grass valley
A BELDEN BRAND

GV ORBIT SERVICES

CONTROL, CONFIGURATION AND MONITORING

User Guide

13-03082-060 AA

2020-02-04

www.grassvalley.com

Patent Information

This product may be protected by one or more patents.

For further information, please visit: www.grassvalley.com/patents/

Copyright and Trademark Notice

Belden, Belden Sending All The Right Signals, and the Belden logo are trademarks or registered trademarks of Belden Inc. or its affiliated companies in the United States and other jurisdictions. Grass Valley, GV Orbit Services are trademarks or registered trademarks of Grass Valley Canada. Belden Inc., Grass Valley Canada, and other parties may also have trademark rights in other terms used herein.

Terms and Conditions

Please read the following terms and conditions carefully. By using GV Orbit documentation, you agree to the following terms and conditions.

Grass Valley hereby grants permission and license to owners of GV Orbit to use their product manuals for their own internal business use. Manuals for Grass Valley products may not be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, for any purpose unless specifically authorized in writing by Grass Valley.

A Grass Valley manual may have been revised to reflect changes made to the product during its manufacturing life. Thus, different versions of a manual may exist for any given product. Care should be taken to ensure that one obtains the proper manual version for a specific product serial number.

Information in this document is subject to change without notice and does not represent a commitment on the part of Grass Valley.

Warranty information is available from the Legal Terms and Conditions section of Grass Valley's website (www.grassvalley.com).

About this Manual

Title: GV Orbit Services User Guide

Part Number: 13-03082-060 AA

Revision: Issue 1 Revision 1 2020-02-04, 12:23

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 (this document)
13-03082-090	GV Orbit Admin Guide

Table of Contents

1 GV Orbit Services

GV Orbit Services

Introduction

This *GV Orbit Services User Guide* explains what GV Orbit Services are, how they fit into a GV Orbit system and their configuration. This chapter provides a brief overview of GV Orbit and introduces the services.

GV Orbit is system configuration, control and monitoring solution from Grass Valley for Grass Valley's audio/video/IP products and third-party devices.

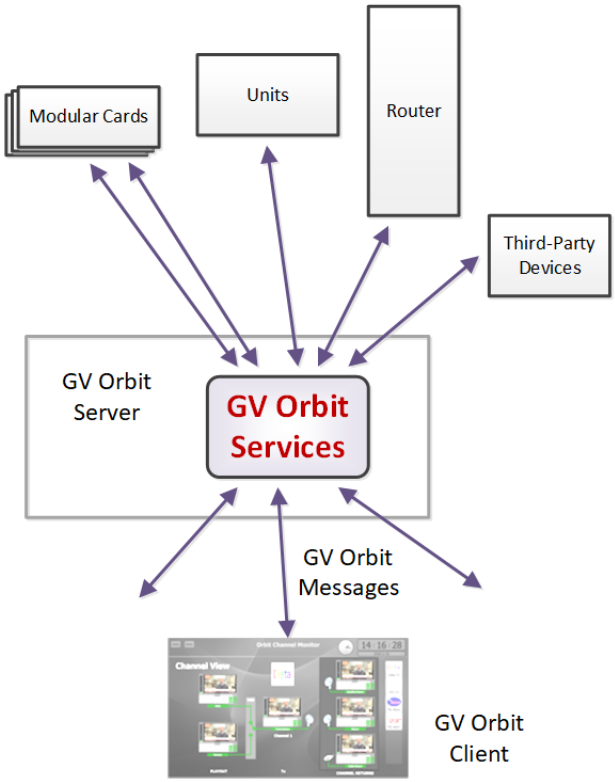


Fig. 1-1: GV Orbit Services

A GV Orbit system utilizes GV Orbit Services running on a GV Orbit server to provide services for the configuration, control and monitoring, and routing of audio/video system devices via the GV Orbit Client user interface. Services include:

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

GV Orbit Services are used in the GV Orbit Professional and GV Orbit Enterprise products.

Note: No GV Orbit services are used for the GV Orbit Lite product.

GV Orbit Overview

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. The underlying client-server architecture is targeted at open standards-based IP systems with many features and functions specifically crafted to make IP easy.

'Dynamic Orchestration' is GV Orbit's core strength that differentiates it from competitive systems. The ability to build, configure and change systems on-the-fly is hugely powerful, whether it is the adding/removing of devices or simply changing a name. In today's cost-conscious world, fast and efficient deployment and re-purposing of systems for alternative scenarios or productions is a key requirement.

GV Orbit uses one or more GV Orbit servers running the GV Orbit Services and one or more client computers running the GV Orbit Client application.

Service Software Versions in the GV Orbit Package

GV Orbit Services described in this document are components of the GV Orbit software suite. GV Orbit Services versions described are listed in Table 1-1.

Table 1-1: GV Orbit Services Versions

Service	Version
Densité Manager Service	1.0
Email Service	4.0
Event Logging Service	4.0
IP Proxy Service	4.0
Log Server Service	4.0
Map View Service	4.0
Masking Service	4.0
Monitoring Service	4.0
Relay Service	4.0
Repository Manager Service	4.0
Routing Service	4.0
Web Renderer Service	4.0

System Overview (Services)

GV Orbit Services are run on one or more GV Orbit servers. Two servers can form a cluster for a redundant system.

A GV Orbit Client custom, graphical operator panel can form a soft user panel to control/monitor various status items from many system devices, and/or route signals between devices. Messages in a system are aggregated by services. They are used by soft user panels, event logging, control and routing, and by various GV Orbit Services. Figure 1-2 shows a general view of a GV Orbit Services ecosystem.

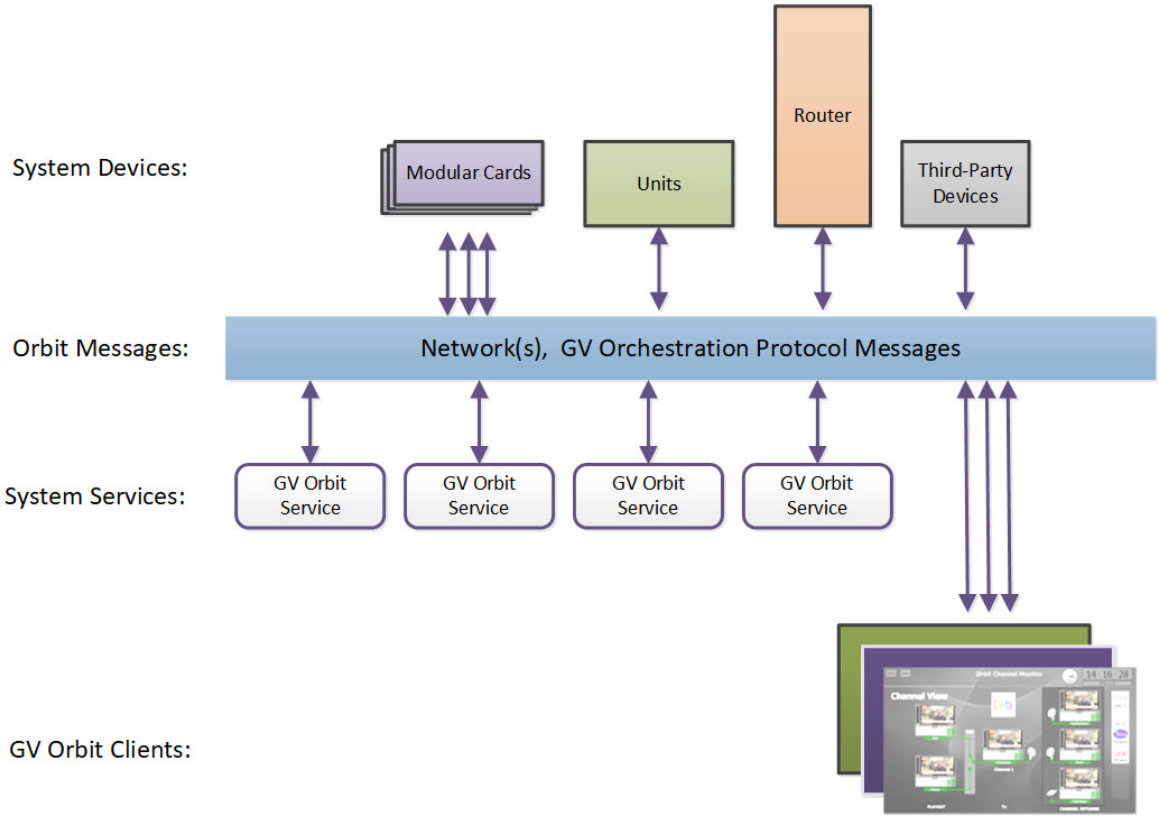


Fig. 1-2: GV Orbit General Diagram

GV Orbit Services facilitate the display of device status messages, processing of alarms, and the configuration and control of routing in a system. Alarms originate from a Monitoring service which processes log messages from Grass Valley devices (for example, Densité, IQ, and MV-8 Series devices) or from third-party devices. The GV Orbit Services provide system functionality, such as alarm aggregation, masking, and routing control.

GV Orbit Services can also off-load some processing from GV Orbit clients. For example, for permanent processing of logic on a custom user panel, or for raising alarms via email. Additionally, a Web Renderer service enables existing GV Orbit custom operator panels to be displayed in a web browser.

Services System Diagram

Figure 1-3 shows a functional diagram of a GV Orbit Services ecosystem, showing system devices, services, and the GV Orbit message communication 'Domains'.

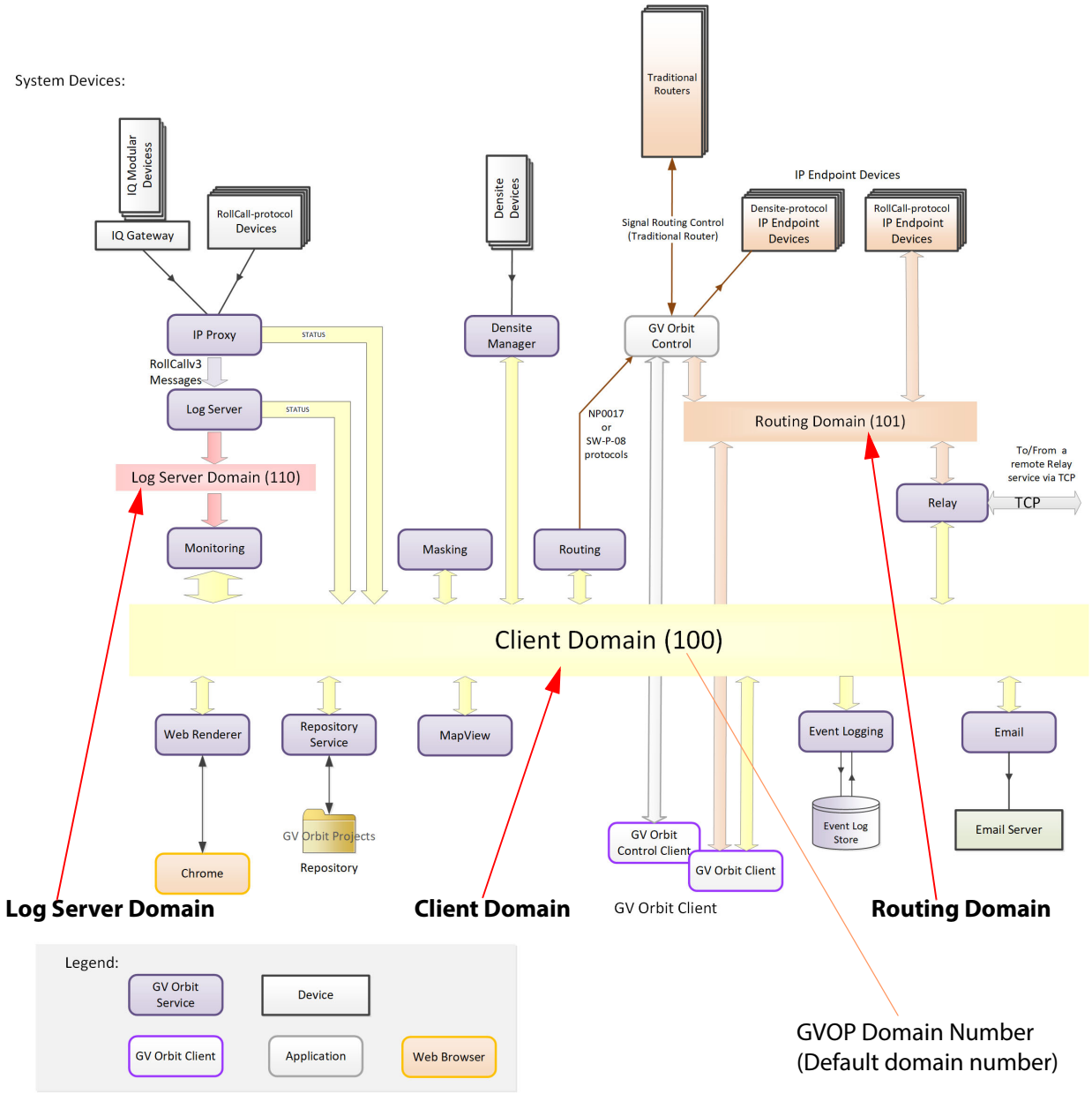


Fig. 1-3: GV Orbit Services Ecosystem Diagram with Domains

System devices send out log data and status messages. For RollCall-protocol devices, messages are aggregated by a Log Server service onto a **Log Server Domain** and are monitored by a Monitoring service to yield a suite of alarms on the **Client Domain**. For Densité-protocol devices, messages are aggregated by a Densité Manager service, to also yield alarm messages on the **Client Domain**.

Alarm messages may be viewed on some custom control and monitoring user panel in the GV Orbit Client tool, or in a Chrome web-browser window. The messages are also logged and may be viewed and searched with the Event Logging service.

IP endpoint control determines signal routing in an IP routing system. It is usually performed with in-band control on separate high-speed media network(s). Routing uses a separate domain, the **Routing Domain,** and the GV Orbit Control application, which is also running on the GV Orbit server. Routing can be done within a mixed IP and traditional signal routing environment.

GV Orchestration Protocol (GVOP)

The various GV Orbit services and devices communicate with one another and with GV Orbit Client applications. The messaging uses the GV Orchestration Protocol (GVOP).

Domains to Segregate Messages

The GV Orchestration Protocol communications may be segregated by using GVOP Domains. Typically in a GV Orbit system there is a Client domain, a Log Server domain, and a Routing domain. (See Figure 1-3 on page 5.) Each Domain is defined with a Domain ID number.

Services Overview

The GV Orbit **Professional** and **Enterprise** products use GV Orbit Services running on one or more GV Orbit servers. The table below indicates which services are particularly used for each GV Orbit product option code.

Table: GV Orbit Services Used for GV Orbit Products Options Codes

GV Orbit Service	GV Orbit Product Option Code			
	GVO-CFG-PRO	GVO-MON-PRO	GVO-CTL-PRO	GVO-CTL-ENT
Densité Manager	●			
Email	●	●	●	●
Event Logging		●		
IP Proxy	●	●	●	●
Log Server	●	●	●	●
Map View		●		
Masking	●	●	●	●
Monitoring	●	●	●	●
Relay	●	●	●	●
Repository		●		
Routing			●	●
Web Renderer		●		

CAUTION
Configuration changes to GV Orbit Services, and to other GV Orbit settings/devices, should be done by a GV Orbit system administrator.

A brief overview of each GV Orbit service follows.

Densité Manager Service

The GV Orbit **Densité Manager** service collects and collates logging information from Grass Valley Densité-protocol devices and distributes it to subscribing clients, for example to the GV Orbit **Monitoring** service. The service is the entry point into the system for log data from Densité-protocol devices. (See Densité Manager Service, on page 29.)

Email Service

The GV Orbit **Email** service sends emails on behalf of GV Orbit via a configured SMTP server. (See Email Service, on page 33.)

Event Logging Service

The GV Orbit **Event Logging** service captures and stores status messages and alarms within a system. The service can be configured to store one or more log data-sets into an event log store. A complete history of events may be stored for a device, or for a sub-set of devices, or for the system as a whole. Additionally, smaller, filtered log files can record a smaller subset of data within the system. Historical events can then be viewed and investigated. Log data can be sent to advanced search and visualization engines.

(See Event Logging Service, on page 39.)

IP Proxy Service

The GV Orbit **IP Proxy** service is used with Grass Valley IQ devices and RollCall-protocol devices to aggregate RollCall connections from several devices.

(See IP Proxy Service, on page 65.)

Log Server Service

The GV Orbit **Log Server** service collects and collates logging information from devices on a RollCall network and distribute it to subscribing clients, for example, to the GV Orbit Monitoring service.

The service is the entry point into a system for RollCall log data from RollCall-protocol devices (for example from IQ Modular devices or from MV-8 series Multiviewers). The service also supports inbound data from Grass Valley's RollSNMP application tool and third-party IP endpoint applications.

Multiple **Log Server** services can work together to provide redundancy, such that if either one is shutdown then the other will take its place seamlessly with no loss of data to the client.

(See Log Server Service, on page 75.)

Map View Service

The GV Orbit **Map View** service serves a GV Orbit control and monitoring (C&M) project. The service executes part of a GV Orbit C&M project in parallel with a GV Orbit Client when the project is run. The service evaluates the alarm state of *all* C&M project custom panel screens and then publishes overall project 'state' information to the project running on a client computer.

The service also executes any server-side logic contained in any special files within the C&M project (i.e. logic in GV Orbit 'global files', files with the .globalx extension) and manages the state of 'User Folders' in the project.

(See Map View Service, on page 91.)

Masking Service

The GV Orbit **Masking** service manages masked alarms within the system. The service publishes information about what alarms should be masked. Alarm producers (for example, the GV Orbit **Monitoring** service) subscribe to this information; they use it when calculating the actual state of alarms that they will publish.

(See Masking Service, on page 105.)

Note: The **Masking** service is not responsible for actually masking alarms. Instead, it informs other services about alarms to be masked.

Monitoring Service

The primary purpose for the GV Orbit **Monitoring** service is to calculate key alarm state information in a system from log data, either directly from units/devices/cards/frames or indirectly from a **Log Server** service.

The incoming log data indicates the state of system devices. The **Monitoring** service then assesses this to produce alarm state information. A numeric 'state' is used to represent 'alarm state' and indicate where each current log data value (or combination of values) is 'good', 'bad', or is a 'warning' (i.e. 'OK', 'Error', or 'Warning' respectively).

The service then publishes the calculated alarm state data in alarm messages to subscribers. A services and GV Orbit Client(s) can subscribe to these alarm messages and, for example, alarm state information can be used on a GV Orbit custom soft panel with GV Orbit 'Alarm Behaviours'.

A GV Orbit Client may also write out log data and this will be processed by the **Monitoring** service. (See Monitoring Service, on page 115.)

Relay Service

The GV Orbit **Relay** service runs on a GV Orbit server and enables GV Orbit messages to pass between GVOP Domains. This is useful in certain system configurations.
(See Relay Service, on page 149.)

Repository Manager Service

The GV Orbit **Repository Manager** service runs on a GV Orbit server and provides access to a repository of GV Orbit projects for the GV Orbit system and for GV Orbit Clients.
(See Repository Manager Service, on page 157.)

Routing Service

The GV Orbit **Routing** service interfaces between GV Orbit soft control panels and a router controller device using NP0017 or SW-P-08 protocols. (See Routing Service, on page 167.)

Web Renderer Service

The GV Orbit **Web Renderer** service runs on a GV Orbit server and enables users to view and use a GV Orbit C&M project graphical custom panel in a web browser.
(See Web Renderer Service, on page 177.)

Configuring GV Orbit Services

GV Orbit Services are configured via their configuration screens. These screens are accessible from the GV Orbit server. See Accessing the GV Orbit Server, on page 14.

The services adopt default RollCall addresses in a new GV Orbit system.

> CAUTION
> Configuration changes to GV Orbit Services, and to other GV Orbit settings/devices, should be done by a GV Orbit system administrator.

Interface Selection to Limit Message Traffic

The various GV Orbit services run on a server computer which has one or more network interface connections to IP networks in the system. Each GV Orbit service can be individually configured to use one or more of the network interfaces of the server PC. Selection of network interface on a service-by-service basis should be used to limit GV Orbit traffic sent over different networks.

For example, if a server is connected to IP Media networks and there is no requirement for a GV Orbit service to send/receive data over these high speed networks, then network interface selection can be made to exclude these interfaces from use by the service.

GV Orbit Redundant System

Active-Standby

In a GV Orbit system with two GV Orbit servers, the servers may be configured as a redundant pair, running as an 'active-standby' pair. Services then run as 'Active-Standby'.

Common Virtual IP Address

Each server has its own IP address and, for a redundant pair, there is also a third, common (virtual) IP address which is serviced by the active server of the server pair. This is configured for a GV Orbit server on its 'Cluster' configuration screen.

For more information, please refer to other GV Orbit server documentation. (See Related Documentation, on page iii.)

GV Orbit Client Application

The GV Orbit Client application runs on a client computer. It allows a user to configure, control and monitor system devices, and to control routing. It uses GV Orbit control and monitoring projects (C&M projects) and GV Orbit services running on a GV Orbit server.

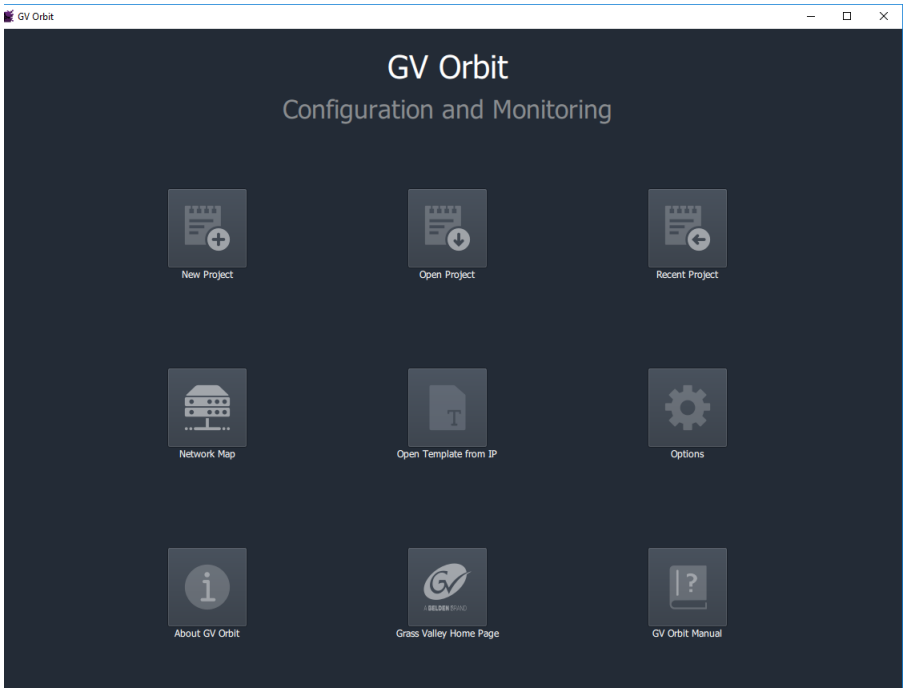


Fig. 1-4: GV Orbit Client Initial Screen

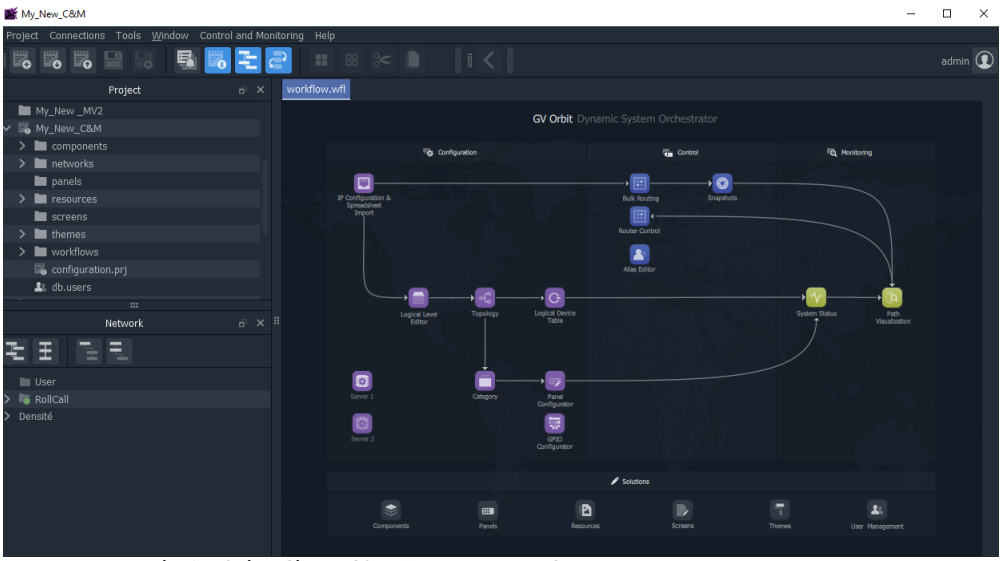


Fig. 1-5: Example GV Orbit Client C&M Project Home Screen

Note: The **Home Screen** appearance varies according to project type and which GV Orbit Client windows are enabled and being shown.

2 Managing Services

Chapter contents:

Each of the various GV Orbit Services is configured via a configuration screen which is hosted on a GV Orbit server. Configuration screens are accessed from the GV Orbit server, or via the GV Orbit Client.

Configuration changes should be carried out by a GV Orbit system administrator.

Accessing the GV Orbit Server

For more information on the GV Orbit server, please refer to the *GV Orbit Admin Guide* in Related Documentation, on page iii.

From GV Orbit Client

With a GV Orbit C&M project open in GV Orbit Client, in the **Workflow** window:

1 Click on a 'Server' icon in the graphical workflow stage. See Figure 2-1.

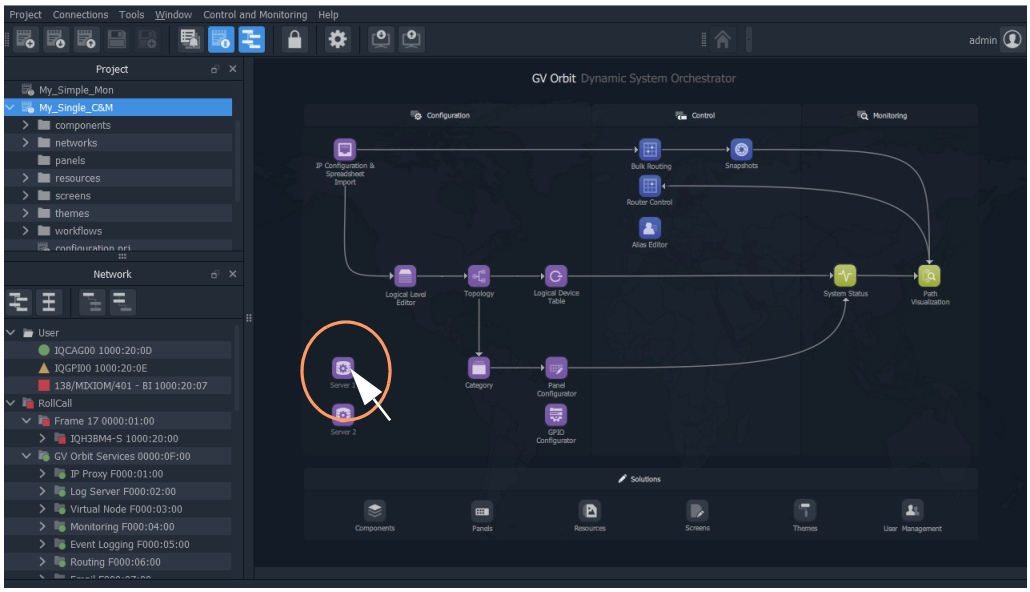


Fig. 2-1: C&M Project Workflow Stage and Server Icon

The GV Orbit server's **Admin Login** screen is opened. See Figure 2-2 onwards.

From a Browser

1 Enter the IP address of a GV Orbit server into a web browser (Chrome recommended).

The GV Orbit server **Admin Login** screen is shown.

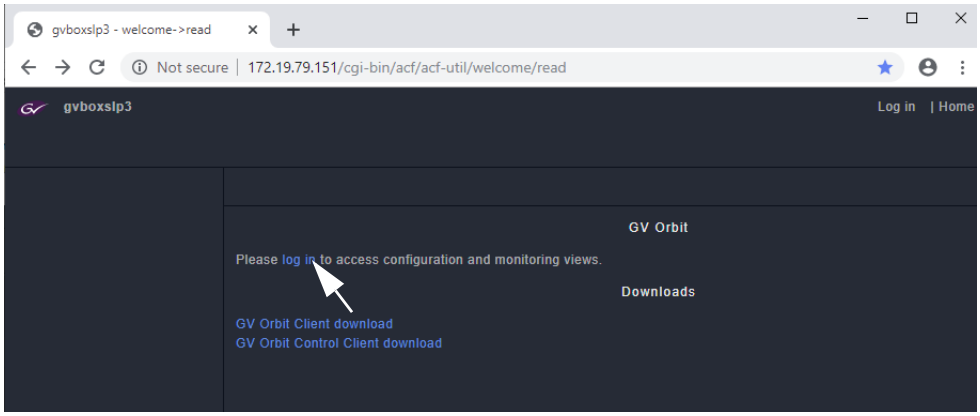


Fig. 2-2: GV Orbit Server Admin Login Screen

2 Click **Login** and enter the **User ID** and **Password** to access the GV Orbit server. (Default is 'admin' 'admin'.)

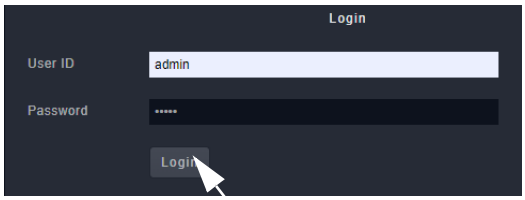


Fig. 2-3: GV Orbit Server Login

3 Click **Login**.

The GV Orbit server **Home** stage is shown.

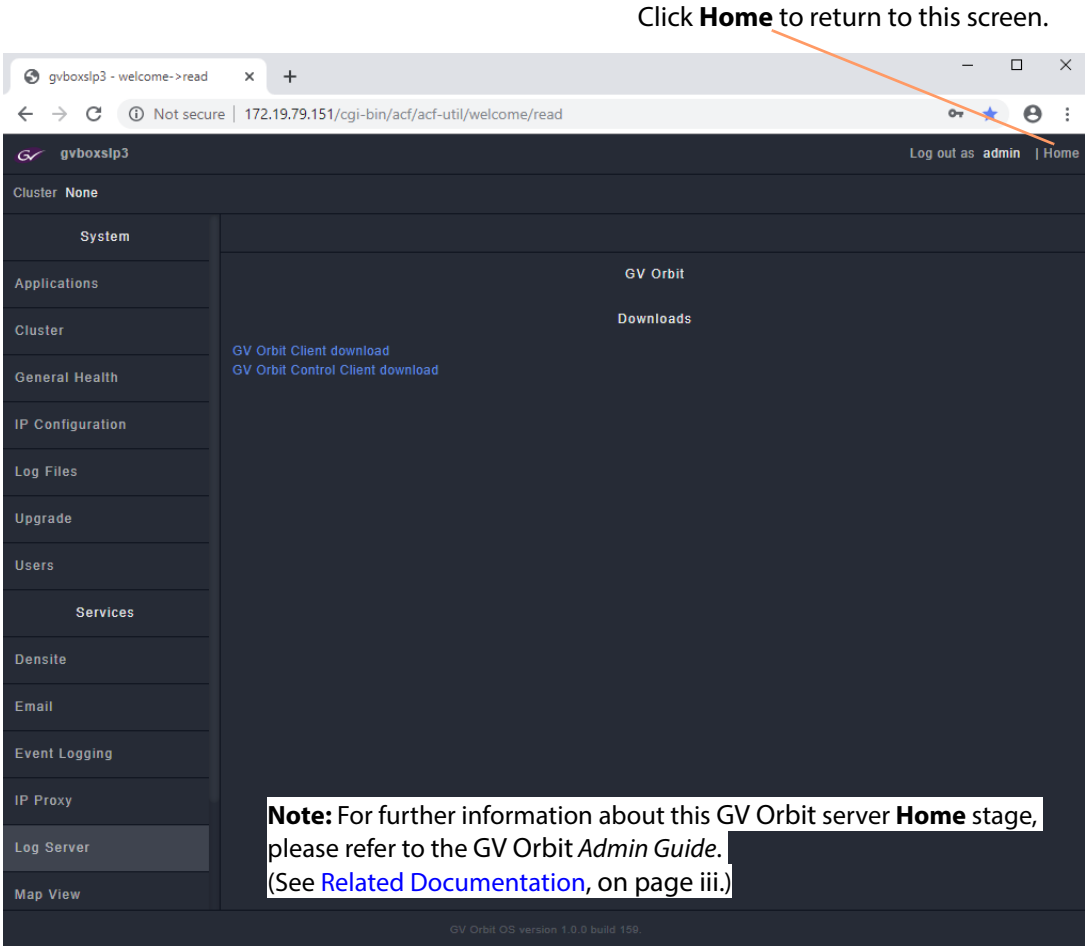


Fig. 2-4: GV Orbit Server Home Stage

GV Orbit Services Management

To manage a service, from the GV Orbit server **Home** stage:

1 Click on the **Applications** tab on the left-hand side.

The applications 'Status' tab-screen is shown.

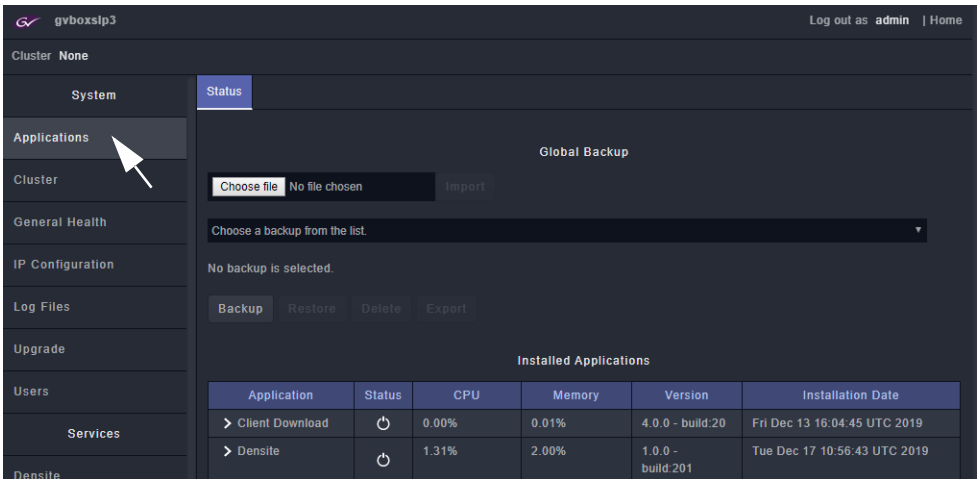


Fig. 2-5: Select Applications Status Tab-Screen

Under the **Installed Applications** heading, there is a section for each application/service running on the GV Orbit server.

2 Scroll down the list of installed applications to the required GV Orbit service.

Fig. 2-6: Installed Applications

3 Expand the selected application/service item by clicking its **>** icon.

Figure 2-7 shows one expanded section for a GV Orbit service, showing service management controls.

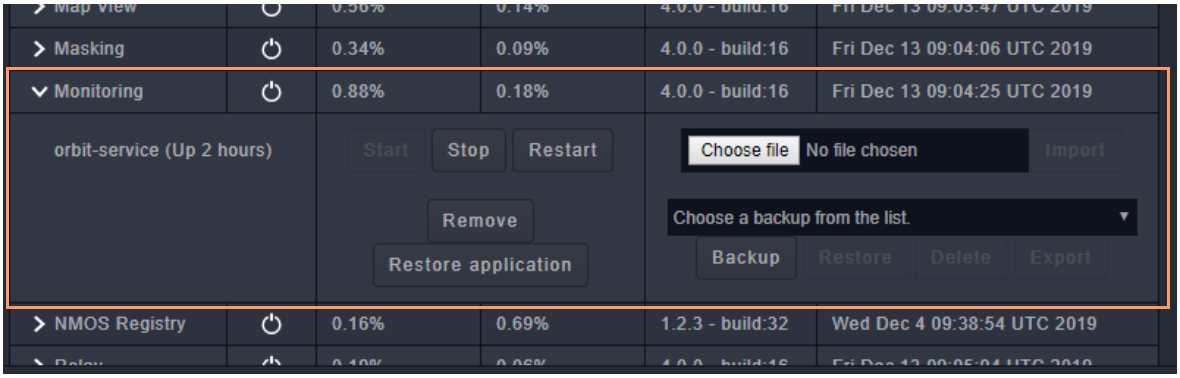


Fig. 2-7: GV Orbit Service Management Controls (Monitoring Service Shown)

Service Management Controls

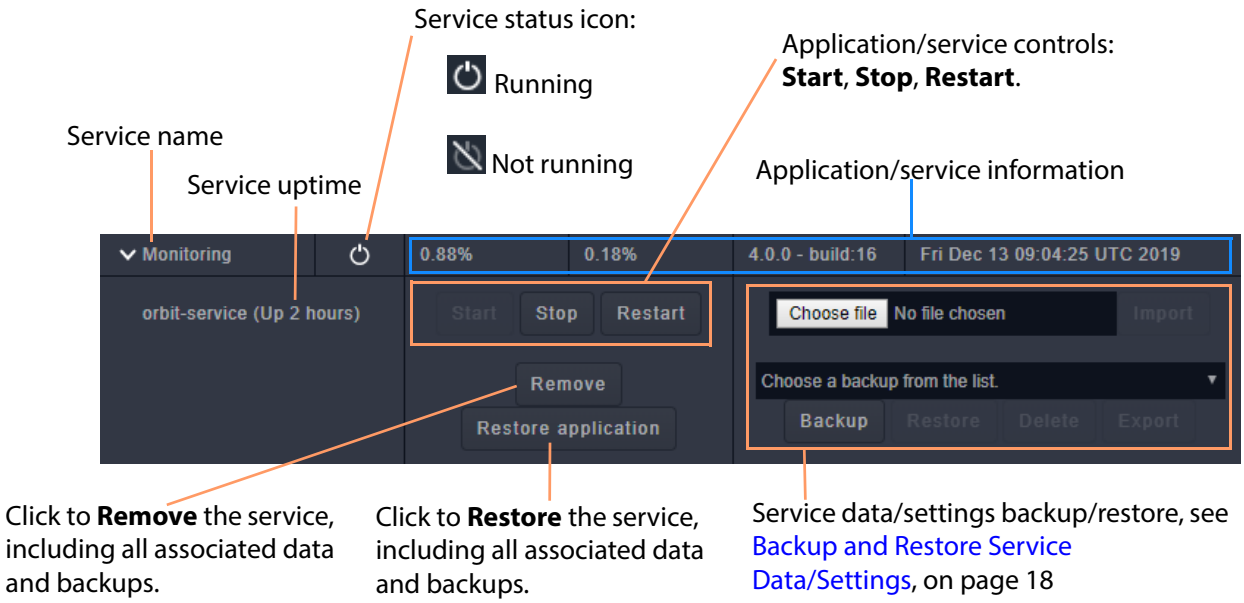


Fig. 2-8: Service Management Controls

CAUTION:
A **Remove** cannot be undone. This fully removes any application and all its associated services and backups.

Note:
An application/service may be **Restored** by reinstalling afterwards and settings can be restored by importing a *previously-exported* backup.

Backup and Restore Service Data/Settings

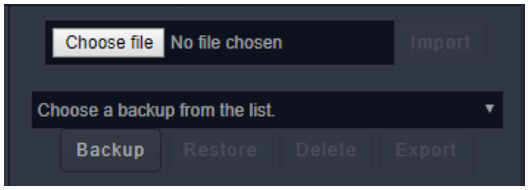


Fig. 2-9: Service Data Management Backup Controls

For each service/application on the GV Orbit server, associated data and settings can be backed up, restored, exported and imported. The following sub-sections refer to the 'Applications' screen when logged into a GV Orbit server:

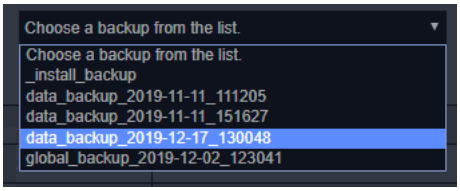
Backup

To take a backup of the *settings* for a service:

1 Click **Backup**.

A settings backup file is created automatically. The file name contains the date and time, in a 'yyyy-mm-dd_hhmmss' format.
For example, `data_backup_2019-12-17_130048`.

2 The backup file name subsequently appears in the 'Choose a backup from the list' drop-down list:



Restore

To restore a backup of *settings*:

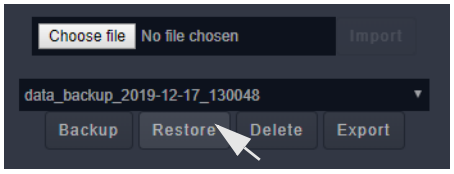
1 Select a backup file from the drop-down list.

2 Click **Restore**.

A confirming pop-up dialog shows the backup file name and asks if you are sure.

3 Click **OK**.

The settings are restored.



Delete

To delete a backup file:

1 Select a backup file from the drop-down list.

2 Click **Delete**.

Export

To export a backup file (to keep, or to use a copy elsewhere):

1 Select a backup file from the drop-down list.

2 Click **Export**.

The exported settings are contained in a compressed file (extension .tar.gz), which is downloaded by the browser.

Import

To import a backup file (i.e. an exported .tar.gz file) from elsewhere:

1. Click **Choose File** and select the file to be imported.
2. Click **Open**.

   The chosen file's name appears in the 'Import' box.
3. Click **Import**.

   The file is imported into the system and appears in the 'Choose a backup from the list' drop-down list.
4. Select the file in the drop-down list.
5. Click **Restore**
   and click **OK** in the pop-up dialog to confirm.

   The imported backup file's settings are applied.

GV Orbit Service Configuration Screens

Configuration screens for active GV Orbit Services are accessible via the GV Orbit server.

Note: Redundant GV Orbit Server Clusters and **GV Orbit Services:**
All GV Orbit Services are run as 'Active-Standby'. A service's configuration screen is only accessible on the active GV Orbit server.

CAUTION
Configuration changes to GV Orbit Services, and to other GV Orbit settings/devices, should be done by the GV Orbit system administrator.

Accessing a Service Configuration Screen

From the GV Orbit server **Home** stage (see Accessing the GV Orbit Server, on page 14):

1 Scroll down the left-hand side of the screen to the side-tabs headed 'Services'. These are the side-tabs for each GV Orbit Service.

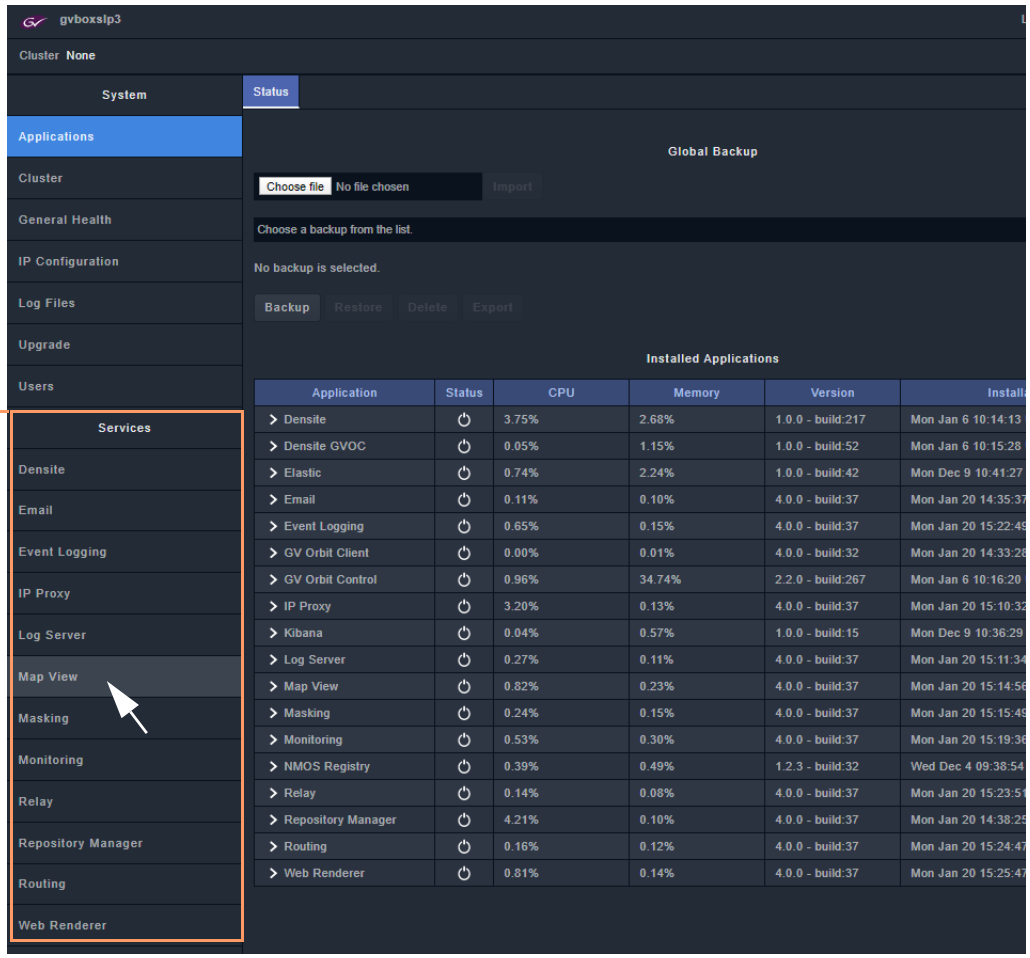


Fig. 2-10: Selecting a Service

2 Click on a 'Service' side-tab.

The configuration screen for the service is shown.

> **Note:**
> An 'Active-Standby' service's configuration screen is only accessible on the *active* GV Orbit server.

Click the  icon to return to the GV Orbit server **Home** stage.

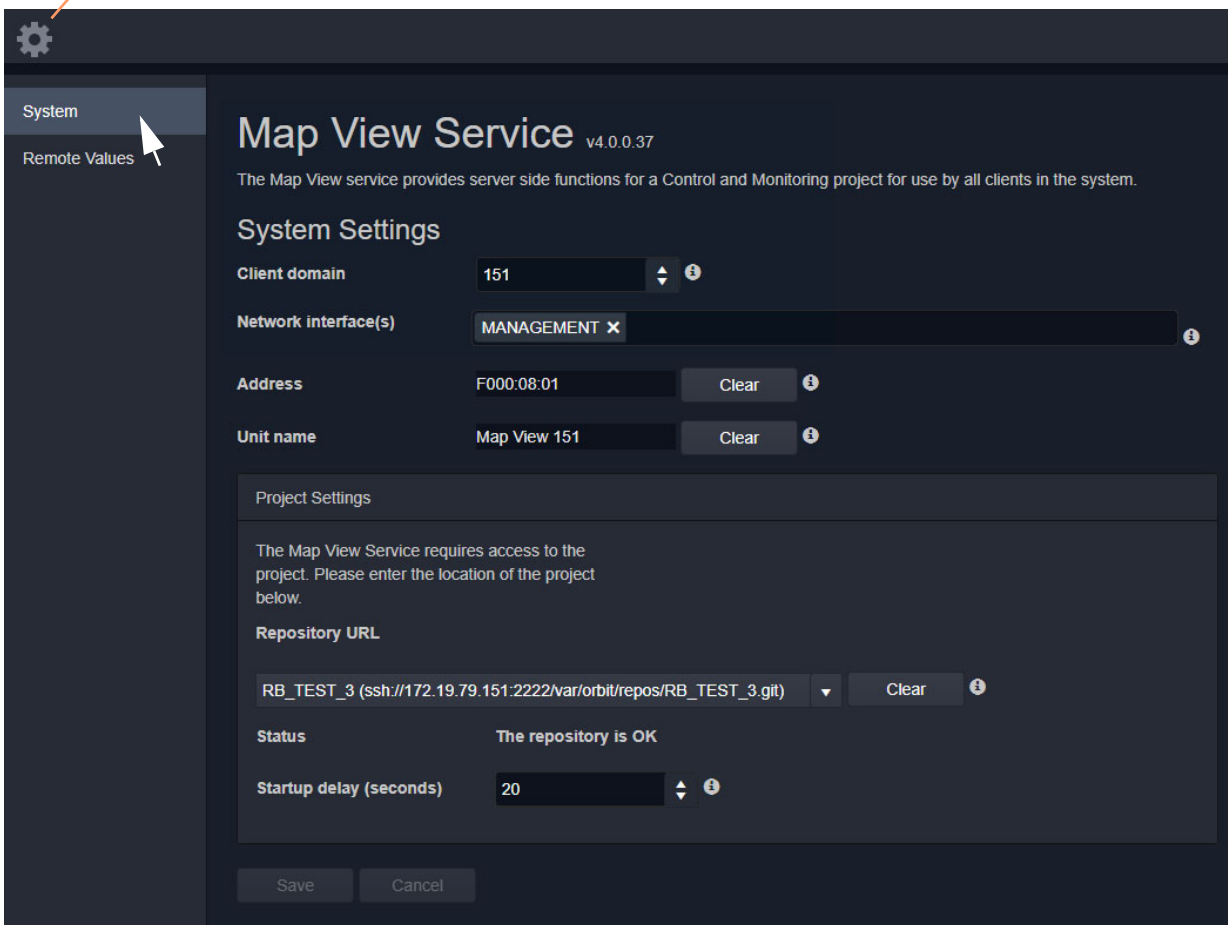


Fig. 2-11: GV Orbit Service Configuration Screen (Map View Service Shown)

Each service configuration screen may have one or more side-tabs.

3 Select a side-tab.

Service settings can be modified.

Changing Settings

The configuration screens for all GV Orbit Services are described in this document. Settings changes can be made on a configuration screen and need to be saved on each screen. (See Save Settings Changes, on page 22.)

Save Settings Changes

When one or more settings changes have been entered into a service configuration settings screen or tab-screen, the changes need to be saved on the screen or on each tab-screen.

A screen may have a 'Save changes' or 'Save' button and/or a yellow 'Unsaved changes' banner message may appear at the bottom of the screen/tab-screen.

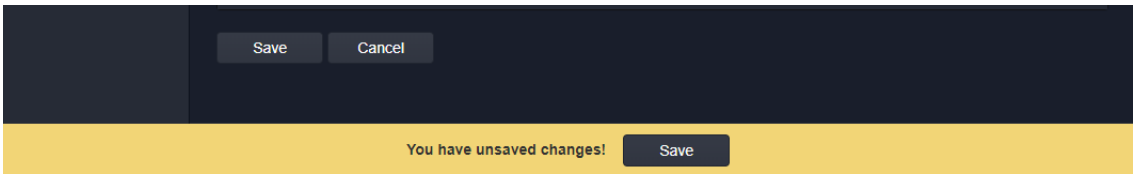


Fig. 2-12: Unsaved Changes Banner

To apply changes made to items on the service's configuration screen or tab-screen:

1. Click **Save** in an 'Unsaved Changes' banner,
   or
   click the **Save Changes** or **Save** button on the configuration tab-screen.
2. Then click **OK** on any 'Save Complete' dialog.

Alternatively, to discard changes:

- Press the **Cancel** button.

Return to the Server Home Stage

Finally, once all settings for a service have been made and saved:

1. Click on the cog icon  to go back to the GV Orbit server's **Home** stage.
   (Or, if in a web browser, click the browser's **Back** button.)

   The GV Orbit server **Home** stage is shown.

Accessing Further Configuration Screens

From the GV Orbit server's **Home** stage, select another service to configure, as required.

Service System Settings

Each GV Orbit service has a configuration screen with one or more tabs with various service settings. There are some setting types that services have in common, which are listed on the service's 'System' configuration screen.

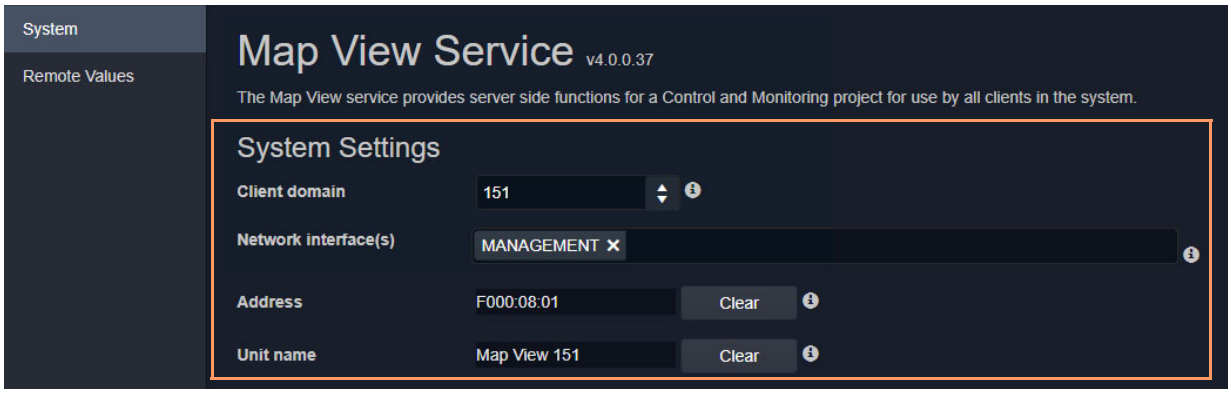


Fig. 2-13: Example Common Setting Types (Map View Service Shown)

Client Domain Setting

Each service uses a GVOP Domain to communicate within a GV Orbit system. This is a setting on the service's configuration screen. This should be set to match the Client Domain used by the GV Orbit system. This is typically set up by the GV Orbit system administrator.

See Figure 1-3, GV Orbit Services Ecosystem Diagram with Domains, on page 5 in Chapter 1 for an example system diagram showing Domains.
See Grass Valley Orchestration Protocol (GVOP), on page 193 for information on GVOP Domains.

Note:
GV Orbit Client(s) and GV Orbit Service(s) must be on the same Domain to be able to communicate and see each other's data.

Default Domain ID Numbers

A new GV Orbit system uses default Domain IDs, described in the table below:

Table 2-1: Default GV Orbit System Domain IDs

GV Orbit Services Domain	Default Domain ID	Comment
System	0	Used for system auto-discovery.
Client	100	Monitoring traffic.
Routing	101	For control of IP Endpoints for signal routing.
Routing Topology	105	For future GV Orbit releases.
Log Server	110	Used by the Log Server service for RollCall-protocol devices.

