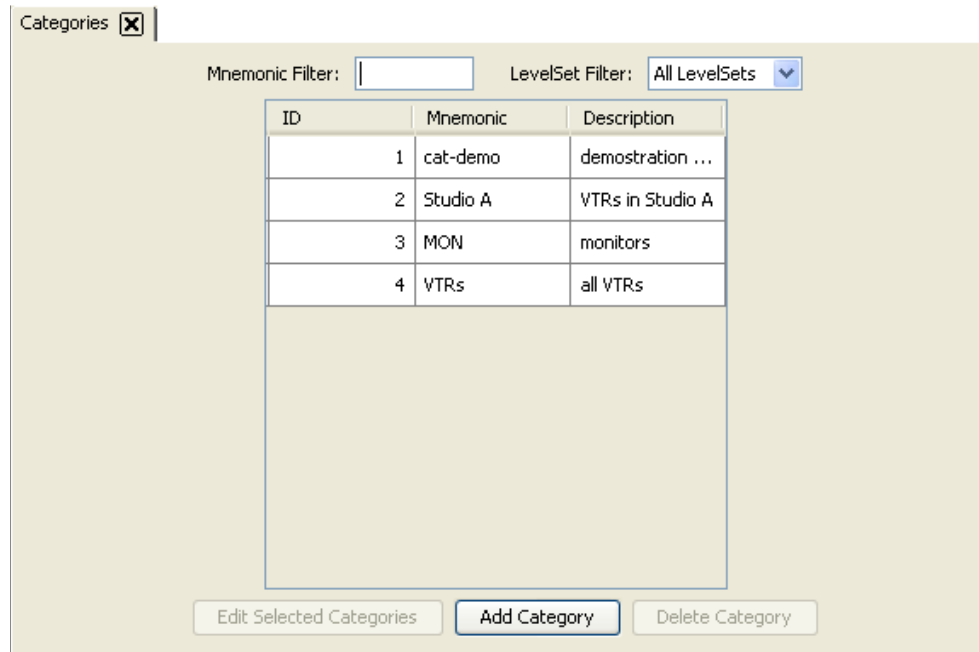
Figure 10-28. Categories Page

3 Double-click on a single row to open details for that category.

Or

Click anywhere in the row listing the category being updated. Using the 'Shift' or 'CTRL' key on your keyboard' you can select multiple categories. Each category opens in a separate tab. Click a tab to bring the page forward.

The 'Category Details' page appears:
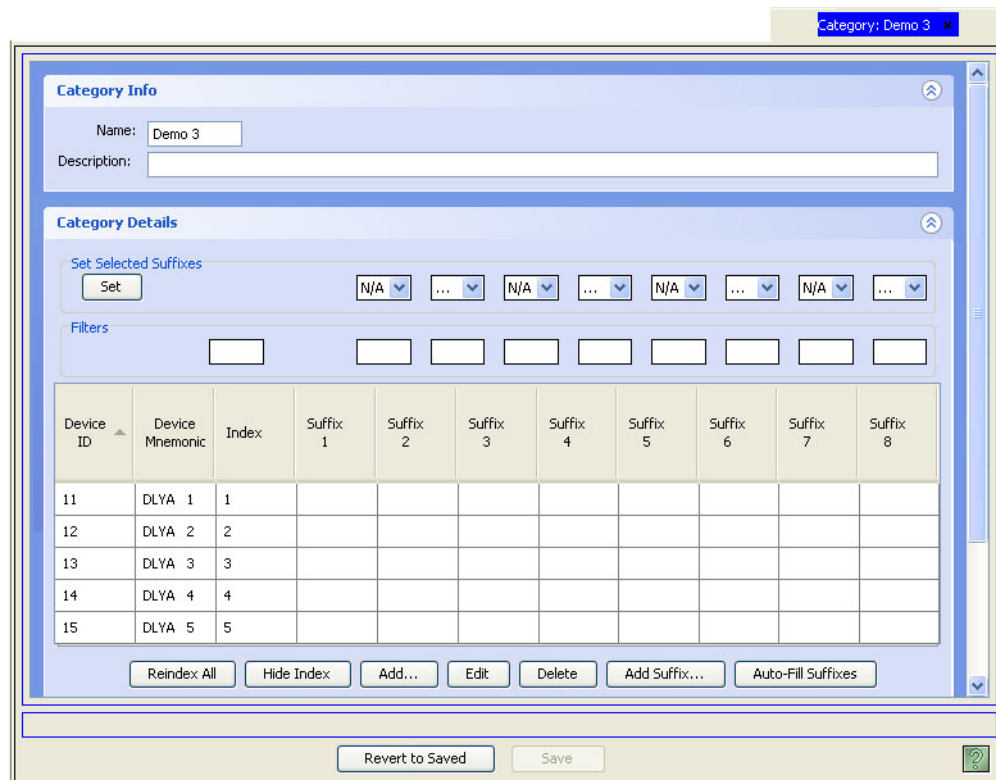
Figure 10-29. Category Details Page

4 Click Add Suffix..., located at the bottom of the devices list. (You may need to scroll down to see the button.) The 'Input' dialog box appears:
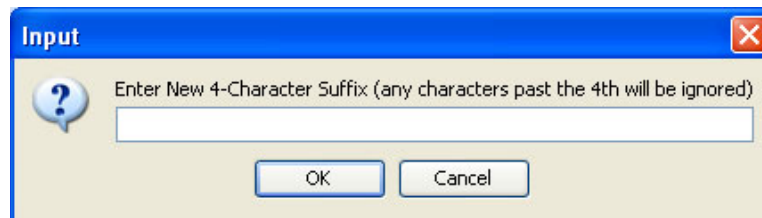
Figure 10-30. Enter New 4-Character Suffix Dialog Box

5 Enter up to 4 alphanumeric characters for the suffix and click OK to close the dialog box and save changes. Do not use punctuation marks or symbols. The characters are limited to ensure that the suffix displays properly on control panel buttons.

Or

Click Cancel to close the dialog box without saving changes.

Note	To review a list of suffixes, from the 'Views' pane, select 'Suffixes'.

6 Click Save, located on the 'Categories' page.

Or

To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the page.

How to Add a Suffix Using the 'Suffixes' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Suffixes'. The 'Suffixes' table appears:
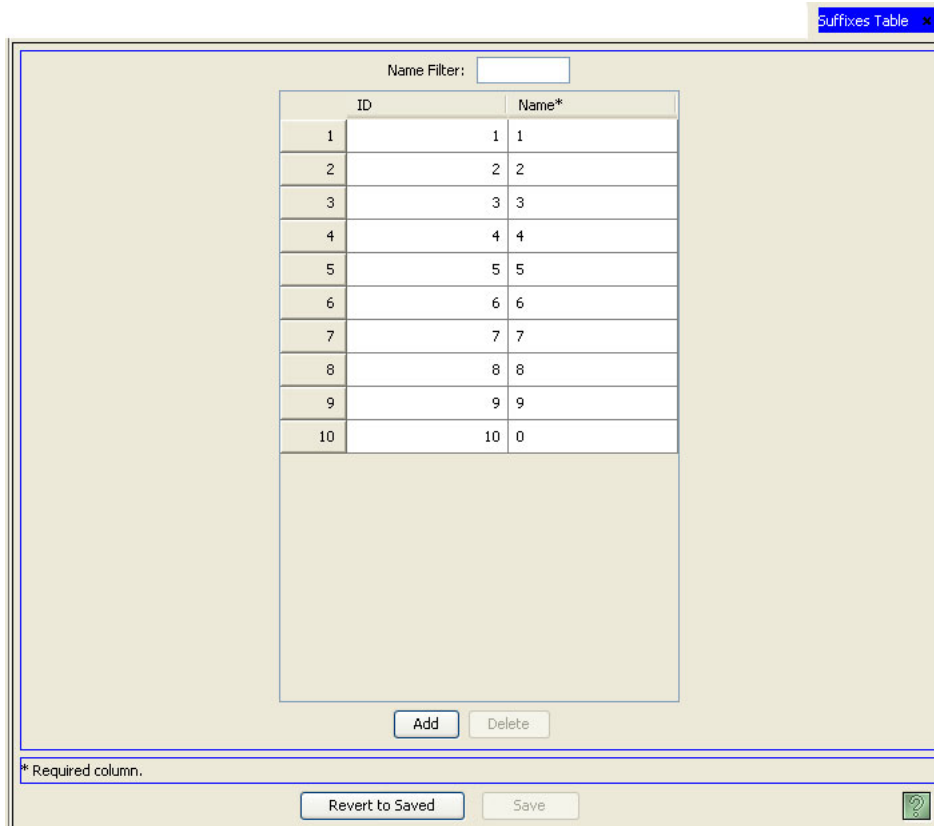
Figure 10-31. Suffixes Table

3 Click Add. A blank row is added to the list of suffixes.

4 In the blank row, in the 'Name' column, click in the field to activate it and enter a suffix name. For more information on suffixes, see Using Categories and Suffixes on page 190.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

7 (Optional) Add the suffix to categories. (See Adding Suffixes to Categories on page 195.)

Removing Suffixes

Suffixes are removed globally. Suffixes cannot be removed from categories on an individual basis. When a suffix is removed, the associated display on the control panel is also removed.

Suffixes are removed using the 'Suffixes' table accessed through the 'Views' pane.

How to Remove a Suffix

1 Launch NV9000-SE. (See [Launching and Exiting the Application](#) on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Suffixes'. The 'Suffixes' table appears, as shown in Figure 10-32.

To narrow the suffixes that appear, enter the first characters of a suffix in the 'Name' Filter. The list is automatically reduced to display only those suffixes matching the character string.
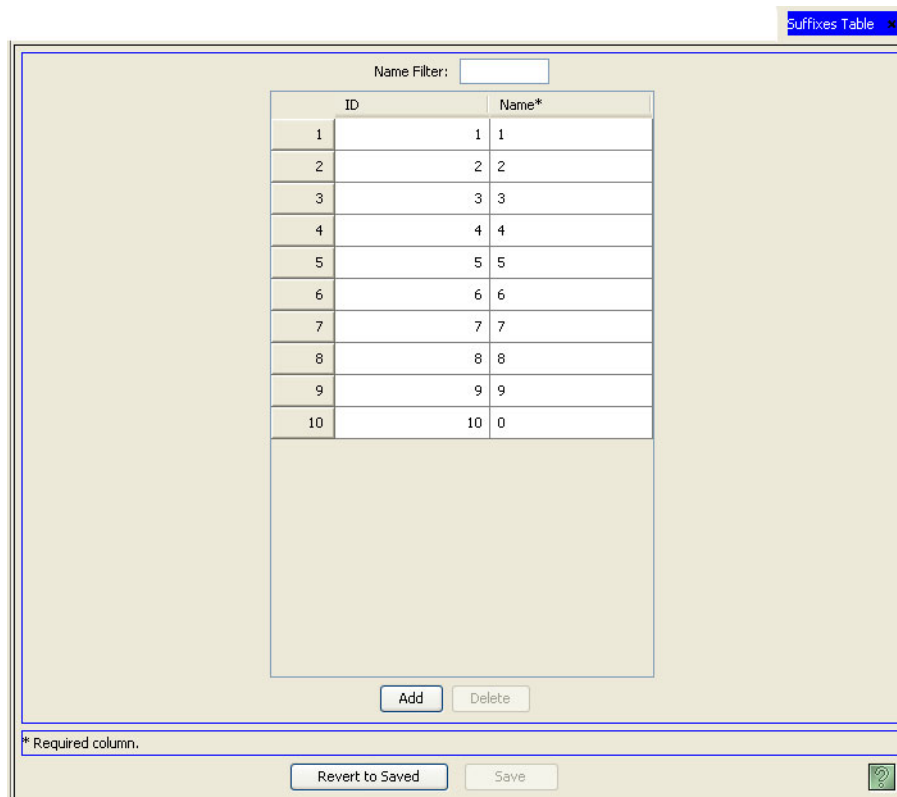
Figure 10-32. Suffixes Table

3 Click anywhere in the row listing the suffix being removed and click Delete. The row displaying the suffix is removed.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Deleting Categories

Categories can be deleted at any time. Deleting a category removes it completely from the system. Any suffixes and devices associated with a category remain in the system unless individually and separately deleted.

NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependences, when the deletion is attempted, NV9000-

SE informs you of the dependencies. Delete the dependencies first, then delete the originally selected record.

Categories can be deleted using the 'Categories' page accessed through the 'Configuration' pane or using the 'Categories' table or 'Category Details' table accessed through the 'Views' pane.

How to Delete a Category Using the 'Categories' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Categories'. The 'Categories' page displays, as shown in Figure 10-33.

All categories currently defined in the system are listed. To narrow the list, enter the first characters of the category's name in the 'Mnemonic Filter' field. The list is automatically reduced to display only categories matching that character string.

Or

From the 'Level Set Filter' drop-down list, select a level set. The list is automatically reduced to display only level sets matching the one selected.
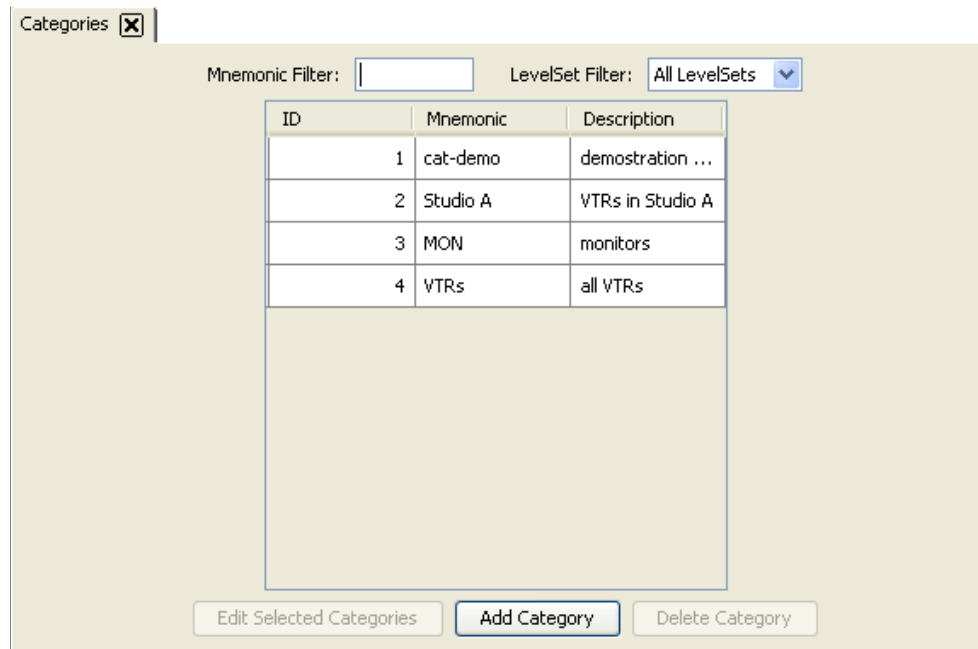
Figure 10-33. Categories Page

3 From the list of categories that display, click anywhere in the row listing the category being deleted and click Delete Category. The row is removed from the list.

4 On the confirmation dialog box, click Delete.

5 Click X on the window title tab to close the page.

How to Delete a Category Using the 'Categories' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Categories'. The 'Categories' table appears, as shown in Figure 10-34.

To narrow the list of categories that display, enter the first characters of a category name in the 'Mnemonic Filter' field. The list is automatically reduced to display only categories matching that character string.
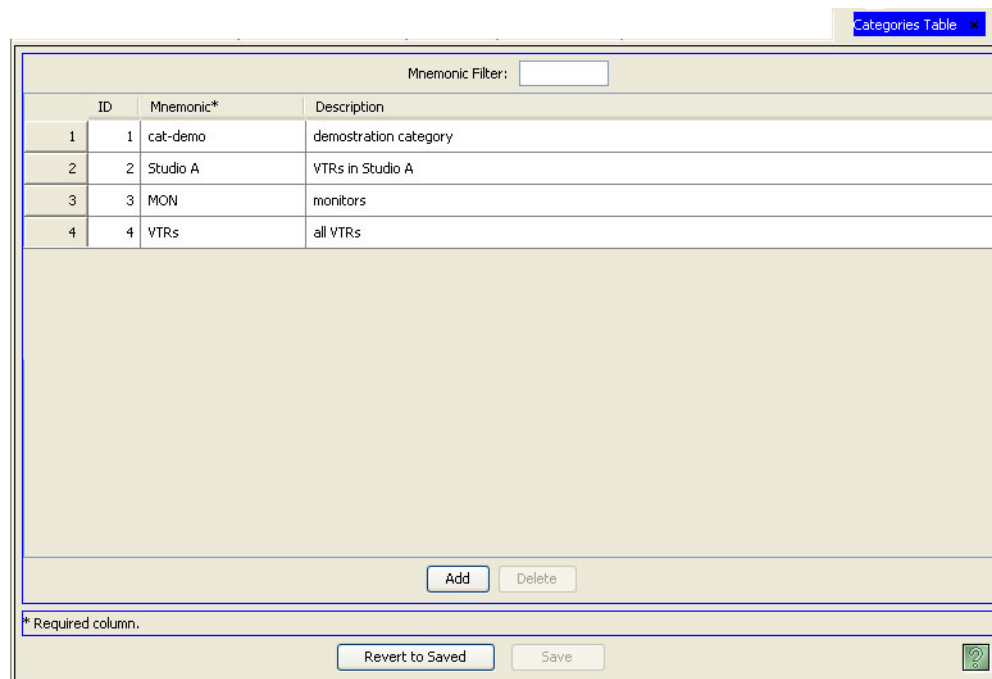
Figure 10-34. Categories Table

3 From the list of categories that display, click anywhere in the row listing the category being deleted and click Delete. The row is removed from the list.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

How to Delete a Category Using the 'Category Details' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Category Details'. The 'Category Details' table appears, as shown in Figure 10-35.

All categories currently defined in the system are listed. To narrow the list, enter the first characters of the category's name in the 'Category Filter' field. The list is automatically reduced to display only categories matching that character string.

Or

Enter the first characters of a device name in the 'Device Filter' field. The list is automatically reduced to display only devices matching that character string.

Figure 10-35. Category Details Table

3　From the list of categories that display, click anywhere in the row listing the category being deleted and click Delete. Be sure to select *all* rows listing the category. The row is removed from the list.

4　Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5　Click X on the window title tab to close the table.

11. Control Panels

Operators use control panels to perform switching activities. In order for routers and other devices to communicate with the control panels, the control panels must be configured in the NV9000-SE system. Control panels are inoperable until properly configured. To configure a control panel, you define control panel behavior, button functions and operational modes. Each control panel configuration is saved as a configuration file and can be unique to a control panel or shared among many panels of the same type.

Control panels are either hardware (physical) or virtual (a software application) and are easily added using the 'Add Control Panel' wizard. Once added, control panel information can be managed through the 'Control Panel' page or through individual tables. The wizard, page and tables share databases. Changes made in one interface immediately appears in all corresponding fields in all interfaces sharing that database.

Virtual versions of hardware control panels are run on computers attached to the NV9000-SE and the NV9000 system controller through a network. Virtual control panels display control buttons on a screen similar to the buttons operators see on a hardware control panel. Functionally, the virtual panels are identical to their matching hardware control panel counterparts. However, there are a few slight operational differences. The most obvious is that with a physical control panel, you press a physical button and with a virtual control panel, you click on a colored rectangle (a virtual "button").

Differences between virtual panels and hardware panels:

- Virtual panels have no GPIOs, which are ignored by the virtual panels. See Defining General Purpose I/O (GPIO) Connections on page 337.
- Buttons on physical panels have fixed legends (plastic button inserts). Depending on the control panel, buttons on virtual panels can have more than one "page" can have different legends for different pages. See Creating a "Tree" of Pages on page 342).
- Virtual panels have a context menu with which to connect or disconnect the control panel and to select certain display options.
- Virtual panels can be resized and repositioned on your screen.
- Dark (i.e, disabled) buttons illuminate if you click on them and hold the mouse down.

There are two virtual control panels that do not have a hardware equivalent: EC9700 control GUI and the EC9710 status GUI. For information about these panels, see EC9700 and EC9710 Panels on page 385.

Panels are managed using the following interfaces:

- 'Add Control Panel' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add a single control panel. Opens the 'Control Panels Details' page through which panels are defined. See [Adding a Control Panel](#) on page 240.

- 'Control Panels' page (accessed through the 'Configuration' pane)—A list of existing panels. Opens the 'Control Panels Details' page through which control panel configuration can be added or updated. See [Updating Control Panel Details](#) on page 349.

- 'Panels' table (accessed through the 'Views' pane)—A list of existing panels and configuration files, one row per configuration file. Using this table, user name and language can be updated. In addition, this table can be used to add a control panel to an existing configuration file, but no control panel definitions, such as buttons, can be added. That must be done through the 'Control Panel Details' page accessed through the 'Control Panels' page. See [Updating Control Panel Details](#) on page 349.

- 'Paths' table (accessed through the 'Views' pane)—A list of existing pathnames for control panel configuration files, one pathname per row. Using this table, the pathname can be added, updated or deleted and the file type changed. See [Working With Configuration Files](#) on page 19.

Overview of Control Panels

Control panels are used by operators to execute switching sequences. Control panels may be physical (a hardware device) or virtual (a software application that runs on a computer). In order for the routers and other devices to communicate with the control panels, the control panels must be configured in NV9000-SE.

NV9000-SE enables you to configure control panels and save the configurations in files. This means that one configuration can be applied to many control panels, saving time and effort. Each configuration is given a unique ID number. For management purposes, a "master configuration" can be created incorporating nearly all functions available for Engineering use, while a separate reduced functionality configuration can be created for operators' day-to-day use. Within this environment, a maintenance Engineer could "enable" the master configuration by temporarily changing a control panel's ID number, and then restore the original settings (enter the ID number of the original configuration) when maintenance is complete. For more information on managing configuration files, see [Configurations](#) on page 17.

Locking and Protecting Panels

Traditional destination-oriented locks and protects are available, as well as source locks and protects. The usage is entirely flexible and can be disabled globally (if no requirement for locks and protects is activated) or locally on only specific control surfaces (depending on the user's access rights).

In the NV9000 environment, "users" own locks and protects. A user can be a "person" (e.g., an Engineer or an Editor), a "location" (e.g., master control or news production) or even a "device" (e.g., a commercial playout server). Because users own locks and protects, when the message "VTR04 locked by Edit Bay 1" or "VTR12 protected by Com Playout Server" appears on a control panel, the operator knows that the list user placed the lock.

Currently Supported Panels

NV9000-SE currently supports a wide variety of control panels. Each control panel type has a different layout, operation mode and button options to meet your unique needs.

The following is a brief description of each control panel:

Panel Name	Description	Related Topic
NV9601	X-Y /Multi-destination 2RU control panel with 42 characters by 8 lines	NV9601 on page 517
NV9602	Multi-mode 1RU control panel with 8-character displays	NV9602 on page 519
NV9603	X-Y control panel with 8-character displays	NV9603 on page 521
NV9604	Multi-mode 1RU control panel	NV9604 on page 522
NV9605	Single-mode 1RU control panel with 3-line by 8-character displays	NV9605 on page 524
NV9606	Multi-mode 1RU control panel with 68 buttons	NV9606 on page 525
NV9607	Multi-mode 2RU control panel with 16 buttons	NV9607 on page 526
NV9608	X-Y /Multi-destination 2RU control panel with 8 LCD buttons	NV9608 on page 528
NV9609	X-Y control panel with 8-character displays	NV9609 on page 531
NV9616	X-Y /Multi-destination 2RU control panel with 16 LCD buttons	NV9616 on page 532
NVRP16	Remote panel module that sends "take" or "lock" messages to a network of routers.	RP16 and RP32 on page 535
NVRP32		
NV9640	X-Y /Multi-destination 2RU panel with 42 characters by 8 lines	NV9640 on page 535
NV9641	X-Y/Multi-destination 1RU panel with 16 LCD function buttons	NV9641 on page 538
NV9642	X-Y/Multi-destination 1RU panel with 34 LCD function buttons and VFD display.	NV9642 on page 541
NV9660	Hybrid 2RU panel combining audio mixer panel and router control panel	NV9660 on page 545
NV9575-VF	1RU tally expander featuring 64 relay outputs and 32 optionally isolated inputs	NV9575-VF on page 548

Creating Button Legends

If using the hardware version of a control panel, you can create button legends at any time using a desktop publishing application. The legends should be transparent and no larger than $0.40'' \times 0.40''$ (10 mm square). A 3/8″ (9.5 mm) square insert allows for a little clearance. The clear plastic material used for overhead transparencies is suitable for printing legends.

Button legends that appear on the virtual version of a control panel are based on defaults within the NV9000-SE system. Virtual panel button legends cannot be changed.

For a list of default button text, see Button Functions on page 359.

How to Create Button Legends for Hardware Panels

Gently pull the clear plastic cap from the button, insert the label in the cap, and replace the cap. The caps come off easily. No tools are required. It is recommended that you avoid using any adhesive.

Global Navigation Buttons

A Global Navigation button displays a predetermined set of pages. A "page" is a set of buttons that appear on the control panel. For example, if there are 36 buttons on the panel, a "page" would be one set of 36 buttons and their selected functions.

Global Navigation buttons are only available in the NV9640, NV9641 or NV9642 control panels. Once created, a Global Navigation button can be added to multiple control panels, however the control panels must be the same control panel type as the Global Navigation button editor. For example, if a Global Navigation button is created for NV9640 it can only be applied to NV9640 control panels

The NV9640, NV9641 and NV9642 control panels can have more than one page of buttons. Each page can have different button functions assigned, that in turn display on the control panel. Operators view different pages of buttons by pressing the Up or Down buttons on the control panel.

For more information on "pages" and buttons, see Creating a "Tree" of Pages on page 342. For more information on configuring control panels, see Adding a Control Panel on page 240.

Creating Global Navigation Buttons

Global Navigation buttons are created using an "editor" which is a configuration page similar to that used to configure control panels, but with several unique buttons. Using the Global Navigation button editor, you can select functions for each button on the panel, creating one or multiple pages.

Once created, the Global Navigation button editor appears in the list of control panels (select 'Configuration' and then 'Control Panels') and the 'Panel Type' column appends "Navigation" to the panel type. Select the editor and either double-click or click 'Edit Selected Panel' to open the Global Navigation editor and make changes. Global Navigation buttons can only be edited using this editor.

Applying Global Navigation Buttons

Global Navigation buttons are applied using the control panel configuration pages. When creating a control panel configuration for an NV9640, NV9641 or NV9642 control panel, select 'Global Navigate' in the 'Button Type' section. The page(s) created for the Global Navigation button appear in the 'Page Table' section. (See Creating a "Tree" of Pages on page 342.)

When selecting a Global Navigation button you are applying a copy to the current control panel configuration. You are not linking to the actual Global Navigation button editor.

Managing Global Navigation Buttons

Global Navigation buttons can be updated at any time. Once updated, the Global Navigation button changes are not immediately seen on the associated control panels. First the changes must be saved

in the Global Navigation button editor, then sent (i.e., "pushed") to the control panels themselves, and finally implemented through the system controller. For instructions, see Implementing Configuration Changes on page 17.

When a Global Navigation button is deleted, the pages associated with the button are deleted from any control panel to which the button has been added.

How to Create a Global Navigation Button

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Tasks' pane and then 'Add Control Panel'.

Or

From the Navigation area, select the 'Configuration' pane and then 'Control Panels'. The 'Control Panels' page displays. On the 'Control Panels' page, click Add Control Panel**.**

The 'Add Control Panel' page appears:

Figure 11-1. Add Control Panel Page

3 Enter information in the fields provided. Entries must be entered in all active fields:

Field	Description
Type	From the drop-down list, select either NV9640, NV9641 or NV9642. When saved, the Global Navigation button can be applied to other control panels of the same type
ID	Enter a *unique* identification number up to five digits long. Do not use punctuation marks or symbols.
Name	Enter a unique and descriptive name for the Global Navigation button editor, up to 8 characters long. Do not use punctuation marks or symbols.

Field	Description
User	By default, only the user type 'EnvyUser' is supported at this time. For more information, see Managing User Names on page 509.
Configuration Options	Select 'New (default), named' and enter the name of the Global Navigation button editor you are creating.

4 Click Navigate. The 'Control Panel Details' page for the type of control panel being configured appears.

5 Select 'Navigation' from the 'Button Type' drop-down list. The 'Edit Navigation Button' dialog box appears:
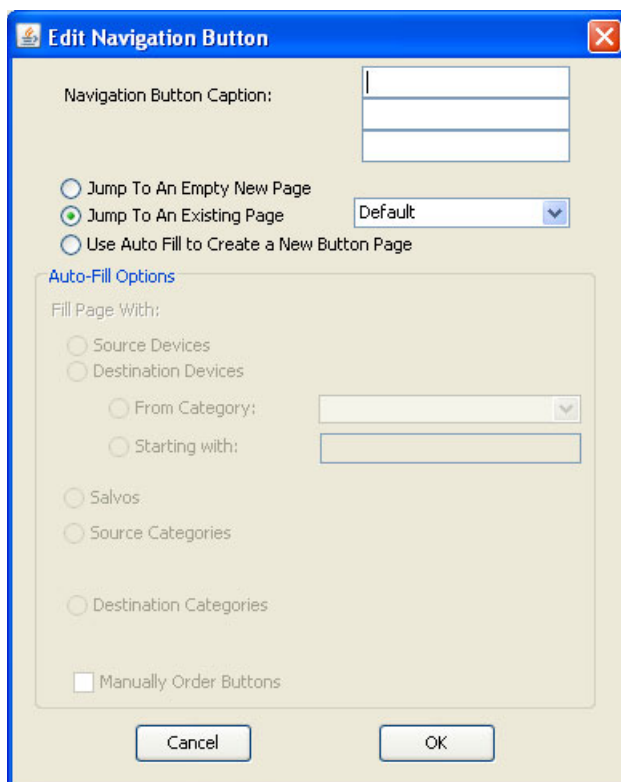
Figure 11-2. Edit Navigation Button Dialog Box

6 In the 'Navigation Button Caption' fields, enter up to three lines of text, 8 characters long. The text will display on the button on the control panel. Usually the text displays the page name and button caption.

7 Select a radio button to determine what action occurs when the navigation button is pressed:

- Jump to an Empty New Page – This option creates a new page in the hierarchy. During operation, the navigation button you are creating causes the control panel to display the related page. That is, when selected all the buttons predetermined for this page display on the control panel. After the page is created, you can select it at any time and edit its buttons.

- Jump to an Existing Page – This does not create a new page. Instead this causes the control panel to display an existing page you have selected from the drop-down list.

- Use Auto-Fill to Create a New Button Page – Activates auto-fill options. Auto fill automatically generates a number of button assignments on one or more subpages as defined in the 'Edit Navigation Button' dialog box, as shown in Figure 11-47. Go to Step 5.

If 'Use Auto Fill....' is left unchecked, the subpage has no new buttons assigned (except for those specified as 'Place this button on all child pages').

NV9000-SE Utilities (SE) creates at least one new button page, filling the page(s) with button functions according to the fill options you specify. Automatic fill has several options, as listed in Step 5.

Automatic fill has a "manually order buttons" option where you can reorder the list items as you want.

Automatic fill creates as many new pages in the hierarchy as required to support the number of fill items. If the number of items is greater than 29, NV9000-SE Utilities places 28 items on a page where the bottom left button is a back button and the bottom right button is a "forward" button. The last page of the automatic fill will not have a forward button and might not be completely filled.

The fill occurs in a left-to-right, and top-to-bottom order:

During operation, the navigation button will cause the NV9000-SE to display the first of the auto-fill pages. The operator uses the back and forward buttons to scroll through the list.

The button caption is what you type in the three lines for the button caption. You can change the names of the automatic fill pages in the button page list. After the pages are created, you can select any of them at any time and edit its buttons.

During configuration, you can double-click a navigation button to view and edit its target page. Any page can have navigation buttons. You can also select pages by double-clicking on the page's page number field in the button page list.

8 Select from the following auto-fill options. Radio button options are distinct; one or the other option may be chosen, but not both.

Radio Button	Activates Options	Description
Source devices		NV9000-SE assigns sources to buttons in new subpage(s). If it has too many sources to fit on the subpage, additional subpages are created, as needed. The software automatically adds **Back** and **Forward** buttons when more than one subpage is required
	From Category	Using the drop-down list, select the category from which the source devices will be defined.
	Starting With	Select source devices starting with a specified substring. For example, if you specify "V" in the 'Starting With' text box, all sources whose names start with "V" are placed on a subpage.
Destination devices		Auto-fill using destination devices functions the same as for source devices, except that destination devices are chosen.
	From Category	Using the drop-down list, select the category from which the destination devices will be defined.
	Starting With	Select destination devices starting with a specified substring. For example, if you specify "V" in the 'Starting With' text box, all sources whose names start with "V" are placed on a subpage.
Salvos		NV9000-SE assigns salvos to buttons in new subpages. If it has too many salvos to fit on the subpage, additional subpages are created, as needed. The software automatically adds **Back** and **Forward** buttons when more than one subpage is required.
Source categories		NV9000-SE assigns source categories to buttons in a new button subpage. If there are too many source categories to fit on the subpage, it creates further subpages as needed. The software adds **Back** and **Forward** buttons when more than one subpage is required. Categories that are both source and destination categories are included.

Radio Button	Activates Options	Description
Destination categories		NV9000-SE assigns destination categories to buttons in a new button subpage. If there are too many destination categories to fit on the subpage, it creates further subpages as needed. The software adds **Back** and **Forward** buttons when more than one subpage is required. Categories that are both source and destination categories are included.
Manually order buttons		If you check the 'Manually order buttons' box, NV9000-SE presents a dialog that lists the sources, destinations, categories, or salvos you selected. You may reorder the items. To do so, ***double-click*** on a row in the list and drag it up or down to the position that you like. The row you selected is re-positioned *beneath* the row on which you release your mouse button. *Note:* If you have two items in this list, to reorder them, drag the first item *on top of* the second. Dragging the second *above, below, or on top of* the first will not work.

Figure 11-3. Edit Navigation Button Dialog Box - Auto Fill Activated

9 Click OK**.** The pages appear in the 'Page Table' section in the order selected.

10 Click Save.

How to Update a Global Navigation Button

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Control Panels'. The 'Control Panels' page appears:

Figure 11-4. Add Control Panel Page

3 Locate the control panel with the word "Navigation" appended. Click anywhere in the row and then Edit Selected Control Panels. The Global Navigation button editor displays.

4 In the 'Button Layout' section, select the 'Navigate' button you want to update and make changes as described in steps 5 through 9 in How to Create a Global Navigation Button on page 235.

5 Click Save.

6 Click Push changes to panel configs. This adjusts all control panel configurations to use the updated template.

7 Implement changes in the control panels. For instructions, see Implementing Configuration Changes on page 17.

How to delete a Global Navigation button

Global Navigation buttons and their editors are deleted just like any other control panel configuration. See Deleting Panels on page 354 for instructions. Deleting a Global Navigation editor removed the Global Navigation button and all associated pages from any control panel to which it was applied.

Adding a Control Panel

A control panel can be added and configured at any time. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

Control panels can be added using a wizard, page or table. Each performs specific tasks:

- 'Add Control Panel' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add a single control panel. Opens the 'Control Panels Details' page through which control panels are defined.

- 'Control Panels' page (accessed through the 'Configuration' pane)—A list of existing panels to which a new control panel can be added. Opens the 'Control Panels Details' page through which panels are added and updated.

- 'Panels' table (accessed through the 'Views' pane)—A list of existing panels and configuration files, one row per configuration file. Using this table, a control panel can be added to an existing configuration file, but no control panel definitions, such as buttons, can be added. That must be done through the 'Control Panel Details' page accessed through 'Control Panels' page.

Several control panels can be added quickly by entering minimal control panel information in the 'Add Control Panel' wizard and then clicking the Finish button. The control panel name and type is added and all fields cleared so that another control panel can be added immediately. However, no control panel configurations, such as buttons, are added. Panels can be configured at a later date using the 'Control Panels' page accessed through the 'Configuration' pane.

The pages used to configure control panels feature a level filter. These filters enable you to limit the choices that display to only sources, destinations, or categories within a selected level.

How to Add a Control Panel

Use the 'Add Control Panel' wizard or 'Control Panels' page.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Tasks' pane and then 'Add Control Panel'.

Or

From the Navigation area, select the 'Configuration' pane and then 'Control Panels'. The 'Control Panels' page displays. On the 'Control Panels' page, click Add Control Panel.

The 'Add Control Panel' page appears:

Figure 11-5. Add Control Panel Page

3 Enter information in the fields provided. Entries must be entered in all active fields:

Field	Description
Type	From the drop-down list, select the control panel being added.
ID	Enter a *unique* identification number up to five digits long. Do not use punctuation marks or symbols.
Name	Enter a unique and descriptive name for the control panel, up to 8 characters long. Do not use punctuation marks or symbols.
User	By default, only the user type 'EnvyUser' is supported at this time. For more information, see Managing User Names on page 509.
Configuration Options	Click the radio button matching the option you want. If no other control panel configuration currently exists in the NV9000-SE system, all radio buttons are deactivated except for 'New'.
	If using an existing control panel configuration from outside the NV9000-SE system, enter a 'New Name' in the field provided and select where 'copied from' from the drop-down list.
	If copying an existing control panel configuration within the NV9000-SE system, select the configuration from the 'Existing' drop-down list.

4 Click Next. The 'Control Panel Details' page for the type of control panel being configured appears.

Or

Click Finish to save the new control panel to the system and add another control panel immediately. The panels are added to the system, but only as files containing the information added in the 'Add Control Panel'. To add control panel configurations, such as buttons, locate the control panel and perform Step 5, as described in this procedure. (See How to Locate and View Existing Control Panels on page 347.)

Or

Click Cancel to clear the fields without saving any information.

5 Follow instructions for entering information for the specific control panel being configured:

Panel Type	Panel Type	Panel Type
NV9601 on page 242	NV9607 on page 271	NV9642 on page 319
NV9602 on page 251	NV9608 on page 277	NV9660 on page 327
NV9603 on page 256	NV9609 on page 286	NV9575-VF on page 329
NV9604 on page 261	NV9616 on page 292	NVRP16 on page 333
NV9605 on page 264	NV9640 on page 301	NVR2P32 on page 335
NV9606 on page 268	NV9641 on page 311	

NV9601

The 'NV9601' page determines how the NV9601 control panel functions and display. For a description of the control panel and functions, see NV9601 on page 517 or refer to the *NV9601 User's Guide*.

The 'NV9601' page is divided into sections:

• Button Layout—A graphic representation of the buttons and control panel window on the control panel. Click on a button to assign a function to it. Certain buttons have preassigned functions and cannot be changed.

• Button Definitions—Assign a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.

• Panel Options—Specify control panel behaviors, such as default modes and switching rules.

The control panel is configured using the 'NV9601' page. When saved, the configurations are communicated to the physical control panel and appears to the operator using the control panel.

How to Configure a NV9601 Control Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9601 control panel. (See Adding a Control Panel on page 240.)

Or

Locate the NV9601 control panel being updated. (See How to Locate and View Existing Control Panels on page 347.)

The 'NV9601' page appears:

Button Layout section

Button Definitions section

Panel Options section
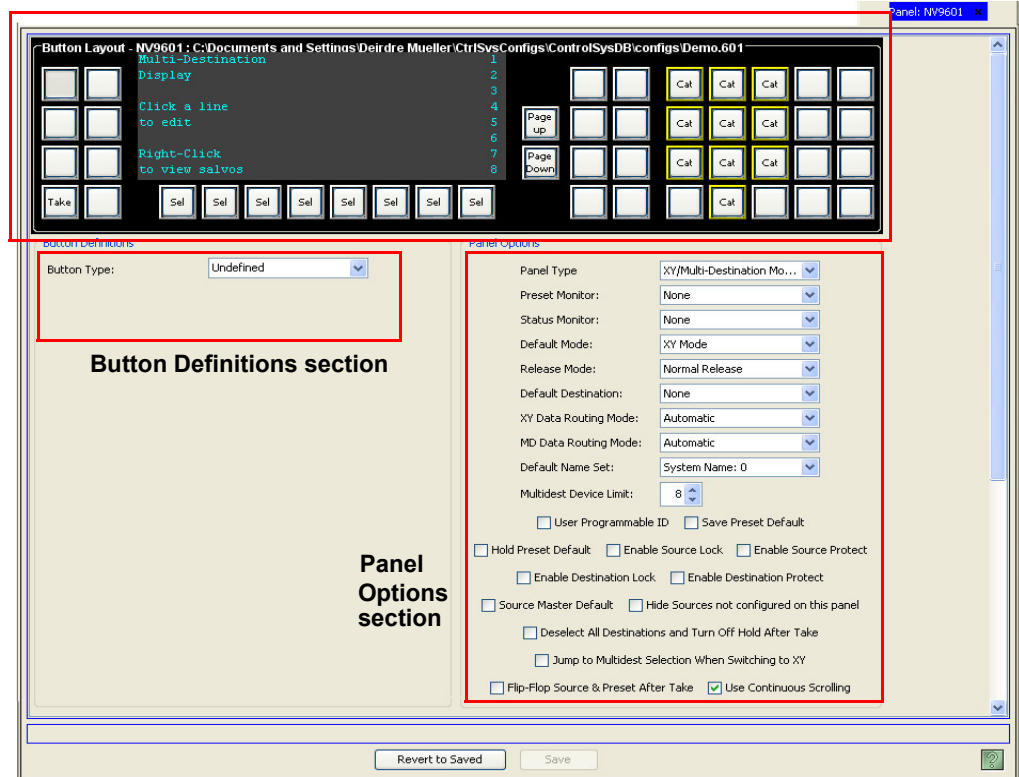
Figure 11-6. NV9601 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists.

Field	Option	Description	Related Topic
Panel Type	XY / Multidest Mode	Panel can be used in either XY or multi-destination (MD) modes. If this option is chosen, place an XY/MD (multi-destination) button on the control panel.	Modes of Operation on page 357 and Default State on page 356
	Multidest Mode Only	Locks the control panel in MD mode. XY mode cannot be accessed.	
	XY Mode Only	Locks control panel in XY mode. MD mode cannot be accessed.	
Preset Monitor	None	Monitor the selected preset by defining a destination that the preset source can be routed to.	—
	‹device›		
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.	—
	‹device›		
Default Mode	XY Mode	Starts the control panel in XY mode after a reset.	—
	Multidest	Starts the control panel in MD mode after a reset.	

Field	Option	Description	Related Topic
Release Mode	Normal Release	This control panel can only release "locks" and "protects" set at the control panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
	Force Release	This control panel can release locks and protects set by any user. We recommend that you use 'Normal Release' mode and assign a PIN to allow access to the 'Force Release' function.	
Default Destination	Last Selected	The control panel remembers the last destination selected and restores this after a reset.	Default State on page 356
	None	After a reset, the control panel displays no destination device. (Not recommended)	
	‹device›	The control panel uses the specified device as the destination after a reset.	
X-Y Data Routing Mode	Automatic	If a data level is involved in the route, connects the source to the destination, regardless of who is currently using the devices.	Default Routing on page 357 and Modes of Operation on page 357
	Semi-automatic	If the device to be acquired is already in use on the data level, the user is alerted. The user can perform the route by pressing **Take** a second time. If **Take** is not pressed again, the route is cancelled. If the device is not in use, the "take" occurs automatically. (Recommended)	
	Manual	All takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level "take".	
MD Data Routing Mode	Automatic	If a data level is involved in the multi-destination route, connects the source to the destinations, regardless of who is currently using the devices. (Recommended)	Default Routing on page 357 and Modes of Operation on page 357
	Manual	All multi-destination takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level "take."	
Default Name Set	‹name set›	The name set selected is applied to the control panel. When a **Name Set Toggle** button is added, it toggles between the default name set and the system name set.	Name Set Toggle on page 363
Multidest Device Limit	(fixed at 8 presently)	The maximum number of MD entries allowed. 16 pages, 8 per page provides 128 maximum (Range 1–128). The default is 8. See Step 5 for the related entry fields.	NV9601 on page 517

3 In the 'Panel Options' section, check a check box to select additional control panel behaviors (un-check a check box to deselect an option).

Check box	Description	Related Topic
User Programmable ID	When checked, the Panel ID can be changed locally at the control panel itself. When unchecked, ID numbers can only be changed by first entering the system PIN locally at the control surface to temporarily enable ID changes.	Changing a Control Panel ID on page 351
Save Preset Default	Makes any **Save Preset** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). This button causes the control panel to save whatever source is in the 'Preset' column, so that if the control panel is reset, that source reappears. When off, the presets are not saved. **Note:** If this option is selected, it is recommended that a **Save Preset** button be placed on the control panel.	Default State on page 360
Hold Preset Default	Makes any **Hold** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). **Note:** If this option is selected, it is recommended that a **Hold** button be placed on the control panel.	Hold on page 361 Default State on page 360
Enable Source Lock	Enables any **Lock** button to lock sources on the control panel. If 'Enable Source Lock' is unchecked, the Lock button cannot be used to lock sources on the control panel.	Locks on page 362
Enable Source Protect	Enables any **Protect** button to protect sources on the control panel. If 'Enable Source Protect' is unchecked, the **Protect** button cannot be used to protect sources on the control panel.	Protect on page 363
Enable Destination Lock	Enables any **Destination Lock** button to function. If 'Enable Destination Lock' is unchecked, the **Destination Lock** button will not function on the control panel.	Locks on page 362
Enable Destination Protect	Enables any **Destination Protect** button to function. If 'Enable Destination Protect' is unchecked, the **Destination Protect** button will not function on the control panel.	Protect on page 363
Source Master Default	Makes the source the controlling (or "master") device permanently. By default, 'destination is master' is selected. (This option is specifically for use with a Miranda data router or port switch.) "Source is master" is used for duplication, or broadcast routing, on the control level. "Destination is master" is for machine-to-machine editing. **Note:** "Source is master" mode reverses the direction of data routing for devices used in data (control) level "takes". **Note:** If 'Source Master Default' is selected, the **Source Master** button will not switch to "destination is master" mode when pressed.	Source Master on page 365
Hide sources not configured on this panel	Hides name of all source devices that are not presently configured. The control panel displays asterisks instead.	—

Check box	Description	Related Topic
Deselect All Destinations and Turn off Hold after Take	**Hold** normally has two functions: (1) allow multiple selections prior to a "take" and (2) retain the selections after the "take" with **Hold** remaining in effect. When this option is selected, a **Hold** performs the first function—allow multiple selections prior to a "take"—but not the second. The **Hold** deselects all destinations and turns itself off after the "take". This option helps eliminate the time-consuming process of finding all and deselecting destinations on many pages after a "take" has been performed.	Hold on page 361
Jump to Multidest Selection when switching to XY	If the user has selected a single destination in multi-destination mode, switching to X-Y mode causes that destination to become the current destination in X-Y mode.	Modes of Operation on page 357
Flip-flop source to preset after Take	Swaps the preset source and the previously assigned source for this destination.	—
Use Continuous Scrolling	If checked, the panel scrolls source or destination devices continuously. That is, the display shows the first device in the list following the last when scrolling up, and shows the last device after the first if scrolling down. If unchecked, the panel stops scrolling when it reaches either the beginning or end of the list. This option does not affect scrolling of salvos when the panel is in salvo mode or levels when the panel is in level mode.	—

4 In the 'Button Layout' section select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

There are two classes of buttons:

- Those that assign a dedicated function to a button directly, such as 'Def State' (default state) or 'Clear'.
- Those that define a variable function, such as 'Category'. Additional options display enabling you to define the variables.

Select from the following button options:

Button	Modes	Description	Related Topic
Broadcast	All modes	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	Broadcast on page 359
Category	All modes	Selects a category (and its device list). Separate categories are permitted for source and destination devices. When you assign a category button, three additional drop-down menus appear: 'Source Category', 'Destination Category', and 'Suffix'. Choose one of the categories (or none) from the category lists. Choose one of the suffixes (or none) from the suffix list. Select a level from the 'Level Set Filter' to limit categories to only those in the selected level.	Using Categories and Suffixes on page 190\ and Category on page 359

Button	Modes	Description	Related Topic
Chop	All modes	When supported by the router, the button is a toggle that enables and disables rapid switching of the selected destination device between the current source and the preset source. Used to test system timing.	Chop on page 360
Clear	All modes	Clears the last input in a series of entries. Press repeatedly to clear an entire sequence.	Clear on page 360
Clear Preset	All modes	Erases entries in the control panel's 'Preset' column, while leaving the control panel in the same mode. Recommended as a "safety" button.	Clear Preset on page 360
Default State	All modes	Returns the control panel to its pre-defined state.	Default State on page 360
Destination	All modes	Assigns a destination device to this control panel.	--
Destination Lock	All modes	Sets or removes a "lock" on current destination device. The lock can only be removed at the control panel that originally set the lock, or by a control panel that has 'Force Release' enabled. An "L" on the control panel display indicates a "lock".	Locks on page 362
Destination Mode	All modes	This button initiates the destination selection sequence, and lights all valid category buttons in amber. Operators choose the desired destination in XY mode, or the destination to add in multi-destination mode.	Destination Mode on page 360
Destination Protect	All modes	Sets or removes a "protect" on current destination device. The protect can only be removed at the control panel that originally set the protect, or by a control panel that has 'Force Release' enabled. A "P" on the control panel display indicates a "protect".	Protect on page 363
Free Source	All modes	Defines a phantom device that can be used to release or "free" devices on the data (control) level. A free source is also used with tielines to free the tieline for others to use. The free source is configured in the Level Sets page.	Free Source on page 361 and Level Sets on page 111
Hold	All modes	Retains preset information after **Take** is pressed. Useful when routing the same source to many destinations.	Hold on page 361
Information	All modes	Panel mode is changed to display system messages. This button toggles between current control panel mode and the info screen. A "+" sign indicates messages are present. The Info button lights when messages are available for viewing.	Information on page 361
Level Map	All modes	Cross-connects levels (typically in the same physical router). Typically used to shuffle audio channels, for example, to connect AES1/2 to AES3/4. When an **Info** button is configured, you can view current cross-connects. The 'Level' mode is cancelled when the next normal "take" is performed involving the selected devices. (The **Level Map** button becomes enabled only when there is a valid preset.)	Level Mapping on page 362

Button	Modes	Description	Related Topic
Lock	All modes	Sets or removes a "lock" on the current source or destination device. The lock can be removed only at the control panel that originally set the lock, or by a control panel that has 'Force Release' enabled. An "L" on the control panel display indicates a "lock".	Locks on page 362
Menu	All modes	Brings up a menu that provides access to a variety of local control panel options. The button is required if you want access to system menus and "local" salvos.	Menu Mode on page 358
Name Set Toggle	All modes	Toggles between the default name set and the system name set.	Name Set Toggle on page 363
Panel Lock	All modes	Prevents accidental changes to the control panel settings. When the control panel is locked, the button array becomes blank except for the **Panel Lock** button.	Panel Lock on page 363
Preset Release	All modes	Used to remove locks and protects from preset devices (in the 'Preset' column). If locks and protects are commonly used, this button is recommended.	Preset Release on page 363
Previous Source	All modes	Immediately restores the previously selected source to the current destination (similar to an "undo" button). Press **Take** to complete the route.	Previous Source on page 363
Protect	All modes	Sets or removes a "protect" on the current source or destination device. The protect can be removed only at the control panel that originally set the protect, or by a control panel that has 'Force Release' enabled. A "P" on the control panel display indicates a "protect".	Protect on page 363
Salvo	All modes	Places the control panel in 'Salvo' mode. The button is required if you want access to system salvos. When you assign 'Salvo' to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364 and Salvos on page 431
Save Preset	All modes	When on, this button causes the control panel to save whatever source is in the 'Preset' column, so that if the control panel is reset, that source reappears. When off, the presets are not saved.	—
Scroll	All modes	Allows scrolling through all data in a list (such as a category) using the **Page Up** and **Page Down** buttons. The function toggles on/off with each press of the Scroll button. (A recommended button.)	Scroll on page 365
Source	All modes	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level. (The same is true if selecting destinations in MD mode.)	Source on page 365
Source Master	XY only	The button reverses the direction of data routing for devices used in data (control) level "takes". For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing Source Master reverses the roles.	Source Master on page 365

Button	Modes	Description	Related Topic
Source Mode	All modes	This (required) button initiates the source selection sequence, and lights all valid category buttons in green.	Source Mode on page 365
SrcDstMode	All modes	Toggles between all buttons being sources or all buttons being destinations, depending on the current control panel mode.	—
Take	All modes	Switches the loaded preset source device(s) to the selected destination device on all levels that have a preset loaded. The 'Status' column changes to the new device(s).	Take on page 366
Undefined	--	Makes the button undefined and inactive. It will remain unlit.	—
XY / MD Mode	All modes	Switches control panel between XY and multi-destination modes.	Modes of Operation on page 357

5 (For MD mode only) If the control panel window displays multi-destination lines, as shown in Figure 11-7, edit the multi-destination display as needed:

a If "Multi-destination Display" is not currently displaying, as shown in Figure 11-7, right-click on the control panel display window.

Figure 11-7. Panel Window Displaying Salvo Options

b Click on any line in the control panel to edit that line. Click **Page Down** to view additional lines. The window displays 8 lines at any one time. The 'Multi-Destination Display Entry' dialog box appears:
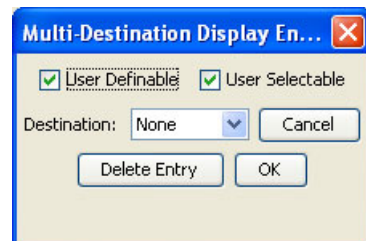
Figure 11-8. Multi-Destination Display Entry Dialog Box

c Select if the line is 'User Definable' and/or 'User Selectable':

'User Definable' allows the operator to change a destination that appears in the display area. Uncheck the 'User Definable' check box if the destination is to remain fixed.

Note	When a multi-destination button is user definable, a Destination Mode button must be added to the control panel. This allows the user to select a new destination from that location in the destination list using the category/index buttons. If selected, the new destination is retained, even after reset.

'User Selectable' allows the operator to select the device (using the selection buttons) and preset a new source. Uncheck the 'User Selectable' if check box if the destination is to be "view only." In view-only mode, the user cannot route to the destination, but other control panels may.

d Select a 'Destination' from the drop-down list and click OK. The destination displays on the selected line in the control panel window.

e Click OK to close the dialog box and save your changes.

Or

Click Cancel to close the dialog box without saving changes.

f Repeat steps **b** through **e** until all destinations you want are listed.

g To remove a destination, select the line in the window and click Delete Entry on the dialog box.

6 Set up salvos as needed. For information about salvos, see [Salvos](#) on page 431:

a Right-click in the control panel window if "Salvo Display" does not appear, as shown here:
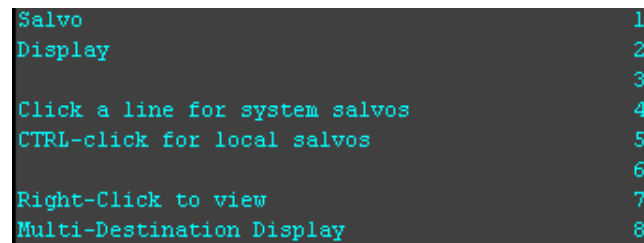
Figure 11-9. Panel Window Displaying Salvo Options

b Click on a line in the window to select it. Click Page Up to view additional lines. The window displays 8 lines at a time. The 'Salvo Display Entry' dialog box appears:
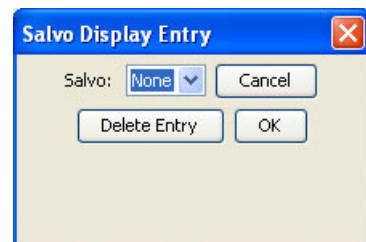
Figure 11-10. Salvo Display Entry Dialog Box

c Choose a salvo from the drop-down menu and click OK. The salvo displays on the selected line in the control panel window and the dialog box closes.

Or

Click Cancel to close the dialog box without saving changes.

d Repeat steps b and c until all salvos you want to add display in the window.

e To remove a salvo, select the line in the window and click Delete Entry on the dialog box.

7 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

8 Click X on the window title tab to close the page.

NV9602

The 'NV9602' page determines how the NV9602 control panel functions and displays. For a full description of the control panel and functions, see NV9602 on page 519.

The 'NV9602' page is divided into sections:

- Button Layout — A graphic representation of the control panel. Click on a button to assign a function to it. The right-most buttons are normally used as up/down buttons and there are two arrows silk-screened to the right of these buttons. Do not place a menu function on these buttons.
- Button Definitions — Assigns a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.
- Panel Options — Specifies control panel behavior, such as default modes.

The control panel options, button layout and button definitions are configured using the 'NV9602' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel.

How to Configure a NV9602 Control Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9602 control panel. (See Adding a Control Panel on page 240.)

Or

Locate the NV9602 control panel being updated. (See How to Locate and View Existing Control Panels on page 347.)

The 'NV9602' page appears:

Button Layout section
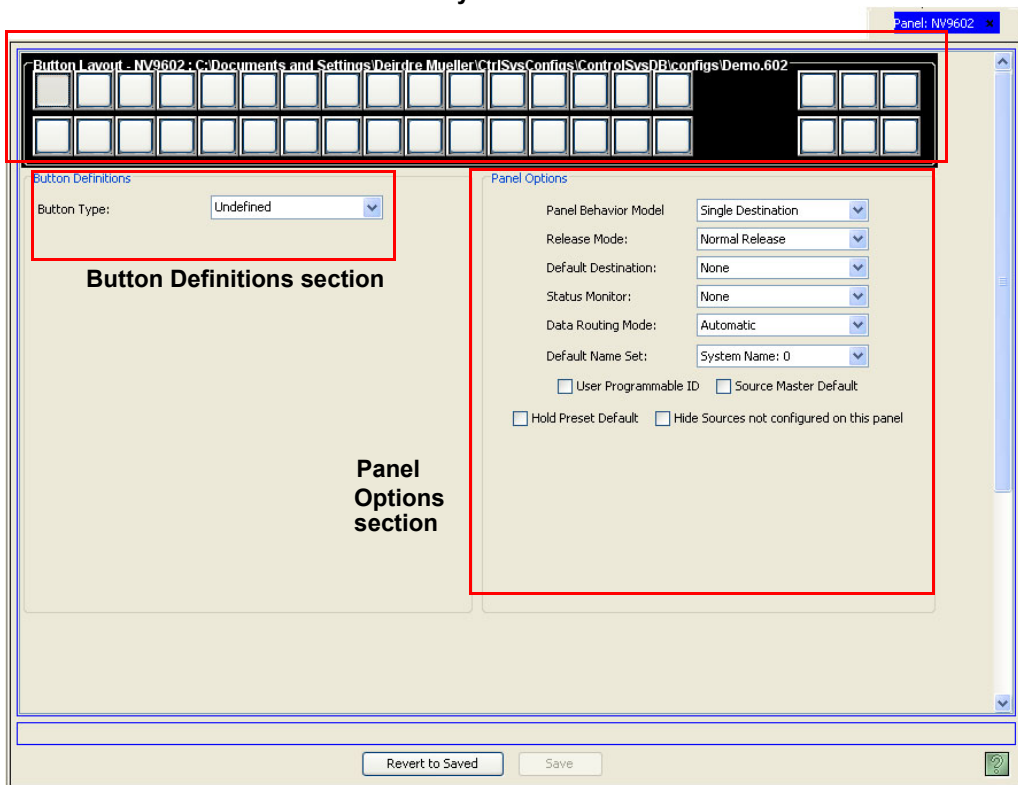
Figure 11-11. NV9602 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists, such as operation modes and default settings.

Field	Option	Description	Related Topic
Panel behavior model	Single destination	A single destination device is assigned to this control panel. Buttons are generally configured as source devices, which are then available to this destination simply by selecting them. This mode is commonly referred to as BPS, or button-per-source.	—
	Limited X-Y	A mix of source and destination devices is programmed, allowing any source to be routed to any destination. This mode is not to be confused with full X-Y operation—this is a subset using only devices assigned to control panel buttons.	Modes of Operation on page 357
	Single destination with Breakaway	You may assign NV9602 buttons as virtual levels allowing level-by-level "takes." All panels are restricted to a single destination.	About Breakaways on page 359
	Multiple destination	This mode breaks a single NV9602 into multiple "button-per-source" panels, similar to NV9601 multi-destination mode. Refer to the NV9602 User's Guide for more details.	Modes of Operation on page 357

Field	Option	Description	Related Topic
Release Mode	Normal Release	This control panel can only release "locks" and "protects" set at the control panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
	Force Release	This control panel can release locks and protects set by any user. Miranda recommends that you use 'Normal Release' mode and assign a PIN to allow access to the 'Force Release' function.	
Default Destination	None	After a reset, the control panel displays no destination device. (Not recommended.)	Default State on page 356
	‹device›	The control panel uses the specified device as the destination after a reset. This also becomes the destination controlled when the control panel is set to single destination mode.	
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.	—
	‹device›		
Data Routing Mode	Automatic	X-Y mode routes made on the control level, if present, occur automatically.	Default Routing on page 357
	Semiautomatic	X-Y mode routes made on the control level, if present, require a confirmation before being switched.	
	Manual	All X-Y routes made on the control level when the source device is currently in-use are performed as separate takes.	
Default Name Set	‹name set›	The name set selected is applied to the control panel. When a **Name Set Toggle** button is added, it toggles between the default name set and the system name set.	Name Set Toggle on page 363

3 In the 'Panel Options' section, check a check box to select additional control panel behaviors (un-check a check box to deselect an option).

Check box	Description	Related Topic
User Programmable ID	When checked, the Panel ID can be changed locally at the control panel itself. When unchecked, ID numbers can only be changed by first entering the system PIN locally at the control surface to temporarily enable ID changes.	Changing a Control Panel ID on page 351
Source Master Default	Makes the source the controlling (or "master") device permanently. By default, 'destination is master' is selected. (This option is specifically for use with a Miranda data router or port switch.) "Source is master" is used for duplication, or broadcast routing, on the control level. "Destination is master" is for machine-to-machine editing. **Note:** "Source is master" mode reverses the direction of data routing for devices used in data (control) level "takes". **Note:** If 'Source Master Default' is selected, the **Source Master** button will not switch to "destination is master" mode when pressed.	Source Master on page 365
Hold Preset Default	Makes any **Hold** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). **Note:** If this option is selected, it is recommended that a **Hold** button be placed on the control panel.	Hold on page 361 and Default State on page 360
Hide sources not configured on this panel	Hides name of all source devices that are not presently configured. The control panel displays asterisks instead.	—

4 In the 'Button Layout' section, select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

There are two classes of buttons:

- Those that assign a dedicated function to a button directly, such as 'Def State' (default state) or 'Clear'.
- Those that define a variable function, such as 'Category'. Additional options display enabling you to define the variables.

Select from the following button options:

Button	Modes	Description	Related Topic
Broadcast	All modes	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	Broadcast on page 359
Chop	All modes	When supported by the router, the button is a toggle that enables and disables rapid switching of the selected destination device between the current source and the preset source. Used to test system timing.	Chop on page 360
Default State	All modes	Returns the control panel to its pre-defined state.	Default State on page 360
Destination	Limited XY only	Assigns a destination device to this control panel.	—
Destination Lock	All but MD	Sets or removes a "lock" on current destination device.	Locks on page 362
Destination Protect	All but MD	Sets or removes a "protect" on current destination device.	Protect on page 363
Destination Shift	Limited XY only	Allows the operator to select the second destination device mapped to a destination button. Two sets of destination devices can be programmed. The button toggles between the "unshifted" set and the "shifted" set.	Destination Shift on page 360
Free Source	All but MD	Defines a phantom device that can be used to release or "free" devices on the data (control) level. A free source is also used with tielines to free the tieline for others to use. The free source is configured in the Level Sets page.	Free Source on page 361 and Level Sets on page 111
Menu	All modes	Brings up a menu that provides access to a variety of local control panel options. The button is required if you want access to system menus and "local" salvos.	Menu Mode on page 358
Name Set Toggle	All modes	Toggles between the default name set and the system name set.	Name Set Toggle on page 363
Panel Lock	Limited XY only	Prevents accidental changes to the control panel settings. When the control panel is locked, the button array becomes blank except for the **Panel Lock** button.	Panel Lock on page 363
Previous Source	All but MD	Immediately restores the previously selected source to the current destination (similar to an "undo" button).	Previous Source on page 363
Salvo	All modes	Places the control panel in 'Salvo' mode. The button is required if you want access to "system" salvos. When you assign 'Salvo' to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364 and Salvos on page 431

Button	Modes	Description	Related Topic
Source	All modes	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level. (The same is true if selecting destinations in MD mode.)	Source on page 365
Source Master	All modes	The button reverses the direction of data routing for devices used in data (control) level "takes". For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing **Source Master** reverses the roles.	Source Master on page 365
Source Shift	All modes	Allows the operator to select the second source device mapped to a source button. Two sets of source devices can be programmed. The button toggles between the "unshifted" set and the "shifted" set.	Source Shift on page 365
Undefined	All modes	Makes the button undefined and inactive. It will remain unlit.	—

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

NV9603

The 'NV9603' page determines how the NV9603 control panel functions and displays. For a full description of the control panel and functions, see NV9603 on page 521.

The 'NV9603' page is divided into sections:

- Button Layout—A graphic representation of the control panel. Click on a button to assign a function to it. Certain buttons have preassigned functions and cannot be changed.
- Button Definitions—Assigns a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.
- Panel Options—Specifies control panel behavior, such as the mode of operation and default mode.

The control panel options, button layout and button definitions are configured using the 'NV9603' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel

How to configure a NV9603 control panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9603 control panel. (See Adding a Control Panel on page 240.)

   Or

   Locate the NV9603 control panel being updated. (See How to Locate and View Existing Control Panels on page 347.) The 'NV9603' page appears:

Button Layout section
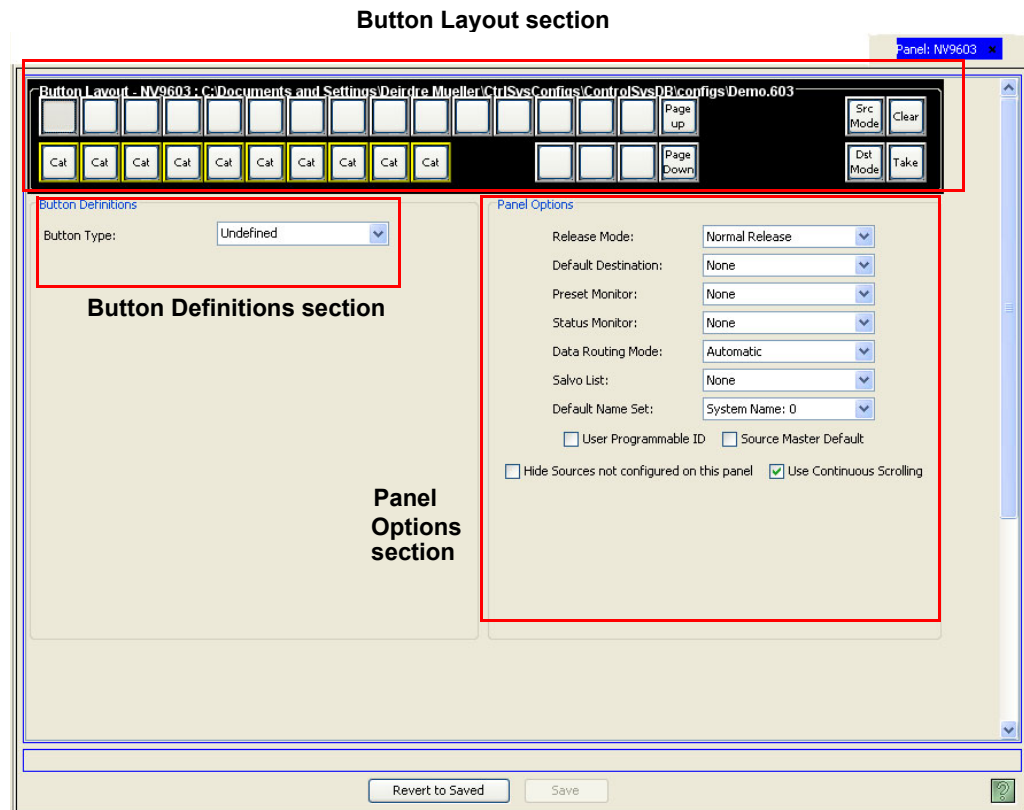
Figure 11-12. NV9603 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists:

Field	Option	Description	Related Topic
Release Mode	Normal Release	This control panel can only release "locks" and "protects" set at the control panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
	Force Release	This control panel can release locks and protects set by any user. Miranda recommends that you use 'Normal Release' mode and assign a PIN to allow access to the 'Force Release' function.	

Field	Option	Description	Related Topic
Default Destination	None	After a reset, the control panel displays no destination device. (Not recommended.)	Default State on page 356
	‹device›	The control panel uses the specified device as the destination after a reset. This also becomes the destination controlled when the control panel is set to single destination mode.	
Preset Monitor	None	Monitor the selected preset by defining a destination that the preset source can be routed to.	—
	‹device›		
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.	—
	‹device›		
Data Routing Mode	Automatic	X-Y mode routes made on the control level, if present, occur automatically.	Modes of Operation on page 357 and Default Routing on page 357
	Semiautomatic	X-Y mode routes made on the control level, if present, require a confirmation before being switched.	
	Manual	All X-Y routes made on the control level when the source device is currently in-use are performed as separate takes.	
Salvo List	‹salvo›	Select from existing salvos already created in NV9000 system.	Salvos on page 364 and Salvos on page 431
Default Name Set	‹name set›	The name set selected is applied to the control panel. When a **Name Set Toggle** button is added, it toggles between the default name set and the system name set.	Name Set Toggle on page 363

3 In the 'Panel Options' section, check a check box to select additional behavior panels (un-check a check box to deselect an option):

Check box	Description	Related Topic
User-Programmable ID	When checked, the Panel ID can be changed locally at the control panel itself. When unchecked, ID numbers can only be changed by first entering the system PIN locally at the control surface to temporarily enable ID changes.	—
Source Master Default	Makes the source the controlling (or "master") device permanently. By default, 'destination is master' is selected. (This option is specifically for use with a Miranda data router or port switch.)	Source Master on page 365
	"Source is master" is used for duplication, or broadcast routing, on the control level. "Destination is master" is for machine-to-machine editing.	
	Note: "Source is master" mode reverses the direction of data routing for devices used in data (control) level "takes".	
	Note: If 'Source Master Default' is selected, the **Source Master** button will not switch to "destination is master" mode when pressed.	

Check box	Description	Related Topic
Hide sources not configured on this panel	Hides name of all source devices that are not presently configured. The control panel displays asterisks instead.	—
Use Continuous Scrolling	If checked, the panel scrolls source or destination devices continuously. That is, the display shows the first device in the list following the last when scrolling up, and shows the last device after the first if scrolling down. If unchecked, the panel stops scrolling when it reaches either the beginning or end of the list. This option does not affect scrolling of salvos when the panel is in salvo mode or levels when the panel is in level mode.	—

4 In the 'Button Layout' section, select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

There are two classes of buttons:

- Those that assign a dedicated function to a button directly, such as 'Def State' (default state) or 'Clear'. No other options are available.

- Those that define a variable function, such as 'Category'. Additional options display enabling you to define the variables.

Select from the following button options:

Button	Description	Related Topic
Broadcast	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	Broadcast on page 359
Category	Selects a category (and its device list). Separate categories are permitted for source and destination devices. When you assign a category button, three additional drop-down menus appear: 'Source Category', 'Destination Category' and 'Suffix'. Choose one of the categories (or none) from the category lists. Choose one of the suffixes (or none) from the suffix list. Select a level from the 'Level Set Filter' to limit categories to only those in the selected level.	Category on page 359
Chop	When supported by the router, the button is a toggle that enables and disables rapid switching of the selected destination device between the current source and the preset source. Used to test system timing.	Chop on page 360
Destination	Selects a destination device. Choose a destination from the drop-down list. An optional 'Level Set Filter' may be selected to limit the devices that display to only those in the selected level sets.	Level Sets on page 111
Destination Lock	Sets or removes a "lock" on the current destination device.	Locks on page 362
Destination Mode	This (required) button initiates the destination selection sequence, and lights all valid category buttons in amber. Operators choose the desired destination in XY mode, or the destination to add in 'Multidest' mode.	Destination Mode on page 360 and Modes of Operation on page 357

Button	Description	Related Topic
Destination Protect	Sets or removes a "protect" on the current destination device.	Protect on page 363
Destination Shift	Allows the operator to select the second destination device mapped to a destination button. Two sets of destination devices can be programmed. The button toggles between the "unshifted" set and the "shifted" set.	Destination Shift on page 360
Free Source	Defines a phantom device that can be used to release or "free" devices on the data (control) level. A free source is also used with tielines to free the tieline for others to use. The free source is configured in the Level Sets page.	Free Source on page 361 and Level Sets on page 111
Level	Shows the status of a specific level on the display. When a level button is assigned, a 'Virtual Level' drop-down menu appears. Choose one of the levels or 'none'.	About Levels and Level Sets on page 112
Menu	Displays a menu of local control panel options. *Do not* assign the menu to either of the buttons with up/down arrows beside them (the right-most buttons).	Menu Mode on page 358
Name Set Toggle	Toggles between the default name set and the system name set.	Name Set Toggle on page 363
Page Down	Allows scrolling through all data in a list (such as a category) using the **Page Up** and **Page Down** buttons. The function toggles on/off with each press of the Scroll button. (A recommended button.)	—
Page Up		
Panel Lock	Prevents accidental changes to the control panel settings. When the control panel is locked, the button array becomes blank except for the **Panel Lock** button.	Panel Lock on page 363
Previous Source	Immediately restores the previously selected source to the current destination (similar to an "undo" button).	Previous Source on page 363
Salvo	The button either executes a salvo or arms a salvo (where a second press executes the salvo). When you assign **Salvo** to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364 and Salvos on page 431
Source	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level.	Source on page 365 and Source Shift on page 365
Source Master	The button reverses the direction of data routing for devices used in data (control) level "takes". For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing **Source Master** reverses the roles.	Source Master on page 365
Source Mode	This (required) button initiates the source selection sequence, and lights all valid category buttons in green.	Source Mode on page 365
Source Shift	Allows the operator to select the second source device mapped to a source button. Two sets of source devices can be programmed. The button toggles between the "unshifted" set and the "shifted" set.	Source Shift on page 365

Button	Description	Related Topic
Take	Switches the loaded preset source device(s) to the selected destination device on all levels that have a preset loaded. The 'Status' column changes to the new device(s).	Take on page 366
Undefined	Makes the button undefined and inactive. It will remain unlit.	—

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

NV9604

The 'NV9604' page determines how the NV9604 control panel functions and displays. For a full description of the control panel and functions, see NV9604 on page 522.

The 'NV9604' page is divided into sections:

- Button Layout — A graphic representation of the control panel. Click on a button to assign a function to it. Certain buttons have preassigned functions and cannot be changed.

- Button Definitions — Assigns a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.

- Panel Options — Specifies control panel behavior, such as the type of control panel and default mode.

The control panel options, button layout and button definitions are configured using the 'NV9604' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel.

How to Configure a NV9604 Control Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9604 control panel. (See Adding a Control Panel on page 240.)

Or

Locate the NV9604 control panel being updated. (See How to Locate and View Existing Control Panels on page 347.)

The 'NV9604' page appears:

Button Layout section
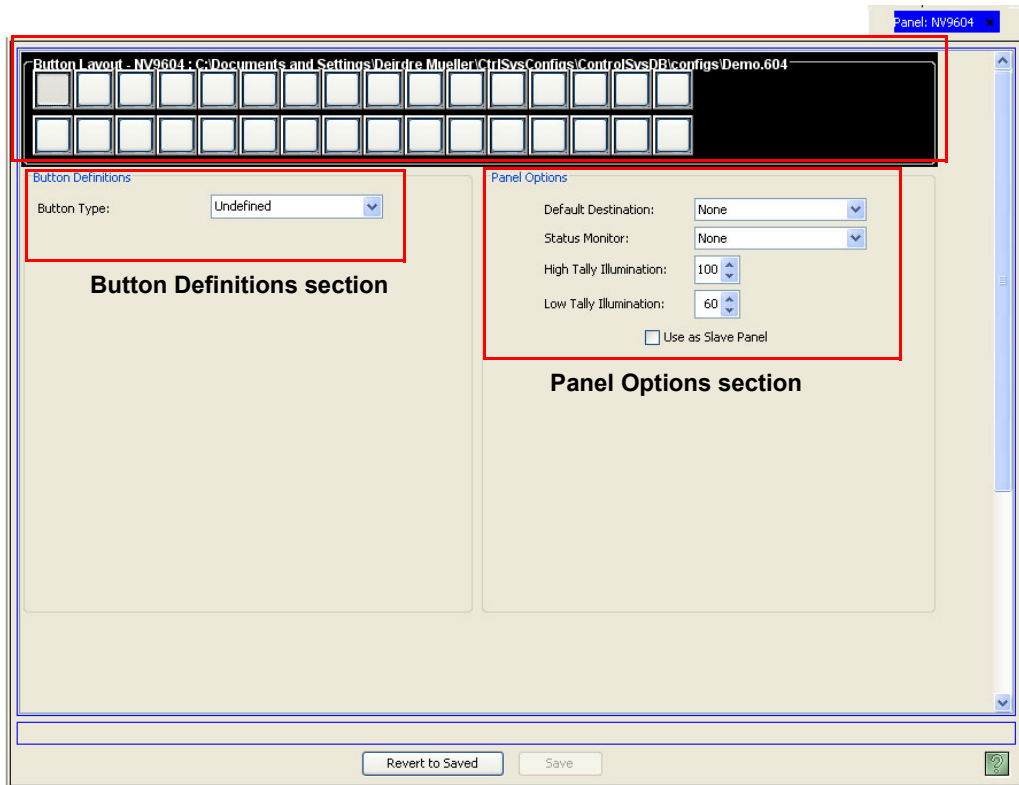
Figure 11-13. NV9604 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists:

Field	Option	Description
Default Destination	None	After a reset, the control panel displays no destination device. (Not recommended). See Default State on page 356.
	‹device›	The Panel uses the specified device as the destination after a reset. This also becomes the destination controlled when the control panel is set to single destination mode.
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.
	‹device›	
High Tally Illumination	‹number›	Controls button brightness. Press the up or down arrow to increase or decrease the number that displays. The greater the number, the greater the brightness; the lower the number, the dimmer the brightness. High tally is always brighter than low tally.
Low Tally Illumination	‹number›	

3 In the 'Panel Options' section, check the 'Use as Slave Panel' check box to have the NV9604 act as a "slave" to an NV9602 control panel. For more information, see Default Routing on page 357.

a If checked, the 'Configure Slave Panel' dialog box appears:

Figure 11-14. Configure Slave Panel Dialog Box

b From the drop-down list, select the ID of the control panel acting as the "master" control panel and click OK.

To view a list of control panel IDs, from the 'Views' pane select 'Panels'. All panels currently in the system display with an ID in the 'Panel ID' column.

4 In the 'Button Layout' section, select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

Select button options as follows:

Button	Description	Related Topic
Destination	Assigns a destination device to this control panel.	—
Previous Source	Immediately restores the previously selected source to the current destination (similar to an "undo" button).	Previous Source on page 363
Salvo	The button either executes a salvo or arms a salvo (where a second press executes the salvo). When you assign Salvo to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364 and Salvos on page 431
Source	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level.	Source on page 365 and Source Shift on page 365
Undefined	Makes the button undefined and inactive. It will remain unlit.	—

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

NV9605

The 'NV9605' page determines how the NV9605 control panel functions and displays. For a full description of the control panel and functions, see <u>NV9605</u> on page 524.

The 'NV9605' page is divided into sections:

- Button Layout — A graphic representation of the control panel buttons. The default 'Page Up' and 'Page Down' buttons scroll through four "pages" of button functions with each page appearing in the left-most 32 buttons. These may not be changed.

- Button Definitions — Assign a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.

- Outputs — The general-purpose I/O (GPIO) output connections at the rear of the control panel.

- Inputs — The general-purpose I/O (GPIO) input connections at the rear of the control panel.

- Panel Options — Specify control panel behavior, such as default mode.

The control panel options, button layout and button definitions are configured using the 'NV9605' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel.

How to Configure a NV9605 Control Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9605 control panel. (See <u>Adding a Control Panel</u> on page 240.)

Or

Locate the NV9605 control panel being updated. (See <u>How to Locate and View Existing Control Panels</u> on page 347.)

The 'NV9605' page appears:
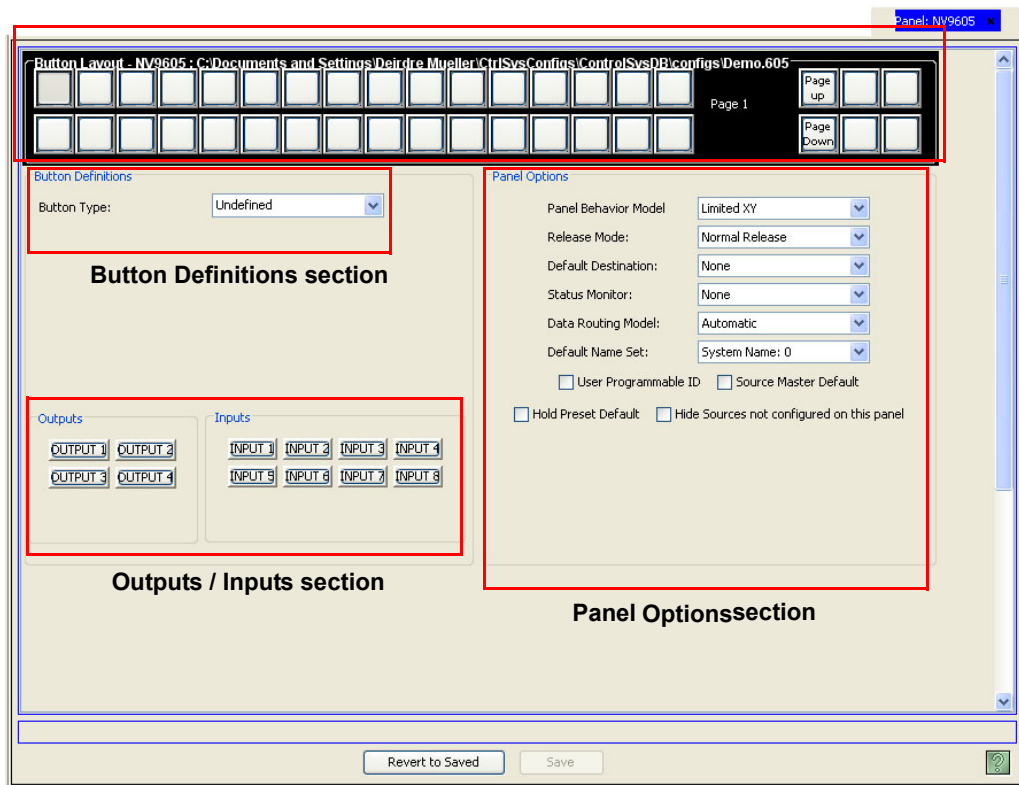
Figure 11-15. NV9605 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down listsIn the

Field	Option	Description	Related Topic
Panel Behavior	Limited XY	Locks control panel in X-Y mode. Multidestination (MD) mode cannot be accessed.	Modes of Operation on page 357
	Multi-destination	Locks the control panel in MD mode. X-Y mode cannot be accessed.	
Release Mode	Normal Release	This control panel can only release "locks" and "protects" set at the control panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
	Force Release	This control panel can release locks and protects set by any user. Miranda recommends that you use 'Normal Release' mode and assign a PIN to allow access to the 'Force Release' function.	

Field	Option	Description	Related Topic
Default Destination	Last Selected	Panel remembers the last destination selected and restores this after a reset.	Default State on page 356
	None	After a reset, the control panel displays no destination device. (Not recommended.)	
	‹device›	The Panel uses the specified device as the destination after a reset. This also becomes the destination controlled when the control panel is set to single destination mode.	
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.	—
	‹device›		
Data Routing Mode	Automatic	Routes made on the control level, if present, occur automatically.	Default Routing on page 357
	Semiautomatic	Routes made on the control level, if present, require a confirmation before being switched.	
	Manual	All routes made on the control level when the source device is currently in-use are performed as separate "takes".	
Default Name Set	<name set>	The name set selected is applied to the control panel. When a **Name Set Toggle** button is added, it toggles between the default name set and the system name set.	Name Set Toggle on page 363

3 In the 'Panel Options' section, check a check box to select additional control panel behaviors (un-check a check box to deselect an option):

Check box	Description	Related Topic
User-Programmable ID	When checked, the Panel ID can be changed locally at the control panel itself. When unchecked, ID numbers can only be changed by first entering the system PIN locally at the control surface to temporarily enable ID changes.	—
Source Master Default	Makes the source the controlling (or "master") device permanently. By default, 'destination is master' is selected. (This option is specifically for use with a Miranda data router or port switch.) "Source is master" is used for duplication, or broadcast routing, on the control level. "Destination is master" is for machine-to-machine editing. **Note:** "Source is master" mode reverses the direction of data routing for devices used in data (control) level "takes". **Note:** If 'Source Master Default' is selected, the **Source Master** button will not switch to "destination is master" mode when pressed.	
Hold Preset Default	Makes any **Hold** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). **Note:** If this option is selected, it is recommended that a **Hold** button be placed on the control panel.	Hold on page 361 Default State on page 360
Hide sources not configured on this panel	Hides name of all source devices that are not presently configured. The control panel displays asterisks instead.	—

4 In the 'Button Layout' section, select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section. Buttons in the left-hand section (32 total) may only be assigned Destination, Level, Salvo, Source and Undefined. The buttons that appear in the right-hand section (6 total), may be assigned any of the functions listed below.

