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GV ORBIT

Version 3.1.0

Release Notes

13-03082-010 BF
2023-08-18

www.grassvalley.com

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1 GV Orbit Release Notes

The *GV Orbit Release Notes* includes lists of new features and enhancements, bugs fixed, as well as known issues and limitations associated with the latest version of the GV Orbit software.

Overview

GV Orbit version 3.1.0 is a major release that adds many new features to GV Orbit (see New Features, Enhancements, and Bugs Fixed, on page 8). See also Known Issues and Limitations, on page 128.

Before Upgrading GV Orbit

GV Orbit Licensing for Version 3.0.0 or Higher is Enforced

As of GV Orbit version 3.0.0 release, the new **GVO-BASE-V3** license is required to run any GV Orbit service compatible with version 3.0.0. Before upgrading from version 2.0.0 or earlier, the **GVO-BASE-V3** license must be updated in advance.

GV Orbit Licensing for Version 2.0.0 or Higher is Enforced

When upgrading from GV Orbit version 1.7.X or lower to version 2.0.0 or higher:

- GV Orbit applications are protected by a license option. This requires a special one-time upgrade procedure. Refer to **License Service** in the *GV Orbit Admin Guide*. See Related Documentation, on page 143.
- You must first obtain a license file from Grass Valley before you start the upgrade procedure. Contact Technical Support to do so. See Grass Valley Technical Support, on page 168.

Backup GV Orbit

Backup the GV Orbit configuration to your local PC before you perform a GV Orbit software upgrade so that you can return to the previous GV Orbit software version if necessary. Refer to **Global Backup** in the *GV Orbit Admin Guide*. See Related Documentation, on page 143.

Check GV Orbit Installation Requirements

Certain installation requirements must be met before upgrading; see Installation and Network Requirements, on page 143.

Service Licensing and Software Versions Included in GV Orbit

GV Orbit Services are components of the GV Orbit software suite. Each service has its own software version linked to GV Orbit Version 3.1.0 as shown below. GV Orbit Services are described in the *GV Orbit Admin Guide*. See Related Documentation, on page 143.

The GV Orbit **Express**, **Professional** and **Enterprise** products use GV Orbit Services running on one or more GV Orbit servers. The table below indicates which licensed services are available according to each GV Orbit product option code.

The **GVO-BASE-V3** is a paid license required for all new installations of GV Orbit Version 3.0.0 or upgrades to GV Orbit Version 3.0.0 from Version 2.0.0 or earlier. The applications in Version 3.0.0 onwards will also require this **GVO-BASE-V3** license to be loaded in advance.

As of GV Orbit version 2.0.0 or higher, the licensing model is enforced by the License service, which must first be installed in order to upgrade any GV Orbit service. Refer to **License Service** in the *GV Orbit Admin Guide*. See Related Documentation, on page 143.

Service	Version	GV Orbit Product Option Code						
		GVO-CFG-PRO	GVO-MON-PRO	GVO-CTL-PRO	GVO-CTL-ENT	GVO-CTL-XPS	GVO-BASE-V3	GVO-TALLY
Operating System	3.1.0	Always available - no license required.						
Alarm API Service	6.1.0		●				●	
Automatic Network Configurator Service	1.2.0	●					●	
Channel Manager	6.1.0	●					●	
Densité Snapshot API Service	6.1.0	●					●	
Densité Manager Service	1.12.3						●	
Densité GVOC Service	1.5.4			●	●	●	●	
Device Manager	6.1.0	●	●				●	
Device Manager Service	1.5.6		●				●	
Elastic search Service	1.2.4		●				●	
Email Service	6.1.0		●				●	
Event Logging Service	6.1.0		●				●	
GV Orbit Client Service	6.1.0	Always available - no license required.						
GV Orbit Control Service	4.1.0			●	●	●	●	

Service	Version	GV Orbit Product Option Code						
		GVO-CFG-PRO	GVO-MON-PRO	GVO-CTL-PRO	GVO-CTL-ENT	GVO-CTL-XPS	GVO-BASE-V3	GVO-TALLY
GVO Tally Service	22.12.6			●	●	●	●	●
IP Friendly Name Service	2.6.0	Always available - no license required.						
IP Proxy Service	6.1.0						●	
Identity Service	6.1.0	Always available - no license required.						
License Service	2.0.0	Always available - no license required.						
Log Server Service	6.1.0	●	●				●	
LUT Manager Service	6.1.0	●					●	
MV Cluster Manager Service	6.1.0	●					●	
Map View Service	6.1.0		●				●	
Masking Service	6.1.0		●				●	
Monitoring Service	6.1.0		●				●	
NMOS Registry Service	3.0.0			●	●		●	
NMOS Service	6.1.0	●					●	
Relay Service	6.1.0	●	●	●	●		●	
Repository Manager Service	6.1.0	●	●	●	●	●	●	
Routing Service	6.1.0			●	●	●	●	
SNMP Service	6.1.0		●				●	
Server Health Service	1.3.2		●				●	
Snapshot Recall Service	6.1.0	●					●	
Web Renderer Service	6.1.0		●	●	●	●	●	

New Features, Enhancements, and Bugs Fixed

The following is a list of GV Orbit features and enhancements. The most recent items are marked with a star (★) symbol.

GV Orbit Version 3.1.0

As shown in each application's *About* screen, GV Orbit version 3.1.0 is composed of:

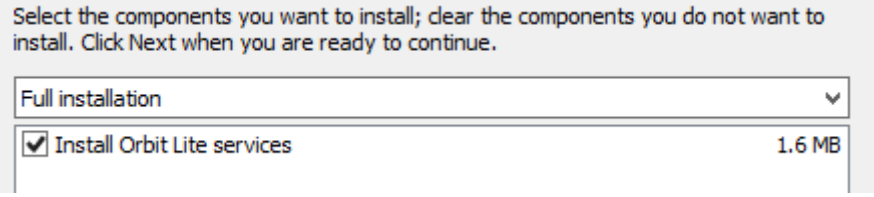
- GV Orbit Client version 6.1.0.
- GV Orbit Control version 4.1.0.

This release adds the following enhancement(s), see New Features and Enhancements, on page 13.

See also Known Issues and Limitations, on page 128.

New Features and Enhancements

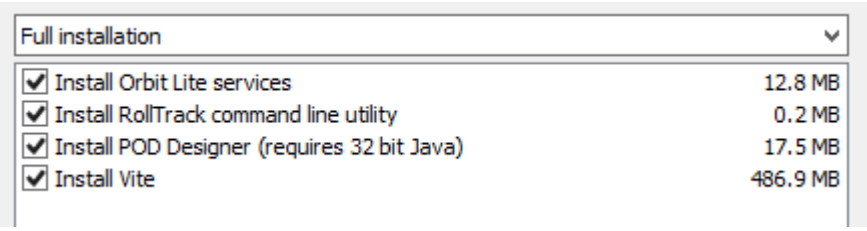
★ [Ref. #UCCM-4760] **Orbit Lite installer has optional IP Proxy service component:** The Orbit Lite installer now provides you with the option (enabled by default) to install the IP Proxy service. IP Proxy is used for configuring Rollcall devices.



- These are accessed via a web browser.
- The default URL is http://127.0.0.1:8081/
- The port number can be changed during the install.
- There is a single service present which is IP Proxy.
- The TCP Port will be set to 2069 by default.

★ [Ref. #UCCM-4759] **Additional components included with Orbit Lite installer:** When installing GVO Lite, four optional components are now included:

- Install Orbit Lite services.
- Install RollTrack command line utility.
- Install POD Designer (requires 32 bit Java).
- Install Vite.



This is accessible from the desktop icons, the start menu and from the workflow page of an Orbit C&M project via the Router Configuration button.

★ [Ref. #UCCM-5270] **Automatic change detection of remote repository for Orbit projects:** GV Orbit 3.1.0 now enables you to automatically update your local project when a new commit has been made to the GV Orbit server repository. To enable this feature, go to Projects and set the Monitor repository option.

When an update is detected in the server repository, an alert message will pop up if you would like to synchronize the server with your local copy.
Note: If you choose not to update, the automatic monitoring feature will stop and disable itself. You can re-enable the feature from the Projects menu.

★ [Ref. #UCCM-4930] **Double Click Takes on Mapview Source Buttons can be disabled:** When a Mapview routing panel is being used, double-clicking on a source with a destination selected will do an immediate take to that source.
To disable this functionality:

- Go to Projects and click on Edit Variables.
- Change "Source Button Dbl-Click Take Active" to False, and reload panels.

★ [Ref. #UCCM-4232] **Time Graph widget added to MapView:** The Time Graph provides a live and historical view of numerical sample values. Sample values can be connected to the Time Graph using behaviors and bindings. For example, an Alarm value and a Direct binding.
Note: The values must be integer values. If the numerical value is embedded in a string and/or contains fractional parts then the value must be resolved by using, for example, a StringOp bindings.

The Time Graph appears in the widget toolbar as:

Properties (all at their default values):

- **History**

  This is the number of samples (values) to record, expressed as minutes.
  The number of minutes is based on the expectation of one sample per second. Thus for a history of 60 minutes, the number of samples recorded will be 3600 (60 * 60).
  The allowable range is from 1 minute to 10,080 (where 10,080 is equivalent to 7 days of samples at a rate of one sample per second).
- **Maximum Value / Minimum Value**

These set the range of expected values.
The minimum value is limited to zero and the maximum value is limited to 999.

- **Tick Count**

  This sets the number of intermediate markers to display on the graph between max and min. Values can be from 0 to 9.

- **High Band Visible / Low Band Visible**

  These display as horizontal dashed lines and indicate the highest and lowest values so far recorded.

- **High Band Color/ Low Band Color**

  The colours to use for the high and low band markers.

- **Background Color**

  The colour of the entire background area of the graph.

- **Grid Color**

  The colour used to draw the lines around the plotting area and for the tick marks.

- **Text Color**

  The colour used for all text on the graph.

- **Plot Color**

  The colour of the plotting line used to draw values on the graph.

- **Overflow Color**

  The colour to indicate that a value exceeds the maximum value specified.
  It appears on the graph as a vertical patterned line at the point where the value was received.

- **Underflow Color**

  The color to indicate that a value subceeds the minimum value specified.
  It appears on the graph as a vertical patterned line at the point where the value was received.

Operation

- On the Y axis, the minimum and maximum values are displayed together with the specified number of tick marks (four in this case).
- The high band marker shows the maximum value so far received.
- The low band marker shows the minimum value so far received.
- The plot is drawn from right to left. The most recent value is on the right of the graph.
- The timestamps display the rightmost sample and leftmost sample.
- When the graph is first activated (put into run mode), the scrollbar will not be visible.
- It automatically becomes visible when there are more samples than can be displayed.
- Moving the scrollbar to the left will pan through the samples all the way back to when recording started. While panning, live updates will not be seen. To resume seeing live updates, move the scrollbar all the way to the right.
- The X Scale slider is used to adjust the number of samples that can be drawn in the display area of the graph.

  Note: when the recorded history is very large, panning using the scrollbar can become coarse and can cause pages of samples to be skipped in order to pan back to the beginning. In this case, the increment and decrement scroll buttons can be used to pan a page at a time.n

Performance

- The Time Graph only needs minimal CPU requirements.
- Memory consumption depends upon how many Time Graphs are present in a MapView screen and the size of the History for each graph.
- If the History is set to its maximum value then one graph could consume around 150 MB of memory when it reaches its recording capacity.

★ [Ref. #UCCM-3650] **Monitoring By Exception Auto Load Feature Added:** When configuring a Monitoring By Exception widget in Orbit Client, the properties pane now contains an "Auto Load" tickbox.

When enabled, the target link will fire automatically without user requiring to click the widget.

★ [Ref. #UCCM-4126] **Mapview properties window indicates the type of widget selected:** Properties window now displays specific label based on the type of selected widgets:

- Button properties.
- Label properties.
- Widget properties
- Screen properties.

★ [Ref. #UCCM-4933] **GVO Client: added access to user's profile:** You can now select Profile from the currently logged in user menu. This opens an embedded browser tab and shows the profile page.

★ [Ref. #UCCM-4895] **Identity Manager Auditing Viewer:** Auditing viewer page has been added to Identity Manager. This displays audit log entries with following information:

- Date
- Operation type (Login / Logout)
- Operation status (Success / Failure)
- User who triggered the operation
- IP of the device triggering the operation.

★ [Ref. #UCCM-4603] **Web Admin Log Files view:** Log Files view in Web Admin has been improved. You can now view, tail, and download log file.

Applications logs are displayed in grid.

Log files grid have sorting and filtering capabilities.

Entries in the grid are grouped by the application. The filters you apply will be kept until browser tab is closed.

★ [Ref. #UCCM-3705] **Deleting log files from Log Files view:** As an administrator, you can now delete log files in the Web Admin. An alert message will pop up to confirm that you wish to perform the delete action.

★ [Ref. #UCCM-3705] **Web Renderer Time Graph widget:** You can now use the TimeGraph widget in the MapView projects when viewed using the Web Renderer.

★ [Ref. #UCCM-5148] **Notifications added to the Routing Service:** The Routing Service now provides notifications of the following events:

- Empty snapshot name - when trying to create a snapshot with a blank name.
- Snapshot created.
- No connection to the controller.
- Snapshot creation failed.

★ [Ref. #UCCM-5312] **Orbit Client All-Leve-Take changes:** In Orbit Client, the Fixed Controller, Paged Controller and Bulk Routing panels will now send All-Level-Takes when you haven't made any changes to source or destination level selections. This is signaled by the Take button now showing "All Level Take".

Bugs Fixed

★ [Ref. #UCCM-5087] **IP Friendly Name Service active-standby redundancy mode:** IPFNS Redundancy mode was changed from active-active to active-standby. Data between nodes will be replicated using standard replication mechanism. If data is changed on active server, it will be replicated to standby server in more or less one minute.

★ [Ref. #UCCM-4382] **Fixed Densite Card Panel Not Opening:** The Control Panel for Densite cards would not open after changing projects or server settings, until a period of time had passed. This issue has been resolved.

★ [Ref. #UCCM-5162] **Upgrade Sony NMOS Registry service to newer code.**

★ [Ref. #UCCM-5230] **Orbit client log in dialog screen position fixed.**

★ [Ref. #UCCM-5098] **Memory Cap Added to NMOS Registry:** The NMOS Registry docker container now has a memory cap of 12GB applied. This will prevent the NMOS Registry taking up excessive amounts of server memory if it malfunctions.

★ [Ref. #UCCM-5086] **Fixed possible crash when GVO Client starts:** If the identity service was unreachable, GVO Client could crash when it was started. This issue has been resolved.

★ [Ref. #UCCM-4110] **Orbit installer no longer sets VLC_PLUGIN_PATH environment variable.**

GV Orbit Version 3.0.0

As shown in each application's *About* screen, GV Orbit version 3.0.0 is composed of:

- GV Orbit Client version 6.0.0.
- GV Orbit Control version 4.0.0.

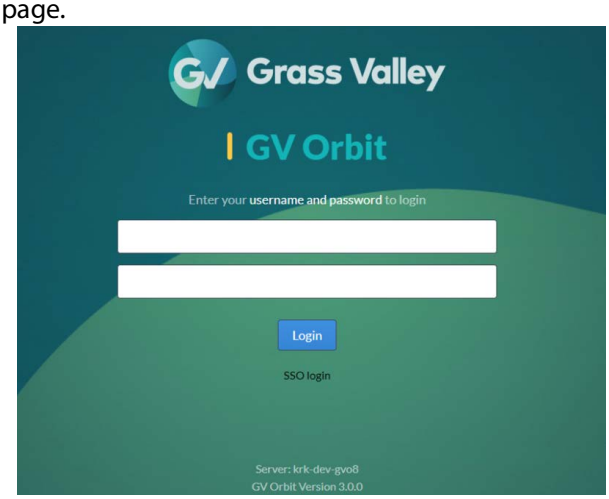
This release adds the following enhancement(s), see New Features and Enhancements, on page 13. See also Known Issues and Limitations, on page 128.

New Features and Enhancements

- [Ref. #UCCM-4372] **Unified User Authentication:** GV Orbit 3.0.0 now features a Unified User Authentication where the same login can be used across all of its client application and interfaces.
  - Each client application connects to the same user database in a new Identity Service.
  - The same username is recognized as the same user throughout.
  - Provides the option to use secure communication over the HTTPS protocol between a client and a server.
  - The Identity Service optionally integrates with an Identity Provider to authenticate users.
    - An Identity Provider manages authentication requests from multiple applications.

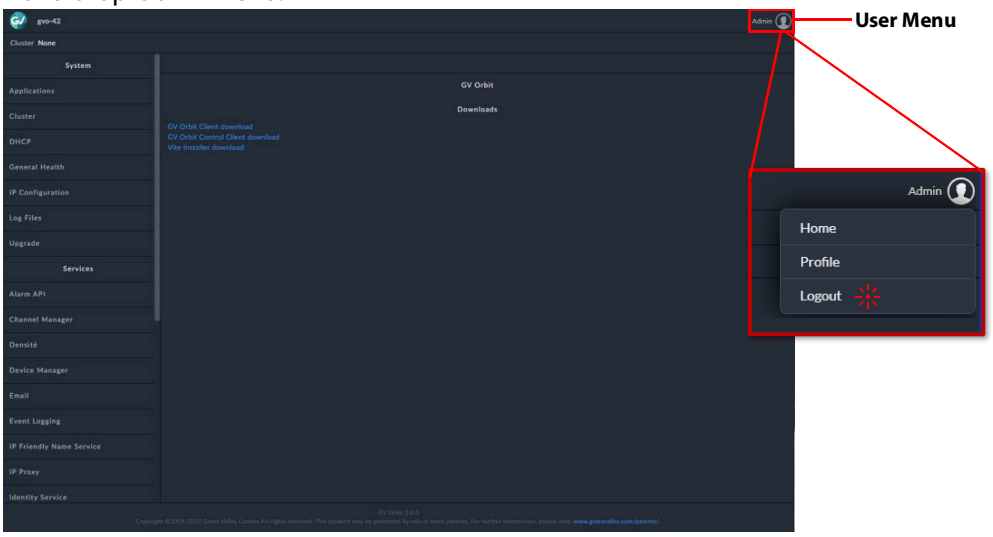
– The Identity Provider can maintain its own user directory or integrate with an existing User Database such as Active Directory.

When connecting to the GV Orbit Server Web Administration page, users will now see a GV Orbit login page.



For initial setup and configuration, use the default administrator login.
Username: *admin,* ***password:*** *admin.*

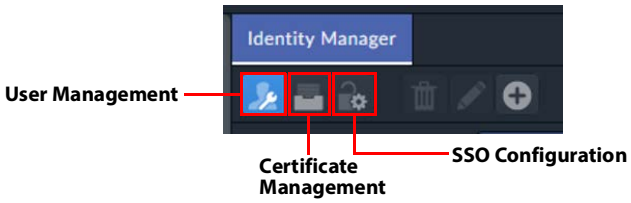
Once logged in, the upper right corner of the page will display the logged in user along with a drop-down menu.



To log out, click on the user drop-down menu and select **Logout**.

- [Ref. #UCCM-4502] **Identity Service administration:** The Identity Service administration page offers three tabs: User Management, Certificate Management and SSO Configuration.

  Note: Access to this page is restricted to users with the Administrator role only.



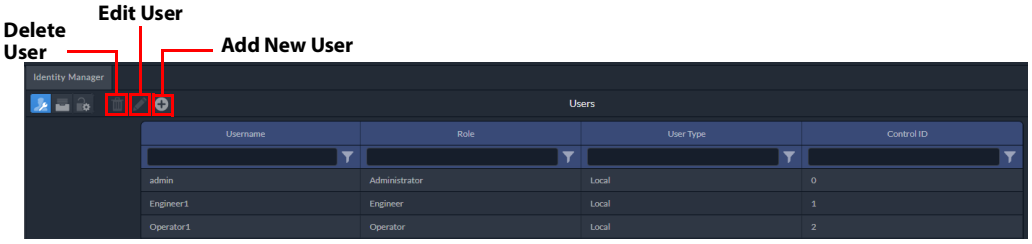
  - **User Management** lists the users present in the system and allows creating, editing and deleting users. Administrators can create users that are either local or external.

    Local users are assigned a username, role and password. They can log in directly to GV Orbit through the login page. Their username, password and role can be edited.

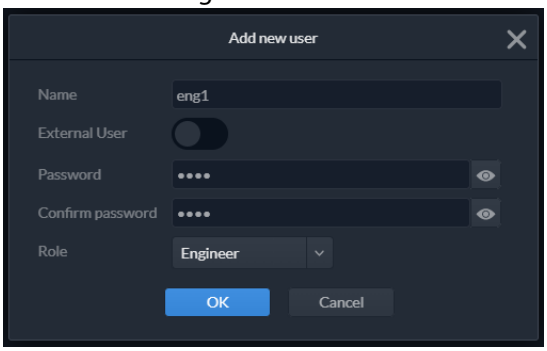
    External users do not have a password defined in GV Orbit. Such users must log in via SSO and enter the credentials defined in the configured external OpenID Connect identity provider.
  - **Certificate Management** tab allows HTTPS protocol to be enabled. Initially, a default self-signed certificate will be used. It needs to be replaced with a production certificate by administrator as soon as possible after HTTPS is enabled. The currently used certificate data is displayed on this tab.
  - **SSO Configuration** tab is used to configure and enable external OpenID Connect identity provider for SSO integration.

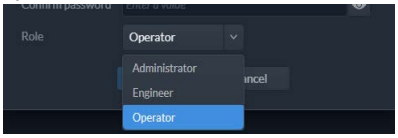
Note that the Web Admin "Users" page previously available in 2.x releases has now been deprecated.

- [Ref. #UCCM-4302] **User Management in Identity Service administration:** User management is performed on the Users tab of Identity Service administration page. The profiles of existing users are shown there and the toolbar buttons allow to add, edit and delete users.



When creating a user, a popup with a form containing user data fields is shown. It includes following fields:



Parameter	Description
Name	Name of the created user. It must be 4-16 alphanumeric (a-z, 0-9) characters in length.
External User	If enabled, user will only be able to log in using SSO.
Password	User's password, which must be at least 4 characters long; shown only if External User toggle is off.
Confirm password	Field to re-enter the user's password; shown only if External User toggle is off.
Role	User's role within the system, options are: Administrator, Engineer, Operator.  The Operator role has access to the following pages in Web Admin: • General Health • Log Files • Channel Manager • Device Manager • Event Logging • GVO Tally • LUT Manager • Web Renderer

When editing user, it is possible to modify Name, Role and Password (by clicking Reset button on Edit user pop-up window and then entering new password in another pop-up window; only available for local users). The User Type (local/external) cannot be changed.

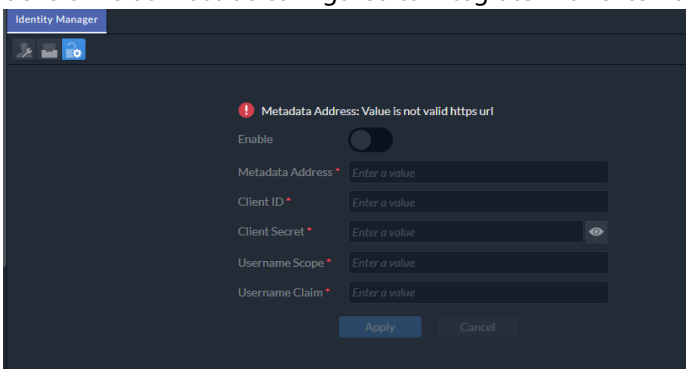
- [Ref. #UCCM-4794] **Replication of Identity Service:** Identity Service is replicated from Active to Standby node when cluster is set up. This means that configuration changes (including User Management) to that service are blocked on Standby node and should only be performed on Active node.
- [Ref. #UCCM-4702] **HTTPS support and configuration:** HTTPS can be enabled on **Identity Service administration page > Certificate Management** tab. When enabled for the first time, a default self-signed certificate will be used. It should be replaced by administrator as soon as possible with a production certificate.

  To replace a certificate, PEM-encoded certificate file together with matching certificate private key file must be uploaded on Certificate Management tab. This can only be performed if HTTPS is already enabled, as private key should only be transferred on encrypted connection. After selecting files to upload and clicking Upload button, a validation is performed. If either certificate or key file is incorrect, or if files do not match, an error is displayed. Otherwise a summary of uploaded certificate is displayed before performing actual replacement on server.

  A backup of previous files is automatically done. They can be found in `/data/var/certificate/certificate.crt.old` and `/data/var/certificate/certificate.key.old` for certificate and key file respectively. These backups can be restored manually by logging into server with SSH, logging in as root, renaming said files by removing `.old` suffix and restarting nginx service with `service nginx restart` command.
- [Ref. #UCCM-4697] **Replication of HTTPS and certificate settings:** Currently, HTTPS as well as certificate settings are not replicated between cluster nodes. If HTTPS is to be used on cluster, it must be enabled on both nodes manually. Similarly, certificate and private key must be uploaded on both nodes.
- [Ref. #UCCM-4739] **Single Sign-On (SSO) support and configuration:** SSO integration with OpenID Connect identity provider can be enabled on **Identity Service administration page > SSO Configuration tab**. For SSO to work, HTTPS must be enabled as well.

  Only users defined as external on Users tab can log in using external identity provider, which means that users present in external identity provider, but not created and marked external in GV Orbit will not be able to log in.

  Several fields must be configured to integrate with external identity provider:



Parameter	Description
Metadata Address	URL to OIDC metadata discovery endpoint (usually it is *https://SERVER_ADDRESS/.well-known/openid-configuration*).
Client ID	Client ID that is configured in identity provider for GV Orbit.
Client Secret	Client Secret that is set for a client with Client ID given above.
Username Scope	OIDC scope that includes a claim which contains a username.
Username Claim	Name of claim that contains a username; this username is used to match external identity provider users with users defined in GV Orbit that are marked as external.

Identity provider must have a client configuration for GV Orbit. GV Orbit uses `code` response type with `query` response mode (authorization code flow), so these must be allowed in client configuration. Client must also be given access to configured Username Scope. Allowed login callback URL must be set to *https://GV_ORBIT_ADDRESS/identity/signin-oidc*. Token endpoint authentication method should be set to `Post`.

- [Ref. #UCCM-4714/UCCM-4713/UCCM-4727] **GV Orbit Client and Server Authentication of users:** In previous versions of GV Orbit Client, authentication of users was performed within GV Orbit Client itself.

  This has been changed and GV Orbit Client now authenticates users via GV Server's Identity Service.

  Upon start up of GV Orbit Client, the user will be automatically prompted for the address of a GV Server. After providing the address, the user will be prompted to log in. The log in must be successful before GV Orbit Client will accept the given address.

  If the GV Server has been successfully set, then on the next launch of GV Orbit Client, the user will be automatically prompted to log in.

  Note: It is possible to use the IP address, but it is recommended to use the hostname when logging in to the server via HTTPS to avoid warning messages on the login screen.

  Some of the main menu items on GV Orbit Client's start up page have restricted access which is controlled by whether the user has logged in and what role the user has.

  This applies to Create Project, Open Project and Recent Projects.

  None of these are available when not logged in.

  When logged in as admin or engineer role then they are all available.

  When logged in as operator role then Open Project and Recent Projects are available.

  Open Project and Recent Projects are available when logged in with operator role.

  If a user has logged in, then the user name and logged in icon appear in the top right of the start up page. Clicking on the logged in icon will prompt the user to log out.

- [Ref. #UCCM-4928] **Workflow restrictions based on user role:** If existing projects are using the default workflow, then it is necessary to manually update the workflow page for the C&M project(s) that you will use for testing.

  After installing this version of GV Orbit Client, copy the workflow.wfl in: *C:\Program Files\Grass Valley\GV Orbit\workflows* and paste it into the workflows folder of your project.

Role	Description
Administrator Role	All functions are visible on the workflow page.
Admin Role	All functions are visible except for User Management.
Operator Role	The following functions are not visible: • Router Configuration • Components • Resources • Themes • User Management

- [Ref. #UCCM-4771] **Opening a web link to the server login page is prohibited:** GV Orbit Client uses either of the following URLs to log in via GV Server:
  - http://{server}/identity/orbit
  - https://{server}/identity/orbit

  Attempting to open such a link will result in a warning message saying that the link cannot be opened.
- [Ref. #UCCM-4770] **Disable pushing and pulling project to and from the server when logged in as an operator:** When logged in as an operator, the pushing and pulling of project to and from the server is disabled.
- [Ref. #UCCM-5007] **Login fields for Densité REST API no longer required:** Login fields for Densité REST API are now hidden.
- [Ref. #UCCM-4705] **User role added to user behaviour:** In addition to the username and password, the user behaviour now also exposes the user role.

  The password value is now obfuscated when running in test behaviour mode.
- [Ref. #UCCM-5002] **GV Orbit Client and Server Authentication: Recommendation to use the hostname when logging in to server via HTTPS:** See release notes [Ref. #UCCM-4714], on page 18.
- [Ref. #UCCM-4824] **Web Renderer does not need a separate login:** The Web Renderer now acquires the credentials of the user currently logged into the server.

  This removes the need for a log in dialog after clicking the 'Web View' link.

  Limitations:
  - If the server is enabled for HTTPS then a properly authorized certificate must be installed on the server. A self-signed certificate may not work.

    The certificate which is installed by default will not work.
  - There is no known workaround if using the Chrome browser.
  - Workaround using the Firefox browser:
    1 In Firefox, open a tab and browse to 'about:config'.
    2 In the search box enter 'network.websocket.allowInsecureFromHTTPS'

3 This option should appear.

4 Click on the option to toggle it to 'true'.

- [Ref. #UCCM-4554] **Install Vite 6.0 application from GV Orbit server:** The GV server Web Admin home page provides a download link for Vite 6.0 installer.

  Note that this would download a zip file that needs to be extracted and the installer run.

  Note: Version 6.0 must be compatible with the target Router controllers (S8xx & VEGA) firmware. Updating the Routers controllers firmware may be required. For further support on compatibility between version 6.0 Vite or how to upgrade a Router controllers firmware, please contact Grass Valley support.

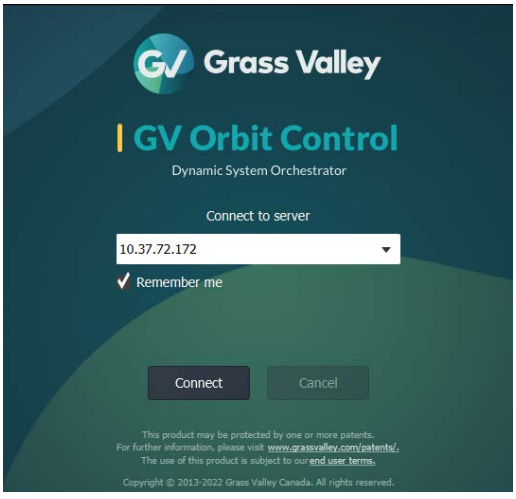
- [Ref. #UCCM-4492] **Launch Vite 6.0 application from GV Orbit Client:** A link to the Vite application has been added to the workflow page.

  If Vite is installed then clicking on the link will open a copy of the Vite application. If not installed then a warning message will appear.

  Note: For existing C&M projects, it is necessary to take the following steps to enable this feature (INSTALL_DIR is the installation directory of GV Orbit and PROJECT_DIR is the location of the project folder on disk):

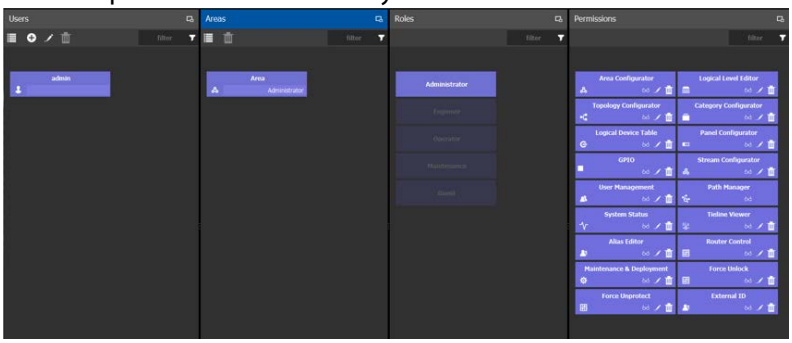
  - Copy *INSTALL_DIR\components\workflow\workflow launch vite.cptx* to *PROJECT_DIR\components\workflow\workflow launch vite.cptx*
  - Copy *INSTALL_DIR\resources\images\workflow\router_config.svg* to *PROJECT_DIR\resources\images\workflow\router_config.svg*
  - Copy *INSTALL_DIR\workflows\workflow.wfl* to *PROJECT_DIR\workflows\workflow.wfl*

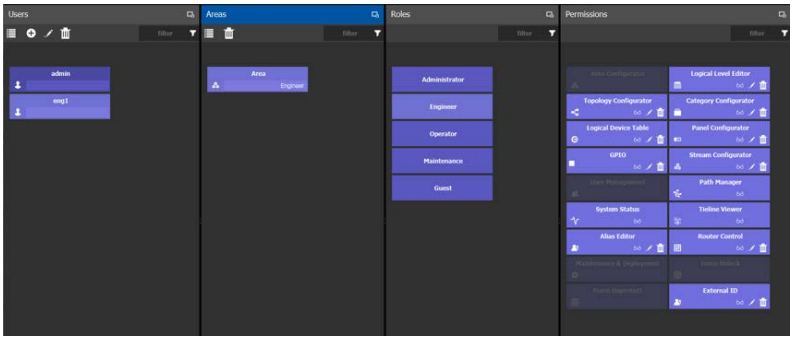
- [Ref. #UCCM-4609] **Unified User Authentication in GV Orbit Control client:** When launching the GV Orbit Control client for the first time, users will be prompted to select the GV Orbit server to connect to.



  - When connecting to a valid 3.0 server, the GV Orbit login screen opens and users will log in using the GV Orbit Identity Service credentials.
  - If you attempt to log in to a 2.x GV Orbit server or a non GV Orbit server, the login page window will open with a 404 error. Close the window to return to the server selection and make sure that the correct client version is installed for the appropriate version of the GV Orbit server.

Note: The user no longer has the ability to add, edit or remove users from the User Management page. Valid users are now automatically added to the list of users with their role profile set in the Identity Service.

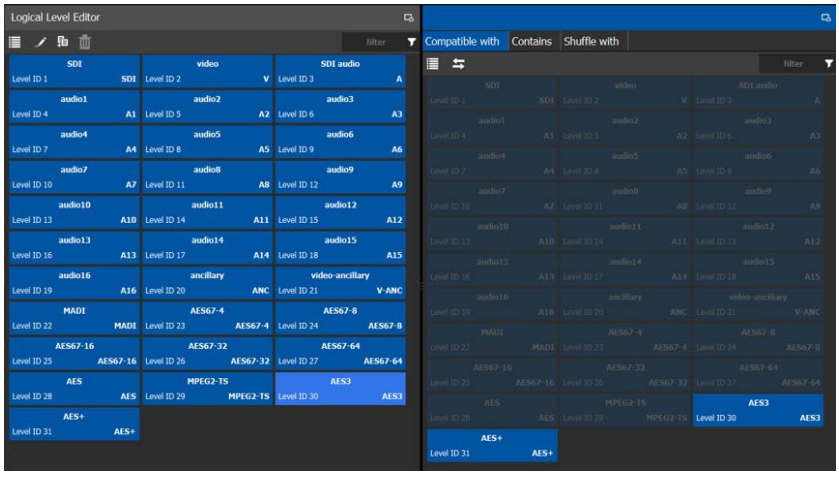




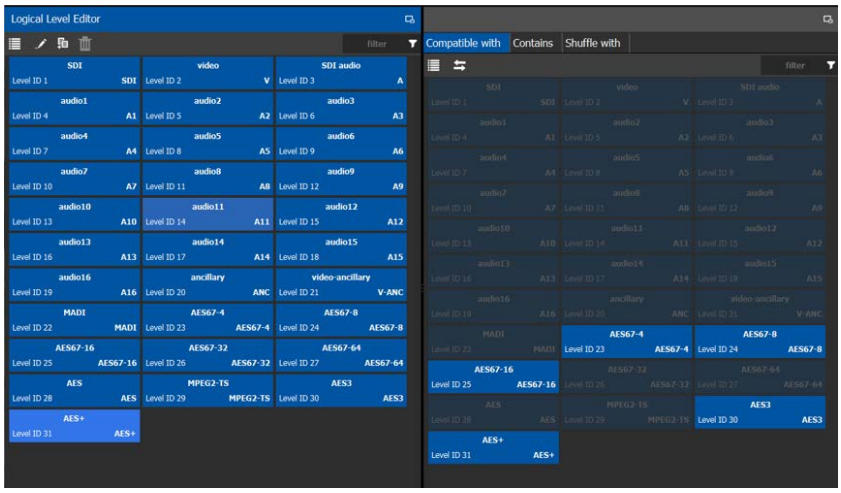
- [Ref. #UCCM-4459] **ST2110-31 Audio flow support for GVOP devices:** ST2110-31 Audio flow control is now supported for compatible GVOP devices, e.g. IQUCP25/50, UCP3901, etc.

  The Logical Level Editor includes two additional levels, i.e. AES3 and AES3+.

  - The AES3 level is compatible with both AES3 and AES3+.
  - Devices which are only capable of or only configured to receive ST2110-31 flows should use the AES3 level.



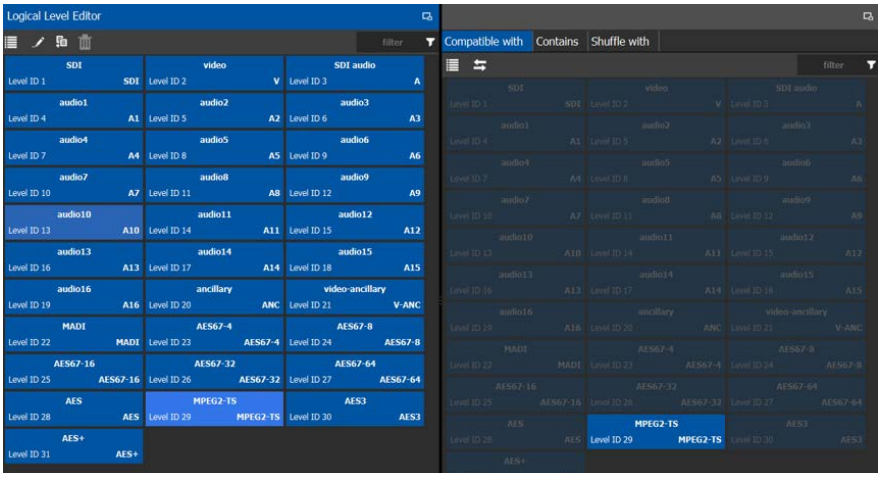
- The AES3+ level is compatible with both AES3, AES3+, along with AES67-4, AES67-8 and AES67-16 levels.
- Devices which can receive both ST2110-31 and ST2110-30 flows can use the AES3+ level.



- Under the Stream Supported flows types field, the new level AES3 will be also visible for compatible devices. Those can be manually overwritten under the Stream Logical Level entries to another supported and desired Audio flow level.

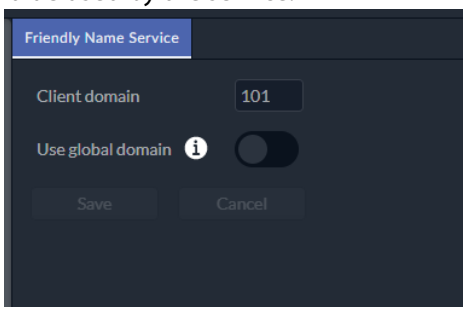
Note: Routing of ST2110-31 flows in this version is only supported for GVOP devices. Support for NMOS devices is expected in future versions.

- [Ref. #UCCM-4527] **Introduced a new MPEG2TS level for routing XIP-39x1-ASI streams to/from IP networks:** A new MPEG2TS level has been added to support the XIP-39x1-ASI application for routing ASI streams to/from IP networks.



- [Ref. #UCCM-4486] **Importing RollSNMP drivers into GV Orbit:** RollSNMP drivers can now be imported from the device manager drivers page. Once uploaded, the imported driver can be selected when adding a new SNMP device.
- [Ref. #UCCM-4691] **IP Friendly Name Service page:** The IP Friendly Name Service page can be accessed from the Web Admin page.

The service Client domain can be manually set to other than the default global domain value used by the service.



Note: The IP Friendly Name Service Client domain must match the GVOP Control domain that should also match the domain listed under the IDs for IP Routing Domain, which in turn can be accessed from the GV Orbit Control Client under the System Controller Group Properties.

- [Ref. #UCCM-4493] **GV Orbit Tally Service:** GV Orbit Tally is a fully-featured live production tally system, available as a new software option within the GV Orbit server environment.

  As standard, it includes tally-over-IP support for all relevant GV live production products, including GV cameras, GV switchers, GV multiviewers and GV routing systems. Third-party devices can be supported through additional license purchases. Non-IP tally interfaces (such as serial and GPI) can be supported through additional hardware purchases. It can run independently without a GVO-CTL routing system or fully integrate with GVO-CTL routing and/or legacy GV routing systems.

  The new licensed GV Orbit Tally service can be accessed via the Web Admin menu.

  Note: To return back to Web Admin menu, click on the GV Logo.

- [Ref. #UCCM-4832] **GV Orbit Tally service licensing requirements:** The new GV Orbit Tally service can be activated by ANY of the following licenses:
  - GVO-CTL-XPS
  - GVO-CTL-PRO
  - GVO-CTL-ENT
  - GVO-TALLY (New license)

  For live production tally use-cases, a GVO-TALLY license is required. As for router protocol conversion use-cases, either a GVO-TALLY or GVO-CTL-x license is required.

- [Ref. #UCCM-4490] **New licensing requirement: GVO-BASE-V3:** Since the release of GV Orbit 3.0.0, GVO-BASE-V3 license is required to run any service compatible with version 3.0.0. This is basic license which is required by any 3.x system. Make sure you have the license available before upgrading to anything higher or equal to GV Orbit 3.0.0.