Network Interface(s) Setting

Each GV Orbit Service will require one or more connections to IP network(s) on the GV Orbit server and used by the GV Orbit system. On a service-by service basis, IP network interfaces can be selected in a service's configuration screen.

> **Note:**
> By default, the **Network Interface(s)** cell is empty, in this case, *all* network interfaces of the server will be used by the service.

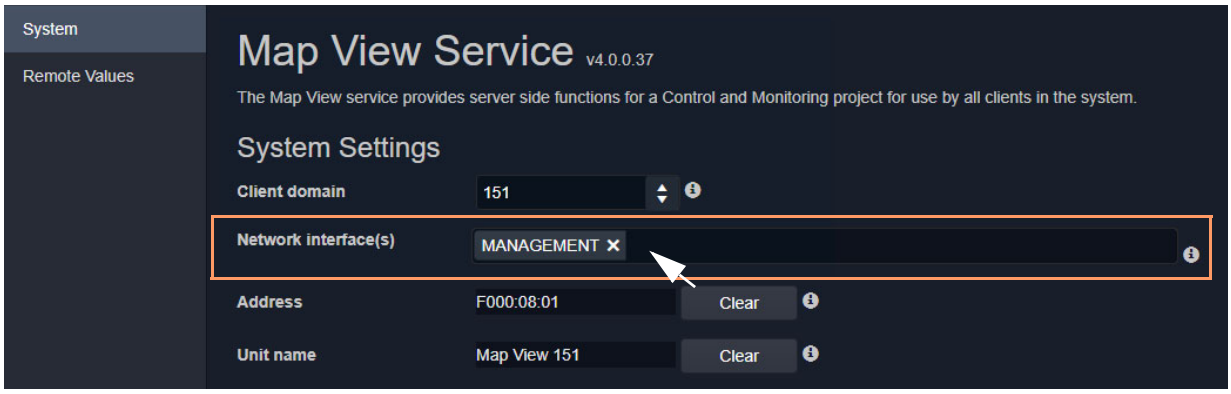


Fig. 2-14: Example Network Interface(s) Setting (Map View Service Shown)

Select Network Interface(s)

To select one or more **Network Interface(s)**:

1 Click in the **Network Interface(s)** text box or cell.

A drop-down list of available network interfaces is shown.

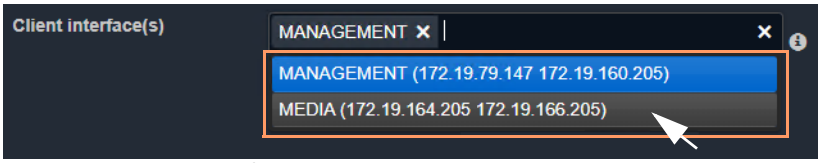


Fig. 2-15: Network Interfaces Drop-Down list

2 Select the server network interface(s) for the service to use from the drop-down list. More than one interface may be selected.

When one or more interfaces have been selected the service will use only those interfaces listed.

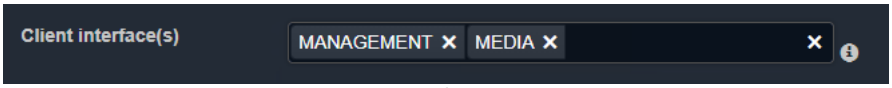


Fig. 2-16: Example Selected Network Interfaces

Note:
When selecting **Network Interface(s)** to use for services, ensure the selected interface(s) are on the same network as the corresponding GV Orbit Client(s).

Delete a Network Interface Item

To delete an item from the list of selected interfaces:

1 Click on its adjacent **x**.

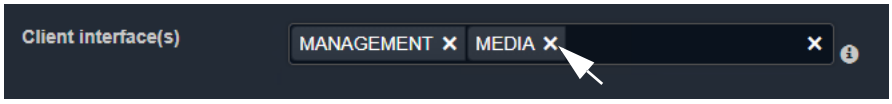


Fig. 2-17: Delete a Network Interface Item

RollCall Address Setting

Assigning of RollCall addresses for each service is done at system design and installation. Addresses must be unique within a system for each different service.

From each service's configuration screen, the service's RollCall address may be changed, if required. For example, in a second, complete GV Orbit system, different addresses would typically be used. This is typically done by the GV Orbit system administrator.

Click the **Clear** button beside the **Address** text box to restore a service's default address.

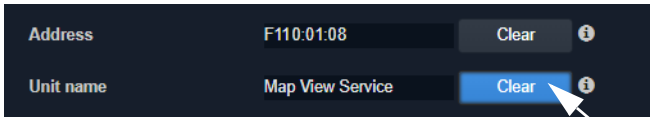


Fig. 2-18: Address and Unit Name Clear Buttons

Unit Name Setting

Each **Service** is given a 'friendly' name to help identify it in log files and in the GV Orbit Client **Network** window etc.

From each service's configuration screen, click the **Clear** button beside the **Unit Name** text box to restore a service's default unit name.

Service Settings

Default Settings

On a new GV Orbit server, the GV Orbit Services, where possible, have default settings. These defaults are designed to quickly get a GV Orbit system running. For example:

- RollCall addresses assigned to each service;
- a default log file configuration is set up;
- default IP port numbers are used; and
- many alarm monitoring settings are pre-configured.

Default Service RollCall Addresses and Unit Names

Table 2-2: GV Orbit Service Default RollCall Addresses and Unit Names

Default RollCall Address	Service Default Unit Name
F110:01:01	IP Proxy Service
F110:01:02	Log Server Service
F110:01:03	Masking Service
F110:01:04	Monitoring Service
F110:01:05	Event Logging Service
F110:01:06	Routing Service
F110:01:07	Email Service
F110:01:08	Map View Service
F110:01:09	Web Renderer Service
F110:01:0A	Relay Service
F110:01:0B	Repository Manager Service

System-Specific Settings

Some settings are specific to an installation and these do require setting up by the GV Orbit system administrator. These settings include:

- Connections to existing Grass Valley Densité- and RollCall-protocol devices/frames etc. (**Densite Manager** service, **IP Proxy** service and **Log Server** service.)
- The user's email server settings. (**Email** service.)
- Setting up a GV Orbit C&M project for the **Map View** service or for the **Web Renderer** service.

These are noted as 'system-specific' configuration items in this user guide.

Service Alarms

Each GV Orbit service itself generates one or more alarms which can be viewed in an **Alarm Summary** window. To view the **Alarm Summary** window:

- Right-click on the corresponding service item in the **Network** window of a GV Orbit Client C&M project and select **Alarms**. See Figure 2-19.

> **Note:**
>
> The **Monitoring** service must be running for alarms to be present in the GV Orbit system; this includes alarms for GV Orbit Services themselves.

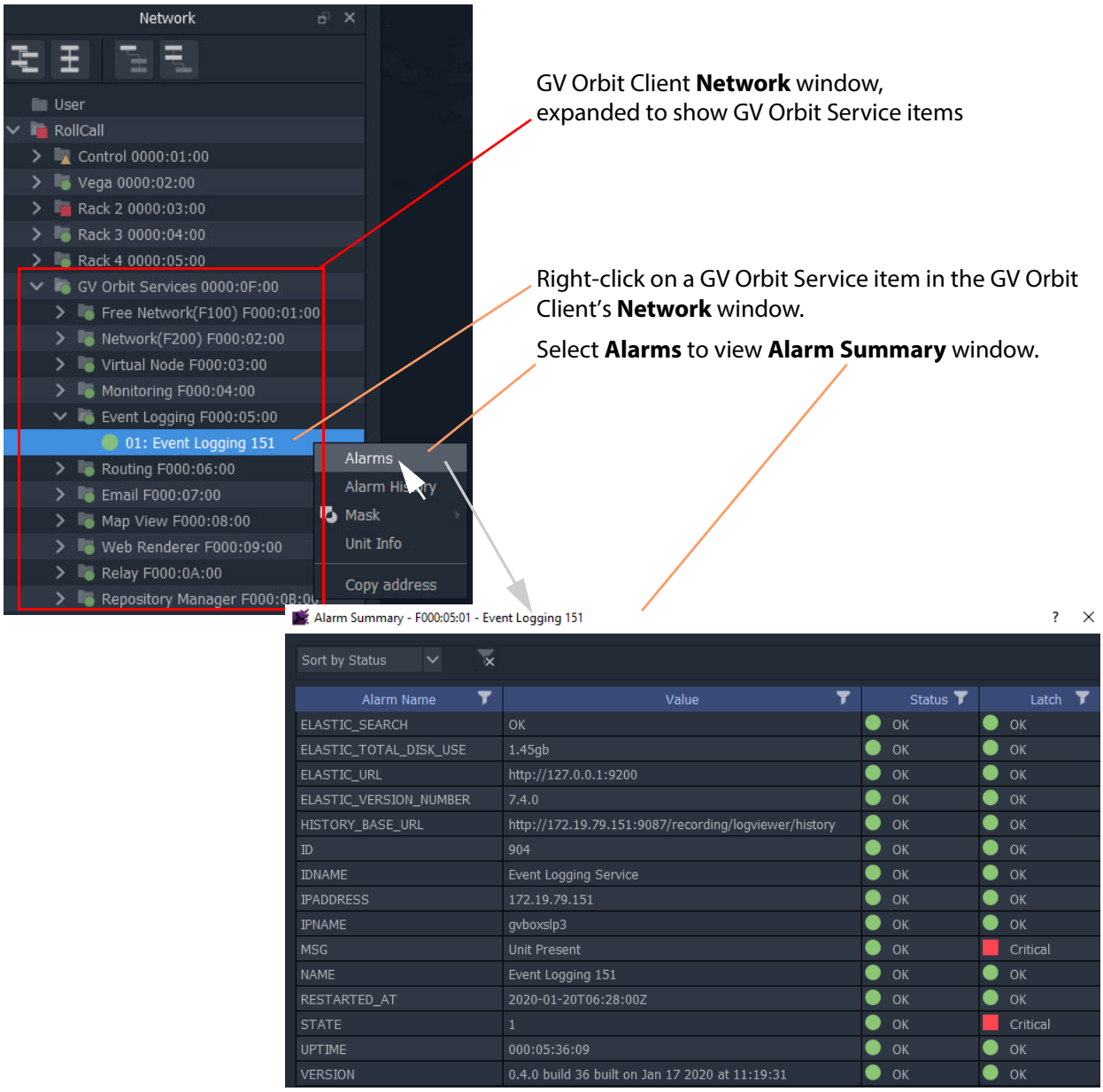


Fig. 2-19: Service Alarm Summary Window (Event Logging Shown)

3 Densité Manager Service

Chapter contents:

Introduction

Version: 1.0

The GV Orbit **Densité Manager** service manages Densité frames and cards for GV Orbit. It allows two-way communication from GV Orbit to these frames/cards, converting status and alarm messages from these devices into a GV Orbit format.

The service is the entry point into a GV Orbit system for log data from Densité-protocol devices (for example, from a Grass Valley IPG-3901 IP Gateway card). The service collects logging information from devices and distributes it to subscribing clients, for example, to the **Monitoring** Service.

System Screen

The **Densité Manager** service configuration screen is shown in Figure 3-1.

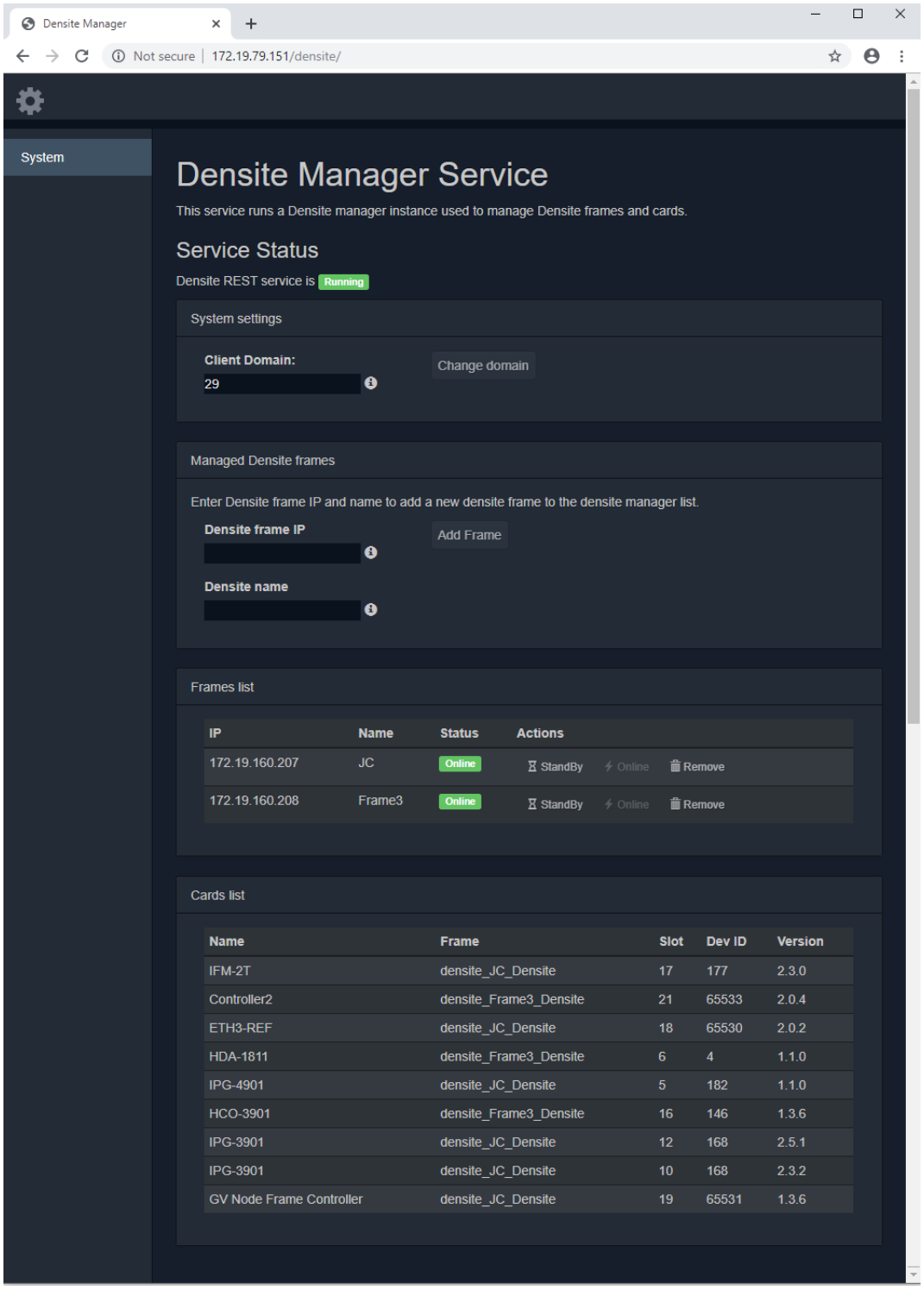
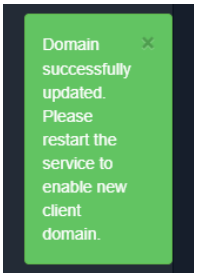


Fig. 3-1: Densité Manager Service - System Screen

Table 3-1: Densité Manager Service - System Settings

Setting	Description
Service Status	Indicates the status of the service: 'running'/'not running'.
System Settings:	
Client Domain	Text box. Enter a new Domain number for the service to use.
Change Domain	Button. Click to save the new Domain number to be used by the service. A pop up box confirms that the new number has been updated:  Restart the **Densité Manager** service for the service to use the new domain number.
Managed Densité Frames:	
Densité Frame IP	Text box. Enter the IP address of a Densité frame to be added.
Densité Name	Text box. Enter a name for the frame to be added.
Add Frame	Button. Click to add a new frame to the service.
Frames List:	A list of the frames added to the service. Column headings:
IP	IP address.
Name	Name of frame.
Status	Frame status: 'online'/'offline'.
Actions	Click on an item to perform an action: • Click **Standby** to set the service into 'Standby' mode. • Click **Online** to set the service into 'Active' mode. • Click **Remove** to remove the frame from the service.
Cards List:	A list of all the cards visible to the service and added to the service. Column headings:
Name	Card name.
Frame	Name of the frame housing the card.
Slot	Card frame slot number.
Dev ID	Densité device ID number.
Version	Software/firmware version on the card.

4 Email Service

Chapter contents:

Introduction

Version: 4.0

The **Email** service sends emails on the behalf of GV Orbit via a configured SMTP server. For a running GV Orbit C&M project, when an Email Behaviour is triggered it sends a message to the **Email** service, which causes an email message to be sent.

> **Note: Behaviour**:
> In GV Orbit, a Behaviour implements some 'behind the scenes' logic on a custom graphical operator panel. The logic may be triggered by some monitored external event, or by the user.

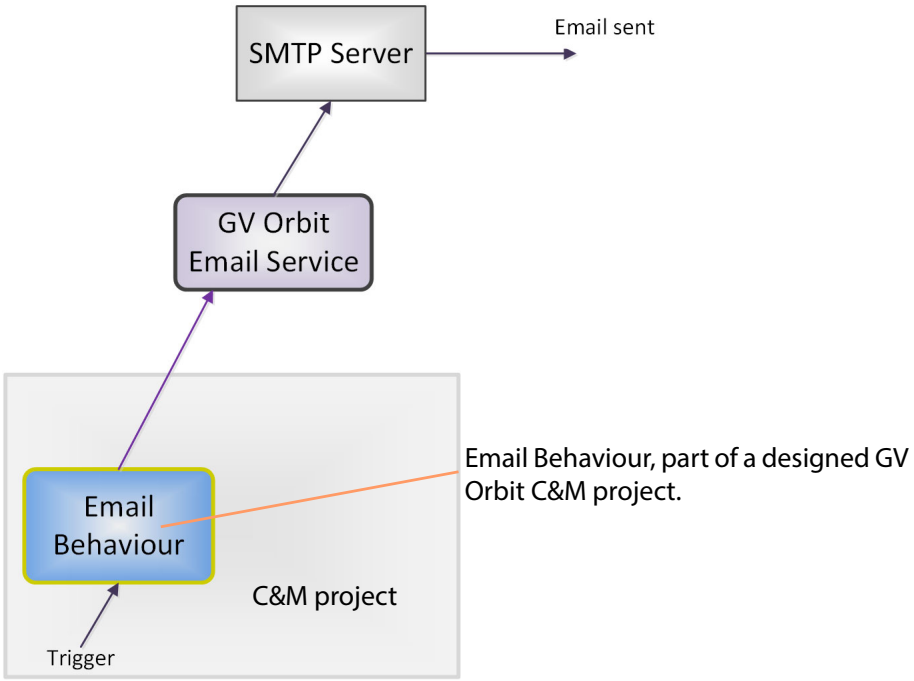


Fig. 4-1: GV Orbit Email Service

Note: Using a Global file:
Typically when designing a GV Orbit C&M project, use a GV Orbit 'Global file' to hold the 'Email Behaviour' and any triggering 'logic' for it. This type of file runs on the GV Orbit server and not on the GV Orbit client, which functionality persists even when the client PC is powered down.

System Screen

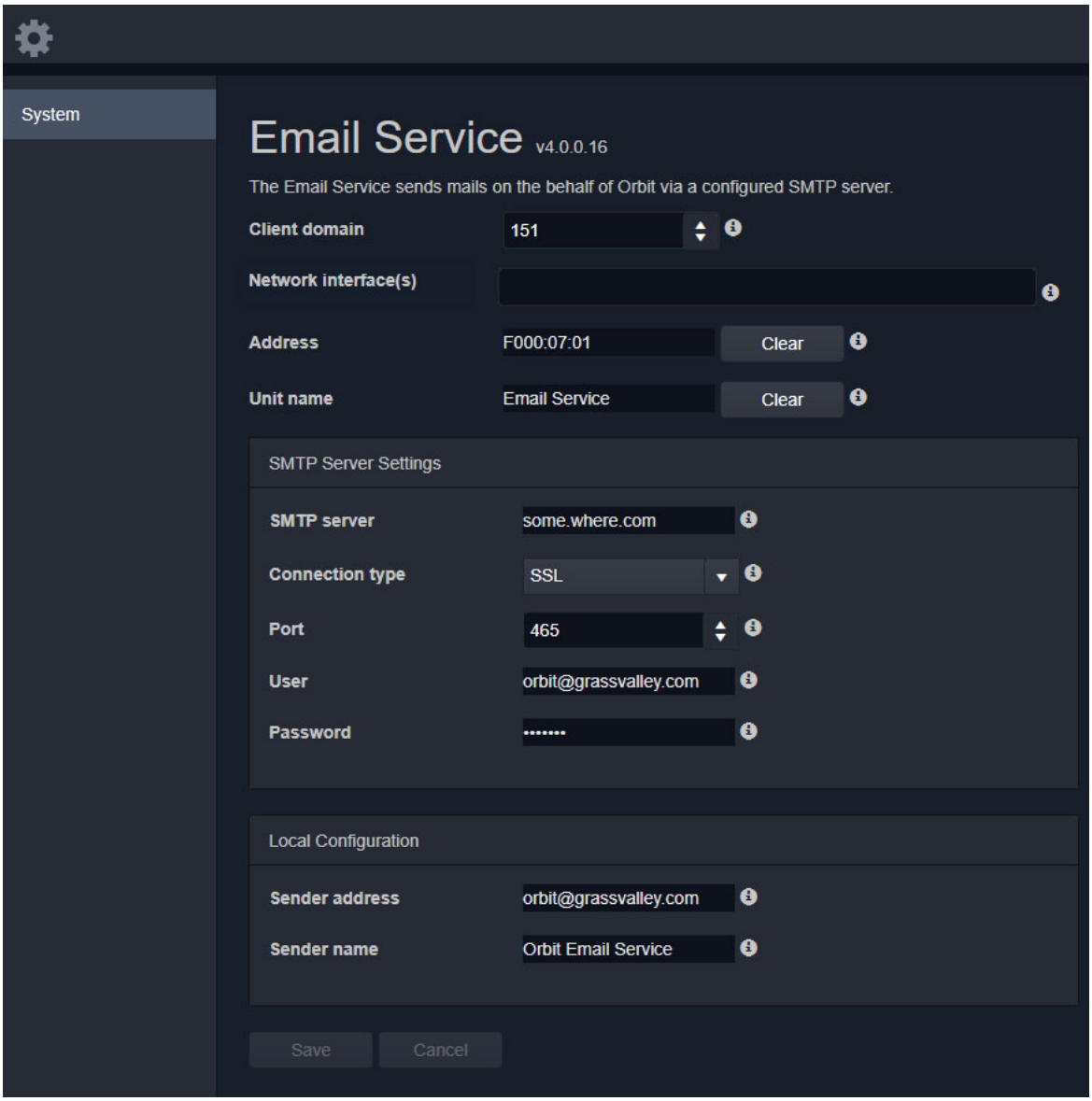


Fig. 4-2: Email Service - System Screen

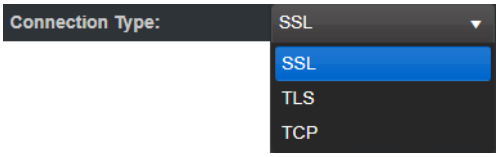
Table 4-1 below describes the system settings of the **Email** service configuration screen.

Note: Some settings are system-specific.

Table 4-1: Email Service - System Settings

Setting	Description
Client Domain	Text box. Enter a GVOP domain number that the service will use (usually the 'Client' domain). The valid range is 1 to 232. See Grass Valley Orchestration Protocol (GVOP), on page 193 for information on Domains. **Note:** This setting should be set to match the Domain used by a GV Orbit Project in a GV Orbit Client. If the GV Orbit Client and **Email** service are on different domains they cannot see each other's data.
Network Interface(s)	Drop-down box. Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected. By default this cell is empty, in this case, all interfaces will be used by the service. (See Network Interface(s) Setting, on page 24.) **Note:** When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding GV Orbit Client(s).
Address	Text box. Enter RollCall address to use for the **Email** service. This will uniquely identify the service in the GV Orbit system. This will be used when the service publishes its own log data. See RollCall Address Setting**, on page 25**, and RollCall Address**, on page 189,** for information about RollCall address. The user is free to define the RollCall addresses for a system.
Clear	Button. Click to restore default RollCall address for the service. Default: F110:01:07
Unit Name	Text box. Enter a name for the **Email** service, to be a human-readable identifier for the service which appears in the GV Orbit client **Network** window.
Clear	Button. Click to restore default name for the service.
SMTP Server Settings:	**Note:** These are system-specific settings.
SMTP Server	Text box. Enter the web address (IP network domain name) of the SMTP server. For example, 'my.mailserver.com'.

Table 4-1: Email Service - System Settings (continued)

Setting	Description
Connection Type	Drop-down box. Select the protocol for communicating with the SMTP server. 
Port	Text box. Enter the IP port number to use to communicate with the SMTP server.
User	Text box. Enter a valid user name to log into the SMTP server with.
Password	Text box. Enter the corresponding user password to log into the SMTP server.
Local Configuration:	**Note:** These are system-specific settings.
Sender Address	Text box. Enter a default sender email address to use for emails sent by the GV Orbit system. For example, 'GVOrbit@My_Company.com'.
Sender Name	Text box. Enter a default sender name to use for emails sent by the GV Orbit system. For example, 'The GV Orbit Email Service'.

5 Event Logging Service

Chapter contents:

Introduction

Version: 4.0

The **Event Logging** service captures alarms and device status messages in an event log which may be monitored live or referred to later. (For example, the history of alarm changes, value changes, mask applications, alarm acknowledgments and any other status changes can be viewed.)

The service acts as a listener, snooping on the various GVOP messages in a GV Orbit system. The service can store a copy of all or some of the event log information by applying a filter to messages it listens to and writes into an event log store.

The service offers the facility to search for and browse logged event information. Additionally, the service can expose a data connection for each event log store, allowing the logged data to be displayed inside a GV Orbit client custom soft panel using the purpose-made 'Alarm List' graphical widget.

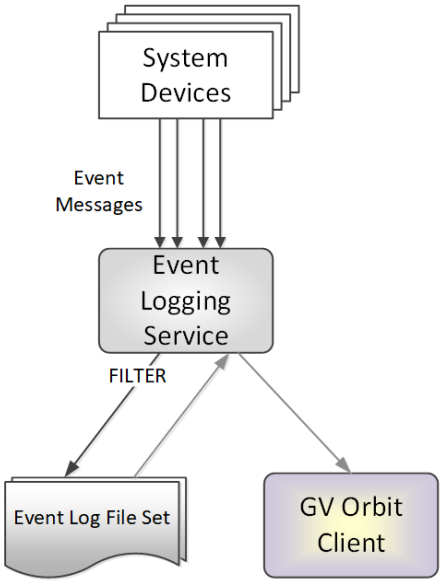
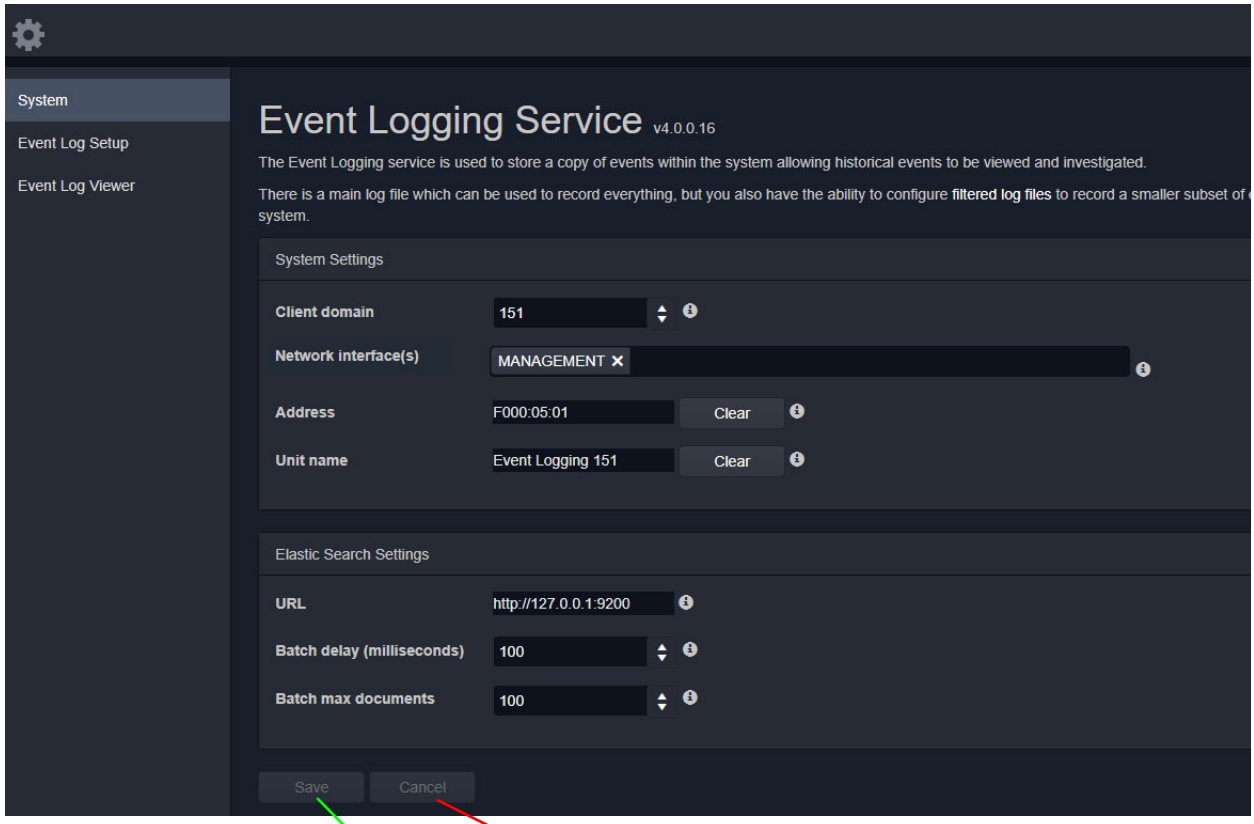


Fig. 5-1: GV Orbit Event Logging Service

System Screen

Table 5-1 below describes the system settings of the **Event Logging** service configuration screen of Figure 5-2.



Press **Cancel** to discard changes to settings.

Press **Save** to apply changes made to setting items on the configuration screen.

Fig. 5-2: Event Logging Service - System Screen

Table 5-1: GV Orbit Event Logging Service - Settings

Setting	Description
System Settings:	
Client Domain	Text box. Enter a GVOP domain number that the **Event Logging** service will monitor (usually the system's 'Client' domain). Messages published onto this domain will be logged. The valid range is 1 to 232. See Grass Valley Orchestration Protocol (GVOP), on page 193 for information on Domains. **Note:** If the GV Orbit Client and **Event Logging** service are on different GVOP domains they cannot see each other's data.

Table 5-1: GV Orbit Event Logging Service - Settings (continued)

Setting		Description
	Network Interfaces	Drop-down box. Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected. By default this cell is empty, in this case, all interfaces will be used by the service. (See Network Interface(s) Setting, on page 24.) **Note:** When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding GV Orbit Client(s).
	Address	Text box. Enter RollCall address to use for the **Event Logging** service. This will uniquely identify the service in the GV Orbit system. This will be used when the service publishes its own event log data. See RollCall Address**, on page 189** for information about RollCall address. The user is free to define the RollCall addresses for a system.
	Clear	Button. Click to restore default RollCall address for the service. Default: F110:01:05
	Unit Name	Text box. Enter a name for the **Event Logging** service, to be a human-readable identifier for the service which appears in the GV Orbit client **Network** window.
	Clear	Button. Click to restore default name for the service.
Elastic Search Settings:		
	URL	Text box. Enter the URL of the Elastic search engine to be used for the processing of event logs (include IP address and IP port number). Loop-back IP addresses are allowed. (Typically, it is the GV Orbit server that runs the Elastic search application.) For example: • `http://127.0.0.1:9200` for a loop-back IP address. • `http://172.20.79.143:9200` for a specific IP address.
	Batch delay (milliseconds)	Text box. Enter the maximum wait time (ms) before sending a batch of event log data to the search engine. (Default 100 ms.) (It is more efficient to send data in batches.)
	Batch max documents	Text box. Enter the maximum number of documents in a batch to send to the search engine. (Default 100.)

Event Log Setup Screen

Fig. 5-3: Event Log Setup Screen

Current Event Log File Configurations

This section of the **Event Log Setup** screen (see Figure 5-3 on page 43) allows the user to add a new event log file configuration or to select an event log file configuration for editing or deleting.

The **Event Logging** service stores data within plain text log files, which may be configured to either store all data or just filtered data. This enables data to be logged for, for example, just alarms from devices for one channel. Different event log file configurations can be set up individually.

Event log file configuration settings also allow time periods (days) to be set before automatically clearing log file data.

Default Log File Configuration

A GV Orbit system has a default log file configuration already set up (named '**default**') which is set to be the default one shown in the **Alarm History** window in GV Orbit Client.

Note: Do not delete the '**default**' log file configuration.

Table 5-2: Current Log File Configuration Settings

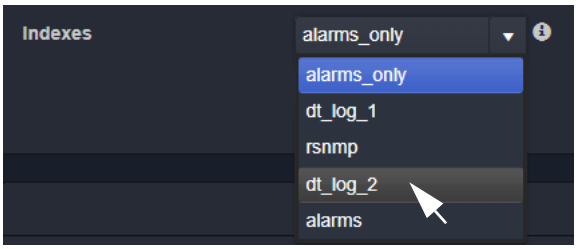
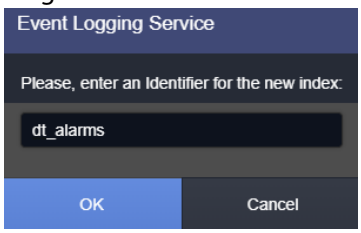
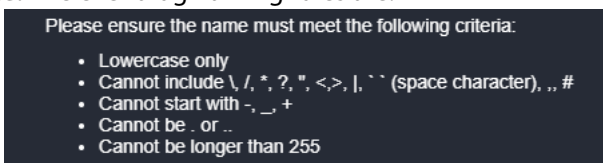
Setting	Description
Indexes	Drop-down box. Shows the selected event log file configuration (index). When the control is selected, it shows a drop-down list of all currently configured event log file configurations within the system. **Select a Log File Configuration:** To select an event log file configuration: 1 Click on the item. A drop-down list of all event log file configurations is shown. 2 Select an event log file configuration item for configuration editing.  The selected event log file configuration's settings are editable in the **Log File Configuration** panel below, see Event Log File Configuration, on page 46.
New	Button. To create a new event log file configuration: 1 Click **New**. A dialog is shown.  2 Enter a name for the event log file configuration. (See Identifier and Event Log File Name, on page 46 for information on how the identifier is used.) **Note:** The event log naming rules are: 

Table 5-2: Current Log File Configuration Settings (continued)

Setting	Description
	3 Click **OK**. A new, empty event log file configuration is created and is ready to be configured in the panel below. See Event Log File Configuration, on page 46.
Delete	Button. Click to delete the selected event log file configuration.

Identifier and Event Log File Name

Each event log file configuration (index) has an **identifier**, a text string which will be used to form the names of the event log files produced.

Event Log File Name Format

The following log file name format is used:

IDENT-YYYY-MM-DD-N.log

Where:

- IDENT is the identifier text string, for example: CHAN001
- YYYY is the year, for example: 2019
- MM is the 2-digit decimal month number, for example: 02 for February.
- DD is 2-decimal-digit day number, for example: 05
- N is log file index suffix, a decimal integer 1 to 9 for the different log files in the set of log files of an event log file configuration.

For example, for CHAN001 identifier, a log file set comprises:

- `CHAN001-2019-04-18-1.log`
- `CHAN001-2019-04-18-2.log`
- `CHAN001-2019-04-18-3.log`
- `CHAN001-2019-04-18-4.log`
- `CHAN001-2019-04-18-5.log etc.`

Event Log File Configuration

The settings of the event log file configuration selected in the 'Current Index Configurations''Indexes' drop-down box can be changed in the **Configuration** panel, see Figure 5-4.
The log file configuration name is shown in the **Index Name** field.
The settings and controls are described in Table 5-3.
The user can set op a filter for only specific alarm messages to be logged.

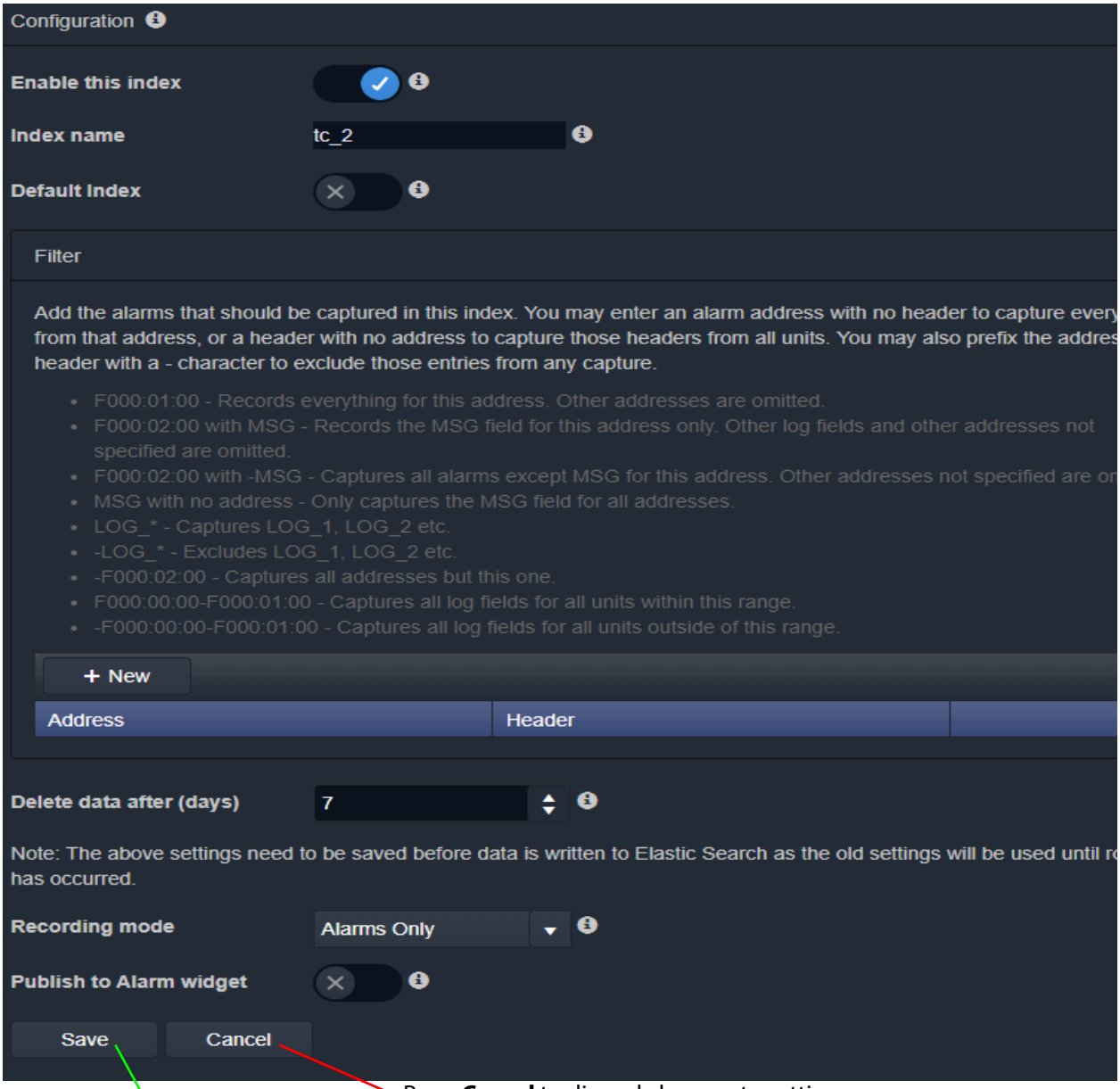


Fig. 5-4: Event Log Setup Settings - Configuration Panel

Table 5-3: Log File Configuration Settings

Setting	Description
Enable this index	Yes/No check box. • 'Yes' - enables logging to the log file. • 'No' - disable logging to the log file.
Index name	Shows the selected log file configuration (read-only).

Table 5-3: Log File Configuration Settings (continued)

Setting	Description
Default index	Yes/No check box. • 'Yes' - this log file set is shown by default in the **Alarm History** window in GV Orbit Client. **Note:** Only one log file configuration should be set to be the **Default Index**.
Filter	Filter rules list: Set up log message filtering rules in this panel. Rules can be set up to allow or block various messages from certain devices or from a range of devices. See Filter List, on page 49 for more information about entering filter rules and some example filter list items.
Delete Data After (days)	Text box. Enter the maximum duration for keeping the logged data.
Recording Mode	Drop-down box. Select the recording mode: • Everything. • Alarms Only. **Note:** Regardless of this setting, user interactions, such as alarm acknowledgments, will be logged.
Publish to Alarm Widget	Yes/No check box. • 'Yes' - the **Event Logging** service exposes the last 200 log file entries to the system. This enables the messages to be displayed in purpose-built 'Alarm List' widget (inside a C&M project screen running in a GV Orbit Client, or on a multiviewer video wall).
Note:	Settings need to be saved before they take effect and new log data is logged (processed, viewed and searched).

Filter List

The filtering for event log file configurations applies to alarm messages, log messages and status messages. The filtering affects what is logged from the point when the filtering is applied to a log file configuration (saved). Any messages already logged are not affected.

For example, if an **Event Logging** service has been logging all messages in a system and then a single address is added to the filtering, then only messages from that one address will then be logged. Messages already logged are not affected.

Filter List Controls

Controls for generating a list of filter rules are shown in Table 5-4.

Table 5-4: Log File Configuration - Filter List Controls

Filter Control	Description
+New	Button. Click to add a new filter rule. Requires Address/Header items.
Address	Column heading. Enter a RollCall address item as part of filter rule.
Header	Column heading. Enter a log header message type as part of filter rule.
Delete	Button. Click to delete the address/header filter item.

Filtering Rules

Filtering rules can be set up, which can then act to reduce the amount of data that is logged in an event log file:

- Initially, the list is empty and all messages are logged.
- One or more filter rules can be set up to allow or to block various messages from certain devices or from a range of devices.
- Filter rules are combined by being logically 'OR'ed together.

Note: There is no inter-dependency between filter rules.

A filter list of RollCall addresses and event log message Headers can be set up which define the messages be captured in the event log file. The list can be scrolled though. See Figure 5-5.

Note:
The set of devices accessible by the **Event Logging** service, and hence the events stored in the event log file, is defined by the GVOP Domain number.

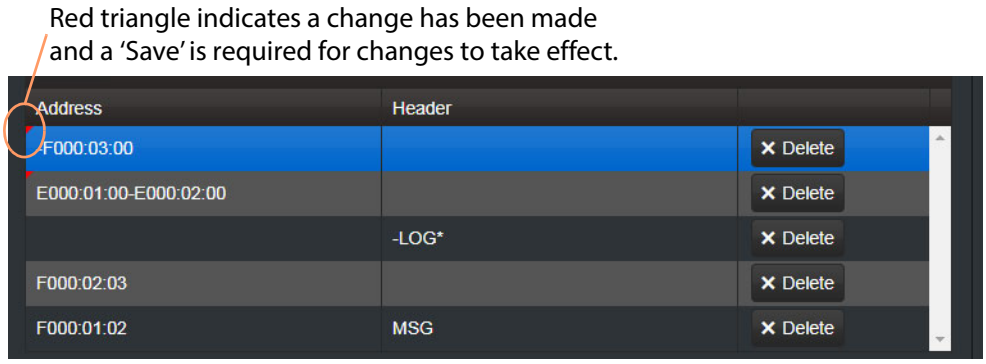


Fig. 5-5: Example Filter Rules List

> **Note: Save changes**:
> A red triangle appears in the top-left of each filter table entry after is has been edited to indicate that a 'Save' must be performed for the change to take effect.

Filter Rules List Items

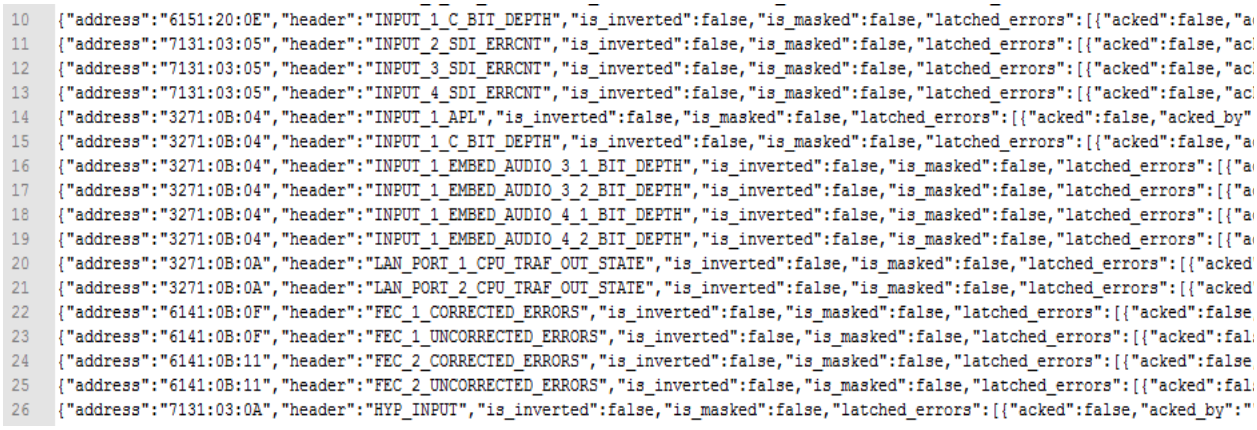
Example rules are listed in Table 5-5. Wild-card characters can be used to specify headers (e.g. LOG_*). An empty rules list will capture all messages.

Table 5-5: Filter Rule List Item Examples

Rule	Filter Rule Item Example		Description
	RollCall Address	Header	
<Empty>			A completely-empty list captures all messages in the GVOP Domain.
Address only:	F000:01:00		Captures all messages/data for this device address.
Address range:	F000:00:00-F000:01:00		Captures all messages/data all device addresses in this range.
Exclude address:	-F000:02:00		Excludes all messages/data for this device address.
Exclude address range:	-F000:00:00-F000:01:00		Excludes all messages/data for device addresses in this range.
Header only:		MSG	Captures MSG messages for all device addresses (in the GVOP domain).
Headers:		LOG_*	Captures messages with log headers: LOG_1, LOG_2, LOG_3, etc.
Exclude headers:		-LOG_*	Excludes messages with log headers: LOG_1, LOG_2 etc.
Address and header:	F000:02:00	MSG	Captures the MSG log field header message for this device address only.
Exclude header from address:	F000:02:00	-MSG	Captures all messages for this device address, except MSG messages.

Event Log File Format

The event log file entries are in JavaScript Object Notation (JSON) format with a single entry per line. See Figure 5-6.



```
{"address":"6151:20:0E","header":"INPUT_1_C_BIT_DEPTH","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"a
{"address":"7131:03:05","header":"INPUT_2_SDI_ERRCNT","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"ac
{"address":"7131:03:05","header":"INPUT_3_SDI_ERRCNT","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"ac
{"address":"7131:03:05","header":"INPUT_4_SDI_ERRCNT","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"ac
{"address":"3271:0B:04","header":"INPUT_1_APL","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"acked_by"
{"address":"3271:0B:04","header":"INPUT_1_C_BIT_DEPTH","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"a
{"address":"3271:0B:04","header":"INPUT_1_EMBED_AUDIO_3_1_BIT_DEPTH","is_inverted":false,"is_masked":false,"latched_errors":[{"a
{"address":"3271:0B:04","header":"INPUT_1_EMBED_AUDIO_3_2_BIT_DEPTH","is_inverted":false,"is_masked":false,"latched_errors":[{"a
{"address":"3271:0B:04","header":"INPUT_1_EMBED_AUDIO_4_1_BIT_DEPTH","is_inverted":false,"is_masked":false,"latched_errors":[{"a
{"address":"3271:0B:04","header":"INPUT_1_EMBED_AUDIO_4_2_BIT_DEPTH","is_inverted":false,"is_masked":false,"latched_errors":[{"a
{"address":"3271:0B:0A","header":"LAN_PORT_1_CPU_TRAF_OUT_STATE","is_inverted":false,"is_masked":false,"latched_errors":[{"acked
{"address":"3271:0B:0A","header":"LAN_PORT_2_CPU_TRAF_OUT_STATE","is_inverted":false,"is_masked":false,"latched_errors":[{"acked
{"address":"6141:0B:0F","header":"FEC_1_CORRECTED_ERRORS","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false
{"address":"6141:0B:0F","header":"FEC_1_UNCORRECTED_ERRORS","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":fal
{"address":"6141:0B:11","header":"FEC_2_CORRECTED_ERRORS","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false
{"address":"6141:0B:11","header":"FEC_2_UNCORRECTED_ERRORS","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":fal
{"address":"7131:03:0A","header":"HYP_INPUT","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"acked_by":"
```


Fig. 5-6: Sample Event Log File Extract

Entries are human-readable but are not easy to browse. GV Orbit offers a log file viewer for easier viewing of log files. See Event Log Viewer, on page 53.

State Value

Note: State Value:

The status of devices and device parameters (headers) are assigned a 'State' value in log messages, where:

- 0 = Masked.
- 1 = OK.
- 49 = Acknowledged warning.
- 50 = Warning.
- 99 = Acknowledged error.
- 100 = Error.

Event Log Message Examples

Example: Event Log Message (type=log)

(The event log file extract example below is presented to make it easier to read in this document.)

A message is logged for each log field value or alarm change.

> **Note:**
> The **Event Logging** service log file configuration's 'Recording Mode', determines if all value changes or just alarms were logged in a log file.

Alarms are signified by a 'State' value greater than 1.


```
{
   "address":"E000:02:00",
   "header":"COMMS",
   "is_inverted":false,
   "is_masked":false,
   "latched_errors":[
      {
         "acked":true,
         "acked_by":"admin",
         "acked_timestamp":"2018-11-27T09:29:15Z",
         "duration":4294967295,
         "state":100,
         "timestamp":"2018-11-27T08:18:26",
         "value":"FAIL"
      }
   ],
   "latched_state":100,
   "state":99,
   "timestamp":"2018-11-27T09:29:15Z",
   "type":"log",
   "unmasked_state":99,
   "value":"FAIL"
}
```


Ack Message (type=ack)

This message is logged when a user physically acknowledges an alarm within the system or they reset an alarm's 'latched state' to its current state value.

Header Mask (type=cellmask)

This message is logged when a user applies any type of log message mask in GV Orbit.

An individual log field message from a device can be masked. When masked, it does not contribute to any overall state value calculated for a device.

Unit Mask (type=unitmask)

This message is logged when a user applies any unit alarm mask in GV Orbit.

All messages from an individual device (unit) can be masked.

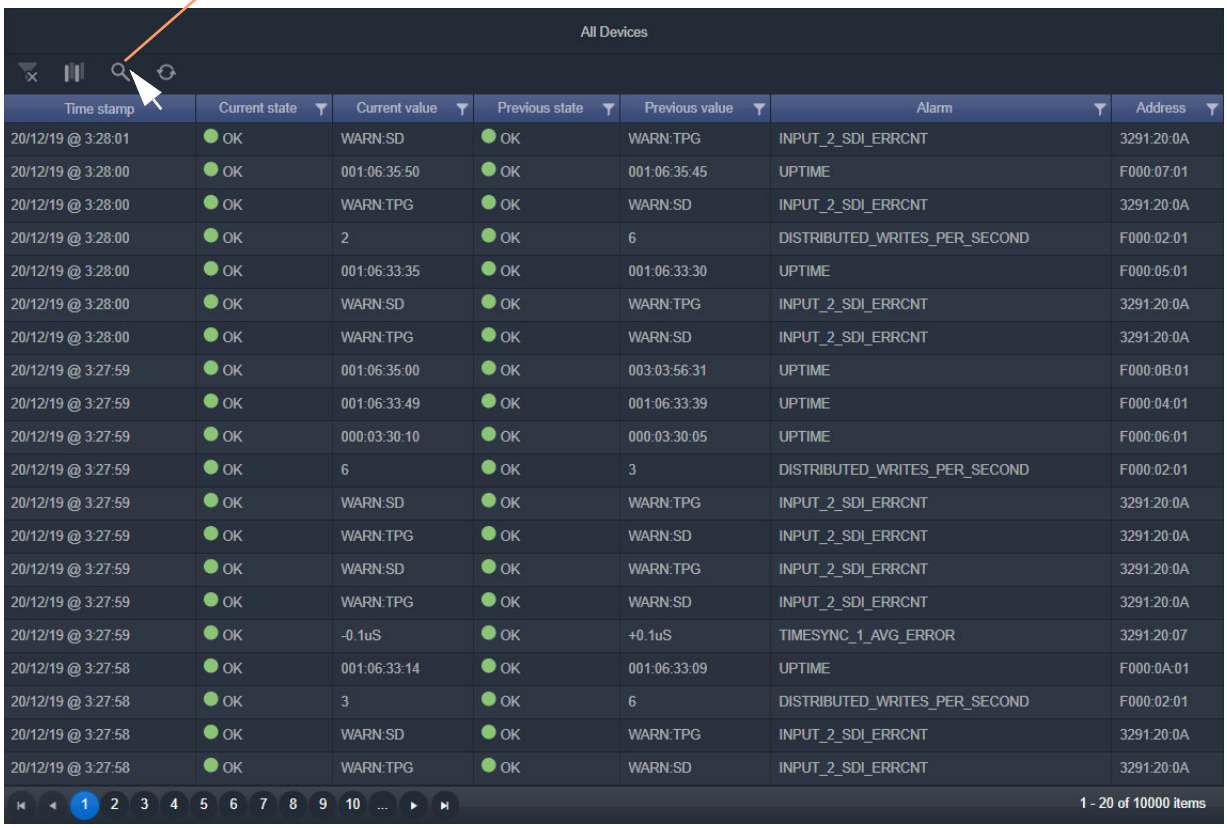
Event Log Viewer

The event log files themselves are human-readable text files; however, they are still quite hard to examine in a text editor. The **Event Logging** service provides a simple event log file viewer facility (**Event Log Viewer**) for viewing the files and querying the recorded event log messages/data.

To access the **Event Log Viewer**:

- Click on the **Event Log Viewer** side-tab of the **Event Logging** service's configuration screen.