There are two classes of buttons:

- Those that assign a dedicated function to a button directly, such as 'Def State' (default state) or 'Clear'.
- Those that define a variable function, such as 'Destination'. Additional options display enabling you to define the variables.

Select from the following button options:

Button	Modes	Description	Related Topic
Destination	XY only	Selects a destination device. Choose a destination from the drop-down list. An optional 'Level Set Filter' may be selected to limit the devices that display to only those in the selected level sets.	Level Sets on page 111
Level	XY, MD	Shows the status of a specific level on the display. When a level button is assigned, a 'Virtual Level' drop-down menu appears. Choose one of the levels or 'none'.	Level Sets on page 111
Name Set Toggle	All modes	Toggles between the default name set and the system name set.	Name Set Toggle on page 363
Panel Lock	XY, MD	Prevents accidental changes to the control panel settings. When the control panel is locked, the button array becomes blank except for the **Panel Lock** button.	Panel Lock on page 363
Salvo	XY, MD	Places the control panel in 'Salvo' mode. The button is required if you want access to system salvos. When you assign 'Salvo' to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364 and Salvos on page 431
Source	XY, MD	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level. (The same is true if selecting destinations in multi-destination mode.)	Source on page 365
Undefined	XY, MD	Makes the button undefined and inactive. It will remain unlit.	—

5 In the 'Outputs' and 'Inputs' sections, define the general-purpose I/O (GPIO) connections at the rear of the control panel as described in Defining General Purpose I/O (GPIO) Connections on page 337.

6 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the page.

NV9606

The 'NV9606' page determines how the NV9606 control panel functions and displays. For a full description of the control panel and functions, see <u>NV9606</u> on page 525.

The 'NV9606' page is divided into sections:

- Button Layout—A graphic representation of the control panel. Click on a button to assign a function to it.

- Button Definitions—Assigns a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.

- Outputs—The general-purpose I/O (GPIO) output connections at the rear of the control panel.

- Inputs—The general-purpose I/O (GPIO) input connections at the rear of the control panel.

- Panel Options—Specifies control panel behavior, such as the type of control panel and default mode.

The control panel options, button layout and button definitions are configured using the 'NV9606' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel.

How to Configure a NV9606 Control Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9606 control panel. (See <u>Adding a Control Panel</u> on page 240.)

Or

Locate the NV9606 control panel being updated. (See <u>How to Locate and View Existing Control Panels</u> on page 347.)

The 'NV9606' page appears:

Button Layout section

Figure 11-16. NV9606 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists:

Field	Option	Description
Default Destination	None	After a reset, the control panel displays no destination device. (Not recommended). See Default State on page 356.
	‹device›	The control panel uses the specified device as the destination after a reset. This also becomes the destination controlled when the control panel is set to single destination mode.
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.
	‹device›	
High Tally Illumination	‹number›	Controls button brightness. Press the "up" or "down" arrow to increase or decrease the number that displays. The greater the number, the greater the brightness; the lower the number, the dimmer the brightness. High tally is always brighter than low tally.
Low Tally Illumination	‹number›	

3 In the 'Panel Options' section, check the 'Use as Slave Panel' check box to have the NV9606 act as a "slave" to an NV9607 control panel. For more information, see Default Routing on page 357.

a If checked, the 'Configure Slave Panel' dialog box appears:

Figure 11-17. Configure Slave Panel Dialog Box

b From the drop-down list, select the ID of the control panel acting as the "master" control panel and click OK.

To view a list of control panel IDs, from the 'Views' pane select 'Panels'. All panels currently in the system display with an ID in the 'Panel ID' column.

4 In the 'Button Layout' section, select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

Select from the following button options:

Button	Description	Related Topic
Destination	Assigns a destination device to this control panel.	—
Panel Lock	Prevents accidental changes to the control panel settings. When the control panel is locked, the button array becomes blank except for the **Panel Lock** button.	Panel Lock on page 363
Previous Source	Immediately restores the previously selected source to the current destination (similar to an "undo" button).	Previous Source on page 363
Salvo	The button either executes a salvo or arms a salvo (where a second press executes the salvo). When you assign Salvo to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364 and Salvos on page 431
Source	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level.	Source on page 365
Undefined	Makes the button undefined and inactive. It will remain unlit.	—

5 In the 'Outputs' and 'Inputs' sections, define the general-purpose I/O (GPIO) connections at the rear of the control panel as described in Defining General Purpose I/O (GPIO) Connections on page 337.

6 Click Save.

Or

To revert to the previously saved configuration, click Revert to Save.

NV9607

The 'NV9607' page determines how the NV9607 control panel functions and displays. For a full description of the control panel and functions, see [NV9607](#) on page 526.

The 'NV9607' page is divided into sections:

- Button Layout — A graphic representation of the control panel buttons; up to 116 configurable buttons.

- Button Definitions — Assigns a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.

- Outputs — The general-purpose I/O (GPIO) output connections at the rear of the control panel.

- Inputs — The general-purpose I/O (GPIO) input connections at the rear of the control panel.

- Panel Options — Specifies control panel behavior, such as default mode.

- VFD Display Options — A Vacuum Fluorescent Display (VFD) area that can be configured to display with 4 or 8 lines of text. Once configured, the area displays level status information during normal operation. The operator can also configure the area to display specific levels on a line-by-line basis.

The control panel options, button layout and button definitions are configured using the 'NV9607' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel.

How to Configure a NV9607 Control Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9607 control panel. (See [Adding a Control Panel](#) on page 240.)

Or

Locate the NV9607 control panel being updated. (See [How to Locate and View Existing Control Panels](#) on page 347.)
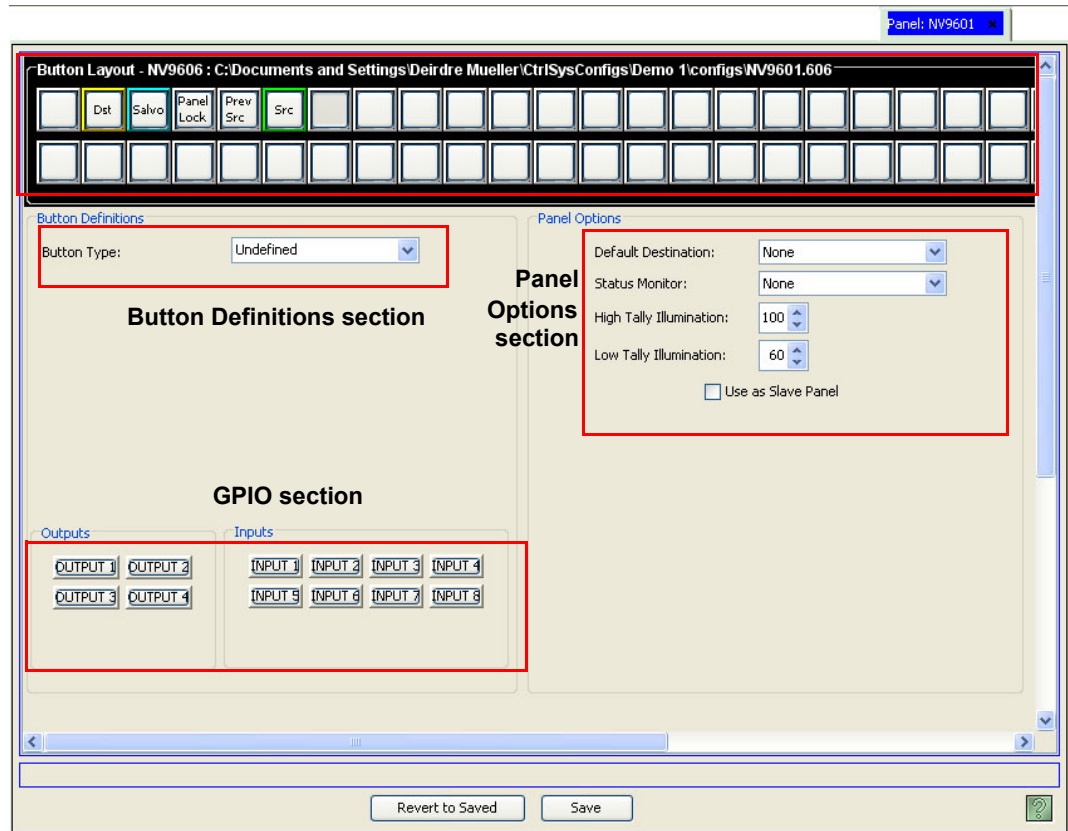
The 'NV9607' page appears:
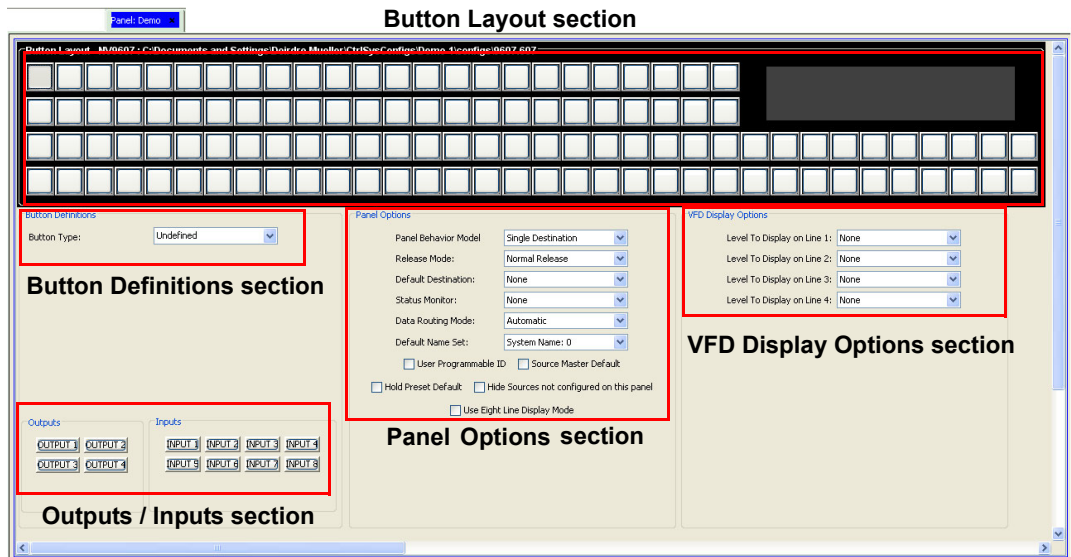
Figure 11-18. NV9607 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists.

Field	Option	Description	Related Topic
Panel Behavior Model	Single Destination	A single destination device is assigned to this control panel. Buttons are generally configured as source devices, which are then available to this destination simply by selecting them. This mode is commonly referred to as BPS, or button-per-source.	—
	Limited X-Y	A mix of source and destination devices is programmed, allowing any source to be routed to any destination. This mode is not to be confused with full X-Y operation—this is a subset using only devices assigned to control panel buttons.	Modes of Operation on page 357
	Single Destination with Breakaway	You may assign NV9607 buttons as virtual levels allowing level-by-level "takes." All panels are restricted to a single destination.	About Breakaways on page 359
	Multiple Destination	This mode breaks a single NV9607 into multiple "button-per-source" panels. Refer to the NV9607 User's Guide for more details.	Modes of Operation on page 357
Release Mode	Normal Release	This control panel can only release "locks" and "protects" set at the control panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
	Force Release	This control panel can release locks and protects set by any user. Miranda recommends that you use 'Normal Release' mode and assign a PIN to allow access to the 'Force Release' function.	

Field	Option	Description	Related Topic
Default Destination	None	After a reset, the control panel displays no destination device. (Not recommended.)	Default State on page 356
	‹device›	The control panel uses the specified device as the destination after a reset. This also becomes the destination controlled when the control panel is set to single destination mode.	
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.	—
	‹device›		
Data Routing Mode	Automatic	X-Y mode routes made on the control level, if present, occur automatically.	Default Routing on page 357
	Semiautomatic	X-Y mode routes made on the control level, if present, require a confirmation before being switched.	
	Manual	All X-Y routes made on the control level when the source device is currently in-use are performed as separate takes.	
Default Name Set	<name set>	The name set selected is applied to the control panel. When a **Name Set Toggle** button is added, it toggles between the default name set and the system name set.	Name Set Toggle on page 363

3 In the 'Panel Options' section, check a check box to select additional control panel behaviors (un-check a check box to deselect an option):

Check box	Description	Related Topic
User-Programmable ID	When checked, the Panel ID can be changed locally at the control panel itself. When unchecked, ID numbers can only be changed by first entering the system PIN locally at the control surface to temporarily enable ID changes.	—
Source Master Default	Makes the source the controlling (or "master") device permanently. By default, 'destination is master' is selected. (This option is specifically for use with a Miranda data router or port switch.)	Source Master on page 365
	"Source is master" is used for duplication, or broadcast routing, on the control level. "Destination is master" is for machine-to-machine editing.	
	Note: "Source is master" mode reverses the direction of data routing for devices used in data (control) level "takes".	
	Note: If 'Source Master Default' is selected, the **Source Master** button will not switch to "destination is master" mode when pressed.	
Hold Preset Default	Makes any **Hold** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted).	Hold on page 361 Default State on page 360
	Note: If this option is selected, it is recommended that a **Hold** button be placed on the control panel.	

Check box	Description	Related Topic
Hide Sources not configured on this panel	Hides name of all source devices that are not presently configured. The control panel displays asterisks instead.	—
Use Eight Line Display Mode	Displays up to eight lines in the display area. If more than eight lines of information are available, make sure to include **Page Up** and **Page Down** buttons on the control panel so that operators can view the entire list.	—

4 In the 'Button Layout' section select a blank button and then in the 'Button Definitions' section select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

There are two classes of buttons:

- Those that assign a dedicated function to a button directly, such as 'Def State' (default state) or 'Clear'.
- Those that define a variable function. Additional options display enabling you to define the variables.

Select from the following button options:

Button	Modes	Description	Related Topic
Broadcast	All modes	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	Broadcast on page 359
Chop	All modes	When supported by the router, the button is a toggle that enables and disables rapid switching of the selected destination device between the current source and the preset source. Used to test system timing.	Chop on page 360
Default State	All modes	Returns the control panel to its pre-defined state.	Default State on page 360
Destination Lock	All but MD	Sets or removes a "lock" on current destination device. The lock can only be removed at the control panel that originally set the lock, or by a control panel that has "Force Release" enabled.	Locks on page 362
Destination Protect	All but MD	Sets or removes a "protect" on current destination device. The protect can only be removed at the control panel that originally set the protect, or by a control panel that has 'Force Release' enabled.	Protect on page 363
Destination Shift	Limited XY only	Allows the operator to select the second destination device mapped to a destination button. Two sets of destination devices can be programmed. The button toggles between the "unshifted" set and the "shifted" set.	Destination Shift on page 360

Button	Modes	Description	Related Topic
Free Source	All but MD	Defines a phantom device that can be used to release or "free" devices on the data (control) level. A free source is also used with tielines to free the tieline for others to use. The free source is configured in the Level Sets page.	Free Source on page 361
Information	All modes	Panel mode is changed to display system messages. This button toggles between current control panel mode and the info screen. A "+" sign indicates messages are present. The Info button lights when messages are available for viewing.	Information on page 361
Level	All but MD	Shows the status of a specific level on the display. When a level button is assigned, a 'Virtual Level' drop-down menu appears. Choose one of the levels or 'none'.	About Levels and Level Sets on page 112
Menu	All modes	Brings up a menu that provides access to a variety of local control panel options. The button is required if you want access to system menus and "local" salvos.	Menu Mode on page 358
Name Set Toggle	All modes	Toggles between the default name set and the system name set.	Name Set Toggle on page 363
Page Down Page Up	All modes	Allows scrolling through all data in a list (such as a category) using the **Page Up** and **Page Down** buttons. The function toggles on/off with each press of the **Scroll** button. (A recommended button.)	—
Panel Lock	All modes	Prevents accidental changes to the control panel settings. When the control panel is locked, the button array becomes blank except for the **Panel Lock** button.	Panel Lock on page 363
Previous Source	All but MD	Immediately restores the previously selected source to the current destination (similar to an "undo" button). Press **Take** to complete the route.	Previous Source on page 363
Salvo	All modes	Places the control panel in 'Salvo' mode. The button is required if you want access to "system" salvos. When you assign 'Salvo' to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364 and Salvos on page 431
Source	All modes	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level. (The same is true if selecting destinations in multi-destination mode.)	Source on page 365

Button	Modes	Description	Related Topic
Source Master	All modes	The button reverses the direction of data routing for devices used in data (control) level "takes". For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing **Source Master** reverses the roles.	Source Master on page 365
Source Preview	All modes	Places the control panel into a mode through which the source device assigned to a button can be determined without taking the source to the current destination.	Source Preview on page 366
Source Shift	All modes	Allows the operator to select the second source device mapped to a source button. Two sets of source devices can be programmed. The button toggles between the "unshifted" set and the "shifted" set.	Source Shift on page 365
Source/Dest Toggle	All modes	Toggles between a source in one mode (i.e. X-Y) and a destination in another mode (i.e. MD).	Source/Dest Toggle on page 365
Source/ Destination	All modes	Button is either a single source or a single destination depending on the operating mode.	Source/Destination on page 365
Take	All modes	Switches the loaded preset source device(s) to the selected destination device on all levels that have a preset loaded. The 'Status' column changes to the new device(s).	Take on page 366
Undefined	—	Makes the button undefined and inactive. It will remain unlit.	—

5 In the 'VFD Display Options' section, select the level that displays on each line of the VFD Display, or select <none> to have no level display.

6 In the 'Outputs' and 'Inputs' sections, define the general-purpose I/O (GPIO) connections at the rear of the control panel as described in Defining General Purpose I/O (GPIO) Connections on page 337.

7 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

8 Click X on the window title tab to close the page.

NV9608

The 'NV9608' page determines how the NV9608 control panel functions and displays. For a full description of the control panel and functions, see NV9608 on page 528.

The 'NV9608' page is divided into sections:

- Button Layout—A graphic representation of the buttons on the control panel. Click on a button to assign a function to it. Certain buttons have preassigned functions and cannot be changed.

- Button Definitions—Assigns a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.

- Panel Options—Specifies control panel behavior, such as the default mode.

The control panel options, button layout and button definitions are configured using the 'NV9608' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel.

How to Configure a NV9608 Control Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9608 control panel. (See Adding a Control Panel on page 240.)

Or

Locate the NV9608 control panel being updated. (See How to Locate and View Existing Control Panels on page 347.)

The 'NV9608' page appears:

Button Layout section
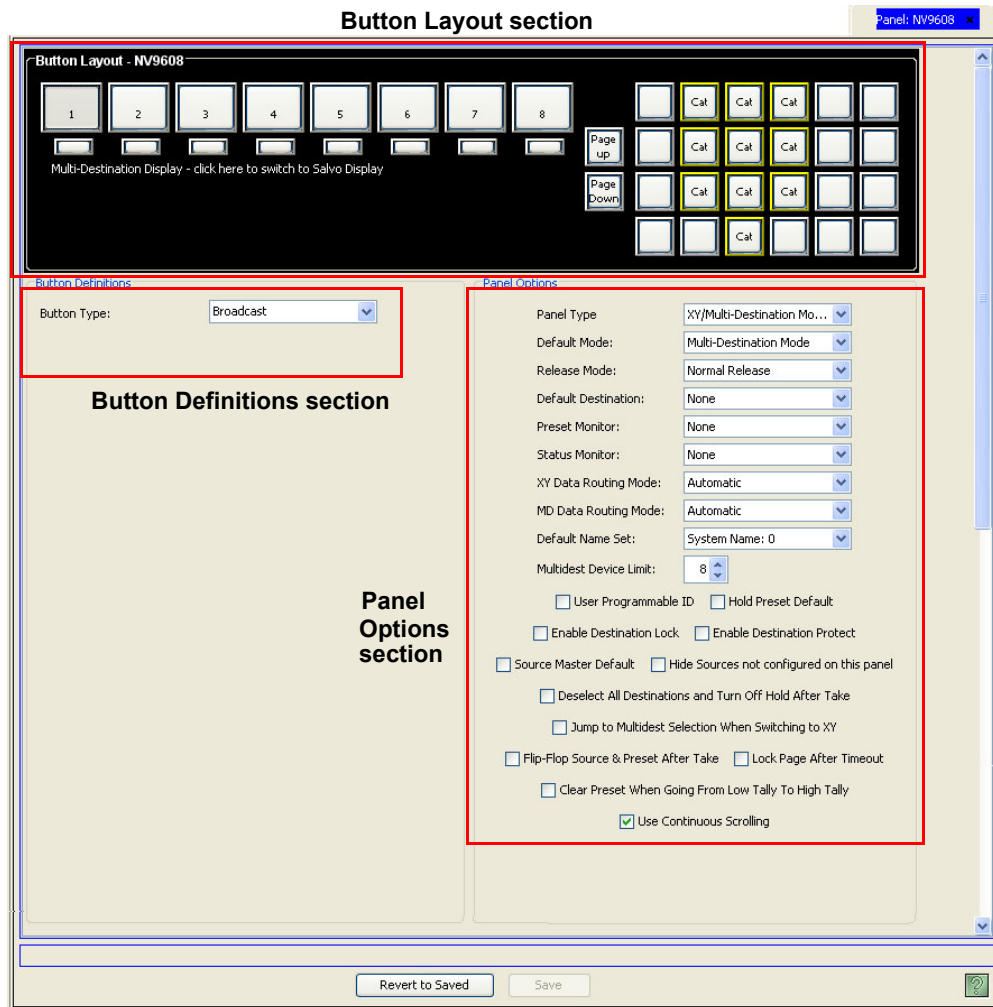
Figure 11-19. NV9608 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists:

Field	Option	Description	Related Topic
Panel Type	XY / Multi-Destination Mode	Panel can be used in either XY or Multidestination modes. If this option is chosen, place an **XY/MD** button on the control panel.	Modes of Operation on page 357
	XY Mode	Locks control panel in XY mode. Multidestination mode cannot be accessed.	
	Multi-Destination Mode	Locks the control panel in multidestination mode. XY mode cannot be accessed.	
Default Mode	XY Mode	Starts the control panel in X-Y mode after a reset.	Default State on page 356
	Multi-Destination Mode	Starts the control panel in multidestination (MD) mode after a reset.	

Field	Option	Description	Related Topic
Release Mode	Normal Release	This control panel can only release "locks" and "protects" set at the control panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
	Force Release	This control panel can release locks and protects set by any user. Miranda recommends that you use 'Normal Release' mode and assign a PIN to allow access to the 'Force Release' function.	
Default Destination	Last Selected	Panel remembers the last destination selected and restores this after a reset.	Default State on page 356
	None	After a reset, the control panel displays no destination device. (Not recommended.)	
	‹device›	The Panel uses the specified device as the destination after a reset.	
Preset Monitor	None	Monitor the selected preset by defining a destination that the preset source can be routed to.	—
	‹device›		
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.	—
	‹device›		
XY Data Routing Mode	Automatic	If a data level is involved in the route, connect the source to the destination, regardless of who is currently using the devices.	Default Routing on page 357
	Semi-automatic	If the device to be acquired is already in use on the data level, alerts the user — but allows the user to perform the route by pressing **Take** a second time. If **Take** is not pressed again, the route is cancelled. If the device is not in use, the take occurs automatically. Recommended mode.	
	Manual	All takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level take.	
MD Data Routing Mode	Automatic	If a data level is involved in the multi-destination route, connect the source to the destinations, regardless of who is currently using the devices. (Recommended.)	Default Routing on page 357
	Manual	All multi-destination takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level take.	

Field	Option	Description	Related Topic
Default Name Set	‹name set›	The name set selected is applied to the control panel. When a **Name Set Toggle** button is added, it toggles between the default name set and the system name set.	[Name Set Toggle](#) on page 363
Multidest Device Limit	‹number›	The maximum number of multi-destination entries allowed. 16 pages, 8 per page provides 128 maximum (Range 1–128). The default is 8.	—

3 In the 'Panel Options' section, check a check box to select additional control panel behaviors (un-check a check box to deselect an option):

Check box	Description	Related Topic
User-Programmable ID	When checked, the Panel ID can be changed locally at the control panel itself. When unchecked, ID numbers can only be changed by first entering the system PIN locally at the control surface to temporarily enable ID changes.	—
Hold Preset Default	Makes any **Hold** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). **Note:** If this option is selected, it is recommended that a **Hold** button be placed on the control panel.	[Hold](#) on page 361 and [Default State](#) on page 360
Enable Destination Lock	Enables any **Destination Lock** button to function. If 'Enable Destination Lock' is unchecked, the **Destination Lock** button will not function on the control panel.	[Locks](#) on page 362
Enable Destination Protect	Enables any **Destination Protect** button to function. If 'Enable Destination Protect' is unchecked, the **Destination Protect** button will not function on the control panel.	[Protect](#) on page 363
Source Master Default	Makes the source the controlling (or "master") device permanently. By default, 'destination is master' is selected. (This option is specifically for use with a Miranda data router or port switch.) "Source is master" is used for duplication, or broadcast routing, on the control level. "Destination is master" is for machine-to-machine editing. **Note:** "Source is master" mode reverses the direction of data routing for devices used in data (control) level "takes". **Note:** If 'Source Master Default' is selected, the **Source Master** button will not switch to "destination is master" mode when pressed.	[Source Master](#) on page 365
Hide sources not configured on this panel	Hides name of all source devices that are not presently configured. The control panel displays asterisks instead.	—

Check box	Description	Related Topic
Deselect All Destinations and Turn off Hold after Take	**Hold** normally has two functions: (1) allow multiple selections prior to a "take" and (2) retain the selections after the take with Hold remaining in effect. When this option is selected, a **Hold** performs the first function—allow multiple selections prior to a "take"—but not the second. The **Hold** deselects all destinations and turns itself off after the take. This option helps eliminate the time-consuming process of finding all (and only those) and deselecting destinations on many pages after a "take" has been performed.	Hold on page 361 and Take on page 366
Jump to Multidest Selection when switching to XY	If the user has selected a single destination in multi-destination mode, switching to X-Y mode causes that destination to become the current destination in X-Y mode.	Modes of Operation on page 357
Flip-Flop Source & Preset After Take	Swaps the preset source and the previously assigned source for this destination.	—
Lock Page After Timeout	The control panel locks after a set time of inactivity and the 'Page Up' and 'Page Down' buttons go dark to prevent the MD destinations from accidently being scrolled. Pressing any other button starts the timeout over. The time out is set in the 'SysParams' table ((PANEL_PRESET_TIMEOUT)). By default the timeout is set to 30 seconds.	Managing System Parameters on page 48 Locks on page 362
Clear Preset When Going From Low Tally to High Tally	Clears the current Preset by pushing the switch from high tally to low tally to high tally again and then proceeds to preset a new source.	—
Use Continuous Scrolling	If checked, the panel scrolls source or destination devices continuously. That is, the display shows the first device in the list following the last when scrolling up, and shows the last device after the first if scrolling down. If unchecked, the panel stops scrolling when it reaches either the beginning or end of the list. This option does not affect scrolling of salvos when the panel is in salvo mode or levels when the panel is in level mode.	—

4 In the 'Button Layout' section, select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

There are two classes of buttons:

- Those that assign a dedicated function to a button directly, such as 'Def State' (default state) or 'Clear'. No other options are available.

- Those that define a variable function, such as 'Category'. Additional options display enabling you to define the variables.

Select button options as follows:

Button	Modes	Description	Related Topic
Broadcast	All modes	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	Broadcast on page 359
Category	All modes	Selects a category (and its device list). Separate categories are permitted for source and destination devices. When you assign a category button, three additional drop-down menus appear: 'Source Category', 'Destination Category' and 'Suffix'. Choose one of the categories (or none) from the category lists. Choose one of the suffixes (or none) from the suffix list. Select a level from the 'Level Set Filter' to limit categories to only those in the selected level.	Category on page 359 and Categories on page 189
Chop	All modes	When supported by the router, the button is a toggle that enables and disables rapid switching of the selected destination device between the current source and the preset source. Used to test system timing.	Chop on page 360
Clear	All modes	Clears the last entry in a sequence of entries.	Clear on page 360
Clear Preset	All modes	Erases entries in the control panel's 'Preset' column, while leaving the control panel in the same mode. Recommended as a "safety" button.	Clear Preset on page 360
Default State	All modes	Returns the control panel to its pre-defined state.	Default State on page 360
Destination Lock	All modes	Sets or removes a "lock" on current destination device. The lock can only be removed at the control panel that originally set the lock, or by a control panel that has "Force Release" enabled.	Locks on page 362 and Force Release on page 360
Destination Mode	All modes	This (required) button initiates the destination selection sequence, and lights all valid category buttons in amber. Operators choose the desired destination in XY mode, or the destination to add in 'Multidest' mode.	Destination Mode on page 360 and Modes of Operation on page 357
Destination Protect	All modes	Sets or removes a "protect" on current destination device. The protect can only be removed at the control panel that originally set the protect, or by a control panel that has 'Force Release' enabled.	Protect on page 363
Free Source	All modes	Defines a phantom device that can be used to release or "free" devices on the data (control) level. A free source is also used with tielines to free the tieline for others to use. The free source is configured in the Level Sets page.	Free Source on page 361 and Level Sets on page 111

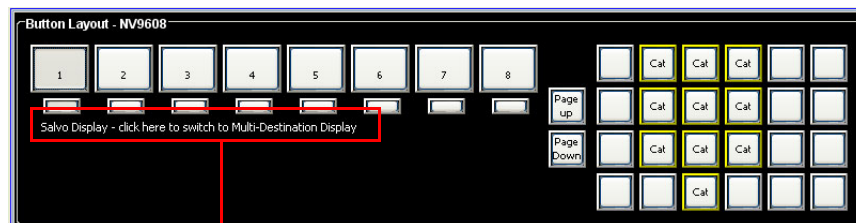| Button	Modes	Description	Related Topic
Gang Take	All modes	Can perform a "take" of multiple levels of a device at a single time. Switches multiple preset destinations simultaneously (with a single button press). The switching may take several milliseconds to complete.	—
Hold	All modes	Retains preset information after **Take** is pressed. Useful when routing the same source to many destinations.	Hold on page 361
Information	All modes	Panel mode is changed to display system messages. This button toggles between current control panel mode and the info screen. A "+" sign indicates messages are present. The Info button lights when messages are available for viewing.	Information on page 361
Level Map	All modes	Cross-connects levels (typically in the same physical router). Typically used to shuffle audio channels, for example, to connect AES1/2 to AES3/4. When an **Info** button is configured, you can view current cross-connects. The 'Level' mode is cancelled when the next normal 'Take' is performed involving the selected devices. (The **Level Map** button becomes enabled only when there is a valid preset.)	Level Mapping on page 362
Load Preset	All Modes	Recalls a named set of stored presets. A **Gang Take** button can switch all preset destinations simultaneously (with a single button press - the 'Gang Take' may take several milliseconds to complete). The 'Gang Take' is not required. Presets are stored using the **Save Preset** button.	—
Menu	All modes	Brings up a menu that provides access to a variety of local control panel options. The button is required if you want access to system menus and "local" salvos.	Menu Mode on page 358
Name Set Toggle	All modes	Toggles between the default name set and the system name set.	Name Set Toggle on page 363
Panel Lock	All modes	Prevents accidental changes to the control panel settings. When the control panel is locked, the button array becomes blank except for the **Panel Lock** button.	—
Preset Release	All modes	Used to remove locks and protects from preset devices (in the 'Preset' column). If locks and protects are commonly used, this button is recommended.	Preset Release on page 363
Previous Source	All modes	Immediately restores the previously selected source to the current destination (similar to an "undo" button). Press **Take** to complete the route.	Previous Source on page 363

Button	Modes	Description	Related Topic
Salvo	All modes	Places the control panel in Salvo mode. The button is required if you want access to system salvos. When you assign 'Salvo' to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364
Save Preset	All modes	When on, this button causes the control panel to save whatever source is in the 'Preset' column, so that if the control panel is reset, that source reappears. When off, the presets are not saved.	—
Source	All modes	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level. (The same is true if selecting destinations in multi-destination mode.)	Source on page 365
Source Master	All but MD	The button reverses the direction of data routing for devices used in data (control) level "takes". For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing **Source Master** reverses the roles.	Source Master on page 365
Source Mode	All modes	This (required) button initiates the source selection sequence, and lights all valid category buttons in green.	Source Mode on page 365
SrcDst Mode	All modes	Toggles between all buttons being sources or all buttons being destinations, depending on the current control panel mode.	—
Undefined	—	Makes the button undefined and inactive. It will remain unlit.	—
XY / MD Mode	All modes	Switches control panel between XY and multi-destination modes.	Modes of Operation on page 357

5 Enter destinations for multi-destination switching:

a Click on the line of text 'Salvo Display - Click here to switch to Multi-Destination Display', as shown in as shown in Figure 11-20. The text is a toggle.

Figure 11-20. Multi-Destination Display Switch

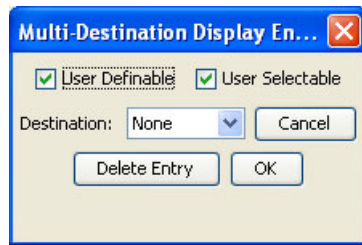b Click a button in the control panel image. The 'Multi-Destination Display Entry' dialog box appears:

Figure 11-21. Multi-Destination Display Entry Dialog Box

c Select if the line is 'User Definable' and/or 'User Selectable':

'User Definable' allows the operator to change a destination that appears in the display area. Uncheck the 'User Definable' check box if the destination is to remain fixed.

Note	When a multi-destination button is user definable, a Destination Mode button must be added to the control panel. This allows the user to select a new destination from that location in the destination list using the category/index buttons. If selected, the new destination is retained, even after reset.

'User Selectable' allows the operator to select the device (using the selection buttons) and preset a new source. Uncheck the 'User Selectable' if check box if the destination is to be "view only." In view-only mode, the user cannot route to the destination, but other control panels and automation may.

d Select a 'Destination' from the drop-down list and click OK. The destination displays on the selected line in the control panel window.

e Click OK to close the dialog box and save your changes.

Or

Click Cancel to close the dialog box without saving changes.

f Repeat steps **b** through **e** until all destinations you want are listed.

g To remove a destination, click Delete Entry on the dialog box.

6 Set up salvos as needed. For information about salvos, see Salvos on page 431:

a Click on the line of text 'Multi-Destination Display - Click here to switch to Salvo Display', as shown in as shown in Figure 11-22. The text is a toggle.

Click to activate Salvo mode

Figure 11-22. Salvo Display Switch

b Click a button in the control panel image to select a destination number. The 'Salvo Display Entry' dialog box appears, as shown in Figure 11-23. The text is a toggle.
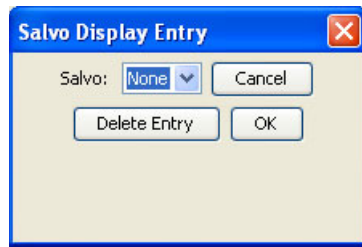
Figure 11-23. Salvo Display Entry Dialog Box

c Choose a salvo from the drop-down menu and click OK. The salvo number displays on the selected line in the control panel window.

Or

Click Delete Entry to delete the entry.

Tip	Operators using the control panel may define a local salvo by placing the control panel in "record" mode (using the menu), performing a sequence of operations, and saving the salvo by giving it a name. The operator must also add the new salvo to the salvo list so that it can be selected when the operator places the control panel in salvo mode.

7 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

8 Click X on the window title tab to close the page.

NV9609

The 'NV9609' page determines how the NV9609 control panel functions and displays. For a full description of the control panel and functions, see NV9609 on page 531.

The 'NV9609' page is divided into sections:

- Button Layout—A graphic representation of the buttons on the control panel. Click on a button to assign a function to it. Certain buttons have preassigned functions and cannot be changed.
- Button Definitions—Assigns a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.
- Outputs—The general-purpose I/O (GPIO) output connections at the rear of the control panel.
- Inputs—The general-purpose I/O (GPIO) input connections at the rear of the control panel.
- Panel Options—Specifies control panel behavior, such as the default mode.

The control panel options, button layout and button definitions are configured using the 'NV9609' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel.

How to Configure a NV9609 Control Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9609 control panel. (See Adding a Control Panel on page 240.)

Or

Locate the NV9609 control panel being updated. (See How to Locate and View Existing Control Panels on page 347.) The 'NV9609' page appears:
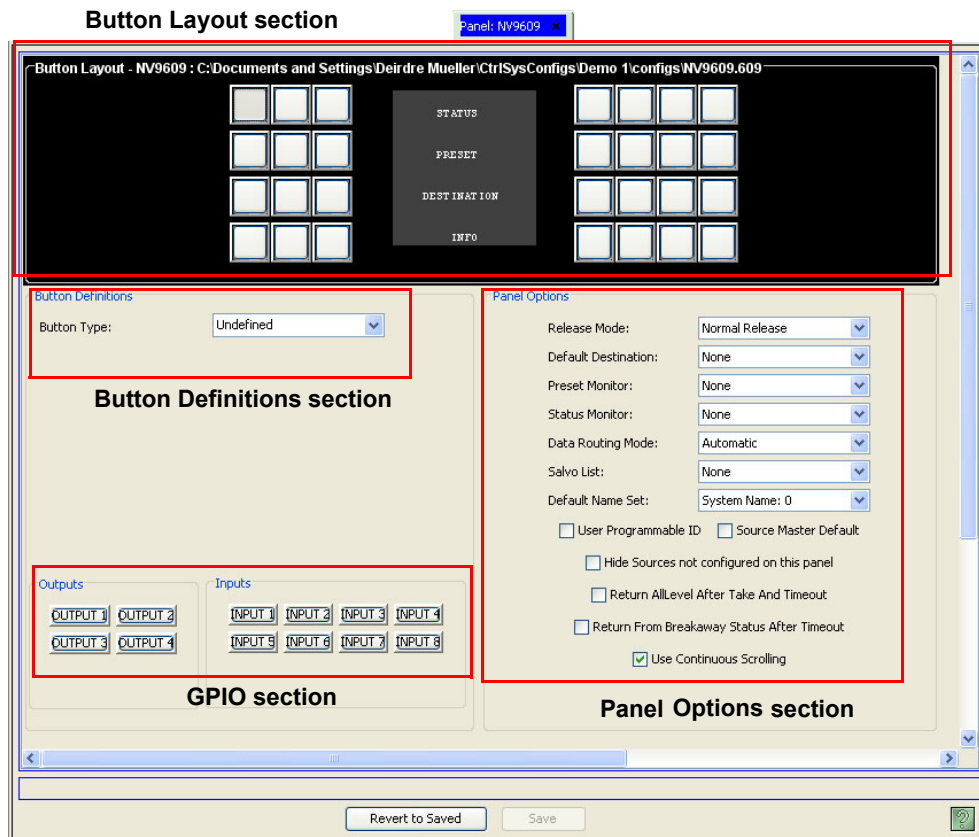

Figure 11-24. NV9609 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists:

Field	Option	Description	Related Topic
Release Mode	Normal Release	This control panel can only release "locks" and "protects" set at the control panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
	Force Release	This control panel can release locks and protects set by any user. Miranda recommends that you use 'Normal Release' mode and assign a PIN to allow access to the 'Force Release' function.	

Field	Option	Description	Related Topic
Default Destination	Last Selected	Panel remembers the last destination selected and restores this after a reset.	Default State on page 356
	None	After a reset, the control panel displays no destination device. (Not recommended.)	
	‹device›	The Panel uses the specified device as the destination after a reset.	
Preset Monitor	None	Monitor the selected preset by defining a destination that the preset source can be routed to.	—
	‹device›		
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.	—
	‹device›		
Data Routing Mode	Automatic	If a data level is involved in the route, connect the source to the destination, regardless of who is currently using the devices.	Default Routing on page 357
	Semi-automatic	If the device to be acquired is already in use on the data level, alerts the user—but allows the user to perform the route by pressing **Take** a second time. If Take is not pressed again, the route is cancelled. If the device is not in use, the take occurs automatically. Recommended mode.	
	Manual	All takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level take.	
Salvo List	‹salvo›	Select from existing salvos already created in NV9000 system.	Salvos on page 364 and Salvos on page 431
Default Name Set	‹name set›	The name set selected is applied to the control panel. When a **Name Set Toggle** button is added, it toggles between the default name set and the system name set.	Name Set Toggle on page 363

3 In the 'Panel Options' section, check a check box to select additional control panel options (uncheck a check box to deselect an option):

Check box	Description	Related Topic
User-Programmable ID	When checked, the Panel ID can be changed locally at the control panel itself. When unchecked, ID numbers can only be changed by first entering the system PIN locally at the control surface to temporarily enable ID changes.	—
Source Master Default	Makes the source the controlling (or "master") device permanently. By default, 'destination is master' is selected. (This option is specifically for use with a Miranda data router or port switch.) "Source is master" is used for duplication, or broadcast routing, on the control level. "Destination is master" is for machine-to-machine editing. **Note:** "Source is master" mode reverses the direction of data routing for devices used in data (control) level "takes". **Note:** If 'Source Master Default' is selected, the **Source Master** button will not switch to "destination is master" mode when pressed.	Source Master on page 365
Hide sources not configured for this panel	Hides name of all source devices that are not presently configured. The control panel displays asterisks instead.	—
Return All Level After Take and Timeout Return From Breakaway Status After Timeout	When a level has been selected in Level Mode, the level indicated in 'Info' returns to 'All Level' after the a "take" or "breakaway" is performed on this level *and* the time set in system parameters for a time out has passed (PANEL_PRESET_TIMEOUT). By default, the level display returns to 'All Level' immediately after a "take" or "breakaway". By default, the time out is set to 30 seconds. This feature allows consecutive "takes" on a level without having to go into Level mode and reset the level between "takes". The timeout also ensures that the panel reverts to the 'All Levels' state after a period of inactivity.	Managing System Parameters on page 48 Modes of Operation on page 357 About Breakaways on page 359 Take on page 366
Use Continuous Scrolling	If checked, the panel scrolls source or destination devices continuously. That is, the display shows the first device in the list following the last when scrolling up, and shows the last device after the first if scrolling down. If unchecked, the panel stops scrolling when it reaches either the beginning or end of the list. This option does not affect scrolling of salvos when the panel is in salvo mode or levels when the panel is in level mode.	—

4 In the 'Button Layout' section, select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

There are two classes of buttons:

- Those that assign a dedicated function to a button directly, such as 'Def State' (default state) or 'Clear'. No other options are available.

- Those that define a variable function, such as 'Category'. Additional options display enabling you to define the variables.

Select from the following button options:

Button	Description	Related Topic
Broadcast	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	Broadcast on page 359
Category	Selects a category (and its device list). Separate categories are permitted for source and destination devices. When you assign a category button, three additional drop-down menus appear: 'Source Category', 'Destination Category' and 'Suffix'. Choose one of the categories (or none) from the category lists. Choose one of the suffixes (or none) from the suffix list. Select a level from the 'Level Set Filter' to limit categories to only those in the selected level.	Category on page 359 and Categories on page 189
Chop	When supported by the router, the button is a toggle that enables and disables rapid switching of the selected destination device between the current source and the preset source. Used to test system timing.	Chop on page 360
Clear	Clears the last entry in a sequence of entries.	Clear on page 360
Destination	Sets the selected device as the default destination. When selected, a drop-down list appears from which you can choose the destination device.	—
Destination Lock	Sets or removes a "lock" on current destination device. The lock can only be removed at the control panel that originally set the lock, or by a control panel that has "Force Release" enabled.	Locks on page 362 and Force Release on page 360
Destination Mode	This (required) button initiates the destination selection sequence, and lights all valid category buttons in amber. Operators choose the desired destination in XY mode, or the destination to add in 'Multidest' mode.	Destination Mode on page 360 and Modes of Operation on page 357
Destination Protect	Sets or removes a "protect" on current destination device. The protect can only be removed at the control panel that originally set the protect, or by a control panel that has 'Force Release' enabled.	Protect on page 363
Free Source	Defines a phantom device that can be used to release or "free" devices on the data (control) level. A free source is also used with tielines to free the tieline for others to use. The free source is configured in the Level Sets page.	Free Source on page 361 and Level Sets on page 111

Button	Description	Related Topic
Level	Shows the status of a specific level on the display. When a level button is assigned, a 'Virtual Level' drop-down menu appears. Choose one of the levels or 'none'.	About Levels and Level Sets on page 112
Level Mode	Allows the operator to scroll between levels and do breakaways.	About Breakaways on page 359
Menu	Brings up a menu that provides access to a variety of local control panel options. The button is required if you want access to system menus and "local" salvos.	Menu Mode on page 358
Name Set Toggle	Toggles between the default name set and the system name set.	Name Set Toggle on page 363
Page Down	Allows scrolling through all data in a list (such as a category) using the **Page Up** and **Page Down** buttons. The function toggles on/off with each press of the Scroll button. (A recommended button.)	—
Page Up		
Panel Lock	Prevents accidental changes to the control panel settings. When the control panel is locked, the button array becomes blank except for the **Panel Lock** button.	—
Previous Source	Immediately restores the previously selected source to the current destination (similar to an "undo" button). Press **Take** to complete the route.	Previous Source on page 363
Salvo	Places the control panel in Salvo mode. The button is required if you want access to "system" salvos. When you assign 'Salvo' to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364
Source	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level. (The same is true if selecting destinations in MD mode.)	Source on page 365
Source Master	The button reverses the direction of data routing for devices used in data (control) level "takes". For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing **Source Master** reverses the roles.	Source Master on page 365
Source Mode	This (required) button initiates the source selection sequence, and lights all valid category buttons in green.	Source Mode on page 365
SrcDstMode	Toggles between all buttons being sources or all buttons being destinations, depending on the current control panel mode.	—
Take	Switches the loaded preset source device(s) to the selected destination device on all levels that have a preset loaded. The 'Status' column changes to the new device(s).	Take on page 366
Undefined	Makes the button undefined and inactive. It will remain unlit.	—

5 In the 'Outputs' and 'Inputs' sections, define the general-purpose I/O (GPIO) connections at the rear of the control panel as described in Defining General Purpose I/O (GPIO) Connections on page 337.

6 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the page.

NV9616

The 'NV9616' page determines how the NV9616 control panel functions and displays. For a full description of the control panel and functions, see NV9616 on page 532.

The 'NV9616' page is divided into sections:

- Button Layout — A graphic representation of the buttons on the control panel. Click on a button to assign a function to it. Certain buttons have existing labels. Do not change the definition or functions of these buttons.
- Button Definitions — Assigns a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.
- Panel Options — Specifies control panel behaviors, such as default operating mode.

The control panel options, button layout and button definitions are configured using the 'NV9616' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel.

How to Configure a NV9616 Control Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9616 control panel. (See Adding a Control Panel on page 240.)

Or

Locate the NV9616 control panel being updated. (See How to Locate and View Existing Control Panels on page 347.)

The 'NV9616' page appears:
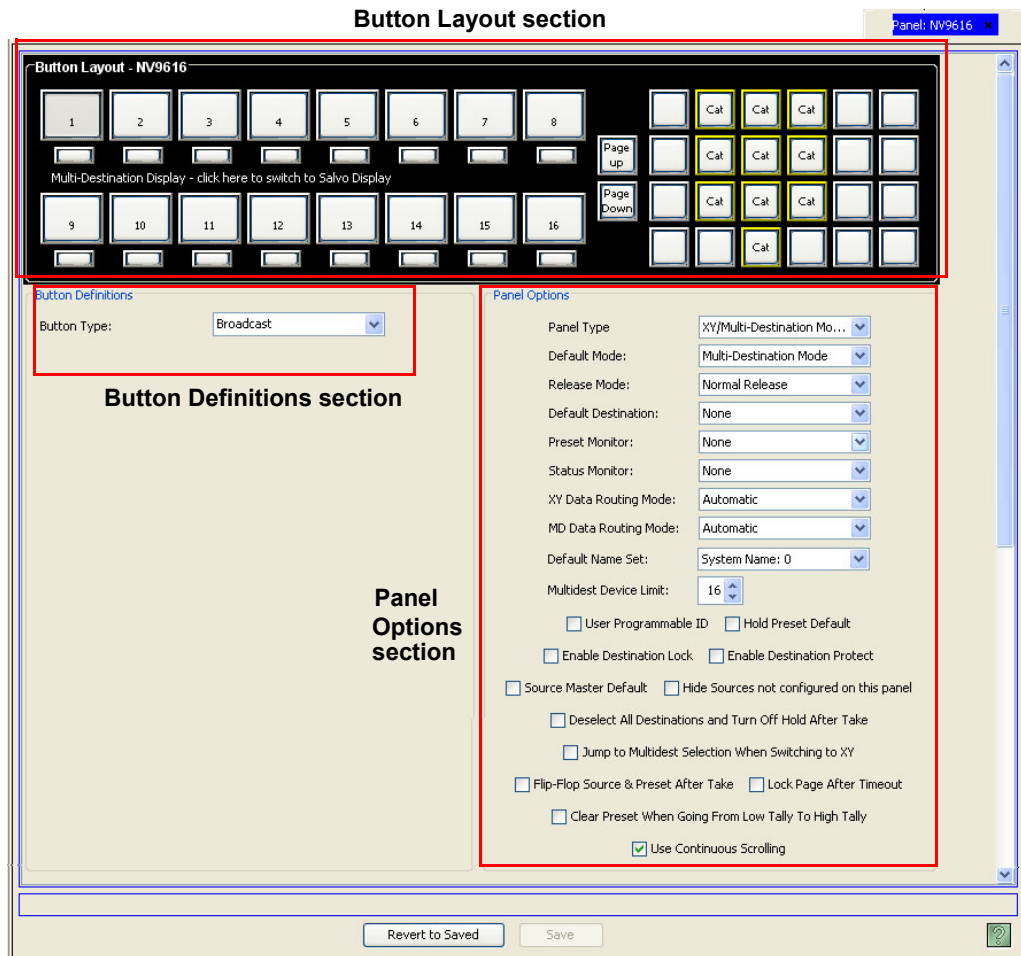
Figure 11-25. NV9616 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists:

Field	Option	Description	Related Topic
Panel Type	XY / Multi-Destination Mode	Panel can be used in either XY or Multidestination modes. If this option is chosen, place an **XY/MD** button on the control panel.	Modes of Operation on page 357
	XY Mode	Locks control panel in XY mode. Multidestination mode cannot be accessed.	
	Multi-Destination Mode	Locks the control panel in multidestination mode. XY mode cannot be accessed.	
Default Mode	XY Mode	Starts the control panel in X-Y mode after a reset.	Default State on page 356
	Multi-Destination Mode	Starts the control panel in multidestination (MD) mode after a reset.	

Field	Option	Description	Related Topic
Release Mode	Normal Release	This control panel can only release "locks" and "protects" set at the control panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
	Force Release	This control panel can release locks and protects set by any user. Miranda recommends that you use 'Normal Release' mode and assign a PIN to allow access to the 'Force Release' function.	
Default Destination	Last Selected	Panel remembers the last destination selected and restores this after a reset.	Default State on page 356
	None	After a reset, the control panel displays no destination device. (Not recommended.)	
	‹device›	The Panel uses the specified device as the destination after a reset.	
Preset Monitor	None	Monitor the selected preset by defining a destination that the preset source can be routed to.	—
	‹device›		
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.	—
	‹device›		
XY Data Routing Mode	Automatic	If a data level is involved in the route, connect the source to the destination, regardless of who is currently using the devices.	Default Routing on page 357
	Semi-automatic	If the device to be acquired is already in use on the data level, alerts the user — but allows the user to perform the route by pressing **Take** a second time. If **Take** is not pressed again, the route is cancelled. If the device is not in use, the take occurs automatically. Recommended mode.	
	Manual	All takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level take.	
MD Data Routing Mode	Automatic	If a data level is involved in the multi-destination route, connect the source to the destinations, regardless of who is currently using the devices. (Recommended.)	Default Routing on page 357
	Manual	All multi-destination takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level take.	

Field	Option	Description	Related Topic
Default Name Set	<name set>	The name set selected is applied to the control panel. When a **Name Set Toggle** button is added, it toggles between the default name set and the system name set.	Name Set Toggle on page 363
Multidest Device Limit	<number>	The maximum number of multi-destination entries allowed. 16 pages, 8 per page provides 128 maximum (Range 1–128). The default is 8.	—

3 In the 'Panel Options' section, check a check box to select additional control panel behaviors (un-check a check box to deselect an option).

Check box	Description	Related Topic
User Programmable ID	When checked, the Panel ID can be changed locally at the control panel itself. When unchecked, ID numbers can only be changed by first entering the system PIN locally at the control surface to temporarily enable ID changes.	Changing a Control Panel ID on page 351
Hold Preset Default	Makes any **Hold** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). **Note:** If this option is selected, it is recommended that a **Hold** button be placed on the control panel.	Hold on page 361 Default State on page 360
Enable Destination Lock	Enables any **Destination Lock** button to function. If 'Enable Destination Lock' is unchecked, the **Destination Lock** button will not function on the control panel.	Locks on page 362
Enable Destination Protect	Enables any **Destination Protect** button to function. If 'Enable Destination Protect' is unchecked, the **Destination Protect** button will not function on the control panel.	Protect on page 363
Source Master Default	Makes the source the controlling (or "master") device permanently. By default, 'destination is master' is selected. (This option is specifically for use with a Miranda data router or port switch.) "Source is master" is used for duplication, or broadcast routing, on the control level. "Destination is master" is for machine-to-machine editing. **Note:** "Source is master" mode reverses the direction of data routing for devices used in data (control) level "takes". **Note:** If 'Source Master Default' is selected, the **Source Master** button will not switch to "destination is master" mode when pressed.	Source Master on page 365
Hide sources not configured on this panel	Hides name of all source devices that are not presently configured. The control panel displays asterisks instead.	—

Check box	Description	Related Topic
Deselect All Destinations and Turn off Hold after Take	**Hold** normally has two functions: (1) allow multiple selections prior to a "take" and (2) retain the selections after the take with **Hold** remaining in effect. When this option is selected, a **Hold** performs the first function—allow multiple selections prior to a "take"—but not the second. The **Hold** deselects all destinations and turns itself off after the take. This option helps eliminate the time-consuming process of finding all and deselecting destinations on many pages after a "take" has been performed.	Hold on page 361
Jump to Multidest Selection when switching to XY	If the user has selected a single destination in multi-destination mode, switching to X-Y mode causes that destination to become the current destination in X-Y mode.	Modes of Operation on page 357
Flip-Flop Source & Preset After Take	Swaps the preset source and the previously assigned source for this destination.	—
Lock Page After Timeout	The control panel locks after a set time of inactivity and the 'Page Up' and 'Page Down' buttons go dark to prevent the MD destinations from accidently being scrolled. Pressing any other button starts the timeout over. The time out is set in the 'SysParams' table ((PANEL_PRESET_TIMEOUT)). By default the timeout is set to 30 seconds.	Managing System Parameters on page 48 Locks on page 362
Clear Preset When Going From Low Tally to High Tally	Clears the current Preset by pushing the switch from high tally to low tally to high tally again and then proceeds to preset a new source.	—
Use Continuous Scrolling	If checked, the panel scrolls source or destination devices continuously. That is, the display shows the first device in the list following the last when scrolling up, and shows the last device after the first if scrolling down. If unchecked, the panel stops scrolling when it reaches either the beginning or end of the list. This option does not affect scrolling of salvos when the panel is in salvo mode or levels when the panel is in level mode.	—

4 In the 'Button Layout' section select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition display on the selected button in the 'Button Layout' section.

There are two classes of buttons:

- Those that assign a dedicated function to a button directly, such as 'Def State' (default state) or 'Clear'.
- Those that define a variable function, such as 'Category'. Additional options display enabling you to define the variables.

Select from the following button options:

Button	Modes	Description	Related Topic
Broadcast	All modes	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	Broadcast on page 359
Category	All modes	Selects a category (and its device list). Separate categories are permitted for source and destination devices. When you assign a category button, three additional drop-down menus appear: 'Source Category', 'Destination Category', and 'Suffix'. Choose one of the categories (or none) from the category lists. Choose one of the suffixes (or none) from the suffix list. Select a level from the 'Level Set Filter' to limit categories to only those in the selected level.	Using Categories and Suffixes on page 190 and Category on page 359
Chop	All modes	When supported by the router, the button is a toggle that enables and disables rapid switching of the selected destination device between the current source and the preset source. Used to test system timing.	Chop on page 360
Clear	All modes	Clears the last input in a of entries. Press repeatedly to clear an entire sequence.	Clear on page 360
Clear Preset	All modes	Erases entries in the control panel's 'Preset' column, while leaving the control panel in the same mode. Recommended as a "safety" button.	Clear Preset on page 360
Default State	All modes	Returns the control panel to its pre-defined state.	Default State on page 360
Destination Lock	All modes	Sets or removes a "lock" on current destination device. The lock can only be removed at the control panel that originally set the lock, or by a control panel that has "Force Release" enabled. An "L" indicates a "lock" on the display.	Locks on page 362
Destination Mode	All modes	This (required) button initiates the destination selection sequence, and lights all valid category buttons in amber. Operators choose the desired destination in XY mode, or the destination to add in Multidest (MD or multi-destination) mode.	Destination Mode on page 360
Destination Protect	All modes	Sets or removes a "protect" on current destination device. The protect can only be removed at the control panel that originally set the protect, or by a control panel that has 'Force Release' enabled. A "P" indicates a "protect" on the display.	Protect on page 363

Button	Modes	Description	Related Topic
Free Source	All modes	Defines a phantom device that can be used to release or "free" devices on the data (control) level. A free source is also used with tielines to free the tieline for others to use. The free source is configured in the Level Sets page.	Free Source on page 361 and Level Sets on page 111
Gang Take	All modes	Can perform a "take" of multiple levels of a device at a single time. Switches multiple preset destinations simultaneously (with a single button press). The switching may take several milliseconds to complete.	—
Hold	All modes	Retains preset information after **Take** is pressed. Useful when routing the same source to many destinations.	Hold on page 361
Information	All modes	Panel mode is changed to display system messages. This button toggles between current control panel mode and the info screen. A "+" sign indicates messages are present. The Info button lights when messages are available for viewing.	Information on page 361
Level Map	All modes	Cross-connects levels (typically in the same physical router). Typically used to shuffle audio channels, for example, to connect AES1/2 to AES3/4. When an **Info** button is configured, you can view current cross-connects. The 'Level' mode is cancelled when the next normal 'Take' is performed involving the selected devices. (The **Level Map** button becomes enabled only when there is a valid preset.)	Level Mapping on page 362
Load Preset	All modes	Recalls a named set of stored presets. A **Gang Take** button can switch all preset destinations simultaneously (with a single button press - the 'Gang Take' may take several milliseconds to complete). The 'Gang Take' is not required. Presets are stored using the **Save Preset** button.	—
Menu	All modes	Brings up a menu that provides access to a variety of local control panel options. The button is required if you want access to system menus and "local" salvos.	Menu Mode on page 358
Name Set Toggle	All modes	Toggles between the default name set and the system name set.	Name Set Toggle on page 363
Panel Lock	All modes	Prevents accidental changes to the control panel settings. When the control panel is locked, the button array becomes blank except for the **Panel Lock** button.	—
Preset Release	All modes	Used to remove locks and protects from preset devices (in the 'Preset' column). If locks and protects are commonly used, this button is recommended.	Preset Release on page 363

Button	Modes	Description	Related Topic
Previous Source	XY, MD	Immediately restores the previously selected source to the current destination (similar to an "undo" button). Press **Take** to complete the route.	Previous Source on page 363
Salvo	Salvo	Places the control panel in 'Salvo' mode. The button is required if you want access to "system" salvos. When you assign 'Salvo' to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364 and Salvos on page 431
Save Preset	XY, MD	When on, this button causes the control panel to save whatever source is in the 'Preset' column, so that if the control panel is reset, that source reappears. When off, the presets are not saved.	—
Source	All modes	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level. (The same is true if selecting destinations in multi-destination mode.)	Source on page 365
Source Master	XY only	The button reverses the direction of data routing for devices used in data (control) level "takes". For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing **Source Master** reverses the roles.	Source Master on page 365
Source Mode	All modes	This (required) button initiates the source selection sequence, and lights all valid category buttons in green.	Source Mode on page 365
SrcDstMode	All modes	Toggles between all buttons being sources or all buttons being destinations, depending on the current control panel mode.	—
Undefined	—	Makes the button undefined and inactive. It will remain unlit.	—
XY / MD Mode	XY, MD	Switches control panel between XY and multi-destination modes.	Modes of Operation on page 357

5 Enter destinations for multi-destination switching:

a Click on the line of text 'Salvo Display - Click here to switch to Multi-Destination Display', as shown in as shown in Figure 11-26. The text is a toggle.
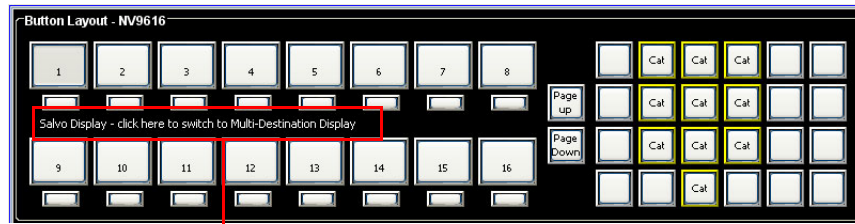
Click to activate Mutlidestination mode

Figure 11-26. Multi-Destination Display Switch

b Click a button in the control panel image to select a destination number. The 'Multi-Destination Display Entry' dialog box appears:
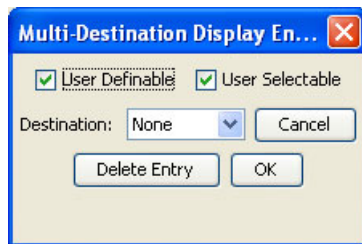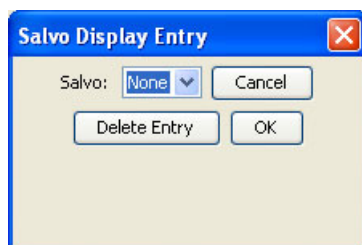

Figure 11-27. Multi-Destination Display Entry Dialog Box

c Select if the line is 'User Definable' and/or 'User Selectable':

'User Definable' allows the operator to change a destination that appears in the display area. Uncheck the 'User Definable' check box if the destination is to remain fixed.

> **Note**　　When a multi-destination button is user definable, a Destination Mode button must be added to the control panel. This allows the user to select a new destination from that location in the destination list using the category/index buttons. If selected, the new destination is retained, even after reset.

'User Selectable' allows the operator to select the device (using the selection buttons) and preset a new source. Uncheck the 'User Selectable' if check box if the destination is to be "view only." In view-only mode, the user cannot route to the destination, but other control panels may.

d Select a 'Destination' from the drop-down list and click OK. The destination displays on the selected line in the control panel window.

e Click OK to close the dialog box and save your changes.

Or

Click Cancel to close the dialog box without saving changes.

f Repeat steps **b** through **e** until all destinations you want are listed.

g To remove a destination, select the line in the window and click Delete Entry on the dialog box.

6 Set up salvos as needed. For information about salvos, see :

a Click on the line of text 'Multi-Destination Display - Click here to switch to Salvo Display', as shown in as shown in Figure 11-28. The text is a toggle.
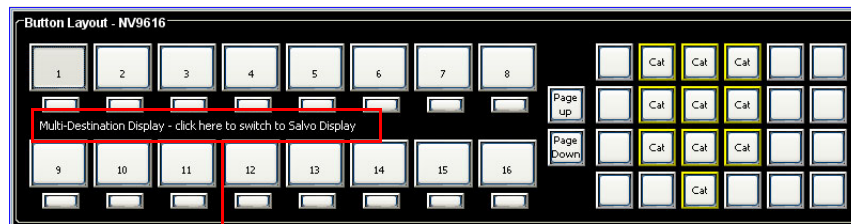
Figure 11-28. Salvo Display Switch

b Click a button in the control panel image to select a destination number. The 'Salvo Display Entry' dialog box appears:

Figure 11-29. Salvo Display Entry Dialog Box

c Choose a salvo from the drop-down menu and click OK. The salvo number displays on the selected line in the control panel window.

Or

Click Delete Entry to delete the entry.

Tip	Operators using the control panel may define a local salvo by placing the control panel in "record" mode (using the menu), performing a sequence of operations, and saving the salvo by giving it a name. The operator must also add the new salvo to the salvo list so that it can be selected when the operator places the control panel in salvo mode.

7 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

8 Click X on the window title tab to close the page.

NV9640

The 'NV9640' page determines how the NV9640 control panel functions and displays. For a full description of the control panel and functions, see NV9640 on page 535.

The 'NV9640' page is divided into sections:

• Button Layout — A graphic representation of the buttons and control panel window on the control panel. The button layout is organized as a "tree" with "parent" pages and "child" pages. "Parent" pages are one level up from a "child" page; "child" pages are always one level below a

"parent" page. Each of the 30 buttons can execute a function or select an entirely new set of functions on a lower level ("child" page) in the "tree." The "tree" is not limited in size.

Click on a button to assign a function to it. Certain buttons have pre-assigned text. Do not assign new functions to these buttons.

- Button Definitions — Assigns a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.

- Page Table — This section includes a visual representation of the "parent" and "child" pages in the "tree." The "tree" is created by selecting 'Navigate' in the 'Button Layout' section.

- Outputs — The general-purpose I/O (GPIO) output connections at the rear of the control panel.

- Inputs — The general-purpose I/O (GPIO) input connections at the rear of the control panel.

- Panel Options — Specifies control panel behaviors, such as default operating mode.

The control panel options, button layout and button definitions are configured using the 'NV940' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel.

How to Configure a NV9640 Control Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9640 control panel. (See <u>Adding a Control Panel</u> on page 240.)

Or

Locate the NV9640 control panel being updated. (See <u>How to Locate and View Existing Control Panels</u> on page 347.)

The 'NV9640' page appears:

Button Layout section
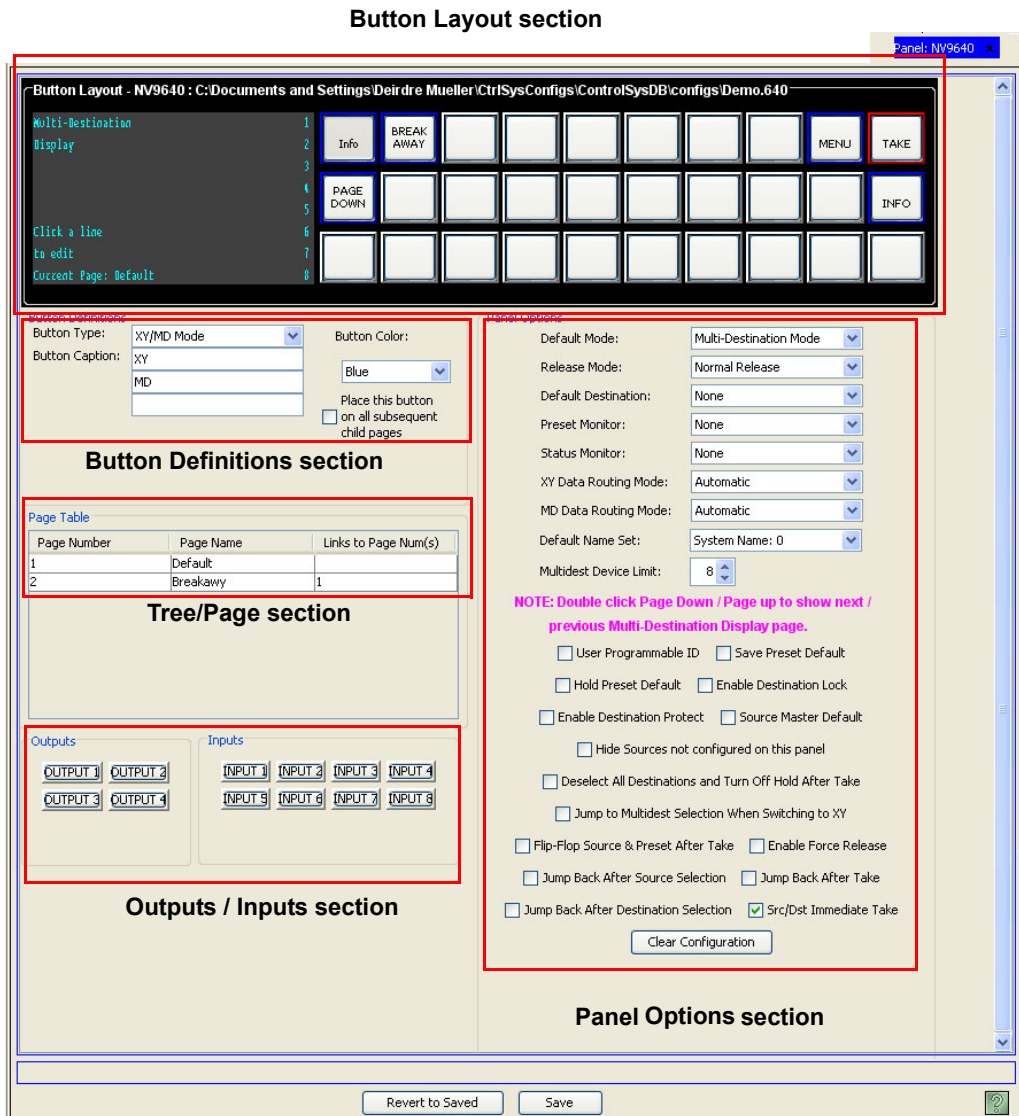
Figure 11-30. NV9640 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists.

Field	Option	Description	Related Topic
Default Mode	XY Mode	Starts the control panel in XY mode after a reset.	Modes of Operation on page 357
	Multidest	Starts the control panel in MD mode after a reset.	and Default State on page 356

Field	Option	Description	Related Topic
Release Mode	Normal Release	This control panel can only release "locks" and "protects" set at the control panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
	Force Release	This control panel can release locks and protects set by any user. Miranda recommends that you use 'Normal Release' mode and assign a PIN to allow access to the 'Force Release' function.	
Default Destination	None	After a reset, the control panel displays no destination device. (Not recommended)	Default State on page 356
	‹device›	The control panel uses the specified device as the destination after a reset.	
Preset Monitor	None	Monitor the selected preset by defining a destination that the preset source can be routed to.	—
	‹device›		
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.	—
	‹device›		
X-Y Data Routing Mode	Automatic	If a data level is involved in the route, connects the source to the destination, regardless of who is currently using the devices.	Default Routing on page 357 and Modes of Operation on page 357
	Semi-automatic	If the device to be acquired is already in use on the data level, alerts the user—but allows the user to perform the route by pressing **Take** a second time. If **Take** is not pressed again, the route is cancelled. If the device is not in use, the "take" occurs automatically. (Recommended)	
	Manual	All takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level take.	
MD Data Routing Mode	Automatic	If a data level is involved in the multi-destination route, connects the source to the destinations, regardless of who is currently using the devices. (Recommended)	Default Routing on page 357 and Modes of Operation on page 357
	Manual	All multi-destination takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level "take."	
Default Name Set	‹name set›	The name set selected is applied to the control panel. When a **Name Set Toggle** button is added, it toggles between the default name set and the system name set.	Name Set Toggle on page 363
Multidest Device Limit	(fixed at 8 presently)	The maximum number of MD entries allowed. 16 pages, 8 per page provides 128 maximum (Range 1–128). The default is 8. See Step 5 for the related entry fields.	NV9640 on page 535

3 In the 'Panel Options' section, check a check box to select additional control panel behaviors (un-check a check box to deselect an option).

Check box	Description	Related Topic
User Programmable ID	When checked, the Panel ID can be changed locally at the control panel itself. When unchecked, ID numbers can only be changed by first entering the system PIN locally at the control surface to temporarily enable ID changes.	Changing a Control Panel ID on page 351
Save Preset Default	Makes any **Save Preset** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). This button causes the control panel to save whatever source is in the 'Preset' column, so that if the control panel is reset, that source reappears. When off, the presets are not saved. **Note:** If this option is selected, it is recommended that a **Save Preset** button be placed on the control panel.	Default State on page 360
Hold Preset Default	Makes any **Hold** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). **Note:** If this option is selected, it is recommended that a **Hold** button be placed on the control panel.	Hold on page 361 Default State on page 360
Enable Destination Lock	Enables any **Destination Lock** button to function. If 'Enable Destination Lock' is unchecked, the **Destination Lock** button will not function on the control panel.	Locks on page 362
Enable Destination Protect	Enables any **Destination Protect** button to function. If 'Enable Destination Protect' is unchecked, the **Destination Protect** button will not function on the control panel.	Protect on page 363
Source Master Default	Makes the source the controlling (or "master") device permanently. By default, 'destination is master' is selected. (This option is specifically for use with a Miranda data router or port switch.) "Source is master" is used for duplication, or broadcast routing, on the control level. "Destination is master" is for machine-to-machine editing. **Note:** "Source is master" mode reverses the direction of data routing for devices used in data (control) level "takes". **Note:** If 'Source Master Default' is selected, the **Source Master** button will not switch to "destination is master" mode when pressed.	Source Master on page 365
Hide sources not configured on this panel	Hides name of all source devices that are not presently configured. The control panel displays asterisks instead.	—

Check box	Description	Related Topic
Deselect All Destinations and Turn off Hold after Take	**Hold** normally has two functions: (1) allow multiple selections prior to a "take" and (2) retain the selections after the take with **Hold** remaining in effect. When this option is selected, a **Hold** performs the first function — allow multiple selections prior to a "take" — but not the second. The **Hold** deselects all destinations and turns itself off after the take. This option helps eliminate the time-consuming process of finding all and deselecting destinations on many pages after a "take" has been performed.	Hold on page 361
Jump to Multidest Selection when switching to XY	If the user has selected a single destination in multi-destination mode, switching to X-Y mode causes that destination to become the current destination in X-Y mode.	Modes of Operation on page 357
Flip-Flop Source & Preset After Take	Swaps the preset source and the previously assigned source for this destination.	--
Enable Force Release	Allows operator to execute a forced release. The operator must know the PIN to execute.	Force Release on page 360
Jump Back After Source Selection Jump Back After Take Jump Back After Destination Selection	Jumps back to the top page (default) after a destination i or source is selected on another page. This does not function when using a Suffix Page to select the destination. 'Jump Back After Take' jumps the top page after a new source has been selected and a "take" performed. This can be used with a Suffix Page. 'Jump Back After Source Selection' must be un-checked or it overrides this option.	Creating a "Tree" of Pages on page 342 Using Global Suffix Pages on page 202
Src/Dst Immediate Take	Checking this option allows a "take" to occur from a specified source to a selected destination when the **Src/Dst** button is pressed (source shown on top line, destination shown on the bottom line). If the check box is not checked, pressing the **Src/Dst** button performs a preset of that source on that destination and enables the **Take** button, which must then be pressed to perform the "take".	Source/Destination on page 365

4 In the 'Button Layout' section, select buttons and button definitions.

There are two classes of buttons:

- Those that assign a dedicated function to a button directly, such as 'Def State' (default state) or 'Clear'. No other options are available.

- Those that define a variable function, such as 'Category'. Additional options display enabling you to define the variables.

To select a button definition, do the following:

a There are two pages of buttons. By default the pages are named 'Default'. Select the page to which buttons are being added. Pages are numbered according to where they are in the "tree", with number 1 being the highest, or "parent" page and all other pages being "child" pages.

b Select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

c Choose the 'Button Color' from the drop-down list.

> d To have the button appear on all "child" pages—pages lower in the "tree" than the selected page—check the 'Place this button on all subsequent child pages' check box.
>
> e Select a button function from the 'Button Type' drop-down list. (See the options below.)
>
> f Enter up to 8 characters in each 'Button Caption' field. The top field appears as the top line of text on the button, the next field, the second line of text, and the bottom field as the third line of text.

Select from the following button options:

Button	Modes	Description	Related Topic
Back	All modes	Returns the control panel user to the previous "page" in the "tree."	Creating a "Tree" of Pages on page 342
Broadcast	All modes	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	Broadcast on page 359
Category	All modes	Selects a category (and its device list). Separate categories are permitted for source and destination devices. When you assign a category button, three additional drop-down menus appear: 'Source Category', 'Destination Category', and 'Suffix'. Choose one of the categories (or none) from the category lists. Choose one of the suffixes (or none) from the suffix list. Select a level from the 'Level Set Filter' to limit categories to only those in the selected level. Select 'Use global suffix page to select devices' to apply predetermined suffixes in a predetermined order.	Using Categories and Suffixes on page 190\ and Category on page 359 and Using Global Suffix Pages on page 202
Chop	All modes	When supported by the router, the button is a toggle that enables and disables rapid switching of the selected destination device between the current source and the preset source. Used to test system timing.	Chop on page 360
Clear Preset	All modes	Erases entries in the control panel's 'Preset' column, while leaving the control panel in the same mode. Recommended as a "safety" button.	Clear Preset on page 360
Default State	All modes	Returns the control panel to its pre-defined state.	Default State on page 360
Destination	All modes	Sets the selected device as the default destination.Select the device from the drop-down list that appears.	—
Destination Lock	All modes	Sets or removes a "lock" on current destination device. The lock can only be removed at the control panel that originally set the lock, or by a control panel that has "Force Release" enabled.	Locks on page 362
Destination Protect	All modes	Sets or removes a "protect" on current destination device. The protect can only be removed at the control panel that originally set the protect, or by a control panel that has 'Force Release' enabled.	Protect on page 363

Button	Modes	Description	Related Topic
Free Source	All modes	Defines a phantom device that can be used to release or "free" devices on the data (control) level. A free source is also used with tielines to free the tieline for others to use. The free source is configured in the Level Sets page.	Free Source on page 361 and Level Sets on page 111
Global Navigate	All modes	The pages assigned to this button can be globally applied to every control panel with the global navigate button. Updates are also global.	Global Navigate on page 361
Hold	All modes	Retains preset information after **Take** is pressed. Useful when routing the same source to many destinations.	Hold on page 361
Information	All modes	Panel mode is changed to display system messages. This button toggles between current control panel mode and the info screen. A "+" sign indicates messages are present. The Info button lights when messages are available for viewing.	Information on page 361
Level Map	All modes	Cross-connects levels (typically in the same physical router). Typically used to shuffle audio channels, for example, to connect AES1/2 to AES3/4. When an **Info** button is configured, you can view current cross-connects. The 'Level' mode is cancelled when the next normal 'Take 'is performed involving the selected devices. (The **Level Map** button becomes enabled only when there is a valid preset.)	Level Mapping on page 362
Menu	All modes	Brings up a menu that provides access to a variety of local control panel options. The button is required if you want access to system menus and "local" salvos.	Menu Mode on page 358
Name Set Toggle	All modes	Toggles between the default name set and the system name set.	Name Set Toggle on page 363
Navigate	All modes	The 'Edit Navigate Button' dialog appears in which you define a button page that displays when the button is pressed. See Step 5.	—
Page Down	All modes	Allows scrolling through all data in a list (such as a category) using the **Page Up** and **Page Down** buttons. The function toggles on/off with each press of the Scroll button. (A recommended button.)	—
Page Up	All modes		
Panel Lock	All modes	Sets or removes a "lock" on the current control panel. The lock can only be removed at the control panel that originally set the lock, or by a control panel that has 'Force Release' enabled. An "L" indicates a "lock" on the display.	Panel Lock on page 363
Preset Release	All modes	Used to remove locks and protects from preset devices (in the 'Preset' column). If locks and protects are commonly used, this button is recommended.	Preset Release on page 363
Previous Source	All modes	Immediately restores the previously selected source to the current destination (similar to an "undo" button). Press **Take** to complete the route.	Previous Source on page 363

Button	Modes	Description	Related Topic
Quick Source	All modes	Immediately presets the source defined without having to first select a category and then select a device. From the drop-down list, select the source device.	—
Salvo	All modes	Places the control panel in 'Salvo' mode. The button is required if you want access to system salvos. When you assign 'Salvo' to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364 and Salvos on page 431
Save Preset	All modes	When on, this button causes the control panel to save whatever source is in the 'Preset' column, so that if the control panel is reset, that source reappears. When off, the presets are not saved.	—
Selection	All modes	Displays and enables operator to select items from the list that displays. For example, a list of salvos.	—
Source	All modes	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level. (The same is true if selecting destinations in MD mode.)	Source on page 365
Source Master	All modes	The button reverses the direction of data routing for devices used in data (control) level "takes". For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing **Source Master** reverses the roles.	Source Master on page 365
Source/ Destination	All modes	Button is either a single source or a single destination depending on the operating mode.	Source/Destination on page 365
Take	All modes	Switches the loaded preset source device(s) to the selected destination device on all levels that have a preset loaded. The 'Status' column changes to the new device(s).	Take on page 366
Undefined	All modes	Makes the button undefined and inactive. It will remain unlit.	—
XY / MD Mode	All modes	Switches control panel between XY and multi-destination modes.	Modes of Operation on page 357

5 If 'Navigate' was selected as a button type, define the button properties. Using the 'Edit Navigation Button' dialog box, pages that create a "tree" can be selected. You can choose to have the button jump to a new page or an existing page, creating "child" pages to "parent" pages. For instructions, see Creating a "Tree" of Pages on page 342.

6 Enter destination numbers for multi-destination switching:

a Click on any line in the control panel window, as shown in Figure 11-31. The 'Multi-Desti-
nation Display Entry' dialog box appears (Figure 11-32):

Figure 11-31. Control Panel Window
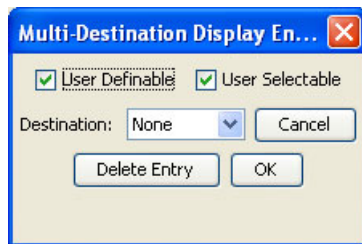
Figure 11-32. Multi-Destination Display Entry Dialog Box

b Select if the line is 'User Definable' and/or 'User Selectable':

'User Definable' allows the operator to change a destination that appears in the display area.
Uncheck the 'User Definable' check box if the destination is to remain fixed.

Note	When a multi-destination button is user definable, a Destination Mode but-ton must be added to the control panel. This allows the user to select a new destination from that location in the destination list using the category/ index buttons. If selected, the new destination is retained, even after reset.

'User Selectable' allows the operator to select the device (using the selection buttons) and
preset a new source. Uncheck the 'User Selectable' if check box if the destination is to be
"view only." In view-only mode, the user cannot route to the destination, but other control
panels may.

c Select a 'Destination' from the drop-down list and click OK. The destination displays on the
selected line in the control panel window.

d Click OK to close the dialog box and save your changes.

Or

Click Cancel to close the dialog box without saving changes.

e Repeat steps **b** through **e** until all destinations you want are listed.

f To remove a destination, select the line in the window and click Delete Entry on the dialog
box.

7 Salvos are assigned to buttons individually. Salvo buttons can be created in two ways:

• Manually using the button definition tools described in Step 4, selecting 'Salvo' from the
'Button Types' drop-down list.

• Automatically, by creating a navigation button that will automatically assign all salvos to
one or more subpages, as described in Step 5.

8 In the 'Tree/Page' section, the pages that make up a "tree" are listed. There are three columns: 'Page Number', 'Page Name' and 'Referrers'. Pages are listed in numeric order such that the lowest number is higher in the "tree" (display before) larger numbers, which are lower in the "tree" (display after). If you reorder, the numbers reorder alphabetically, not numerically. See Creating a "Tree" of Pages on page 342.

9 In the 'Outputs' and 'Inputs' sections, define the general-purpose I/O (GPIO) connections at the rear of the control panel as described in Defining General Purpose I/O (GPIO) Connections on page 337.

10 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

Or

To clear all configuration selects and start anew, click Clear Configuration.

11 Click X on the window title tab to close the page.

NV9641

The 'NV9641' page determines how the NV9641 control panel functions and displays. For a full description of the control panel and functions, see NV9641 on page 538.

The 'NV9641' page is divided into sections:

- Button Layout — A graphic representation of the buttons and control panel window on the control panel. The button layout is organized as a "tree" with "parent" pages and "child" pages. "Parent" pages are one level up from a "child" page; "child" pages are always one level below a "parent" page. Each of the 30 buttons can execute a function or select an entirely new set of functions on a lower level ("child" page) in the "tree." The "tree" is not limited in size.

  Click on a button to assign a function to it. Certain buttons have pre-assigned text. Do not assign new functions to these buttons.

- Button Definitions — Assigns a definition to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.

- Page Table — This section includes a visual representation of the "parent" and "child" pages in the "tree" of pages. The "tree" is created by selecting 'Navigate' in the 'Button Layout' section or by selecting 'Paging Mode' in the 'Panel Options' section.

- Outputs — The general-purpose I/O (GPIO) output connections at the rear of the control panel.

- Inputs — The general-purpose I/O (GPIO) input connections at the rear of the control panel.

- Panel Options — Define control panel behavior, such as the default operating mode.

The control panel options, button layout and button definitions are configured using the 'NV941' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel.

How to Configure a NV9641 Control Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9641 control panel. (See Adding a Control Panel on page 240.)