- [Ref. #UCCM-4926] **Licensing update for IP Proxy service:** As of GV Orbit 3.0.0, the IP Proxy service will no longer require the GVO-CFG-PRO or GVO-MON-PRO licenses. The service will be available by default with the GVO-BASE-V3 license.

- [Ref. #UCCM-4908] **Licensing update for Densité service:** As of GV Orbit 3.0.0, the Densité service will no longer require the GVO-CFG-PRO or GVO-MON-PRO licenses. The service will be available by default with the GVO-BASE-V3 license.

GV Orbit Version 2.12.2

As shown in each application's *About* screen, GV Orbit version 2.12.2 is composed of:

- GV Orbit Client version 5.12.2.
- GV Orbit Control version 3.12.1.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- New Features and Enhancements, on page 24
- Bugs Fixed, on page 26

See also Known Issues and Limitations, on page 128.

New Features and Enhancements

- [Ref. #UCCM-5037] **Introduction of an NP0017 Legacy mnemonic mode for northbound traffic:**
  - **Modification 1:**

    Introduced a system configuration property to select the NP0017 mnemonic handling for installations designed around a GV Orbit system running versions earlier than 2.8.1.

    This **NP17 Legacy Mnemonic** mode should only be enabled to cater for northbound systems that depend on the earlier implementation and for scenarios when upgrading from a version earlier than 2.8.1 to version 2.12.2.

    The property can be configured in the **GV Orbit Control Client** > **Area Editor** > **System Controller Group Properties** > **NP17 Legacy Mnemonic**.

    The NP0017 commands affected are:

    - GetMnemonics (0x00003012)
    - GetExtendedMnemonics (0x00003022)

    When the legacy mode is **enabled**, mnemonics are retrieved by External ID ranges (before paging fixes introduced in GV Orbit version 2.8.1, see [Ref. #UCCM-4256], on page 47). In this case "startingOffset" means the first External ID to include in the response list.

    When the legacy mode is **disabled (default mode)**, mnemonics are retrieved by logical pages (see [Ref. #UCCM-4256], on page 47). In this case "startingOffset" means the first page to include in the response list.

    The property is intended to be set once at installation/maintenance window and not something to be modified during normal system operation.

    Changing the property should always be done on the master node (it will be synced automatically to the backup node).

    The setting will be persisted post future upgrades.

    After changing the property, no application restart is required. However, it might be required to restart the northbound system using the commands in order to fully trigger a fresh fetch of all pages of all mnemonics.

- **Modification 2:**

  Removed a spurious returned mnemonic with External ID =FFFFFFFF (-1) if they are any unassigned or blank External ID entries in the GV Orbit Control client Alias Editor.

- [Ref. #UCCM-4422] **IP Configurator: New 'NMOS Label' column in the device table:** For NMOS devices, the NMOS device label is displayed under the NMOS Label column. This is a non-editable field. Any changes to the label must be done on the NMOS device directly.
- [Ref. #UCCM-4614] **Redesignation of MP2T flow type:** This affects NMOS devices that advertise MP2T flows.

  The readable flow type name has been changed from 'MP2T' to 'MPEG2-TS'.

  Spreadsheet export now uses 'MPEG2-TS' instead of 'MP2T'.

  Spreadsheet import will accept either 'MPEG2-TS' or 'MP2T'.
- [Ref. #UCCM-4616] **IP Configurator consistently uses SMPTE flow type names**

Current Naming	New Naming
2022-6	ST 2022-6
JPEG-XS	JPEG-XS
MP2T	MPEG2-TS
RFC4175	ST 2110-20
VC-2	ST 2042
PCM	ST 2110-30
AES3	ST 2110-31
Meta	ST 2110-40

- [Ref. #UCCM-4815] **IP Configurator: Option to overwrite transport settings:** It is not possible to clear the multicast settings for some NMOS devices, i.e. they do not allow setting the multicast address to blank or 0.0.0.0.

  In order to change multicast settings for such devices, the Enable Flows dialog has a new option to overwrite any existing values.
- [Ref. #UCCM-4974] **IP Configurator: Spreadsheet validation applied to selected items only:** The spreadsheet import dialog used to always do validation of the complete spreadsheet.

  This is no longer the case. It now does validation based on the currently selected sheets and devices.
- [Ref. #UCCM-4947] **IP Configurator: Added new function to assign NMOS labels as device names:** There is a new function on the Devices tab called 'Assign Device Names'. This application is exclusive to NMOS devices only.

  It will scan through all the devices and for each NMOS device with an empty device name, and it will set the device's NMOS Label as the device name.

  There is also an option to set NMOS descriptions as device descriptions.

  Note: An NMOS device without a device description will display the NMOS description in greyed-out text. This is equivalent to a blank device description for GVOP devices.

- [Ref. #UCCM-4946] **SSH-Pass application added to Mapview Service:** The Mapview Docker container has had SSH-Pass application added which will persist across restarts.

Bugs Fixed

- [Ref. #UCCM-4171] **NV8576 ports do not align with card slots in GV Orbit:** The slot order for port numbering has been fixed to reflect description in **Slot Order for Port Numbering** in the *NV8500 User's Guide* for NV8576 and NV8576-Plus frames. See Related Documentation, on page 143.
- [Ref. #UCCM-5054] **Densité DDA cards crash Densité REST API in GV Orbit:** A corrupted package for a specific Densité card has been removed from the installer.

  Note: For Grass Valley personnel performing an upgrade:

  After a system upgrade, ensure the following actions are performed on **both nodes** once:

  - Stop the Densité service.
  - Manually remove the **DDA1133-service-1.0.0-RC-6.jar** file found under **/data/apps/densite/data/plugins/**.
  - After each removal, restart the Densité service application.
- [Ref. #UCCM-5016] **Improved efficiency and reliability of the Alias Editor copy and paste function:** Addressed an issue that resulted in losing External IDs and Name assignment entries during copy and paste. Improved the copy and paste mechanism performance by processing External ID updates in parallel.
- [Ref. #UCCM-3996] **Alarms are now propagated to the tally lamp widget in the web renderer:**

  Note: Please refer to known issue [Ref. #UCCM-4969], on page 128, and ensure that the Densité domain is not configured to be the same as the Monitoring domain in the system.

  On the Monitoring service page, under GVOP Device Alarm Settings, set the device alarm domain number to the same value that is set in the Densité service.
- [Ref. #UCCM-4635] **Masking Service memory use reduced:** A memory leak in the Masking Service has been fixed.
- [Ref. #UCCM-4737] **Fixed Alarm window selection:** The Alarm window in GV Orbit Client would sometimes select the wrong alarms when copy and pasting, or selecting to mask alarms.
- [Ref. #UCCM-4480] **Log fields fetched more reliably:** Upon startup, the Logserver Service fetches log fields from devices. This has been made more robust to prevent it missing log fields.
- [Ref. #UCCM-4719] **Fixed Arista Supervisor SNMP Driver:** The SNMP driver for the Arista Supervisor is now working correctly without errors.
- [Ref. #UCCM-4662] **Fixed incorrect tooltip when user hover over filter option in Channel Manager:** Tooltip in Channel Manager now appears correctly when hovering over the filter option.

- [Ref. #UCCM-4690] **Purge All devices could cause GV Orbit Client to crash:** GV Orbit Client could crash when performing a purge all devices in IP Configurator. The problem arises while clearing associated external IDs during the purge. Occasionally, a crash would not occur, but any associated external IDs would not be cleared. This issue is now fixed.
- [Ref. #UCCM-4745] **Fixed duplicate UCP devices in the IP Configurator:** This could occur if a UCP was configured to use the Ethernet Gb interface for NMOS.
- [Ref. #UCCM-4733] **Fixed refresh problem of XIP audio flows in the IP Configurator:** While the IP Configurator was running, enabling audio flows on the XIP control screen would cause them to appear in the Source/Destination Flows tabs.

  However, disabling them would not cause them to disappear.

GV Orbit Version 2.12.1

As shown in each application's *About* screen, GV Orbit version 2.12.1 is composed of:

- GV Orbit Client version 5.12.1.
- GV Orbit Control version 3.12.0.

Bug Fixed

- [Ref. #UCCM-4668] **Corrupt multicast data in the IP Configurator:** Corrupt data could sometimes appear on the Source Flows tab in the IP Configurator. The corruption was random.

  Each time the IP Configurator was opened, different source flows could have corrupt data. Sometimes there could be no corruption at all.

  There was also a secondary problem with spreadsheet import whereby source flow changes could be reported even though there were none.

GV Orbit Version 2.12.0

As shown in each application's *About* screen, GV Orbit version 2.12.0 is composed of:

- GV Orbit Client version 5.12.0.
- GV Orbit Control version 3.12.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- New Features and Enhancements, on page 28
- Bugs Fixed, on page 30

See also Known Issues and Limitations, on page 128.

New Features and Enhancements

- [Ref. #UCCM-4569] **Snapshot logs updated to show categories recalled:** When clicking on a recall with snapshot version 2, the user can now see the recalled categories.
- [Ref. #UCCM-4182] **View External IDs in IP Configuration page:** Due to incompatible changes in the GVOC database, please run a backup before upgrading to version 2.12.0.

  A synchronization error with IP Friendly Name service such as in a scenario that the service is not running. For example, in a case where a synchronization error occurs when switching to a new topology, and the IP Friendly Name service returns, it may eventually be published to an already active topology and older cache. The user should have a good state backup in case they lose the configuration before switching topology, this unlikely event is part of their maintenance protocol.

  We do not see an issue with upgrading from 2.10.0/2.11.0 to 2.12.0 if the system is in good working order. For example in version 2.10.0/2.11.0, the design only allows synchronization from IP Friendly Name service to GVOC. User must ensure now prior to upgrading to 2.12.0 that the system is at a good state in relation of the GVOC and IP Friendly Name service being in sync to each other to avoid any syncing side effects after the upgrade as this will enable the two way syncing.

  Note: It is important to understand the correct workflow.

  All required devices for a topology should be added before making changes in the IP Configurator (normally be spreadsheet import).

  If a device is added after changes have been made in the IP Configurator then new source and destination external IDs will be generated by GVOC and published back to the IP Friendly Name service.
- [Ref. #UCCM-2937] **IP Configurator support for 2110-31:** Proper decoding to human readable form has been added for 2110-31 flows. Currently, the human readable form is 'AES3'.

  Additionally for the UCP, it is now possible to configure an audio spigot as either PCM or AES3 if that is supported by the firmware. The configuration follows the same rules as the template control that the A and B flows must not contradict each other, i.e. one cannot be PCM and the other AES3. The 'enable' dialog has had AES3 added to it.

  Note that if both PCM and AES3 are selected then PCM takes precedence.

The spreadsheet now supports AES3 as a flow type. If the A and B flows contradict each other, a validation error will occur when trying to import. The import process can be used to switch flow types, i.e. if a flow type is currently set to PCM then the import can be used to switch it to AES3 and vice versa.

- [Ref. #UCCM-4458] **NP0017 protocol update to 302A command:** Command is done according to the following specification:

```
8.42 0x0000 302A Take Source To Destination By Level
8.42.1 Message Format.
 {Protocol Header}
 {[32]User ID of the requestor} // NOTE: userId is needed as in 3000 req -
NP0017.PDF must be updated to include it
 {[32]Number of requests = n}
 {Take Data}n
    {Take Data} =
      {[32]Destination Device ID}
      {[32]Destination Virtual Level ID} // must be valid GVC level id or
ALL_LEVELS=0xFFFFFFFF
      {[32]Source Device ID}
      {[32]Source Virtual Level ID} // must be valid GVC level id or
ALL_LEVELS=0xFFFFFFFF
      {[32]Take mode}

ALL_LEVELS = 0xFFFFFFFF flag:
If any of {[32]Destination Virtual Level ID} or {[32]Source Virtual Level ID}
is ALL_LEVELS=0xFFFFFFFF
then the given TakeData will result in a take of all levels of Source Device
to Destination Device
which is equivalent to doing a 0x0000 3016 command.

Any other TakeData from the same 0x0000 302A command
will be processed normally - ie. they can be other ALL_LEVELS takes or
specific level takes.

The described behavior of ALL_LEVELS flag is the same as for {[32]Destination
Virtual Level ID} or {[32]Source Virtual Level ID}
in the 0x0000 3000 command.

8.42.2 Responses4

  0x8000 0000 Error Response.
  0x8000 0002 Multiple Status Response.

Note: The response is different to the one of 0x0000 3000 command (contains
additional OverallStatusFlag).

9.3 0x8000 0002 Multiple Status Response (from NP0018-00 rev B spec)

{Protocol Header}
{[32]OriginatingSequenceNumber}
{[32]OverallStatusFlag}
{[32]NumberOfStatusFlags=m}
{[32]StatusFlags}m
```

```
Overall Status Flag values and meanings:
0x0000(Success): All of the Status flags are 0x0000(Success)
0x0080(Failure): At least one of the Status flags is not 0x0000(Success)
```

- [Ref. #UCCM-3665] **XIP-3901-ASI configuration and monitoring support:** GV Orbit will now recognize the new XIP-3901-ASI application and display it in the Network tree. Right click on the ASI card in the Network tree to open the card service panel or upgrade the card.
- [Ref. #UCCM-4450] **Channel Manager now supports XIP-3901-UDC-IP v1.6.x:** Proper panel is displayed for XIP-301-UDC-IP card versions 1.6.x.
- [Ref. #UCCM-4551] **XIP-3901-ASI is control support:** GV Orbit Control Client will recognize the new XIP-3901-ASI application and display it in the available NMOS devices and can be added to the topology. Routing is allowed by specifying the Video Level in this release.

  A new "video/MP2T" media type support for XSI3901-ASI card is made available in the NMOS senders.
- [Ref. #UCCM-4412] **Arista forces publish sender info:** The "Force Resync" button was added to Arista MCS control port and should be refreshing the sender info.

Bugs Fixed

- [Ref. #UCCM-4567] **Source and destination names not in sync with GVOC:** With the IP Configurator running, changing a source or destination name in GVOC did not update the name in the Bulk Router application.
- [Ref. #UCCM-4552] **Fix for destination level buttons in the custom router panel:** Fix behaviour of custom router panel fixed mode destination level buttons when the 'Cancel' button is clicked.
- [Ref. #UCCM-4548] **Fix for IPVU missing destinations:** When the IPVU was configured in single stream mode, the two destinations did not appear in the IP Configurator.
- [Ref. #UCCM-4532] **Input/Output overview Unsupported Rate and Rate Mismatch:** Channel Manager now properly displaying Rate Mismatch when card signals rate mismatch.

  When card reports this value;
  - The No Carrier value is displayed in the Input
  - Link displays connected when Auto Follow (Input) is turned on
  - Displaying unsupported rate when card signals this value
- [Ref. #UCCM-4500] **Previous Source feature not working in custom router panel:** Previous Source feature now working properly in custom router panel.
- [Ref. #UCCM-4398] **Lockup in Monitoring service fixed:** A lockup sometimes occurred in the Monitoring service after failover which then had to be manually restarted. The root cause of this lockup has been fixed.
- [Ref. #UCCM-4269] **IP Proxy stability improvement:** On large systems after failover or restarting the service, IP Proxy sometimes fails to connect via Control Panel. This issue has been fixed.
- [Ref. #UCCM-4623] **IP Proxy connectivity improvement:** The IP Proxy service may disconnect the wrong device under certain conditions. This issue has been fixed.

- [Ref. #UCCM-4612] **External IDs correctly synchronized after a topology switch in GVOC:** After switching topologies in GVOC, all the old External IDs are cleared and the new ones set.

  It was observed that some of the new values were not always set (appeared blank) in the IP Configurator.
- [Ref. #UCCM-4601] **NMOS service memory consumption reduced:** The NMOS service would increase its memory usage over time to a level that was not required. This has been fixed by making the garbage collector limit the heap size.
- [Ref. #UCCM-4598] **IP Configurator does not filter out NMOS flows:** A device that is seen both by NMOS and GVOP is shown as a GVOP device and the NMOS version does not appear in the Devices tab.

  However, the NMOS flows and spigots of the device are not filtered out. This can be seen when doing a Multicast Scan from the Source Flows tab. The NMOS flows appear in the table alongside the corresponding GVOP flows.
- [Ref. #UCCM-4536] **Error message appears when no new file is pushed to the card in LUT Manager:** The OK button is activated if there are changes on the upload cards, otherwise the OK button is disabled.
- [Ref. #UCCM-4378] **LUT Manager - Upload LUT tooltip:** Tooltip is not displayed if the file name is not elided.
- [Ref. #UCCM-4658] **GV Orbit Client crashes when using the Bulk Router application:** When using the Bulk Router application, the GV Orbit Client may throw an exception and crash under certain conditions, i.e. when it loses connection to the routing service.

GV Orbit Version 2.11.0

As shown in each application's *About* screen, GV Orbit version 2.11.0 is composed of:

- GV Orbit Client version 5.11.0.
- GV Orbit Control version 3.110.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- New Features and Enhancements, on page 32
- Bugs Fixed, on page 36

See also Known Issues and Limitations, on page 128.

New Features and Enhancements

- [Ref. #UCCM-3887] **Save full snapshot for selected card:** Feature in Device Manager:
  1. Select some compatible device (e.g. Device Type: XIP-3901-UDC-IF)
  2. Click on Save button .
  3. Fill Name of save, which be displayed during the Recall on the list (field is required).
  4. Fill Comments, if you have some comments to saved snapshot (this field is optional).
  5. Click OK, after that save will be processed in background.
  6. You will get notification after finishing the operation.

- [Ref. #UCCM-3722] **Recalling a snapshot to multiple devices:** It is now possible to recall a snapshot to multiple devices.

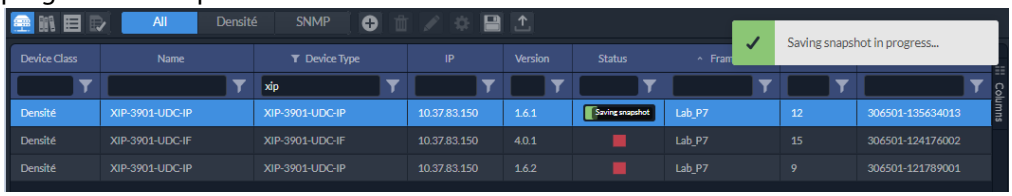
  In the Device Manager, select multiple devices of the same application and version, then click Recall.

  Note that if selected devices are not compatible, a warning message will appear, and the Recall will be prevented.

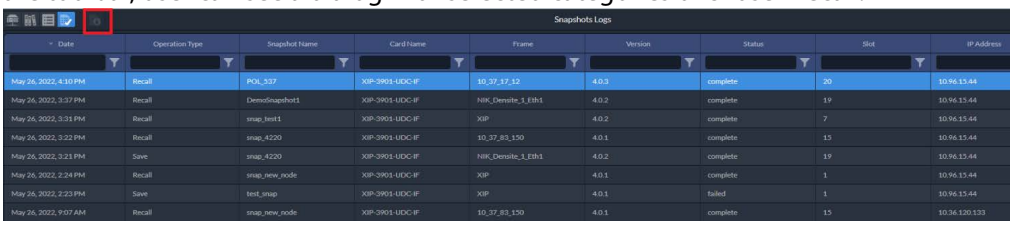
- [Ref. #UCCM-3945] **Recall snapshot to selected cards:** Feature in Device Manager:
  1. Select some compatible device (e.g. Device Type: XIP-3901-UDC-IF)
  2. Click on Recall button .
  3. Choose snapshot which should be recalled to selected device.
  4. Choose parameters which should be recalled to selected device.
  5. Click OK, after that Recall will be processed in background.

6 You will get a notification after finishing the operation.

- [Ref. #UCCM-4064] **Display warning popup while starting recall process if selected device(s) is busy:** If trying to save or recall a snapshot on a device which is already in progress of saving or recalling a snapshot, a warning dialogue will popup to advise that the device is currently busy.
- [Ref. #UCCM-4069] **Snapshot recall to a card is blocked if another recall already in progress:** Snapshot Manager blocks recall operation to card if another recall is already in progress.
- [Ref. #UCCM-4070] **Device Manager shows a progress status when the device is busy saving or recalling a snapshot:** When a snapshot is saved from or recalled to a device, that will now be indicated on the device in the Device Manager page. Under the Status column for the device, the status alarm will change to a progress meter showing the progress of the operation.



- [Ref. #UCCM-4220] **Snapshot logs show which settings were recalled:** In the Snapshots Logs page in Device Manager, after clicking the log row, and then the Recall button in the toolbar, user can see a dialog with selected categories of chosen recall.



- [Ref. #UCCM-4400] **Improved snapshot recall performance:** Improved the performance of snapshot recalls by comparing the snapshot with current card settings and ignoring parameters that are not being changed.
- [Ref. #UCCM-4413] **Support for additional XIP applications:** The snapshot and recall feature in Device Manager is now available for additional XIP applications:
  - DC 2.1
  - UC 2.1
  - FS 2.2
  - GB-IP 1.0

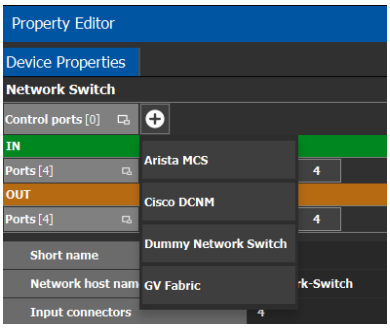
- [Ref. #UCCM-4391] **Added Densité service packages:** The following Densité service packages are now included with the GV Orbit distribution:
  - XIP-3901-UDC-IF 3.1
  - XIP-3901-UDC-IF 4.0.2
  - XIP-3901-UDC-IP 1.6.2

  Densité cards being added to the system with these support applications and versions will now be automatically detected without the need for additional upgrade or installation packages.
- [Ref. #UCCM-3424] **IP Configuration - Set source and destination names for NMOS devices:** In the IP Configuration screen, it is now possible to set the Source and Destination names for NMOS devices and have that information propagated to GV Orbit Control and available for use on panels.

  It is also possible to import a configuration spreadsheet with the Source and Destination names set.
- [Ref. #UCCM-4432] **Updated spreadsheet column name:** When doing a spreadsheet export, the column formerly known as Port Number has now been renamed to External ID to properly reflect the values in that column.
  Note that for existing spreadsheets that still use the Port Number as column header, these will still be compatible and will be imported into the External ID field.
- [Ref. #UCCM-4249] **IP Friendly Name Service no longer requires license:** The IP Friendly Name Service previously required either the GVO-CTL-PRO or GVO-CTL-ENT license. This is no longer required and the service is available by default.
- [Ref. #UCCM-4161] **LUT Manager - improve push to card dialog:** Implemented minor improvements in the Upload LUTs dialog when pushing LUTs to devices, including:
  1. Emphasizing filenames by making it brighter when dragging and dropping a LUT.
  2. Including X button only for new LUTs added to slots.
  3. Added possibility to upload files with the same filename to the slot (user can change file data between two uploads)
  4. Displaying an original value instead of an empty value after clicking X to remove a LUT from a row.
- [Ref. #UCCM-4287] **Restart of individual SNMP units:** Individual SNMP units can now be added, updated and removed without affecting other units.
- [Ref. #UCCM-3434] **Arista MCS routing (beta):** In GV Orbit Control, it is now possible to configure a Network Switch to connect to an Arista MCS server and perform routes through MCS.

  Note: This feature is currently being released as a BETA release as it has not completed thorough and extensive testing through all possible use cases and switch configurations. It is available for trials, demos, or proof of concept testing, and should not be used in a live production environment. **This feature is disabled by default. To enable, please contact your local Sales or Support representative.**
  1. In GVOC, in the Topology Configurator, add a Network Switch bubble to the topology.
  2. Select the Network Switch and view the Device Properties.

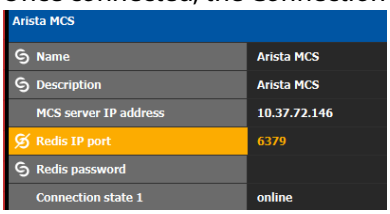
3 Click the icon to add a Control Port and select Arista MCS.



4 Once added, in the Arista properties at the bottom, enter the MCS IP address. For MCS clusters, enter the virtual IP of the cluster.

5 Enter the Redis port. By default this uses port 6379.

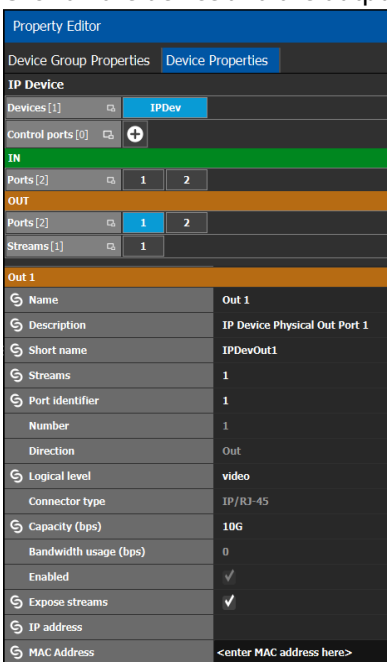
6 Once connected, the Connection State should show "online".



7 Any NMOS/GVOP devices connected to the switch will automatically have their sender information published to MCS.

8 For any non-NMOS and non-GVOP IP devices, the MAC address must be manually set for any sender ports.

9 Click on the device and the output port, and enter the MAC address.



10 Once the switch and the rest of the topology has been configured, it will be possible to route sources to destinations via MCS.

Bugs Fixed

- [Ref. #UCCM-4398] **Lock up in Monitoring Service fixed:** A lock up sometimes occurred in the Monitoring service after failover which then had to be manually restarted.

  The root cause of this lock up has been fixed.
- [Ref. #UCCM-4339] **Could not select pages in the IPVU control screen:** The page list control was disappearing from the control screen.

  This is now working correctly.
- [Ref. #UCCM-4375] **Unable to upload LUT files exceeding 1MB:** Corrected LUT upload to allow files up to 12MB in size.
- [Ref. #UCCM-4345] **NV panels would sometimes freeze or stop responding momentarily in a large system:** The caching of sources/destinations alias names that are used on physical/virtual panels has been improved.

  The aliases are now not fetched from DB very often, but only when some alias actually changes, i.e. via edition in Alias configurator or a change of the Alias group name in Panel Configurator.
- [Ref. #UCCM-3539] **Support for upgrading IQUCP2504-MD:** Support for upgrading the IQUCP2504-MD from the GV Orbit client has been fixed.
- [Ref. #UCCM-3995] **Card parameter sorting not working:** Densité card parameter sorting is now works correctly when clicking on the column header to sort.
- [Ref. #UCCM-3821] **Not grayed out values in downmixer for XIP Cards:** Non-editable values where non grayed out indicating that the field is possible to edit.
- [Ref. #UCCM-3543] **Synchronisation of name changes between GV Orbit Control and the Bulk Router:** Name changes of sources and destinations made in GV Orbit Control are reflected in the Bulk Router in GV Orbit Client.
- [Ref. #UCCM-4425] **Fix for SNMP date and time formatting:** Date and time alarms are now being formatted correctly.
- [Ref. #UCCM-4346] **Transport (SDP) file retrieval fixed:** The correct port numbers are now used to retrieve transport files for senders. In particular, this fixes the issue for EVS (and other third party) devices.

  Also included are:
  - Fix for devices not coming back online when switching between NMOS registries.
  - Fix for the flow enabled checkbox getting out of sync when enabling or disabling a flow fails.
  - Change to allow flows to be enabled when the source RTP port is not set.
- [Ref. #UCCM-4560] **IP Configurator - Spreadsheet Import stability improved:** During a spreadsheet import, if an IP address is of invalid form (i.e. 239.1.1), it would cause the GV Orbit client to crash.

GV Orbit Version 2.10.0

As shown in each application's *About* screen, GV Orbit version 2.10.0 is composed of:

- GV Orbit Client version 5.10.0.
- GV Orbit Control version 3.10.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- New Features and Enhancements, on page 37
- Bugs Fixed, on page 40

See also Known Issues and Limitations, on page 128.

New Features and Enhancements

- [Ref. #UCCM-4248] **Device Manager activated with GVO-CFG-PRO license:** The Device Manager is now available and activated with either the GVO-MON-PRO or GVO-CFG-PRO licenses.
- [Ref. #UCCM-4190] **Device Manager - Ability to edit SNMP devices:** In Device Manager, you can edit existing SNMP device by selecting the device then clicking the Edit button on the top toolbar.

  This will open a dialog window that allows you to edit the SNMP device settings. Click **OK** to save changes. Note that any changes made will cause the SNMP service to restart in order for the new settings to take effect.
- [Ref. #UCCM-4189] **Displaying alarms for SNMP Devices in Device Manager:** In the table of devices in Device Manager, hover the cursor over the Status alarm of an SNMP device to view the alarm shown.

- [Ref. #UCCM-4183/UCCM-3077] **IP Configuration - Setting External IDs:** It is now possible to set the External ID for any source or destination in the configuration page and via spreadsheet import.

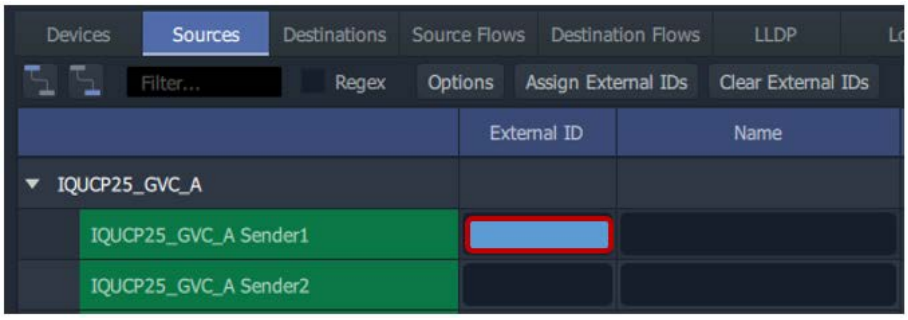
  Note that the External ID must be a unique integer greater than 0, and less than 2,000,000. It is not possible to have two or more sources with the same External ID. Likewise, two or more destinations cannot have the same External ID.

  - **Via spreadsheet import:** To set the external ID in the IP Configuration spreadsheet import function, enter a value in the spreadsheet under the External ID column.

If the spreadsheet entry for External ID is left blank, it means no changes will be made to the existing External ID in the system.

To clear the External ID value, use the number "0".

- **In the configuration page:** To set the External ID in the configuration page, enter a value in the table under the External ID column on the Sources or Destinations tab.



To clear the External ID value, use the number "0".

Note: The devices must already have been discovered in the GVOC Topology in order for enter External IDs to apply correctly.

Warning: It is possible for the External ID to be manually changed in the GVOC Alias Editor and that change will not be reflected in the IP Configuration table.

- [Ref. #UCCM-4074] **GV Orbit Control Client - Update delete button:** Some changes have been made to the Delete button in the GVOC.

The changes are as follow:

- The icon now looks more like a trash bin rather than a recycling bin which was sometimes confused with the refresh icon. This change has also been applied to all instances of the Delete button throughout the GVOC and is consistent with the default delete icon used in the rest of GV Orbit.
- In the Topology view, the Delete button has been moved to the first right of the toolbar, away from the Refresh and Quick Connect buttons.
- When you click **Delete** in the Topology view, a pop-up window now appears asking you to confirm the operation.

- [Ref. #UCCM-4072] **Recall snapshot selected categories to multiple cards:** From the Snapshot page, it is possible to recall a snapshot to multiple cards.

To recall a snapshot to multiple cards:

1. Select the snapshot from the table then click the Recall button.
2. A **Select Devices** dialog window will open showing a listing of devices compatible with the selected snapshot.
3. Select one or more devices to recall the snapshot to and click **Next**.
4. This goes to the **Select parameters** window listing the available categories of settings to recall.
5. Select the desired categories and click **OK** to recall.

6 Click **Back** to return to the device selection page or **Cancel** to end the operation without making any changes.

- [Ref. #UCCM-3829] **Channel Manager - Additional Audio controls for XIP-UDC-IF and IP:** New adjustment controls have been added in the Channel Manager for selected channel under Downmixer page to configure:
  - DialNorm
  - LFE Mix Level
  - Level Normalization
- [Ref. #UCCM-3335] **Set community strings for SNMP devices:** In Device Manager, when adding or editing SNMP devices, it is possible to define the Read Community string. This value defaults to "public". To change the value, click in the field and enter a new value.

- [Ref. #UCCM-4297] **Fixed wall editor issues:** Resizing and dragging tiles in freehand mode sometimes results in an incorrect output. This causes the MV Cluster Service to remove the tile thinking it was out of bounds.
- [Ref. #UCCM-3992] **IP Configurator fixes and improvements:** Previously, when adding NMOS devices which are also GVOP, they used to appear twice in the IP Configuration page.

  The GVOP information would now take precedence and GVOP/NMOS devices would appear once.

- [Ref. #UCCM-4278] **IMPORTANT: Upon first startup, GV Orbit 2.10 will re-assign duplicate external IDs stored in the GV Orbit Control database to an appropriate new value:**

  When the GV Orbit Control application is updated to 3.10 and **starts for the first time**, the application will take the following actions to ensure there are no duplicates of external IDs in the database:

  - Identify the maximum external ID number in the given topology and mark it as a new assignment point onward for any new external IDs required for new devices and existing devices, etc.
  - Reassign values of duplicate external IDs by keeping the first value and auto-assigning the following duplicate that is identified to a new value.

Bugs Fixed

- [Ref. #UCCM-4340] **Custom tile in multiple layouts may disappear when one of the layout was deleted:** When a custom tile was used in multiple layouts and one of those layouts was deleted, it could result in the tile in the other layout being replaced with a standard video tile. This issue is now fixed.
- [Ref. #UCCM-4276] **IP Configurator fixes and improvements:** Previously**,** IP Configurator always used the default IS05 port when fetching SDP information, rather than the one advertised over IS04. Stability has now been improved.
- [Ref. #UCCM-4272] **SNMP trap processing:** SNMP traps are now processed correctly by the SNMP service.
- [Ref. #UCCM-4270/UCCM-3448] **MV Cluster Service fixes and improvements:**
  - MV Cluster Service no longer pushes to MVs on failover/startup.
  - Fixed an issue whereby MV Cluster Service was failing to push due to invalid SSH credentials.
  - Fixed an issue whereby the MV Cluster Service could become unresponsive.
- [Ref. #UCCM-4255] **IP Configurator: Unable to import spreadsheet with duplicate IP addresses:** It is possible for some devices to share the same IP address. For example, some device drivers can create multiple devices that all use the same IP address to communicate.

  In the spreadsheet, we allow the IP address to be the unique key for a record, but in these special cases, it is necessary to qualify the IP address with the device GUID.

  Duplicate IP addresses are now allowed as long as the GUID is present.

  Some other issues were also found and corrected while working on this. Additional fixes are as follows:

  - Problems setting external IDs for senders that do not have a group hint tag, i.e. the whole device is a source or destination.
  - Automatic assignment of external IDs could lock up.
  - Purging offline devices was very slow and could cause time out.
  - It was not possible to purge external IDs for offline devices that did not have a friendly name assigned.
  - The generated port names for GVOP (GV Orchestration Protocol) devices used a zero-based spigot index instead of the one-based readable version.

- [Ref. #UCCM-4226] **GV Orbit Client increments destination count for NMOS devices:** Fixed an issue where removing and re-adding the same NMOS device would cause the count of sources and/or destinations to increase.
- [Ref. #UCCM-4337] **SNMP slot value was not displayed in the devices table:** The SNMP devices table did not show the actual value of the slot. This issue has been fixed and the slot value is now visible in SNMP devices table.
- [Ref. #UCCM-4313] **Restoring a service backup from one server to another server can cause service corrupted settings being restored:** Fixed an issue where restoring a service backup from one server to another server could result in service corrupted settings being restored, such as IP addresses.
- [Ref. #UCCM-4261] **Not able to enter text in the filter field of a table:** Added the ability to filter text using floating filters in grids. This applies to:
  - LUT Manager
  - Device Manager
  - Channel Manager
- [Ref. #UCCM-4178] **Previous Source button state:** The Previous Source button of the XY soft routing panel in GV Orbit Client will now become inactive when a non-routed destination is selected.
- [Ref. #UCCM-4168] **Not able to see serial numbers for older Densite cards:** In the Device Manager, it is now possible to view the serial numbers of all current and legacy Densite devices.

  Note that there are some Densite cards that do not have serial numbers. This can be confirmed by launching the card service panel and looking in the Info tab. If a serial number is available, then it will be viewable in the Device Manager.
- [Ref. #UCCM-3919] **Fixed Recording service lock up on failover issues:** Removed a duplicate of the HTTP client code issue in the Elastic search query code used in the Recording service. It caused the Recording service to completely lock up periodically on failover.

GV Orbit Version 2.9.0

As shown in each application's *About* screen, GV Orbit version 2.9.0 is composed of:

- GV Orbit Client version 5.9.0.
- GV Orbit Control version 3.9.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- New Features and Enhancements, on page 42
- Bugs Fixed, on page 45

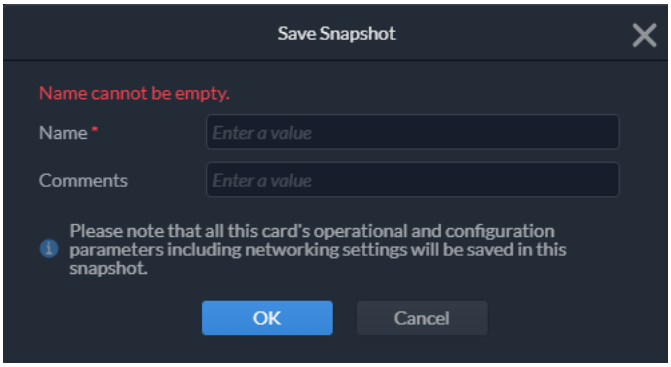
See also Known Issues and Limitations, on page 128.

New Features and Enhancements

- [Ref. #UCCM-3664] **Save and recall snapshots for Densite cards:** GV Orbit now allows you to save and recall snapshots of a Densite card's configuration. To use this feature, go to the Device Manager which displays a list of all Densite devices configured in GV Orbit.

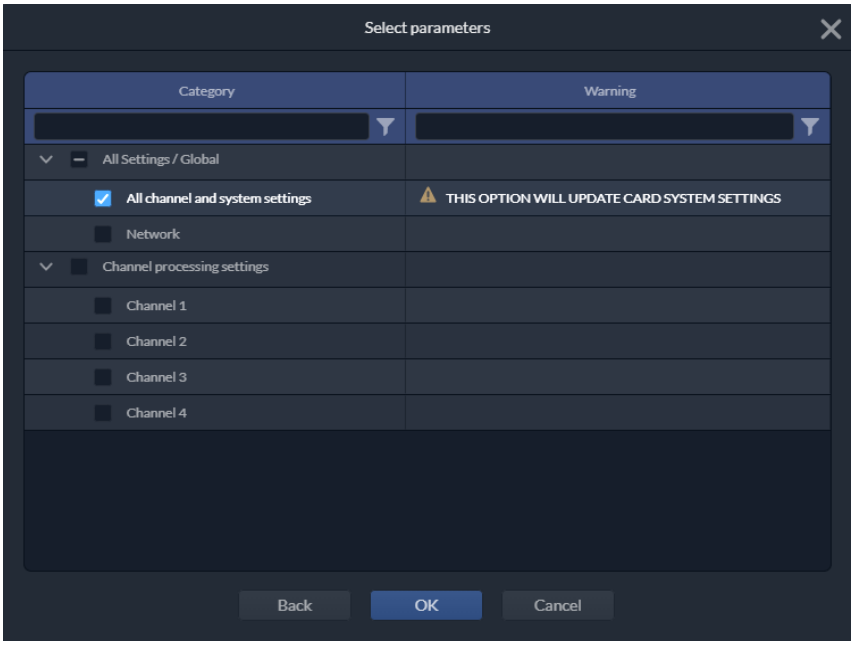
  Click and select a compatible Densite card. On the menu bar at the top, there are icons for saving a snapshot, and recalling a snapshot.

  To save a snapshot, click the Save icon. A dialog box will appear prompting you to enter a name for the snapshot and optional comments.



  Click OK to save the snapshot. It may take several seconds for this operation to complete.

To recall a snapshot, click the Recall icon. A dialog box will appear showing a list of compatible snapshots. If no snapshots are listed, it means no compatible snapshots have been saved yet. Select a snapshot and click Next. The dialog window will then show a short listing of available categories of settings to recall.



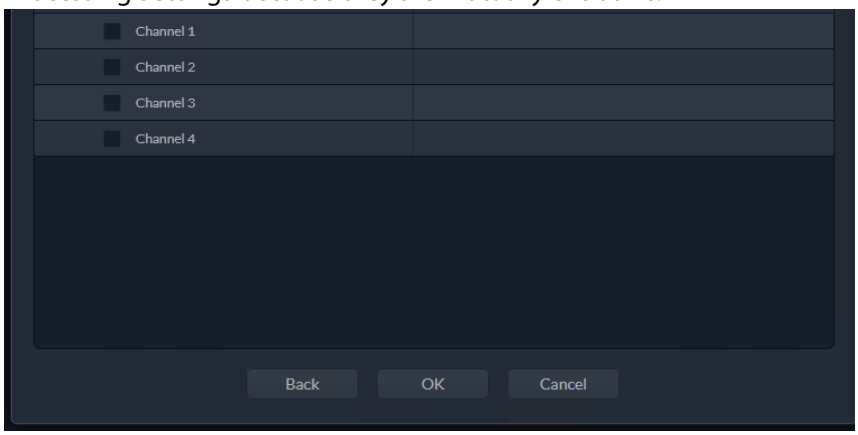
Selecting the All Channel and System Settings option will recall all operational settings for the card and all of its processing channels.

Selecting the Network option will recall all network configuration settings including IP addresses.

Click OK to proceed with the recall. Note that this operation could take up to a minute to complete.

