



grass valley

A **BELDEN** BRAND

ORBIT SERVICES

CONTROL, CONFIGURATION AND MONITORING

User Manual

Issue 1 Revision 2

2019-07-11

www.grassvalley.com

Patent Information

This product may be protected by one or more patents.

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About this Manual

Title Orbit Services User Manual
 Part Number ORBIT-SRV-UM, Issue 1 Revision 2
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The following Orbit manuals are related documents:

Table 1 Related Documents

Type	Title	Description
User Manual: Orbit - Introduction		Introduction to Orbit Client and description of common items.
User Manual: Orbit for Multiviewers		Multiviewer-specific features of Orbit.
User Manual: Orbit MapView		Describes MapView features of Orbit.
User Manual: Orbit Routing Panel		Describes Routing Control panels open-able from Orbit.
User Manual: Orbit for IP Routing		Describes IP Routing Configuration with Orbit.

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1 Product Overview

Orbit is a suite of software packages and plug-ins from Grass Valley, a Belden brand, which forms a configuration, control and monitoring system for Grass Valley audio/video/IP products and third-party devices.

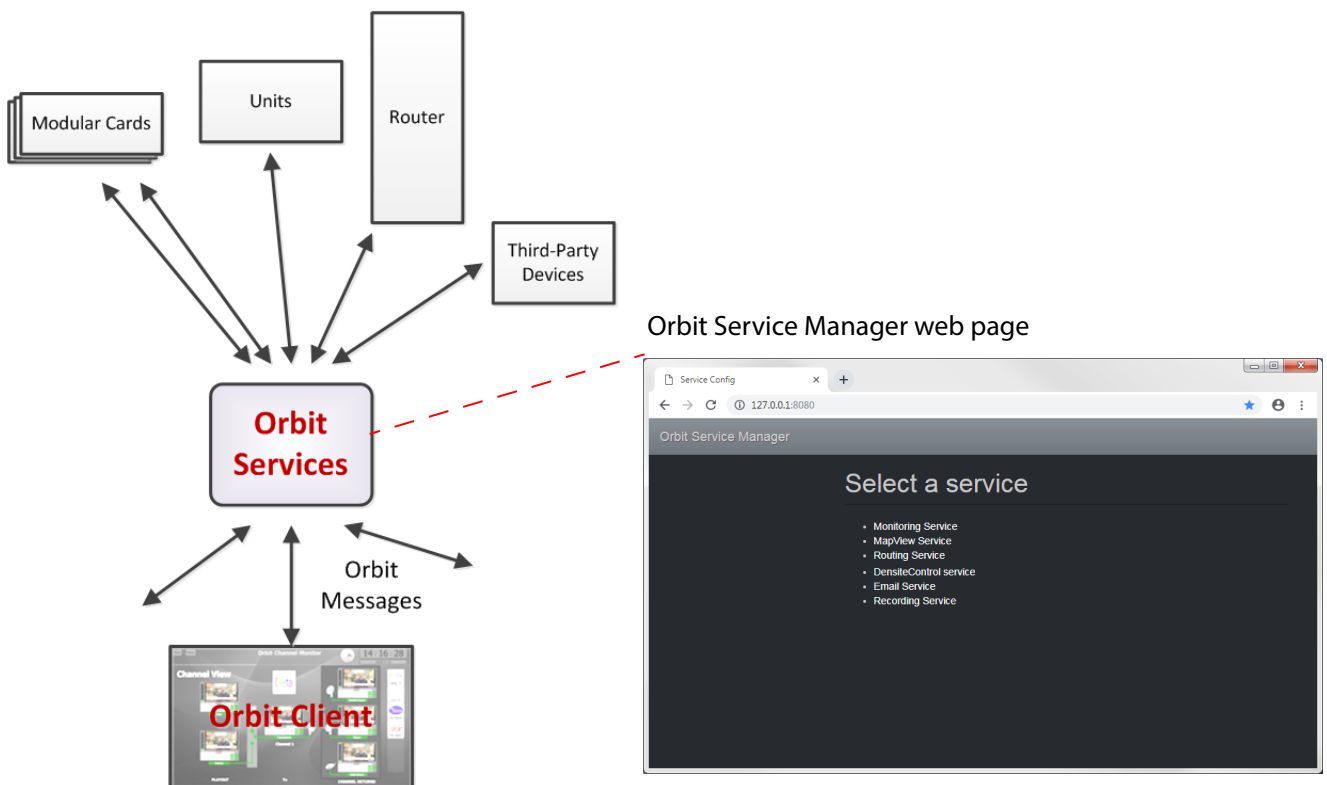


Fig. 1-1: Orbit Services

An Orbit system utilizes Orbit Services running on a server to provide services for the configuration, control and monitoring of audio/video system devices via Orbit client applications. The services include:

- Monitoring Service
- MapView Service.
- Routing Service.
- Densité Control Service.
- Email Service.
- Recording Service.