Click  to select the data to be viewed.
See Search Parameters Dialog, on page 54.



See Search Results Viewing, on page 56.

Fig. 5-7: Event Log Viewer

The log data set to be shown can be selected (see Select Log Data to View, on page 54).

The log data list can be searched by date and for a selectable time period (see Select Date and Time Period to View, on page 54). The resulting log messages are shown in the **Event Log Viewer** screen in a scrollable, paged list.

Alarms that are masked are shown 'grayed-out' (duller) in the list.

Search Parameters Dialog

Log data from the log file to be displayed can be selected with the **Search Parameters** dialog to reduce the log messages shown.

Select Log Data to View

To view captured messages/data of an event log file, in the **Event Log Viewer** screen:

1 Click on the **Search Parameters** icon ( ).

The **Search Parameters** dialog is shown.

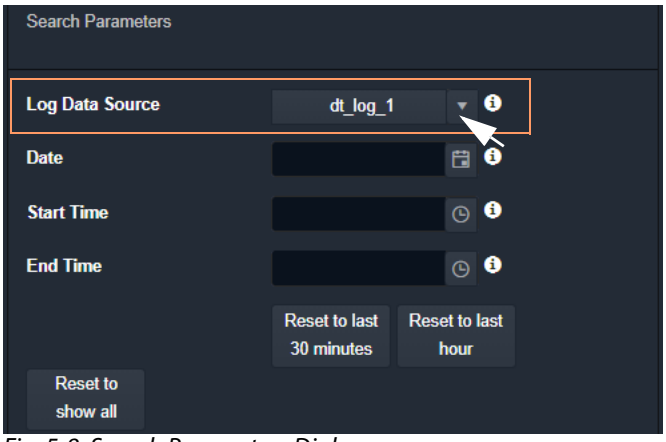


Fig. 5-8: Search Parameters Dialog

2 Select an event log file configuration in the **Log Data Source** drop-down list.

Once selected, event log data messages are shown in the **Event Log Viewe**r.

Select Date and Time Period to View

3 Messages can be filtered by their time-stamp in the **Search Parameters** dialog.

Event log data for the filtered times-tamp is shown in the **Event Log Viewer**.

The date and time selection controls are described in Table 5-6.

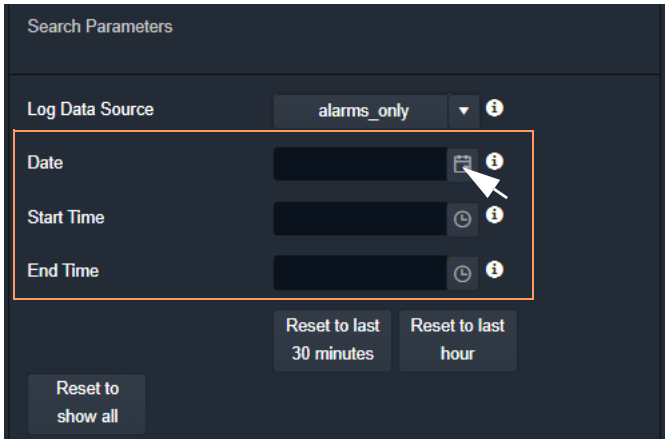
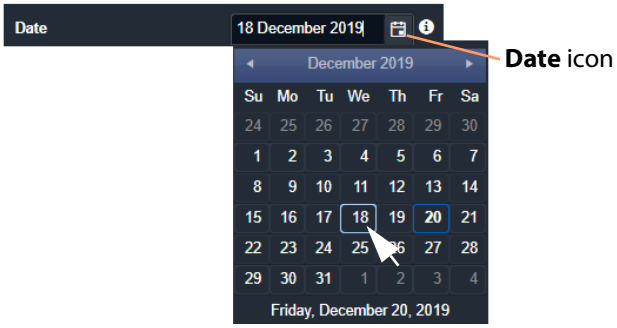
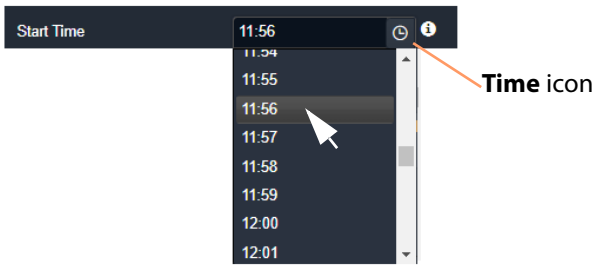


Fig. 5-9: Search Parameters Dialog

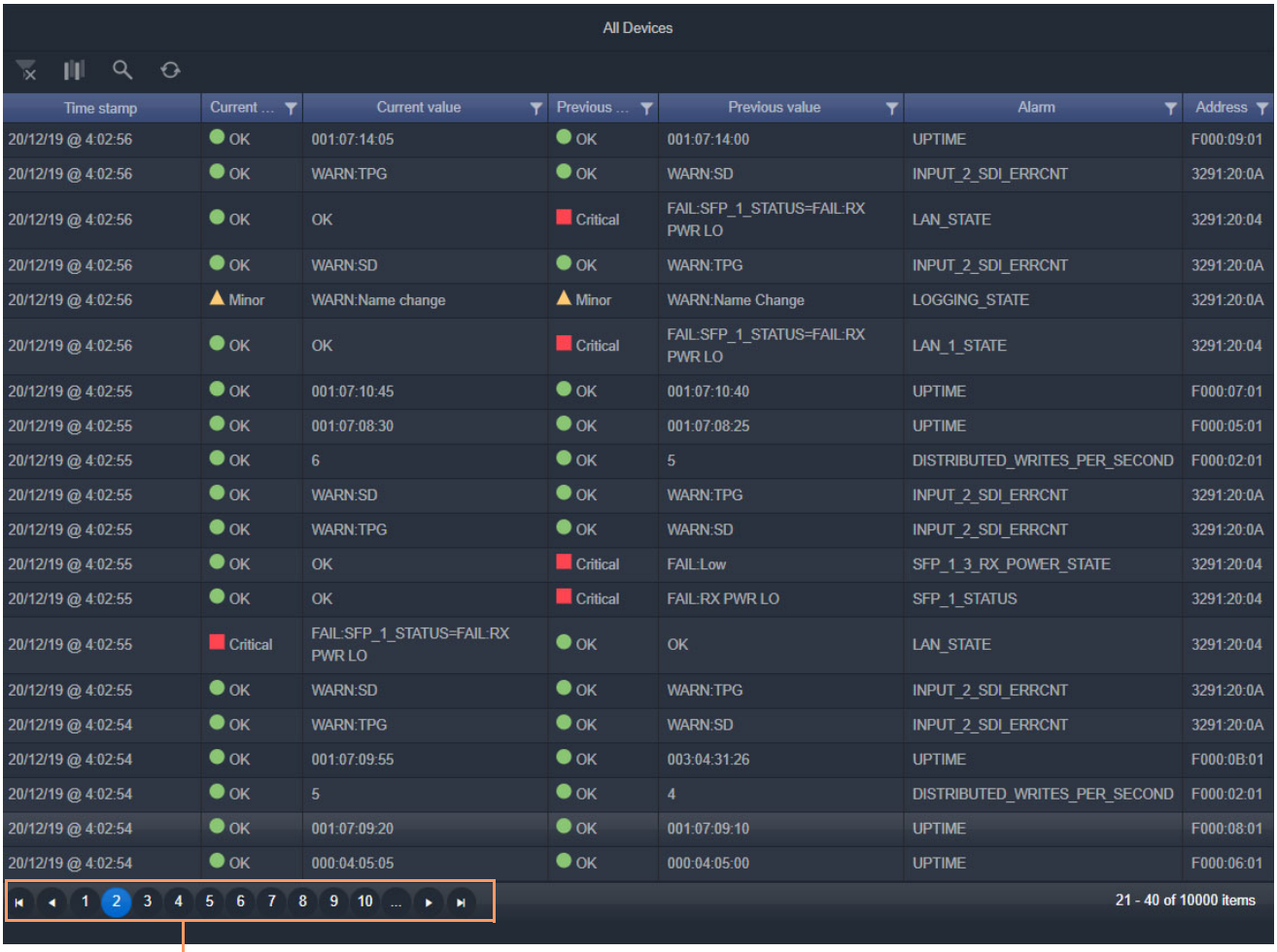
Table 5-6: Event Log Viewer - Date/Time in the Search Parameters Dialog

Control	Description
Date	Date box. Click on the **Date** icon and set the (start) date from which to view event logs. 
Start Time	Time box. Click the clock **Time** icon to set a start time, from which to view the event logs.  **Note:** The time is shown in 24-hour format: 00:00 is midnight. 02:50 is ten minutes to three at night. 12:00 is mid-day 14:50 is ten minutes to three in the afternoon. 19:30 is half past seven in the evening. 23:59 is one minute to midnight.
End Time	Time box. Click on the clock **Time** icon and set an end time. Event log messages up to this end time will be viewed. **Note:** It is possible to set an end time which is earlier than the start time. In this case, the end time is interpreted as being in the *next day*.
Reset to last 30 minutes	Button. Click to view event messages that occurred in the last 30 minutes.
Reset to last Hour	Button. Click to view event messages that occurred in the last hour.

Note:
The search engine used is limited to returning a maximum of 10000 items. Any search carried out will be limited to this maximum number of results shown.

Search Results Viewing

The **Event Log Viewer** displays the resulting event log messages from the event log and time period set up in the **Search Parameters** dialog. If more than 20 results are returned, then the results are presented in screens and paging buttons are provided to navigate the results.



Page navigating controls

State icons:

- OK
- Minor Warning
- Major Warning
- Error

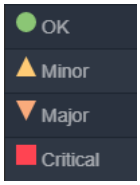


Fig. 5-10: Event Log Viewer - Search Results

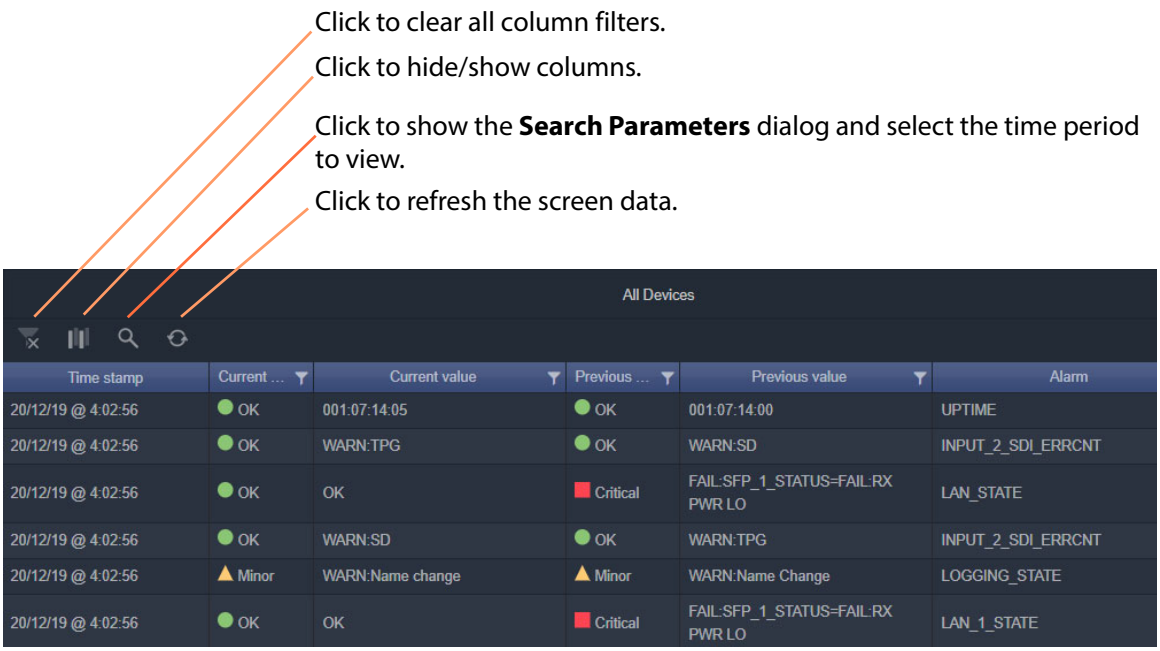


Fig. 5-11: Event Log Viewer - Controls

The displayed results are tabulated in columns. Column headings are described in Table 5-7.

Table 5-7: Results Column Headings

Column Heading	Description
Time stamp	The time-stamp of the event log message. Time stamp format: DD/MM/YY @ hh:mm:ss For example, 25/12/19 @ 9:25:01 **Note:** Alarm message time stamps shown in the viewer have already been filtered by the **Search Parameters** dialog settings.
Current state	The current log state: • OK • Minor Warning • Major Warning • Critical Error/Failure
Current value	The current value of the log state. For example: • 9 • 3.34V • FAIL:Low • +0.1 us • 1.32dBm • 6.0kBytes/sec • 39C
Previous state	The previous log state.
Previous value	The previous log state value.

Table 5-7: Results Column Headings (continued)

Column Heading	Description
Alarm	The name of the event log message type. For example: • INPUT_8_SDI_ERRCNT • LAN_PORT_1_IN_TRAFFIC • TEMP_2_CELSIUS
Address	The device's RollCall address/identifier. For example: • 3291:20:0A • F110:01:07

The displayed results may be further filtered:

- Hide/show columns (see Hide/Show Columns, on page 58).
- Filter columns on specific criteria (see Filter Columns, on page 58).

Hide/Show Columns

- Click the **Hide/Show Columns** icon ( ) and select the columns to hide or to show.

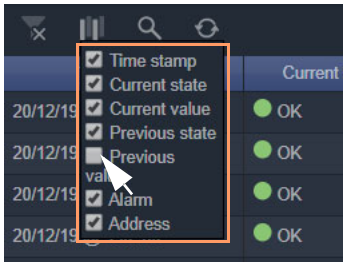


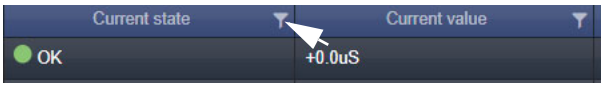
Fig. 5-12: Select Columns - Hide/Show

Filter Columns

For displayed event log messages, for all columns except 'Time Stamp', additional filtering may be specified. This may be used to help find specific messages (for example, only 'errors', or only 'entries from a specific device'). The filtering just limits what is shown in the viewer.

Filtering of entries can be done on one or more columns. Filtering can show items whose column value is 'equal to' or, alternatively, 'not equal to' a value:

1 Click on a **Filter Column** icon in a column heading:



The **Filter Column** dialog is shown.

2 Select the column filter condition in the first drop-down menu ('Equals' or 'Not Equals'). For example 'Equals'. See Figure 5-13 a.

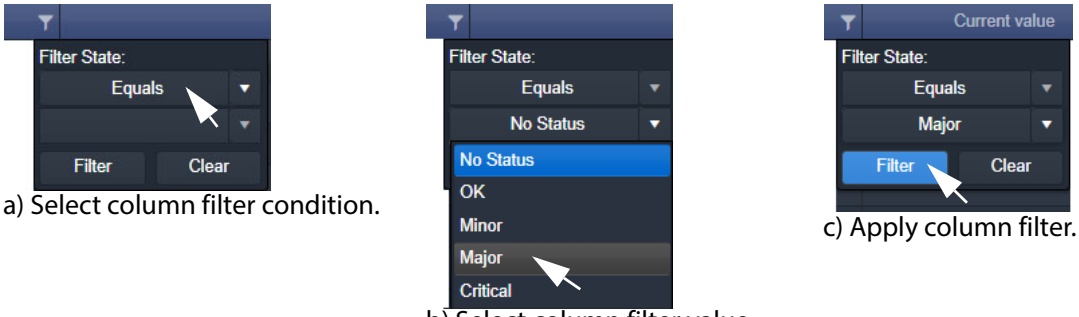


Fig. 5-13: Filter Column Dialog:
a) Select Condition.
b) Select Filter Value.
c) Apply Filter.

3 Select the column filter value. (Values presented in the drop-down list depend on the column being filtered.) For example, 'Major'. See Figure 5-13 b.

4 Click **Filter** to apply the column filter. See Figure 5-13 c.

The column filter is applied and the log data shown is restricted accordingly.
In this example, only current 'Major' warnings are picked out by the filter and shown. See Figure 5-14.

Fig. 5-14: Column Filter Example

Further Filtering

To further limit the displayed data, filter on other columns.

Clear Column Filters

To clear all column filters, click the **Clear all filters** icon ().

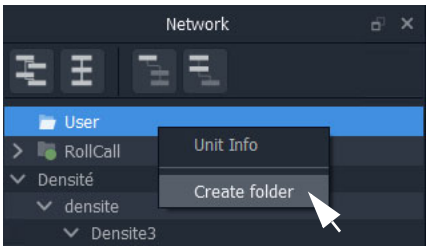
Non-RollCall Devices

The **Event Logging** service natively supports RollCall addresses and hence RollCall devices. Log event messages from iControl or Densité devices may still be logged etc. by the service by using a **User** folder in a C&M project's **Network** window in GV Orbit Client.

With a GV Orbit C&M project open in GV Orbit Client:

1 Show the **Network** window.

2 Right-click on the top-level user folder ('**User**') and select 'Create Folder':



The **Create Folder** dialog is shown.

3 Enter a name for the new user (sub-)folder (e.g. 'Densité Dev Group') and click **OK**.

A new sub-folder under **User** is created.

4 Right-click on the new sub-folder and select 'Assign Address'.

The **Assign Address** dialog is shown.

5 Enter a RollCall address for the sub-folder and click **OK**.

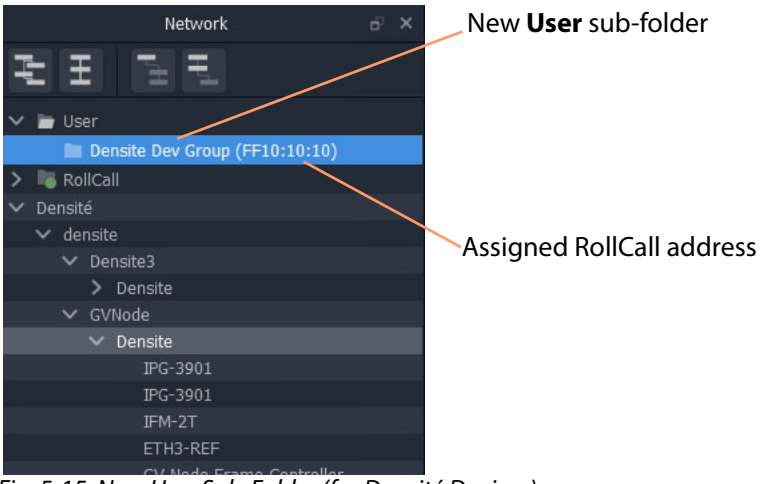
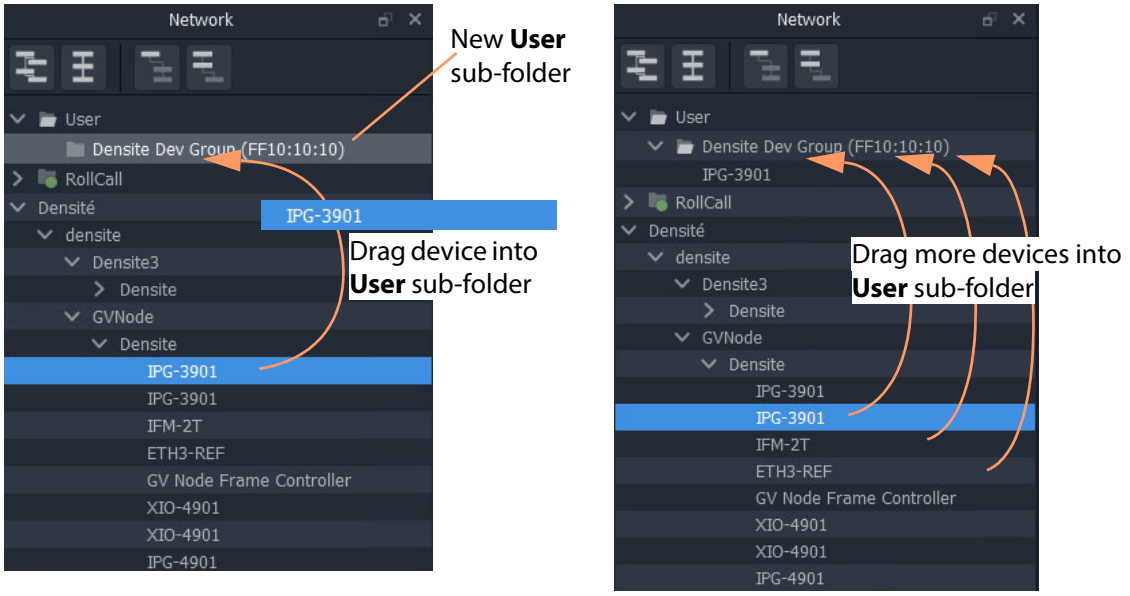


Fig. 5-15: New User Sub-Folder (for Densité Devices)

6 Expand the **Network** window tree-view to see Densité devices.

7 Drag the Densité devices of interest in the **Network** window into the new **User** sub-folder. See Figure 5-16.



a) Drag a device into new **User** sub-Folder

b) Drag more device into new **User** sub-Folder

Fig. 5-16: Drag Densité Device into New User Sub-Folder

The dragged devices are now shown beneath the **User** sub-folder.

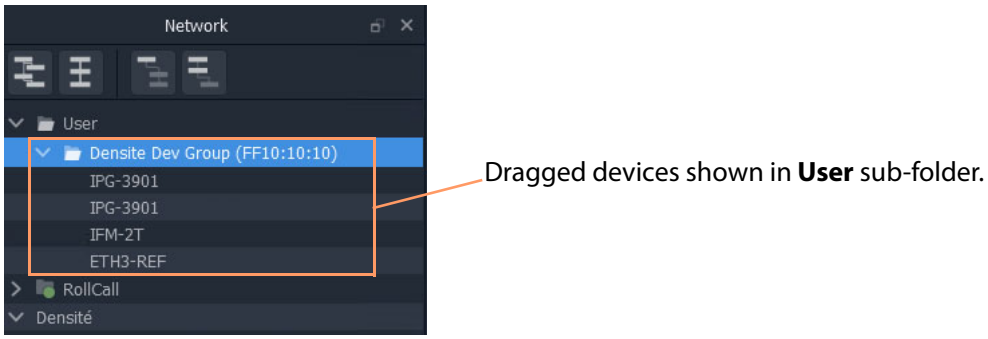


Fig. 5-17: Resulting New User Sub-Folder (Shown Expanded)

8 Click **Project -> Save Project** in the main menu to locally save the GV Orbit project.

9 Click **Project -> Push** to push the project to the repository on the GV Orbit server.

> **Note:**
> It is necessary to push the project to the GV Orbit server so it may be deployed in the GV Orbit system for the **Event Logging** service (and other services) to access.

The GV Orbit services will aggregate the devices in the new **User** sub-folder under the assigned RollCall address, and log messages can be logged and hence viewed by an **Alarm List** widget on a GV Orbit C&M project screen, or by the **Event Log Viewer**.

Alarm List Widget and Event Logging Service

The alarm messages can be viewed on a GV Orbit C&M project custom user panel. The **Alarm List** widget is available to design a custom panel with in GV Orbit Client.

The **Alarm List** widget can be placed onto a custom user panel when using the GV Orbit Client in 'Design Mode'. It can be configured to display event log message information:

- "live" data from the GV Orbit **Monitoring** service; or
- historical data from one of the **Event Logging** service's event logs.

When the C&M project is saved and pushed to the GV Orbit server it can be run. Log messages are shown, color-coded, and scroll up the widget.

Fig. 5-18: Alarm List Widget Shown Running on a C&M Project Custom User Panel

Note:
The **Publish to Alarm Widget** setting must be enabled within the Event Log File configuration of the **Event Logging** service before the **Alarm List** widget can correctly connect to the service and log messages.

Event Logging Service Alarms

The **Event Logging** service itself generates alarms which can be viewed in an **Alarm Summary** window.

ELASTIC_SEARCH - Status of the Elastic search engine connected to.

ELASTIC_TOTAL_DISK_USE - Total disk space on GV Orbit server that is used by the Elastic search engine.
100 GBytes is reserved on the server for this.
Alarm state on this is:

- Warning above 75GBytes; and
- Error above 100 GBytes.

The service stops writing above 120 GBytes until some of the reserved space is freed (e.g. by reducing the 'Delete Data After' setting).

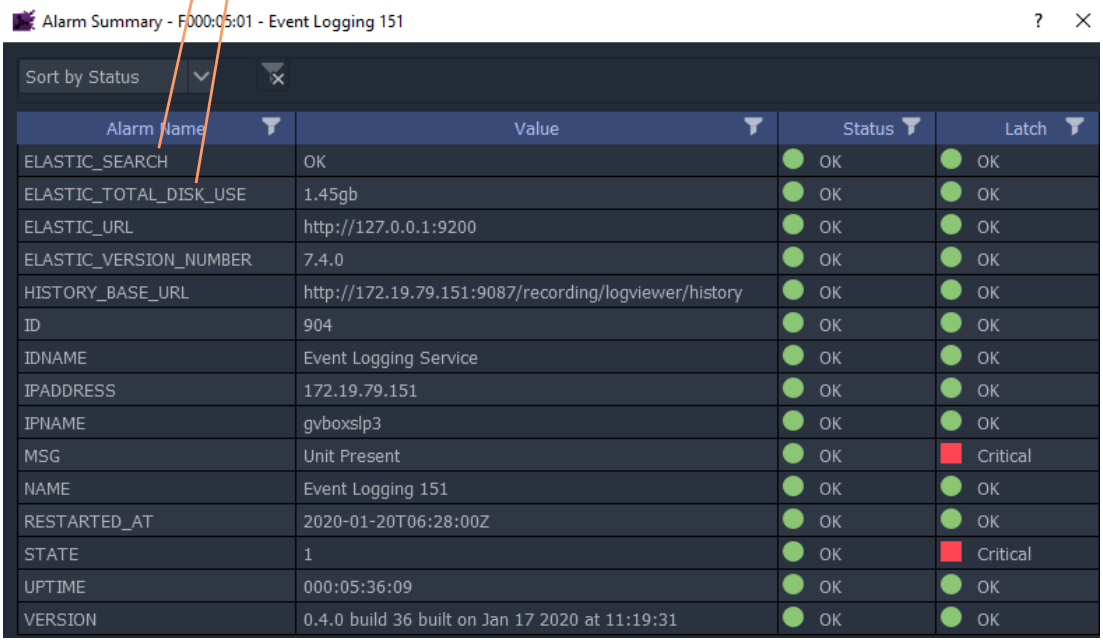


Fig. 5-19: Event Logging Service Alarm Summary Window

6 IP Proxy Service

Chapter contents:

Introduction

Version: 4.0

The GV Orbit **IP Proxy** service aggregates RollCall control and monitoring connections to multiple RollCall-protocol devices/frames with RollCall addresses. The service presents messages from these devices to the GV Orbit **Log Server** service. The service supports a main connection to a device/frame and up to 2 further, redundant connections.

Devices/frames include:

- IQMIX and IQUCP modular cards;
- IQ frame controllers (Gateways);
- MV-8 Series multiviewers;
- Kahuna production switchers; and
- Hardware and soft control panels.

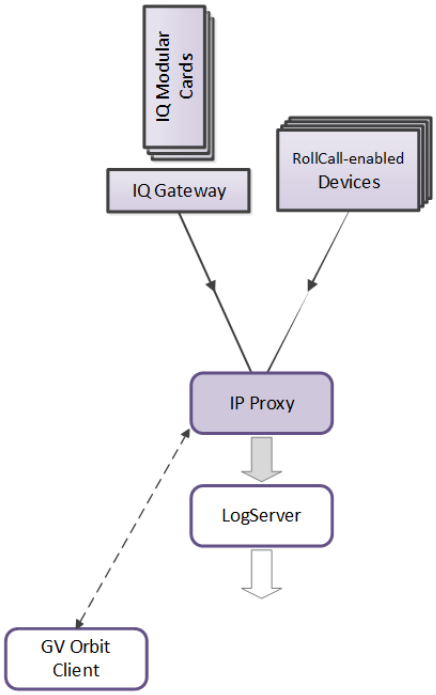


Fig. 6-1: GV Orbit IP Proxy Service

The aggregated connections are presented in a tree structure in the **Network** window of a GV Orbit Client; the client connects to an **IP Proxy** service to form the tree view.

System Screen

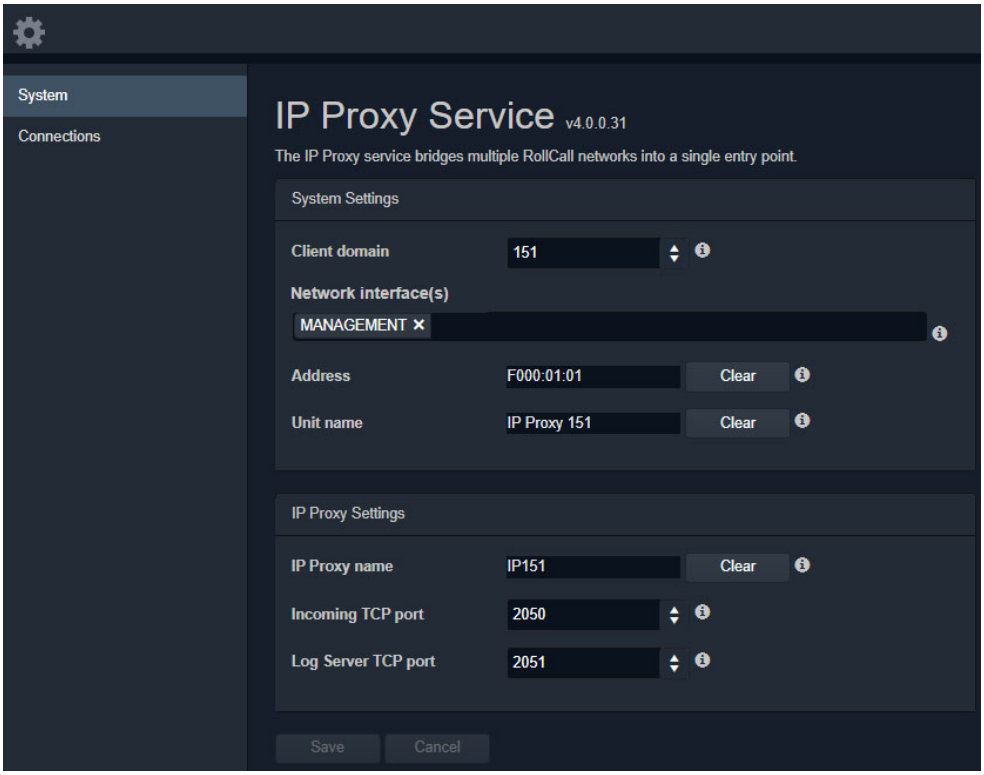


Fig. 6-2: IP Proxy Service System Screens

Table 6-1 below describes the 'System' screen setting of the IP Proxy configuration screen.

Table 6-1: GV Orbit IP Proxy Service - System Settings

Setting	Description
System Settings:	
Client Domain	Text box. Enter a GVOP Domain number that the GV Orbit clients are running on (i.e. 'Client' domain). The valid range is 1 to 232. (See Grass Valley Orchestration Protocol (GVOP), on page 193 for information on Domains.) Device 'State' information (log messages) is obtained via the GVOP protocol over the **Client Domain**. A device's RollCall template configuration screen is opened via the RollCallv3 protocol through the **IP Proxy** service. **Note:** The **Client Domain** should be set to match the domain used by a GV Orbit project in a GV Orbit Client. If the GV Orbit Client and **IP Proxy** service are on different domains they cannot see each other's data.

Table 6-1: GV Orbit IP Proxy Service - System Settings (continued)

Setting	Description
Network Interfaces	Drop-down box. Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected. By default this cell is empty, in this case, all interfaces will be used by the service. (See Network Interface(s) Setting, on page 24.) **Note:** When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding GV Orbit Client(s).
Address	Text box. Enter RollCall address to use for the service to write its own state messages with. This uniquely identifies the service in the GV Orbit system and is used when the service publishes its own log data. (See RollCall Address, on page 189 for information about RollCall address.) The user is free to define the RollCall addresses for a system.
Clear	Button. Click to restore the default RollCall address for the service. Default: F110:01:01
Unit Name	Text box. Enter a name for the service. This is a human-readable identifier for the **IP Proxy** service to use. This name appears in the GV Orbit Client's **Network** window for the service; it is the name of the service itself, with the specified RollCall address.
Clear	Button. Click to restore the default name for the service.
IP Proxy Settings:	**Note:** Any changes in this section will require an **IP Proxy** service stop/start.
IP Proxy Name	Text box. Enter a name. This is a human-readable identifier for the **IP Proxy** service connections to use. This name is shown in the GV Orbit Client's **Network** window for connections the **IP Proxy** service makes to RollCall-protocol devices. For example, IQ modules in an IQ modular frame slots: a **Network** window shows the IQ frame controller and the modules. Under each module, connections to the RollCall device are shown. **Note:** This name may be either the same as or different to the service's **Unit Name**.
Clear	Button. Click to restore the default name to use.

Table 6-1: GV Orbit IP Proxy Service - System Settings (continued)

Setting	Description
Incoming TCP Port	Text box. Enter IP port number to use for RollCall connections from connected devices to the **IP Proxy** service. Default = 2050
Log Server TCP Port	Text box. Enter IP port number to use for connections to the Log Server service. **Note:** This should *not* be the same as **Incoming TCP Port** setting. Default = 2051

Connections Screen

Note: Connections to devices/frames are system-specific items.

The **Connections** screen allows the user to manage the connections from the **IP Proxy** service to RollCall devices. The screen contains a list of devices for the **IP Proxy** service. List items can be added, edited and deleted. Each list item is either a RollCall-protocol device or a 'virtual tree node'. The status of the connection to each device is shown. Any change saved will be applied and will only temporarily interrupt the operation of the service. An **IP Proxy** service stop/start is *not* required.

The resulting connected RollCall network is viewed as a tree structure in the GV Orbit Client application **Network** window.

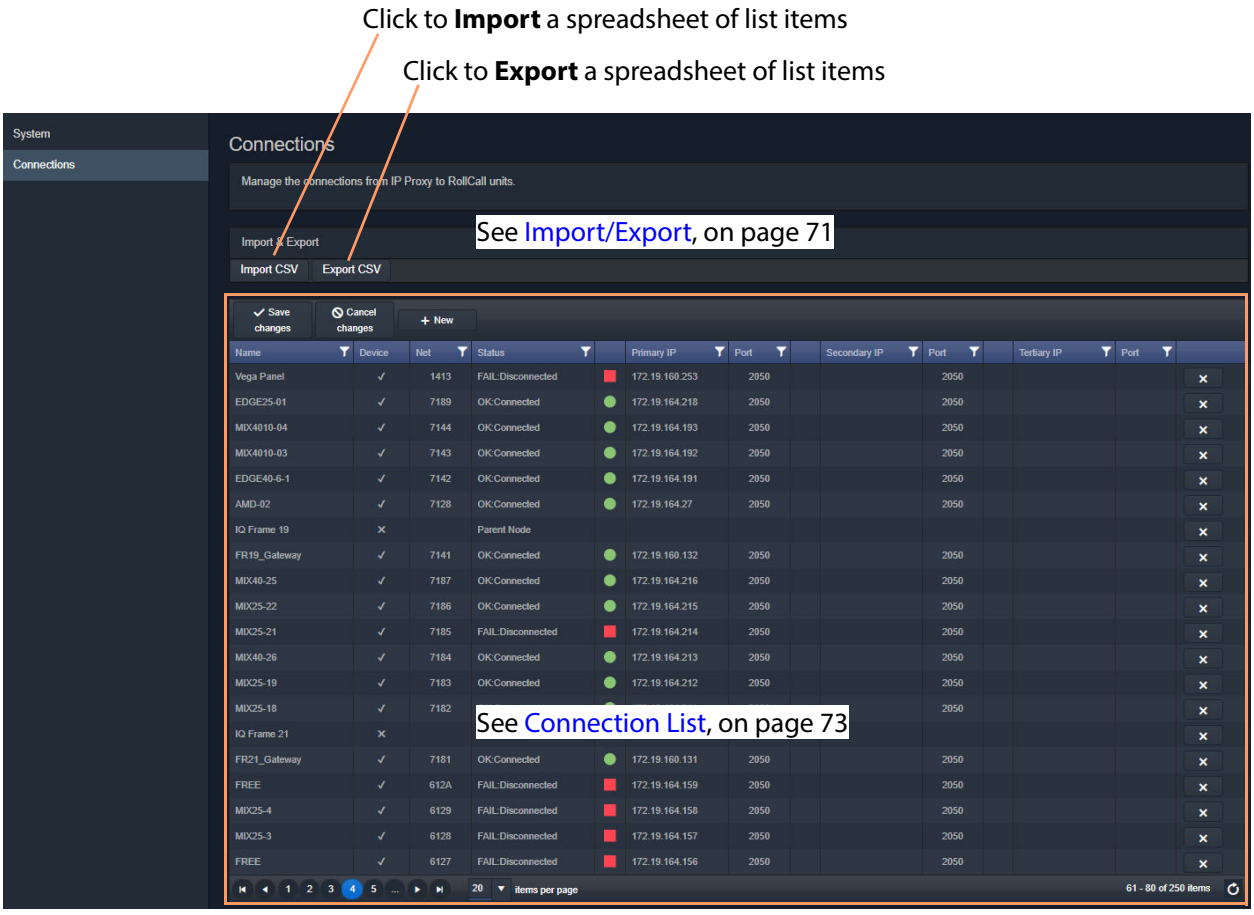


Fig. 6-3: IP Proxy Service - Connections Screen

Import/Export

Table 6-2: Connections Screen - Import and Export Controls

Control	Description
Import CSV	Button. Click to import a spreadsheet (CSV format) of connections. • Select a CSV file. • Click **Open**.
Export CSV	Button. Click to export a spreadsheet (CSV) of connections. (See Exported CSV Connections, on page 71.)
Save	Button. Click to save local changes to the **IP Proxy** service.
Cancel	Button. Click to cancel local changes.
+New	Button. Click to add a new, empty row to the list. See **Note 1**.
Note 1:	A new row item needs explicitly saving with **Save**.

Exported CSV Connections

An exported spreadsheet file is in comma-separated variables (CSV) format. (See Figure 6-4.)

```
Name,Device,Network,Primary IP,Primary Port,Secondary IP,Secondary Port,Tertiary IP,Tertiary Port
Network(1160),false,1160,,null,,null,,null
FR01_Gateway,false,1111,,null,,null,,null
Engineering Frames,false,1100,,null,,null,,null
FR03_Gateway,false,1211,,null,,null,,null
IQ Frame 03,false,1210,,null,,null,,null
FR0C_3,false,12A4,,null,,null,,null
BCE Frames,false,1200,,null,,null,,null
IQMIX4010-2,false,1273,,null,,null,,null
IQEDGE 02,false,F2D2,,null,,null,,null
FR01_Gateway,true,7111,172.19.160.111,2050,,2050,,null
IQ Frame 01,false,7110,,null,,null,,null
Network(7100),false,7100,,null,,null,,null
Rack 6,false,7000,,null,,null,,null
MIX-01,true,7112,172.19.164.11,2050,172.19.166.11,2050,,null
MIX-02,true,7113,172.19.164.12,2050,172.19.166.12,2050,,null
MIX-03,true,7114,172.19.164.13,2050,172.19.166.13,2050,,null
MIX-04,true,7115,172.19.164.14,2050,172.19.166.14,2050,,null
MIX-05,true,7116,172.19.164.15,2050,172.19.166.15,2050,,null
MIX-06,true,7117,172.19.164.16,2050,172.19.166.16,2050,,null
FR02_Gateway,true,7121,172.19.160.112,2050,,2050,,null
IQ Frame 02,false,7120,,null,,null,,null
MIX-07,true,7122,172.19.164.21,2050,172.19.166.21,2050,,null
MIX-08,true,7123,172.19.164.22,2050,172.19.166.22,2050,,null
```

a) CSV file in Text Editor

	A	B	C	D	E	F	G	H	I
1	Name	Device	Network	Primary IP	Primary Port	Secondary IP	Secondary Port	Tertiary IP	Tertiary Port
2	Network(1160)	FALSE	1160		null		null		null
3	FR01_Gateway	FALSE	1111		null		null		null
4	Engineering Frames	FALSE	1100		null		null		null
5	FR03_Gateway	FALSE	1211		null		null		null
6	IQ Frame 03	FALSE	1210		null		null		null
7	FR0C_3	FALSE	12A4		null		null		null
8	BCE Frames	FALSE	1200		null		null		null
9	IQMIX4010-2	FALSE	1273		null		null		null
10	IQEDGE 02	FALSE	F2D2		null		null		null
11	FR01_Gateway	TRUE	7111	172.19.160.111	2050		2050		null
12	IQ Frame 01	FALSE	7110		null		null		null
13	Network(7100)	FALSE	7100		null		null		null
14	Rack 6	FALSE	7000		null		null		null
15	MIX-01	TRUE	7112	172.19.164.11	2050	172.19.166.11	2050		null
16	MIX-02	TRUE	7113	172.19.164.12	2050	172.19.166.12	2050		null
17	MIX-03	TRUE	7114	172.19.164.13	2050	172.19.166.13	2050		null
18	MIX-04	TRUE	7115	172.19.164.14	2050	172.19.166.14	2050		null
19	MIX-05	TRUE	7116	172.19.164.15	2050	172.19.166.15	2050		null
20	MIX-06	TRUE	7117	172.19.164.16	2050	172.19.166.16	2050		null
21	FR02_Gateway	TRUE	7121	172.19.160.112	2050		2050		null
22	IQ Frame 02	FALSE	7120		null		null		null
23	MIX-07	TRUE	7122	172.19.164.21	2050	172.19.166.21	2050		null
24	MIX-08	TRUE	7123	172.19.164.22	2050	172.19.166.22	2050		null

b) CSV file in a spreadsheet tool

Fig. 6-4: Example CSV Export File:
a) CSV File in Text Editor.
b) CSV File in Spreadsheet Tool.

Converter Utility for Old IP Proxy Files

The GV Orbit Client installation folder on a client PC contains a command line utility for converting older IP Proxy files into the CSV format required for importing into GV Orbit. This is found in the 'tools' sub-folder. Example path:

```
C:\Program Files\Grass Valley\GV Orbit\tools\IpProxyConfigConverter.exe
```

Usage: `C:>IpProxyConfigConverter.exe <source_file> <out_file>`

Connection List

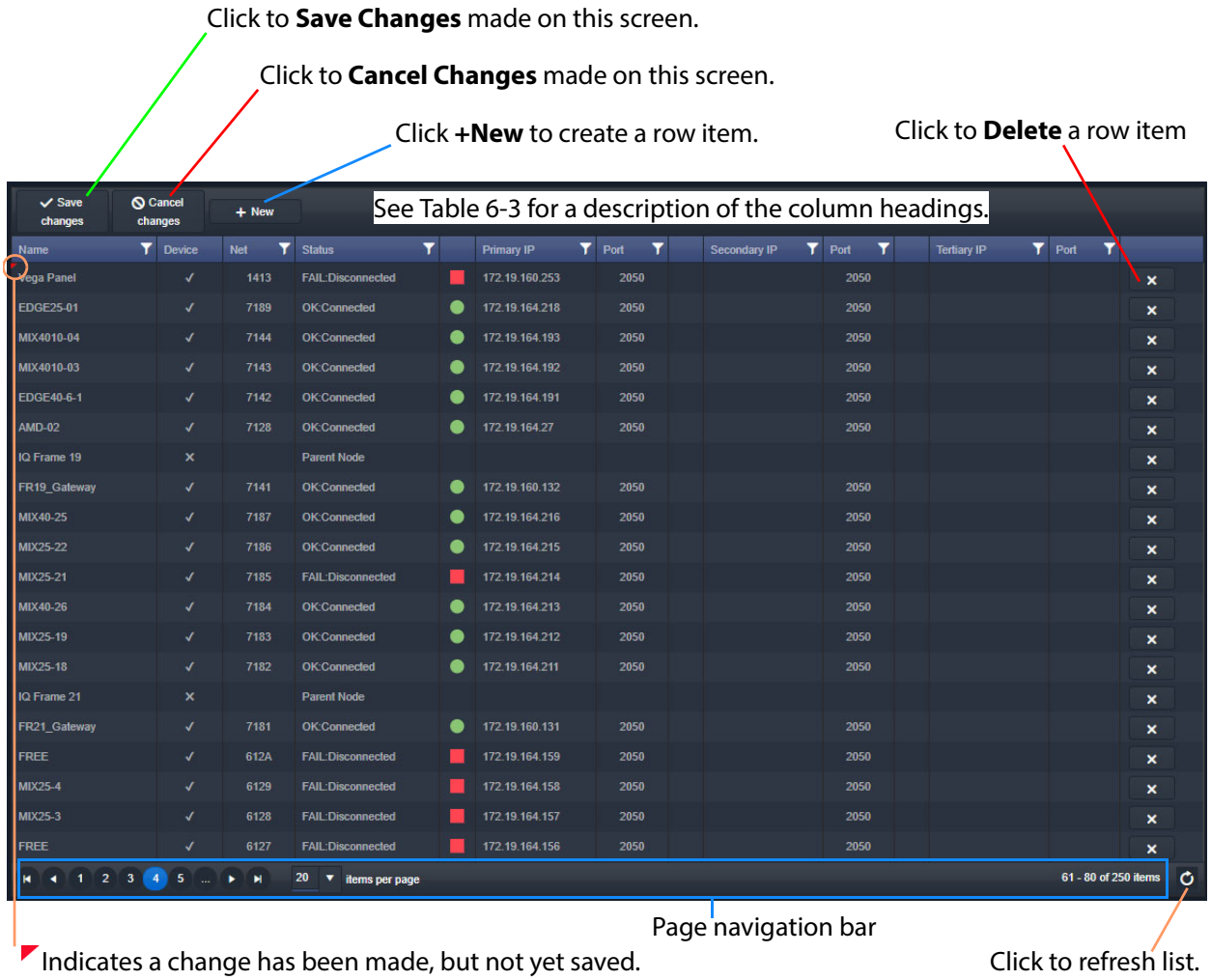


Fig. 6-5: IP Proxy Service - Connections

Table 6-3: Connections Screen - Column Headings

Column Heading	Description
Name	Text box. Enter a name for the device, or frame, or virtual tree node.
Device	Check box. • Select for a device, or frame, or unit with a RollCall connection. • Deselect for a virtual tree node.
Net	Text box. Enter the 4-hex-digit RollCall address network number. I.e. the four most significant digits of the RollCall address. For example, 4300.

Table 6-3: Connections Screen - Column Headings (continued)

Column Heading	Description
Status	Information only. Displays the status of the IP Proxy connection to the device/frame/unit. A red/green 'LED' status indication is also shown. For a virtual tree node, 'Parent Node' is displayed.
Primary IP	Text box. Primary IP address of device/frame/unit.
Port	Text box. IP port number for primary IP address.
Secondary IP	Text box. Secondary IP address of device/frame/unit.
Port	Text box. IP port number for secondary IP address.
Tertiary IP	Text box. Tertiary IP address of device/frame/unit.
Port	Text box. IP port number for tertiary IP address.

7 Log Server Service

Chapter contents:

Introduction

Version: 4.0

The GV Orbit **Log Server** service collects logging information from devices on a RollCall network and distributes it to subscribing clients, for example, to the GV Orbit **Monitoring** service.

The **Log Server** service is the entry point into a system for RollCall log data from RollCall-protocol devices (for example, from Grass Valley IQ Modular devices or MV-8 Series Multiviewers). The service also supports in-bound data from Grass Valley's RollSNMP application tool and third-party IP endpoint applications.

Multiple **Log Server** services can work together to provide redundancy, such that if either one is shutdown then the other will take its place seamlessly with no loss of data to the client.

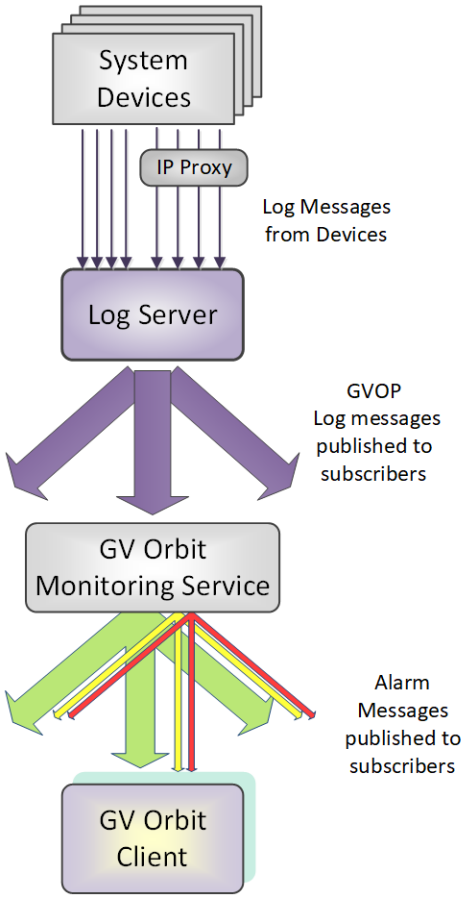


Fig. 7-1: GV Orbit Log Server Service

Typical System Architecture

A typical control and monitoring system that uses the **Log Server** service is shown in Figure 7-2. The example is for a dual-redundant implementation; single **Log Server** service implementations are possible.

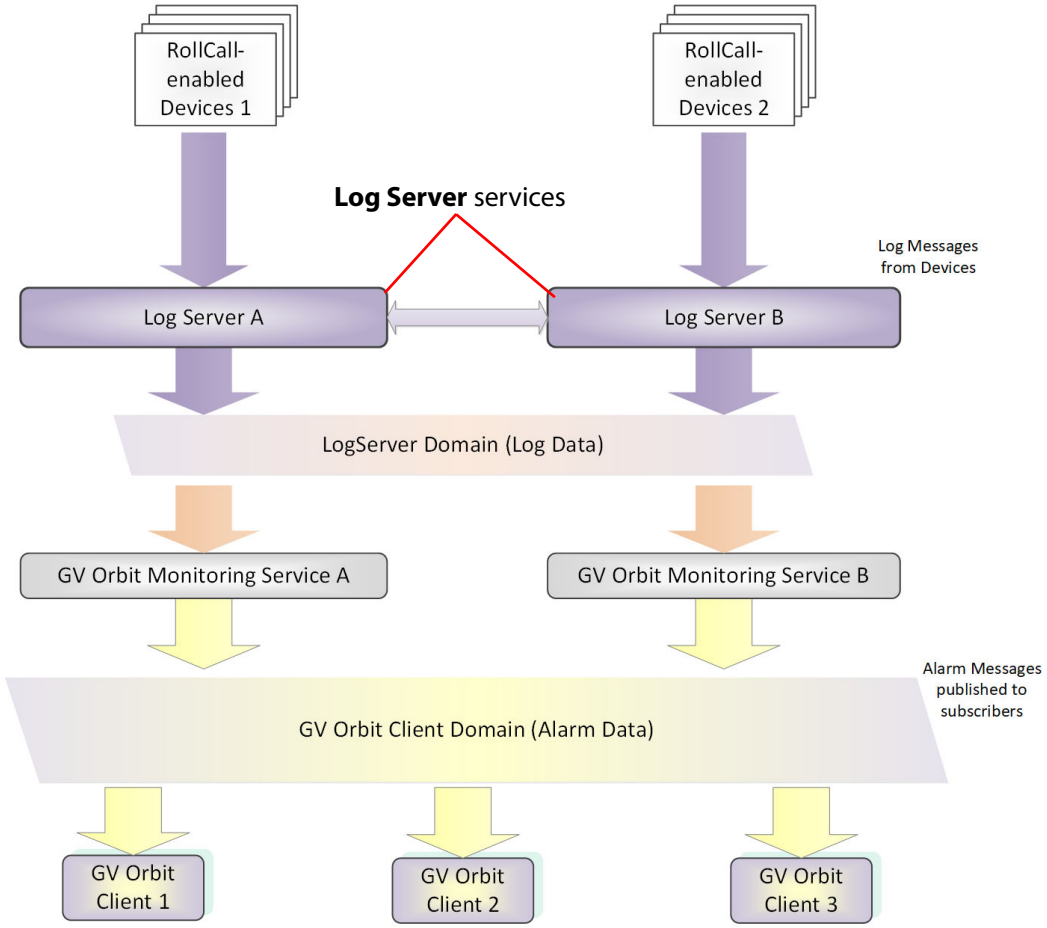


Fig. 7-2: GV Orbit Log Server System

Log Server services A and B in Figure 7-2 operate in a dual-redundant manner. The services manage the synchronization of all data between them. If service A or B were to go down, then the other service is ready to take over.

Each **Log Server** service sees RollCall-protocol devices and connects to the via RollCall protocol over TCP (default port 2050). **Log Servers** receive device log messages, poll devices and gather some device information (name, id, version etc.).

> **Note:**
> In redundant system, a private link between **Log Servers** is only used with IQ Gateways for IQ devices. Data from other devices or services must be sent to *both* **Log Server** Services.

The **Log Server** service exposes gathered log data to subscribing GV Orbit **Monitoring** services in a 'raw' form (i.e. without 'OK', 'Warning', or 'Error' state).

Example 'raw' log information:

Supply voltage = 5.25 V
Data rate = 1024 packets/second
Temperature = 55 °C

A **Monitoring** service then typically uses this 'raw' data, assigns 'state', and generates alarms within the Grass Valley common alarm model.

Example alarm 'state' information:

Supply voltage OK
Data rate OK
Temperature Warning
Device Error

System Screen

Table 7-1 describes the system settings screen tab of the **Log Server** 'System' configuration screen, see Figure 7-3.

