GV ORBIT

Version 1.0.0

Admin Guide

13-03082-090 AB

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Table of Contents

1 Introduction

Welcome to GV Orbit! This Administration Guide is designed to help you get your GV Orbit Server up and running. The following chapters will guide you through the installation, networking, and server admin configuration of a GV Orbit system. This chapter provides a brief GV Orbit overview. The purpose of this guide is to provide a brief introduction to GV Orbit Admin interface and its features.

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).

Part Number	Document Title
GVB-2-0860A-EN-DS	GV Orbit Datasheet
13-03082-010	GV Orbit Release Notes
13-03082-020	GV Orbit Welcome
13-03082-030	GV Orbit Client Quick Start Guide
13-03082-060	GV Orbit Services User Guide
13-03082-090	GV Orbit Admin Guide (this document)
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)

For Dell documentation, use your server's service tag to access the documentation on Dell's website.

Software Updates

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. You can obtain the latest GV Orbit software from Grass Valley Technical Support. See Grass Valley Technical Support, on page 60.

About GV Orbit

GV Orbit is a single, consolidated, overarching configuration, control and monitoring package specifically designed for the dynamic orchestration of broadcast media networks, whether they be SDI, hybrid or pure IP. Its underlying architecture, however, is targeted at open standard-based IP systems with many features and functions specifically crafted to make IP easy.

Overview of the GV Orbit System

2
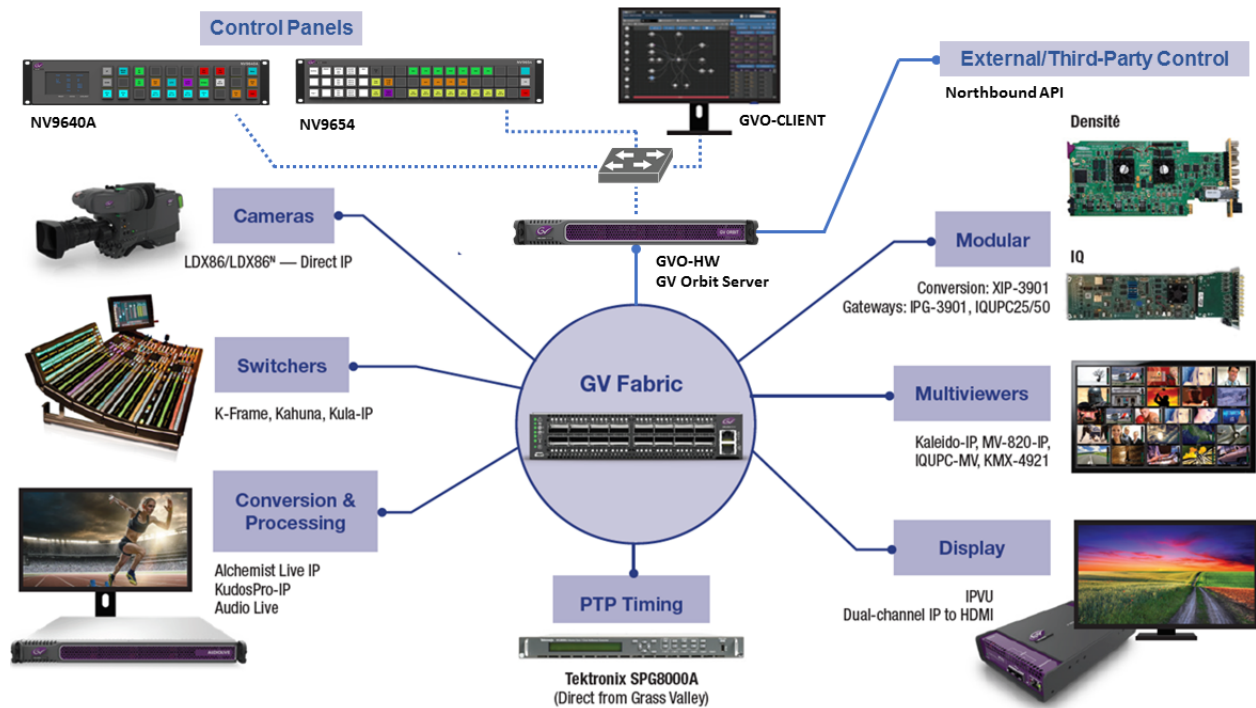
GV Orbit Server Installation

Introduction

This chapter provides information about system requirements, items shipped with your GV Orbit Server and it will guide you through GV Orbit Server installation.

Getting Organized / Unpacking

Required Materials

Your GV Orbit Server package includes the following:

- One GV Orbit Server
- Installation hardware and rails
- Accessory tray containing:
    - Dell PowerEdge documentation
    - 2 × Power cords
- GV Orbit documentation folder containing:
    - Welcome letter, with setup and configuration checklist.

In addition to the above, you will need the following (not supplied):

- One 1GBase-T Ethernet switch having enough ports for the primary management network:
    - The primary management port for each GV Orbit Server **GB1** port. See Port Identification, on page 15.
    - The server's Enterprise (iDRAC) port for each GV Orbit Server if you have made a BIOS setting change on the GV Orbit Server. See Bridging iDRAC onto a LAN on Motherboard (LOM) Port to Save Cabling, on page 20.
    - Client PCs.
    - Panel devices.
    - Production equipment that uses a management port for configuration and control (the equipment uses out of band signaling).
    - Connection to all high-bit rate media network switches, to the optional iDRAC network switch, and to the optional secondary management network switch.

    Note: The use of multiple network switches is preferred. The theory is that should a network fail, then this will only degrade system availability and avoid a full system failure.

- [Optional] One 1GBase-T Ethernet switch having enough ports for the secondary (redundant) management network:
  - The secondary management port for each GV Orbit Server **GB2** port. See Port Identification, on page 15.
  - Panel devices equipped with a second management port.
  - Production equipment equipped with a second management port for configuration and control (the equipment uses out of band signaling).
  - Connection to all high-bit rate media switches and to the primary management network.
  - Connection to all high-bit rate media network switches and to the primary management network switch.
- Up to four 10GB Ethernet switches for high-bit rate media streams with enough ports to connect to all production equipment fitted with high-speed media ports.
- [Optional] One 1000Base-T (or 100Base-T) Ethernet switch having enough ports for the Enterprise iDRAC network. See also Bridging iDRAC onto a LAN on Motherboard (LOM) Port to Save Cabling, on page 20 to eliminate the need for this switch and its related cabling.
  - For each GV Orbit Server's Enterprise iDRAC port found on each GV Orbit Server if you are using the default iDRAC BIOS settings.
  - Connection to the primary management network switch and to the secondary management network switch, if available.
- Client PC (refer to the *GV Orbit Release Notes* for client PC requirements; see Related Documentation, on page 5).
- Cables to make Ethernet network connections between:
  - All equipment (GV Orbit Servers, client PCs, panel devices, production equipment, and so on) and their network switch.
  - Network switches.

Cable type	Purpose
CAT-5e or CAT-6a	For Ethernet connectivity for the server's Enterprise (iDRAC) Network
CAT-5e or CAT-6a	For Ethernet connectivity for the Management Network
Fiber or CAT-6a	For Ethernet connectivity for high-bit rate media networks

- Standard 19-inch rack.

You also will need for the first-time startup configuration (not supplied):

For the first-time startup, you need to connect to the GV Orbit Server's console by temporarily connecting the following equipment to the GV Orbit Server:

- Monitor which supports one of the following resolutions and is equipped with a 15-pin VGA connector.
- USB keyboard.
- USB mouse (optional).

GV Orbit Server Physical Interface

When the front cover is removed, the following connectors, controls, and indicators are available.

Item	Description
[1] LEDs	Status LED indicators
[2] VGA[i]	VGA Connector (×1)
[3] eSATA	Connection for external storage
[4] Hard Drives	×2
[5] Power On/Off	Press to initiate GV Orbit Server startup. Once running, press again to initiate server shutdown.
[6] USB	USB 2.0 port
[7] Enterprise port	iDRAC (Micro USB 2.0 port)
[8] Information Tag	Service Tag, NIC, MAC address
[9] CAC	Common Access Card / Smart Card Reader

i. 1.The rear VGA port overrides the front VGA port when both VGA ports are connected.

On the rear panel, the following connections are available.

Item	Description
[11] COM	Serial port
[12] Enterprise port	iDRAC (RJ45 1GBase-T port (×1))
[13] LAN	RJ45 1GBase-T port (×2)
[14] NIC PCIe 3.0 Slots	RJ45 10GBase-T port (×4) or Intel X710 Quad Port 10Gb SFP+
[15] VGA	VGA Connector (×1)

Item	Description
[16] USB	USB 3.0 port (×2)
[17,18] Power connector	IEC (×2)

For more information about the frame's connections, controls, indicators, and maintenance operations, refer to the *Dell EMC PowerEdge XR2 Installation and Service Manual*. See Related Documentation, on page 5.

Mechanical Installation

Setting up the GV Orbit Server Hardware

To set up the GV Orbit Server hardware

1 Refer to the *Dell EMC PowerEdge XR2 Installation and Service Manual* (see Related
Documentation, on page 5) shipped with your GV Orbit Server, and mount the unit in a
standard 19-inch rack. Make sure that the unit will have adequate ventilation.

2 Configure the GV Orbit Server for first time use. See First-Time Start-up Configuration,
on page 20.

3

GV Orbit Server Cabling

Introduction

This chapter shows how to interconnect the GV Orbit Server with its associated networks.
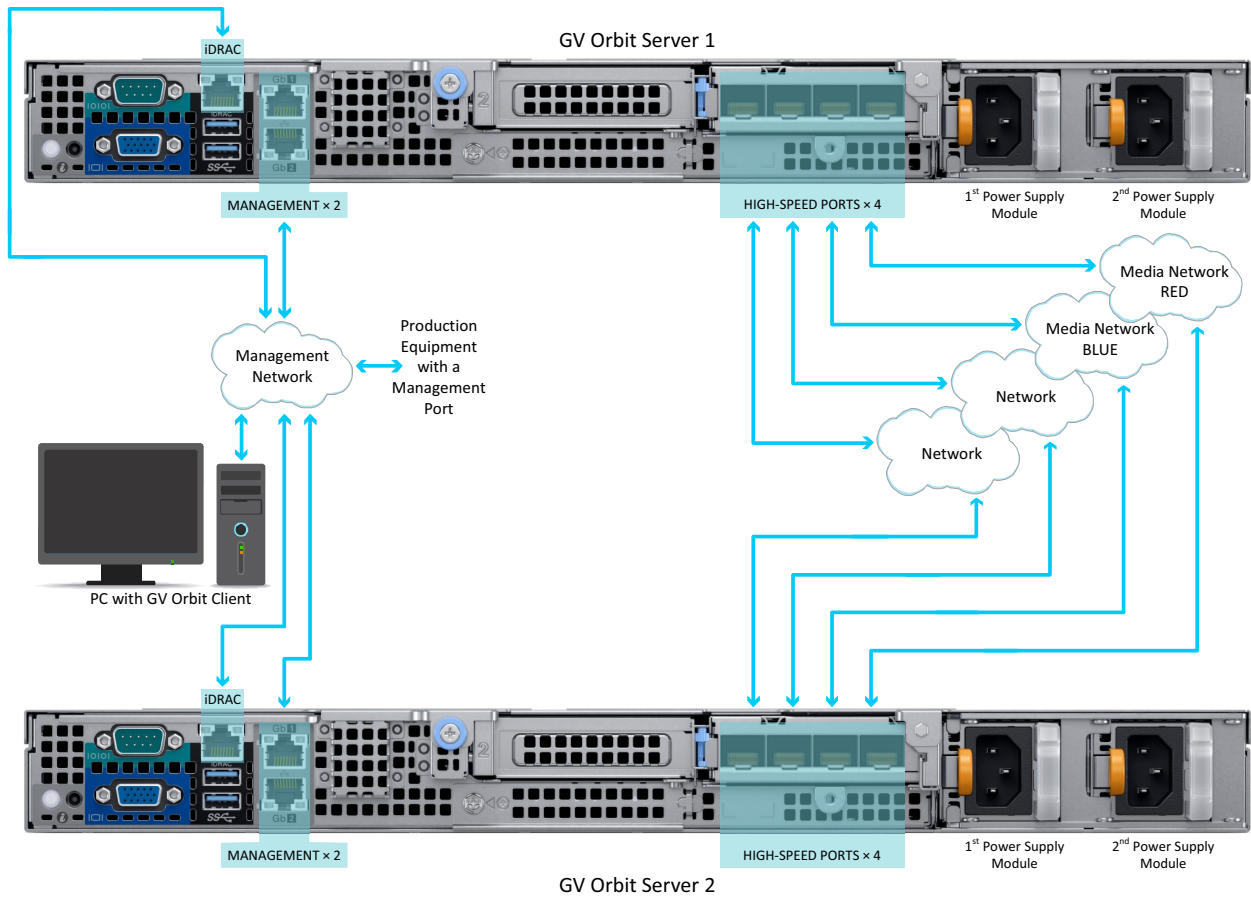
Cabling Diagram

Aside from the iDRAC port, Ethernet ports on the GV Orbit Server are not application or service specific. That is, any port can be used for any use or protocol by GV Orbit.