Software Version

Orbit Services described in this document use the following version of the Orbit software suite:

Orbit 3.1 or later

System Overview

Orbit Services are typically run on a server computer (recommended). They may also be run on a client computer.

Orbit MapView client screens can form a soft user panel for monitoring various status items of many system devices. Messages to/from devices are aggregated by services for the client applications. Figure 1-1 shows an outline of a general system view.

Orbit Services facilitate the processing of alarms in a system. Alarms can originate from Grass Valley devices (Densite, IQ, MV-8xx, etc.) or from third party devices. The services provide common functionality, such as alarm aggregation, masking and reporting; services process alarms to ensure all Orbit clients have a common view of the state of the system.

Services also off-load some processing from Orbit clients, for example, for permanent processing of logic, or for raising alarms via email.

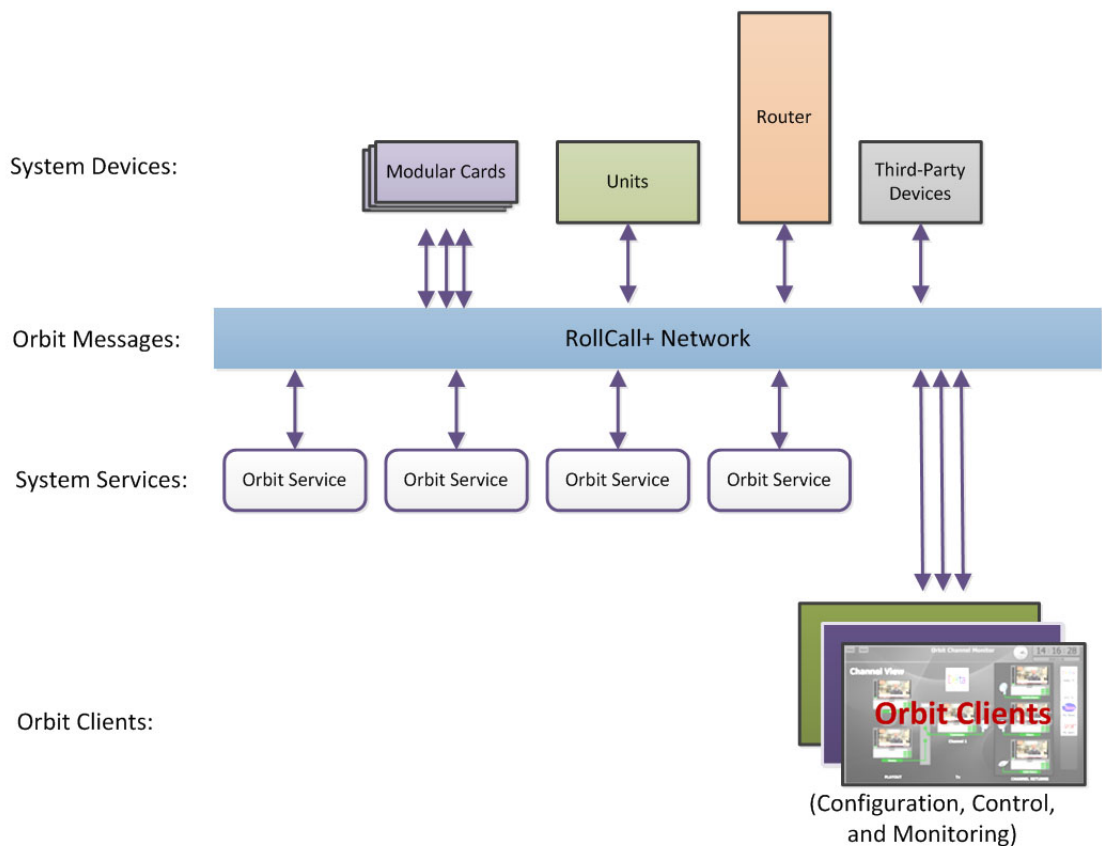


Fig. 1-2: Orbit System Diagram

Orbit Services

Environment

Orbit Services are supported on the following operating systems:

- Windows Server® 2012R2
- Windows Server® 2016

Ensure all patches have been applied to the Operating System before installing Orbit Services.

Installation

Orbit Services run on a server computer as (Windows) services. They are installed on a server computer as an option when installing Orbit software, see Figure 1-3.