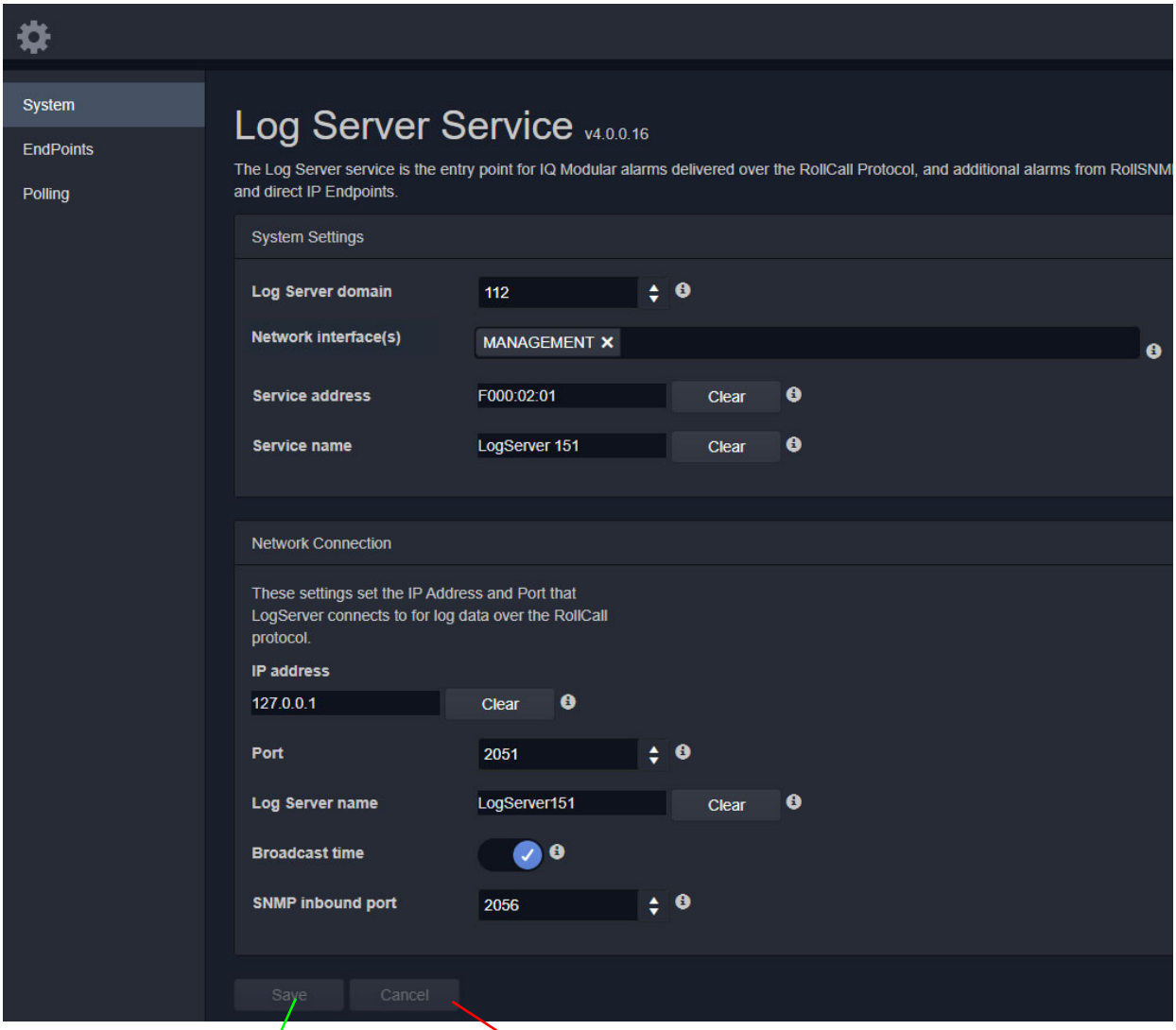


Fig. 7-3: Log Server Service - System Screen

Table 7-1: Log Server Service - System Settings

Setting	Description
System Settings:	
Log Server Domain	Text box. Enter a GVOP domain number that the service will publish its 'raw' log data onto. The valid range is 1 to 232. (See Grass Valley Orchestration Protocol (GVOP), on page 193 for information on Domains.)
Network Interface(s)	Drop-down box. Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected. By default this cell is empty, in this case, all interfaces will be used by the service. (See Network Interface(s) Setting, on page 24.) **Note:** When selecting interface(s), ensure selected interface(s) are on the same network as the corresponding GV Orbit Client(s).
Service Address	Text box. Enter RollCall address for the service to use when publishing 'raw' log data. This will uniquely identify the service in the GV Orbit system. (See RollCall Address, on page 189 for information about a RollCall address.) The user is free to define the RollCall addresses for a system.
Clear	Button. Click to restore default RollCall address for the service. Default: F110:01:02
Service Name	Text box. Enter a unique name for the service. This is a human-readable identifier for the **Log Server** service to use. This name will be used when publishing the 'raw' log data and used in the **Network** window in a GV Orbit Client. **Service Name** should be unique, including for redundant configurations. For example, 'Log Server A' and 'Log Server B'.
Clear	Button. Click to restore default name for the service.
Network Connection:	A **Log Server** service may connect to an IP share server device to get IQ/RollCall-protocol device data. Connection is usually made to an **IP Proxy** service using the RollCall protocol, but it may also be to an IQ Gateway.

Table 7-1: Log Server Service - System Settings (continued)

Setting	Description
IP Address	Text box. Enter the IP address of a server running a RollCall IP share service for the **Log Server** service to connect to. Typically, this is the **IP Proxy** service running on the GV Orbit server in the system. (In some systems, this may be set up by the GV Orbit system administrator to be some other device. E.g. IQ Gateway.) **Note:** The loop-back host IP address 127.0.0.1 is valid to use for the GV Orbit server.
Clear	Button. Click to set **IP Address** to the loop-back address, 127.0.0.1.
Port	Text box. Enter the IP port number to use for the RollCall protocol messages targeting the RollCall IP share device. Default is 2050.
Log Server Name	Text box. Enter a user-defined name to identify the **Log Server** service with. **Note:** When running multiple, redundant **Log Server** services, both must use the same **Log Server Name**. For IQ Gateways, their 'Name Log Server' setting should use this name. (See IQ Gateway Setup, on page 82 for information about setting up IQ gateways.)
Clear	Button. Click to restore default name to use.
Broadcast Time	Check box. • Selected - the **Log Server** service will send out 'Time' data packets to IQ Gateways, to provide them with a system time. • Deselected - no 'Time' data packets are sent. This time is used to time-stamp all data back from the IQ Gateway. This will be the time-stamp of corresponding alarms viewed in the GV Orbit client. **Note:** In redundant **Log Server** configurations, 'Broadcast Time' can be deselected on one of the **Log Servers** if their clocks are not perfectly synchronized. This avoids an IQ Gateway receiving different times and any resulting alarm time-stamp irregularities. **Recommended:** It is recommended that only one of a pair of redundant **Log Server** services should be sending time packets.
SNMP Inbound Port	Text box. Enter IP port number to use to listen for in-bound SNMP data from Grass Valley's RollSNMP.

Monitoring Redundancy

Dual-redundancy can be achieved by running two **Log Server** services, each connected to its own single **Monitoring** service. Further resilience can be achieved if both **Monitoring** services are connected to both **Log Servers**; however, this configuration does result in extra data on the domain.

IQ Gateway Setup

A Grass Valley IQ Gateway device can be configured to log data to any **Log Server** service, or to a specifically named **Log Server** service. It is the network connection **Log Server Name**, described in Table 7-1, that is used to identify **Log Servers** to devices.

Figure 7-4 shows the relevant IQ Gateway configuration screen, openable in GV Orbit Client (or via the Grass Valley RollCall Control Panel tool).

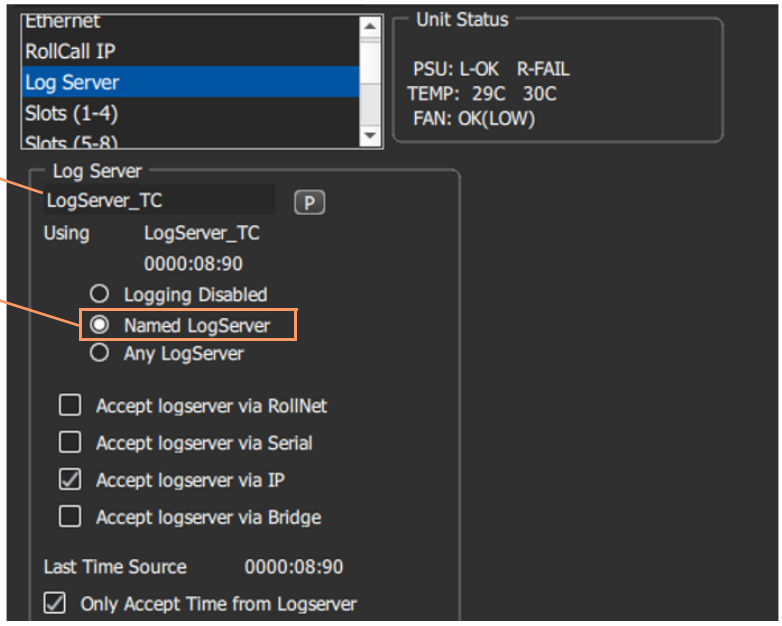


Fig. 7-4: IQ Gateway Configuration Screen Extract

Named Log Server Setting on IQ Gateway

Each IQ Gateway should normally be configured with the 'Named Log Server 'option selected and with the same name as provided as the **Log Server Name** setting. The **Log Server Name** setting of each **Log Server** must be also set to the same name.

Note:
In dual-redundant mode, both **Log Server** services should have the:

- *Same* **Log Server Name** setting. I.e. 'Network Connection' **Log Server Name** on the **Log Server** service **System** screen.
  (IQ Gateways can then send log data to either **Log Server** service.)
- *Different* **Service Name** setting. I.e. 'System Setting' **Service Name** on the **Log Server** service **System** screen.
  Each **Log Server** service can then be uniquely identified in the 'raw' data logs it sends out.

EndPoints Screen

Note: These 'Endpoints' settings are system-specific items.

The **EndPoints** screen tab can be used to configure a **Log Server** service with a collection of IP addresses to connect to for obtaining log data. This enables third-parties to inject log data into the Grass Valley GV Orbit monitoring system using the RollCall SDC-02 protocol. The **Log Server** service will connect to the listed IP addresses and get logging data from the IP endpoint devices.

Note: SDC-02:

SDC-02 defines a simple protocol for use by third-party IP endpoint devices to allow them to provide telemetry/status monitoring to the Grass Valley control and monitoring system. The IP endpoint device IP addresses and IP ports that they are listening on should be configured within this screen.

SDC-02 is available under a non-disclosure agreement (NDA) from Grass Valley. For more information, contact Grass Valley customer support.

The **EndPoints** screen contains a list (initially empty) of IP addresses etc. See Figure 7-5.

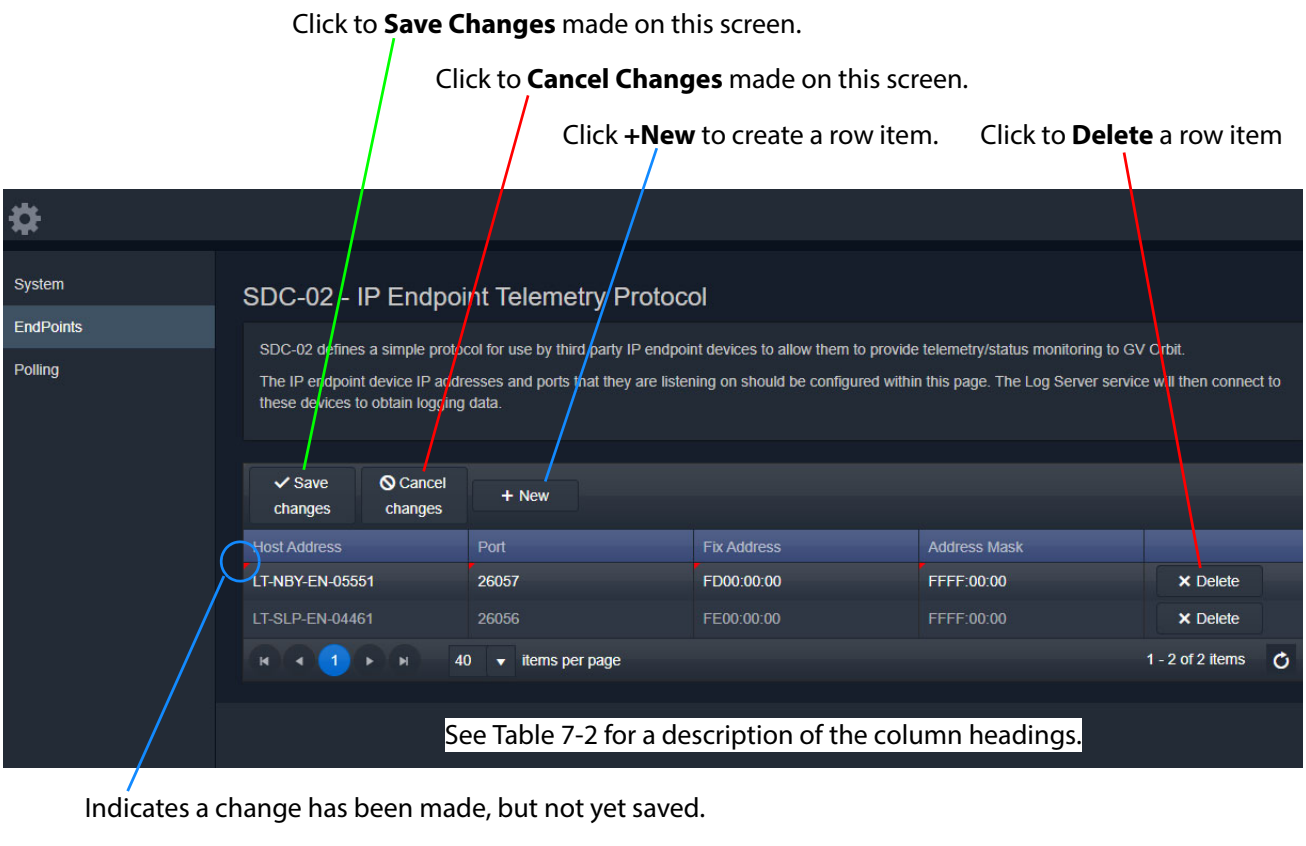


Fig. 7-5: Log Server Service - EndPoints Screen

Table 7-2: Log Server Service - Endpoints Column Headings

Column Heading	Description
Host Address	Enter either the host's: • device name; or • IP address. For example, 168.10.51.12, or SVR-AB-04461
Port	Enter the IP port number to send/receive messages to/from this host.
Fix Address	Enter the RollCall address to map RollCall messages to/from the host. For example, CE00:00:00 See RollCall Address Mapping, on page 85 for more information on address mapping.
Address Mask	Enter a RollCall address mask to be used in mapping of addresses. For example, FFFF:00:00. See RollCall Address Mapping, on page 85 for more information on address mapping.

RollCall Address Mapping

Third-party log information (received via the SDC-02 protocol) will have its own RollCall address range. This may require some address mapping to fit into the receiving GV Orbit system - because of some addressing clash or some addressing convention. The **Log Server** service maps the third-party addresses into a new target address range.

Note:
RollCall address format: NNNN:UU:PP,
where:
NNNN = Network number;
UU = Unit/device number; and
PP = RollCall Port number.
(see GV Orbit Addresses and Protocols, on page 189).

- **Fix Address** is the target address 'stem'. Typically this would be the 'network number' part of the RollCall address, e.g. FE00:00:00.
- **Address Mask** then defines which part of the **Fix Address** address to use. Address digit positions marked with 'F' will come from the **Fix Address**.

  For example, for third-party devices for:
  - RollCall addresses B300:03:01, B300:03:02 and B300:03:03; and
  - for a target GV Orbit system which needs to
  - map these to addresses FE00:03:01, FE00:03:02 and FE00:03:03 respectively.

  Set:
  - **Fix Address** to FE00:00:00; and
  - **Address Mask** to FFFF:00:00. (Thus masking all four digits NNNN.)

  In a resulting mapped address, the 'NNNN' part will come from the **Fix Address** and the 'UU:PP' part from the device address.

Polling Screen

> **Note:** The 'Polling' configuration comprises system-specific items.

The **Polling** screen contains a list of devices/units/frames to be polled by the **Log Server** service. The service will regularly poll these units using the RollCall 'GETID' message.

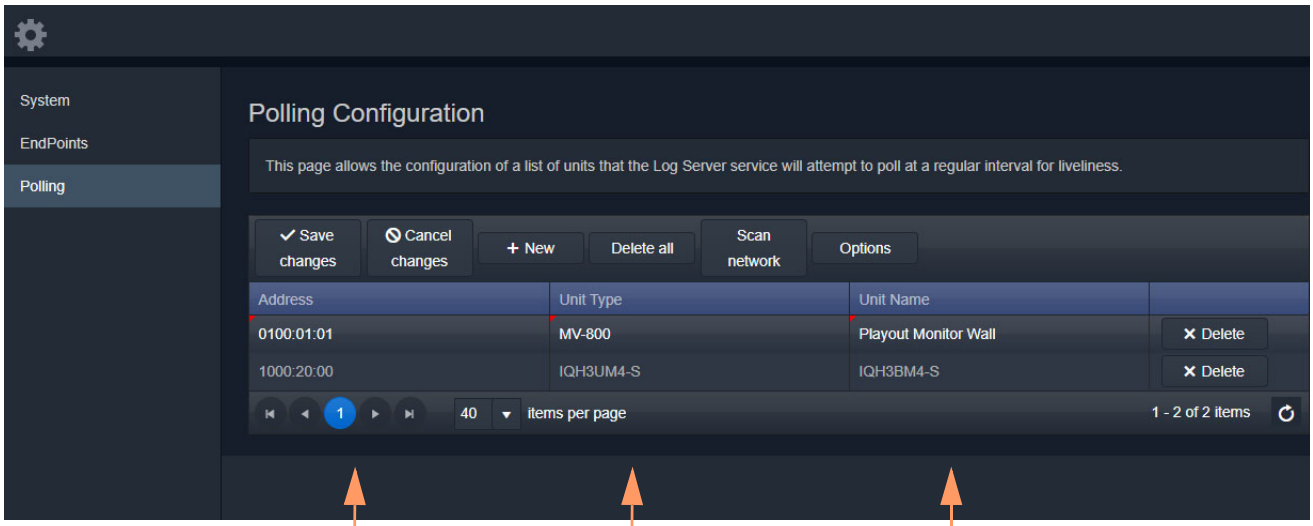
Polling is used to determine if devices/units/frames are 'alive' or not:

- If a unit/device/frame is switched off, then poll messages will start to fail.
- Log data for that device, and for any of its ports, will be cleared down and removed from the system.
- A **Monitoring** service detects any removal of the data and will:
  - indicate this with a Grey/Unknown alarm state; and will
  - set any MSG field to 'FAIL: Unit Lost'.

The **Log Server** service will regularly poll these units using the RollCall 'GETID' message, once per 'Unit Poll Rate' – see polling options.

Polling Configuration Screen

The **Polling Configuration** screen holds an editable list of RollCall addresses of units/devices/frames to be polled and some polling-rate settings. See Figure 7-6 and Table 7-4.



Columns:

Address: RollCall address

Unit Type: Unit/Device/Frame type (informative only)

Unit Name: Unit/Device/Frame name (informatively only)

Fig. 7-6: Log Server Service - Polling Screen

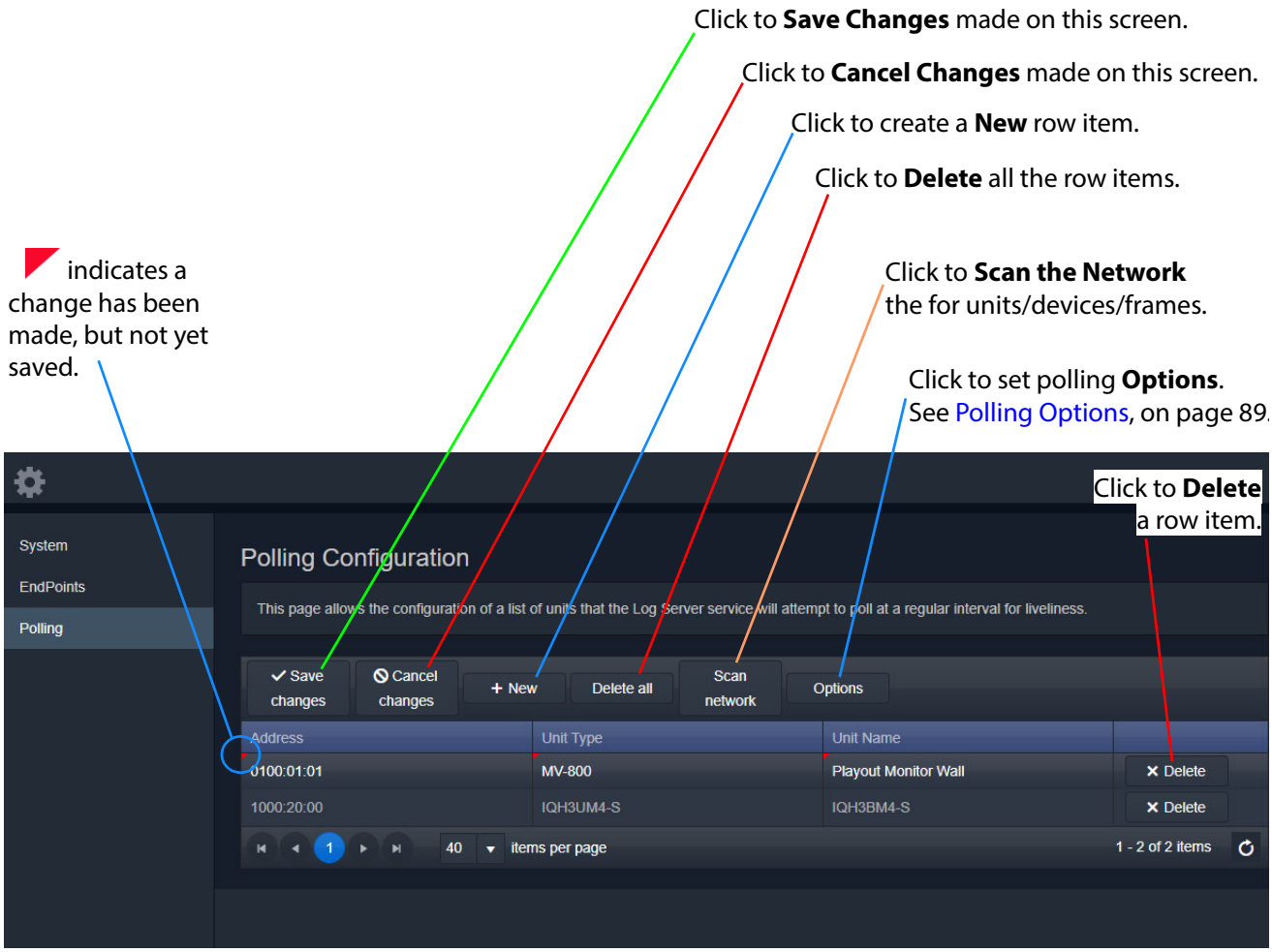


Fig. 7-7: Log Server Service - Polling Screen Controls

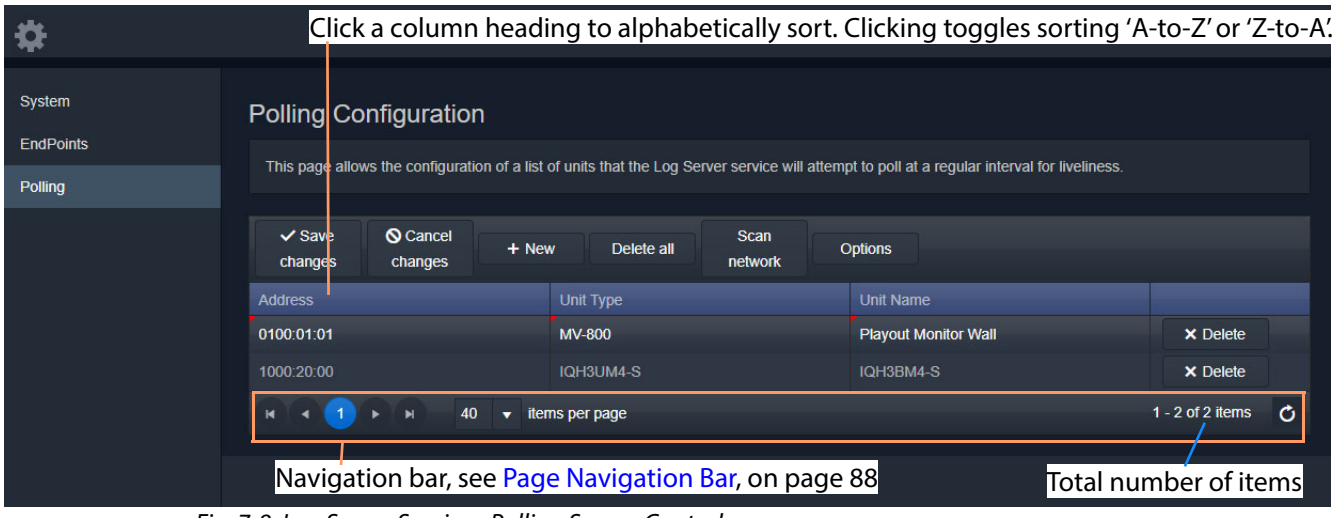


Fig. 7-8: Log Server Service - Polling Screen Controls

Table 7-3: GV Orbit Log Server Service - Polling Screen Controls

Setting	Description
Save Changes	Button. Click to save local changes to the **Log Server** service. Any changes, except **Delete All**, are first made in the screen locally and then must be explicitly saved to commit these changes back to the server.
Cancel Changes	Button. Click to cancel local changes.
+New	Button. Click to add a new, empty row item to the list. Then: • Address can be manually configured. • 'Unit Type' and 'Unit Name' may also be filled in, but these fields are *informative only*. **Note:** A new row item is a local change and needs explicitly saving with **Save Changes**.
Delete All	Button. Click to delete all row items. A prompt is offered to the user. **Note:** All entries from the polling list are deleted immediately *on the server*. Thus NO 'Save Changes' is needed.
Scan Network	Button. Click to automatically locally-populate the table with all units/devices etc. which are found on the network. **Note:** A **Save Changes** is required to save this change.
Options	Button. Click to set up the options in the **Polling Options** dialog (see Polling Options, on page 89), which allows the user to set up: • Unit Poll Rate (seconds). • Max Missed Polls - Maximum number of missed polls allowed.

Page Navigation Bar

The **Polling** screen row items are presented in one or more pages, which may be navigated using the navigation bar, see Figure 7-9. The number of 'Items per page' can be set with a drop-down box and the total number of items is shown. Pages can be navigated with the page selection buttons or with the arrow buttons.

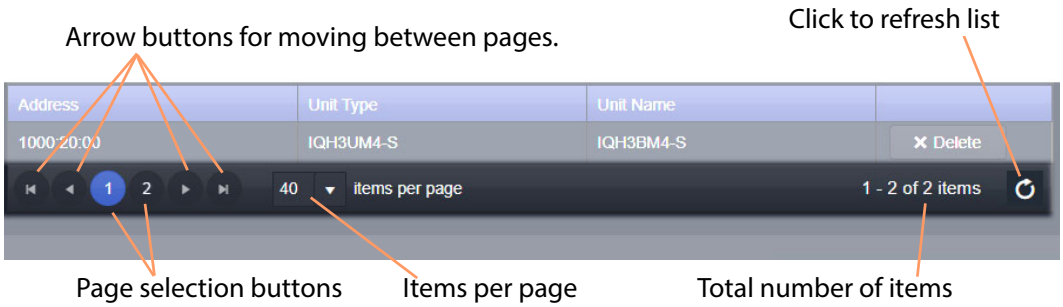


Fig. 7-9: Page Navigation Bar

Polling Options

Click the **Options** button to show the **Polling Options** dialog. See Figure 7-10 and Table 7-4.

Fig. 7-10: Polling Options Dialog

Table 7-4: Polling Options

Option	Description
Unit Poll Rate (seconds)	Text field. Enter the polling period (in seconds). Each specific unit/device/frame is polled once every **Unit Poll Rate** seconds. (Polling messages are RollCall 'GETID' messages.) A **Log Server** service will spread out all polling over the polling period. Thus, if the total number of units in the polling list is N, then: • the service sends out a polling message every **Unit Poll Rate** / N seconds; and • polling messages are sent at a rate of N / **Unit Poll Rate** per second.
Max Missed Polls	Text field. Enter the total number of polls of a unit/device/frame that a **Log Server** service is allowed to miss before declaring that device dead or lost. **Note:** If a poll is missed, then the next poll is sent immediately; thus, this is *not* dependent on 'Unit Poll Rate'.

Automatic Polling

When a **Log Server** service initially detects a unit/device/frame, the device is automatically added to the polling list. This quickens the occurrence of the initial poll and thus the initial log request made of the device.

8 Map View Service

Chapter contents:

Introduction

Version: 4.0

The **Map View** service runs on a GV Orbit server and performs some functions for a GV Orbit 'Control and Monitoring' project (C&M project).

A C&M project's custom user panel(s) typically comprise one or more control/monitoring user panels/screens running on a client computer. The **Map View** service performs server-side functionality (rather than client-side) to support the GV Orbit C&M project and such server-side processing can continue without the client application, or the client computer, running.

Key **Map View** service functions are:

- **Alarm State** - Provide 'alarm state' information to a client C&M project for any:
  - 'Link State' of the C&M project custom user panel hierarchy.
  - Exception Monitoring widgets in custom user panels.
  - 'User Folder' status in the **Network** window tree-view.
- **Remote Values** - Hold values based on RollCall commands. These Remote Values can be used in a C&M project.
- **Server-side Functionality** - Carry out any Server-side Processing for a C&M project (global logic files).

A repository on a GV Orbit server is used to hold GV Orbit projects. This ensures the same project (and same version of the project) is running throughout a GV Orbit system.

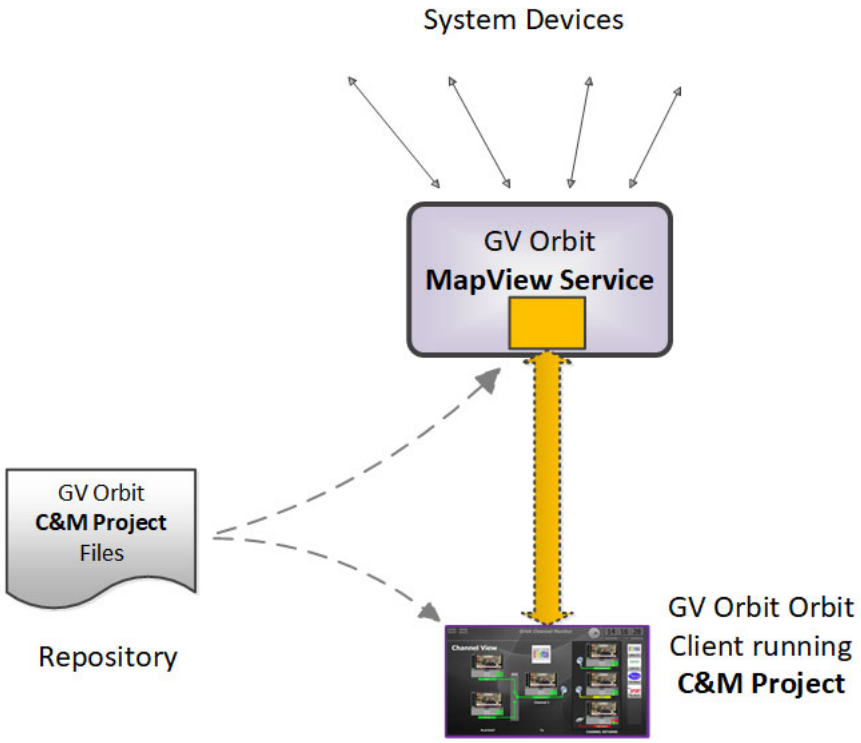


Fig. 8-1: GV Orbit Map View Service

Link State

The service evaluates the alarm state of *all* custom user panels of a designated C&M project. Typically, C&M project custom panels are linked in some hierarchy. The service publishes overall, live project 'Link state' alarm information to the client C&M project. This enables any on-screen icons to actively reflect the overall state of devices and/or custom panels.
(For example, an on-screen widget which links to other custom panels - using a GV Orbit Link Behaviour - may show a flashing red border to indicate an error state in the panel it links to.)

CAUTION

To ensure that the 'state' of all the 'Links' in a C&M project are correctly shown on a panel, the **Map View** service and the GV Orbit Client(s) must be using the *same* version of the *same* C&M project.

If project versions are different, then grayed-out links may be shown on-screen.

Remote Values

The user can define a list of variables for the **Map View** service to hold. These **Remote Values** are stored by the service and are based on RollCall commands. The values persist and will, for example, survive a server reboot or a C&M project reopening/change. The values can be written to or read by a C&M project custom panel using a GV Orbit RollCall+ Behaviour.

In a C&M project, **Remote Values** may be used and bound to C&M project on-screen controls and widgets, or to cause other actions to be carried out.

Remote Values can be used for *non-volatile* storing of values in a monitoring system.
An example application for this is:

- The state of devices in a system, and/or of individual device inputs, can be stored and then used at the start-up of a client project, enabling specific actions to be taken based on these persisting 'monitoring system' values.

Remote Values are implemented as user-defined RollCall+ commands. The commands are for the RollCall address of the **Map View** service itself.
An example application for this is:

- User-defined RollCall+ commands can be created. The C&M project can issue these via a RollCall+ GV Orbit Behaviour. Such commands can be used to indicate some monitoring system state, or to emulate some RollCall+ commands from other devices.

Server-side Processing

The **Map View** service carries out server-side processing defined in a GV Orbit C&M project in 'Global files'. This processing runs on the server even without the project running on the client. Global files are defined as part of the C&M project, but will run on the GV Orbit server.

It is important for the **Map View** service and C&M project clients to be using the *same* version of the *same* project.

System Screen

Table 8-1 below describes the system settings of the **Map View** service's **System** configuration screen of Figure 8-2.

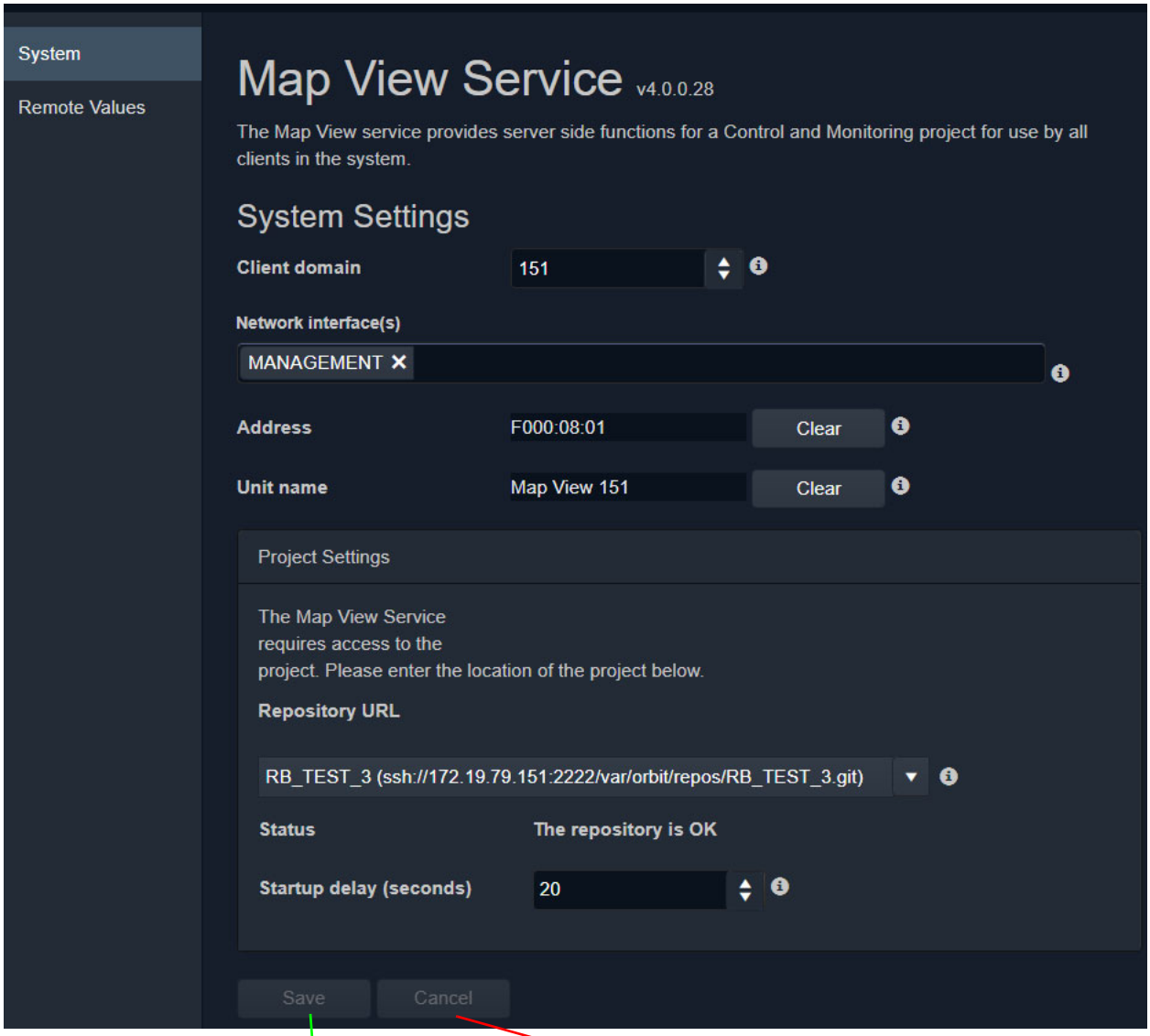


Fig. 8-2: Map View Service - System Settings

Table 8-1: GV Orbit Map View Service - System Settings

Setting	Description
System Settings:	
Client Domain	Text box. Enter a GVOP domain number that the **Map View** service is to use (usually the 'Client' domain). This should be set to match the client domain used by the GV Orbit C&M project to be served by the **Map View** service. The valid range is 1 to 232. See Grass Valley Orchestration Protocol (GVOP), on page 193 for information on Domains. **Note:** If the GV Orbit Client running the C&M project and the GV Orbit service are on different domains they cannot communicate and see each other's data.
Network Interfaces	Drop-down box. Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected. By default this cell is empty, in this case, all interfaces will be used by the service. (See Network Interface(s) Setting, on page 24.) **Note:** When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding GV Orbit Client(s).
Address	Text box. Enter RollCall address to use for the **Map View** service. This will uniquely identify the service in the GV Orbit system. This will be used when the service publishes its own event log data. See RollCall Address, on page 189 for information about RollCall address. The user is free to define the RollCall addresses for a system.
Clear	Button. Click to restore the default RollCall address for the service. Default: F110:01:08
Unit Name	Text box. Enter a name for the **Map View** service, to be a human-readable identifier for the service which appears in the GV Orbit client **Network** window.
Clear	Button. Click to restore the default name for the service.

Table 8-1: GV Orbit Map View Service - System Settings (continued)

Setting	Description
Project Settings:	**Note:** These **Map View** service 'Project Settings' are system-specific. The **Map View** service requires access to the GV Orbit C&M project that it will serve. Project files are stored in a repository on the GV Orbit server, one project per repository. Both the GV Orbit service and the GV Orbit client have access to the repository.
Repository URL	Drop-down box. Select the C&M project repository for the **Map View** service to use. (The drop-down list is automatically filled out by the GV Orbit server.)
Status	Status information, read-only. Indicates the status of the service's connection to the repository holding the target C&M project files.
Startup Delay (seconds)	Text box. Enter a delay (in seconds) from the start-up of the service to when it begins to publish data onto the domain. This gives a freshly-started **Map View** service time to obtain all log data and correctly calculate all resulting 'Link State' information before publishing results. (This is used for dual-redundant GV Orbit server cases, to prevent a newly-starting service from publishing initial start-up data values to a system. Typical values required are in the range 10 to 60 seconds.)

Remote Values Screen

Note: Remote Values are system-specific items.

Click on the **Remote Values** side-tab to see the **Remote Values** screen which holds a list of 'Remote Value' items. See Figure 8-3.

The **Remote Values** defined in the **Map View** service are based on user-defined RollCall+ commands. The RollCall+ command numbers used are chosen by the user and they must be uniquely defined for any one **Map View** service. A value for each user-defined RollCall+ command is stored by the service.

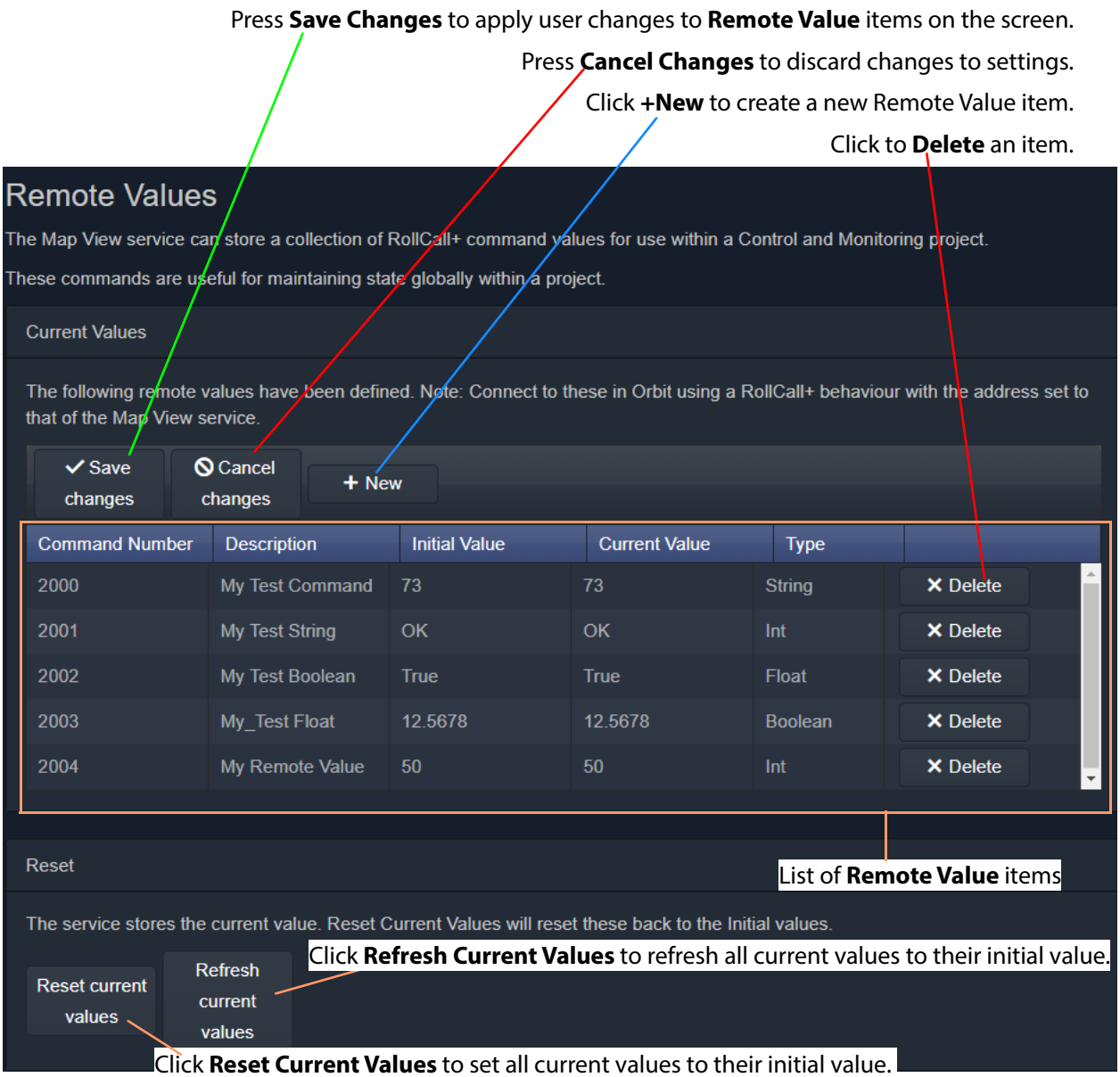


Fig. 8-3: Map View Service - Remote Values

Managing Remote Values

New Remote Value

To create a new **Remote Value**, from the **Map View** service configuration screen:

1 Go to the **Map View** service **Remote Values** tab.

2 Click **+New**.
A new **Remote Value** item appears in the list.

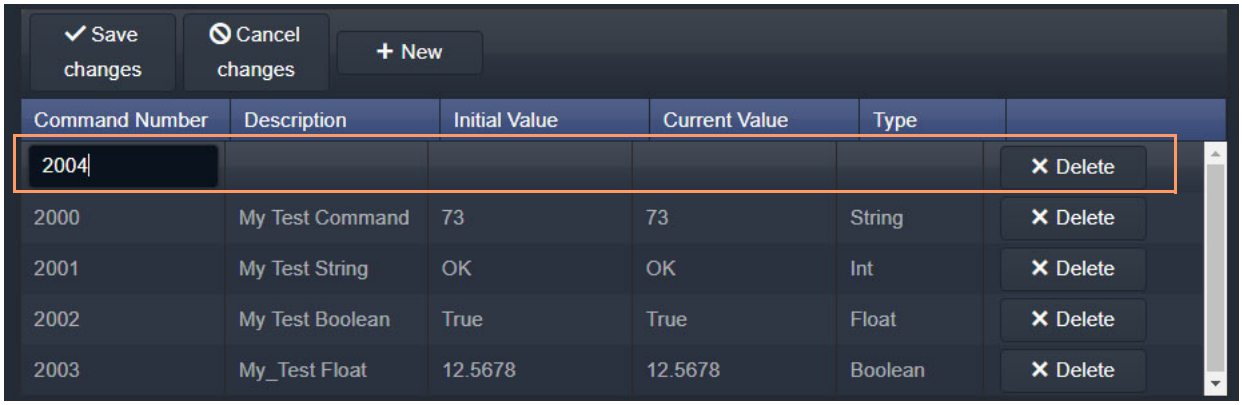


Fig. 8-4: New Remote Value Item

3 Enter a new 'Command Number'.
For example, '2004'.
(**Note:** This must be unique for this **Map View** service.)

4 Enter a 'Description' for the new RollCall+ command.

5 Enter an 'Initial Value' for the value that is stored by the new RollCall+ command.
For example, '50'.

6 From the 'Type' drop-down list, select the type of value that is stored by the RollCall+ command (i.e. text string, integer number, logical Boolean, or floating point number).
For example, select 'Int' for integer type.

Fig. 8-5: Selecting Remote Value Type from Drop-Down List

7 Click **Save Changes**.

A new **Remote Value** item is created in the list.

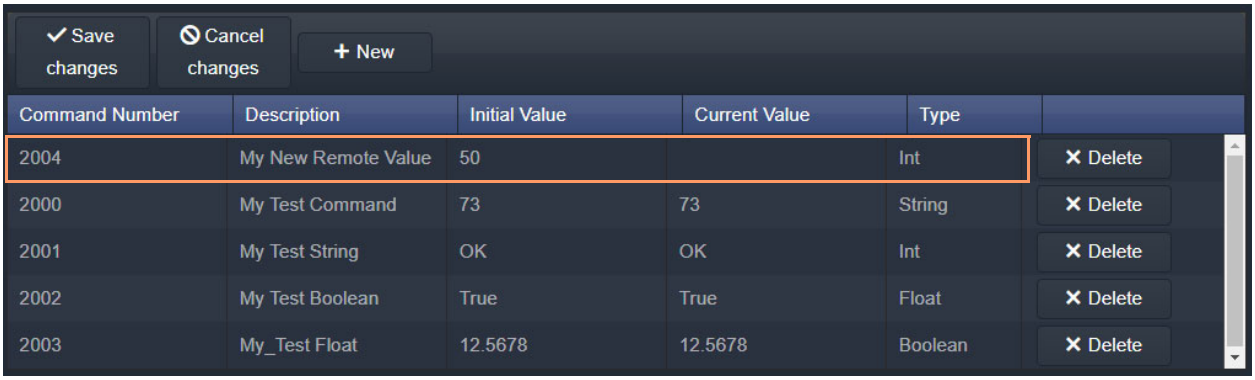


Fig. 8-6: New Remote Value Item

Once a user-defined **Remote Value** is set up in the **Map View** service, a client C&M project custom panel can read from or write to the value via a RollCall+ command using a GV Orbit RollCall+ Behaviour and the **Map View** service's RollCall address and the corresponding (Remote Value) command number.

Reset a Remote Value

All the **Remote Values** can be reset to their initial values by clicking **Reset Current Values**.

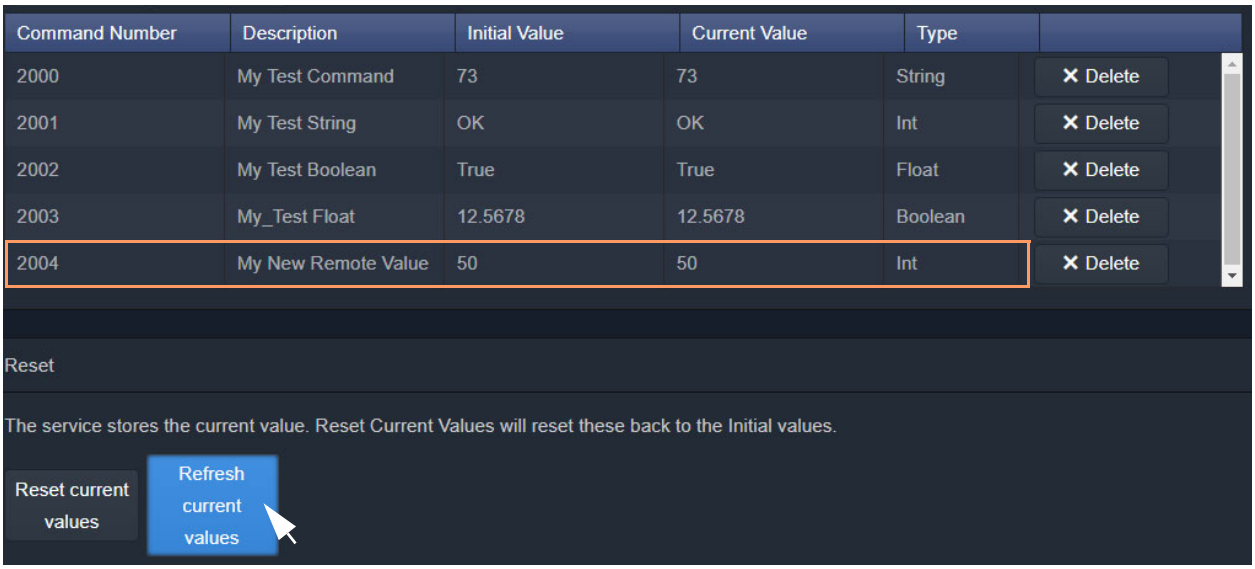


Fig. 8-7: Reset to Initial Values

Refresh Remote Value Display

All the displayed 'Current Values' can be refreshed and updated by clicking **Refresh Current Values**.

C&M Project Remote Value Example

The C&M project example below uses a simple GV Orbit C&M project to display a **Remote Value** on a C&M project custom panel and change the **Remote Value** from the panel.

In this example, a C&M project custom panel shows the value of the **Remote Value** that has the command number '2004'. The custom panel is designed so that a new value can be entered via an on-screen text box, and its value can be incremented or zeroed by clicking panel buttons. See Figure 8-10.

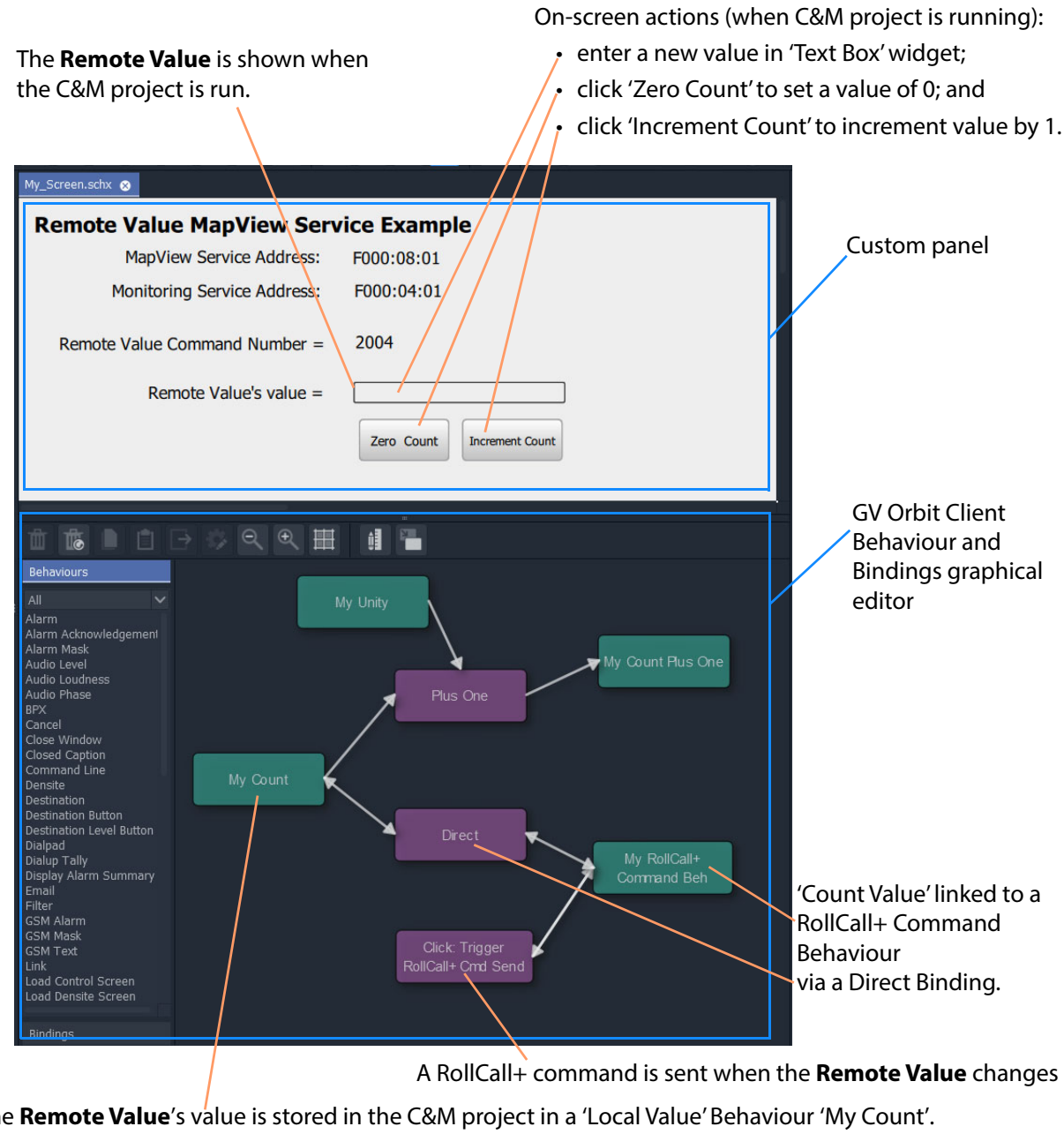
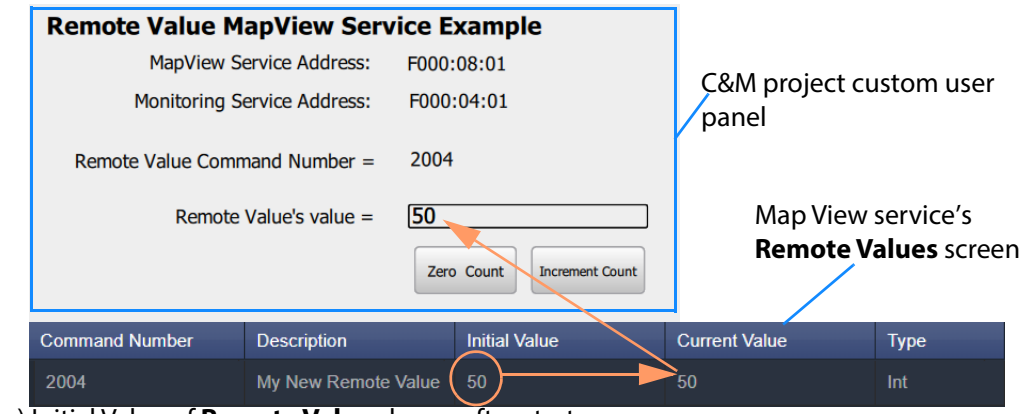


Fig. 8-8: C&M Project Screenshot - Remote Values Example

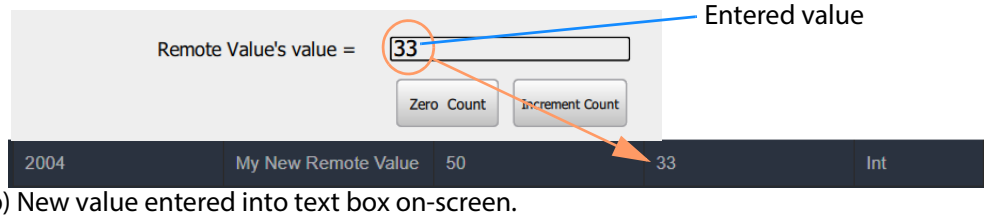
A **Remote Value** has already been created with RollCall+ command number '2004' (see Managing Remote Values, on page 98). In this example, the on-screen value shown on the user panel is linked to a GV Orbit RollCall+ Behaviour configured for '2004'. A RollCall+ command is automatically sent out upon a value change to keep the **Remote Value** up to date with any local changes made.