- [Ref. #UCCM-4071] **Recalling a snapshot to a card:** In the Device Manager, a snapshot can be recalled to a card. To perform a recall, select a supported device and click the *Recall* button. The Recall dialog box will be presented.
  The first step is to select a snapshot on the recall dialog box. Only compatible snapshots will be displayed. After selecting a snapshot and clicking the *Next* button, the next step is to select parameters to recall.
  The user has ability to select parameters to recall. The network parameters are unselected by default.

There is no possibility to select parameters from All Settings / Global and Channel Processing Settings because they are mutually exclusive.



Note: In this Release, only these applications are supported:

- XIP-3901-UDC-IF v3.1
- XIP-3901-UDC-IF v4.0.2
- XIP-3901-UDC-IP v1.6.2

- [Ref. #UCCM-3725] **Device Manager Snapshots page to manage card snapshots:** In Device Manager, there is now an option to view and manage all saved card snapshots. In the top menu bar, click the third icon.

The table provides a list of all saved snapshots in the system. The list can be sorted and filtered by clicking on the column header and filter icon.

To delete a snapshot, click and select a snapshot and click the trashcan icon on the menu bar. You will be prompted to confirm the action.

It is also possible to edit the snapshot name or comments by double clicking on the field, entering a new value, and pressing enter to save.

- [Ref. #UCCM-3726] **Device Manager Card Snapshots Log page:** The Device Manager now includes a Snapshots Log page that displays a history of all Snapshot related operations.
On the top menu bar, click the Snapshots Log icon on the right.
The following details are listed for each entry:

The table lists all operations related to Card Snapshots including Saves, Recalls, and Deletes.
The following details are listed for each entry:

- **Date:** The timestamp of the operation
- **Operation Type:** The type of operation, whether it was a save, recall, delete, or any other operation
- **Snapshot Name:** The name of the affected snapshot
- **Card Name:** The name of the affected card
- **Frame:** The name of the frame that the affected card belongs to
- **Version:** The version of the card application
- **Status:** Status of the operation, whether or not it completely successfully
- **Slot:** Slot number of the affected card
- **IP Address:** IP Address of the client station that initiated the operation
- **Comments:** Additional comments

The table can also be sorted and filtered by clicking on the column header or filter icon.

- [Ref. #UCCM-4003] **IP Config - Inspect feature updated to support NMOS devices:** The inspect window now shows correct information for NMOS devices.
- [Ref. #UCCM-3991] **IP Config - Copy table entries:** When double-clicking on a table cell, the user has the option to copy from either a right click context menu or CTRL+C. The selection has a unique highlight on the cell that is clicked on, as opposed to highlighting the entire row.
- [Ref. #UCCM-3681] **XIP-3911 platform support:** The upcoming XIP-3911 platform is now supported.
- [Ref. #UCCM-3116] **KIP SNMP alarm monitoring (beta):** A beta version of the Kaleido IP SNMP driver has been added to the GV Orbit Device Manager page. For now, we only recommend testing with Kaleido version 11 or higher. If the use of this driver causes any issues which may impact the rest of the system, please report and discontinue use.

Bugs Fixed

- [Ref. #UCCM-3787] **GV Orbit Logging and Audit Log file does not contain the correct user ID:** The user ID is now set when making a route. Previously, user ID was only set after a protect or lock operation was performed.
- [Ref. #UCCM-3993] **Ping Support over Management & Media Networks added:** The Ping feature in the IP Configuration screen has now been fixed to support NMOS devices. A single ping will be sent for the management, media A and media B networks via the GV Orbit Server to the IP addresses that the device advertises, and report success or failure.
- [Ref. #UCCM-3923] **Updating the XIP NMOS label does not update the device name in the IP configurator:** Fixed the issue so that changes to the NMOS label from the XIP control panel will now be properly updated and reflected in the IP Configuration screen.
  Note that when the change is made on the XIP control panel, the device will need to re-register itself to the NMOS registry. During this time, the device will appear offline (in red) in the IP Configuration screen. This process may take more than 10 seconds before it appears online again with the updated name.

- [Ref. #UCCM-3562] **Windows Application scaling causes resize issue with web content in GV Orbit Client:** Fixed an issue when the Windows Display Settings option to scale text is set to greater than 100%, content within the GV Orbit Client may be scaled and no longer appear correctly. for example the Channel Manager screen may be scaled such that the lower scroll bar is no longer visible. The pages now scales properly with all elements visible.
- [Ref. #UCCM-1317] **Audio processing card not visible in Sirius 8xx:** A net service required a far side address translation. This issue is now fixed.
- [Ref. #UCCM-3965] **Fixed notification of modified variable file:** Asterisk (*) was not displayed on variable files to indicate changes when *Apply* and *OK* buttons were pressed.
- [Ref. #UCCM-4225] **NMOS Reliability improvements:** Previously, bulk setting of transport parameters for many NMOS devices could fail, and Multicast settings arriving via the NMOS Registry were sometimes missed.
  Extended error messages are now shown if they occur, and the Enable/Disable checkboxes are now fixed.
- [Ref. #UCCM-4048] **Virtual Crosspoints lose associations with destinations:** When GV Orbit is not able to make a route to one of the destinations associated with a virtual crosspoint, it will cause those associations to break. This is now fixed so that the virtual crosspoint always retains the link to the destination, regardless of whether routes fail or succeed.

GV Orbit Version 2.8.1

As shown in each application's *About* screen, GV Orbit version 2.8.1 is composed of:

- GV Orbit Client version 5.8.1.
- GV Orbit Control version 3.8.0.

Bugs Fixed

- [Ref. #UCCM-4256] **NP0017 commands implementation changed - 3012 and 3022:** As a result of this bug, the paging of NP0017 GetMnemonics (3012) and GetExtendedMnemonics (3022) has been fixed to correctly interpret the 'startingOffset' parameter in the request.

  In versions of GVOC 2.8.1 and higher, the 'startingOffset' means 'number of entries to skip' in the request and start returning from the next entry.

  To request all entries, the API client should start requesting from startingOffset=0, for example:

  First request: startingOffset=0, maxNumberOfRecords=255 // will return first 255 mnemonics (ordered by EXTERNAL_ID a.k.a. ID value)

  Second request: startingOffset=255, maxNumberOfRecords=255 // will skip first 255 returned in 1st request and return next 255 mnemonics

  ....

  Note: As with previous versions, the last request in the sequence might return less than 'maxNumberOfRecords' if there are less entries left to be listed.
- [Ref. #UCCM-4033] **The web page is unavailable after downgrading from 2.8.0 to a lower version:** An issue with the Device Manager application had been preventing the downgrade from 2.8.0 or higher to 2.7.0 or lower from working properly. This has now been corrected.
- [Ref. #UCCM-4258] **Router service fails to start following failover:** Fixed an issue where using external ID numbers greater than 100,000,000 could cause communication loss or significant delays between the Control service and the Routing Service. This primarily impacted how long the service took to start after a restart or failover.

GV Orbit Version 2.8.0

As shown in each application's *About* screen, GV Orbit version 2.8.0 is composed of:

- GV Orbit Client version 5.8.0.
- GV Orbit Control version 3.8.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- New Features and Enhancements, on page 51
- Bugs Fixed, on page 51

See also Known Issues and Limitations, on page 128.

New Features and Enhancements

- [Ref. #UCCM-4036] **Export to File Feature:** The following pages and tables now have the added ability to export their data to a CSV (comma separated values) text file or an Microsoft Excel spreadsheet format:
  - Channel Manager Snapshot Logs
  - Channel Manager Snapshot Manager
  - Channel Manager Configuration
  - LUT Manager Configuration
  - LUT Manager Logs
  - Device Manager

  To export the file, right click in the table of data and select Export. Then select the format of the export.
- [Ref. #UCCM-3803] **Windows 11 support:** The GV Orbit client application and GV Orbit Control application now officially supports Windows 11.
- [Ref. #UCCM-3785] **Validate Transport Parameters for Enabled flows:** The IP Configurator spreadsheet import has been enhanced to validate transport parameters on import.
- [Ref. #UCCM-3784/UCCM-3783] **IP Spreadsheet Import Validation Improvements:**
  - **Improve IP Address Validation in IP Spreadsheet Import:** Added IPv4 address validation to the IP Configuration Spreadsheet Import process.
  - **Validate Spreadsheet Import for Duplicate Multicast Source IP Addresses:** Enhanced the IP Configurator spreadsheet import to validate duplicate Multicast IP addresses from with the same Source IP address.
- [Ref. #UCCM-3729] **Added Warning in Channel Manager for Operations that may Take Time:** The Channel Manager will warn users that some operations, for example applying a Snapshot Recall to multiple cards may take time.
- [Ref. #UCCM-3657] **LUT Manager Enhanced with a History View:** Added a history view to the LUT Manager to show LUT operations that have been performed over time.
- [Ref. #UCCM-3654] **Automatically Refresh Screen Following a LUT Update Failure:** Improved the LUT Manager to automatically refresh the page following a failure to update a LUT on a device.

- [Ref. #UCCM-3630] **GV Orbit Client can Handle Browser Request for New Tab:** The GV Orbit Client now supports browser requests to open a page in a new tab. Previously these requests were silently ignored. This enables pages on the GV Orbit Server that feature links to new tabs to work correctly when viewed from the GV Orbit Client Workflow page.
- [Ref. #UCCM-3727] **Updated Device Manager User Interface:** The Device Manager user interface has been updated to provide quick filters to filter on SNMP or Densité devices. Control panels for cards that provide HTML control surfaces such as the JPEG-XS card can be opened directly from the Device Manager. The card alarm is shown in the user interface for Densité Devices.
- [Ref. #UCCM-3577] **Previous Source / Undo feature for routing control:** GV Orbit now supports the ability in routing control to undo the last take or select the previous source routed to the current destination. This functionality is available in GV Orbit Control Routing Control, GV Orbit client bulk routing panel, NV hard and soft panels.

  The Previous Source button can be added to NV panels via the Panel Configurator in GV Orbit Control.

Bugs Fixed

- [Ref. #UCCM-3918] **No connection to IPProxy after GV Orbit Failover:** Thread handling had stability improved.

  Identified and corrected buffer handling and thread safety issues.
- [Ref. #UCCM-3913] **Bulk routing to NMOS destinations causes tallies not to update when a route contains error message:** Issue has been fixed and tallies are updated.
- [Ref. #UCCM-3843] **Adding possibility to route to or from Channels 17-64 in a UCP-3901-MD:** Channels 17-64 in a UCP-3901-MD are now available for routing.
- [Ref. #UCCM-3721] **Unsolicited GV Orbit failover:** To prevent unsolicited failovers, a new configuration setting has been added which allow a larger systems to have longer timeout on Apache Ignite – For more information and configuration options, refer to the GV Orbit manual. See Related Documentation, on page 97.
- [Ref. #UCCM-3688] **Slow routing to destinations when a mixture of audio shuffles take place:** Performance of action has been improved.
- [Ref. #UCCM-3606] **Email Alerts are only Working when the Alert is Triggered on the GV Orbit Client:** Corrected an issue in the Map View Service that was preventing the Email Behavior from being triggered when used inside a Logic file.
- [Ref. #UCCM-3973] **Corrected an Issue where NMOS Transport Parameters can be Out of Sync with Device:** Corrected an issue with the handling of NMOS transport parameters from the XIP-3901-UDC-IF where the IP Configuration screen in GV Orbit could be out of sync with the card control panel.
- [Ref. #UCCM-3950] **Correct Issue with IP Configurator Multicast Scan:** Corrected an issue in the IP Configurator that could cause the user interface to block when performing a Multicast IP Scan.
- [Ref. #UCCM-3939] **Removed the New Option from the Network Entry in the Project Tree:** The context menu option to create a new Network File from the Network node in the Project Tree has been removed.

- [Ref. #UCCM-3895] **Hide Audio Channels not Available on XIP Device:** Corrected an issue where 64 Audio Channels were presented for all processing channels on an XIP Device. The UI is now correctly filtered to show the correct number of Audio Channels for each processing channel.
- [Ref. #UCCM-3886] **Correct and Issue where Alarm Category Failed if Alarm Name Contained Spaces:** Corrected an issue in the Monitoring Service where creating a new alarm category using alarm names that contain spaces resulted in the category alarm not being generated.
- [Ref. #UCCM-3837] **Issue recalling Snapshots with different audio channels:** When recalling snapshots from channels which have a different number of audio channels, a warning is now displayed to indicate potential incompatibility with the snapshot.
- [Ref. #UCCM-3822] **Removed DISTRIBUTED_LOG_SERVER_MATCH Alarm:** The Log Server alarm DISTRIBUTED_LOG_SERVER_MATCH has been removed as this alarm was not relevant for GV Orbit and falsely reported a warning and was typically masked on deployment.
- [Ref. #UCCM-3782] **Multicast Scan Results do not Update when Switching Multicast Mode:** Corrected an issue where the results from a multicast duplicate scan were not refreshed when switching in/out of source specific multicast mode.
- [Ref. #UCCM-3704] **Fix for web browser scaling issues on 4K monitors:** The web browser tabs are now scaling correctly when displayed on a 4K monitor.

GV Orbit Version 2.7.1

As shown in each application's *About* screen, GV Orbit version 2.7.1 is composed of:

- GV Orbit Client version 5.7.1.
- GV Orbit Control version 3.7.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- New Features and Enhancements, on page 51
- Bugs Fixed, on page 51

See also Known Issues and Limitations, on page 128.

New Features and Enhancements

- [Ref. #UCCM-3828/UCCM-3827] **Updated Elastic Search to Pull in Patched Log4J v2 Library and Addressed Log4J v2 Vulnerabilities:** While these applications were not impacted by the following Log4J v2 vulnerabilities:
  - https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2021-44228
  - https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2021-45046
  - https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2021-45105
  - https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2021-44832

  Densité Manager, Densité GVOC, and Elastic Search have been proactively updated to use Log4J v2.17.1.

Bugs Fixed

- [Ref. #UCCM-3881] **Corrected Race Condition when Setting Transport Parameters through IS-05:** Corrected a race condition that prevented setting XIP-3901 transport parameters through IS-05 correctly.
- [Ref. #UCCM-3852] **Corrected Crash when Clicking Cancel on Project Login Screen:** Corrected an issue in the GV Orbit Client that caused a crash when clicking **Cancel** on the Project Login screen.

GV Orbit Version 2.7.0

As shown in each application's *About* screen, GV Orbit version 2.7.0 is composed of:

- GV Orbit Client version 5.7.0.
- GV Orbit Control version 3.7.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- New Features and Enhancements, on page 52
- Bugs Fixed, on page 55

See also Known Issues and Limitations, on page 128.

New Features and Enhancements

- [Ref. #UCCM-3498/UCCM-3436/UCCM-3692/UCCM-3693/UCCM-3435] **IP Configuration Screen Enhancements:**
  - **Export Spreadsheet with NMOS and GVOP Devices:** The IP Configuration screen in GV Orbit supports the export of both NMOS and GVOP devices. This feature can be used to capture the current multicast settings of the system and be used as the basis for implementing a customer-specific addressing scheme to be later imported and applied to GV Orbit.

    From the **Devices** tab select **Export**.
  - **IP Configuration Spreadsheet Import for NMOS and GVOP Devices and Flows:** The IP Configuration & Spreadsheet Import feature has been enhanced to support NMOS as well as GVOP devices. This feature is available in new C&M Projects and can be added to existing projects with the following procedure.

    1 Make a backup of the directory containing the GV Orbit C&M Project.

    2 Install GV Orbit Client v5.7.0 or higher.

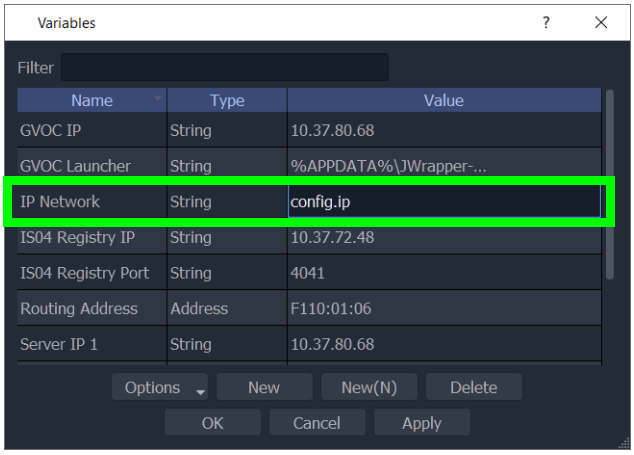
    3 Copy the following directories and replace them in your project directory:

    – C:\Program Files\Grass Valley\GV Orbit\workflows

    – C:\Program Files\Grass Valley\GV Orbit\resources\images\workflow

    – C:\Program Files\Grass Valley\GV Orbit\components\workflow

    4 Set Project Variable to use the new IP Configuration & Spreadsheet Import feature: Open **Project** > **Edit variables**. In the **Variables** window, set the value of **IP Network** to **config.ip**. Click **OK**.

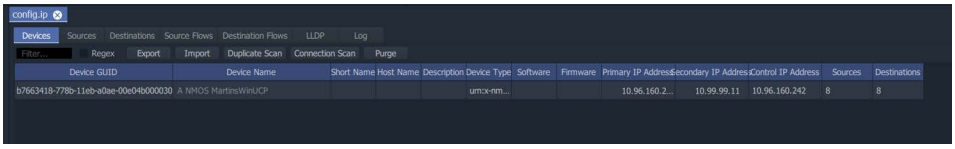


5 Open the project in GV Orbit Client.

6 Click the IP Configuration & Spreadsheet Import icon on the Workflow page.

NMOS and GVOP (IQUCP, MV820-IP, Kahuna, and so on) require different levels of information for configuration. Fields that are not required for a specific device type are grayed out in the spreadsheet.

Export and update the spreadsheet as required, use the Import button to import the modified spreadsheet.



- **Duplicate Scan Updated to Support NMOS Entries:** The IP Configuration screen in GV Orbit supports the validation of duplicate parameters for both NMOS and GVOP devices. Duplicate scanning is performed upon spreadsheet import, or it can be manually triggered by clicking the **Duplicate Scan** button on the Devices tab.

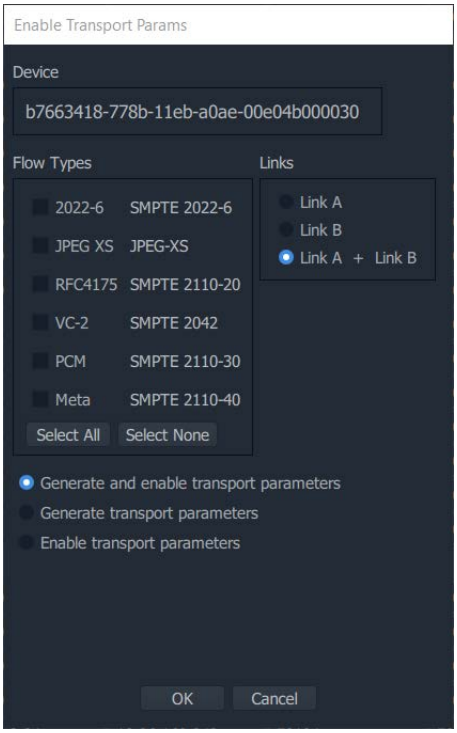
  Duplicate scan confirms that devices have unique IP Addresses and names.

- **Multicast Scan Updated to Support NMOS Entries:** The IP Configuration screen has been updated to support Multicast Scan for both NMOS and GVOP devices. The multicast scan is performed on spreadsheet import.

- **Set Sender Multicast Details in IP Configuration Screen:** The IP Configuration screen in GV Orbit now supports the setting of Multicast Address parameters for both NMOS and GVOP devices. Settings can be applied manually, automatically or via an imported spreadsheet.

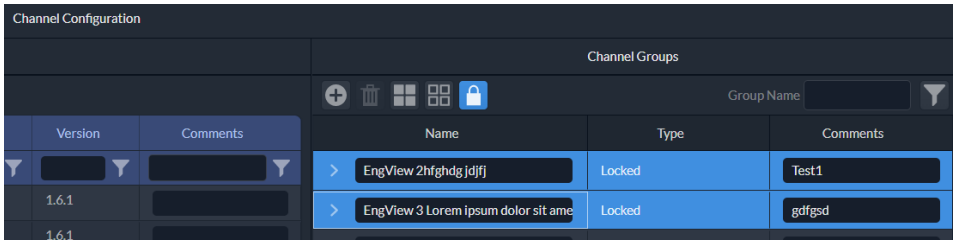
  To manually set multicast parameters open the Source Flows tab and edit the parameters. Flows can also be enabled or disabled manually.

To automatically set multicast parameters select Enable Flows, configure the flow types and select the desired mode.

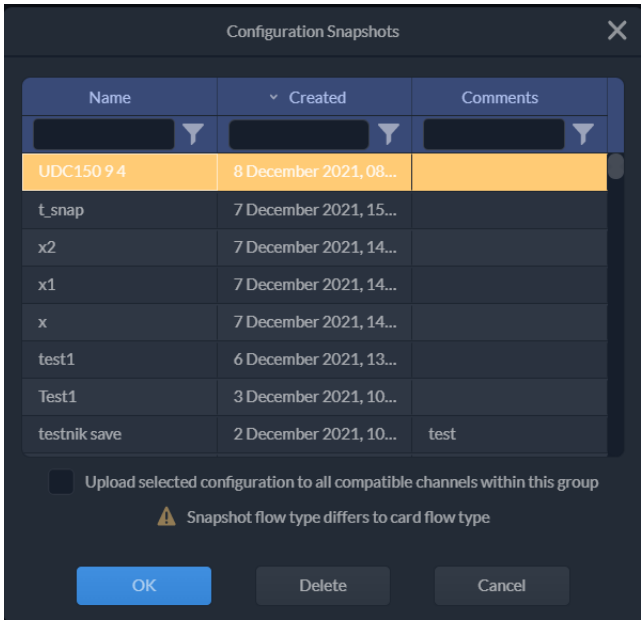


- [Ref. #UCCM-3616/UCCM-2863/UCCM-3065] **Channel Manager Enhancements:**
  - **Support for XIP-3901-UDC-IP v1.6.1 in Channel Manager:** The GV Orbit Channel Manager now includes support for the XIP-3901-UDC-IP application running version 1.6.1. Users will now be able to view UDC-IP channels in the Channel list and be able to access the control panel for UDC-IP channels in the Channel Operations page.
  - **Channel Manager Channel Configuration page:** The Channel Manager now includes a new Channel and Groups Configuration page which allows users to view more detailed information at a glance for all available channels and groups within the system.
  - **Lock Groups in the Channel Manager:** The Channel Manager has been enhanced with the ability to lock Groups so that it cannot be modified or deleted. This enables Groups to be created that contain specific Channels that cannot be edited without first unlocking the Group.

    The lock feature is enabled through the Channel Configuration page. Select a single Channel or multiselect multiple Channels in the Group and toggle the lock icon. <Shift>-Click to select a range, and <Ctrl>-Click to select multiple individual Channels.



- [Ref. #UCCM-3639] **Added Support for Licensing Options for IQ-UCP AMD:** Added a licensing option for the IQ-UCP AMD core.
- [Ref. #UCCM-3617] **Warn when Recalling Channel Snapshot with Different Flow Type:** The Channel Manager has been enhanced by warning you if a Recall to a Channel is requested that was created for a different flow type. For example trying to recall a Snapshot from an HD Channel to a UHD Channel. You can ignore the warning and proceed with the Recall. In this case be aware the settings applied to the Channel may not be suitable for the signals currently being processed by the Channel.



Bugs Fixed

- [Ref. #UCCM-3592] **Email Configuration doesn't Reflect Saved Settings:** Corrected an issue with the Email Service that was preventing the configuration screen from displaying recently saved settings.
- [Ref. #UCCM-3488] **Corrected Issue with RollCall Devices Logging via their Secondary and Tertiary Network Interfaces:** Corrected an issue in the IP Proxy Service that was preventing devices that output their alarms via the Log Server service from doing so on their Secondary or Tertiary network interfaces.
- [Ref. #UCCM-3446] **Filter for Created Date not Working as Intended:** Corrected an issue with the Created Date filter in the Channel Manager when using the Recall Snapshot feature on the Channel Operations page.

- [Ref. #UCCM-3766] **Improved Handling of Incorrect Tile Positions in the MV Cluster Manager:** The handling of tiles with invalid coordinates has been improved. Previously an incorrect tile would result in aborting processing which would unload Walls from the multiviewers. Now the error will be logged to the MV Cluster Manager log and the Tile is removed from the Wall.

GV Orbit Version 2.6.0

As shown in each application's *About* screen, GV Orbit version 2.6.0 is composed of:

- GV Orbit Client version 5.6.0.
- GV Orbit Control version 3.6.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- New Features and Enhancements, on page 57
- Bugs Fixed, on page 59

See also Known Issues and Limitations, on page 128.

New Features and Enhancements

- [Ref. #UCCM-3564] **Added Support for GVO-CTL-XPS License:** Added support for the GV Orbit Control Express license for use with Grass Valley base band router solutions.

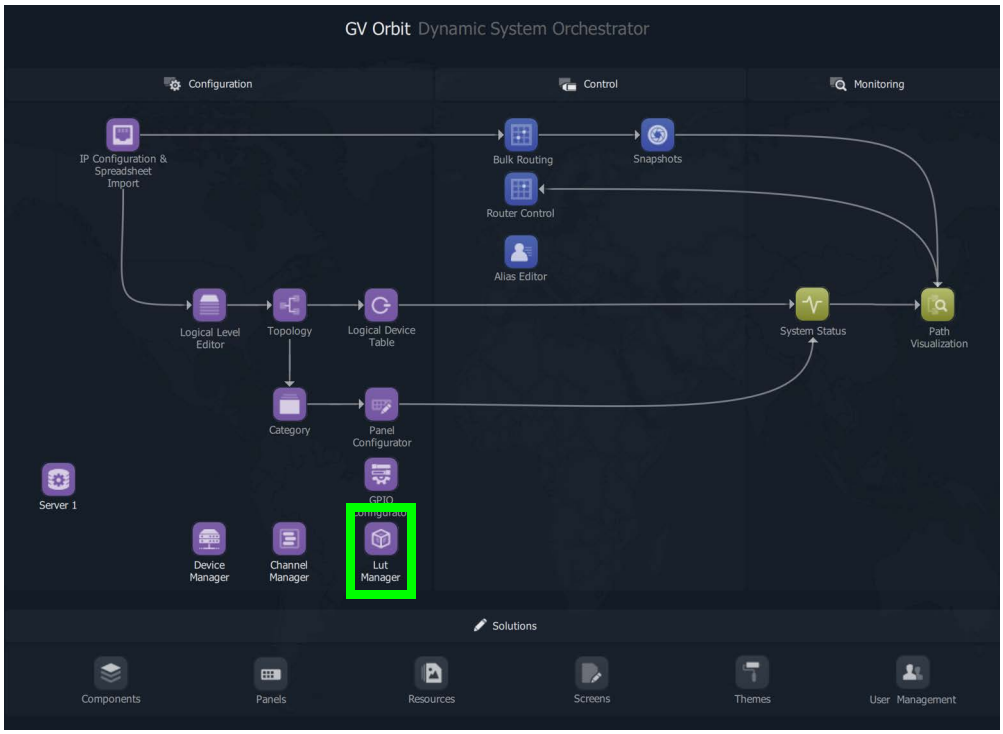
  License

Option	Description
License: GVO	
GVO-CFG-PRO	License for GV Orbit Configuration Professional software (one license required per server). Each license includes one client seat (GVO-CLIENT).
GVO-MON-PRO	License for GV Orbit Monitoring Professional software (one license required per server). Each license includes one client seat (GVO-CLIENT). Includes: mapview, HTML and logging support.
GVO-CTL-XPS	License for GV Orbit Control Express software (one license required per server). Each license includes one client seat (GVO-CLIENT). Includes: Aliases, breakaway, lock and protect, GPIO logic, salvos, and baseband tielines. For use with GV baseband only systems. Includes 50 GVO-CTL-BB licenses.
GVO-CTL-PRO	License for GV Orbit Control Professional software (one license required per server). Each license includes one client seat (GVO-CLIENT). Includes: Aliases, breakaway, lock and protect, GPIO logic, salvos, northbound control and support for GV Hardware Panels.
GVO-CTL-ENT	License for GV Orbit Control Enterprise software (one license required per server). Each license includes one client seat (GVO-CLIENT). Includes: Professional features plus; automatic pathfinding, multi-hop control and shuffle.

  NOTE: The License service has to be upgraded first. After which other services can then be upgraded.

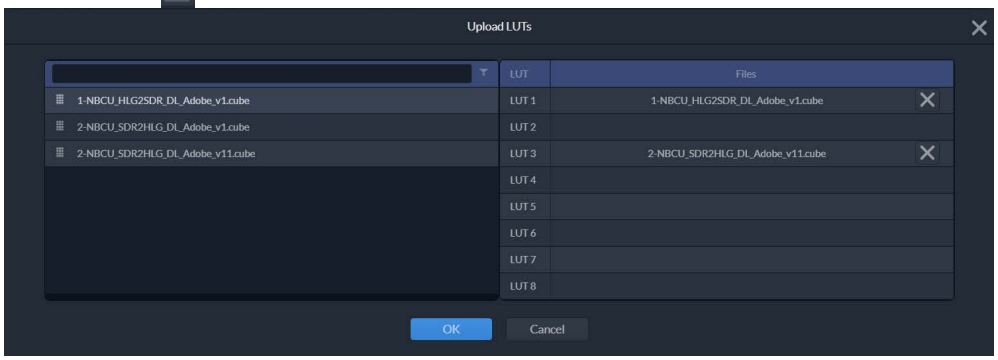
- [Ref. #UCCM-3521] **Added Support for the XIP-3901-UDC v4.0.1 to the Channel Manager:** Added support for the XIP-3901-UDC-IF v4.0.1 card to the Channel Manager. Changes include:
  - Support for quad channels.
  - Updated video resolution menus - depending on mode (Quad HD or Dual UHD).
  - Updated HDR Processing menus - Renamed LUTs and included NBCU LUTs.
  - Renamed Detail Enhancer to Enhancement and added new Filtering and MPEG pre-processor menus.
  - Updated Downmix to include new mode 5.1.4 to 5.1+Stereo and relevant controls.
- [Ref. #UCCM-2620] **Added LUT Manager:** The LUT Manager enables the configuration of custom LUTs for the XIP-3901 family of cards. The LUT Manager is launched from the GV Orbit Workflow screen.

  To add the new Workflow screen to an existing project; install GV Orbit version 2.6.0 then copy the following directories to the existing project.
  - C:\Program Files\Grass Valley\GV Orbit\resources
  - C:\Program Files\Grass Valley\GV Orbit\workflows



The LUT Manager features two sections, LUT Configuration and HDR Enabled Devices.

- The LUT Configuration section is used to upload custom LUTs. Click the icon to upload a custom LUT. Once loaded, set the colorimetry settings as required.
- The HDR Enabled Devices section is used to see the custom LUTs present on devices and to delete or upload LUT files to the available slots on the device. Use shift + click to select a range of devices, or ctrl + click to select multiple devices. Click the icon to enter the upload selection dialog.



The list of available LUT files can be filtered. Use the drag handle to drag and drop the file into the appropriate slot. Up to eight slots can be populated. After clicking OK the LUT files will be uploaded to the respective slots on the selected devices.

Filenames for files that have been uploaded to a device, but cannot be processed by the device, for example, in the case of an incorrect format, will be shown in red.

Bugs Fixed

- [Ref. #UCCM-3586] **Corrected Issue with Renaming Active Layouts in Multiviewer Cluster Configurator:** Corrected an issue that could cause the GV Orbit Client to exit when renaming an active layout in the Multiviewer Cluster Configurator.
- [Ref. #UCCM-3582] **Corrected Issue that Caused all Multiviewer Outputs to Update on a Save:** Corrected an issue where the Push on Save option in the GV Orbit Client could remain enabled when multiple projects have been opened. Also corrected an issue where generating a new GUID could cause the multiviewer to re-load the project.
- [Ref. #UCCM-3576] **Fixed Issue Preventing TEK SPG 8000 SNMP Driver from Initialising:** Fixed issue preventing the TEK SPG 8000 SNMP driver from initializing.
- [Ref. #UCCM-3519] **Corrected Issue that Caused Multiviewer Outputs to Refresh on GV Orbit Failover:** Corrected issue in the Multiviewer Cluster Manager that caused projects to be reloaded onto the Multiviewers in the event of a failover between GV Orbit servers.

GV Orbit Version 2.5.0

As shown in each application's *About* screen, GV Orbit version 2.5.0 is composed of:

- GV Orbit Client version 5.5.0.
- GV Orbit Control version 3.5.0.

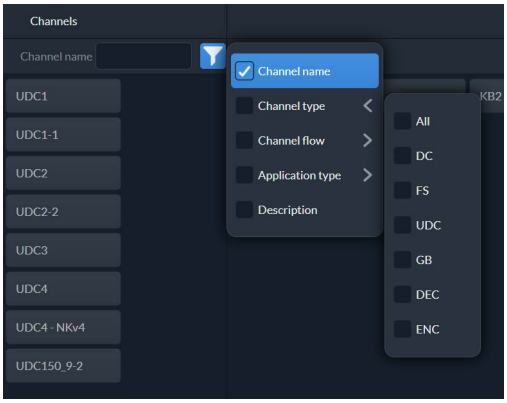
This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- GV Orbit Client v2.5.0 New Features and Enhancements, on page 60
- GV Orbit Control v2.5.0 New Features and Enhancements, on page 61
- GV Orbit Client v2.5.0 Bugs Fixed, on page 62
- GV Orbit Control v2.5.0 Bugs Fixed, on page 63

See also Known Issues and Limitations, on page 128.

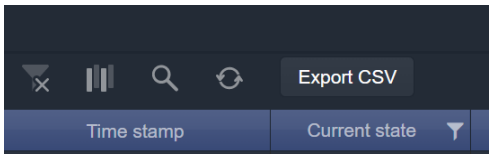
GV Orbit Client v2.5.0 New Features and Enhancements

- [Ref. #UCCM-3493] **Added Indicator to show Current Room Layout for Kaleido Multiviewers:** The currently selected room layout for the Kaleido Multiviewers is now indicated with a check mark.
- [Ref. #UCCM-3489] **Added Support for Licensing Options for IQ-UCP AMD:** Added a licensing option for the IQ-UCP AMD core.
- [Ref. #UCCM-3273/#UCCM-3066/UCCM-3124] **Channel Manager Enhancements:**
  - **Improved Filter Options in Channel Manager:** Filter options within the Channel Manager have been improved to allow you to filter based on a number of criteria, and options are now selectable.



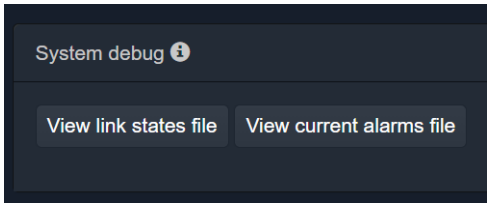
  - **Add Support to Recall Channel Settings to all Channels in a Group:** Support added to recall Channel Settings to all Channels in a Group. Enable the checkbox in the Recall dialog box to apply the channel settings to all compatible channels in the group.
  - **Snapshot Configuration Screen can Recall Snapshot to Multiple Channels:** Added feature to allow the recall of Snapshots to multiple channels from the Snapshot Configuration Screen. After selecting a Channel and clicking the Recall Settings button, you can use the Select Channels for Upload dialog to filter and select the channels to which the Snapshot should be recalled.

- [Ref. #UCCM-2782] **Added the Ability to Download Events from the Event Logging Service:** Added a feature to download events from the Event Logging Service as a CSV file.



Apply filters as required to display the desired events in the table. Use the Export CSV dialog box to save the contents of the table to a CSV file.

- [Ref. #UCCM-1723] **Added Support to View MapView Debug Data through Web Page:** The MapView configuration web page on the GV Orbit Service features two new buttons to retrieve and display debugging information.



Select **View link states file** to see the aggregate state information for each link between screens in the project.

Select **View current alarms file** to see the current alarm status

GV Orbit Control v2.5.0 New Features and Enhancements

- [Ref. #PEG-11775] **Added Support for the IQ-UCP-AMD Card:** Added support for IQ-UCP-AMD card to GV Orbit Control.
- [Ref. #PEG-11761] **Added Support for DCNM Tally Status on NVision Panels:** Added functionality to show tally information from Cisco DCNM on NVision panels. Additional state information is displayed on the panel buttons.

Meaning	Description	Text	
Unknown	No notifications received from DCNM about flows being added or deleted.	??	[??]
Partially healthy	Some flows are stitched, providing enough for the final destination. E.g.: V + Anc on A link, and Audio on B link. Only applies when the destination is in redundancy mode.	[]-[]-[]	[SICK]
Unhealthy	Some flows are stitched, but not enough for the final destination. E.g.: Missing audio.	..-[]-..	[BAD]
Complete	All A+B flows are stitched (Video, Audio and Anc).	Empty	Empty
Not present	None of the flows are stitched (received notifications about the flows being deleted).	..-..-..	[MISS]
Tally flow status option is disabled		Empty	Empty

This feature requires that the software version running on the Cisco switches be DCNM build 11.5(1), with switch firmware: NX-OS 10.1(2). See also Cisco DCNM Network Switch, on page 126.

- [Ref. #PEG-10571/PEG-9918] **Enhanced 24 Character support for NVision Panels:**
  - **Added Support for 24 Character Salvo Names on NVision Panels:** Added support to display 24 character Salvos names regardless of the panels *Display 24 character* options.

  - **Added Support for 24 Character Display on NVision Panels:** Added 24 character support to the Category, Load page and Load layout buttons. This is regardless of the *Display 24 characters* property as these buttons only display the name of the element.

GV Orbit Client v2.5.0 Bugs Fixed

- [Ref. #UCCM-3514] **Corrected issue with MV Cluster Mode Reverting TSL Mode:** Corrected an issue where editing the assigned router destinations or TSL indexes for Multiviewer inputs in Room editor caused the TSL mode to change from 5.0 to 3.1.
- [Ref. #UCCM-3506] **Global variables in Mapview do not link to external file:** Fixed an issue when using an external link file for global variables; the variables are not read when the GV Orbit Client starts.
- [Ref. #UCCM-3495] **Improvement to Data Replication Between Servers in a Cluster:** An improvement has been made when handling large replication data sets between GV Orbit Servers in a Cluster. Previously undefined behavior could result when transferring large data sets. The transfer of data between servers has now been optimized.
- [Ref. #UCCM-3487] **Improved Reporting of Data Errors within Relay Service:** Data flow error reporting has been improved in the Relay Service. Previously an error was generated if no data had been seen for a period of time. This led to false errors during periods of inactivity in lightly used systems. The data flow error is now raised when no data has been seen, for example, indicating a configuration error.

- [Ref. #UCCM-3483] **Improved Handling of Service Alarms During a Failover:** Improved the handling of alarms from the GV Orbit Services during a failover between servers in a cluster. Previously the incorrect alarm state for the service health could be left after a failover. This has been corrected such that during failover the expected error will be generated as one service shuts down and the standby starts up. However alarms will not settle to the state of the active servicefg.
- [Ref. #UCCM-3482] **Removed Index from Salvo Behavior Configuration:** The NP0017 protocol only provides the name of a Salvo so the option to configure the Salvo Behavior with a Salvo index has been removed. Salvos can only be found by name. Changing the name of the Salvo in GV Orbit Control will require the Salvo Behavior to be manually updated in the GV Orbit Client.
- [Ref. #UCCM-3474] **Correct Case Handling which Resulted in Incorrect Paths:** Improved handling of case sensitive paths to avoid issues with paths working in the GV Orbit but not the Web Renderer.
- [Ref. #UCCM-3470] **Correct Mismatch Between Button Label Text in GV Orbit Client and Web Renderer:** Improved mismatch between the rendering of text in button labels between the GV Orbit Client and the Web Renderer.
- [Ref. #UCCM-3443] **Added Support to Open RollCall Control Screens from GV Orbit Landing Page:** Added support to open the Control and Upgrade screens for RollCall devices from the Network Map screen on the GV Orbit Client Landing Page.
- [Ref. #UCCM-3237/UCCM-3062] **Upgraded Chromium Engine:**
  - **Upgraded Chromium Engine to Correctly Display GV Orbit Server Web Pages:** The Chromium engine has been updated, correcting rendering issues when displaying the Licensing Service web page from the GV Orbit Server.
  - **Updated Chromium Engine in GV Orbit Client:** The Chromium Engine in the GV Orbit Client has been updated, this allows streams from the AMPP Flow Monitor to be decoded.

GV Orbit Control v2.5.0 Bugs Fixed

- [Ref. #UCCM-3462] **Corrected Panel Artifacts when Changing Layouts when not on Home Screen:** Corrected an issue when changing panel layouts while it is connected and not on the home page would cause artifacts on the panel.
- [Ref. #UCCM-3501] **Corrected an issue where routing to NMOS devices sometimes would not work:** Corrected an issue where both connections to an NMOS could be marked as redundant, which resulted in a success for the take but no request was made to the endpoint.
- [Ref. #PEG-11773] **Improve Handling of Logical Destinations using Unexposed Streams:** Improved handling of logical destinations with unexposed streams that may have resulted in failed takes to the exposed edge stream downstream of that unexposed stream.

  NOTE: Only exposed streams on the logical destination are processed as part of the take. If a stream is not exposed and used in a logical destination then undefined behavior may result, particularly if downstream of it there are streams that are exposed and part of another logical destination.

GV Orbit Version 2.4.1

As shown in each application's *About* screen, GV Orbit version 2.4.1 is composed of:

- GV Orbit Client version 5.4.0.
- GV Orbit Control version 3.4.0.

GV Orbit Control v2.4.1 Bugs Fixed

- [Ref. #UCCM-3512] **Missing routing destinations:** An issue where the routing service is missing a range of NP17 router destinations has been fixed.
- [Ref. #UCCM-3502] **Updated SNMP Application Installer to Correct IP Address:** Updated the SNMP Application installer to correct an internal IP address used for communication between SNMP and Log Server Applications.
- [Ref. #PEG-11772] **Exposing IP streams were being hidden after a reboot:** Exposing IP streams on devices like UCP for use in logical devices was being reverted back to hidden after a reboot of the controller. This issue has been fixed.