The diagrams below show the typical network connections for the GV Orbit Server.

Note: The management network(s) are interconnected with the high-bit rate media networks.
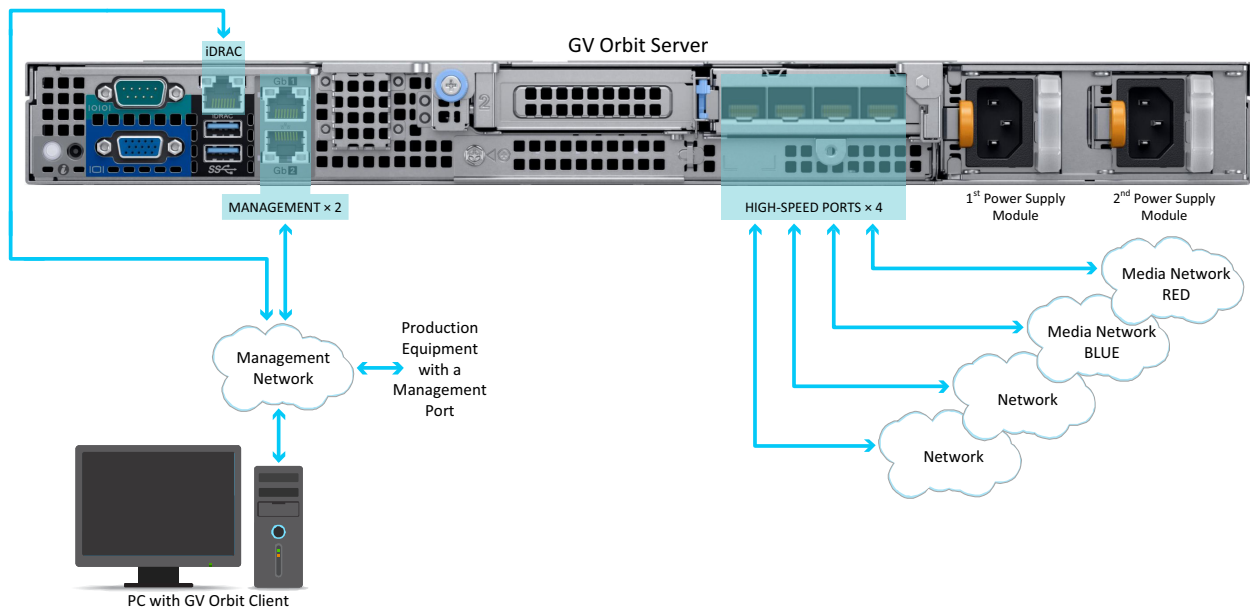
Typical cabling diagram

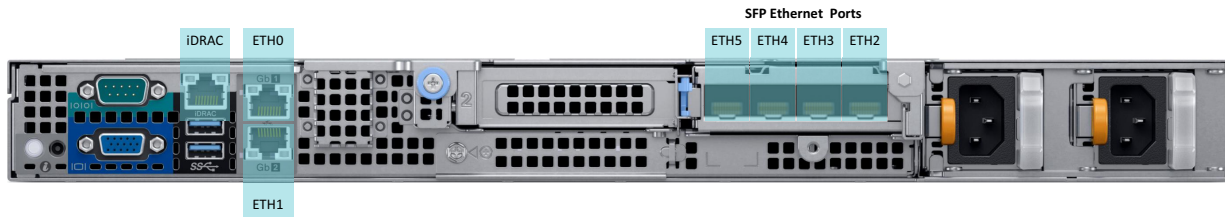*Typical cabling diagram for a cluster*

Port Identification

How Ethernet ports are identified in the GV Orbit Admin Interface depends on the type of network card interface installed in your GV Orbit Server.

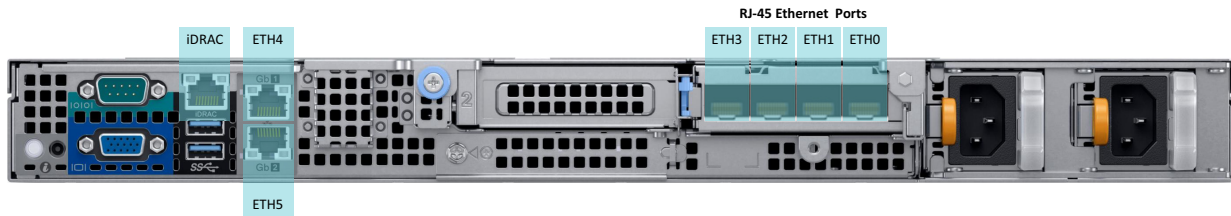## Ethernet Port Identification with an SFP (fiber) Network Card

*Ethernet port identification used in the GV Orbit Admin interface with a GV Orbit Server equipped with an **SFP (fiber)** network card*

Port Identification:			
Marked on the Server Chassis	**In the BIOS**	**In GV Orbit and OS**	**Connection Type and Data Bandwidth**
iDRAC	iDRAC	-	RJ-45 / 1GB
GB1[i]	LOM0	eth0	RJ-45 / 1GB
GB2[ii]	LOM1	eth1	RJ-45 / 1GB
–	–	eth2	SFP / 10GB
–	–	eth3	SFP / 10GB
–	–	eth4	SFP / 10GB
–	–	eth5	SFP / 10GB

i. This interface port must be used as the primary management network.

ii. If required, use this interface port for a secondary management network to support equipment that has a second management port (for redundancy). Otherwise it can be used for any other application.

Ethernet Port Identification with an RJ-45 (copper) Network Card

*Ethernet port identification used in the GV Orbit Admin interface with a GV Orbit Server equipped with an **RJ-45 (copper)** network card*

Port Identification:			
Marked on the Server Chassis	**In the BIOS**	**In GV Orbit and OS**	**Connection Type and Data Bandwidth**
iDRAC	iDRAC	-	RJ-45 / 1GB
GB1[i]	LOM0	eth4	RJ-45 / 1GB
GB2[ii]	LOM1	eth5	RJ-45 / 1GB
–	–	eth3	RJ-45 / 10GB
–	–	eth2	RJ-45 / 10GB
–	–	eth1	RJ-45 / 10GB
–	–	eth0	RJ-45 / 10GB

i. This interface port must be used as the primary management network.

ii. If required, use this interface port for a secondary management network to support equipment that has a second management port (for redundancy). Otherwise it can be used for any other application.

Cabling and Configuring the GV Orbit Server to support SMPTE ST 2022-7 Redundancy

To make streaming more reliable over an IP network, the implementation of SMPTE ST 2022-7 seamless protection switching depends on stream redundancy. This protection scheme transmits two identical SMPTE ST 2110-20 packet streams over physically separate network routes (shown as Red LAN / A Network and Blue LAN / B Network in the figure below), so that if one network goes down, the second network takes over. This process is seamless because switching between the streams is instantaneous and does not impact content.

The following figure shows two GV Orbit Servers in a cluster configuration where **GV Orbit Server A** and **GV Orbit Server B** provide failover protection for each other. See also Cluster Task, on page 36.
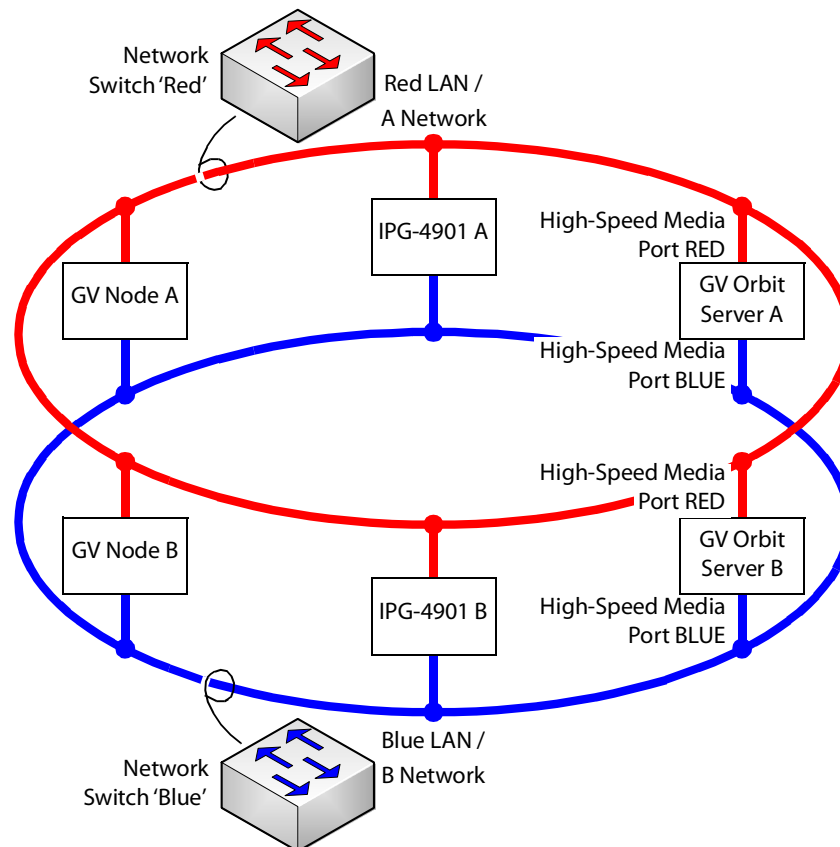
PREREQUISITES:

- At least two network switches must be used for this application. Contact Grass Valley for more information about switch compatibility. See Grass Valley Technical Support, on page 60. These switches must be configured to be used with SMPTE ST 2022-7. See the fabric configuration documentation supplied with the switch. For example, at minimum, subnets and IP address ranges must be set.
- The connected network must have a PTP grandmaster server clock on its domain.

Example of how to cable a GV Orbit Server for SMPTE ST 2022-7

1   As shown in the figure above, connect the GV Orbit Server's RED High-Speed Media Port to the A Network shown in red. See the Cabling Diagram, on page 13 to locate the High-Speed Media Ports.

2   Connect the GV Orbit Server's BLUE High-Speed Media Port to the B Network shown in blue.

3   Connect all other equipment to the network switches that provide sources and / or are destinations.

4   The network switches need to be configured. See the switch's user documentation for more information.

Getting Started

Introduction

This chapter shows how to get the GV Orbit Server up and running for the first time.

Configuring the GV Orbit Server's BIOS and Management Network IP Settings

The first time you power up the GV Orbit Server, you must configure the GV Orbit Server's management network settings. This allows you to connect to the GV Orbit Server's admin interface. Once you have access to the GV Orbit Server's admin interface, you then configure the remaining network interfaces as necessary.

GV Orbit Server is shipped with no default IP Address. Set the IP address through the server's console menu. This is accessed by connecting a keyboard and monitor directly to the GV Orbit Server.

About the Server Enterprise Network iDRAC

The Server Enterprise Network **iDRAC** is used to connect to the server's motherboard management interface. Using this connection reduces the need for physical access to the GV Orbit Server. iDRAC alerts administrators about server hardware level issues and enables them to perform remote system management. For more information about iDRAC, refer to the *Dell EMC PowerEdge XR2 Installation and Service Manual*; see Related Documentation, on page 5. See First-Time Start-up Configuration, on page 20 to enable it.

Should you choose to not connect the iDRAC port to your network, you must be prepared to connect a keyboard, mouse, and monitor directly to the server for emergency maintenance procedures, should this be necessary, under the supervision of Grass Valley Technical Support.

Bridging iDRAC onto a LAN on Motherboard (LOM) Port to Save Cabling

In the server's BIOS, there is the **NIC Selection** iDRAC setting to select which port is to be used for the iDRAC service.

iDRAC NIC Selection setting	Description
Dedicated	Uses the server's **iDRAC** network Ethernet port for the iDRAC service. The server's **iDRAC** network Ethernet port must then be connected to the Server Enterprise Network.
LOM0 LOM1	Uses one of the server's built-in Ethernet ports **LOM0** (GB1) or **LOM1** (GB2) to access the iDRAC service through the management network. Setting this option will avoid the extra cabling necessary to connect to the iDRAC port to a switch.