The **Map View** service stores any new values of the RollCall+ command, allowing all of the GV Orbit system to see any **Remote Value** value changes, including the C&M project. A C&M project gets an initial start-up value from the **Map View** service.

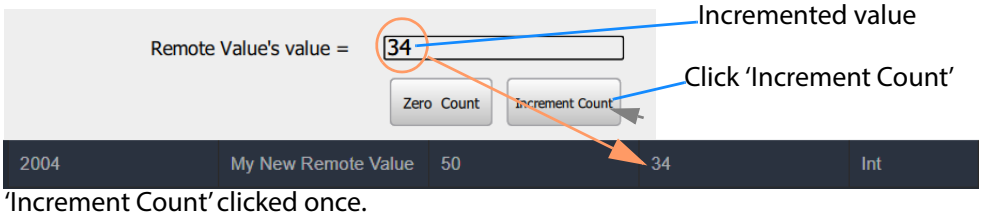
When the project is run, the on-screen behavior of the user panel is shown in Figure 8-9. It is a simple demonstration of how a **Remote Value** can be read/written by a custom panel.



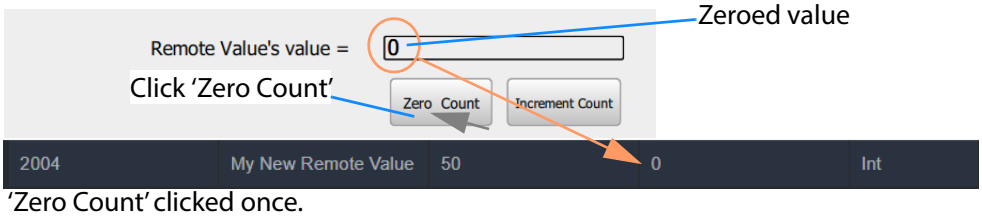
a) Initial Value of **Remote Value** shown after start up.



b) New value entered into text box on-screen.



c) 'Increment Count' clicked once.



d) 'Zero Count' clicked once.

Fig. 8-9: On-Screen Running of Custom User Panel and Remote Value Example

C&M Project Behaviours and Bindings

The GV Orbit Behaviours and Bindings that are 'behind the scenes' in this C&M project custom user panel implement the panel's functionality. These are shown in Figure 8-10 and Figure 8-11.

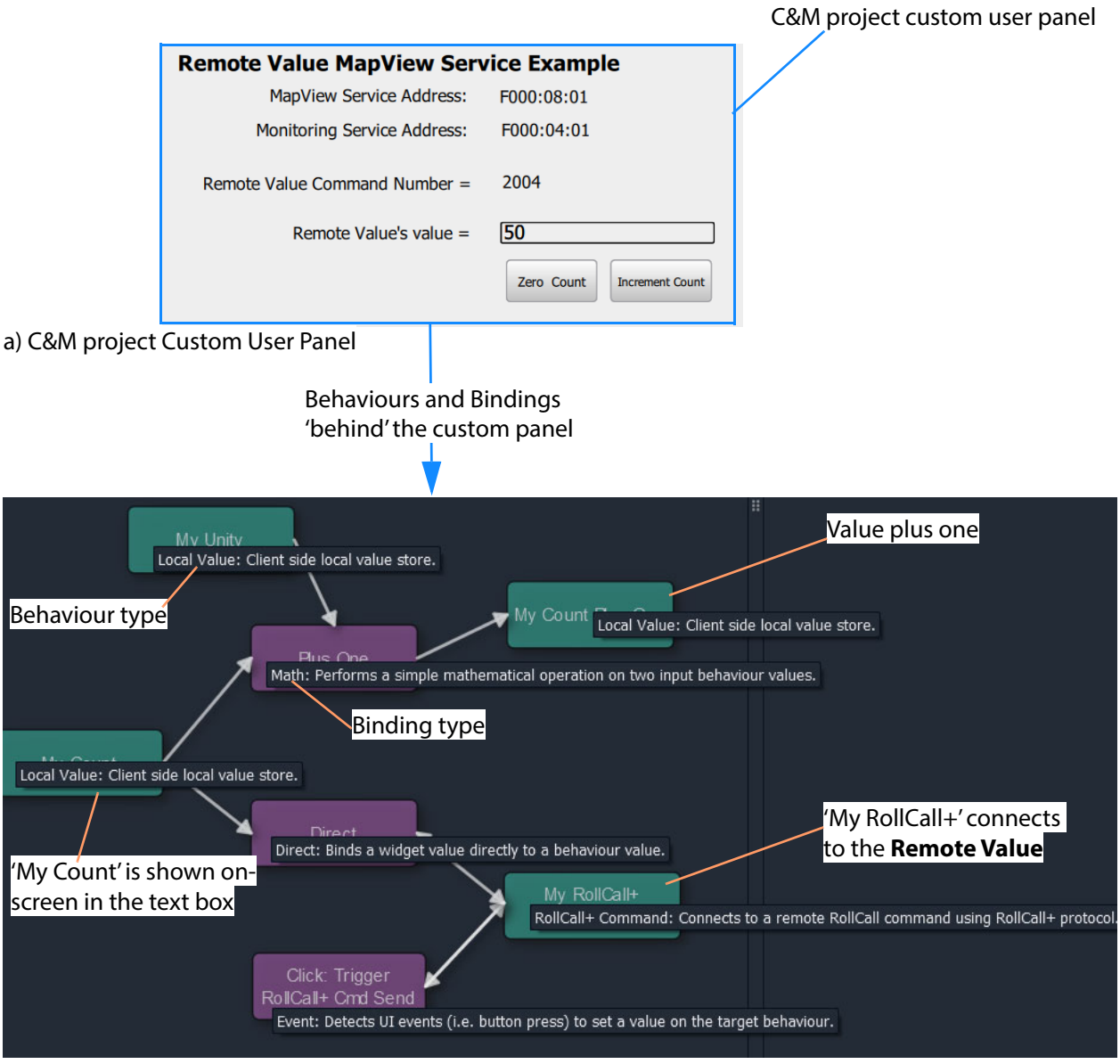
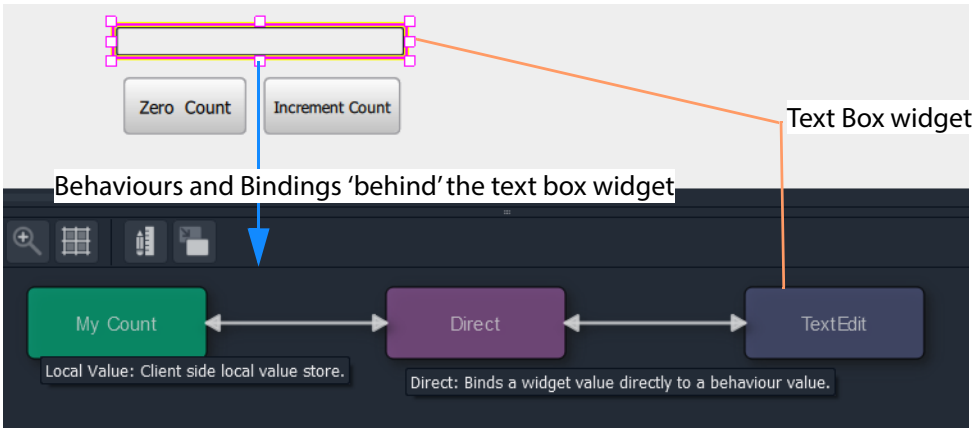
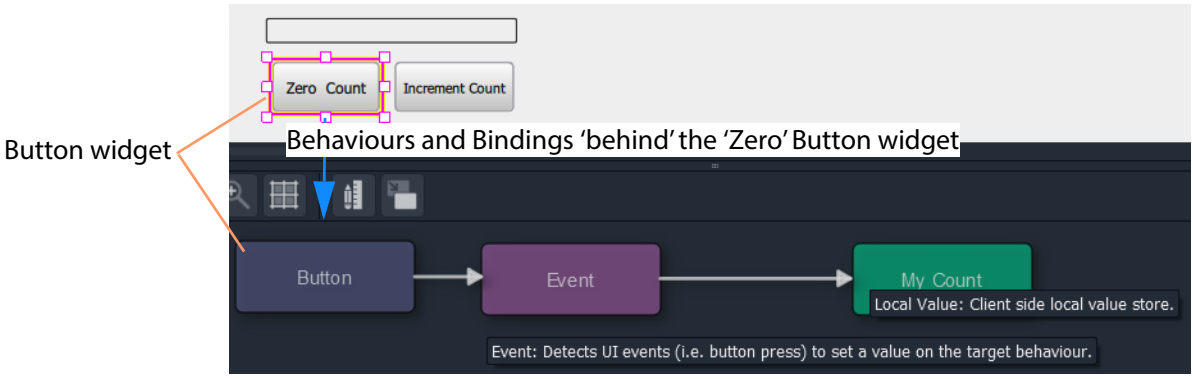


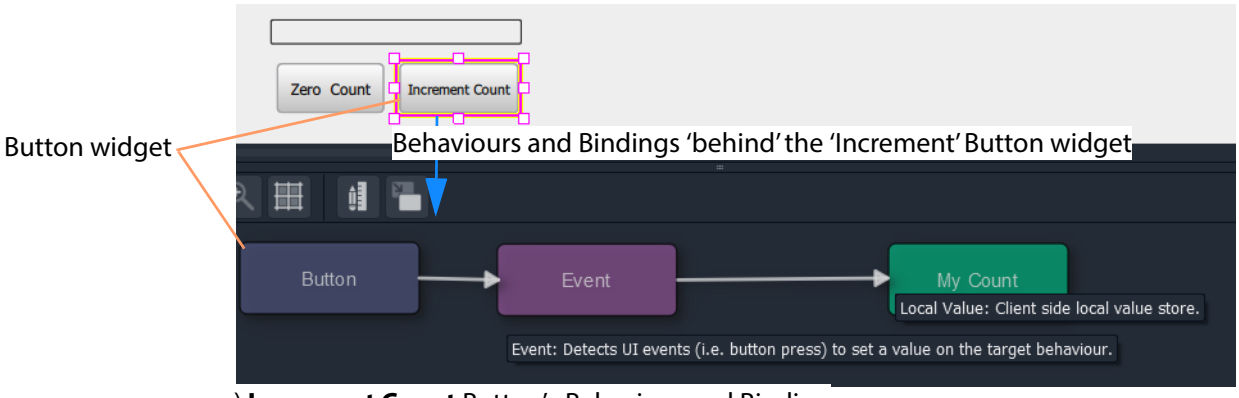
Fig. 8-10: Annotated Behaviour and Bindings Graphical Editor Showing:
a) Custom User Panel.
b) Behaviours and Bindings Behind the Custom User Panel.



a) Text Box Widget's Behaviour and Binding



b) **Zero Count** Button's Behaviour and Binding



c) **Increment Count** Button's Behaviour and Binding

Fig. 8-11: Annotated Behaviour and Bindings Graphical Editor for:
a) Text Box Widget.
b) Zero Count Button.
c) Increment Count Button.

9 Masking Service

Chapter contents:

Introduction

Version: 4.0

The GV Orbit **Masking** service manages masking of alarms within a system. The service maintains and publishes information about which alarms should be masked. It also maintains any timers related to the application of masks in a system.

Alarm producers in a system, such as the GV Orbit **Monitoring** service, subscribe to the **Masking** service for masking information and use it to determine the state of each of their alarms before publishing them. Thus the **Masking** service itself is only *indirectly* responsible for publishing alarms with a masked state.

Features of the **Masking** service include:

- **System Masks** - system wide masking operations.
- **Timed Masks** - mask for a duration.
- **Unit Masks** - mask alarms from a unit/device.
- **Cell Masks** - mask a particular alarm from a unit/device.
- **Mask Persistence** - enabling active masks to be applied after a power cycle.
- **Mask Until Green** - mask an alarm until fault condition cleared.
- Redundancy.

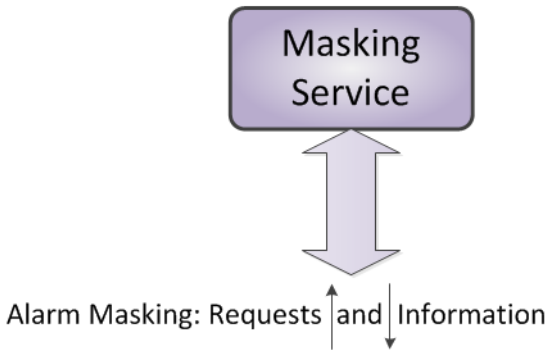


Fig. 9-1: GV Orbit Masking Service

System Screen

The **Masking** service configuration screen is shown in Figure 9-2 and the settings are described in Table 9-1.

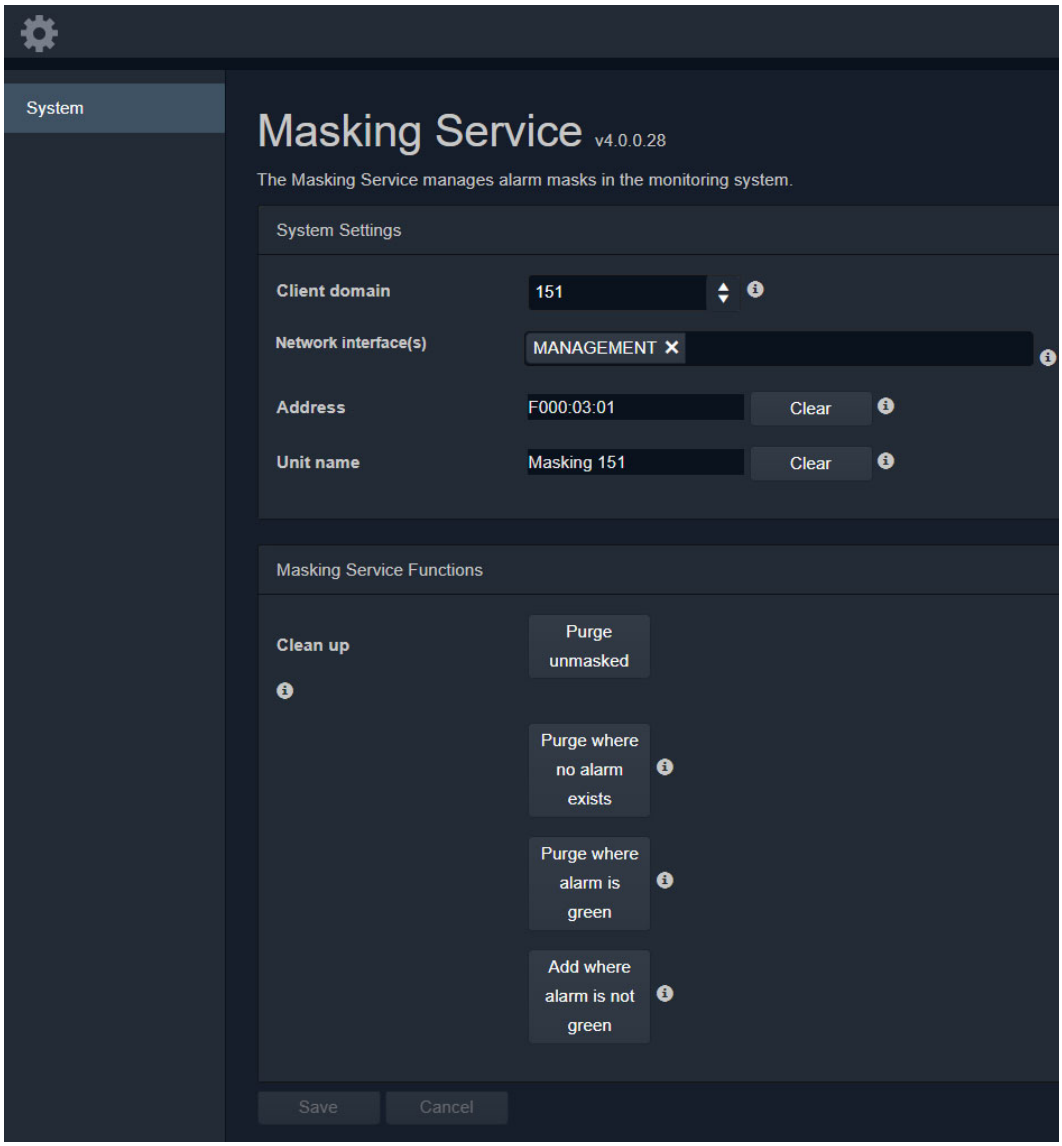


Fig. 9-2: Masking Service - System Screen

Table 9-1: GV Orbit Masking Service - System Settings

Setting	Description
System Settings:	
Client Domain	Text box. Enter a GVOP domain number that the service can use for operation of the service ('Client' domain). The valid range is 1 to 232. (See Grass Valley Orchestration Protocol (GVOP), on page 193, for information on Domains.)
Network Interfaces	Drop-down box. Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected. By default this cell is empty, in this case, all interfaces will be used by the service. (See Network Interface(s) Setting, on page 24.) **Note:** When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding GV Orbit Client(s).
Address	Text box. Enter RollCall address for the service to use for sending out log data relating to service operation. This will uniquely identify the **Masking** service in the GV Orbit system. (See RollCall Address, on page 189, for information about RollCall address.) The user is free to define the RollCall addresses for a system.
Clear	Button. Click to restore default RollCall address for the service. Default: F110:01:03
Unit Name	Text box. Enter a unique name for the service. This is a human-readable identifier for the **Masking** service. This name will be used when the service publishes any log data and used in the **Network** window in a GV Orbit Client. **Note**: This name should be unique, including for redundant configurations. For example, 'Masking A' and 'Masking B'.
Clear	Button. Click to restore default name for the service.

Table 9-1: GV Orbit Masking Service - System Settings (continued)

Setting	Description
Masking Service Functions:	
	'Clean up' actions which affect the masking information stored in the **Masking** service. These actions clean up any residual masking in a system. (Often in a live system there are many residual masks which are no longer valid and need to be cleaned up.) **Note:** Each action offers a prompt to the user, to confirm the action before any changes are made.
Purge unmasked	Button. Click to purge all masks that are in the 'Unmasked' state. When a mask is removed (i.e unmasked), the **Masking** service keeps information about the mask, including its time-stamp and who removed it. To clear these masks from the **Masking** service, the **Purge unmasked** option can be used.
Purge where no alarm exists	Button. Click to purge all masks with no known existing current alarm. These masks will be purged from the **Masking** service. **Note:** Alarms may no longer exist in a system because: • A device has been removed from a system. • A device is temporarily off-line. **CAUTION:** Take care when using this option, because purging will affect both devices that have been removed from a system and those that are temporarily off-line.
Purge where alarm is green	Button. Click to purge all masks where the alarm state is 'OK' (green). These masks will be purged from the **Masking** service. **Note:** This does not affect masks where no alarm exists.
Add where alarm is not green	Button. Click to make the monitoring system alarms show 'all green'. This function instructs the **Masking** service to add masks of the type "mask until green" to all alarms that are not showing 'OK' (green state). **Note:** This is a useful function during commissioning of a system. See Add Mask Where Not Green, on page 111.

Applying a Mask

Masking can be applied via the GV Orbit Client application with either:

- the **Network** window (right-click on a device and select 'Mask'); or
- an **Alarm Mask Behaviour** on a GV Orbit C&M project custom user panel.

Mask Types

The following masking types are available:

Mask Unit (Mask Device)

This type of mask will mask an alarm from a device.

UnMask Unit (Unmask Device)

This will remove any alarm mask type from a device.

Mask Until Time

This type of mask will mask an alarm and automatically remove the mask after a configurable period of time. When the mask is removed, any latched alarm values will be reset.

The **Masking** service monitors this time period and will automatically effect the removal of the mask when the time period has expired.

For example, this is useful if some engineering work is to be done which may cause alarms while it is being done. In this case, setting a **Mask Until Time** mask for the duration of the work:

- will mask alarms for that time;
- will expire after the preset time; and
- masks will then behave as normal.

> **Note:**
> If a further mask is made on an alarm which is already actively masked by a 'Mask Until Time' mask, then the *later* mask will take precedence.

Note:
The period of time used is selected by the user when applying the 'Mask Until Time' mask; the user selects from several choices. The choices can be configured in GV Orbit Client with a GV Orbit C&M project open. (See the **Masking** tab - 'Tools -> Options -> Monitoring' from the main menu.) The choices offered are configurable. The default choices are:

- 1 minute;
- 5 minutes;
- 20 minutes;
- 1 hour;
- 24 hours; and
- 7 days.

Mask Until Green

This type of mask will mask an alarm and automatically remove it when the alarm state is 'OK' (i.e. when an on-screen alarm goes green).

For example, this is useful if an error condition occurs, and is acknowledged and remedial work is underway or scheduled. In this case, the alarm can be masked until the work is carried out and the error cleared.

Masking Service Functions

Note:
For a description of all **Masking Service Functions**, please see the 'Masking Service Functions' items in Table 9-1, on page 108. (Masking Service Functions:)

Add Mask Where *Not* Green

This masking service function is a useful during, for example, the commissioning of a new system. Alarms will be masked until their alarm state goes green (i.e. until system device is set up properly), at which point the mask is removed (i.e. the alarm is unmasked).

Alarms Generated

The **Masking** service itself sends out alarm log data.
To view live alarms from the **Masking** service itself in the GV Orbit Client application:

1 Right-click in the **Network** window on the **Masking** service item and select 'Alarms'.

A **Alarm Summary** window is shown which shows status information about the service, including the alarms it generates. See Figure 9-3.

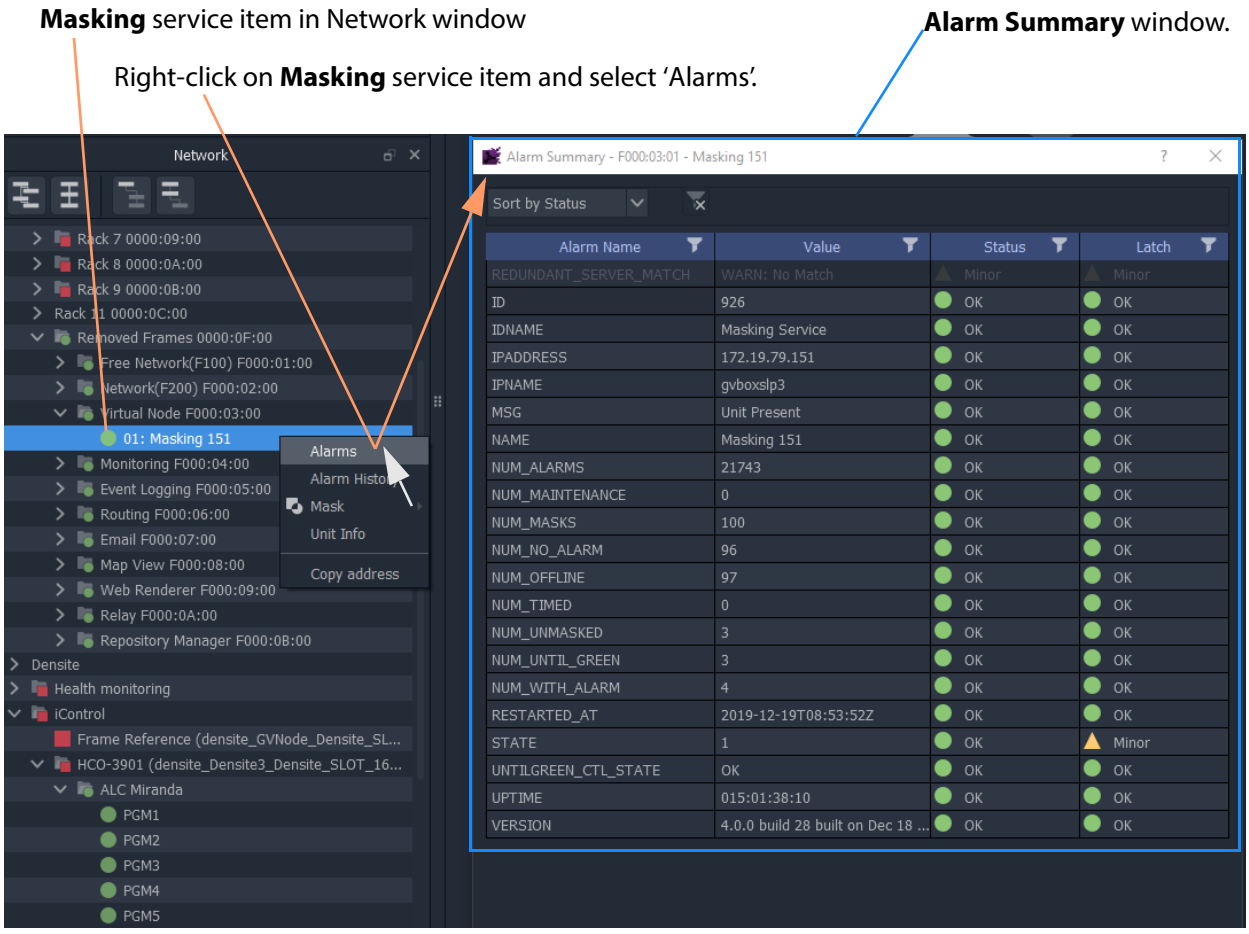


Fig. 9-3: Masking Service's Alarm Summary Window

Masking Service Alarm Summary Information

The **Alarm Summary** window shows some status values for the **Masking** service; these include some count values which are described in Table 9-2.

Table 9-2: Masking Service Information

Alarm Count	In the Masking Service, Total Number of .....
NUM_ALARMS	Alarms
NUM_MAINTENANCE	Maintenance masks.
NUM_MASKS	Total number of masks. Where: **NUM_MASKS** = **NUM_MAINTENANCE** + **NUM_OFFLINE** + **NUM_UNMASKED** and **NUM_MASKS** = **NUM_NO_ALARMS** + **NUM_WITH_ALARMS**
NUM_NO_ALARM	Masks where no matching alarm can be found.
NUM_OFFLINE	Off-line masks.
NUM_TIMED	Masks with an automatic expiration time period.
NUM_UNMASKED	Masks which have been unmasked at some stage.
NUM_UNTIL_GREEN	Masks which are 'masked until green'.
NUM_WITH_ALARM	Masks where a matching alarm *can* be found.

10 Monitoring Service

Chapter contents:

Introduction

Version: 4.0

A monitoring system is interested in alarm status information. The primary purpose of the GV Orbit **Monitoring** service is to calculate key 'alarm state' information from log messages from system devices/units. There may be large amounts of log data and most of it may be informative. The **Monitoring** service processes log information on a GVOP domain and produces alarm information. Various pieces of alarm information may come from one source device (i.e. the same device address) and this information can be combined together. Resulting alarm information is sent out as alarm messages into the GV Orbit system.

Note:

The **Monitoring** service can combine various 'alarm state' information from a *single* device (i.e. from a single device address).
The service *does not* combine together 'alarm state' information from multiple device addresses.

A GV Orbit client can subscribe to these alarm messages and, for example, alarm state information can be used on a GV Orbit C&M project custom user panel (using GV Orbit Alarm Behaviours).

A GV Orbit client or a GV Orbit service may also write log data to a GVOP domain for the **Monitoring** service to process.

Note:

The **Monitoring** service must be running for alarms to be present in the GV Orbit system; this includes alarms for GV Orbit Services themselves.

Additionally, there is a 'light' protocol to allow third party devices/systems to access some alarm state information.

Note:

In a GV Orbit system, the 'GVOP domain number' should match across:

- Logging Service
- GV Orbit Service(s)
- GV Orbit Client(s).

And each item must have a unique RollCall address or system identifier.

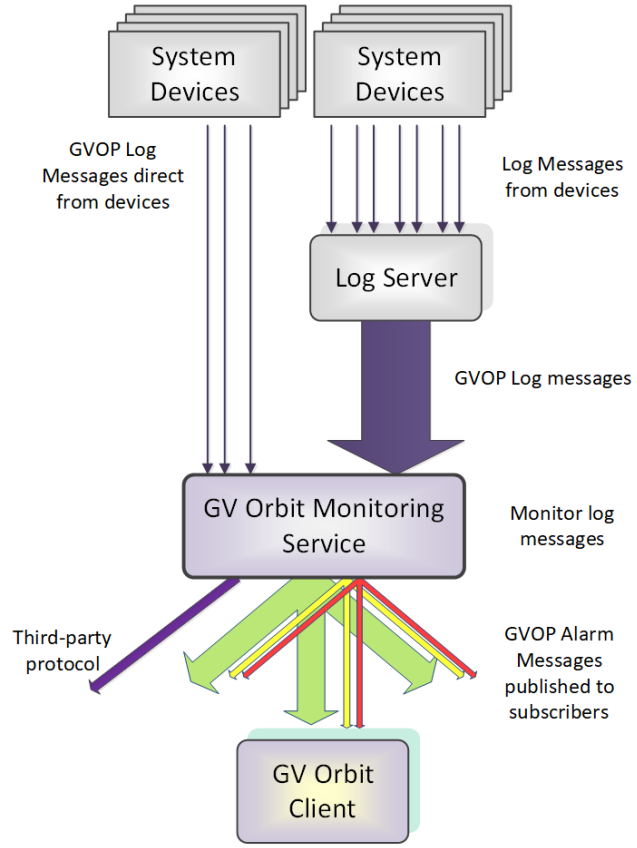


Fig. 10-1: GV Orbit Monitoring Service

Log Fields and Headers

A log message contains a HEADER=VALUE pair, commonly referred to as a **Log Field**. Log Fields from a **Log Server** service, or from a **Densité Manager** service, or directly from devices/units (i.e. any device in a 'control and monitoring' GVOP domain) can be processed by the **Monitoring** service: The service detects the alarm state of current Log Fields ('OK', 'Warning', or 'Error') and publishes the resulting calculated state information in GVOP alarm messages to subscribers.

STATE Log Field

A **STATE Log Field** is automatically added to each unit in a system by the **Monitoring** service. This contains the aggregate alarm state of all the unit's log messages, providing a useful overall log field for monitoring to use.

Header Rules

A **Monitoring** service is pre-configured with rules for processing the main and common **Headers** found in system log messages.

Every log message in the system should have an accompanying header rule.

Header Rules are listed on the **Headers** configuration screen (see Headers Screen, on page 132, for details). Each listed header has corresponding 'alarm state matching rules' which provide, for example, information about allowable limits for a Log Field. The rules determine a resulting alarm state for the Log Field.

When the current value of a Log Field header changes, the resulting Alarm state is determined by the **Monitoring** service, which looks up the corresponding **Header Rule** and works out what 'state' to apply ('OK', 'Warning', 'Error').

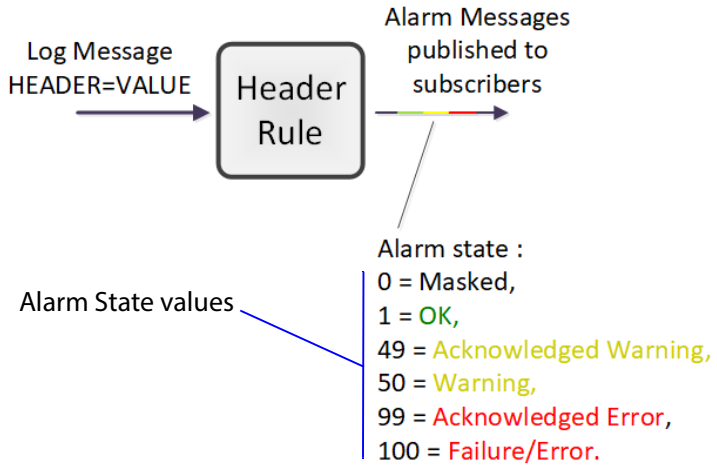


Fig. 10-2: Header Rule

Note:
The Alarm state value for an:
- 'Acknowledged Warning' is distinct from Warning'.
- 'Acknowledged Error' is distinct from 'Error'.

Rules

A rule for a Header is defined through one or more 'state matching' rules for the Header value. The following types of rules can be defined for different Header value types:

- String value rule.
- Numeric value rule.
- 'Rate of change' value rule.

Each Header rule can be configured with an automatic acknowledge time period. The **Monitoring** service automatically acknowledges an 'Error' or 'Warning' after this period.

Wild Card *

An asterisk wild card character (*) can be used when forming rules for similarly-named Headers. This can reduce the amount of Header rule configuration needed.

A device may often have many similarly-named Log Fields. In this case, Header rules can be created using a wild card character to create rules which apply to more than one Header. The wild card, *, is used in place of a number in the Header name.

For example, 'INPUT_*' includes Headers INPUT_1, INPUT_2, INPUT_3, ... etc.

Number Range [ ]

A number range may be specified in a Header name for a rule to specify a range of Headers.

For example, 'INPUT_[1-10]' covers Headers INPUT_1 to INPUT_10.

Categories

Categories can effectively combine several log messages from one device into one log message to ease subsequent monitoring in a system.

When monitoring a system, it is a common requirement to show a single alarm state for multiple log messages from a given device. This can be achieved in GV Orbit with the **Monitoring** service: Often, a device has many similar Log Fields. For example, a multiviewer has many inputs with similar corresponding Headers. The **Monitoring** service can monitor multiple alarm messages and aggregate the results into one alarm state (called, say, "INPUT_STATE") using **Categories**. See Figure 10-3.

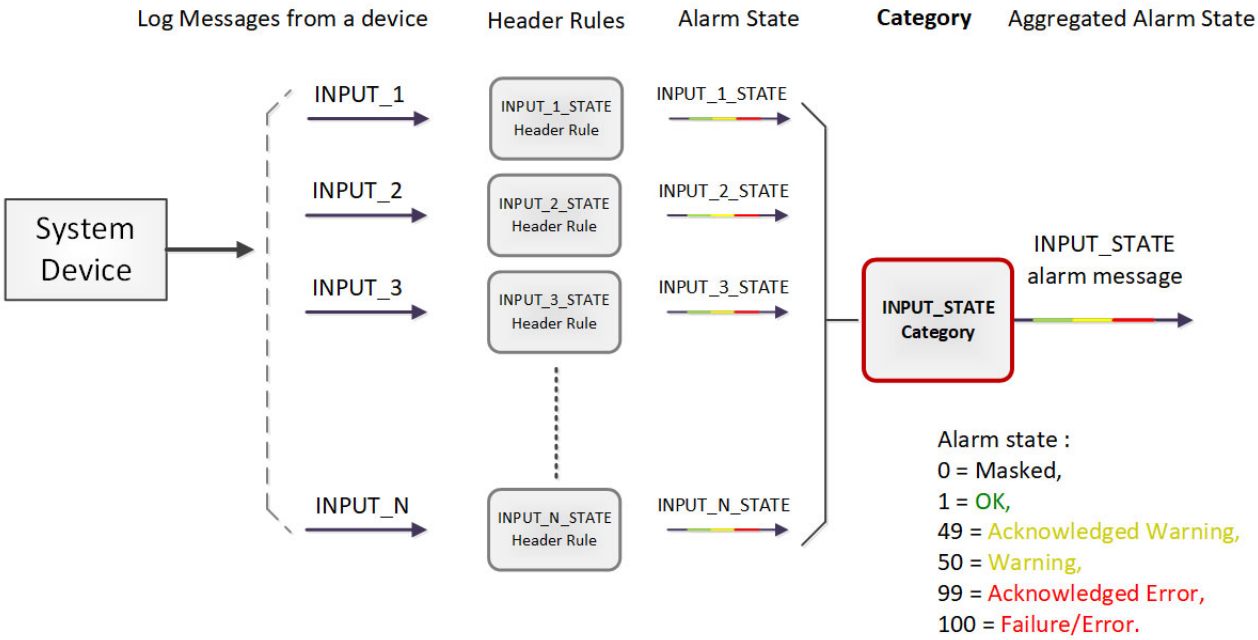


Fig. 10-3: Category Example - Block Diagram

Example Use Cases

Often, a device has many similar Log Fields. For example, a multiviewer has many inputs with similar corresponding Headers.

- A multiviewer with 48 inputs:
  Headers may include: INPUT_1_STATE, INPUT_2_STATE, and so on up to INPUT_48_STATE.

  A category can be used create a new Log Field (called, say, 'INPUT_STATE') to contain the overall combined alarm states of all the INPUT_*_STATE Log Fields.

- For a single multiviewer input:
  Headers may include: INPUT_1_LOST, INPUT_1_STATE, INPUT_1_STANDARD, INPUT_1_FRAMERATE.

  A category can be used create a new Log Field (called, say, 'INPUT') to contain the overall combined alarm states of all the INPUT_1* Log Fields.

  Note:

  Monitoring of multiple Log Fields and aggregating the resulting alarm states can be achieved in GV Orbit in one of two ways:

  1. Solely with a C&M project custom user panel in GV Orbit Client:
     a design a GV Orbit client custom user panel to look at multiple log message types;
     b use Behaviours and Bindings to determine alarm states for each log message, and to aggregate the multiple results into one alarm state; and then
     c show alarm state on the custom panel (for example, with a Tally lamp).

  Or, alternatively:

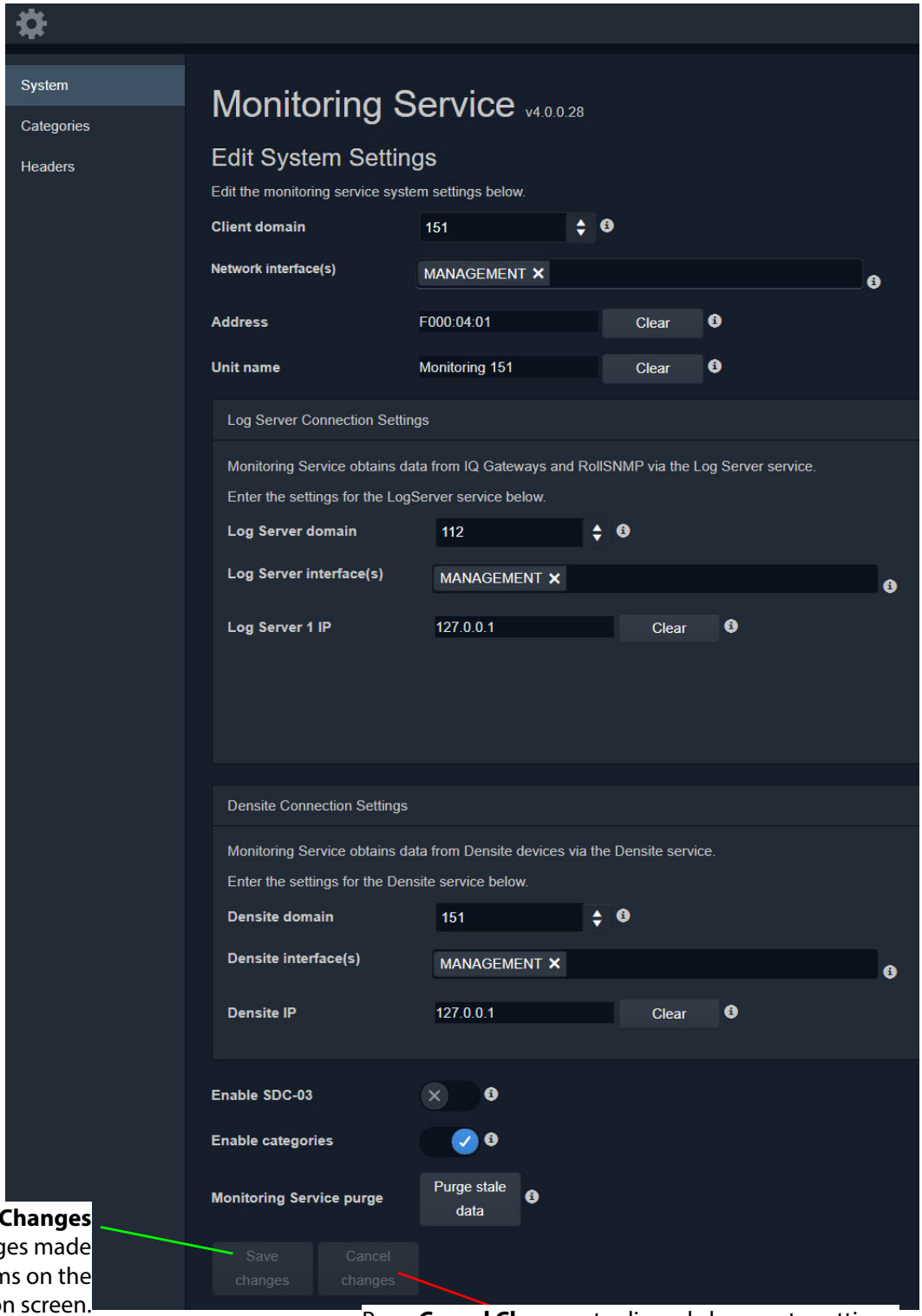
  2. With a **Monitoring** service *and* GV Orbit client custom panel(s):

     It can be more convenient to perform the aggregation centrally and then provide a single, aggregate Log Field to one or more subscribing GV Orbit client custom panels. Do this using the **Monitoring** service and a GV Orbit client panel:

     a configure the service to look at multiple log messages;
     b configure the service with a **Category** to aggregate the log messages;
     c design a GV Orbit C&M project custom panel to look at the new, single (aggregated) log message; and
     d show the alarm state on the custom panel (with a Tally lamp).

See Categories Screen, on page 125, for more details.

System Screen



Press **Save Changes** to apply changes made to setting items on the configuration screen.

Press **Cancel Changes** to discard changes to settings.

Fig. 10-4: Monitoring Service - System Settings Screen

Table 10-1: GV Orbit Monitoring Service - System Settings

Setting	Description
Edit System Settings:	
Client Domain	Text box. Enter a GVOP domain number that the service will monitor (typically, this is the 'Client' domain). The valid range is 1 to 232. (See Grass Valley Orchestration Protocol (GVOP), on page 193 for information on Domains.) **Note:** The **Client Domain** should be set to match the domain used by a GV Orbit Project in a GV Orbit Client. If the GV Orbit Client and Monitoring Service are on different domains they cannot see each other's data.
Network Interfaces	Drop-down box. Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected. By default this cell is empty, in this case, all interfaces will be used by the service. (See Network Interface(s) Setting, on page 24.) **Note:** When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding GV Orbit Client(s).
Address	Text box. Enter RollCall address for the service to use to write its state messages to. This will uniquely identify the service in the GV Orbit system. This will be used when the service publishes its own log data. (See RollCall Address, on page 189 for information about RollCall address.) The user is free to define the RollCall addresses for a system.
Clear	Button. Click to restore the default RollCall address for the service. Default: F110:01:04
Unit Name	Text box. Enter a name. This is a human-readable identifier for the **Monitoring** service to use. This name appears in the GV Orbit client **Network** window.
Clear	Button. Click to restore the default name for the service.
Log Server Connection Settings:	
	A **Monitoring** service connects to a **Log Server** service via a Log Server GVOP domain to get Rollcall-protocol device log data.

Table 10-1: GV Orbit Monitoring Service - System Settings (continued)

Setting	Description
Log Server Domain	Text box. Enter the GVOP domain number for the **Monitoring** service to get its **Log Server** log information from. **Note:** This should be different to the **Client Domain**.
Log Server Interface(s)	Drop-down box. Click in the cell and select the server computer network interface(s) for the **Monitoring** service to use to communicate with the **Log Server**. More than one interface may be selected. By default this cell is empty, in this case, all interfaces will be used by the service. When one or more interfaces have been selected the service will use only those interfaces listed. To delete an item from the list, click on its adjacent **x**. **Note:** When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding Log Sever(s).
Log Server 1 IP	Text box. Enter IP address of the where the **Log Server** is running which the **Monitoring** service is connected to. For a typical GV Orbit system, both services are running on the same GV Orbit server and, in this case, the 'loop back' IP address 127.0.0.1 should be used. **Note:** In some systems, a different IP address may be specified by the GV Orbit system administrator.
Clear	Button. Click to clear the text box.
Densité Connection Settings:	
	A **Monitoring** service connects to a **Densité Manager** service to get device log data.
Densité Domain	Text box. Enter a GVOP domain number of the **Densité Manager** service to connect to. This may be the same as the Client domain number.
Densité Interfaces	Drop-down box. Click in the cell and select the server network interface(s) for the **Monitoring** service to use to connect to the **Densité Manager** service. More than one interface may be selected. By default this cell is empty, in this case, all interfaces will be used by the service.

Table 10-1: GV Orbit Monitoring Service - System Settings (continued)

Setting	Description
Densité IP	Text box. Enter IP address of the where the **Densité Manager** is running which the **Monitoring** service is connected to. For a typical GV Orbit system, both services are running on the same GV Orbit server and, in this case, the 'loop back' IP address `127.0.0.1` should be used. **Note:** In some systems, a different IP address may be specified by the GV Orbit system administrator.
Clear	Button. Click to clear the text box.
Enable SDC-03	Check box. Select to enable the SDC-03 (Traffic Light) interface. See SDC-03 Interface, on page 124. **Note:** Enabling SDC-03 requires a **Monitoring** service restart.
Enable Categories	Check box. • Select to enable 'Categories' in the **Monitoring** service. • Deselect to disable. When disabled, the **Monitoring** service will not add additional log field categories. **Note:** This requires a **Monitoring** service Stop/Start.
Monitoring Service Purge	Button. Click **Purge Stale Data** to force the **Monitoring** service to remove log fields which are grayed-out: For example, because their source publisher has gone away.

Monitoring Redundancy

Dual-redundancy can be achieved by running two **Monitoring** services with each connected to its own **Log Server** and **Densité Manager** services.

Further resilience can be achieved if both **Monitoring** services are connected to each other's own **Log Server** and **Densité Manager** services. This configuration does result in extra data on the GVOP domain.

SDC-03 Interface

The **SDC-03 Interface** allows a third-party device/system to connect to the **Monitoring** service and obtain high-level monitoring information. SDC-03 is a 'light' status-monitoring protocol allowing access to alarm data generated by the **Categories** screen.
Note: Detailed log data is not available over this interface.

The SDC-03 interface is available under NDA from Grass Valley. For information on the SDC-03 status monitoring protocol, please contact Grass Valley Support.

Categories Screen

A **Category** allows a user to define a new Header to carry an aggregated Alarm state and define a list of the Log Fields which should be aggregated. The list may be defined:

- As a collection of fixed headers.
- Using wild cards (i.e. INPUT_*).
- Using ranges (i.e. INPUT_[1-20]).

When **Categories** are enabled, the **Monitoring** service automatically scans each device in the system and adds the new Log Field to any devices which have matching Header rules. Thus, the new status information appears in a device's **Alarm Summary** window.

Figure 10-5 shows the **Monitoring** service **Categories** configuration screen and describes the screen controls and features.
Categories Example, on page 127, shows an example of setting up a new **Category**.

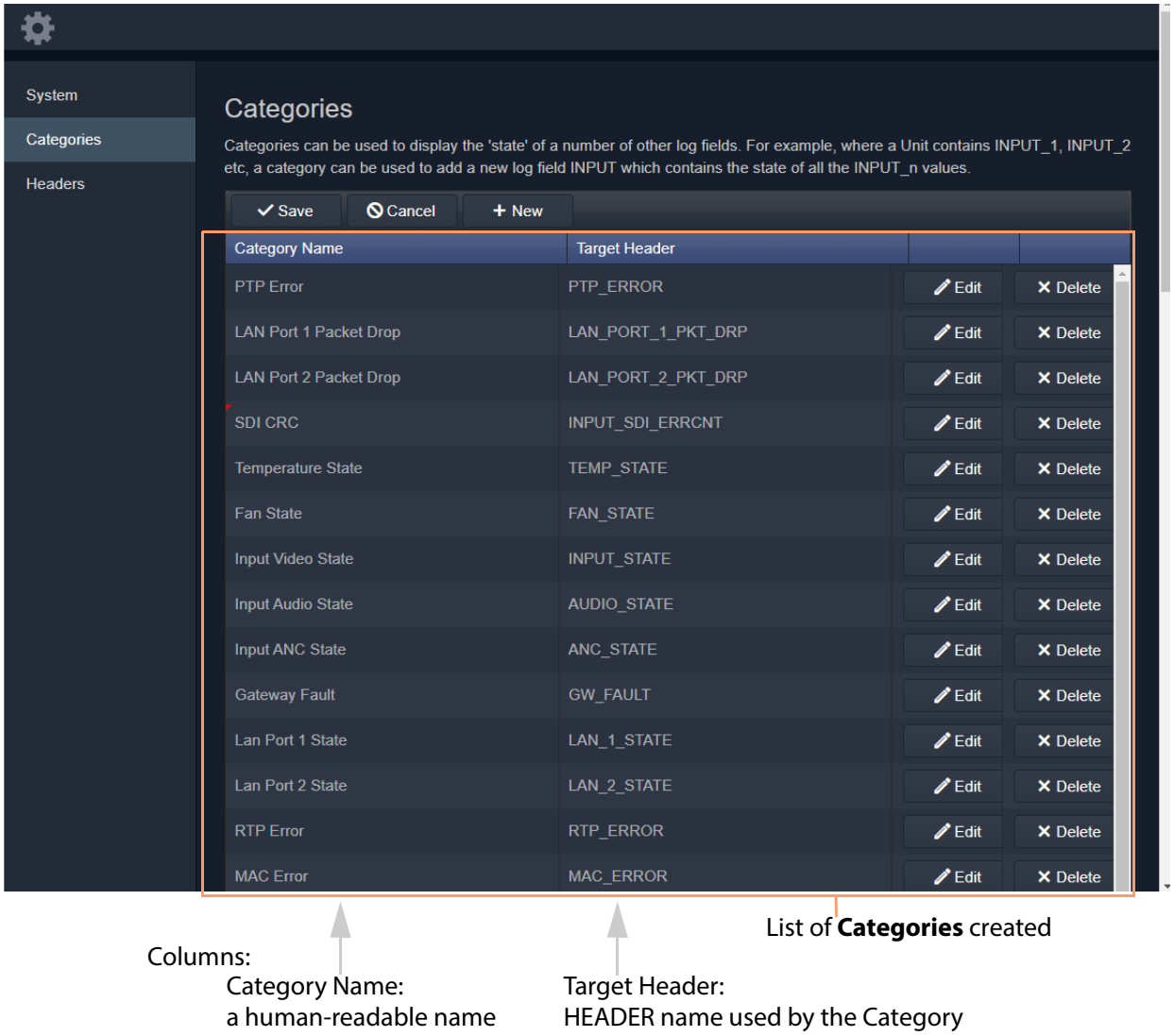


Fig. 10-5: Monitoring Service - Categories Screen

Fig. 10-6: Categories List

Categories Example

In this example, a new **Category** is created which aggregates together some Log Headers.

New Category

To create a new **Category**:

1 Open the **Categories** screen of the **Monitoring** service.

2 Click **+New**.

A new, blank **Category** item appears at the top of the **Category** list.