   Or

   Locate the NV9641control panel being updated. (See How to Locate and View Existing Control Panels on page 347.) The 'NV9641' page appears:
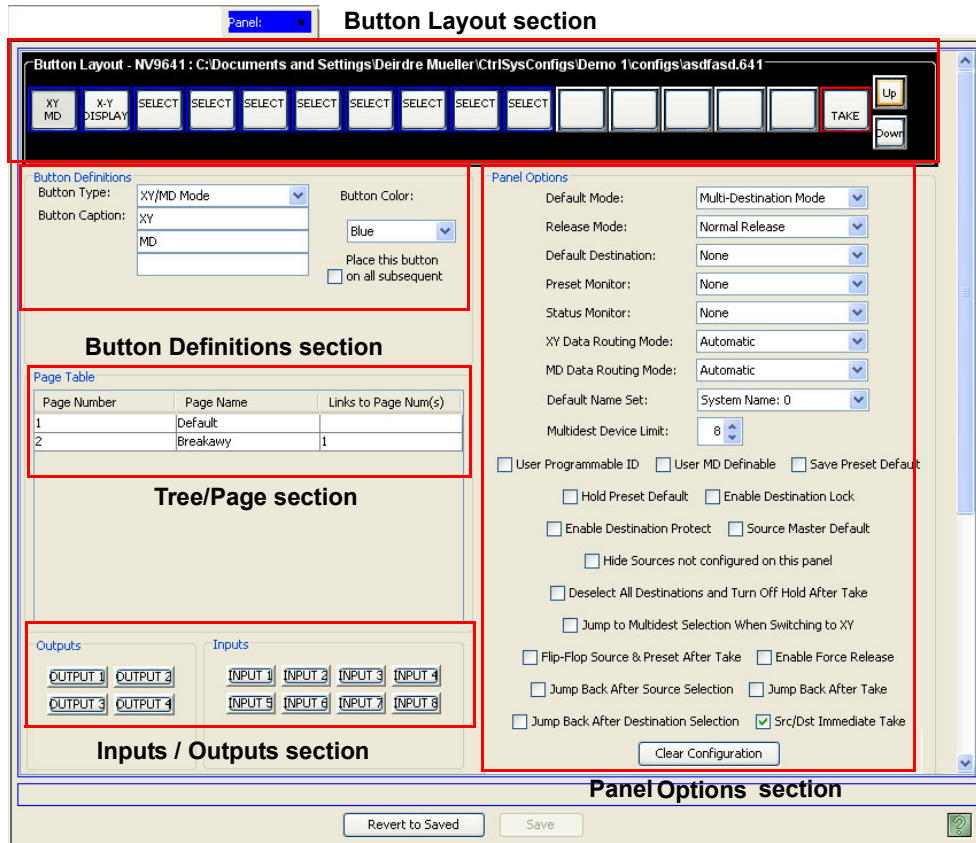
Figure 11-33. NV9641 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists.

Field	Option	Description	Related Topic
Panel Behavior Mode	XY/MD Mode	Panel functions in XY/multidestination mode only.	Modes of Operation on page 357
	Page Mode	During operation, the **Up** and **Down** buttons navigate through all of the pages in the order created.	
Default Mode	XY Mode	Starts the control panel in XY mode after a reset.	Modes of Operation on page 357 and Default State on page 356
	Multidest	Starts the control panel in MD mode after a reset.	

Field	Option	Description	Related Topic
Release Mode	Normal Release	This control panel can only release "locks" and "protects" set at the control panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
	Force Release	This control panel can release locks and protects set by any user. Miranda recommends that you use 'Normal Release' mode and assign a PIN to allow access to the 'Force Release' function.	
Default Destination	None	After a reset, the control panel displays no destination device. (Not recommended)	Default State on page 356
	‹device›	The control panel uses the specified device as the destination after a reset.	
Preset Monitor	None	Monitor the selected preset by defining a destination that the preset source can be routed to.	—
	‹device›		
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.	—
	‹device›		
X-Y Data Routing Mode	Automatic	If a data level is involved in the route, connects the source to the destination, regardless of who is currently using the devices.	Default Routing on page 357 and Modes of Operation on page 357
	Semi-automatic	If the device to be acquired is already in use on the data level, alerts the user—but allows the user to perform the route by pressing **Take** a second time. If **Take** is not pressed again, the route is cancelled. If the device is not in use, the "take" occurs automatically. (Recommended)	
	Manual	All takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level take.	
MD Data Routing Mode	Automatic	If a data level is involved in the multi-destination route, connects the source to the destinations, regardless of who is currently using the devices. (Recommended)	Default Routing on page 357 and Modes of Operation on page 357
	Manual	All multi-destination takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level "take."	
Default Name Set	<name set>	The name set selected is applied to the control panel. When a **Name Set Toggle** button is added, it toggles between the default name set and the system name set.	Name Set Toggle on page 363
Multidest Device Limit	(fixed at 8 presently)	The maximum number of MD entries allowed. 16 pages, 8 per page provides 128 maximum (Range 1–128). The default is 8. See Step 5 for the related entry fields.	NV9641 on page 538

3 In the 'Panel Options' section, check a check box to select additional control panel behaviors (un-check a check box to deselect an option).

Check box	Description	Related Topic
User Programmable ID	When checked, the Panel ID can be changed locally at the control panel itself. When unchecked, ID numbers can only be changed by first entering the system PIN locally at the control surface to temporarily enable ID changes.	Changing a Control Panel ID on page 351
User MD Definable	When checked, allows the operator to change a destination that appears in the display area. Uncheck the 'User Definable' check box if the destination is to remain fixed. Note: When a multi-destination button is user definable, a Destination Mode button must be added to the control panel. This allows the user to select a new destination from that location in the destination list using the category/index buttons. If selected, the new destination is retained, even after reset.	—
Save Preset Default	Makes any **Save Preset** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). This button causes the control panel to save whatever source is in the 'Preset' column, so that if the control panel is reset, that source reappears. When off, the presets are not saved. **Note:** If this option is selected, it is recommended that a **Save Preset** button be placed on the control panel.	Default State on page 360
Hold Preset Default	Makes any **Hold** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). **Note:** If this option is selected, it is recommended that a **Hold** button be placed on the control panel.	Hold on page 361 and Default State on page 360
Enable Destination Lock	Enables any **Destination Lock** button to function. If 'Enable Destination Lock' is unchecked, the **Destination Lock** button will not function on the control panel.	Locks on page 362
Enable Destination Protect	Enables any **Destination Protect** button to function. If 'Enable Destination Protect' is unchecked, the **Destination Protect** button will not function on the control panel.	Protect on page 363
Source Master Default	Makes the source the controlling (or "master") device permanently. By default, 'destination is master' is selected. (This option is specifically for use with a Miranda data router or port switch.) "Source is master" is used for duplication, or broadcast routing, on the control level. "Destination is master" is for machine-to-machine editing. **Note:** "Source is master" mode reverses the direction of data routing for devices used in data (control) level "takes". **Note:** If 'Source Master Default' is selected, the **Source Master** button will not switch to "destination is master" mode when pressed.	Source Master on page 365
Hide sources not configured on this panel	Hides name of all source devices that are not presently configured. The control panel displays asterisks instead.	—

Check box	Description	Related Topic
Deselect All Destinations and Turn off Hold after Take	**Hold** normally has two functions: (1) allow multiple selections prior to a "take" and (2) retain the selections after the take with **Hold** remaining in effect. When this option is selected, a **Hold** performs the first function—allow multiple selections prior to a "take"—but not the second. The **Hold** deselects all destinations and turns itself off after the take. This option helps eliminate the time-consuming process of finding all and deselecting destinations on many pages after a "take" has been performed.	Hold on page 361
Jump to Multidest Selection when switching to XY	If the user has selected a single destination in multi-destination mode, switching to X-Y mode causes that destination to become the current destination in X-Y mode.	Modes of Operation on page 357
Flip-Flop Source & Preset After Take	Swaps the preset source and the previously assigned source for this destination.	—
Enable Force Release	Allows operator to execute a forced release. The operator must know the PIN to execute.	Force Release on page 360
Jump Back After Source Selection Jump Back After Take Jump Back After Destination Selection	Jumps back to the top page (default) after a destination i or source is selected on another page. This does not function when using a Suffix Page to select the destination. 'Jump Back After Take' jumps the top page after a new source has been selected and a "take" performed. This can be used with a Suffix Page. 'Jump Back After Source Selection' must be un-checked or it overrides this option.	Creating a "Tree" of Pages on page 342 Using Global Suffix Pages on page 202
Src/Dst Immediate Take	Checking this option allows a "take" to occur from a specified source to a selected destination when the **Src/Dst** button is pressed (source shown on top line, destination shown on the bottom line). If the check box is not checked, pressing the **Src/Dst** button performs a preset of that source on that destination and enables the **Take** button, which must then be pressed to perform the "take".	Source/Destination on page 365

4 In the 'Button Layout' section, select buttons and button definitions.

There are two classes of buttons:

- Those that assign a dedicated function to a button directly, such as 'Def State' (default state) or 'Clear'. No other options are available.
- Those that define a variable function, such as 'Category'. Additional options display enabling you to define the variables.

To select a button definition, do the following:

a There are two pages of buttons. By default the pages are named 'Default'. Select the page to which buttons are being added. Pages are numbered according to where they are in the "tree," with number 1 being the highest, or "parent" page and all other pages being "child" pages.

b Select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

c Choose the 'Button Color' from the drop-down list.

d To have the button appear on all "child" pages—pages lower in the "tree" than the selected page—check the 'Place this button on all subsequent child pages' check box.

For categories, check the 'Use global suffix page to select devices' to apply predetermined suffixes. (See Auto-Fill Suffixes on page 195.)

e Select a button function from the 'Button Type' drop-down list. (See the options below.)

f Enter up to 8 characters in each 'Button Caption' field. The top field appears as the top line of text on the button, the next field, the second line of text, and the bottom field as the third line of text.

Select from the following button options:

Button	Modes	Description	Related Topic
Back	All modes	Returns the control panel user to the previous "page" in the "tree."	Creating a "Tree" of Pages on page 342
Broadcast	All modes	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	Broadcast on page 359
Category	All modes	Selects a category (and its device list). Separate categories are permitted for source and destination devices. When you assign a category button, three additional drop-down menus appear: 'Source Category', 'Destination Category', and 'Suffix'. Choose one of the categories (or none) from the category lists. Choose one of the suffixes (or none) from the suffix list. Select a level from the 'Level Set Filter' to limit categories to only those in the selected level. Select 'Use global suffix page to select devices' to apply predetermined suffixes in a predetermined order.	Using Categories and Suffixes on page 190\ and Category on page 359 and Using Global Suffix Pages on page 202
Chop	All modes	When supported by the router, the button is a toggle that enables and disables rapid switching of the selected destination device between the current source and the preset source. Used to test system timing.	Chop on page 360
Clear Preset	All modes	Erases entries in the control panel's 'Preset' column, while leaving the control panel in the same mode. Recommended as a "safety" button.	Clear Preset on page 360
Default State	All modes	Returns the control panel to its pre-defined state.	Default State on page 360
Destination	All modes	Sets the selected device as the default destination. Select the device from the drop-down list that appears.	—
Destination Lock	All modes	Sets or removes a "lock" on current destination device. The lock can only be removed at the control panel that originally set the lock, or by a control panel that has "Force Release" enabled. An "L" indicates a "lock" on the display.	Locks on page 362

Button	Modes	Description	Related Topic
Destination Protect	All modes	Sets or removes a "protect" on current destination device. The protect can only be removed at the control panel that originally set the protect, or by a control panel that has 'Force Release' enabled. A "P" indicates a "protect" on the display.	Protect on page 363
Free Source	All modes	Defines a phantom device that can be used to release or "free" devices on the data (control) level. A free source is also used with tielines to free the tieline for others to use. The free source is configured in the Level Sets page.	Free Source on page 361 and Level Sets on page 111
Global Navigate	All modes	The pages assigned to this button can be globally applied to every control panel with the global navigate button. Updates are also global.	Global Navigate on page 361
Hold	All modes	Retains preset information after **Take** is pressed. Useful when routing the same source to many destinations.	Hold on page 361
Information	All modes	Panel mode is changed to display system messages. This button toggles between current control panel mode and the info screen. A "+" sign indicates messages are present. The Info button lights when messages are available for viewing.	Information on page 361
Level Map	All modes	Cross-connects levels (typically in the same physical router). Typically used to shuffle audio channels, for example, to connect AES1/2 to AES3/4. When an **Info** button is configured, you can view current cross-connects. The 'Level' mode is cancelled when the next normal 'Take 'is performed involving the selected devices. (The **Level Map** button becomes enabled only when there is a valid preset.)	Level Mapping on page 362
Menu	All modes	Brings up a menu that provides access to a variety of local control panel options. The button is required if you want access to system menus and "local" salvos.	Menu Mode on page 358
Name Set Toggle	All modes	Toggles between the default name set and the system name set.	Name Set Toggle on page 363
Navigate	All modes	The 'Edit Navigate Button' dialog appears in which you define a button page that displays when the button is pressed. See Step 5.	—
Page Down	All modes	Allows scrolling through all data in a list (such as a category) using the **Page Up** and **Page Down** buttons. The function toggles on/off with each press of the Scroll button. (A recommended button.)	—
Page Up	All modes		
Panel Lock	All modes	Sets or removes a "lock" on the current control panel. The lock can only be removed at the control panel that originally set the lock, or by a control panel that has 'Force Release' enabled. An "L" indicates a "lock" on the display.	Panel Lock on page 363

Button	Modes	Description	Related Topic
Preset Release	All modes	Used to remove locks and protects from preset devices (in the 'Preset' column). If locks and protects are commonly used, this button is recommended.	Preset Release on page 363
Previous Source	All modes	Immediately restores the previously selected source to the current destination (similar to an "undo" button). Press **Take** to complete the route.	Previous Source on page 363
Quick Source	All modes	Immediately presets the source defined without having to first select a category and then select a device. From the drop-down list, select the source device.	—
Salvo	All modes	Places the control panel in 'Salvo' mode. The button is required if you want access to "system" salvos. When you assign 'Salvo' to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364 and Salvos on page 431
Save Preset	All modes	When on, this button causes the control panel to save whatever source is in the 'Preset' column, so that if the control panel is reset, that source reappears. When off, the presets are not saved.	—
Selection	All modes	Displays and enables operator to select items from the list that displays. For example, a list of salvos.	—
Source	All modes	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level. (The same is true if selecting destinations in MD mode.)	Source on page 365
Source Master	All modes	The button reverses the direction of data routing for devices used in data (control) level "takes". For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing **Source Master** reverses the roles.	Source Master on page 365
Source/ Destination	All modes	Button is either a single source or a single destination depending on the operating mode.	Source/Destination on page 365
Take	All modes	Switches the loaded preset source device(s) to the selected destination device on all levels that have a preset loaded. The 'Status' column changes to the new device(s).	Take on page 366
Undefined	All modes	Makes the button undefined and inactive. It will remain unlit.	—
X-Y Display	All modes	Displays current status of currently selected take before take is performed.	—
XY / MD Mode	All modes	Switches control panel between XY and multi-destination modes.	Modes of Operation on page 357

5 If 'Navigate' was selected as a button type, define the button properties. Using the 'Edit Navigation Button' dialog box, pages that create a "tree" can be selected. You can choose to have the button jump to a new page or an existing page, creating "child" pages to "parent" pages. See Creating a "Tree" of Pages on page 342.

6 Salvos are assigned to buttons individually. Salvo buttons can be created in two ways:

- Manually using the button definition tools described in Step 4, selecting 'Salvo' from the 'Button Types' drop-down list.
- Automatically, by creating a navigation button that will automatically assign all salvos to one or more subpages, as described in Step 5.

7 In the 'Outputs' and 'Inputs' sections, define the general-purpose I/O (GPIO) connections at the rear of the control panel as described in Defining General Purpose I/O (GPIO) Connections on page 337.

8 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

Or

To clear all configuration selects and start anew, click Clear Configuration.

9 Click X on the window title tab to close the page.

NV9642

The 'NV9642' page determines how the NV9642 control panel functions and displays. For a full description of the control panel and functions, see NV9642 on page 541.

The 'NV9642' page is divided into sections:

- Button Layout—A graphic representation of the buttons and control panel window on the control panel. The button layout is organized as a "tree" with "parent" pages and "child" pages. "Parent" pages are one level up from a "child" page; "child" pages are always one level below a "parent" page. Each of the 34 buttons can execute a function or select an entirely new set of functions on a lower level ("child" page) in the "tree." The "tree" is not limited in size.

  Click on a button to assign a function to it. Certain buttons have pre-assigned text. Do not assign new functions to these buttons.

- Button Definitions—Assigns a definition to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.

- Page Table—This section includes a visual representation of the "parent" and "child" pages in the "tree." The "tree" is created by selecting 'Navigate' in the 'Button Layout' section.

- Outputs—The general-purpose I/O (GPIO) output connections at the rear of the control panel.

- Inputs—The general-purpose I/O (GPIO) input connections at the rear of the control panel.

- Panel Options—Define control panel behavior, such as the default operating mode.

The control panel options, button layout and button definitions are configured using the 'NV942' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel.

How to Configure a NV9642 Control Panel.

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9642 control panel. (See Adding a Control Panel on page 240.)

Or

Locate the NV9642 control panel being updated. (See How to Locate and View Existing Control Panels on page 347.) The 'NV9642' page appears:

Button Layout section
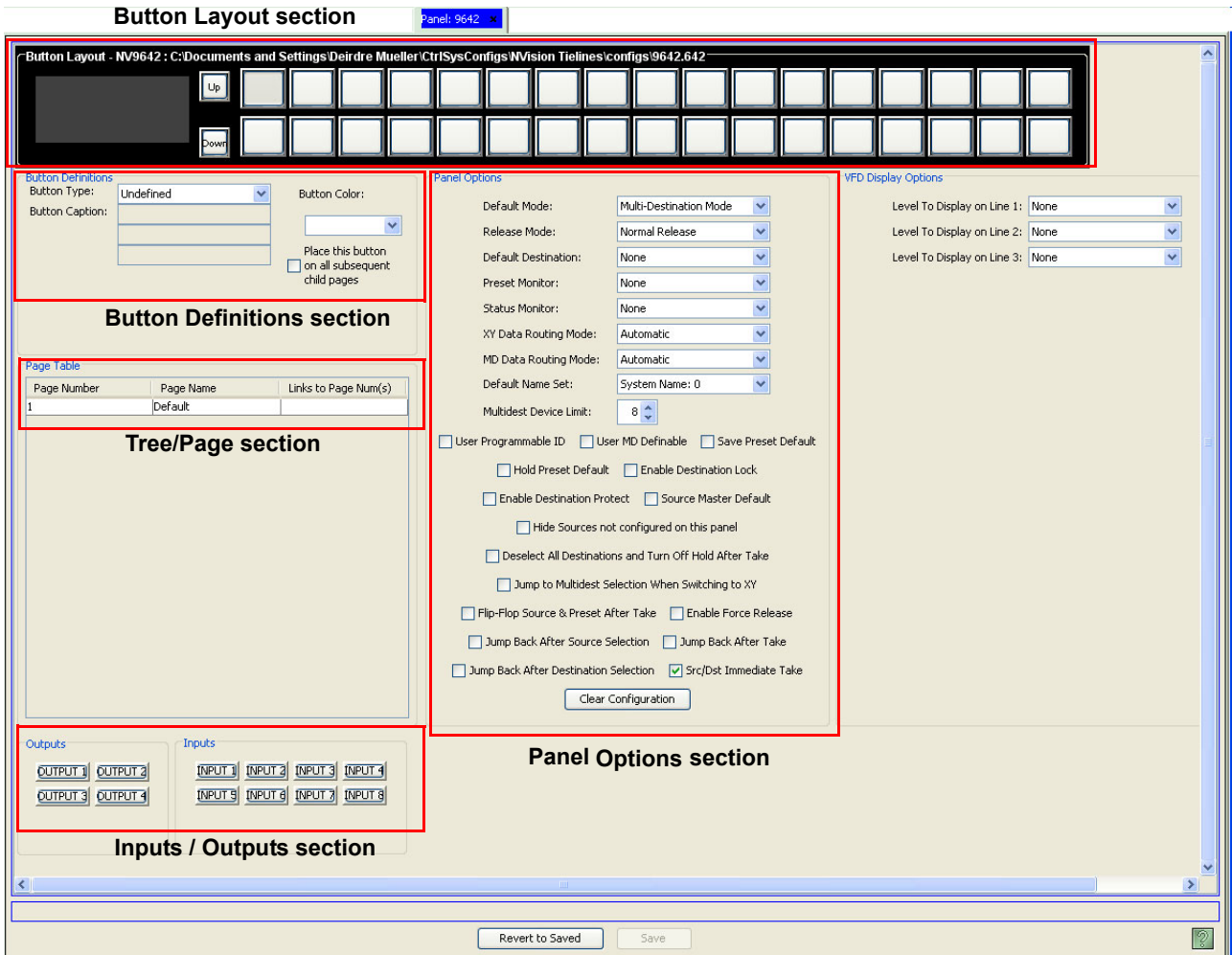
Figure 11-34. NV9642 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists.

Field	Option	Description	Related Topic
Default Mode	XY Mode	Starts the control panel in XY mode after a reset.	Modes of Operation on page 357 and Default State on page 356
	Multi-Destination Mode	Starts the control panel in MD mode after a reset.	

Field	Option	Description	Related Topic
Release Mode	Normal Release	This control panel can only release "locks" and "protects" set at the control panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
	Force Release	This control panel can release locks and protects set by any user. Miranda recommends that you use 'Normal Release' mode and assign a PIN to allow access to the 'Force Release' function.	
Default Destination	None	After a reset, the control panel displays no destination device. (Not recommended)	Default State on page 356
	‹device›	The control panel uses the specified device as the destination after a reset.	
Preset Monitor	None	Monitor the selected preset by defining a destination that the preset source can be routed to.	—
	‹device›		
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.	—
	‹device›		
X-Y Data Routing Mode	Automatic	If a data level is involved in the route, connects the source to the destination, regardless of who is currently using the devices.	Default Routing on page 357 and Modes of Operation on page 357
	Semi-automatic	If the device to be acquired is already in use on the data level, alerts the user — but allows the user to perform the route by pressing **Take** a second time. If **Take** is not pressed again, the route is cancelled. If the device is not in use, the "take" occurs automatically. (Recommended)	
	Manual	All takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level take.	
MD Data Routing Mode	Automatic	If a data level is involved in the multi-destination route, connects the source to the destinations, regardless of who is currently using the devices. (Recommended)	Default Routing on page 357 and Modes of Operation on page 357
	Manual	All multi-destination takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level "take."	
Default Name Set	<name set>	The name set selected is applied to the control panel. When a **Name Set Toggle** button is added, it toggles between the default name set and the system name set.	Name Set Toggle on page 363
Multidest Device Limit	(fixed at 8 presently)	The maximum number of MD entries allowed. 16 pages, 8 per page provides 128 maximum (Range 1–128). The default is 8. See Step 5 for the related entry fields.	NV9642 on page 541

3 In the 'Panel Options' section, check a check box to select additional control panel behaviors (un-check a check box to deselect an option).

Check box	Description	Related Topic
User Programmable ID	When checked, the Panel ID can be changed locally at the control panel itself. When unchecked, ID numbers can only be changed by first entering the system PIN locally at the control surface to temporarily enable ID changes.	Changing a Control Panel ID on page 351
User MD Definable	When checked, allows the operator to change a destination that appears in the display area. Uncheck the 'User Definable' check box if the destination is to remain fixed. Note: When a multi-destination button is user definable, a Destination Mode button must be added to the control panel. This allows the user to select a new destination from that location in the destination list using the category/index buttons. If selected, the new destination is retained, even after reset.	—
Save Preset Default	Makes any **Save Preset** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). This button causes the control panel to save whatever source is in the 'Preset' column, so that if the control panel is reset, that source reappears. When off, the presets are not saved. **Note:** If this option is selected, it is recommended that a **Save Preset** button be placed on the control panel.	Default State on page 360
Hold Preset Default	Makes any **Hold** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). **Note:** If this option is selected, it is recommended that a **Hold** button be placed on the control panel.	Hold on page 361 and Default State on page 360
Enable Destination Lock	Enables any **Destination Lock** button to function. If 'Enable Destination Lock' is unchecked, the **Destination Lock** button will not function on the control panel.	Locks on page 362
Enable Destination Protect	Enables any **Destination Protect** button to function. If 'Enable Destination Protect' is unchecked, the **Destination Protect** button will not function on the control panel.	Protect on page 363
Source Master Default	Makes the source the controlling (or "master") device permanently. By default, 'destination is master' is selected. (This option is specifically for use with a Miranda data router or port switch.) "Source is master" is used for duplication, or broadcast routing, on the control level. "Destination is master" is for machine-to-machine editing. **Note:** "Source is master" mode reverses the direction of data routing for devices used in data (control) level "takes". **Note:** If 'Source Master Default' is selected, the **Source Master** button will not switch to "destination is master" mode when pressed.	Source Master on page 365
Hide Sources not configured on this panel	Hides name of all source devices that are not presently configured. The control panel displays asterisks instead.	—

Check box	Description	Related Topic
Deselect All Destinations and Turn off Hold after Take	**Hold** normally has two functions: (1) allow multiple selections prior to a "take" and (2) retain the selections after the take with **Hold** remaining in effect. When this option is selected, a **Hold** performs the first function — allow multiple selections prior to a "take" — but not the second. The **Hold** deselects all destinations and turns itself off after the take. This option helps eliminate the time-consuming process of finding all and deselecting destinations on many pages after a "take" has been performed.	Hold on page 361
Jump to Multidest Selection when switching to XY	If the user has selected a single destination in multi-destination mode, switching to X-Y mode causes that destination to become the current destination in X-Y mode.	Modes of Operation on page 357
Flip-flop Source & Preset After Take	Swaps the preset source and the previously assigned source for this destination.	—
Enable Force Release	Allows operator to execute a forced release. The operator must know the PIN to execute.	Force Release on page 360
Jump Back After Source Selection Jump Back After Take Jump Back After Destination Selection	Jumps back to the top page (default) after a destination i or source is selected on another page. This does not function when using a Suffix Page to select the destination. 'Jump Back After Take' jumps the top page after a new source has been selected and a "take" performed. This can be used with a Suffix Page. 'Jump Back After Source Selection' must be un-checked or it overrides this option.	Creating a "Tree" of Pages on page 342 Using Global Suffix Pages on page 202
Src/Dst Immediate Take	Checking this option allows a "take" to occur from a specified source to a selected destination when the **Src/Dst** button is pressed (source shown on top line, destination shown on the bottom line). If the check box is not checked, pressing the **Src/Dst** button performs a preset of that source on that destination and enables the **Take** button, which must then be pressed to perform the "take".	Source/Destination on page 365

4 In the 'Button Layout' section, select buttons and button definitions.

There are two classes of buttons:

- Those that assign a dedicated function to a button directly, such as 'Def State' (default state) or 'Clear'. No other options are available.
- Those that define a variable function, such as 'Category'. Additional options display enabling you to define the variables.

To select a button definition, do the following:

a There are two pages of buttons. By default the pages are named 'Default'. Select the page to which buttons are being added. Pages are numbered according to where they are in the "tree," with number 1 being the highest, or "parent" page and all other pages being "child" pages.

b Select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

c Choose the 'Button Color' from the drop-down list.

d To have the button appear on all "child" pages—pages lower in the "tree" than the selected page—check the 'Place this button on all subsequent child pages' check box.

For categories, check the 'Use global suffix page to select devices' to select predefined suffixes. (See <u>Auto-Fill Suffixes</u> on page 195.)

e Select a button function from the 'Button Type' drop-down list. (See the options below.)

f Enter up to 8 characters in each 'Button Caption' field. The top field appears as the top line of text on the button, the next field, the second line of text, and the bottom field as the third line of text.

Select from the following button options:

Button	Modes	Description	Related Topic
Back	All modes	Returns the control panel user to the previous "page" in the "tree."	<u>Creating a "Tree" of Pages</u> on page 342
Broadcast	All modes	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	<u>Broadcast</u> on page 359
Category	All modes	Selects a category (and its device list). Separate categories are permitted for source and destination devices. When you assign a category button, three additional drop-down menus appear: 'Source Category', 'Destination Category', and 'Suffix'. Choose one of the categories (or none) from the category lists. Choose one of the suffixes (or none) from the suffix list. Select a level from the 'Level Set Filter' to limit categories to only those in the selected level. Select 'Use global suffix page to select devices' to apply predetermined suffixes in a predetermined order.	<u>Using Categories and Suffixes</u> on page 190\ and <u>Category</u> on page 359 and <u>Using Global Suffix Pages</u> on page 202
Chop	All modes	When supported by the router, the button is a toggle that enables and disables rapid switching of the selected destination device between the current source and the preset source. Used to test system timing.	<u>Chop</u> on page 360
Clear Preset	All modes	Erases entries in the control panel's 'Preset' column, while leaving the control panel in the same mode. Recommended as a "safety" button.	<u>Clear Preset</u> on page 360
Default State	All modes	Returns the control panel to its pre-defined state.	<u>Default State</u> on page 360
Destination	All modes	Sets the selected device as the default destination.Select the device from the drop-down list that appears.	—
Destination Lock	All modes	Sets or removes a "lock" on current destination device. The lock can only be removed at the control panel that originally set the lock, or by a control panel that has "Force Release" enabled. An "L" indicates a "lock" on the display.	<u>Locks</u> on page 362

Button	Modes	Description	Related Topic
Destination Protect	All modes	Sets or removes a "protect" on current destination device. The protect can only be removed at the control panel that originally set the protect, or by a control panel that has 'Force Release' enabled. A "P" indicates a "protect" on the display.	Protect on page 363
Free Source	All modes	Defines a phantom device that can be used to release or "free" devices on the data (control) level. A free source is also used with tielines to free the tieline for others to use. The free source is configured in the Level Sets page.	Free Source on page 361 and Level Sets on page 111
Global Navigate	All modes	The pages assigned to this button can be globally applied to every control panel with the global navigate button. Updates are also global.	Global Navigate on page 361
Hold	All modes	Retains preset information after **Take** is pressed. Useful when routing the same source to many destinations.	Hold on page 361
Information	All modes	Panel mode is changed to display system messages. This button toggles between current control panel mode and the info screen. A "+" sign indicates messages are present. The Info button lights when messages are available for viewing.	Information on page 361
Level Map	All modes	Cross-connects levels (typically in the same physical router). Typically used to shuffle audio channels, for example, to connect AES1/2 to AES3/4. When an **Info** button is configured, you can view current cross-connects. The 'Level' mode is cancelled when the next normal 'Take 'is performed involving the selected devices. (The **Level Map** button becomes enabled only when there is a valid preset.)	Level Mapping on page 362
Menu	All modes	Brings up a menu that provides access to a variety of local control panel options. The button is required if you want access to system menus and "local" salvos.	Menu Mode on page 358
Name Set Toggle	All modes	Toggles between the default name set and the system name set.	Name Set Toggle on page 363
Navigate	All modes	The 'Edit Navigate Button' dialog appears in which you define a button page that displays when the button is pressed. See Step 5.	—
Page Down	All modes	Allows scrolling through all data in a list (such as a category) using the **Page Up** and **Page Down** buttons. The function toggles on/off with each press of the Scroll button. (A recommended button.)	—
Page Up	All modes		
Panel Lock	All modes	Sets or removes a "lock" on the current control panel. The lock can only be removed at the control panel that originally set the lock, or by a control panel that has 'Force Release' enabled. An "L" indicates a "lock" on the display.	Panel Lock on page 363

Button	Modes	Description	Related Topic
Preset Release	All modes	Used to remove locks and protects from preset devices (in the 'Preset' column). If locks and protects are commonly used, this button is recommended.	Preset Release on page 363
Previous Source	All modes	Immediately restores the previously selected source to the current destination (similar to an "undo" button). Press **Take** to complete the route.	Previous Source on page 363
Quick Source	All modes	Immediately presets the source defined without having to first select a category and then select a device. From the drop-down list, select the source device.	—
Salvo	All modes	Places the control panel in 'Salvo' mode. The button is required if you want access to "system" salvos. When you assign 'Salvo' to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364 and Salvos on page 431
Save Preset	All modes	When on, this button causes the control panel to save whatever source is in the 'Preset' column, so that if the control panel is reset, that source reappears. When off, the presets are not saved.	—
Selection	All modes	Displays and enables operator to select items from the list that displays. For example, a list of salvos.	—
Source	All modes	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level. (The same is true if selecting destinations in MD mode.)	Source on page 365
Source Master	All modes	The button reverses the direction of data routing for devices used in data (control) level "takes". For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing **Source Master** reverses the roles.	Source Master on page 365
Source/Destination	All modes	Button is either a single source or a single destination depending on the operating mode.	Source/Destination on page 365
Take	All modes	Switches the loaded preset source device(s) to the selected destination device on all levels that have a preset loaded. The 'Status' column changes to the new device(s).	Take on page 366
Undefined	All modes	Makes the button undefined and inactive. It will remain unlit.	—
X-Y Display	All modes	Shows the status of the currently selected take before the take is executed.	—
XY / MD Mode	All modes	Switches control panel between XY and Multi-destination modes.	Modes of Operation on page 357

5 If 'Navigate' was selected as a button type, define the button properties. Using the 'Edit Navigation Button' dialog box, pages that create a "tree" can be selected. You can choose to have the button jump to a new page or an existing page, creating "child" pages to "parent" pages. See Creating a "Tree" of Pages on page 342.

6 Salvos are assigned to buttons individually. Salvo buttons can be created in two ways:

   • Manually using the button definition tools described in Step 4, selecting 'Salvo' from the 'Button Types' drop-down list.

   • Automatically, by creating a navigation button that will automatically assign all salvos to one or more subpages, as described in Step 5.

7 In the 'Outputs' and 'Inputs' sections, define the general-purpose I/O (GPIO) connections at the rear of the control panel as described in Defining General Purpose I/O (GPIO) Connections on page 337.

8 (Optional) In the 'VFD Display Options' section select what displays to the control panel operator on each line in the display area. There are three lines of display. Select a level to display on line 1 in the display are from the drop-down list for 'Level to Display on Line 1'. Repeat for line 2 and line 3.

9 Click Save.

   Or

   To revert to the previously saved configuration, click Revert to Saved.

   Or

   To clear all configuration selects and start anew, click Clear Configuration.

10 Click X on the window title tab to close the page.

NV9660

The 'NV9660' page determines how the NV9660 control panel functions and displays. For a full description of the control panel and functions, see NV9660 on page 545.

The 'NV9660' page is divided into sections:

   • Button Layout — A graphic representation of the buttons on the control panel. Click on a button to assign a function to it. Certain buttons have existing labels. Do not change the definition or functions of these buttons.

   • Panel Configuration — Specifies control panel behaviors, such as the default operating mode.

To configure the control panel options, button layout and button definitions, and control panel configurations, are assigned using the 'NV9660' page. When saved, the configurations are communicated to the physical control panel and appear to the operator using the control panel.

How to Configure a NV9660 Control Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add a NV9660 control panel. (See Adding a Control Panel on page 240.)

Or

Locate the NV9660 control panel being updated. (See) The 'NV9660' page appears:
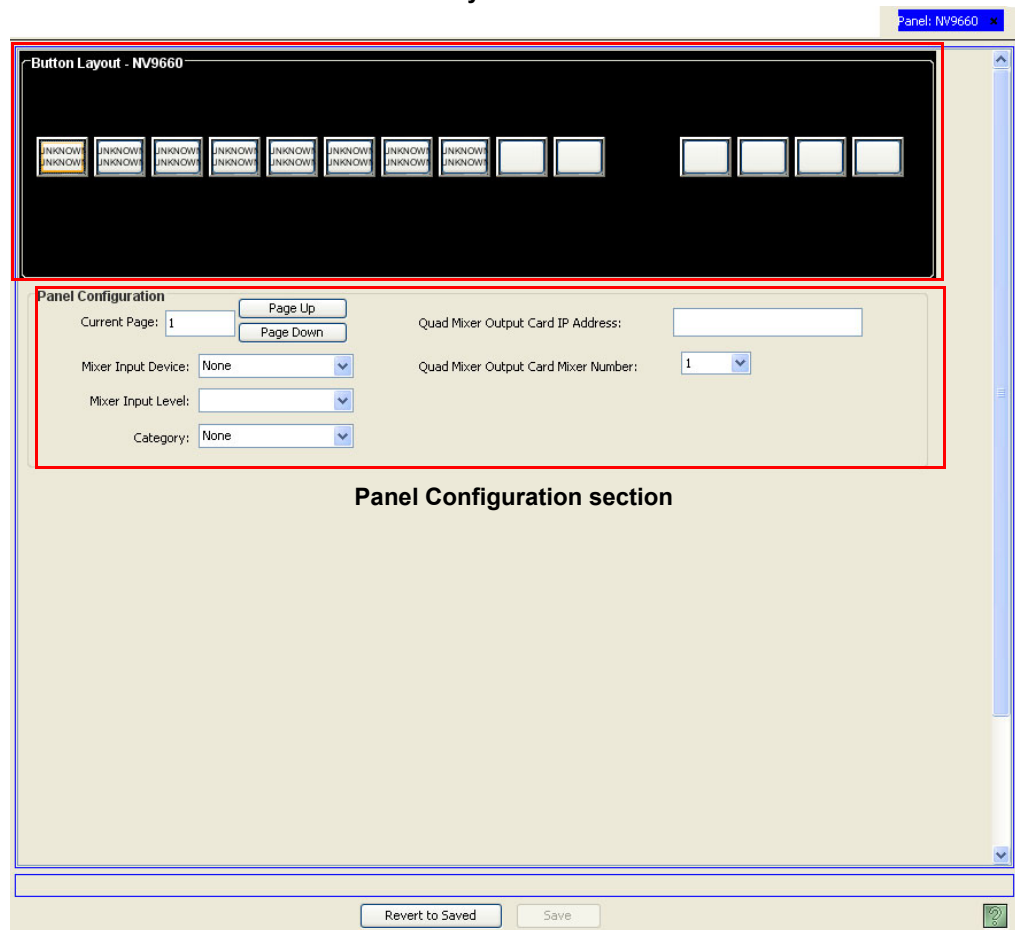
Button Layout section

Figure 11-35. NV9660 Page

2 In the 'Panel Configuration' section, enter Quad Mixer I/O card configurations:

Field	Description
Quad Mixer Output Card IP Address	Enter the IP address for the Quad Mixer Output card's location on the router. For more information on Quad Mixer Output cards, see the NV7512 User's Guide.
Quad Mixer Output Card Mixer Number	From the drop-down list, select the output number assigned to the slot in which the Quad Mixer Output card is installed on the router. There are up to four slots.

3 In the 'Button Layout' section, click Page Up or Page Down to move between pages on the display. On the page you want, select a blank button and then select options as follows:

Field	Option	Description
Mixer Input Device	‹device›	From the drop-down list, select device the control panel uses as a source.
Mixer Input Level	‹level›	From the drop-down list, select signal level.
Category	‹category›	The category associated with the source. For more information on categories, see Using Categories and Suffixes on page 190.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the page.

NV9575-VF

The 'NV9575-VF' page determines how the NV9575-VF tally processor functions and displays. For a full description of the control panel and functions, see NV9575-VF on page 548.

The NV9575-VF tally processor provides general-purpose input connections at the rear of the control panel. The NV575-VF tally expander does that specifically and has no other controls. 32 optically isolated inputs (also called GPIs) that can be configured to trigger an event on a transition from off to on, and to trigger another event on a transition from on to off. Events include:

- A salvo.
- Route the "previous source" switched by *any* control panel to a destination.
- Route the "previous source" switched by *this* control panel to a destination.
- Four relays that can be configured to switch on a number of conditions:
  - One or more routes occurring on specific levels.
  - Conditions involving output ports (destination, level).
  - A transition on one or more of the control panel's GPI inputs.

What devices are connected to the inputs and outputs is entirely up to you.

The 'NV9575-VF' page is divided into sections:

- Panel I/O Layout—A graphic representation of the connectors on the control panel. On the left side are 64 button images representing 64 relay outputs. On the right side are 32 button images representing 32 optically isolated inputs. An input can trigger a salvo.

  When selected, the button is highlighted. Buttons for which inputs/outputs have been assigned functions display as green.
- Control Point—Specify the control point for the control panel.

To configure the NV9575-VF, button definitions are assigned using the 'NV9575-VF' page. When saved, the configurations are communicated to the physical panel.

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

The NV9575-VF tally processor uses Boolean expressions to create a series of actions that occur when certain events or combinations of events occur. An expression can reflect (1) the occurrence of a particular source switched to a particular destination, on a particular level, (2) output port status, and (3) input transition. For information on Boolean expressions, see Using Boolean Expressions on page 337.

How to Configure a NV9575-VF Tally Processor

1 Add a NV9575-VF control panel. (See Adding a Control Panel on page 240.)

Or

Locate the NV9575-VF control panel being updated. (See How to Locate and View Existing Control Panels on page 347.) The 'NV9575-VF' page appears:
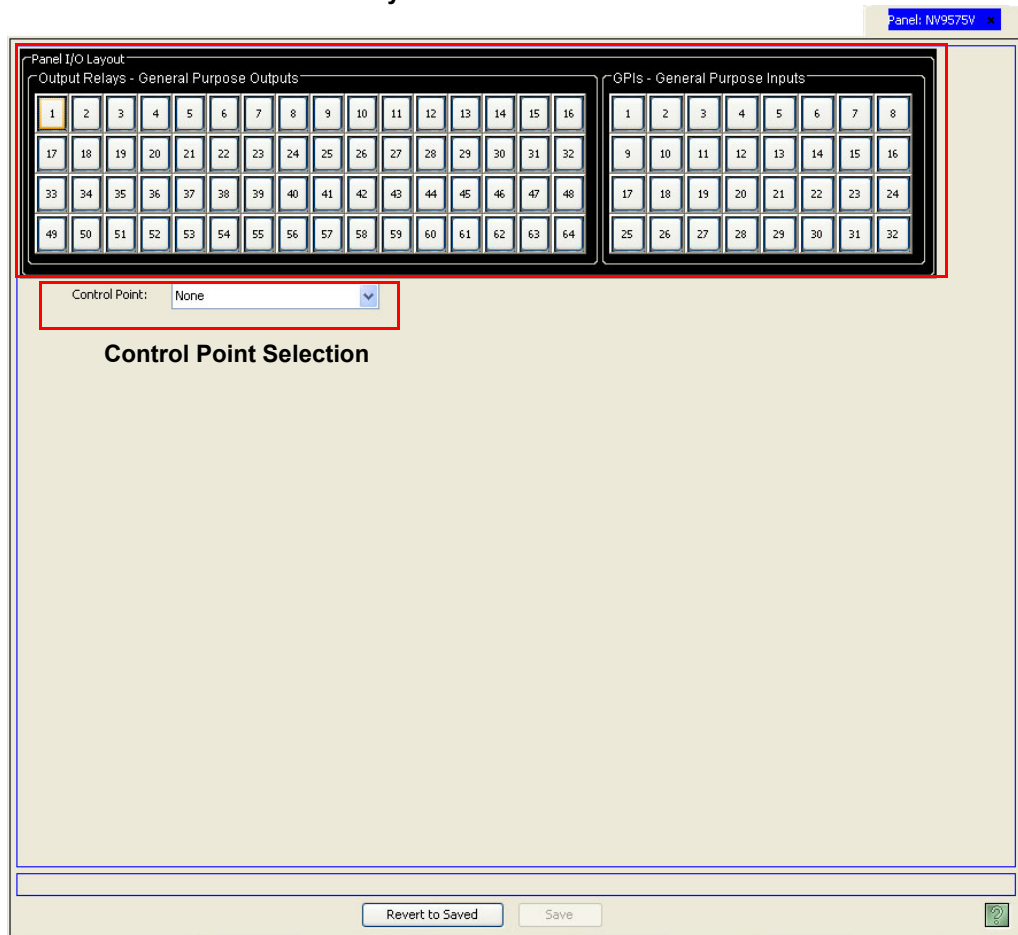
Figure 11-36. NV9575-VF Page

▲ Note that the NV9575-VF has no actual buttons. The buttons on this page represent the 32 general-purpose inputs and 64 general-purpose outputs at the rear of the panel. The NV9575-VF is a tally processor, not a control panel.

2 In the 'Panel I/O Layout' section, click on a button in the 'Output Relays' section to select it. The 'Output Relay Rule Configuration' window appears:
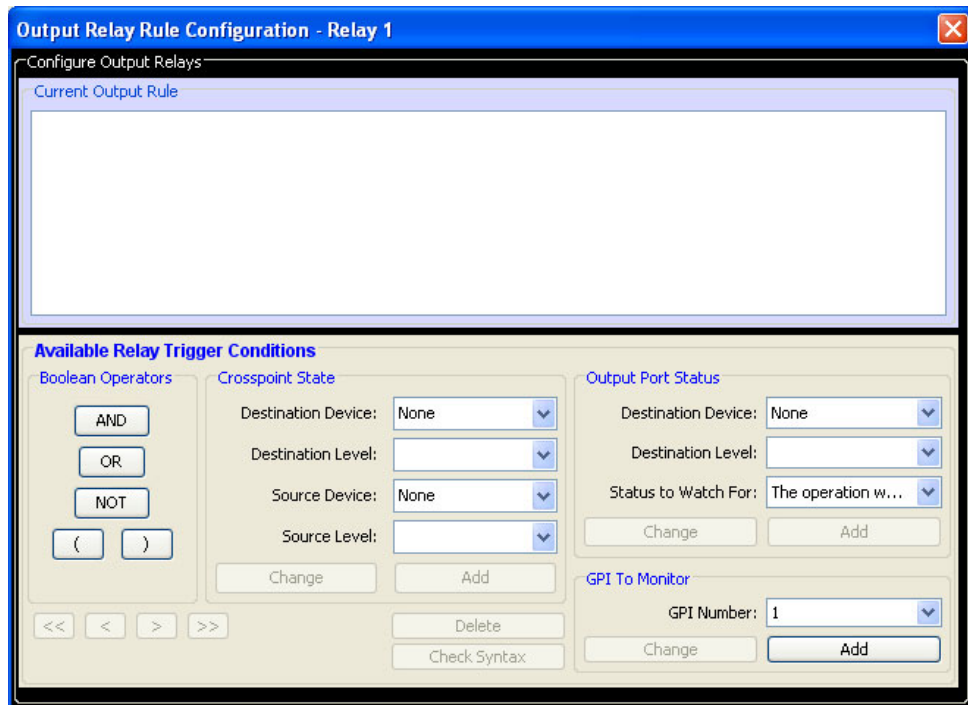
Figure 11-37. Output Relay Rule Configuration Window

Using the "Output Relay Rule Configuration' window, a Boolean expression can be created using source destinations, port status, and GPI status. For more information on Boolean expressions, see Using Boolean Expressions on page 337.

3 In the 'Boolean Operators' section, click the button matching the Boolean operator you want.

4 In the 'Crosspoint State' section, select destination and source information for the output connector from the drop-down lists and click Add. (If you are updating existing information, click Change.)

Field	Option	Description
Destination Device	‹device›	The device to which the signal through that connector is sent.
Destination Level	‹level›	The signal level for the destination device.
Source Device	‹device›	The device from which the signal is being received.
Source Level	‹level›	The signal level for the source device.

5 In the 'Output Port Status' section, select status information to be monitored for the output connector from the drop-down lists and click Add. (If you are updating existing information, click Change.)

Field	Option	Description
Destination Device	‹device›	The device to which the signal through that connector is sent.
Destination Level	‹level›	The signal level for the destination device.

Field	Option	Description
Status to Watch for	The operation was successful Destination port locked Destination port protected Router offline / unavailable No tieline available Used as master point to point Used as master without responses Used as broadcast master Used as slave point to point Used as slave without responses Used as Broadcast Slave	The transition will occur when the selected status is met.

6 In the 'GPI to Monitor' section, select the 'GPI Number' (General Purpose Input) and click Add. (If you are updating existing information, click Change.)

7 To move forward and back through the Boolean expression, use the four directional arrows in the lower, left corner of the window. The arrows are the only way to position between two items or at the end of a Boolean expression. Double-click a term or an operator to select it.

Arrow functions are as follows:

- The left double arrows highlights the first term or operator in the expression.

- The right double arrow moves to the very end of the expression where more items may be added.

- The single arrows select and highlight the previous or next terms, operators, or spaces between terms and operators.

8 (Optional) To change a term, highlight it, reconstruct the term in the appropriate entry fields, and click Change.

9 (Optional) Click Check Syntax to evaluate the syntax of the complete expression. Most syntax error occur when an operator has been left out between terms or an extra operator has been added to the end.

10 In the 'Panel I/O Layout' section, click on a button in the 'GPIs' (General Purpose Input) section to select it. The 'Configure GPI' dialog box appears, as shown in <u>Figure 11-38</u>.

For more information on GPIO (General Purpose Input Output), see <u>Defining General Purpose I/O (GPIO) Connections</u> on page 337.
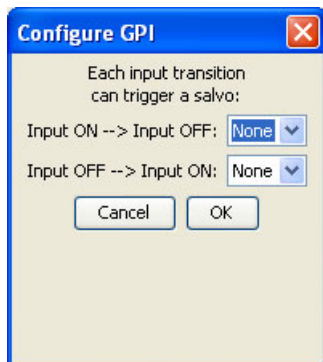
Figure 11-38. Configure GPI Dialog Box

Using this dialog box, from the drop-down list, select to have an event signalled when a transition occurs on the input from 'on' to 'off' ('Input ON → Input OFF') or from 'off' to 'on' ('Input OFF → Input ON'). The NV9575-VF can be configured to recognize either occurrence on any of the 32 inputs, and specify the salvo to execute at either occurrence or both. In addition, one or more input transitions in relay output expressions can be included.

From Click OK to save your changes and close the dialog box

Or

Click Cancel to close the dialog box without saving any changes.

11 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

12 Click X on the window title tab to close the page.

NVRP16

The 'NVRP16' page determines how a CR Series control panel mounted on the RP16 remote panel module functions and displays. For a full description of the module and functions, see <u>RP16 and RP32</u> on page 535.

▲ This page configures the remote panel *module*, but the configuration is entirely on the basis of the control panel that you have mounted (or plan to mount) on the remote panel module.

The 'NVRP16' page is divided into sections:

• Button Layout—A graphic representation of the remote panel module.

• Button Definitions—Assigns a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.

• Panel Options—Specifies panel behavior, such as default mode.

The remote panel options, button layout and button definitions are configured using the 'NVRP16' page. When saved, the configurations are communicated to the physical remote panel module and appear to the operator using the panel.

How to Configure an RP16 Remote Panel

Important	When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add an RP16. (See <u>Adding a Control Panel</u> on page 240.)

Or

Locate the RP16 panel being updated. (See <u>How to Locate and View Existing Control Panels</u> on page 347.)

The 'NVRP16' page appears:

Button Layout section
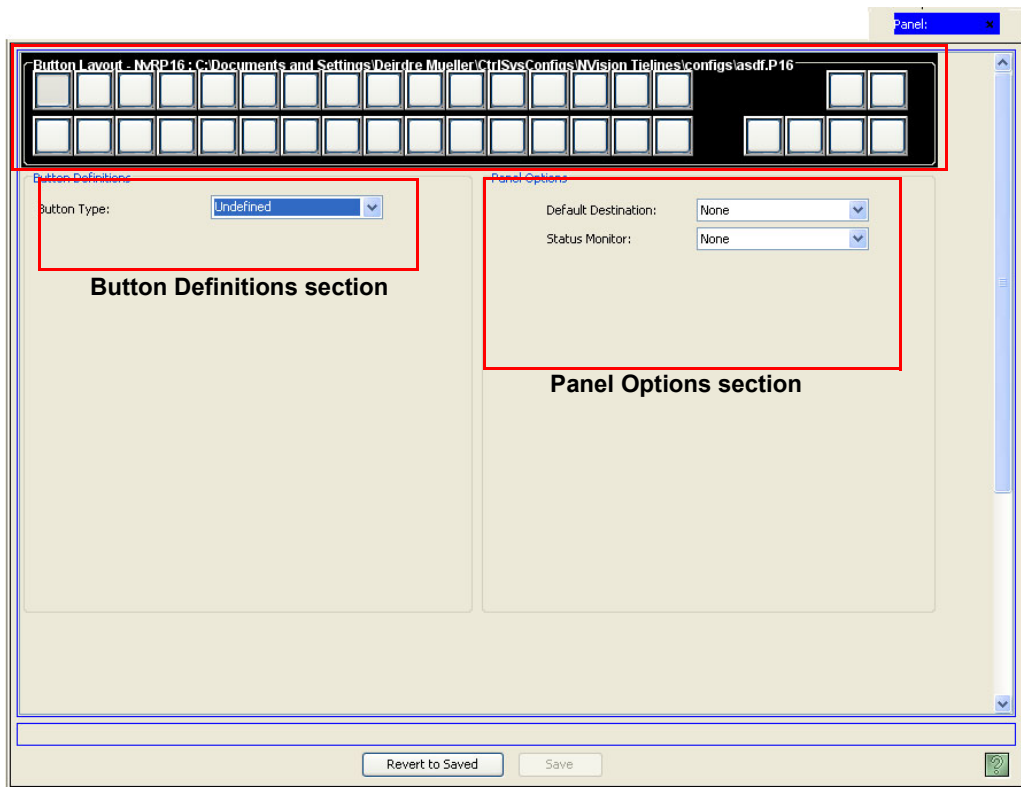
Figure 11-39. NVRP16 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists:

Field	Option	Description
Default Destination	None	After a reset, the control panel displays no destination device. (Not recommended). See Default State on page 356.
	‹device›	The Panel uses the specified device as the destination after a reset. This also becomes the destination controlled when the control panel is set to single destination mode.
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.
	‹device›	

3 In the 'Button Layout' section, select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

Select button options as follows:

Button	Description	Related Topic
Destination	Assigns a destination device to this control panel.	—
Level	Shows the status of a specific level on the display. When a level button is assigned, a 'Virtual Level' drop-down menu appears. Choose one of the levels or 'none'.	About Levels and Level Sets on page 112

Button	Description	Related Topic
Previous Source	Immediately restores the previously selected source to the current destination (similar to an "undo" button).	Previous Source on page 363
Salvo	The button either executes a salvo or arms a salvo (where a second press executes the salvo). When you assign Salvo to a button, a drop-down list appears in which you select a salvo ID.	Salvos on page 364 and Salvos on page 431
Source	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level.	Source on page 365 and Source Shift on page 365
Undefined	Makes the button undefined and inactive. It will remain unlit.	--

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the page.

NVR2P32

The 'NVRP32' page determines how a CR Series control panel mounted on the RP32 remote panel module functions and displays. For a full description of the module and functions, see RP16 and RP32 on page 535.

▲ This page configures the remote panel *module*, but the configuration is entirely on the basis of the control panel that you have mounted (or plan to mount) on the remote panel module.

The 'NVRP32' page is divided into sections:

• Button Layout — A graphic representation of the remote panel module.

• Button Definitions — Assigns a function to the currently selected button in the 'Button Layout' field. The options available as definitions change depending on the options selected in the 'Panel Options' section.

• Panel Options — Specifies panel behavior, such as default mode.

The remote panel options, button layout and button definitions are configured using the 'NVRP32' page. When saved, the configurations are communicated to the physical remote panel module and appear to the operator using the panel.

How to Configure an RP32 Remote Panel

Important When configuring the control panel, it is important to select control panel options first. This determines the subsequent button definitions.

1 Add an RP32. (See Adding a Control Panel on page 240.)

Or

Locate the RP32 being updated. (See How to Locate and View Existing Control Panels on page 347.)

The 'NVRP32' page appears:
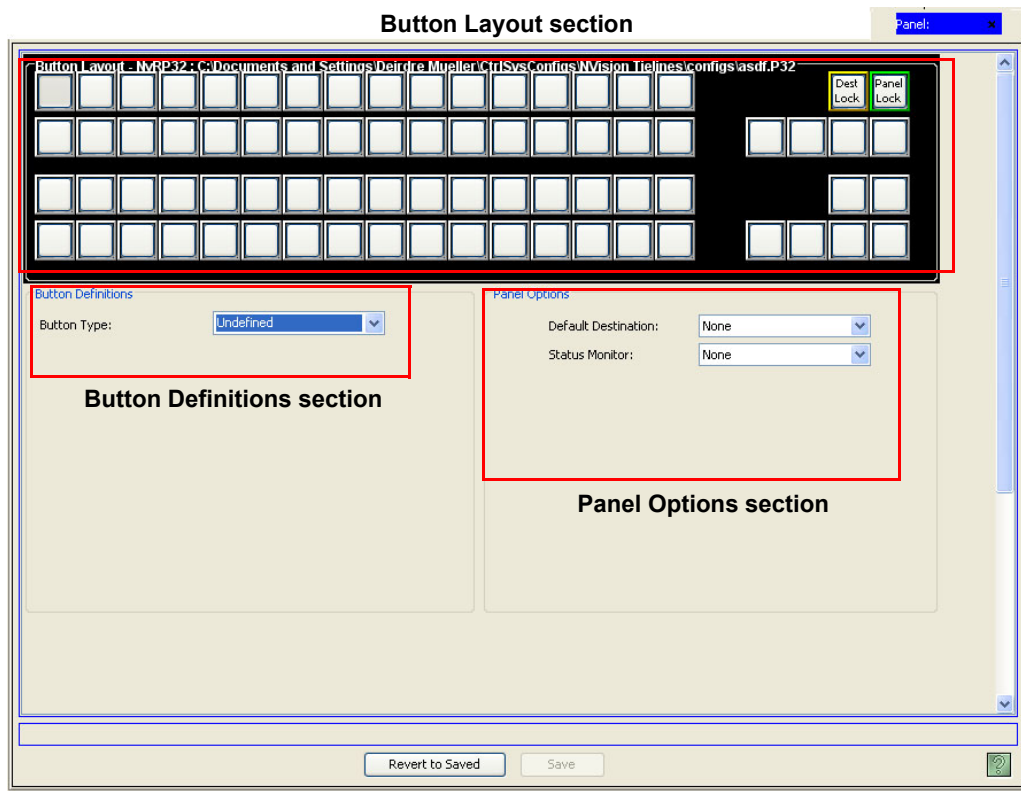
Figure 11-40. NVRP32 Page

2 In the 'Panel Options' section, select control panel behaviors from the drop-down lists:

Field	Option	Description
Default Destination	None	After a reset, the control panel displays no destination device. (Not recommended). See Default State on page 356.
	‹device›	The Panel uses the specified device as the destination after a reset. This also becomes the destination controlled when the control panel is set to single destination mode.
Status Monitor	None	Selected destination used as a monitor to switch the source that is in 'status' mode for the selected destination.
	‹device›	

3 In the 'Button Layout' section, select a blank button and then in the 'Button Definitions' section, select a definition for the button from the drop-down list. The button definition appears on the selected button in the 'Button Layout' section.

Select button options as follows:

Button	Description	Related Topic
Destination	Assigns a destination device to this control panel.	—
Level	Shows the status of a specific level on the display. When a level button is assigned, a 'Virtual Level' drop-down menu appears. Choose one of the levels or 'none'.	About Levels and Level Sets on page 112

Button	Description	Related Topic
Salvo	The button either executes a salvo or arms a salvo (where a second press executes the salvo). When you assign Salvo to a button, a drop-down list appears in which you select a salvo ID.	[Salvos](#) on page 364 and [Salvos](#) on page 431
Source	Loads a predefined source device into the preset column, ready for selection by pressing **Take**. When you assign 'Source' to a button, a drop-down list appears in which you select a source(s). Select a level from 'Level Set Filter' to limit the sources to only those assigned to that level.	[Source](#) on page 365 and [Source Shift](#) on page 365
Undefined	Makes the button undefined and inactive. It will remain unlit.	—

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the page.

Defining General Purpose I/O (GPIO) Connections

The NV9605, NV9606, NV9607, NV9609, NV9640, NV9641 and NV9575-VF control panels provide general-purpose I/O (GPIO) connections at the rear of the control panel. However, unlike the NV9605, NV9606, NV9607, NV9609, NV9640 or NV9641, the NV9575-VF tally expander has no other controls and is solely composed of GPIO connectors. For instructions on setting up GPIO connectors for the NV9575-VF, see [NV9575-VF](#) on page 329. This section provides instructions only for the NV9605, NV9606, NV9607, NV9609, NV9640 and NV9641.

On the control panels, eight optically isolated inputs can be configured to trigger an event on a transition from 'off' to 'on', and to trigger another event on a transition from 'on' to 'off'.

Events include:

- A salvo.
- Route the "previous source" switched by any control panel to a destination.
- Route the "previous source" switched by this control panel to a destination.
- Four relays that can be configured to switch if the following conditions are present:
  - One or more routes occurring on specific levels.
  - Conditions involving output ports (destination, level).
  - A transition on one or more of the control panel's GPI inputs.

GPIO uses a single DB25 connector, at the rear of a control panel, that provides 12 pairs of signals (PMOUT, NO,COM for the 4 relays and +, – for the 8 inputs) leaving one unused pin. You can choose to connect any device to the inputs and outputs.

Using Boolean Expressions

The NV9605, NV9640 and NV9641 panels use Boolean expressions to create a series of actions that occur when a button on the control panel is pressed. Boolean expressions comprise *terms* and *operators*. *Terms* are operands and generated by choosing entries from the drop-down lists provided and then clicking ADD. *Operators* include those words listed in the left-hand section of the

screen: AND, OR, and NOT. Operator precedence is normally NOT before AND before OR. Boolean expressions can be parenthesized to control the order of evaluation. All parenthesized expressions are evaluated first; nested parentheses are evaluated before outer parentheses.

The following is a quick summary of the Boolean operators:

- All operands evaluate either TRUE or FALSE
- AND = true if ALL terms are true; false if ANY term is false
- OR = false if ALL terms are false; true if ANY term is true
- NOT = true if term is false; false if term is true (i.e., negation)

Example:

In this example, the destination device is MON2 and the destination level SD and the source device is CAM1 and the source level is SD.

Selecting these devices and levels, and choosing the operator ADD, produces the following Boolean expression:

```
SD on CAM1 is switched to SD on MON2
```

That expression can then be ANDed with another expression

```
INPUT 3 OR INPUT 8
```

When selected, the relay chosen (relay 1) will transition when the *entire* expression is true. That is, when the switch occurs and either of the inputs (3 or 8) transitions from 'off' to 'on'.

To allow a relay to switch when an input transitions from 'on' to 'off', precede the input term with the operator NOT. For example, the expression

```
INPUT 3 OR NOT INPUT 8
```

will evaluate true either when input 3 goes from "off" to "on" or when input 8 goes from "on" to "off".

One or more expressions regarding the output port status can also be included in the expression. For example, choosing 'Used as broadcast slave', VTR3, and HD for output port status produces the proposition

```
HD on VTR3 has status of 'Used as broadcast slave
```

GPIO Section of Control Panel Pages

The 'NV9605', 'NV9606', 'NV9607', 'NV9609', 'NV9640' and 'NV9641' pages feature a 'GPIO' section. Using this section, 4 relay outputs and 8 optically isolated inputs can be configured.

How to Define GPIO Connections

1 Locate the NV9605, NV9606, NV9607, NV9609, NV9640 or NV9641 control panel being updated. (See How to Locate and View Existing Control Panels on page 347.)

The 'NV9605', 'NV9606', 'NV9607', 'NV9609', 'NV9640' or 'NV9641' page appears, displaying a 'GPIO' section:
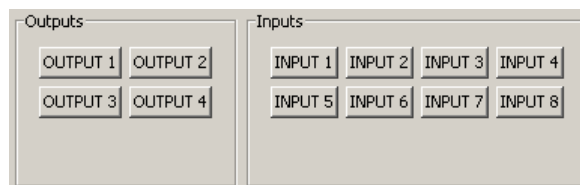
Figure 11-41. GPIO Section

2 In the 'Outputs' section, click on any of the four OUTPUT buttons to select it. The 'Output Relay Rule Configuration' window appears:
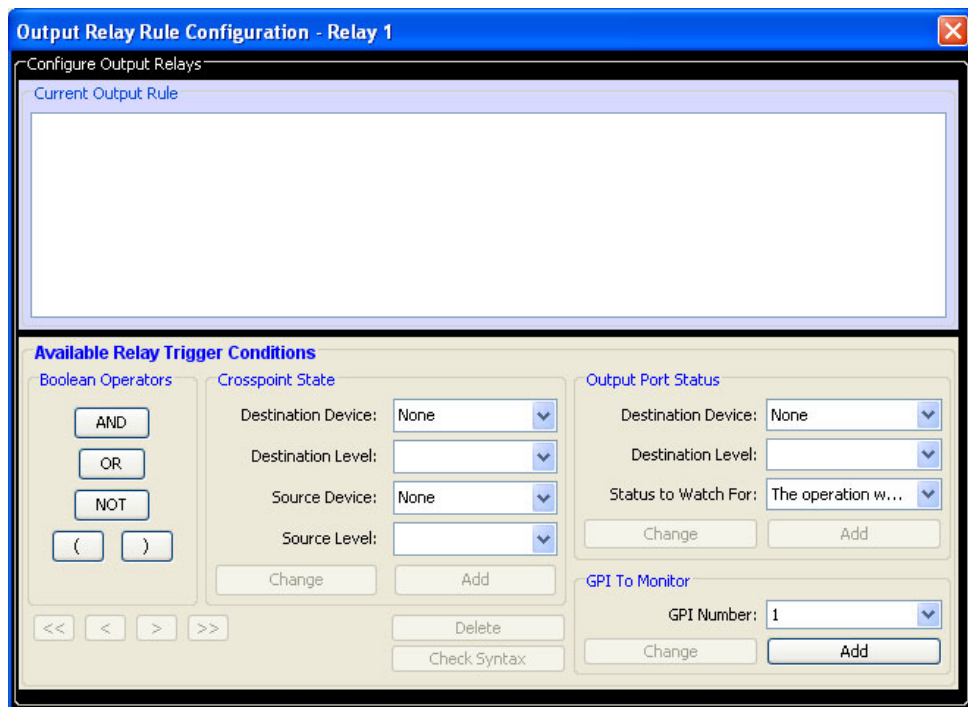
Figure 11-42. Output Relay Rule Configuration Window

Using the "Output Relay Rule Configuration' window, a Boolean expression can be created using source destinations, port status, and GPI status. For more information on Boolean expressions, see

3 In the 'Boolean Operators' section, click the button matching the Boolean operator you want.

4 In the 'Crosspoint State' section, select destination and source information for the output connector from the drop-down lists and click Add. (If you are updating existing information, click Change.)

Field	Option	Description
Destination Device	‹device›	The device to which the signal through that connector is sent.
Destination Level	‹level›	The signal level for the destination device.
Source Device	‹device›	The device from which the signal is being received.
Source Level	‹level›	The signal level for the source device.

5 In the 'Output Port Status' section, select status information to be monitored for the output connector from the drop-down lists and click Add. (If you are updating existing information, click Change.)

Field	Option	Description
Destination Device	‹device›	The device to which the signal through that connector is sent.
Destination Level	‹level›	The signal level for the destination device.

Field	Option	Description
Status to Watch for	The operation was successful Destination port locked Destination port protected Router offline / unavailable No tieline available Used as master point to point Used as master without responses Used as broadcast master Used as slave point to point Used as slave without responses Used as Broadcast Slave	The transition will occur when the selected status is met.

6 In the 'GPI to Monitor' section, select the 'GPI Number' (General Purpose Input) and click Add. (If you are updating existing information, click Change.)

7 To move forward and back through the Boolean expression, use the four directional arrows in the lower, left corner of the window. The arrows are the only way to position between two items or at the end of a Boolean expression. Double-click a term or an operator to select it.

Arrow functions are as follows:

- The left double arrows highlights the first term or operator in the expression.

- The right double arrow moves to the very end of the expression where more items may be added.

- The single arrows select and highlight the previous or next terms, operators, or spaces between terms and operators.

8 (Optional) To change a term, highlight it, reconstruct the term in the appropriate entry fields, and click Change.

9 (Optional) Click Check Syntax to evaluate the syntax of the complete expression.Most syntax error occur when an operator has been left out between terms or an extra operator has been added to the end.

10 In the 'Panel I/O Layout' section, click on a button in the 'GPIs' (General Purpose Input) section to select it. The 'Configure GPI' dialog box appears, as shown in Figure 11-38.

For more information on GPIO (General Purpose Input Output), see Defining General Purpose I/O (GPIO) Connections on page 337.

Figure 11-43. Configure GPI Dialog Box

Using this dialog box, from the drop-down list, select to have an event signalled when a transition occurs on the input from "on" to "off" ('Input ON → Input OFF') or from "off" to "on" ('Input OFF → Input ON'). For example, the NV9575-VF can be configured to recognize either occurrence on any of the 32 inputs, and specify the salvo to execute at either occurrence or both. In addition, one or more input transitions in relay output expressions can be included.

11 Click OK to save your changes and close the dialog box

Or

Click Cancel to close the dialog box without saving any changes.

12 In the 'Outputs' section, click on any of the four INPUT buttons to select it. (See Figure 11-36.) The 'Input GPI Configuration' dialog box appears:
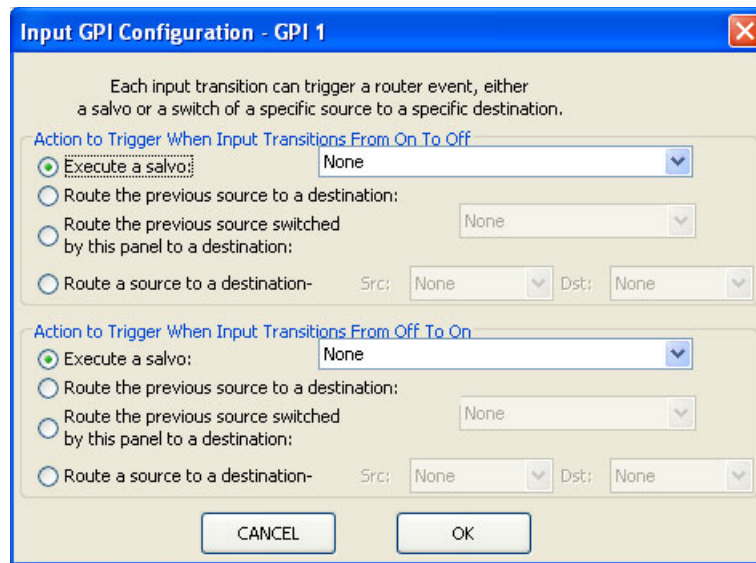
Figure 11-44. Input GPI Configuration Dialog Box

Choose what 'Action to Trigger When Input Transitions From On to Off' and 'Action to Trigger When Input Transitions From Off to On'. The control panel can be configured to recognize either occurrence on any of the 8 inputs, and specify one of three behaviors for each event or both.

Select the radio button to activate that option:

- Execute a salvo—Select a salvo ID in the salvo drop-down list.

Note	A 'Previous Source' command in a salvo chooses the most recent source that is different from the current source (for a designated destination).

- Route the previous source to a destination—Select a destination in the destination drop-down list.
- Route the "previous source" switched by *this* control panel to a destination—Select a destination in the destination drop-down list, even if it is the same as the current source. One or more input transitions can be included in a relay output expression.
- Route a source to a destination—Select a 'Src' (source) and a 'Dest' (destination) from the drop-down lists.

13 Click OK to save your changes and close the dialog box

Or

Click CANCEL to close the dialog box without saving any changes.

14 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

15 Click X on the window title tab to close the page.

Creating a "Tree" of Pages

The NV9640, NV9641 and NV9642 have a 'Page Table' section. A "page" is a predetermined button layout and functions. By selecting a different page, an operator can view a different set of buttons and their functions. An unlimited number of pages can be created, each with its own button selections. The button layout is organized as a tree-like structure with "parent" pages and "child" pages. "Parent" pages are one level up from a "child" page; "child" pages are always one level below a "parent" page. For ease, all "child" pages will be referred to as subpages and the "parent" page will be referred to as the primary page.

You can have multiple subpages. When a new page is selected, the buttons display functions configured for that page. In other words, if you select a subpage, button functions change to match the buttons configured for that page in the hierarchy.

The 'Page Table' section has three columns: "Page Number', Page Name' and 'Links to Page Num(s)'. Pages are ordered by number, from lowest to highest with the higher numbers corresponding to pages higher in the "tree." The page at the top of the "tree" is titled "Default." Initially, the "tree" has only a default page. All other pages you add are subpages.

This is a sample of a 'Page Table' section:

Figure 11-45. Page Table section on Control Panel page

It represents the following "tree" of pages:
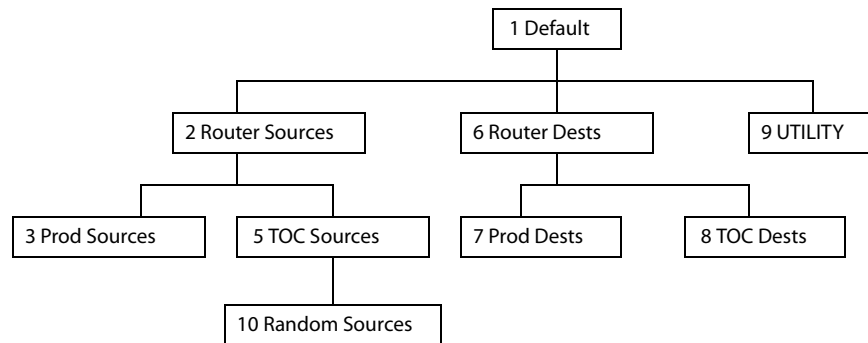
The 'Links to Page Num(s)' column lists all pages a specific page links to (e.g., refers to). For example, in Figure 11-45 page number 5, references page 2. Using this column you can examine the "tree" of pages. If the 'Links to Page Num(s)' field is empty, the page is inaccessible during operation. (The exception is the default page which is always available after reset. It might become unavailable in a configuration that has subpages with no Back buttons.)

When creating the hierarchy of pages remember that the operator must be able to reach any page in the hierarchy. To do this:

- Place a Back button on each subpage. The Back button enables the operator to return to the previous page.

  Or

- Place a button on each page that causes the control panel to display a *specific* page.

  Or

- The operator can also use the Up and Down buttons on the control panel.

In addition, in most cases the operator will also need a Take button and at least one selection button. A Clear Preset button is strongly recommended. (See <u>Clear Preset</u> on page 360.)

How to Create Pages

1 Locate the NV9640, NV9641 or NV9642 control panel being updated. (See How to Locate and View Existing Control Panels on page 347.)

2 Select 'Navigation' from the 'Button Type' drop-down list. The 'Edit Navigation Button' dialog box appears:
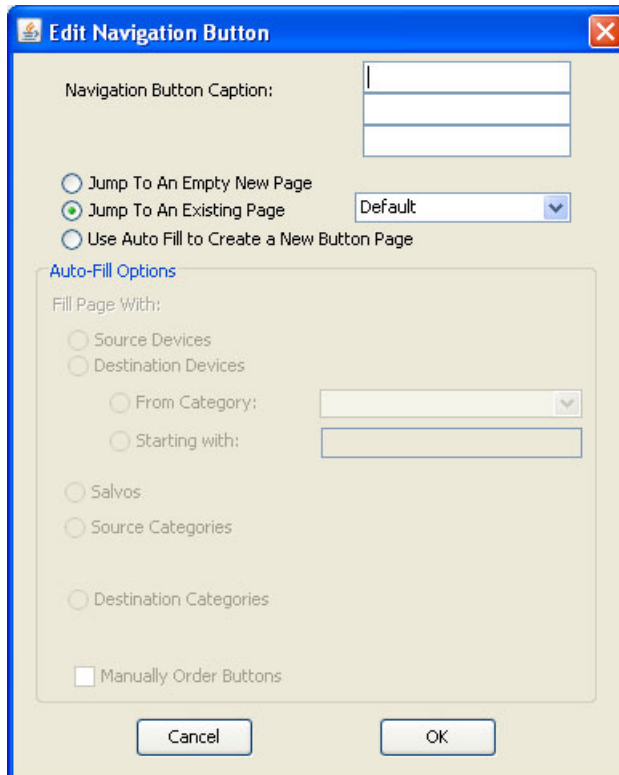
Figure 11-46. Edit Navigation Button Dialog Box

3 In the 'Navigation Button Caption' fields, enter up to three lines of text, 8 characters long. The text will display on the button on the control panel. Usually the text displays the page name and button caption.

4 Select a radio button to determine what action occurs when the navigation button is pressed:

- Jump to an Empty New Page—This option creates a new page in the hierarchy. During operation, the navigation button you are creating causes the control panel to display the related page. That is, when selected all the buttons predetermined for this page display on the control panel. After the page is created, you can select it at any time and edit its buttons.

- Jump to an Existing Page—This does not create a new page. Instead this causes the control panel to display an existing page you have selected from the drop-down list.

- Use Auto-Fill to Create a New Button Page—Activates auto-fill options. Auto fill automatically generates a number of button assignments on one or more subpages as defined in the 'Edit Navigation Button' dialog box, as shown in Figure 11-47. Go to step 5.

   If 'Use Auto Fill....' is left unchecked, the subpage has no new buttons assigned (except for those specified as 'Place this button on all child pages').

NV9000-SE Utilities creates at least one new button page, filling the page(s) with button functions according to the fill options you specify. Automatic fill has several options, as listed in Step 5.

Automatic fill has a "manually order buttons" option where you can reorder the list items as you want.

Automatic fill creates as many new pages in the hierarchy as required to support the number of fill items. If the number of items is greater than 29, NV9000-SE Utilities places 28 items on a page where the bottom left button is a back button and the bottom right button is a "forward" button. The last page of the automatic fill will not have a forward button and might not be completely filled.

The fill occurs in a left-to-right, and top-to-bottom order:

During operation, the navigation button will cause the NV9000-SE to display the first of the auto-fill pages. The operator uses the back and forward buttons to scroll through the list.

The button caption is what you type in the three lines for the button caption. You can change the names of the automatic fill pages in the button page list. After the pages are created, you can select any of them at any time and edit its buttons.

During configuration, you can double-click a navigation button to view and edit its target page. Any page can have navigation buttons. You can also select pages by double-clicking on the page's page number field in the button page list.

5   Select from the following auto-fill options. Radio button options are distinct; one or the other option may be chosen, but not both.

Radio Button	Activates Options	Description
Source Devices	NV9000-SE assigns sources to buttons in new subpage(s). If it has too many sources to fit on the subpage, additional subpages are created, as needed. The software automatically adds **Back** and **Forward** buttons when more than one subpage is required	
	From Category	Using the drop-down list, select the category from which the source devices will be defined.
	Starting With	Select source devices starting with a specified substring. For example, if you specify "V" in the 'Starting With' text box, all sources whose names start with "V" are placed on a subpage.
Destination Devices	Auto-fill using destination devices functions the same as for source devices, except that destination devices are chosen.	
	From Category	Using the drop-down list, select the category from which the destination devices will be defined.
	Starting With	Select destination devices starting with a specified substring. For example, if you specify "V" in the 'Starting With' text box, all sources whose names start with "V" are placed on a subpage.
Salvos	NV9000-SE assigns salvos to buttons in new subpages. If it has too many salvos to fit on the subpage, additional subpages are created, as needed. The software automatically adds **Back** and **Forward** buttons when more than one subpage is required.	
Source Categories	NV9000-SE assigns source categories to buttons in a new button subpage. If there are too many source categories to fit on the subpage, it creates further subpages as needed. The software adds **Back** and **Forward** buttons when more than one subpage is required. Categories that are both source and destination categories are included.	

Radio Button	Activates Options	Description
Destination Categories		NV9000-SE assigns destination categories to buttons in a new button subpage. If there are too many destination categories to fit on the subpage, it creates further subpages as needed. The software adds **Back** and **Forward** buttons when more than one subpage is required. Categories that are both source and destination categories are included.
Manually order buttons		If you check the 'Manually order buttons' box, NV9000-SE presents a dialog that lists the sources, destinations, categories, or salvos you selected. You may reorder the items. To do so, ***double-click*** on a row in the list and drag it up or down to the position that you like. The row you selected is re-positioned *beneath* the row on which you release your mouse button. *Note:* If you have two items in this list, to reorder them, drag the first item *on top of* the second. Dragging the second *above, below, or on top of* the first will not work.

Figure 11-47. Edit Navigation Button Dialog Box - Auto Fill Activated

6 Click OK**.** The pages appear in the 'Page Table' section in the order selected.

How to Update or Delete a Page

Pages for configuring NV9640, NV9641 and NV9642 control panel feature right-click menus. By selecting a page entry from the list of pages in the 'Page Table' section, and then right-clicking on it, a menu displays allowing you to 'Delete Selected Page' or 'Delete this and all consecutive pages' (the selected page, all pages that it link to, and all subsequent pages and the pages they link to).

Right-clicking on a 'Navigation' button displays a menu with a single option: 'Edit Selected Button'. Selecting this option opens the 'Edit Navigation Button' dialog box. Using the 'Edit Naviga-

tion Button' dialog box, pages that create a hierarchy can be selected. You can choose to have the button jump to a new page or an existing page, creating "child" pages to "parent" pages. For instructions, see How to Create Pages on page 344

At the bottom of the 'Panel Options' section is the Clear Configuration button, which clears the control panel configuration. Clearing the configuration deletes all configured pages except for page 1, clears all buttons on that page (all buttons are reset to 'Undefined'), and sets control panel options to 'None' or deselected, whichever is appropriate. This provides a truly clean configuration, unlike creating a new configuration in which some of the buttons are pre-configured.

Locating and Viewing Existing Control Panels

Depending on the information you want to view, different pages or tables present different control panel information. Pages are accessed through the 'Configuration' pane, while tables are accessed through the 'Views' pane:

- The 'Control Panels' page displays all current details for a single control panel.
- The 'Panels' table lists all control panels in a simple format: one control panel per row.

How to Locate and View Existing Control Panels

Use the 'Control Panels' page.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Control Panels'. The 'Control Panels' page displays, as shown in Figure 11-48. All control panels currently defined in the system are listed.

To narrow the list, enter the first characters of the control panel's name in the 'Panel Filter' field. The list is automatically reduced to display only panels matching that character string.

Or

From the 'Users' drop-down list, select the users with access to the control panel. The list is automatically reduced to display only panels having the same user group as the one selected. (See Managing User Names on page 509.)

ID	Panel ID	Panel	Panel Type	Configuration Name
1	10000	TEST PNL	NV9640	\nvision\envy\usersys\live\TEST.640
2	10001	TEST 605	NV9605	\nvision\envy\usersys\live\NV9605.605
3	9602	TOP RACK	NV9602	\nvision\envy\usersys\live\9602.602
4	105	2nd rack	NV9602	\nvision\envy\usersys\live\105.602
5	9601	THIRDRCK	NV9601	\nvision\envy\usersys\live\9601.601
6	107	107	NV9601	\nvision\envy\usersys\live\9601.601
7	2222	2222	NV9601	\nvision\envy\usersys\live\9601.601
8	809	809	NV9601	\nvision\envy\usersys\live\9601.601
9	9608	9608	NV9616	\nvision\envy\usersys\live\9608.616
10	106	106	NV9602	\nvision\envy\usersys\live\105.602
11	108	108	NV9602	\nvision\envy\usersys\live\105.602
12	9999	TEST PNL	NV9601	\nvision\envy\usersys\live\TEST PNL.601
13	9641	ABC DEMO	NV9641	\nvision\envy\usersys\live\ABC TEST.641
14	123	Global	NV9641 Suffix	\nvision\envy\usersys\live\Global.641.suffix
15	12	Nav	NV9641 Navigation	\nvision\envy\usersys\live\asdf.641.navigate
16	6239	D-Test	NV9642	\nvision\envy\usersys\live\D-Test.642
17	9603	9603	NV9603	\nvision\envy\usersys\live\9603.603
18	9604	9604	NV9604	\nvision\envy\usersys\live\9604.604
19	9609	9609	NV9606	\nvision\envy\usersys\live\9609.606
20	9605	9605	NV9605	\nvision\envy\usersys\live\9605.605
21	9604	9604	NV9604	\nvision\envy\usersys\live\9604.604

Figure 11-48. Control Panels Page

The 'Panel' column lists the name assigned the control panel in NV9000-SE. The 'User' column lists the primary user group associated with the control panel.

3 Double click on a single row to open details for that control panel.

Or

Click anywhere in the row listing the control panel being viewed. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple control panels. Each control panel opens in a separate tabbed window. Click the tab to bring the window forward.

The 'Panel Details' page appears. The information that displays differs from control panel to control panel. For a full explanation, refer to the procedure for adding that control panel:

4 Click X on the window title tab to close the page.

How to Locate and View Existing Panels Using the 'Panels' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Panels'. The 'Panels' table appears, as shown in Figure 11-49.

To narrow the list of panels that display, enter the first characters of a control panel name in the 'Panel Name Filter' field. The list is automatically reduced to display only panels matching that character string.

Figure 11-49. Panels Table

Four columns display control panel information. Each row represents a single control panel:

Column	Description
Selected	Features check boxes used to select specific panels when updating the table.
SQL ID	The ID number assigned to the SQL.
Panel ID	Lists the number by which the control panel is identified in the NV9000-SE system.
Panel Name	Lists the name associated with the control panel. This name is created by the user when adding the control panel.
Configuration File	The name of the control panel configuration file is defined when a control panel is added to the NV9000-SE system. Normally the file name extension reflects the control panel type. For more information, see Creating or Changing a Configuration File on page 20.
User Name	The users defined in the control panel configuration.
Language	English is the default. In the future, other languages will be implemented.
Description	An optional description of the control panel.