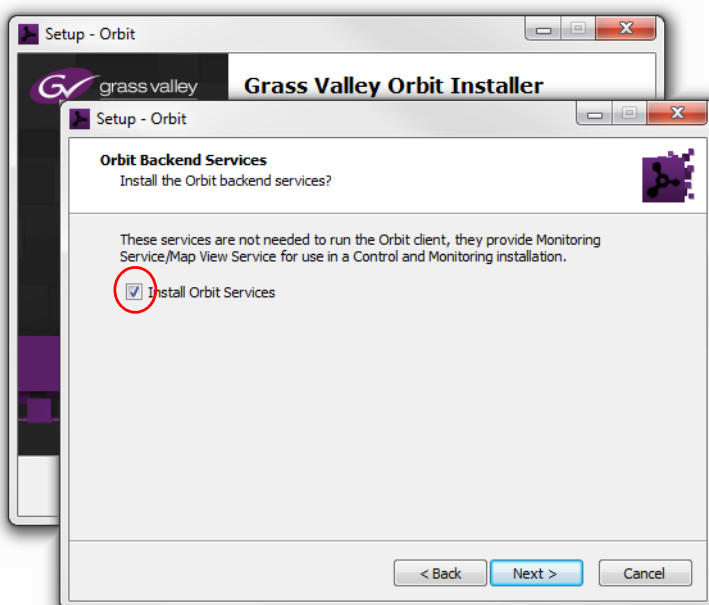
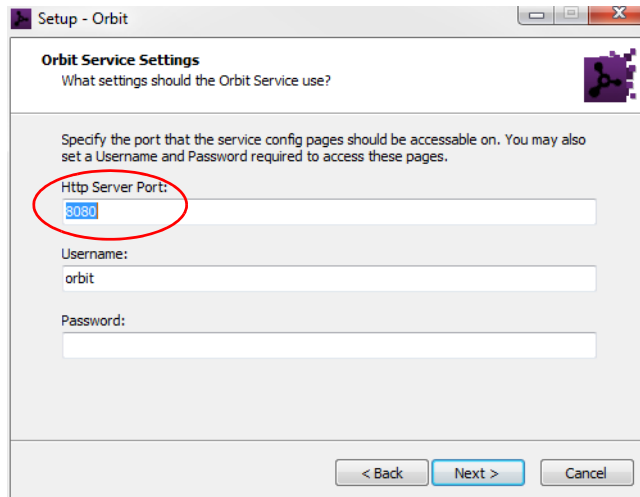


Fig. 1-3: Install Orbit Services

Orbit Services are configurable through a web interface (Orbit Services Manager) and the default IP port number is 8080. This IP port number can be changed at installation (see Figure 1-4): If IP port 8080 is in use on the target server platform, enter a free IP port number at Orbit Services installation.

Additionally, the Orbit Services configuration web pages can be protected with username and password access. The default username is 'orbit' with no password: This can be changed at Orbit Services installation (see Figure 1-4).



Note: These may be left at their default settings.

Fig. 1-4: Orbit Services Installation - IP Port and Username/Password

Note: The username and password used to access the Orbit Services configuration web pages are standalone, and are NOT connected to user accounts on the target platform.

All of the Orbit services installed.

Orbit Services Manager (Web Page)

The various Orbit Services are configured via the Orbit Services Manager web page. To open this:

- 1 Open a web browser and enter the URL in the form:

`http://<IP_Address>:<IP_Port>/`

Where:

- **<IP_Address>** is the IP address of a server computer with Orbit Services installed.
- **<IP_Port>** is the IP port number used by the Orbit Services - determined at Orbit installation.

For example, to open IP port number 8080 on the local machine (localhost 127.0.0.1), enter: <http://127.0.0.1:8080/>

The Orbit Services Manager web page will be shown in the browser. See Figure 1-5.

Click on the banner to return to this main screen.

List of Orbit Services

Click on an item to access its configuration screen.