GV Orbit Version 2.4.0

As shown in each application's *About* screen, GV Orbit version 2.4.0 is composed of:

- GV Orbit Client version 5.4.0.
- GV Orbit Control version 3.4.0.

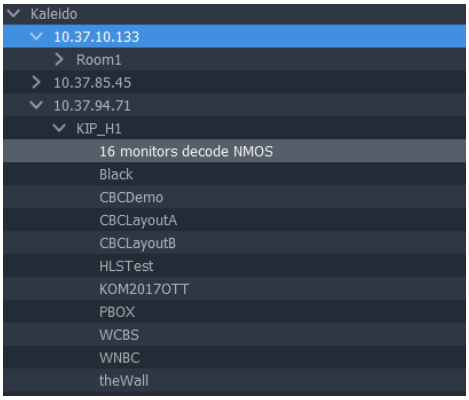
This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- GV Orbit Client v2.4.0 New Features and Enhancements, on page 65
- GV Orbit Control v2.4.0 New Features and Enhancements, on page 68
- GV Orbit Client v2.4.0 Bugs Fixed, on page 68
- GV Orbit Control v2.4.0 Bugs Fixed, on page 69

See also Known Issues and Limitations, on page 128.

GV Orbit Client v2.4.0 New Features and Enhancements

- [Ref. #UCCM-3246/UCCM-3304/UCCM-3301] **Channel Manager improvements:**
  - **XIP-3901-UDC-IF controls improvements:** Fixed some minor issues and added several new control options.
  - **Added Audio Upmixer controls:** Added controls for the XIP-3901-UDC-IF Audio Upmixer feature in the Channel Manager.
  - **Added Audio Input Selection controls:** Added controls for the XIP-3901-UDC-IF Audio Input Selection feature in the Channel Manager.
- [Ref. #UCCM-3331/UCCM-1009] **Improve Kaleido Multiviewer integration in GV Orbit Client:**
  - **Xedit integration: Select and edit layouts:** In the GV Orbit client Network view, under the Kaleido device, you are now able to see a list of rooms and layouts with the ability to load a layout or launch Xedit to edit the layout.
  - **Integrate Kaleido multiviewers into the GV Orbit client network tree:**



Expanding a Kaleido multiviewer in the GV Orbit client network tree will cause GV Orbit to connect to the device and obtain a room listing which will be displayed as child nodes in the tree. Under the rooms layouts will be displayed.

The context menu "Open in XEdit" is a shortcut to allow the layout to be opened directly in XEdit if installed.

- [Ref. #UCCM-2930/UCCM-2919] **MV Cluster improvements:**
  - **Support Automatic Save of Sources Associated with Multiviewer Room Layouts:** The Multiviewer Cluster Manager supports the automatic save of sources associated with tiles for each layout. On a layout change the source is automatically recalled and routed. The functionality is enabled with this icon in the Room XY Routing mode.
  - **MV Cluster: save source assignments with layout:** It is now possible to save the currently assigned monitor wall sources with the layout so that when the layout is loaded at a later time, it will automatically route and assign the same sources.
- [Ref. #UCCM-2864/UCCM-3143] **Channel Snapshot Manager improvements:**
  - **Channel Snapshot Manager management and configuration page:** Added a Snapshot management and configuration page which allows for administration of saved channel snapshots. This includes the ability to rename the snapshot, update the description, and delete the snapshot.
  - [Ref. #UCCM-3143] **Channel Manager History Page:** Added a History page to the Channel Manager. Shows the history of snapshot creation, recall and deletion. Accessed through the icon in the Channel Manager.

  Note: snapshot operations prior to version 2.4.0 will not display some of the metadata information such as channel type and name.
- [Ref. #UCCM-3444] **Added Support for Text Replacement:** The String Op Behaviour has been improved with a Replace All operation. All instances of the search term are replaced, the search term can be case sensitive and the offset from the beginning of the string can be configured.
- [Ref. #UCCM-3439] **New RollSNMP drivers in GV Orbit:** New drivers have been added to the GV Orbit Device Manager. See Device Manager Monitoring Support, on page 162.
- [Ref. #UCCM-3113] **JPEG XS control in MapView screens:** JPEG XS control in MapView screens

  GV Orbit client now supports JPEGXS control API in the MapView screens through a new Densité+ behavior. The behavior can be found under the Densité REST group.

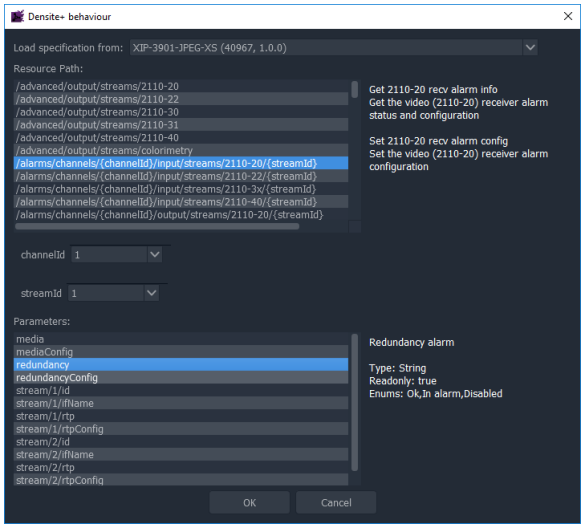
  The behavior has two main properties to configure:

  1 Resource Path

  2 Parameters

  Related parameters are divided into groups using the resource path. Each group may contain a number of parameters, or in some cases none at all, where the resource path is used to specify an operation such as reboot or reset stats.

  A UI is provided, allowing the user to easily configure:

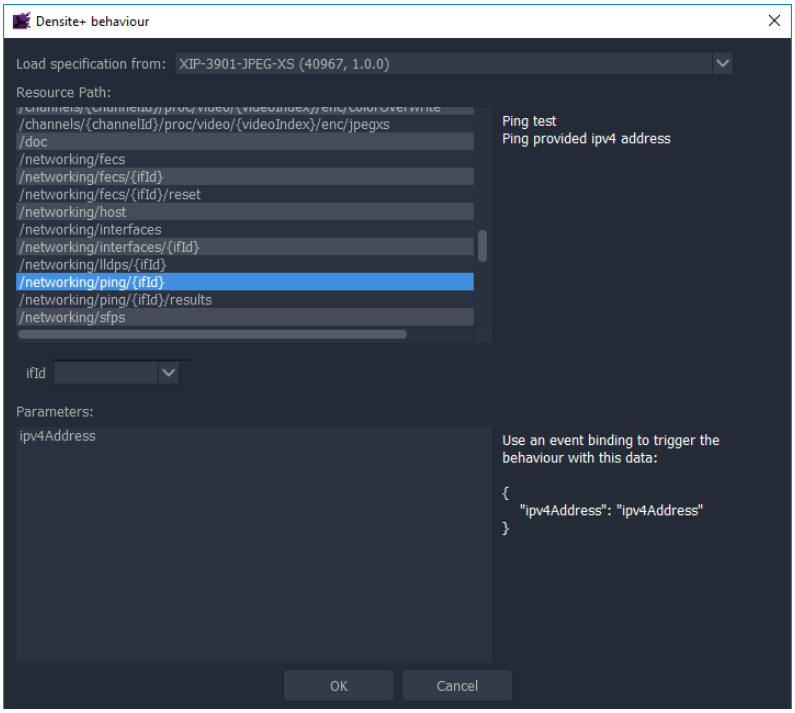


Additionally the behavior supports a Card Id, used to obtain the cards API endpoint address and a Write Mode which can be used to fix the behavior into either Read/Write (or both) modes. In most cases Read/Write won't hurt, even if only using for display purposes, however Read only will be slightly more efficient in these cases.

Note: When writing to a parameter, the behavior must have only one parameter selected, otherwise GV Orbit does not know which to update. This may be improved in a later release of GV Orbit.

Some Resource Paths define actions (events) such as rebooting the card, or pinging an IP address on one of its interfaces. These require an event binding to be used to trigger the action, either with execute (where no data is needed to be passed), or with a data event, passing the required JSON object.

The configuration UI shows the format of the JSON needed.



And this can be copied into the Event Binding:

GV Orbit Control v2.4.0 New Features and Enhancements

- [Ref. #PEG-11325] **Improved tallying for composite levels:** Changes were made so composite levels satisfied by the configuration of sub-levels of a destination are now available and tallied.

  For example: creating a 2110 destination with streams assigned in the V, A and Anc levels will now tally the V-ANC and SDI levels when all of their sub-levels are on the same source.

  - The composite level buttons on NV panels will now be enabled when the composite level's sub-levels are satisfied by the destinations configuration.
  - The composite levels of logical destinations will now be returned to NP0017 client when the composite level's sub-levels are satisfied by the destinations configuration. You can see this in the bulk routing panel of GV-Orbit-Configurator.
  - Composite levels SDI, V-ANC and SDI-Audio are now tallied with the source when their sub-levels are all on the same source.

  This affects NDAC clients and NV panels.
- [Ref. #PEG-11221] **Sirius 800 series router control support:** GV Orbit Control now includes a Sirius 800 series router device type which can be added to the topology for more detailed control, including support for multiple controllers and different types of I/O cards. Note that the router must first be configured manually before being added to GV Orbit.

GV Orbit Client v2.4.0 Bugs Fixed

- [Ref. #UCCM-3409] **Link variable override not working when target screen variable default matches override:** Corrected an issue with screen links that prevented an Address variable from being passed correctly when the target screen default variable was set to a variable itself, E.g. passing the variable {Address} and the Address variable on a screen is set to {Address}.
- [Ref. #UCCM-3386] **Cannot set a common IP address for Line Card SNMP connectivity:** Fixed issue so that it is now possible to set the same IP address for different line cards.
- [Ref. #UCCM-2093] **Corrected Issue in Densité Card Control Panel Preventing List of Cards from Showing:** The Densité Panel Launcher has a feature to propagate the user default configurations from one card to other similar cards.

  The known issue where the list of available cards to copy to is always empty has been fixed.

GV Orbit Control v2.4.0 Bugs Fixed

- [Ref. #PEG-11719] **Removed one of the buttons for showing long stream names in the Logical Device Table:** There were two buttons accomplishing the same purpose on the toolbars for the Stream Browser and Device Table in the Logical Device Table UI. In rare occurrences, selecting the destinations tab before the sources were loaded could cause the name to toggle between short and long names, thereby freezing the UI.

  The button on the device table side has been removed to prevent this from happening. The toggle is now done for both sections on the Stream Browser toolbar.

GV Orbit Version 2.3.1

As shown in each application's *About* screen, GV Orbit version 2.3.1 is composed of:

- GV Orbit Client version 5.3.0.
- GV Orbit Control version 3.3.1.

See also Known Issues and Limitations, on page 128.

GV Orbit Control v2.3.1 Bugs Fixed

- [Ref. #UCCM-3457] **Invalid router panel configurations in GV Orbit Control v2.3.0:** The panel buttons go dark when the GV Orbit Control configuration already includes router panel configuration(s), and:
  - You create a new panel on the GV Orbit Control topology, and assign an existing behavior.
  - You assign a new behavior to an existing panel.

GV Orbit Version 2.3.0

As shown in each application's *About* screen, GV Orbit version 2.3.0 is composed of:

- GV Orbit Client version 5.3.0.
- GV Orbit Control version 3.3.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- GV Orbit Client v2.3.0 New Features and Enhancements, on page 71
- GV Orbit Control v2.3.0 New Features and Enhancements, on page 73
- GV Orbit Client v2.3.0 Bugs Fixed, on page 77
- GV Orbit Control v2.3.0 Bugs Fixed, on page 78

See also Known Issues and Limitations, on page 128.

GV Orbit Client v2.3.0 New Features and Enhancements

- [Ref. #UCCM-3327] **License service not included in system backup:** When performing a system backup, note that the License Service is not included in the backup. So when restoring a backup, the system will retain its existing licenses. If this is a new server with no existing licenses, then new licenses must be requested again.
- [Ref. #UCCM-3314/UCCM-3115/UCCM-3313/UCCM-3313] **Kaleido XEdit integration:**
  - **Open XEdit from GV Orbit Client:** XEdit can be opened for Kaleido multiviewers that have been manually added through the new **Connections** > **Kaleido** menu option: enter the IP Address for a Kaleido and the unit is added to the Network View in the GV Orbit client. Right click on the unit's IP address in the Network Tree. XEdit is launched and instructed to connect to the requested Kaleido. Connecting to another Kaleido will switch the running instance of XEdit to the newly-requested Kaleido.

    XEdit needs to be pre-installed on the same PC as GV Orbit. Either use the online installer by connecting to a Kaleido multiviewer in a web browser or obtain an offline installer from Grass Valley Support.

    You can specify which version of XEdit to open through the **Project** > **Edit variables** > **XEdit** Launcher. Specify auto for GV Orbit to auto select an installed version. Or, define the path to the required version of XEdit.
  - **Manual Discovery of Kaleido Multiviewers:** Kaleido Multiviewer can be added to the GV Orbit Client using **Connections** > **Kaleido**. Manually entering the IP Address for a Kaleido will add the unit to the Network View in the client.
- [Ref. #UCCM-3236] **Support JPEG-XS License Option for the IPVU:** Added support for installing the JPEG-XS license for the IPVU from the GV Orbit Client.

- [Ref. #UCCM-3227/UCCM-3165/UCCM-3153/UCCM-3037/UCCM-3036/UCCM-3300/UCCM-3299] **Channel Manager enhancements:**
  - **Added audio downmixer controls:** In the Channel Manager card control panel for the XIP-3901-UDC-IF, added controls for the audio downmixer.
  - **Block card controls during save/recall operation:** In the Channel Manager, when initiating a Snapshot or Recall operation, the controls for all users displaying the same channel will be blocked while displaying a spinning icon with a status message to indicate progress.
  - **Added HDR controls:** In the Channel Manager card control panel for the XIP-3901-UDC-IF, added controls for the HDR processing.
  - **Apply filters to Group and Channel lists:** Added the ability to filter Group and channel lists in the Channel Manager by Name or Description.
  - **XIP-3901-UDC-IF 2×1 audio mixer controls:** Added the 2×1 Audio Mixer controls to the XIP-3901-UDC-IF channel control panel in the Channel Manager page.
  - **Audio Input status for XIP-3901-UDC-IF channels:** Added audio input status for the XIP-3901-UDC-IF processing channel control panel in the Channel Manager page.
- [Ref. #UCCM-3106] **MV Cluster: XY Routing Operator Mode:** If you do not have the **Edit screens** permission then when you open a MV Cluster Room File, you will be taken directly to the XY Routing Screen and the application will be put into full screen mode. You will only be able to switch Rooms, Switch Room Layout and Switch Monitor Layouts.
- [Ref. #UCCM-3080] **Network View: Missing User Access Roles and Privileges:** Added permissions to allow Device Upgrade and Device Control. These permissions now need to be added to a user's profile, if not present then these options will be hidden on the context menu in the Network Tree.
- [Ref. #UCCM-2992] **Configuration and Monitoring Support for XIP-3901-JPEG-XS:** GV Orbit now includes support for the newly released XIP-3901-JPEG-XS Densité card application. The card is automatically viewable in the GV Orbit Client Network view.

  To view the alarms, the card must be configured to publish it's alarms to the server. First, the Alarm API service must have its **Write Access** property set to enabled, this allows the server to receive alarms. Next, the GV Orbit server's IP address must be set in the JPEG-XS card control panel under **System** > **Alarm Configuration**. Alternately, using the Densité service page, the server's IP can be set for all cards.
- [Ref. #UCCM-2808] **GV Orbit routing panels reports the user that locked a destination:** In the GV Orbit routing panels, when a destination is locked, click on a destination which indicates which user locked it.
- [Ref. #UCCM-2652] **Source Level and Destination Level behaviors should operate in Fixed Mode:** Source and Destination Level Behaviors can be assigned to work on specific sources and destinations. This enables customized XY Soft Panels to be created that include level based routing for specific sources and/or destinations. **Note:** when routing using specific levels unless a full level take is performed, breakaway routing will take place.

- [Ref. #UCCM-2639] **GV Orbit Client Take Behavior to report 'Take Occurred', 'Take Destination', 'Previous Source Take' & ' New Source Take':** The Routing Take Behavior has been enhanced to provide additional information such as previous source, current source, destination and take occurred. This additional information allows Soft XY panels to be designed with additional information for the user or to enable an undo feature to be implemented.

GV Orbit Control v2.3.0 New Features and Enhancements

- [Ref. #PEG-11731] **NMOS option to enable multiple audio flows with group hint tag:** Now there is an option under NMOS devices to enable multi-flow audio when the device publishes more than 1 audio sender or receiver with the same group hint tag.

  After upgrading to this version, currently existing devices have this option turned OFF. Adding an NMOS device to the topology will have this option turned ON.

  Quick Config can be used to set this option to ON or OFF for multiple devices by selecting device groups and using the Quick Config tool, and then selecting the appropriate option in the menu.
- [Ref. #PEG-11723] **Back button for NV panels:** GV control systems added a new button called *Back* that allows the panel user to go back to a previously visited page. The *Back* button stacks all visited pages or layout pages and will always be highlighted until the panel user reaches the end of the stack.

  The new *Back* button is available under the built-in behavior list and can be dragged from the list and dropped on a panel button.

  The list of visited pages is persisted and survives restart, reboot and failover actions.
- [Ref. #PEG-11722] **Previous page and Next page buttons for NV panels:** GV control systems added new buttons for NV panels; *Previous page* and *Next page*, to help cycle through specific layout pages by using these new buttons.

  These new buttons are available under the built-in behavior list and they can be dragged from the list and dropped on a panel button.
- [Ref. #PEG-11721] **Updated names for existing NV panel concepts:** GV control systems did update some NV panels concepts:

  The concept of *Panel Definition* is now replaced by *Panel Model*, where a panel model is a reference to a specific panel hardware type (for example, NV9654, NV9680, and so on).

  The concept of *Panel Behavior* is now called *Panel Layout*. A *Panel Layout* is a template/canvas related to specific panel model. Panel layouts can have one or more pages with multiple buttons/functions. Panel layouts can be triggered and used from other panel instances if those are from the same panel model, using the *Load Layout* option.

  These changes have been made to improve the user interface clarity and they do not change the internal logic of the feature.
- [Ref. #PEG-11713] **Updated northbound SW-P-08 protocol to support Workbench and Luna controllers:** Updated SW-P-08 implementation to support northbound Dual controller Status Response Messages which are required for Workbench and the Luna 2460 to control the GV Orbit Control.

- [Ref. #PEG-11644] **NMOS IS-05 v1.1 support:** GV control systems now supports natively the IS-05 v1.1 API when available. It will be used over v1.0 when both versions are available.
- [Ref. #PEG-11635] **JPEG-XS (2110-22) flow type support for GVOP devices:** The support of JPEG-XS (2110-22) flow type was added in GV control systems for GVOP devices where it is now recognized as a video flow type and properly set with the corresponding bandwidth.

  Logical levels should be used in order to prevent routing between compressed and uncompressed flows.
- [Ref. #PEG-11626] **JPEG-XS (2110-22) flow type support for NMOS devices:** The support of JPEG-XS (2110-22) flow type was added in GV control systems for NMOS devices where it's now recognized as a video flow type and properly set.

  Logical levels should be used in order to prevent routing between compressed and uncompressed flows.
- [Ref. #PEG-11587] **2022 flow type support for NMOS senders:** The support of 2022 flow type was added in GV control systems for NMOS senders where the flow type is now recognized as an ***SDI*** logical level and is properly set.

  NMOS receivers will keep using the ***Video*** logical level and routing to those receivers from ***SDI*** sources is already covered by the pathfinding algorithm, so no manual configuration is needed.

  For information, manual changes to sender/receiver logical levels are persisted and not in-sync anymore with the NMOS registry data.
- [Ref. #PEG-11484] **Re-index action in Alias Editor now requires text input:** In order to protect against click errors, a captcha-style dialog was added to the re-index button of the Alias Editor to confirm the action which can have a big impact on router tables.

  The dialog asks the user to type the text "re-index" to confirm the action.
- [Ref. #PEG-11470] **GV Orbit Control system's northbound control through Sony LSM (NS-BUS router matrix protocol):** GV Orbit Control system's northbound interface added the ability to control crosspoints through Sony LSM (NS-BUS router matrix protocol).

  With this integration, logical sources/destinations from GV control systems, including those created for NMOS devices, are now available northbound to be used by Sony panels and commands received through *NS-BUS router matrix protocol* are properly handled.

  LSM does not allow the configuration of the TCP port to which it connects to on an NS-BUS router device and uses 9720 by default. Because of this limitation, only one area of GV control systems can be controlled. GV control systems allow control of the area with the lowest external ID through the NS-BUS protocol.

  When adding a GV Orbit Control system as an NS-BUS Device in the LSM configuration, the selected Protocol must be TCP and the Device Port Number value must be 8079. Device IP Address1 field should be the Virtual IP address of the GV Orbit Control system. Device IP Address2 field must be empty.

- [Ref. #PEG-11463] **Support of Global Pages / Panel Layouts concepts in GV Control Systems:** GV control systems added the support of *Global Pages* for NV panels.

  The concept of *Global Pages* is called *Panel Layouts* in GV control systems, where a panel layout is a template/canvas related to specific panel model, with a set of buttons, to be used across multiple workflows and panels.

  Panel layouts can have one or more pages with a set of buttons/functions. Panel layouts can be triggered and used from other panel instances if those are from the same panel model, using the *Load Layout* option. A new section called *Layouts* was added to the resources home page of the *Panel Configurator*. This section will display only the available layouts that are using the same panel model that is actually open in the *Panel Configurator*. One or more panel layouts can be selected and added to the panel, at once.

  Panel layout pages/buttons can be changed from the main panel and the changes will be dynamically reflected on all panels where those pages are used, which has the advantage of updating multiple panels from one place with a single configuration.

  Once the *Load Layout* option is added on a specific panel, it's possible to choose the exit mode, in order to leave a specific panel layout and go back to a specific stage, using the same existing EXIT options: Never, Preset, Take.

  On the panel (Hardware or Software versions), the *Load Layout* button will display the name of the layout and once clicked, the panel layout will be open showing all buttons and functions of that specific layout.

  Panel layouts can trigger other panel layouts (nested layouts) and the panel user is able to leave one layout, through the exit mode, to send the panel user to the previously visited panel page. The panel user can navigate through multiple panel layouts and also different pages from those panel layouts. The Back button and/or the Previous and Next page buttons can be used to cycle through the panel layout pages or through different panel layouts.

- [Ref. #PEG-11437] **Audio Live dual redundancy support:** GV control systems added the support of dual redundancy for Audio Live.

  Audio Live dual redundancy is supported in GV control systems with Audio Live v1.5.3 firmware version. With this new Audio Live firmware, each Audio Live unit can be configured as Independent, Redundant - Primary or Redundant - Secondary.

  Those configurations are available through the RollCall Unit Redundancy menu, for each unit.

  For dual redundancy support, both Audio Live units must be configured in redundancy mode, one unit as Redundant - Primary and the other one as Redundant - Secondary. Both units must have similar configurations, such as Input and Output configurations and it's important to have both units up-and-running while configuring the Audio Live cluster.

  Also, Primary and Secondary input and output ports from both units must be connected to RED and BLUE network switches and the corresponding spigots/streams must be properly configured.

  Those configuration requirements are needed for a proper dual redundancy support in GV control systems.

Once the Audio Live configuration has been done, both units will be synchronized in order to exchange flows data in order to handle dual redundancy.

Dual redundancy on Audio Live was designed to prevent signal loss or signal glitching in case of a hardware failure of one of the two units. In order to achieve this, the Audio Live cluster is using, on the sender side, the primary port from the Primary unit as the cluster primary output, whereas the secondary port of the secondary unit is used as the cluster secondary output.

The secondary output from the primary unit and the primary output from the secondary unit are not used by the GV control systems.

On the receiver side, input ports from both Primary and Secondary units are used and join the same flows; primary input from the primary unit and the primary input from the secondary unit, as well as the secondary input from the primary unit and the secondary input from the secondary unit.

Note that Cisco DCNM host policies are only created for the streams corresponding to the ports that are actually used by GV control systems.

Once the Audio Live cluster configuration is completed, the cluster will be discovered in GV control systems, as a GVOP discovered device. If there is any configuration issue between the two Audio Live units, causing the cluster to be in a bad state (not synchronizing properly), then the discovered entity will not be discovered under the GV Orbit Control system and if the device is already on the topology, the status will change to offline.

A new icon is used to distinguish between Audio Live units using v1.5.3 firmware and units using an older firmware, regardless of the redundancy mode (Independent or Redundant).

The name of the discovered cluster and its related spigots will be using the ones from the primary Audio Live unit.

Once the cluster is added to the topology, the cluster group device will be listing two nodes corresponding to the two Audio Live units. Each node will provide the Audio Live unit properties (Unit name, hostname, Control IP address, GUID. and so on) and also the specific unit ports and spigots.

The cluster device group is listing the ports and the spigots from the used units; the primary port is the one from the primary unit where the secondary port is the one from the secondary unit.

The cluster Redundancy mode property will reflect the current cluster status (Independent or Redundant).

The control port status (Online / Offline / Reconnecting) for the cluster is available on the cluster device group and also through the System Status page where the status for both units is also available.

There are no changes when connecting the Audio Live cluster to the topology network switches using Quick Connect tool.

While routing using the Audio Live cluster inputs, GV control systems will configure the four Audio Live cluster inputs and only use the primary output from the primary unit and the secondary output of the secondary unit. Those used input and output ports are properly displayed through the Path Manager.

While replacing a failing unit, it's important to apply the same IP configuration to the new unit as was applied to the previous faulty unit, otherwise tally issues may occur.

Independent Audio Live units from existing topologies, using an older Audio Live firmware, cannot be used for dual redundancy. Those units must be deleted from the topology, upgraded to v1.5.3 firmware (or higher), configured in a cluster mode and then they will be discovered by GV control systems.

No changes will be noticed if an independent Audio Live unit, using v1.5.3 Audio Live firmware (or higher) is added to the topology, except the new icon and the new unit Redundancy Mode, shown as Independent.

- [Ref. #PEG-11434] **NMOS improvements for A/B routing:** GV control systems added a new mechanism while routing from single-sided sources (A or B) to dual-sided destinations (A and B).

  This was causing issues especially if routing a single-sided source from B to a dual-sided NMOS destination, as the NMOS receiver was trying to join the B flow on its A side, which may result in an unsuccessful route.

  In order to instruct those NMOS receivers to join single-sided sources on specific interfaces, GV control systems now specify the interface to be used as the primary object, using the *transport_params* list property, as part of the IS-05 connection management bulk request.

  No changes were made if routing a dual-sided source to a dual-sided destination; the *transport_params* list property will remain empty, which is an indication to use all available interfaces.

- [Ref. #UCCM-3146] **Global settings configuration for the NMOS registry application:** Configuration changes to the global settings of the NMOS registry application can be requested through Grass Valley support and services team.

  Parameters such as the *priority*, *PTP domain number* and more can be updated and the configuration will be persisted across upgrades. Note that the configuration file is not persisted if the NMOS registry application is deleted or re-installed.

  Please contact Grass Valley Technical Assistance Center (TAC) to help you with these configuration changes.

GV Orbit Client v2.3.0 Bugs Fixed

- [Ref. #UCCM-2946] **SNMP Units Showing as Offline when Many Units are Monitored:** The default SNMP driver configuration contained an incorrect timeout for the ping interval. The driver incorrectly detected the device as offline, causing a re-collection of SNMP data upon reconnection. The default timeout has been set correctly for new installs. Upon upgrade, the value will be updated for existing installs.
- [Ref. #UCCM-3235] **RollCall Support for UHD1200/1100, IQLDK30, IQMDA40 and IQUDC40:** Added support to display the RollCall Control Screens for the UHD1200/1100, IQLDK30, IQMDA40, and IQUDC40.
- [Ref. #UCCM-3346] **Refresh the web UI after the upgrade:** After each upgrade (OS and application) it was necessary to refresh in the browser with Shift-F5. Otherwise some web UI parts were not displayed properly after the upgrade. As of this version, it is no longer required to do so as the browser cache will be disabled. You may still need to do one last refresh though in each page in which you experience an issue.
- [Ref. #UCCM-3340] **Corrected Issue with Installing Snapshot Service when not Connected to Internet:** Corrected an issue that prevented the Snapshot Service from installing if the GV Orbit Server was not connected to the internet.

- [Ref. #UCCM-3281] **Hide Card Controls for Offline Channel:** Modified the Channel Manager so that should a Channel become unavailable, the card controls are not shown.

GV Orbit Control v2.3.0 Bugs Fixed

- [Ref. #PEG-11730] **Routing issues from northbound control systems:** In previous versions of GV control systems using NP0017, there was the possibility for northbound control systems to encounter a routing issue if a DCNM control port was offline, due to the fact that GV control systems were sending unsuccessful status to those northbound systems.

  This issue is now fixed as this error status is not included anymore in GV control systems reply and only a warning is displayed in the logs.
- [Ref. #PEG-11667] **Audit Logs accumulate infinitely and were never cleaned up:** Audit Logs from GV control systems will now maintain a history of up to 90 files, instead of always preserving them all.
- [Ref. #PEG-11657] **DCNM host policies may not be deleted if dynamically decreasing spigot streams/flows:** A fix was made for a known issue in GV control systems if spigot streams/flows were decreasing which could be the case if the spigot went from a configuration with a higher number of audio streams/flows to a configuration with less audio streams/flows. This issue is now fixed.
- [Ref. #PEG-11654] **Labels set on ports and streams will now carry over to the logical devices properly:** There was an issue where if an automatically created logical device label was manually changed and then the corresponding stream's label was also changed, resetting the logical device label was no longer following changes from the stream's name. This issue is now fixed.
- [Ref. #PEG-11642] **Automatic cleanup of unused tally records in the control system database:** Some tally-related records were unnecessarily maintained in the control system database. These will be automatically cleaned up when installing this version. This can make the upgrade process take 5 to 10 minutes longer than usual.
- [Ref. #PEG-11605] **NMOS Driver status now updates faster when the devices becomes online or offline:** There was an issue where the connection status in the System Status Page could take up to 2 minutes to change when an NMOS device became unreachable or back online. This was fixed and the update should happen within 5 to 10 seconds now.
- [Ref. #PEG-11591] **Audio Live inputs used as sources no longer clear multicast address on the B side when used in a take:** When using an Audio Live input spigot directly as a source in a take to a destination that is not the same Audio Live unit, the B-side multicast address joined on the Audio Live input spigot would be cleared to 0.0.0.0. This is now fixed, and the multicast address will no longer change.

- [Ref. #PEG-11182] **New improvements to handle redundancy for NMOS devices:** Pathfinding issues were happening if NMOS devices were publishing their resources with a mix of redundant and non-redundant senders/receivers.

  For NMOS devices, the redundancy for the node interfaces is exposed through the *interface_binding* property from the related NMOS senders and receivers.

  This property is used by GV Orbit NMOS controllers, as part of the IS-04 API, to establish the redundancy between the available interfaces published by the NMOS node.

  If *Sender A* from *Device X* is publishing its *interface_binding* with 2 interfaces (*eth1* and *eth2*) and from the same *Device X* another *Sender B* is publishing its *interface_binding* with only one interface (*eth1*), GV Orbit NMOS controllers will consider *eth1* as redundant based on *Sender A* and as non-redundant based on Sender B and in this case the result won't be deterministic and issues may happen while mapping those resources to the appropriate interfaces.

  Prior to the improvement made in this release, the workaround was to set those NMOS senders/receivers to be *all* either redundant or non-redundant, as a source/destination is either redundant or not, but not a mix of both.

  As part of this release and in order to accommodate these unique configurations, GV control systems added a new mechanism to handle redundancy at the streams level (NMOS senders/receivers) and no longer at the port/interface level. So, issues related to those configuration should not affect the NMOS IS-04 discovery in GV control systems anymore.
- [Ref. #UCCM-3248] **Download All button from GV Orbit logs web page is now functional:** The *Download All* button from the GV Orbit logs page will now properly build a tar.gz archive of all the logs in the server and automatically download the file when it's ready.

GV Orbit Version 2.2.0

As shown in each application's *About* screen, GV Orbit version 2.2.0 is composed of:

- GV Orbit Client version 5.2.0.
- GV Orbit Control version 3.2.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- GV Orbit Client v2.2.0 New Features and Enhancements, on page 80
- GV Orbit Control v2.2.0 New Features and Enhancements, on page 81
- GV Orbit Client v2.2.0 Bugs Fixed, on page 81
- GV Orbit Control v2.2.0 Bugs Fixed, on page 82

See also Known Issues and Limitations, on page 128.

GV Orbit Client v2.2.0 New Features and Enhancements

- [Ref. #UCCM-3015] **Channel Operations Workflow page:** GV Orbit now features a new Processing Channels Management and Operations page allowing you to easily visualize, manage, and operate your XIP processing channels as individual entities without worrying about which physical card they're located on.

  You are able to see a full listing of available channels in the system. You can create custom groups and assign channels to groups for easy organization and access. When selecting a channel, you have access to card parameters controls for only that one channel. Additionally, you have the ability to save a snapshot of the current channel configuration which can be recalled at a later time or even loaded to a different compatible channel.

  This feature requires the GVO-CFG-PRO license.

  The page can be accessed from the main workflow page under the **Channel Manager** icon.

  As of GV Orbit version 2.2.0, only the XIP-3901-UDC-IF v3.1 is supported.
- [Ref. #UCCM-3025] **Card controls for XIP-3901-UDC-IF channels:** Within the Processing Channels Management and Operations page, you are able to load a control panel for a selected processing channel from an XIP-3901-UDC-IF v3.1 card. Refer to the User Guide for full list of available controls.
- [Ref. #UCCM-2868] **Open Channel Manager from C&M Project Workflow Page:** The Workflow page in a C&M Project contains a new icon in the Configuration section called Channel Manager. Click this icon to open the Processing Channel Manager and Operations page.

  Note: The icon is only available in new C&M Projects. To add this functionality to an existing project

  1. Upgrade the GV Orbit Client to version 5.2.x or higher.
  2. Ensure the project is not open in GV Orbit Client.
  3. Copy the file `C:\Program Files\Grass Valley\GV Orbit\workflows\workflow.wfl` into the workflows folder of your project. For example: `C:\My-Project-Folder\My-Project-Name\workflows`
  4. Open the project in GV Orbit Client.

- [Ref. #UCCM-2289] **Multicast scan should include Communication Address:** GV Orbit uses the IP address 239.255.0.1 to automatically discover devices on the network. This address should not be used for audio/video/metadata in an IP network. The GV Orbit Client IP Configuration screen will now prevent this address (and it's aliased equivalents) from being set manually or by the spreadsheet import mechanism.

GV Orbit Control v2.2.0 New Features and Enhancements

- [Ref. #PEG-11570] **Ability to use audio channels with SDI streams:** GV Orbit control already provides the ability to use specific audio channels related to MADI and AES streams, using the Channel Browser from the Logical Device Table. Those are available to be used for the creation of logical sources/destinations, by assigning the desired audio channels to the appropriate A1 to A16 levels.

  This workflow is now available for SDI streams as well, as a replacement for the previous workflow where the Shuffle option was required but only available for logical sources. This new workflow is available for both logical sources and destinations.

- [Ref. #PEG-11297] **Automatic workflows to support multi audio flows in GV Control Systems:** GV control systems already support the creation of logical sources/destinations using multiple audio flows/streams, although those workflows were 100% manual, where level duplication was required to create new level families before assigning each of the audio flows to those families.

  With this new workflow, GV control systems added the ability to automatically create logical sources/destinations using multiple audio flows/streams.

  With GVOP devices, logical sources/destinations are created using the audio channels from the spigot streams. Spigot configuration allows the use of 1, 2 or 4 audio streams where the audio channels count is accordingly adjusted. The 16 audio channels from the automatic logical sources/destinations is created using the multi audio streams/flows. For example, in a 2 audio streams configuration, each stream will have 8 audio channels. For a 4 audio streams configuration, each of the 4 streams will have 4 audio channels.

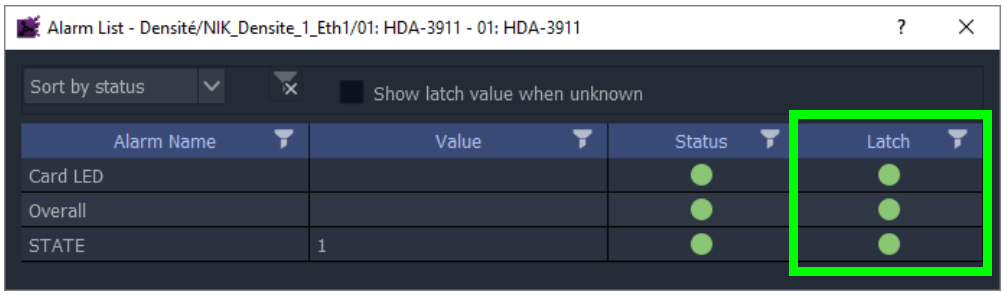
  For NMOS devices, until NMOS IS-08 specifications are supported by GV control systems to leverage the audio channel mapping details provided by NMOS senders/receivers, GV Orbit Control system relies on the NMOS senders/receivers Group Hint Tag property to determine the available audio streams/flows to be used in order to extract the appropriate audio channels used for the creation of the automatic logical sources/destinations. GV control systems still provide the ability to create custom logical sources/destinations using specific streams and specific audio channels.

  Routing between IP sources and IP destinations, with different flow configurations requires an AudioLive in order to convert audio flows into compatible ones.

GV Orbit Client v2.2.0 Bugs Fixed

- [Ref. #UCCM-3147] **Fixed Crash when Changing Project Properties or Modifying Unicast IP Addresses:** Corrected two crashes in the GV Orbit Client. The first could occur when closing the IP Configurator screen and then modifying a project variable. The second when adding/removing a Unicast IP address in Connection->GVOP and then toggling network interfaces on/off.

- [Ref. #UCCM-3087] **Corrected an issue where destinations with no route were captured in a snapshot:** The Routing Snapshot feature now filters out empty routes, for example, destinations with no routed source as it is not possible to restore an non-routed source.
- [Ref. #UCCM-3075] **Alarm API Service Global Domain Handling:** Corrected an issue where the Alarm API Service was not handling the global settings for the Client Domain.
- [Ref. #UCCM-2935] **When stopping a SNMP driver instance, values remain in last known state:** The GV Orbit Client Alarm List window has an additional option to show the last latched alarm state in the case where an alarm is no longer available (for example, if a card is off line). By default the current values for alarms are cleared when the state cannot be determined.



- [Ref. #UCCM-2397] **No audio tallying on bulk router page with an audio only take:** Corrected an issue where audio only takes might not be tallied correctly.
- [Ref. #UCCM-2130] **In Network view, XIP-3901 showing two different applications in same slot:** Fixed an issue where sometimes the GV Orbit client network view would show two different XIP-3901 applications in the same slot. This would happen sometimes when the XIP is changed from one application to another and the previous one would not properly be removed.

GV Orbit Control v2.2.0 Bugs Fixed

- [Ref. #PEG-10622] **NMOS devices that are removed from a system can now be properly deleted from the topology:** Because of a device delete handling issue, deleting an NMOS from the topology would not properly delete all of the device elements if this device was not properly discovered from the registry.

  This lead to a problem where a device being replaced or reprogrammed with different UUIDs could not be cleanly deletable from the topology configurator.

GV Orbit Version 2.1.1

As shown in each application's *About* screen, GV Orbit version 2.1.1 is composed of:

- GV Orbit Client version 5.1.0.
- GV Orbit Control version 3.1.0.

GV Orbit Client v2.1.1 Bugs Fixed

- [Ref. #UCCM-3140] **Loss of connection between applications:** Fixed an issue where after a power cycle, fail-over, or restart of any of GV Orbit's services and applications, sometimes connections to those applications from external clients would fail. This would sometimes also affect internal communications between services or appear as files not available for download.

GV Orbit Version 2.1.0

As shown in each application's *About* screen, GV Orbit version 2.1.0 is composed of:

- GV Orbit Client version 5.1.0.
- GV Orbit Control version 3.1.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

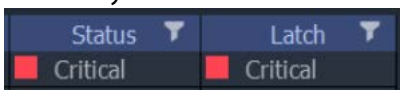
- GV Orbit Client v2.1.0 New Features and Enhancements, on page 84
- GV Orbit Control v2.1.0 New Features and Enhancements, on page 85
- GV Orbit Client v2.1.0 Bugs Fixed, on page 85
- GV Orbit Control v2.1.0 Bugs Fixed, on page 86

See also Known Issues and Limitations, on page 128.

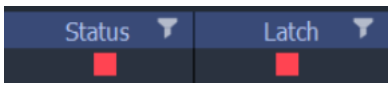
GV Orbit Client v2.1.0 New Features and Enhancements

- [Ref. #UCCM-2958] **GV Orbit web admin page refresh:** Once GV Orbit is upgraded to version 2.1.0, the web admin page must be refreshed (shift + click refresh) in order to render the updated page properly.
- [Ref. #UCCM-2432] **Removed status text from status alarms:** Made a small update to the Alarm List window to remove the redundant status text that was showing next to the alarm status icon.

  Previously with GV Orbit version <2.1.0:

  Now with GV Orbit Version 2.1.0:

- [Ref. #UCCM-1054] **Deployment of a GV Orbit VM server using OVA:** GV Orbit can now run on a Virtual Machine. For the hardware and virtual machine requirements, see Virtual Machine, on page 145. For how to install the OVA on VMware, refer to the new *GV Orbit Software Installation on a VM* chapter that has been added to the GV Orbit Admin Guide. See Related Documentation, on page 143.
- [Ref. #UCCM-3103] **Kibana removed from installation package:** While Kibana can be used for troubleshooting and analysis of logged data, it is not required for production use and has been removed from the installer.

  If not being used, Grass Valley recommends that it be uninstalled to free up additional resources for the rest of the system. To do this, go to the GV Orbit Server Web Admin page and go to the Applications section.