Furthermore, in the server's BIOS, there is the **Failover Network** iDRAC setting to select which port is to be used should the above network fail.

For more information about iDRAC, refer to the Dell Integrated Dell Remote Access Controller 9 User's Guide; see

First-Time Start-up Configuration

The first time you start-up the GV Orbit Server, you need to configure the Management Ethernet port interface. At this time it is recommended to enable iDRAC to allow remote server maintenance. Once this is complete, the remaining Ethernet ports can be configured through the GV Orbit Server admin's interface.

Proceed as follows.

1 Install the GV Orbit Server frame in its designated rack position.

2 Connect a monitor, keyboard, and optionally a mouse to the GV Orbit Server (front or rear panel connectors can be used).
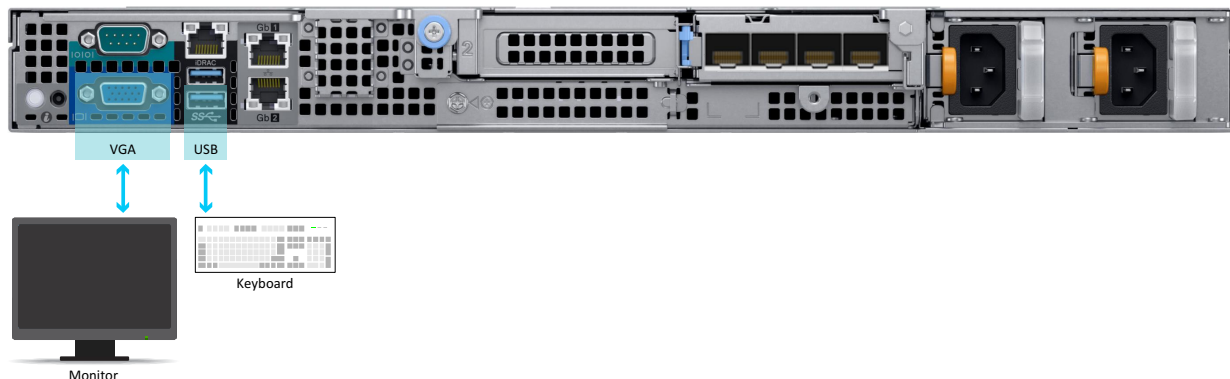

3 Connect the power cords to the GV Orbit Server frame, and then turn the power on. The power switch is located on the front panel.

The GV Orbit Server starts up. As the GV Orbit Server's power on tests verify the server's hardware, an option to configure the BIOS appears.
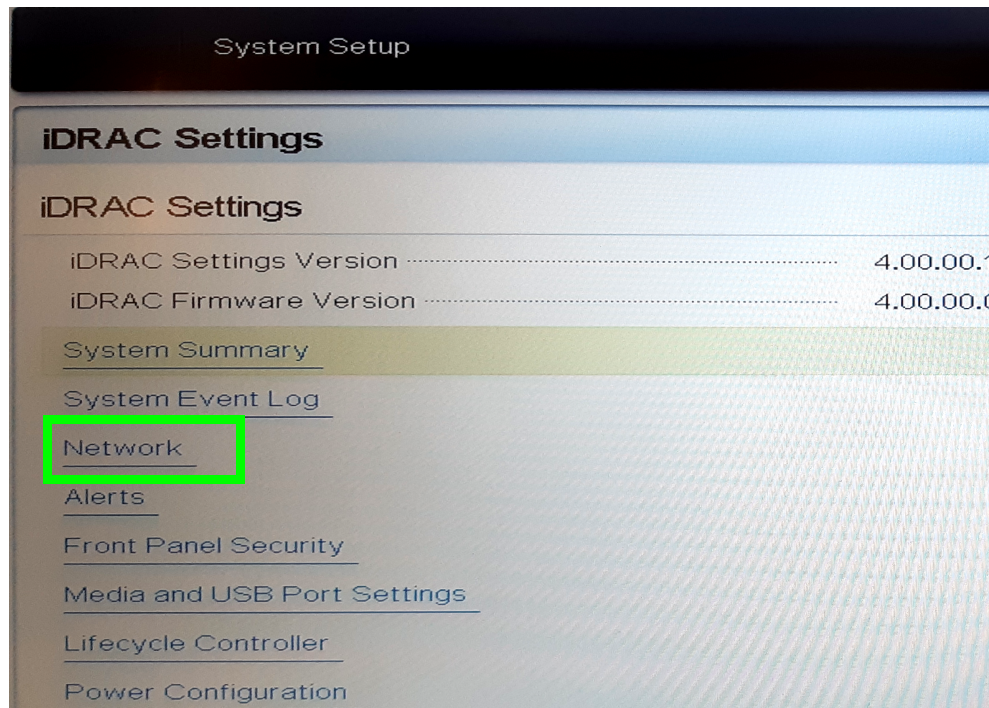
4 Press **F2** on the keyboard.
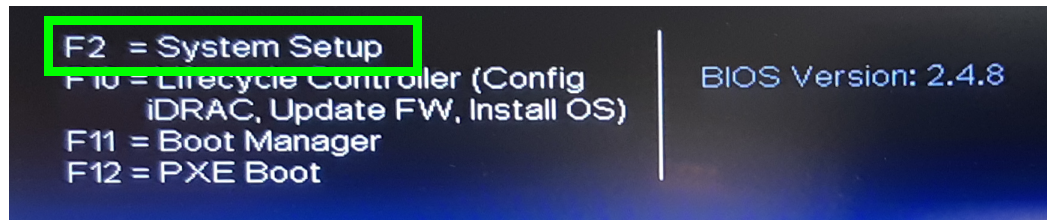
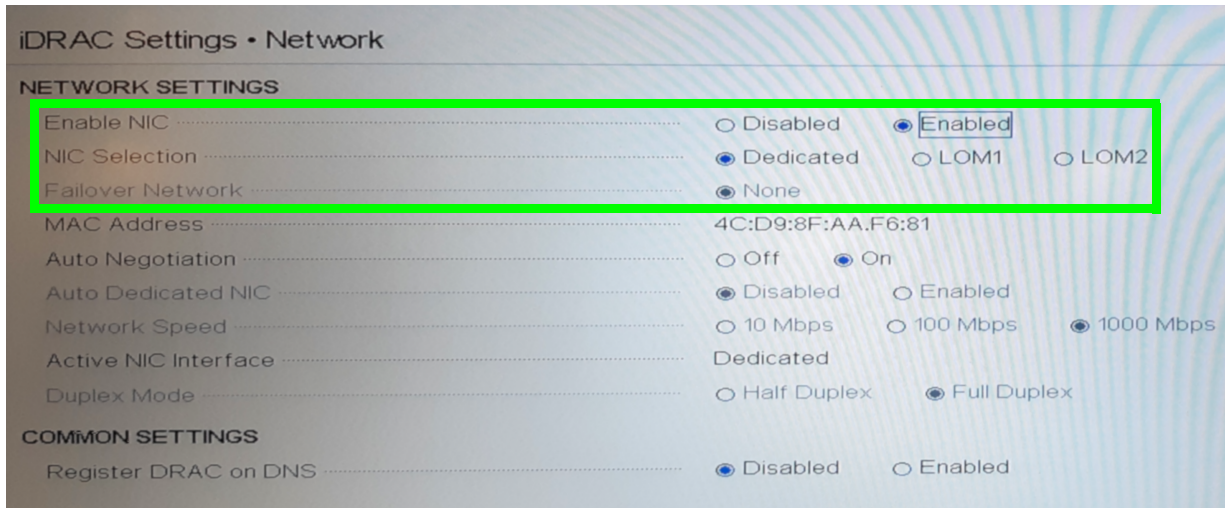> Note: Though the description for F10 mentions iDRAC, do not use this option as it is not functional.

5 With the keyboard's down arrow key, select **iDRAC Settings**.
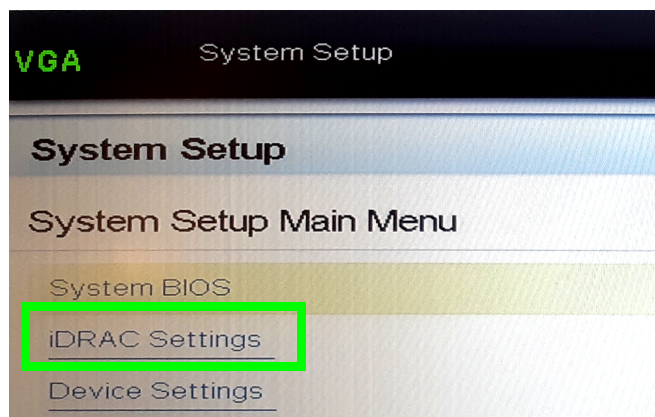
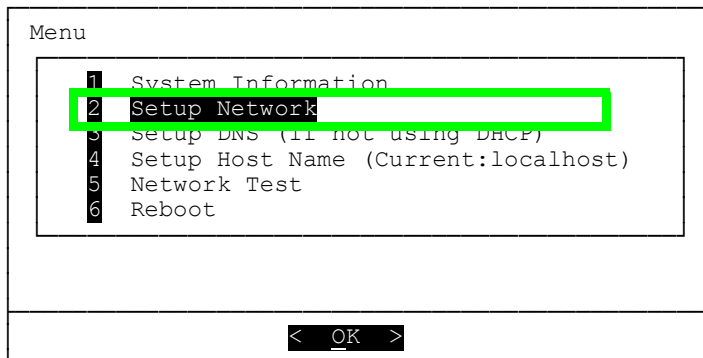6 With the keyboard's down arrow key, select **Network**.

7 Set **Enable NIC** to **Enabled**.

8 Set **NIC Selection** and **Failover Network** according to Bridging iDRAC onto a LAN on Motherboard (LOM) Port to Save Cabling, on page 20.

9 Set the network configuration for the iDRAC interface under **IPV4 Settings**.

10 Select **Back**.

11 Select **Reboot**.

Allow the GV Orbit Server to reboot and wait for the console menu to appear.

```
GV Orbit OS version X.X.X build XXX. Running from: DISK OS1 (/dev/sda2)
```


12 With the keyboard's down arrow key, select **Setup Network**.

13 Configure the GV Orbit Server's Management Ethernet network interface according to Port Identification, on page 15.
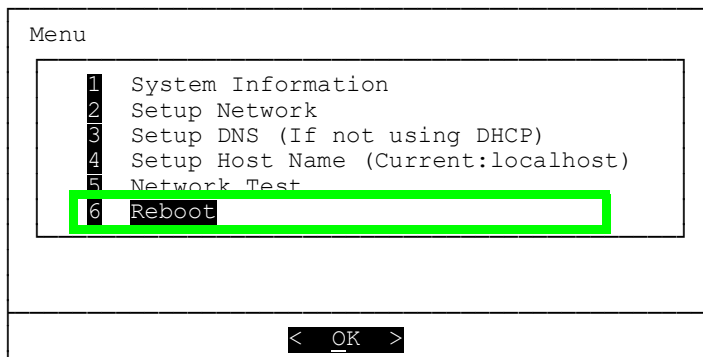
The following is an example of how to set the IP address of the GV Orbit Server's eth0 network interface to 10.0.3.5. Text shown in bold are values you enter and must be adapted to your network requirements.

```
GV Orbit OS version X.X.X build XXX. Running from: DISK OS1 (/dev/sda2)
――――――――――――――――――――――――――――――――――――――――――――――――――
Available interfaces are: eth0 eth1 eth2 eth3 eth4 eth5.
Enter "?" for help on bridges, bonding and vlans.
Which one do you want to initialize? (or '?' or 'done') [eth0] eth0
Ip address for eth0? (or 'dhcp', 'none', '?') [dhcp] 10.0.3.5
Netmask? [255.0.0.0] 255.255.240.0
Gateway? (or 'none') [none] 10.0.3.1
Configuration for eth0:
type=static
address=10.0.3.5
netmask=255.255.240.0
gateway=10.0.3.1
broadcast=10.0.15.255
Available interfaces are: eth1 eth2 eth3 eth4 eth5.
Enter "?" for help on bridges, bonding and vlans.
Which one do you want to initialize? (or '?' or 'done') [eth0] done
Do you want to do any manual network configuration? [no] no
```

Once the GV Orbit Server management network interface has been configured, the remaining network configuration will be done within the GV Orbit Server's admin interface (see IP Configuration Task, on page 45). However, you can configure the remaining network interfaces, the DNS, and the GV Orbit Server's host name now by selecting the option from the menu, if you so choose.