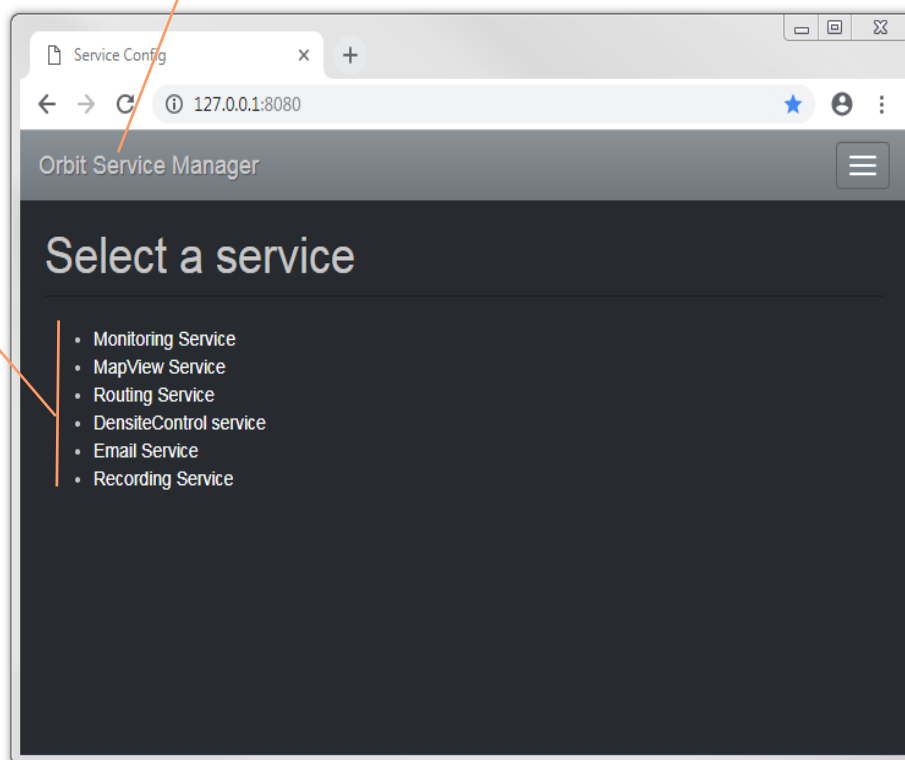


Fig. 1-5: Orbit Services Manager Main Screen

To select a service:

- 2 Click on an item in the list to access a service's configuration web page.
- 3 After making changes to configuration settings on the web page, to make the new settings take effect, click the 'Save' button at the bottom of the web page.

Note: Orbit Services are described in detail in chapters of this user manual.

Finally, after configuring a service:

- 4 Click on the 'Orbit Service Manager' banner to return to the main screen.

Monitoring Service

The primary purpose for the **Orbit Monitoring Service** is to calculate key state information from Log Fields generated from log information from cards or units in a system that use the RollCall protocol. The service uses Log Field data from a Grass Valley Log Server (a Windows service and part of the Grass Valley RollCall Middleware Services) and may also process raw log data from cards/units (i.e. any device in its 'control and monitoring' RollCall domain). The service then publishes the calculated state data in Alarm Messages to subscribers. An Orbit client can subscribe to these Alarm Messages and, for example, Alarm state information can be used on a MapView screen with Alarm Behaviours.

A client may also write log data to the 'control and monitoring' RollCall domain. This data will be processed by the Orbit Monitoring Service.

Web page accessed via <IP_Address>:<IP_Port>/monitoringnode/

For example: <http://127.0.0.1:8080/monitoringnode/>

(See [Monitoring Service](#), on page 9.)

MapView Service

The **Orbit MapView Service** runs on a server computer and serves an Orbit MapView project. The service executes an Orbit MapView project in parallel with an Orbit MapView client. The service evaluates the alarm state of *all* MapView screens and then publishes overall project 'state' information to the client.

The service also executes any server-side logic contained in any special files within the project (Orbit Global files, with a .globalx extension) and manages the state of 'User Folders' in the project.

A GIT repository may be used to hold Orbit projects. This can ensure the service uses the same project as is running on the client.

Web page accessed via <IP_Address>:<IP_Port>/rollmap/

For example: <http://127.0.0.1:8080/rollmap/>

(See [MapView Service](#), on page 43.)

Routing Service

The **Orbit Routing Service** interfaces between Orbit soft control panels and a router controller device using NP0017 or SWP-P-08 protocols.

Web page accessed via <IP_Address>:<IP_Port>/routingnode/

For example: <http://127.0.0.1:8080/routingnode/>

(See [Routing Service](#), on page 57.)

Densité Control Service

The **Orbit Densité Control** service allows Orbit to set/view multicast parameters of Densité cards.

Web page accessed via <IP_Address>:<IP_Port>/densitecontrolnode/

For example: <http://127.0.0.1:8080/densitecontrolnode/>

Email Service

The **Orbit Email Service** sends emails on the behalf of Orbit via a configured SMTP server.

Web page accessed via <IP_Address>:<IP_Port>/emailnodeplugin/

For example: <http://127.0.0.1:8080/emailnodeplugin/>

(See [Email Service System Page](#), on page 66.)

Recording Service

The **Orbit Recording Service** captures and stores a copy of all log message or alarm changes within a system, allowing historical events to be viewed and investigated. A main log file is used to record everything. Additionally, smaller, filtered log files can record a smaller subset of data within the system.