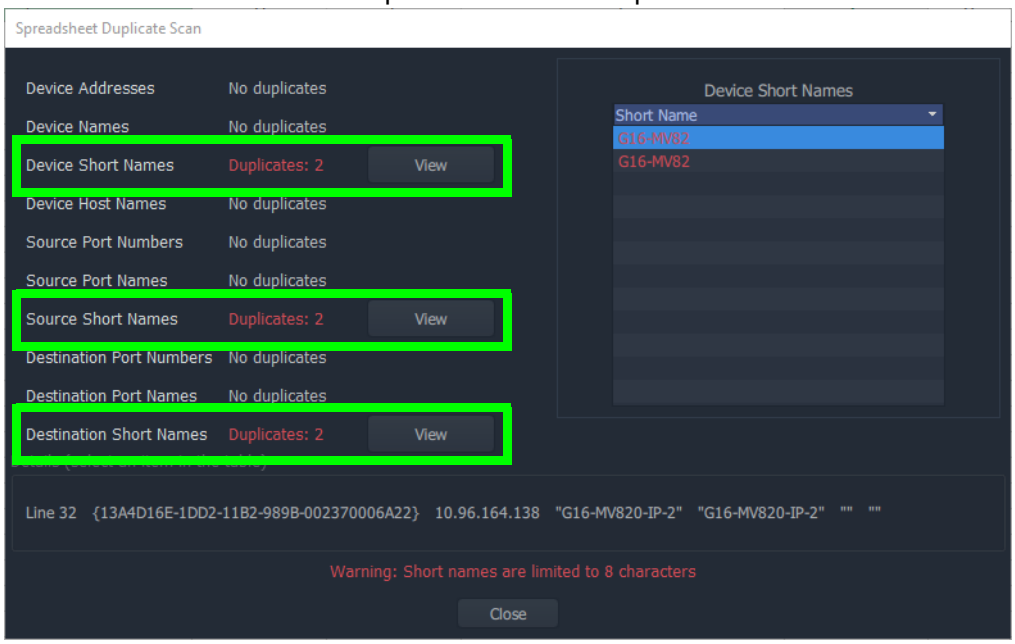
  Find the Kibana application and expand it, then click **Remove**.

GV Orbit Control v2.1.0 New Features and Enhancements

- [Ref. #PEG-11479] **Device port capacity configuration through template:** Grass Valley control systems added a new property, at the device level, called *Default Port Capacity (bps)* for Network Switch and IP Device. When this value is set, it's used as the default capacity for all of the device's ports, if no value is explicitly set on the port.
  If used with an IP device and set on a port within the device group properties (port prototype), then this value overrides the default value set on the device.
- [Ref. #PEG-11472] **New screen for analyzing Audio Live spigot usage:** A new screen is available in GV Orbit Control which displays spigot usage and overall capacity of tielines, to better analyze possible problems with running out of resources.

GV Orbit Client v2.1.0 Bugs Fixed

- [Ref. #UCCM-2946] **Important Linux Kernel update for enhanced stability:** The Linux kernel has been updated to prevent potential file system errors caused by repeated power failures.
- [Ref. #UCCM-3014] **SNMP Service Shows Connection Error to Log Server Service on Clean Install:** Corrected a configuration issue that caused the SNMP Service to connect on the wrong IP address to the Log Server.
- [Ref. #UCCM-2946] **SNMP Units Showing as Offline when Many Units are Monitored:** The default SNMP driver configuration contained an incorrect timeout for the ping interval. The driver incorrectly detected the device as offline, causing a re-collection of SNMP data upon reconnection. The default timeout has been set correctly for new installs. Upon upgrade, the value will be updated for existing installs.
- [Ref. #UCCM-2773] **IP Configuration Import of Short Names Checked for Duplicates:** When importing a configuration into the IP Configuration screen, the short names are now truncated to 8 characters before the duplicate check is run. If duplicates exist they will need to be corrected in the spreadsheet before import is allowed.



- [Ref. #UCCM-2750] **Corrected Type Miss-Match in SNMP Set Behavior:** Corrected an issue in the SNMP Set Behavior where the OID Type in the UI did not match the backend implementation.
- [Ref. #UCCM-2684] **Ctrl + Click Used to Select Multiple Widgets in GV Orbit client:** Selection of multiple widgets is now accomplished by holding CTRL while clicking on widgets. Previously the shift modifier was used.

GV Orbit Control v2.1.0 Bugs Fixed

- [Ref. #PEG-11581] **GPO Tally rules now properly launch on boot:** GPO rules based on Tally were not properly started when booting the server. A failover to the stand-by server was required for the rule to come into effect.

  This has been addressed and Tally-based rules will now properly start on the active server when the server boots.
- [Ref. #PEG-11567] **Exposed SDI stream setting is no longer reset for IQ devices:** When exposing the SDI streams of IQMIX, IQUCP, or IQAMD cards without using automatic sources and destinations, the driver would reset the exposed stream setting back to "Hidden" when the card was rebooted, or when the topology was activated. The setting will now only change when automatic sources and destinations are toggled on or off.

GV Orbit Version 2.0.0

As shown in each application's *About* screen, GV Orbit version 2.0.0 is composed of:

- GV Orbit Client version 5.0.0.
- GV Orbit Control version 3.0.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- GV Orbit Client v2.0.0 New Features and Enhancements, on page 87
- GV Orbit Control v2.0.0 New Features and Enhancements, on page 88
- GV Orbit Client v2.0.0 Bugs Fixed, on page 90

See also Known Issues and Limitations, on page 128.

GV Orbit Client v2.0.0 New Features and Enhancements

- [Ref. #UCCM-2788] **GV Orbit package signature:** A checksum was added to GV Orbit package release in order to validate the file integrity. This can be validated on Windows with 7-Zip (using the Explorer context menu) by comparing it with the supplied sha256 file.
- [Ref. #UCCM-2779] **SNMP Connection driver:** In the new Device Manager, there is a new SNMP Connection driver. This is a simple driver which checks for a few basic SNMP values like the system up time, device name, and device description. This is intended to be used as a simple testing and troubleshooting tool to validate connectivity to SNMP devices.
- [Ref. #UCCM-2676] **Added Support for IQUCP Multiple Audio Flows:** From IQUCP version 16.1.114_bo.29.45 GV Orbit Client supports the configuration of multicast IP addresses for multiple audio flow.

  Control of those multi-audio flows is not available yet in GV Orbit Control.
- [Ref. #UCCM-2649] **Device Manager for SNMP devices:** GV Orbit now includes a new Device Manager for SNMP devices. The Device Manager can be launched from the main workflow page at the bottom of the Configuration section. This will open a new tab displaying the new Device Manager page.

  From there you can add and remove SNMP device drivers, and see a listing of those driver instances in the table.
- [Ref. #UCCM-2488] **GV Orbit Licensing:** GV Orbit version 2.0.0 now introduces License protection. In order to use the features and applications on the GV Orbit server, the appropriate applications must be licensed. Once licensed it will be possible to upgrade and start those applications.

  IMPORTANT

  Before upgrading to GV Orbit version 2.0.0, you must obtain a license from Grass Valley. The license is installed during the upgrade; refer to the *GV Orbit Admin Guide* to do so. See Related Documentation, on page 143.

  If a license expires while an application is running, the application will not be interrupted. However, on the next application or system restart, the application will be prevented from starting up. Additionally, it will not be possible to upgrade the application if not licensed.

- [Ref. #UCCM-2483] **Web Admin License Service page:** In the GV Orbit Web Administration page, there is now a new License Service which can is used to manage licenses in GV Orbit.

  You send your System Serial Number or License Identifier to Grass Valley's Order Processing team to generate a license. You then upload the license through the License service on the GV Orbit Web Administration page to activate the required features.

  The License table shows what features are enabled or not, and whether those licenses are permanent (perpetual) or temporary (trial).
- [Ref. #UCCM-2343] **RollSNMP integration with Device Manager:** The previously existing RollSNMP drivers for the Cisco switches and GV Fabric have now been added to the new Device Manager service and can be accessed by opening it from the workflow page.
- [Ref. #UCCM-1191] **REST interface for Alarms:** The Alarm API service provides the ability for a third party device to inject alarms into the GV Orbit Monitoring system, or for a third party to extract alarms from GV Orbit. The Alarm REST API is documented with the Alarm API Service.

GV Orbit Control v2.0.0 New Features and Enhancements

- [Ref. #PEG-11476] **DCNM network switch interfaces bandwidth capacity configuration:** GV control systems added an improvement for the DCNM driver where the interface's bandwidth capacity for the Cisco network switches are automatically and dynamically updated based on the information provided by DCNM APIs. When the bandwidth capacity is not available, a default value will be used (10G) and you need to update the values accordingly.

  Also, another improvement related to the Cisco network switches interfaces label was made to publish the spine/leaf switch label and not only the interface label (*RED_Spine_9508 Ethernet1/3/2* instead of *Ethernet1/3/2*).
- [Ref. #PEG-11455] **Support of NMOS IS-04 v1.3 in GV Control Systems:** GV control systems added the support for NMOS IS-04 v1.3. This support does not cover any support for NMOS IS-07.
- [Ref. #PEG-11440] **DCNM 11.5(1) support:** GV control systems added the support of DCNM v11.5(1). Older DCNM versions are still compatible with new GV control systems.

- [Ref. #PEG-11319] **Home page improvements for NV panels:** GV control systems added new improvements for NV panels to better handle the panel's Home page.

  Before those improvements, the first page of the panel was by default called *Home* for information purposes only but no specific workflows were related to this page.

  With these new improvements, the first page of the panel is simply called *Page 1* and automatically assigned as the default Home page.

  With multiple pages created, a new option called *Home Page* was added to the panel toolbar menu in order to configure a specific panel page as the Home page. When the page is already assigned as the Home page, the assignment option is grayed-out and the page borders are highlighted in red.

  Under the list of pages, from the *Tool* menu, the assigned Home page has an icon to quickly flag the Home page.

  Also, a new built-in behavior called *Load Home Page* was added. This new button can be added to the panel and when it's pressed, the user is automatically redirected to the Home page. If the Home page is updated, the same button will be dynamically updated to redirect to the new Home page.
- [Ref. #PEG-11310] **Copy/Paste improvements for NV panels:** GV control systems added the following improvements in the *Panel Configurator* while using copy/paste:

  Copy/cut/paste buttons from one page to another and from one panel to another is now possible using either the icons in the toolbar or through keyboard shortcuts

  Multi-select using the shift key is now possible:

  - By holding the shift key and selecting the first and the last button/cell, all buttons/cells in between are selected. The same workflow is possible in reverse order as well.
  - If the first and the last selected buttons/cells are in different lines, the entirety of the lines will be selected in reading direction, between the two buttons/cells.
- [Ref. #PEG-11303] **Panel Lock support for NV panels:** A new built-in behavior called *Panel Lock* has been added for NV panels.

  Once the button added to the panel, it can be used to lock the panel and disable the panel buttons. Pressing panel buttons when it's locked won't have any effect.

  When the panel is locked, all panel buttons go dark, except the *Panel Lock* button that becomes red and display *Panel Unlock*.

  In the lock state, all panel logical source/destination labels still get updated.

  In the same lock state, if the *Panel Lock* button is deleted from the *Panel Configurator*, the panel will be unlocked and the *Panel Lock* button will be deleted from the panel itself.

- [Ref. #PEG-11287] **Default destination support for NV panels:** GV control systems added support of *Default Destination* for NV panels.

  Using the *Panel Configurator*, you now have the ability to use a specific logical destination as the panel default destination. The assignment is done by using the *Default Destination (DD)* option from the toolbar menu, under the *Destinations* tab/list.

  Once the default destination is assigned, always under the *Panel Configurator*, the *Default Destination (DD)* option will be highlighted for that logical destination and the *DD* icon will be added to the destination cell. The same option is used to un-assign the default destination. Assigning a new logical destination as the default one will remove the assignment from the previous logical destination.

  Also, a new property called *Default Destination* was added to the panel property editor (global) to display the label of the default destination once assigned. When there is no default destination, the field is empty.

  It is not required to have the default destination added to the panel in order to start using it.

  Also, a new built-in behavior called *Default Destination* was added to the existing list. Once the button is added to the panel, it will display the current status of the assigned default destination in order to quickly and dynamically monitor its status. When this new *Default Destination* button is selected, there is an option under its property editor to show the destination tally or to disable it. It's actually enabled by default. If a new default destination is assigned, the button will be dynamically updated.

GV Orbit Client v2.0.0 Bugs Fixed

- [Ref. #UCCM-2843] **Unable to Open MV Cluster Project after Changing Monitor Size:** Corrected an issue that resulted in being unable to open a MV Cluster Manager project after changing the size of a monitor.
- [Ref. #UCCM-2609] **Correct Life Cycle Policy for Event Logging Service:** The Event Recording Service was not applying the life cycle policy correctly. This resulted in data not being deleted according to the policy configured in the Event Log Setup. Life Cycle polices are not correctly created for new Indexes.

  To manage the life cycle policy on an existing Index contact Support to discuss requirements.
- [Ref. #UCCM-1849] **Added Support for GV Orbit Client External IDs:** The GV Orbit Client and GV Orbit Routing Service now support the GV Orbit Control External IDs. Support for External IDs is enabled by default for new C&M projects. For existing C&M Project the feature needs to be enabled so as not to break backwards compatibility,

  Enable the External ID feature in the GV Orbit Client by setting **Project** > **Edit variables** > **Show External IDs** to **true**.

  When using External IDs the Routing Behaviors will show the same ID as GVOC. Adding or removing existing IDs will not impact existing assignments. Changing an existing External ID will still require a re-assignment of the ID in the GV Orbit Client, either Router Behaviors or Multiviewer Destination assignment,
- [Ref. #UCCM-1816] **Removed SNMP devices do not get removed from GV Orbit client network view:** Fixed issue so that when the data is purged from the monitoring service, it properly removes the alarm data of the removed SNMP device without needing to restart the services.

- [Ref. #UCCM-1735] **Issues when modifying IP of existing SNMP device:** Fixed an issue where changing the IP address of an SNMP device could cause the service to crash.
- [Ref. #UCCM-981] **Densité card panel becomes unresponsive after disconnect:** Corrected an issue where the Densité card panel would become unresponsive if the connection to the server was lost. The panel will now automatically close when there is no connection.

GV Orbit Version 1.7.1

As shown in each application's *About* screen, GV Orbit version 1.7.1 is composed of:

- GV Orbit Client version 4.7.1.
- GV Orbit Control version 2.9.1.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- GV Orbit Client v1.7.1 New Features and Enhancements, on page 91
- GV Orbit Control v1.7.1 New Features and Enhancements, on page 91
- GV Orbit Client v1.7.1 Bugs Fixed, on page 91
- GV Orbit Control v1.7.1 Bugs Fixed, on page 92

See also Known Issues and Limitations, on page 128.

GV Orbit Client v1.7.1 New Features and Enhancements

- [Ref. #UCCM-2679] **Web Renderer service now supports multiple rendering engines:** The Web Renderer service as been improved to add the ability to define additional **Rendering engines** (from 1 up to 50) in the **Web Renderer** settings. The web renderer service will then start up this many instances of the engine to support additional load.

  Previously, a single instance of the web renderer engine handled the entire load for every single client connected to it through a web browser. If the logic was fairly complex, this could degrade loading and response time. Performance is improved by distributing the connections over a number of rendering engines.

  Rendering engine connections are allocated on a rotating basis, with each one connecting to the next available engine.
- [Ref. #UCCM-2647] **Added Support for Variable Resolver in Behaviors and Bindings:** A new Variable Resolver Binding can be used to resolve a variable and bind it to a behavior or a widget value.
- [Ref. #UCCM-2621] **Support User ID's in GV Orbit Client for Routing:** The GV Orbit Client now allows User ID's to be set for each user. Use the User Management icon on the Workflow page of a C&M Project to create users. Assign a Control External ID to each user. Users with different ID's cannot release a destination locked by another. The admin user or user with an ID of 0 can override others.

  Note: User databases are not synced between the GV Orbit Client and GV Orbit Control. Users also need to be created within the GV Orbit Control and be assigned the same ID.

GV Orbit Control v1.7.1 New Features and Enhancements

- [Ref. #PEG-11450] **Fast routing when using virtual crosspoints:** improvements were made to virtual crosspoints to increase the routing speed.

GV Orbit Client v1.7.1 Bugs Fixed

- [Ref. #UCCM-2706] **Web Renderer Load Balancing:** Refer to Ref.#UCCM-2679 in the *New Features and Enhancements* section for more details.
- [Ref. #UCCM-2665] **Corrected Issue with Multiple Users in Web Renderer:** Corrected an issue where multiple users logging in to the Web Renderer resulted in the incorrect user name being displayed on the users screen.

- [Ref. #UCCM-2642] **Corrected Crash in IP Proxy:** Corrected an issue with IP Proxy that resulted in a crash of the service when more than a 1000 connections were in operation.
- [Ref. #UCCM-2617] **Allow Users Names with '-' and '&' Characters:** Fixed issue that was preventing using certain characters such as '-' and '&' in user names.
- [Ref. #UCCM-2549] **TSL Behaviors not working in MV Cluster:** Fixed an issue where manually configured TSL behaviors may not work in MV Cluster
- [Ref. #UCCM-2315] **Default Spigot Filtering to Show All:** Changed the default setting of Spigot Filtering to be “Show All”. Note that this will only apply to new projects.
- [Ref. #UCCM-2278] **Unable to Route Source to Virtual Crosspoint Destination using Bulk Routing until Routing Service has been Restarted:** Corrected issue with Virtual Crosspoints not being routable until after a reset of the Routing Service.
- [Ref. #UCCM-2150] **Improvements for backup export from GV Orbit web admin:** A ngnix error was happening while trying to export a global backup through the web admin page and it was due to the global zip file generation. This issue has been solved.
- [Ref. #UCCM-1414] **Densité panel launcher crashes sometimes:** Fixed an issue that would sometimes cause the Densité panel launcher to crash.
- [Ref. #UCCM-1359] **New style filters:** Custom filters used to be shared across all panels of the bulk router.

  They are now specific to the panel in which they are created.

  Legacy filters will still appear in all panels. If edited and saved then they will become specific to the panel in which the edit took place.

GV Orbit Control v1.7.1 Bugs Fixed

- [Ref. #PEG-11436] **Pathfinding improvements:** There was a limitation where takes were failing from 2022-6 sources to single NMOS destinations when the receiver device is only connected to the Blue (redundant) network. This limitation was related to the pathfinding and is now fixed.
- [Ref. #PEG-11421] **Improved IQAMD and Audio Live MADI routing performance:** When an Audio Live device has all of the IP signals required, routing an audio source to an audio destination with MADI channel mapping, the pathfinding algorithm will now automatically re-use joins already present on the Audio Live and destination device so that the only commands needed are simple crosspoints within the audio live matrix. This greatly accelerates shuffling of audio when signals are available on the Audio Live.
- [Ref. #PEG-11315] **When using complex breakaway and shuffling, tielines were sometimes not used correctly:** Some complex shuffling and breakaway routing workflows using a mix of GV Node, IPG-4901 and IQMIX cards would sometimes not update or use tielines correctly. Tieline usage has been improved so that the decision of freeing or re-using a tieline is now correct.

GV Orbit Version 1.7.0

As shown in each application's *About* screen, GV Orbit version 1.7.0 is composed of:

- GV Orbit Client version 4.7.0.
- GV Orbit Control version 2.9.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- GV Orbit Client v1.7.0 New Features and Enhancements, on page 93
- GV Orbit Control v1.7.0 New Features and Enhancements, on page 94
- GV Orbit Client v1.7.0 Bugs Fixed, on page 95
- GV Orbit Control v1.7.0 Bugs Fixed, on page 96

See also Known Issues and Limitations, on page 128.

GV Orbit Client v1.7.0 New Features and Enhancements

- [Ref. #UCCM-2536] **Alarm API Service:** new service that provides an API to enable third parties to access alarms from a GV Orbit system. The Alarm API service contains links to the API.
- [Ref. #UCCM-2371] **Multiviewer XY Routing Keyboard Shortcuts:** support for keyboard entry of source names in the Multiviewer Room XY routing mode has been added to help speed up assignment of sources to multiviewer destinations. Select a tile on a Monitor using the mouse. Navigate between tiles on a Monitor using the left and right cursor keys. Start typing a source name to bring up a filtered list of source, press <enter> to take.
- [Ref. #UCCM-2360] **Improve Handling of Layouts in the MV Room Editor:** improved support for layout changes when operating in the Multiviewer Room mode. External layout changes, for example, layout changes that occur by changing a layout directly through an MV-8x series Multiviewer are highlighted to the user by creating an 'Untitled*' Room Layout. The user has the option to save or discard the newly created Room Layout.
- [Ref. #UCCM-2171] **MV Cluster Manager service:** The MV Cluster Manager service can now be configured in the GV Orbit Web Admin page.
- [Ref. #UCCM-2165] **MV Cluster dynamic router destination assignment:** the MV Cluster Mode has been enhanced to support dynamic allocation of Multiviewer destinations. In Dynamic Destination Allocation mode, the user does not need to statically associate a Multiviewer Destination with a Tile, and they will default to the Dynamic Destination Allocation mode. Tiles can be statically assigned a destination in the Destination Assignment mode of the Room Editor. Statically assigned destinations are automatically removed from the destinations available for dynamic assignment. If a layout contains more tiles than a Multiviewer can support, the unallocated destinations are highlighted in the UI.
- [Ref. #UCCM-2066] **Room Editor Monitor Configuration Dialog Improvements:** the Monitor Configuration dialog box in the Output Assignment mode of the Room Editor has been improved. The assignment of outputs to drive the quadrants of a 4K UHD monitor is now done by dragging the outputs to the correct quadrant. Icons are now used to select between different modes.

- [Ref. #UCCM-2062] **Added Filtering to Room Editor Output Assignment Mode:** the Output Assignment mode of the Room Editor for the MV Cluster has been enhanced with the ability to filter multiviewers or outputs based on their name.

GV Orbit Control v1.7.0 New Features and Enhancements

- [Ref. #PEG-11201] **Lock/Protect support for various users in GV Control Systems:** Improvements were added to GV control systems northbound interface to handle lock/protect operations for various users.

  Prior to those improvements, all operations were performed as the "admin" user, as the user ID was not considered while processing those northbound commands. With these improvements, GV control systems added the ability to prevent users to unlock destinations previously locked by other users.

  In GV control systems, under *User Management*, an extra field called "External ID" was added and an "Unsigned Integer" value can be used for this new field.

  When a command is received from the northbound interface, the control system tries to match the ID received within the command with the external ID of an existing user, such that the command is carried out as by that user. If no user is found or no user ID is supported by the northbound protocol, the command is executed as the "admin" user, the same way it was done before those improvements, in order to prevent breaking existing systems.

  NP0016 and NP0017 protocols provide the user ID for various operations. The user ID is defined as an unsigned integer value from 0 to 4294967295 but it's recommended to NOT use values beyond 2147483647 to avoid any conversion or any special handling of users ID in GV control systems. If the recommendation cannot be applied, please contact Grass Valley support for further details on how to configure those values in GV control systems.

  Other improvements were made in the control system audit logging where operation details are now displayed in the logs to indicate the user name and its external ID, the northbound interface (for example, NP0017), type of commands (Device-based, Port-based, etc.) and if the command was received from a panel.

- [Ref. #PEG-11364] **Pathfinding improvements to support different IP configurations with single (A or B) and dual (A and B) source/destination devices:** Improvements were added to GV control systems in order to handle new combinations of different IP configurations where the source/destination devices are connected to either A network, B network, or both A and B networks for redundancy. Those improvements apply to devices using both GVOP and NMOS drivers, in the case of single hop pathfinding, where the source and the destination devices are directly connected to the network switches with no processing in the middle.

  Also, *Purple Networks* where routes are made using sources **from** a device connected only to the **A** network **to** destinations of a device that is connected only on the **B** network, and vice-versa, are not supported yet.

  Prior to this effort, GV control systems were always using the streams on the A network (main), as part of the pathfinding algorithm, to start looking for the appropriate path. So, takes were failing if the source device was only connected to the B network.

As part of those new improvements, the following combinations are now supported:

- Single A source to Single A destination (this was already supported).
- Single A source to Dual A/B destination (Improvements were made to properly handle the destination tally).
- Single B source to Single B destination (now supported).
- Single B source to Dual A/B destination (Improvements were made to properly handle the destination tally).
- Dual A/B source to Single A destination.
- Dual A/B source to Single B destination.
- Dual A/B source to Dual A/B destination (this was already supported).

Those combinations are also supported if using sources with different flow types (2022-6, 2110-20, 2110-30, 2110-40) with all level takes or breakaway/shuffle operations.

- [Ref. #PEG-11417] **HTTP redirections support in GV Control Systems while fetching NMOS senders SDP file:** Improvements were made in GV control systems to properly handle HTTP redirections while fetching an NMOS senders SDP file.
- [Ref. #PEG-11422] **Pathfinding improvements while using AES-67 level:** When using a source or a destination that is assigned one of the AES-67 logical levels directly with no channels configured, routing using such a source or destination will join the audio directly from source to destination without utilizing the Audio Live.

GV Orbit Client v1.7.0 Bugs Fixed

- [Ref. #UCCM-2593] **Corrected Operation of Lock and Release on XY Soft Panel:** corrected operation of lock and release buttons on the XY Soft Panels.
- [Ref. #UCCM-2497] **Spigots display improvements in the Path Manager:** with the new workflows where GVOP devices don't use the Camera /Monitor bubbles, the corresponding spigot's information were missing in the Path Manager.

  This issue is no longer happening and the spigots are properly displayed for both the source and destination devices.
- [Ref. #UCCM-2411] **Network Interfaces Setting goes Blank on Save:** fixed an issue where the Network interface(s) section of GV Orbit Services turns blank when prompted to save changes.
- [Ref. #UCCM-2370] **Chronological order for GV Orbit global and applications backup:** GV Orbit provides the ability to trigger global backups for all applications at once or individual backups for each application. The latter ones show under the applications themselves where the first ones show under the *Global Backup* section, at the top of the page.

  Both backups lists are now chronologically ordered, where the most recent backup shows at the top of the list.

  For each GV Orbit application, under the backup list, you can find backups triggered as part of the global backup and those triggered from the application itself. The list of global ones are shown at the top followed by the list of the application ones, both chronologically ordered.

- [Ref. #UCCM-2181] **Sometimes GV Orbit is unable to lock to a NTP server:** in previous GV Orbit versions, there was an issue where, sometimes, GV Orbit was failing to lock to a NTP server, so the workaround was to set the Date/Time manually in the NTP configuration through the web admin page.

  This issue is fixed with this release and this workaround is no longer needed.
- [Ref. #UCCM-2124] **GV Orbit DHCP configuration improvements:** in previous GV Orbit versions, only IP addresses within the DHCP range, for a specific network interface, were used for the gateway. This was affecting GV Fabric configuration, where users were not able to access devices or use FTP from outside the GV Fabric network. The workaround was to add the gateway IP address manually in GV Fabric configuration.

  This issue is fixed with this release and this workaround is no longer needed as any IP address outside the DHCP range can now be used.
- [Ref. #UCCM-1930] **Add sorting ability to the Routing Level select dialog:** the Routing Level select dialog was ordered alphabetically and the indexing produced was the alphabetically index and not the actual index of the levels. This has now been fixed, along with the improved ability to sort alphabetically or by level index.
- [Ref. #UCCM-1929] **Destination behavior level editor filter not working:** Fixed filter field to correctly filter entries

GV Orbit Control v1.7.0 Bugs Fixed

- [Ref. #PEG-10501] **Take fails if topology interconnections do not match the spigot configuration:** there was a limitation in GV control systems related to spigot configuration where either no path was found, no receiver configured, or no receiver cleared, if the source or destination spigot was configured in A or in B mode. This issue is fixed now and this no longer happens.
- [Ref. #PEG-11337] **NVision Panel control memory leak fixed:** an issue was resolved that was causing NVision hardware or software panels to slowly leak memory on the control system server side. After weeks of operation, this could cause the control system to run out of memory and trigger an automatic failover condition.
- [Ref. #PEG-11413] **Physical Connections Table in Topology Configurator now always shows ports correctly:** there have been some instances where the Physical Connections Table UI in the Topology Configurator would no longer be able to display available ports for IP connections. This issue has been fixed.

GV Orbit Version 1.6.0

As shown in each application's *About* screen, GV Orbit version 1.6.0 is composed of:

- GV Orbit Client version 4.6.0.
- GV Orbit Control version 2.8.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- GV Orbit Client v1.6.0 New Features and Enhancements, on page 97
- GV Orbit Control Client v1.6.0 New Features and Enhancements, on page 98
- GV Orbit Client v1.6.0 Bugs Fixed, on page 101
- GV Orbit Control v1.6.0 Bugs Fixed, on page 101

See also Known Issues and Limitations, on page 128.

GV Orbit Client v1.6.0 New Features and Enhancements

- [Ref. #UCCM-2390] **Panel errors when launched from two versions of GV Orbit:** When trying to open a Densité card panel from two different versions of GV Orbit client running at the same time, this will generate an error and the panel will not open.

  Running two different versions of GV Orbit client at the same time is not supported and it is advised to only have one instance running in order to properly access the Densité card panels.
- [Ref. #UCCM-2321] **Allow IQUCP Devices to Load Different Personalities:** Support has been added to enable IQUCP devices to be upgraded with different personalities. Previously this was an operation that needed to be done in Factory Mode.
- [Ref. #UCCM-2267] **Add Override for Duplicate Mnemonics:** A property, *Allow Duplicate Names* has been added to allow duplicate mnemonics in spreadsheet import. With this property enabled you should take care to check duplicate entries will not negatively impact your system.
- [Ref. #UCCM-2201] **Updated select all functionality in MV Cluster projects:** In an MV Cluster project, in the Layouts or Destinations modes, you can now select all tiles within a given output monitor using the Select All button on the toolbar or CTRL+A.
- [Ref. #UCCM-2197] **Updated run mode in MV Cluster projects:** In the MV Cluster projects, updated the availability of Run Mode as follows:
  - In Outputs and Destinations mode, removed Run mode since it is not applicable.
  - Routing Mode now only runs in Run Mode.
- [Ref. #UCCM-2173] **Added Duplicate Check on Manual Text Entry:** Added duplicate value checking when directly entering data through the GV Orbit IP Configuration screen. The user is warned if a duplicate entry is found for the following:
  - Device Name
  - Device Short Name
  - Device Host Name
  - Spigot Name
  - Spigot Short Name
  - Spigot Port ID

- [Ref. #UCCM-2063] **Services updated to use global domain configuration:** GV Orbit services have now been updated to inherit the GVOP domain information that is globally configured under the *IP Configuration* > *GVOP Domains* page.

  Each service also has the ability to be overridden in its global domain settings by disabling the *Use Global Domain* option, which then allows you to define the domains locally.

  The following services have been updated:

  - Densité
  - Email
  - Event Logging
  - IP Proxy
  - Log Server
  - Map View
  - Masking
  - Monitoring
  - Relay
  - Repository Manager
  - Routing
  - Web Renderer

GV Orbit Control Client v1.6.0 New Features and Enhancements

- [Ref. #UCCM-2447] **The *Gateways* configuration parameter has been updated to *DHCP client gateways*:** In GV Orbit web admin page, under *IP Configuration*, then *Interface Configuration*, the label for the *Gateways* configuration parameter has been updated to *DHCP client gateways* to avoid any confusion with the *Default gateway* configuration parameter.
- [Ref. #UCCM-1445] **Automatic configuration of GVOP devices:** As part of Grass Valley's IP Simplified with the purpose of providing more automatic workflows, GV Orbit introduces a new service called *IP Friendly Name* service. This service runs as a standalone application and is responsible for persisting the data coming from GV Orbit Configuration. Afterward, this data is shared and used by GV Orbit Control.

  In this new workflow, there is a single entry point for configuration which is GV Orbit Configuration.

  For this release, device configuration covers only devices which support GVOP (GV Orchestration Protocol). In future releases, this support will be expanded to NMOS devices. For now, you maintain the ability to customize your NMOS devices within GV Orbit Control.

  An indication was added to GV Orbit Control, for devices using GVOP, under the Property Editor, to indicate that those devices are only editable from GV Orbit Configuration.

  The Spreadsheet Import functionality in GV Orbit Configuration was improved to cover more properties such as Device [Name, Short name, Network Host Name, Description] and Spigot [Name / Port Name, Short Name, ID / Port number].

As part of the Spreadsheet Import process, GV Orbit Configuration processes the data and flags any duplicate data to the user. However, a property called *Allow Duplicate Names* was added to allow duplicate mnemonics (Port name) during the spreadsheet import. With this property enabled, you should make sure duplicate entries will not impact your system.

With these new added properties, you can use the spreadsheet to build the device list as well as the spigot list with their properties.

Those Device and Spigot properties will be shared with GV Orbit Control and will be used to build the topology devices. Changes from GV Orbit Configuration are automatically and dynamically reflected in GV Orbit Control.

Logical sources/destinations related to those GVOP devices will be automatically created using the spigot name (Port Name), once the configured device is added to the topology, even before making the appropriate connections. Those logical sources/destinations are created using the appropriate streams. For gateway devices, the SDI streams will be used and for IP devices, the IP streams will be used.

Logical sources/destinations are only created when the topology is activated and the device is online.

With this new workflow, there is no need to use camera/monitor devices to create the logical sources/destinations and they are not created anymore using the Quick Connect tool.

Logical sources/destinations are dynamically created/deleted/updated as the configuration of the device changes, and are not editable anymore from GV Orbit Control through the Logical Device Table or the Alias Editor. All configuration is done through GV Orbit Configuration.

This new workflow does not remove the ability for users to manually create custom logical sources/destinations using the streams of their choice. Other improvements were added to help with the manual creation of custom logical sources/destinations, including an improved naming convention for the IP and SDI streams as well as some new filtering and display capabilities.

For gateway devices, the Stream Configurator provides the ability to expose the IP streams, so you can decide to expose the streams of your choice. In this case, the logical sources/destinations created using the SDI streams from the same spigot as the exposed IP streams, won't be reachable anymore by the pathfinding, since the new exposed IP streams become the edge.

You also have the ability to disable the automatic creation of the logical sources/destinations. For this purpose, a property called *Automatic Sources and Destinations* is available on the device to enable/disable all logical sources/destinations for all available spigots and this is also available on the device spigots to enable/disable the logical source/destination for a specific spigot.

If the *Automatic Sources and Destinations* option is unchecked, the IP or SDI streams will be disabled. So, if you are willing to create custom logical sources/destinations, the desired streams should be exposed first, using are the Stream Configurator.

For topologies created prior to GV Orbit 1.6.0 and upgraded to 1.6.0, the *Automatic Sources and Destinations* option will be unchecked. So, the automatic logical sources/destinations won't be automatically created for devices already on the topology.

Those automatic workflows, including the automatic device configuration, rely on having the *IP Friendly Name* service up and running as the configuration data is stored within the service. So, if a new topology is started with no *IP Friendly Name* service running, GV Orbit Control will use its default values for the Device, Spigot and Logical Source/Destination labels. GV Orbit Control will start using the values from GV Orbit Configuration once the *IP Friendly Name* service is back online.

If the topology was already built with existing devices, and the *IP Friendly Name* service stopped running, GV Orbit Control will keep using the last known values.

If GV Orbit Control is offline when all Device values (Name, Short-Name, Hostname and Description) of a given device or all Spigot values (Name, Short-Name, Port Number) of a given spigot are deleted from GV Orbit Client, GV Orbit Control won't receive the corresponding “delete” notifications. So, when it comes back, it may still be showing the previous values. So, we recommend to make sure GV Orbit Control is online while removing Device and Spigots values from GV Orbit Configuration. If this not done, the workaround is to simply modify the value again in GV Orbit Configuration.

- [Ref. #PEG-11338] **GV Control Systems Northbound GVG Native Protocol Implementation Improvement:** The control system northbound GVG Native Protocol implementation no longer returns empty names if there is a gap in the logical sources or destinations’ external IDs.

  Based on the amount and length of names configured in the control system, in some cases a source or destination name could be missing in the returned response to a 'QN' command.

- [Ref. #PEG-11333] **GV Control Systems Northbound GVG Native Protocol Subscriptions Support:** Support for the subscribe *SB* and unsubscrive *UB* commands of the northbound GVG Native Protocol has been added. The only supported subscription type is *DS* (subscription for destination status change by name). This allows a GVG NP client to subscribe to asynchronous crosspoint changes of all or specific destinations. Asynchronous notifications are sent in the form of an *NY* command from the control system to the GVG NP client. Please refer to the *Grass Valley Protocols Manual, Section 3, Series 7000 Native Protocol* documentation for further details.

- [Ref. #PEG-11332] **GV Control Systems Response Pacing Configuration for the Northbound GVG Native Protocol BK Command:** A new parameter has been added to the northbound GVG Native Protocol *BK* command. The new *m* parameter can be followed by no value or a value ranging from 0 to 999 and allows a GVG NP client to configure the control system response pacing to its needs. Providing a value of 0 to 999 delays response messages by that amount of time in milliseconds. No value means use the system default, which is currently 150 milliseconds. Please refer to the 'Grass Valley Protocols Manual, Section 3, Series 7000 Native Protocol' documentation for further details.

- [Ref. #PEG-11232] **Ability to display 24 characters for streams in the Stream Browser and in the Multilevel Table:** GV control systems added the ability to display 24 characters for streams, in the *Stream Browser* and in the *Multilevel Table*. The IP/SDI icon was removed in order to gain more space.

  Unlike the *Stream Browser* cells, the ones from *Multilevel Table* are adjustable by resizing the column, and can be adjusted to display more characters.

- [Ref. #PEG-11226] **Ability to display streams full or short name in the Logical Device Table (Stream Browser and Multilevel Table):** A new option was added to the *Logical Device Table*, in GV control systems, to show either the full or short name/label, for both Streams and Devices.

  The option was added to the *Stream Browser* and the *Multilevel Table* as well, to toggle between full and short name/label. When the new button/option is selected/unselected, both Stream and Device labels are updated to either show short or long name/label.

  Also, when filtering by stream or device name/label, the filter will be applied on the labels that are currently displayed; either long or short labels. If a filter is applied and the button is selected/unselected, the filter will be re-applied based on the new values displayed.
- [Ref. #PEG-11224] **Ability to show streams full and short name in the Stream Browser info button/option:** The button/option from the *Stream Browser,* in GV control systems, now shows the streams full name as well as the streams short name.

GV Orbit Client v1.6.0 Bugs Fixed

- [Ref. #UCCM-2151] **Unable to open the control screen of Densité cards in GV Orbit client:** The `/etc/hosts` file is not supposed to be edited by the user, because unexpected contents may cause the application to fail. The Densité application is now more resilient against various unexpected configurations and automatically adapts to the file's contents in order to make it compliant.
- [Ref. #UCCM-2131] **Corrected Issue where the IQ Frame Controller is left in an Unprogrammed State after Upgrading:** Corrected an issue in the GV Orbit IP Proxy service where the connection to an IQ Frame Controller was terminated during upgrade leaving the unit in an unprogrammed state.
- [Ref. #UCCM-2262] **Increase Timeout for RollCall Upgrade Process:** Not all IQ devices define a wait time between a unit completing upgrade and returning back on line. In some cases, this was causing upgrades of devices to fail. The upgrade process default timeout has been increased to handle the case where a device does not define its own default timeout.
- [Ref. #UCCM-2222] **Correct Issue with Control Option Missing on RollCall Devices in Network Tree:** Corrected an issue where the Control option on the Network Tree was missing after the GV Orbit Client had been minimized.
- [Ref. #UCCM-2361] **On cold boot, a GV Orbit server clustered pair may launch as active-active:** When powering up a pair of GV Orbit servers, there is a low random chance that both servers would come up as active. This has been fixed.

GV Orbit Control v1.6.0 Bugs Fixed

- [Ref. #PEG-11397] **Logical Device creation is now possible for K-Frame streams:** A K-Frame driver issue was preventing manual creation of logical devices in the Logical Device Table. This issue has been resolved.
- [Ref. #PEG-11356] **NV hardware panels can sometimes connect to the stand-by server:** An issue causing hardware NV panels to sometimes connect to the stand-by server and not obtaining its configuration has been resolved. Only the active server will be capable of receiving connections from these panels.

- [Ref. #UCCM-1647] **Routing issues using IQUCP with version 15.5.97 firmware:** Routing issues in the control system may occur while using an IQUCP with version15.5.97 firmware. When upgrading from an IQUCP card version with 4 spigot streams to the version 15.5.97 (with 3 spigot streams).

  This issue is resolved now and there is no need to reset the card configuration or to reboot the card.

GV Orbit Version 1.5.0

As shown in each application's *About* screen, GV Orbit version 1.5.0 is composed of:

- GV Orbit Client version 4.5.0.
- GV Orbit Control version 2.7.0.