3 Click X on the window title tab to close the table.

Updating Control Panel Details

Control panel information can be updated at any time. Each control panel page and table displays specific information. The information that displays differs from control panel to control panel. For a full explanation of each section, and how to enter updated information, refer to the procedure for adding that control panel. (See Adding a Control Panel on page 240.) Each section is discussed in detail in each procedure.

Different NV9000-SE interfaces perform specific tasks, as follow:

Task	Interface	Pane
[Changing a Panel Name or Description](#) on page 350	Panels Table	Views
[Changing a Control Panel ID](#) on page 351	Panels Table	Views
[Creating or Changing a Configuration File](#) on page 20	Panels Table	Views
[Creating, Updating and Deleting Configuration File Pathnames](#) on page 24	Paths Table	Views
[Changing the Associated User Name](#) on page 352	Panels Table	Views
[Changing the Associated Language](#) on page 353	Panels Table	Views
[Updating Control Panel Configurations](#) on page 353	Control Panels Page	Configuration

Changing a Panel Name or Description

It is important that control panel names are unique and descriptive in order to avoid confusion. Once changed, the new control panel name populates all instances of that name throughout the system.

Panel names and descriptions can be changed using the 'Panels' table accessed through the 'Views' pane.

How to Update a Control Panel Name or Description

1 Launch NV9000-SE. (See [Launching and Exiting the Application](#) on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Panels'. The 'Panels' table appears, as shown in Figure 11-50.

To narrow the list of panels that display, enter the first characters of a control panel name in the 'Panel Name Filter' field. The list is automatically reduced to display only panels matching that character string.

Figure 11-50. Panels Table

3 Locate the row listing the control panel being updated.

4 Click on the 'Panel Name' field to activate it and enter a new name.

5 Click on the 'Description' field to activate it and enter a new description.

6 Click Save.

   Or

   To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the table.

Changing a Control Panel ID

The ID assigned to a control panel can be updated at any time. It is important that control panel IDs are unique. Once changed, the new control panel ID populates all instances of that ID throughout the system.

Panel ID numbers for control panel configurations can be changed using the 'Panels' table accessed through the 'Views' pane.

How to Update a Control Panel ID for a Configuration File

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Panels'. The 'Panels' table appears, as shown in Figure 11-51.

   To narrow the list of panels that display, enter the first characters of a control panel name in the 'Panel Name Filter' field. The list is automatically reduced to display only panels matching that character string.

	SQL ID	Panel ID*	Panel Name	Configuration File*	User Na
1	1	10000	TEST PNL	\nvision\envy\usersys\live\TEST.640	EnvyUs
2	2	10001	TEST 605	\nvision\envy\usersys\live\NV9605.605	EnvyUs
3	3	9602	TOP RACK	\nvision\envy\usersys\live\9602.602	EnvyUs
4	4	105	2nd rack	\nvision\envy\usersys\live\105.602	EnvyUs
5	5	9601	THIRDRCK	\nvision\envy\usersys\live\9601.601	EnvyUs
6	6	107	107	\nvision\envy\usersys\live\9601.601	EnvyUs
7	7	2222	2222	\nvision\envy\usersys\live\9601.601	EnvyUs
8	8	809	809	\nvision\envy\usersys\live\9601.601	EnvyUs
9	9	9608	9608	\nvision\envy\usersys\live\9608.616	EnvyUs
10	10	106	106	\nvision\envy\usersys\live\105.602	EnvyUs
11	11	108	108	\nvision\envy\usersys\live\105.602	EnvyUs
12	12	9999	TEST PNL	\nvision\envy\usersys\live\TEST PNL.601	EnvyUs
13	13	9641	ABC DEMO	\nvision\envy\usersys\live\ABC TEST.641	EnvyUs
14	14	234	asdf	\nvision\envy\usersys\live\asdf.P16	EnvyUs

Name Filter: User Filter:

Add   Delete   Edit

* Required column.

Revert to Saved   Save

Panels Table

Figure 11-51. Panels Table

3 Locate the row listing the control panel being updated.

4 Click on the 'Panel ID' field to activate it and enter a new ID number. The number must use numeric characters only (no letters or symbols) and is limited to 9 numbers.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Changing the Associated User Name
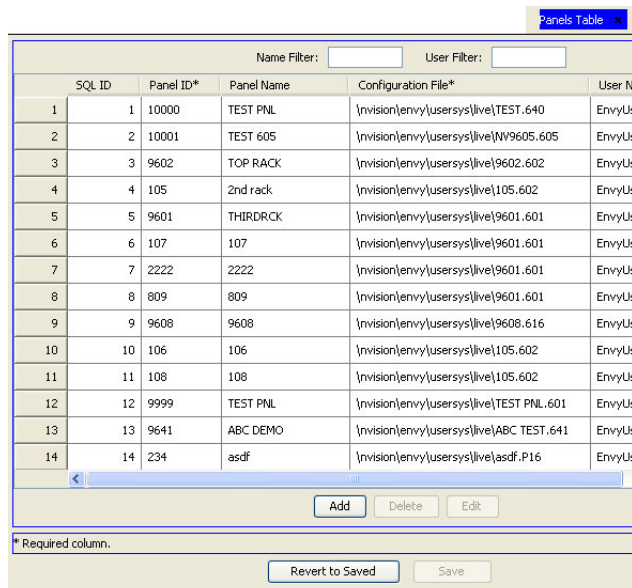
User names are defined when a control panel is added to the NV9000-SE system. The user name assigned to a control panel can be updated at any time using the 'Panels' table accessed through the 'Views' pane. User names define access permissions to panels. For information on managing users in the NV9000-SE system, see Managing User Names on page 509.

How to Update the User Name Associated with a Control Panel

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Panels'. The 'Panels' table appears, as shown in Figure 11-52.

To narrow the list of panels that display, enter the first characters of a control panel name in the 'Panel Name Filter' field. The list is automatically reduced to display only panels matching that character string.

Figure 11-52. Panels Table

3 Locate the row listing the control panel being updated.

4 Click on the 'User Name' field to activate it and select a new user name from the drop-down list.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Changing the Associated Language

By default, English is associated with all control panel configurations. Other languages are not available at this time, but will be available in future releases.

Updating Control Panel Configurations

Panel configurations are managed through the 'Control Panels' page accessed through the 'Configuration' pane. Each control panel has a unique interface. To update a control panel configuration, you must access that specific interface.

How to Update Control Panel Configurations

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Control Panels'. The 'Control Panels' page displays, as shown in Figure 11-53. All control panels currently defined in the system are listed.

   To narrow the list, enter the first characters of the control panel's name in the 'Panel ID Filter', 'Control Panel Name Filter' or 'Panel Type Filter' field. The list is automatically reduced to display only routers matching that character string.

   Or

   From the 'Users' drop-down list, select the users with access to the control panel. The list is automatically reduced to display only panels having the same name assigned as the one selected. (See <u>Managing User Names</u> on page 509.)
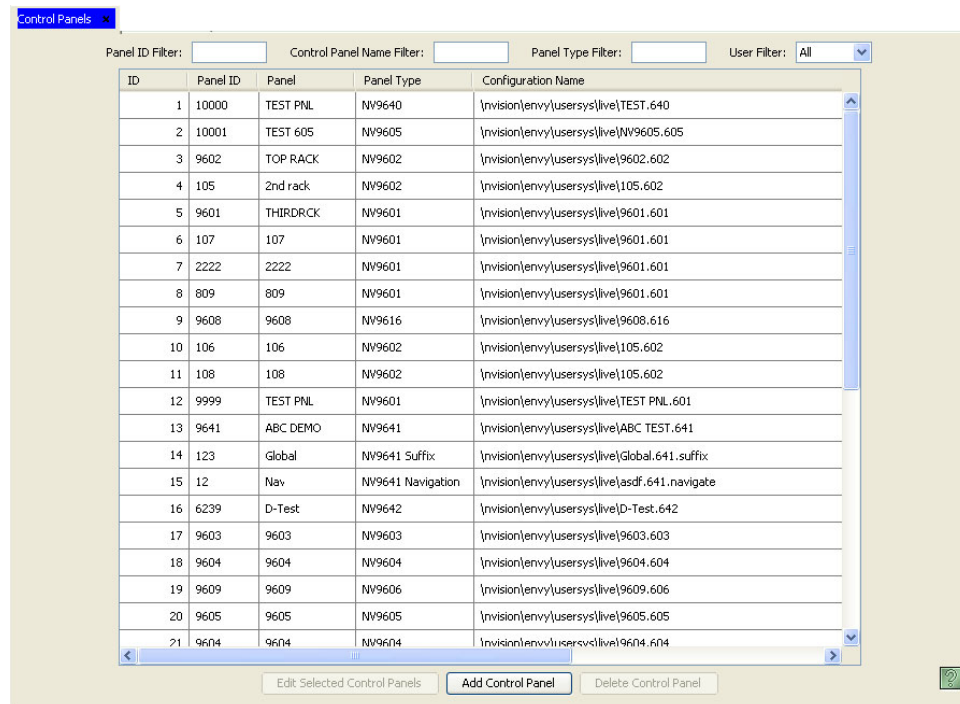
Figure 11-53. Control Panels Page

3 Double click on a single row to open details for that control panel.

Or

Click anywhere in the row listing the control panel being updated. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple control panels. Each control panel opens in a separate tabbed window. Click the tab to bring the window forward.

The 'Panel' page for the selected control panel(s) appears.

4 Follow the instructions for adding control panel details as described in the procedure for that control panel, updating configurations as needed:

NV9601 on page 242   NV9602 on page 251   NV9603 on page 256

NV9604 on page 261   NV9605 on page 264   NV9606 on page 268

NV9607 on page 271   NV9608 on page 277   NV9609 on page 286

NV9616 on page 292   NV9640 on page 301   NV9641 on page 311

NV9642 on page 319   NV9660 on page 327   NV9575-VF on page 329

NVRP16 on page 333   NVR2P32 on page 335

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

Deleting Panels

Control panels can be deleted from the NV9000-SE system at any time. If currently connected to the system controller and NV9000-SE, configuration changes take effect immediately. It is recommended that panels be deleted off-line. This ensures that all ramifications of the deletion are reviewed and necessary configuration changes made before you go "live". When a control panel is deleted, the associated configuration is no longer available to the operator.

NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependences, when the deletion is attempted, NV9000-SE informs you of the dependencies. Delete the dependencies first, then delete the originally selected record.

Panels can be deleted using the 'Control Panels' page accessed through the 'Configuration' pane or using the 'Panels' table accessed through the 'Views' pane.

How to Delete a Control Panel Using the 'Control Panels' Page
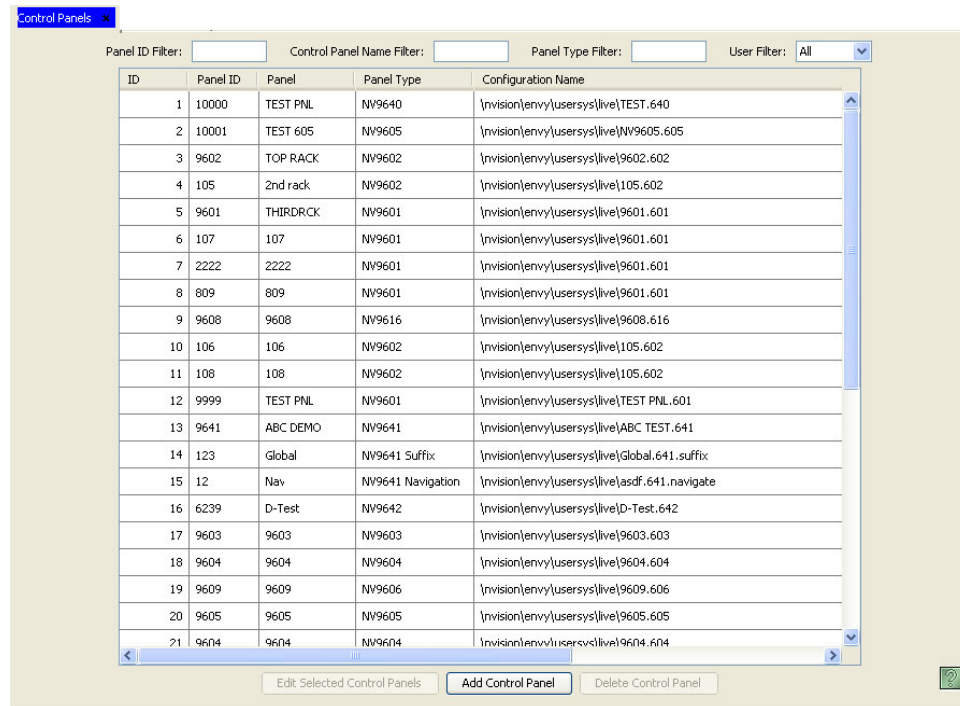
1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Control Panels'. The 'Control Panels' page displays, as shown in Figure 11-54. All control panels currently defined in the system are listed.

To narrow the list, enter the first characters of the control panel's name in the 'Panel ID Filter', 'Control Panel Name Filter' or 'Panel Type Filter' field. The list is automatically reduced to display only routers matching that character string.

Or

From the 'Users' drop-down list, select the users with access to the control panel. The list is automatically reduced to display only panels having the same name assigned as the one selected. (See Managing User Names on page 509.)

Figure 11-54. Control Panels Page

3 Click anywhere in the row listing the control panel(s) being deleted and click Delete Control Panel.

4 On the confirmation dialog box, click Delete.

5 Click X on the window title tab to close the page.

How to Delete a Control Panel Using the 'Panels' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Panels'. The 'Panels' table appears, as shown in Figure 11-55.

To narrow the list of panels that display, enter the first characters of a control panel name in the 'Panel Name Filter' field. The list is automatically reduced to display only panels matching that character string.

	SQL ID	Panel ID*	Panel Name	Configuration File*	User Na
1	1	10000	TEST PNL	\nvision\envy\usersys\live\TEST.640	EnvyUs
2	2	10001	TEST 605	\nvision\envy\usersys\live\NV9605.605	EnvyUs
3	3	9602	TOP RACK	\nvision\envy\usersys\live\9602.602	EnvyUs
4	4	105	2nd rack	\nvision\envy\usersys\live\105.602	EnvyUs
5	5	9601	THIRDRCK	\nvision\envy\usersys\live\9601.601	EnvyUs
6	6	107	107	\nvision\envy\usersys\live\9601.601	EnvyUs
7	7	2222	2222	\nvision\envy\usersys\live\9601.601	EnvyUs
8	8	809	809	\nvision\envy\usersys\live\9601.601	EnvyUs
9	9	9608	9608	\nvision\envy\usersys\live\9608.616	EnvyUs
10	10	106	106	\nvision\envy\usersys\live\105.602	EnvyUs
11	11	108	108	\nvision\envy\usersys\live\105.602	EnvyUs
12	12	9999	TEST PNL	\nvision\envy\usersys\live\TEST PNL.601	EnvyUs
13	13	9641	ABC DEMO	\nvision\envy\usersys\live\ABC TEST.641	EnvyUs
14	14	234	asdf	\nvision\envy\usersys\live\asdf.P16	EnvyUs

Name Filter: [ ]   User Filter: [ ]

Add   Delete   Edit

* Required column.

Revert to Saved   Save

Figure 11-55. Panels Table

3 From the list of panels that display, click anywhere in the row listing the control panel being deleted and click Delete. The row is removed from the list.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Panel Operation

This section describes the function that occurs when a specific button is pressed, default behaviors, and modes of operation. For details on performing a specific task on the control panel, refer to the control panel's *User's Guide*.

Default State

The default control panel state consists of the default destination and the default mode in a control panel's current configuration. It occurs under the following conditions:

- The panels's power is cycled.
- A Default State button is pressed.
- Stopping and starting the NV9000 server.
- The control panel configuration is updated on-line.

Default Routing

Unlike video or audio matrices, data routers (also called "port" routers or machine control routers) allow only point-to-point connections. For editing, Miranda port routers also allow point-to-multiple-point connections. (Machine control connections are for dubbing, cue tone distribution, to roll a backup VTR, etc.)

When connections are point-to-point, there are some operational issues. For example, if an editor in one suite selects a VTR that is currently in use in another edit bay, he or she will break the RS-422 data connection to the edit controller, and disrupt the edit. It would be better if the control level could be separated from the other levels. The NV9000 provides this separation in two of the three different data modes: semi-automatic and manual.

The following are the data modes:

- Automatic mode. Control level switches automatically follow with the other configured levels.
- Semi-automatic mode. The new source will be routed on all levels — except control. The operator is prompted to press Take again, if the route on the control level is desired. Pressing Clear Preset or waiting for the preset to time out cancels the control level route. This is the recommended mode for most applications.
- Manual mode. All switches performed on the control level between ports that are currently in use are performed as separate takes, providing some degree of safety.

Modes of Operation

Depending on the control panel, it may have several modes of operation. Depending on the configuration, the modes for routing signals are X-Y mode only, MD mode only or both X-Y and MD. A single button labeled 'XY/MD' toggles between the modes.

Other modes provide access to salvos, control panel settings and system information. Depending on the control panel, not all of the modes are available.

X-Y Mode

X-Y mode provides full router control of sources and destinations. Any single source (X) can be routed to any single destination (Y). In this mode, to perform a "take," (1) choose a destination, (2) choose a source, and (3) press Take to complete the route.

In X-Y mode there is full control of all levels. A level typically represents a single signal type used in your system, such as AES or HD. (See About Levels and Level Sets on page 112.) The display area shows up to eight levels. If additional levels are available, press Page Up or Page Down to view.

Optional breakaway levels may also be selected. A breakaway is a subset of levels that may be selected for a "take" from the list of available valid levels. For example, if a destination device is assigned to levels HD, SD and TC, you can select to route to only HD. By default, all valid levels are selected for a "take." To route to only a subset—to "breakaway"—the levels must be specifically selected. For more information, see About Breakaways on page 359.

Multi-Destination (MD) Mode

MD mode enables the operator to route one or more sources to multiple destinations at one time. In this mode, the operator (1) chooses a destination, (2) chooses a source, and (3) using the Hold but-

ton selects additional sources and destinations. When Take is pressed, the source(s) is routed to all selected destinations.

The display area shows only the primary virtual level so that additional destination information can be viewed instead. Takes are "all levels" and breakaways cannot be performed. "All levels" means that when Take is pressed, the control panel automatically matches as many of the destination levels as possible to the available source levels; a subset of levels cannot be chosen. Individual destinations are selected by using the selection buttons located below the display area.

Up to eight destinations appear in the display area at any one time. Use the Page Up and Page Down buttons to view any additional destinations.

Paging Mode

Applicable only to the NV9641, this mode allows you to build a series of pages that display predefined buttons. During operation, the Up and Down buttons navigate through all of the pages in the order created. For more information on pages, see

Menu Mode

Pressing the Menu button places the control panel in Menu mode. Usually Menu mode is used for changing control panel settings, such as assigning the control panel an ID number or controlling button brightness.

In this mode, the following menu options may be available. Options may vary depending on the control panel:

1 Software. Displays information about the application loaded onto the control panel.

2 User. Displays the user name and user ID.

3 Panel. Displays control panel name, ID, configuration file, host name, and IP address.

4 Illumination. Changes the illumination of the buttons from low to high.

5 Salvo. Enables you to start, pause or cancel a salvo record; save a salvo, or clear a local salvo.

6 Force Release. Enables or disables the ability to force a release of locks or protects.

7 [not used]

8 Exit. Press to exit the currently displayed menu screen. If at the initial screen, pressing the button exits menu mode.

Setup Mode

This mode activates automatically when the control panel is first powered up, but is still disconnected from the network. In this mode, the control panel's ID can be set.

Salvo Mode

Pressing the Salvo button places the control panel in Salvo mode. A salvo is a predetermined set of actions that are executed in sequence once the salvo is activated. Up to eight salvos show in the display area at one time. Use the Page Up and Page Down buttons to view additional salvos.

Info Mode

Pressing the Info button places the control panel in Info mode. This mode displays specific system messages in the display area, such as error messages, lock or protect status, tieline information, user ID, etc. When there are system messages ready for viewing, the Info button becomes lit. If there are

messages that require more than eight lines of text, the Page Up and Page Down buttons become active enabling the operator to scroll and view additional messages.

Button Functions

The following section lists the buttons that may be added to a control panel. The buttons and functions available differ depending on the type of control panel; not all panels offer all the functions listed. For details on how to perform a specific task in the control panel, see the corresponding control panel User's Guide.

In general, buttons either perform a specific function, such as Take or Category, or make a selection, such as a virtual level or destination. The function or selection vary depending on the type of control panel and the configuration created in NV9000-SE.

About Breakaways

Breakaways are only available in X-Y mode. A breakaway occurs when an operator routes to a subset of available valid levels, not to all valid levels. By default, all valid levels are automatically selected when preparing for a "take." By creating a breakaway, you route only to the levels you have individually selected.

Individual levels are selected by using the selection buttons (numbered buttons under a display field, such as in the NV9601). The buttons act as toggles, selecting or deselecting the corresponding level in the display area. After Take is pressed, the control panel returns to the default state in which all levels are selected. To have the subset of levels selected for the breakaway retained after a "take," the operator presses Hold prior to Take to retain the presets. When the "take" is complete, the previously selected levels are held for the next session.

Broadcast

Broadcast mode (default legend Brd cst) is only available in X-Y mode. The control panel must have Brd cst, Src Mstr and Save Prst buttons present in order to perform this function. A data (control) router is required for this route.

This mode is used to assign a "master" device and connect it to multiple "slave" devices. For example, an operator can route VTR1 to VTRs 2 through 10, sending audio, video and control from the source (master) to all destinations (slaves). To put it another way, the source controls all destinations.

In this mode, the master device issues commands to all slave devices, but only one slave device (the first one assigned to the broadcast group) can communicate back to the master. All other slave devices only receive commands; no status information is sent back to the master device.

Category

Category buttons are available in X-Y or MD mode. Category buttons are used as the second step in selecting a source or destination device. The first step is to select 'Destination Mode' or 'Source Mode'. (See) Before a source or destination can be selected, the category to which it belongs must first be selected. Categories are created during configuration and are broad sets of devices grouped by a related feature, such as

function or location. The control panel can only access devices that have been assigned to a category.

For more information on creating and managing categories, see Categories on page 189.

Chop

The Chop button (default legend Chop) is only available in X-Y mode. This button enables an operator to switch rapidly between the current source device and a preset source device for a given destination. This mode is used to test system timing and not used for normal operation.

Clear

The Clear button (default legend Clear) is available in X-Y and MD mode. This button clears the last selection action. Each button press clears one previous action, eventually clearing each action all the way to clearing the category.

Clear Preset

The Clear Preset button (default legend Clear Preset) is available in X-Y and MD mode. This button clears presets and returns the operator to the first step in selected devices.

Default State

The Default State button (default legend Def State) is available in X-Y and MD mode. This button returns the control panel to its default state as defined in the configuration file. When pressed, all pending, but not executed "takes" are cancelled.

Destination Lock

See Locks on page 362.

Destination Mode

The Destination Mode button (default legend Dest Mode) is available in X-Y and MD mode. This button is the first step in the destination selection process. (The second step is to select a Category.)

Destination Protect

See Protect on page 363.

Destination Shift

See Source Shift on page 365.

Force Release

A lock or protect can be applied to a configuration to avoid accidental changes. (See Locks on page 362 or Protect on page 363.) A 'Force Release' occurs when a lock or protect is removed by some-

one other than the person who originally set the lock. To force a release, the operator may need a personal identification number (PIN). See Force Release on page 360.

Free Source

The Free Source button (default legend Free Src) is available in X-Y and MD mode. This button is typically used to disconnect routes on the control level. When Free Src is pressed, in X-Y mode, presets the designated free source for the current destination. When Take is pressed, selected levels of the free source are routed to the destination's level set and any tielines are removed. In MD mode, presets the designated free source for the current destination.

For more information on tielines, see Tielines on page 457.

Global Navigate

The Global Navigate button is available in X-Y and MD mode. This button can be assigned a set of pages. When this button is assigned to other panels, all panels will have the exact same button function when the button is pressed. If the global navigate button configuration is changed in NV9000-SE, when the configuration is updated in the system controller, each control panel with the global navigate button is also updated with the new configuration.

Hold

The Hold button (default legend Hold) is available in X-Y and MD mode. In X-Y mode, this button retains the levels selected for a breakaway. (See About Breakaways on page 359.) In MD mode, this button retains one or more destination selections for a "take." When Hold mode is off, the control panel returns to the default condition.

The Hold button is a toggle. Press it once to activate Hold mode; press it again to deactivate Hold mode. When Hold is pressed, in X-Y mode, the selected levels for a breakaway are retained after Take is pressed so that the presets do not have to be selected again. In MD mode, more than one destination is "held" and selected to be included in the "take."

Information

The Information button (default legend Info) is available in X-Y and MD mode. Depending on the control panel, a "+" appears in a column in the display area it indicates that there is more information available for that item. The operator presses Info to view additional information. Pressing Info again returns to the previous display. Info mode also lists the virtual levels when tielines are created or the sources involved in a Chop. (See Tielines on page 457 or Chop on page 360.)

Level

In X-Y mode, selection buttons present a set of virtual levels that you can select or deselect for breakaway takes. These are referred to as 'Level' buttons. You can also use 'Level' buttons to perform level-mapping. See Level Mapping on page 362.

If you have more levels than buttons, the Up and Down scroll buttons light up to indicate that more levels (and 'Level' buttons) are present. Use the Up and Down buttons to scroll up and down the list of available levels.

Usually a 'Level' button displays 3 lines of text. The top line of text identifies the current source. If the current destination had a breakaway take, the sources will be different across the set of 'Level' buttons. If the destination does not include a particular level, that button will be dark, but will display the level name. When a source is preset, prior to a take, the 'Level' buttons show the preset source on the middle line of text. After a take, the 'Level' buttons show the new source on the top line of text and on the XY status button. The bottom line of text always shows the level mnemonic.

Level Mapping

Level mapping is available in X-Y mode only. Level mapping enables the operator to map one level to another level. Typically, level mapping is used for AES levels, for example, connecting level AES1/2 to level AES3/4 (normally AES1/2 maps to AES1/2 only). To put it another way, level mapping is a way to "remap" source virtual levels to different destination virtual levels rather than to destinations on the same level as the source.

The operator can only map compatible signal (level) types. For example, you can map AES1/2 to AES5/6, but not AES1/2 to HD. Level mappings are cancelled whenever the next normal "take" is performed involving the selected devices.

For mapping between physical levels, see Tielines on page 457.

Level Mode

Level mode is available only in the NV9609 control panel. This button enables the user to scroll between levels and perform breakaways. (See About Breakaways on page 359.)

Locks

A "lock" prevents *anyone*—even the user who issued the lock—from routing to the destination or source. A "protect" prevents *others* from routing to a destination or source, but not the user who created the protect. Locks and protects are useful for preventing accidental routes. For more information on "protects," see Protect on page 363.

Locking a destination prevents any user, including the control panel's owner, from switching the locked source to any other device. Similarly, locking a source prevents any user, even the control panel owner, from routing from a source device to any locked destination. When locked, the button displays 'Unlock' to indicate that pressing it unlocks the destination. When unlocked, the button displays 'Lock' to indicate that pressing it locks the destination.

Locks are applied by an "owner" of a control panel. The owner is identified by the User Name. Depending on the control panel, users of other control panels, when a device is locked a "+" appears in the 'Preset' column in the display area. The user can press Info to learn which user applied the lock. (See Information on page 361.) If a lock was applied by the current user of a control panel, no "+" displays. To remove a lock applied by another user, Forced Release mode must be enabled. For instructions, see Force Release on page 360.

The Dest Lock and 'Lock buttons are toggles. In addition to having a "lock" button on the control panel, Lock mode must be enabled in the Panel Options ('Enable Source Lock'; 'Enable Destination Lock'). See Adding a Control Panel on page 240.

Name Set Toggle

The Name Set Toggle button toggles the control panel's display between the system mnemonics and the name set selected as the 'Default Name Set' in the 'Panel Options' section, if that option is available for the control panel type. This button is not configurable. (See Using Name Sets on page 497.)

None/All

The None/All button selects either all levels or destinations, or deselects all levels or destinations, depending on the current control panel mode. The button is a toggle; pressing once selects all, pressing again deselects all.

Panel Lock

A control panel lock prevents accidental changes to the control panel settings. When the control panel is locked, the button array becomes blank except for the Panel Lock button. The button is a toggle: pressing the Panel Lock button again reverts the control panel to its previous state.

Panel locks are applied by an "owner" of a control panel. The owner is identified by the Owner ID number. To remove a lock applied by another user, Forced Release mode must be enabled. (See Force Release on page 360.)

Preset Release

The Preset Release button (default legend Preset Rel) is only available in X-Y mode. This button is used to clear source locks and protects.

How the Preset Rel button functions depends on the operator's access rights. If the lock or protect was set at the control panel by the control panel's owner, this button releases the control panel. If the protect or lock was set by another user at another control panel, Preset Rel only works if Force Release is activated. (See Force Release on page 360.)

Previous Source

The Previous Source button (default legend Prev Src) is available in X-Y and MD mode. This button loads the previously switched source for the current destination. To complete a "take" using the source and destination(s) listed, press Prev Src and then press Take. The previous source's level mapping is used whenever Prev Src is selected. (See Level Mapping on page 362.)

Protect

A "protect" prevents *others* from routing to a destination or source, but not the user who initiated the protect status. Protects are applied by an "owner" and is based on the user ID entered in the control panel. When applied, other users at other control panels are unable to switch to the protected destination or source. However, a user at the control panel from which the protect originated can switch the protected source or destination without clearing the protect.

Protects are useful for preventing accidental routes and acts as a warning to others. Depending on the control panel, when a device is protected a '+' appears. Press Info to learn which user applied the protect. If a protect was applied by the current user of a control panel, no '+' displays. Force

Release enables other users, other than owner, to remove the protect. (See Force Release on page 360.) To prevent anyone from performing a different route, apply a lock instead. (See Locks on page 362.)

There are two button that apply protects: Prot protects a source or destination. Dest Prt (Destination Protect) protects only destinations. The configurer may choose to have one or both appear on the control panel, depending on your facility needs. If a virtual (software) control panel, when protected, the button displays 'Unprotect' to indicate that pressing it removes the protect status. When unprotected, the button displays 'Protect' to indicate that pressing it applies a protect status to the destination.

If a hardware control panel, the Dest Prt and Prot are toggles. Press the button to protect a destination. Press the button again to release the protects status. In addition to having a "protect" button on the control panel, Protect mode must be enabled in the Panel Options ('Enable Source Protect'; 'Enable Destination Protect'). See Adding a Control Panel on page 240.

Salvos

The Salvo button (default legend Salvo) launches a previously created salvo. A salvo is a set of pre-recorded activities such that when a salvo button is pressed, all pre-recorded activities occur in the exact sequence recorded. Salvos are helpful when a certain action, such as a specific "take," is repeated over and over. Instead of having to create the switch sequence anew each time, the operator can just press one button.

Salvo is a unique mode, separate from X-Y or MD mode. The Salvo button runs both local and system salvos. Using the salvo menu, operators can create, save and clear local salvos. System salvos are created when the control panel is configured.

Local salvos are only executed by the control panel through which the salvo was created, and only the control panel that created the salvo can delete it. System salvos can only be altered or deleted through NV9000-SE.

Selection (non-configurable; numbered)

Selection buttons perform a specific selection when pressed. These non-configurable buttons are numbered and usually correspond to a line of text in a display window on the control panel. Selection buttons are toggles. Press once to select and press again to deselect.

What a selection buttons selects changes depending on the mode of operation and the control panel configuration, but in general:

- In X-Y mode, the buttons select levels and are referred to as 'Level' buttons. See Level on page 361.
- In MD mode, the buttons select destinations.
- In Menu mode, the buttons select menu options.
- In Salvo mode, the buttons select salvos.

For more information about control panel modes, see the control panel's User's Guide.

Scroll

The Scroll button (default legend Scroll) is used for X-Y mode only, although it lights in MD mode too. This button is used to activate the Page Up and Page Down buttons enabling the operator to scroll through a list of devices that appears in the display area for a specific category. This function is only enabled when a category button is pressed.

Source

The Source button is available in X-Y and MD mode. The button has a specific source device assigned and the button legend reflects the name of the device. When pressed, the source and corresponding levels display. What source is assigned to the button is determined when the control panel is configured.

Source Mode

The Source Mode button (default legend Src Mode) is available in X-Y and MD mode. This button is the first step in the source selection process. (The second step is to select a Category.) When **Src Mode** is pressed, the control panel lights change to green and all buttons related to source device selection light.

Source/Destination

The Source/Destination button (default legend Source/Dest) has either a single source or a single destination assigned depending on the current control panel mode. In X-Y mode, the button is a source; in MD mode, the button is a destination.

Source/Destination Mode

The Source/Destination mode button (default legend Src/Dst Mode) is used for X-Y mode only. The button toggles between all buttons being in source mode or all buttons being in destination mode.

Source/Dest Toggle

The Source/Destination toggle button (default legend Source/Dest Toggle) toggles between source mode or a destination mode depending on the current control panel mode. In X-Y mode, the button toggles between two sources; in MD mode, the button toggles between two destinations.

Source Shift

Some panels allow the Source buttons to be configured with two sources. This button (default legend Src Shift) allows one source to be accessed when the button is low tally and a second source to be accessed when the button is high tally. If two sources are assigned to a Source button, you must include a Src Shift button on the control panel so that the operator can access both sources.

Source Master

The Source Master button (default legend Src Mstr) is available in X-Y mode only. The Src Mstr button forces the direction of routing for devices used in data (machine control routers) takes. This function is used with machine control (data) routers where there is a master (controlling) device

and slave (controlled) devices. Usually the master routes to the slave. To reverse the order, such that the slave routes to the master device, press Src Mstr before pressing Take.

Src Mstr is used when performing using Broadcast mode. (See <u>Broadcast</u> on page 359.)

Source Preview

The Source Preview button (default legend Src Preview) only pertains to the NV9607 control panel. This button can be used on a NV9606 control panel but only when it is used as a "slave" (controlled) to a NV9607 control panel (controlling). The Src Preview button places the control panel in a mode that enables the operator can discover what source device is assigned to a specific button without performing a "take".

Take

Pressing Take executes the currently selected route. How a "take" is performed and occurs differs depending on whether you are in X-Y mode or MD mode.

In X-Y mode an operator can route one set of preset sources to one destination. X-Y mode allows the operator to select a source and destination is any order, but the destination device determines the valid levels and the resulting preset sources that may be included in the "take." A "take" can only occur if the destination and source devices are members of the same level set. (See <u>About Levels and Level Sets</u> on page 112.) For example, if a destination device is a member of the HD level set only and the source device is a member of the SD level set only, the two cannot be routed. However, if the destination device is a member of the HD level *and* SD level, then the routing can occur. One exception is if the two levels have been mapped. (See <u>Level Mapping</u> on page 362.)

The "take" occurs for all valid levels. To route only to specific levels and not all valid levels, perform a breakaway. See <u>About Breakaways</u> on page 359.

In MD mode the operator can route one or more sources to one or more destinations. Unlike X-Y mode that allows the operator to select a source and destination is any order, in MD mode the destination must be selected *prior* to selecting the source.

X-Y Display

Only available on control panels with LCD display: NV9640 and NV9642, this button shows the status of the currently selected "take," before the "take" is executed.

12. Master Control

Using NV9000-SE, you can add Miranda's master control processors (MCPMs and MCEs) to the NV9000 system as if they were routers. The primary purpose of a master control processor is to place one of many video and audio sources "on air" or, alternatively, to switch video and audio sources to selected output(s). When it switches, the master control processor can do so with a set of transition effects that include speed, fade, video effects, and audio mixing. The master control processor's program and preset buses cannot be switched from an NV9000 system control panel. The information viewed through NV9000-SE is for *status only*. Master control status is used by tally and UMD systems.

NV9000-SE uses router pages and tables to manage master control information. Be careful when naming MCPMs and MCEs that the names are easily distinguishable as MCPMs or MCEs and not routers.

A master control processor's physical level is level 1 (128×4) and its crosspoint matrix has 128 inputs and 4 outputs. The 4 outputs are:

- Program video
- Program audio
- Preset video
- Preset audio

Add Master Control

You can add a master control processor to the NV9000-SE system using the 'Add NVision Master Control' wizard accessed through the 'Tasks' pane. After the processor is added, it appears on the 'Routers' page accessed through the 'Configuration' pane and in the 'Routers' table accessed through the 'Views' pane. By default, master control is assigned the NV Master Control Ethernet protocol. (See NV Master Control Ethernet Protocol on page 515.)

To quickly add several master control processors, each processor can be entered in the 'Add NVision Master Control' wizard and then the Add & Clear button pressed. This adds the processor name and clears all fields so that another processor can be added immediately. However, no connection information for the processor can be defined; only default connection information is applied. Connection information is changed using the 'Master Control Details' page accessed through the 'Routers' page in the 'Configuration' pane.

NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To use saved configuration changes, the changes must be written to the NV9000 system controller. For information on implementing changes, see Implementing Configuration Changes on page 17.

How to Add a Master Control Processor

1 Launch NV9000-SE. (See [Launching and Exiting the Application](#) on page 12.)

2 From the navigation area, select the 'Tasks' pane and then 'Add NVision Master Control'. The 'Add NVision Master Control' page appears:

Figure 12-1. Add NVision Master Control Page

Red text denotes a required field.

3 Enter a 'Name' for the master control processor in the field provided.

4 Select a 'Router Host' from the drop-down list. By default, the host assigned to master control is 'NVCONFIG'.

5 The 'Primary Control Point' (which will be the IP address of the processor on the master control network) by default is set to 'New'.

6 Click Add & Edit. The 'Master Control Details' page appears, as shown in Figure 12-2.

Or

Click Add & Clear. The master control processor is added and fields in this page are cleared so that another master control processor can be added immediately. The master control processor is added with a default IP address.

Or

Click Clear to clear all fields without saving any changes.

The 'Router Info' page appears:

Figure 12-2. Master Control Details Page

7 In the 'Router Info' section, the name entered in the 'Add NVision Master Control' page displays in the 'Name' field. You can update it at this time, if desired.

8 In the 'Router Info' section, the 'Protocol' displays. It is 'NV Master Control Ethernet Protocol'. (See NV Master Control Ethernet Protocol on page 515.)

9 In the 'Router Connection Info', assign the IP address of the MCE or MCPM of interest to the control point.

Control points (also called control ports) are Ethernet ports in the NV9000 server through which routers, panels, and other devices are connected. For more information on control points, see Managing Control Points on page 381.

10 Click Save. The user is saved to the system.

11 Click X on the window title tab to close the page.

Locating and Viewing Master Controls

Depending on the information you want to view, different interfaces present different master control information:

- 'Routers' page (accessed through the 'Configuration' pane)—A list of existing routers, including master control processors. Opens the 'Master Control Details' page which displays details for an individual, selected master control processor.
- 'Routers' table (accessed through the 'Views' pane)—A list of all existing routers, one per row, including master control processors, with name and host.
- 'Router Control' table (accessed through the 'Views' pane)—A list of existing routers, including master control processors, and associated control point, one control point per row.

How to Locate and View Existing Master Control Processors

Use the 'Routers' page.

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the navigation area, select the 'Configuration' pane and then 'Routers'. The 'Routers' page displays, as shown in Figure 12-3. All routers and master control processors currently defined in the system are listed.

To narrow the list, enter the first few characters of the master control processor's name in the 'Router Filter' field. The list is automatically reduced to display only master control processors matching that character string.
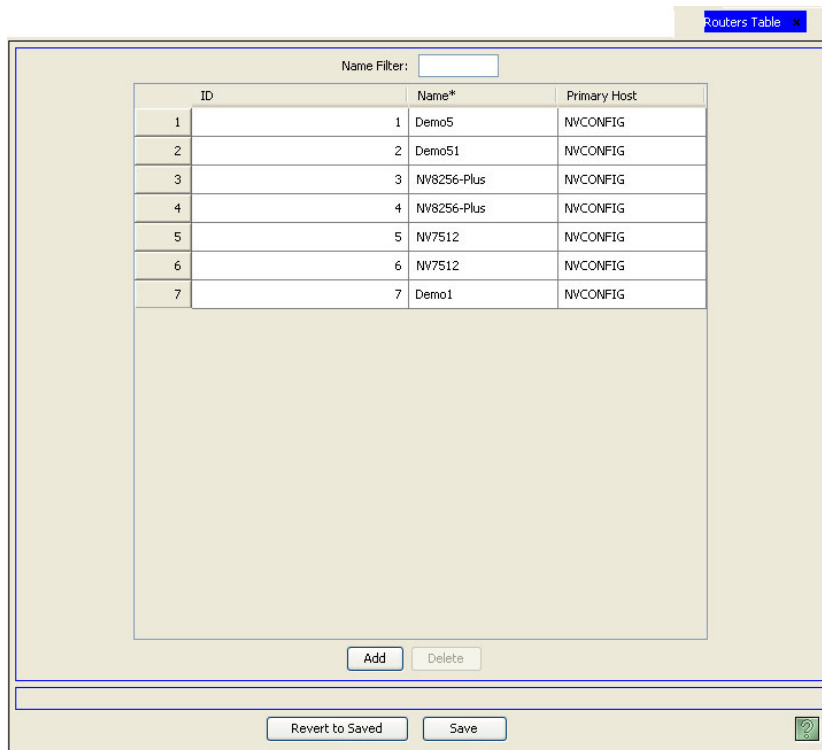
Or

From the 'Hosts Filter' drop-down list, select the master control processor's host. The list is automatically reduced to display only master control processors having the same host as the one selected.
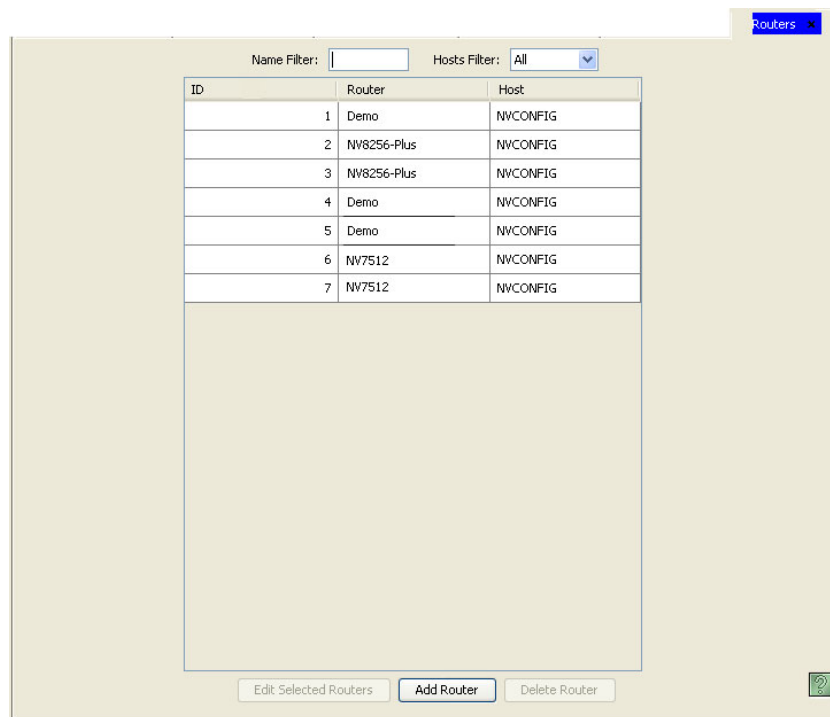
Figure 12-3. Routers Page

The 'Router' column lists the name assigned the master control processor in NV9000-SE. The 'Host' column lists the primary host associated with the master control processor.

3 Double click on a single row to open 'Master Control Details' for that router.

Or

Click anywhere in the row listing the master control processor being viewed. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple master control processors. Each master control processor opens in a separate tabbed window. Click the tab to bring the window forward.

The 'Mast Control Details' page appears:
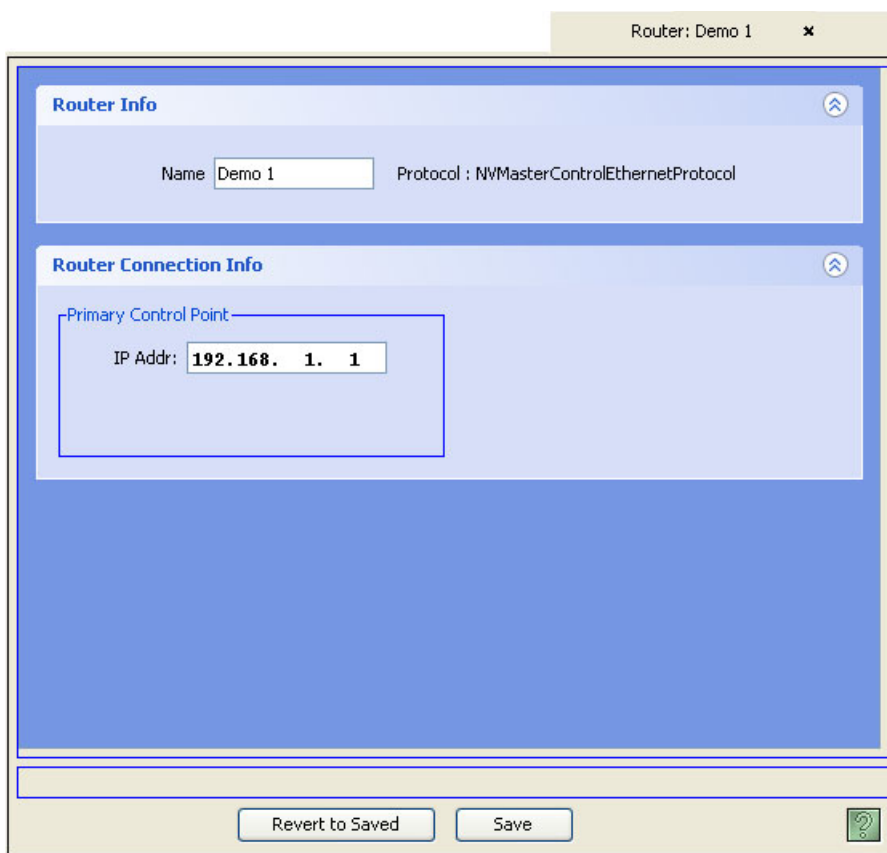
Figure 12-4. Master Control Details Page

Each section displays specific information, as follows:

Router Info	Name	The name assigned the master control processor.
	Protocol	The protocol used by the master control processor. It is NV Master Control Ethernet Protocol. (See NV Master Control Ethernet Protocol on page 515.)
Router Connection Info	Primary Control Point	The control point must be the IP address of the MCPM or MCE on the master control network.
		Control points (also called control ports) are Ethernet ports in the NV9000 server through which routers, panels, and other devices are connected. For more information on control points, see Managing Control Points on page 381.
		Lists 'IP address' of connection to control system.

▲ The NV9000 system treats the MCPM or MCE as if it were a router with crosspoints.

4 Click **X** on the window title tab to close the page.

How to Locate and View Existing Master Controls Using the 'Routers' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the navigation area, select the 'Views' pane and then 'Routers'. The 'Routers' table appears, as shown in Figure 12-5.

To narrow the list of master control processors that display, enter the first characters of a master control processor name in the 'Router Name Filter' field. The list is automatically reduced to display only master control processors matching that character string.
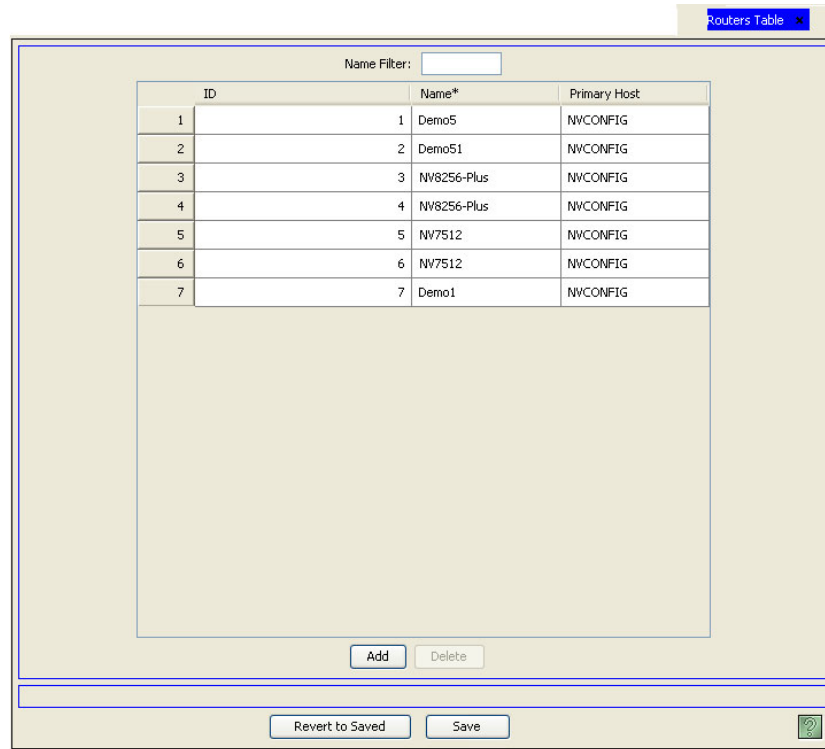
Figure 12-5. Routers Table

Four columns display master control information. Each row represents a single router or master control processor (MCE or MCPM).

Column	Description
ID	Lists the ID number associated with the master control processor.
Name	Lists the name associated with the master control processor.
Primary Host	Lists the primary host for the master control processor.

3 Click X on the window title tab to close the table.

How to Locate and View Existing Master Controls Using the 'Router Controls' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the navigation area, select the 'Views' pane and then 'Router Controls'. The 'Router Controls' table appears, as shown in Figure 12-6.

To narrow the list, enter the first characters of the master control processor's name in the 'Router Filter' field. The list is automatically reduced to display only master control processors matching that character string.

Or

Enter the start of a control point address in the 'Control Point Filter' field. The list is automatically reduced to display only master control processors whose address matches the characters entered.

Figure 12-6. Router Controls Table

Several columns display router and master control information. Each row represents a single control point (also called control port) that has been associated with a router or master control processor.

Control points are serial or Ethernet ports in the NV9000 server through which routers, panels, and other devices are connected. master control processor use only Ethernet. For more information on control points, see Managing Control Points on page 381.

Column	Description
Router Name	Lists the router or master control processor name.
Control Point Description	Lists the control point associated with the router or master control processor listed in the same row. For more information on control points, see Managing Control Points on page 381.
Protocol	The protocol associated with the master control processor. That is NV Master Control Ethernet Protocol. (See NV Master Control Ethernet Protocol on page 515.)
Parameters	Optional parameters for third-party protocols.
Control Mode	Lists if the 'Primary control card' or the 'Secondary control card' is acting as the primary control. These are the control cards of a master control frame (NV5100MC or NV5128-MC).

3 Click X on the window title tab to close the table.

Updating Master Control Details

Master control name and IP address can be updated at any time. It is recommended that master control processors be updated off-line. That ensures that all settings are correct before you go "live." NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To use saved configuration changes, the changes must be written to the NV9000 system controller. For information on implementing changes, see Implementing Configuration Changes on page 17.

Master control information can be updated using either a page or the tables. The page accessed through the 'Configuration' pane and the tables accessed through the 'Views' pane share database fields. Changes made in a configuration page appear in other the tables and vice versa.

Different NV9000-SE pages perform specific tasks, as follow:

Task	Interface	Pane
Changing a Master Control Name on page 375	Routers Page, Routers Table	Configuration, Views
Updating a Master Control Host on page 378	Routers Table	Views
Updating Control Points for Master Control on page 378	Router Controls Table	Views
Updating Master Control Protocol on page 379	Router Controls Table	Views
Updating Control Mode for Master Control on page 380	Router Controls Table	Views

Changing a Master Control Name

It is important that master control processor names are unique and descriptive in order to avoid confusion. Once changed, the new master control processor name populates all instances of that name throughout the system.

Master control processor names can be changed using the 'Routers' page accessed through the 'Configuration' pane or the 'Routers' table accessed through the 'Views' pane.

How to Change a Master Control Name Using the 'Routers' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the navigation area, select the 'Configuration' pane and then 'Routers'. The 'Routers' page displays, as shown in Figure 12-7.

To narrow the list, enter the first characters of the master control processor's name in the 'Router Filter' field. The list is automatically reduced to display only master control processors matching that character string.

Or

From the 'Hosts Filter' drop-down list, select the master control processor's host. The list is automatically reduced to display only master control processors having the same host as the one selected.
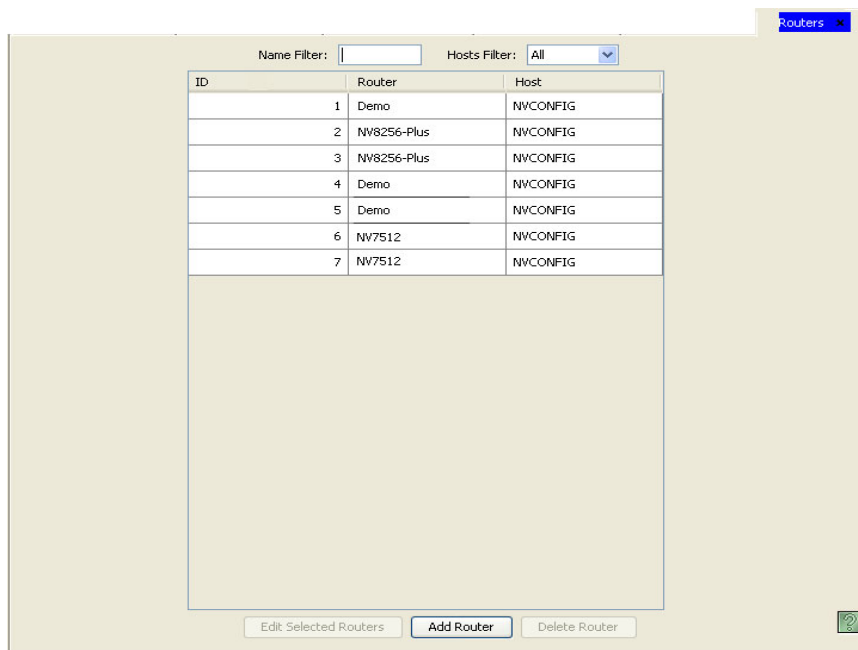
Figure 12-7. Routers Page

3 Click anywhere in the row listing the router whose master control processor is being updated and click Edit Selected Routers. The 'Master Control Details' page appears:
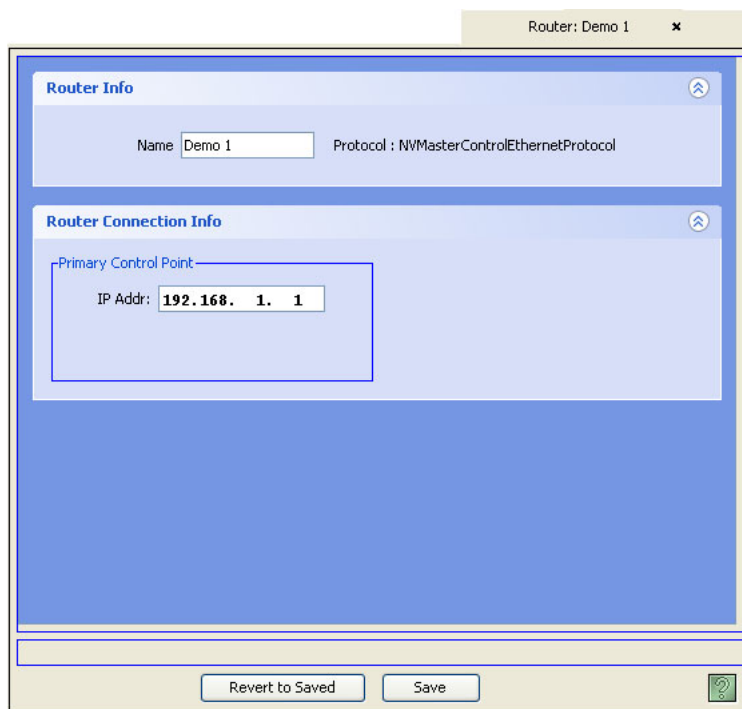
Figure 12-8. Master Control Details Page

If multiple master control processors are selected, each additional master control processor opens in a separate tabbed window. Click the tab to bring that window forward. If one master control processor is selected, the details for that master control processor display.

4 Update the 'Name' in the field provided.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

How to Change a Master Control Name Using the 'Routers' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the navigation area, select the 'Views' pane and then 'Routers'. The 'Routers' table appears, as shown in Figure 12-9.

To narrow the list of master control processors that display, enter the first characters of a master control processor name in the 'Name Filter' field. The list is automatically reduced to display only master control processor matching that character string.

			Routers Table x
Name Filter:			

ID		Name*	Primary Host
1	1	Demo5	NVCONFIG
2	2	Demo51	NVCONFIG
3	3	NV8256-Plus	NVCONFIG
4	4	NV8256-Plus	NVCONFIG
5	5	NV7512	NVCONFIG
6	6	NV7512	NVCONFIG
7	7	Demo1	NVCONFIG

Add   Delete

Revert to Saved   Save
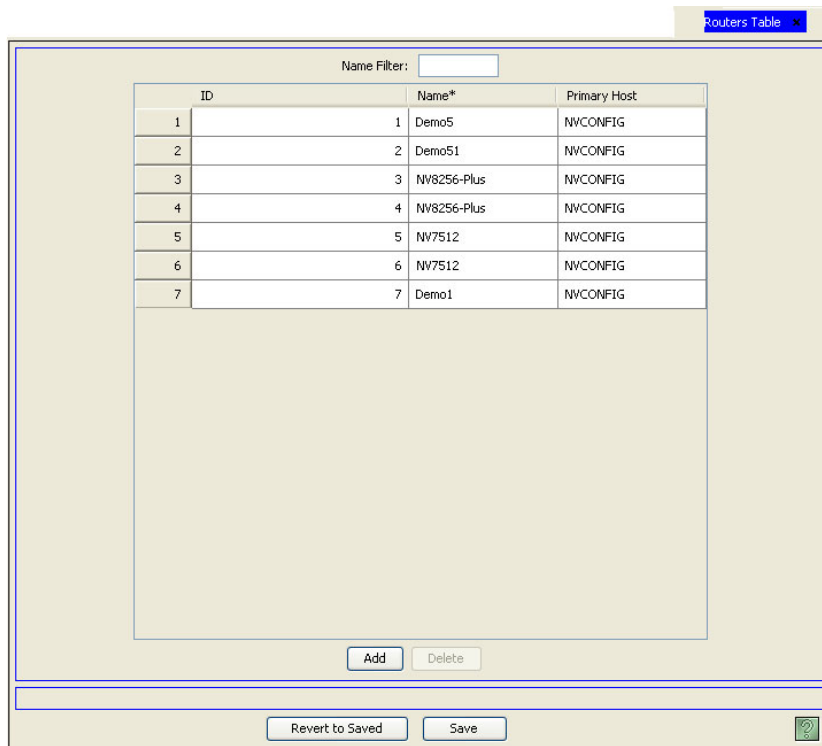
Figure 12-9. Routers Table

3 Locate the row listing the master control processor being updated.

4 Click on the 'Name' field to activate it and enter a new name.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.
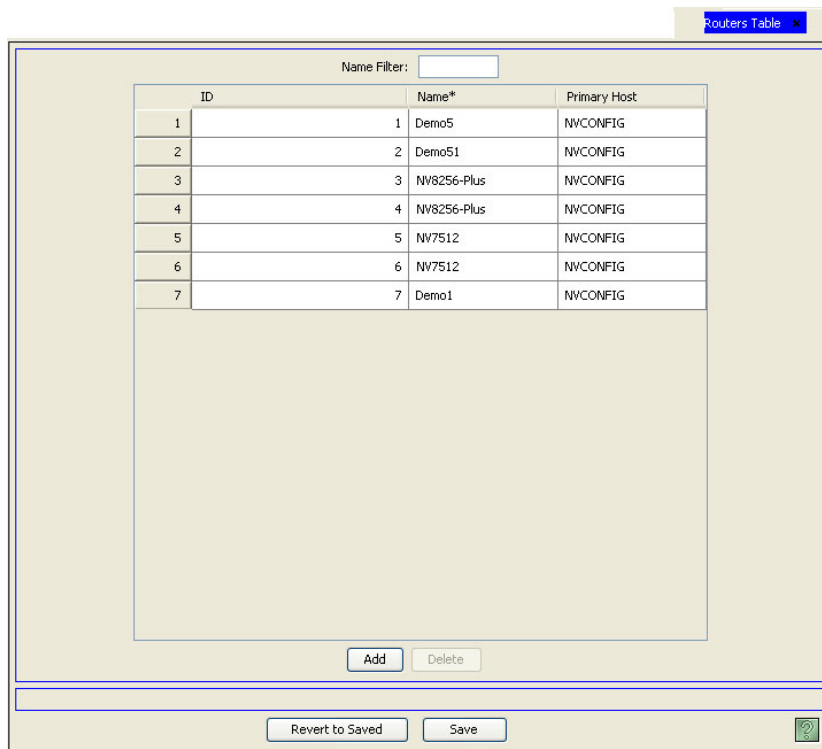
Updating a Master Control Host

The master control processor's host can be changed using the 'Routers' table accessed through the 'Views' pane. You can only select from a list of existing hosts.

How to Update a Router Host

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the navigation area, select the 'Views' pane and then 'Routers'. The 'Routers' table appears, as shown in Figure 12-10.

To narrow the list of master control processors that display, enter the first characters of a master control processor name in the 'Name Filter' field. The list is automatically reduced to display only master control processors matching that character string.

Figure 12-10. Routers Table

3 On the row listing the master control processor being updated, from the drop-down list in the 'Primary Host' column, select a new host.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Updating Control Points for Master Control

Control points (also called control ports) are serial or Ethernet ports in the NV9000 server through which master control processors, routers, panels, and other devices are connected. At any time, the control point associated with a master control processor can be updated. However, the updated con-

trol point must be a legitimate control point for the master control processor to successfully communicate with the rest of the control system. For example, if you change a master control processor's Ethernet connection without updating control point information in the 'Control Point' table, the Ethernet connection will fail.

The master control processor's control point can be changed using the 'Router Controls' table accessed through the 'Views' pane. You can only select from a list of existing control points. For instructions on adding or updating control points, see Managing Control Points on page 381.

To view a list of current control points, from the 'Views' pane, select 'Control Points'.

How to Update Control Points for Master Control

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the navigation area, select the 'Views' pane and then 'Router Controls'. The 'Router Controls' table appears, as shown in Figure 12-11.

	Router	Control Point Description*	Protocol*	Parameters	Control Mode*
1	Demo5	E,192.168.1.1 DEFAULT DESC, ID: 9	NV Ethernet		Primary control card
2	Demo5	E,192.168.1.2 DEFAULT DESC, ID: 10	NV Ethernet		Secondary control card
3	Demo51	Enet Addr 192.168.1.1 DEFAULT DESC, ID: 11	NV Master Control Ethernet		Primary control card
4	NV8256	E,192.168.1.1 DEFAULT DESC, ID: 12	NV Master Control Ethernet		Primary control card
5	NV8256-Pl	E,192.168.1.1 DEFAULT DESC, ID: 13	NV Master Control Ethernet		Primary control card
6	NV8256-Pl	E,192.168.1.1 DEFAULT DESC, ID: 14	NV Master Control Ethernet		Primary control card
7	NV7512	S,2,9600,N81 DEFAULT DESC, ID: 15	NV Serial-Public		Primary control card
8	NV7512	E,192.168.1.1 DEFAULT DESC, ID: 16	NV Ethernet		Primary control card
9	Demo1	E,192.168.1.2 DEFAULT DESC, ID: 17	NV Ethernet		Secondary control card

Figure 12-11. Router Controls Table

3 On the row listing the master control processor being updated, from the drop-down list in the 'Control Point Description' column, select a new control point.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Updating Master Control Protocol

The NV9000 server supports several protocols for both Miranda and third-party routers. However, for master control there is only one protocol: NV Master Control Ethernet. For more information, contact Miranda Technical Support.

Updating Control Mode for Master Control

The NV9000 control system communicates with master control processors through control cards in the master control frames. Most master control frames have a primary control card and a secondary control card (for redundancy). By default, NV9000-SE communicates with a master control processor through the frame's primary control card. However, this can be overridden and communication directed through the secondary control card.

You can change the control card selected for communication with the NV9000-SE system using the 'Router Controls' table accessed through the 'Views' pane.
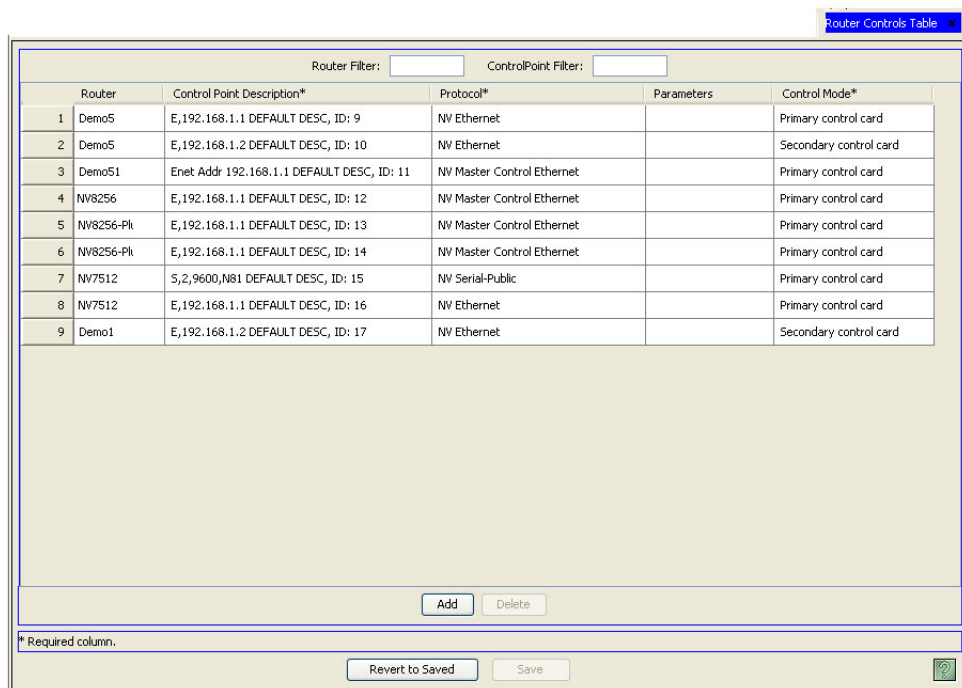
How to Update Router Control Mode

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the navigation area, select the 'Views' pane and then 'Router Controls'. The 'Router Controls' table appears, as shown in Figure 12-12.

To narrow the list, enter the first few characters of the master control processor's name in the 'Router Filter' field. The list is automatically reduced to display only master control processors matching that character string.

Or

Enter the start of a control point address in the 'Control Point Filter' field. The list is automatically reduced to display only master control processors whose address matches the characters entered.

Figure 12-12. Router Controls Table

3 On the row listing the master control processor being updated, select either 'Primary control card' or 'Secondary control card' from the drop-down list in the 'Control Mode' column. These are *not* primary and secondary master control processors, but the control cards in the master control frame.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Managing Control Points

Control points (also called control ports) are serial or Ethernet ports in the NV9000 server through which you connect routers, panels, and other devices. You can connect other networks too. Control points are added, updated and removed using the 'Control Points' table accessed through the 'Views' pane.

Master control's control points can be viewed, updated or deleted as needed. Control points for master control processors are managed the exact same way control points are managed for routers. For more information on managing control points, see Managing Control Points on page 96.

Deleting Master Controls

Master control processors can be deleted from the at NV9000-SE system at any time. It is recommended that master control processor be deleted offline. This ensures that all ramifications of the deletion are reviewed and necessary configuration changes made before you go "live."

NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependences, when the deletion is attempted, NV9000-SE informs you of the dependencies. Delete the dependencies first, then delete the originally selected record.

Master control processors can be deleted using the 'Routers' page accessed through the 'Configuration' pane or using the 'Routers' table accessed through the 'Views' pane.

How to Delete a Router using the 'Routers' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the navigation area, select the 'Configuration' pane and then 'Routers'. The 'Routers' page displays, as shown in Figure 12-13.

To narrow the list, enter the first characters of the master control processor's name in the 'Name Filter' field. The list is automatically reduced to display only master control processors matching that character string.

Or

From the 'Hosts' drop-down list, select the master control processor's host. The list is automatically reduced to display only master control processor having the same host as the one selected.
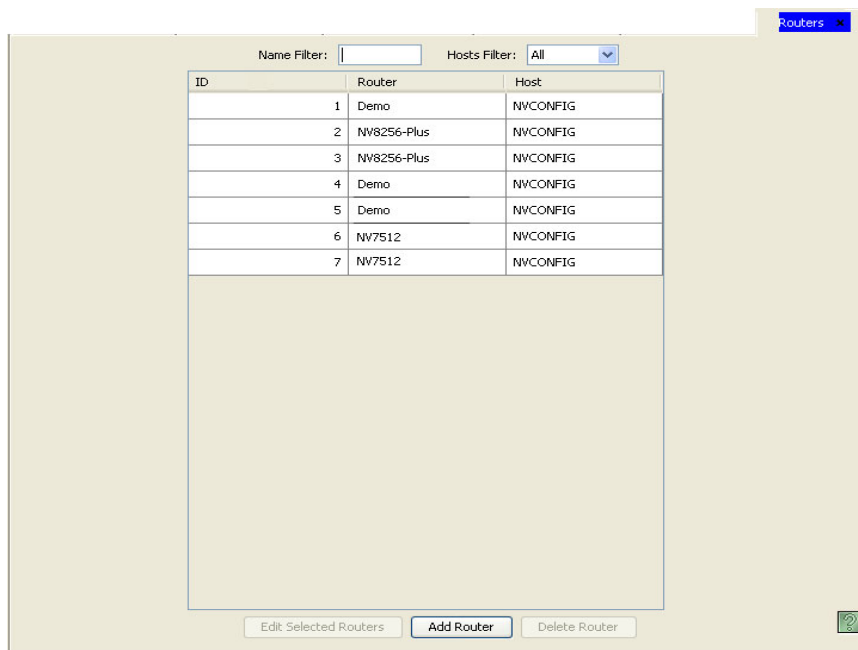
Figure 12-13. Routers Page

3 Click anywhere in the row listing the master control processor being deleted and click Delete Router.

4 On the confirmation dialog box, click Delete.

5 Click X on the window title tab to close the page.

How to Delete a Router Using the 'Routers' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the navigation area, select the 'Views' pane and then 'Routers'. The 'Routers' table appears, as shown in Figure 12-14.

To narrow the list of master control processors that display, enter the first characters of a master control processor name in the 'Name Filter' field. The list is automatically reduced to display only master control processors matching that character string.

Figure 12-14. Routers Table

3 Click anywhere in the row listing the master control processor being deleted and click Delete. The row is removed from the list.

4 Click Save.

Or

Click Revert to Saved to revert to previously saved information.

5 Click X on the window title tab to close the table.

13. EC9700 and EC9710 Panels

The NV9000 supports two virtual control panels that do not have hardware equivalents: the EC9700 control GUI and the EC9710 status GUI. These virtual control panels are run on computers attached to the NV9000-SE and the NV9000 control system through a network. Virtual control panels display control buttons on a screen similar to the buttons operators see on a hardware control panel. In order for the routers and other devices to communicate with the control panels, the control panels must be configured in the NV9000-SE system.

In general, EC9700 and EC9710 panels are added using the 'Add SW Panel' wizard. Once added, control panel information can then be managed through the 'SW Panel' page or through individual tables. Wizards, pages and tables share databases. This means that information added or changed in one interface appears in all corresponding fields in related interfaces.

Each interface performs specific tasks:

- 'Add SW Panel' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add a single control panel. Opens the 'EC9700/9710 Details' page through which panels are defined. See Adding an EC9700/EC9710 Panel on page 385.
- 'EC9700/9710' page (accessed through the 'Configuration' pane)—A list of existing panels. Opens the 'EC9700/9710 Details' page through which panels can be updated. See Updating EC9700/EC9710 Panel Details on page 404.
- 'GUIs' table (accessed through the 'Views' pane)—A list of configuration files and associated panels, one row per configuration file, with user name, language and description. A control panel can be added to an existing configuration file using this table, but no control panel definitions, such as buttons, can be added. That must be done through the 'SW Panel Details' page accessed through the 'EC9700/9710' page. See Updating EC9700/EC9710 Panel Details on page 404.
- 'Paths' table (accessed through the 'Views' pane)—A list of existing pathnames for configuration files, one pathname per row and file type. Using this table, the pathname can be added, updated or deleted and the file type changed. See Creating, Updating and Deleting Configuration File Pathnames on page 24.

Adding an EC9700/EC9710 Panel

A EC9700/EC9710 control panel can be added and configured at any time. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

EC9700/EC9710 control panels can be added using a wizard, page or table. Each performs specific tasks:

- 'Add SW Panel' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add a single control panel. Opens the 'EC9700/9710 Details' page through which panels are defined.

- 'EC9700/9710' page (accessed through the 'Configuration' pane)—A list of existing panels to which a new control panel can be added. Opens the 'EC9700/9710 Details' page through which panels are defined.

- 'GUIs' table (accessed through the 'Views' pane)—A list of configuration files and associated panels, one row per configuration file, with user name, language and description. A control panel can be added to an existing configuration file using this table, but no control panel definitions, such as buttons, can be added. That must be done through the 'SW Panel Details' page accessed through 'EC9700/9710' page.

Several panels can be added quickly by entering minimal control panel information in the 'Add SW Panel' wizard and then clicking the Finish button. The control panel name and type is added and all fields cleared so that another control panel can be added immediately. However, no control panel configurations, such as buttons, are added. Panels can be configured at a later date using the 'EC9700/9710' page accessed through the 'Configuration' pane.

EC9700 Panel

The 'EC9700' page determines how the EC9700 control panel functions and displays. The EC9700 X-Y / multi-destination software control panel provides the same functionality as the NV9601 hardware control panel, but uses a software driven GUI application. (See NV9601 on page 517.) This software control panel may be installed on as many PCs as desired, but only two may be active concurrently.

The 'EC9700' page is divided into sections:

- GUI Options—Determines which buttons display on the control panel and the default behavior of each button.

- Lists—Enables you to select from lists of categories, multi-destination devices, salvos and user buttons, and define each one.

- GUI Layout—Determines the number of rows and/or columns that display on the control panel for devices, categories, tally connectors, multi-destination devices, and if the display is relative or absolute.

The control panel, options and layout are configured using the 'EC9700' page. When saved, the configurations are communicated to the computer running the control panel and appear to the operator using the control panel.

How to Add an EC9700 Control Panel

Use the 'Add SW Panel' wizard or the 'EC9700/9710' page.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Tasks' pane and then 'Add SW Panel'.

Or

From the Navigation area, select the 'Configuration' pane and then 'SW Panel'. On the 'SW Panel' page, click Add SW Panel.

The 'Add SW Panel' page appears:

Figure 13-1. Add SW Panel Page

3 Enter information in the fields provided. Entries must be entered in all active fields:

Field	Description
Type	From the drop-down list, select EC9700.
Computer (or Windows User) Name where control panel will be located	Enter the name of the computer or user name on a network where the control panel will be installed.
User	From the drop-down list, select a user type. Only the user type 'EnvyUser' is supported at this time.
Configuration Options	Click the radio button matching the option you want. If no other control panel configuration currently exists in the NV9000-SE system, all radio buttons are deactivated except for 'New'.
	If copying a control panel configuration, enter a 'New Name' in the field provided and select where 'copied from' from the drop-down list.
	If copying an 'Existing' control panel configuration, select the configuration from the drop-down list.

4 Click Add. The 'SW Panel Details' page appears, as shown in Figure 13-2.

Or

Click Finish. This adds the EC9700 control panel to the NV9000-SE system and clears all fields so that another control panel can be added immediately. However, no button definitions are added. To add details to the control panel, locate the control panel and perform steps 5 through 14 as described in this procedure. (See How to Locate and View Existing EC9700/EC9710 Panels on page 399.)

Or

Click Clear to clear the fields without saving any information.
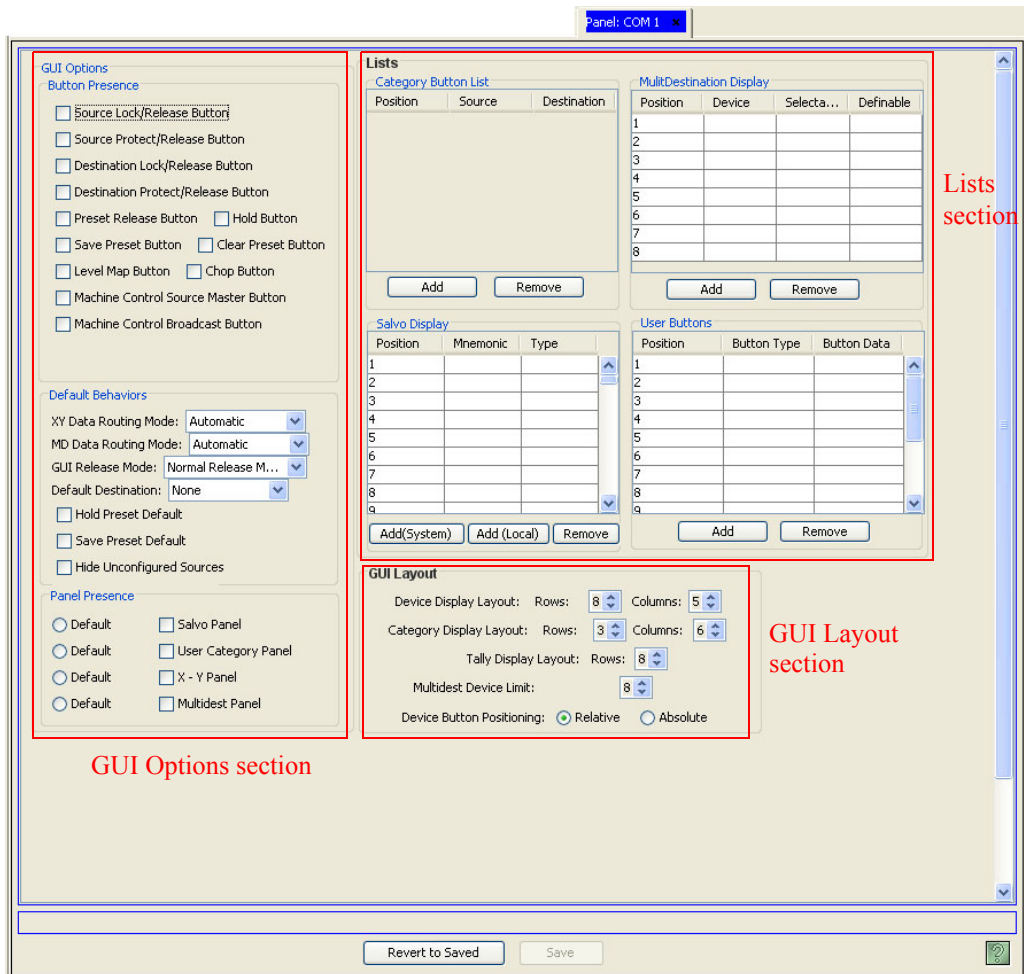
Figure 13-2. EC9700 Details Page

5 In the 'Button Presence' subsection within the 'GUI Options' section, check a check box to have that button display on the control panel interface. Not all options are valid for all modes. (See Step 6 for mode selection.):

Option	Mode	Description	Related Topic
Source Lock/ Release Button	XY, MD	Enables any **Lock** button to lock sources on the control panel. If 'Enable Source Lock' is unchecked, the Lock button cannot be used to lock sources on the control panel.	Locks on page 362
Source Protect/ Release Button	XY, MD	Enables any **Protect** button to protect sources on the control panel. If 'Enable Source Protect' is unchecked, the **Protect** button cannot be used to protect sources on the control panel.	Protect on page 363
Destination Lock/ Release Button	XY, MD	Enables any **Destination Lock** button to function. If 'Enable Destination Lock' is unchecked, the **Destination Lock** button will not function on the control panel.	Locks on page 362

Option	Mode	Description	Related Topic
Destination Protect/Release Button	XY, MD	Enables any **Destination Protect** button to function. If 'Enable Destination Protect' is unchecked, the **Destination Protect** button will not function on the control panel.	Protect on page 363
Preset Release Button	XY only	Used to remove locks and protects from preset devices (in the 'Preset' column). If locks and protects are commonly used, this button is recommended.	Preset Release on page 363
Hold Button	XY, MD	Retains preset information after **Take** is pressed. Useful when routing the same source to many destinations.	Hold on page 361
Save Preset Button	XY, MD	When on, this button causes the control panel to save whatever source is in the 'Preset' column, so that if the control panel is reset, that source reappears. When off, the presets are not saved.	—
Clear Preset Button	XY, MD	Erases entries in the control panel's 'Preset' column, while leaving the control panel in the same mode. Recommended as a "safety" button.	Clear Preset on page 360
Level Map Button	XY, MD	Cross-connects levels (typically in the same physical router). Often used to shuffle audio channels, for example, to connect AES1/2 to AES3/4. When an **Info** button is configured, you can view current cross-connects. The 'Level' mode is cancelled when the next normal "take' is performed involving the selected devices. (The **Level Map** button becomes enabled only when there is a valid preset.)	Level Mapping on page 362
Chop Button	XY only	When supported by the router, the button is a toggle that enables and disables rapid switching of the selected destination device between the current source and the preset source. Used to test system timing.	Chop on page 360
Machine Control Source Master Button	MD only	The button reverses the direction of data routing for devices used in data (control) level takes. For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing **Source Master** reverses the roles.	Source Master on page 365
Machine Control Broadcast Button	MD only	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	Broadcast on page 359

6 In the 'Default Behaviors' subsection within the 'GUI Options' section, select the routing mode for control panel:

Field	Option	Description	
XY Data Routing Mode	Automatic	If a data level is involved in the route, connects the source to the destination, regardless of who is currently using the devices.	Default Routing on page 357 and Modes of Operation on page 357
	Semiautomatic	If the device to be acquired is already in use on the data level, alerts the user — but allows the user to perform the route by pressing **Take** a second time. If **Take** is not pressed again, the route is cancelled. If the device is not in use, the "take" occurs automatically. (Recommended)	
	Manual	All takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level take.	
MD Data Routing Mode	Automatic	If a data level is involved in the multi-destination route, connect the source to the destinations, regardless of who is currently using the devices. (Recommended.)	Default Routing on page 357 and Modes of Operation on page 357
	Manual	All multi-destination takes on the data level must be performed manually as breakaways. The data level will never switch as part of a multi-level take.	
GUI Release Mode	Normal Release Mode	The control panel can release "locks" and "protects" set only at the control panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
	Force Release Mode	The control panel can release locks and protects set by any user. Miranda recommends that you use 'Normal Release' mode and assign a PIN to allow access to the 'Force Release' function.	
Default Destination	None	After a reset, the control panel displays no destination device. (Not recommended.)	Default State on page 360
	‹device›	The control panel uses the specified device as the destination after a reset. This also becomes the destination controlled when the control panel is set to single destination mode.	
Hold Preset Default	(check or uncheck)	Makes any **Hold** button active when the control panel reverts to its default state (after a **Default State** button is pressed, or when the control panel is restarted). **Note:** If this option is selected, it is recommended that a **Hold** button be placed on the control panel.	Default State on page 360 and Hold on page 361

Field	Option	Description	
Save Preset Default	(check or uncheck)	(MD only) When on, this button causes the control panel to save whatever source is in the 'Preset' column, so that if the control panel is reset, that source reappears. When off, the presets are not saved.	Default State on page 360
Hide Unconfigured Sources	(check or uncheck)	Hides name of all source devices that are not presently configured. The control panel displays asterisks instead.	—

7 In the 'Panel Presence' subsection within the 'GUI Options' section, select control panel layouts. To have one of the control panel layouts display as the default whenever the control panel is opened, select the 'Default' radio button next to that option.

8 In the 'Category Button List' subsection of the 'Lists' section, add buttons to the display control panel that enables the operator to select a category of devices (For more information on categories, see Using Categories and Suffixes on page 190.):

a Click Add. The 'Add Category Button' dialog box appears:

Figure 13-3. Add Category Button Dialog Box

b Enter a button name in the 'Button Index' field.

c Select a 'Src Category' (source category) from the drop-down list.

d Select a 'Dst Category' (destination category) from the drop-down list.

e Click OK. The button appears in the 'Category Button List'.

f Repeat steps **a** through **e** until all desired buttons are added.

9 In the 'MultiDestination Display' subsection of the 'Lists' section, add buttons to the control panel that enable the operator to send signals to multiple devices:

a Click on the numbered line to which you want to add a button and click Add. The button appears on that line in the control panel GUI.