Web page accessed via <IP_Address>:<IP_Port>/recording/

For example: <http://127.0.0.1:8080/recording/>

(See [Recording Service](#), on page 69.)

Interface Selection to Limit Traffic

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

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

Monitoring Service 2

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Introduction

A monitoring system is interested in alarm status information. The primary purpose of the **Orbit Monitoring Service** is to calculate key 'alarm state' information from log messages from system devices or units that support the RollCall protocol. There may be large amounts of log data and most of it may be informative. The Monitoring Service processes log information and produces alarm information. Various alarm information from one source device (i.e. same RollCall address) can be combined together. Resulting alarm information is sent out as alarm messages.

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

An Orbit client can subscribe to these alarm messages and, for example, alarm state information can be used on an Orbit MapView screen (with Alarm Behaviours).

An Orbit client or the Orbit MapView service may also write log data to a RollCall domain for the Orbit Monitoring Service to process.

Note: In a system, the 'RollCall domain number' should match across:

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

And each item must have a unique RollCall address.

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

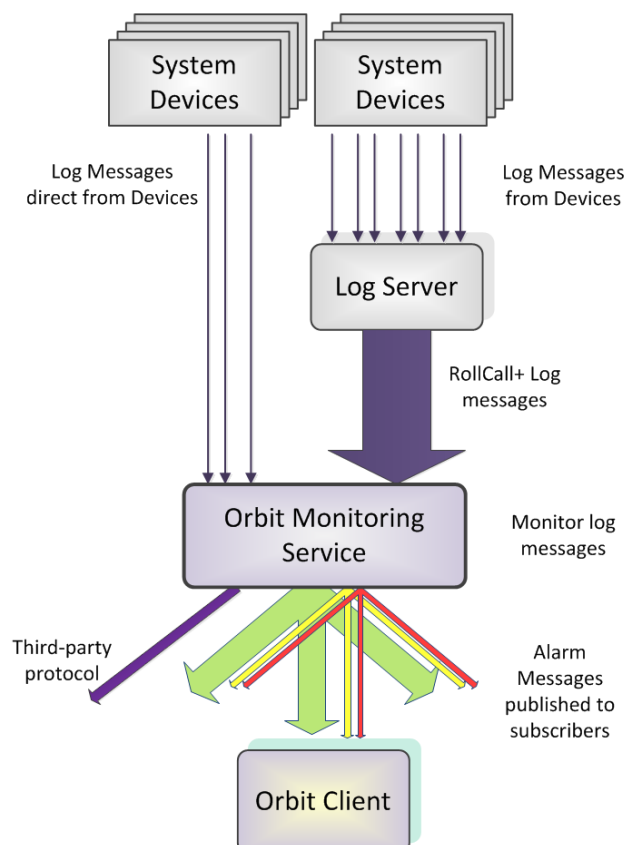


Fig. 2-1: Orbit Monitoring Service

Log Fields and Headers

Log messages contain HEADER=VALUE pairs, commonly referred to as a **Log Field**. Log Fields from a Grass Valley Log Server (part of RollCall Middleware Services) and directly from devices or units (i.e. any device in a 'control and monitoring' RollCall domain) can be processed by the service. The Monitoring Service detects the alarm state of current Log Fields (good, bad or warning) and publishes the resulting calculated state information in 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 state for monitoring screens etc. to use.

Header Rules

A Monitoring Service is pre-configured with rules for processing the main and common Headers found in a system log messages. Every log message in the system should have an accompanying rule. Other Header rules can be added.

Header rules are listed on the Headers configuration page (see [Headers Page](#), on page 25, for details). Each listed Header has corresponding 'alarm state matching rules' (for example, information about allowable limits for a Log Field value). The rules determine a resulting alarm state for the Header information. When the current value of a Header changes, the resulting Alarm state is determined by looking up the Header's rule.

When a Log Field value changes, the Monitoring Service looks up the corresponding matching rules for the Header and works out what 'state' to apply (OK, Warning, Error/Fail).