14 Reboot the GV Orbit Server; select **Reboot**.

```
Menu

    ┌─────────────────────────────────────────────┐
    │ 1    System Information                       │
    │ 2    Setup Network                            │
    │ 3    Setup DNS (If not using DHCP)            │
    │ 4    Setup Host Name (Current:localhost)      │
    │ 5    Network Test                             │
    │ 6    Reboot                                   │
    │                                               │
    │                                               │
    │                                               │
    └─────────────────────────────────────────────┘

                    <   OK   >
```

Allow the GV Orbit Server to reboot and wait for the console menu to appear.

15 Disconnect the monitor and keyboard from the GV Orbit Server.

16 Connect your GV Orbit Server's Ethernet ports to two or more Ethernet switches, according to the Cabling Diagram, on page 13:
   • One *Management Network* connected to **GB1** or **GB2**.
   • One or more *Media Networks* connected to other Ethernet ports.

17 Connect a client PC to the network that has connectivity with the *Management Network*. See the *GV Orbit Release Notes* for the client PC's requirement; see Related Documentation, on page 5

Commissioning the GV Orbit Server

Commission the GV Orbit Server as follows.

1 The configuration of the GV Orbit Server is through its web interface. See Launching and Logging in to GV Orbit Admin Interface, on page 25 for more information.

2 Navigate to the **IP Configuration** Task and configure the remaining GV Orbit Server's IP settings according to your network requirements. See IP Configuration Task, on page 45 and Cabling Diagram, on page 13.

3 Ping each piece of production equipment from the GV Orbit Server's network ports to verify network connectivity to all networked equipment. See PING Screen, on page 46.

4 Configure the GV Orbit Server according to your needs. See GV Orbit Server Configuration Tasks, on page 29.

5 Install the GV Orbit Client software applications on one or more client PCs that are going to be used to configure GV Orbit. See GV Orbit Client Software Application Downloads, on page 29.

6 Configure GV Orbit, refer to the *GV Orbit Client Quick Start Guide*; see Related Documentation, on page 5.

Launching and Logging in to GV Orbit Admin Interface

Access the GV Orbit Admin interface as follows:

1 With the client PC, enter the GV Orbit server's management IP address into the address bar of the web browser (Google Chrome). In the example, First-Time Start-up Configuration, on page 20, this is shown as *10.0.3.5*.

The GV Orbit Admin login screen appears. If not, click **Home** and the **log in**.
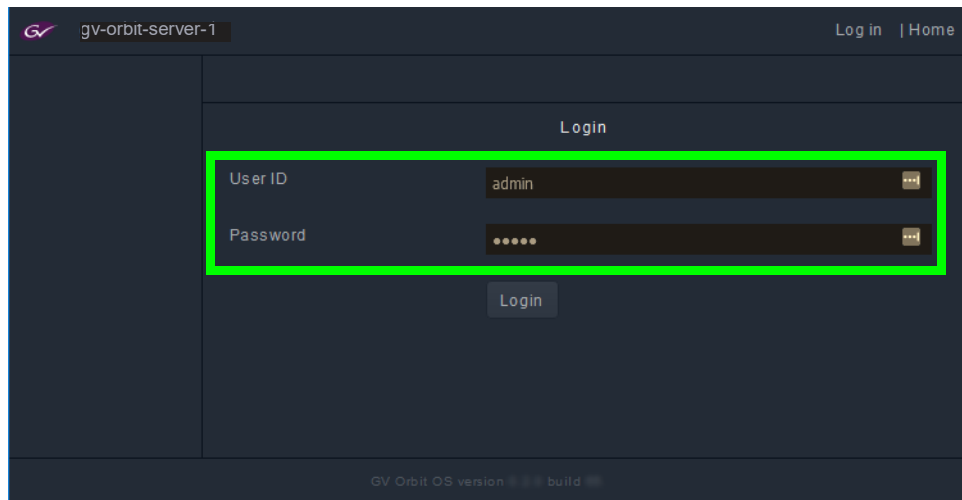
2 Enter your login credentials. The default login is *admin / admin*.

GV Orbit Admin Home Stage interface opens.
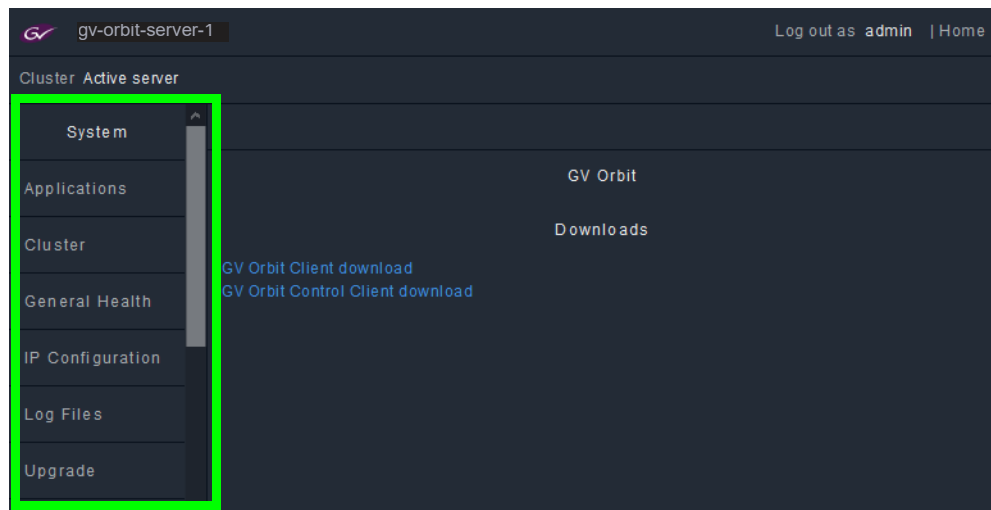
Note: Some options shown above are not available to users with a non-administrator role. All users have access to:

• The cluster status (view only).
• General Health (all screens, view only).
• Log files.
• Change their own password.

The left hand side of the screen has a menu of the available configuration screens. See GV Orbit Server Configuration Tasks, on page 29.

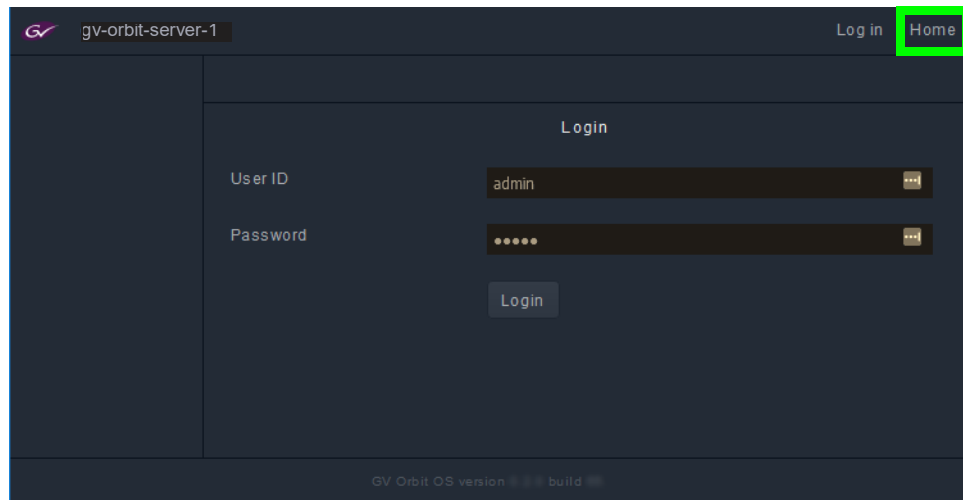3 Change the admin password to secure access to the server. See Password Change Screen, on page 58.

Navigating Back to GV Orbit Home / Downloads Stage

At any time, you can navigate back to the Home stage by clicking **Home**.

To navigate back to GV Orbit Home Stage

1 Click **Home** in the upper right corner.
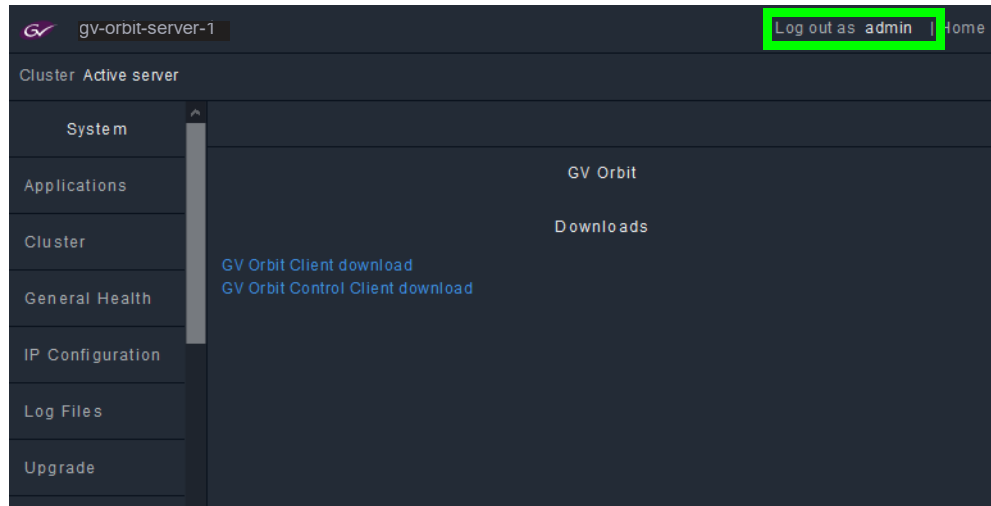

The GV Orbit Downloads task is shown.

To download the GV Orbit client software application, see GV Orbit Client Software Application Downloads, on page 29.
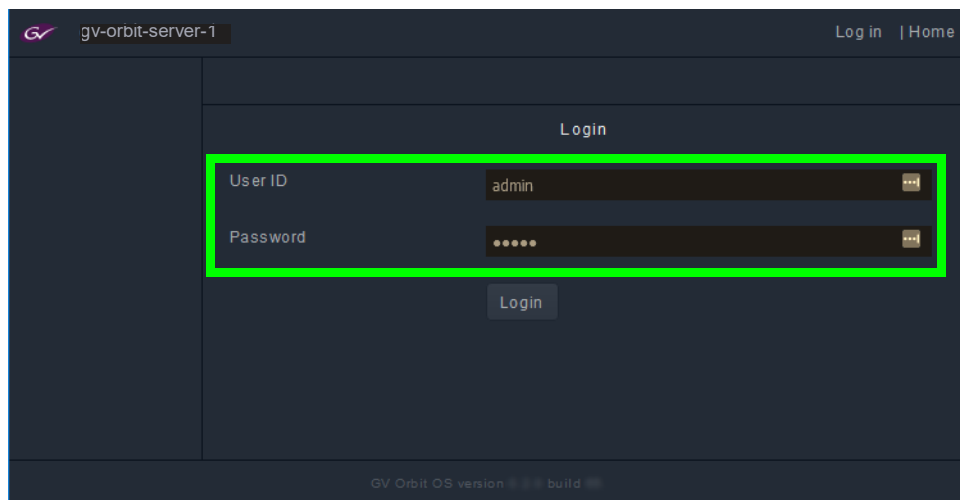
Switching User Profiles

From any open task, you can switch to another user profile. First, one or more user profiles must have been created; see Create User Screen, on page 57.

To switch to another user profile

1 Click on the user profile name at the top right of GV Orbit Admin.

The Login screen appears.

2 Enter the login credentials for the user profile, in the **User ID** and **Password** fields.

3 Click **Log in**.

GV Orbit Admin Home Stage interface opens.

GV Orbit Server Configuration Tasks

Home Stage

In the Home stage you download the GV Orbit client software applications. If you have updated the GV Orbit Server, you will need to re-download and install the GV Orbit client software applications on your PC in order to maintain compatibility.

GV Orbit Client Software Application Downloads

The GV Orbit client software is how users access the GV Orbit application in order to configure and use GV Orbit. GV Orbit clients run on a PC and connect through the network to the GV Orbit server.

GV Orbit Client software Application	Description
GV Orbit Control Client	Video and audio routing system client software application.
GV Orbit Client	Configuration, monitoring and logging client software application.

To access the native client software installer

1 From the PC on which you want to install the GV Orbit software application, log in to GV Orbit Admin. See Launching and Logging in to GV Orbit Admin Interface, on page 25.