The 'Multi-Destination Display Entry' dialog box appears:
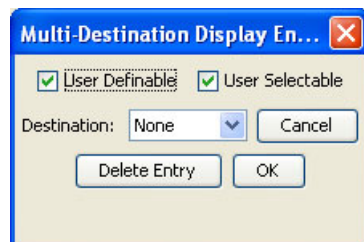
Figure 13-4. Multi-Destination Display Entry Dialog Box

b Select if the line is 'User Definable' and/or 'User Selectable':

'User Definable' allows the operator to change a destination that appears in the display area. Uncheck the 'User Definable' check box if the destination is to remain fixed.

Note	When a multi-destination button is user definable, a Destination Mode button must be added to the control panel. This allows the user to select a new destination from that location in the destination list using the category/index buttons. If selected, the new destination is retained, even after reset.

'User Selectable' allows the operator can select the device (using the selection buttons) and preset a new source. Uncheck the 'User Selectable' if check box if the destination is to be "view only." In view-only mode, the user cannot route to the destination, but other control panels and automation may. Select a 'Destination' from the drop-down list. When the button is pressed on the control panel, the signal will be sent to the device selected.

c Select a 'Destination' from the drop-down list and click OK. The destination displays on the selected line in the control panel window.

d Click OK to close the dialog box and save your changes.

Or

Click Cancel to close the dialog box without saving changes.

e Repeat steps **b** through **e** until all destinations you want are listed.

f To remove a destination, select the line in the window and click Clear Entry on the dialog box.

10 In the 'Salvo Display' subsection of the 'Lists' section, add buttons to the control panel that enable the operator to execute salvos (For more information, see Salvos on page 431.).

Both system and local salvos can be added. System salvos reside within the NV9000-SE system and local salvos reside on the local computer or on a computer on the network.

a Click on the numbered line to which you want to add a button and click Add(System) to add a system salvo or Add(Local) to add a local salvo. The button appears on that line in the control panel GUI.

The 'Salvo Display Entry' dialog box appears:
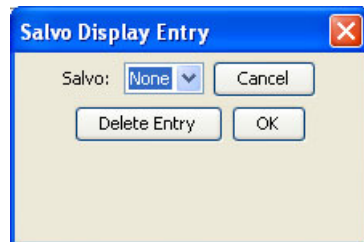
Figure 13-5. Salvo Display Entry Dialog Box

b Choose a salvo from the drop-down menu and click OK. The salvo displays on the selected line in the control panel window and the dialog box closes.

Or

Click Cancel to close the dialog box without saving changes.

c Repeat steps b and c until all salvos you want to add display in the window.

d To remove a salvo, select the line in the window and click Clear Entry on the dialog box.

11 In the 'User Buttons' subsection of the 'Lists' section, add buttons to the control panel that enable the operator to perform specific user functions:

a Click on the numbered line to which you want to add a button and click Add. The button will appear on that line in the control panel GUI.

The 'Add User Button' dialog box appears:

Figure 13-6. Add User Button Dialog Box

b Select a user button from the drop down list and click OK:

Option	Description	Related Topic
Quick Source Button	Immediately selects the preselected device as the source of the signal. Select the device from the 'Quick Source' drop-down list.	—
Free Source Button	Selects the free source designated for the destination device's level set. (See About Levels and Level Sets on page 112.) The free source disconnects, or "frees" devices on a control level.	Free Source on page 361
Previous Source Button	Immediately restores the previously selected source to the current destination (similar to an "undo" button).	Force Release on page 360
Default State Button	Returns the control panel to its pre-defined state.	Default State on page 360
Clear Button	Clears the last selection on the control panel. Can be pressed several times to "undo" a series of consecutive selections.	Clear on page 360

The user button details appear on the selected row with the 'Button Type' and 'Button Data', such as source device, in the corresponding columns.

c Repeat steps a and b until all desired buttons have been added.

12 In the 'GUI Layout' section, select how many of each type of button/list displays on the GUI:

Field	Description
Device Display Layout	Select the number of 'Rows' and 'Columns' for devices that display on the GUI.
Category Display Layout	Select the number of 'Rows' and 'Columns' for categories that display on the GUI.
Tally Display Layout	Select the maximum number of tally connectors that display on the GUI.
Multidest Device Limit	Select the maximum number of multi-destination devices that display on the GUI.
Device Button Positioning	Select whether buttons display in a 'Relative' positioning or in an 'Absolute' display on the GUI.

13 Click Save to save your changes.

14 Click X on the window title tab to close the page.

EC9710 Panel

The 'EC9710' page determines how the EC9710 control panel functions and displays. The EC9710 is a "status" GUI only. This software control panel may be installed on as many PCs as desired, but only two may be active concurrently.

The 'EC9710' page is divided into sections:

- GUI Options — Determines which buttons display on the control panel and the default behavior of each button.
- Lists — Enables you to select from lists of categories, multi-destination devices, salvos and user buttons, and define each one.
- GUI Layout — Determines the number of rows and/or columns that display on the GUI for devices, categories, tally connectors, multi-destination devices, and if the display is relative or absolute.

The control panel, options and layout are configured using the 'EC9710' page. When saved, the configurations are communicated to the computer running the control panel application and appear to the operator using the control panel.

How to Add an EC9710 Control Panel

Use the 'Add SW Panel' wizard or the 'EC9700/9710' page.

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Tasks' pane and then 'Add SW Panel'.

Or

From the Navigation area, select the 'Configuration' pane and then 'SW Panel'. On the 'SW Panel' page, click Add SW Panel.

The 'Add SW Panel' page appears:

Figure 13-7. Add SW Panel Page

3 Enter information in the fields provided. Entries must be entered in all active fields:

Field	Description
Type	From the drop-down list, select 'EC9710'.
Computer (or Windows User) Name where control panel will be located	Enter the name of the computer or user name on a network where the control panel will be installed.
User	From the drop-down list, select a user type. By default, only the user type 'EnvyUser' is supported at this time.
Configuration Options	Click the radio button matching the option you want. If no other control panel configuration currently exists in the NV9000-SE system, all radio buttons are deactivated except for 'New'.
	If copying a control panel configuration, enter a 'New Name' in the field provided and select where 'copied from' from the drop-down list.
	If copying an 'Existing' control panel configuration, select the configuration from the drop-down list.

4 Click Add. The 'SW Panel Details' page appears, as shown in Figure 13-8.

Or

Click Finish. This adds the EC9710 control panel to the NV9000-SE system and clears all fields so that another control panel can be added immediately. However, no button definitions are added. To add details to the control panel, locate the control panel and perform steps 5 through 14 as described in this procedure. (See How to Locate and View Existing EC9700/EC9710 Panels on page 399.)

Or

Click Clear to clear the fields without saving any information.
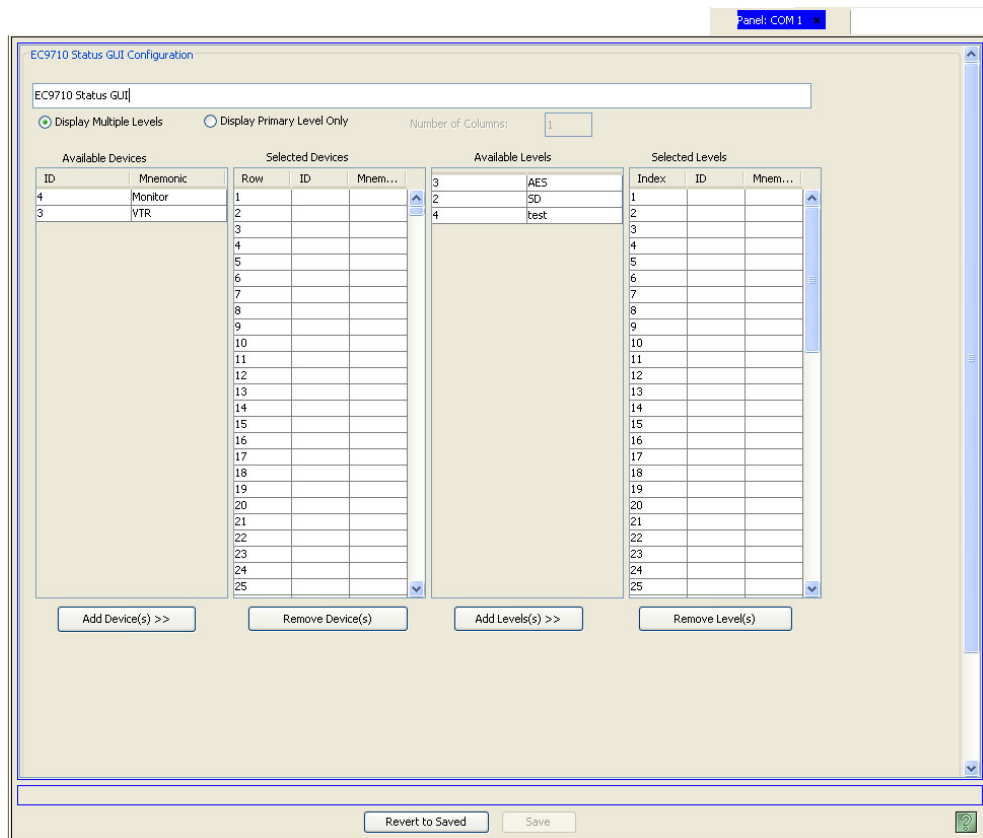
Figure 13-8. EC9710 Details Page

5 In the field at the top of the page, the default configuration name displays. If desired, enter a new name.

6 Select the 'Display Multiple Levels' or 'Display Primary Level Only' radio button.

If 'Display Multiple Levels' is selected, multiple levels can be displayed through the GUI and the 'SW Panel Details' page lists additional columns for levels, as shown in Figure 13-8.

If Display Primary Level Only' is selected, only one level can be displayed through the GUI and the 'SW Panel Details' page lists only one level, as shown in Figure 13-9.
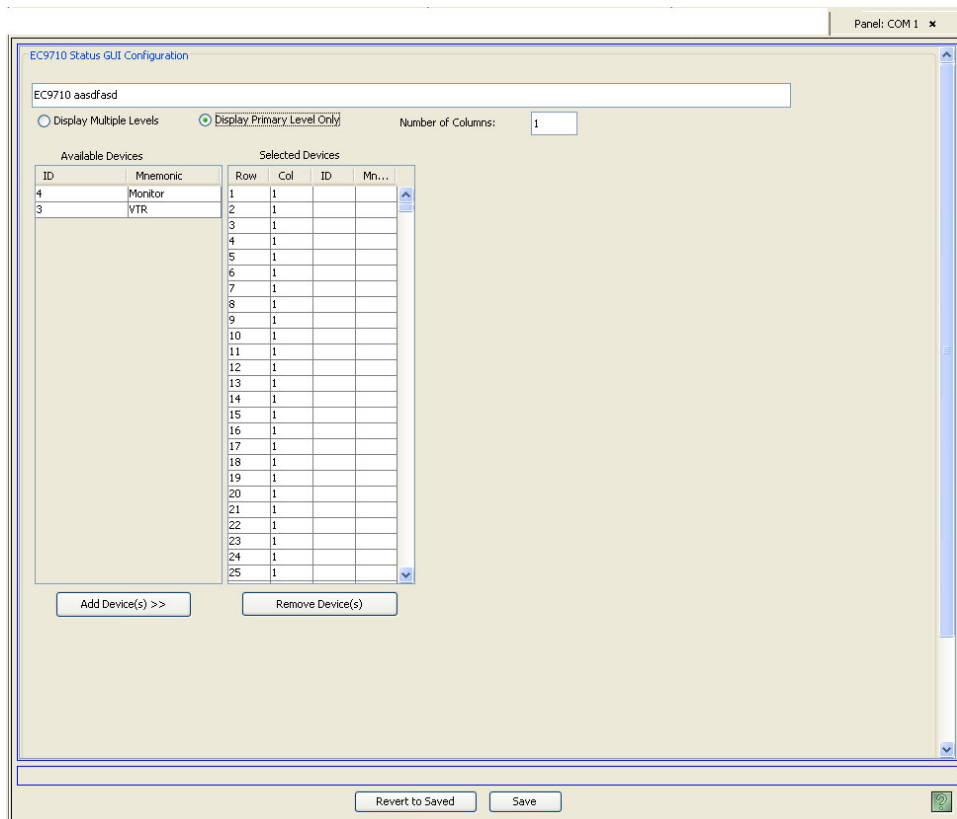
Figure 13-9. EC9710 Details Page

7 The 'Available Devices' section lists all devices currently in the NV9000-SE system by 'ID' and 'Mnemonic' (name). Select the row listing the device you want to add and click Add Device(s). The device is added to the first available row in the 'Selected Devices' table.

Repeat until all devices have been added. If a device was added in error, select the row listing the device and click Remove Device(s).

For more information on devices and adding them to the NV9000-SE system, see Devices on page 157.

8 If 'Display Multiple Levels' was selected in step 6, select level sets. The 'Available Levels' section lists all level sets currently in the NV9000-SE system by 'ID' and 'Mnemonic'. (See Figure 13-8.) Select the row listing the level set you want to add and click Add Level(s). The level set is added to the first available row in the 'Selected Levels' table.

Repeat until all level sets have been added. If a level set was added in error, select the row listing the level set to be removed and click Remove Level.

For more information on level sets and adding them to the NV9000-SE system, see Level Sets on page 111.

9 Click Save to save your changes.

10 Click X on the window title tab to close the page.

How to Add a EC9700/EC9710 Control Panel Using the 'GUIs' Table

Panels can be added to configuration files using the 'GUIs' table. However, no button configurations can be selected. To define control panel configurations, see How to Add an EC9700 Control Panel on page 386 or How to Add an EC9710 Control Panel on page 394.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'GUIs'. The 'GUIs' table appears:

Figure 13-10. GUIs Table

3 Click Add. A blank row appears at the end of the list.

4 In the blank row, click on a column to activate the cell and enter information as follows:

Column	Description
ID	The identification number automatically assigned the control panel in the NV9000-SE system.
Computer (or Windows User) Name	Enter the name of the computer on the network on which the control panel application resides.
User Name	Enter the user's name. User names are managed through the 'User' table. (See Managing User Names on page 509.)
Configuration	From the drop-down list, select a configuration file to associate with the control panel. For more information on configuration files, see Working With Configuration Files on page 19
Language	Currently, only English is supported.
Description	Enter an optional description of the control panel.

5 Click Save to save your changes.

6 Click X on the window title tab to close the table.

Locating and Viewing Existing EC9700/EC9710 Panels

Depending on the information you want to view, different pages or tables present different control panel information. Pages are accessed through the 'Configuration' pane, while tables are accessed through the 'Views' pane:

- The 'EC9700/9710' page displays all current details for a single control panel.
- The 'GUIs' table lists all EC9700/EC9710 panels in a simple format: one control panel per row.

How to Locate and View Existing EC9700/EC9710 Panels

Use the 'EC9700/9710' page.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'EC9700/9710'. The 'EC9700/9710' page displays, as shown in Figure 13-11. All EC9700/EC9710 panels currently defined in the system are listed.

To narrow the list, enter the first characters of the control panel's name in the 'SW Panel Name Filter' field. The list is automatically reduced to display only panels matching that character string.

Or

From the 'Users Filter' drop-down list, select the users with access to the control panel. The list is automatically reduced to display only panels having the same user group as the one selected. (See Managing User Names on page 509.)

Figure 13-11. EC9700/9710 Page

The 'Panel' column lists the name assigned the control panel in NV9000-SE. The 'User' column lists the primary user associated with the control panel.

3 Double-click on a single row to open details for that control panel.

Or

Click anywhere in the row listing the control panel being viewed. Use the "Shift' or 'Ctrl' key on your keyboard to select multiple control panels. Each control panel opens in a separate tabbed window. Click the tab to bring the window forward.

The 'SW Panel Details' page appears. Depending on the control panel, different pages display, as shown in Figure 13-12 and Figure 13-13.
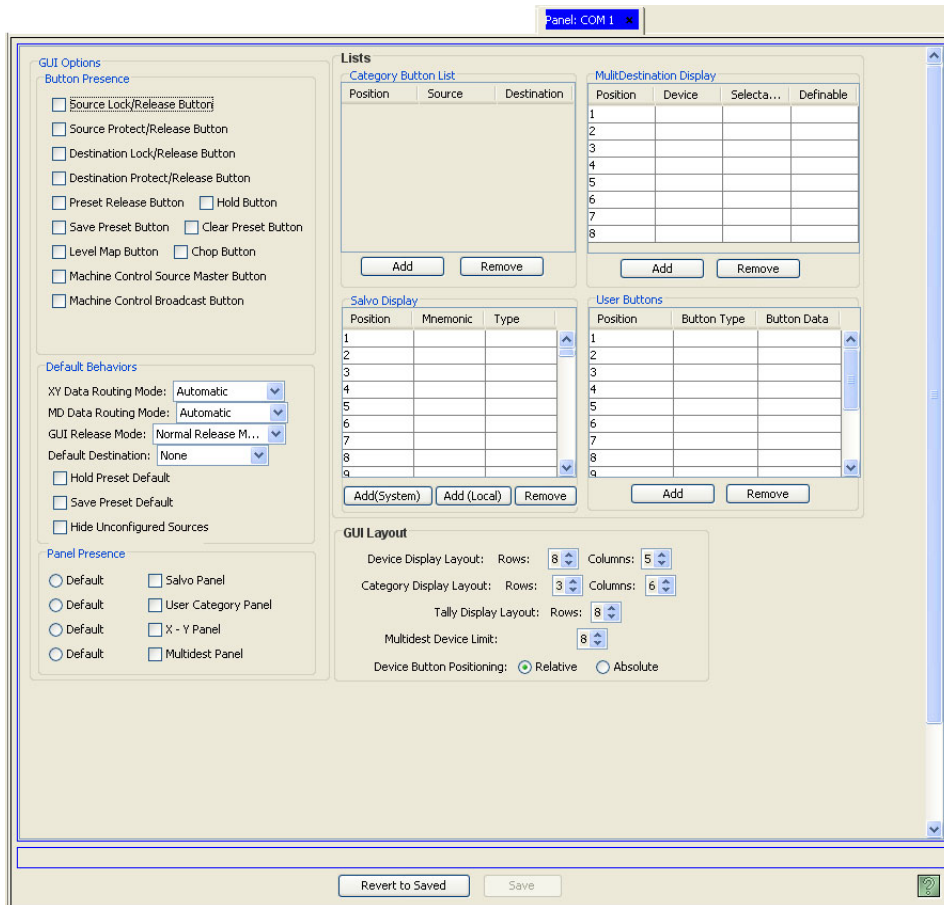
Figure 13-12. EC9700 Details Page
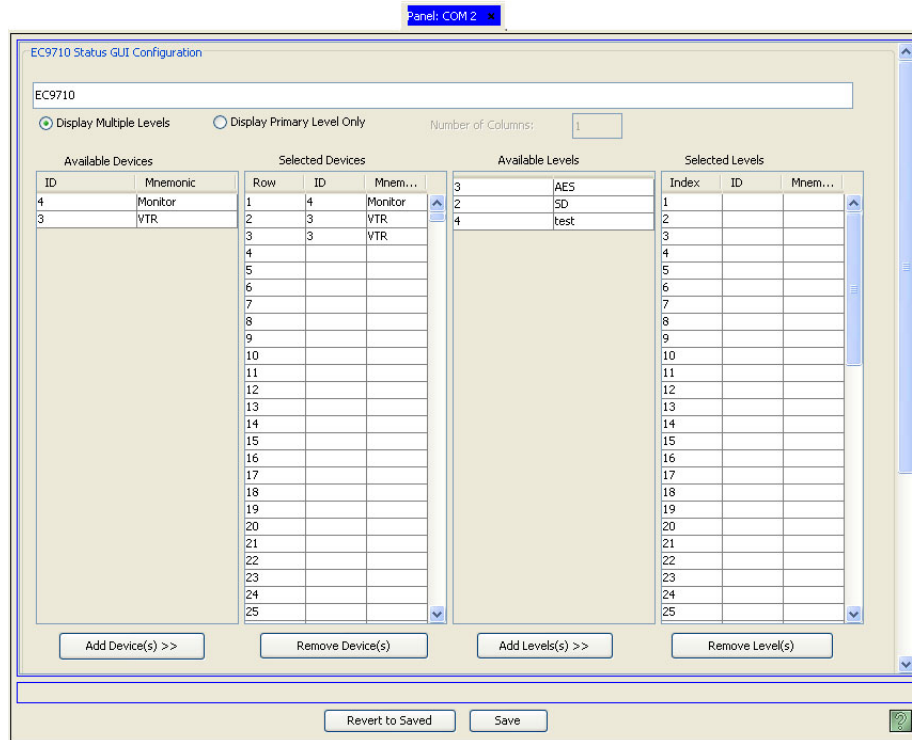
Figure 13-13. EC9710 Details Page

Each section displays specific information. The information that displays differs from control panel to control panel. For a full explanation of each section, refer to the procedure for adding that control panel:

EC9700 Panel on page 386

EC9710 Panel on page 394

4 Click X on the window title tab to close the page.

How to Locate and View Existing Panels Using the 'GUIs' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'GUIs'. The 'GUIs' table appears, as shown in Figure 13-14.

To narrow the list of panels that display, enter the first characters of a control panel name in the 'Computer (or Windows User) Name Filter' field. The list is automatically reduced to display only panels matching that character string.

Figure 13-14. GUIs Table

Four columns display control panel information. Each row represents a single control panel:

Column	Description
ID	The identification number automatically assigned the control panel in the NV9000-SE system.
Computer (or Windows User) Name	The name of the computer on the network where the EC9700/EC9710 control panel application resides.
User Name	The user's name. User names are managed through the 'User' table. (See Managing User Names on page 509.)
Configuration	The configuration file associated with the control panel. 'For more information on configuration files, see Working With Configuration Files on page 19
Language	Currently, only English is supported.
Description	Optional description of the EC9700/EC9710 control panel.
Computer (or Windows User) Name	The name of the computer or the user's name on the network where the EC9700/EC9710panel application resides.

3 Click X on the window title tab to close the table.

Updating EC9700/EC9710 Panel Details

EC9700/EC9710 control panel information can be updated and configured at any time. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

Each control panel page and table displays specific information. The information that displays differs from control panel to control panel. For a full explanation of each section, and how to enter updated information, refer to the procedure for adding that control panel. Each section is discussed in detail in each procedure.

Different NV9000-SE interfaces perform specific tasks, as follow:

Task	Interface	Pane
Adding Computers to Existing EC9700 or EC9710 Configurations on page 22	GUIs Table	Views
Creating, Updating and Deleting Configuration File Pathnames on page 24	Paths Table, GUIs Table	Views
Changing the Associated User Name on page 404	GUIs Table	Views
Changing the Associated Language on page 405	GUIs Table	Views
Updating EC9700/EC9710 Panel Configurations on page 405	SW Page	Configuration

Changing the Associated User Name

User names are defined when a EC9700/EC9710 control panel is added to the NV9000-SE system. The user name assigned to a control panel can be updated at any time using the 'GUIs' table accessed through the 'Views' pane.

Users are added and updated in the system using the 'Users' table accessed through the 'Views' pane. For more information on managing users, see Managing User Names on page 509.

How to Update the User Name Associated with a Control Panel

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'GUIs'. The 'GUIs' table appears, as shown in Figure 13-15.

To narrow the list of panels that display, enter the first characters of a control panel name in the 'Computer (or Window User) Name Filter' field. The list is automatically reduced to display only panels matching that character string.

ID	Computer (or Windows User) Name*	User Name*	Configuration File*	Language*	Description
1	1	com1	EnvyUser		English	
2	2	COM1	EnvyUser		English	
3	3	COM1	EnvyUser	\nvision\envy\usersys\live\asdf.700	English	
4	4	COM1	EnvyUser	\nvision\envy\usersys\live\azdfasdf.710	English	
5	5	COM1	EnvyUser	\nvision\envy\usersys\live\asdf.700	English	
6	6	Demo Lab	EnvyUser	\nvision\envy\usersys\live\asdf.700	English	
7	7	Demo Lab	EnvyUser	\nvision\envy\usersys\live\asd.710	English	
8	8	Facility A	EnvyUser	\nvision\envy\usersys\live\App 1.700	English	
9	9	Demo Lab	EnvyUser	\nvision\envy\usersys\live\Demo.710	English	

Add   Delete

Figure 13-15. GUIs Table

3 Locate the row listing the control panel being updated.

4 Click on the 'User Name' field to activate it and select a new user name from the drop-down list.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Changing the Associated Language

By default, English is associated with all control panel configurations. Other languages are not available at this time, but may be available in future releases.

Updating EC9700/EC9710 Panel Configurations

Panel configurations are managed through the 'EC9700/9710' page accessed through the 'Configuration' pane. Each EC9700/EC9710 control panel has a unique interface. To update a control panel configuration, you must access that specific interface.
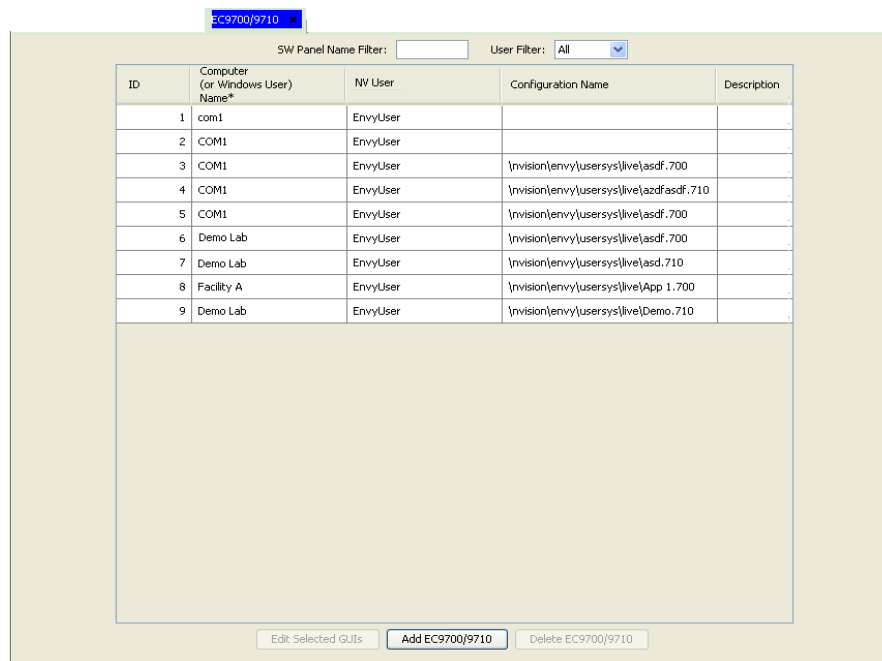
How to Update EC9700/EC9710 Control Panel Configurations

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'EC9700/9710'. The 'EC9700/9710' page displays, as shown in Figure 13-16. All EC9700/EC9710 panels currently defined in the system are listed.

To narrow the list, enter the first characters of the control panel's name in the 'SW Panel Name Filter' field. The list is automatically reduced to display only panels matching that character string.

Or

From the 'Users Filter' drop-down list, select the users with access to the control panel. The list is automatically reduced to display only panels having the same user group as the one selected. (See Managing User Names on page 509.)

ID	Computer (or Windows User) Name*	NV User	Configuration Name	Description
1	com1	EnvyUser		
2	COM1	EnvyUser		
3	COM1	EnvyUser	\nvision\envy\usersys\live\asdf.700	
4	COM1	EnvyUser	\nvision\envy\usersys\live\azdfasdf.710	
5	COM1	EnvyUser	\nvision\envy\usersys\live\asdf.700	
6	Demo Lab	EnvyUser	\nvision\envy\usersys\live\asdf.700	
7	Demo Lab	EnvyUser	\nvision\envy\usersys\live\asd.710	
8	Facility A	EnvyUser	\nvision\envy\usersys\live\App 1.700	
9	Demo Lab	EnvyUser	\nvision\envy\usersys\live\Demo.710	

Figure 13-16. EC9700/9710 Page

3 Double click on a single row to open details for that control panel.

Or

Click anywhere in the row listing the control panel being viewed. Use the "Shift' or 'Ctrl' key on your keyboard to select multiple control panels. Click the tab to bring that page forward.

The 'SW Panel Details' page for that EC9700/EC9710 control panel appears.

4 Refer to the instructions for adding control panel details as described in the procedure for that control panel, updating information as needed:

EC9700 Panel on page 386
EC9710 Panel on page 394

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

Deleting Panels

EC9700/EC9710 panels can be deleted from the NV9000-SE system at any time. It is recommended that panels be deleted off-line. This ensures that all ramifications of the deletion are reviewed and necessary configuration changes made before you go "live". Once deleted, a control panel is no longer accessible to operators and cannot be used to perform tasks.

NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependences, when the deletion is attempted, NV9000-SE informs you of the dependencies. Delete the dependencies first, then delete the originally selected record.

Panels can be deleted using the 'EC9700/9710' page accessed through the 'Configuration' pane or using the 'GUIs' table accessed through the 'Views' pane.

How to Delete a Control Panel Using the 'EC9700/9710' Page

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'EC9700/9710'. The 'EC9700/9710' page displays, as shown in Figure 13-17. All EC9700/EC9710 panels currently defined in the system are listed.

To narrow the list, enter the first characters of the control panel's name in the 'SW Panel Name Filter' field. The list is automatically reduced to display only panels matching that character string.

Or

From the 'Users Name' drop-down list, select the users with access to the control panel. The list is automatically reduced to display only panels having the same user group as the one selected. (See <u>Managing User Names</u> on page 509.)

Figure 13-17. EC9700/9710 Page

3 Click anywhere in the row listing the control panel(s) being deleted and click Delete SW Panel.

4 On the confirmation dialog box, click Delete.

5 Click X on the window title tab to close the page.

How to Delete a Control Panel Using the 'GUIs' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'GUIs. The 'GUIs' table appears, as shown in Figure 13-18.

To narrow the list of panels that display, enter the first characters of a control panel name in the 'Computer (or Window User) Name Filter' field. The list is automatically reduced to display only panels matching that character string.

	ID	Computer (or Windows User) Name*	User Name*	Configuration File*	Language*	Description
1	1	com1	EnvyUser		English	
2	2	COM1	EnvyUser		English	
3	3	COM1	EnvyUser	\nvision\envy\usersys\live\asdf.700	English	
4	4	COM1	EnvyUser	\nvision\envy\usersys\live\azdfasdf.710	English	
5	5	COM1	EnvyUser	\nvision\envy\usersys\live\asdf.700	English	
6	6	Demo Lab	EnvyUser	\nvision\envy\usersys\live\asdf.700	English	
7	7	Demo Lab	EnvyUser	\nvision\envy\usersys\live\asd.710	English	
8	8	Facility A	EnvyUser	\nvision\envy\usersys\live\App 1.700	English	
9	9	Demo Lab	EnvyUser	\nvision\envy\usersys\live\Demo.710	English	

Figure 13-18. GUIs Table

3 From the list of panels that display, click anywhere in the row listing the control panel being deleted and click Delete. The row is removed from the list.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

14. External Interfaces

External interfaces are NV9000 software components that can be added to your NV9000 configuration. Some applications exist by default and some are optional. For a list of available applications, contact Technical Service.

External interfaces are managed using the following interfaces:

- 'Add External Interface' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add a single external interface. Opens the 'External Interface Details' page through which external interfaces are defined. See Adding an External Interface on page 409.
- 'External Interfaces' page (accessed through the 'Configuration' pane)—A list of existing external interfaces. A new external interface can be added to this list. Opens the 'External Interface Details' page through which external interfaces are defined and updated. See Updating External Interface Information on page 417.
- 'Apps' table (accessed through the 'Views' pane)—A list of existing external interfaces and configuration files, one row per interface type with name, control point, parameters, run condition, run priority and log mode. Using this table an external interface can be added to an existing interface type and connection protocols managed. See Locating and Viewing Existing External Interfaces on page 414 and Updating External Interface Information on page 417.

Adding an External Interface

An external device can be added and configured at any time. NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

External interfaces can be added using a wizard, page or table. Each performs specific tasks:

- 'Add External Interface' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add a single external interface. Opens the 'External Interface Details' page through which external interfaces are defined. However, the wizard does not allow you to configure the control point, run condition, run priority, and log mode. These tasks are performed using the 'Apps' table.
- 'External Interfaces' page (accessed through the 'Configuration' pane)—A list of existing external interfaces. A new external interface can be added to this list. Opens the 'External Interface Details' page through which external interfaces are defined.
- 'Apps' table (accessed through the 'Views' pane)—A list of existing external interfaces and configuration files, one row per interface type. Using this table, an external interface can be added to an existing interface type. However, connection information is not added. Ethernet or serial connection information is added using the 'External Interfaces Details' page accessed through the 'External Interfaces' page.

To quickly add several external interfaces, the minimal information needed for each external interface can be entered in the 'Add External Interface' wizard and then Add & Clear clicked. This adds the external interface and clears all fields so that another external interface can be added immediately.

How to Add an External Interface

Use the 'Add External Interface' wizard of the 'External Interfaces' page.

1. Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2. From the Navigation area, select the 'Tasks' pane and then 'Add External Interface'.

   Or

   From the Navigation area, select the 'Configuration' pane and then 'External Interface'. The 'External Interface' page displays. On the 'External Interface' page, click Add External Interface.

   The 'Add External Interface' page appears:
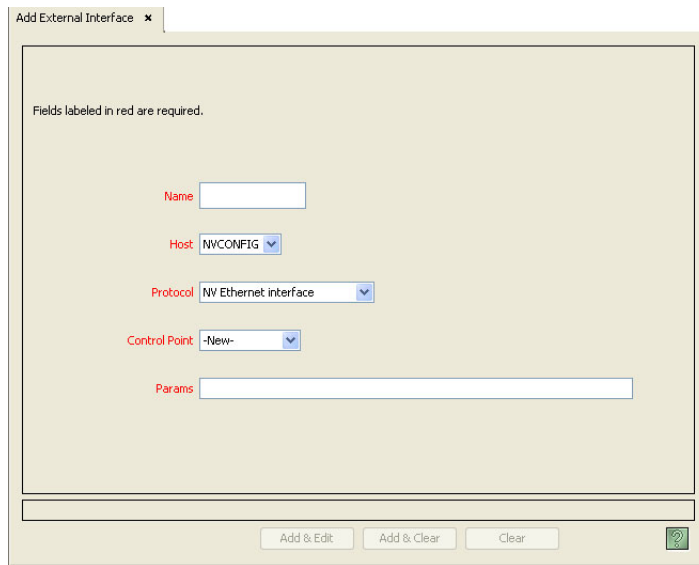
Figure 14-1. Add External Interface Page

3. Enter information in the fields provided. Red titles denote required fields:

Field	Description
Name	Enter the name used to describe the external interface. Be sure to use a unique name that is descriptive. The name is limited to 8 characters. Do not use punctuation marks or symbols.
Host	From the drop-down list, select the primary host for the external interface. There is generally only one: NVCONFIG.
Protocol	From the drop-down list, select the Ethernet or serial protocol the router is using to communicate with NV9000-SE.

Field	Description
Primary Control Port Secondary Control Port	Control ports depend on the router type and protocol. Some protocols do not have a secondary control port. A control port is a port (Ethernet or serial) on the host computer. **Important:** Leave the control ports fields set to '-New-'. Control ports are specified in the 'External Interface' page. The coded control points in the drop-down menus begin with "E" for an Ethernet control point and "S" for a serial control point. **Note**: One 8-port RS-422 expansion card is standard on the NV9000 enhanced system and optional on the NV9000-LS. The serial port settings differ depending on which protocol you have selected. The Miranda router standard 38.4 K baud, 8 data bits, no parity, and 1 stop bit.

4 Click Add & Edit to add the new external interface. The 'External Interface Details' page appears. Depending on whether an Ethernet or serial protocol was selected, different pages display, as shown in Figure 14-2 and Figure 14-3.

Or

Click Add & Clear. This adds the external interface with default settings to the NV9000-SE system and clears all fields so that another external interface can be added immediately. Repeat Step 3 until all external interfaces are added.

Or

Click Clear to clear the fields without saving any information.

Figure 14-2. External Interface Page for Ethernet Protocol
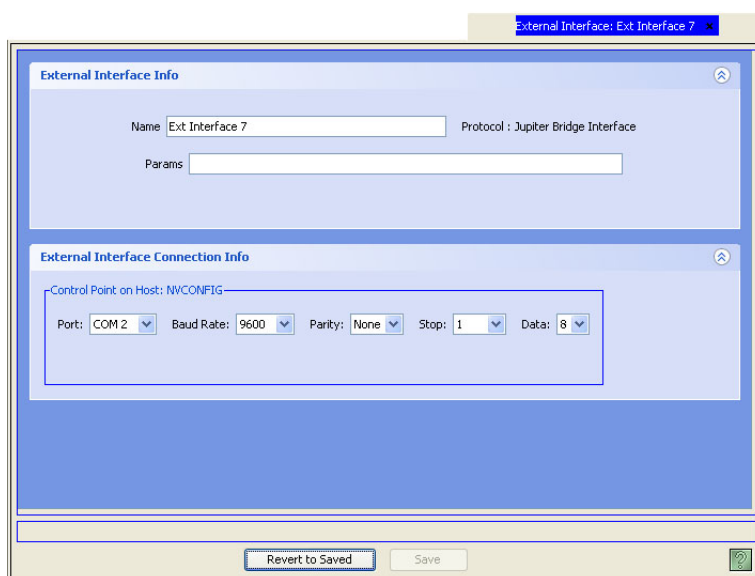
Figure 14-3. External Interface Page for Serial Protocol

5 The fields display default settings. There are two sections: 'External Interface Info' and 'External Interface Connection Info'. The fields in the 'External Interface Connection Info' section change depending on the protocol selected in step 4.

Update information, as needed:

Section	Field	Description
External Interface Info	Name	The name assigned to the external interface. The information entered in the 'Add External Interface' page displays. You can change it here at this time.
	Params	Special parameters to be added for specific functions or to have special features enabled. For more information, contact Miranda Technical Support.
External Interface Connection Info (displays if Ethernet protocol selected)	IP Address	Enter the IP address for the external interface communication with the NV9000-SE system.
External Interface Connection Info (displays if serial protocol selected)	Port	From the drop-down list, select a port and then select settings for that port as required.
	Baud Rate	**Note**: The serial port settings differ depending on which protocol was selected in Step 4. The Miranda router standard is 38.4 K baud, 8 data bits, no parity, and 1 stop bit.
	Parity	
	Stop	
	Data	

6 Click Save to save your changes.

7 (Optional) Select control point, run condition, run priority, and log mode information using the 'Apps' table. See

8 Click X on the window title tab to close the page.

How to Add an External Interface Using the 'Apps' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Apps'. The 'Apps' table appears, as shown in Figure 14-4.

   To narrow the list of external interfaces that display, enter the first characters of an external interface name in the 'Name Filter' field. The list is automatically reduced to display only external interfaces matching that character string.
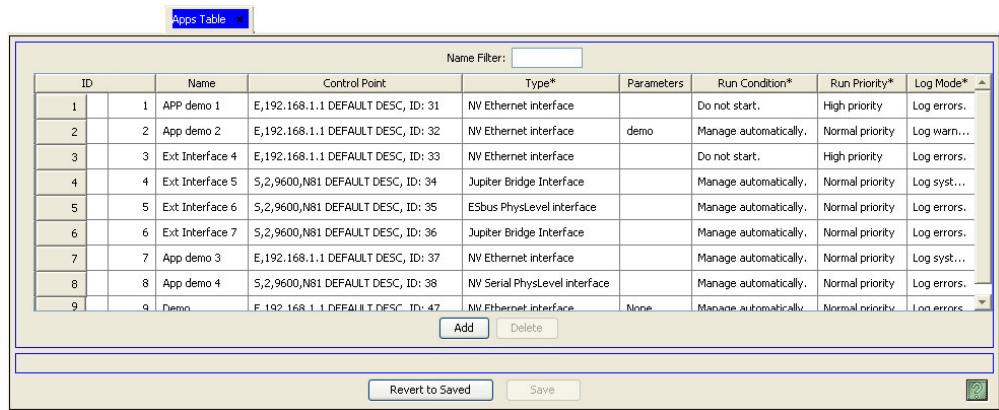
Figure 14-4. Apps Table

3 Click Add. A blank row appears at the bottom of the list of external interfaces.

4 In the blank row, click on a cell in a column to activate it and enter information, as follows:

Section	Description
Name	A unique name for the external interface.
Control Point	Select a control point for the external interface.
	Control points are serial or Ethernet ports in the NV9000 server through which routers, panels, and other devices are connected. For more information on control points, see Managing Control Points on page 96.
Parameters	Enable special features that the external application supports. For more information, contact Miranda Technical Support.
Run Condition	Select if the external application starts automatically or not.
Run Priority	Set priority of external application over other applications running.
Log Mode	Select the level of logging to be used for troubleshooting errors.

5 Click Save to save your changes.

6 Add connection information. To add details to the external interface, locate the external interface and perform steps 5 through 8 as described in How to Add an External Interface on page 410. (See How to Locate and View Existing External Interfaces on page 414.)

7 Click X on the window title tab to close the table.

Locating and Viewing Existing External Interfaces

Depending on the information you want to view, different pages or tables present different external interface details. Pages are accessed through the 'Configuration' pane, while tables are accessed through the 'Views' pane:

- The 'External Interfaces' page displays all current details for a single external interface.
- The 'Apps' table lists all external interfaces in a simple format: one external interface per row.

How to Locate and View Existing External Interfaces

Use the 'External Interfaces' page.

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'External Interfaces'. The 'External Interfaces' page displays, as shown in Figure 14-5. All external interfaces currently defined in the system are listed.

   To narrow the list, enter the first characters of the application's name in the 'Name Filter' field.

   And/Or

   Enter the first characters of the type of application in the 'Type Filter' field.

   The list is automatically reduced to display only external interfaces matching that character string.
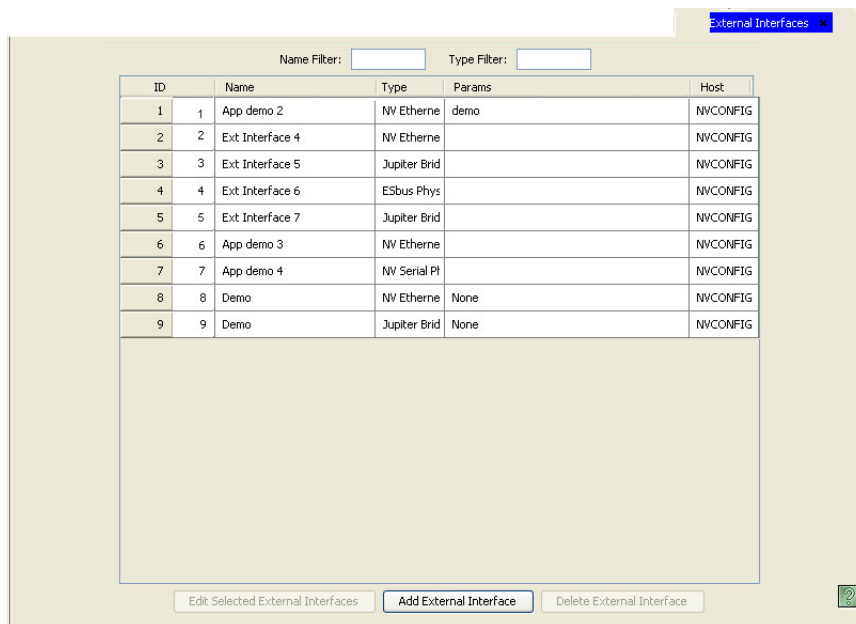
Figure 14-5. External Interfaces Page

3 Double-click on a single row to open details for that external interface.

   Or

   Click anywhere in the row listing the external interface being viewed. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple external interfaces. Each external interface opens in a separate tabbed window. Click the tab to bring that window forward.

The 'External Interfaces Details' page that appears depends on whether the external interface is using an Ethernet or serial protocol, as shown in Figure 14-6 and Figure 14-7.

Figure 14-6. External Interface Page for Ethernet Protocol

Figure 14-7. External Interface Page for Serial Protocol

Each section displays specific information, as follows:

Section	Field	Description
External Interface Info	Name	The name assigned to the external interface. The information entered in the 'Add External Interface' page displays. You can change it here at this time.
	Params	Special parameters to be added for specific functions or to have special features enabled.

Section	Field	Description
External Interface Connection Info (displays if Ethernet protocol selected)	IP Address	The IP address for the Ethernet connection.
External Interface Connection Info (displays if serial protocol selected)	Port	The settings for the serial port connection. Default settings display unless otherwise changed.
	Baud Rate	
	Parity	
	Stop	
	Data	

4 Click X on the window title tab to close the page.

How to Locate and View Existing External Interfaces Using the 'Apps' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Apps'. The 'Apps' table appears, as shown in Figure 14-8.

To narrow the list of external interfaces that display, enter the first characters of an external interface name in the 'Name Filter' field. The list is automatically reduced to display only external interfaces matching that character string.
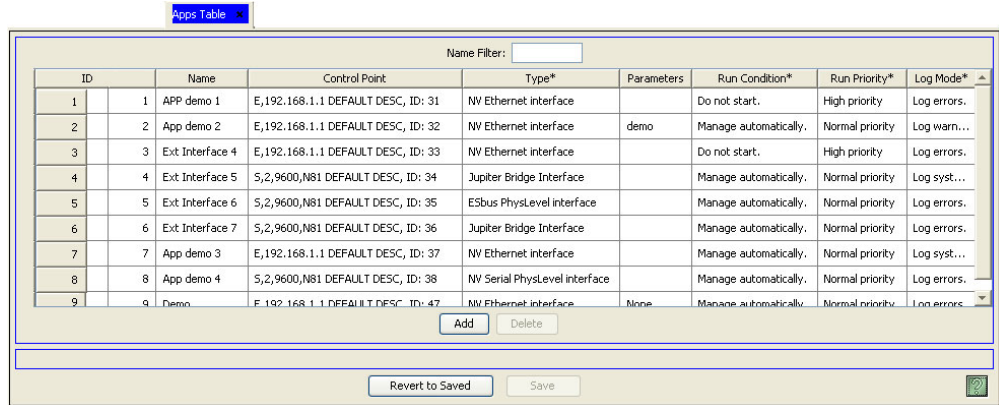

Figure 14-8. Apps Table

3 Several columns display external interface information. Each row represents a single external interface:

Section	Description
Name	The name for the external interface.
Control Point	The control point for the external interface. Control points are serial or Ethernet ports in the NV9000 server through which routers, panels, and other devices are connected. For more information on control points, see Managing Control Points on page 96.
Parameters	Enable special features than the external application supports.
Run Condition	Select if the external application starts automatically or not.

Section	Description
Run Priority	Set priority of external application over other applications running.
Log Mode	Select the level of logging to be used for troubleshooting errors.

4 Click X on the window title tab to close the table.

Updating External Interface Information

External interface information can be updated at any time. External interface information is stored in the database in the 'Apps' table. The table, accessed through the 'Views' pane, enables you to quickly and easily update a specific piece of information, such as a control point. The pages and tables in NV9000-SE share databases, so that changes made in one interface populate all corresponding fields in all related interfaces.

NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement configuration changes, the NV9000 control system must write the configuration and then be restarted. For more information, see Implementing Configuration Changes on page 17.

If currently connected to the system controller and NV9000-SE, configuration changes take effect immediately. It is recommended that external interfaces be updated off-line. That ensures that all settings are correct before you go "live".

Different NV9000-SE interfaces perform specific tasks, as follows:

Task	Interface	Pane
Changing an External Interface Name on page 417	External Interfaces Page, Apps Table	Configuration, Views
Updating External Interface Parameters on page 420	External Interfaces Page	Configuration
Updating External Interface Connection Information on page 421	External Interfaces Page	Configuration
Changing External Interface Connection Protocol (Type) on page 423	Apps Table	Views
Changing the External Interface Control Point on page 424	Apps Table	Views
Changing the Run Condition or Run Priority on page 425	Apps Table	Views
Changing the Log Mode for an External Interface on page 426	Apps Table	Views

Changing an External Interface Name

It is important that external interface names are unique and descriptive in order to avoid confusion. Once changed, the new external interface name populates all instances of that name throughout the system.

External interface names can be changed using the 'External Interfaces' page accessed through the 'Configuration' pane or the 'Apps' table accessed through the 'Views' pane.
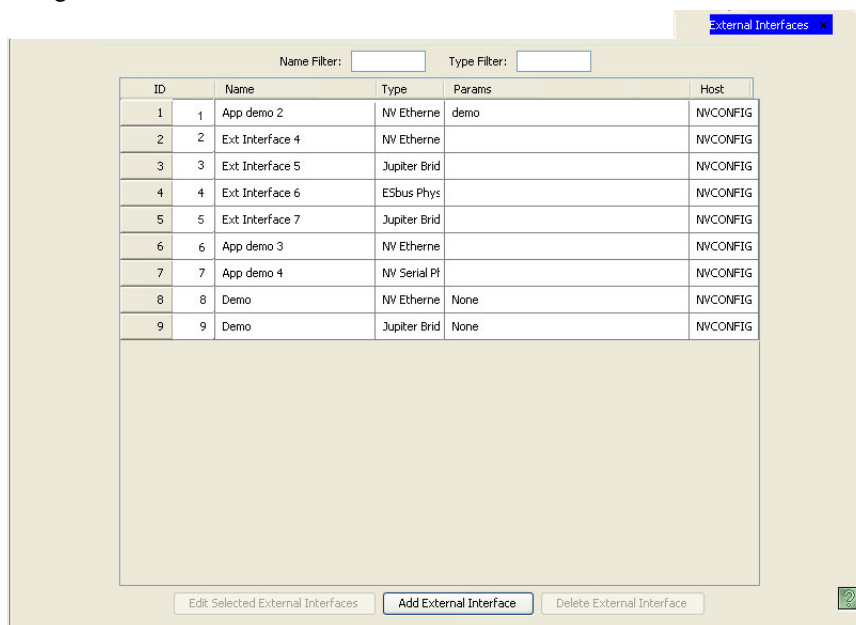
How to Update an External Interface Name Using the 'External Interfaces' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'External Interfaces'. The 'External Interfaces' page displays, as shown in Figure 14-9.

To narrow the list, enter the first characters of the application's name in the 'Name Filter' field.

And/Or

Enter the first characters of the type of application in the 'Type Filter' field.

The list is automatically reduced to display only applications matching that character string.
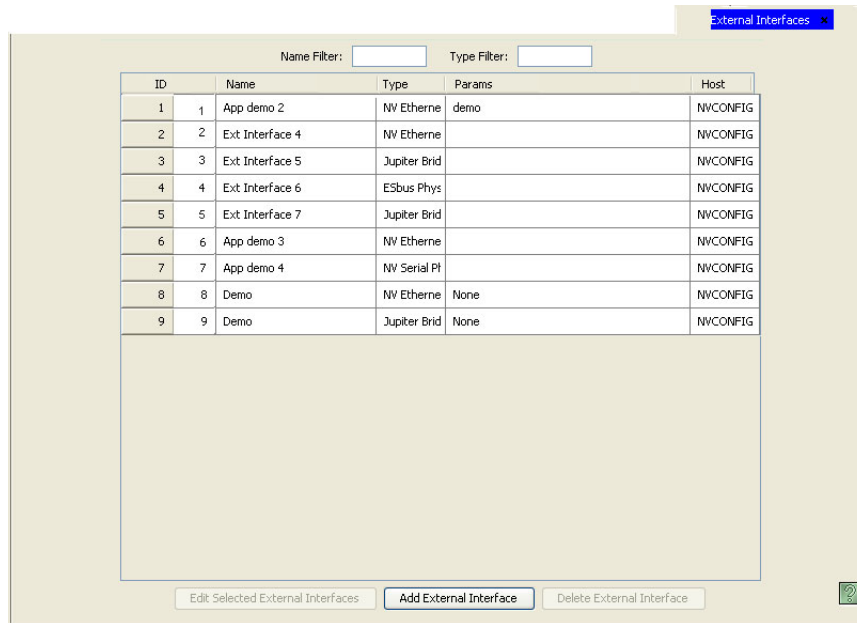
Figure 14-9. External Interfaces Page

3 Click anywhere in the row listing the external interface being updated and click Edit Selected External Interfaces. The 'External Interface Details' page appears, as shown in Figure 14-10.

Figure 14-10. External Interface Details Page (Example for Ethernet Protocol)

4 Update the 'Name' in the field provided.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

How to Update an External Interface Name Using the 'Apps' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Apps'. The 'Apps' table appears, as shown in Figure 14-11.

To narrow the list of external interfaces that display, enter the first characters of an external interface name in the 'Name Filter' field. The list is automatically reduced to display only external interfaces matching that character string.

Figure 14-11. Apps Table

3 Locate the row listing the external device being updated.

4 Click on the 'Name' field to activate it and enter a new name.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Updating External Interface Parameters

Parameters enable special features that the external application supports. External interface parameters can be changed using the 'External Interfaces' page accessed through the 'Configuration' pane.

How to Update External Interface Parameters
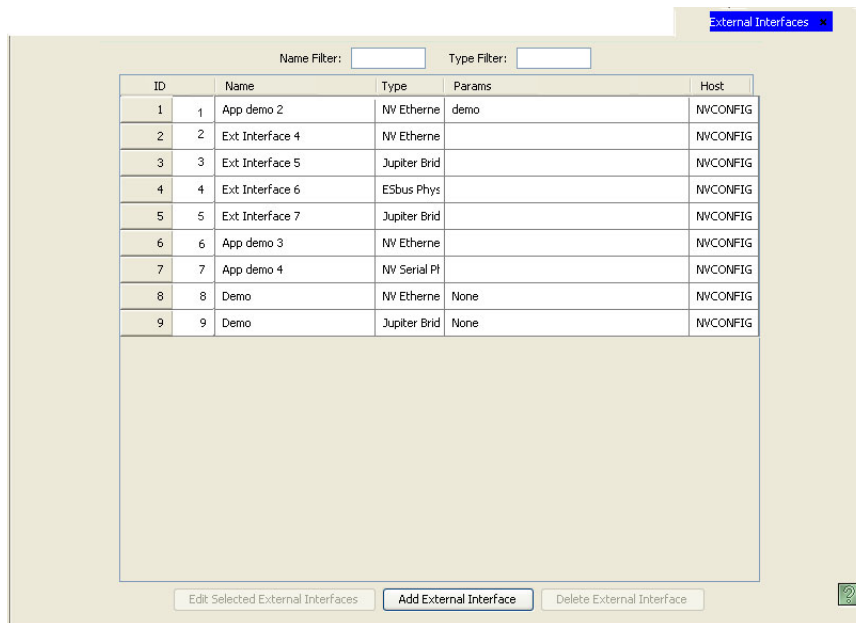
1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'External Interfaces'. The 'External Interfaces' page displays, as shown in Figure 14-12.

To narrow the list, enter the first characters of the application's name in the 'Name Filter' field.

And/Or

Enter the first characters of the type of application in the 'Type Filter' field.

The list is automatically reduced to display only external interfaces matching that character string.

ID		Name	Type	Params	Host
1	1	App demo 2	NV Etherne	demo	NVCONFIG
2	2	Ext Interface 4	NV Etherne		NVCONFIG
3	3	Ext Interface 5	Jupiter Brid		NVCONFIG
4	4	Ext Interface 6	ESbus Phys		NVCONFIG
5	5	Ext Interface 7	Jupiter Brid		NVCONFIG
6	6	App demo 3	NV Etherne		NVCONFIG
7	7	App demo 4	NV Serial Pl		NVCONFIG
8	8	Demo	NV Etherne	None	NVCONFIG
9	9	Demo	Jupiter Brid	None	NVCONFIG

Figure 14-12. External Interfaces Page

3 Click anywhere in the row listing the external interface being updated and click Edit Selected
External Interfaces. The 'External Interface Details' page appears, as shown in Figure 14-13.
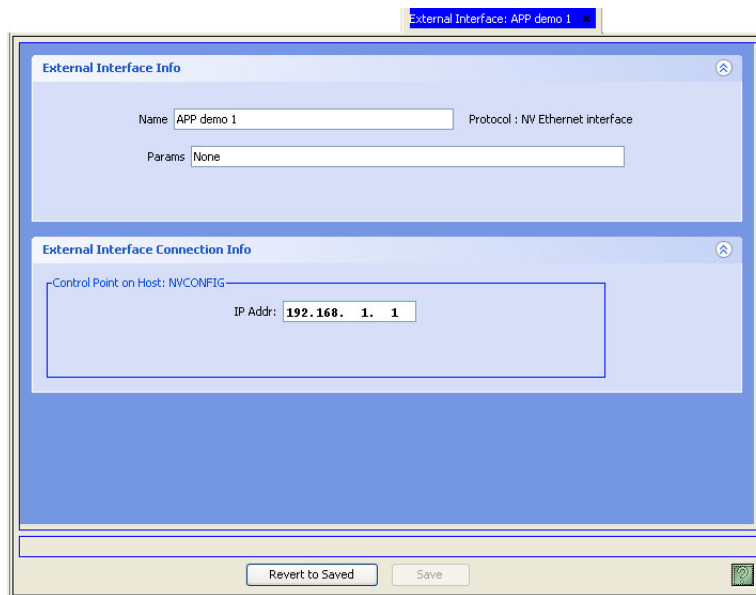
Figure 14-13. External Interface Details Page (Example for Ethernet Protocol)

4 Update the 'Params' with new parameter information in the field provided. Parameters enable
special features that the external application supports. For more information, contact Miranda
technical support.

5 Click Save.

Or

To revert to previously the saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

Updating External Interface Connection Information

Depending on the protocol (type) of external interface, the connection is either Ethernet or serial.
Ethernet and serial connection information can be updated at any time using the 'External Inter-
faces' page accessed through the 'Configuration' pane. If updating an IP address, be sure the
address is unique and valid for your facility's network.

How to Update External Interface Connection Information

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'External Interfaces'. The
'External Interfaces' page displays, as shown in Figure 14-14.

To narrow the list, enter the first characters of the application's name in the 'Name Filter' field.
And/Or

Enter the first characters of the type of application in the 'Type Filter' field.

The list is automatically reduced to display only external interfaces matching that character string.
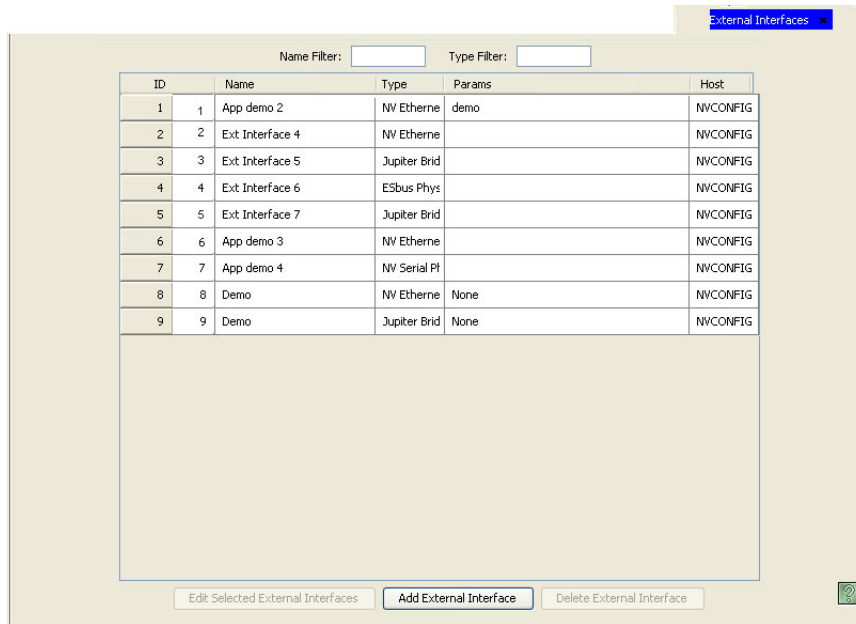
Figure 14-14. External Interfaces Page

3 Click anywhere in the row listing the external interface being updated and click Edit Selected External Interfaces.

The 'External Interfaces' page that appears depends on whether the external interface is using an Ethernet or serial protocol, as shown in Figure 14-15 and Figure 14-16.
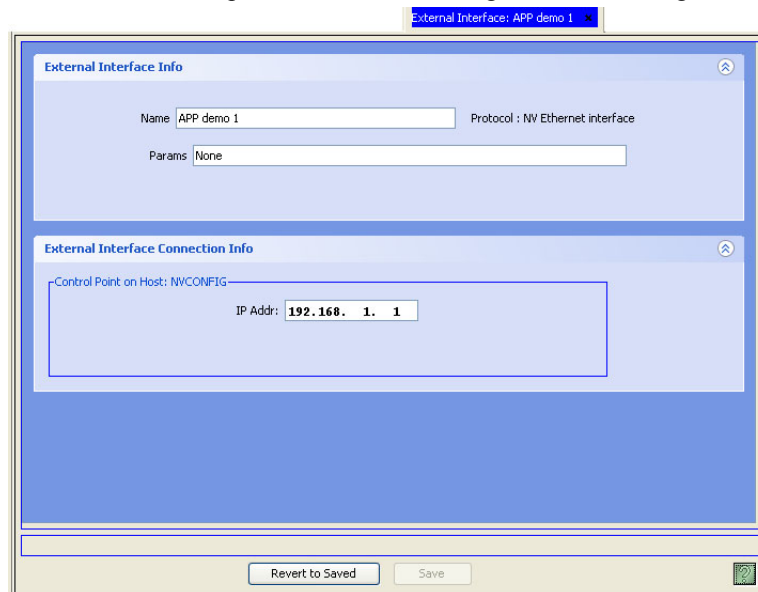
Figure 14-15. External Interface Page for Ethernet Protocol
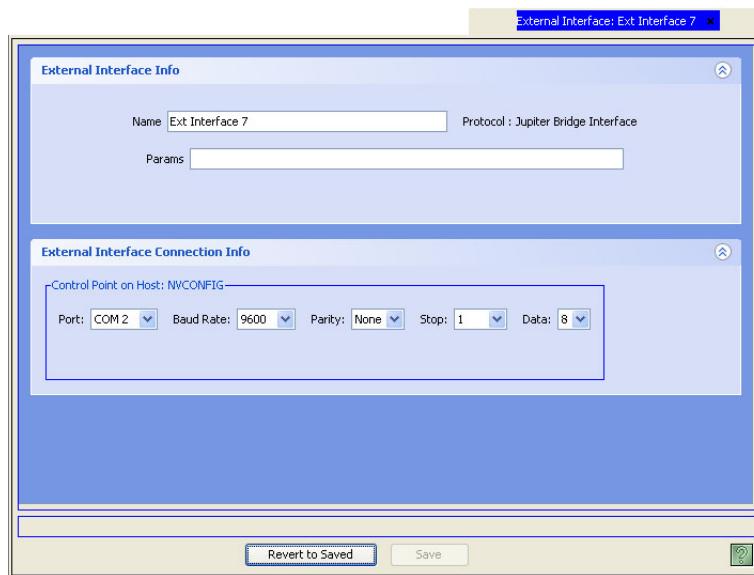
Figure 14-16. External Interface Page for Serial Protocol

4 In the 'External Interface Connection' section, update information in the fields provided. Different fields display depending on the whether the connection is Ethernet or serial. For information on changing the type of connection, see Changing External Interface Connection Protocol (Type) on page 423:

Connection Type	Field	Description
(displays if Ethernet protocol selected)	IP Address	Enter the IP address for the external interface communication with the NV9000-SE system.
(displays if serial protocol selected)	Port	From the drop-down list, select a port and then select settings for that port as required. **Note**: The serial port settings differ depending on which protocol was selected in Step 3. The Miranda router standard is 38.4 K baud, 8 data bits, no parity, and 1 stop bit.
	Baud Rate	
	Parity	
	Stop	
	Data	

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

Changing External Interface Connection Protocol (Type)

The protocol selected for an external interface determines the type of connection: Ethernet or serial. The protocol associated with an external interface can be updated using the 'Apps' table accessed through the 'Views' pane. For information on updating Ethernet or serial connection information, see Updating External Interface Connection Information on page 421.
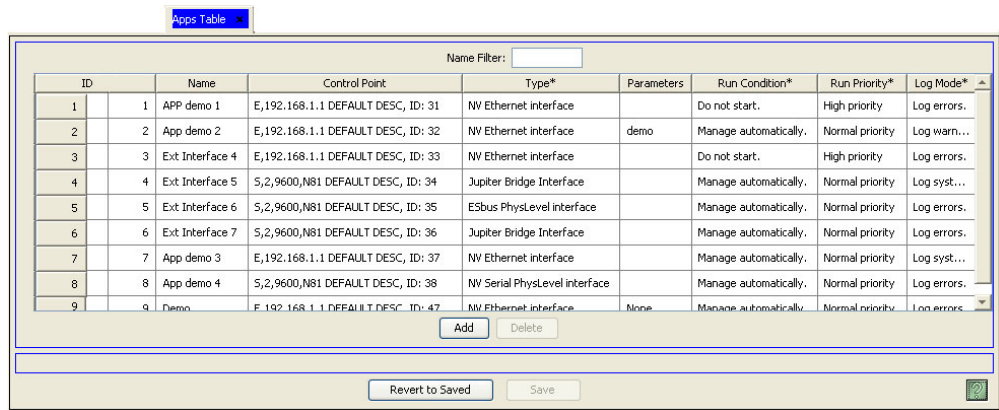
How to Update External Interface Protocol (Type)

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Apps'. The 'Apps' table appears, as shown in Figure 14-17.

To narrow the list of external interfaces that display, enter the first characters of an external interface name in the 'Name Filter' field. The list is automatically reduced to display only external interfaces matching that character string.

Figure 14-17. Apps Table

3 Locate the row listing the external device being updated.

4 In the 'Type' column, click in the field to activate it and select a protocol from the drop down list. For a description of each protocol, contact Miranda Technical Support.

- ESBus PhysLevel Interface (Serial)
- Jupiter Bridge Interface (Serial)
- NVEthernet Interface (Serial)
- NV Serial PlysLevel Interface (Serial)
- NV9000 Panel Server (Ethernet)
- NV9000 Tieline Server (Ethernet)
- Probel PhysLevel Interface (Serial)

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.
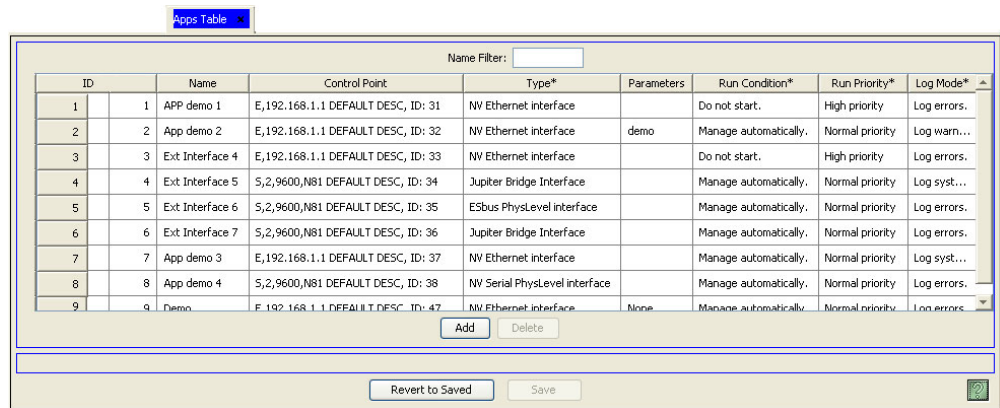
Changing the External Interface Control Point

The control point associated with an external interface can be updated using the 'Apps' table accessed through the 'Views' pane. For information on updating Ethernet or serial connection information, see Updating External Interface Connection Information on page 421.

How to Update the External Interface Control Point

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Apps'. The 'Apps' table appears, as shown in Figure 14-18.

To narrow the list of external interfaces that display, enter the first characters of an external interface name in the 'Name Filter' field. The list is automatically reduced to display only external interfaces matching that character string.

Figure 14-18. Apps Table

3 Locate the row listing the external device being updated.

4 In the 'Control Point' column, click in the field to activate it and select a control point from the drop down list.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Changing the Run Condition or Run Priority

The run condition determines if the application starts automatically upon booting up the system. The run priority determines if requests initiated by the application are performed before requests from other applications or in the order received. Run condition and run priority can be changed using the 'Apps' table accessed through the 'Views' pane.
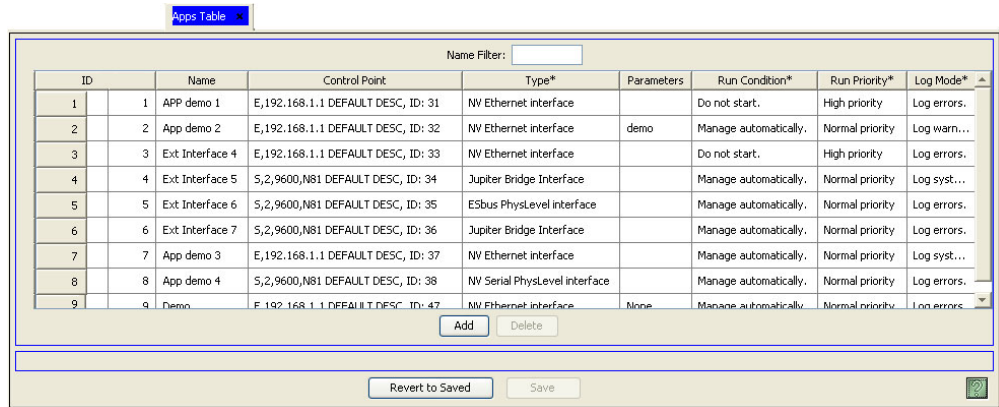
How to Update the Run Condition or Run Priority

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Apps'. The 'Apps' table appears, as shown in Figure 14-19.

To narrow the list of external interfaces that display, enter the first characters of an external interface name in the 'Name Filter' field. The list is automatically reduced to display only external interfaces matching that character string.

Figure 14-19. Apps Table

3 Locate the row listing the external device being updated.

4 In the 'Run Condition' column, click in the field to activate it and select a run condition from the drop down list:

   • Manage automatically — External application starts at boot up.

   • Do no start — External application does not start at boot up.

5 In the 'Run Priority' column, click in the field to activate it and select a run priority from the drop down list:

   • Normal priority — Priority is normal. The system controller executes request in order received.

   • High priority — External application takes priority over other applications. The system controller executes requests from "high priority" applications before executing requests from "normal priority" applications.

6 Click Save.

   Or

   To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the table.

Changing the Log Mode for an External Interface

The NV9000 server application maintains extensive logs of all system processes. These logs are used throughout the system for troubleshooting purposes. A variety of logging "levels" can be set as desired. Logs are located in the `NVISION\envy\userlocal` folder on the server's C:\ or D:\ drive.

The log mode associated with an external interface can be updated at any time using the 'Apps' table accessed through the 'Views' pane.

How to Update the External Interface Log Mode

1 Launch NV9000-SE. (See)

2 From the Navigation area, select the 'Views' pane and then 'Apps'. The 'Apps' table appears, as shown in Figure 14-20.

To narrow the list of external interfaces that display, enter the first characters of an external interface name in the 'Name Filter' field. The list is automatically reduced to display only external interfaces matching that character string.

Figure 14-20. Apps Table

3 Locate the row listing the external device being updated.

4 In the 'Log Mode' column, click in the field to activate it and select a log mode from the drop down list:

Option	Description
No logging	No error logging is performed.
Log errors	Only critical system errors are logged (e.g., loss of a server).
Log warnings	Only warnings (non-critical errors) are logged, (e.g., loss of a backup control card).
Log system events	This level of logging includes the two previous levels, plus system events (e.g., a panel or a router dropping off line).
Log transactions	This level includes the three previous levels, plus a record of all messages between all system components (e.g., each time a panel sends a request).
Log all events	*All* system activity is written to the logs.
Log debugging info	Extensive information about errors. (Use this option only under Miranda direction.)
Log verbose debugging info	Use this option only under Miranda direction. *Use caution: it quickly fills the hard drive with data.*

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Deleting External Interfaces

External interfaces can be deleted from the at NV9000-SE system at any time. It is recommended that external interfaces be deleted offline. This ensures that all ramifications of the deletion are reviewed and necessary configuration changes made before you go "live". Once deleted, the application is no longer available to users.

NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependences, when the deletion is attempted, NV9000-SE informs you of the dependencies. Delete the dependencies first, then delete the originally selected record.

External interfaces can be deleted using the 'External Interfaces' page accessed through the 'Configuration' pane or using the 'Apps' table accessed through the 'Views' pane.

How to Delete a Router Using the 'Routers' Page

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'External Interfaces'. The 'External Interfaces' page displays, as shown in Figure 14-21.

To narrow the list, enter the first characters of the application's name in the 'Name Filter' field.

And/Or

Enter the first characters of the type of application in the 'Type Filter' field.

The list is automatically reduced to display only external interfaces matching that character string.

Figure 14-21. External Interfaces Page

3 Click anywhere in the row listing the external interface being deleted and click Delete External Interface.

4 On the confirmation dialog box, click Delete.

5 Click X on the window title tab to close the page.

How to delete an external interface using the 'Apps' table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Apps'. The 'Apps' table appears, as shown in Figure 14-22.

To narrow the list of external interfaces that display, enter the first characters of an external interface name in the 'Name Filter' field. The list is automatically reduced to display only external interfaces matching that character string.

Figure 14-22. Apps Table

3 From the list of external interfaces that display, click anywhere in the row listing the external interface being deleted and click Delete. The row is removed from the list.

4 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

15. Salvos

A salvo is a series of commands strung together to create a predesignated action. When an operator selects a button that activates a salvo, all commands within that salvo are executed. This is extremely useful when a series of commands are frequently repeated.

System salvos exist globally, available to all control panel configurations. *Local salvos* belong only to the control panel on which they are recorded.

Salvos are managed using the following interfaces:

- 'Add Salvo' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add a single salvo. Opens the 'Salvo Details' page through which salvos are created. See Creating a Salvo on page 432.

- 'Salvos' page (accessed through the 'Configuration' pane)—A list of existing salvos to which a new salvo can be added. Opens the 'Salvo Details' page through which salvos are created and salvo configurations updated. See Creating a Salvo on page 432 and Updating Salvo Configurations on page 450.

- Three salvo tables (accessed through the 'Views' pane):

    - 'Salvos' table—A list of existing salvos, one per row. Using this table, salvo names, description and file paths can be added or updated. However, the actions that compose the salvo cannot be selected. Salvo actions are managed using the 'Salvo Details' page accessed through the 'Salvos' page. The added salvo can have the file path of an existing salvo, essentially acting as a "save as" function. See Locating and Viewing Existing Salvos on page 438 and Updating Salvo Information on page 443.

    - 'Salvo List' table—A list of existing salvos "lists", one list per row, by name. A salvo list is a folder containing one or more salvos. Using this table, salvo lists can be added, removed or renamed. See Creating and Deleting Salvo Lists on page 446.

    - 'Salvo List Details' table—A list of existing salvos, one per row, with associated salvo list and ID. Using this table, existing salvos can be added to or removed from existing salvo lists. See Adding Salvos to or Removing Salvos from Salvo Lists on page 448.

About Salvos

A Salvo is a set of multiple commands grouped under one command, similar to a "macro" in a computer program. These custom command sets can perform a variety of functions, for example:

- Set all the monitors in a monitor wall to black.

- Assign bars and tone to all record devices in all edit suites.

There are two types of salvos:

- "System" salvos — System salvos are available to all control panels and all users on the system as long as a 'Salvo' button has been added to the panel. Up to 2,048 system salvos can be defined in a configuration.

- "Local" salvos — Local salvos are programmed by a user at a panel and are available only to that specific control panel. They are also saved as part of a control panel's local file. Up to 512 local salvos can be programmed. The user programs a local salvo "live" — using a record function — by doing takes and other operations.

Creating a Salvo

A salvo can be added and configured at any time. It is recommended that salvos be added to your system off-line. That ensures that all settings are correct before you go "live". NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see [Implementing Configuration Changes](#) on page 17.

Salvos can be added using a wizard, page or table. Each performs specific tasks:

- 'Add Salvo' wizard (accessed through the 'Tasks' pane) — A step-by-step guide to add a single salvo. Opens the 'Salvo Details' page through which salvos are created.

- 'Salvos' page (accessed through the 'Configuration' pane) — A list of existing salvos to which a new salvo can be added. Opens the 'Salvo Details' page through which salvos are created.

- 'Salvos' table — A list of existing salvos. A salvo name, description and file path can be added using this table, but the actions that compose the salvo cannot. Salvo actions are added using the 'Salvo Details' page accessed through the 'Salvos' page.

To quickly add several salvos, the salvo name and description can be added in the 'Add Salvo' wizard and then Finish clicked. This adds a salvo file and clears all fields so that another salvo can be added immediately. However, no actions that compose the salvo are added. Details for the salvo can be added a later date using the 'Salvos' page accessed through the 'Configuration' pane.

How to Create a Salvo

Use the 'Add Salvo' wizard or the 'Salvos' page.

1 Launch NV9000-SE. (See [Launching and Exiting the Application](#) on page 12.)

2 From the Navigation area, select the 'Tasks' pane and then 'Add Salvo'.

Or

From the Navigation area, select the 'Configuration' pane and then 'Salvo'. The 'Salvo' page displays. On the 'Salvo' page, click Add Salvo. The 'Add Salvo' page appears:

Figure 15-1. Add Salvo Page

3 Enter information in the fields provided:

Field	Description
Salvo Mnemonic	Enter a name for the salvo. The name is limited to 8 characters. Do not use punctuation marks or symbols.
Salvo Description	Enter an optional description of the salvo.

4 (Optional) Check the 'Copy existing salvo' check box and select a salvo from the drop-down list. The new salvo will have the same configuration as the selected salvo. You can then change the new salvo as needed.

5 Click Next. The 'Salvo Details' page appears, as shown in Figure 15-2.

Or

Click Finish. This adds the salvo name and description to the NV9000-SE system and clears all fields so that another salvo can be added immediately. However, no salvo actions (commands), are added. To add details to a salvo, locate the salvo and perform steps 5 through 8 as described in this procedure. (See How to Locate and View Existing Salvos Using the 'Salvos' Page on page 438.)

Or

Click Clear to clear the fields without saving any information.
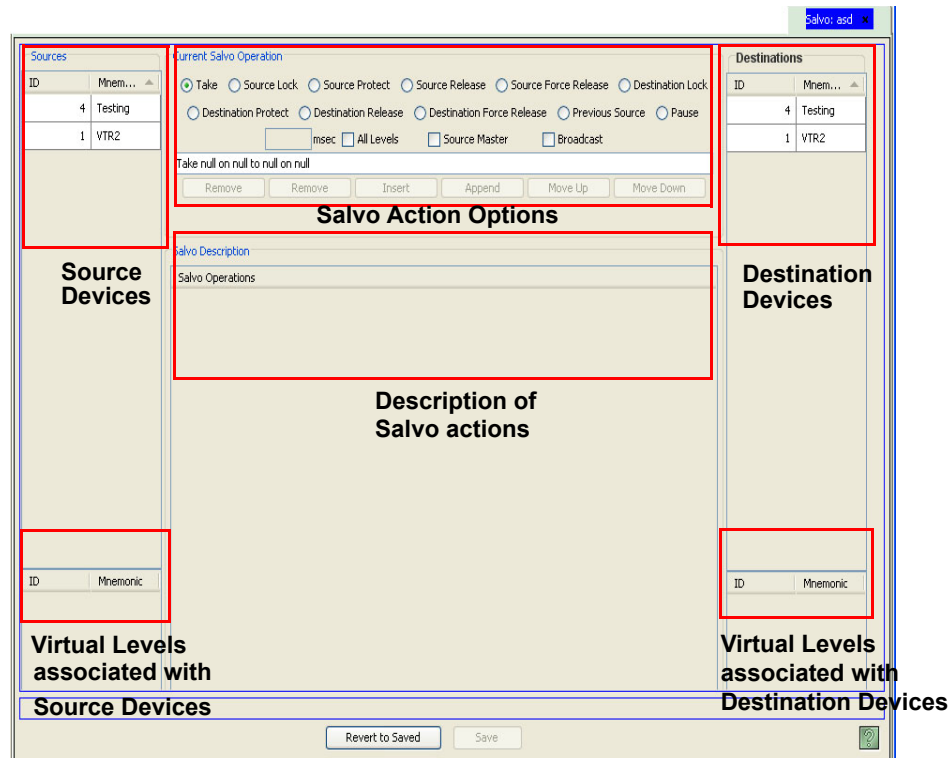
Figure 15-2. Salvo Details Page

The 'Salvo Details' page has four sections:

- Sources—Lists all *source* devices in the upper region and all virtual levels associated with those devices in the lower region. (See About Devices on page 158 and Physical Levels vs. Virtual Levels on page 112.)

- Destinations—Lists all *destination* devices in the upper region and all virtual levels associated with those devices in the lower region. (See About Devices on page 158 and Physical Levels vs. Virtual Levels on page 112.)

- Current Salvo Operations—Options for selected actions (commands).

- Salvo Description—Brief description of the selected salvo actions.

The fields in the 'Sources' sections change depending on the option selected in the 'Current Salvo Operation' section. As options are selected in the 'Current Salvo Operation' section, a description of the operation appears in the 'Salvo Description' section.

6 Construct a salvo action, as follows:

a Select the radio button corresponding to the action you want:

Option	Source or Destination	Description	Related Topic
Take	Sources/ Destinations	Switches the loaded preset source device(s) to the selected destination device on all levels that have a preset loaded. The 'Status' column changes to the new device(s).	Take on page 366
Source Lock	Sources only	Enables any **Lock** button to lock sources on the control panel. If 'Enable Source Lock' is not selected, the **Lock** button cannot be used to lock sources on the panel.	Locks on page 362
Source Protect	Sources only	Enables any **Protect** button to protect sources on the panel. If 'Enable Source Protect' is not selected, the **Protect** button cannot be used to protect sources on the panel.	Protect on page 363
Source Release	Sources only	The panel can release source locks and protects set only at the panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Locks on page 362 and Protect on page 363 and Force Release on page 360
Source Force Release	Sources only	Enables this panel to release any source locks and protects set by any user. Miranda recommends that you use 'Source Release' mode and assign a PIN to allow access to the 'Force Release' function.	Force Release on page 360
Destination Lock	Destinations only	Enables any **Destination Lock** button to function. If 'Enable Destination Lock' is not selected, the **Destination Lock** button will not function on the panel.	Locks on page 362
Destination Protect	Destinations only	Enables any **Destination Protect** button to function. If 'Enable Destination Protect' is not selected, the **Destination Protect** button will not function on the panel.	Protect on page 363
Destination Release	Destinations only	This panel can release destination locks and protects set only at the panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Force Release on page 360
Destination Force Release	Destinations only	Enables this panel to release any destination locks and protects set by any user. Miranda recommends that you use 'Destination Release' mode and assign a PIN to allow access to the 'Force Release' function.	Force Release on page 360
Previous Source	Destinations only	Immediately restores the previously selected source to the current destination (similar to an "undo" button).	Previous Source on page 363
Pause	—	Enter the number of 'milliseconds' a pause will last when activated and if the pause applies to 'All Levels'.	—

Option	Source or Destination	Description	Related Topic
Source Master	Source only	The button reverses the direction of data routing for devices used in data (control) level takes. For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing **Source Master** reverses the roles.	Source Master on page 365
Broadcast	—	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	Broadcast on page 359

Depending on the action selected, either the 'Sources' or 'Destination' column, or both, are active. Each column lists all source devices and destination devices in the NV9000-SE system. For more information on devices, see Devices on page 157.

b Select the 'Source' or 'Destination' device, depending on the action.

c Select the virtual level for the source or the destination device.

d In the 'Current Salvo Operations' section, click Append. A description of the action appears in the 'Salvo Description' section:
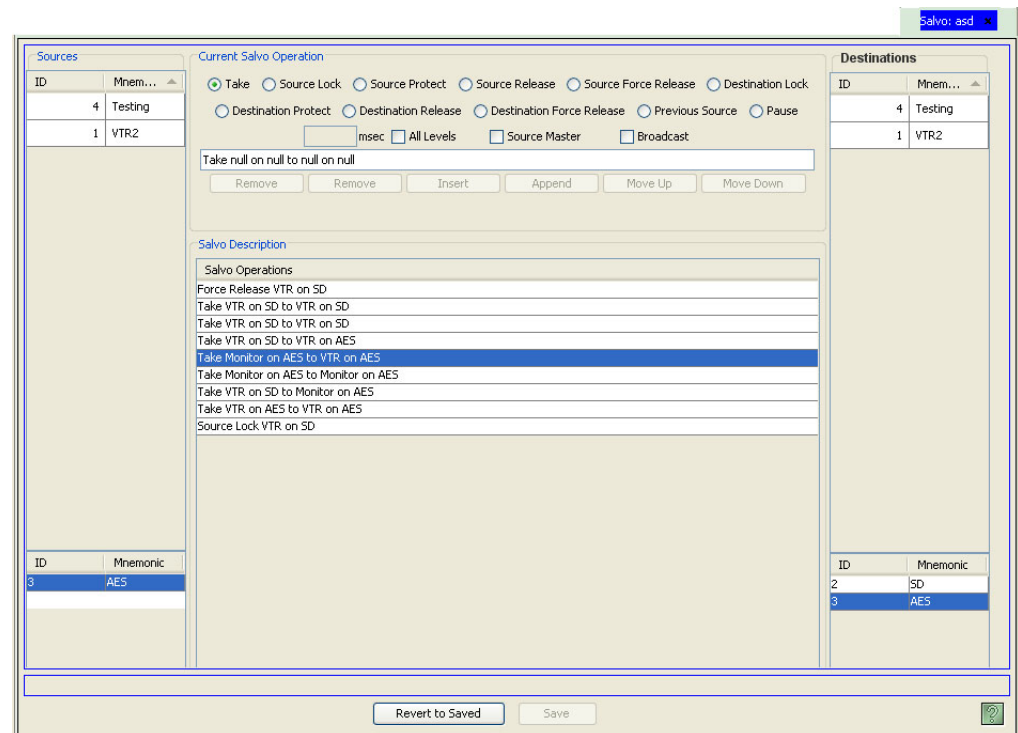
Figure 15-3. Salvo Details Page

Example: Select 'Take' as the action and then select the source device 'VTR' and the virtual level 'SD'. Now select the destination device 'VTR' and the virtual level 'AES'. The resulting salvo will switch a signal on the selected VTR on the SD virtual level to the selected VTR on the AES virtual level whenever the Take button on the control panel is pressed.

e Repeat steps **a** through **d** until all actions for the salvo have been selected.