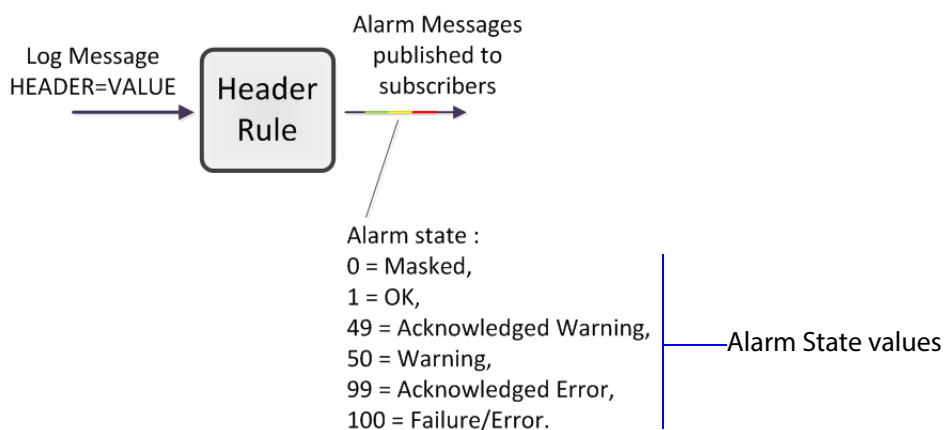


Fig. 2-2: Header Rule

Rule

A rule for a Header is defined through one or more 'state matching' rules for the Header value:

- A string value rule.
- Numeric value rule or a 'rate of change' value rule.

Each Header rule can be configured with an automatic acknowledge time period. The Monitoring Service will automatically acknowledge a Failure/Error or a Warning after this time period.

Note: The Alarm state for an 'Acknowledged Warning' is distinct from 'Warning'.
The Alarm state for an 'Acknowledged Failure/Error' is distinct from 'Failure/Error'.
See Figure 2-2.

Wild card *

An asterisk wild card character (*) can be used when forming rules for similarly-named Headers.

A device may often have many similar Log Fields - for example, to report on 'input state' (INPUT_1, INPUT_2, ... etc.) or on 'fan state' (FAN_1, FAN_2, ... etc.). In this case, Header rule items can be created using a wild card character to create rules to apply to more than one Header. This reduces the amount of configuration needed.

The wild card, *, is used in place of a number in the Header name.

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

Range []

A number range may be specified in a Header name for a rule.

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

Categories

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

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 Orbit with the Monitoring Service: The service can monitor multiple Alarm messages (for example, INPUT_*_STATE) and aggregate the results into one alarm state (called, say, "INPUT_STATE") using **Categories**.

Examples:

- A multiviewer with 48 inputs, Headers may include:
INPUT_1_STATE, INPUT_2_STATE, and so on up to INPUT_48_STATE.
- For a single multiviewer input, Headers may include:
INPUT_1_LOST, INPUT_1_STATE, INPUT_1_STANDARD, INPUT_1_FRAMERATE.

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

For example, if a device has log fields for INPUT_1, INPUT_2 etc., then a **Category** can create a new Log Field (called, say, 'INPUT') to contain the overall combined alarm states of all the INPUT_* Log Fields.

See Figure 2-3.

Log Messages from a device: Header Rules: Alarm States: **Category:** Aggregated Alarm State:

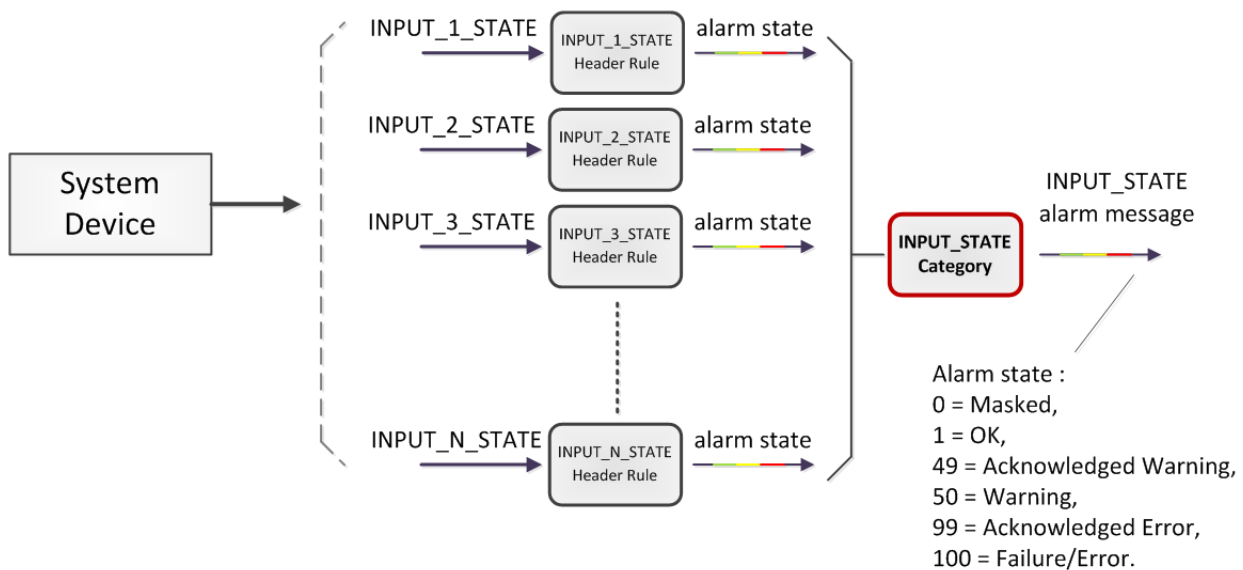


Fig. 2-3: Category Example Block Diagram

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

1. Orbit client screen: (Solely on an Orbit client screen)

- design an Orbit client screen to look at multiple log message types;
- determine alarm states for each log message;
- aggregate the multiple results into one alarm state; and
- show alarm state on-screen (for example, with a Tally lamp).