2 In the default Home stage, click a software application download link.
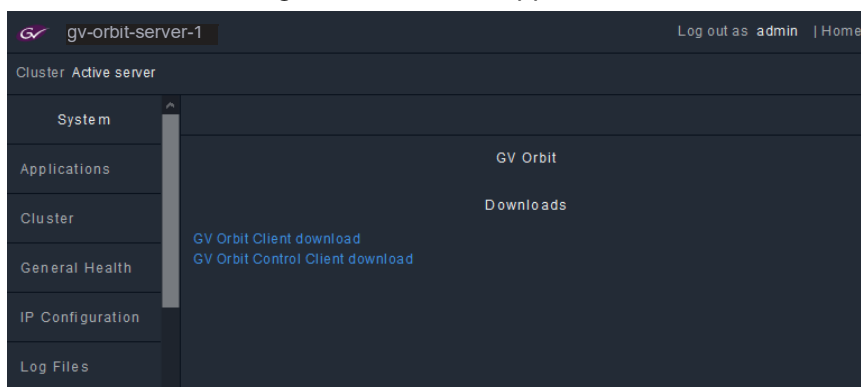
Your browser will ask to save a file.

3 Click **Save File**.

4 Once the download is complete, double-click the file to run it.

5 Follow the software installer instructions to complete the installation.

6 From the PC's Start menu, run the GV Orbit Control Client / GV Orbit Client software application.

For more information about installing and using the client software applications, refer to the *GV Orbit Client Quick Start Guide*; see Related Documentation, on page 5.

System

In the system tasks, you configure and perform maintenance on the GV Orbit server.

Applications Task

You must be an administrator user to access this task. The GV Orbit server runs a number of software applications, that work in concert to provide the necessary system applications to support all GV Orbit activity. The **Status** screen allows you to:

- Backup and restore most software application databases on the GV Orbit server. It is important to backup the GV Orbit server once you have configured it. Should anything happen with the server, you can then restore the configuration and quickly recover normal operation. See Global Backup, on page 31.

- Control the individual GV Orbit system applications:
  - View the status of the individual GV Orbit system applications
  - Control the individual GV Orbit system applications to:
    - Start, stop, and restart an application individually
    - Remove and restore the application's installation
    - Perform backup and restore operations

  See Installed Applications, on page 33.

- View the tail of the *gvos* log file to see the server's health, specifically to see an upgrade's success. See Log File / Tail Log File Details, on page 53.

Command Result

This is shown when there is an error or information message to be shown. For example, the creation status of a backup.

Global Backup

Global Backup allows you to backup all GV Orbit Server's databases and settings as a file that is saved locally on the server and to restore all GV Orbit Server's databases and settings from a file saved locally on the server. Any backup can be downloaded as a file to your PC to

be later uploaded to the GV Orbit Server when needed for disaster recovery or to transfer the settings to a new GV Orbit Server.
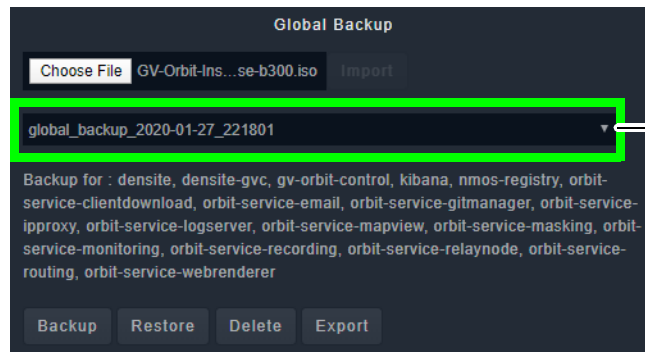
Pulldown list of the Global Backups available locally on the GV Orbit Server

| Parameter	Description
Choose File Import	To upload a previously-created Global Backup file to the GV Orbit Server from your PC. 1 Click **Choose File** to identify the backup file on our PC. 2 Click **Import** to upload the backup file onto the GV Orbit Server. When complete, the Global Backup will be available in the pulldown list.
Pulldown list	Selects one of the Global Backups currently available locally on the GV Orbit Server. Global Backups are labeled with the date and time the backup was created.
Backup	Create a backup of most[a] GV Orbit Server's databases and settings as a file that is saved locally on the server. Once created, the backup becomes available in the **Global Backup** pulldown list and also the pulldown lists of each individual application that was included in this global backup.
Backup for	When a backup is selected from the pulldown list, this lists the applications that are part of the selected backup. The individual applications shown in this list can be restored by that application using this backup: See the application's pulldown list and the **Restore** feature in Application Maintenance, on page 34.
Restore	Restore the Global Backup to the GV Orbit Server's configuration that was selected from the pulldown list. Schedule this maintenance operation during off hours when the system is not in use.
Delete	Remove the Global Backup that was selected from the **Global Backup** pulldown list from the GV Orbit Server. For each individual application that was included in this Global Backup, this backup is also removed from the application's pulldown list.
Export	Save the Global Backup that was selected from the pulldown list as a file to your PC. After making changes to GV Orbit, save your work for disaster recovery: 1 Click **Backup**. 2 Select the just created Global Backup from the pulldown list. 3 Click **Export**. 4 Select a destination for the file on your PC.

a. Certain applications such as Elastic are not backed up.

Installed Applications

The Installed Applications shows you the status of each application and when an application is selected, you can perform maintenance actions on the selected application.

### GV Orbit Applications Status

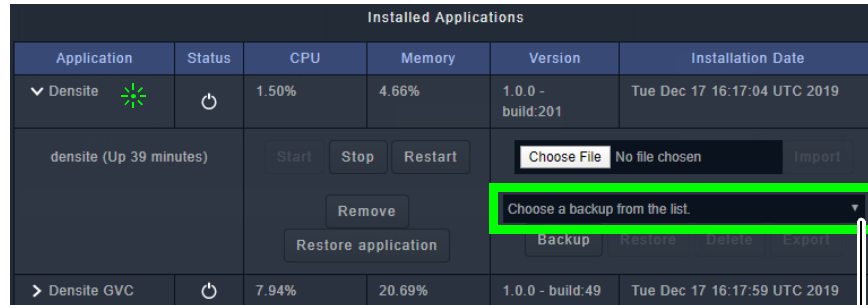The Installed Applications table shows the operating status of each GV Orbit application.

	Installed Applications					
Application	Status		CPU	Memory	Version	Installation Date
❯ Client Download	✴	⏻	0.00%	0.03%	4.0.0 - build:20	Tue Dec 17 16:20:32 UTC 2019
❯ Densite		⏻	1.47%	5.45%	1.0.0 - build:201	Tue Dec 17 16:17:04 UTC 2019
❯ Densite GVC		⏻	10.72%	7.95%	1.0.0 - build:49	Tue Dec 17 16:17:59 UTC 2019
❯ Elastic		⏻	0.18%	8.53%	1.0.0 - build:42	Tue Dec 17 16:18:22 UTC 2019
❯ Email		⏻	0.26%	0.29%	4.0.0 - build:16	Tue Dec 17 16:21:03 UTC 2019
❯ Event Logging		⏻	1.23%	0.82%	4.0.0 - build:16	Tue Dec 17 16:22:27 UTC 2019
❯ GV Orbit Control		⏻	1.91%	8.86%	2.2.0 - build:263	Tue Dec 17 16:18:55 UTC 2019
❯ IP Proxy		⏻	0.39%	0.31%	4.0.0 - build:16	Tue Dec 17 16:21:34 UTC 2019

Click an application's row to perform maintenance actions

Parameter	Description
Application	Shows the application's name. Click an application's row to perform maintenance actions on the application. See Application Maintenance, on page 34. The services of certain applications also have configuration properties in **Services**. For more information about each service, refer to the *GV Orbit Services User Guide* (see Related Documentation, on page 5).
Status	Shows if the application is running or not. ⏻ : the application is running. 🚫 : the application is stopped. ❓ : the application is being upgraded, is not correctly installed, or it is being removed. Note: In a cluster, if you have stopped a application and there is a failover (manually forced or otherwise), the application will be also stopped on the failover server, as the application has intentionally been stopped.
CPU	Shows the application's CPU usage.
Memory	Shows the application's memory (RAM) usage.
Version	Shows the application's revision (version) number.
Installation Date	Shows the date when the application was installed.

Application Maintenance

Each installed application has a number of maintenance actions that can be taken.

Pulldown list of the backups available locally on the GV Orbit Server

Parameter	Description
Application info	Shows how long the application has been running for.
Start	Starts the application.
Stop	Stops the application. Schedule this maintenance operation during off hours when the system is not in use. Note: In a cluster, if you have stopped a application and there is a failover (manually forced or otherwise), the application will also be stopped after the failover, as the application has intentionally been stopped.
Restart	Stops and then starts the application. Schedule this maintenance operation during off hours when the system is not in use.
Remove	Removes the application from the GV Orbit Server. Schedule this maintenance operation during off hours when the system is not in use.
Restore application	Reverts to the previously installed version of an application. For example, if for a given application you have version 2.1.0 installed, then you upgrade the application to version 2.2.0, then **Restore application** becomes available. Clicking **Restore application** will revert to the previous version 2.1.0 install. If there is no previous install to revert to, then **Restore application** is not available.
Choose File Import	Uploads a previously-created Application Backup file to the GV Orbit Server from your PC. Global Backups cannot be uploaded. 1 Click **Choose File** to identify the backup file on your PC. 2 Click **Import** to upload the backup file onto the GV Orbit Server. When complete, the Application Backup will be available in the pulldown list.
pulldown list	Selects one of the Backups currently available locally on the GV Orbit Server. In this list, you will see the Application Backups for this application and you will also see the Global Backups that include this application. Backup are labeled with the date and time the backup was created.
Backup	Creates a backup of the application's databases and settings as a file that is saved locally on the server. Once created, the backup becomes available in the pulldown list.

Parameter	Description
Restore	Restores the Application Backup to the GV Orbit Server's configuration that was selected from the pulldown list. Schedule this maintenance operation during off hours when the system is not in use.
Delete	Removes the Application Backup from the GV Orbit Server that was selected from the pulldown list. Global Backups cannot be removed.
Export	Saves the Application Backup that was selected from the pulldown list as a file to your PC. After making changes to GV Orbit, save your work for disaster recovery: 1 Click **Backup**. 2 Select the just created Application Backup from the pulldown list. 3 Click **Export**. 4 Select a destination for the file on your PC.

Tail Log File

View the tail of the *gvos* log file to see the server's health, to see the status of ongoing actions on the applications. See Log File / Tail Log File Details, on page 53.

Cluster Task

You must be an administrator user to configure this task. Non-administrator users have view-only access to the cluster's IP addresses.

A cluster provides continued operation (failover protection) should a GV Orbit Server fail. The failover method varies according to whether the *GV Orbit Control* Application is installed and running. See GV Orbit Applications Status, on page 33 to know the GV Orbit Control application's operating status.

GV Orbit Control Application	Failover Operational Method
Installed and running	If a problem occurs with the currently active GV Orbit Server, such as network loss or connectivity issues, the inactive GV Orbit Server becomes the active GV Orbit Server (it then supports all GV Orbit applications) automatically. The GV Orbit Server that was formerly active reboots in an attempt to recover from the failure and then remains in standby mode.
Not installed or is not running	GV Orbit Server cluster will not automatically fail over. You have to log into either: • the inactive cluster member and click **Force Active**. • the active cluster member and click **Force Failover**.

Parameter	Description
Cluster Configuration	A server cluster provides 1:1 failover protection where the primary server is protected by the redundant server.
Current (active / standby)	This is the IP address of the current GV Orbit Server. For example, this is the IP address used in your browser's address bar to connect to this GV Orbit Server.
Remote (active / standby)	Once a cluster has been formed, this shows the IP address of the other GV Orbit Server cluster member. To create a cluster, see Creating a GV Orbit Server Cluster, on page 38.
(active) (standby)	If two GV Orbit Servers are configured in a redundant configuration as a cluster, then during the normal course of operations, this shows the operating status of the two GV Orbit Servers: Which GV Orbit Server is active and which GV Orbit Server is in hot standby mode (inactive). When GV Orbit Control Application (Densité GVOC) is installed and running: If a problem occurs with the currently active GV Orbit Server, such as network loss or connectivity issues, the standby GV Orbit Server becomes the active GV Orbit Server (it undertakes the processing load for all GV Orbit applications). The GV Orbit Server that was formerly active reboots in an attempt to recover from the failure and then remains in standby mode.
Virtual IP Address	When a cluster has been formed, this is the virtual IP address (known to the OS as *vethgvos*) to communicate with the active server in a GV Orbit server cluster. If a GV Orbit server cluster is not being used, you can use the GV Orbit server administration IP address or this virtual IP address for controlled devices. For example, in a cluster configuration, a soft panel should be configured to point to this virtual IP address. When a failover happens, the control is maintained as the panel uses this virtual IP address. In the IP Configuration, the status for this interface is shown as *vethgvos*. See Interfaces Status Screen, on page 46.