7 Organize the actions in the 'Salvo Description' section. The order in which the actions appear are the order in which the actions are executed. Click a button to perform that task:

Remove—Select an action in the list and click to remove that action.

Insert—Click in the list to insert an action in that location in the list.

Move Up—Select an action and click to move up one place in the list.

Move Down—Select an action and click to move down one place in the list.

8 Click Save to save your changes.

9 Click X on the window title tab to close the page.

How to Add a Salvo Using the 'Salvos' Table as a "Save As" Function

The 'Salvos' table can be used as a "save as" function, creating a new salvo by selecting an existing salvo and saving it with a new name. Once created, the new salvo can be updated as needed. This is an easy and quick way to create several salvos that contain similar commands.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Salvos'. The 'Salvos' table appears, as shown in Figure 15-4.

To narrow the list of salvos that display, enter the first characters of a salvo name in the 'Mnemonic Filter' field. The list is automatically reduced to display only salvos matching that character string.
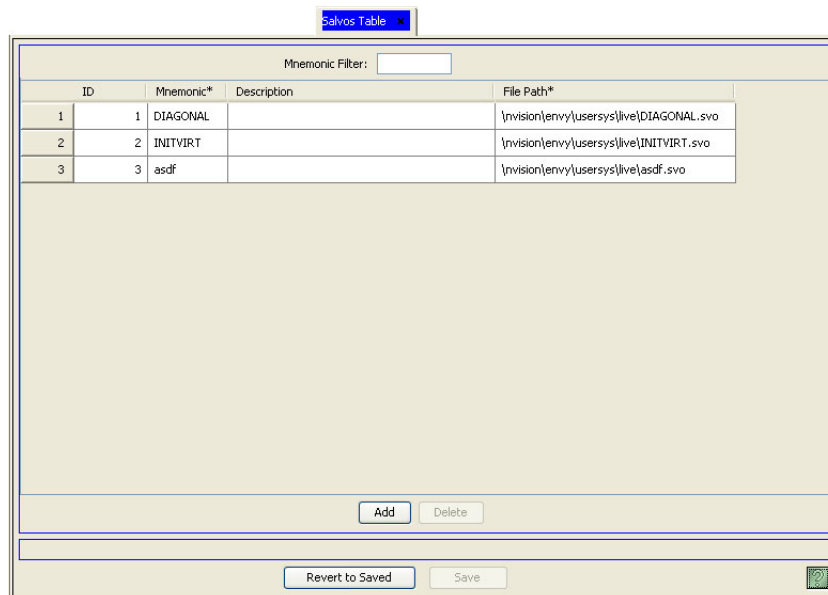
Figure 15-4. Salvos Table
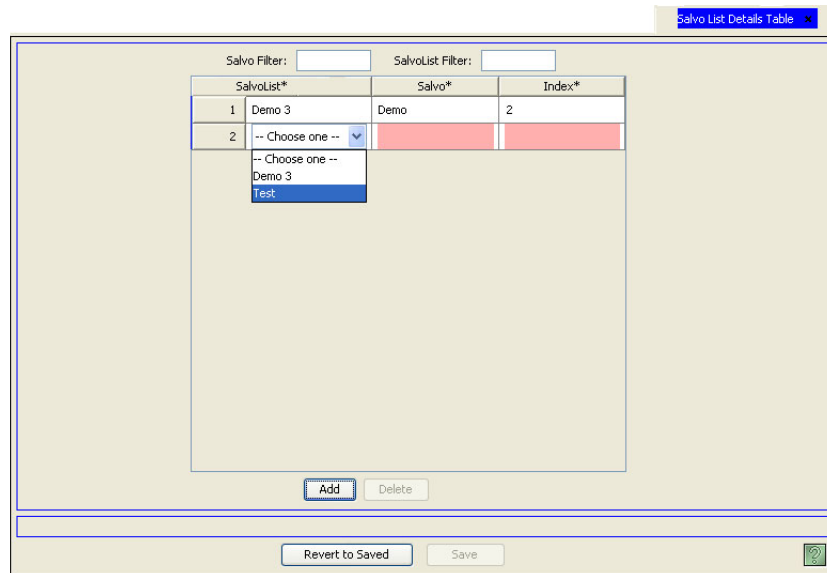
3 Click Add. A blank row appears at the bottom of the list of salvos.

4 In the blank row, click on a cell in a column to activate it and enter information, as follows:

Section	Description
Mnemonic	Enter a unique name for the salvo up to 8 characters long. Do not use punctuation marks or symbols.

Section	Description
Description	Enter an optional description of the salvo.
File Path	From the drop-down list, select a file path for the salvo or leave the default that displays. Each file path represents an existing salvo. Selecting a file path copies that salvo to the currently selected salvo, similar to a "save as" function.

5 Click Save to save your changes.

6 Click X on the window title tab to close the table.

Locating and Viewing Existing Salvos

Depending on the information you want to view, different interfaces present different salvo details:

- 'Salvos' page (accessed through the 'Configuration' pane)—A list of existing salvos. Opens the 'Salvo Details' page listing all actions composing the selected salvo.
- Three salvo tables (accessed through the 'Views' pane):
  - 'Salvos' table—A list of existing salvos, one per row, with name, description and file path.
  - 'Salvo List' table—A list of existing salvos "lists" or folders, one list per row, with name. Salvo lists may exist without containing any salvos or may contain one or more salvos.
  - 'Salvo List Details' table—A list of existing salvo lists (folders), one per row, with associated salvo and ID. If a salvo list contains two or more salvos, each salvo is listed on a different row.

How to Locate and View Existing Salvos Using the 'Salvos' Page

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Salvos'. The 'Salvos' page displays, as shown in Figure 15-5. All salvos currently defined in the system are listed.

To narrow the list of salvos that display, enter the first characters of a salvo name in the 'Mnemonic Filter' field. The list is automatically reduced to display only salvos matching that character string.
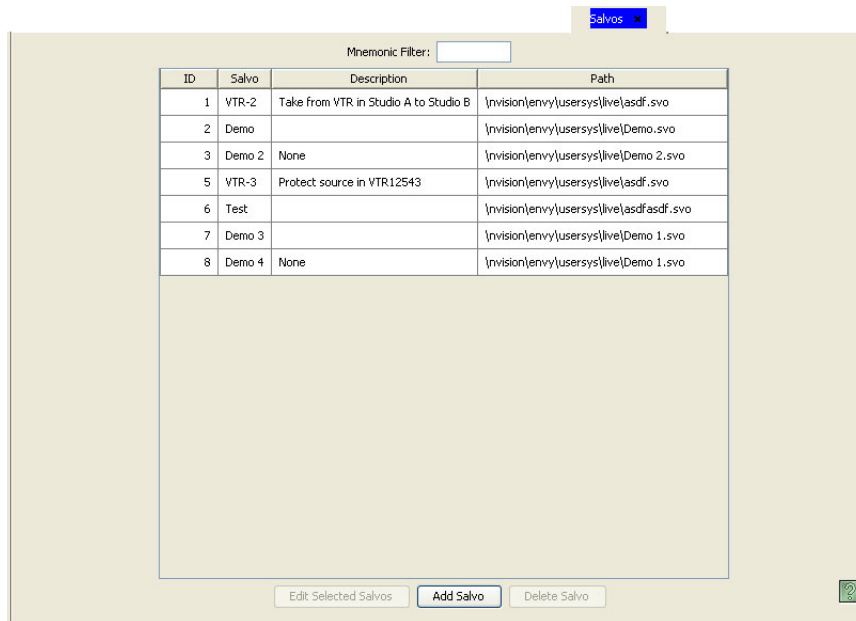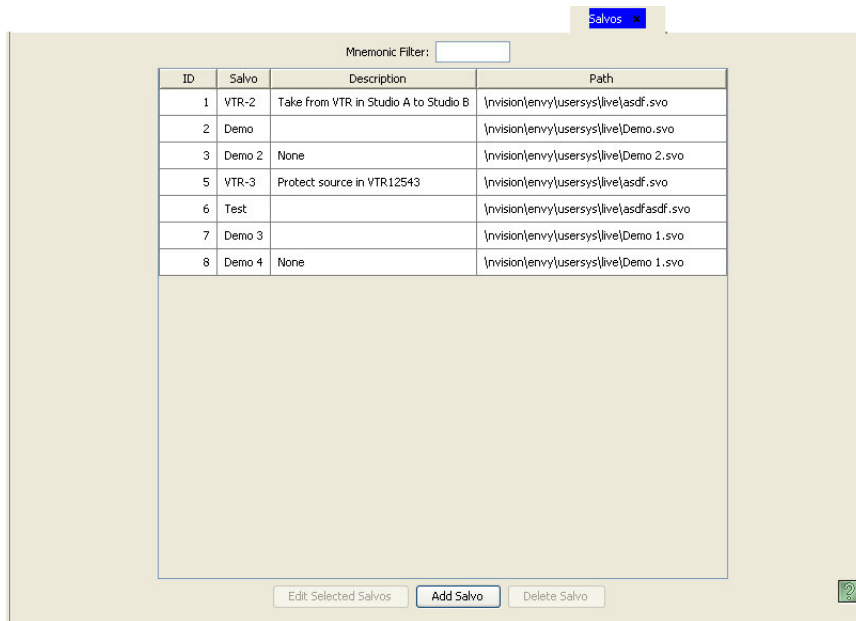

Figure 15-5. Salvos Page

3 Double-click on a single row to open details for that salvo.

Or

Click anywhere in the row listing the salvo being viewed. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple salvos. Each salvo opens in a separate tabbed window. Click the tab to bring that window forward.

The 'Salvo Details' page appears:
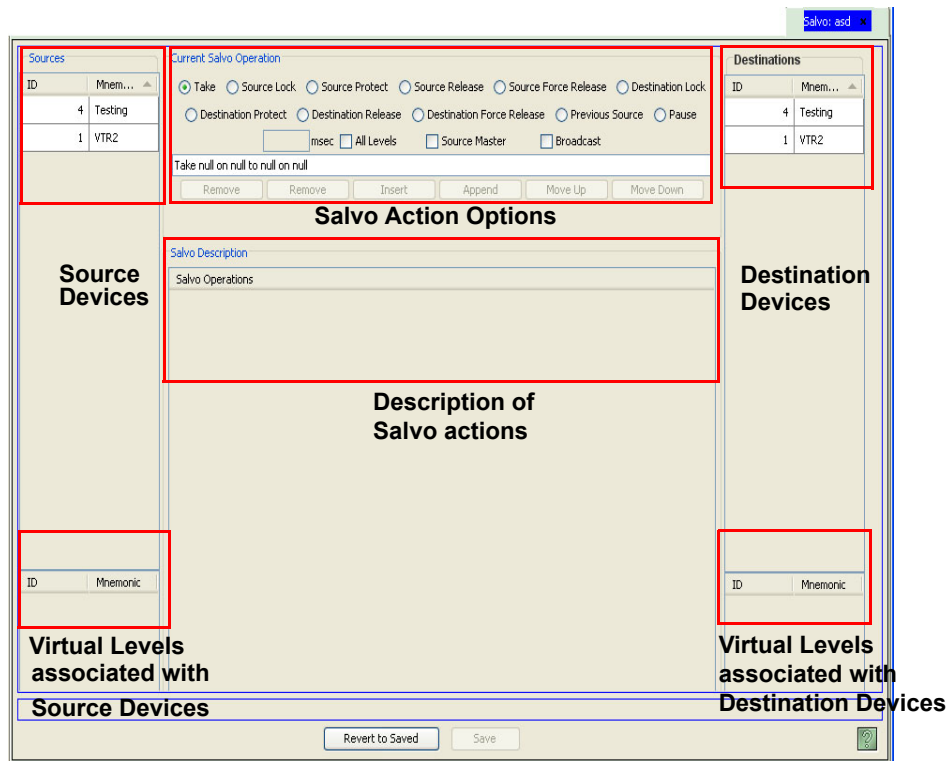
Figure 15-6. Salvo Details Page

The 'Salvo Details' page has four sections:

- Sources — lists all sources devices in the upper region and all virtual levels associated with those devices in the lower region. (See About Devices on page 158 and Physical Levels vs. Virtual Levels on page 112.)
- Destinations — lists all destination devices in the upper region and all virtual levels associated with those devices in the lower region. (See About Devices on page 158 and Physical Levels vs. Virtual Levels on page 112.)
- Current Salvo Operations — Options for selected actions.
- Salvo Description — Brief description of the selected actions.

The fields in the 'Sources' sections change depending on the option selected in the 'Current Salvo Operation' section. As options are selected in the 'Current Salvo Operation' section, a description of the operation appears in the 'Salvo Description' section.

4 Click X on the window title tab to close the page.

How to Locate and View an Existing Salvo Using the 'Salvos' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Salvos'. The 'Salvos' table appears, as shown in Figure 15-7.

To narrow the list of salvos that display, enter the first characters of a salvo name in the 'Mnemonic Filter' field. The list is automatically reduced to display only salvos matching that character string.
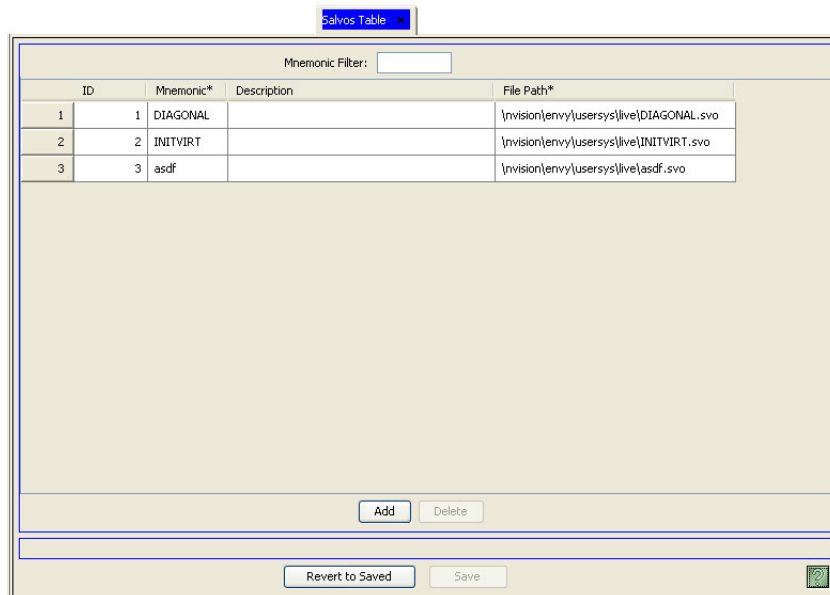
Figure 15-7. Salvos Table

Each row represents a single salvo and lists the following information:

Section	Description
Mnemonic	The salvo name.
Description	Description of the salvo.
File Path	The file path for the salvo file.

3 Click X on the window title tab to close the table.

How to Locate and View an Existing Salvo Lists Using the 'Salvo Lists' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Salvo List'. The 'Salvo Lists' table appears, as shown in Figure 15-8.

To narrow the list of salvos that display, enter the first characters of a salvo name in the 'Mnemonic Filter' field. The list is automatically reduced to display only salvos matching that character string.
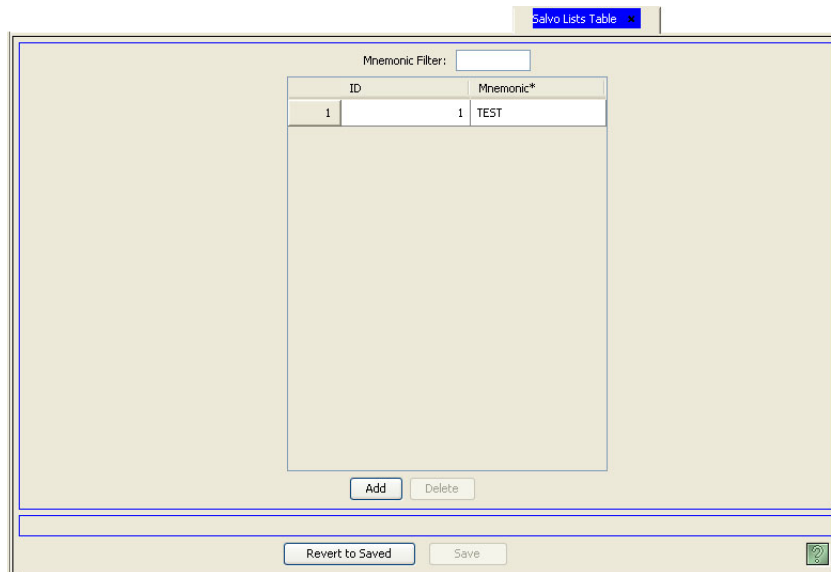
Figure 15-8. Salvo List Table

All salvo lists (folders) currently in the system are listed by name and ID number. Salvo lists are listed whether they contain salvos or not.

3 Click X on the window title tab to close the table.

How to Locate and View an Existing Salvo List and Salvos

Use the 'Salvo List Details' table.

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Salvo List Details'. The 'Salvo List Details' table appears, as shown in Figure 15-9.

To narrow the list of salvos that display, enter the first characters of a salvo name in the 'Salvo Filter' field.

Or

Enter the first characters of the folder to which the salvo belongs in the 'Salvo List Filter' field.

The list is automatically reduced to display only salvos matching that character string.
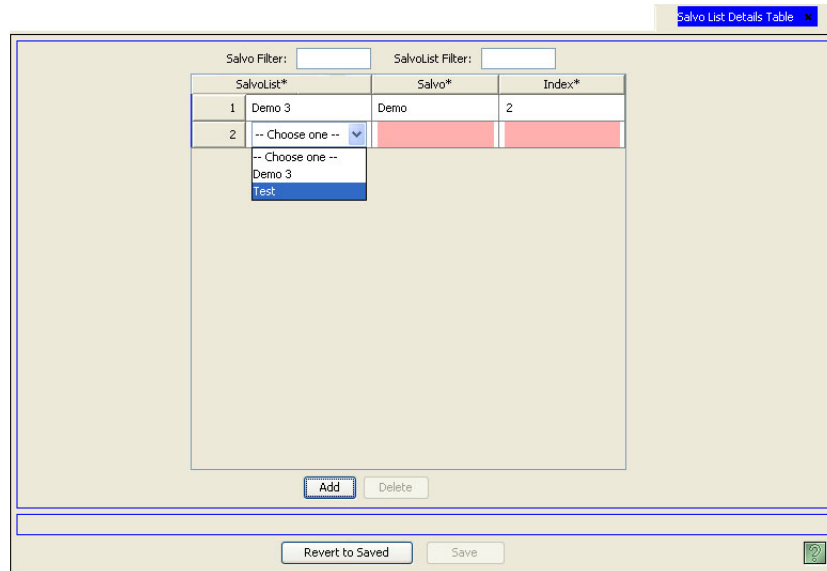
Figure 15-9. Salvo List Details Table

Each row lists a single salvo list (folder) and a single salvo. If a salvo list contains more than one salvo, the list is listed on a separate row with that salvo.

Section	Description
Salvo List	The existing salvo in the corresponding salvo list.
Salvo	Description of the salvo.
Index	The file path for the salvo file.

3 Click X on the window title tab to close the table.

Updating Salvo Information

Salvo and salvo list (folder) information can be updated at any time. This information is stored in the database in the 'Salvos', 'Salvo List' and 'Salvo Details' tables. Each table, accessed through the 'Views' pane, enables you to quickly and easily update a specific piece of information. Because interfaces in the NV9000-SE share databases, changes in one interface, such as a page, appear in all corresponding fields in all related interfaces, such as a table.

Salvo lists (folders) and filepaths are created at the time the salvo is added to the NV9000-SE system.

It is recommended that salvos be updated off-line. That ensures that all settings are correct before you go "live". NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

Different NV9000-SE interfaces perform specific tasks, as follow:

Task	Interface	Pane
Changing a Salvo Name or Description on page 444	Salvos Table, Salvo List Table	Views
Updating Salvo File Path on page 445	Salvos Table	Views
Creating and Deleting Salvo Lists on page 446	Salvo List Table	Views
Adding Salvos to or Removing Salvos from Salvo Lists on page 448	Salvo List Details Table	Views
Updating Salvo Configurations on page 450	Salvo Page	Configuration

Changing a Salvo Name or Description

It is important that salvo names are unique and descriptive in order to avoid confusion. Once changed, the new salvo name populates all instances of that name throughout the system.

Salvo names can be changed using the 'Salvos' table or 'Salvo List' table accessed through the 'Views' pane. Descriptions can only be changed using the 'Salvos' table.

How to Change a Salvo Name Using the 'Salvos' or 'Salvo List' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Salvos'. The 'Salvos' table appears, as shown in Figure 15-10.

Or

From the Navigation area, select the 'Views' pane and then 'Salvo List'. The 'Salvo List' table appears, as shown in Figure 15-11.

To narrow the list of salvos that display, enter the first characters of a salvo name in the 'Mnemonic Filter' field. The list is automatically reduced to display only salvos matching that character string.
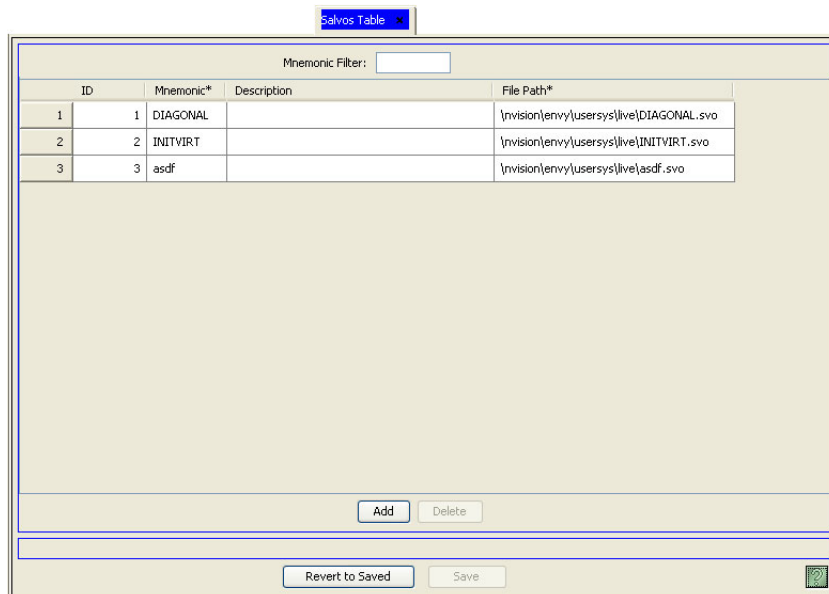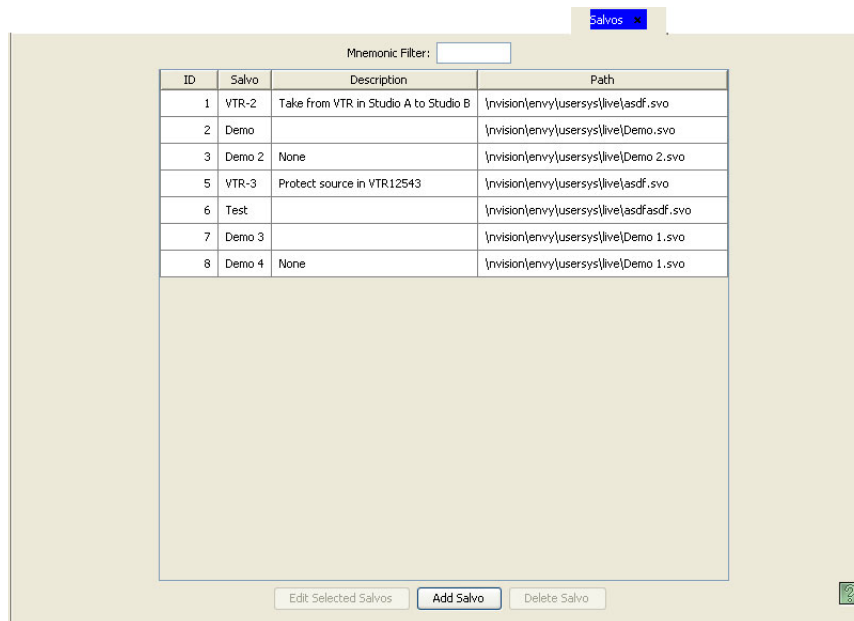

Figure 15-10. Salvos Table
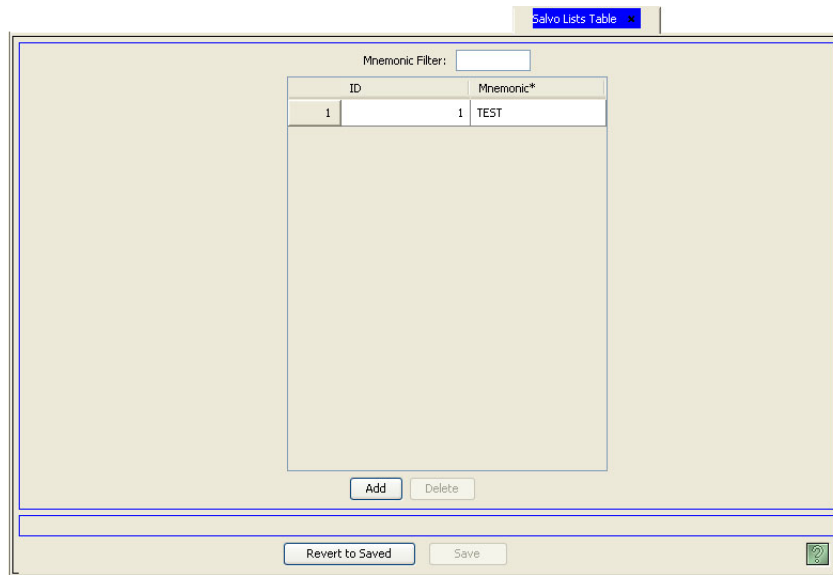
Figure 15-11. Salvo List Table

3 Locate the row listing the salvo being updated.

4 Click in the 'Mnemonic' field to activate it and enter a new name.

5 In the 'Salvos' table, click in the 'Description' field to activate it an enter a new description. (See Figure 15-10.)

6 Click X on the window title tab to close the table.

Updating Salvo File Path

The file path for a salvo can be updated at any time. When a file path is updated, the salvo that exists at that directory location is now associated with the selected salvo list (the folder containing the salvo). File paths are automatically created when a salvo is added to the NV9000-SE system. (See Creating a Salvo on page 432.) By default, NV9000-SE creates a default pathname for the configuration file by concatenating `\nvision\envy\bin\usersys\live\` and the configuration file name. The pathname is expressed relative to the hard disk of any NV9000 server.

Salvo file paths can be changed using the 'Salvos' table accessed through the 'Views' pane.

How to Update a Salvo Pathname

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Salvos'. The 'Salvos' table appears, as shown in Figure 15-12.

To narrow the list of salvos that display, enter the first characters of a salvo name in the 'Mnemonic Filter' field. The list is automatically reduced to display only salvos matching that character string.
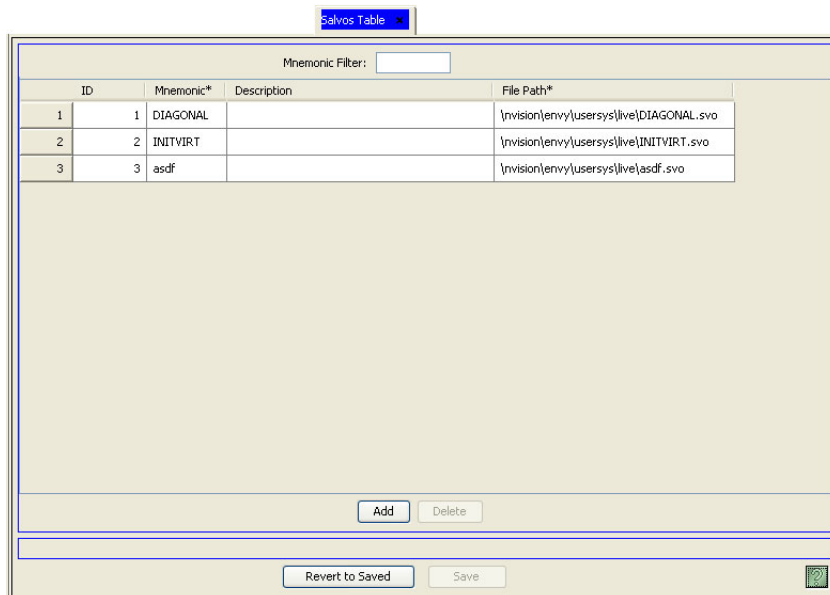
Figure 15-12. Salvos Table

3 Locate the row listing the salvo being updated.

4 Click on the 'File Path' field to activate it and select a new pathname from the drop-down list.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Creating and Deleting Salvo Lists

A salvo list is a folder that contains one or more salvos. Each salvo list can contain one or more salvos, or none. Salvos are added to a salvo list by selecting the file path that points to that salvo. (See Adding Salvos to or Removing Salvos from Salvo Lists on page 448.) Salvo lists can be created or deleted using the 'Salvo List' table accessed through the 'Views' pane.

Be careful when deleting salvo lists. Removing a salvo list removes all salvos within that folder. If a salvo only exists in that list, and no other, the salvo is removed from the NV9000-SE system. If a salvo exists in more than one salvo list, it remains in the system as long as it is associated with at least one salvo list (folder).

How to create a salvo list

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Salvo List'. The 'Salvo List' table appears, as shown in Figure 15-13.

To narrow the list of salvos that display, enter the first characters of a salvo list name in the 'Mnemonic Filter' field. The list is automatically reduced to display only salvo lists matching that character string.
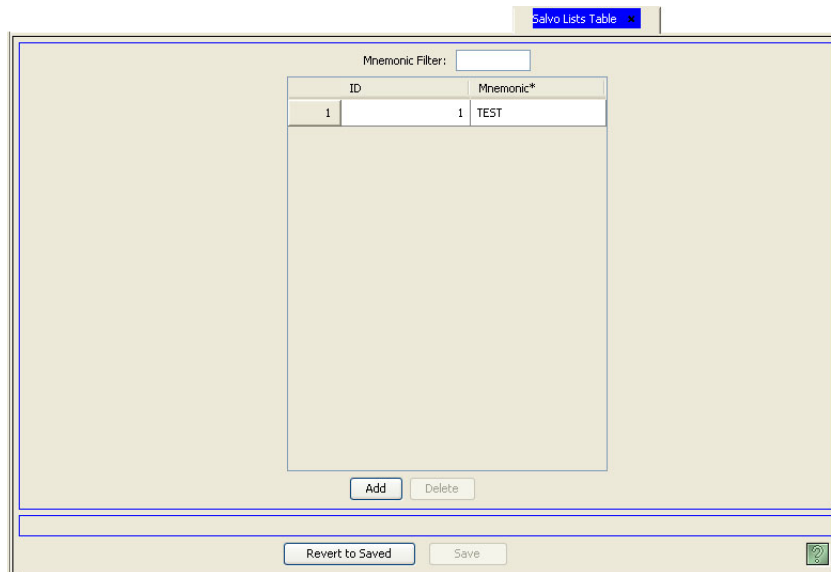
Figure 15-13. Salvo List Table

3 Click Add. A blank row appears at the bottom of the list of salvos, as shown in Figure 15-13.

4 In the blank row, click in the 'Mnemonic' column to activate it and enter a name for the salvo list.

5 Click Save to save your changes.

6 Click X on the window title tab to close the table.

How to Delete a Salvo List

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Salvo List'. The 'Salvo List' table appears, as shown in Figure 15-14.

To narrow the list of salvos that display, enter the first characters of a salvo list name in the 'Mnemonic Filter' field. The list is automatically reduced to display only salvo lists matching that character string.
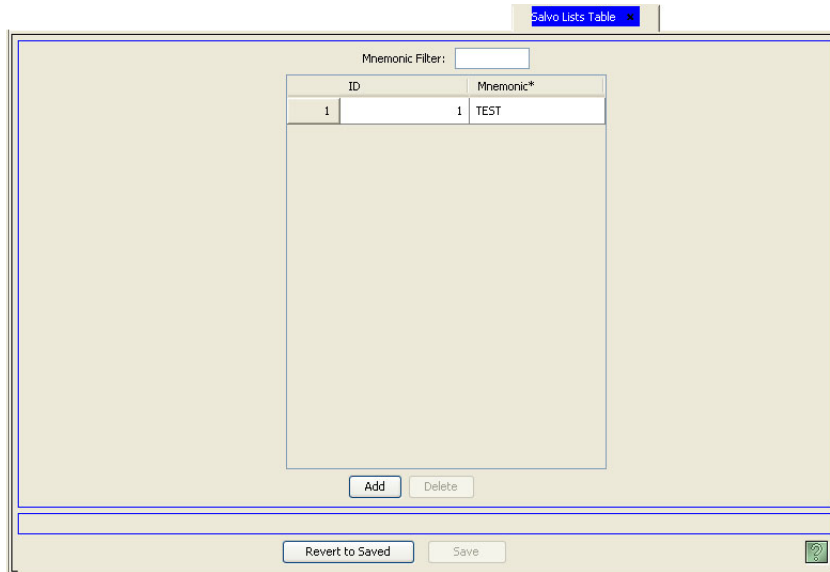
Figure 15-14. Salvo List Table

3 Locate the row listing the salvo file being removed.

4 Click anywhere in a row to select that salvo.

5 Click Delete. The salvo list is removed from the table.

6 Click Save.

   Or

   To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the table.

Adding Salvos to or Removing Salvos from Salvo Lists

Salvo lists are folders that contain one or more salvos. Salvos can be added or removed from a salvo list at any time using the 'Salvo List Details' table, accessed through the 'Views' pane.

How to Add a Salvo to a Salvo List

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Salvo List Details'. The 'Salvo List Details' table appears, as shown in Figure 15-15.

   To narrow the list of salvos that display, enter the first characters of a salvo name in the 'Salvo Filter' field.

   Or

   Enter the first characters of the salvo list in the 'Salvo List Filter' field.

The list is automatically reduced to display only salvos or salvo lists matching that character string.

Figure 15-15. Salvo List Details Table

3 Click Add. A new blank row appears at the bottom of the list.

4 In the blank row, click on the 'Salvo List' field to activate it and select the salvo list (folder) to which a salvo is being added.

5 In the same row, click on the 'Salvo' field to activate it and select the salvo being added to the salvo list from the drop-down list.

6 Click Save.

   Or

   To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the table.

How to Remove a Salvo from a Salvo List

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Salvo List Details'. The 'Salvo List Details' table appears, as shown in Figure 15-16.

   To narrow the list of salvos that display, enter the first characters of a salvo name in the 'Salvo Filter' field.

   Or

   Enter the first characters of the salvo list in the 'Salvo List Filter' field.

The list is automatically reduced to display only salvos or salvo lists matching that character string.
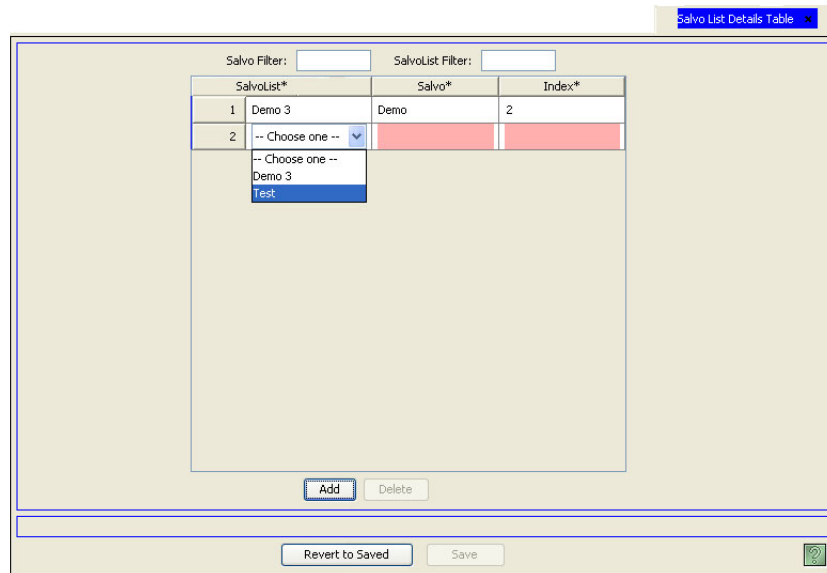
Figure 15-16. Salvo List Details Table

3 Locate the row listing the salvo list (folder) and the salvo being removed. A salvo list remains in the system even if all salvos are removed. Salvo lists must be deleted separately. (See Creating and Deleting Salvo Lists on page 446.)

4 Click anywhere in a row to select that salvo.

5 Click Delete. The row is removed from the table indicating that the salvo has been removed from the salvo list.

6 Click Save.

   Or

   To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the table.

Updating Salvo Configurations

Salvos are composed of preset actions or configurations. Any changes to a salvo are immediately reflected throughout the NV9000-SE system. It is strongly recommended that salvos be updated offline and tested to ensure that the changes work as desired when once again online.

A salvo configuration is updated using the 'Salvo' page accessed through the 'Configuration' pane.

How to Update Salvo Configurations

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Salvo'. The 'Salvo' page displays, as shown in Figure 15-17.

To narrow the list of salvos that display, enter the first characters of a salvo name in the 'Mnemonic Filter' field. The list is automatically reduced to display only salvos matching that character string.

Figure 15-17. Salvo Page

3 Click anywhere in the row listing the salvo being updated and click Edit Selected Salvos. The 'Salvo Details' page appears:
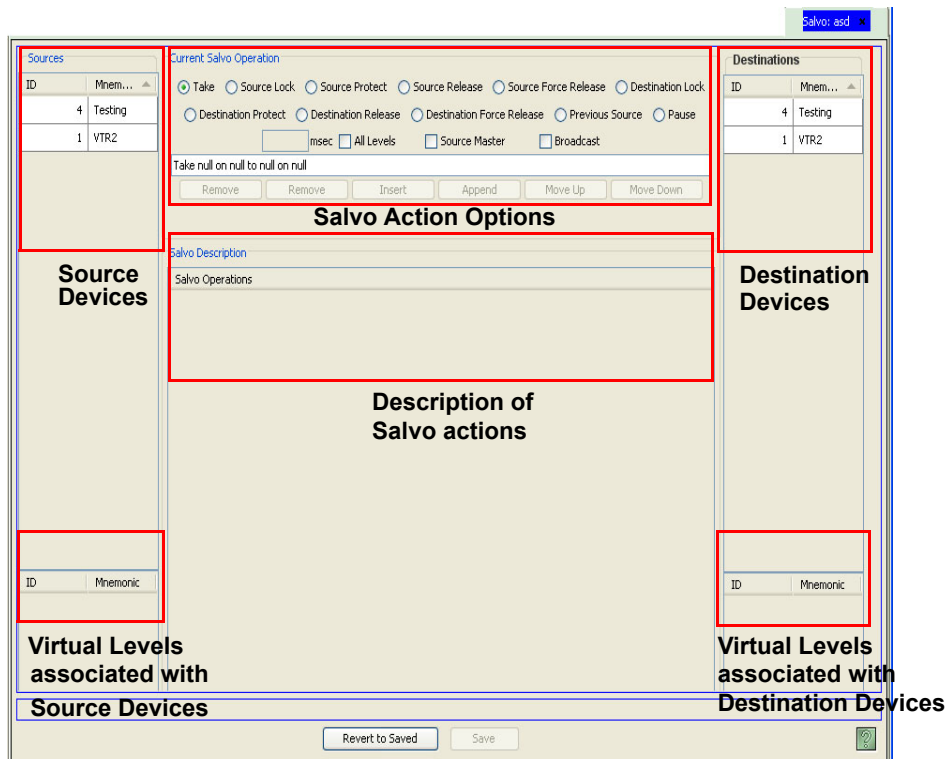
Figure 15-18. Salvo Details Page

The 'Salvo Details' page has four sections:

- Sources — Lists all *source* devices in the upper region and all virtual levels associated with those devices in the lower region. (See [About Devices](#) on page 158 and [Physical Levels vs. Virtual Levels](#) on page 112.)

- Destinations — Lists all *destination* devices in the upper region and all virtual levels associated with those devices in the lower region. (See [About Devices](#) on page 158 and [Physical Levels vs. Virtual Levels](#) on page 112.)

- Current Salvo Operations — Options for selected actions.

- Salvo Description — Brief description of the selected actions.

The fields in the 'Sources' sections change depending on the option selected in the 'Current Salvo Operation' section. As options are selected in the 'Current Salvo Operation' section, a description of the operation appears in the 'Salvo Description' section.

4 Update salvo action, as needed.

  a Select the radio button corresponding to view the action, if any, that you want, as follows:

Option	Source or Destination	Description	Related Topic
Take	Sources/ Destinations	Switches the loaded preset source device(s) to the selected destination device on all levels that have a preset loaded. The 'Status' column changes to the new device(s).	[Take](#) on page 366
Source Lock	Sources only	Enables any **Lock** button to lock sources on the control panel. If 'Enable Source Lock' is not selected, the **Lock** button cannot be used to lock sources on the panel.	[Locks](#) on page 362
Source Protect	Sources only	Enables any **Protect** button to protect sources on the panel. If 'Enable Source Protect' is not selected, the **Protect** button cannot be used to protect sources on the panel.	[Protect](#) on page 363
Source Release	Sources only	The panel can release source locks and protects set only at the panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	[Locks](#) on page 362 and [Protect](#) on page 363 and [Force Release](#) on page 360
Source Force Release	Sources only	Enables this panel to release any source locks and protects set by any user. Miranda recommends that you use 'Source Release' mode and assign a PIN to allow access to the 'Force Release' function.	[Force Release](#) on page 360
Destination Lock	Destinations only	Enables any **Destination Lock** button to function. If 'Enable Destination Lock' is not selected, the **Destination Lock** button will not function on the panel.	[Locks](#) on page 362
Destination Protect	Destinations only	Enables any **Destination Protect** button to function. If 'Enable Destination Protect' is not selected, the **Destination Protect** button will not function on the panel.	[Protect](#) on page 363

Option	Source or Destination	Description	Related Topic
Destination Release	Destinations only	This panel can release destination locks and protects set only at the panel itself (by the assigned user). A user who has the correct PIN can enable 'Force Release' temporarily, allowing the removing of locks and protects set by any user.	Force Release on page 360
Destination Force Release	Destinations only	Enables this panel to release any destination locks and protects set by any user. Miranda recommends that you use 'Destination Release' mode and assign a PIN to allow access to the 'Force Release' function.	Force Release on page 360
Previous Source	Destinations only	Immediately restores the previously selected source to the current destination (similar to an "undo" button).	Previous Source on page 363
Pause	—	Enter the number of 'milliseconds' a pause will last when activated and if the pause applies to 'All Levels'.	—
Source Master	Source only	The button reverses the direction of data routing for devices used in data (control) level takes. For example, if the (controlling) destination is the master and the (controlled) source is the slave, pressing **Source Master** reverses the roles.	Source Master on page 365
Broadcast	—	On the data (control) level, assigns one controlling device (master) to multiple controlled devices (slaves). Useful in dubbing and editing applications. Status is only reported from the first assigned slave.	Broadcast on page 359

Depending on the action selected, either the 'Sources' or 'Destination' column, or both, are active. Each column lists all source devices and destination devices in the NV9000-SE system. For more information on devices, see Devices on page 157.

b Select a new 'Source' or 'Destination' device, depending on the action.

c Select a new virtual level for the source or the destination device, if needed.

d In the 'Current Salvo Operations' section, click Append. A description of the updated action appears in the 'Salvo Description' section, as shown in Figure 15-19.
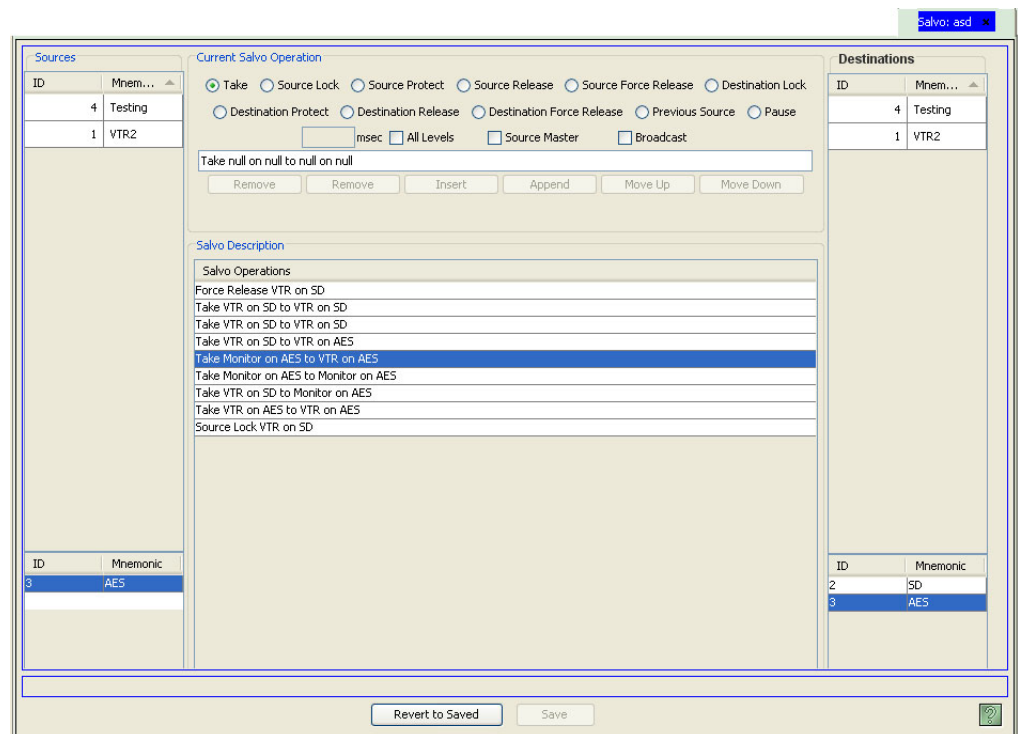
Figure 15-19. Salvo Details Page

e Repeat steps **a** through **d** until all actions have bee updated as desired.

5 Organize the actions in the 'Salvo Description' section. The order in which the actions appear are the order in which the actions are executed if multiple actions are activated. Click a button to perform that task:

Remove — Select an action in the list and click to remove that action.

Insert — Inserts an action in the list in the row selected.

Move Up — Select an action and click to move up one place in the list.

Move Down — Select an action and click to move down one place in the list.

6 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the page.

Deleting Salvos

Salvos can be deleted from the at NV9000-SE system at any time. Deleting a salvo removes it from the NV9000-SE system and any control panels or other devices accessing that salvo can no longer execute it. It is recommended that salvos be deleted offline. This ensures that all ramifications of the deletion are reviewed and necessary configuration changes made before you go "live".

NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependencies, when the deletion is attempted, NV9000-SE informs you of the dependencies. Delete the dependencies first, then delete the originally selected record.

Salvos can be deleted using the 'Salvos' page accessed through the 'Configuration' pane or using the 'Salvos' table accessed through the 'Views' pane.

How to Delete a Salvo Using the 'Salvos' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Salvos'. The 'Salvos' page displays, as shown in Figure 15-20.

To narrow the list of salvos that display, enter the first characters of a salvo name in the 'Mnemonic Filter' field.

The list is automatically reduced to display only salvos matching that character string.

ID	Salvo	Description	Path
1	VTR-2	Take from VTR in Studio A to Studio B	\nvision\envy\usersys\live\asdf.svo
2	Demo		\nvision\envy\usersys\live\Demo.svo
3	Demo 2	None	\nvision\envy\usersys\live\Demo 2.svo
5	VTR-3	Protect source in VTR12543	\nvision\envy\usersys\live\asdf.svo
6	Test		\nvision\envy\usersys\live\asdfasdf.svo
7	Demo 3		\nvision\envy\usersys\live\Demo 1.svo
8	Demo 4	None	\nvision\envy\usersys\live\Demo 1.svo

Figure 15-20. Salvos Page

3 Click anywhere in the row listing the salvo being deleted and click Delete Salvo.

4 On the confirmation dialog box, click Delete.

5 Click X on the window title tab to close the page.

How to Delete a Salvo Using the 'Salvos' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Salvo'. The 'Salvo' table appears, as shown in Figure 15-21.

To narrow the list of salvos that display, enter the first characters of a salvo name in the 'Mnemonic Filter' field. The list is automatically reduced to display only salvos matching that character string.
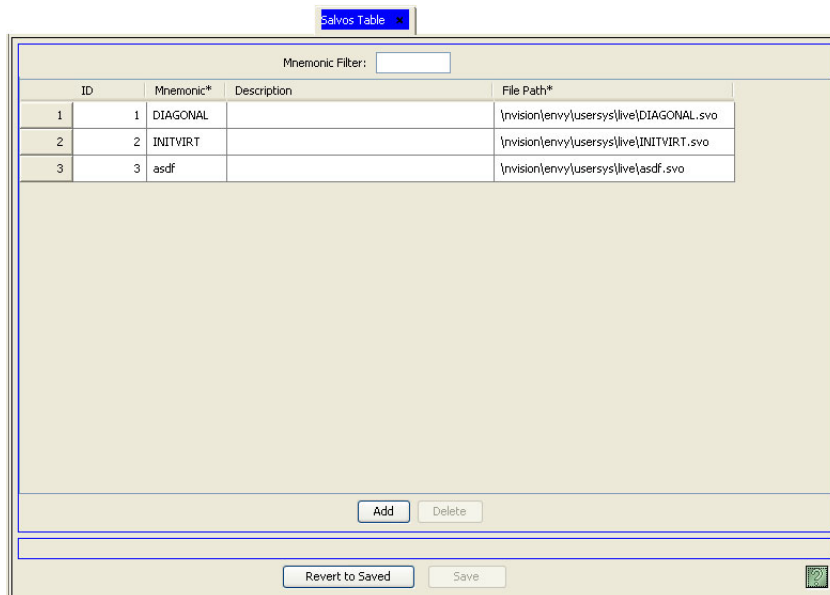
Figure 15-21. Salvo Table

3 Locate the row listing the salvo file you want to remove.

4 Click anywhere in the row listing the salve being deleted.

5 Click Delete. The salvo is removed from the list.

6 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the table.

16. Tielines

The NV9000-SE features tielines, a powerful tool that enables routing between physical levels on routers. Signals are routed between devices that share a common virtual level, but not between physical levels. (See About Levels and Level Sets on page 112.) Without a tieline, signals cannot be routed between different physical levels. Using the tielines tool, a port on one router can be mapped to a port on another router. A single port can be mapped to several ports, however several ports cannot be mapped to multiple ports. This is true in either direction: upstream to downstream, or downstream to upstream. Tielines can be overridden at the control panel.

Yes   No

One port can be mapped to
multiple ports, but multiple
ports cannot be mapped to
multiple ports.
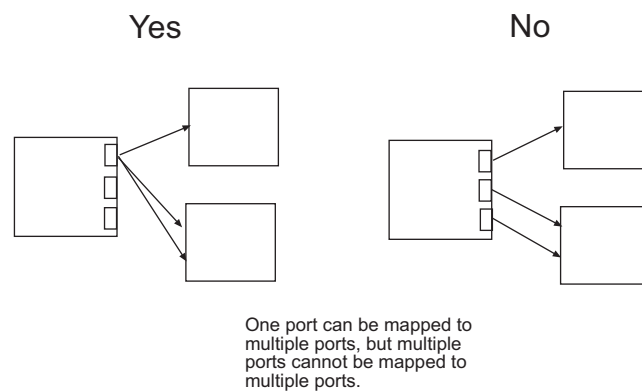
Figure 16-1. Illustration of Tieline Mapping Between Ports

Tielines have three basic functions:

- No signal conversion—Connect two routers without signal conversion. Signals from one router are routed to another router "as is."

- Signal conversion—Send a signal from a router to a conversion tool, such as a signal embedder, and then route the signal to another router or back to the source router.

- Fan out/Fan in of audio channels—Break out audio channels sent from a source (router or audio stream) to a disembedder and forward to multiple devices (or the reverse sequence).

There are several concepts used in NV9000-SE that refer to different ancillary tieline features:

- Costs

    Tielines can use whatever route is designated. The actual cost of using this route can vary from tieline to tieline. For example, one tieline may use satellite to route between physical levels, which is more costly than using another tieline that utilizes optical cables. NV9000-SE enables you to enter a numeric value that represents the cost of the tieline. The lower the number, the less expensive the cost of using the route mapped in the tieline. In turn, this allows the most economical tieline to be used when available.

    Costs must be integers (do not use decimals, slashes or commas, or other punctuation marks) and do not need to be actual monetary amounts, but any representative number. Negative numbers (i.e., –1, –2) may be used as well as positive numbers (i.e., 1, 2).

Costs are updated and viewed using the 'Tieline' table or the 'Tieline Path' table accessed through the 'Views' pane. See <u>Viewing the 'Tieline' Table</u> on page 466 or <u>Viewing the 'Tieline Path' Table</u> on page 467.

• Hop Count

A hop count is the total number of tielines required to make the desired route. In other words, how many times does a signal need to "hop" from tieline to tieline to reach its final destination. Cost defaults to the hop count if no cost is entered.

• Signal Binding

When creating a tieline, the signals corresponding to the virtual levels associated with the devices that are part of the tieline display. Each signal type within a virtual level can be selected or deselected. If selected, the signal type is "bound" to the tieline. Once "bound," the selected signal type is always associated with that tieline configuration until changed.

Binding signals is an added protection that ensures that the right signal type is selected when using a tieline to route between devices, that signal types are consistent across configurations, and that signal types cannot be altered "on the fly."

Tielines and the corresponding signals bound to the configuration are viewable using the 'Tieline Signal Binding' table accessed through the 'Views' pane. See <u>Viewing the 'Tieline Signal Binding' Table</u> on page 472.

• Signal Types

On the tieline interface, signal types represent a default and consistent set of signals. The signals, and their definitions, can be shared by multiple control systems.

• Port Binding

Similar to signal binding, when a device port is selected for a tieline it is "bound" to that tieline. Once "bound," the port is no longer available for use in another tieline. This ensures that one port is not accidentally used in multiple tielines.

Tielines and the corresponding ports bound to the configuration are viewable using the 'Tieline Port Binding' table accessed through the 'Views' pane. See <u>Viewing the 'Tieline Port Binding' Table</u> on page 470.

• Grouping

Once created, tielines can be organized in groups. Groups enable you to combine several tielines that are always used together. For example, audio channels associated with video channels. When creating a group, a tieline can only belong to one group at a time. All tielines in a groups are reserved and cannot be used by another group.

Similar to signal binding or port binding, tieline group binding 'binds' the tieline to the selected groups. This ensures that one tieline is not used outside the selected group.

Tieline Interfaces

In general, tielines are added using the 'Add Tieline' wizard and then managed through the 'Tielines' page or individual tables. All pages and tables share information so that data entered or updated in one interface is added or updated in corresponding data fields in other interfaces.

Tielines are managed using the following interfaces:

- 'Add Tieline' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to create a tieline. Opens the 'Tieline (Graphical) Details' page through which physical levels are mapped. See Creating a Tieline on page 461.

- 'Tielines' page (accessed through the 'Configuration' pane)—A list of existing tielines. Opens the 'Tielines Details' page through which physical level mapping can be updated, and tielines are added or deleted. See Creating a Tieline on page 461 and Updating a Tieline on page 473.

- Six tables (accessed through the 'Views' pane):

  - 'Tieline' table—A list of existing tielines, one per row, with name, ID and cost. Using this table, the tieline name, cost and description can be updated, and a tieline file can be added with name, description and cost. However, no physical levels can be mapped. That must be done through the 'Tieline (Graphical) Details' page accessed through 'Tieline' page. See Updating a Tieline on page 473

  - 'Tieline Path' table—A list of paths for each tieline, one path per row. This table lists all paths and if a route can be made between devices using existing tielines and if the route is efficient. This table is for reference only. See Viewing the 'Tieline Path' Table on page 467.

  - 'Tieline Path Detail' table—A list of each tieline used to make a route, one tieline per row. Some routes require more than one tieline. This table is for reference only. See Viewing the 'Tieline Path Detail' Table on page 469.

  - 'Tieline Port Binding' table—A list of each port in a tieline, one port per row. When a tieline is created, the port used is "bound" to that tieline such that no other device or tieline can use it. This table is for reference only. See Viewing the 'Tieline Port Binding' Table on page 470.

  - 'Tieline Reservation' table—This table provides a "snapshot" of the server side. When a tieline is reserved, all of its ports and resources cannot be used by another tieline. See Viewing the 'Tieline Reservation' Table on page 471.

  - 'Tieline Signal Binding' table—A list of those signals that a tieline can pass. Each row lists one signal and its corresponding tieline input and tieline output. This table is for reference only. See Viewing the 'Tieline Signal Binding' Table on page 472.

Tieline groups are managed using the following interfaces:

- 'Add Tieline Group' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to create a tieline group. Opens the 'Tieline Group Details' page through which tielines can be selected to add to a group. See Creating a Tieline Group on page 482.

- 'Tieline Groups' page (accessed through the 'Configuration' pane)—A list of existing tieline groups. Opens the 'Tieline Group Details' page through which tielines in the group can be added or deleted. See Creating a Tieline Group on page 482 and Updating a Tieline Group on page 490.

- Two tables (accessed through the 'Views' pane):

  - 'Tieline Group' table—A list of existing tieline groups, one per row, with name, ID and description. Using this table, the tieline name and description can be updated, and a tieline group file can be added with name and description. However, no tielines can be added. That must be done through the 'Tieline Group Details' page accessed through 'Tieline Groups' page. See Viewing the 'Tieline Group' Table on page 488

  - 'Tieline Group Binding' table—A list of each tieline in a group, one tieline per row. When a tieline group is created, the tielines added to the group are "bound" to that tieline group

such that the tieline can belong to no other group. This table is for reference only. See [Viewing the 'Tieline Group Binding' Table](#) on page 489.

Using the 'Tieline Details' Page

The 'Tielines Details' page ([Figure 16-2 on page 461](#)) provides a graphical representation of the tielines being created or managed. Upstream (source) routers display in green and downstream (destination) devices display in amber. Ports appear as small rectangles with numbers. The numbers represent the actual port numbers on the device. Only available ports display. When a tieline is created between two ports, the ports turn bright green. Unused ports are black.

When creating tielines, the following rules apply:

- Tielines *can* be made from *one* port on the upstream router to one or more ports on one or more downstream routers, or from one downstream router to one or more ports on one or more upstream routers.
- Tielines *cannot* be made from *multiple* ports on the upstream router to multiple ports on the downstream router, or from multiple ports on the downstream router to multiple ports on the upstream router.

Upstream devices are listed in the 'Upstream' section located in the left-hand area of the window. When a device is selected, either upstream or downstream, it is represented in the center 'Graph' section. Downstream devices are listed in the right-hand area of the screen.

Viewing Virtual Levels and Signal Types

A tieline connection is created by "drawing" an arrow from one device's port to another device's port. To view the virtual levels and signal types corresponding to the selected ports, click on the arrow. The arrow becomes bold and corresponding virtual levels and signal types display in the 'Virtual Levels' section and the 'Signal Types' section for the upstream and downstream ports.

Arrows Represent Physical Connections

The arrows that appear in the 'Graph' section represent the physical cable that connects the two devices. In order for a tieline configuration to work, the actual ports must be connected. For instructions on making connections to a physical port, refer to the device's User's Guide.
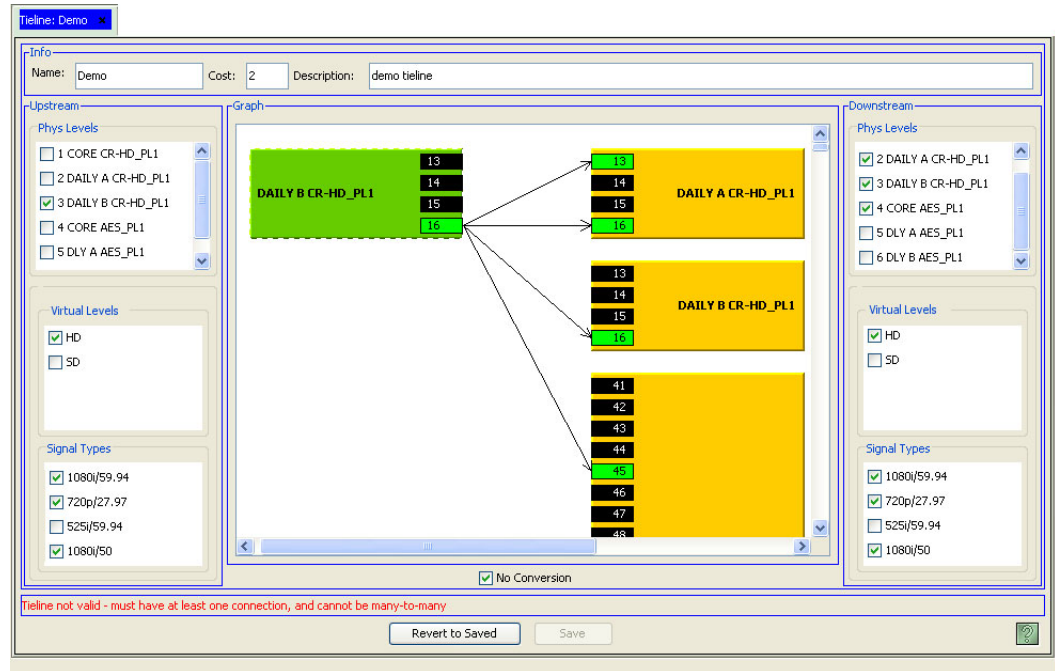
Figure 16-2. Tieline Graphic Representation

There are basic interface tasks you can perform in the 'Graph' section:

- Drag — To move an image in the 'Graph' field, left-click on the image, and while keeping the mouse button depressed, move the mouse to "drag" the image to a new location.

- Draw tielines — To create a tieline, you "draw" an arrow between two devices. To draw an arrow, click on the port you want in the downstream device. Keeping the mouse pointer button depressed, move the mouse to the port on the upstream device being mapped. A line appears on the screen between the two ports. You must start with the downstream device first.

- Activate arrow — To activate an arrow between devices, click on the arrow in the 'Graph' section. This populates the 'Virtual Levels' and 'Signal Types' associated with that tieline connection.

Creating a Tieline

A tieline can be created and configured at any time. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected devices. For information on implementing changes, see Implementing Configuration Changes on page 17.

If currently connected to the NV9000 system controller and NV9000-SE, configuration changes take effect immediately. It is recommended that tielines be added off-line. That ensures that all settings are correct before you go "live."

Tielines can be added using a wizard or page, as follows:

- 'Add Tieline' wizard (accessed through the 'Tasks' pane) — A step-by-step guide to add a single tieline. Opens the 'Tieline Details' page through which router physical levels are mapped.
- 'Tielines' page (accessed through the 'Configuration' pane) — A list of existing tielines to which a new tieline can be added. Opens the 'Tieline Details' page through which physical levels are defined.

To quickly add several tielines, minimal information for each tieline can be entered in the 'Add Tieline' wizard and then the Finish button is clicked. This adds the tieline name and clears all fields so that another tieline can be added immediately. However, no details for the tieline, such as physical levels, are added. Tieline details are added using the 'Tielines' page accessed through the 'Configuration' pane.

How to Add a Tieline Using the 'Add Tieline' Wizard or 'Tielines' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)
2 From the Navigation area, select the 'Tasks' pane and then 'Add Tieline'.

Or

From the Navigation area, select the 'Configuration' pane and then 'Tielines'. The 'Tielines' page displays. On the 'Tielines' page, click Add Tieline. The 'Add Tieline' page appears:
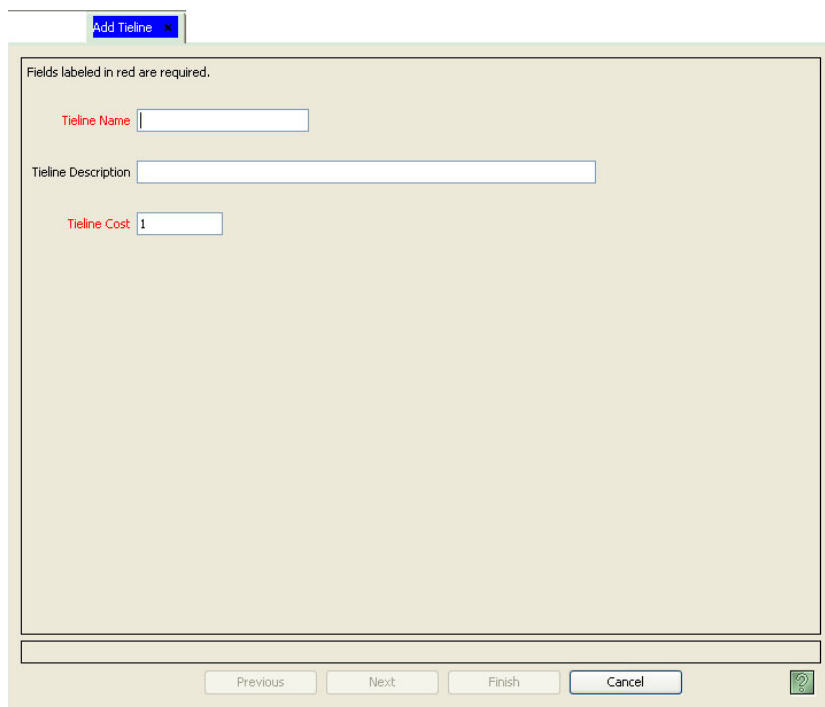
Figure 16-3. Add Tieline Page

3 Enter information in the fields provided. (Red titles denote required fields.)

Field	Description
Tieline Name	Enter a name for the tieline. Be sure to use a unique name that is descriptive. The name is limited to 8 characters. Do not use punctuation marks or symbols.
Tieline Description	(Optional) Enter a brief description of the tieline.
Tieline Cost	Enter a numeric value for the cost of the tieline. The lower the number, the less expensive the cost of using the route mapped in the tieline. (See Costs on page 457.) This lets operators quickly see which route is the most cost-effective to use when more than one option is available.

4 Click Next. The 'Tieline Details' page appears. Continue to Step 5.

Or

Click Finish to save minimal tieline information, clear all fields, and immediately add another tieline. The tielines are added in name only and without physical levels. To add details, locate the tieline and perform steps 5 through 10 as described in this procedure. (See .)

Or

Click Cancel to clear the fields without saving any information.

5 Select devices for the tieline configuration. Devices are listed in the 'Phys Levels' section:

In the 'Upstream' section, check the check box next to the source router. The router displays as a green figure in the 'Graph' field, as shown in Figure 16-4. Only one upstream device may be selected.

In the 'Downstream' section, check the check box next to the destination device. Multiple destination devices may be selected. The device displays as an amber figure in the 'Graph' field:
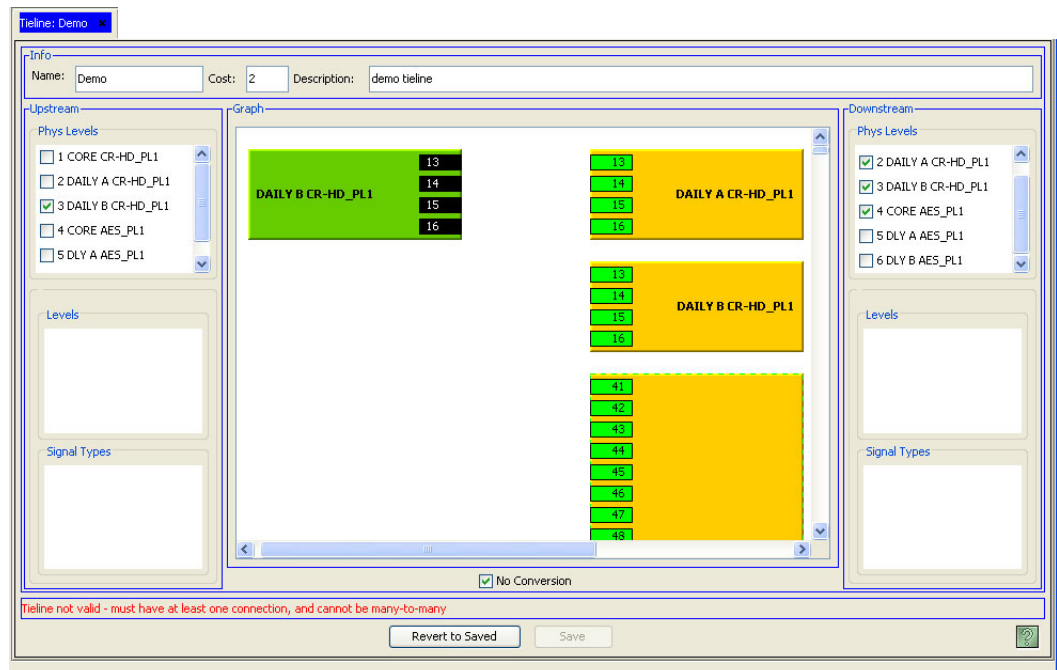
Figure 16-4. Tieline Details Page, New Tieline

6 Using your mouse pointer, draw an arrow from the downstream port to the upstream port. (See Using the 'Tieline Details' Page on page 460.) Multiple downstream ports may be mapped to one upstream port, but multiple downstream ports cannot be mapped to multiple upstream ports (and vice versa). If no ports are listed (e.g. numbered box), there are no ports available for the tieline.

As each port is selected, you can click on the arrow to activate the 'Virtual 'Levels' and 'Signal Types' sections and view the corresponding virtual levels and signal types for that port.

7 (Optional) In the 'Virtual Levels' section, check the check box next to each virtual level that represent the signal types you want to "bind" to the tieline.(See Signal Binding on page 458.) The signals associated with the virtual level display in the 'Signal Types' section.

8 Repeat step 5 through 7 until all tielines have been created. To remove a tieline, select the arrow and then press Delete on your keyboard.

9 Click Save.

10 Click X on the window title tab to close the page.

Locating and Viewing Existing Tieline Details

Depending on the information you want to view, different pages or tables present different tieline information. The 'Tielines' page, accessed through the 'Configuration' pane, lists all existing tielines. From this page you can open the 'Tielines Details' page to view a graphic representation of the tieline and the signals and levels involved. See How to Locate and View Existing Tielines Using the 'Tielines' Page on page 464.

Six tables, accessed through the 'Views' pane, present specific tieline information. These tables are for reference purposes only, with the exception of the 'Tieline' table, which can be used to update costs information. (See Changing Tieline Cost on page 476.) For a detailed description of each table, see Using Tables to View Tieline Details on page 466. To update tieline information, see Updating a Tieline on page 473.

How to Locate and View Existing Tielines Using the 'Tielines' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Tielines'. The 'Tielines' page displays, as shown in Figure 16-5. All tielines currently defined in the system are listed.

To narrow the list, enter the first characters of the tieline's name in the 'Name Filter' field. The list is automatically reduced to display only tielines matching the character string.
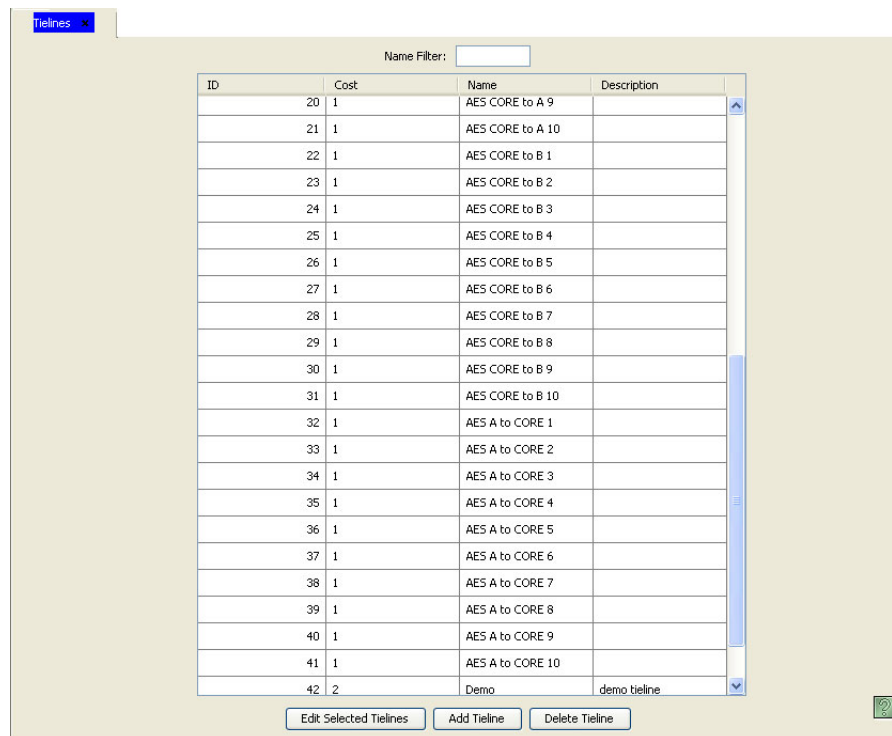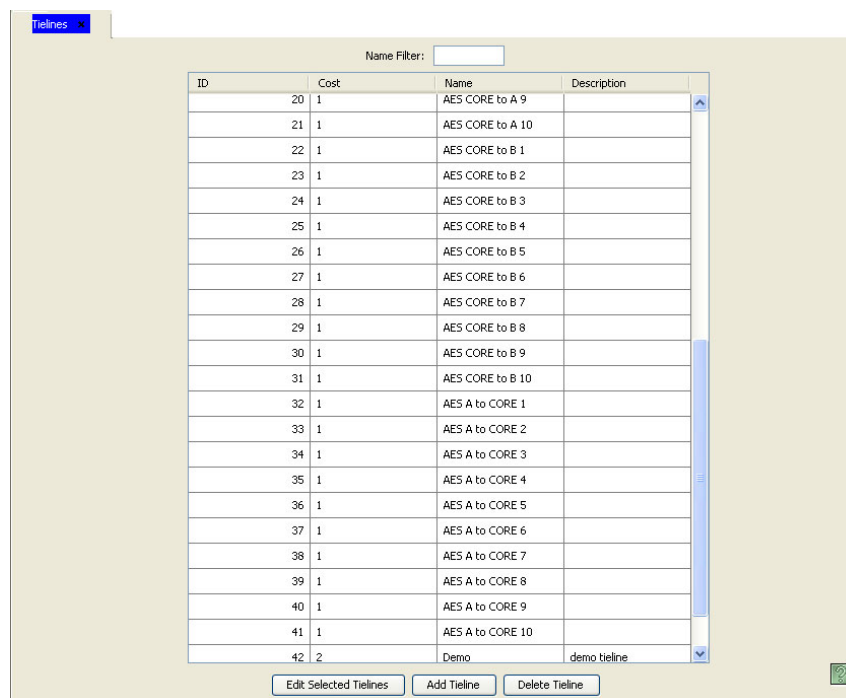

Figure 16-5. Tieline Page

The 'Name' column lists the name assigned the tieline in NV9000-SE.

3 Double click on a single row to view details for each tieline in the 'Tieline Details' page.

Or

Click anywhere in the row listing the tieline being viewed and click Edit Selected Tieline. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple tielines. Each tieline opens in a separate tabbed window. Click the tab to bring the window forward.

In the 'Upstream' and 'Downstream' areas of the screen, the following sections display information, as follows:

Section	Description
PhysLevel	The routers or physical devices available. The checked router/device is included in the tieline and represented in the 'Graph' section of the screen.
Virtual Levels	The virtual levels associated with the device. If checked, the level and corresponding signal types are "bound" to the tieline. (See Signal Binding on page 458.)
Signal Types	For each virtual level selected, the signal types associated with that virtual level display.
Graph	Located in the center of the screen, this section provide a graphical representation of the ports connected to create the tieline, including specific port numbers.

4 Click X on the window title tab to close the page.

Using Tables to View Tieline Details

Each table presents a unique set of information. Tielines created and updated in the 'Tieline Details' page are reflected in these tables. These tables are for reference purposes only. Do not change any information on these tables. To update a tieline, see Updating a Tieline on page 473.

The following tables display specific tieline information:

- 'Tieline' table—A list of existing tielines, one per row, with name, ID and cost.
- 'Tieline Path' table—A list of each path for each tieline, one path per row. This table lists all paths, if a route can be made between devices using existing tielines, and if the route is efficient. This table also provides a quick and easy way to see if a tieline can be created between two physical levels (all possible combinations are listed).
- 'Tieline Path Detail' table—A list of each tieline used to make a route, one input tieline and one output tieline per row. In other words, the table lists each "hop" required to complete a route with each row representing a single hop. Some routes require more than one tieline.
- 'Tieline Port Binding' table—A list of each port in a tieline, one port per row. When a tieline is created, the port used is "bound" to that tieline such that no other device or tieline can use it.
- 'Tieline Reservation' table—This table provides a "snapshot" of the server side. When a tieline is reserved, all of its ports and resources cannot be used by another tieline.
- 'Tieline Signal Binding' table—A list of signals that a tieline can pass. Each row lists one signal and its corresponding tieline input and tieline output.

Viewing the 'Tieline' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)
2 From the Navigation area, select the 'Views' pane and then 'Tieline'. The 'Tieline' table appears, as shown in Figure 16-6.

To narrow the list of tielines that display, enter the first characters of a tieline name in the 'Name Filter' field. The list is automatically reduced to display only tielines matching that character string.
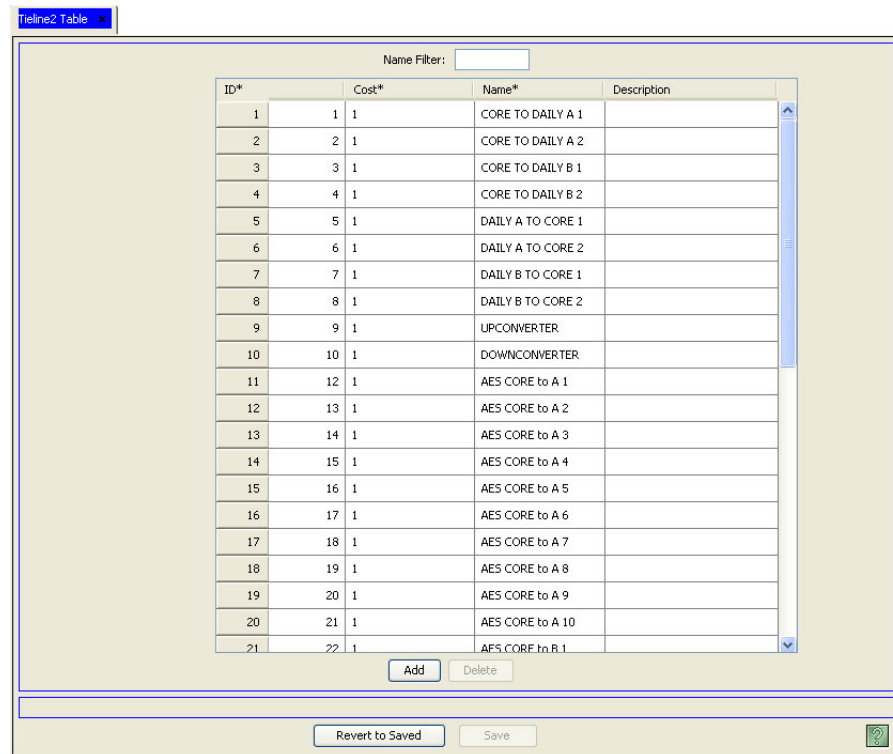
Figure 16-6. Tieline Table

Four columns display tieline information. Each row represents a single tieline.

Column	Description
ID	Lists the ID number associated with the tieline
Cost	The numeric "weight" assigned to the tieline. (See Costs on page 457.)
Name	Lists the name associated with the tieline.
Description	The description, if any, associated with the tieline.

3 Click X on the window title tab to close the table.

Viewing the 'Tieline Path' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Tieline Path'. The 'Tieline Path' table appears, as shown in Figure 16-7.

To narrow the list of tielines that display, enter the first characters of a source (upstream) physical level in the 'Source Phys Level Filter' field.

Or

Enter the first characters of a source signal type in the 'Source Signal Type Filter' field.

Or

Enter the first characters of a destination (downstream) physical level in the 'Dest Phys Level Filter' field.

Or

Enter the first characters of a destination signal type in the 'Dest Signal Type Filter' field.

The list is automatically reduced to display only tielines matching those character strings entered.

Figure 16-7. Tieline Path Table

Several columns display tieline information. Each row represents a single tieline path.

Column	Description
ID	Lists the ID number associated with the tieline
Source Phys Level	The physical level associated with the upstream device.
Source Signal Type	The signal type associated with the upstream device.
Dest Phys Level	The physical level associated with the downstream device.
Dest Signal Type	The signal type associated with the downstream device.
Hop Count	The number of "jumps" to route from a source to a destination. The more jumps required, the higher the count. See Hop Count on page 458.
Cost	The numeric "weight" assigned to the tieline. (See Costs on page 457.) If no cost is assigned, by default the cost is the sum of the "hops"—the hop count—required to complete the route.

3 Click X on the window title tab to close the table.

Viewing the 'Tieline Path Detail' Table

1 Launch NV9000-SE. (See

2 From the Navigation area, select the 'Views' pane and then 'Tieline Path Detail'. The 'Tieline Path Detail' table appears, as shown in Figure 16-8.

To narrow the list of tielines that display, enter the first digits of a Tieline path ID number in the 'Path Filter' field.

Or

Enter the first characters of a source (upstream device) in the 'Input Tieline' field.

Or

Enter the first characters of a destination (downstream device) in the 'Output Tieline' field.

Or

Enter the first characters of a physical level in the 'Phys Level Filter' field.

The list is automatically reduced to display only tielines matching those character strings entered.

Figure 16-8. Tieline Path Detail Table

Several columns display tieline information. Each row represents a single input or output for a tieline.

Column	Description
Tieline Path	Lists the ID number associated with the specific tieline path.
Signal Type	The signal type associated with the tieline.
Input Tieline	The source (upstream device) specified for the tieline; one per row.
Output Tieline	The destination (downstream device) specified for the tieline; one per row.

Column	Description
Phys Level	The physical level associated with the tieline.
Input Port	The source (upstream device) port specified for the tieline; one per row. Negative numbers specify that this port is the beginning of the tieline.
Output Port	The destination (downstream device) port specified for the tieline; one per row. Negative numbers specify that this port is the ending point of the tieline.
Segment Index	Each indicates which step in a multi-hop tieline this is. A single hop tieline will always have an index of zero.

3 Click X on the window title tab to close the table.

Viewing the 'Tieline Port Binding' Table

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Tieline Port Binding'. The 'Tieline Port Binding' table appears, as shown in Figure 16-9.

To narrow the list of tielines that display, enter the first character of a tieline name in the 'Tieline Filter' field.

And/Or

Enter the first characters of a physical level in the 'Phys Level Filter' field.

(Remote tielines are not currently implemented.)

The list is automatically reduced to display only tielines matching those character strings entered.

Figure 16-9. Tieline Port Binding Table

Several columns display tieline information. Each row represents a single port.

Column	Description
ID	Lists the ID number associated with the specific tieline path.
Tieline	The name of the tieline.
PhysLevel	The physical level associated with the tieline.
Direction	Whether the port is an input or output.
Port	The number assigned to the port on the device.
Remote	(This feature is not currently implemented.)

3 Click **X** on the window title tab to close the table.

Viewing the 'Tieline Reservation' Table

1 Launch NV9000-SE. (See)

2 From the Navigation area, select the 'Views' pane and then 'Tieline Reservation'. The 'Tieline Reservation' table appears, as shown in Figure 16-10.

To narrow the list of tielines that display, enter the first characters of Tieline name in the 'Tieline Filter' field. The list is automatically reduced to display only tielines matching the character strings entered.


Figure 16-10. Tieline Reservation Table

Several columns display tieline information.

Column	Description
Tieline	The name of the tieline.
User	The Miranda NV9000 user that requested the tieline.

Column	Description
IP Address	The IP address from which the request was made.
LTC	Linear Time Code. This is used if the tieline crosses several time codes
Timestamp	The time when the reservation for the tieline was put into use. This is the time the tieline was actually put into use. This is important if someone has a tieline in use and, for example, forgets to release the tieline.
Source Phys Level	The physical level (upstream device) for the tieline.
Source Signal Type	The signal type associated with the upstream device.
Source Port	The source (upstream device) port for the tieline.
Dest Phys Level	The physical level (downstream device) for the tieline.
Dest Signal Type	The signal type associated with the downstream device.
Dest Port	The destination (downstream device) port for the tieline.
Downstream Port	The router's input port on the router that the tieline feeds into.
Upstream Port	The router's output port that is feeding into the tieline.