2. Monitoring Service and client screen(s):

Alternatively, it can be more convenient to perform the aggregation centrally and then provide a single, aggregate Log Field to one or more subscribing Orbit client screens. Do this using the **Monitoring Service** and an Orbit client screen:

- configure the service to look at multiple log messages;
- configure the service with a **Category** to aggregate the log messages;
- design an Orbit screen to look at the one (aggregated) log message; and
- show the alarm state on-screen (with a Tally lamp).

See [Categories Page](#), on page 20, for more details.

Monitoring Service Web Pages

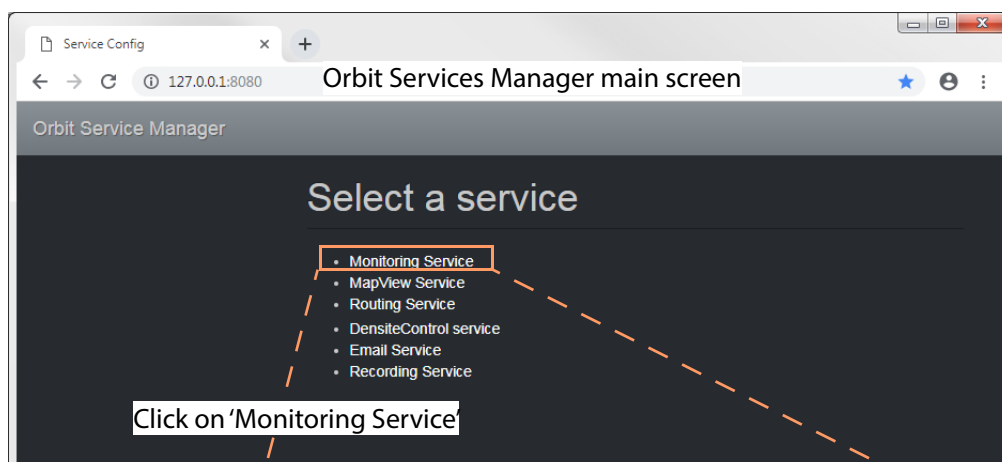
The Monitoring Service configuration web page is accessed by a web browser:

- From the Orbit Services Manager web page (<Server_IP_Address>:<IP_Port>/) by clicking on 'Monitoring Service'.
- or
- Directly at the web address <Server_IP_Address>:<IP_Port>/monitoringnode/

The Monitoring Service web page contains side tabs:

- System. (See [System Settings Page](#), on page 15.)
- Categories. (See [Categories Page](#), on page 20.)
- Headers. (See [Headers Page](#), on page 25.)
- Units. (See [Units Page](#), on page 40.)

See Figure 2-4.



Monitoring Service main screen at <IP_Address>:<IP_Port>/monitoringnode/

Side tabs:

- System.
- Categories.
- Headers.
- Units.