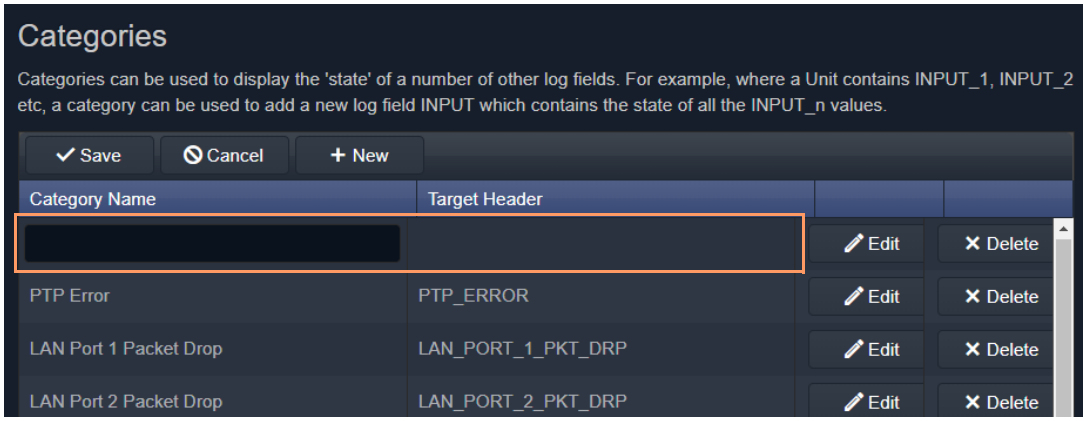


Fig. 10-7: New Blank Category Item

3 Enter a name for the new **Category** - a human-readable, 'friendly' name.

4 Enter a name for the Log Field Header to be used by the **Category** (Target Header).

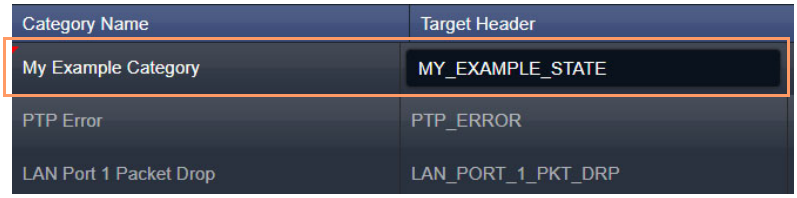


Fig. 10-8: New Category Name and Header

5 Click **Save**.

Edit - Add Header Match Pattern

6 Click **Edit** to edit the new **Category** item.

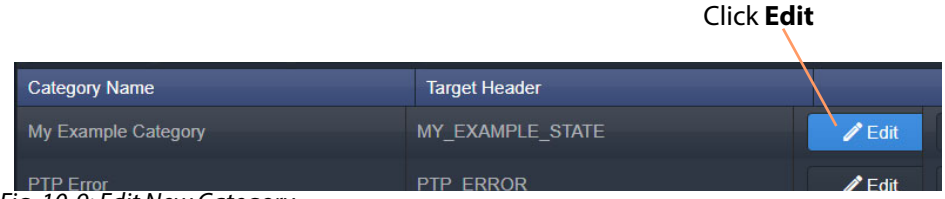


Fig. 10-9: Edit New Category

The **Edit Category** dialog is shown. See Figure 10-10.

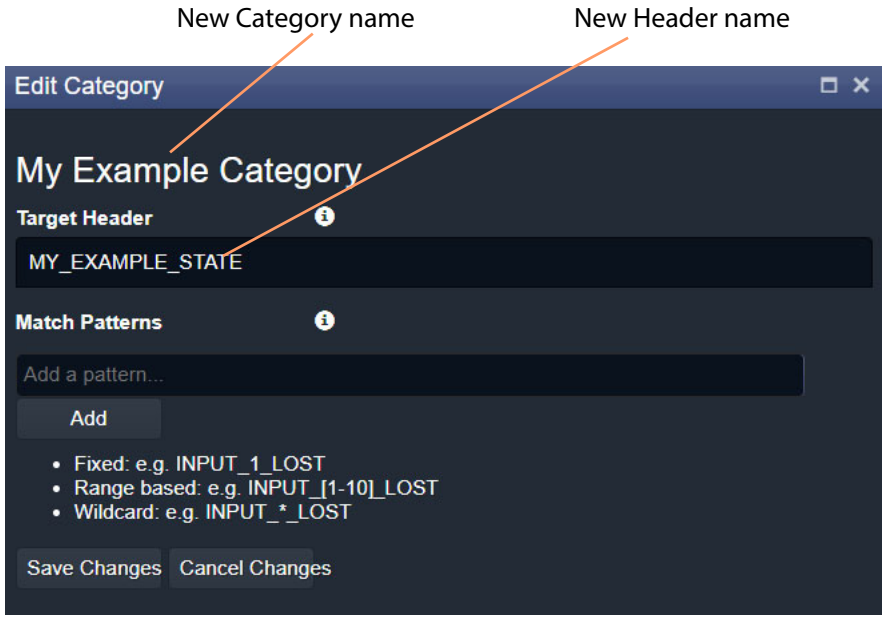


Fig. 10-10: Edit Category Dialog

7 In the **Match Patterns** text box,
begin entering a Header **Match Pattern** text string. For example, "INPUT_".

As the text string is entered, a drop-down list appears showing all the candidate Header names filtered on the entered text. See Figure 10-11.

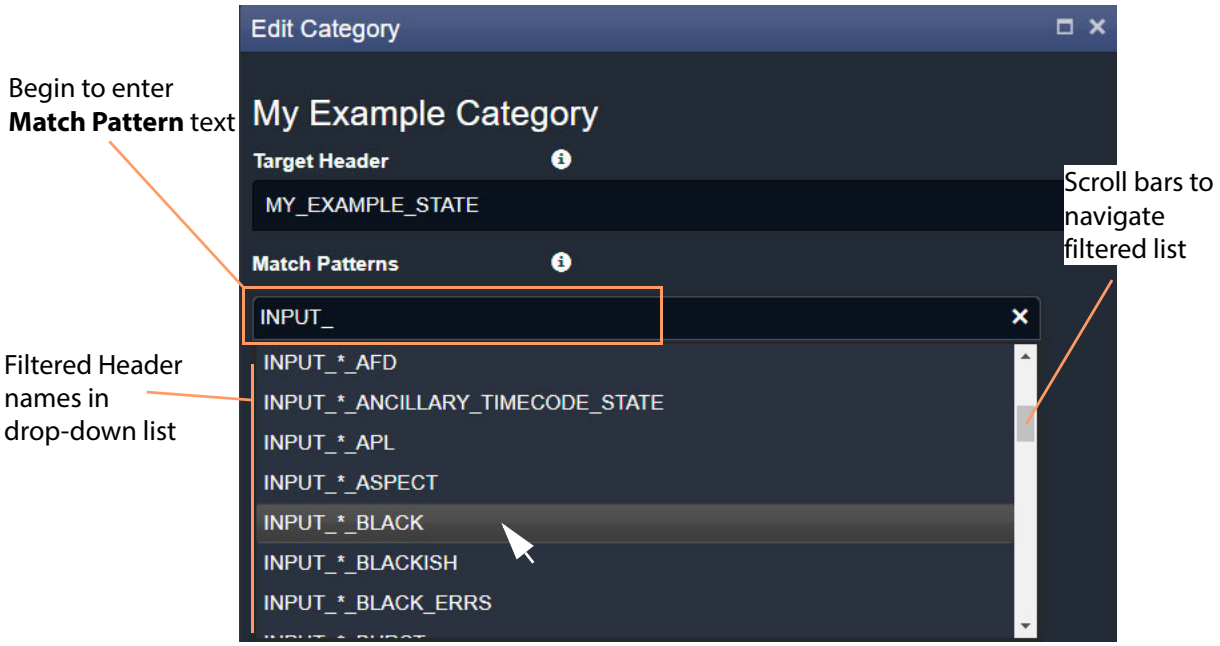
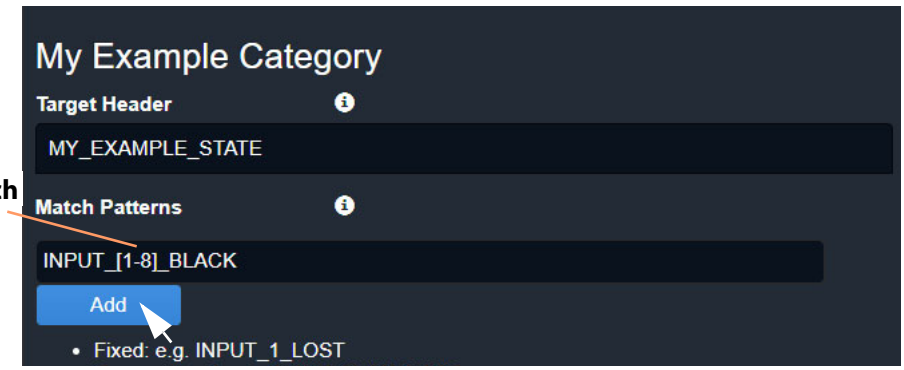


Fig. 10-11: Select a Match Pattern From Drop-Down List

8 Select a **Match Pattern** from the drop-down list.
For example, INPUT_*_BLACK.

9 If required,
now edit the selected **Match Pattern** string further.

For example, replace the wild-card '*' character in 'INPUT_*_BLACK' with a range, INPUT_[1-8]_BLACK, to look for black detection status only on inputs 1 to 8.



The selected **Match Pattern** has been edited in the text box.

Fig. 10-12: Entering a Match Pattern

10 Click **Add**.

A **Match Pattern** is added to the **Category**.

Added **Match Pattern**

Fig. 10-13: Added Match Pattern

One **Match Pattern** has now been set up for this **Category**. More match patterns may be added, if required.

More Match Patterns

To add more **Match Patterns** into the **Category**:

11 Clear the text entry box by clicking on the **x** that appears when the cursor hovers over the right-hand end of the text box. (See Figure 10-14.)

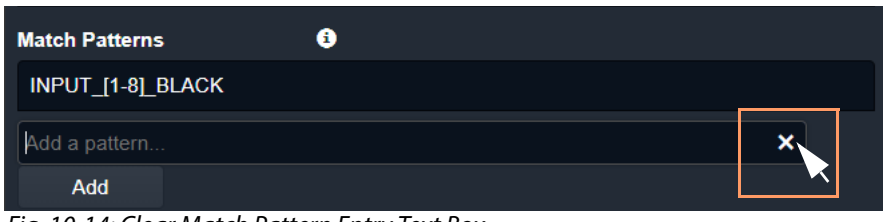


Fig. 10-14: Clear Match Pattern Entry Text Box

12 Begin entering another Header **Match Pattern** text string and select the required name item in the drop-down list.

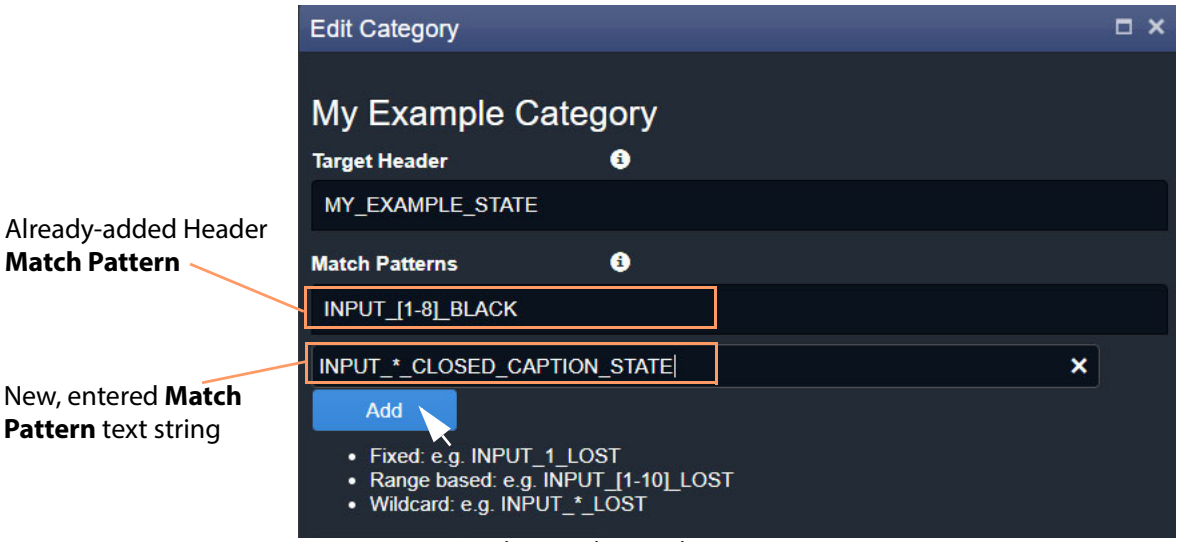


Fig. 10-15: Entering Another Header Match Pattern

13 Click **Add**.

The newly-entered text string is added to the **Category**.

Two Header **Match Patterns** have now been set up for this **Category**. See Figure 10-16.

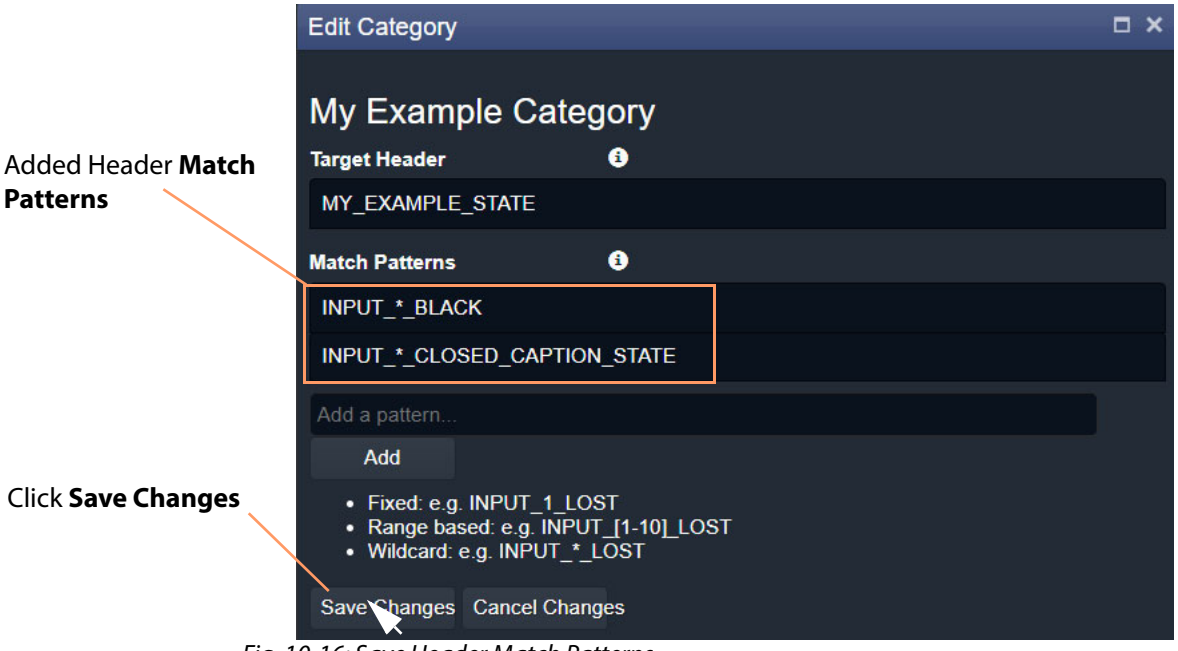


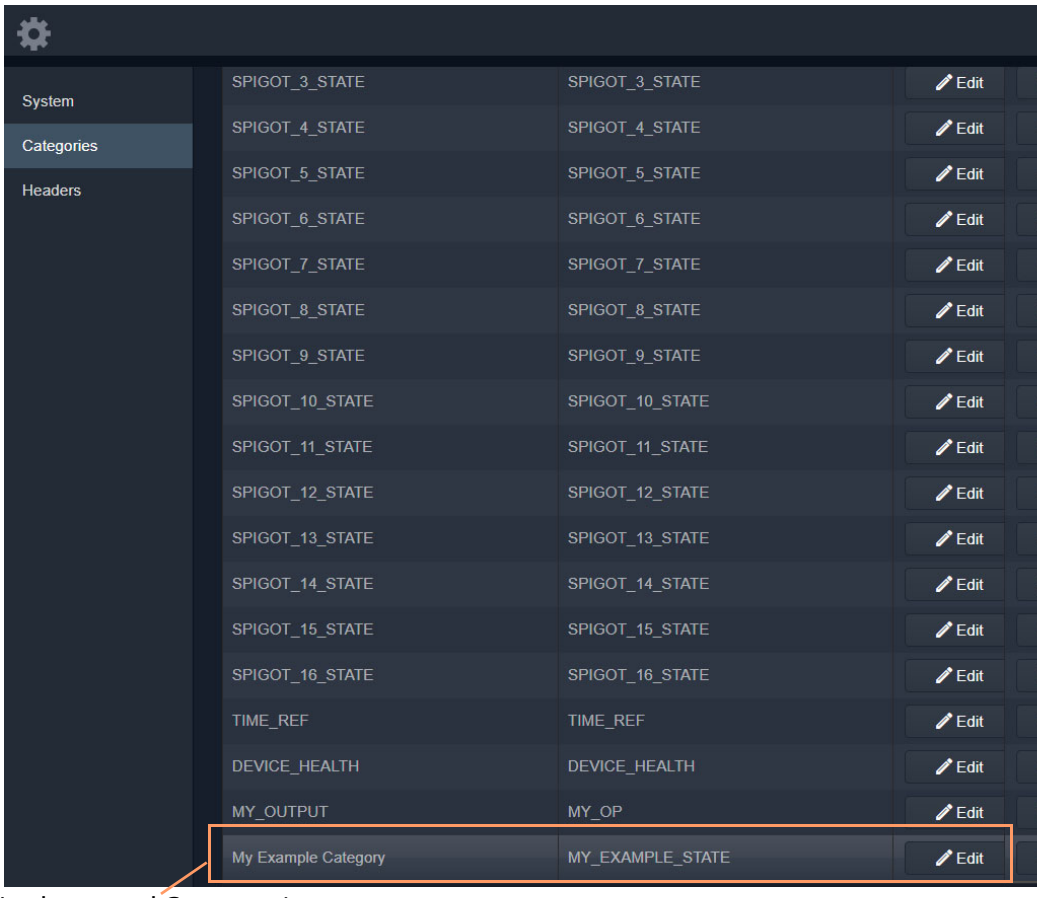
Fig. 10-16: Save Header Match Patterns

In this example, the new **Category** will now aggregate together alarm messages about input black detection and input closed caption status.

14 Click **Save Changes**.

The changes made in the **Edit Category** dialog are saved and the dialog is closed.

The new **Category** appears at the bottom of the **Category** list in the **Categories** screen. See Figure 10-17.



Newly-created **Category** item

Fig. 10-17: New Category in Category List

Headers Screen

The **Headers** configuration screen contains a list of **Header** rule items, i.e. Headers with their state matching rules. Custom items can be added. Rules may be edited.

Header Screen Information

State Matching Rules

- Numeric State Matching Rule, on page 132
- Rate of Change State Matching Rule, on page 132
- String State Matching Rule, on page 133

Numeric State Matching Rule

This rule operates on a Log Field with a numeric value.

The rule derives an alarm state ('OK', 'Warning', 'Error/Fail') from a numeric range defined by threshold values. When a value is within a range, the corresponding alarm state is used. See Figure 10-18.

Custom **Numeric State** matching rules can be created.

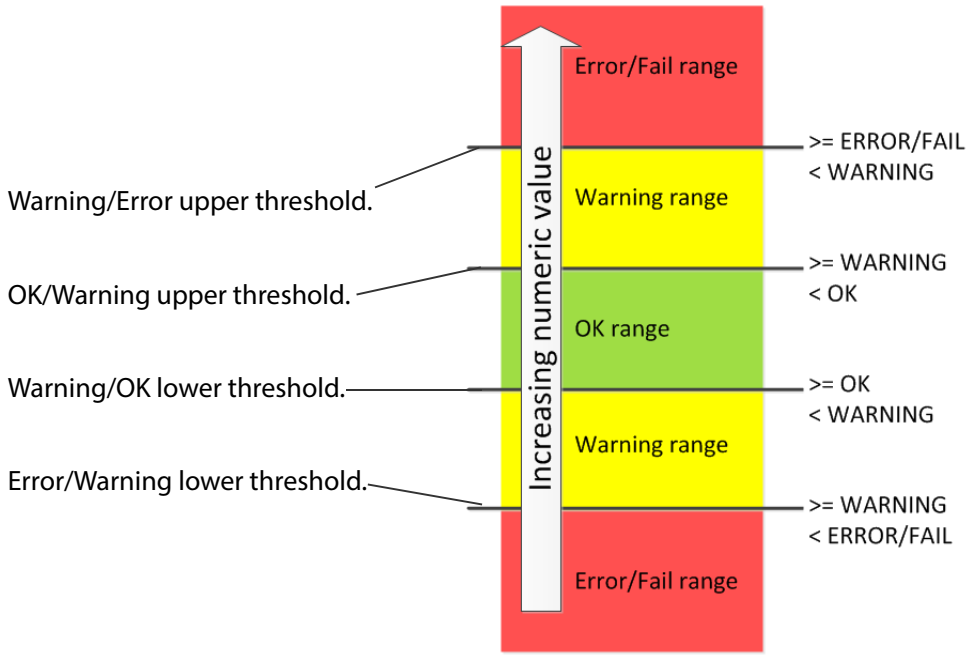


Fig. 10-18: Numeric Value Rule Thresholds

Rate of Change State Matching Rule

This rule operates on a Log Field with a numeric value (for example, an error count).

The rule derives an alarm state ('OK', 'Warning', 'Error/Fail') from a *rate of change* of the numeric value, rather than from the absolute value itself.

The **Rate of Change** rule allows a low frequency of device status events to occur before and alarm is triggered. For example, input SDI CRC errors may occasionally occur on a device and monitoring can be set up to only trigger an alarm if many errors occur.

Threshold rates of change values are defined over a defined sample interval. When a value's 'rate of change' exceeds a certain amount per sample interval, a 'Warning' Alarm state and beyond that, a 'Failure/Error' Alarm state is used. See Figure 10-19.

Custom **Rate of Change** state matching rules can be created.

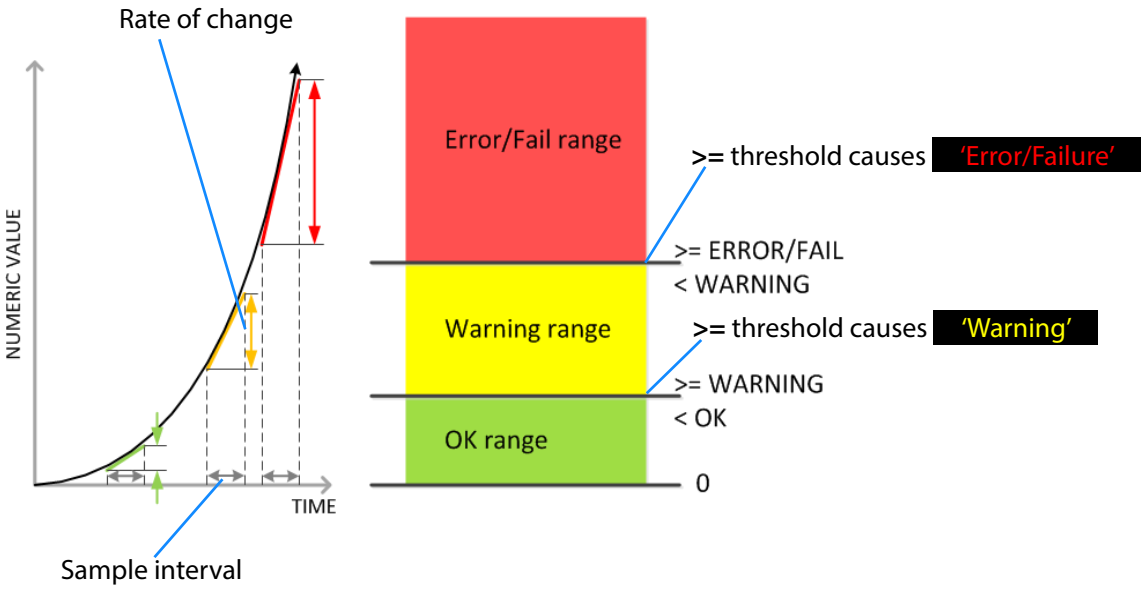


Fig. 10-19: Rate of Change Rule Thresholds

String State Matching Rule

This rule operates on a Log Field with text string values. The rules assign alarm states ('OK', 'Warning', 'Error/Fail') from a semicolon-separated list of text string conditions. The text condition matches strings that start with specified text and the syntax uses an asterisk wild card character.

For example, UNIT LOST*;FAIL matches text strings starting with 'Unit lost' or 'Fail'.

When a text string condition is met, the corresponding Alarm state value is used.

Custom **String State** matching rules can be created.

Note:
Text string matching conditions are *not* case-sensitive.

Deferring Alarms in String State Matching

For a **String State Matching** rule, the assertion of a resulting alarm can be delayed (deferred). This has the effect of ignoring any short alarm conditions for a defined period. A deferring period (in seconds) can be configured *per string matching condition*:

For example, if the **String State Matching** rule is "5?LOST*;CRITICAL*" then:

- Log Field values starting with 'LOST' will cause an alarm only after 5 seconds, unless the error condition goes away within that time.
- Log Field values containing 'CRITICAL' would cause an alarm immediately.

Deferring is used for two main purposes: Alarm Escalation and Alarm Suppression.

Alarm Escalation

Warning and Error/Failure conditions can be configured in a rule with the same expressions, but with different defer periods. (See Deferring Alarms in String State Matching, on page 134.)
In this way, a Warning alarm can change into an Error/Failure alarm if the alarm is not dealt with within a certain period of time.

For example, a Warning alarm is set up to monitor some status value with no defer period and an Error/Failure alarm is set to monitor the same status but with a defer period. When an alarm expression condition matches, there is first a Warning alarm state asserted and then an Error/Failure alarm state is asserted after a defer period (if the alarm is not cleared).

The Error/Failure defer time thus provides 'warning time' and may be used to give the user some time to deal with the problem before it escalates.

Alarm Suppression

Occasionally there are alarms which flicker into Error/Failure or Warning states only briefly and which may only be serious if they stay fixed in one state for longer than a set period of time - for example, a 'video input is black' alarm. Deferring an alarm can suppress this "noise".
(See Deferring Alarms in String State Matching, on page 134.)

For example, in order to avoid spurious false triggers, a Video Input Black alarm can be deferred for up to 5 seconds, thus ignoring brief, legitimate occurrences of a black video image.

Headers List

The **Headers** configuration screen defines the rules for each Header in the system. A list of all Headers is presented in pages with a navigation bar to enable the user to navigate between pages of the list. The number of list items per pages can be selected and the total number of items is shown. See Figure 10-20.

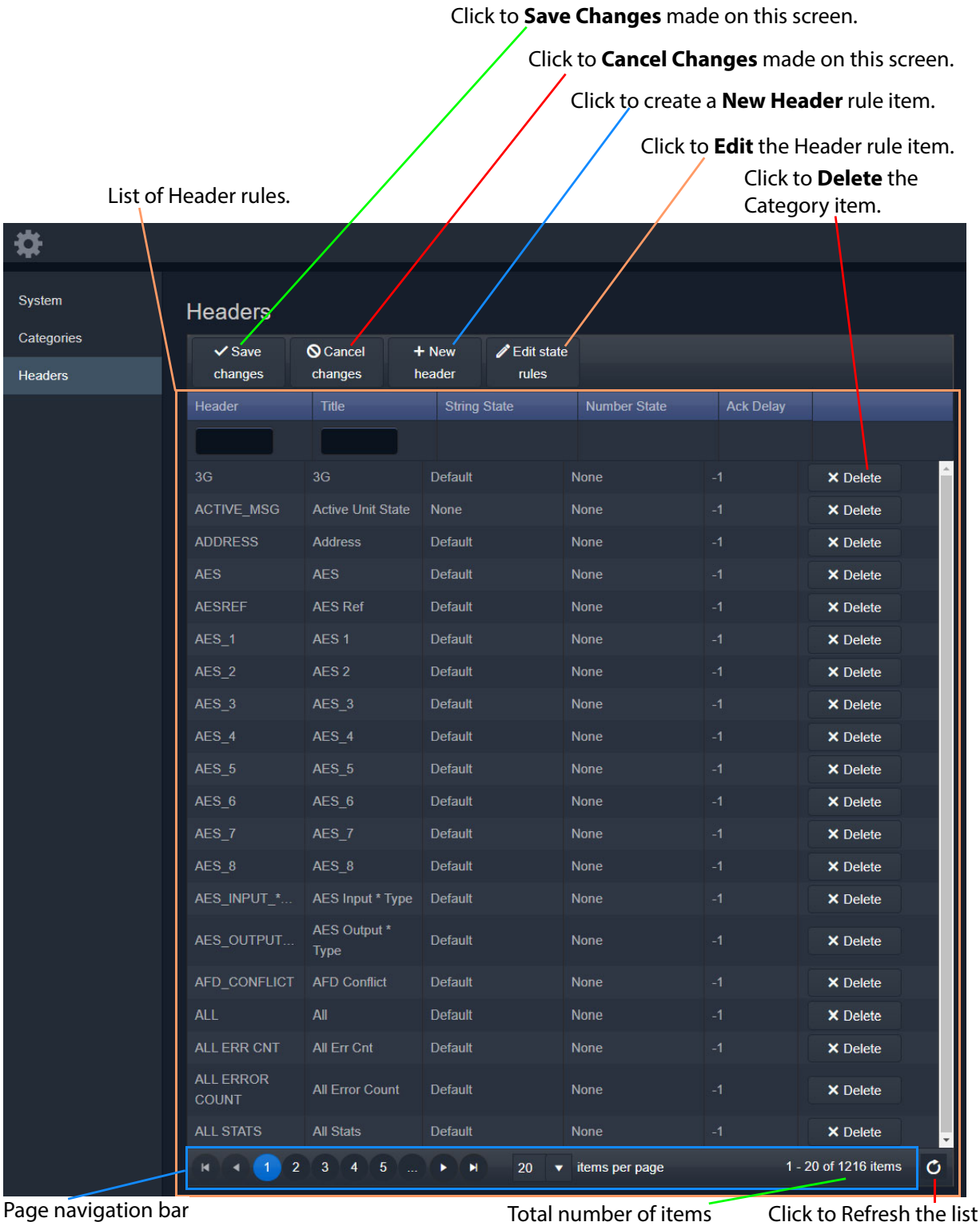


Fig. 10-20: Monitoring Service - Headers List Screen

Fig. 10-21: Monitoring Service - Header List Columns

Filtering the Headers List

The **Headers** list can be filtered using the filter text boxes at the top of the 'Header' and 'Title' columns. This provides two filters to reduce the number of displayed items.

1 Begin to enter text into one of the filter boxes.

A drop-down list of possible **Header** names/titles is shown. See Figure 10-22.

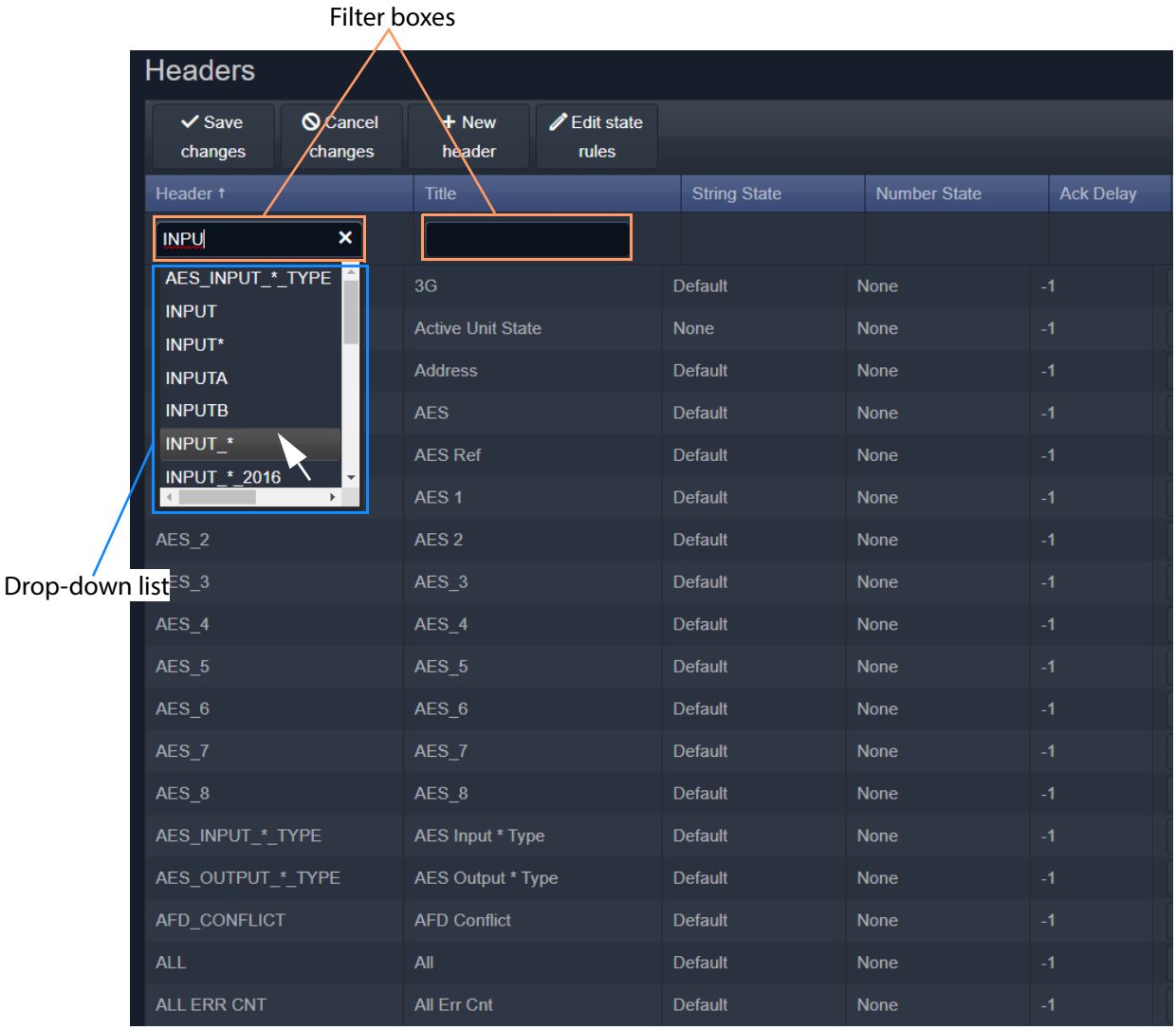
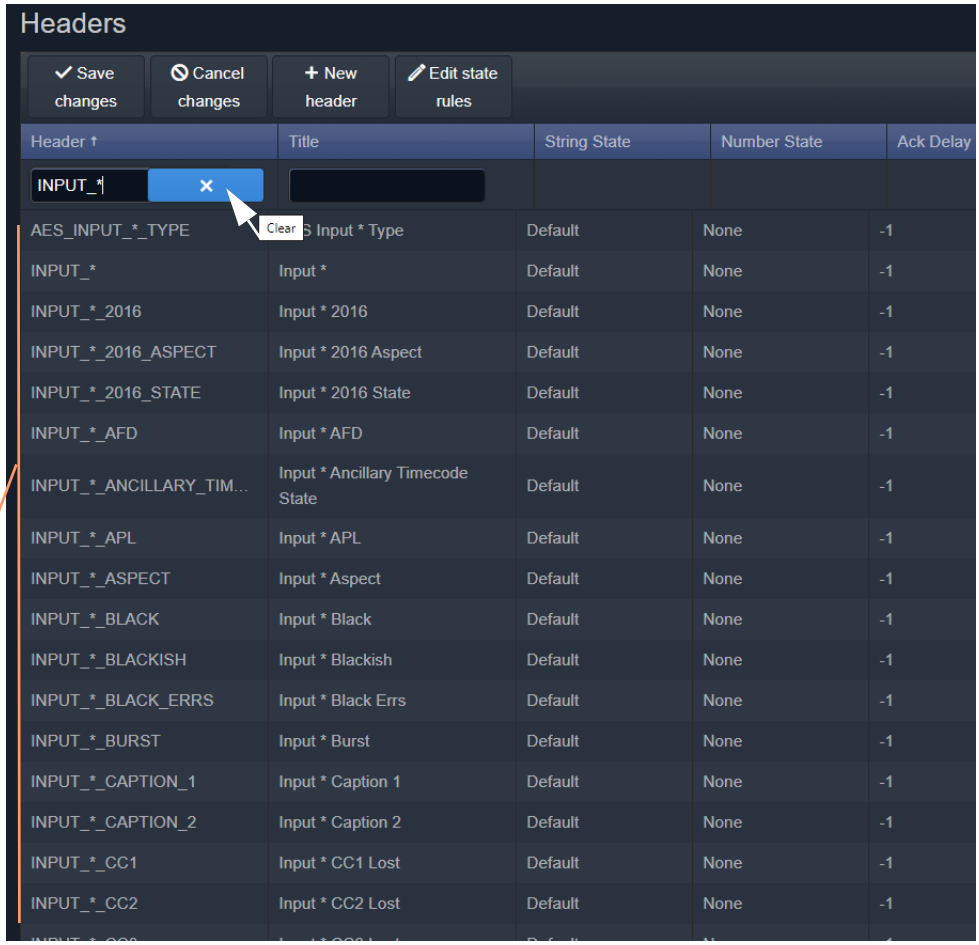


Fig. 10-22: Filtering Header Rule Items

2 Select an item from the drop-down list.

The Header list is filtered on the selected item. See Figure 10-23.



Header List is filtered on the entered filter

Fig. 10-23: Filtered Header List Items

Additional Filter

3 To additionally filter with the second filter box, enter text into the box and select from the drop-down box.

Clear Filter

4 To clear the filtering, click on the **x** button beside each filter box.

New Header Rule

To create a new rule for a new **Header**:

1 Click **+New Header**.

2 Begin to enter the **Header** name and select a name from the drop-down list (or enter a new name, if required). (This is the Header that the rule will apply to.) See Figure 10-24.

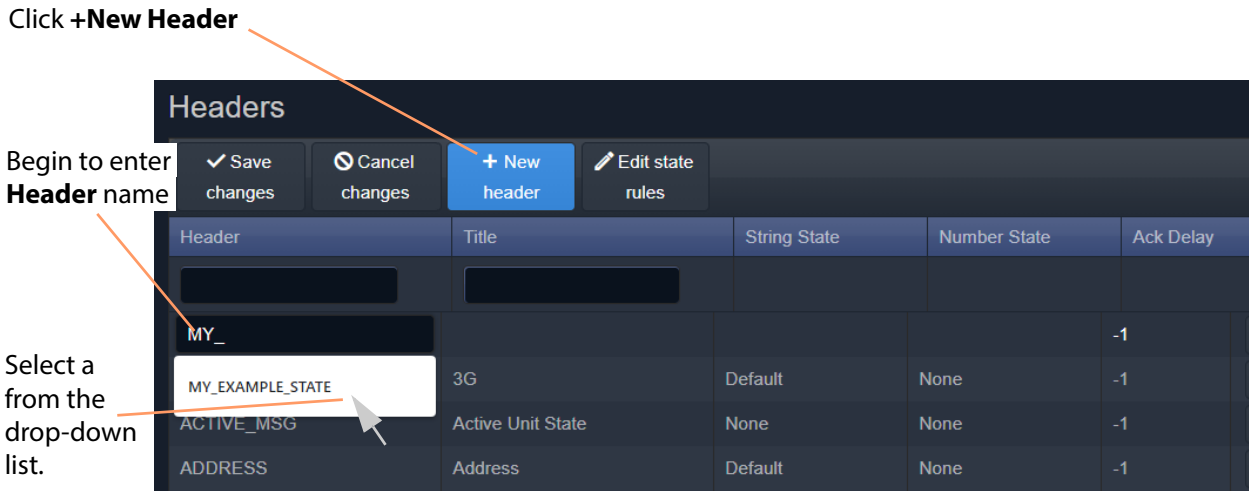


Fig. 10-24: Enter Header Rule Name

3 Enter a name (title) for the new **Header Rule**, a human-readable text string. See Figure 10-25.

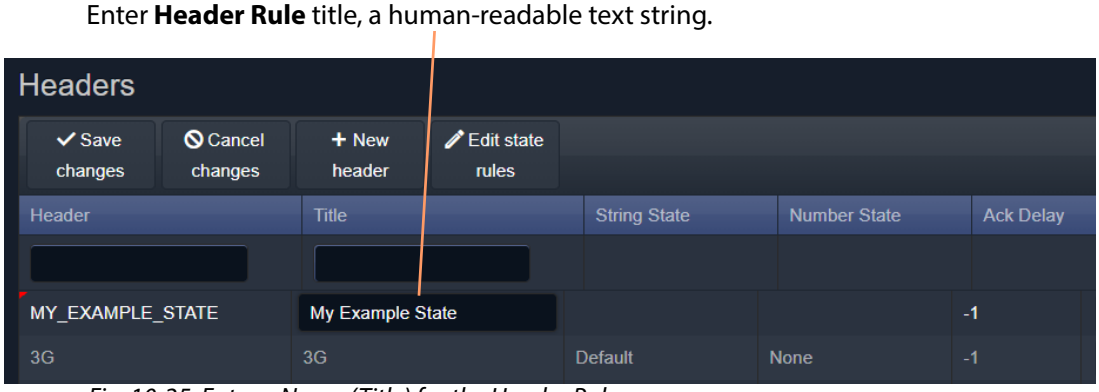


Fig. 10-25: Enter a Name (Title) for the Header Rule

4 Select state rule for the **Header Rule** (a **String State** rule and/or a **Number State** rule). See Figure 10-26.

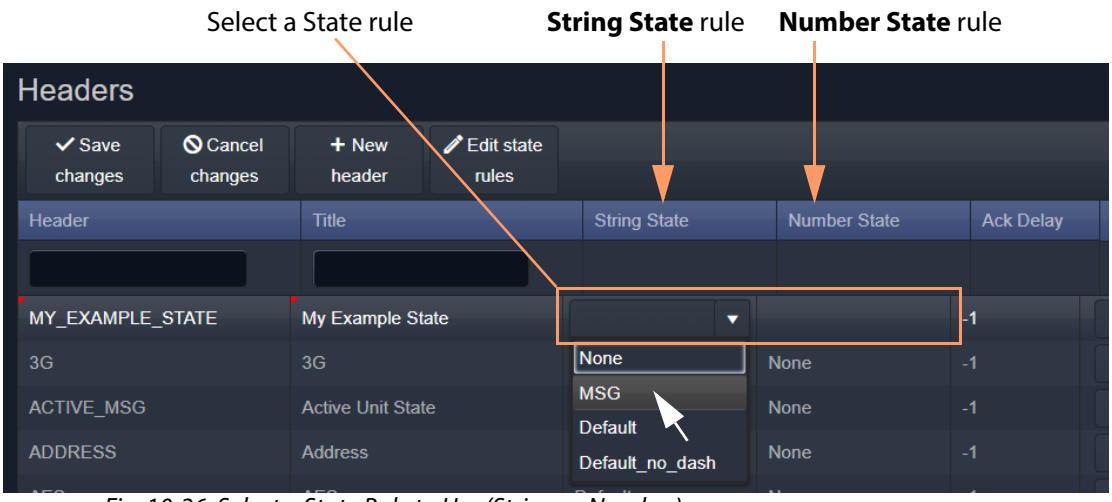


Fig. 10-26: Select a State Rule to Use (String or Number)

Note:
Custom state rules (**String State** or **Numeric State**) can be set up. See State Rules, on page 141.

5 If an auto-acknowledge is required, set the timeout period (**Ack Delay** figure in seconds, -1 = no auto-acknowledge). See Figure 10-27.

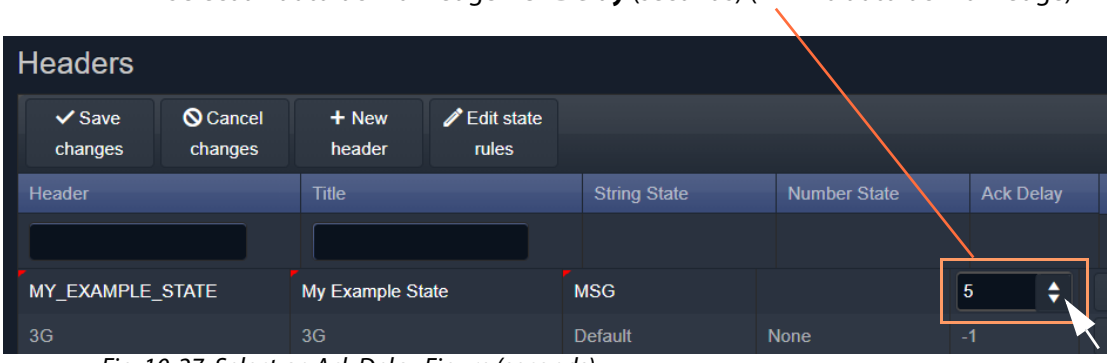


Fig. 10-27: Select an Ack Delay Figure (seconds)

6 Click **Save Changes**.

A new **Header Rule** has been created. See Figure 10-28.

Fig. 10-28: New Header Rule Created

State Rules

The **Monitoring** service has some default state rules already defined for processing **Header** values. Custom state rules can be generated and then used in any Header rule; this can be done for 'String' matching, or 'Number' matching, or for processing a 'Rate of Change'.

Edit a State Rule

To edit a state rule:

1 Click **Edit State Rules** in the **Headers** configuration screen, see Figure 10-29.

The **Edit States** dialog is shown, see Figure 10-30.

Fig. 10-29: Edit State Rules Button

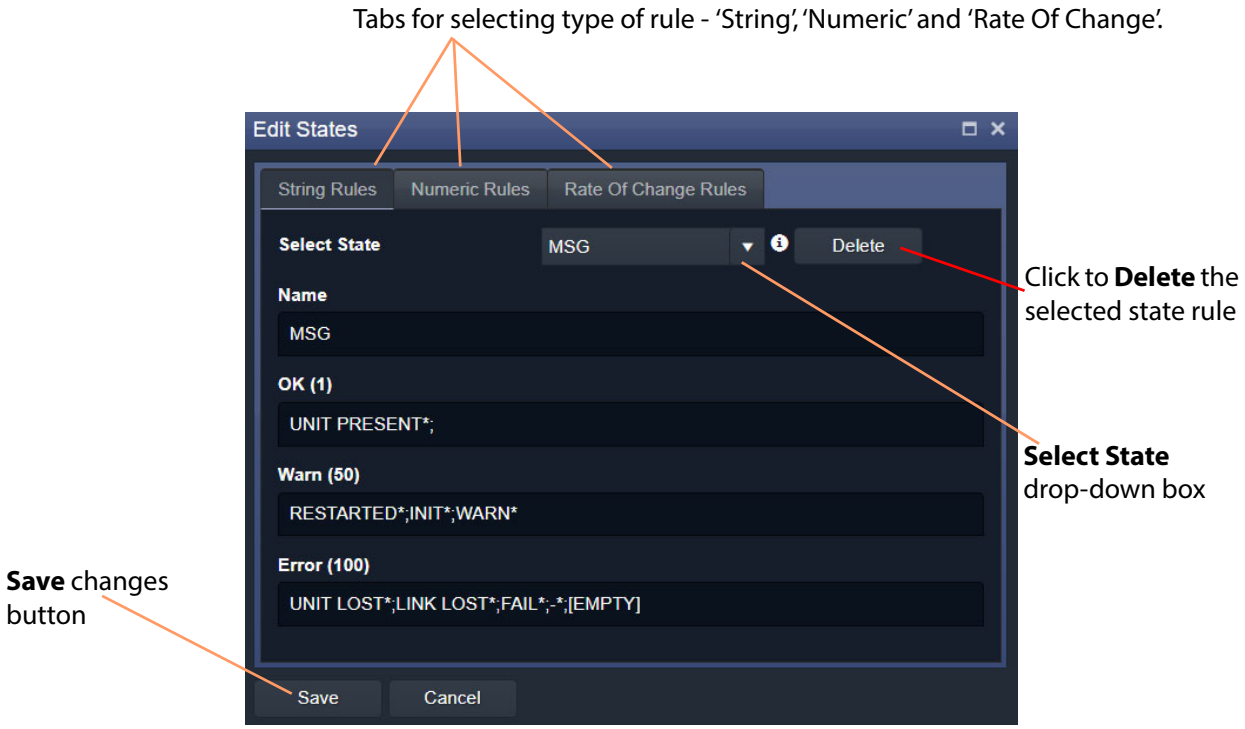


Fig. 10-30: Edit States Dialog

2 Select the state rule type to edit by clicking on a tab ('String Rules', 'Numeric Rules', or 'Rate Of Change Rules').

3 Select the state rule to edit from the **Select State** drop-down list. See Figure 10-31.

Fig. 10-31: Select State Drop-Down List

4 Edit the settings, see:

- String State Rule Settings, on page 145;
- Numeric State Rule Settings, on page 146; or
- Rate Of Change State Rule Settings, on page 147).

5 Click **Save**.

Create a New State Rule

To create a new state rule:

1 Click **Edit State Rules** in the Headers configuration screen.

The **Edit States** dialog is shown.

2 Select the type of state rule to edit by clicking on a tab ('String Rules', 'Numeric Rules', or 'Rate Of Change Rules').

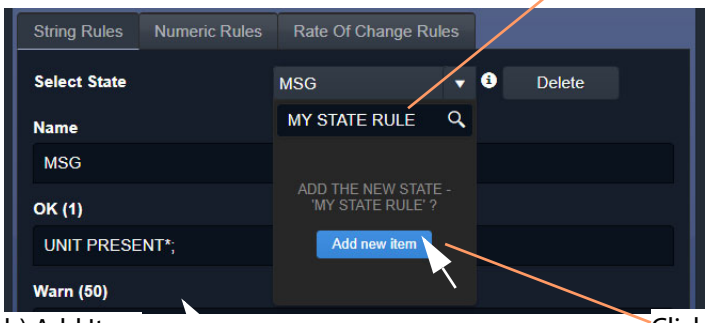
3 Click on the **Select State** drop-down box and enter a *new* **State Rule** name. See Figure 10-32a.

GV Orbit detects that this is a new name.

4 Click **Add new item** in the drop-down list. See Figure 10-32b.

The new name item is added into the drop-down list. See Figure 10-33a.

a) Enter new **State Rule** name



b) Add Item

Fig. 10-32: New State Name

5 Select the new item in the drop-down list by clicking on it.

A new blank **State Rule** is created and shown in the dialog. See Figure 10-33b.

a) Name added to drop-down list

b) New Blank State Rule

Fig. 10-33: New State Name

6 Edit the rule settings as required, see:

- String State Rule Settings, on page 145;
- Numeric State Rule Settings, on page 146; or
- Rate Of Change State Rule Settings, on page 147).

7 Click **Save**.

State Rule Settings

A **State Rule** describes how to derive an alarm state ('OK', 'Warning', 'Error/Fail') from a log message value. A message's **Header** value is processed and an Alarm state derived. **State Rule** types include:

- **String** - defining text string matching and mapping to Alarm states.
- **Numeric** - defining number range mapping to Alarm states.
- **Rate Of Change** - defining a number rate of change rule for mapping to Alarm states.

Each rule type has various settings, as described in sub-sections below:

String State Rule Settings

A text rule is entered into the **Edit States** dialog for alarm states 'OK', warning ('Warn'), and error 'Error'. One or more text conditions may be entered as a semicolon-separated list of text conditions. (See String State Matching Rule, on page 133.)

Fig. 10-34: String Rules Tab

1 Enter the text conditions for each Alarm state. ('OK', 'Warn', 'Error')
2 Click **Save**.

Note:
In a text rule condition:

- '**[EMPTY]**' matches a Log Field with no value.
  Example, `UNITLOST*;LINKLOST*;FAIL*;-;[EMPTY]`
- '**-**' matches a Log Field with a value of '-' (an 'unknown' value).
  Example, `FAIL*;-`
- '*****' is a wild card and matches any characters.

Numeric State Rule Settings

Numeric rules have parameters which map alarm states ('OK', 'Warning', 'Error/Fail') to value ranges (or bands) of the numeric parameter involved. These are specified with upper- and lower-threshold values. (See Numeric State Matching Rule, on page 132, for a description.)

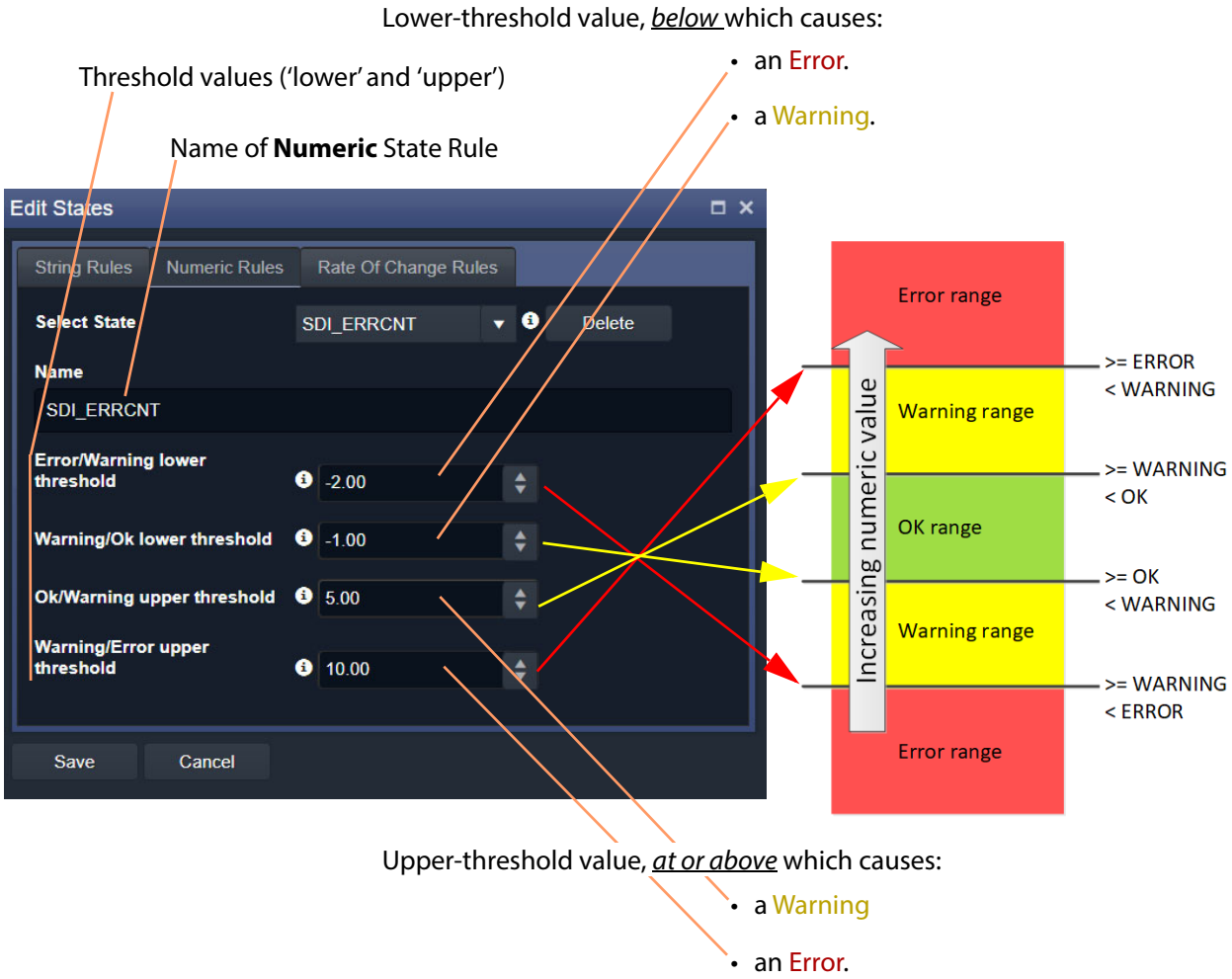


Fig. 10-35: Edit States Dialog - Numeric Rules Tab

1 Enter the upper- and lower-threshold values (i.e. for lower- and upper- 'OK-Warning' and 'Warning-Error' thresholds).
2 Click **Save**.