3 Click X on the window title tab to close the table.

Viewing the 'Tieline Signal Binding' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Tieline Signal Binding'. The 'Tieline Signal Binding' table appears, as shown in Figure 16-11.

To narrow the list of tielines that display, enter the first character of a signal binding name in the 'Port Binding Filter' field.

And/Or

Enter the first characters of a signal type in the 'Signal Type Filter' field.

The list is automatically reduced to display only tielines matching those character strings entered.
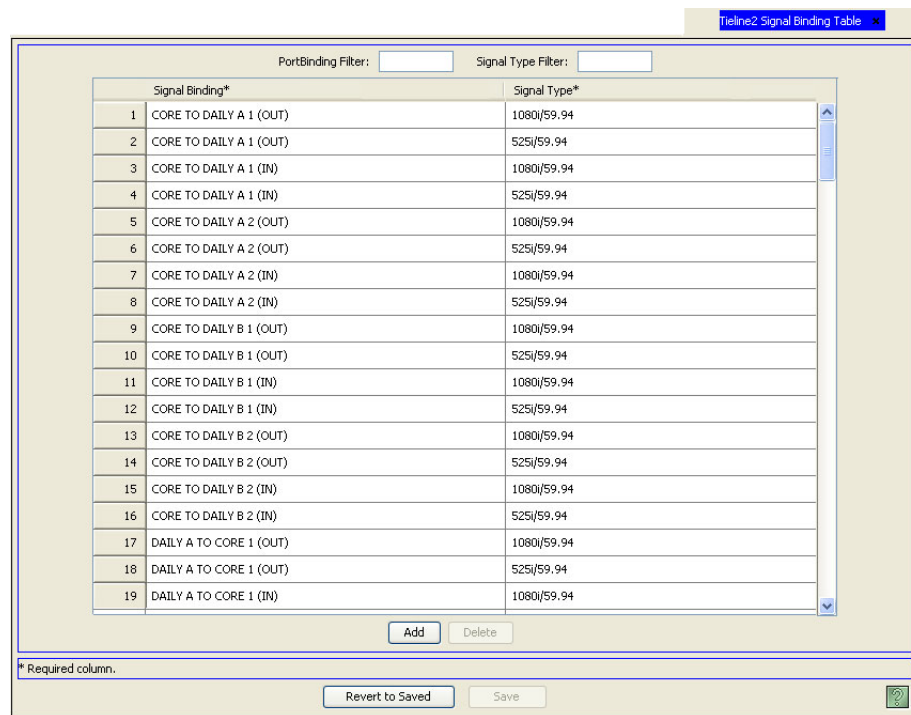
Figure 16-11. Tieline Signal Binding Table

Two columns display tieline information.

Column	Description
Signal Binding	The device and if it is upstream (out) or downstream (in) whose signal bound to the tieline. See Signal Binding on page 458.
Signal Type	The signal type bound.

3 Click **X** on the window title tab to close the table.

Updating a Tieline

A tieline can be updated at any time. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected devices. For information on implementing changes, see Implementing Configuration Changes on page 17.

If currently connected to the NV9000 system controller and NV9000-SE, configuration changes take effect immediately. It is recommended that tielines be updated off-line. That ensures that all settings are correct before you go "live".

When updating tieline information, it is recommended that you use the 'Tielines' page or the 'Tielines' table only. Information that displays through all other tables is for reference purposes only and should not be changed. The 'Tielines' page is accessed through the 'Configuration' pane

and the 'Tielines' table is accessed through the 'Views' pane. Changes made in the 'Tielines' page and 'Tielines' table are reflected in all other associated tables accessed through the 'Views' pane.

Different NV9000-SE interfaces perform specific tasks, as follow:

Task	Interface	Pane
Changing a Tieline Group Name or Description on page 490	Tieline Page, Tieline Table	Configuration, Views
Changing Tieline Cost on page 476	Tieline Page	Configuration
Adding and Removing Tielines in a Tieline Group on page 492	Tieline Page	Configuration
Changing Virtual Levels and Signal Types on page 479	Tieline Page	Configuration

Changing a Tieline Name or Description

It is important that tieline names are unique and descriptive in order to avoid confusion. Once changed, the new tieline name populates all instances of that name throughout the system.

Tieline names and descriptions can be changed using the 'Tielines' page, accessed through the 'Configuration' pane or the 'Tielines' table, accessed through the 'Views' pane.

How to Change a Tieline Name Using the 'Tielines' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Tielines'. The 'Tielines' page displays, as shown in Figure 16-12. All tielines currently defined in the system are listed.

To narrow the list, enter the first characters of the tieline's name in the 'Name Filter' field. The list is automatically reduced to display only tielines matching that character string.
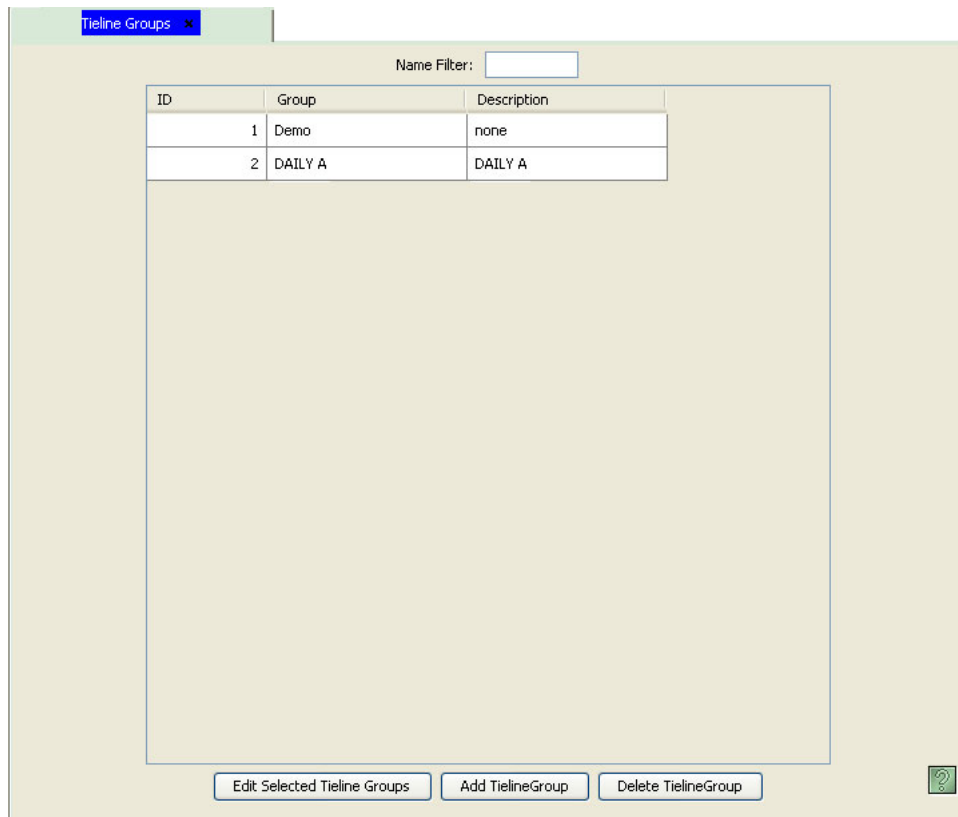

Figure 16-12. Tieline Page

The 'Name' column lists the name assigned the tieline in NV9000-SE.

3 Double click on a single row to view details for that tieline in the 'Tieline Detail' page.

Or

Click anywhere in the row listing the tieline being viewed and click Edit Selected Tieline. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple tielines. Each tieline opens in a separate tabbed window. Click the tab to bring the window forward.

4 In the 'Name' field located at the top of the screen, enter the new tieline name.

5 In the 'Description' field, enter a new description.

6 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

7 Click **X** on the window title tab to close the page.

How to Change a Tieline Name Using the 'Tieline' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Tieline'. The 'Tieline' table appears, as shown in Figure 16-13.

To narrow the list of tielines that display, enter the first characters of a tieline name in the 'Name Filter' field. The list is automatically reduced to display only tielines matching that character string.

ID*	Cost*	Name*	Description
1	1	1	CORE TO DAILY A 1	
2	2	1	CORE TO DAILY A 2	
3	3	1	CORE TO DAILY B 1	
4	4	1	CORE TO DAILY B 2	
5	5	1	DAILY A TO CORE 1	
6	6	1	DAILY A TO CORE 2	
7	7	1	DAILY B TO CORE 1	
8	8	1	DAILY B TO CORE 2	
9	9	1	UPCONVERTER	
10	10	1	DOWNCONVERTER	
11	12	1	AES CORE to A 1	
12	13	1	AES CORE to A 2	
13	14	1	AES CORE to A 3	
14	15	1	AES CORE to A 4	
15	16	1	AES CORE to A 5	
16	17	1	AES CORE to A 6	
17	18	1	AES CORE to A 7	
18	19	1	AES CORE to A 8	
19	20	1	AES CORE to A 9	
20	21	1	AES CORE to A 10	
21	22	1	AES CORE to B 1	

Figure 16-13. Tieline Table

3 Click on the 'Name' field to activate it and enter a new name.

4 Click on the 'Description' field to activate it and enter a new description.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Changing Tieline Cost

The cost associated with a tieline represents the financial expenditure required to route using that tieline. The cost numbers are representative and not actual dollars. The lower the number, the cheaper the tieline. For example, a cost of "1" means that the tieline is cheaper to use for switching than a tieline with a cost of "3". For more information, see Costs on page 457.

Tieline costs can be changed using the 'Tielines' table, accessed through the 'Views' pane.

How to Change a Tieline Cost

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Tieline'. The 'Tieline' table appears, as shown in Figure 16-14.

To narrow the list of tielines that display, enter the first characters of a tieline name in the 'Name Filter' field. The list is automatically reduced to display only tielines matching that character string.

Figure 16-14. Tieline Table

3 Click on the 'Cost' field to activate it and enter a new cost number. Do not use decimal points, commas or punctuations, however negative number (i.e., –2, –3) are allowed.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the table.

Adding and Removing Physical Levels (Devices)

The physical levels, or devices, associated with a tieline can be changed at any time. If adding a device, connections to that device must be created. However, connections to the still existing device remain intact. If removing a device all previous connections to that device are removed. This "breaks" the previously configured tieline and all operators using that tieline will no longer be able to route successfully. In short, when you choose to add a device you must create the new connections to the new device. If you remove a device, you must create new connections to replace the ones removed with the old device.

Physical levels are changed using the 'Tieline' page, accessed through the 'Configuration' pane.

How to Change a Tieline Physical Level

1 Launch NV9000-SE. (See)

2 From the Navigation area, select the 'Configuration' pane and then 'Tielines'. The 'Tielines' page displays, as shown in Figure 16-15. All tielines currently defined in the system are listed.

To narrow the list, enter the first characters of the tieline's name in the 'Name Filter' field. The list is automatically reduced to display only tielines matching that character string.


| ID	Cost	Name	Description
20	1	AES CORE to A 9	
21	1	AES CORE to A 10	
22	1	AES CORE to B 1	
23	1	AES CORE to B 2	
24	1	AES CORE to B 3	
25	1	AES CORE to B 4	
26	1	AES CORE to B 5	
27	1	AES CORE to B 6	
28	1	AES CORE to B 7	
29	1	AES CORE to B 8	
30	1	AES CORE to B 9	
31	1	AES CORE to B 10	
32	1	AES A to CORE 1	
33	1	AES A to CORE 2	
34	1	AES A to CORE 3	
35	1	AES A to CORE 4	
36	1	AES A to CORE 5	
37	1	AES A to CORE 6	
38	1	AES A to CORE 7	
39	1	AES A to CORE 8	
40	1	AES A to CORE 9	
41	1	AES A to CORE 10	
42	2	Demo	demo tieline

Figure 16-15. Tieline Page

The 'Name' column lists the name assigned the tieline in NV9000-SE.

3 Double click on a single row to view details for that tieline in the 'Tieline Detail' page.

Or

Click anywhere in the row listing the tieline being viewed and click **Edit Selected Tieline**. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple tielines. Each tieline opens in a separate tabbed window. Click the tab to bring the window forward.

4 If adding a device, select a new device(s) for the tieline configuration. Devices are listed in the 'Phys Levels' section:

In the 'Upstream' section, check the check box next to the new source router, if needed. The router displays as a green figure in the 'Graph' field, as shown in Figure 16-16. Only one upstream device may be selected.

In the 'Downstream' section, check the check box next to the destination device, if needed. Multiple destination devices may be selected. The device displays as an amber figure in the 'Graph' field:
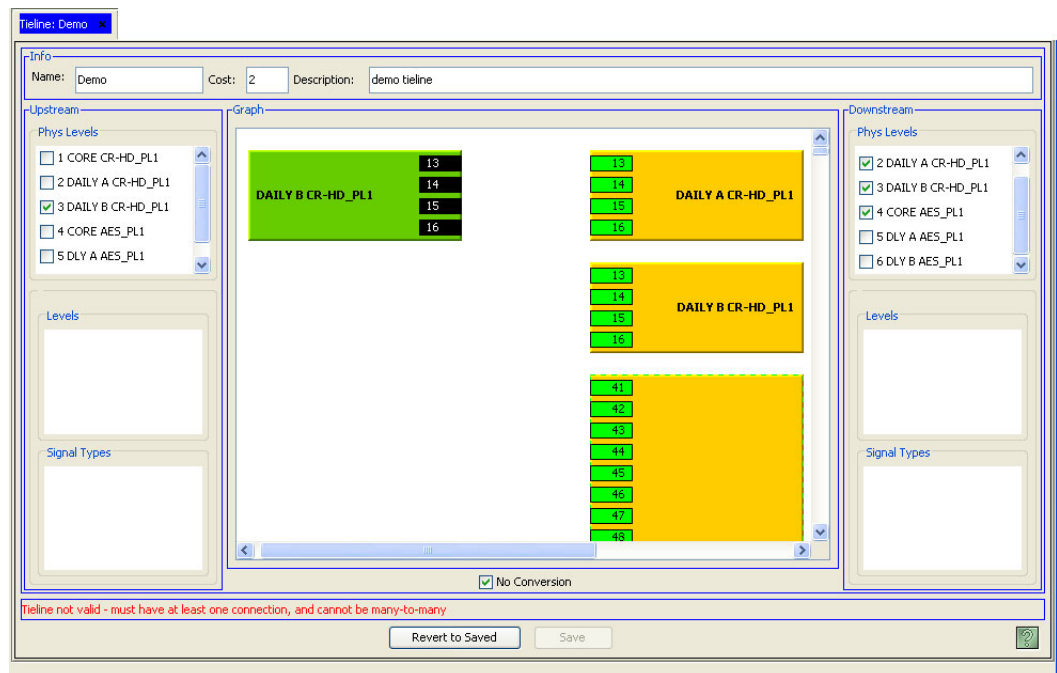
Figure 16-16. Tieline Details Page, New Tieline

5 If removing a device, uncheck the check box in the 'Phys Level' section (either 'Upstream' or 'Downstream') that corresponds to the device you want to remove. The device disappears from the 'Graph' section.

6 Depending on the devices that now display in the 'Graph' section, create connections as needed.

Using your mouse pointer, draw an arrow from the downstream port to the upstream port. (See Using the 'Tieline Details' Page on page 460.) Multiple downstream ports may be mapped to one upstream port, but multiple downstream ports cannot be mapped to multiple upstream ports (and vice versa). If no ports are listed (e.g. numbered box), there are no ports available for the tieline.

As each port is selected, you can click on the arrow to activate the 'Virtual 'Levels' and 'Signal Types' sections and view the corresponding virtual levels and signal types for that port.

7 (Optional) In the 'Virtual Levels' section, check the check box next to each virtual level that represent the signal types you want to "bind" to the tieline. (See Signal Binding on page 458.) The signals associated with the virtual level display in the 'Signal Types' section.

8 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

9 Click X on the window title tab to close the page.

Changing Virtual Levels and Signal Types

The virtual levels associated with a tieline can be changed at any time. Virtual levels and signals for a specific connection are viewed by clicking on the arrow in the 'Graph' section that represents the connection. As each arrow is selected, the 'Virtual 'Levels' and 'Signal Types' sections populate with the currently selected virtual levels and signal types for that port.

Virtual levels and signal types must be compatible between devices. For example, you cannot route an HD signal from and upstream device to a downstream device that only manages audio signals.

Virtual levels and signal types are changed using the 'Tieline' page, accessed through the 'Configuration' pane.

How to Change a Tieline Virtual Level or Signal Type

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Tielines'. The 'Tielines' page displays, as shown in Figure 16-17. All tielines currently defined in the system are listed.

To narrow the list, enter the first characters of the tieline's name in the 'Name Filter' field. The list is automatically reduced to display only tielines matching that character string.
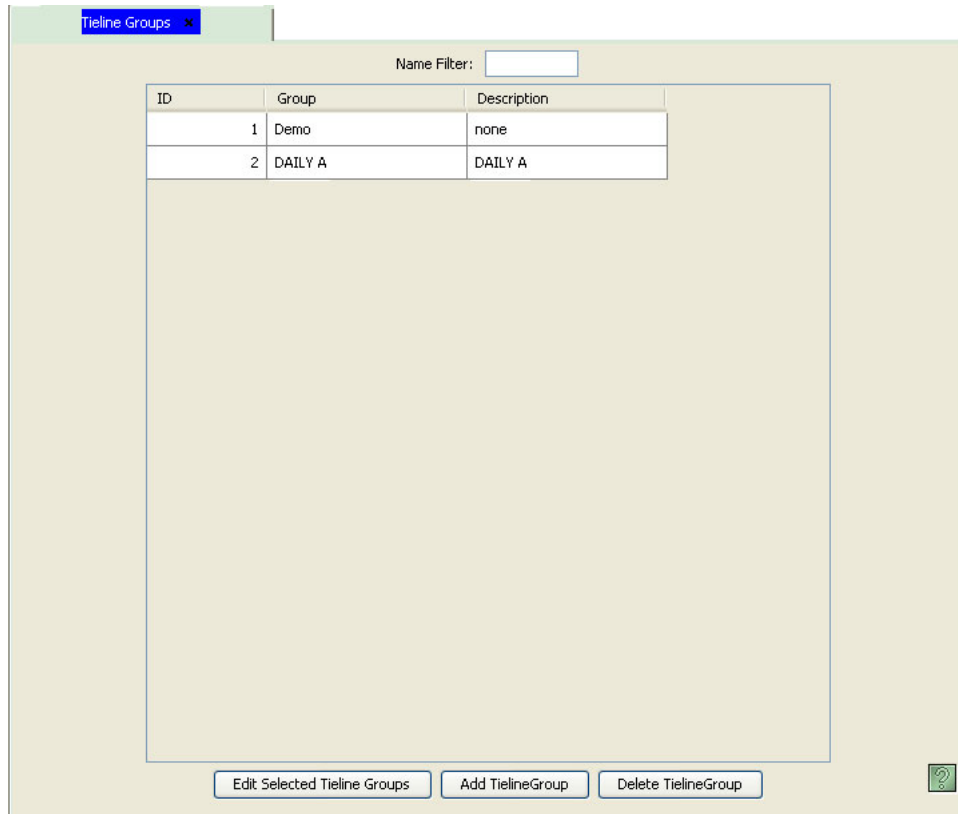
Figure 16-17. Tieline Page

3 Double click on a single row to view details for that tieline in the 'Tieline Detail' page.

Or

Click anywhere in the row listing the tieline being viewed and click Edit Selected Tieline. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple tielines. Each tieline opens in a separate tabbed window. Click the tab to bring the window forward.

4 In the 'Graph' section, click on an arrow. Corresponding 'Virtual Levels' and 'Signal Types' display in the related sections, as shown in Figure 16-18. Only one arrow may be selected at any one time.
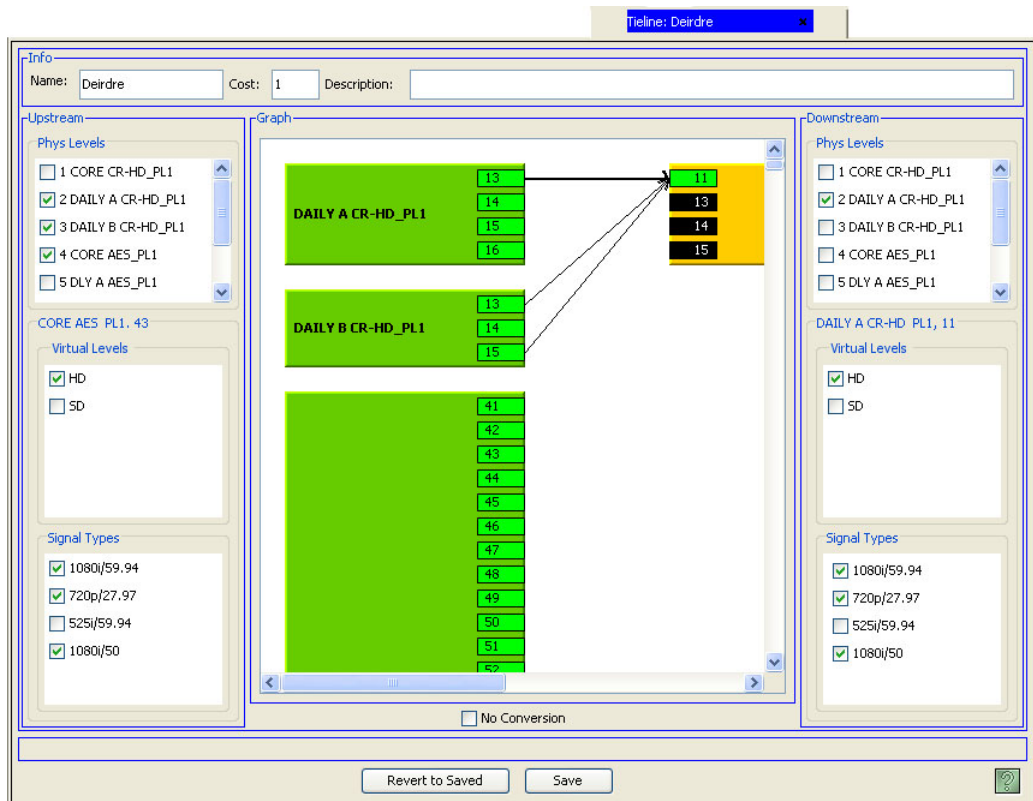
Figure 16-18. Tieline Details Page - New Tieline

5 In the 'Upstream' and 'Downstream' areas, in the 'Virtual Levels' section, check a check box to select the associated level. Selecting a virtual level selects all signal types associated with that level.

Or

Uncheck a check box to deselect the associated level. Deselecting a virtual level deselects all signal types associated with that level.

6 In the 'Upstream' and 'Downstream' areas, in the 'Signal Types' section, check a check box to select the associated signal.

Or

Uncheck a check box to deselect the associated signal.

7 Click Save.

Or

> To revert to previously saved configuration, click Revert to Saved.

8 Click X on the window title tab to close the page.

Deleting a Tieline

Tielines can be deleted from the NV9000-SE system at any time. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

If currently connected to the NV9000 system controller and NV9000-SE, configuration changes take effect immediately. It is recommended that tielines be removed off-line. That ensures that all settings are correct before you go "live."

Tielines can be deleted using the 'Tielines' page accessed through the 'Configuration' pane.

How to Delete a Tieline

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Tielines'. The 'Tielines' page displays, as shown in Figure 16-19. All tielines currently defined in the system are listed.

To narrow the list, enter the first characters of the tieline's name in the 'Name Filter' field. The list is automatically reduced to display only tielines matching that character string.
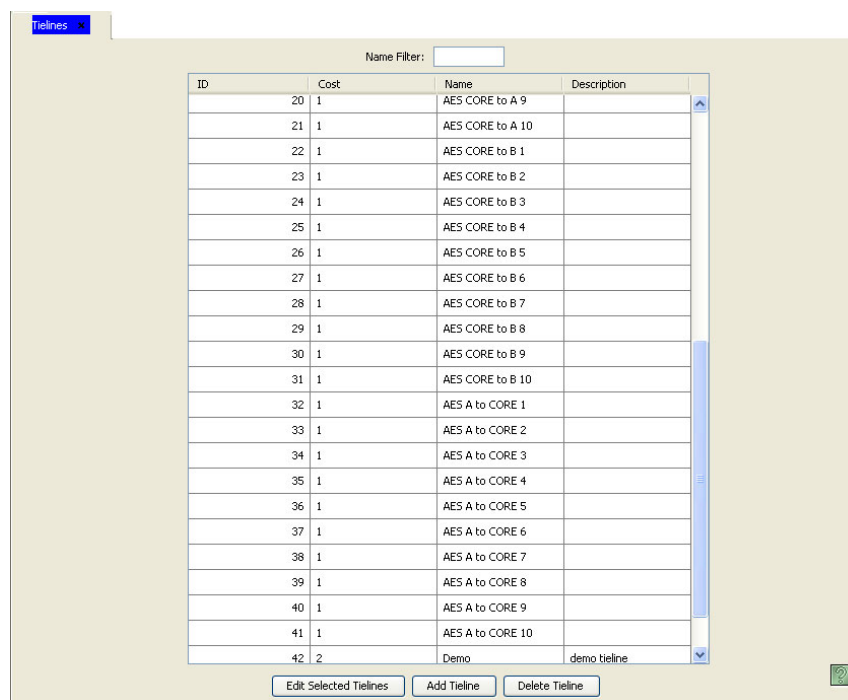
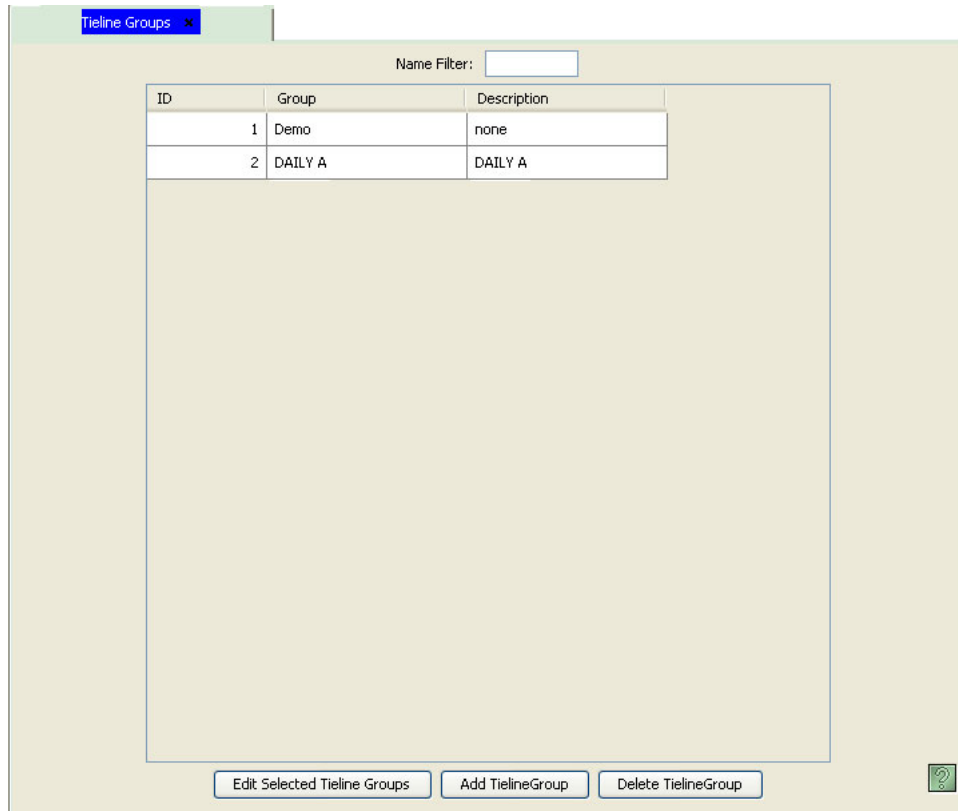

Figure 16-19. Tieline Page

The 'Name' column lists the name assigned the tieline in NV9000-SE.

3 Click anywhere in the row listing the tieline you want to delete and click Delete Tieline. The row
is removed from the table.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the page.

Managing Tieline Groups

Tielines can be combined into groups for easy management. Because tielines are often consistently
used with other tielines, grouping provides a quick and easy way to add multiple tielines. For exam-
ple, if specific audio is always paired with specific video, grouping the audio tielines and video
tielines enables you to add both tielines in one easy step. (See Creating a Tieline on page 461.)

A tieline can only belong to one group at any time. When applying a group to a device, all tielines
in the tieline group are reserved. Once a group is created, it appears as an option when selecting
tielines to apply to devices.

Creating a Tieline Group

A tieline group can be created and configured at any time. Once changes are saved, there is no
"undo" function; the configuration is permanently altered. To implement saved configuration
changes, the changes must be written to the NV9000 system controller for dispersal to connected
routers. For information on implementing changes, see Implementing Configuration Changes on
page 17.

Tieline groups can be added using a wizard or page, as follows:

• 'Add Tieline Group' wizard (accessed through the 'Tasks' pane)—A step-by-step guide to add
a single tieline group. Opens the 'Tieline Group Details' page through which tielines are
selected and added to the group.

• 'Tieline Groups' page (accessed through the 'Configuration' pane)—A list of existing tieline
groups to which a new tieline group can be added. Opens the 'Tieline Group Details' page
through which tielines in the group are defined.

To quickly add several tieline groups, minimal information for each group can be entered in the
'Add Tieline Group' wizard and then the Finish button clicked. This adds the tieline group name and
clears all fields so that another tieline group can be added immediately. However, no details for the
tieline group, such as tielines within the group, are added. Tieline group details are added using the
'Tieline Groups' page accessed through the 'Configuration' pane.

How to Add a Tieline Group

Use the 'Add Tieline Group' wizard or 'Tieline Groups' page.

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Tasks' pane and then 'Add Tieline Group'.

Or

From the Navigation area, select the 'Configuration' pane and then 'Tieline Groups'. The 'Tieline Groups' page displays. On the 'Tieline Groups' page, click **Add Tieline Group.**

The 'Add Tieline Group' page appears:

Figure 16-20. Add Tieline Group Page

3 Enter information in the fields provided (Red titles denote required fields):

Field	Description
Tieline Group Name	Enter a name for the tieline group. Be sure to use a unique name that is descriptive. The name is limited to 8 characters. Do not use punctuation marks or symbols.
Tieline Group Description	(Optional) Enter a brief description of the tieline group.

4 Click Next. The 'Tieline Group Details' page appears, as shown in . Continue to Step 5.

Or

Click Finish to save minimal tieline group information, clear all fields, and immediately add another tieline group. The tieline group is added in name only and without any tielines added to the group. To add tielines, locate the tieline group and perform steps 5 through 10 as described in this procedure. (See .)

Or

Click Cancel to clear the fields without saving any information.

Figure 16-21. Tieline Group Details Page, New Group

5 Select a tieline from 'Tielines Available' list and click the left facing arrow. The tieline appears in the 'Tielines in Group' section, as shown in Figure 16-22. Continue until all tielines you

want to add appear in the 'Tielines in Group' list. To remove a tieline from the group, select the tieline and click the right facing arrow.
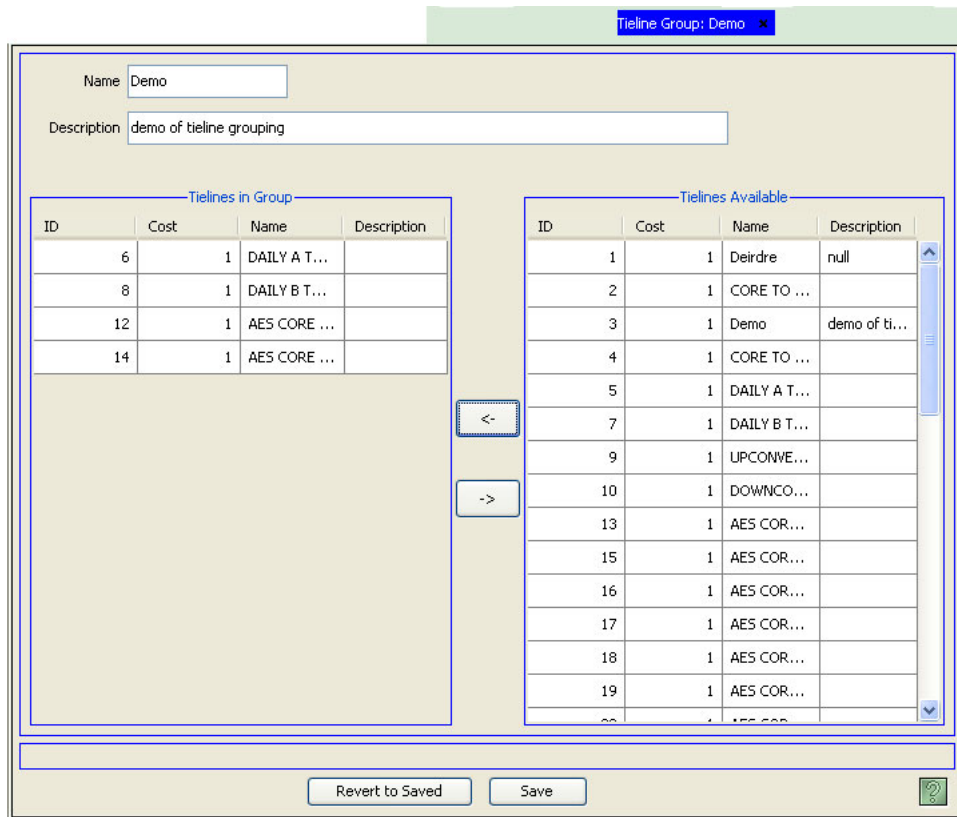
Figure 16-22. Tieline Group Details Page

6 Click Save.

7 Click X on the window title tab to close the page.

Locating and Viewing Existing Tieline Group Details

Depending on the information you want to view, different pages or tables present different tieline group information. The 'Tieline Groups' page, accessed through the 'Configuration' pane, lists all existing tieline groups. From this page you can open the 'Tieline Group Details' page to view a list of tielines included in the group. See How to Locate and View Existing Tieline Groups Using the 'Tieline Groups' Page on page 485.

Two tables, accessed through the 'Views' pane, present specific tieline group information. These tables are for reference purposes only. For a detailed description of each table, see Using Tables to View Tieline Group Details on page 487. To update tieline information, see Updating a Tieline Group on page 490.

How to Locate and View Existing Tieline Groups Using the 'Tieline Groups' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Tieline Groups'. The 'Tieline Groups' page displays, as shown in Figure 16-23. All tielines currently defined in the system are listed.

To narrow the list, enter the first characters of the tieline group's name in the 'Name Filter' field. The list is automatically reduced to display only tieline groups matching the character string.

Figure 16-23. Tieline Groups Page

The 'Name' column lists the name assigned the tieline group in NV9000-SE.

3 Double click on a single row to view details for that tieline group in the 'Tieline Group Details' page.

Or

Click anywhere in the row listing the tieline being viewed and click Edit Selected Tieline Groups. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple tieline groups. Each tieline group opens in a separate tabbed window. Click the tab to bring the window forward.

The 'Tieline Group Details' page appears:
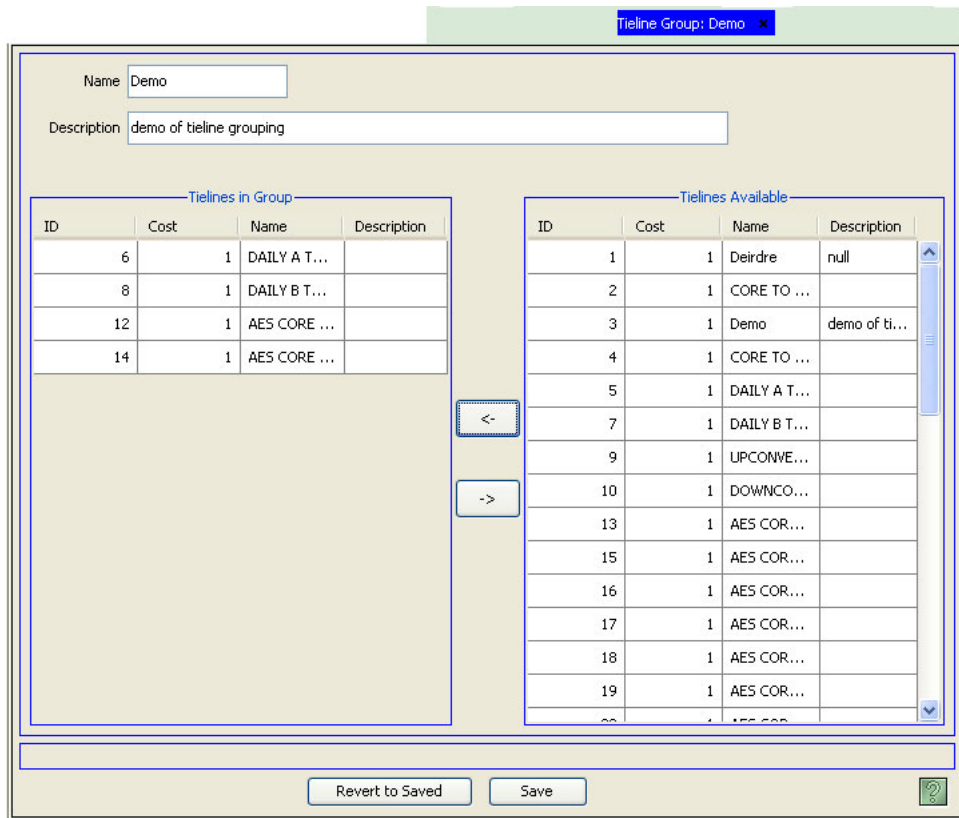
Figure 16-24. Tieline Group Details Page

The 'Tielines in Group' section lists tielines currently included in the group. The 'Tielines Available' section lists tielines not currently in any group. Each section lists details, as follows:

Section	Description
ID	Lists the ID number associated with the tieline.
Cost	The numeric "weight" assigned to the tieline listed on that row. (See Costs on page 457.) If no cost is assigned, by default the cost is the sum of the "hops"—the hop count—required to complete the route.
Name	The name assigned to the tieline.
Description	An optional description of the tieline.

4 Click X on the window title tab to close the page.

Using Tables to View Tieline Group Details

Each table presents a unique set of information. Tielines created and updated in the 'Tieline Group Details' page are reflected in these tables. These tables are for reference purposes only. Do not change any information on these tables. To update a tieline, see Updating a Tieline Group on page 490.

The following tables display specific tieline information:

- 'Tieline Group' table—A list of existing tieline groups, one per row, with name, ID and description.
- 'Tieline Group Binding' table—A list of each tieline in a group, one tieline per row. When a tieline group is created, the tieline added to the group is "bound" to that group such that no other group can use that tieline.

Viewing the 'Tieline Group' Table

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Tieline Group'. The 'Tieline Group' table appears, as shown in Figure 16-25.

To narrow the list of tieline groups that display, enter the first characters of a tieline group name in the 'Name Filter' field. The list is automatically reduced to display only tieline groups matching that character string.
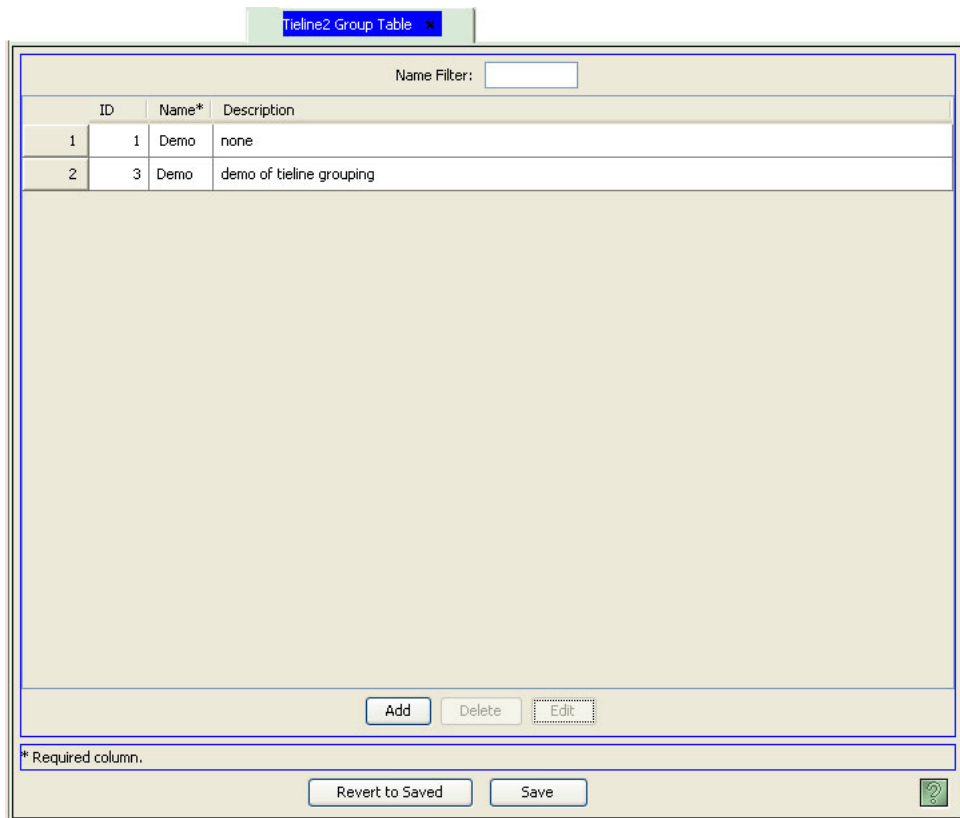
Figure 16-25. Tieline Group Table

Three columns display tieline information. Each row represents a single tieline group.

Column	Description
ID	Lists the ID number associated with the tieline group
Name	Lists the name associated with the tieline group.
Description	The description, if any, associated with the tieline group.

3 Click X on the window title tab to close the table.

Viewing the 'Tieline Group Binding' Table

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Tieline Group Binding'. The 'Tieline Group Binding' table appears, as shown in Figure 16-26.

To narrow the list of tieline groups that display, enter the first character of a tieline group name in the 'Group Filter' field.

And/Or

Enter the first characters of an individual tieline in the 'Tieline Filter' field.

The list is automatically reduced to display only tieline groups matching those character strings entered.
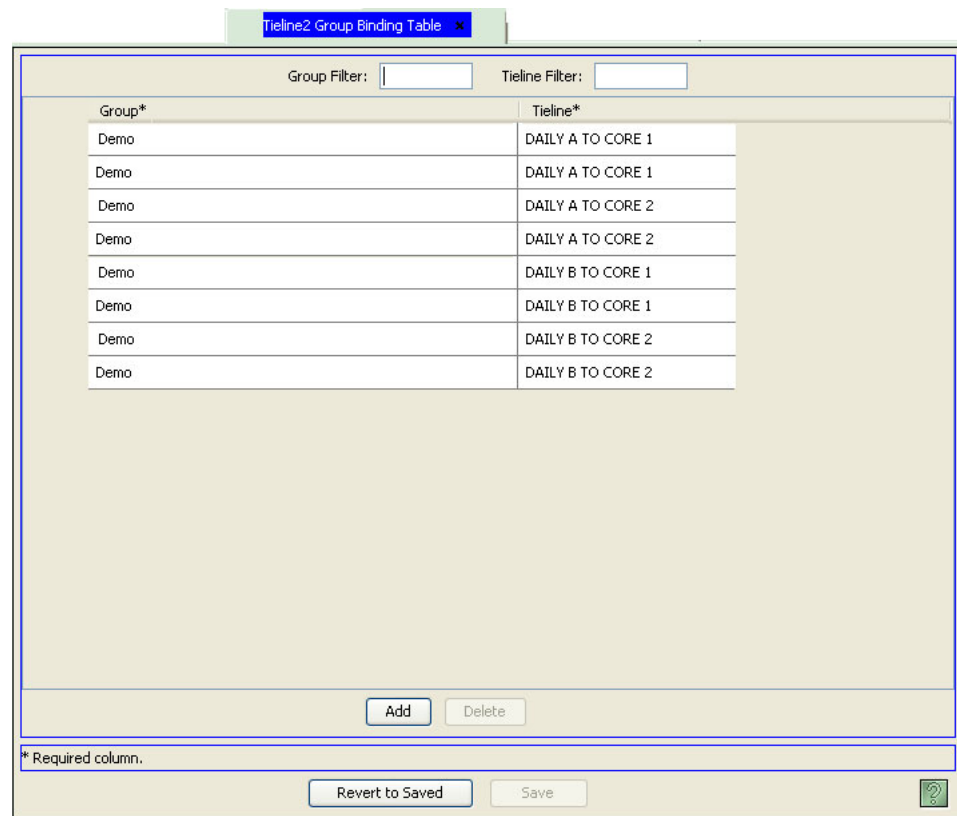
Figure 16-26. Tieline Group Binding Table

Two columns display tieline group information. Each row represents a single tieline.

Column	Description
Group	The name of the tieline group to which the tieline listed on the same row belongs.
Tieline	The name of the tieline.

3 Click X on the window title tab to close the table.

Updating a Tieline Group

A tieline group can be updated at any time. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see <u>Implementing Configuration Changes</u> on page 17.

If currently connected to the NV9000 system controller and NV9000-SE, configuration changes take effect immediately. It is recommended that tielines be updated off-line. That ensures that all settings are correct before you go "live".

When updating tieline group information, it is recommended that you use the 'Tieline Groups' page or the 'Tieline Group' table only. Information that displays through all other tables is for reference purposes only and should not be changed. The 'Tieline Groups' page is accessed through the 'Configuration' pane and the 'Tieline Group' table is accessed through the 'Views' pane. Changes made in the 'Tieline Groups' page and 'Tieline Groups' table are reflected in all other associated tables accessed through the 'Views' pane.

Different NV9000-SE interfaces perform specific tasks, as follow:

Task	Interface	Pane
<u>Changing a Tieline Group Name or Description on page 490</u>	Tieline Groups Page, Tieline Group Table	Configuration, Views
<u>Adding and Removing Tielines in a Tieline Group on page 492</u>	Tieline Groups Page	Configuration

Changing a Tieline Group Name or Description

It is important that tieline group names are unique and descriptive in order to avoid confusion. Once changed, the new tieline group name populates all instances of that name throughout the system.

Tieline group names and descriptions can be changed using the 'Tieline Groups' page, accessed through the 'Configuration' pane or the 'Tieline Group' table, accessed through the 'Views' pane.

How to Change a Tieline Group Name Using the 'Tieline Groups' Page

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Tieline Groups'. The 'Tieline Groups' page displays, as shown in Figure 16-27. All tieline groups currently defined in the system are listed.

To narrow the list, enter the first characters of the tieline group's name in the 'Name Filter' field. The list is automatically reduced to display only tieline groups matching that character string.
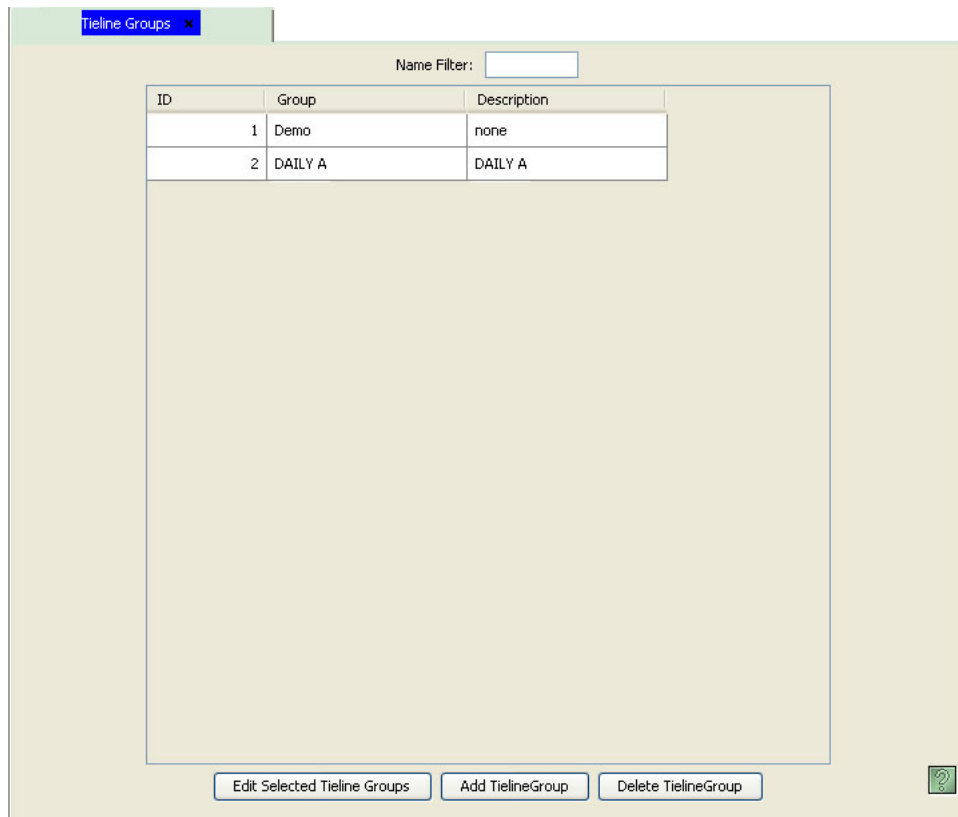

Figure 16-27. Tieline Group Page

The 'Name' column lists the name assigned the tieline group in NV9000-SE.

3 Double click on a single row to view details for that tieline group in the 'Tieline Group Detail' page.

Or

Click anywhere in the row listing the tieline group being viewed and click Edit Selected Tieline. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple tieline groups. Each tieline group opens in a separate tabbed window. Click the tab to bring the window forward.

4 In the 'Name' field located at the top of the screen, enter the new tieline group name.

5 In the 'Description' field, enter a new description.

6 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

7 Click X on the window title tab to close the page.

How to Change a Tieline Group Name Using the 'Tieline Group' Table

1 Launch NV9000-SE. (See [Launching and Exiting the Application](#) on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Tieline Group'. The 'Tieline Group' table appears, as shown in Figure 16-28.

To narrow the list of tielines that display, enter the first characters of a tieline group name in the 'Name Filter' field. The list is automatically reduced to display only tieline groups matching that character string.
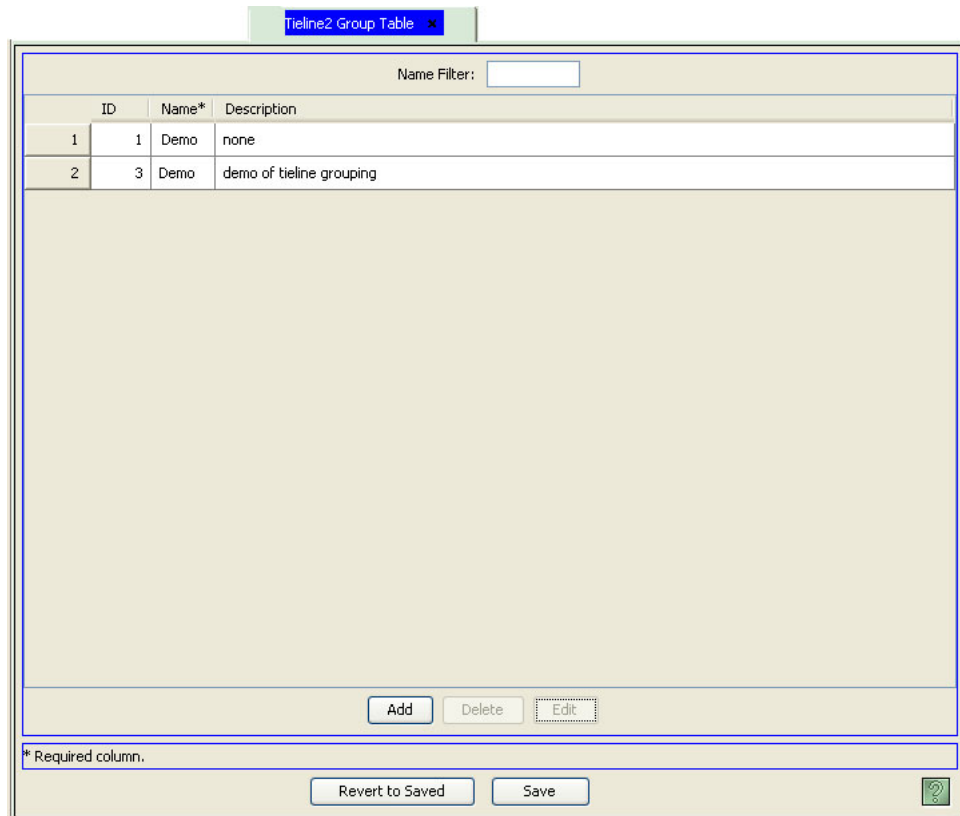
Figure 16-28. Tieline Group Table

3 Click on the 'Name' field to activate it and enter a new name.

4 Click on the 'Description' field to activate it and enter a new description.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Adding and Removing Tielines in a Tieline Group

The tielines included in a tieline group can be changed at any time. If adding a tieline, the tieline belongs to that group and no others. If removing a tieline, the tieline becomes available to add to a different tieline group.

Tielines are added using the 'Tieline Group Detail' page, accessed through the 'Tieline Groups' page on the 'Configuration' pane.

How to Add or Remove Tielines in Tieline Groups

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Tieline Groups'. The 'Tieline Groups' page displays, as shown in Figure 16-29. All tieline groups currently defined in the system are listed.

To narrow the list, enter the first characters of the tieline group's name in the 'Name Filter' field. The list is automatically reduced to display only tieline groups matching that character string.
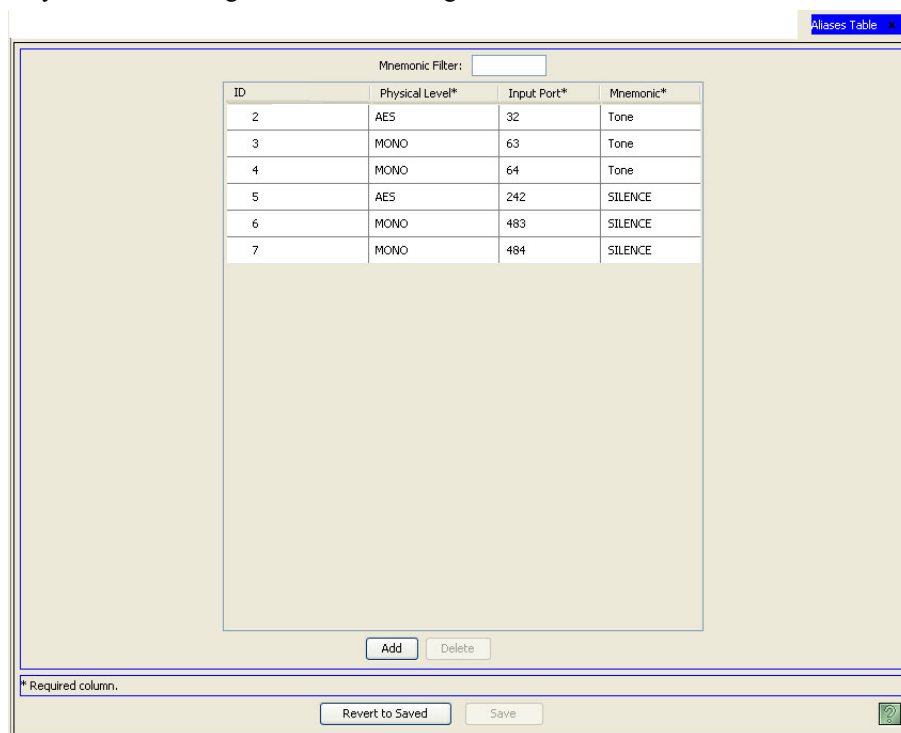

Figure 16-29. Tieline Group Page

The 'Name' column lists the name assigned the tieline group in NV9000-SE.

3 Double click on a single row to view details for that tieline group in the 'Tieline Group Detail' page, as shown in Figure 16-30.

Or

Click anywhere in the row listing the tieline group being viewed and click Edit Selected Tieline. Use the 'Shift' or 'Ctrl' key on your keyboard to select multiple tieline groups. Each tieline group opens in a separate tabbed window. Click the tab to bring the window forward.

4 If adding a tieline, select a tieline from the 'Tielines Available' list and click the left facing arrow. The tieline appears in the 'Tielines in Group' list.

If removing a tieline, select the tieline from the 'Tielines in Group' list and click the right facing arrow. The tieline appears in the 'Tielines Available' list and is no longer associated with the tieline group.
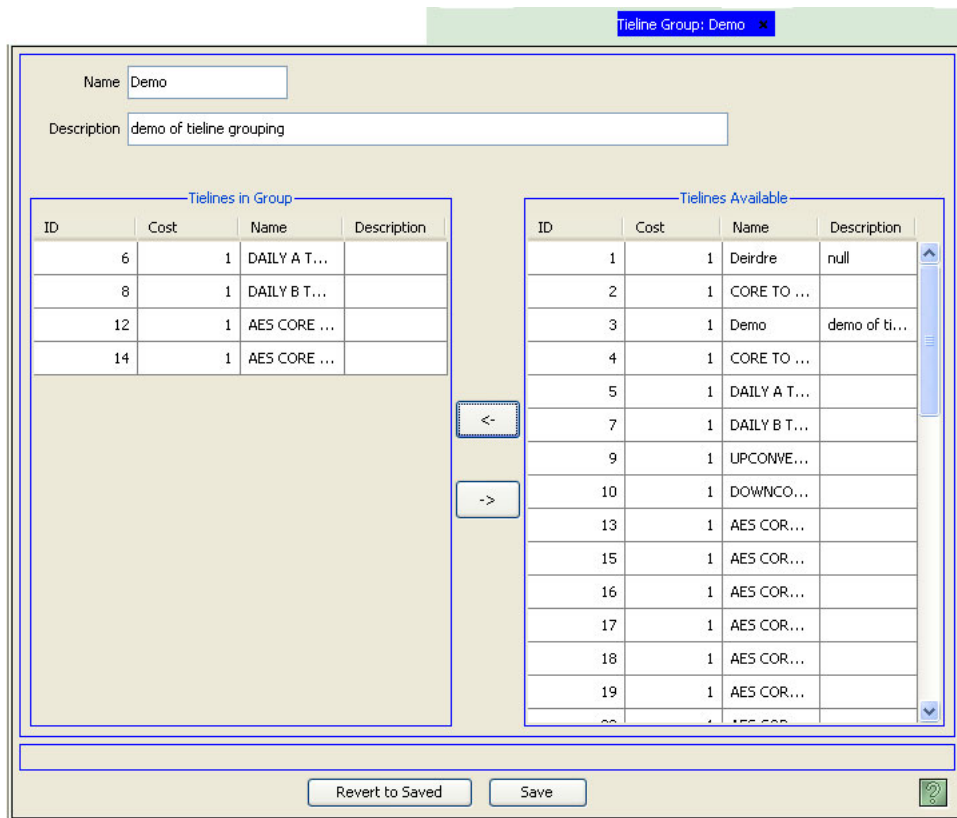
Figure 16-30. Tieline Group Details Page

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the page.

Deleting a Tieline Group

Tieline groups can be deleted from the NV9000-SE system at any time. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

If currently connected to the NV9000 system controller and NV9000-SE, configuration changes take effect immediately. It is recommended that tielines be removed off-line. That ensures that all settings are correct before you go "live."

Tieline groups can be deleted using the 'Tieline Groups' page accessed through the 'Configuration' pane or the 'Tieline Group' table, accessed through the 'Views' pane.

How to Delete a Tieline Group Using the 'Tieline Groups' Page

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Configuration' pane and then 'Tieline Groups'. The 'Tieline Groups' page displays, as shown in Figure 16-31. All tieline groups currently defined in the system are listed.

To narrow the list, enter the first characters of the tieline group's name in the 'Name Filter' field. The list is automatically reduced to display only tieline groups matching that character string.

Figure 16-31. Tieline Group Page

The 'Name' column lists the name assigned the tieline in NV9000-SE.

3 Click anywhere in the row listing the tieline group you want to delete and click Delete Tieline. The row is removed from the table.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click **X** on the window title tab to close the page.

How to Delete a Tieline Group Using the 'Tieline Group' Table

1 Launch NV9000-SE. (See [Launching and Exiting the Application](#) on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Tieline Group'. The 'Tieline Group' table displays, as shown in Figure 16-32. All tieline groups currently defined in the system are listed.

To narrow the list, enter the first characters of the tieline group's name in the 'Name Filter' field. The list is automatically reduced to display only tieline groups matching that character string.

Figure 16-32. Tieline Group Table

The 'Name' column lists the name assigned the tieline in NV9000-SE.

3 Click anywhere in the row listing the tieline group you want to delete and click Delete Tieline. The row is removed from the table.

4 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

5 Click X on the window title tab to close the page.

17. Using Name Sets

Name sets enable you to assign descriptive names to devices in NVISION. Name sets are useful when trying to remember specific devices. For example, if your facility has several routers, you can assign descriptive names that indicate the location of each router, such as "StudioA" and "StudioB" or the function, such as "EditA." The names display on buttons on control panels enabling operators to easily distinguish each device.

If no name is assigned to a device, by default the system name displays on the control panel.

Names sets are managed through the 'Name Sets' window accessed from the pop-up menu that displays when right-clicking on a system controller in the 'System Management' pane.

Adding and Viewing Name Sets

A name set can be added to NV9000-SE at any time. Name sets are added using the 'Name Sets' window accessed through the 'System Management' pane. This same window lists the details for all currently added name sets for easy viewing and managing in one location.

Name sets can be created as a complete set and then added all at once or added incrementally as each individual name is added. Adding a name set as a whole means that you can make adjustments and verify that the name sets are correct before displaying the names on control panels. Adding name sets incrementally allows you to make changes to name sets and have each change display immediately on control panels without having to apply them separately.

How to Add a Name Set

1 Launch NV9000-SE. (See)

2 From the Navigation area, select the 'System Management' pane.

3 Right-click on the system controller you are currently working with and from the pop-up menu select 'Edit Name Sets'. The 'Name Sets' window appears, as shown in Figure 17-1. All name sets currently defined in the system are listed.
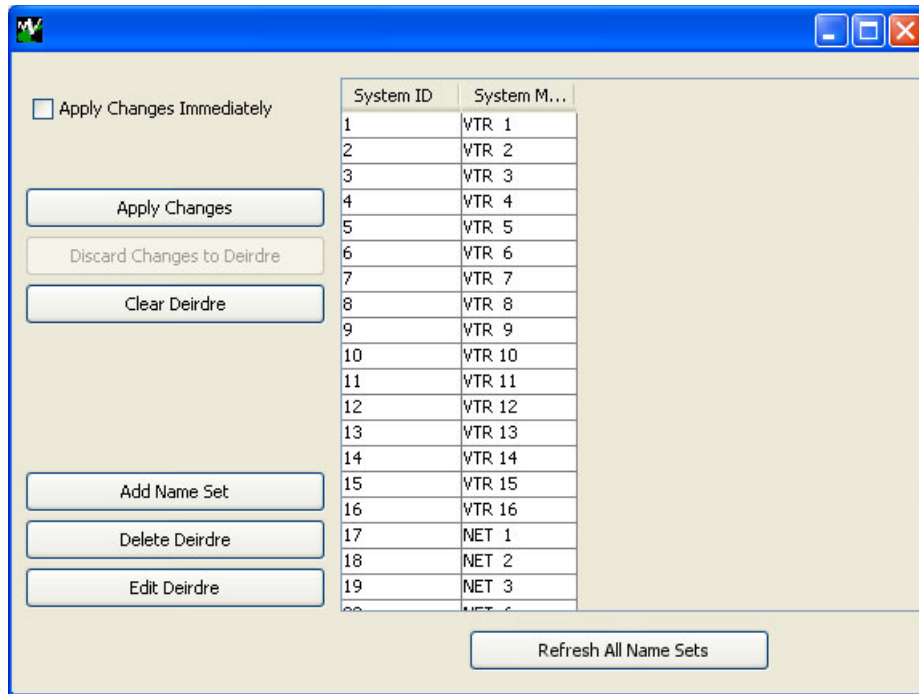
Figure 17-1. Name Sets Window

4 Click Add Name Set. The 'Enter New Name Set Name' dialog appears.

5 Enter the name of the new name set and click **OK**. A column appears to the right of existing col-
umns with the name of the new name set at the top:
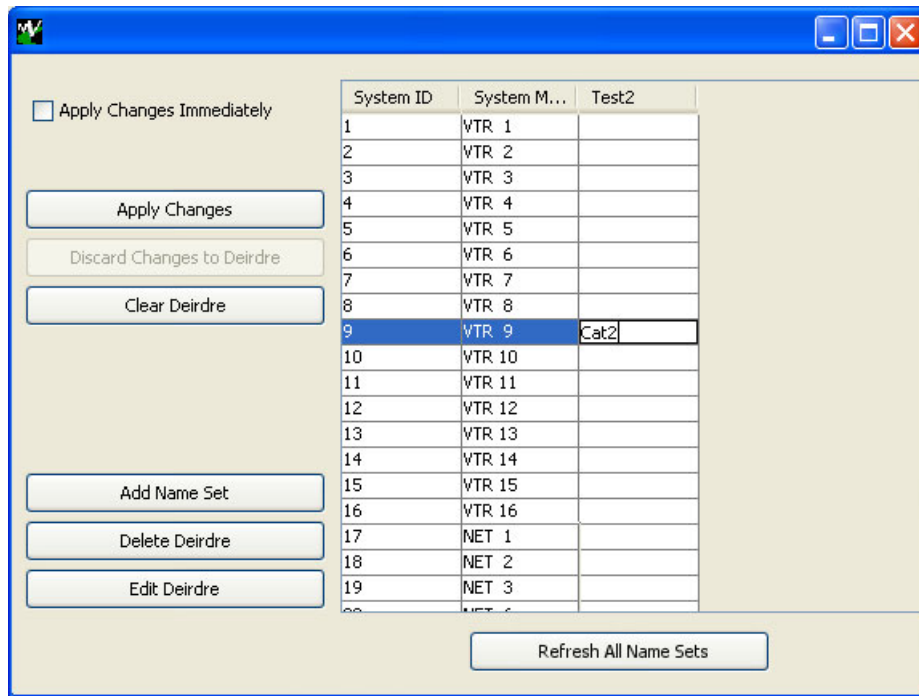
Figure 17-2. Name Sets Window with Added Name Set

6 To have changes sent to control panels immediately as each name is added to a name set, with-
out having to complete creating the name set as a whole, check the 'Apply Changes Immedi-
ately' check box.

To have changes applied only after you have created the entire name set, make sure 'Apply
Changes Immediately' is unchecked.

7 To add an alias to a name set for a device, click on the cell at the intersection of the row listing
the device you want to add and the column for that name set. The field becomes active, as
shown in Figure 17-2. In the active field, enter a name for that device.

Continue adding names until your name set is complete. To remove or change a name entered
by accident, click on the row again and either enter a new name or remove the name com-
pletely.

8 If 'Apply Changes Immediately' is unchecked, click Apply Changes to send all names in the
name set to control panels.

9 Click X on the window title tab to close the window.

How to View Name Sets

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'System Management' pane.

3 Right-click on the system controller you are currently working with and from the pop-up menu select 'Edit Name Sets'. The 'Name Sets' window appears, as shown in Figure 17-3. All name sets currently defined in the system are listed.
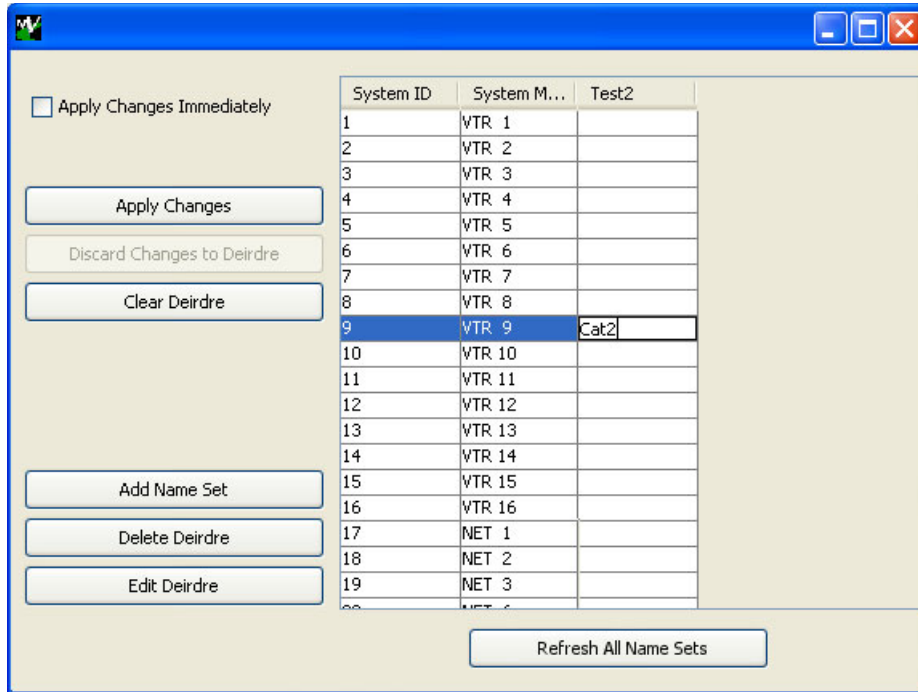
Figure 17-3. Name Sets Window with Name Set

4 Click Refresh All Name Sets to refresh the list of name sets and ensure that the latest data is displaying.

5 Click X on the window title tab to close the window.

Updating a Name Set

Using the 'Name Sets' window, name sets can be updated at any time, including the name of the name set itself or names within the name set. If the 'Apply Changes Immediately' check box is checked, each change is immediately sent to control panels as it is made. If you want to make all your changes before sending them to control panels, make sure 'Apply Changes Immediately' is unchecked. Remember that operators see the changes made to name sets on corresponding control panel buttons.

How to Update a Name Set

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'System Management' pane.

3 Right-click on the system controller you are currently working with and from the pop-up menu select 'Edit Name Sets'. The 'Name Sets' window appears, as shown in Figure 17-4. All name sets currently defined in the system are listed.
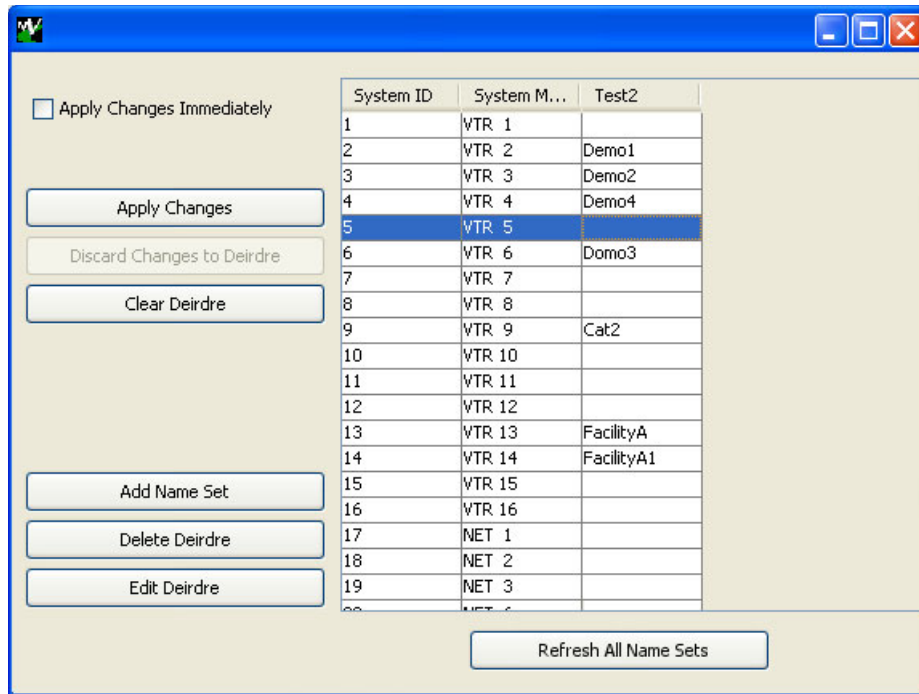
Figure 17-4. Name Sets Window

4 To have changes sent to control panels immediately as each name is updated or removed in a name set, without having to complete making changes to the name set as a whole, check the 'Apply Changes Immediately' check box.

To have changes applied only after you have made all updates to the entire name set, make sure 'Apply Changes Immediately' is unchecked.

5 To change the name of a name set, click on the name set column and click Edit Name Set. In the 'Edit Name Set' dialog box that appears, enter a new name and click OK.

6 To remove or change a name in a name set, click on the row listing the name to activate the cell and either enter a new name or remove the name completely.

Or

To remove all names in a name set, click on the name set column and click Clear Name Set.

And/Or

To undo the removal of all names in a name set, click Discard Changes.

7 If 'Apply Changes Immediately' is unchecked, click Apply Changes to send your changes to control panels.

8 Click X on the window title tab to close the window.

Deleting a Name Set

A name set can be deleted at any time using the 'Name Sets' window accessed through the 'System Management' pane. Be careful when deleting a name set. If the names in the name set are currently displaying on control panels, removing the name set will remove those names from displaying on the control panel. Instead, default system names display.

How to Delete a Name Set

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'System Management' pane.

3 Right-click on the system controller you are currently working with and from the pop-up menu select 'Edit Name Sets'. The 'Name Sets' window appears, as shown in Figure 17-4. All name sets currently defined in the system are listed.

4 Click on the name set column listing the name set you want to remove and click Delete Name Set.

5 On the confirmation dialog box that displays, click OK. The column displaying the name set is removed and the names in the name set removed from the system.

   Or

   Click Cancel to close the dialog box without removing the name set

6 Click X on the window title tab to close the window.

18. Using the Alias Table

Using the 'Aliases' table, aliases can be added, updated or deleted. The 'Aliases' table accessed through the 'Views' pane enables you to assign a specific name for every instance of a particular input port on a router. For example, you can configure all VTRs in your facility with 8 audio channels, even ones that don't have that many channels. Using the 'Alias' table you could assign the same port to channels 5-8 on a 4 channel VTR. By assigning the alias "SILENCE" you can force each of those 4 channel VTRs to status "SILENCE" on channels 5-8.

Adding an Alias

Using the 'Alias' table, accessed through the 'Views' pane, you can add alias to ports. It is recommended that when creating aliases that you use intuitive names that are descriptive or common to your facility.

NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

How to Add an Alias

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Aliases'. The 'Aliases' table appears, as shown in Figure 18-1.

All aliases currently defined in the system are listed. To narrow the list, enter the first characters of the alias's name in the 'Mnemonic Filter' field. The list is automatically reduced to display only aliases matching that character string.
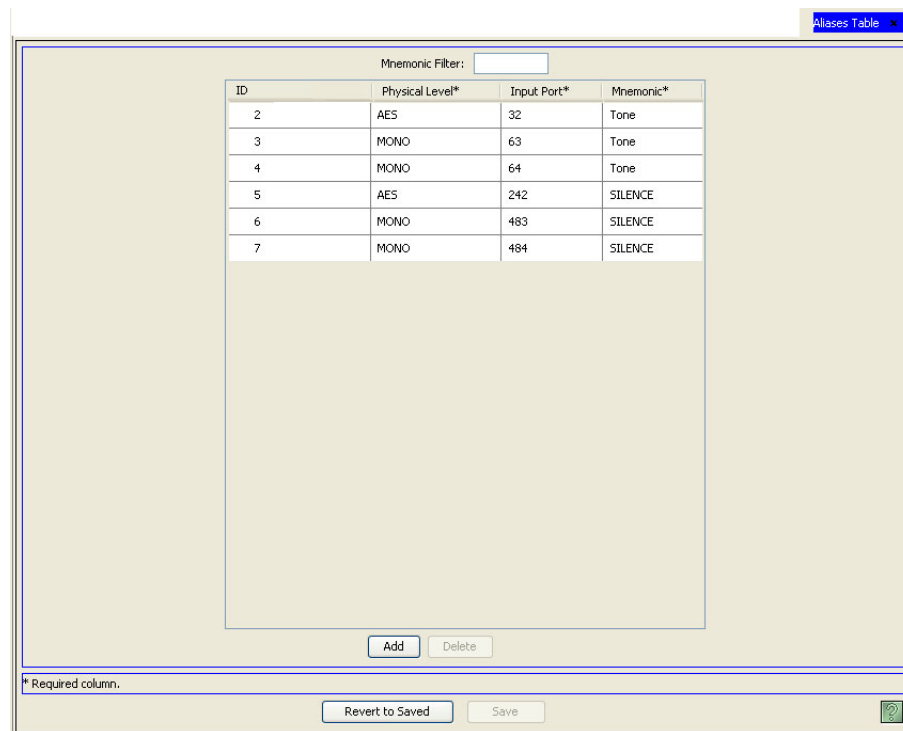
Figure 18-1. Aliases Table

Asterisks denote required fields.

3 Click Add. A blank row appears.

4 In the blank row, click in the 'Physical Level' column and select a physical level for the port from the drop-down list.

Note	Input ports are identified by port number and physical level. For more information on physical levels, see Physical Levels vs. Virtual Levels on page 112.

5 In the same row, click in the 'Input Port' column to activate it and enter the number of the port.

6 In the same row, click in the 'Mnemonic' column to activate it and enter the name assigned to the port. Alpha-numeric characters may be used, but no symbols or punctuation marks.

7 Click Save. The alias is saved to the system.

8 Click X on the window title tab to close the table.

Locating and Viewing Aliases

The 'Aliases' table, accessed through the 'Views' pane, lists all aliases in one convenient interface.

How to Locate and View Aliases

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Aliases'. The 'Aliases' table appears, as shown in Figure 18-2.

All aliases currently defined in the system are listed. To narrow the list, enter the first characters of the alias's name in the 'Mnemonic Filter' field. The list is automatically reduced to display only aliases matching that character string.
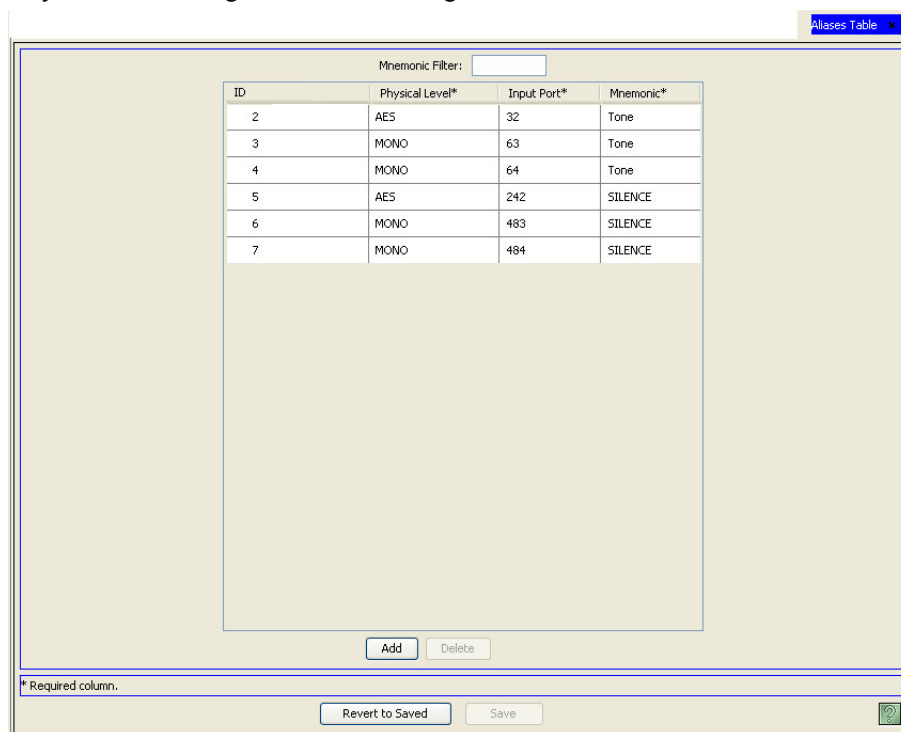
Figure 18-2. Aliases Table

Each alias is listed, one alias per row. Each column displays information about the alias, as follows:

Field	Description
ID	Lists the ID number associated with the host computer
Physical Level	The physical level for the input port. Input ports are identified by port number and physical level. For more information on physical levels, see Physical Levels vs. Virtual Levels on page 112.
Input Port	The number of the input port.
Mnemonic	The name assigned to the port.

3 Click X on the window title tab to close the table.

Updating an Alias

Using the 'Aliases' table accessed through the 'Views' pane, the alias name, physical level or port number can be updated at any time. NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

How to Update an Alias

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Aliases'. The 'Aliases' table appears, as shown in Figure 18-3.

All aliases currently defined in the system are listed. To narrow the list, enter the first characters of the alias's name in the 'Mnemonic Filter' field. The list is automatically reduced to display only aliases matching that character string.

ID	Physical Level*	Input Port*	Mnemonic*
2	AES	32	Tone
3	MONO	63	Tone
4	MONO	64	Tone
5	AES	242	SILENCE
6	MONO	483	SILENCE
7	MONO	484	SILENCE

Figure 18-3. Aliases Table

Asterisks denote required fields.

3 Locate the row listing the host being updated.

4 In the row, click in the 'Physical Level' column and select a new physical level for the port from the drop-down list.

Note	Input ports are identified by port number and physical level. For more information on physical levels, see Physical Levels vs. Virtual Levels on page 112.

5 In the same row, click in the 'Input Port' column to activate it and enter a new port number.

6 In the same row, click in the 'Mnemonic' column to activate it and enter a new name to assign to the port. Alpha-numeric characters may be used, but no symbols or punctuation marks.

7 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

8 Click X on the window title tab to close the table.

Deleting an Alias

An alias can be deleted at any time using the 'Aliases' table accessed through the 'Views' pane. Be careful when deleting an alias. If the alias is actively being referenced by a device or control panel, the alias will no longer display to the operator.

NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependences, when the deletion is attempted, NV9000-SE informs you of the dependencies. Delete the dependencies first, then delete the originally selected record.

How to Delete an Alias

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Aliases'. The 'Aliases' table appears, as shown in Figure 18-4.

All aliases currently defined in the system are listed. To narrow the list, enter the first characters of the alias's name in the 'Mnemonic Filter' field. The list is automatically reduced to display only aliases matching that character string.

ID	Physical Level*	Input Port*	Mnemonic*
2	AES	32	Tone
3	MONO	63	Tone
4	MONO	64	Tone
5	AES	242	SILENCE
6	MONO	483	SILENCE
7	MONO	484	SILENCE

Mnemonic Filter: _____

Add   Delete

* Required column.

Revert to Saved   Save

Figure 18-4. Aliases Table

3 Click anywhere in the row listing the alias being deleted.

4 Click Delete. The row is removed.

5 Click Save.

Or

To revert to previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

19. Managing User Names

Every control panel has a "user" name associated with it. The "user" assigned to a panel has administrative rights and can lock or protect a source or destination. The lock or protect is then "owned" by that user. The lock and protection mechanism reports the user name when another operator tries to use a locked or protected device. This enables the operator to contact the person who "owns" the lock or protect.

Groups of panels can be assigned the same user name. When groups of panels have the same user name, they share lock and protect permissions.

Using the 'Users' table, accessed through the 'Views' pane, user names can be added, updated or deleted. The table also lists all user names currently in the NV9000-SE system. User names are associated with panels using the 'Panels' table accessed through the 'Views' pane. (See Working With Configuration Files on page 19.)

Adding a User

A user can be added to the NV9000-SE system at any time. Users are added using the 'Users' table accessed through the 'Views' pane. User names are associated with panels to enable access control.

NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement configuration changes, the NV9000 control system must write the configuration and then be restarted. For more information, see the NV9000 User's Guide.

How to Add a User

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Users'. The 'Users' table appears, as shown in Figure 19-1.

All users currently defined in the system are listed. To narrow the list, enter the first characters of the user's name in the 'Name Filter' field. The list is automatically reduced to display only users matching that character string.
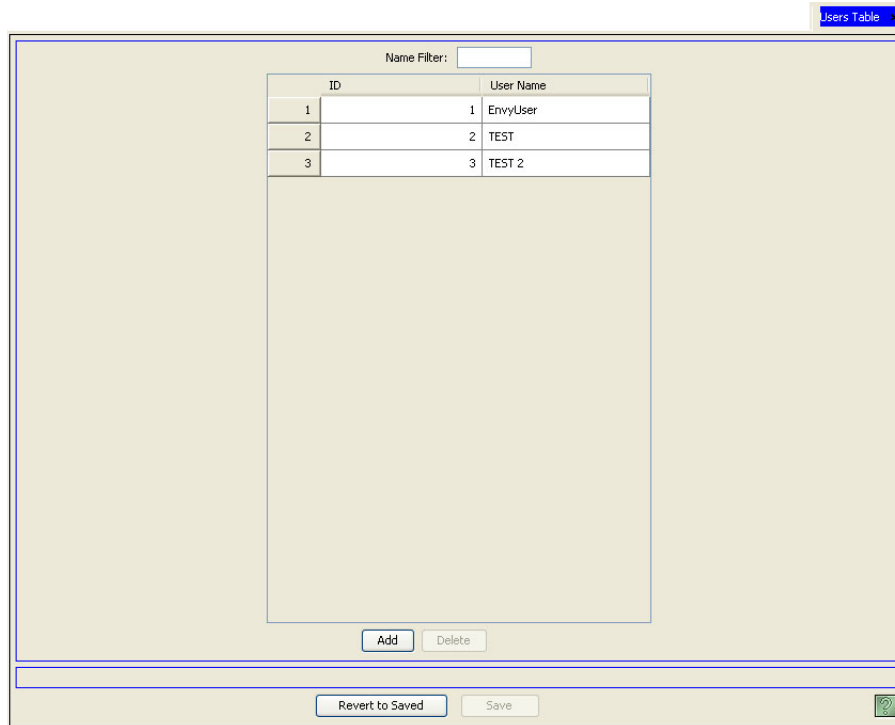
Figure 19-1. Users Table

3 Click Add. A blank row appears.

4 In the blank row, click in the 'User Name' column to activate it and enter a name. Do not use any punctuation marks or symbols.