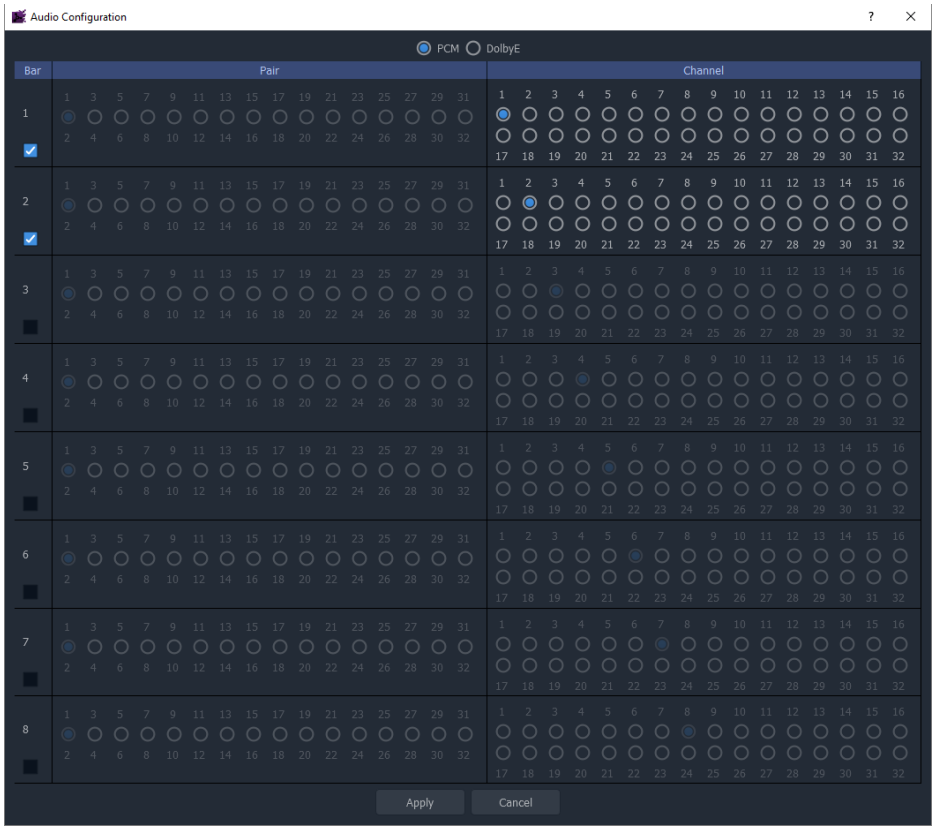
This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- GV Orbit Client v1.5.0 New Features and Enhancements, on page 103
- GV Orbit Control v1.5.0 New Features and Enhancements, on page 106
- GV Orbit Client v1.5.0 Bugs Fixed, on page 107
- GV Orbit Control v1.5.0 Bugs Fixed, on page 107

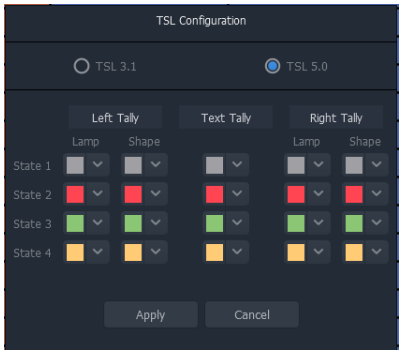
See also Known Issues and Limitations, on page 128.

GV Orbit Client v1.5.0 New Features and Enhancements

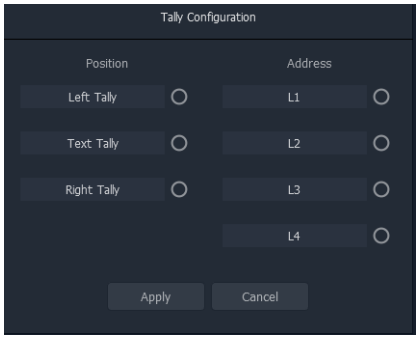
- [Ref. #UCCM-2136] **Added Support for Changing UCP-3901 Personalities:** Added support to allow a different personality to be installed on a UCP-3901 card without requiring Factory Mode.
- [Ref. #UCCM-1996] **Quick Assignment of Audio Channels to Audio Widget:** New feature to enable fast assignment of audio channels to the Audio Widget. Right click on the Audio Widget and select "Audio configuration". From the dialog box the number of bars to show in the widget can be set and the audio channel associated with each bar. PCM and DolbyE channels are supported.



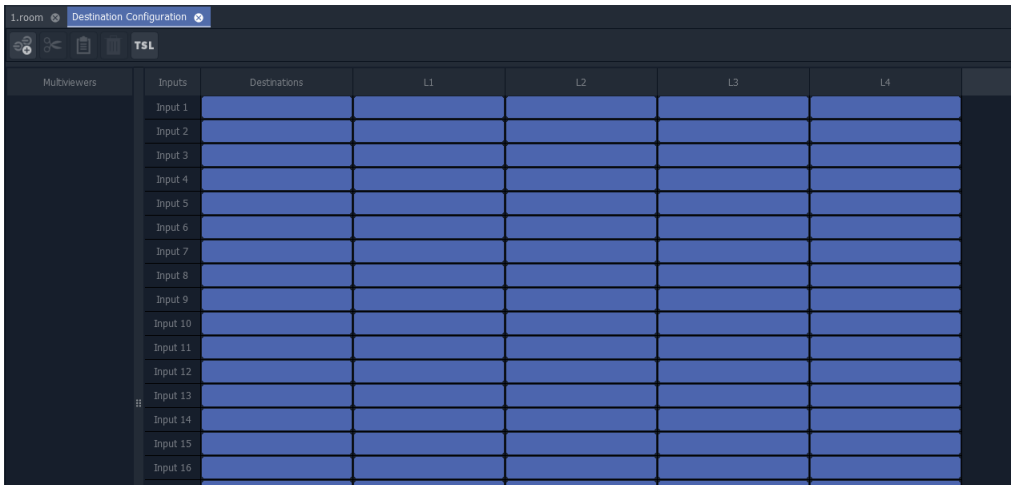
- [Ref. #UCCM-1995] **Added TSL Tally Lamp Configuration to Multiviewer Room Editor:** Added new feature to Multiviewer Room Editor to allow the user to globally configure TSL Mode and colors to use on Tally indicators.



- [Ref. #UCCM-1894] **Ability to Easily Assign TSL Value to Widget:** Added feature to enable the user to quickly assign TSL functionality to Tally Lamp, Label and Shape Widgets. Select the widget, right click and select **TSL configuration**. Select the source of the tally, e.g. left or right tally. Select the TSL address level, e.g. L1, L2 etc. If the user has renamed the levels then their custom labels will be shown.



- [Ref. #UCCM-1893] **Global Configuration of TSL Addresses:** Feature added to Multiviewer Room Editor to enable user to configure TSL addresses associated with each Multiviewer destination. The user can assign up to four TSL addresses per destination. The default address level names, L1, L2, L3 and L4 can be modified by the user.



- [Ref. #UCCM-1520] **Added Support for Clustered Multiviewer Configuration:** Added a new feature to enable a cluster of MV-8x series Multiviewers to be configured together. Using the new Clustered Multiviewer Project the user can create a Room that enables monitors driven from multiple multiviewers to be represented as a pseudo representation of the physical monitor stack. The user configures all multiviewers through a single project. Requires the MV Cluster Manager Service running on the GV Orbit server.
- [Ref. #UCCM-1504] **MV Cluster Manager source to monitor wall destination assignment:** The MV Cluster Routing mode features a new routing panel in which the MV router inputs are visually represented as router destinations on the cluster monitor wall. The operator first selects the desired monitor wall tile destination, then selects the desired source from the source selection portion of the panel to make the cross point. The panel supports standard bulk routing features such as multiple destination routing and source filtering.
- [Ref. #UCCM-1501] **MV Cluster Manager room layout configuration:** The Cluster Manager room layout configurator allows for the creation of layouts which can be grouped together in one large room layout. This layout configurator allows for quick and simple editing of tile arrangement and grid assignment. It also allows assignment of destinations to monitor tiles to support the ability to route sources directly to monitor wall tiles.
- [Ref. #UCCM-1500] **MV Cluster Manager room designer:** GV Orbit now supports the ability to cluster multiple MV multi-viewers into a single monitor wall. The first part of this feature allows the creation of rooms with multiple physical displays and assigning those displays to output heads on different multi-viewers.

GV Orbit Control v1.5.0 New Features and Enhancements

- [Ref. #PEG-11323] **Support of NV9680 virtual/software panel:** GV control systems added the support for the new NV9680 panel (hardware and software), which has 4 rows of 20 relegendable buttons, with 2 RU.

  As part of this integration, a new layout for Panel Configurator was added.
- [Ref. #PEG-11300] **Ability to generate audio logical devices with selectable amount of channels per device:** GV control systems added the ability to specify the desired number of audio channels while creating audio logical sources/destinations, from AES-67 streams, from the *Channel Browser*.
- [Ref. #PEG-11220] **Video/Audio/Metadata IP flow bandwidth report in GV Control Systems for GVOP devices:** GV control systems now dynamically reports the video, audio and metadata IP flow bandwidth of transmitters and receivers, for devices using GVOP, based on the flow presence and the standard reported by the cards.
- [Ref. #PEG-11166] **Support of NV8500 hybrid router connected to a gateway:** Improvements were made to support a mix of (de)embedder and SDI cards in the NV8500 hybrid router by selecting ports which are connected or not to a (de)embedder. For example, path finding will use a disembedder if an audio breakaway is requested and will use a SDI port if a SDI take is requested. This was conditioned on the fact that the hybrid router is connected to another SDI router or to source/destination devices.

  Now, this is also supported if the hybrid router is connected to a gateway which sends/receives in TR-04 or 2110 format.

- [Ref. #PEG-11119] **Automatic detection of the router type and cards in slots for NV8500 hybrid routers:** The control system added the ability to detect automatically the router type once the router control ports are properly set.

  Once the router type is detected, the internal wiring is built and the input/output slots are automatically and properly configured, including the slots number as well as the slots card type and the description.

  No manual configuration is required anymore by the operator.

  In case of card type change, the control system provides the ability to update the new card through an option on the control port called **Update Slotted cards**, that way the internal wiring is rebuilt to take into account the new updates for all slots cards. The update could be triggered from either the main or redundant control port and the user will be prompted to confirm the update.

GV Orbit Client v1.5.0 Bugs Fixed

- [Ref. #UCCM-2094] **Fixed a Crash when Opening IQ Device Control Panel:** Corrected a crash that occurred when modifying a parameter on an IQ device control panel.
- [Ref. #UCCM-2040] **GV Fabric hostname should not be editable in SNMP application:** Fixed issue where changing the friendly name of a GV Fabric device in the SNMP application page would change the hostname of the actual GV Fabric unit. *Workaround:* The hostname for GV Fabric should only be set directly on the switch through its web administration page.

GV Orbit Control v1.5.0 Bugs Fixed

- [Ref. #PEG-11313] **Take to a destination may affect another destination not part of the take:** A bug fix was done for an issue where takes to a specific destination may affect other destinations not part of the take.
- [Ref. #PEG-11229] **NMOS Senders/Receivers with no interface_bindings (empty) won't be mapped anymore to existing ports/interfaces:** In the early NMOS days, GV control systems were mapping NMOS senders/receivers with no *interface_bindings (empty),* to the existing ports/interfaces. This was done to accommodate some NMOS devices that were not properly reporting the *interface_bindings.*

  This accommodation no longer makes sense and was removed from GV control systems. Now, any NMOS senders/receivers that are missing *interface_bindings* won't be listed under the existing ports/interfaces.
- [Ref. #PEG-10959] **Latest Mac OS-X version support with NV Virtual Router Panels:** The latest Mac OS-X version is now supported with NV Virtual Router Panels. Note that the Gatekeeper must be disabled for NV virtual panels to run on MAC OS.

GV Orbit Version 1.4.0

As shown in each application's *About* screen, GV Orbit version 1.4.0 is composed of:

- GV Orbit Client version 4.4.0.
- GV Orbit Control version 2.6.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- GV Orbit Client v1.4.0 New Features and Enhancements, on page 108
- GV Orbit Control v1.4.0 New Features and Enhancements, on page 109
- GV Orbit Client v1.4.0 Bugs Fixed, on page 109
- GV Orbit Control v1.4.0 Bugs Fixed, on page 110

See also Known Issues and Limitations, on page 128.

GV Orbit Client v1.4.0 New Features and Enhancements

- [Ref. #UCCM-1891] **Global configuration for client domains:** In the Web Admin's IP Configuration page, there is a new DDS domains tab where the client domain can be set globally for all services and applications, as opposed to setting it individually for each application.

  For version 1.4.0, this setting only applies to the Server Health service. Future versions will apply this to other GV Orbit applications.
- [Ref. #UCCM-1815] **Added Support for Licensing Options for the UCP-3901:** Added support to apply license files to the UCP-3901 Densité card.
- [Ref. #UCCM-1659] **Enhanced drag and drop into GV Orbit client custom screens from Alarm List:** Improves the drag and drop support when creating GV Orbit custom screens from alarm data by:
  - Enabling drag and drop from the alarm list window.
  - Enhancing the existing drag and drop from the network tree to allow aggregate states to be built.
- [Ref. #UCCM-1512] **GV Fabric Auto Discovery in GV Orbit:** As part of GV Fabric discovery the following capabilities have been added:
  - GV Fabric auto discovery in the GV Orbit Client Network View. Right click on the device opens a context menu from which the Control item will open the configuration web page for the device.
  - GV Fabric alarms monitoring through the SNMP service.The SNMP service is automatically configured when a new GV Fabric is detected on the network. No manual configuration is needed.
  - GV Fabric auto discovery in GV Orbit Control under the *Discovered Devices* list.

- [Ref. #UCCM-1099] **Alarms for monitoring the GV Orbit server's health status:** In the GV Orbit client, it is now possible to monitor and view alarms for the GV Orbit server's health status in the Network view using the new Server Health application.

  The available alarms include:

  - Power supply status
  - Fan status
  - Server redundancy status
  - Temperature
  - Server resource usage
  - Application status (including resource usage per application)
- [Ref. #UCCM-1017] **Bulk Routing List View:** Extended the Bulk Routing user interface to include a List View which is focused on level shuffling and breakaway. Access the List View from the Bulk Routing UI using the List View icon, .

GV Orbit Control v1.4.0 New Features and Enhancements

- [Ref. #PEG-11225] **Quick Connect now remembers last selection of IP/SDI network choices:** In the Topology Configurator, the Quick Connect option will now remember the IP connection, SDI device generation, and the choice of main and backup network settings.

  Note that this is saved on a per user basis in Windows. It is not system-wide to GV Orbit Control.
- [Ref. #PEG-11190] **DCNM v11.4(1) support:** The control system now supports Cisco DCNM v11.4(1).
- [Ref. #UCCM-1164] **GV Fabric Initial Configuration (Day zero):** *GV Fabric Initial Configuration* is one of Grass Valley ***IP Simplified*** initiatives, with the idea to provide automatic workflows and reduce user/manual interventions. The goal of this initial configuration (day zero) is to start with GV Fabric switches out-of the box and to be able to simply connect the switch to the GV Orbit Control's management network, without any need to make a serial connection to the switch. Then GV Orbit Control automatically configures any GV Fabric switch to get it up and running. Once the configuration is complete, the GV Fabric switch appears in GV Orbit Control in the Discovered devices list and it is ready to be used in your control system topology.

GV Orbit Client v1.4.0 Bugs Fixed

- [Ref. #UCCM-1838] **Correct Issue where IP Configuration Screen could Lose Styling:** Corrected an issue where the styling of the IP Configuration screen could display some areas with a bright theme after the application was left minimized.
- [Ref. #UCCM-1836] **Correct Rendering Issue on some PCs:** A rendering issue was corrected on some PC's with corruption shown in the scroll bars, or multiviewer project landing pages after closing a Multiviewer Wall or Tile editor.
- [Ref. #UCCM-1804] **Correct Issue where Bulk Routing Screen could Lose Styling:** Corrected an issue where the filter boxes on the Bulk Routing screen could lose their styling and appear with a bright theme.

- [Ref. #UCCM-1724] **Source Select Popup on Bulk Routing Screen is Sometimes Case Sensitive:** The Source Select popup that is accessed from the Bulk Routing screen by starting to type a source name while a Destination or Destination Level is selected is sometimes case sensitive.

GV Orbit Control v1.4.0 Bugs Fixed

- [Ref. #PEG-11236] **Panel not coming online after upgrading to GV Orbit Control version 1.3.0:** If an NVision panel was in a state where a category was being displayed before an upgrade to GV Orbit Control version 1.3.0 was done, the panel would not come online after the update. It would be unaffected by the update if the current panel page had no categories displayed. This issue has been fixed in GV Orbit Control version 1.4.0.

GV Orbit Version 1.3.0

As shown in each application's *About* screen, GV Orbit version 1.3.0 is composed of:

- GV Orbit Client version 4.3.0.
- GV Orbit Control version 2.5.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

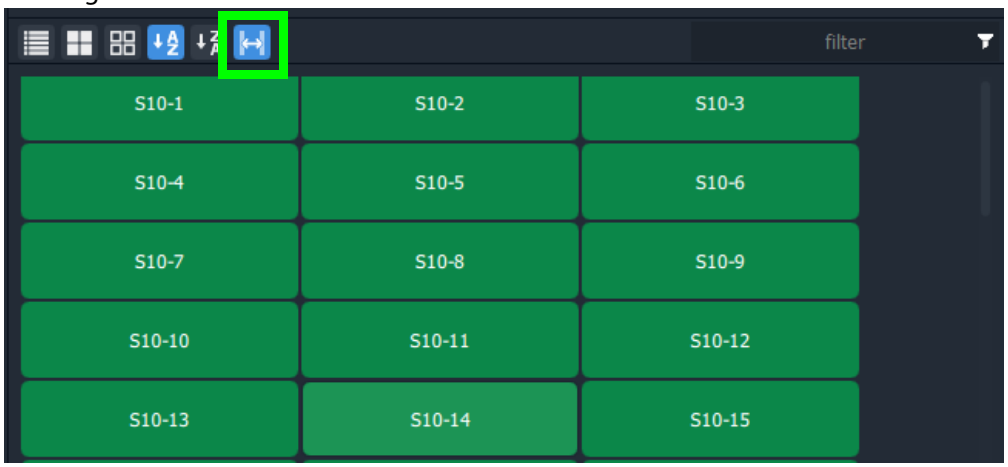
- GV Orbit Client v1.3.0 New Features and Enhancements, on page 111
- GV Orbit Control v1.3.0 New Features and Enhancements, on page 112
- GV Orbit Client v1.3.0 Bugs Fixed, on page 113
- GV Orbit Control v1.3.0 Bugs Fixed, on page 114

GV Orbit Client v1.3.0 New Features and Enhancements

- [Ref. #UCCM-1004] **Bulk Routing Escape and Backspace Key Handling:** The Bulk Routing screen key operation has been updated. The backspace key will clear the filter on the active panel. The escape key usage has been improved so that it no longer clears the active filters.

  When using the filters, the enter key must be pressed to activate the filter, pressing escape will revert to the previous filter.

- [Ref. #UCCM-1357] **Added Support for Larger Buttons on Bulk Routing Screen:** Buttons on the Bulk Routing screen can be increased in size to allow space for long names. The button in the tool bar of the source or destination panels toggles between normal and large button mode.

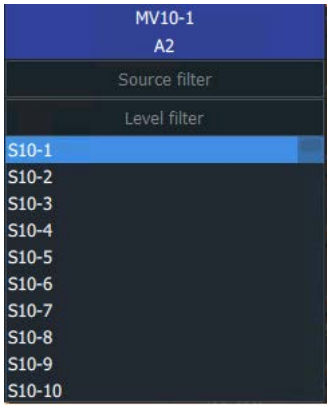


- [Ref. #UCCM-1461] **SNMP monitoring for Cisco 9000 series network switches:** It is now possible to monitor and view alarms for the Cisco 9000 series network switches through SNMP from the Network window in GV Orbit Client. Connections to the switches are configured in the GV Orbit web admin page under the SNMP service. There are 3 available drivers that can be configured:
  - For the 9500 modular series, there are drivers for the:
    - Cisco 9000 Supervisor; and
    - Cisco 9000 Line cards.

- For fixed switches like the 9300 or 9200 series, there is the Cisco 9000 Single Switch driver.

Note: These drivers only support SNMP v2c at this time.

- [Ref. #UCCM-1597] **Bulk Routing Styling Change to Better Show Selected Buttons:** The Bulk Routing Panel screen styling has been improved to better show the selected source, destination and level buttons. A grid/panel outline has been added to show the grid/pane that has the current keyboard focus.
- [Ref. #UCCM-1616] **New Method of Routing Levels:** The new Bulk Routing Panel method replaces the old method which was done in two operations. The old method used the Tab key on a destination level button to select a source level and pressing any alphanumeric key to bring up a source selector.
  The new method just requires pressing any alphanumeric key when one or more levels that are selected. This reveals a 'Dial Source-Level' dialog which allows both the source and source level to be selected:



  In the 'Dial Source-Level' dialog:
  - The title bar shows the currently-selected destination level(s).
  - The Tab key moves focus between source and level filtering/selection.
    Note: you cannot move focus unless a valid source is selected.
  - The Escape key (ESC) will cancel the operation.
  - The Enter key will, if a valid source and level have been selected, execute the routing. Mouse-clicking on a source or source level will do the same.
- [Ref. #UCCM-1642] **Persist Bulk Routing Display Mode:** The Bulk Routing Panel screen now persists the mode for the following display options:
  - Button Size
  - Hide Sources
  - List View

GV Orbit Control v1.3.0 New Features and Enhancements

- [Ref. #UCCM-1464] **The Sony NMOS registry becomes the default NMOS registry in GV Orbit:** GV Orbit has the ability to run a NMOS registry through the *NMOS Registry* application. This application was using the Grass Valley NMOS registry as the default one. The *NMOS Registry* application is now using the Sony NMOS registry in replacement for the Grass Valley NMOS registry.

  In use, this update is transparent and there are no changes in how to use GV Orbit.

- [Ref. #PEG-10915] **K-Frame switcher with 25G connections support in the control system:** K-Frame switcher 25G connections support was added to the control system.
- [Ref. #PEG-11103] **NV Hybrid routers support:** The NV Hybrid routers support has been added to GV control systems.

  A new virtual device called “NV Hybrid Router” was added to the list of virtual devices.

  Once added to the topology, the router type can be selected from the available list: NV8140, NV8144, NV8280, NV8576 or NV8576. Plus the relevant control ports.

  Once selected, the number of slots and ports are automatically adjusted based on the router type.

  Then, the card type should be manually selected, for each input slot (Disembedder, MADI, SDI, No card) as well as for each output slot (Embedder, MADI, SDI, No card), as the automatic detection is not supported yet but planned for a later release.

  Based on the card type, the ports are automatically enabled/disabled based on the expected card type configuration.

  For output slots, the Disembedder/Embedder card type, that is used for shuffling on the SDI input, is also not supported yet and planned for a later release.

  Also, MADI sources or destinations need to be directly connected to the same hybrid router.

  The user has the ability to push the Lock/Protect from the Control System to the router for destinations that are directly connected to the router. This requires enabling the "**In router Lock/Protect enabled**" property on the control port.

  Also, the router Lock/Protect status is displayed only for destinations directly connected to the router.

  If a specific router port is locked/protected but not linked to any destination within the Control System, the Lock/Protect status won't be exposed in the Control System and in fact they are not releasable.

  Destinations Lock/Protect is performed through the panel and if a destination is locked by another user, any take to this same destination will fail.

  A panel admin user has the ability to release locks made by another user where non-admin users could only release locks they made.
- [Ref. #PEG-11160] **Panel Exit mode for categories:** A new property named *Exit Page* for the Category button can now be used to indicate which page the panel should navigate to upon selection of a category item. The default return page of the Category button will still be applicable If the *Exit Page* property is not set or if the *Exit Mode* is set to never.

GV Orbit Client v1.3.0 Bugs Fixed

- [Ref. #UCCM-1711] **Corrected an Issue where the é in Alarm Addresses was not Processed Correctly:** The MapView Service was not processing the é character in Densité alarms as UTF8 so the alarm was not correctly resolved resulting in link states not being shown correctly.
- [Ref. #UCCM-1714] **Corrected Issue where Control Option was Missing From Network View for RollCall Devices:** Corrected an issue where a RollCall connection was interrupted thus causing the Control option on the Network View to be lost.

- [Ref. #UCCM-1768] **Corrected an issue Where Stale Data was Shown in the GV Orbit Client:** Corrected an issue where the GV Orbit Client did not recognize a restart of the services running on the GV Orbit Server. This led to incorrect alarm data being shown in the GV Orbit Client Alarm List.

GV Orbit Control v1.3.0 Bugs Fixed

- [Ref. #PEG-10769] **Unable to do more than one level breakaway to an IQUCP destination:** There was an issue where you were not able to do more than one level breakaway to an IQUCP destination. This issue is now fixed.
- [Ref. #PEG-10872] **K-Frame production switcher now able to fetch labels from GV Orbit Control:** In previous versions of GV Orbit Control, the K-Frame production switcher was unable to properly fetch source and destination labels from GV Orbit Control using the GVG NP protocol. This was because the labels that were returned were too many that were sent too quickly.

  This has now been correctly paced down and the K-Frame can now receive labels properly.

GV Orbit Version 1.2.0

As shown in each application's *About* screen, GV Orbit version 1.2.0 is composed of:

- GV Orbit Client version 4.2.0.
- GV Orbit Control version 2.4.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- GV Orbit Client v1.2.0 New Features and Enhancements, on page 115
- GV Orbit Control v1.2.0 New Features and Enhancements, on page 116
- GV Orbit Client v1.2.0 Bugs Fixed, on page 117
- GV Orbit Control v1.2.0 Bugs Fixed, on page 118

GV Orbit Client v1.2.0 New Features and Enhancements

- [Ref. #UCCM-1506] **Bulk Routing Lock and Protect Shortcut Keys:** Keyboard shortcuts have been added to support lock, protect and release operations directly from the Bulk Routing screen.
  - Select a destination with space bar
  - Ctrl+P : Protect
  - Ctrl+L : Lock
  - Ctrl+R : Release
- [Ref. #UCCM-1450] **Relay service now supports IP topics:** The relay service can now route IP Routing data between different domains or networks. There are two primary use cases when this would be needed:
  1. To expose IP routing data from the MEDIA network onto the CONTROL or CORPORATE networks, allowing a client to operate on a host without access to the MEDIA network.
  2. To bring all the distributed IP devices together allowing them to be accessed from a single centralized and well known location.

  The Relay Service should be configured on GV Orbit Server through the setup page, adding a new configuration and selecting the IP routing option from the **Common Configurations** drop down.
- [Ref. #UCCM-1446] **Soft panels now support X/Y routing with fixed sources and destinations:** Prior to this build, soft panels (that is, user laid out panels) could only support a paged list of all sources and destinations in the router. This was fine for engineering purposes, but an operator typically wants a fixed set of sources and destinations on their screens. This feature adds this functionality.

  This change affects the **Source Button and Destination Button** behaviors where there are new properties.
- [Ref. #UCCM-1050] **Show Densité Device Control and Alarms together in Network View:** The Network View has been simplified with Densité devices now showing as a single entry rather that separate Densité devices and iControl alarms. The Network View now shows the aggregate state for a Densité device. Right clicking on the device brings up the context menu that allows the device Control Panel or Upgrade to be carried out.

- [Ref. #UCCM-1426] **Added Support for Alarms with no State:** Alarms from Densité devices that have no state are called Text alarms. Text alarms were being shown as having an Unknown state, which was incorrect. Text alarms now appear in the Alarm List and Alarm History as having a a state of Text.
- [Ref. #UCCM-1416] **Densite Device Context Menu Update:** The following context menu items for Densite devices have been renamed.

Previous name	New name
Display Card Parameters	Card parameters
Open Control Screen	Control
Open Upgrade Screen	Upgrade

- [Ref. #UCCM-1030] **Web Renderer Opens in new Browser Tab:** The Web Renderer Service has been modified so that the Web View opens in a new Web Browser tab.

  Note: if the GV Orbit Server web page is opened from within the GV Orbit Client, the display of the Web View is not supported. Use a Chrome Browser instead.

GV Orbit Control v1.2.0 New Features and Enhancements

- [Ref. #UCCM-1421] **DCNM v11.3(1) support:** The control system now supports Cisco DCNM v11.3(1) and is backward compatible with DCNM v11.2(1).
- [Ref. #UCCM-1376] **IP friendly names persistence support:** GV Orbit has a new service/application called *IP Friendly Name*.

  The service runs as Active/Active. It's recommended to use the service in a redundant system.

  This new service has the ability to map Device UUID's with Device Names.

  Using GV Orbit Configuration (GV Orbit Client), you have the ability to assign a friendly name to a specific device. This friendly name will be mapped with the device UUID and it's persisted. Then, the new friendly name will be displayed in GV Orbit Control in the device under the *Discovered Devices List* and in the *Topology Configurator*, under the device *Name, Short Name*, and the *Network Hostname,* as well as the *Device Group Name*. All those names are updated if the device friendly name is updated, using GV Orbit Configuration.
- [Ref. #UCCM-1308] **GV Orbit to support DHCP for panels:** GV Orbit introduces the support of DHCP for NV series panels, on available and enabled network interfaces.

  When a NV panel is connected to the network switch, GV Orbit issues an IP address to the panel.

  In the GV Orbit web admin page, there is a new page called **DHCP** where the DHCP status is displayed and where some configuration actions can be performed. The DHCP status depends on whether or not DHCP is enabled on any of the interfaces.

  DHCP leases can be issued by either Active or Standby server.

  If using DHCP, it is recommended to either use a NTP server or manually synchronize both server clocks before establishing the server cluster.

- [Ref. #PEG-11104] **Categories that hold only one type of logical device now has a more specific icon:** When a category holds only sources, its icon now shows an embedded source graphic.

  When a category holds only destinations, its icon now shows an embedded destination graphic.

  The icon will change dynamically as sources and destinations are removed or added to a category. If a category is empty or contains both sources and destinations, the current icon with no extra graphic is displayed.

  The new graphics are available in the Category Configurator and Panel Configurator.

  The main use for this is to have two categories in the same name, one with sources only and the other with destinations only and still be able to differentiate between the two within the GUI.
- [Ref. #PEG-11100] **Sender/Receiver ports for NMOS devices with no streams attached are disabled by the control system:** The control system creates sender and receiver ports for NMOS devices based on the node interface property. If no senders/receivers are publishing the same interface in their *interface_bindings* property, the port is disabled by the control system.
- [Ref. #PEG-11042] **The property editor shows physical ports that are disabled:** The control system added the ability to display, in the property editor, physical input/output ports that are disabled.

  Disabled streams and gateways (for IPG devices) remain hidden in the property editor.
- [Ref. #PEG-11108] **Category items now display in the order in which they are sorted:** In the Category Configurator, items can be manually set in a specific order which is appropriate for a specific workflow.

  Prior to this version, when calling up a Category on a panel, the items of the Category would always be displayed in alphabetical order. Starting with this release, the order in which these items are displayed will now follow the same order in which they are displayed in the Category Configurator.

  Category panel button assignments now have a new property called "Sort Mode" which can change this behavior to sort alphabetically again if required. Three options are available: "Manual" which is the default and uses the order from the Category or "A-Z" or "Z-A" for alphabetical sort ascending or descending.

  The Category setting copy functionality was also enhanced so that a single setting can be applied to multiple Category button, this can be used to set the Sort Mode across multiple button assignments in bulk for a single panel behavior.

GV Orbit Client v1.2.0 Bugs Fixed

- [Ref. #UCCM-1578] **Fixed Crash when Renaming a Layout in an Multiviewer Project:** Fixed issue where renaming a Layout caused the GV Orbit client to crash.
- [Ref. #UCCM-1507] **Correct Loss of Focus on Bulk Routing Panel:** You are prevented from moving focus using <ctrl>+right arrow from the Destination Panel if no salvos have been created.
- [Ref. #UCCM-1297] **Show/Hide Property Grid:** A new button, , has been added to the toolbar. The button is used to show/hide the Property Grid when it edit mode. When the Property Grid is visible the button is shown in the toggled state, .

- [Ref. #UCCM-1122] **Added Parameter Check to Address Setting on User Folder:** Added RollCall address validation to sub folders of the User folder in the Network View.
- [Ref. #UCCM-881] **Open Alarm History in new Tab:** The Event Logging Service has been modified so that the Event Log Viewer opens in a new Web Browser tab.

  Note. if the GV Orbit Server web page is opened from within the GV Orbit Client the display of the Event Log Viewer is not supported.

  Use instead the Alarm History button on the tool bar.
- [Ref. #UCCM-1361] **Corrected Issue with Workflow Screen not Visible after Undocking Bulk Routing Screen:** Corrected an issue that was preventing the toolbar button to display the workflow button after the Bulk Routing screen had been undocked.

GV Orbit Control v1.2.0 Bugs Fixed

- [Ref. #UCCM-1356] **Audio logical levels set on IQAMD or Audio Live are no longer reset when reconnecting:** If an AES-67 level on a stream is manually changed with an equivalent AES-67 level with a different amount of audio channels, the new level will no longer be overwritten when the control system reconnects to the device.

  For example, if a stream with level AES-67-64 ch is manually changed to AES-67-16 ch on an a Audio Live stream, the new level (16 ch) will stay the same regardless of the actual channel count on the device.
- [Ref. #PEG-11074] **Device control port's status may stay at *Unknown* if the topology has a DCNM control port:** An issue was encountered when the topology has network switches with DCNM control port. Other control ports could be affected and could stay at *Unknown* status if you deactivate and re-activate the topology within a few seconds. The issue does not happen if there is no DCNM control port.

  The workaround was to Deactivate the topology, wait until the DCNM control port goes offline and then activate the topology.

  This issue is now fixed and no workaround is needed.
- [Ref. #PEG-10846] **Receiver streams multicast IP address are set to 0.0.0.0 if the control system is not able to get the information:** In previous versions of the control system, when a new generic IP device was created with ports and their related streams, the multicast IP address of the sender and receiver streams were set using a specific pattern (224.x.x.x).

  Setting the multicast IP address, for receiver streams, using default values, could lead you to think that the receiver is actually joining a sender with the specified default multicast IP address. This was noticed especially with NMOS receivers where the *sender_id* is set to null.

  In the new control system version, those **receiver** multicast IP addresses are set to 0.0.0.0 if the control system is not able to get them through the driver. This is applicable only for receiver streams.
- [Ref. #PEG-10791] **IPVU receivers video format automatically updated by the control system:** The control system now supports the control of the IPVU (joining streams) and also support the control of the IPVU parameters.

GV Orbit Version 1.1.0

As shown in each application's *About* screen, GV Orbit version 1.1.0 is composed of:

- GV Orbit Client version 4.1.0.
- GV Orbit Control version 2.3.0.

This release adds the following enhancement(s) and corrects the following issue(s) that are separated out as follows.

- GV Orbit Client v1.1.0 New Features and Enhancements, on page 119
- GV Orbit Control v1.1.0 New Features and Enhancements, on page 123
- GV Orbit Client v1.1.0 Bugs Fixed, on page 125
- GV Orbit Control v1.1.0 Bugs Fixed, on page 125

GV Orbit Client v1.1.0 New Features and Enhancements

- [Ref. #UCCM-258] **GV Fabric control port and dynamic interface changes:** GV Orbit has now a new control port for GV Fabric switches.

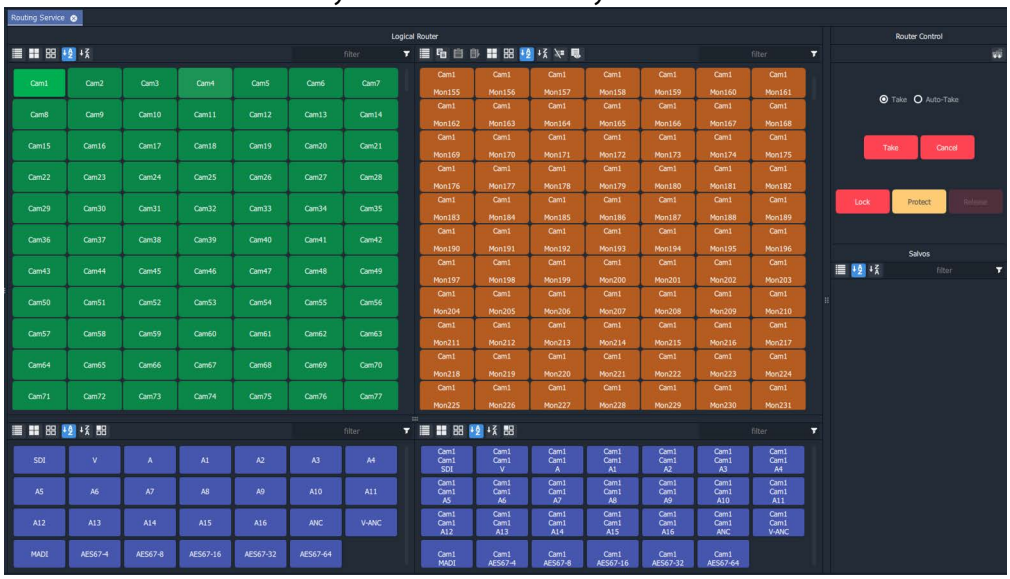
  You will need to add the control port on a network switch, and enter the IP address of the switch with the appropriate credentials.

  Once the control port is started and the connection established, GV Orbit will display the status of the network switch as Online and will update the name and the description of the generic network switch with the GV Fabric ones.

  With some compatible devices such as the XIP that provides proper LLDP data, GV Orbit is able to show the name of the network interface where the device is connected. This information is displayed in the link between the device and the GV Fabric as well as in the GV Fabric input/output ports, both from the Topology Configurator. Path Manager also publishes the appropriate GV Fabric interface.

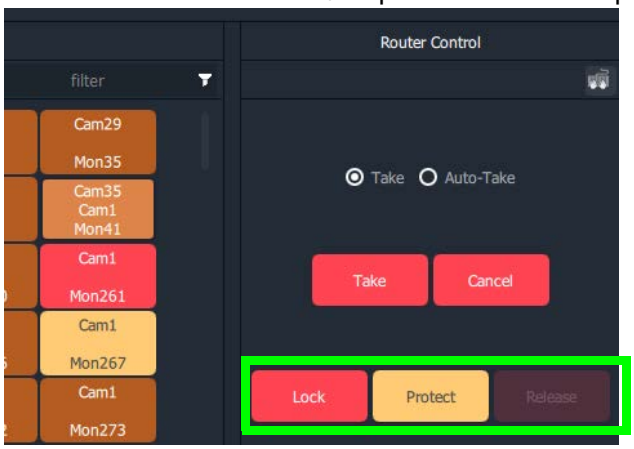
  If the same device is plugged to a different GV Fabric network interface, GV Orbit automatically updates this information in the Topology Configurator and in the Path Manager.

- [Ref. #UCCM-1174] **Bulk Routing Panel Restyle:** The Bulk Routing panel has been restyled with a different layout, a single splitter is now used to alter the division between source/destination buttons and source/destination levels. The button and level buttons have been restyled with a rounded style and altered colors.

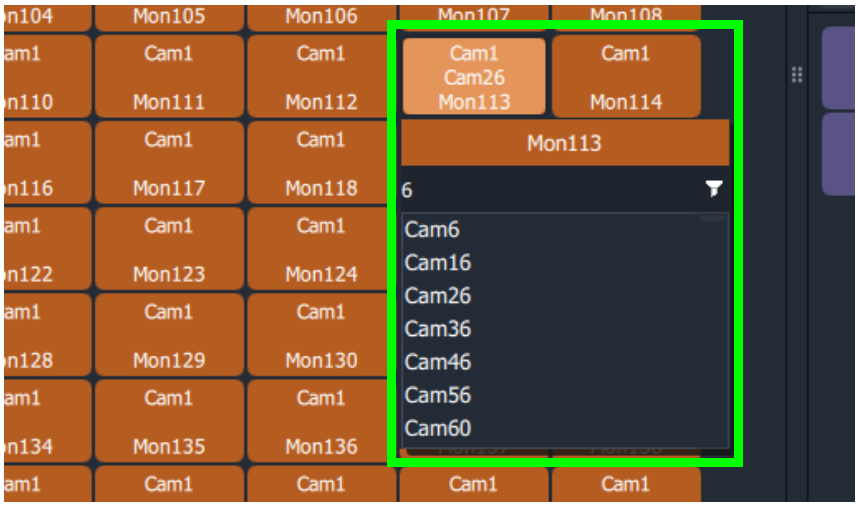


- [Ref. #UCCM-1118] **Lock and Protect destinations support in the Bulk Routing:** Added support to Lock and Protect destinations. *Lock* and *Protect* applies to all levels associated with the destination. Protected destinations and their levels are indicated in yellow. Locked destination and their levels are indicated in red.

  The *Release* button un-locks/un-protects a locked or protected destination.



- [Ref. #UCCM-1041] **The source filter popup window now moves so it does not obscure the selected destination:** The source filter popup window now moves so it does not obscure the selected destination. It is now displayed (if it fits) directly below the selected destination as shown below:

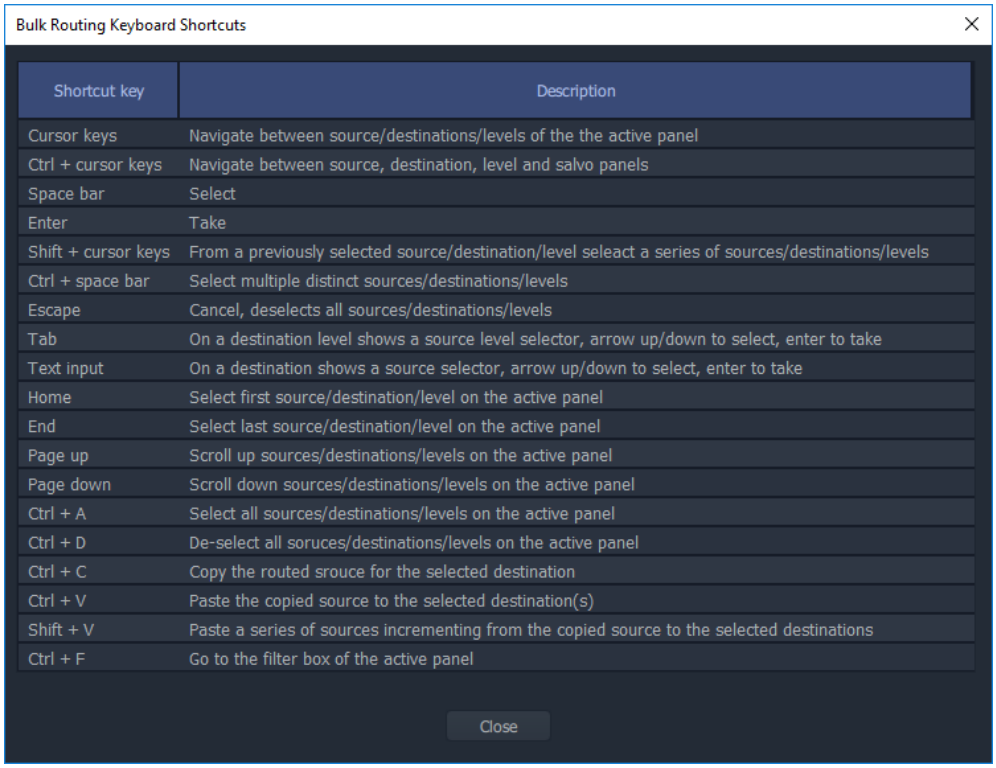


- [Ref. #UCCM-1019] **Updates to the bulk routing context menu:** There have been some minor changes to the context menu and tool bar buttons displayed when the bulk routing panel is open.