Rate Of Change State Rule Settings

'Rate of Change' rules have parameters which map alarm states ('OK', 'Warning', 'Error/Fail') to a changing value. (See Rate of Change State Matching Rule, on page 132, for more information.)

A rate of change is specified with a sample interval (a duration) and threshold values. Value increments per sample interval are mapped to alarm states. See Figure 10-35.

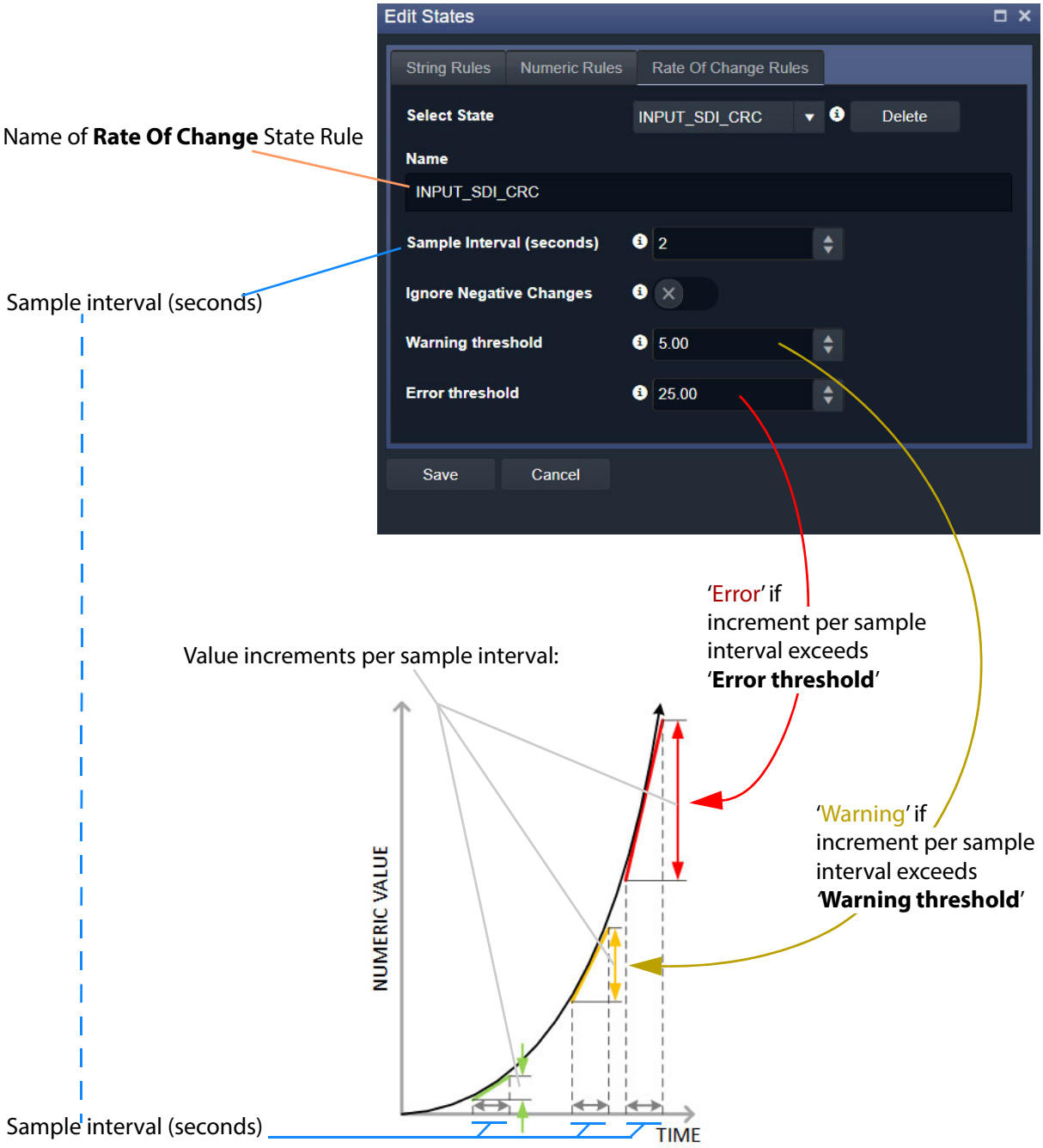


Fig. 10-36: Edit States Dialog - Rate Of Change Rules Tab

1 Enter the Sample interval (seconds).

To ignore any negative changes in value:

2 Select 'Ignore Negative Changes' for any negative changes in the value not to be taken into account.
(Deselect to include negative value changes.)

Then:

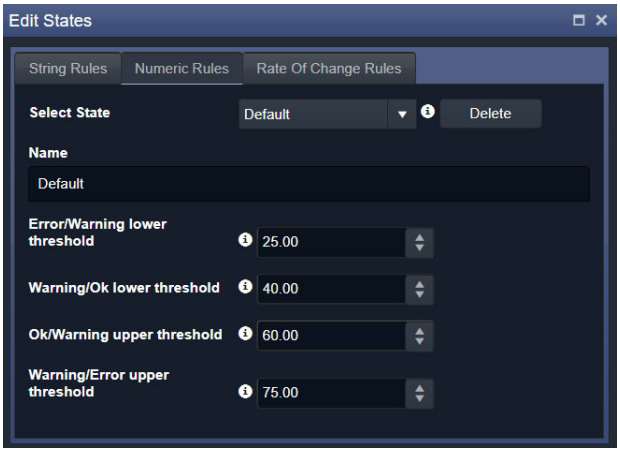
3 Enter the:
- Warning threshold value; and
- Error threshold value.

Finally:

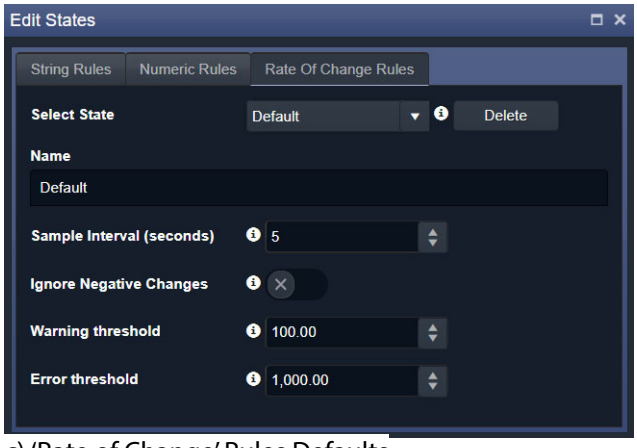
4 Click **Save**.

State Rule Defaults

a) String Rules Defaults



b) Numeric Rules Defaults



c) 'Rate of Change' Rules Defaults

Fig. 10-37: Default State Rules

11 Relay Service

Chapter contents:

Purpose

Version: 4.0

The GV Orbit **Relay** service allows GV Orbit to pass (relay) selected GVOP data between two GV Orbit local GVOP Domains. The configuration of a **Relay** service depends on the GV Orbit system design and requirements.

> **Note:**
> Configuration of the **Relay** service is system-specific.

For example, the service can be used to:

- Allow GV Orbit system alarm data to be passed to an MV-8 series multiviewer on a different GVOP Domain for display.

> **Note:**
> A Relay service relays only GVOP data within/between GV Orbit systems. It does not relay other data nor message types. For example, it will not relay 'ping' messages.

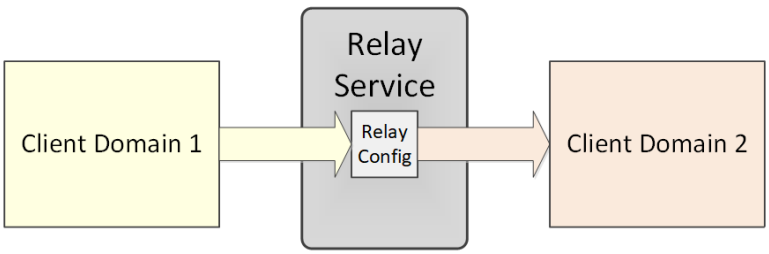


Fig. 11-1: Relay Service

Use Cases

The **Relay** service is used in certain system use cases and can be set up to perform zero, one, or more relay tasks in a GV Orbit system. Setting up the **Relay** service is done with use cases and includes the relaying of:

- Alarm data from GV Orbit to a MV-8 Series multiviewer (version v3.x and earlier). See Figure 11-2a.
- Status from a MV-8 Series multiviewer (version v3.x and earlier) into a GV Orbit system. See Figure 11-2b.

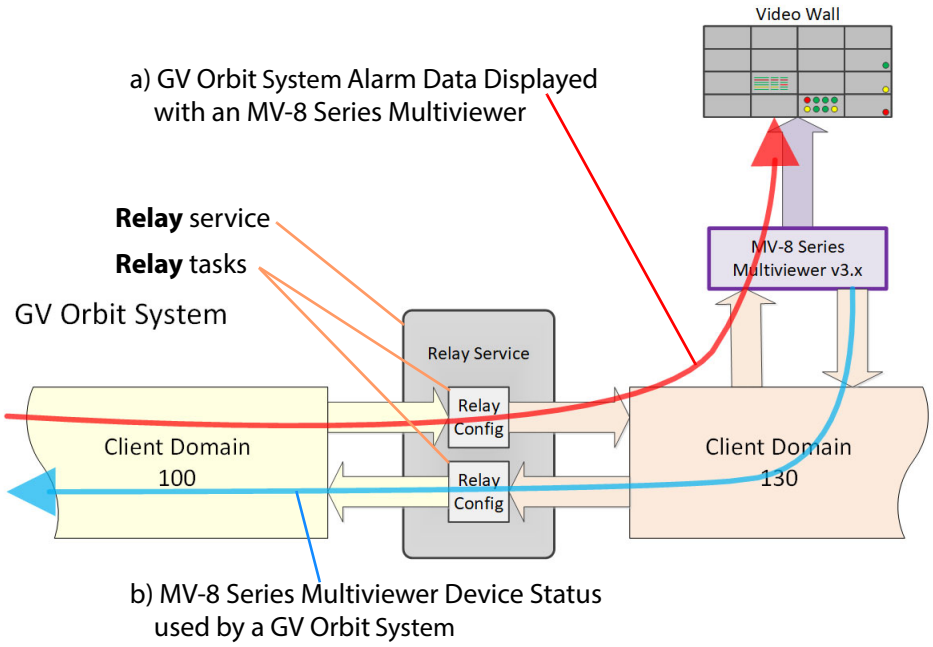


Fig. 11-2: Relay Use Cases:
a) MV-8 Series Multiviewer Displaying GV Orbit System Alarm Information.
b) MV-8 Series Multiviewer Device Status Used by a GV Orbit System.

System Screen

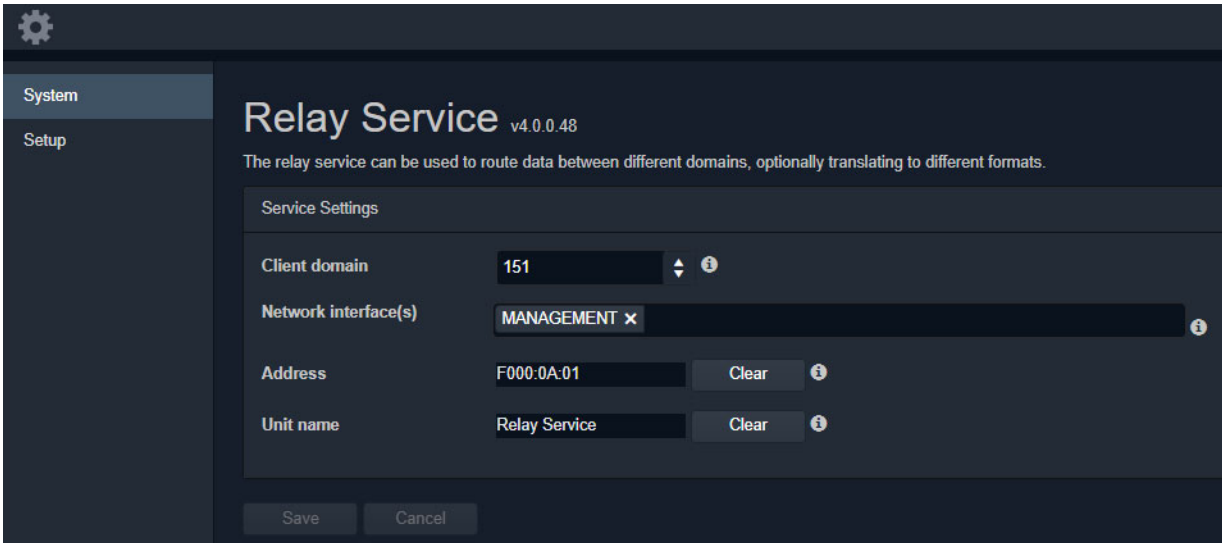


Fig. 11-3: Relay Service - System Screen

Table 11-1: Relay Service - *System Settings*

Setting	Description
Client Domain	Text box. Enter a GVOP domain number of the system's Client Domain. This is the domain on which the service will report its status. The valid range is 1 to 232. See Grass Valley Orchestration Protocol (GVOP), on page 193 for Domain information.
Network Interface(s)	Drop-down box. Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected. By default this is empty and all interfaces will be used by the service. (See Network Interface(s) Setting, on page 24.) **Note:** When selecting interface(s) to use, ensure selected interface(s) are on the same network as the corresponding GV Orbit Client(s).
Address	Text box. Enter RollCall address to uniquely identify the service in the GV Orbit system. It will be used when the service publishes event log data. See RollCall Address**, on page 189** for information about RollCall address. The user is free to define the RollCall addresses for a system.
Clear	Button. Click to restore the default RollCall address for the service. Default: F110:01:0A

Table 11-1: Relay Service - *System Settings (continued)*

Setting	Description
Unit Name	Text box. Enter a name for the **Relay** service, to be a human-readable identifier for the service which appears in the GV Orbit client **Network** window.
Clear	Button. Click to restore the default name for the service.

Setup Screen

The **Setup** screen lists zero or more **Relay** task configurations; new items can be created quickly and edited. Each item is a task performed by the **Relay** service.

A **Relay** task passes selected data one way from a (source) Domain to a (destination) Domain. For passing in both directions, two **Relay** tasks are required, one in each direction.

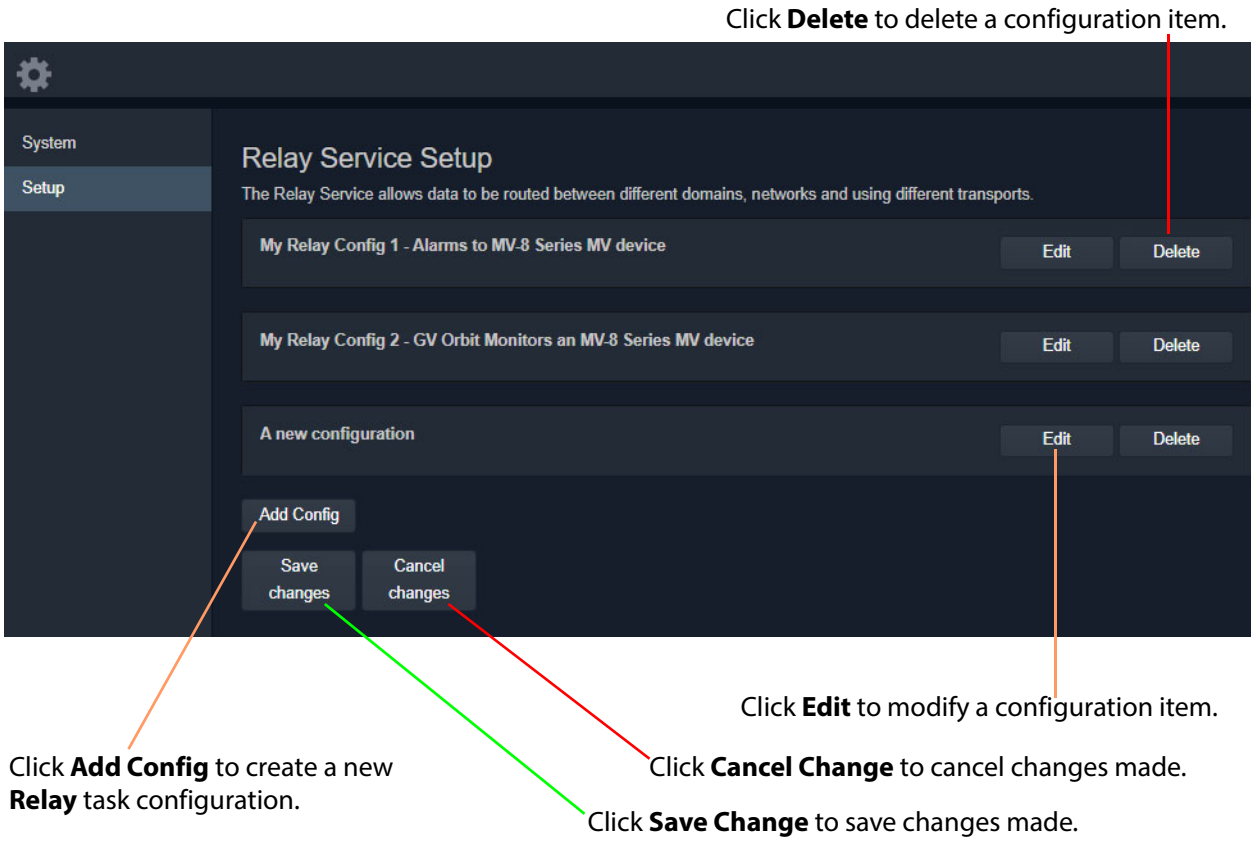


Fig. 11-4: Relay Service - Setup Screen (Example Relay Task Configurations Shown)

New Relay Task Configuration

To create a new **Relay** task configuration:

1 Click **Add Config**.

A new item is added to the list.

2 Click **Edit** for the (new) item on the list.

A **Configuration** dialog is shown. See Figure 11-5.

3 Configure the **Relay** task item. See Configure Relay Task, on page 153.

4 Click **Apply** when configuration settings changes are done.

Configure Relay Task

A relay task requires the following information to be configured:

- Use case - I.e. this defines the selected GVOP message data type(s) to be relayed.
- Source (**From**) and destination (**To**) locations - I.e: Domain ID number; GV Orbit server network interface(s) for the relay task to use; and Device IP addresses to use (if no multi-cast is enabled).

This is done in the **Relay** service's **Configuration** dialog. See Figure 11-5.

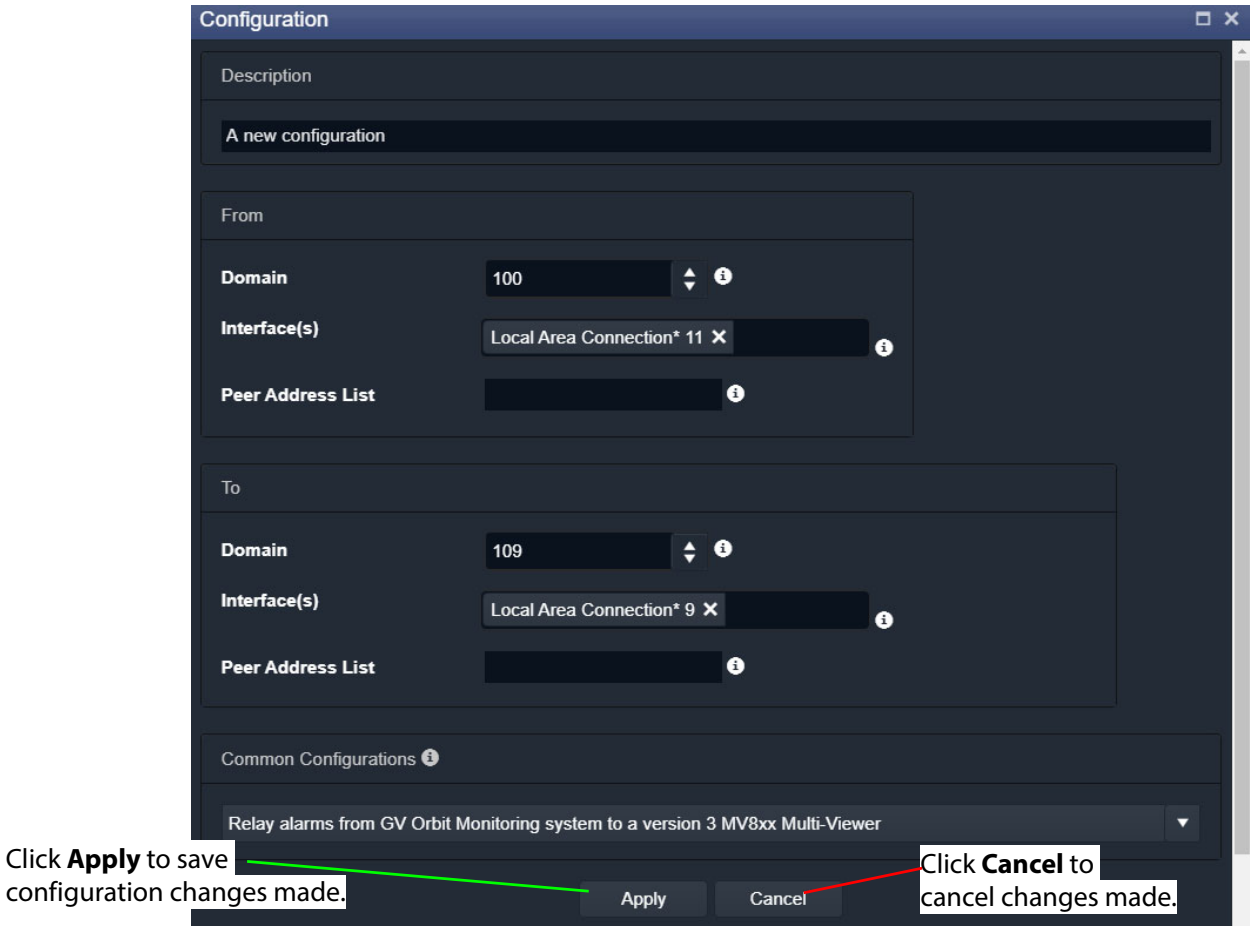


Fig. 11-5: Relay Service - Configuration Dialog

Table 11-2: Relay Service - *Configuration Dialog*

Setting		Description
Description		Text box. Enter a text description of the **Relay** task.
From:		A **Relay** task passes selected messages one-way: • ***from*** a source GVOP Domain. • *to* a destination GVOP Domain.
	Domain	Text box. Enter the Domain number of the *source* Domain. See Grass Valley Orchestration Protocol (GVOP), on page 193 for information on Domains.
	Interface(s)	Drop-down box. Click in the cell and select the GV Orbit server network interface(s) for the service to use for the *source* of data messages to relay. More than one interface may be selected. By default this cell is empty, in this case, all network interfaces will be used by the service.
	Peer Address List	Text box. A list of IP addresses for the service to connect to for *source* data. **Note:** Leave this field empty if multicast addressing is enabled on the network. In this case, all Domain members will be contacted.
To:		A **Relay** task passes selected messages one-way: • *from* a source GVOP Domain. • ***to*** a destination GVOP Domain.
	Domain	Text box. Enter the Domain number of the *destination* Domain.
	Interface(s)	Drop-down box. Click in the cell and select the GV Orbit server network interface(s) for the service to use for the *destination* of relayed data messages. More than one interface may be selected. By default this cell is empty, in this case, all network interfaces will be used by the service.
	Peer Address List	Text box. A list of IP addresses for the service to connect to. **Note 1:** Leave this field empty if multicast addressing is enabled on the network. In this case, all Domain members will be contacted.

Table 11-2: Relay Service - *Configuration Dialog (continued)*

Setting	Description
Common Configurations	Drop-down box. The drop-down list presents **Relay** task use cases. Select a use case; this selects the data type to be relayed by the **Relay** task. Use case: • **Relay alarms** *from* **GV Orbit Monitoring system** *to* **a version 3 MV8xx Multiviewer** (i.e. version 3.x or earlier MV-8 Series multiviewer). Includes translating from GV Orbit message format to Orbit 3.x message format. • **Relay Log Server data** *from* **a version 3 MV8xx Multi-viewer** to **GV Orbit Monitoring system** (i.e. version 3.x or earlier MV-8 Series multiviewer) *to* GV Orbit Monitoring system. Includes translating from Orbit 3.x message format to GV Orbit message format.
Apply	Button. Click to apply changes made in the dialog.

12 Repository Manager Service

Chapter contents:

Purpose

Version: 4.0

The **Repository Manager** service runs on a GV Orbit server computer. It manages repositories of GV Orbit projects for the GV Orbit system. There is one project per repository. Access is provided for GV Orbit clients and other GV Orbit services (for example, for the **Map View** service and for the **Web Renderer** service).

Repositories on the GV Orbit server ensure the same project (and same version of the project) is used and is running throughout a GV Orbit system.

System Screen

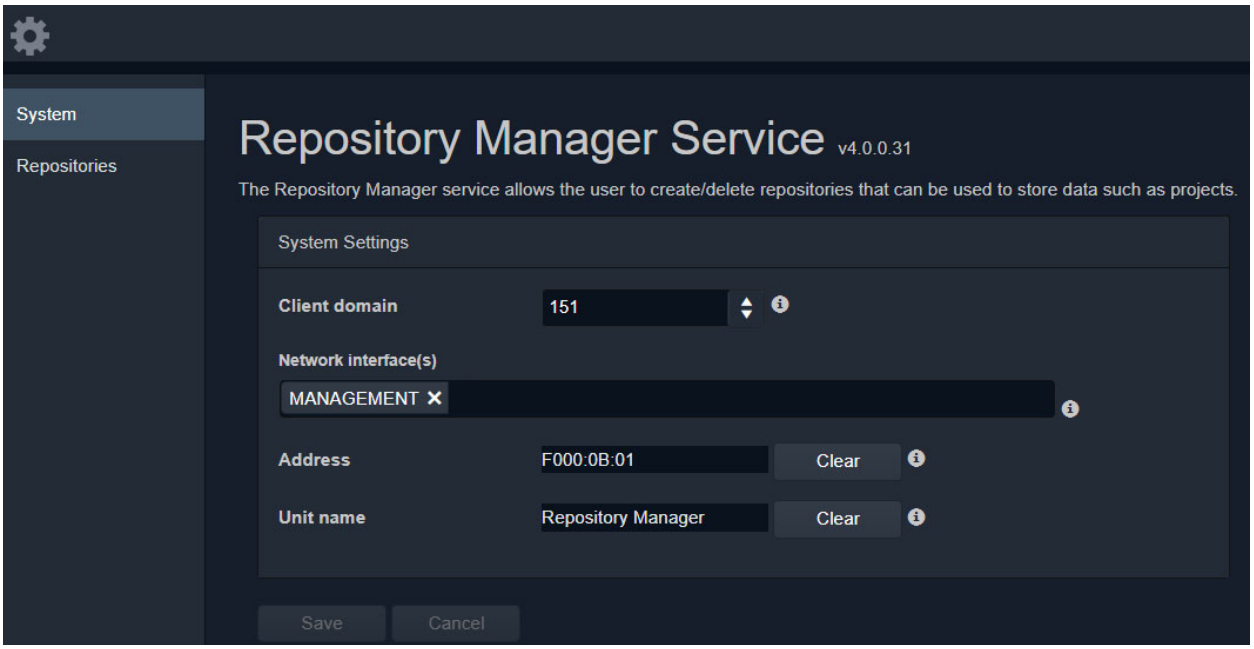


Fig. 12-1: Repository Manager Service - System Screen

Table 12-1: Repository Manager Service - *System Settings*

Setting	Description
Client Domain	Text box. Enter a GVOP domain number for the system's client domain. This is the domain on which the service will report its status. The valid range is 1 to 232. See Grass Valley Orchestration Protocol (GVOP), on page 193 for information on Domains.
Network Interface(s)	Drop-down box. Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected. By default this cell is empty, in this case, all interfaces will be used by the service. (See Network Interface(s) Setting, on page 24.) **Note:** When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding GV Orbit Client(s).

Table 12-1: Repository Manager Service - *System Settings (continued)*

Setting	Description
Address	Text box. Enter a RollCall address to use for the **Repository Manager** service. This will uniquely identify the service in the GV Orbit system. This will be used when the service publishes its own event log data. See RollCall Address**, on page 189** for information about RollCall address. The user is free to define the RollCall addresses for a system.
Clear	Button. Click to restore the default RollCall address for the service. Default: F110:01:0B
Unit Name	Text box. Enter a name for the **Repository Manager** service, a human-readable identifier for the service which appears in the GV Orbit client **Network** window.
Clear	Button. Click to restore the default name for the service.

Repositories Screen

Note: Repositories are system-specific items.

All repositories on the GV Orbit server are listed on the **Repositories** screen. The list can be sorted alphabetically and displayed items can be filtered. A new repository can be created and an existing one can be deleted.

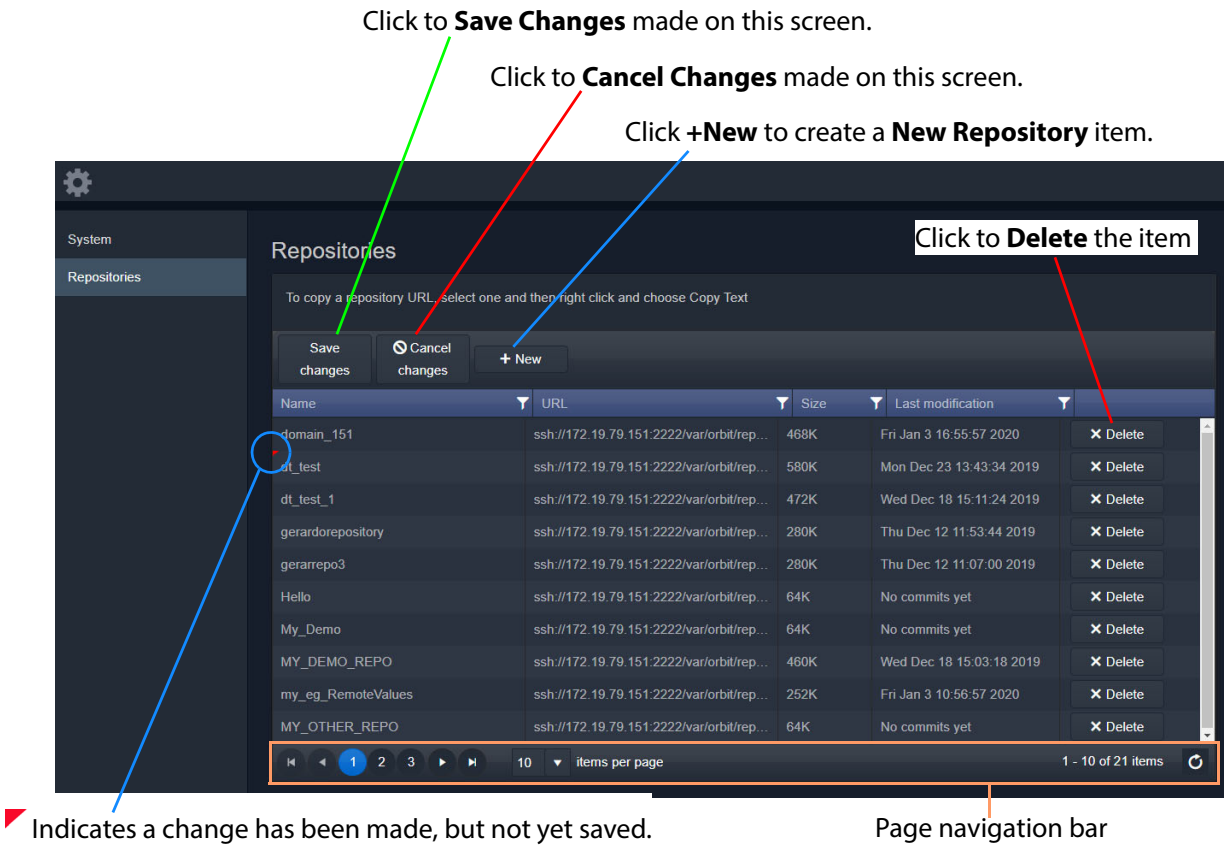


Fig. 12-2: Repositories Screen

Table 12-2: Repositories Screen - Column Headings

Column Heading	Description
Name	Name of the **Repository**.
URL	URL of the **Repository** on the GV Orbit server. (Read-only) To copy the URL: • right-click on the URL item; and • select 'Copy Text'.
Size	Size of the **Repository** (bytes). (Read-only)
Last Modification	Time/date when a GV Orbit project was last pushed to the **Repository**. (Read-only)

New Repository

A new **Repository** can be created and added to the list. This is done from the GV Orbit server on the **Repository Manager** service's **Repositories** screen.

> **Note:**
> A new **Repository** can also be created on the server from the GV Orbit Client application: Click 'Connections -> GV Server' in the main menu, and create a new **Repository** in the 'Setup' dialog.

To create a new **Repository** from the **Repositories** screen:

1 Click **+New**.

A new, blank row item is created in the list.

New, blank row item

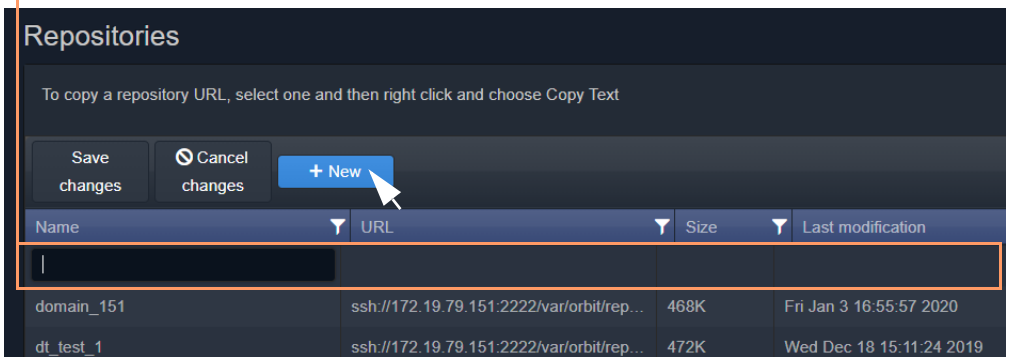


Fig. 12-3: New Repository Row Item

2 Enter a name for the new **Repository**.

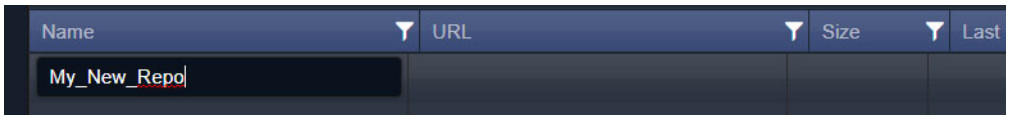


Fig. 12-4: Enter Repository Item Name

3 Press Enter when done.

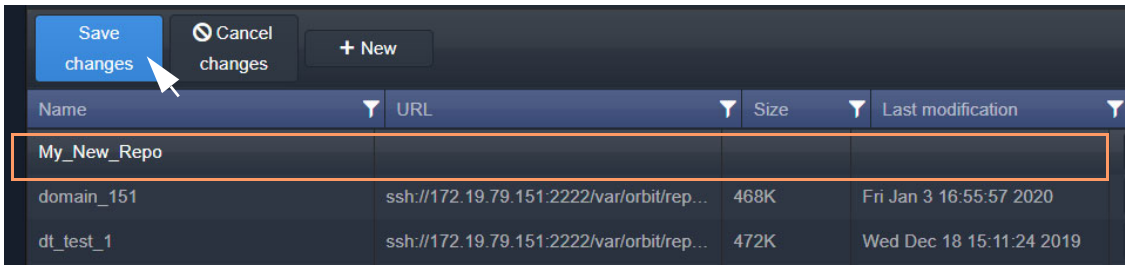
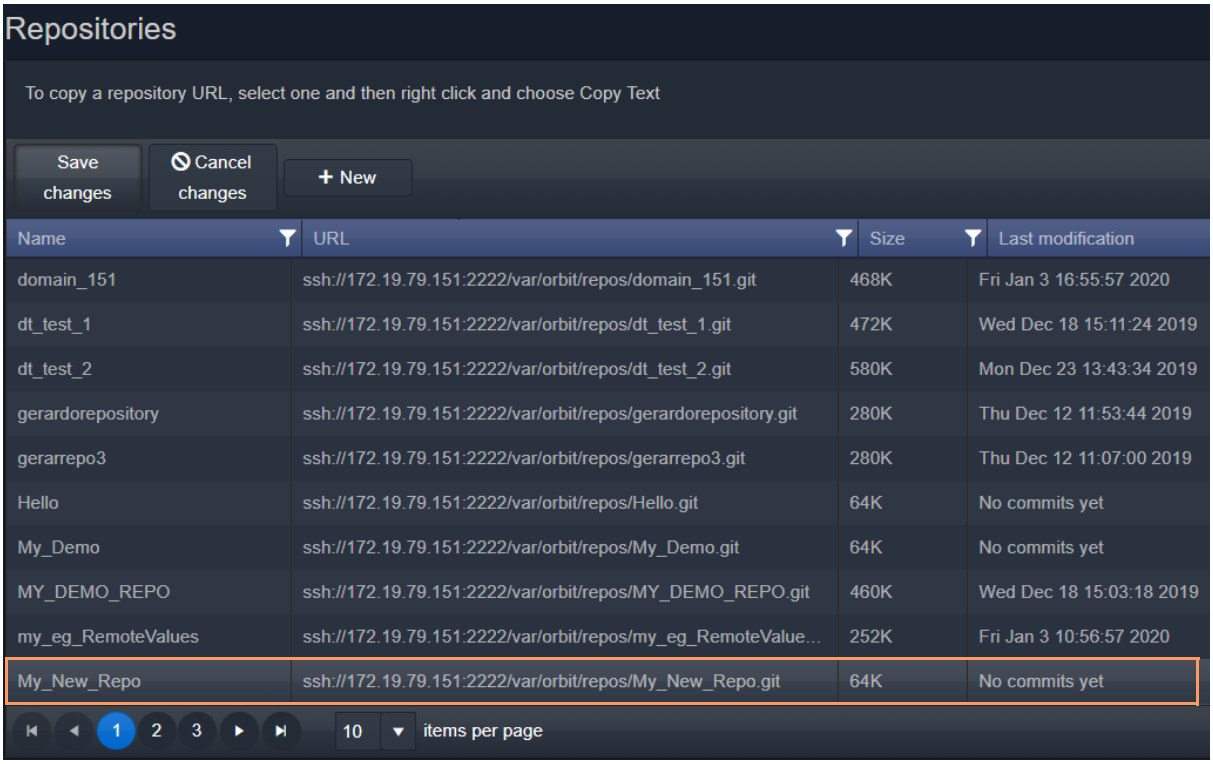


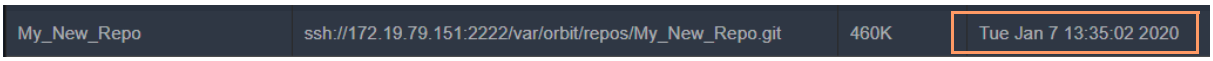
Fig. 12-5: Save New Row Item

4 Press **Save Changes**.

The new row item is added into the sorted list and given a URL. See Figure 12-6a.



a) New Repository Item.



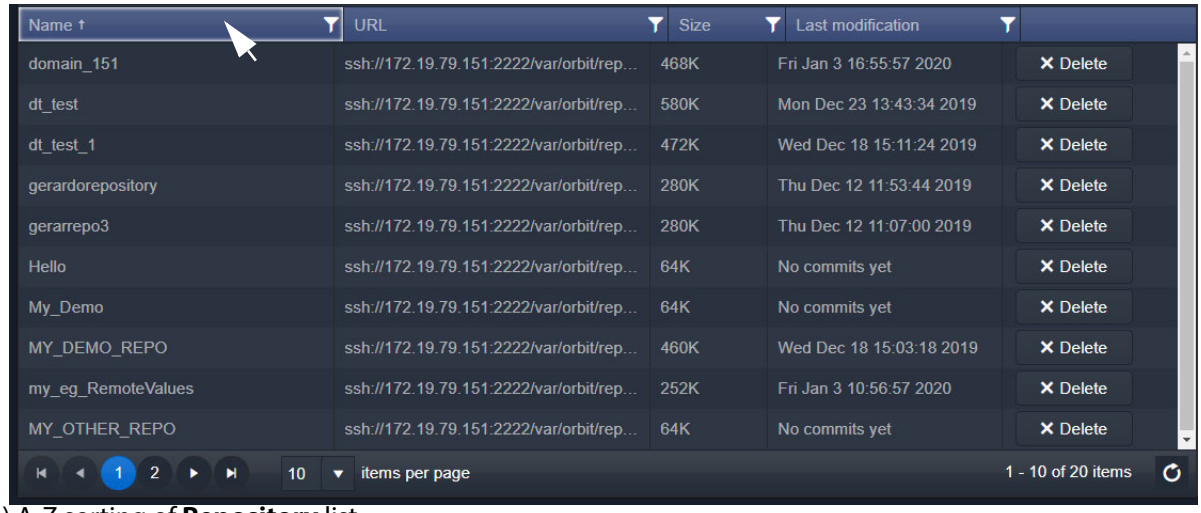
b) After a GV Orbit C&M project has been pushed to the Repository.

Fig. 12-6: New Repository Item:
a) New Repository Item.
b) After a Push.

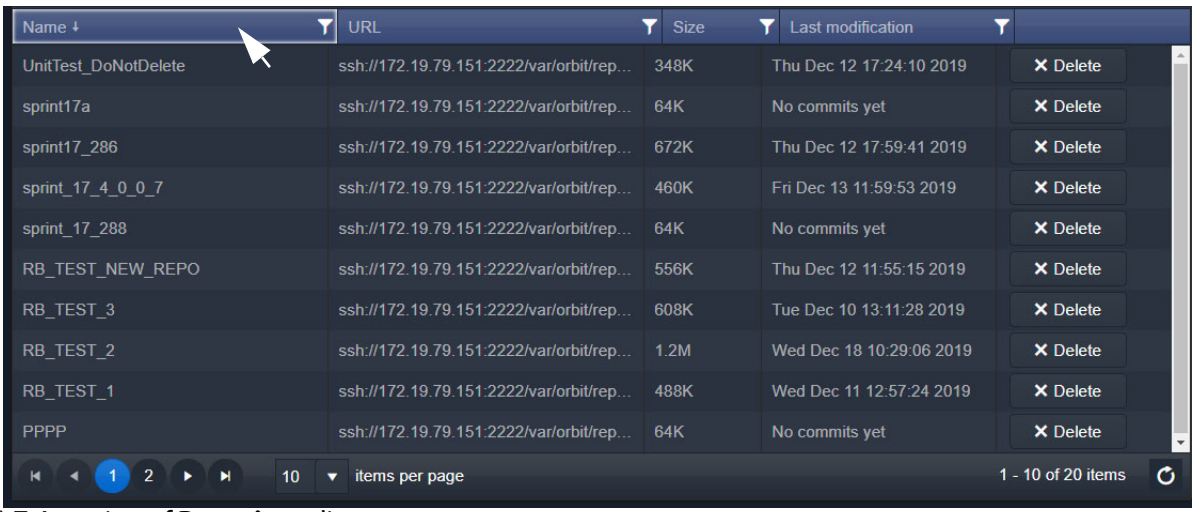
The new **Repository** has not had a project pushed to it yet and the 'Last Modification' column reads 'No commits yet'. After a project 'push' to a repository, the 'Last Modification' column shows the time and date of the 'push'. See Figure 12-6b.

Column Sorting

Click on a column heading to toggle between A-Z and Z-A alphabetical sorting of the presented **Repositories** list items.



a) A-Z sorting of **Repository** list



b) Z-A sorting of **Repository** list

Fig. 12-7: Sorting Repositories List:
a) A-Z sorted.
b) Z-A sorted.

Column Filtering

The presented **Repository** list items may be filtered on columns.

Column Filter

1 Click on the filter icon ( ) in a column heading.

A **Filter** dialog is shown. See Figure 12-8.

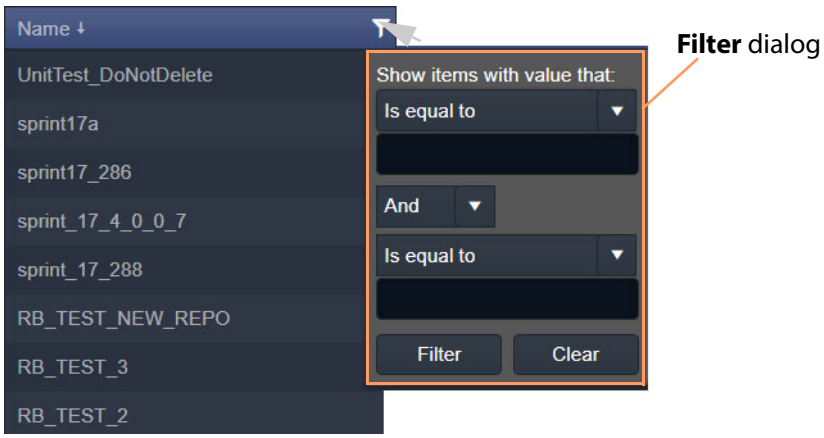


Fig. 12-8: Filter Dialog

2 Set up the filter condition in the dialog. (See Filter Conditions, on page 165 for more information.)

3 Click **Filter** to apply the filtering.

The presented items in the list are filtered.
While filtering is being done, the filter icon in the column heading changes color, indicating filtering is being applied to the column.

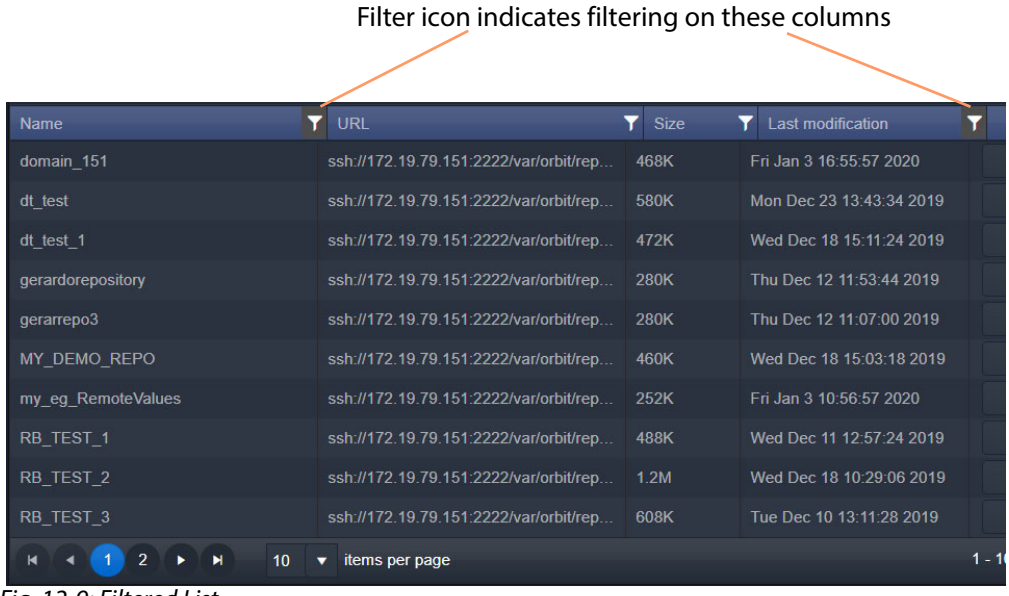


Fig. 12-9: Filtered List

Clear a Column Filter

To clear a column filter:

1 Click **Clear** in the column's **Filter** dialog.

Filter Conditions

Two filter conditions may be entered into a **Filter** dialog. The conditions can be combined in an 'AND' or in an 'OR' way.

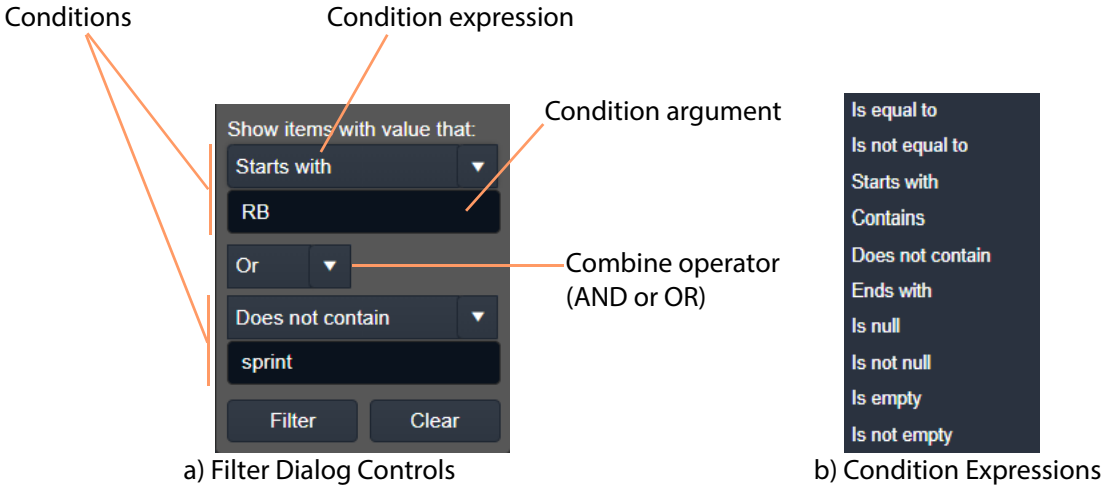


Fig. 12-10: Filter Dialog: a) Controls; b) Condition Expressions.

Filter Example

This example filters on the **Name** column and shows the items whose **Name**:

- starts with 'RB'; or
- does not contain 'sprint'.

To filter on a **Name** column:

1 Click on the filter icon in the **Name** column heading to show the **Filter** dialog.

In the **Filter** dialog:

2 Click on the first, 'condition expression' drop-down box, see Figure 12-11a.

3 Select a condition expression in the drop-down list. See Figure 12-11b.
('Starts with')

4 Enter 'condition argument' text.
('RB')

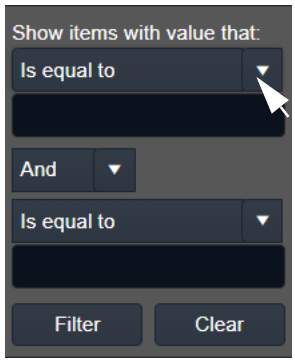
5 Click on the 'combine operator' drop-down box and select an operator. See Figure 12-11c.
('OR')

6 Select a second condition expression in the drop-down list.
('Does not contain')

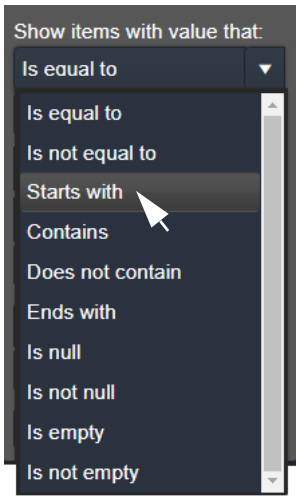
7 Enter condition argument text for the second condition. ('sprint')

8 The completed filter set up is shown in Figure 12-11d.

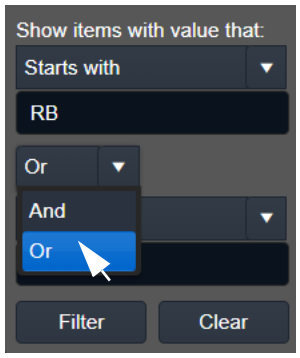
9 Click **Filter** to apply this filter.



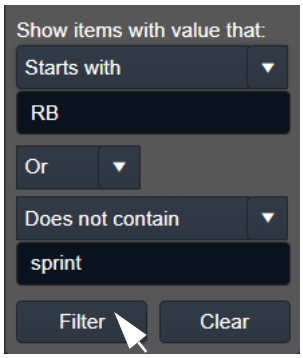
a) Filter dialog



b) Condition expression



c) Combining operator



d) Filter conditions set up

Fig. 12-11: Example Setting Up Filter Dialog

13 Routing Service

Chapter contents:

Introduction

Version: 4.0

The **Routing** service provides a translation between dedicated routing protocols and a router controller for GV Orbit clients and services. The **Routing** service connects to a router controller device using either the NP0017 or SW-P-08 Grass Valley protocols. And GV Orbit soft router control panels connect to the **Routing** service.

The service also enables the state of all routings and routing levels (i.e. every crosspoint in the routing system) to be saved as a 'snapshot'. These can be saved and recalled, providing the ability to control and to change a GV Orbit routing system on-the-fly.