Parameter	Description
Reference IP Address	Set the IP address of a high-availability (reliable) device on the same network as the GV Orbit servers. It can be the IP address of the network's PTP clock for example. When a cluster has been formed, the two GV Orbit servers in the cluster ping each other to know if the other server is alive. Should one GV Orbit server not receive the ping back from the other GV Orbit server, the cluster may provoke an automatic failover by using connectivity to the reference IP device as a tie-breaker: • When a GV Orbit server as member of a cluster loses connectivity with both the other GV Orbit server and with the reference IP device, it will become inactive as it makes the determination that it is no longer network connected. • When a GV Orbit server as member of a cluster loses connectivity with the other GV Orbit server, however it still has connectivity with the reference IP device, this GV Orbit server will make the determination that is still has network connectivity and therefore it becomes active, if it was not already active.
Update	Click to apply any changes you have made to any of the above IP addresses.
Force Failover Force Active	When a cluster has been formed, these options becomes available. Click: • **Force Failover** to force the active GV Orbit Server into standby mode so that it ceases operation. • **Force Active** to activate the standby GV Orbit Server to now support all GV Orbit applications. Schedule this maintenance operation during off hours when the system is not in use.
Tail Log file	This outputs the last few lines of the GV Orbit server's log. As new logs are added to the log file, they are shown in real time.
File name	The log file's current file name used to identify it on the GV Orbit server's filesystem.
File size	The log file's current file size.

Creating a GV Orbit Server Cluster

A GV Orbit Server cluster consists of two GV Orbit Servers:

- Both GV Orbit Servers have identical databases. Changes to the database in one GV Orbit Server are mirrored in the other GV Orbit Server's database.
- Only one GV Orbit Server is active at any one time. The other GV Orbit Server is in hot standby. A failover mechanism detects when the active GV Orbit Server has failed, and transfers operation to the standby GV Orbit Server.
- A virtual IP address is used to make the GV Orbit Server cluster always reachable, as it always points to the currently active member of the GV Orbit Server cluster.

PREREQUISITES:

- Schedule this maintenance operation during off hours when the system is not in use.
- Two GV Orbit Servers, both:

- Connected to the same network. See Cabling Diagram, on page 13 for a cluster.
- Have the same GV Orbit software revision.
- Have their network configuration set. See IP Configuration Task, on page 45.
- Are operational. With a browser, you are able to navigate through the administration interface of both GV Orbit Servers.
- Have the same applications installed with the same software revision.

To create a GV Orbit Server Cluster

To configure a cluster of two GV Orbit Servers to form a redundant configuration, proceed as follows:

1 With a browser, connect to the GV Orbit Server whose configuration you want to protect; typically this is the GV Orbit Server that has been configured the most. For this procedure, this is GV Orbit Server 1. When a cluster is formed, the remote GV Orbit Server's database will be overwritten and all configuration data will be lost on that server. For this procedure, the remote GV Orbit Server is GV Orbit Server 2.

2 In GV Orbit Server 1's Cluster task, set the:
- GV Orbit Server 2's IP address in **Remote (standby)**.
- Virtual IP address in **Virtual IP address**.
- Reference IP address in **Reference IP address**.

3 Click **Update**.

When you click **Update**, the database from GV Orbit Server 1 is copied to GV Orbit Server 2. GV Orbit Server 2 joins the cluster group automatically as the standby server. Failover is now available.

Dissolving a Cluster

Schedule this maintenance operation during off hours when the system is under reduced demand.

The following procedure is an example that presumes:

- The first of the two servers is called GV Orbit Server 1 with IP address = 172.19.79.143 and is currently active.
- The second the two servers is called GV Orbit Server 2 with IP address = 172.19.79.144 and is in hot standby.
- The virtual IP address for the cluster is 172.19.79.145.

To dissolve a cluster

Proceed as follows.

1 With a browser tab, connect to the GV Orbit Server 1 (active, IP address = 172.19.79.143) and navigate to the Cluster task.

2 Record the values for the following properties:

- GV Orbit Server 2's IP address in **Remote (standby)**.
- Virtual IP address to be used in **Virtual IP address**.
- Reference IP address in **Reference IP address**.

3 Clear the values for the following properties:

- GV Orbit Server 2's IP address in **Remote (standby)**.

The **Virtual IP address** parameter is left untouched for now.

4 Click **Update**.

The cluster has now been dissolved.

- GV Orbit Server 1 is now a standalone server, is online, its topology is activated in the GV Orbit Control application, and it has the virtual IP address. All third party devices/systems, using the virtual IP address, will have access to the active server (GV Orbit Server 1).
- GV Orbit Server 2 is now a standalone server, is online, its topology is de-activated, and it has no virtual IP address. All third party devices/systems will not communicate with this server as the virtual IP address is not configured.
- Failover is unavailable, as each server is acting as a standalone server.

Upgrading a Cluster

To upgrade a cluster, you must first break the cluster and then upgrade the two GV Orbit Servers individually. Schedule this maintenance operation during off hours when the system is under reduced demand.

The following upgrade procedure is an example that presumes:

- The first of the two servers is called GV Orbit Server 1 with IP address = 172.19.79.143 and is currently active.
- The second of the two servers is called GV Orbit Server 2 with IP address = 172.19.79.144 and is in hot standby.
- The virtual IP address for the cluster is 172.19.79.145.

To upgrade a cluster

Proceed as follows.

1 Dissolve the cluster. See Dissolving a Cluster, on page 39.

2 Upgrade the software on GV Orbit Server 2 (standby). See Upgrade Task, on page 53.

3 Once the upgrade of GV Orbit Server 2 is completed, in two separate browser tabs, connect to the:

- GV Orbit Server 1 (active, IP address = 172.19.79.143) and navigate to the Cluster task.

- GV Orbit Server 2 (standby, IP address = 172.19.79.144) and navigate to the Cluster task.

Note: The delay to carry out the following 4 steps is between 2 to 5 seconds. During this time, third party devices/controllers will not be able to perform any control actions.

4 For GV Orbit Server 1, clear the value for the virtual IP address in **Virtual IP address**.

5 Click **Update**.

6 For GV Orbit Server 2, set the value for the virtual IP address in **Virtual IP address**.

7 Click **Update**.

8 Deactivate the topology in the GV Orbit Control application on GV Orbit Server 1 and activate it on GV Orbit Server 2.

Now:

- GV Orbit Server 1 is now a standalone server, is online, its topology is de-activated in the GV Orbit Control application, and it has no virtual IP address. All third party devices/systems will not communicate with this server as the virtual IP address is not configured.

- GV Orbit Server 2 is now a standalone server, is online, its topology is activated, and it has the virtual IP address. All third party devices/systems, using the virtual IP address, will have access to the active server (GV Orbit Server 2).

- Failover is unavailable, as each server is acting as a standalone server.

9 Upgrade the software on GV Orbit Server 1.

10 Once the upgrade of GV Orbit Server 1 is completed, connect to the GV Orbit Server 2 (IP address = 172.19.79.144).

11 In GV Orbit Server 2's Cluster task, set GV Orbit Server 1's IP address in **Remote (standby)**.

12 Click **Update**.

When you click **Update**, the database from GV Orbit Server 2 is copied to GV Orbit Server 1. GV Orbit Server 1 joins the cluster group automatically as the standby server. Failover is now available.

Test the Standby GV Orbit Server

Schedule this maintenance operation during off hours when the system is not in use. Forcing a failover can be used as a method to test if the standby GV Orbit Server is healthy and available. For this procedure, the active GV Orbit Server is identified as GV Orbit Server 1 and the standby GV Orbit Server server is identified as GV Orbit Server 2. See Identifying which server in a Cluster is Active or Standby, on page 42.

1 With a browser tab, connect to the active GV Orbit Server (GV Orbit Server 1) and navigate to the Cluster task.

2 Click **Force Failover**.

The GV Orbit Server 1 becomes the standby server and the standby server (GV Orbit Server 2) becomes active.

3 Test your GV Orbit installation: Run the GV Orbit Client and make signal routing takes between sources and destinations for example. Confirm that GV Orbit Server 2 is running as expected by loading it with normal activity for your installation.

If any issue is noticed, then:

a Click **Force Active** on GV Orbit Server 1 to switch processing activity back to GV Orbit Server 1 (which is known to work), to restore operation.

b Call Grass Valley Technical Support. See Grass Valley Technical Support, on page 60. **Do not proceed any further with this upgrade procedure.**

Identifying which server in a Cluster is Active or Standby

The current cluster's status is shown in the top left corner of every screen.
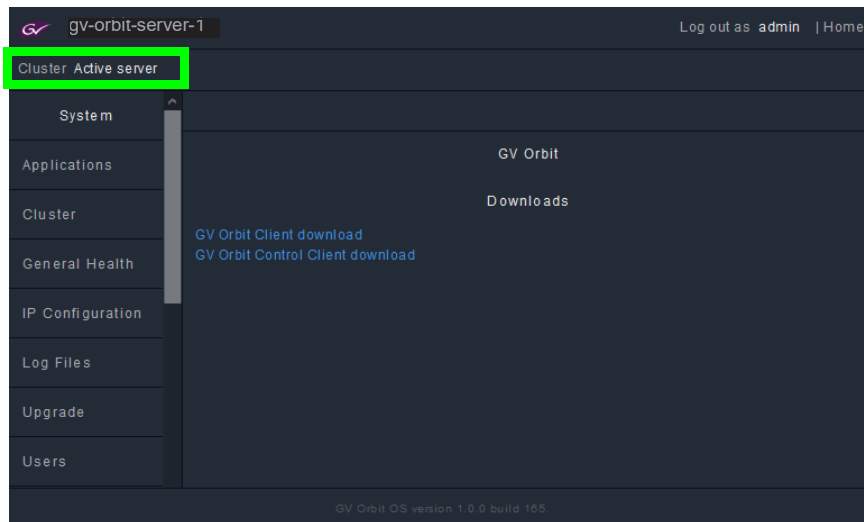
Cluster Parameter	Description
None	The server you have connected to is currently not part of a cluster.
Active server	The server you have connected to is currently the active member of a cluster.
Standby server	The server you have connected to is currently the standby (inactive) member of a cluster.

General Health Task

The General Health task shows the GV Orbit server's health parameters. The following tabs are documented below.

- System Screen, on page 43
- Hardware Screen, on page 44
- Storage Screen, on page 44
- Network Screen, on page 44
- Network Activity Screen, on page 45

System Screen

The System screen provides a health overview for the GV Orbit server.

Parameter	Description
Versions and names	Shows the operating system's version, and installation details.
Uptime	Shows the time since the last reboot. This also shows the average CPU load during this time.
Time/Time Zone	Shows the server's current time and date.
Memory	Shows the server's current memory usage breakdown.

Hardware Screen

The Hardware screen provides CPU profile details and information about memory usage for the GV Orbit server.

Storage Screen

The Storage screen provides information about disk storage capacity and disk partitions for the GV Orbit server.

Hard Drive Partition	Description
sda1	EFI boot partition.
sda2	Operating System 1 (OS1).
sda3	Operating System 2 (OS2).
sda4	Swap space.
sda5	Applications and application data. This contains all persisted information: system configuration (IP addresses, hostname, and so on), applications, and application data / databases.

Network Screen

The Network screen provides information about network (Ethernet) interfaces, IP routing, and tunneling that have been configured for the GV Orbit server. See also Port Identification, on page 15.

Network Activity Screen

The Network Activity screen provides information about the inbound and outbound network traffic bandwidth usage for the GV Orbit server.

Parameter	Description
Interface	Lists the current network interfaces.
IP Address	Lists the network interface IP addresses.
RX	Enable / disable the network traffic graphing for inbound connections.
TX	Enable / disable the network traffic graphing for outbound connections.
Start / Stop	Pause and restart the network traffic graph.

IP Configuration Task

You must be an administrator user to configure this task.

In the IP Configuration task you set the GV Orbit server's network connection parameters and you can view network health parameters. The following tabs are documented below.

Interfaces Status Screen

The Interfaces Status screen provides network interface details of each interface for the GV Orbit server. See also Port Identification, on page 15.

Host Name Screen

The Host Name screen allows you to set the GV Orbit server's network host name. The host name is the network name that uniquely identifies this GV Orbit server.

DNS Screen

The DNS screen allows you to set the GV Orbit server's DNS servers it will use.

Parameter	Description
DNS default search domain	Set the network domain name.
DNS name servers	Set the IP address for one or more Domain Name System (DNS) servers separated by spaces.

PING Screen

The PING screen allows you to test the reachability of a remote host on an IP network and to determine the time it takes test packets to be returned from the remote host. For example, the response time for a panel is sluggish or non-responsive. Use the panel's IP address with ping to find out the network delay with the panel. If network delay is the root cause, ping can be used to evaluate the success of mitigation strategies.