  The toolbar now displays the *lock*, *undock* and *full screen* icons together:

  The context menu options now have slightly different text and the *Show Sources* option has been moved to the toolbar as *Hide Sources*.

- [Ref. #UCCM-1275, Ref. #UCCM-1016, & Ref. #UCCM-1042] **Bulk Routing Keyboard Shortcut Keys Help:** Display Bulk Routing help using the keyboard help icon , the help menu shows an explanation of the shortcut keys that can be used to operate the Bulk Routing screen.



- [Ref. #UCCM-1261] **The slider widget has been updated with additional styling properties:** The slider widget has been updated with various new properties to allow much greater flexibility when styling a widget.
- [Ref. #UCCM-1264] **Changes to the network view toolbar:** The toolbar now contains the following new items:
  - List view: This provides a flat view of all the leaf nodes in the network tree.
  - Filter string:
    - Enabled when in list view mode.
    - Shows only those items that contain the filter text string.
  - Filter menu:
    - Enabled when in list view mode.
    - Provides filtering by item type and by item state.
- [Ref. #UCCM-1112] **State *No State* changed to *Unknown*:** The state shown as *No State* has been changed to *Unknown*.
- [Ref. #UCCM-1096] **Tally Property Shape Changed to Represent State:** The Tally Widget property Shape has been changed to State. In additional to the two tally lamp modes, circle and rectangle that show state by changing the color of the widget, additional state modes have been added that match the alarm shapes.

- [Ref. #UCCM-1076] **Reworked the GV Orbit masking menus:** The GV Orbit masking options have been slightly re-worked to make names and such more consistent across ranges of products. Unit mask has been changed to device mask, timed mask to snooze mask, until green has been changed to until normal.

  Additionally the alarm list details box now allows filtering on multiple states and latched states rather than on a single option.
- [Ref. #UCCM-1072] **Alarm Masking Menu Changes:**
  - The terminology has been updated for alarm masking menus.
  - Snooze and Tag alarms are selected from the context menu instead of a popup window.
- [Ref. #UCCM-1062] **New List View Filtering:** The Network View supports filtering when in List View. The list of devices can be filtered by the following options.
  - RollCall/Densite Devices
  - Alarm State
  - Text entry for Device Name

GV Orbit Control v1.1.0 New Features and Enhancements

- [Ref. #PEG-11008] **Support of disconnecting NMOS flows through an IS-05 command:** The IS-05 connection management request sent by the control system will set the *master_enable* flag to false if the source IP address is 0.0.0.0.
- [Ref. #PEG-11007] **Display the status of NMOS devices that are not available for control through IS-05:** A new property has been added to NMOS control ports called *IS-05 Controllable*. This field indicates whether the corresponding node in the NMOS registry has devices that support being controlled through IS-05.
- [Ref. #PEG-10993] **DNS-SD NMOS registry redundancy support:** GV Orbit Control now supports NMOS registries redundancy with DNS-SD. If GV Orbit Control discovered a registry through DNS-SD, and that registry becomes unavailable, GV Orbit Control will automatically fail over to the next available registry listed in the DNS.
- [Ref. #PEG-10971] **Tielines refresh through the control system client:** You now have the ability to refresh tielines through the Path Manager using the *Refresh Tielines* button available on the upper banner.

  This functionality allows you to recompute the tielines usage given the crosspoints in each device, in case the tieline status in the control system has become out-of-sync with what's actually routed.
- [Ref. #PEG-10946] **Exposed streams setting management in the Stream Configurator:** This allows you, through the Stream Configurator, to filter displayed streams by *exposed stream* property and also the ability to expose or unexpose streams through selection.

  This is useful when you would like to expose only certain streams in a system (for instance, only the Audio streams of a specific device).
- [Ref. #PEG-10906] **GV Orbit Control System Status Page now displays Densité Manager memory usage:** In the GV Orbit Control application, the System Status Page now displays the memory usage of the local Densité Manager. The percentage reflects the memory used out of its allocated heap size of 8GB.

- [Ref. #PEG-10899] **New option for wide widgets in Router Control UI:** The Router Control UI has a new option for making the source and destination double their width to accommodate longer labels.

  The option is available independently for sources and destinations and is persisted for the currently logged in user, meaning that re-launching the Router Control UI or GV Orbit Control will remember the previously set value.

  Note that this preference is also saved on a per user basis in Windows, meaning the setting has to be set on every PC and user where the GV Orbit Control runs.
- [Ref. #PEG-10806] **NDAC NP0017: Lock and Protect destinations support:** The control system now provides support for *Lock* and *Protect* destinations.

  You have the ability to lock/unlock and protect destinations through the *Router Control* using the *Lock*, *Release* and *Protect* available options.

  The control system stores the locks in its database and they are preserved after a restart/reboot. Destinations will remain locked/protected.

  In practice, the control system does not read a lock from a router and does not control it.

  If a configured panel in the control system is used, a user must be assigned and that prevents other users from removing the protect. An admin user can override other users.

  In the NP0017 protocol, Lock/Protect commands require a user ID. Currently, the control system northbound implementation does not take into account the user ID and simply considers all commands executed as the admin user. Lock for various users is not supported yet.

  Lock and protect currently affects all levels of the destination and does not consider individual levels. Locking one level locks all destination levels and the control system does not yet support specific lock levels.
- [Ref. #PEG-10733] **Warn user when GV Orbit Control version and the connected server version do not match:** A warning is displayed to you if the GV Orbit Control version is different from the version of the connected server. If both versions match, no warning will be displayed.

  A confirmation is prompted. If you select *OK*, GV Orbit Control will continue to load as per normal. If *Cancel* is selected, the application will go back to the login screen.
- [Ref. #PEG-10588] **Unique custom level names on a panel:** On a panel, we are limited to 8 characters for a Tally: 3 lines of 8 characters.

  In the Logical Level Editor, a short name must have 8 characters or less. A custom level is built (by duplicating the factory ones) with the first 3 letters of the resulting short label and ".." and the last 3 letters from the resulting short label.

  The resulting short label is the concatenation of the a prefix provided by you, the short label of the copied logical level and a suffix provided by you (prefix and suffix can be empty).

  For example,

  if the Short Label Prefix is **Test** and the Factory level is **AES67-64**, the short name will be **Tes..-64**

  if the Short Label Suffix is **Test** and the Factory level is **AES67-64**, the short name will be **AES..est**

- [Ref. #PEG-10342] **DNS-SD Support for the NMOS registry discovery:** GV Orbit Control can now automatically discover an NMOS registry through DNS-SD given the DNS server and search domain. The DNS server and search domain are automatically retrieved through the OS (if available), but can be overridden by you in the Area Configurator. If the DNS information is changed in the OS, GV Orbit Control must be restarted to retrieve the new values from the OS. As before, you still have the option to set a static NMOS registry URL if desired.
- [Ref. #PEG-10150] **Control port added to a device by importing a spreadsheet:** The feature Spread Sheet Import/Export now supports ControlPorts in a specific sheet.

GV Orbit Client v1.1.0 Bugs Fixed

- [Ref. #UCCM-1283] **Improved the combo box and the list box widgets so that they can better configure the value they return:** The Combo Box and List Box widgets were limited in the value that they could change, making custom screens complex to configure. These have been fixed so there are a few new ways they can be used.
  - The Data property can now be set to a string which contains specific values for each option using the following syntax: [3]Channel 1;[4]Channel 2. In this example the List/Combo boxes would display Channel 1/Channel 2 as options, but when adjusted its value would change between 3 and 4. This makes it fair bit easier to bind this to a remote value such as RollCall or Densite.
  - There is a further option *Use label/value* which when selected makes the List/Combo boxes use the [value] or label if no value defined as the value of the List/Combo box. When this us unchecked, it will use the zero based index of the items in the Data property as its value.
- [Ref. #UCCM-1282] **Corrected Issues with GV Live Workers not Available in Network View:** An issue with GV Live and Audio Live workers not being visible in the Network View of GV Orbit Client has been resolved. The Network View can now be expanded to browse to and open the Worker control screens. Providing the Workers have been added to the Log Server polling list, the Worker alarm state is also visible in the Network View.
- [Ref. #UCCM-1253] **Web Renderer Project wasn't Reloading Project:** A correction made to the Web Renderer so all elements of a project are reloaded when a new project is selected.
- [Ref. #UCCM-1125] **Cannot see take buttons when bulk routing is opened:** When the bulk routing tool was opened and a pane (network or project) is open at the left (default opening of the tool), the router control area was not visible.
- [Ref. #UCCM-1098] **Updates to how GV Orbit opens screens in different tabs:** Prior to this fix, GV Orbit would open some screens in existing tabs when in run mode. For example opening a component would replace an existing screen tab. This occurred until you had opened a completely different type, for example a network screen, in which can a new tab would then be created. So it was all a bit random.

  GV Orbit now only opens screens in an existing tab when in run mode. All other files will be opened in their own tabs. The application now is automatically put into edit mode when opening a component, or creating a new screen to allow immediate editing.

GV Orbit Control v1.1.0 Bugs Fixed

- [Ref. #PEG-11010] **Random issue with GV Orbit Control failover mechanism:** An issue related to the failover mechanism was noticed where you could end-up with an active server or loss of the topology. This issue is fixed.
- [Ref. #PEG-10945] **Unable to reuse a discovered device if it was deleted from a device group instead of deleting the entire device group:** If there are multiple discovered devices in a single device group, and any individual device is deleted from the group, the discovered device does not become available in the discovered device library to be dropped on the topology again. This issue is now fixed.
- [Ref. #PEG-10927] **IS-05 bulk stage requests to NMOS receivers don't include transport_params anymore:** IS-05 sent by the control system won't include *transport_params* anymore, as allowed by NMOS specs to accommodate receivers that don't support *transport_params* with an empty list.
- [Ref. #PEG-10890] **DCNM control port can be disabled on an active topology:** We added a feature to allow you to disable/enable the DCNM driver on an active topology. This feature is a tool to help support teams to solve potential configuration issues on a live system without impacting the routing functionality or other control port devices. Some other useful troubleshooting data is also added to system snapshots.
- [Ref. #PEG-10851] **Additional port/interface created for new added NMOS device to a device Group if all devices already connected:** If a device group does exist in GV Orbit Control topology, with few NMOS devices AND those devices are connected to/from network switch, then you decide to add a new NMOS device to this existing device group, GV Orbit Control will add the new device but this device will have an extra port/interface (factory generated). This issue is now fixed.
- [Ref. #PEG-10618] **Sometimes Audit logs viewed from the web admin page in GV Orbit Control will not load and reports errors:** The web browser was unable to display the audit.log file if its size is too big. Now, you have the option to download the audit.log file if its size is bigger than 10MB, otherwise the content will be shown in the web browser.
- [Ref. #PEG-10617] **All level takes failing from an IQMV (V, A) source to an IQUCP (V, A, ANC) destination:** If a take was requested from an IQMV output which has only Video and Audio (No ancillary) to an IQUCP destination which has Video, Audio and Ancillary, GV Orbit Control was failing the take with an error mentioning that the ancillary level is missing.

  With this new fix, GV Orbit Control will succeed the take with a warning message mentioning that only Video and Audio were taken.

  As long as Video (the highest ranking level) is carried successfully, the take will succeed.

  If not all levels are carried, GV Orbit Control will display a warning that not all levels were taken.
- [Ref. #PEG-10344] **Cannot select some MADI streams in the Logical Device Table:** The issue where we were not able to select / drag some streams of the Stream Browser of the Logical Device Table in a logical source level column, is now fixed.

GV Orbit Version 1.0.1

This release adds the following enhancement(s) and corrects the following issue(s).

New Features and Enhancements

- [Ref. #PEG-11008] **Support of disconnecting NMOS flows through an IS-05 command:** The IS-05 connection management request sent by the control system will set the *master_enable* flag to false if the source IP address is *0.0.0.0*.
- [Ref. #PEG-11007] **Display the status of NMOS devices that are not available for control through IS-05:** A new property has been added to NMOS control ports called *IS-05 Controllable*. This field indicates whether the corresponding node in the NMOS registry has devices that support being controlled through IS-05.
- [Ref. #PEG-10342] **DNS-SD Support for the NMOS registry discovery:** GV Orbit Control can now automatically discover an NMOS registry through DNS-SD given the DNS server and search domain. The DNS server and search domain are automatically retrieved through the operating system (if available), but can be overridden by you in the *Area Configurator*. If the DNS information is changed in the operating system, GV Orbit Control must be restarted to retrieve the new values from the operating system. As before, you still have the option to set a static NMOS registry URL if desired.
- [Ref. #PEG-10993] **DNS-SD NMOS registry redundancy support:** GV Orbit now supports NMOS registries redundancy with DNS-SD. If GV Orbit discovers a registry through DNS-SD, and that registry becomes unavailable, GV Orbit will automatically fail over to the next available registry listed in the DNS.

Bugs Fixed

- [Ref. #PEG-10927] **IS-05 requests do not include transport_params anymore:** IS-05 sent by the control system will not include *transport_params* anymore, as allowed by NMOS specifications to accommodate receivers that do not support *transport_params* with an empty list.

GV Orbit Version 1.0.0

This is the first release.

Known Issues and Limitations

The following is a list of known issues and limitations associated with GV Orbit. The star (★) symbol indicates a new issue in GV Orbit version 3.1.0.

- GV Orbit Client Known Issues and Limitations, on page 128
- GV Orbit Control Known Issues and Limitations, on page 130

GV Orbit Client Known Issues and Limitations

★ [Ref. #UCCM-4985] **Device Manager Snapshot limitation that include large LUT files:** There is currently a limitation that makes it impossible to save snapshots that contain LUT files larger than 9MB. This is a per-file limit, meaning that multiple smaller LUT files are allowed, even if the sum of their sizes exceeds 9MB. If the limit is exceeded while trying to save a snapshot, an error message explaining the limitation is now shown.

- [Ref. #UCCM-4969] **Densité service fails to communicate with Monitoring service when using global domain:** Please ensure that the Densité domain is not configured to be the same as the Monitoring domain.

  On the Densité service page, deselect 'Use global domain' and specify a unique client domain number.

  On the Monitoring service page, under GVOP Device Alarm Settings, set the device alarm domain number to the same value as that set in the Densité service.

- [Ref. #UCCM-3553] **Shuffled Route on IQ-AMD may fail:** When performing a route from an input to output on an IQ-AMD card the internal loop back of the card is correctly used. If a breakaway is then performed using a second input on the same card the route will be recorded as a success but an AudioLive will not be invoked to performed the shuffle.
  Workaround: To work around this problem route, perform the breakaway using an input from a second IQ-AMD.

- [Ref. #UCCM-758] **The GVNodeManager panels are not available from the GV Orbit client:** Even though the panel launcher can open the GV Node manager panel using the `http://{IP}:{PORT}/panel-launcher-service/api/v1/services/gvnodemangers` supplied list, the GV Orbit client does not support the listing and the opening of the GV Node manager panels.

- [Ref. #UCCM-930] **Elastic persisted data size is too large to be downloaded:** Elastic data can take a significant amount of disk space preventing the download of the compressed archive due to its size. The splitting of the archive in small chunks suitable for download would require manual operations that are not available to the end user although it could still be possible for an authorized engineer to do this and recover the data.

- [Ref. #UCCM-980] **Densité does not report cards for which their services are not started:** Cards for which the service bundles are not present or the card's service is not started properly are not listed in the Densité web page or the cards list in the GV Orbit Client.

  Traditionally, in iNavigator, the list of all the cards in a Densité frame were displayed and the cards for which the service was not started was displayed using a grayed out font. At the moment, there is no way to report the physical cards found through the Densité REST API.
  Workaround: Open the upgrade manager panel from the GV Orbit client (in the Densité cards list in the GV Orbit Client, right-click the frame's controller card and select *Open Upgrade Screen*) and install the service bundles for any unresolved cards.
- [Ref. #UCCM-982] **Upgrade manager cannot be opened if no services are started for a Densité frame:** The Densité frame's service must be started before the upgrade manager panel can be opened. If at least one service is started for a Densité frame (this is normally the controller card), then the Densité REST API reports the frame and it is added to the GV Orbit client list of detected Densité frames. At this point, you can open an upgrade manager panel.

  However, if the controller service is not started, then the frame is not reported by the Densité REST API and it is not displayed by the GV Orbit client.
  Workaround: Install a service bundle so that the Densité frame reports at least one card through the REST API.
- [Ref. #UCCM-1352] **Child Nodes not Supported in IP Proxy in the Same way as RollCall IP Proxy:** Currently child nodes are not supported in IP Proxy in the same way as it was in the old RollCall IP Proxy. In RollCall IP Proxy child nodes could be defines as follows.

  MV main board = 2200:01:00

  MV IP card 1 = 2210:30:00

  MV IP card 2 = 2220:30:00

  MV IP card 3 = 2230:30:00

  MV IP card 4 = 2240:30:00

  In this case the devices will not show correctly in the Network View in GV Orbit. Instead the devices need to be declared with Node values as follows in IP Proxy:

  MV Parent = 2200 (Device set to false)

  MV Main Board = 2210

  MV IP Card 1 = 2220

  MV IP Card 2 = 2230

  MV IP Card 3 = 2240

  MV IP Card 4 = 2250

  The Network View will show the devices as:

  MV Parent = 2000:02:00

  MV Main Board = 2210:01:00

  MV IP card 1 = 2220:30:00

  MV IP card 2 = 2230:30:00

  MV IP card 3 = 2240:30:00

  MV IP card 4 = 2250:30:00

GV Orbit Control Known Issues and Limitations

- [Ref. #UCCM-5313] **Clustering nodes after breaking the cluster (with removal of Virtual IP):** Virtual IP address should be removed to properly break cluster. The following steps should be executed:
  - Stop gv-orbit-control on both nodes
  - Cluster nodes
  - Start gv-orbit-control on active node
- [Ref. #UCCM-3703] **Alchemist Live UHD mode appears as offline in GV Orbit:** *Workaround:* Set Alchemist UHD agent to *input=RTP QUAD* and *output=RTP QUAD* so that it enables all 8 Spigots for a while and then it gets detected by GVOC correctly as online. After that, you can start/stop Alchemist in various modes and it should properly be appearing as 'online' (for the running agents/devices) or 'reconnecting' (for the agents that are powered off). In case the offline mode is reached again, there might be a need to repeat the workaround, i.e. enabling all 8 Spigots of Alchemist for a moment.
- [Ref. #UCCM-952] **Containers are not notified if: IP addresses, the group they belong to, or the hostname has changed:** Containers are given the configured IP addresses and the group they belong to (for example, MANAGEMENT, MEDIA, and CORPORATE) and their hostname on startup. If you change the IP address configuration, the group they belong to, or the hostname, containers are not notified of this change. Containers use the new values only when they are restarted or when the host is rebooted.
- [Ref. #UCCM-1124] **Backup friendly names are renamed to the original name once imported:** If a user decides to export a backup, then re-names it, and tries to import it again, the backup may be flagged as already existing on the GV Orbit Server, as GV Orbit uses a metadata file to distinguish between backup files.

  When a backup file is imported, the name assigned to it is generated based on information contained in the metadata file, including the date and time when the backup was originally created.
- [Ref. #UCCM-1146] **Setting an interface, already configured, to *Not Configured* will not disable it:** If you set an interface, under *Interfaces Configuration*, that is already been configured, to *not configured*, save and restart, it will not disable the interface. The *Expert Mode* will no longer show the interface but the interface status and ifconfig will show the newly disabled interface as always *Up* when it's supposed to be *Down*. *Workaround:* Reboot the server.
- [Ref. #UCCM-1465] **The control system client may show empty tabs after a failover:** After multiple cluster failovers, the control system client may show empty tabs. *Workaround:* Close the client and re-open it again.
- [Ref. #UCCM-1473] **Interface status does not display the right IP Address after an update:** Changing the interface IP address does not update the interface status. *Workaround:* GV Orbit Server should be rebooted.
- [Ref. #UCCM-2283] **Configuration changes may not be possible when stand-by server is coming up:** In a GV Orbit Control cluster, when the stand-by system is coming online, it may not be possible to make certain topology or panel configuration changes until the stand-by system completes replication, which can take from 15 seconds to a minute depending on your current configuration size.

- [Ref. #UCCM-2316] **Some settings lost when upgrading from Orbit to GV Orbit:** When upgrading from Orbit 3.1 to GV Orbit, not all client side settings are migrated. In particular, the settings for IP addresses used for Unicast Discovery of designated Interfaces for GVOP communication. Proceed as follows.

  Open **Tools** > **Options** > **RollCall+** in the Orbit 3.1 Client and note the following:

  - Domain
  - Multicast Discovery State
  - Additional Peers
  - Interface(s) that have a tick against them

  Open **Connections**->**GVOP** in the GV Orbit Client and ensure the settings from above are applied:

  - Client domain
  - Multicast discovery
  - Unicast discovery IP address(es)
  - Interface(s)
- [Ref. #PEG-3498] **A refresh of the Router UI may be needed to reflect changes in the Alias table:** For GV Orbit Control, if you update the Aliases while the Router Control UI stage is open in the GV Orbit Control, you may need to reopen the Router Control UI to reflect those changes.
- [Ref. #PEG-4269] **Adding logical devices while GV Orbit Control Panel Configurator is open may not display the devices sorted correctly:** For GV Orbit Control, when adding sources and destinations in a Topology while the Panel Configurator is open and the Sources or Destinations view is exposed, the created sources or destinations adds them into an unsorted order in the Panel Configurator view. Also applies to salvos and other items.
  Workaround: Closing and reopening the stage in GV Orbit Control will address the sorting issue.
- [Ref. #PEG-6457] **"ERROR - GUI panel not found" is displayed when launching client:** For GV Orbit Control, if this message is displayed, close and reopen the GV Orbit Control.
- [Ref. #PEG-6646] **No keystroke duplicate warning is displayed when setting the same keystroke more than once:** For GV Orbit Control, within the Category Configurator Stage, if you set the keystrokes of more than one device to the same keystroke assignment, they can create an issue where the desired device may not be selected from a panel whilst using the keystroke selection option from a category button.
  Workaround: Take care to provide unique keystroke selection for each device.
- [Ref. #PEG-6749] **GV Orbit Control does not automatically reconnect when changing the management IP address.**
  Workaround: If this occurs, close and relaunch the client. Then, log in with the new IP address.
- [Ref. #PEG-6958] **Physical Connections Builder may not reflect disconnected ports:** In GV Orbit Control, if you disconnect physical connections for the Connected tab in the physical connections editor, on the topology configurator stage, the now disconnected ports, may not display in the builder section. If this occurs, you may need to click off the physical connection and then back onto it to see the ports available for connection.

- [Ref. #PEG-7159] **Phantom buttons on hardware panels can be cleared by changing pages:** For GV Orbit Control, changing the location of a level button on an active panel can create a button with text, but no color. The label of the old button may remain. Changing the page, or opening a list page, to re-legend this button will refresh the button. This only affects the panels with the LED buttons.
- [Ref. #PEG-7283] **The keystroke does not work when the suffix is composed of both a letter and a number.** For GV Orbit Control.
  Workaround: If this occurs, either use only numbers or use only a single letter for the suffix/keystroke to select devices within a category.
- [Ref. #PEG-7815] ***Takes* may fail on redundant IP sources with inverted connections:** For GV Orbit Control, when using a redundant (2022-7) network, if you connect the first output port to the B network and the redundant port to the A network (invert the connection), you might see a take failure if the connection on the other side of the network fabric is not inverted.

  Similarly, having a non redundant IP device connected only to A network will allow us to do a take, but having it connected only to B network will not.

  Connect first port to the A network and redundant port to B network to resolve this.
- [Ref. #PEG-7830] **Black screen appears when you open the Panel Configurator stage.** For GV Orbit Control.
  Workaround: if you receive the black screen when opening or selecting the Topology Configurator stage, close and reopen the stage.
- [Ref. #PEG-7922] **Software panel configuration may not reflect panel behavior change when the topology is not active:** If the GV Orbit Control topology is not active, and you switch the panel behavior to a different panel, and then activate it, the changes will not be reflected on soft panels.

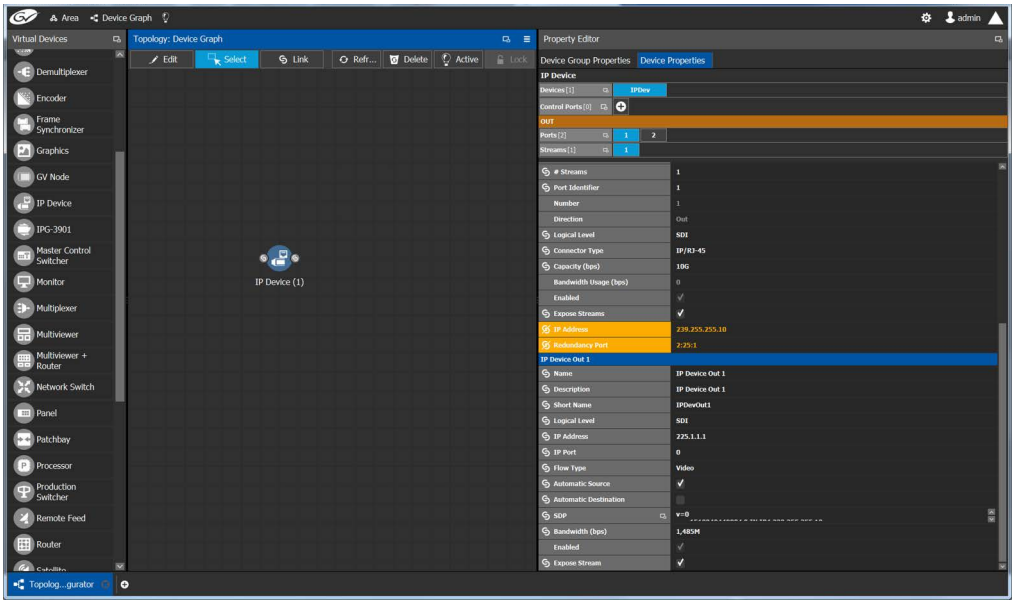
  However, if the topology is active, you can switch the panel behavior and it will do the switch on the fly as expected.
- [Ref. #PEG-8009] **Tie lines view is not updated dynamically when a short name is changed:** For GV Orbit Control, when you change the short name of a device, the Path Management (Tie lines view) is not dynamically updated.
  Workaround: Click the Refresh button.
- [Ref. #PEG-8018] **Ports appearing in "Other" physical connections table are not updated dynamically after changes are made to the device:** For GV Orbit Control, when changing the device short name or device count for the corresponding ports appearing in the *Other* table, the table is not dynamically updated.
  Workaround: If this occurs, deselect/select the link.
- [Ref. #PEG-8096] **Category Configurator is very slow to assign and delete large numbers of sources and destinations:** For GV Orbit Control, if you are experiencing a delay, then as soon as you see the sources are deleted from the screen, close GV Orbit Control and reopen it. This way you skip the unnecessary delays.

  As for the creation of the category, you can do the same thing. Close GV Orbit Control after a while and reopen it.
- [Ref. #PEG-8097] **Logs fill with stack traces when an external controller is configured with an incorrect matrix ID.** For GV Orbit Control.
  Workaround: if this occurs, fix the matrix ID or stop the external control system from accessing NDAC, or change log level for this module. This may well hide other important errors in this same module.

- [Ref. #PEG-8235] **Deleting devices by decreasing the device count is faster when all other GV Orbit Control stage tasks are closed**: For GV Orbit Control, if the device count is changed when only the Topology Configurator stage task is open, the deletion is much faster. As soon as you open the Router Control or Path Manager stage task, it starts to slow down.
- [Ref. #PEG-8251] **Issues using Microsoft Internet Explorer 11 with GV Orbit Control Admin Web Stage:** For GV Orbit Control, issues have been found with Internet Explorer 11 and the upgrade feature from the GV Orbit Control Admin page. We recommend using the Google Chrome web browser as a workaround.
- [Ref. #PEG-8255] **System Status page displaying routers that have been deleted:** For GV Orbit Control, after deleting dummy routers on the loaded topology, the System Status UI was still showing the statuses of the deleted routers without their labels.
  Workaround: Close/reopen the System Status UI.
- [Ref. #PEG-8284] **The Alias Editor are not updated dynamically when physical connections are deleted in the topology:** For GV Orbit Control, if the Alias Editor stage task is open and you sever physical connections in the Topology Configurator task, switching back to the Alias Editor may not reflect the deletion.
  Workaround: If this occurs, click on the refresh button on the Alias Editor.
- [Ref. #PEG-8317] **The GV Orbit Control Admin Backup and Restore does not display the correct host name when the host name has a hyphen in it:** For GV Orbit, it is not recommended to use a hyphen in the host name.
- [Ref. #PEG-8328] **Take should fail with an incorrect physical level configured on a router:** For GV Orbit Control, if you have configured a router, but has the incorrect physical level value, GV Orbit Control attempts to perform the take. If the physical level does not exist on the router, no actual XPTs are switched.
- [Ref. #PEG-8332] **Router Control UI not updated after multi-select take on NV9654 hardware panel.** This relates to GV Orbit Control.
  Workaround: If this occurs, then close and reopen the GV Orbit Control.
- [Ref. #PEG-8449] **Changing the standby server IP without breaking the cluster is not possible.**
  Workaround: If you have to change the IP address of the standby server in a redundant cluster, then it is necessary to break the cluster. To do so, in GV Orbit Control, set the number of controllers in the Area Configurator to 1 and press enter. Then, change the number of controllers back to 2 and enter a new IP address for Controller 2 in the Properties Editor.
- [Ref. #PEG-8469] **The virtual IP address cannot be the same as the IP address of either the active or standby controller:** For GV Orbit Control, also, you cannot use the same IP for both the active and standby controllers. If this is the case, then you will need to edit one, or both controller IP addresses in the area configurator.
  Workaround: If the virtual IP address is the same as the IP address of a controller, or if the both controllers have the same IP address, open the GV Orbit Control > Area Configurator > Property Editor and edit the IP address of one controller or both controllers.

- [Ref. #PEG-8520] **Hosts/flow policies are not being re-created in DCNM after a DCNM HA failover**. For GV Orbit Control, if the active DCNM in a HA availability DCNM configuration goes offline, DCNM will fail over to the standby DCNM, but it will not have the hosts/flow policies that were currently available on the previously active DCNM. To fix this issue we have to deactivate and activate the topology one more time.
- [Ref. # PEG-8542] **A Bad Device Graph Is Loaded After A Switch Of Area:** For GV Orbit Control, the original area may be displayed when you create a new topology, make it active, and then create a new area. If this occurs, then click on the new area to display it.
- [Ref. #PEG-8585] **Ethernet NIC ports on GV Orbit Admin > Network Settings are listed in reverse order:** currently, only the em1 interface is enabled on startup of GV Orbit Control. When you edit the configuration of the interfaces in the web stage, it is important to note that, from the rear, the right most network port actually relates to p6p1. These interfaces also need to be manually enabled using the command, *ifconfig [interface] up* (for example, *ifconfig em2 up*) through SSH to GV Orbit Control, or on the Linux command line interface.
- [Ref. #PEG-8602] **The last take operation added to a salvo can appear incorrectly at the beginning:** For GV Orbit Control, when you add take operations to a salvo, the last take operation added should appear at the bottom of the list. However, it appears at the beginning of the list. If this occurs, then delete the unsorted operation and add it again.
- [Ref. #PEG-8708] **Underscores are ignored in topology naming:** For GV Orbit Control, it is recommended that you replace underscores with another character when naming the GV Orbit Control topology.
- [Ref. # PEG-8782] **Refresh issue in the logical device table while exposing stream:** For GV Orbit Control, while exposing streams and having the logical device table opened, the logical device table can become out of sync when you navigate between the Source and Destination tab of the table. Sometimes the stream will not appear immediately, or sometimes they will not update after changes in the topology.
  Workaround: Refreshing, or reopening the table, can fix this issue.
- [Ref. #PEG-8820] **The Web stage login button is not enabled when using remembered login and password:** the web-stage login button is not enabled when you select the remembered user and password.
  Workaround: If this occurs, press the enter key in one of the two fields, or press the tab key in the user field.
- [Ref. #PEG-8834] **Checking Automatic Sources on Outputs does not assign the streams on some Logical Sources:** For GV Orbit Control, if the logical device table is open when editing the device properties on the topology, and you choose to automatically create sources on Outputs, then you may need to press the refresh (recycle) icon to refresh the devices.
- [Ref. #PEG-8840] **Logical Device Table streams are still shown after deleting a physical connection link:** deleting a physical connection link on the active topology should remove the logical devices that may have been created for a device. However, if the devices are still seen on the logical device table, then pressing the refresh (recycle) icon on the logical device table, will refresh the table.

- [Ref. #PEG-8859] **Redundant port device property displayed with improper format:** For GV Orbit Control, after editing the device property # Output connectors to 2 and setting the Redundant port on Out 1, the redundant port was shown as follows. The workaround is to deselect/re-select the Out 1 port tab.



- [Ref. #PEG-8860] **Takes to an exposed destination will fail due to missing logical level assignment:** For GV Orbit Control, if you expose streams at a port of a router, but that port does not have a defined logical level, then placing that stream in a logical device and performing a take on/to that device will fail. You must manually configure the logical level on the device properties in the topology.
- [Ref. #PEG-8871] **Using Exposed Streams May Create Inaccuracies in Path Manager:** For GV Orbit Control, utilizing the exposed streams functionality in the GV Orbit Control topology, may create instances where the path manager will not show complete status.
- [Ref. #PEG-8882] **Multicast IP group address changes made to XCU are not applied to GV Orbit Control:** For GV Orbit Control, in the case that you edit the multicast group IP address in the XCU for GV Cameras, there is a chance that these changes will not propagate to the GV Orbit Control Topology. The workaround is to deactivate and reactivate the GV Orbit Control Topology.
- [Ref. #PEG-9163] For GV Orbit Control, entering characters in all caps into the Alias editor requires a workaround:
  1. Click on a cell
  2. Press *Enter* first
  3. Start entering the characters in all caps
- [Ref. #PEG-9174] **Topology name limited to 256 characters:** For GV Orbit Control, creating a topology in GV Orbit Control with a name longer than 256 characters causes UI issues.
  Workaround: You must limit the name to less than 256 characters.

- [Ref. #PEG-9176] **Clicking on another Physical Connections link while making connections on another link will interrupt process:** For GV Orbit Control, while in the process of connecting the physical connections of a link within the topology, if you click on another link, all of the connections may not be processed for the former link. You will need to click on the former link and process the remaining connections.
- [Ref. #PEG-9180] **Keystroke Creator option from separator does not work properly in the Category Configuration Stage:** if the suffixes of your logical device names have less than 2 characters (1, 2, ...), then the automatic keystroke editor may not automatically assign the correct keystroke when using the "From Separator" option.
- [Ref. #PEG-9373] **Router Control UI may not update if one of shared control servers is rebooted during takes:** For GV Orbit Control, when 2 servers are controlling the same router and one of the servers is rebooted while takes are being performed on the client connected to the other server, the Router Control UI of the clients connected to the rebooted server may not refresh Router Control UI when the server comes back.
Workaround: reopen another Router Control UI task.
- [Ref. #PEG-9389] **Deleting an NMOS device may leave a ghost device in System Status stage:** For GV Orbit Control, when we add an NMOS device to an active topology we show the status of that device in the system status page. When we delete the device the system status page does not refresh properly and we end up with an empty slot showing "Unknown".
Workaround: Closing and reopening the System Status stage will address this issue.
- [Ref. #PEG-9435] **Discovered Devices control ports may stay on-line when you deactivate a topology:** For GV Orbit Control, if a discovered device is added to an active topology, its control port will come on-line. If you deactivate the topology then the control port remains on-line when it should go off-line. Reactivating and deactivating the topology again gets the control port to go off-line.
- [Ref. #PEG-9439] **You may not be notified when timeout has been reached is a large configuration:** For GV Orbit Control, currently, with the default timeout and polling method for the restoration of the database through the Web Interface, larger configurations may not completely be restored and may revert to their previous database without notifying you.

  The default values must be edited to accommodate larger configurations (>2GB). The current default values from /var/lib/tomcat7/webapps/admin/WEB-INF/classes/admin.properties:

  ```
  #Timeout values for backup and restore.
  # serverStatusRetries: Number of retries when checking for server readiness before giving up.
  # serverStatusInterval: Interval in milliseconds between server readiness check retries.
  # Total timeout for service to restart after a backup or restore is serverStatusRetries * serverStatusInterval
  # When restoring a backup from an older version, multiply the timeout time by the factor migrationMultiplier.
  serverStatusRetries=36
  serverStatusInterval=5000
  migrationMultiplier=5
  ```

  This currently allows only 3 minutes to restore a configuration, and up to 15 minutes for legacy configurations. Changing the serverStatusRetries to 60 would allow up to 5

minutes and 25 minutes, respectively. The issue is that if there is a problem with the database, GV Orbit Control will wait the total of this timeout prior to giving up and reverting.

- [Ref. #PEG-9456] **Streams may no longer be completely mapped after changing the GV Node Mode:** For GV Orbit Control, when using exposed streams on GV Nodes and changing the card mode from TR03 to TR04 for example, the stream assigned in the ANC cell is not removed. Since TR04 does not have ANC, we should remove the streams in that cell since the stream no longer exists in the system.
  Workaround: manually remove the stream.
- [Ref. #PEG-9508] **Do not use loop-back IP in the controller properties:** For GV Orbit Control, using the loop-back IP address for the system controller in the controller properties of the Area Configurator will cause a loop of restarts, as the controller attempts to create a cluster with itself. Utilize the physical IP of the system controllers.
- [Ref. #PEG-9529] **Adding a destination to a virtual XPT when topology is inactive will not route virtual source to the destination:** For GV Orbit Control, part of the GV Orbit Control implementation of Virtual XPTs is the freedom to not require you to manually create a salvo to initialize the virtual source to real destination path. This is accomplished when a real logical destination is added to a virtual XPT. However, when the GV Orbit Control topology is not active, this will not occur. You would then be required to route the virtual source to that real logical destination once the topology is active.
  Workaround: only add real logical destinations to the virtual XPT when the topology is active.
- [Ref. #PEG-9583] **Creating a duplicate panel configuration may not display that panel in the configurator:** For GV Orbit Control, when creating a panel configuration by duplicating an existing configuration, then it may be necessary to open the newly created panel, as it may not be displayed upon creation.
- [Ref. #PEG-9587] **Discovered Devices properties may be overwritten on reactivation of GV Orbit Control:** For GV Orbit Control, the unaffected attributes are logical level, # input connectors, # output connectors, # Streams per input, # Streams per output, automatic Destinations on Inputs, Automatic Sources on Inputs. All other fields will be overwritten on reactivation of the GV Orbit Control topology.
- [Ref. #PEG-9762] **Unchecking exposed streams may affect pathfinding:** For GV Orbit Control, when third party changes are processed, GV Orbit Control figures out the list of sources/destinations which go through each tieline that is affected by the change, and then recomputes the tallies. When finding the sources/destinations, we only look at streams which are exposed. Therefore, if a stream has logical sources/destinations assigned to it, but is not exposed, we'll consider there is no source/destination, and free the tielines when they should be busy.

  This situation can happen in the following scenarios:

  - You add an edge device to the topology (for example, a camera or a monitor) and de-select the “Exposed Streams” property.
  - You select the “Automatic Source/Destination” property, without selecting the “Exposed Streams” property.

  Workaround: always leave the “Exposed Streams” check box checked.

- [Ref. #PEG-9763] **Newly created logical device is not highlighted in the Logical Device Table:** For GV Orbit Control, when you manually create a logical source or destination device in the logical device table, it is currently not highlighted and you may be required to scroll to the device.
- [Ref. #PEG-9765] **Severing many links at once can cause the responsiveness of the user interface to slow down:** For GV Orbit Control, in Topology Configurator, when cutting links with many physical connections, the user interface becomes unresponsive while the task is being executed.
  Workaround: cut fewer links at a time.
- [Ref. #PEG-9893] **Changing the mode of a K-Frame from 2022-6 to 2110 may cause extra ports to display in GV Orbit Control:** For GV Orbit Control, changing the K-Frame mode of operation in the Switcher Menu application from 2022-6 to 2110 may cause additional ports to display in the GV Orbit Control topology, under the device properties for the Production Switcher. This issue occurred 1 out of 3 times during testing.
  Workaround: close and reopen the Topology Manager stage in the GV Orbit Control.
- [Ref. #PEG-9935] **Manually assigned keystrokes in the Category editor may not work on a panel:** For GV Orbit Control, once you have manually added keystrokes to the devices within a category (rather than using the automatically add feature), this may cause these devices to not be selected with keystrokes on a panel. Pressing the category jumps to the keystroke page, but the keystrokes do not light up to indicate what keystrokes are available.
  Workaround: use automatically generated keystrokes.
- [Ref. #PEG-9950] **You may be unable to add any destinations to a virtual destination once they have attempted to add incompatible destinations:** For GV Orbit Control, as the virtual XPTs take on the characteristic logical levels of the actual destinations that are associated to the virtual XPT, or the virtual source is routed to; attempting to associate a real destination, that does not have logical levels compatible with the other destinations already associated to a virtual XPT, to said virtual XPT may create a situation where you can no longer associate any compatible logical destinations.
  Workaround: You must delete the virtual XPT and then only associate compatible logical destinations after recreating the virtual XPT.
- [Ref. #PEG-9955] **Deleting a salvo when that salvo is assigned to a panel configuration may cause the panel to freeze:** deleting a salvo when the salvo is on a panel configuration may cause the panel to freeze if you attempt to execute said salvo on the panel.
  Workaround: remove the salvo button on the panel in Panel Configurator, or recreate the salvo button on the panel.
- [Ref. #PEG-9965] **Logical Device Table Filter is missing some values:** For GV Orbit Control, if you open the logical device table and have not scrolled through the devices, and then try to use the filter, some of the devices that should be displayed when using the filter may not be shown. If you encounters this, you need to scroll down through all of the devices prior to using the filter.