5 Click Save. The user is saved to the system.

6 Click X on the window title tab to close the table.

Locating a User Name

The 'Users' table accessed through the 'Views' pane, lists all users in one convenient location.

How to Locate a User Name

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Users'. The 'Users' table appears, as shown in Figure 19-3.

All users currently defined in the system are listed. To narrow the list, enter the first characters of the user's name in the 'Name Filter' field. The list is automatically reduced to display only users matching that character string.
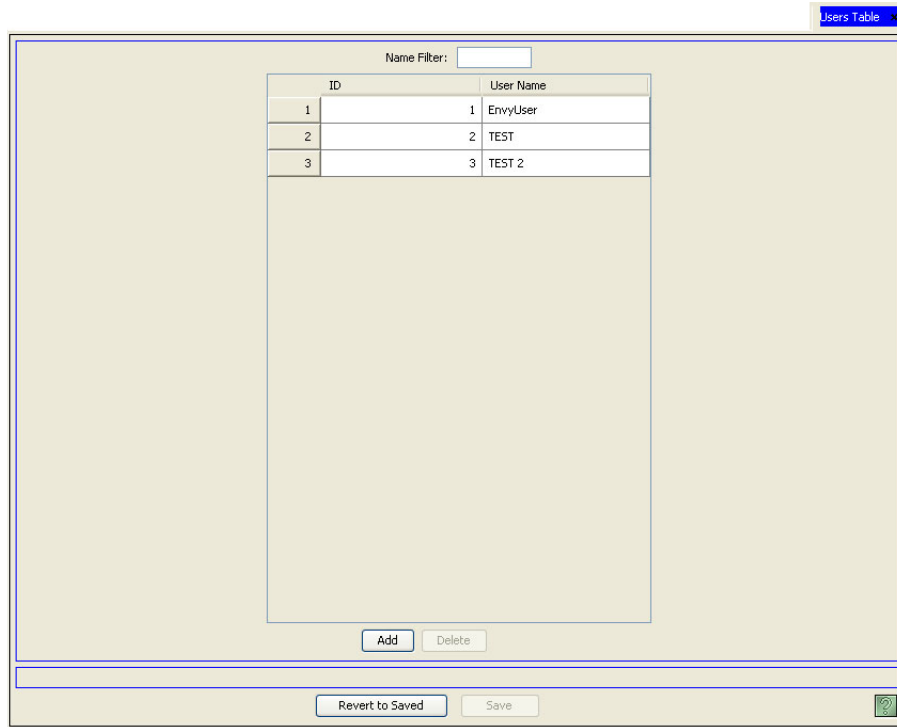
Figure 19-2. Users Table

Each user is listed, one user per row, as follows:

Field	Description
ID	Lists the ID number associated with the user.
Name	The user name.

3 Click X on the window title tab to close the table.

Updating a User Name

Using the 'Users' table accessed through the 'Views' pane, the user name can be updated at any time. The user name is immediately updated wherever it appears in the NV9000-SE system. NV9000-SE saves all configuration changes to the database. Once changes are saved, there is no "undo" function; the configuration is permanently altered. To implement saved configuration changes, the changes must be written to the NV9000 system controller for dispersal to connected routers. For information on implementing changes, see Implementing Configuration Changes on page 17.

How to Update a User Name

1 Launch NV9000-SE. (See Launching and Exiting the Application on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Users'. The 'Users' table appears, as shown in Figure 19-3.

All users currently defined in the system are listed. To narrow the list, enter the first characters of the user's name in the 'Name Filter' field. The list is automatically reduced to display only users matching that character string.
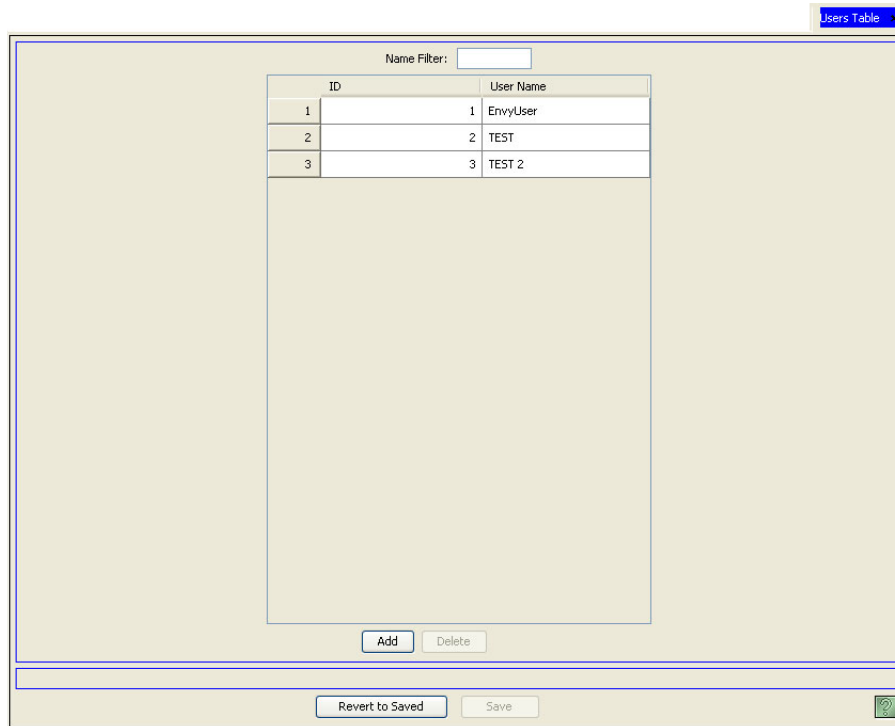
Figure 19-3. Users Table

3 Locate the row listing the host being updated.

4 In the row, click in the 'User Name' column to activate it and enter a new user name. Do not use any punctuation marks or symbols.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

Associating a User With a Panel

Associating a user with a control panel gives that user name the ability to manage access to the control panel, such as applying or removing locks and "protects". User names are associated using the 'Panels' table accessed through the 'Views' pane For instructions on associating users, see Changing the Associated User Name on page 352.

Deleting a User

An user can be deleted at any time using the 'Users' table accessed through the 'Views' pane. Be careful when deleting a user. If the user is actively being referenced by a control panel, the user will no longer display to the operator. In addition, control commands, such as removing locks and protects, are removed with the user name.

NV9000-SE uses a relational database. This means that if a record is referenced by another record, the deletion will not be allowed. If there are dependences, when the deletion is attempted, NV9000-SE informs you of the dependencies. Delete the dependencies first, then delete the originally selected record.

How to Delete a User

1 Launch NV9000-SE. (See <u>Launching and Exiting the Application</u> on page 12.)

2 From the Navigation area, select the 'Views' pane and then 'Users'. The 'Users' table appears, as shown in Figure 19-4.

All users currently defined in the system are listed. To narrow the list, enter the first characters of the user's name in the 'Name Filter' field. The list is automatically reduced to display only users matching that character string.
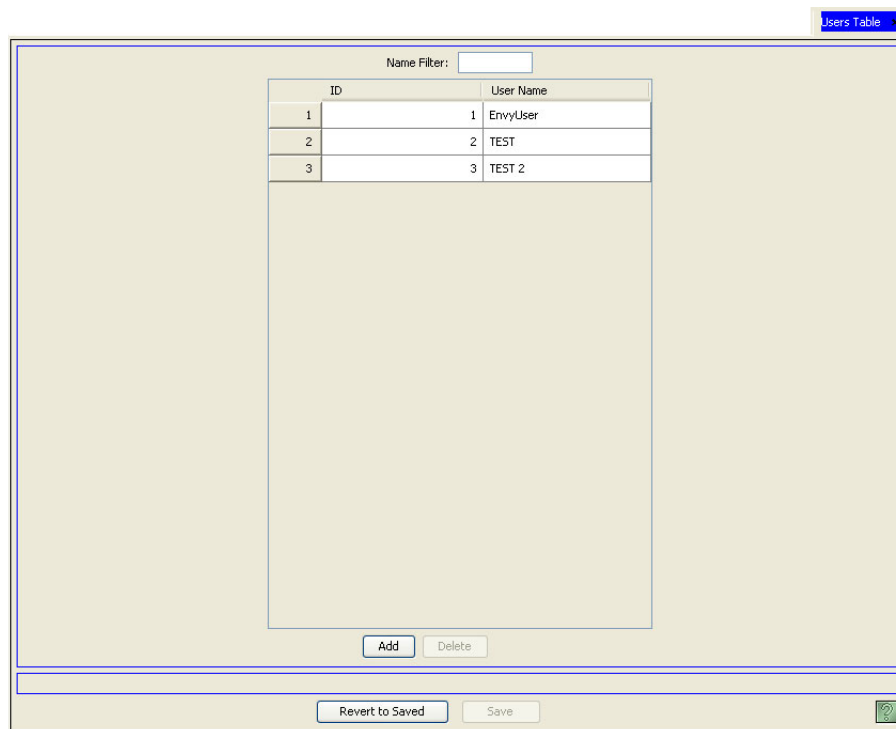
Figure 19-4. Users Table

3 Click anywhere in the row listing the user name being deleted.

4 Click Delete. The row is removed.

5 Click Save.

Or

To revert to the previously saved configuration, click Revert to Saved.

6 Click X on the window title tab to close the table.

A. Protocols

Protocols are applications that run on the router control cards. The NV9000 server supports several protocols for both Miranda and third-party router. For information on adding and updating protocols, see Updating Router Protocol on page 84.

Available Protocols

The following is a list of currently available protocols. This list is subject to change without notice. If you have any questions regarding the use or availability of protocols, contact Miranda technical support.

Protocol	Description	Cable
NV Serial Protocol, Private	Supports communication with Miranda routers using "Universal Series" control cards over an RS-422 serial connection. Use this protocol with newer Miranda routers under serial control.	RS-422, wired straight through. Port configuration is in the router table.
NV Serial Protocol, Public	Supports communication with other vendors' routing products that have implemented the Miranda protocol in their controllers. This protocol also supports Miranda routers that use older model control cards such as the EM0035 or EM0127 controllers. The connection is RS-422. Use this protocol with very old Miranda router models (3xxx).	RS-422, wired straight through
NV Ethernet Protocol	Use this protocol with all current generation Miranda routers. It provides Ethernet connectivity between the NV9000 server and router control cards at 100MB/s. This is the preferred method of connecting current Miranda routers to the NV9000 server.	CAT5E patch cord. Do not use a crossover cable.
NV Master Control Ethernet Protocol	Supports connection to the Miranda NV5128-MC Master Control System. Use this protocol when Master Control status is required to drive the NV9550 tally interface. This connection is 100MB/s Ethernet.	CAT5E patch cord. Do not use a crossover cable.
NV Compact Router Ethernet Protocol	Use this protocol with all Miranda Compact Routers, such as the CR1616-HD and CR3232-AES. It provides Ethernet connectivity between the NV9000 server and compact routers at 100MB/s.	CAT5E patch cord. Do not use a crossover cable.
Virtual Router Protocol	Use this protocol to emulate a router using Miranda protocol, for testing or development work. Status is lost every time the NV9000 is restarted. The protocol is useful for developing a configuration without an actual router.	(not applicable)
Utah RCP-1 Protocol	Enables the NV9000 to switch most models of Utah routers. Contact Miranda for specifics on supported routers. A properly configured Utah AVS2, SC1, SC2 or PL320 controller is required. The NV9000 does not connect directly to a Utah matrix.	Dependent on the Utah controller model.

A. Protocols

Available Protocols

Protocol	Description	Cable
Jupiter ESBus Protocol	Enables the NV9000 to switch Philips routers using a VM3000 controller. Very old Philips routers might not function with this interface. However, most late model matrices, such as Venus, are supported. A properly configured VM3000 is required. Please note: The NV9000 does not connect directly to a Philips matrix. Operation using a serial port on an SI-3000 is not recommended if the total controlled matrix space will exceed 256 × 256.	RS-422 crossover or null modem cable required.
GVG Horizon TCI Protocol	Supports connection to a Grass Valley Group Horizon series router through an HX-GPI external controller. An HX-GPI unit running TCI protocol is required for this interface to function. Please note the NV9000 control point settings for Horizon: S, ‹COM port›, 9600 baud, no parity, 8 data bits, 1 stop bit.	RS-422 crossover with non-standard pinout. See the application note
Probel Router Protocol	Supports control of most Probel routers. Contact Miranda regarding the specific models supported.	Varies by application. Consult the Probel documentation and refer to the NV9000 Router Control System User's Guide for additional information regarding configuration of the Probel external interface.
Pesa Protocol	Supports control of most Pesa routers. Contact Miranda regarding the specific models supported. A properly configured Pesa controller is required between the NV9000 server and the Pesa routers. This connection is RS-232 using one of the ports on the Pesa controller that is normally reserved for the Pesa configuration PC. Pesa does not support an RS-422 interface.	RS-232 pins Tx, Rx, and ground (on a DB-9, typically pins 2, 3 and 5). The Pesa end must be wired for RS-232 loopback. Connect RTS to CTS and DTR to DSR.
ISIS Serial Protocol	Used to control ISIS wideband analog video routers.	RS-422 wired straight through.
DataTek D-2815 Serial Protocol	Used to control older DataTek routers that support the D-2815 protocol.	Please consult the DataTek documentation. Miranda controller ports use the SMPTE 207M controlling port pinout: TX+ 3 RX+ 7 TX– 8 RX– 2
Sony CART+ Serial Protocol	Enables the NV9000 to control Sony routers that support the "Sony CART+" protocol.	Please consult the Sony documentation.

B. Control Panels

The NV9000-SE system enables you to configure several hardware and software control panels. For a description of each panel, refer to the corresponding section title. For instructions on configuring a panel, see

NV9601

The NV9601 is an X-Y/multi-destination control panel featuring a 42 characters by 8 lines display:
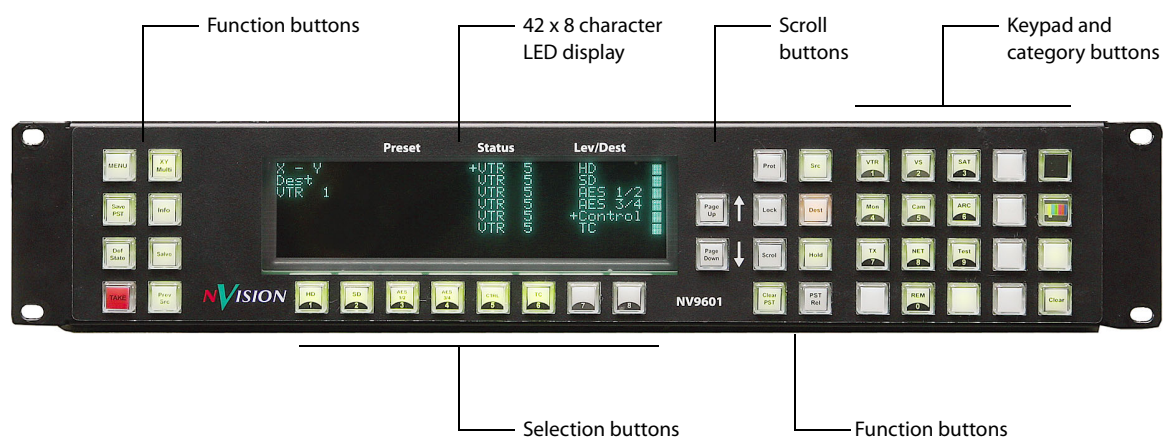
Function buttons   42 x 8 character LED display   Scroll buttons   Keypad and category buttons

Selection buttons   Function buttons

This 2RU panel is organized as follows:

- Function buttons—two sets of eight buttons that can each be assigned one of 26 functions.
- Display—generally, the display is divided into 4 columns (Entry, Preset, Status, Level/Dest).
    - Entry—contains mode, status, and data entry fields.
    - Preset—the source (levels) that are *to be* assigned to the current destination.

      A source appears in the 'Preset' column when the user selects a new source. When a source is preset, the Take button becomes enabled.
    - Status—the source (levels) *currently* assigned to the current destination.
    - Level/Dest—contains destination information.

      In X-Y mode, this column displays the levels associated with the current destination. In multi-destination mode, the display shows an 8-destination segment of the destination list (those defined for multi-destination mode).

The columns include various indicators such as L (locked), P (protected) and + (information available). (The display does not use columns when you are using the menu or displaying information.)

- Scroll buttons—normally Page up and Page Down buttons that scroll through lists of more than 8 items. Such lists include levels, destinations, and salvos.

The scroll buttons also adjust the brightness of the panel buttons (when the operator selects the brightness command from the menu). In addition, the buttons scroll through the devices in a category when the user has selected a category. The selected device ID appears in the 'Entry' column of the display.

- Selection buttons—eight "soft keys" that select, enable, or disable items in the display. Each selection button corresponds to one of the 8 lines in the display.

- Keypad and category area—20 buttons, 10 of which are have fixed functions. These are either numeric buttons (0–9) or "category" buttons, depending on context. The other 10 buttons can be assigned any function, including additional categories and suffixes.

The 10 numeric/category buttons are arranged like a standard push-button telephone keypad.

Modes of Operation

The panel operates in either an X-Y (single destination, with levels displayed) mode or a multi-destination mode. A single button (XY/Mult) can toggle between the modes. The NV9601 can control all sources and destinations—or a subset of them.

The primary modes of operation are:

- X-Y Mode—full control of all router levels. Choose a destination, optionally choose desired breakaway levels, choose a source, and press Take to complete a desired route. In this mode, the display shows status for up to eight levels. Additional levels (if present) are viewable by pressing the Page Up or Page Down buttons.

- Multi-Destination Mode—lets you control multiple destinations. The panel displays up to 8 destinations at a time. You can scroll through 8-destination pages using the Page Up or Page Down buttons. Takes are "all level," and breakaways cannot be performed. Individual destinations are selected using the selection buttons located below the display.

Secondary modes include:

- Salvo Mode—pressing a Salvo button places the NV9601 in "Salvo" mode. The display monitors the status of up to eight salvos at a time. Additional salvos (if any) are viewable by pressing the Page Up or Page Down buttons.

- Menu Mode—pressing a Menu button places the NV9601 in "menu" mode. Pressing a Selection button displays submenus.

- Info Mode—pressing an Info button places the NV9601 in "info" mode. The display shows one or more messages regarding, for instance, level mapping or breakaway status. Additional message text (if any) is viewable by pressing the Page Up or Page Down buttons.

    This is a sample information statement:

    `AES 3/4 on IRD5 is switched to AES 1/2 on IRD1.`

Configurable Functions

The NV9601 can be configured to perform the following functions:

- Previous Source, Free Source and "Quick" Source.

- Lock/Release and Protect/Release for both sources and destinations.

- Return to a pre-defined (or default) state.

• Hold breakaway levels or multiple destinations.

• System salvos and local salvos.

• Change Panel ID and button illumination.

• Level Map.

• In a multiple-panel configuration, a 'Force Release' of a locked or protected device can be configured for each NV9601. However, note that 'Normal Release' and 'Force Release' are mutually exclusive on the same panel.

Additional Control Panel Features

The following additional features are provided:

• The NV9601 supports multiple source breakaways in X-Y mode. This lets you route multiple sources to the same destination on different levels.

• In "Info" mode, the panel displays error messages, lock or protect status, tieline information, swapped level status, etc.

The NV9601 panel uses buttons having both green and amber LEDs. Each button has dual color capability, and each provides three levels of tally: off, dim, and bright. (You can adjust the levels of dim and bright.)

If you assign an X-Y/Multi-Destination button on your panel, it is a toggle: press it once for X-Y mode (it turns green) and press it again for Multi-Destination (it turns amber).

If a menu button is pressed, all buttons turn off except the applicable selection buttons below the display.

NV9602

The NV9602 is a multi-mode 1RU control panel that has two 8-character displays:
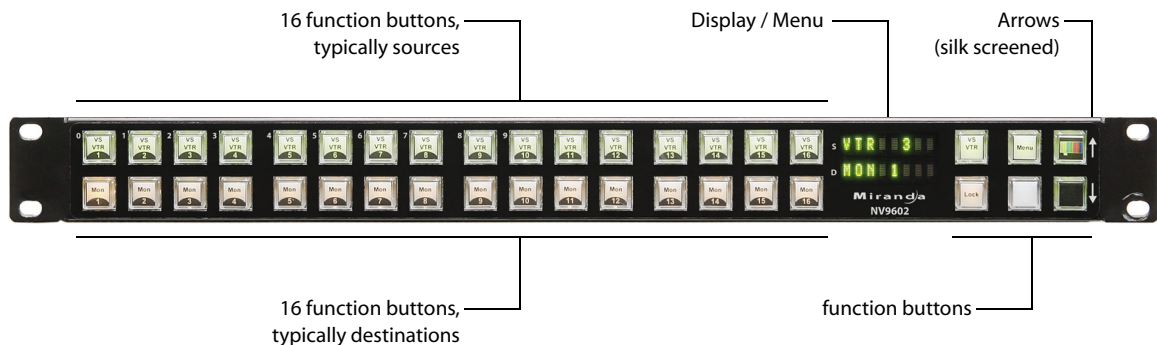
See NV9602 on page 251 for information regarding the 'NV9602' configuration page.

The panel is organized as shown in the illustration above:

• Function buttons—two sets of 16 buttons and one set of 6. Each button can be assigned one of 20 functions. The functions that can be assigned are dependent on the modes of operation.

- Display—two lines that ordinarily show the primary level of the current source and current destination. The display can also show menu items and configuration options, such as panel ID.

- Arrows—up and down arrows are silk-screened on the panel to the right of the right-most buttons. Those buttons are used with the menu to increase or decrease values.

Modes of Operation

The panel operates in one of four modes.

- Single Destination Mode.

  Single-destination mode is the NV9602's basic mode. The panel's single destination is assigned in the configuration file, and Takes are performed on all levels.

- Limited X-Y Mode.

  When the NV9602 is configured as a "limited" X-Y panel, status (showing the source) is provided for one destination at a time.

  In limited X-Y mode, a Hold button will allow gang or dub switching. Destination selections act as toggles and are cumulative—not mutually exclusive.

- Single Destination with Breakaway Mode.

  The Breakaway Mode is an extension of the single-destination mode, with the addition of level buttons.

- Multi-Destination Mode.

  When panels are configured in multi-destination mode, specific groups of sources and destinations are active simultaneously. The destination display (labeled "D") shows the last destination selected. The status display (labeled "S") shows the source for that destination.

  The mode is pre-programmed and cannot be changed at the panel itself. Refer to the NV9602 Multi-Mode Control Panel User's Guide for more information.

Configurable Functions

Depending upon the selected mode, the NV9602 can be configured to perform the following functions:

- Previous Source and Free Source.

- Lock/Release and Protect/Release for destinations.

- Single button to return to a pre-defined default state.

- Multiple source breakaways.

- Hold breakaway levels or multiple destinations.

- System salvos.

- A menu to change Panel ID and display and button illumination.

- In a multiple panel configuration, a Force Release of a locked or protected device can be configured for each NV9602. However, note that Release and Force Release are mutually exclusive on the same Control Panel.

The NV9602 panel uses buttons having both green and amber LEDs. Each button has dual color capability, and each provides three levels of tally: off, dim, and bright. (You can adjust the levels of dim and bright.)

Panel Limitations

There are three functions the NV9602 does not perform:

- Tielines. Tie line usage is not indicated on the NV9602 panel.

- Source Locks and Protects. Source locks and protects are not indicated on the NV9602 panel, nor can the user initiate these modes. Only "destination" locks and protects are supported.

- Local Salvos. The NV9602 control panel only supports the ability to run system salvos. "Local" salvos (such as those created on the NV9601 panel) are not supported, and the user cannot create them.

NV9603

The NV9603 is an X-Y control panel that has three 8-character displays:
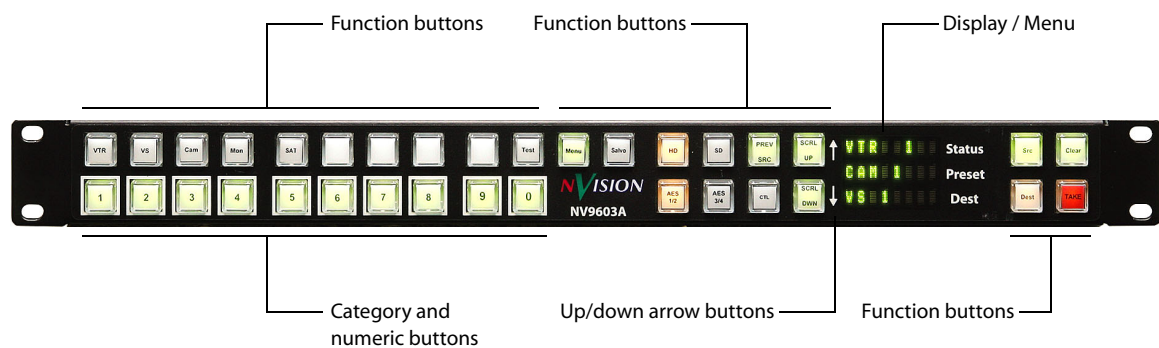
See [NV9603](#) on page 256 for information regarding the 'NV9603' configuration page.

The panel is organized as shown in the illustration above:

- Category and numeric buttons—10 buttons from 0 to 9 which are also category buttons.

- Function buttons—two groups of 10 buttons and another group of 4 buttons.

- Three of the four in the right group have fixed assignments. The functions that can be assigned to other buttons are dependent on the modes of operation.

- Arrows—up and down arrows are silk-screened on the panel to the right of the middle set of function buttons. The right-most buttons of that set are used, with the menu, to increase or decrease values.

Mode of Operation

The panel operates in X-Y Mode only (single source/single destination). Choose a destination, choose a source and press Take to complete a desired route. The panel can be configured to display up to ten levels of status.

From the user's standpoint, the panel has four operational modes:

> • Source mode, in which sources are chosen for selected routes.
>
> • Destination mode, in which destinations are chosen for selected routes.
>
> • Salvo mode, in which "system" salvos are run.
>
> • Menu mode, in which the user can set the panel ID, button illumination, and review various parameters.

Configurable Functions

The NV9603 can be configured to perform the following functions:

- • Previous Source and Free Source.

- • Lock/Release and Protect/Release for destinations only.

- • System salvos.

- • A menu to change Panel ID, adjust button illumination, and provide "read only" status for a variety of other panel functions.

- • In a multiple panel configuration, a Force Release of a locked or protected device can be configured for each NV9603. However, note that Normal Release and Force Release are mutually exclusive on the same Control Panel.

- • The NV9603 supports multiple source breakaways. This lets you route multiple sources to the same destination on different levels. Use Level buttons to make use of this capability.

NV9604

The NV9604 is a multi-mode 1RU control panel:
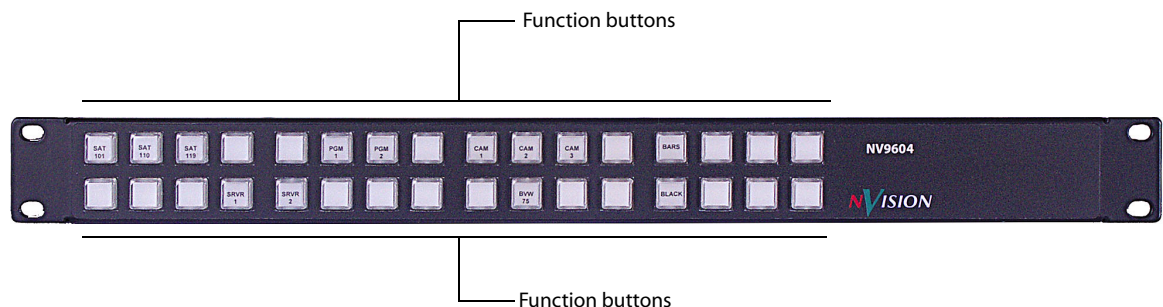
Function buttons

Function buttons

See for information regarding the 'NV9604' configuration page. The panel is organized two sets of 16 buttons that can each be assigned functions, sources, or destinations. (There is no display.)

Modes of Operation

The NV9604 panel can be configured as either a stand-alone panel (single destination, or limited X-Y), or as an expansion panel for the NV9602 Multi-Mode Control Panel. The NV9604's specific mode cannot be changed at the panel itself. The modes of operation are:

- Single Destination Mode

  Single-destination mode is the NV9604's basic mode. The panel's single destination is assigned in the configuration file, and Takes are performed on all levels.

- Limited X-Y Mode

- When the NV9604 is configured as a "limited" X-Y panel, status is provided for one destination at a time. That means that the button with the source routed to the selected destination will go high tally.

- Expansion Panel Mode

  In "expansion panel" mode, the NV9604 extends the number of source and destination buttons of an NV9602 panel. Function (e.g., Free Source, Previous Source) cannot be assigned to buttons.

Note	In each configuration, a Take button is not required. As soon as the source is selected, the route is completed to the pre-assigned destination.

Configurable Functions

Depending upon the selected mode, the NV9604 can be configured to perform the following functions:

- Select a source and switch it to a destination.

- Select a destination.

- Execute a salvo.

- Switch the previous source of the currently selected destination to the currently selected destination.

- Switch a free source to the currently selected destination.

The NV9604 panel uses buttons having both green and amber LEDs. Each button has dual color capability, and each provides three levels of tally: off, dim, and bright. (You can adjust the levels of dim and bright.)

NV9605

The NV9605 is a single-mode 1RU control panel that has a 3-line × 8-character display:

16 function buttons, typically sources

Display

Function buttons

16 function buttons, typically destinations
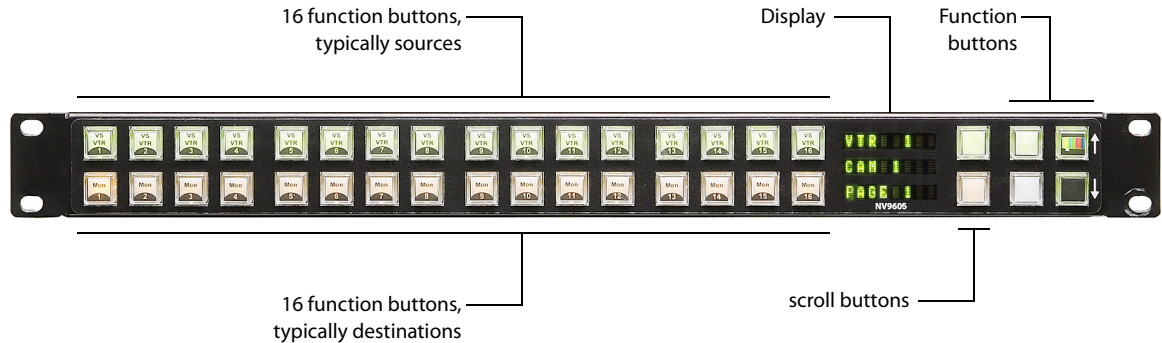
scroll buttons

See <u>NV9605</u> on page 264 for information regarding the 'NV9605' configuration page.

The panel is organized as shown in the illustration above:

- Function buttons—two rows of 16 buttons, two scroll buttons, and 4 other buttons that can each be assigned one of 11 functions.

  The 32 main buttons (on the left) select sources, destinations, levels, or salvos.

  The two scroll buttons are dedicated to 'page up' and 'page down'. Pressing one of these buttons scrolls the 32 main buttons through 4 "pages" of 32 buttons—for a total of 128 functions.

  Each of the right most 4 function buttons can be assigned one of about 11 functions. Once assigned, the functions are fixed and do not scroll when you press a scroll button.

- Display—two lines show the current source and destination. The third line shows the currently selected page (which can be given an arbitrary name).

- Arrows—up and down arrows are silk-screened on the panel to the right of the right-most buttons, The right most buttons are **not** scroll buttons.

Modes of Operation

The panel operates in either single-destination mode or X-Y mode. It allows breakaway if it is configured with level buttons.

Configurable Functions

The NV9605 can be configured to perform the following functions:

- Previous Source and Free Source.

- Lock/Release and Protect/Release for destinations.

- Single button to return to a pre-defined default state.

- Multiple source breakaways.

- Hold breakaway levels.

- System salvos.

- A menu, to view software versions, test buttons, and LEDs, change panel ID, and change button illumination.

- In a multiple panel configuration, a Force Release of a locked or protected device can be configured for each NV9605. However, note that Release and Force Release are mutually exclusive on the same control panel.

The NV9605 panel uses buttons having both green and amber LEDs. Each button has dual color capability, and each provides three levels of tally: off, dim, and bright. Green represents sources; amber represents destinations. A breakaway's primary level is indicated by an amber button; other breakaway levels are indicated by green buttons.

The NV9605 panel has a rear connector that provides 4 relay outputs and 8 optically isolated inputs. See Defining General Purpose I/O (GPIO) Connections on page 337 for more information.

Panel Limitations

There are four functions the NV9605 does not perform: source locks, source protects, and local salvos.

- Source Locks and Protects. Source locks and protects are not indicated on the NV9605 panel, nor can the user initiate these modes. The panel supports only "destination" locks and protects.

- Local Salvos. The NV9605 control panel can run only system salvos. "Local" salvos (such as those created on the NV9601 panel) are not supported. The user cannot create them.

- Category selection. The NV9605 does not have category buttons or numeric buttons.

NV9606

The NV9606 is a multi-mode 1RU control panel:

See NV9606 on page 268 for information regarding the 'NV9606' configuration page. The panel is organized as two sets of 34 buttons that can each be assigned functions, sources, or destinations. (There is no display.)

Modes of Operation

The NV9606 panel can be configured as either a stand-alone panel (single destination, or limited X-Y), or as an expansion panel for the NV9607 Multi-Mode Control Panel. The NV9606's specific mode cannot be changed at the panel itself. The modes of operation are:

- Single Destination Mode. The panel's single destination is assigned in the configuration file, and "takes" are performed on all levels.

- Limited X-Y Mode. When the NV9606 is configured as a "limited" X-Y panel, status is provided for one destination at a time. That means that the button with the source routed to the selected destination will go high tally.

• Expansion Panel Mode. In "expansion panel" mode, the NV9606 extends the number of source and destination buttons of an NV9607 panel.

Note	In each configuration, a Take button is not required. As soon as the source is selected, the route is completed to the pre-assigned destination.

Configurable Functions

Depending upon the selected mode, the NV9606 can be configured to perform the following functions:

• Select a source and switch it to a destination.

• Select a destination.

• Execute a salvo.

• Switch the previous source of the currently selected destination to the currently selected destination.

The NV9606 panel uses buttons having both green and amber LEDs. Each button has dual color capability, and each provides three levels of tally: off, dim, and bright. (You can adjust the levels of dim and bright.)

NV9607

The NV9607 is a multi-mode 2RU control panel that has a configurable Vacuum Fluorescent Display (VFD) that supports four or eight lines of display. Once configured, the display is used to show level status information during normal operation.

See <u>NV9607</u> on page 271 for information regarding the 'NV9607' configuration page.

Modes of Operation

The panel operates in one of four modes.

• Single Destination Mode. Single-destination mode is the NV9607's basic mode. The panel's single destination is assigned in the configuration file, and Takes are performed on all levels.

• Limited X-Y Mode. When the NV9607 is configured as a "limited" X-Y panel, status (showing the source) is provided for one destination at a time.

In limited X-Y mode, a Hold button will allow gang or dub switching. Destination selections act as toggles and are cumulative — not mutually exclusive.

• Single Destination with Breakaway Mode. The Breakaway Mode is an extension of the single-destination mode, with the addition of level buttons.

• Multi-Destination Mode. When panels are configured in multi-destination mode, specific groups of sources and destinations are active simultaneously.

The mode is pre-programmed and cannot be changed at the panel itself. Refer to the NV9607 Multi-Mode Control Panel User's Guide for more information.

Configurable Functions

Depending upon the selected mode, the NV9607 can be configured to perform the following functions:

- Previous Source and Free Source.

- Lock/Release and Protect/Release for destinations.

- Single button to return to a pre-defined default state.

- Multiple source breakaways.

- Breakaways in all operation modes.

- Hold breakaway levels or multiple destinations.

- System salvos.

- A menu to change Panel ID and display and button illumination.

- In a multiple panel configuration, a Force Release of a locked or protected device can be configured for each NV9607. However, note that Release and Force Release are mutually exclusive on the same Control Panel.

The NV9607 panel uses buttons having both green, red and amber LEDs. Each button has tri-color capability, and each provides three levels of tally: off, dim, and bright. (You can adjust the levels of dim and bright.)

Panel Limitations

There are three functions the NV9607 does not perform:

- Tielines. Tie line usage is not indicated on the NV9607 panel.

- Local Salvos. The NV9607 control panel only supports the ability to run system salvos. "Local" salvos are not supported, and the user cannot create them.

NV9608

The NV9608 is an X-Y/multi-destination control panel featuring 8 LCD buttons:
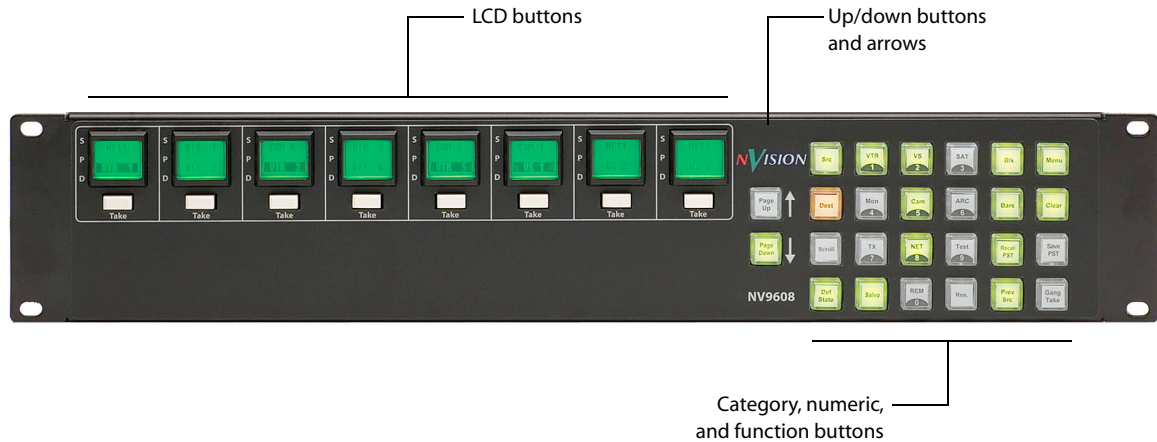
LCD buttons

Up/down buttons
and arrows

Category, numeric,
and function buttons

This 2RU panel is organized as shown in the illustration above:

• LCD button units:

Each unit comprises a large LCD button and a small 'Take' button below the LCD button. The LCD buttons each have 3 lines of text (up to 8 characters per line). In multi-destination mode, the 3 lines of text display source, preset, and destination, respectively. A button can display other messages in other contexts.

When defined, an LCD button represents:

• A destination (in multi-destination mode). The NV9608 provides support for up to 512 destinations on up to 64 pages. You can select a page with the (dedicated) scroll buttons.

| Note | UI2 allows only one page (8 destinations) at present. |

• A salvo (in salvo mode). The NV9608 provides support for salvos on multiple pages of salvo buttons. You can select a page with the (dedicated) scroll buttons.

In X-Y mode, the LCD buttons represent (1) the selected destination on the top left button, in amber, and (2) up to 7 levels on the other buttons.

In menu mode, some of the LCD buttons execute menu functions.

The LCD buttons are also used—in a very specific way—during the definition of a "gang" take.

• Dedicated Page Up and Page Down buttons. These buttons scroll through pages of destinations or through pages of salvos. The scroll buttons page through levels if you have more levels defined than fit on the LCD buttons.

• Keypad and category area—24 buttons, 10 of which are have fixed functions. These are either numeric buttons (0–9) or "category" buttons, depending on context. The other 14 buttons can be assigned any function, including additional categories and suffixes.

The 10 numeric/category buttons are arranged like a telephone keypad:

See the Control Panels on page 231 for information regarding SE's NV9608 configuration page. Note also that the NV9616 control panel is nearly identical to the NV9608, but it has 16 LCD button modules, not 8.

Modes of Operation

The panel operates in either an X-Y (single source/destination) mode or a multi-destination mode. A function button (XY/MD) can toggle between the modes. The NV9608 can also be configured as X-Y only, or multi-destination only.

The primary modes of operation are:

- X-Y Mode—full control of all router levels. Choose a destination, optionally choose desired breakaway levels, choose a source, and press Take to complete a desired route. In this mode, the LCD buttons function as a display and show status for up to 8 levels. The scroll buttons reveal other "pages" of levels if there are more than 8.

- Multi-Destination Mode—lets you control multiple destinations. The panel displays up to 8 destinations at a time. You can scroll through 8-destination pages using the Page Up and Page Down buttons. Select a destination, choose a source, and repeat for all desired routes. Then press Take.

  Takes are "all level," and breakaways cannot be performed. The "all level" take matches as many of the destination levels as possible to the available source levels, using the destination's "primary" level as the reference. .

Note	If breakaway takes are performed in X-Y mode, the destination status in MD mode will be reverse text (on the LCD buttons).

Note	The destination's "primary" level is defined as the virtual level with the lowest ID number—as configured in the virtual level list.

(UI2 presently allows only one page of 8 MD buttons.)

Secondary modes include:

- Salvo Mode—pressing a Salvo button places the NV9608 in "Salvo" mode. The LCD buttons function as a display, showing the names of up to 8 salvos at a time. Additional salvos (if any) are viewable by pressing the Page Up or Page Down buttons.

- Menu Mode—pressing a Menu button places the NV9608 in "menu" mode. The menu display some status information and allows you to enter a panel ID and to control the LCD (and LED) brightness.

  In menu mode, the LCD buttons function as a display. Some buttons execute data entry functions.

Configurable Functions

The NV9608 can be configured to perform the following functions:

- Breakaway and level map status for up to 7 levels at glance. (Other levels can be displayed by scrolling.)

- Previous Source, Free Source, and "Quick" Source.

- Lock/Release and Protect/Release for both sources and destinations.

- Return to a pre-defined (or default) state.

- Hold breakaway levels or multiple destinations.

- System salvos and local salvos.

- Change panel ID and button illumination.

- In a multiple-panel configuration, a Force Release of a locked or protected device can be configured for each NV9608. However, note that Normal Release and Force Release are mutually exclusive on the same panel.

Additional Control Panel Features

The following additional features are provided:

- The NV9608 supports multiple source breakaways in X-Y mode. This lets you route multiple sources to the same destination — on different levels.

- The panel supports gang or dub switching in multi-destination mode. The operator may route single or multiple sources to multiple destinations in a single operation.

The NV9608's 8 LCD buttons can be green (for sources), amber (for destinations), yellow, or red. Each button provides three levels of tally: off, low, and high. Through the menu, high tally can be set at high or medium brightness and low tally can be set at low or medium brightness, where high tally is constrained to be brighter than low tally.

Red generally indicates that a failure has occurred or would occur. For instance, if a destination or a level cannot be switched, its LCD button tallies red. If a device is locked by another user, the button will tally red also.

The NV9616's 24 function buttons and two scroll buttons have LED illumination. The buttons can be green (for sources) or amber (for destinations). Each button provides three levels of tally: off, low, and high. (You can adjust the levels of low and high tally, through the menu. LED brightness levels range from 0% to 100%, in 10% increments, with high tally constrained to be brighter than low tally.)

If you assign an X-Y/Multi-Destination button on your panel, it is a toggle: press it once for X-Y mode (it turns green) and press it again for Multi-Destination (it turns amber).

NV9609

The NV9609 is an X-Y control panel that has four 8-character displays:
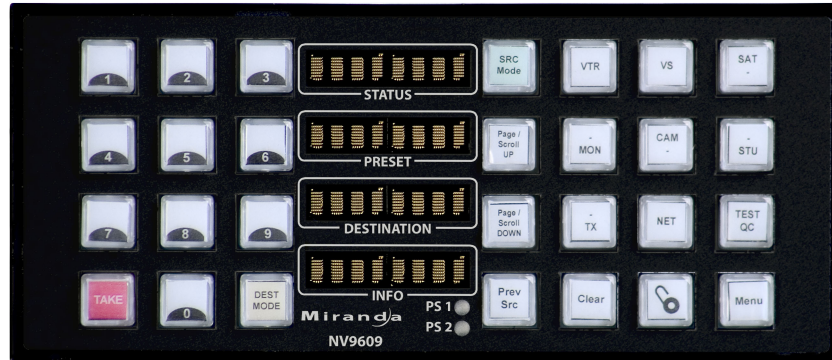
See NV9609 on page 286 for information regarding the 'NV9609' configuration page.

The panel is organized into two array: 12 buttons to the left of the central display area and 16 to the right. None of the buttons have fixed assignments, but are generally divided into the following functions:

- Category and numeric buttons — 10 buttons from 0 to 9 which are also category buttons.

- 'Level' buttons enable breakaway switching.

- 'Next' and 'Prev' that enable operators to scroll through the available levels on the selected destination so that single level breakaway switches may be done.

Mode of Operation

The panel operates in X-Y Mode only (single source/single destination). Choose a destination, choose a source and press Take to complete a desired route. The panel can be configured to display up to eight levels of status.

From the user's standpoint, the panel has four operational modes:

- Source mode, in which sources are chosen for selected routes.

- Destination mode, in which destinations are chosen for selected routes.

- Level Mode, in which a breakaway level can be selected or sources on specific levels determined.

- Salvo mode, in which "system" salvos are run.

- Menu mode, in which the user can set the panel ID, button illumination, and review various parameters.

Configurable Functions

The NV9609 can be configured to perform the following functions:

- Previous Source and Free Source.

- Lock/Release and Protect/Release for destinations only.

• System salvos.

• A menu to change Panel ID, adjust button illumination, and provide "read only" status for a variety of other panel functions.

• The NV9609 supports multiple source breakaways. This lets you route multiple sources to the same destination on different levels. Use Level or Level mode buttons to make use of this capability.

• Time out function – If an operator either initiates a break-away or is viewing the status of a particular level and they leave the panel in a state where it is displaying a level that is not the highest or first level, the panel reverts to the default state displaying the highest or top level; the next take will be pre-set to be all levels.

NV9616

The NV9616 is an X-Y/multi-destination control panel featuring 16 LCD button modules:
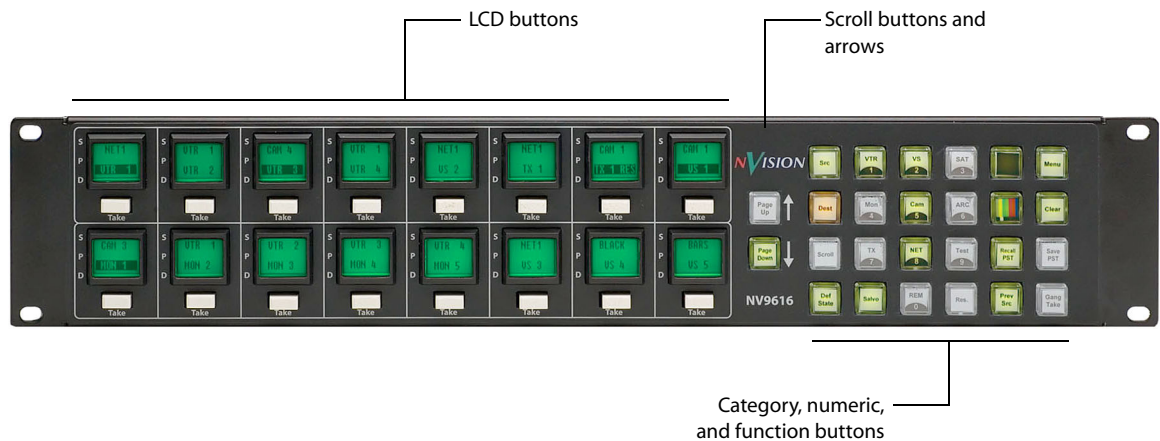
LCD buttons   Scroll buttons and arrows

Category, numeric, and function buttons

This 2RU panel is organized as shown in the illustration above:

• LCD button units.

   Each unit comprises a large LCD button and a small 'Take' button below the LCD button. The LCD buttons each have 3 lines of text (up to 8 characters per line). In multi-destination mode, the 3 lines of text display source, preset, and destination, respectively. A button can display other messages in other contexts.

   When defined, an LCD button represents:

   • A destination (in multi-destination mode). The NV9616 provides support for up to 512 destinations on up to 32 pages. You can select a page with the (dedicated) scroll buttons.

   • A salvo (in salvo mode). The NV9616 provides support for salvos on multiple pages of salvo buttons. You can select a page with the (dedicated) scroll buttons.

   In X-Y mode, the LCD buttons represent (1) the selected destination on the top left button, in amber, and (2) up to 15 levels on the other buttons.

   In menu mode, some of the LCD buttons execute menu functions.

   The LCD buttons are also used—in a very specific way—during the definition of a "gang" take.

- Dedicated Page Up and Page Down buttons. These buttons scroll through pages of destinations or through pages of salvos. The scroll buttons page through levels if you have more levels defined than fit on the LCD buttons.

- Keypad and category area — 24 buttons, 10 of which are have fixed functions. These are either numeric buttons (0–9) or "category" buttons, depending on context. The other 14 buttons can be assigned any function, including additional categories and suffixes.

The 10 numeric/category buttons are arranged like a telephone keypad:

See [NV9616](#) on page 292 for information about using the 'NV9616' configuration page. Note also that the NV9608 control panel is nearly identical to the NV9616, but it has 8 LCD button modules, not 16.

Modes of Operation

The panel operates in either an X-Y (single source/destination) mode or a multi-destination mode. A function button (XY/MD) can toggle between the modes. The NV9616 can also be configured as X-Y only, or multi-destination only.

The primary modes of operation are:

- X-Y Mode — full control of all router levels. Choose a destination, optionally choose desired breakaway levels, choose a source, and press Take to complete a desired route. In this mode, the LCD buttons function as a display and show status for up to 16 levels. The scroll buttons reveal other "pages" of levels if there are more than 16.

- Multi-Destination Mode — lets you control multiple destinations. The panel displays up to 16 destinations at a time. You can scroll through 16-destination pages using the Page Up and Page Down buttons. Select a destination, choose a source, and repeat for all desired routes. Then press Take.

Takes are "all level," and breakaways cannot be performed. The "all level" take matches as many of the destination levels as possible to the available source levels, using the destination's "primary" level as the reference.

Note	If breakaway takes are performed in X-Y mode, the destination status in MD mode will be reverse text (on the LCD buttons).

Note	The destination's "primary" level is defined as the virtual level with the lowest ID number — as configured in the virtual level list.

Secondary modes include:

- Salvo Mode — pressing a Salvo button places the NV9616 in "Salvo" mode. The LCD buttons function as a display, showing the names of up to 16 salvos at a time. Additional salvos (if any) are viewable by pressing the Page Up or Page Down buttons.

- Menu Mode—pressing a Menu button places the NV9616 in "menu" mode. The menu display some status information and allows you to enter a panel ID and to control the LCD (and LED) brightness.

- In menu mode, the LCD buttons function as a display. Some buttons execute data entry functions.

Configurable Functions

The NV9616 can be configured to perform the following functions:

- Breakaway and level map status for up to 15 levels at glance. (Other levels can be displayed by scrolling.)

- Previous Source, Free Source, and "Quick" Source.

- Lock/Release and Protect/Release for both sources and destinations.

- Return to a pre-defined (or default) state.

- Hold breakaway levels or multiple destinations.

- System salvos and local salvos.

- Change panel ID and button illumination.

- In a multiple-panel configuration, a Force Release of a locked or protected device can be configured for each NV9616. However, note that Normal Release and Force Release are mutually exclusive on the same panel.

## Additional Control Panel Features

The following additional features are provided:

- The NV9616 supports multiple source breakaways in X-Y mode. This lets you route multiple sources to the same destination—on different levels.

- The panel supports gang or dub switching in multi-destination mode. The operator may route single or multiple sources to multiple destinations in a single operation.

The NV9616's 16 LCD buttons can be green (for sources), amber (for destinations), yellow, or red. Each button provides three levels of tally: off, low, and high. Through the menu, high tally can be set at high or medium brightness and low tally can be set at low or medium brightness, where high tally is constrained to be brighter than low tally.

The NV9616's 24 function buttons and two scroll buttons have LED illumination. The buttons can be green (for sources) or amber (for destinations). Each button provides three levels of tally: off, low, and high. (You can adjust the levels of low and high tally, through the menu. LED brightness levels range from 0% to 100%, in 10% increments, with high tally constrained to be brighter than low tally.)

If you assign an X-Y/Multi-Destination button on your panel, it is a toggle: press it once for X-Y mode (it turns green) and press it again for Multi-Destination (it turns amber).

RP16 and RP32

The RP16 (1RU panel) and the RP32 (2RU panel) are remote panel modules that sends "take" or "lock" messages to a network of routers (and receives status messages from the routers in the network). A remote panel module must have a Compact Router Series (CR Series) control panel attached to be usable. When commands are executed on the attached control panel, the remote panel module sends commands to the network of routers and receives status messages from the routers. The remote panel modules — coupled with a 1RU or 2RU CR Series control panel — can be used to control a network of mixed compact routers.

The panel module is "remote" because it and its control panel can be located apart from the routers (from a few inches to several hundred meters, subject to cable limitations).

A stand-alone network allows up to 16 remote panel modules, up to 4 routers, and up to 4 levels. A CRSC network allows up to 16 remote panel modules, up to 4 routers, up to 8 levels, and enhanced capabilities. See NVRP16 on page 333 or NVR2P32 on page 335 for information about using the related configuration page.

Each remote panel can be attached to the following corresponding control panels:

• The RP16 — CP1616, CP1604, CP1602, CP3201 (16×16, 16×4, 16×2, with 6 function buttons).

• The RP32 — CP3232 and CP3204 (32×32, 32×4, with 12 function buttons).

These panel configurations are not implemented for the current release of NV9000-SE.

NV9640

The NV9640 is an X-Y/multi-destination control panel featuring 30 LCD buttons and a 42 character by 8 line display:

See NV9640 on page 301 for information about using the 'NV9640' configuration page.

This 2RU panel is organized as shown in the illustration above:

• Function buttons — an array of 30 LCD buttons.

The LCD buttons each have 3 lines of text (up to 8 characters per line). The buttons can display one of eight colors dynamically: red, green, blue, purple, amber, yellow, grey (or white), or 'none'. Green and amber are reserved (by the software) for sources and destinations. You can assign any of the other colors (blue, grey, purple, red, yellow) to a button. You can also assign 'default' as a color which means the button acquires whatever color the system assigns to it, typically green for a source and amber for a destination.

Each LCD button has *four* levels of brightness: off, low, medium, and high, and supports *three* operational levels: high tally, low tally, and off. High tally can be either medium or high brightness and low tally can be either low or medium brightness. High tally is always constrained to be brighter than low tally.

The NV9640 provides a *tree-structured* button layout. You can define a "tree" of buttons in such a way that each of the 30 buttons (all illuminated in various colors and having 3 lines of text) can either execute a function or select a subtree (i.e., present an entirely new set of functions at a lower level in the tree). The tree, with its subtrees, is not limited in size.

Note	During configuration, you will use Navigate buttons to create a subtree. During operation, panel users will press a Navigate button to access a subtree.

Note	We use the term "page" to mean the set of 30 button functions at any particular level in the subtree.

The button tree has a hierarchical structure as does your computer's file system. During configuration, you can view a graphic display of the tree. Button pages that contain Navigate buttons are displayed with file folder icons and + or – to the left of the page name. You can use the + button to view more detail of a subtree. Use the – button to collapse the display of a subtree. Button pages that do not contain Navigate buttons are displayed with a dark circle next to the page name.

Note	Button page names in the displayed tree default to the button text (up to 24 characters). You can change names in the tree without affecting the button text.

Although you can view the tree during configuration, the structure of the tree is not evident on the panel itself. The panel operator must commit the tree structure to memory to be able to use the panel. It is up to the person configuring the panel to design a simple and logical tree structure.

Some buttons functions are assigned by the system depending on the context. For example. if a button page is to represent all sources in a category, and that set changes, the button subtree adjusts in size dynamically. The panel software adds a "forward" button if there are more sources than buttons. Pressing the forward button takes you to the next page of source buttons.

Button states depend on context. Many buttons remain unlit when their functions are disabled. For example, the Page Up and Page Down buttons remain dark until there is an opportunity to scroll up or down, respectively. An XY/MD button turns green for X-Y mode and amber for multi-destination mode. The XY/MD function disappears in menu mode, info mode, or when you switch to another button page.

Save Preset goes low tally when you press Clear Preset.

• Display—eight lines of 42 characters.

In X-Y mode, the display is divided into 4 columns (Entry, Preset, Status, Level/Dest):

- Entry: contains mode, status, and data entry fields.

- Preset: the current preset state.

- Status: the current source state.

- Level/Dest: the current destination state.

The columns include various indicators such as L (locked), P (protected) and + (information available). If more than 8 levels are defined, the user can scroll through "pages" of levels using Page Up and Page Down buttons.

The display also supports multi-destination mode and salvo mode. In multi-destination mode, the display shows 8-page segments of the destination list. The user can scroll through the pages using Page Up and Page Down buttons.

Note	Unless there are more than eight entries in a list, scrolling is disabled and any Page Up and Page Down buttons will be disabled (and unlit).

In salvo mode, the display shows certain details of a selected salvo. (Salvos are individually assigned to LCD buttons.)

The display shows a menu if the user presses a menu button. When you make a menu selection, the menu data are displayed on the LCD buttons. In certain cases, the user can enter data (such as panel ID or LCD brightness) using the menu and certain buttons that allow data entry. The display also shows information if the user presses an 'Info' button. (The display does not use columns when you are using the menu or displaying information.) An Info button remains disabled (dark) unless there is additional information to display.

You can define Selection buttons that select a level during a breakaway setup or that select destinations in multi-destination mode. (In fact, you must do so if the user is to make such selections.)

Modes of Operation

The panel operates in either an X-Y (single source/destination) mode or a multi-destination mode. A single button (XY/Mult) can toggle between the modes. The NV9640 can be configured to control all sources and destinations — or a subset of them.

The primary modes of operation are:

- X-Y Mode — full control of all router levels. Choose a destination, optionally choose desired breakaway levels, choose a source, and press Take to complete a desired route. In this mode, the display shows status for up to eight levels. Additional levels (if present) are viewable by pressing the Page Up and Page Down buttons.

- Multi-Destination Mode — lets you control multiple destinations. The panel displays up to 8 destinations at a time. You can scroll through 8-destination pages using the Page Up and Page Down buttons. Select a destination, choose a source, and repeat for all desired routes. The press Take. Takes are "all level," and breakaways cannot be performed. Individual destinations are selected using the selection buttons located below the display.

Secondary modes include:

- Salvo Mode — pressing a Salvo button places the NV9640 in "Salvo" mode. The display shows information about the salvo and prompts the user to press Take to execute the salvo.

- Menu Mode — pressing a Menu button places the NV9640 in "menu" mode. In menu mode, the LCD button array becomes a menu button panel that changes as needed during menu operation.

- Info Mode — pressing an Info button places the NV9640 in "info" mode. The display shows one or more messages regarding, for instance, level mapping or breakaway status. Additional message text (if any) is viewable by pressing the Page Up and Page Down buttons.

This is a sample information statement:

AES 3/4 on IRD5 is switched to AES 1/2 on IRD1.

Configurable Functions

The NV9640 can be configured to perform the following functions:

- Previous Source, Free Source, and Quick Source.

- Lock/Release and Protect/Release for both sources and destinations.

- Return to a pre-defined (or default) state.

- Hold breakaway levels.

- System salvos.

- Change Panel ID and button illumination.

- In a multiple-panel configuration, a Force Release of a locked or protected device can be con-figured for each NV9640. However, note that Normal Release and Force Release are mutually exclusive on the same panel.

Additional Features

The following additional features are provided:

- The NV9640 supports multiple source breakaways in X-Y mode. This lets you route multiple sources to the same destination on different levels.

- The panel supports gang or dub switching in multi-destination mode. The operator may route single or multiple sources to multiple destinations.

- In "Info" mode, the panel displays error messages, lock or protect status, tieline information, swapped level status, etc.

  If you assign an X-Y/Multi-Destination button on your panel, it is a toggle: press it once for X-Y mode (it turns green) and press it again for Multi-Destination (it turns amber).

NV9641

The NV9641 is an X-Y/multi-destination control panel featuring 16 LCD function buttons and 2 up/down (scroll) buttons. In X-Y mode, it can function as a "button-per-source" panel. This 1RU panel is organized as shown in Figure B-1.

Figure B-1. NV9641 Front

At the rear, in addition to power, serial, and network connectors, is a 25-pin GPIO (tally) connector that supports 4 optically isolated relay outputs and 8 optically isolated inputs.

See NV9641 on page 311 for information about using the 'NV9641' configuration page.

Panel Organization

The NV9641 provides a tree-structured (or hierarchical) button layout. You can define a "tree" of buttons in such a way that each of the 16 LCD buttons (illuminated in various colors and having 1 to 3 lines of text) can either (1) execute a function or (2) select a subtree (i.e., present an entirely new set of functions at a different level in the tree). The tree, with its subtrees, is not limited in size.

The term "page" refers to the set of 16 button functions at any particular level in the subtree. During configuration, you use 'Navigate' buttons to create a subtree. During operation, NV9641 users will press a 'Navigate' button to access a subtree.

The up/down buttons scroll through lists and are not used for navigation per se.

Function Buttons

The NV9641 has an array of 16 LCD buttons. Each has 3 lines of text (up to 8 characters per line). The buttons can display one of seven colors dynamically: nominally red, green, blue, purple, amber, yellow, or grey. An eighth color exists — "dark" — when the LCD is off. During configuration, you can assign any of the 7 colors to a button.

Each LCD button has four levels of brightness: off, low, medium, and high, and supports three operational levels: high tally, low tally, and off. High tally can be either medium or high brightness and low tally can be either low or medium brightness. High tally is always constrained to be brighter than low tally. See LCD Buttons, page 67, for a color chart.

Although you can see a list of the pages in the tree during configuration, the structure of the tree is not evident on the panel itself. The panel operator must commit the tree structure to memory to be able to use the panel. It is up to the person configuring the panel to design a simple and logical tree structure.

Some buttons functions are assigned by the system depending on the context. For example. if a button page is to represent all sources in a category, and that list changes, the button subtree adjusts in size dynamically. The panel software adds a Forward button and a Back button if there are more sources than buttons. Pressing the Forward button takes you to the next page of sources. Pressing the Back button takes you to the previous page of sources.

Some button states depend on context. Many buttons remain unlit when their functions are disabled. For example, the up and down scroll buttons remain unlit until there is an opportunity to scroll up or down, respectively. An XY/MD button turns green for X-Y mode and amber for multi-destination mode. 'Save Preset' goes low tally when you press Clear Preset.

The LCD buttons display a menu if the operator presses a menu button. When the operator make a menu selection, viewable data are displayed on the LCD buttons. In some cases, the operator can enter data (such as panel ID or LCD brightness) using buttons that allow data entry.

You can define 'Selection' buttons that select a level during a breakaway setup or that select destinations in multi-destination (MD) mode. (You must do so if the operator is to make such selections.)

Up/Down Buttons

The two small buttons (next to the printed arrows) illuminate when scrolling is possible. The Up button illuminates when you can scroll up; the down button, when you can scroll down. Scrolling is

necessary when a list of items — for instance, source devices — exceeds the number of buttons available for the items.

Tally Interface

At the rear of the panel is a DB25 connector that provides 8 tally inputs and 4 tally outputs. (The outputs are solid state relay outputs.) Both inputs and outputs are optically isolated. During configuration, you can construct Boolean logic that switches the outputs on. The terms of the logic expressions are states of the source and destination devices, etc., controlled by the NV9641.

During configuration, you can prescribe NV9641 behavior that depends on the tally inputs. What you connect to the tally interface is, of course, up to you. NVISION provides a breakout cable (WC0053) for the tally connector as a purchase option.

The NV9000-SE Utilities on-line help documentation calls the tally interface a GPIO interface. On the rear of the panel, it is labelled a "GPI interface." See Defining General Purpose I/O (GPIO) Connections on page 337, for details.

Modes of Operation

The panel operates in either X-Y mode or multi-destination (MD) mode. A single button (XY/MD) can toggle between the modes. A third mode—called "single-bus," "single-destination," or "but on- per-source" mode—can be emulated in either X-Y mode or MD mode.

The primary modes of operation are:

- X-Y Mode—individual control of all router levels. Choose a destination, optionally choose desired breakaway levels, choose a source, and press Take to complete a desired route.

- Multi-Destination Mode—lets you control multiple destinations. The LCD buttons display destinations and sources. You can scroll through destination lists using the Up and Down buttons. Select a destination, choose a source, and repeat for all desired routes. Then press Take. Takes are "all level," and breakaways cannot be performed.

Note	The 'Hold' mode allows you to select many MD destinations at once.

- Paging Mode—enables you to build a series of pages that display predefined buttons. During operation, the Up and Down buttons navigate through all of the pages in the order created. For more information on pages, see Creating a "Tree" of Pages on page 342.

- Single-Destination Mode—Single-destination" mode is not a distinct mode. It can be combined with the other two modes. You can create many different forms of "single-destination" mode. This mode need not have a single destination. To understand single-destination mode, you need to understand the different button types.

The secondary modes of operation are:

- Setup Mode—where the NV9641 is freshly powered up, but disconnected from the network. In this mode, you can preset the NV9641's panel ID and perform a few diagnostic tasks.

- Salvo Mode—pressing a Salvo button (and then the Take button) executes a salvo. (The duration of a salvo is indeterminate.)

• Menu Mode—pressing a Menu button places the NV9641 in "menu" mode. In menu mode, the LCD button array becomes a menu that changes as needed during menu operation.

Other Functions

The NV9641 can be configured to perform the following additional functions:

• Previous Source, Free Source, and "Quick" Source.

• Lock/Protect/Release for destinations.

• Return to a pre-defined (or default) state.

• Hold breakaway levels.

• System salvos.

• Forced release of locked or protected devices.

The NV9641 provides the following additional features:

• The NV9641 supports multiple-level breakaways in X-Y mode. This lets you route multiple sources to the same destination on different levels.

• The panel supports gang or dub switching in multi-destination mode.

• Broadcast data routing in X-Y mode.

• Level mapping

NV9642

The NV9642 is a hierarchical control panel featuring 34 LCD function buttons (illuminated in various colors and having 1 to 3 lines of text) and a small vacuum fluorescent display having 4 lines of 22 characters. It can operate in X-Y mode or in multi-destination (MD) mode. Operators can switch between modes at any time. The up and down buttons allow you to scroll the display.

This 1RU panel features an alphanumeric display, navigation buttons and LCD function buttons, as shown in Figure B-2:

Figure B-2. NV9642 Front

At the rear, in addition to power, serial, and network connectors, is a 25-pin GPIO (tally) connector that supports 4 optically isolated relay outputs and 8 optically isolated inputs

Panel Organization

The NV9000-SE has two rows of 17 LCD buttons—a total of 34 LCD buttons. Each has 3 lines of text (up to 8 characters per line). The buttons can display one of seven colors dynamically: nominally red, green, blue, purple, amber, yellow, or grey. An eighth color exists—"dark"—when the LCD is off.

If the button text occurs on only one or two lines, the button displays larger text, centered on the button.

During configuration, you can assign any of the 7 colors to a button.

Function Buttons

Each LCD button has *four* levels of brightness: off, low, medium, and high, and supports *three* operational levels: high tally, low tally, and off. High tally can be either medium or high brightness and low tally can be either low or medium brightness. High tally is always constrained to be brighter than low tally.

Although you can see a list of the pages in the tree during configuration, the structure of the tree is not evident on the panel itself. The panel operator must commit the tree structure to memory to be able to use the panel. It is up to the person configuring the panel to design a usable tree structure.

Some buttons functions are assigned by the system depending on the context. For example. if a button page is to represent all sources in a category, and that list changes, the button subtree adjusts in size dynamically. The panel software adds a Forward button and a Back button if there are more sources than buttons. Pressing the Forward button takes you to the next page of sources. Pressing the Back button takes you to the previous page of sources.

Some button states depend on context. Many buttons remain unlit when their functions are disabled. For example, Page Up and Page Down buttons remain unlit until there is an opportunity to scroll selection buttons. By default, an XY/MD button turns green for X-Y mode and amber for multi-destination mode. Save Preset goes low tally when you press Clear Preset.

The LCD buttons display a menu if the operator presses a menu button. When the operator make a menu selection, viewable data are displayed on the LCD buttons. In some cases, the operator can enter data (such as panel ID or LCD brightness) using buttons that allow data entry.

Configurers can define 'Selection' buttons that select a level during a breakaway setup. (Configurers *must* do so if the operator is to make such selections.)

Scrolling is necessary when a list of items—for instance, source devices—exceeds the number of buttons available for the items. The panel adds Forward and Back buttons as necessary. Panels that use multi-destination mode will probably require Page Up and Page Down buttons.

Alphanumeric Display

The 4×22 alphanumeric display provides real-time feedback for the operators as they press buttons to execute takes and other operations. The panel functions in two modes: X-Y or multi-destination. The display changes according to the mode. In either case, the display has 4 rows. Operators might need to scroll the display to see additional information. (The up and down buttons, right next to the display, are for scrolling the display.)

Display Fields

The display has 2 columns:

- Level/Dest.

  In X-Y mode, this column identifies the levels of the currently selected destination. That destination is identified in the information column. In the illustration above, 'VTR--1' was selected. Operators might need to scroll to see or select a level.

  In MD mode, the 'Level/Dest' column presents all the MD destinations defined in the NV9000-SE configuration. (Actual destinations are defined in the NV9000 configuration.) Operators might need to scroll to see or select a destination.

- Status.

  The status column indicates what source was routed to a destination.

  In X-Y mode, the status column represents the levels of a source or the levels of multiple sources under breakaway. These are called the *current source*(s). The presence of '--------' in the status or preset columns means that those particular levels are not defined for the destination. Therefore, no source selection for that level is possible. The illustration above shows that levels HD and 'Time Code' are not defined for VTR 1.

  In MD mode, the status column represents the sources routed to each of the destinations in the 'Level/Dest' column. Again, these are the *current sources*.

In X-Y mode, the display uses its top row to show the selected destination. Therefore, in X-Y mode, the display scrolls 3 lines at a time.

In multi-destination (MD) mode, the display uses all 4 lines to show MD destinations. In MD mode, the display scrolls 4 lines at a time.

Flags

The display also shows flags of different kinds next to the sources and destinations.

Selection Marks

At the far right of the display are marks (3 small bars) that turn on to indicate selections.

In X-Y mode, the marks turn on to indicate that a level is selected and are not visible otherwise. (The operator makes level selections in the button array.)

In MD mode, a mark appears to the right of the currently selected destination (and of all the currently selection destinations in hold mode).

Other Signs

A plus sign (+) indicates that additional information is available. There is an 'Info' button that operators may press to view the additional information.

In MD mode, an asterisk (*) directly after a source indicates a breakaway on that destination.

An 'L' indicates that a device has been locked. A 'P' indicates that a device has been protected. NV9000-SE operators may lock, protect or release destinations. It is important for operators to know that other operators may lock, protect, or release sources and destinations.

Tally Interface

At the rear of the panel is a DB25 connector that provides 8 tally inputs and 4 tally outputs. Both inputs and outputs are optically isolated.

During configuration, you can construct Boolean logic that switches the outputs on. The terms of the logic expressions are states of the source and destination devices, etc., controlled by the NV9000 control system.

Modes of Operation

The panel operates in either X-Y mode or multi-destination (MD) mode. A single button (XY/MD) can toggle between the modes. A third mode—called "single-bus," "single-destination," or "button-per-source" mode—can be emulated in either X-Y mode or MD mode.

The primary modes of operation are:

- X-Y mode—individual control of all router *levels*. Choose a destination, optionally choose desired breakaway levels, choose a source, and press Take to complete a desired route.

- Multi-destination mode—lets you control multiple destinations. The LCD buttons display destinations and sources. You can scroll through destination lists. Select a destination using selection buttons, choose a source, and repeat for all desired routes. Then press Take. Takes are "all level," and breakaways cannot be performed.

  - The alphanumeric display scrolls independently of the selection buttons. Use the fixed up/down buttons to scroll the display.

  - The Hold button allows you to select many MD destinations at once.

- Single-destination mode.

  Single-destination" mode is not a distinct mode, but we mention it because it is a mode on some other panels and can be simulated on the NV9642. It can be combined with the other two modes. You can create many different forms of "single-destination" mode. This mode may in fact have more than a single destination.

The secondary modes of panel operation are:

- Setup mode—where the NV9642 is freshly powered up, but disconnected from the network. In this mode, you can preset the NV9642's panel ID and perform a few diagnostic tasks.

- Salvo mode—pressing a Salvo button (and then Take) executes a salvo. (The duration of a salvo is indeterminate.)

- Menu mode—pressing a Menu button places the NV9642 in "menu" mode. In menu mode, the LCD button array becomes a menu that changes as needed during menu operation.

- Hold mode—when you press the Hold button, hold mode becomes active and when you press it again, hold mode becomes inactive.

- Save preset mode—when you press the Save Preset button, 'Save Preset' mode becomes active and when you press it again, 'Save Preset' mode becomes inactive.

Other Functions

The NV9642 can be configured to perform the following additional functions:

- Previous source, free source, "quick" source, and source/destination buttons.

• Return to a pre-defined (or default) state.

• Hold breakaway levels.

• System salvos.

• Lock/protect/release for destinations.

• Forced release of locked or protected devices.

• Device selection using indexes or suffixes.

The NV9642 provides the following additional features:

• The NV9642 supports multiple-level breakaways in X-Y mode. This lets you route multiple sources to the same destination *on different levels*.

• The panel supports gang or dub switching in multi-destination mode.

• Broadcast data routing in X-Y mode.

• Level mapping.

Button page "templates"—global navigation templates and suffix templates—for easier configuration.

NV9660

The NV9660 a hybrid panel, combining an audio mixer panel and a router control panel. The panel controls the input selection and mixing functions on the NVISION NV7512 "MIX OUT" Quad Mixer Output Module. One NV9660 is required per mixer output, thus four panels are needed to control all four mixers on the NV7512 MIX OUT.
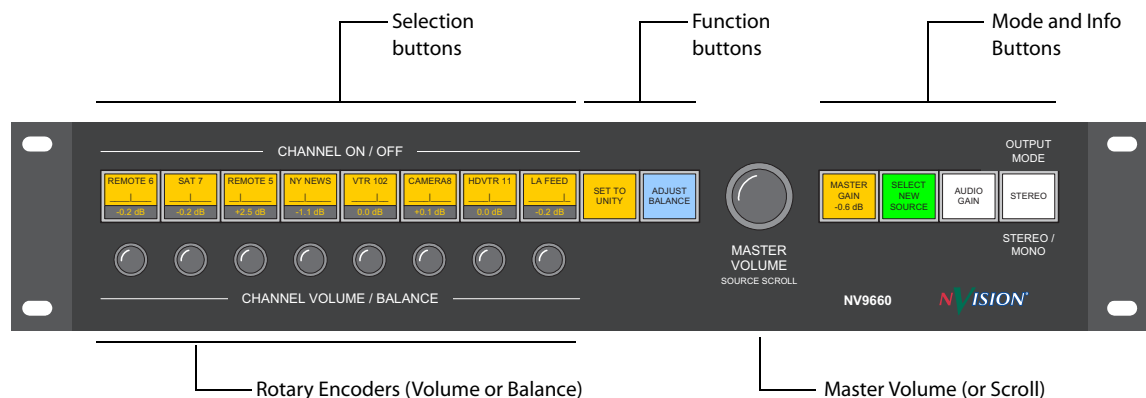
See NV9660 on page 327 for information about using the 'NV9660' configuration page.

Please note:

• Each mixer has eight stereo inputs and a single AES output.

• Each input has adjustable gain and balance.

• The NV9660 panel can choose the router input that feeds each mixer input.

This panel operates in 3 principal modes: (See Modes of operation on page 547).

• Source selection.

• Gain control.

• Balance control.

Panel organization

This 2RU panel is organized as shown in the illustration above. There are 14 LCD buttons, numbered from 1 to 14, left to right. The buttons are color coded and each displays 3 lines of text and graphics, typically the source device, a balance indicator, and gain.

- Selection buttons

  These 8 buttons are toggles that select channels in gain or balance mode.

  These 8 buttons and the two function buttons (9 and 10) function as category and device selection buttons in source selection mode.

- Function buttons

  These 2 buttons depend on the selected panel mode:

  - In gain control mode, button 9 sets selected channels to unity gain. Button 10 switches the panel to balance control mode.

  - In balance control mode, button 9 centers the balance of selected channels. Button 10 switches the panel to gain control mode.

  - In source selection mode, both of these buttons support category and device selection.

- Master volume knob

  In gain and balance control modes, the master volume knob adjusts the total gain of the channel mix.

  In source selection mode, the master volume knob scrolls through source categories and device IDs.

- Mode and information section

  The four buttons in this section change depending on the panel mode. In gain and balance control modes:

  - Button 11 shows the panel's master gain value in dB.

  - Button 14 lets you change the panel's output from stereo to mono and vice versa.

  - In source selection mode:

  - Button 11 lets you select a mixer input to which you want to assign a source.

  - Button 14 has no assigned function. It remains off.

  - Button 12 lets you change mode. Button 13 shows the panel mode.

- Rotary encoder knobs

  The 8 rotary encoders depend on the panel mode. Each affects the channel directly above it.

  - In gain mode, they adjust the gain of the stereo source.

  - In balance mode, they adjust the source's left/right balance.

Important	A channel need not be selected for its associated encoder to adjust its gain or balance.

Modes of operation

There are 3 primary modes of operation:

- In source selection mode, you assign sources to the mixer's input channels. Source categories and device names are pre-configured using the NV9000 Router Control System.

  In source selection mode, the selection buttons turn green.

- In gain control mode, you control the gain of individual input channels and the mixer's output gain. You can also set selected channels to unity.

  In gain control mode, the selection buttons turn amber.

- In balance control mode, you control the balance of individual channels and the mixer's output gain. You can also "center" the balance of selected channels.

  In balance selection mode, the selection buttons turn blue.

Basic Function

This functional diagram illustrates the basic function of the NV9660 mixer.
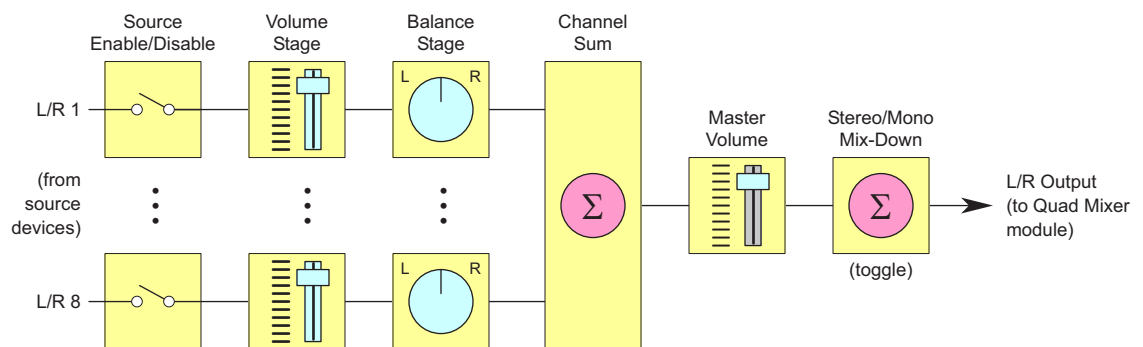
There are four identical mixer functions on a NV7512 Quad Mixer Output card, and the NV9660 panel controls one of these mixers. Please note:

- The NV9660 panel can select 8 stereo sources as mixer inputs.

- Each source uses gain and balance processing, and then all of the left channels are summed — and all of the right channels are summed.

- These summed signals are processed through a gain stage (Master Volume) and are then output.

- If the output mode is "mono mix-down," left and right are summed and divided by two — and this combined signal is copied onto output L and output R.

Additional Panel Features

The LCD buttons are number 1–14 from left to right. A selection button is always in one of the following states:

- Unselected — dimly lit. If a channel selection button is unselected, the input is not part of the mix.

- Selected — brightly lit. If a channel selection button is selected, the input is included in the mix, and functions can be performed on it (e.g., set to unity gain, center balance).

> • Off—dark. If a channel selection button is off, the input is not assigned. If a function button or mode button is off, no function is available or no information is available.

To switch from stereo to mono mode and vice versa, press button 14 until it reads "Stereo" or "Mono."

Button 12 lets you change mode. Button 13 shows the panel mode.

The LCD buttons are color coded:

> Green Source mode button
> Amber Gain mode button
> Blue Balance mode button
> White Info or mode identification
> Red Warning or error
> Dark Off, and not a function.

NV9575-VF

The NV575-VF is a tally interface:

This 1RU device (also called a tally expander) is not a router control panel although you can configure it in SE. It has no controls on its front panel. What it does have are 64 relay outputs and 32 optically isolated inputs, typically used for tally functions.

The NV9575-VF has 6 DB25 connectors on its rear panel — J1 through J6. J1, J2, J4, and J5 provide connections for the 64 relay outputs, 16 per connector, with 8 pins common. J3 and J6 provide connections for the 32 inputs, also 16 per connector with 8 pins common.

Each relay can be configured to switch on a number of conditions:

• One or more routes occurring on specific levels.

• Conditions involving output ports (destination, level).

• A transition on one or more of the NV9575-VF inputs.

Each input (also called a GPI) can be configured to trigger a salvo on a transition from off to on and to trigger another salvo on a transition from on to off.

See for information regarding the 'NV9575-VF' configuration page.

Note	The "buttons" you see in the control panel configuration pages represent connectors at the rear of the panel. The NV9575-VF has no buttons.

EC9700/EC9710 Control Panels

Several Miranda hardware control panels are available as Java-based panels that run on network computers. The software control panel layouts are identical to their hardware counterparts with the same interface, functionality and configuration files. The panels run on Window, MAC or Linux operating systems.

In addition to virtual panels that emulate hardware panels, there are also two software panels that are provided as virtual panels only: EC9700 and EC9710.

The EC9700 X-Y / multi-destination software control panel provides the same functionality as the NV9601 hardware control panel, but uses a software driven GUI application. The EC9710 is a "status" GUI only. These software control panels may be installed on as many PCs as desired—but only two may be active concurrently.

(See)

B. Control Panels

EC9700/EC9710 Control Panels

C. Glossary

Breakaway	Routing multiple sources, on different *distinct* levels, to a destination. (It is not possible to mix sources on the same level.)
Chop	Chop switches the destination between its current source and the preset source
Control point	A port (Ethernet or serial) on the host computer.
Control system	The software that runs on the system controller.
Current configuration	The configuration you are editing.
Dst or DST	Destination
Free Source	A source, usually "black" or "silence" that can be routed to a destination to free the source previously routed to that destination.
GPI	General Purpose Interface. (The term is occasionally used to mean GPI input.)
GPIO	General Purpose Input Output. (The term is occasionally used to mean GPI input.)
GUI	Graphic User Interface
HD	High Definition (HD-SDI). Video signal rates: SMPTE 259M at 1.483 and 1.485 Gb/s.
Host	The computer on which the server runs.
I/O	Input / Output
LED	Light Emitting Diode
Machine Control	Port-to-port routers where ports are neither input nor output, but instead, bi-directional. Used to enable machines to communicate.
MC	Master Control. Refers to the NV5100MC or NV5128-MC master control frames and to master control processors (MCEs and MCPMs).
MD, Multi, Multidest	Multidestination
Page	(1) Several control panels have displays. A display can show a fixed number of entries from potentially large lists, usually 8 entries at a time. A page is an 8-entry segment of a list. Lists can be salvos, destinations, levels, etc.
	(2) Some control panel s have several sets of button functions. For example, the NV9605 have 4 sets of button functions. Each set is called a page.
PGSE	Panel, GUI, and Salvo Editor (a previous edition of configuration software, still in use)
PIN	Personal Identification Number
RCS	Router Control System
RU	Rack Units. A standard measure or size for frames (1.75 inches).
SD	Standard Definition. Video signal rates: SMPTE 259M at 143, 177, 270 and 360 Mb/s and SMPTE 344 M at 540 Mb/s.
Src, SRC	Source
SysMgr	System Manager (a previous edition of software, still in use)
System controller	The hardware on which the control system application runs.

C. Glossary

UniConfig	Application used to configure the router for use by control systems.
UI	User Interface
User	A term meaning a control panel, a person associated with a control panel, or location of a control panel. Users "own" locks and protects.
VFD	A Vacuum Fluorescent Display (VFD) area on the NV9607 control panel that can be configured to display with 4 or 8 lines of text. Once configured, the area displays level status information during normal operation. The operator can also configure the area to display specific levels on a line-by-line basis.
Virtual Partitioning	The same as virtual level. See Physical Levels vs. Virtual Levels on page 112.

Index

Index

Index

Index

Index

Index

S

Index

Index