Parameter	Description
Host name	Set the host name or IP address of the network-connected device you want to test connectivity with.

Parameter	Description
Source interface	Select the GV Orbit server's network interface to use for this test. See Port Identification, on page 15. *Unspecified* allows the server's operating system to automatically choose the best-suited network interface to connect to the specified device for this test.
Ping	Once the above fields are set, click to start the test. • **Reply from** shows that the remote server at the IP address replied to the ping. • **time**= shows the round trip time for each packet. • **Sent = 4, Received** = 4 shows that all ping packets were successfully returned. • **Approximate round trip times** shows the average trip time for the 4 ping packets.

NTP Screen

A GV Orbit server can use the Network Time Protocol (NTP) to keep its internal clock on time. The NTP service uses one or more Internet clocks to set the GV Orbit server's date and time. This service can be disabled: in this case you have to manually set the server's time and date every few months to keep the server's internal clock on time.

Interfaces Configuration Screen

The GV Orbit server has one or more network interfaces (Ethernet) that it uses to communicate with other IP devices on the network.

To change the network interface configuration for a cluster, you must first dissolve the cluster and change the network parameters of the two GV Orbit servers separately. See Dissolving a Cluster, on page 39. Once the network parameters have been changed, you then create the cluster again. See Creating a GV Orbit Server Cluster, on page 38.

To configure a network interface

Schedule this maintenance operation during off hours when the system is not in use. For each network interface, you can choose to use a static IP configuration or, if the connected network for the network interface has a working DHCP server, the IP configuration parameters are assigned by the network's DHCP server.

Configure an interface as follows.

1 Click **Edit**.

2 Set the following parameters.

Parameter	Description
Interface Name	The name from the server's hosts file for this network interface. See also Port Identification, on page 15.
Method	Set the method by which this network interface will use to connect to the network: **Static:** you must set the network connection parameters; see the parameters below. **DHCP:** the network connection parameters are assigned by the network's DHCP server.
Address	With the Static Method only: Set the network interface's address that uniquely identifies this port to the network.
Netmask	With the Static Method only: Set the subnetwork mask for the connected network that defines the range of local IP addresses.
Default gateway	With the Static Method only: Set the IP address of the connected switch or router.
Groups	Sets the network use, for example the application or data type of a given network. See Network Groups Explained, on page 49 for more information.

3 Click **Save**.

4 Click **Restart** for the changes to take effect.

   If you changed the IP address for the Management Network, you will have to enter the new GV Orbit server's management IP address into the address bar of your web browser.

To configure a static route

You can create one or more static routes; this can improve network efficiency by forcing traffic on this interface to a specific destination network or host.

This feature should only be used to handle special networking use-cases. In general, it is preferable to use dynamic routing provided by network switches. See your network switch's documentation for more information about when and how you should use static routes.

Configure a static route as follows.

1 Click **Edit** for the network interface you want to add a static route.

2 Click **Create**.

3 Set the following parameters.

Parameter	Description
IP Address	The destination IP address.
Netmask	The subnetwork mask for the connected network that defines the range of local IP addresses.
Gateway	The next hop IP address.

4 Click **Create**.

5 Click **Save**.

6 Click **Restart** for the changes to take effect.

Network Groups Explained

The following describes the **Groups** parameter in the **Interfaces Configuration** screen (see Interfaces Configuration Screen, on page 47).

Each network interface is dedicated to be used for a specific application or data type. These three network types should each form a separate network (have dedicated network switches for physical segmentation), to which this network interface is accordingly connected. The reasoning for this is to:

- Isolate a network failure to one network thereby limiting the impact of such a failure so that it is not system-wide (if one network goes down, all is not lost).
- Increase security by keeping production equipment isolated from networks that have Internet access and are used for general business computing.

The following values are available for the **Groups** parameter.

Groups Value	Description
CORPORATE	This network interface is connected to the regular IT network backbone for general business computing. For example, this network supports services such as Internet, email, FTP, file servers, and VOIP. In the context of GV Orbit, the corporate network is used for anything but for video production purposes.
MANAGMENT	This network interface is connected to a network dedicated for connectivity with the management port of all video production equipment. This network is used to: • Exchange control signals (for example, NMOS, GV Orbit, and so on) between video production equipment. • Access video production equipment's configuration interface.
MEDIA	This network interface is connected to a high-speed network dedicated for connectivity with the media ports of all video production equipment. This network is used to transmit media content between video production equipment.

The Groups value is used by the **Network interface(s)** parameter in a service to identify which network(s) the service is to use for communications.

For example, the Map View Service shown below will only communicate on network interface(s) that have been assigned to the MANAGEMENT Group.
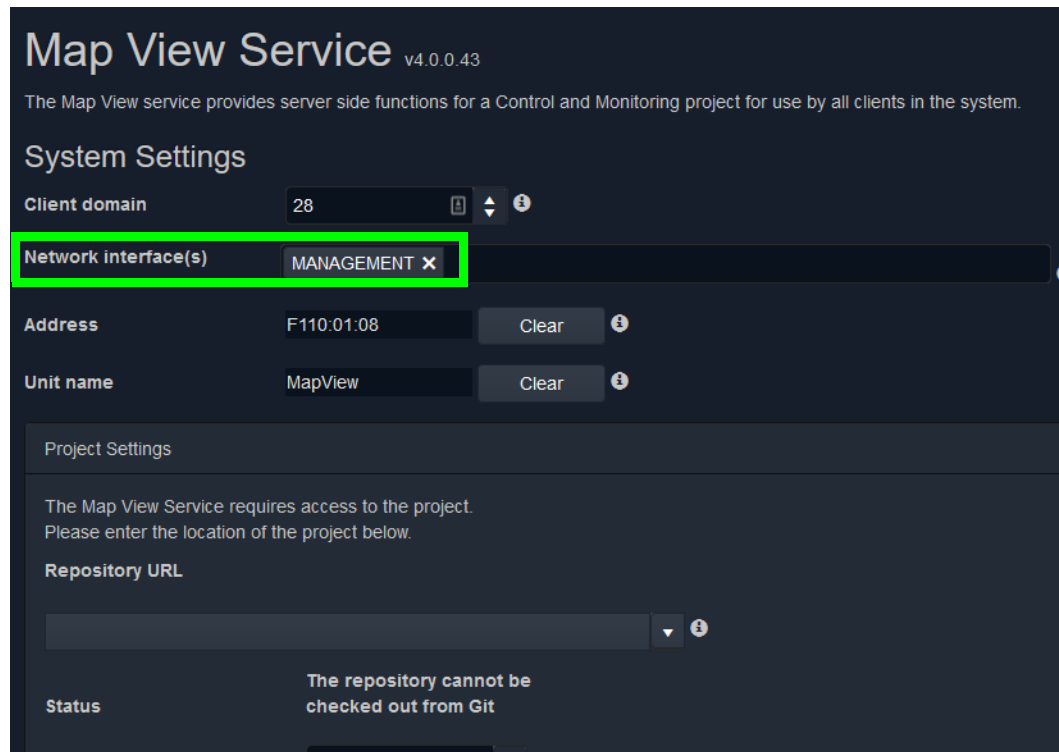
Note: Certain production equipment is not equipped with a Management Ethernet port as such equipment uses its media Ethernet ports to also communicate management and control information along with the media streams. To support this class of equipment, you will need to add the MEDIA group to the **Network interface(s)** parameter for services that are used to manage such production equipment.

For more information about each service, refer to the *GV Orbit Services User Guide* (see Related Documentation, on page 5).

Expert Screen

Schedule this maintenance operation during off hours when the system is not in use. This allows you to edit the GV Orbit server's ipconfig file. Under normal circumstances, you should not modify the contents shown in this screen. This is for use by a network administrator who has experience editing an ipconfig file to create custom network configurations such as port bonding. There is no undo for this screen and an error could result in a loss of connectivity to the GV Orbit server and a general GV Orbit system outage.

Recovery may require access to the server's console through the iDRAC interface. See About the Server Enterprise Network iDRAC, on page 19.

To change the network interface configuration for a cluster, you must first dissolve the cluster and change the network parameters of the two GV Orbit servers separately. See
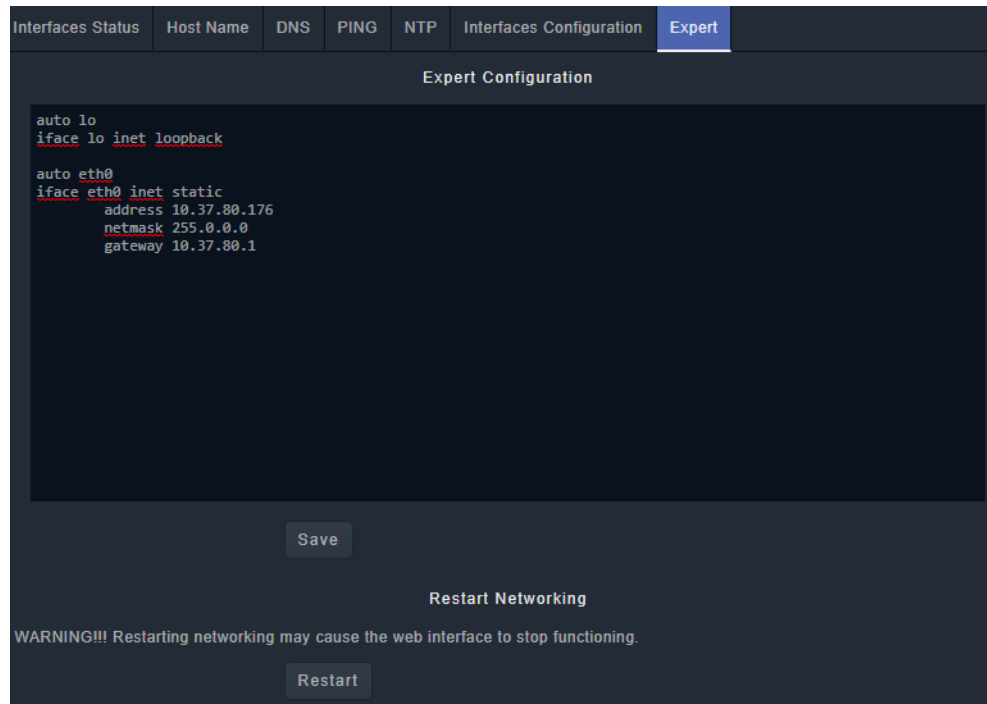
Parameter	Description
Save	Save the changes you have made to the ipconfig file.
Restart	Restart the IP stack to apply the changes you have made to the ipconfig file.

Log Files Task

Grass Valley Technical Support may ask that you send them a log file to help with system diagnostics.

View the log files for the following GV Orbit applications.

- Densité GVOC
- Densité
- GV Orbit Control
- NMOS Registry
- Email
- Repository Manager
- IP Proxy
- Log Server
- Map View
- Masking
- Monitoring

- Event Logging
- Relay
- Routing
- Web Renderer
- GV Orbit

For more information about the GV Orbit applications, refer to the *GV Orbit Services User Guide* (see Related Documentation, on page 5).

Parameter	Description
View	Click to see the entire service's log file in your browser. However, if the file is too big, you will need to download it. See also Log File / Tail Log File Details, on page 53.
Tail	Click to see the tail of the service's log. See also Log File / Tail Log File Details, on page 53.
Download	Click to download a log file.
Size	Shows the log file's file size.
Last Modified	Shows the last time the server updated the log file.

Parameter	Description
File	Shows the log file's location (path and filename) on the GV Orbit server.
Download all	Click to download a compressed archive of all the GV Orbit server's log files.

Log File / Tail Log File Details

The following information and options are available when a log or tail log is shown.

Parameter	Description
File name	Show the log file's location (path and filename) on the GV Orbit server.
Size	Shows the log file's file size in bytes.
Filter	Narrow down the displayed items to only show entries that contain the text you have entered. For example, set: • **error** as a filter to only see log entries with the word *error* in them. • **cluster** as a filter to only see log entries related to cluster operation. • **install** as a filter to only see log entries related to software installation.
Debug	Set to show debug log file entries along with the rest of the logs. By default, debug logs are not displayed. De-select this option to view errors only.
Word wrap	Set to wrap long lines of text around to the following line so that you do not have to scroll to the right to see the end of the line of text. Word wrap confines all the log file text to the space available in the Log File window.