- [Ref. #PEG-9971] **Exposing streams on a router may not properly reserve the bandwidth:** For GV Orbit Control, whilst using the exposing streams feature on GV Orbit Control, you are essentially removing the exposed streams from the tieline pool to create a source/destination at the port stream. Typically this would utilize bandwidth and that used bandwidth would be displayed on the Path Manager Stage. When exposing streams of the port streams connecting two routers, the bandwidth usage may not be displayed properly in path manager.
  Workaround: reactivate the topology to properly display the bandwidth.
- [Ref. #PEG-10064] **You must not sever the link between the Area and System Controller in Area Configurator:** For GV Orbit Control, severing the existing link between the System Controller and the Default area may create a situation where the configuration does not become active after a restart. If this occurs, you may need to load a backup configuration to restore activity.
- [Ref. #PEG-10218] **Discovered devices may not display secondary device name:** For GV Orbit Control, if the secondary device name is not displayed in the discovered devices pane, then it may be necessary to reopen the Topology Configurator stage.
- [Ref. #PEG-10251] **An alias may not be applied dynamically to GPIO editor:** For GV Orbit Control, in the GPIO editor, if you select an alias for sources and destinations, you can enter the alias or system defined name for the destination and the editor logic can accommodate this. If you type in the system defined name for the source with the alias selected, the logic does not accommodate this. You will need to take the following steps:
  1. In the GPIO stage task, Select None for the Source Alias.
  2. Delete the GPI configuration.
  3. Select Route a source to a destination.
  4. In the source text field, enter the source name, not the alias.
  5. In the destination text field, enter the destination name, not the alias.
  6. Validate the rule.
  7. In GPIO stage task, Select Alias for Source.
  8. Now you will the see alias name for the source.
  9. Validate the rule.
- [Ref. #PEG-10388] **DDS discovery devices added to the topology while activated do not appear in the System Status task:** For GV Orbit Control, DDS discovery devices added to the topology while activated do not appear in the System Status Page, unless you de-activate and then activate the topology.
  Workaround: Close and then re-open the System Status task.
- [Ref. #PEG-10466] **GV Orbit Control Cluster cannot be created if a DNS server is configured but is not reachable:** If a DNS server is configured on a pair of GV Orbit Control servers and the DNS server is not reachable (as they cannot be pinged), GV Orbit Control will be unable to create a cluster when creating the cluster configuration through the Area Configurator. The result is both servers to come back as master and kick each other out of the network in a loop.
  Workaround: Remove the bad DNS entries and restart GV Orbit Control on both servers.

- [Ref. #PEG-10492] **Unable to break the link between a router and a monitor:** For GV Orbit Control, sometimes you may encounter an issue where they will not be able to disconnect the link between an SDI router and a monitor, using the cutting tool after disconnecting the physical connection. The link gets stuck.
  Workaround: Close and re-open the Topology Configurator stage.
- [Ref. #PEG-10589] **Changing source or destination short name is not reflected in the Category Configurator and Panel Configurator:** For GV Orbit Control, changing source or destination short name is not reflected in Category Configurator and Panel Configurator.
  Workaround: Close and then re-open either the Category Configurator or Panel Configurator stages.
- [Ref. #PEG-10590] **Virtual XPTS in Router Control UI is empty when removing a destination from Virtual XPT:** For GV Orbit Control, if you have one Virtual XPT with 4 destinations configured in Logical Device Table, you see 4 destinations in the Virtual XPTS Area in the router control UI. If you remove one of the destinations from the Virtual XPT configured in Logical Device Table, all destinations in the Virtual XPT Area in the router control UI will be removed.
  Workaround: Deselect and select again the Virtual XPT destination in Router Control UI.
- [Ref. #PEG-10593] **Third party equipment doesn't handle source/destination with streams that have no logical level:** For GV Orbit Control, when 3rd party equipment updates tielines and tallies, and the streams that are used for the logical source/destination have no logical level, then tallies and tielines will be cleared.
  Workaround: Set a logical level on the stream.
- [Ref. #PEG-10624] **Third party notification broken when a GV Orbit Control server controls another GV Orbit Control server using NP17:** Third party notifications may not work when a GV Orbit Control server is controlling another GV Orbit Control server using NP0017.
  Workaround: Deactivate and then activate the GV Orbit Control topology.
- [Ref. #PEG-10642] **Changing connector type does not change stream type anymore:** For GV Orbit Control, tThe stream type (e.g. SDI stream, IP stream) created for a device is based on the connector type (for example, SDI, or IP). However, if we change the connector type, the stream type does not change accordingly.
  Workaround: Set the stream count to 0 and back to it's desired value. The will cause streams to be deleted and recreated, now with the correct type.
- [Ref. #PEG-10737] **Virtual XPTS - Destinations selection not sorted properly:** For GV Orbit Control, in the Virtual XPTS tab, the real destinations as part of the virtual destination are not sorted properly.
- [Ref. #PEG-10808] **Audio Live path discrimination does not work if there are factory levels on one or more ports:** For GV Orbit Control, the path finding will not use the specific ports with custom levels to convert the signal and instead will use any port that matches the required channel count.
- [Ref. #PEG-10842] **IQUCP cards connection status off-line if the eth2 configuration is blank:** The IQUCP card's connection status is shown off-line if the eth2's configuration is left blank.
  Workaround: Configure eth2 with a valid IP Address and restart the card.

- [Ref. #PEG-10873] **Missing tables in database when creating a cluster with a clean database:** Creating a cluster from a GV Orbit Control server that has a clean GV Orbit Control database could trigger issues with the control port of the devices added in the topology.
  Workaround: Restart the GV Orbit Server before building a cluster with another controller OR Failover right after creating the cluster.
- [Ref. #PEG-10874] **GV Orbit Control controllers switched in the System status page (first controller shown on the second column):** For GV Orbit Control, this issue could occur if you decide to restore a backup from Controller-2 to Controller-1.
  Workaround: With both controllers in a standalone mode, check each server's position in the controller columns. Do this by opening a GV Orbit Control to each server and re-creating the cluster from the server with the correct ID. See *Cluster Task* in the GV Orbit Admin Guide.
- [Ref. #PEG-10883] **Discovered device stays on-line the first time the topology is disabled:** For GV Orbit Control, a discovered device stays on-line the first time a topology is disabled. The control port status is accurate whether the GV Orbit Control topology is on-line or off-line. This has no effect on the GV Orbit system.
- [Ref. #PEG-10958] **NDAC: NP0017 port-based commands do not work properly if there are gaps in the external IDs:** For GV Orbit Control, if there are gaps in the external IDs of the logical sources or destinations, the NDAC NP0017 port-based commands do not work properly. If the external Ids are sequential, the commands all work properly.

  There are checks made which expect that the provided port IDs to be lower than the amount of sources/destinations. This is not true when there are gaps in the external id assignments.
  Workaround: Use the NP0017 device-based commands, where gaps are supported properly.
- [Ref. #PEG-10976] **GPIO rules are validated and saved without using the check box if you switch to another rule:** GPIO rules are validated and saved without using the check box if you switch to another rule.
  Workaround: Do not change to another rule if the current rule is not already validated.
- [Ref. #PEG-10977] **Adding or updating Aliases is not reflected in an open *Router Control* tab:** Adding or updating Aliases is not reflected in an open *Router Control* tab.
  Workaround: Close and re-open the *Router Control* tab.
- [Ref. #PEG-10981] **GPIO - Takes executed once the GPI rule is activated:** For a new rule, if the rule is not activated and you switch the GPI input from either On-to-Off or Off-to-On, there will be no take executed. However, if you activate the rule, then Takes related to the last transition are executed.
- [Ref. #PEG-10983] **Source/Destination short label updates not reflected in open *Category Configurator* and *Panel Configurator* tabs:** When the short label of a device is changed using the Topology Configurator, the labels are not automatically updated in the *Panel Configurator* or *Category Configurator* tabs, if they are already open.
  Workaround: Close and re-open the respective tab to see updated labels.

- [Ref. #PEG-10984] **GPIO - Rule is not executed when it is created during an activated topology with a new database:** GPIO rules are not executed when starting a new topology with a new database.
  Workaround: To execute those GPIO rules, deactivate the topology and then re-activate it.
- [Ref. #PEG-11424] **Opening and closing GV Orbit client causes increasing memory usage on server:** When using the GV Orbit client for an extended period of time (weeks, months) and especially when closing and re-opening stage tasks, it was observed that memory usage on the server would gradually increase.

  In order to free up that increased memory usage, close the client completely and launch it again, this will free up the leaked memory from the previous session.
- [Ref. #PEG-11448] **Pathfinding limitation while using custom levels when sources/destinations are only connected to a redundant switch:** Custom levels are not supported if routing dual sources (AB) to single destinations (B) connected to the redundant switch only, and vice-versa.
- [Ref. #PEG-11491] **A few built-in behavior buttons cannot use different colors:** The are some buttons that cannot use different colors: **Default Destination**, **Destination Status**, **Panel Lock**, and **Panel Home** buttons that are affected by this limitation.

  If the color is changed before activating the topology, the button is set with the desired color, but once the topology is activated and the NV panel is connected, the colors cannot be changed for these above buttons.
- [Ref. #PEG-11589] **Sources and Destinations sometimes remain in Router Control stage after being deleted:** It has been found that when deleting logical devices, either from the topology or the logical device table, that the corresponding source or destination buttons from the Router Control stage task would not dynamically disappear. Under these circumstances, they only disappear after a GV Orbit restart.
- [Ref. #PEG-11598] **Tally on V and ANC levels on NVISION panel will temporarily disappear while doing Level Map:** It has been found that while doing a Level Map action from an NVISION panel, the tally of the source on the V and ANC levels would disappear after 5-10 seconds after pressing the Level Map button to enter source audio level selection mode.

  Once the source audio level is selected, the tally on the V and ANC level properly re-appears.

2 Installation and Network Requirements

This section details the requirements that must be met prior to installing or upgrading a system with the current version of GV Orbit.

GV Orbit has the following product options:

- **GV Orbit Lite** - Basic functionality with a client application only (GV Orbit Client) and available as a free-of-charge download from the Grass Valley website.
- **GV Orbit Express, GV Orbit Professional** and **GV Orbit Enterprise** - A client-server configuration, control, monitoring and signal routing solution. This comprises one or more GV-Orbit Servers (order codes GVO-HW/GVO-HW1/GVO-HW2) and clients (GV Orbit Client). System functionality is determined by the options you have purchased.

Related Documentation

Use the following related documentation to configure GV Orbit and to better understand the available features. You can obtain the latest product documentation from the Documentation Library section of Grass Valley's website (www.grassvalley.com/docs/gvorbit). For first-time users, GV Orbit documentation should be read according to the Reading Order.

Part Number	Reading Order	Document Title
GVB-2-0860A-EN-DS	1	GV Orbit Datasheet
13-03082-020	2	GV Orbit Welcome
13-03082-010	3	GV Orbit Release Notes (this document)
13-03082-090	4	GV Orbit Admin Guide (this includes GV Orbit Services)
13-03082-170	5	GV Orbit Client User Guide
Dell 09K9WX	–	Dell EMC PowerEdge XR2 Getting Started Guide
–	–	Dell EMC PowerEdge XR2 Installation and Service Manual
–	–	Dell Integrated Dell Remote Access Controller 9 User's Guide (iDRAC)
UG0034-08		NV8500 Series User's Guide

For Dell documentation, use your server's service tag to access the documentation on Dell's website.

Hardware Requirements

System Requirements for GV Orbit Client

Lite	Express	Professional	Enterprise
●	●	●	●

The client PC platform must meet the following PC system specifications for optimal performance:

Operating system	Microsoft Windows 11, Windows 10, Windows 8.1, Windows 8, or Windows 7, 64 bit. The latest Microsoft Windows Update security patches must be installed.
Processor	Intel Core i5, the minimum required by the operating system, or better.
Memory	8 GB RAM minimum, the minimum required by the operating system, or more. **Note:** 16-32 GB RAM recommended for multiple instance support, multiple projects and GV Orbit functions running concurrently
Available Storage	The minimum required by the operating system plus: • ≥ 1 GB of available storage (GV Orbit **Lite**). • ≥ 2 GB of available storage (GV Orbit **Express**, **Professional** or **Enterprise**).
Supported Web Browser	Google Chrome only (most recent version).

System Requirements for GV Orbit Client (Advanced, Live Video Wall)

Lite	Express	Professional	Enterprise
●	●	●	●

If the client PC is being used to display a live video wall from H.264 streams (for example, from MV-8 Series Multiviewers), the PC platform must meet the following advanced PC system specifications for optimal performance to decode up to 48 × H.264 streams:

Operating system	Microsoft Windows 11, Windows 10, Windows 8.1, Windows 8, or Windows 7, 64 bit. The latest Microsoft Windows Update security patches must be installed.
Processor	Intel Core i7 (6 core with hyperthreading) or better.
GPU (recommended)	Nvidia GeForce GTX 1050 Ti or equivalent.
Memory	8 GB RAM minimum, the minimum required by the operating system, or more. **Note:** 16-32 GB RAM recommended for multiple instance support, multiple projects and GV Orbit functions running concurrently
Available Storage	The minimum required by the operating system plus: ≥ 2 GB.
Supported Web Browser	Google Chrome only (most recent version).

Supported Server

Lite	Express	Professional	Enterprise
	●	●	●

Hardware Server

GV Orbit version 3.1.0 is supported on the following Grass Valley servers:

- GVO-HW
- GVO-HW1
- GVO-HW2

A version of the GV Orbit software is factory installed on every hardware server.

For the latest features, bug fixes, and stability enhancements, make sure this product has the latest software version installed before putting it into active service. See Installing GV Orbit, on page 165.

Virtual Machine

VMware Requirements for GV Orbit Software Installation

Grass Valley supports the operation of GV Orbit on VMware. However, Grass Valley does not support VMware installation, configuration, operation, maintenance, or troubleshooting. Contact VMware for support.

GV Orbit software is available as an OVA file suitable for installation on a VMware server. The following VMware minimum requirements must be met:

- VMware ESXi 6.7 Update 2

VM Host Requirements for GV Orbit Software Installation

Minimum VM host requirements are as follows.

- 8 vCPUs dedicated to GV Orbit VM. You are responsible for making sure these CPUs are dedicated.
  - On a host with Intel processor @ 3.7 GHz base frequency or better and max turbo frequency of 5.0 GHz (Best).
  - On a host with Intel Xeon Gold @ 3.5 GHz base frequency or better (Optimal).
  - On a host with Intel Xeon Gold @ 3.3 GHz base frequency or better (Minimal).
- RAM dedicated to the GV Orbit VM:
  - 64 GB RAM minimum, for small systems such as an OB truck.
  - 96 GB RAM or more is the recommended minimum when you have a large system.

    Any more RAM that is allocated to the GV Orbit VM will be put to use. More RAM will be necessary for very large systems.
- 900 GB SSD Storage dedicated to the GV Orbit VM.

- Network interfaces, to be configured in the VM.
  - Connection for device MANAGEMENT.
  - Connection for MEDIA streams as some devices use in band control.

Network Requirements

For GV Orbit Lite users

Lite	Express	Professional	Enterprise
●			

For GV Orbit **Lite** users, the GV Orbit Client application is installed and run on a client PC.

See the equipment's installation guide for the network requirements. Your client PC must have network connectivity with the equipment you intend to configure and use.

For GV Orbit Express, Professional and Enterprise users

Lite	Express	Professional	Enterprise
	●	●	●

For GV Orbit **Express**, **Professional** and **Enterprise**, there are one or more GV-Orbit Servers (GVO-HW/GVO-HW1/GVO-HW2) and one or more client PCs each running a GV Orbit Client. Users access the GV-Orbit Server administration setup web page from their client PC.

Client PCs must have network connectivity to the GV-Orbit Server(s). GV-Orbit Server(s) must have network connectivity to the production equipment to be used with GV Orbit.

All client PCs and servers must be connected to a network that supports multicast traffic.

For more information about the network material requirements, refer to **Required Materials** in the *GV Orbit Admin Guide*. For more information about the network architecture requirements, refer to **GV-Orbit Server Cabling** in the *GV Orbit Admin Guide*. See Related Documentation, on page 143.

GV Orbit Server Reserved IP Addresses

Lite	Express	Professional	Enterprise
	●	●	●

The following IP addresses are reserved for use by GV Orbit.

Reserved IP Address	Where	Reason
Do not use IP Addresses in the range between 172.17.00/16 and 172.18.0.0/16	• GV Orbit Server network interface card IP Address. This applies to all GV Orbit Server network interfaces. • GV Orbit Server network address for Static Routes. • Network connected hardware that has network connectivity to the GV-Orbit Server.	This IP address range is reserved for internal use by GV Orbit Server. An IP address conflict in this IP address range will result in the outage of one or more GV Orbit services.
239.255.0.1	• Stream addresses. • GV Orbit Server network interface card IP Address. This applies to all GV Orbit Server network interfaces. • Network connected hardware that has network connectivity to the GV Orbit Server.	GV Orbit uses this IP address to automatically discover devices on the network. This address should not be used for multicast audio / video / metadata streams in an IP network.

TCP/UDP Port Usage

The various communication protocols used in a GV Orbit system require access to specific IP ports. In networks where a firewall is present between device A and device B, the IP ports used to communicate from device A to device B must be open on the incoming (external) side of the firewall.

GV Orbit Client

Lite	Express	Professional	Enterprise
●	●	●	●

The following network ports must be open on PCs running GV Orbit Client:

Client PC Open Network Port Requirements

IP Port	Open Inbound	Open Outbound	Used by Application/Protocol
80		●	GV-Orbit Server administration page access. Communication with some devices and services is done via REST (Cisco DCNM, Densité Manager, AMWA NMOS).
2050	●	●	Default RollCall comms port.
5001 to 5010	●	●	GV Orbit Control Client receives updates. GV Orbit Client replication engine. This is needed so that the client can receive updates from the server and other currently open clients connected to the same server.
5951 5953 5955	●	●	Densité REST API
5957	●	●	GSM REST API
9627	●	●	Densité Panel Launcher Application
32768-65535	●		Java RMI Densité Panel Launcher: Dynamic Allocation of ports. Required for communication between client and Application Server. This range can be restricted to match specific security requirements. A minimum of 4000 ports should be allocated. Contact Grass Valley Technical Support, for more information (see Grass Valley Technical Support, on page 168).
49152-65535		●	Java RMI Densité Panel Launcher: Dynamic Allocation of ports. Required for communication between client and Application Server.
Multicast and Unicast	●	●	See Multicast and Unicast Port Usage and Domain ID, on page 149.

Multicast and Unicast Port Usage and Domain ID

The IP ports required for communication between the GV Orbit Client, GV Orbit services running on a GV-Orbit Server, and other Grass Valley devices that make use of a Domain ID, are derived from the value of the Domain ID and the number of participants on the Domain.
For each Domain there is:

- one multicast port required for each participant to a Domain; and
- two unicast ports are required.

Multicast and Unicast Port Formulas

The following formulas are used to calculate the required multicast and unicast port numbers.

Discovery Multicast Port = 7400 + (250 x Domain ID)

Discovery Unicast Port = 7400 + (250 x Domain ID) + (2 x Participant ID) + 10

Data Unicast Port = 7400 + (250 x Domain ID) + (2 x Participant ID) + 11

Note: Participant IDs are zero-based.

Ports and Default Domain IDs

Default Domain IDs are used by the GV Orbit Client and by the GV Orbit services running on a GV-Orbit Server. The IP ports used for default Domain IDs are described below; if using user-defined Domain IDs, use the formulas above to calculate the required IP port numbers.

The following network ports must be open inbound and outbound on PCs running the GV Orbit Client; recalculate if a different Domain ID is used, or if multiple projects that use the same Domain ID are open concurrently:

Client PC Multicast and Unicast Ports Used for Default Domain IDs

GV Orbit Item	Default Domain ID	Multicast IP Port	Unicast IP Port	Comment
-	0	7400	7410 7411	Domain 0 used for multiviewer discovery.
Monitoring	100	32400	32410 32411	Used by a Multiviewer project and a C&M project. (Projects may share the same domain.)
IP Endpoint Routing Project	101	32650	32660 32661	
Routing Topology	105	33650	33660 33661	
Log server	1100			Used by the Log Server service for RollCall-protocol devices.
Note:	These IP ports must be open inbound and outbound on client PCs.			

Note:
When opening multiple projects on the same Domain at the same time, additional IP ports must be opened in accordance with the number of Domain Participants. Whilst the port numbers can be determined from the above formulas, the actual assignment of an IP port number to a Domain Participant is random.
For example,
if a Multiviewer Project and a C&M Project are both open and using Domain ID 100, then the maximum 'Participant ID' becomes 1 (remember, Participant ID is zero-based, i.e. 0,1) because both services have a Domain Participant. The required IP ports would be:

Default Domain ID	Participant ID	Multicast IP Port	Unicast IP Port	Comment
0	0	7400	7410 7411	Domain 0 is a default domain used for multiviewer discovery.
100	1	32400	32410 32411 32412 32413	The assignment of the unicast ports to the Multiviewer and C&M Projects is random.

GV-Orbit Server

Lite	Express	Professional	Enterprise
	●	●	●

The following network ports must be open inbound and outbound for GV-Orbit Servers:

GV-Orbit Server Network Port Requirements

Port Number	Application / Protocol
20, 21	RollCall-protocol device upgrade via FTP port.
80	Access the GV-Orbit Server web administration page port.
647	DHCPD service port.
1098	Densité Docker Java Remote Method Invocation (RMI) port.
1220	Densité Docker Darwin Streaming Server admin page port.
2050	Default RollCall IP share (incoming/outgoing) port.
2051	Default RollCall IP share Logserver (incoming/outgoing) port.
2056	Logserver SNMP incoming connections port.
2222	Port used by GV Orbit Repository Manager service for SSH connections to repositories on the GV-Orbit Server.
4041	NMOS registry port.
4160	Densité Docker lookup port.
4444	Ignite DataGrid replication and discovery port for GV Orbit Control.
5100	Port used by Densité Manager to control Densité cards and GV Node.
5601	Kibana port.
5701 to 5710	GV Orbit Control replication engine. GV Orbit Control client can receive updates from the server and other currently-open clients connected to the same server. Usually only 5701 and 5702 are used.
5955	Densité Manager REST API.
5959	GV Orbit Control Densité Manager REST API.
7771	Densité Manager Java Management Extensions (JMX).
7772	GV Orbit Control Densité Manager JMX.
7773	Densité Docker rmid JMX.
7774	Densité Docker lookup JMX.
8070 and 8071	IpFriendlyName service and MBean-client Jmx port.
8072 and 8073	IpFriendlyName service and MBean-client application Eclipse and IntelliJ ports.
8090	GV Orbit Control JMX port.
8091	GV Orbit Control REST API port.
9200	Elastic search REST port.

GV-Orbit Server Network Port Requirements *(continued)*

Port Number	Application / Protocol
9300	Elastic search replication port.
41235	Web Renderer web socket server port.
Mail Server Port	The GV Orbit Email service requires connection to an email server. Refer to documentation for email server for the required connection parameters.
Northbound Communications:	
12345	GVG Native protocol northbound communication port.
5193+Area External ID	NP0016 protocol northbound communication port. The Area External ID can be looked up in the GV Orbit client Area Configurator by selecting the area that needs to be controlled and looking at the External ID property.
9193+Area External ID	NP0017 protocol northbound communication port. The Area External ID can be looked up in the GV Orbit client Area Configurator by selecting the area that needs to be controlled and looking at the External ID property.
Southbound Communications:	
User configurable Default: 5194	NP0016 protocol southbound communication port.
User configurable Default: 9193	NP0017 protocol southbound communication port.
User configurable Default: 14000	SW-P-08 protocol southbound communication port.
User configurable Default: 37800	Sony NS-BUS protocol southbound communication port.

Additionally, the following multicast and unicast network ports must be open inbound and outbound on GV-Orbit Servers running the GV Orbit services. Recalculate these if different Domain IDs are used.

GV-Orbit Server Multicast and Unicast Ports for Default Domain IDs

Domain Description	Default Domain ID	Max Participant ID	Multicast IP Port	Unicast IP Port	Comment
Client Domain	100	4	32400	32410 32411 32412 32413 32414 32415 32416 32417 32418 32419	Ports used by GV Orbit services on the Client Domain: Monitoring, MapView, Routing, Recording, Email
IP Endpoint Routing Domain	101	0	32650	32410 32411	Multiviewer and C&M projects can share a domain
Log Server Domain	110	1	34900	33660 33661	
Note:	These IP ports must be open inbound and outbound on client PCs.				

Default Domain Numbers

Lite	Express	Professional	Enterprise
●	●	●	●

A GV Orbit system communicates with various parts of its system and employs 'domains' to segregate its communications. Domains are specified with a Domain ID number (1 to 252; 0 is used for discovery). Domain numbers may be configured by the user as required as this may be necessary when you have more than one GV-Orbit Server on the same network.

A new GV Orbit system uses default Domain IDs, described in the table below:

Default GV Orbit System Domain IDs

GV Orbit Domain	Default Domain ID	Comment
System	0	Used for system auto-discovery.
Engineering	1 to 99	Reserved for engineering use.
Monitoring	100	Monitoring traffic, also known as the 'Client Domain'.
IP Endpoint Routing	101	Control of IP Endpoints for signal routing.
Routing Topology	105	For future GV Orbit releases.
Log Server	110	Used by the LogServer service for RollCall-protocol devices.
Biometrics	201	For future GV Orbit releases.

Software Component Compatibility

Lite	Express	Professional	Enterprise
●	●	●	●

Grass Valley recommends you use the following software components and the stated versions for optimal performance and compatibility with GV Orbit Control version 3.1.0. These devices are supported in the Device Library of GV Orbit Control's Topology Configurator.

GV Orbit Control Inter-Operation System Component Compatibility

Protocols	Requirement for GV Orbit Control Compatibility
External Control Interface Protocols (Northbound)	NP0016 NP0017 SW-P-08 GVG Native Protocol (names-based for K-frame switcher) Sony LSM (NS-BUS Router Matrix protocol)
Router protocols (Southbound)	NP0016 Compact Router NP0016 Enterprise Router NS-BUS (Sony LSM) NV9000 TCP/IP SW-P-08 TCP/IP Subset of CPL to interface with K-Frame Production Switcher running software version 14.3.0 or higher
Panel protocols	NV96XX Panel Control or later

GV Orbit Control Inter-Operation System Component Compatibility

Product	Requirement for GV Orbit Control Compatibility
Audio Live	Version 1.5.0.14 or later
Cisco DCNM Network Switch	GV Orbit version 1.0.0 to version 1.1.0: DCNM build 11.1(1), with switch firmware: NX-OS 9.2(3) DCNM build 11.2(1), with switch firmware: NX-OS 9.3(2) GV Orbit version 1.2.0 to version 1.3.X: DCNM build 11.2(1), with switch firmware: NX-OS 9.3(2) DCNM build 11.3(1), with switch firmware: NX-OS 9.3(3) GV Orbit version 1.4.0 to version 1.7.X: DCNM build 11.4(1), with switch firmware: NX-OS 9.3(5) GV Orbit version 2.0.0 to version 2.4.1 DCNM build 11.5(1), with switch firmware: NX-OS 9.3(6) GV Orbit version 2.5.0 or higher: DCNM build 11.5(1), with switch firmware: NX-OS 10.1(2)
Densité CPU-ETH2	Software versions 2.0.4 or later

GV Orbit Control Inter-Operation System Component Compatibility *(continued)*

Product	Requirement for GV Orbit Control Compatibility
EdgeVision	Software versions 1.21 or later
GV Fabric	Firmware versions onyx-X86_64-3.8.2008 or later
GV Node	Software Versions 1.3.1, 2.2.7, 2.3.0, 3.0.0, 3.1.0 or later
iControl	GV Orbit Lite: Software Version 7.50 and higher (With Densité and GSM REST API licenses) GV Orbit Express, Professional and Enterprise: Not applicable. The iControl service is integrated into the GV-Orbit Server.
IP rears in Kahuna IP, Kula IP, Masterpiece IP, MV82xIP, SQ1000 and Sirius 800	Version 11.73D or later
IPG-3901 (Densité 3 Frame IP Gateway)	Software Versions 1.3.4, 2.2.x, v9.0, 2.4.0.BUNDLE-3, 2.5.0 or later
IPG-4901 (GV Node Frame IP Gateway)	Software Versions 1.1.0, 1.2.0 or later
IPVU	Software versions V2.1.0 or later
IQAMD	Version 8.60.18 or later
IQMIX (IQEDGE Frame)	Software Version 11.30.62 or later
IQMIX, IQUCP IP Gateways or Densité UCP-3901	Version 11.73D or later
KaleidoIP Multiviewer	Version 11 or later
MV-8 Series Multiviewers	Software version 3.0.14 FPGA V280 or later **Note:** To support NP0017 Tallies, version 3.1 is required.
NV9000	Software versions 6.3.0 build 1873 or later
XIP-39x1	All current applications

Equipment Interoperability Incompatibility

While GV Orbit can control a wide range of equipment, this does not guarantee interoperability between controlled equipment. Always consult product datasheets to ensure that common signal types and protocols are supported by both pieces of equipment for interoperability.

Native Densité Card Support

For GV Orbit's Densité Manager Service, GV Orbit Client is integrated with card bundles which allows the GV Orbit Client to automatically recognize the following cards to make Densité card integration easier.

- ADA1021-service-1.0.0-RC-6
- ADA1023-service-2.0.0-RC-6
- ADA1031-service-1.0.0-RC-6
- ADA1033-service-4.0.0-RC-6
- ADC1721-service-2.0.0-RC-6
- ADC1722-service-2.0.0-RC-6
- ADC1722_150-service-2.0.0-RC-6
- ADX1842-service-3.0.1-BUNDLE-1
- ADX1852-service-3.0.1-BUNDLE-1
- ADX1901-service-1.0.0-RC-5 / ADX1901-service-1.0.1-RC-2
- ADX3981-service-3.1.3-RC-3
- AMX1842-service-2.1.0-RC-1
- AMX1901-service-1.0.0-RC-8 / AMX1901-service-1.0.2-RC-2
- AMX3981-service-3.1.3-RC-3
- Apcii-service-1.0.0-RC-6
- DAC1721-service-2.0.0-RC-6
- DAC1721_157-service-1.0.0-RC-6
- DDA1112-service-2.0.0-RC-6
- DDA1113-service-1.0.0-RC-6
- DDA1133-service-1.0.0-RC-6 / DDA1133-service-1.0.3-BUNDLE-1
- DSK3901-service-1.0.0-RC-6
- EAP3X01-service-3.1.3-RC-3
- ETH3-REF-service-2.2.0-BUNDLE-1
- FIM1222-service-1.0.0-RC-2
- FIO19R-service-1.0.0-RC-6
- FIO19RR-service-1.0.0-RC-6
- FIO19RT-service-1.0.0-RC-6
- FIO19T-service-1.0.0-RC-6
- FIO19TT-service-1.0.0-RC-6
- FIO901-service-1.1.0-RC-3
- FIO911XX-service-1.0.0-RC-2
- FIO911_4R-service-1.0.0-RC-3
- FIO911_4T-service-1.0.0-RC-3
- FRS1801-service-2.0.1-RC-3
- FRS3901-service-3.1.3-RC-1
- FXE1501-service-1.0.1-BUNDLE-9

- GPI1501-service-1.0.0-RC-6
- HCO1822_138-service-1.1.4-RC-4
- HCO3901-service-1.2.5-BUNDLE-1
- HCO3931-service-1.0.1-BUNDLE-1
- HDA1801-service-1.0.0-RC-6
- HDA1822-service-1.0.0-RC-6
- HDA1832-service-1.0.0-RC-6
- HDA1851-service-1.0.0-RC-6
- HDA1861-service-1.0.0-RC-6
- HDA1911-service-1.2.1-RC-4 / HDA1911-service-1.2.1-RC-5
- HDA1931-service-1.2.1-RC-4 / HDA1931-service-1.2.1-RC-5
- HDA1941-service-1.0.0-RC-8
- HDA1951-service-1.0.0-RC-9
- HDA3911-service-1.0.2-BUNDLE-1
- HDA3931-service-1.0.2-BUNDLE-1
- HDA3941-service-1.0.0-RC-9
- HDA3951-service-1.0.0-RC-8
- HDA3961-service-1.0.3-BUNDLE-1 / HDA3961-service-1.1.0-BUNDLE-1
- HDA3962-service-1.1.0-BUNDLE-1
- HLP1801-service-2.0.2-BUNDLE-2
- HMP1801-service-5.3.0-RC-1
- IFM2T-service-2.3.0-BUNDLE-1 / IFM2T-service-3.2.1-BUNDLE-2
- IFM2T1-service-2.3.0-BUNDLE-1 / IFM2T1-service-3.2.1-BUNDLE-2
- IFMXX-service-2.3.0-BUNDLE-1 / IFMXX-service-3.2.0-BUNDLE-1
- IPG3901-service-2.5.0-BUNDLE-2 / IPG3901-service-2.5.1-BUNDLE-1 / IPG3901-service-9.0.0-BUNDLE-3
- IPG4901-service-1.2.3-BUNDLE-2
- IRD38XX-service-4.0.3-RC-1
- IRG3401-service-1.0.2-RC-2
- KMV3901-service-1.0.1-RC-1
- KMX3901-service-1.0.2-RC-1
- KMX3921-service-10.2.1-BUNDLE-2
- KMX4911-service-10.2.2-BUNDLE-1 / KMX4911-service-9.0.3-BUNDLE-1
- KMXIN-service-1.0.1-RC-1
- KMXXX-service-1.0.0-BUNDLE-1 / KMXXX-service-1.1.0-BUNDLE-1
- KS910-service-1.0.2-RC-2
- LGK3901-service-1.0.0-RC-6
- LNS3901-service-1.2.2-RC-1
- MAP3901-service-1.0.1-RC-2
- MDX3901-service-1.0.3-BUNDLE-1

- REF1801-service-1.1.4-RC-2
- SCO1421-service-3.2.2-RC-1
- SDA1402-service-1.0.0-RC-6
- SME1901-service-1.3.2-BUNDLE-2
- SME1911-service-1.3.2-BUNDLE-1
- SPG1801-service-1.1.4-RC-2
- VDA1001-service-1.0.0-RC-6
- VDA1002-service-1.1.0-RC-6
- VEA1001-service-1.0.0-RC-6
- VEA1002-service-3.0.0-RC-6
- WDA1001-service-1.0.0-RC-6
- XIO4901-service-2.3.0-BUNDLE-1 / XIO4901-service-3.2.1-BUNDLE-1
- XIP3901DC-service-2.1.0-BUNDLE-1
- XIP3901FS-service-2.1.0-BUNDLE-1 / XIP3901FS-service-2.1.1-BUNDLE-1
- XIP3901GBIP-service-1.0.2-BUNDLE-1
- XIP3901UC-service-1.2.0-BUNDLE-3 / XIP3901UC-service-2.1.0-BUNDLE-1
- XIP3901UDCIF-service-3.1.0-BUNDLE-2 / XIP3901UDCIF-service-4.0.1-BUNDLE-1 / XIP3901UDCIF-service-4.0.2-BUNDLE-1
- XIP3901UDCIP-service-1.4.0-BUNDLE-1 / XIP3901UDCIP-service-1.6.1-BUNDLE-1 / XIP3901UDCIP-service-1.6.2-BUNDLE-1
- XIP3901GBIP-service-1.0.3-BUNDLE-2
- XVP1801-service-1.4.4-RC-3
- XVP3901-service-3.2.4-RC-2 / XVP3901-service-3.3.2-RC-3 / XVP3901-service-3.5.0-BUNDLE-1 / XVP3901-service-9.6.8-BUNDLE-15

More recent software packages may be available. GV Orbit fully supports Densité cards that are not listed above. See the card's documentation for how to obtain the card's software package. The card's software package is installed through the Densité Update Manager (DUM). This is accessed through the GV Orbit Client; refer to *Upgrade Densité-protocol Devices* in the **GV Orbit Client User Guide** for more information. See Related Documentation, on page 143. See also Ref. #UCCM-980 on page 129.

Channel Manager / Snapshot Recall Card Support

The following card bundles / SDCs are supported:

- XIP-3901-UDC-IF v3.1
- XIP-3901-UDC-IF v4.0.2
- XIP-3901-UDC-IP v1.6.x

LUT Manager Card Support

The following cards are supported when used with the latest available bundle / SDC revision:

- XIP-3901-UC/DC/FS
- XIP-3901-UDC-IP
- XIP-3901-UDC-IF

Device Manager / Snapshot Recall Card Support

The following card bundles / SDCs are supported:

- XIP-3901-UDC-IF v3.1
- XIP-3901-UDC-IF v4.0.x
- XIP-3901-UDC-IP v1.6.x
- XIP-3901- DC v2.1.x
- XIP-3901-FS v2.1.x
- XIP-3901-UC v2.1.x
- XIP-3901-GB-IP v1.0.x

Device Manager Monitoring Support

The GV Orbit **Device Manager** service lists and manages the connections to supported devices from a GV Orbit system to provide device operating status and information for the purpose of device health monitoring. For more information, see *Device Manager Service* in the GV Orbit Admin Guide. See Related Documentation, on page 143.

Support for the following devices are integrated into GV Orbit:

- Generic SNMP. This service provides basic SNMP connectivity status for SNMP enabled devices. These devices must be explicitly added to the **Device Manager** service's **Devices** list.

  Note: The **Device Manager** service only supports SNMP v2c device protocol.

- Arista 7500 linecard
- Arista single switch
- Arista supervisor
- Cisco Nexus 9000 Supervisor module
- Cisco Nexus 9000 Line cards
- Cisco Nexus-9000-single-switch
- Dell PowerEdge
- Evertz 5601ACO2
- Evertz MSC5700
- GrassValley GV-Fabric IP switch. These devices can be auto-discovered if the network supports multicast.
- GrassValley KaleidoIP Multiviewer v11 or later
- Informant Windows agent
- Juniper QFX10008 linecard
- Juniper QFX10008 supervisor
- Microsoft Windows PC
- Quantel ISA manager
- Quantel LiveTouch
- Snell ICE X11DPU SD5 PlusInformant
- Snell ICE X9DRW V1.2 SD5 PlusInformant
- Snell Morpheus EVS processes
- Snell Morpheus Media processes
- Snell Morpheus Server processes
- Tektronix ECO8000
- Tektronix SPG8000A

NV Panel Support

The following panels are supported in GV Orbit Control:

- NV9603
- NV9605
- NV9606
- NV9608
- NV9609
- NV9616
- NV9640
- NV9641
- NV9642
- NV9646
- NV9647
- NV9648
- NV9649
- NV9654
- NV9680

NMOS Support

GV Orbit Client supports Networked Media Open Specifications (NMOS) AMWA IS-04 for device discovery and registration and IS-05 for connection management. Furthermore, it supports AMWA BCP-002-01 for the natural grouping of NMOS resources.

The following NMOS protocol versions are supported.

Protocol	Supported Versions
NMOS IS-04	v1.2 and v1.3[a]
NMOS IS-05	v1.0 and v1.1

a. This does not cover any support for NMOS IS-07.

Installing GV Orbit

Installing GV-Orbit Server Software

Lite	Express	Professional	Enterprise
	●	●	●

IMPORTANT

- Before you install version 3.1.0 onto a GV-Orbit Server that has an older version of GV Orbit, make sure to review the latest hardware requirements (see Hardware Requirements, on page 144).

To upgrade the GV-Orbit Server, refer to Upgrade Stage in the *GV Orbit Admin Guide*. See Related Documentation, on page 143.

For the latest features, bug fixes, and stability enhancements, make sure this product has the latest software version installed before putting it into active service.

REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

- This software can only be installed on a GV-Orbit Server, order codes GVO-HW/GVO-HW1/GVO-HW2, or a suitable virtual machine which has been created using the supplied GV Orbit OVA virtual machine image.
- When you upgrade a GV-Orbit Server, Grass Valley strongly recommends that you upgrade all other GV-Orbit Servers on your network to the same version, as well.
- You have made a backup of your GV-Orbit Server's configuration data. See **Global Backup** in the *GV Orbit Admin Guide*. See Related Documentation, on page 143.
- You have the GV Orbit software version 3.1.0 upgrade package (see Grass Valley Technical Support, on page 168).
- You are able to log in to the GV-Orbit Server Admin interface as an administrator. See the *GV Orbit Admin Guide*. See Related Documentation, on page 143.

Note: For GV Orbit Express, Professional and Enterprise products, after the GV-Orbit Server has been upgraded, download the GV Orbit Client installers from the GV-Orbit Server onto client PCs for installation. Obtaining the GV Orbit Client installer from the GV-Orbit Server ensures software version compatibility between clients and server.

Installing GV Orbit Client Software

Lite	Express	Professional	Enterprise
●			

The GV Orbit Client can be downloaded as follows:

- From the Grass Valley website. If your installation does not have a GV-Orbit Server, this is the only way to obtain the GV Orbit Client.
- If your installation has a GV-Orbit Server, you should download the GV Orbit Client from the GV-Orbit Server. This ensures that the GV Orbit Client version will be compatible with the current software version installed on the GV-Orbit Server. See **GV Orbit Client Application Downloads** in the *GV Orbit Admin Guide*. See Related Documentation, on page 143.

Grass Valley Technical Support

For technical assistance, contact our international support center, at 1-800-547-8949 (US and Canada) or +1-530-478-4148.

To obtain a local phone number for the support center nearest you, consult the Contact Us section of Grass Valley's website (www.grassvalley.com).

An online form for e-mail contact is also available from the website.

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