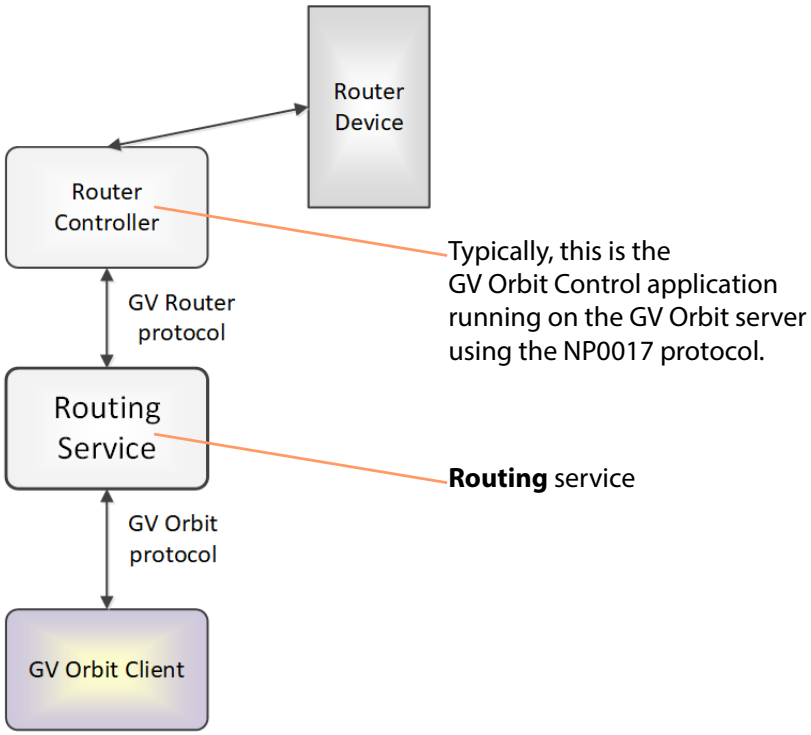
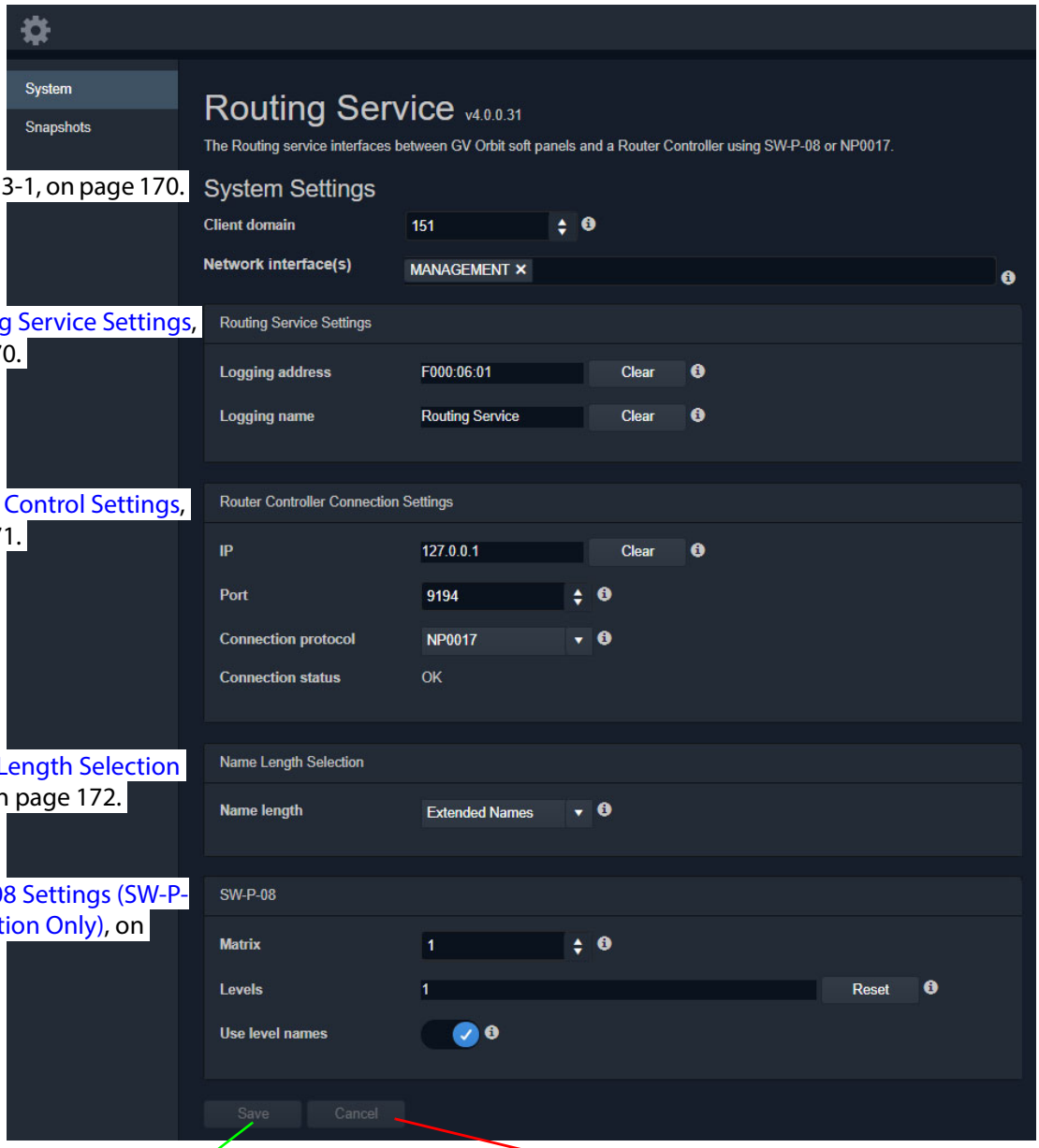


Fig. 13-1: GV Orbit Routing Service

CAUTION
Routing service settings should only be changed by a GV Orbit system administrator.

System Screen



See Table 13-1, on page 170.

See Routing Service Settings, on page 170.

See Router Control Settings, on page 171.

See Name Length Selection Settings, on page 172.

See SW-P-08 Settings (SW-P-08 Connection Only), on page 172.

Press **Cancel** to discard changes to settings.

Press **Save** to apply changes made to setting items on the configuration screen.

Fig. 13-2: GV Orbit Routing Service - System Screen

Table 13-1: System Settings

Setting	Description
Client Domain	Text box. Enter a GVOP domain number that the **Routing** service will use (i.e. the GV Orbit 'Client' domain). Messages published onto this domain will be logged. The valid range is 1 to 232. See Grass Valley Orchestration Protocol (GVOP), on page 193 for information on Domains. **Note:** If the GV Orbit Client and **Routing** service are on different GVOP domains they cannot see each other's data.
Network Interface(s)	Drop-down box. Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected. By default this cell is empty, in this case, all interfaces will be used by the service. (See Network Interface(s) Setting, on page 24.) **Note:** When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding GV Orbit Client(s).

Routing Service Settings

Table 13-2: Routing Service Settings

Setting	Description
Logging Address	Text box. Enter RollCall address for the **Routing** service to use to log its state. This will uniquely identify the service in the GV Orbit system. The user is free to define the RollCall addresses for a system.
Clear	Button. Click to restore the default RollCall address for the service. Default: F110:01:06
Logging Name	Text box. Enter a user-definable name for the unit, to be a human-readable identifier for the **Routing** service.
Clear	Button. Click to restore the default name for the service.

Router Control Settings

Note:
For router control using the **GV Orbit Control** application on the GV Orbit server, then the default settings suffice.

However,
for router control using some other, external router controller,
then these settings are system-specific.

Router Controller Connection Settings

Table 13-3: Router Controller Connection Settings

Setting	Description
IP	Text box. The IP address of the device that the 'router controller' is running on. Typically, the router controller is the **GV Orbit Control** application running on the GV Orbit server in the system. In this case, **IP** should be left at its default loop-back IP address (127.0.0.1) setting. **Note:** In some systems, this may be need to be set up by the GV Orbit system administrator to be some other device running a router controller.
Clear	Button. Click to clear the text box.

Port	Text box.
	The IP port number to use to connect to the router controller.
	Note: The IP port number is specific to the router controller type and, typically, is defined for a specific protocol.
	Router control connection protocols:
	• **NP0017** (default) - GV Orbit services use IP port number 9194 upwards for routing. IP port number:
	  • 9194 is used for GV Orbit Control routing 'Area 1';
	  • 9195 is used for 'Area 2';
	  • 9196 is used for 'Area 3'; etc.
	• **SW-P-08** - GV Orbit services use IP port number 2000.

Connection Protocol	Drop-down box. Select the router control protocol to use by the **Routing** service for its router controller connection(s). The service supports the following protocols: • **NP0017** ('NP17') (default) • **SW-P-08**
Connection Status	Text box (read-only). Displays the status of the connection to the router controller.

Name Length Selection Settings

Table 13-4: GV Orbit Routing Service - Name Length Selection Settings

Setting	Description
Name Length	Drop-down box. Select '8 Character Names' or 'Extended Names' to be used for the router signal names. When in: • 'NP0017' mode - **Routing** service will use names longer than 8 characters. (Default) • 'SW-P-08' mode - **Routing** service will use 32-character names when in the 'Extended Names' mode.

SW-P-08 Settings (SW-P-08 Connection Only)

The table below describes the SW-P-08 settings of the **Routing** service configuration screen of Figure 13-2 on page 169.

> **Note:**
> These settings only apply for a SW-P-08 protocol connection to a router controller.

Table 13-5: SW-P-08 Settings

Setting	Description
Matrix	Text box. Enter the router matrix number on the router controller for the **Routing** service to connect to.
Levels	Text box. Enter a CSV list of levels indexes and, optionally, names that the **Routing** service should retrieve. Not all levels may require control by the **Routing** service. This list specifies which levels and their names. **Note:** Levels in a router are normally numbered from 1 onwards and may route SDI signals *or* audio signals. Enter CSV items in the format: Index:Name for example: `1:video,2:metadata,3:aud1,4:aud2`
Reset	Button. Click to set to '1'.
Use Level Names	Check box. Select how router signal ports are named. • **Yes** - use a port's 'association' name. **Note:** The association name for a port will not vary depending on which level you are accessing. • **No** - use the 'level' name. **Note:** Level names vary depending on the router matrix level being accessed.

Snapshots Screen

A snapshot can be taken of all the routes in a routing system (i.e. the sources that are connected to all destinations), including any shuffles and breakaways.

The **Routing** service's **Snapshots** screen contains a table showing all snapshots, with the snapshot name and the data/time of creation.

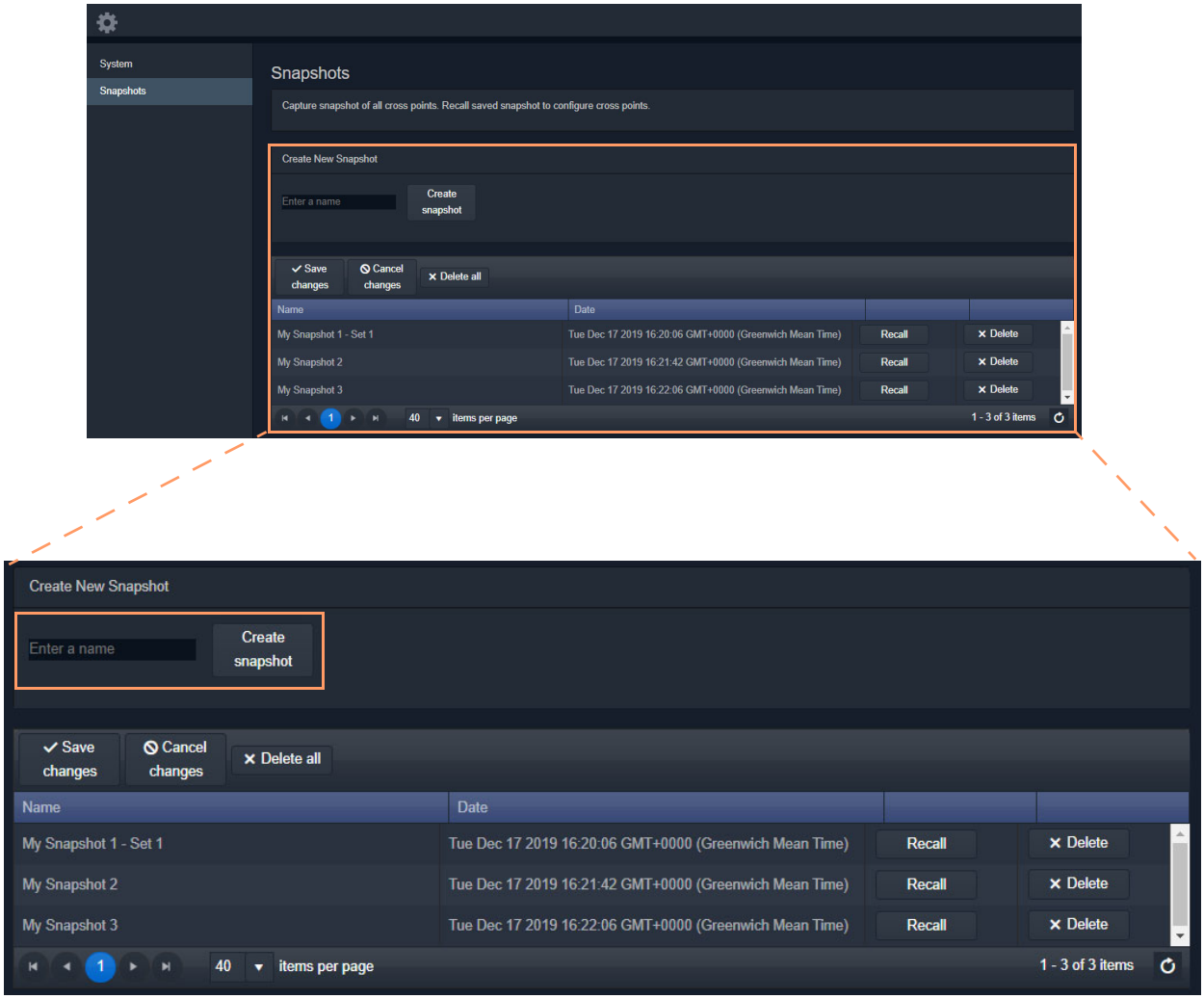


Fig. 13-3: Routing Service Snapshots Screen

Create a New Snapshot

To create a new snapshot:

1 Enter name in **Create New Snapshot** text box.

2 Click **Create Snapshot**.

The sources routed to each destination are saved (including all levels if 'shuffle' and 'breakaway' are involved).

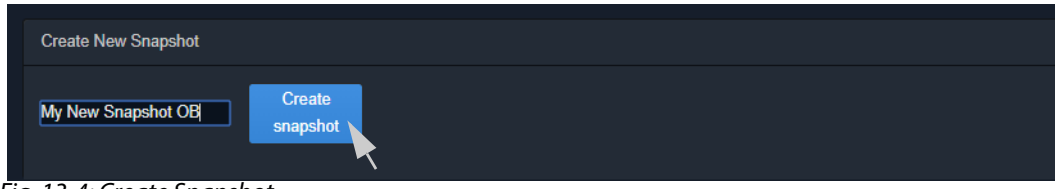


Fig. 13-4: Create Snapshot

Recall Snapshot

To recall a saved snapshot:

1 Select the snapshot in the list.

2 Click **Recall**.

The saved snapshot of route connections is recalled. All routing 'crosspoints' will be set as per the saved configuration.

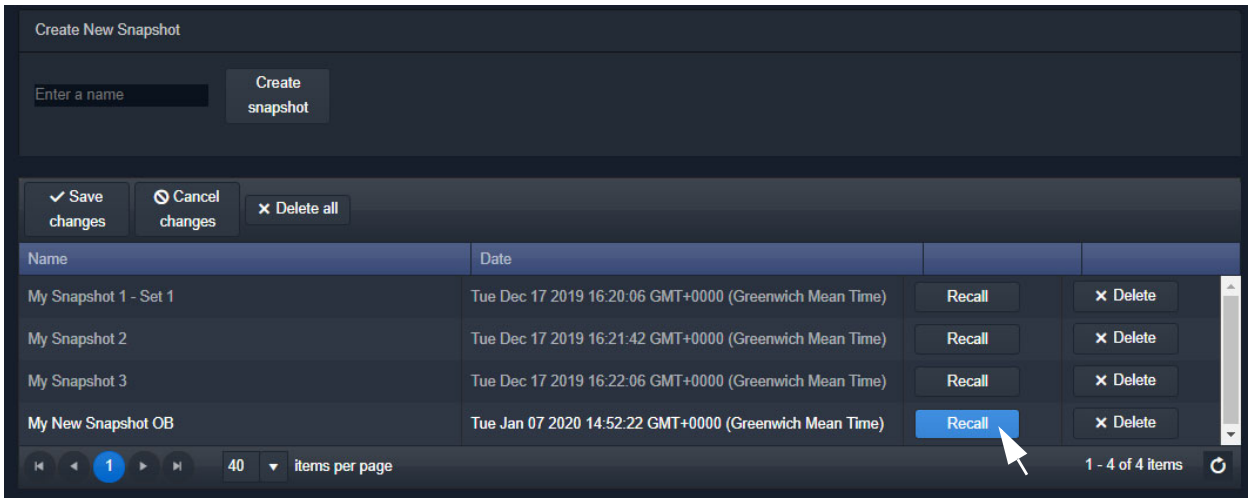


Fig. 13-5: Recall Snapshot

Note:

Destinations that were not routed when a snapshot was created will not be modified when the snapshot is recalled. These destinations are unaffected by the recall and remain routed to their current sources.

Delete Snapshot

Snapshots can be deleted individually or all can be deleted in one go.

To delete a snapshot:

1 Select the snapshot in the list.

2 Click **xDelete**.

To delete all snapshots:

- Click **xDelete All**.

Rename a Snapshot

To rename a snapshot:

1 Click on the snapshot **Name** item in the list.

2 Enter a new name. (See Figure 13-6.)

Fig. 13-6: Enter New Snapshot Name

And press Return.

The change to the list item is marked with a small red triangle; the item needs saving.

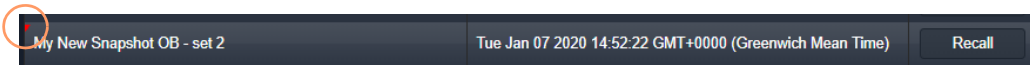


Fig. 13-7: Snapshot Name Changed but Change Not Saved

3 Click **Save Changes**. (See Figure 13-8.)

(To cancel any changes made, click **Cancel Changes**.)

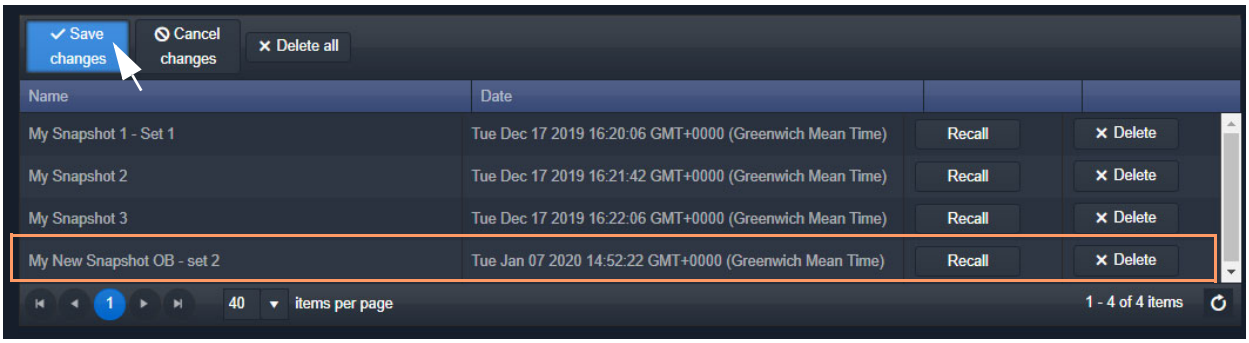


Fig. 13-8: Snapshot Name Changed and Saved

14 Web Renderer Service

Chapter contents:

Introduction

Version: 4.0

Users are able to design and create custom graphical 'control-and-monitoring' operator panels using the Grass Valley GV Orbit Client application. These custom user panels can be deployed within the GV Orbit Client tool to control/monitor devices in a GV Orbit system.

Additionally, these custom operator panels can be deployed in a web browser: The **Web Renderer** service's **Web View** facility loads up a GV Orbit control and monitoring (C&M) project and translates its custom user panels into HTML5 and displays the panels in a web browser.

IMPORTANT

For the **Web Renderer** service, use a finished and working GV Orbit C&M project which has its 'Home schematic' set (see Web View Example, on page 182).

New custom user panels can then be rolled out easily by just updating the GV Orbit project on the repository on the GV Orbit server.

Note:

The **Web Renderer** service supports the Chrome web browser.

Version: 77.0.3865.75 (Official Build) (64-bit)

Available from: https://www.google.com/chrome/

CAUTION:

Use of other browsers may result in incorrect rendering of the C&M custom user panels.

Web View Tool

Web Renderer service configuration screen provides access to a **Web View** tool. The tool is accessed via a URL link from the **Web Renderer** screen ('Open Web View'). This tool loads up an existing GV Orbit C&M project and translates its custom user panel(s) into HTML5.

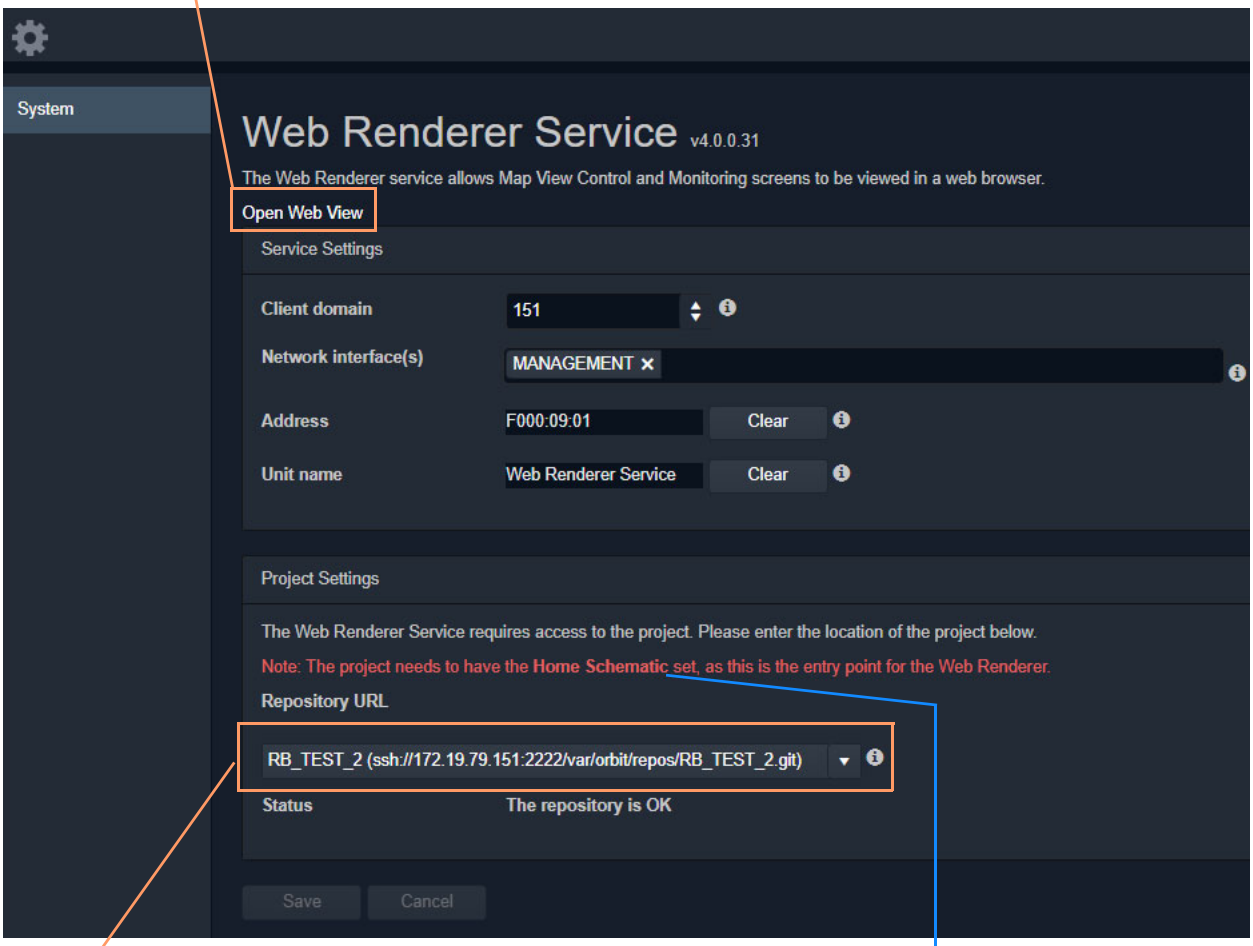
Like custom user panels when they are running in the GV Orbit Client application, the **Web View** tool uses the other GV Orbit services (such as Masking, Monitoring, Map View, Event Logging, Log Server etc.) to run the user panels successfully; this enables the rendered user panels to be populated with the correct data values and alarm states etc.

The **Web View** tool will also run any logic that is embedded in a custom panel. However, any 'Global logic' belonging to the C&M project (i.e. logic contained in GV Orbit .globalx files) is still executed by the **Map View** service; and n*ot* by the **Web View** tool.

See Web View Example, on page 182, for an example using **Web View** from a C&M project.

System Screen

Open Web View link. When the service is configured, click the link to open the **Web View** tool.



Web Renderer service must be told which GV Orbit C&M project to use from the **Repository**.

See Step 1: Set 'Home' in the C&M Project, on page 182, for how to set the '*Home Schematic*' for a C&M project in GV Orbit Client.

Fig. 14-1: Web Renderer - System Screen

Table 14-1: GV Orbit Web Renderer Service Settings

Setting	Description
Open Web View	Click-able link. Opens the **Web View** tool. Click to load up a GV Orbit C&M project and view its custom user panel(s) in a Chrome web browser. See Web View Example, on page 182.

Table 14-1: GV Orbit Web Renderer Service Settings (continued)

Setting	Description
Service Settings:	
Client Domain	Text box. Enter a GVOP domain number that the **Web Renderer** service will use (usually the 'Client' domain). Messages published onto this domain will be logged. The valid range is 1 to 232. See Grass Valley Orchestration Protocol (GVOP), on page 193 for information on Domains. **Note:** If the GV Orbit Client and service are on different GVOP domains they cannot see each other's data.
Network Interface(s)	Drop-down box. Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected. By default this cell is empty, in this case, all interfaces will be used by the service. (See Network Interface(s) Setting, on page 24.) **Note:** When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding GV Orbit Client(s).
Address	Text box. Enter RollCall address to use for the service. This will uniquely identify the service in the GV Orbit system. See RollCall Address, on page 189 for information about RollCall address. The user is free to define the RollCall addresses for a system.
Clear	Button. Click to restore the default RollCall address for the service. Default: F110:01:09
Unit Name	Text box. Enter a name for the service, to be a human-readable identifier for the service which appears in the GV Orbit client **Network** window.
Clear	Button. Click to restore the default name for the service.

Table 14-1: GV Orbit Web Renderer Service Settings (continued)

Setting	Description
Project Settings:	The GV Orbit C&M project being connected to must have its 'Home schematic' set. This acts as an entry point into the custom user panel for the Web Renderer's **Web View** tool. See Web View Example, on page 182, for an example. Step 1: Set 'Home' in the C&M Project, on page 182, shows how to set the 'Home schematic' for a C&M project in GV Orbit Client. **Note:** These **Web Renderer** settings are system-specific.
Repository URL	Select the C&M project's **Repository** on the GV Orbit server. **Note:** The service must be told where the GV Orbit C&M project is and have network access to it.
Status	Shows status of the service's connection to the **Repository**.

Web View Example

A finished and working GV Orbit C&M project is required. This must work in a GV Orbit control/monitoring system in the GV Orbit Client application. All other GV Orbit services must be set up in order for the project's custom user panels to show live data and function correctly etc.

The **Web Renderer** service will run any logic that is embedded in a custom user panel in order to render the panel. However, any global logic within a C&M project (contained in GV Orbit .globalx files) is not run by the service, instead, it is still executed by the **Map View** service.

This example shows the steps required to take a working C&M project and show its custom user panel(s) in a web browser.

Prerequisites

- A working GV Orbit C&M project.
- A working GV Orbit control and monitoring system with a GV Orbit server running GV Orbit services.
- Network access to stored GV Orbit C&M projects on the GV Orbit server.
- A client computer with the Chrome web browser installed.

Procedure

To see a GV Orbit C&M project custom user panel running in a web browser:

Step 1: Set 'Home' in the C&M Project

These steps need only be carried out once on the GV Orbit C&M project:

1 Open the working C&M project in GV Orbit Client.

2 Open the *top level* custom graphical user panel.
(Custom user panels are usually designed as a schematic hierarchy and the top level schematic will be used as the home entry point for the **Web View** tool into the custom user panels.)

3 In the main menu, click '**Project** -> **Set xxx as Home**'.

This sets the current open schematic to be the project's home schematic.

4 Click **Save Project**.

5 Click **Project -> Push** in the main menu.

The **Choose Projects** dialog is shown. See Figure 14-2.

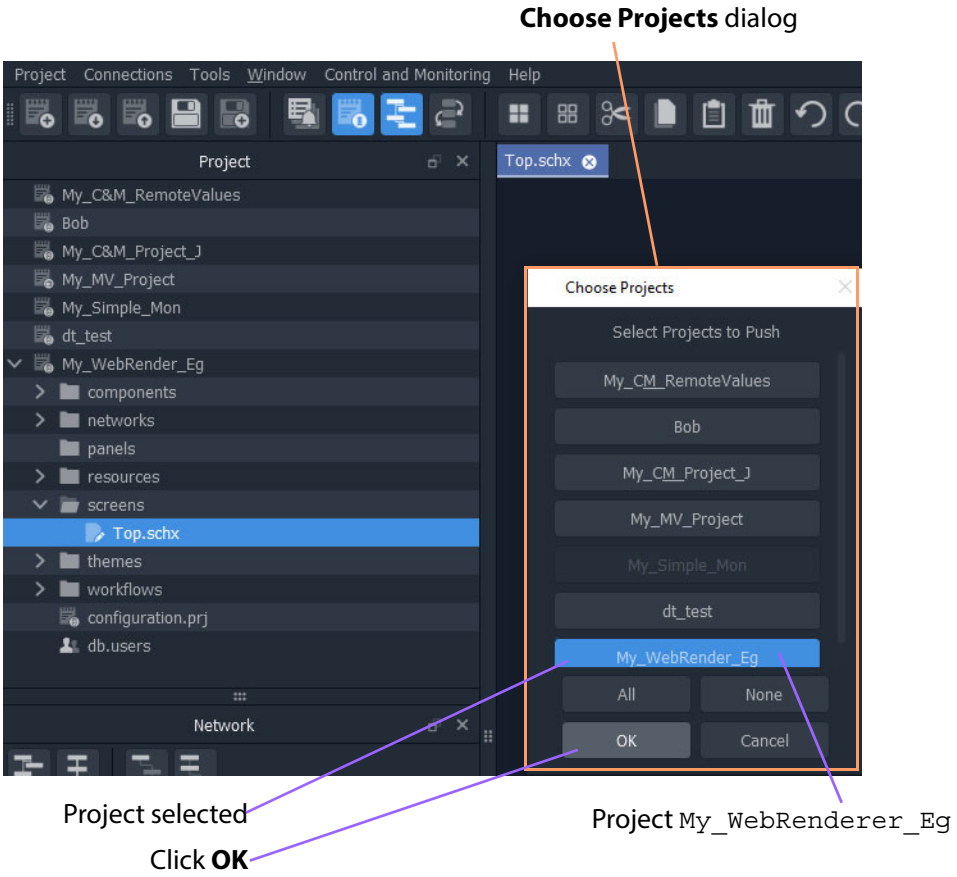


Fig. 14-2: Choose Projects Dialog

6 Ensure the project name is selected in the **Choose Projects** dialog.

7 Click **OK**.

The project is pushed to the repository on the GV Orbit server.

8 A pop-up **Push** dialog informs the user when the project has been pushed successfully. Click **OK** in the pop-up to close it.

9 Close the GV Orbit Client.

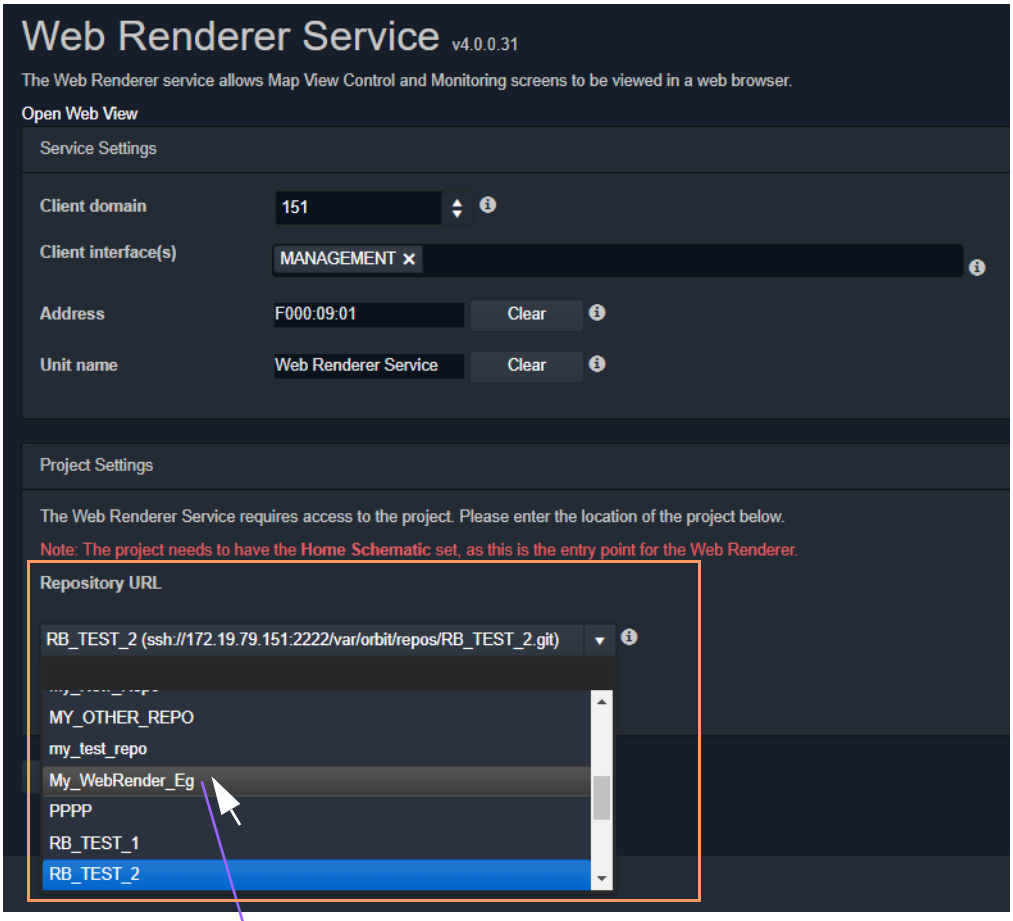
This has prepared the GV Orbit C&M project for use with the **Web Renderer** service's **Web View** tool.

Step 2: Configure the Web Renderer Service

The following steps configure the **Web Renderer** service to point at the GV Orbit C&M project repository:

1 Open the **Web Renderer** service configuration screen on the GV Orbit server.

2 In the 'Project Settings' section, in the **Repository URL** drop-down list, select the URL of the C&M project to be used.



In drop-down list, select **Repository URL** for project `My_WebRenderer_Eg`

Fig. 14-3: Select Repository URL

This points the service at the C&M project.

3 Click **Save**.

The settings change is saved.

A pop-up dialog indicates when this is done.
Click **OK** to clear the pop-up dialog.

This has configured the **Web Renderer** service running on the GV Orbit server to look at the required GV Orbit C&M project.

Step 3: View Custom User Panel on Client Computer

The following steps can be performed on one or more client computers to yield more than one instance of the one custom graphical user panel. The same panel design may then be used by more than one operator to control/monitor system devices.

On a client computer:

1 Log into the GV Orbit server with a Chrome web browser.

2 View the **Web Renderer** service's configuration screen.

3 Click on the **Open Web View** link.

4 Enter the C&M project's user name and password at the prompt.
(User access to the project is the same as for opening the project in GV Orbit Client.)

See Figure 14-4.

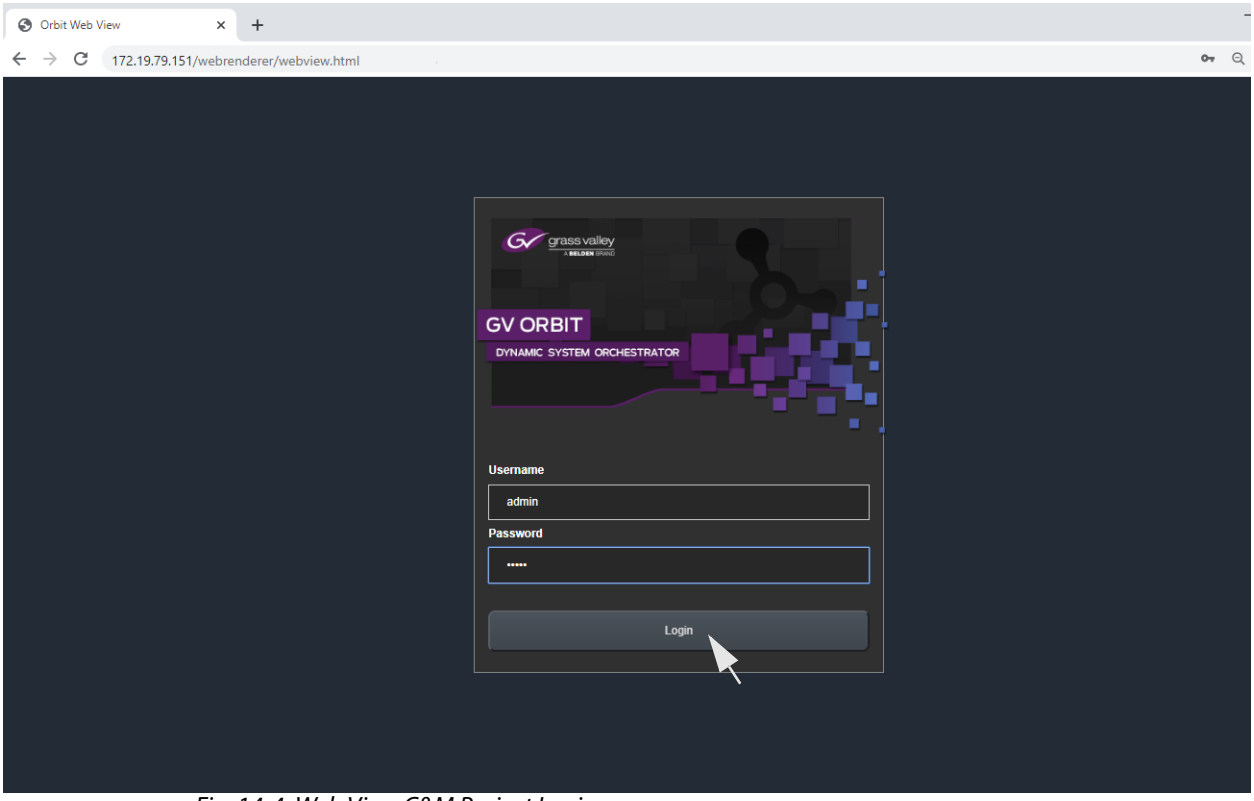


Fig. 14-4: Web View C&M Project Login

5 Click **Login**.

The **Web View** tool opens the C&M project and renders its 'Home schematic' into the web browser window. The custom user panel of the C&M project is shown in the web browser with live data. See Figure 14-5.

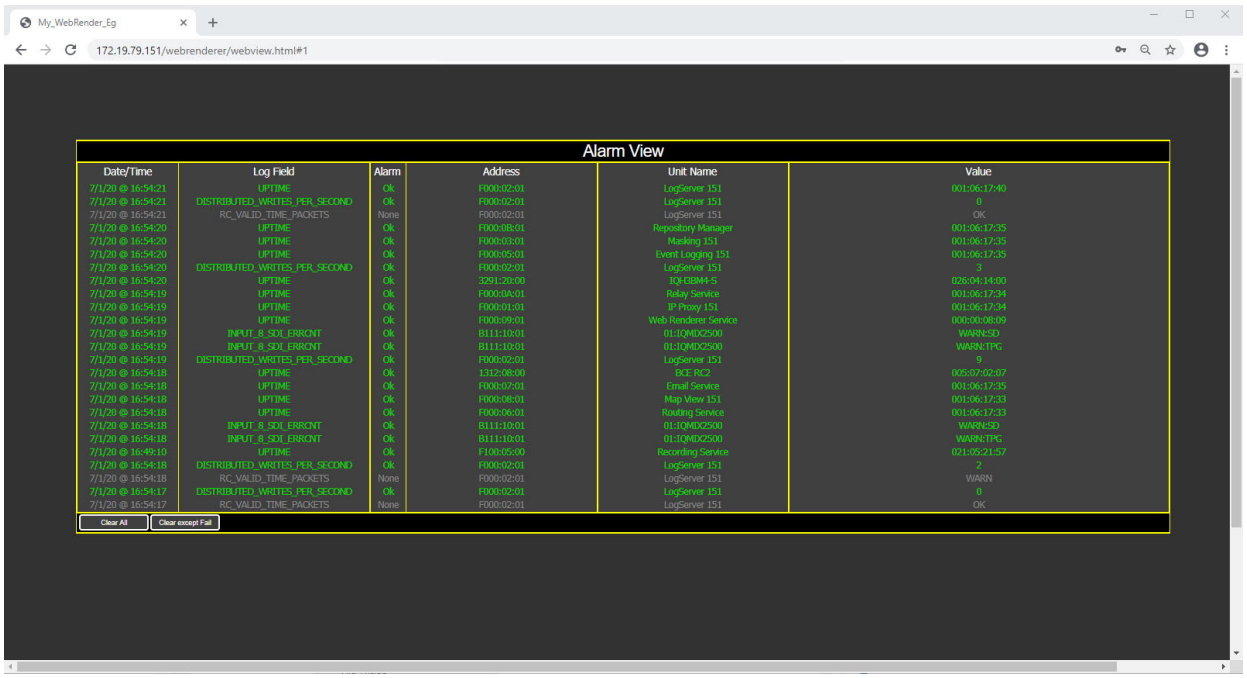


Fig. 14-5: C&M Project Custom User Panel Running in a Web Browser via Web View

The custom C&M project custom user panel can now be used. For comparison, the same project is shown in Figure 14-6 running in the GV Orbit Client application.

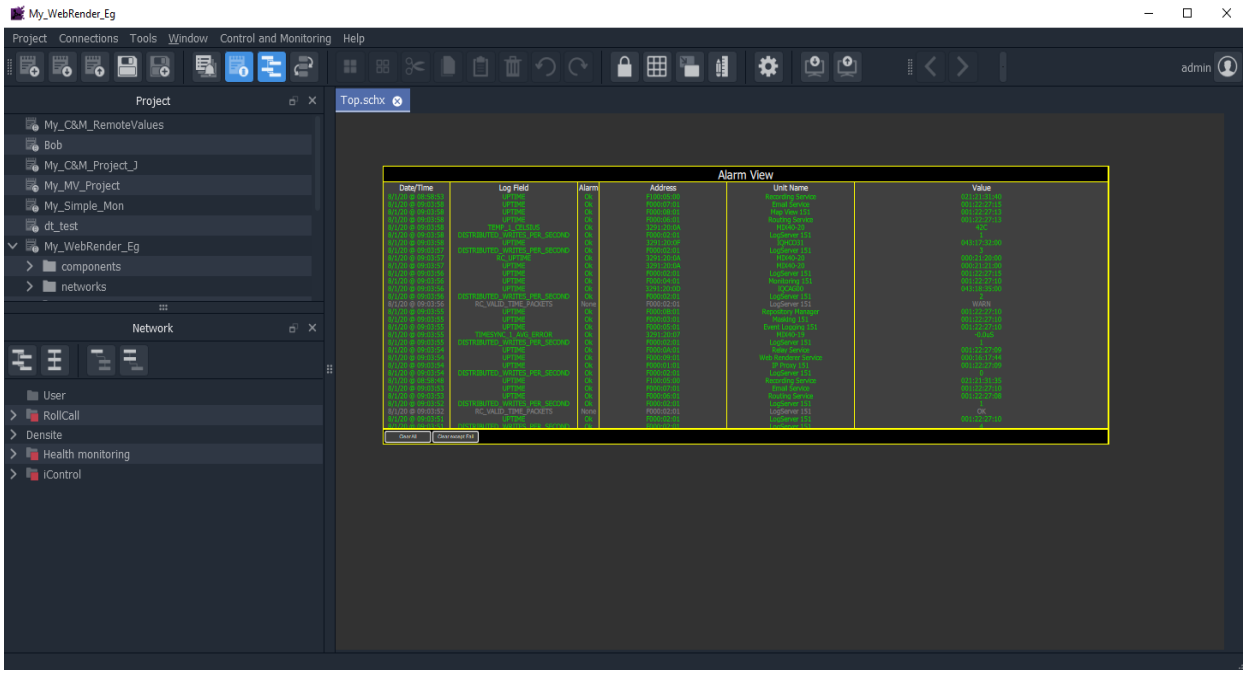


Fig. 14-6: C&M Project Custom User Panel Running in GV Orbit Client

Multiple Client Users and Projects

Multiple Users of the Same Project

One **Web Renderer** service installation can serve up a GV Orbit C&M project to more than one client user. Each client user must access the **Web Renderer** configuration screen from their (client) computer and click **Web View** to see and use the project custom user panel in their own web browser.

Multiple Different Projects

Each server installation of the **Web Renderer** service can only serve up one GV Orbit C&M project; it can do this to one or more client viewers. And there can only be one installation of a **Web Renderer** service on a GV Orbit server.

If there are one or more different GV Orbit C&M projects to be viewed and used via the **Web Renderer** service, then there must be one separate **Web Renderer** service installation on a separate server per project. Each **Web Renderer** service is then configured for a different project. Client users may then access any of the **Web Renderer** service's configuration screens and click **Open Web View** to view and use the corresponding C&M project operator panel.

Contact Grass Valley Professional Services for more information.

A GV Orbit Addresses and Protocols

Appendix contents:

RollCall Address

A RollCall address is used by RollCall-protocol devices and by GV Orbit Services in a Grass Valley GV Orbit system. Addresses must be unique in a system.

Devices in a network that have the same RollCall 'network number' value will be placed within the same branch in the **Network** window in a GV Orbit Client. The address also defines the position of a device in the **Network** window.

RollCall Address Format

A RollCall address uses hexadecimal numbers, i.e. digits 0 to 9, A to F.

The RollCall address format is:

NNNN:UU:PP

Where:

NNNN - RollCall network number. Four hexadecimal digits.

UU - Unit/device number. Two hexadecimal digits.

PP - RollCall port. Two hexadecimal digits.

Network Number (NNNN) Form

The RollCall network number, NNNN, comprises four hexadecimal digits 0-F.

The original architecture of a RollCall system dictated that the network number, **NNNN**, may **only contain zero or more *trailing* zeros** and, additionally, that '0000' is not allowed. Thus, for example:

- ✓ 1000, 12D0, 1456, 2100 are *valid* RollCall network numbers.
- ✘ 1203, 0001, 0F00, 0000 are *invalid* network numbers.

Device Addressing

A Grass Valley IQ modular frame houses an IQ Gateway card and this is assigned a Network Number, NNNN, by an IP Proxy service. The unit/device number, UU, is defined on the Gateway card itself. The RollCall port number, PP, is determined by each modular slot in the IQ frame.

> **Note:**
> When connecting *directly* to an IQ frame, instead of via an IP Proxy service, then the Network Number part, NNNN, of the address is 0000.

For a Grass Valley MV-8 Series multiviewer (e.g. MV-821):

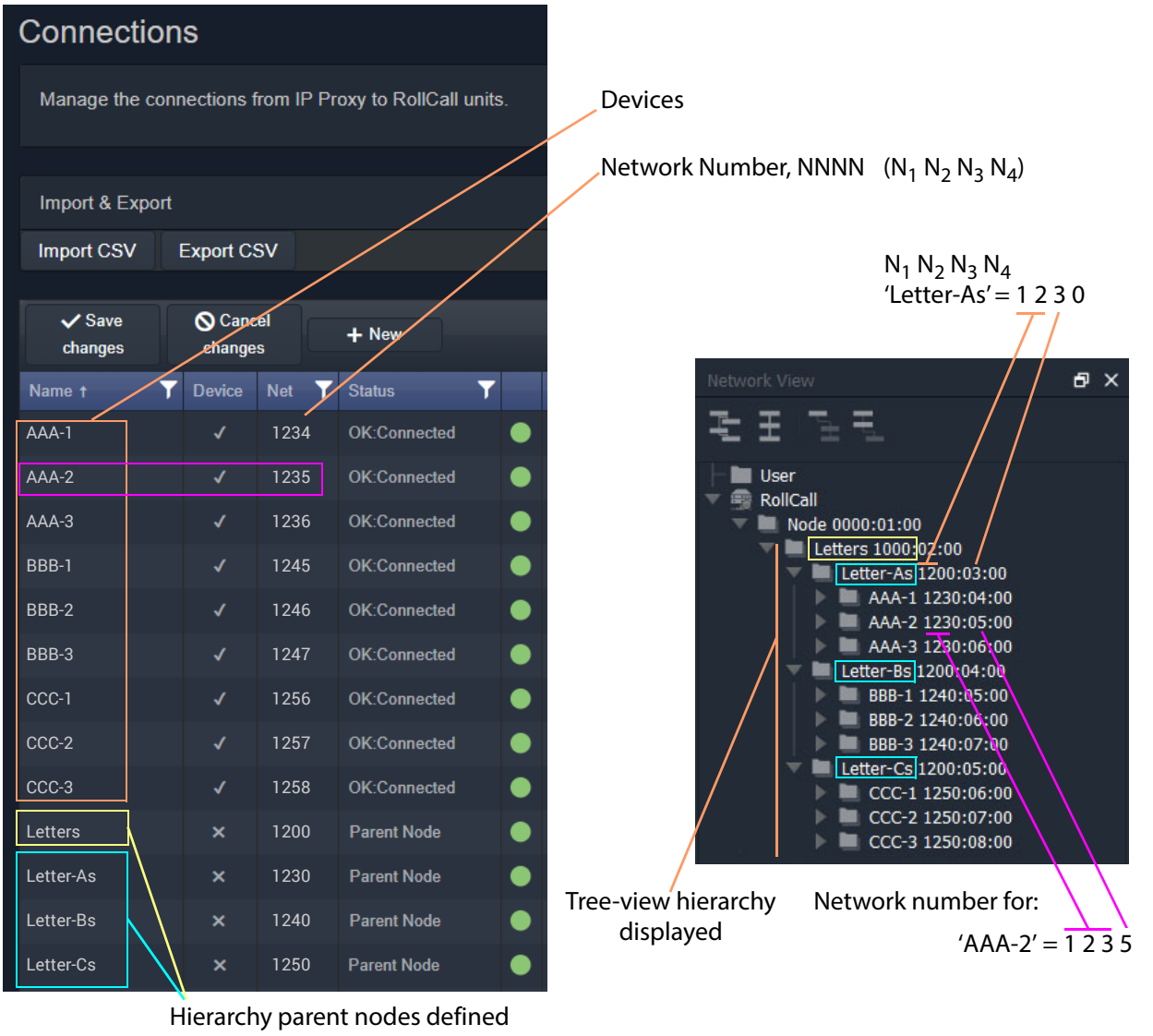
- The Network Number and Unit/device number are specified in the multiviewer's RollCall configuration/control screen (RollCall template).
- The RollCall Port number adopts the values 01 through to 48, corresponding to each of the 48 multiviewer video inputs.

Network Tree View

In a system, devices etc. are each assigned a RollCall address. These are presented in the GV Orbit Client's '**Network**' window as a tree-view. The RollCall address format governs the tree-view hierarchy presented. Addresses should be assigned to devices according to the required device grouping. For example, devices may be grouped according to location, function, or operation. This is normally done by the system architect.

The four 'Network Number' digits of the RollCall address (N_1 N_2 N_3 N_4) directly allow four levels of tree-view hierarchy. Hierarchy nodes may also be labeled.

This is shown in Figure A-1 with some specimen Network Numbers.



a) Devices and Nodes listed
in an **IP Proxy** service **Connections** Screen

b) Devices and Nodes listed
in a GV Orbit Client **Network** window tree-view

Fig. A-1: Generic Device Groupings Example:
a) In IP Proxy Service Connections.
b) in Network Window Tree-View.

RollCall Messages

RollCallv3

First generation of RollCall messages. Device status, logging and information is sent on this messaging system. Used on RollCall-protocol systems.

A RollCall address is used to uniquely identify RollCall-protocol Grass Valley devices when using the RollCallv3 protocol over Ethernet.

> **Note:**
> When the RollCallv3 protocol is used over (older) Grass Valley 'RollNet' connections (serial or 75 Ohm BNC), the network number portion, NNNN, of the RollCall address is used when routing messages across bridged 'RollNet' network segments.

RollCall+

This is the next generation of Grass Valley RollCall messaging system supported by some Grass Valley devices/units.

Grass Valley Orchestration Protocol (GVOP)

This is the next generation of Grass Valley messaging system; it is extended with many new messaging features for today's user applications. GVOP provides a common alarm functionality between RollCall- and Densité-protocol devices.

Unique device identifiers are used in both cases. For:

- RollCall-protocol devices, it is the RollCall address; and for
- Densité devices, it is the Densité URL.

Used in a GV Orbit system, between GV Orbit Services, for processing alarm and log data information from devices and controlling IP endpoints.

GVOP Domain

Domains can be used to segregate data traffic on a common network or across one or more networks. In a GV Orbit system, there may be the following domains:

- a (main) 'Client' domain;
- a 'Log Server' domain; and
- a 'Routing' domain.

  (See Figure 1-3, GV Orbit Services Ecosystem Diagram with Domains, on page 5 in Chapter 1.)

These domains may be present on one network or across a pair of redundant networks, or they may be spread across different networks. For example, a 'Routing' domain controls device IP endpoints and may use in-band device control over high-speed media networks.

A domain is identified by a number in the range is 1 to 232. A domain value of zero, 0, is typically reserved for general device discovery and is not normally used for control data.

Note:
In a GVOP GV Orbit system, devices, GV Orbit clients and services should have the same domain number. If a device is on a different domain number, then it will not be seen/discovered.

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, please consult the Contact Us section of Grass Valley's website (www.grassvalley.com).

An on-line form for e-mail contact is also available from the website.

Corporate Head Office

Grass Valley
3499 Douglas-B.-Floreani
St-Laurent, Quebec H4S 2C6
Canada
Telephone: +1 514 333 1772
Fax: +1 514 333 9828
www.grassvalley.com