Upgrade Task

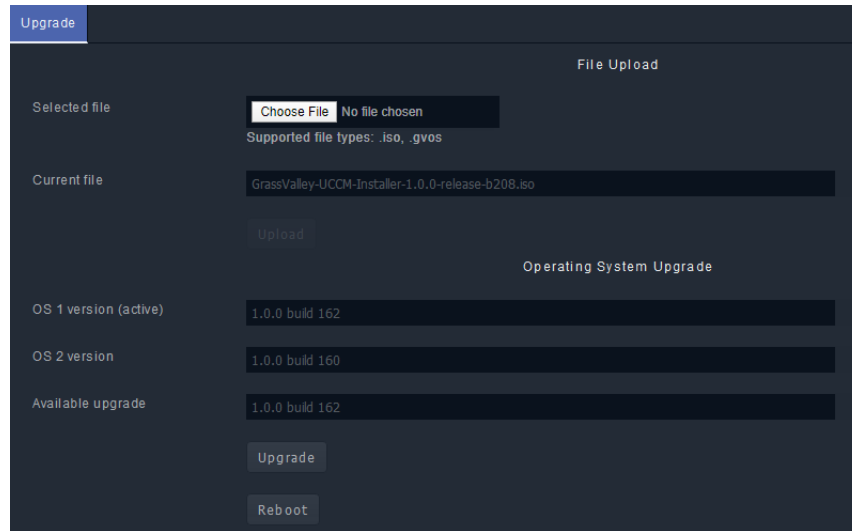You must be an administrator user to configure this task. The Upgrade Task allows you to:

- Upload the latest software onto the GV Orbit server and to then install it.
- Upgrade the individual applications running on the GV Orbit server to the latest available version when the software upload has application updates.
- View the tail of the *gvos* log file to see the server's health, specifically to see an upgrade's success. See Log File / Tail Log File Details, on page 53.

For a cluster, a special upgrade procedure must be followed. See Upgrading a Cluster, on page 40.

Software File Upload and Operating System Upgrade

Schedule this maintenance operation during off hours when the system is not in use. A GV Orbit upgrade installs the latest software and operating system on the GV Orbit server. The upgrade file is an .iso or .gvos file that you obtain by contacting Technical Support. See Grass Valley Technical Support, on page 60.

- An .iso file installs:
    - the server's Operating System (OS) only.
    - the server's Operating System (OS) and GV Orbit's packages for its applications.
- A .gvos file is an upgrade file for a single application.

Parameter	Description
Choose File Upload	To upload an upgrade file to the GV Orbit Server from your PC. 1 Click **Choose File** to identify the upgrade file on our PC. 2 Click **Upload** to upload the upgrade file onto the GV Orbit Server. When complete, the upgrade will be available in **Available upgrade** and the **Tail Log File** will report if the file upload is successful. See Upgrade Tail Log File, on page 57.
Current file	Shows the last uploaded file on the GV Orbit Server.
OS 1 version (active) OS 2 version (active)	The GV Orbit Server has two partitions labeled as **OS 1** and **OS 2**. This shows the current software version installed on each partition. **(active)** indicates the partition currently being used by the GV Orbit Server.
Available upgrade	Once an upgrade file has been uploaded to the GV Orbit Server from your PC (see **Choose File** and **Upload** above), this shows the software version available to upgrade the **OS 1** and **OS 2** partitions.
Upgrade	Schedule this maintenance operation during off hours when the system is not in use. This becomes available once an upgrade file has been uploaded to the GV Orbit Server from your PC. This installs the **Available upgrade** operating system files to the non-active partition.
Reboot	Schedule this maintenance operation during off hours when the system is not in use. This reboots the GV Orbit server. If a software upgrade has been applied, the server must be rebooted to complete the install process and reboot on the updated partition.

Application Upgrade

The GV Orbit server runs a number of applications. If you have uploaded a software file upgrade that contains GV Orbit's packages for its applications that are more recent than the application packages currently installed (see Software File Upload and Operating System Upgrade, on page 53), then you can upgrade those applications. Applications that can be upgraded are shown with a blue background.

Application Upgrade				
Application	Uploaded version	Installed version	Status	Message
Client Download	4.0.0 - build:20	-	Ready to install	-
Densite	1.0.0 - build:205	1.0.0 - build:201	Ready to install	-
Densite GVC	1.0.0 - build:49	1.0.0 - build:49	Installed	-
Elastic	1.0.0 - build:42	1.0.0 - build:42	Installed	-
Email	4.0.0 - build:24	4.0.0 - build:16	Ready to install	-
Event Logging	4.0.0 - build:24	4.0.0 - build:16	Ready to install	-
GV Orbit Control	2.2.0 - build:263	2.2.0 - build:263	Installed	-
IP Proxy	4.0.0 - build:24	4.0.0 - build:16	Ready to install	-
Kibana	1.0.0 - build:15	1.0.0 - build:15	Installed	-
Log Server	4.0.0 - build:24	4.0.0 - build:16	Ready to install	-
Map View	4.0.0 - build:24	4.0.0 - build:16	Ready to install	-
Masking	4.0.0 - build:24	4.0.0 - build:16	Ready to install	-
Monitoring	4.0.0 - build:16	4.0.0 - build:16	Installed	-
NMOS Registry	1.2.3 - build:32	1.2.3 - build:32	Installed	-
Relay	4.0.0 - build:24	4.0.0 - build:16	Ready to install	-
Repository Manager	4.0.0 - build:24	4.0.0 - build:16	Ready to install	-
Routing	4.0.0 - build:24	4.0.0 - build:16	Ready to install	-
Web Renderer	4.0.0 - build:24	4.0.0 - build:16	Ready to install	-

Select all   Deselect a   Upgrade

Click an application's row to select it to be upgraded, or click it again to de-select it

Parameter	Description
Application	Shows the application's name. For more information about the GV Orbit services, refer to the *GV Orbit Services User Guide* (see Related Documentation, on page 5).
Uploaded version	Shows the application version available. The upgrade software version comes from having uploaded a file with File Upload. See Software File Upload and Operating System Upgrade, on page 53.
Installed version	Shows the application's current version.
Status	Shows if an application has an update that is ready to install or not. **Ready to install:** the available **Uploaded version** is more recent than the **Installed version**. **Waiting to install:** this application was selected when you clicked **Upgrade**. **Installing:** the application is being installed/updated. **Installed:** the **Uploaded version** is the same as the **Installed version**. See also Upgrading GV Orbit Server Applications, on page 56.
Message	Shows the current progress of a task in your browser's lower left corner.
Select all	Select all applications shown in the table.

Parameter	Description
Deselect all	Deselect all applications shown in the table.
Upgrade	When one or more application rows are selected (the background is blue), this upgrades the selected applications with the application version shown in **Uploaded version**.
	Wait for the upgrade of the applications to complete before carrying out other operations such as a reboot.
	See also Upgrading GV Orbit Server Applications, on page 56.

Upgrading GV Orbit Server Applications

Schedule this maintenance operation during off hours when the system is not in use. Use the following procedure to upgrade the software of a GV Orbit Server.

For a cluster, this procedure will have to be repeated twice: once for each GV Orbit Server. To do this, see Upgrading a Cluster, on page 40.

To upgrade a GV Orbit server

1 Obtain an .iso or .gvos file from Grass Valley Technical Support. See Grass Valley Technical Support, on page 60.

2 In the Upgrade task, click **Choose File**.

3 Select the .iso or .gvos file on your PC's filesystem.

4 Click **Upload**.

   A progress message is shown in your browser's lower left corner. When complete, the **Available upgrade** shows the version of the upgrade file.

   When the software upload has application updates, one or more applications under **Application Upgrade** may have a blue background indicating that a more recent software version is available.

5 Under **Operating System Upgrade**, click **Upgrade** to upgrade the inactive partition.

   A progress message is shown in your browser's lower left corner.

6 Wait for the *Upgrade complete. Please reboot to apply change.* message to appear.

7 Click **Reboot**.

   This reboots the GV Orbit server and alternates the **Active** partition. A progress message is shown in your browser's lower left corner. When complete, the inactive partition that has just been upgraded has now become active.

8 Under **Application Upgrade**, click **Upgrade** to upgrade the applications.

   A progress message is shown in your browser's lower left corner. When complete, all the applications under **Application Upgrade** have a gray background and are up to date.

9 Test your GV Orbit installation: Run the GV Orbit Client and make takes between sources and destinations for example. Confirm that the upgrade has been successful and that GV Orbit is running as expected.

Only one partition should be upgraded per upgrade cycle. The idea is to have the alternate partition remain at the previous software version. If a blocking issue is noticed in the latest version, you can revert to the previous software version on the alternate partition as an

emergency remedy. To do so, call Grass Valley Technical Support. See Grass Valley Technical Support, on page 60.

Upgrade Tail Log File

The *gvos.log* log file shows the progress of the installation of an update and any related errors. See also Log File / Tail Log File Details, on page 53 for more information.

Users Task

In the Users task, you create, edit, and delete user profiles. A user profile should be created for each GV Orbit user. The following tabs are documented below.
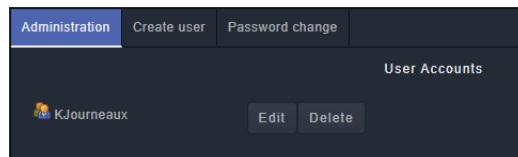
- Administration Screen, on page 57
- Create User Screen, on page 57
- Password Change Screen, on page 58

The *admin* user is a special profile that is used by clients to connect to the GV Orbit Server and it applications. For example, it is used by the Densité Manager

Administration Screen

Once one or more users have been created (see Create User Screen, on page 57), their profiles are shown here.

> **Note**: To access the Administration screen, you must be an administrator. Otherwise, the Administration screen is not visible.

In addition, you can perform the following actions in the **Administration** screen:

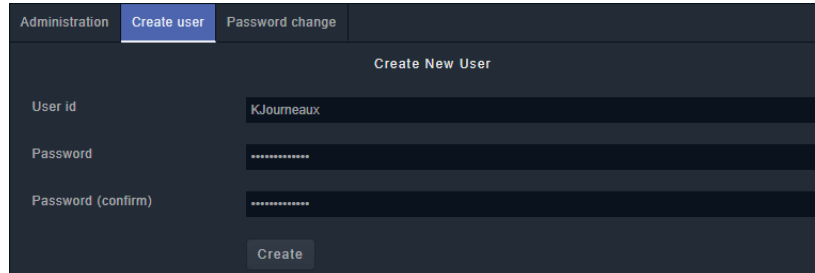| Parameter	Description
Edit	Click to modify the user's credentials (user ID / password).
Delete	Click to remove the user account.

Create User Screen

The first step is to create a user profile for each GV Orbit user.

> **Note**: To access the Create User screen, you must be an administrator. Otherwise, the Create User screen is not visible.
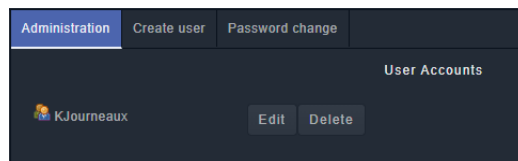
To create a new user account:

1 Launch GV Orbit Admin.

2 Log in as an administrator.

3 Select **Users** > **Create user**.

The Create New User window appears.

4 Enter the required information in the **User id**, **Password**, and **Password (confirm)** fields.

5 Click **Create**.

A new tile representing the new user account appears in the **Administration** screen.

In addition, you can perform the following actions in the **Users** section:

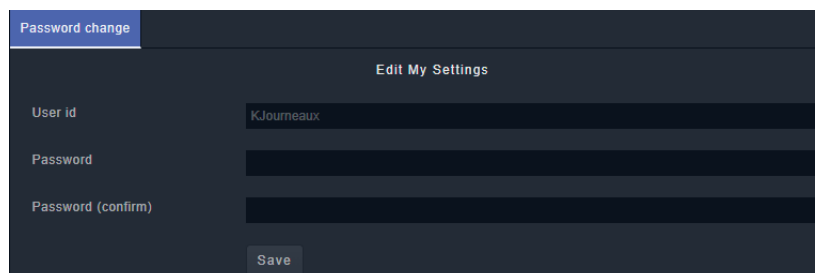| Parameter	Description
Edit	Click to modify the user's credentials (user ID / password).
Delete	Click to remove the user account.

See also

- Switching User Profiles, on page 28

Password Change Screen

This screen changes the password of the currently logged in user. Non-administrator users will only have access to the **Password Change** screen as shown below.

1 Enter the required information in the **User id**, **Password**, and **Password (confirm)** fields.

2 Click **Save**.

GV Orbit Services

GV Orbit relies on a number of services to integrate diverse equipment, and provide advanced features. For more information about the role of each GV Orbit service, refer to the *GV Orbit Services User Guide* (see Related Documentation, on page 5).

Contact Us

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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