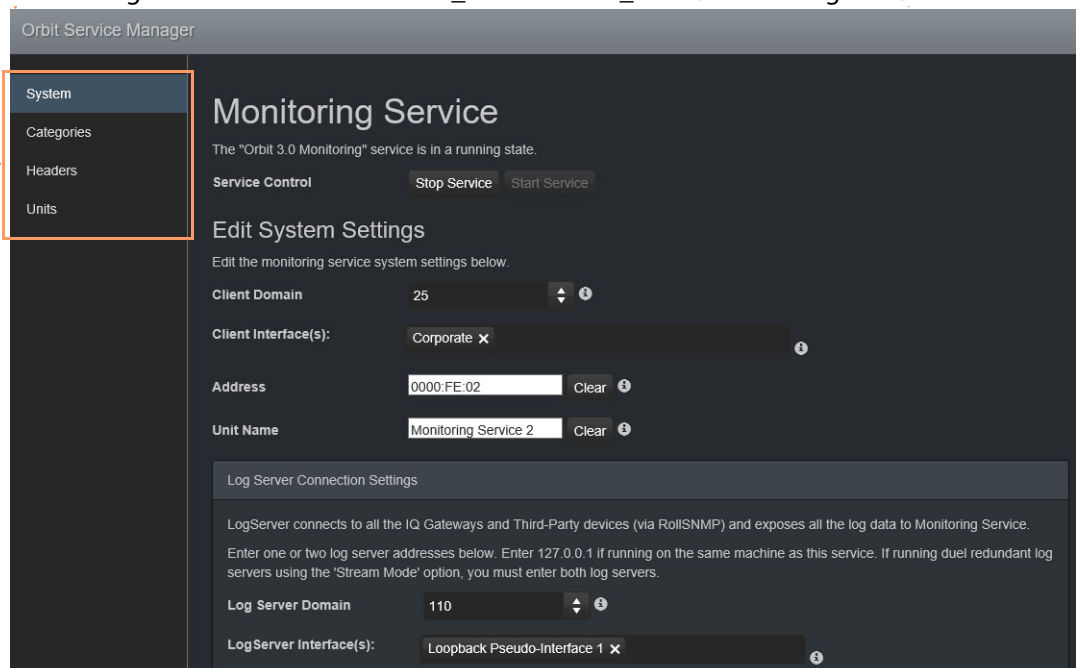


Fig. 2-4: Monitoring Service Main Screen

System Settings Page

Table 2-1 below describes the System Settings page of the Monitoring Service configuration web page, see Figure 2-5.

Orbit Service Manager

Monitoring Service

The "Orbit 3.0 Monitoring" service is in a running state.

Service Control

Edit System Settings

Edit the monitoring service system settings below.

Client Domain 25 ⓘ

Client Interface(s): Corporate ✕ ⓘ

Address 0000:FE:02 ⓘ

Unit Name Monitoring Service 2 ⓘ

Log Server Connection Settings

LogServer connects to all the IQ Gateways and Third-Party devices (via RollSNMP) and exposes all the log data to Monitoring Service.

Enter one or two log server addresses below. Enter 127.0.0.1 if running on the same machine as this service. If running dual redundant log servers using the 'Stream Mode' option, you must enter both log servers.

Log Server Domain 110 ⓘ

LogServer Interface(s): Loopback Pseudo-Interface 1 ✕ ⓘ

Log Server IP 1 127.0.0.1 ⓘ

Log Server IP 2 Enter IP Address ⓘ

Write Mode Receive Only ⓘ

SDC-03 Enabled NO ⓘ

Enable Categories YES ⓘ

Monitoring Service Purge Purge stale data ⓘ

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

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

Fig. 2-5: Monitoring Service - System Settings Page

Table 2-1: Orbit Monitoring Service - System Settings

Setting	Description
Service Status	<p>Indicates if the service is running or is stopped.</p> <p>The service is configured to automatically start when the host machine is restarted. After installation if the host machine is not restarted the service should be started manually.</p>
Service Control: Stop Service Start Service	<p>Buttons.</p> <p>Click to stop the service.</p> <p>Click to start the service.</p>
System Settings: Client Domain	<p>Text box.</p> <p>Enter a RollCall domain number that the service will monitor.</p> <p>The valid range is 1 to 232.</p> <p>(See RollCall Domain, on page 89 for information on Domains.)</p> <p>Note: The Client Domain should be set to match the RollCall domain used by an Orbit Project in an Orbit Client. If the Orbit Client and Monitoring Service are on different domains they cannot see each other's data.</p>
Client Interfaces	<p>Drop down box.</p> <p>Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected.</p> <p>By default this cell is empty, in this case, all interfaces will be used by the service.</p> <p>When one or more interfaces have been selected the service will use only those interfaces listed. See Client Interface Selection, on page 18.</p> <div data-bbox="724 1294 1442 1608" data-label="Image"> </div> <div data-bbox="727 1675 1404 1792" data-label="Image"> </div> <p>To delete an item from the list, click on its adjacent x.</p> <p>Note: When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding Orbit Client(s).</p>

Table 2-1: Orbit Monitoring Service - System Settings (continued)

Setting	Description
Address	<p>Text box.</p> <p>Enter RollCall address to use for the service to write its state messages to. This will uniquely identify the service in the Orbit system. This will be used when the service publishes its own log data.</p> <p>(See RollCall Address, on page 89 for information about RollCall address.)</p> <p>The user is free to define the RollCall addresses for a system.</p> <p>Recommended:</p> <ul style="list-style-type: none"> • Primary servers: F100:01:04 • Secondary servers: F100:02:04
Unit Name	<p>Text box.</p> <p>Enter a name. This is a human-readable identifier for the Monitoring Service to use.</p> <p>This name appears in the Orbit client Network View pane.</p>
Log Server Connection Settings:	<p>A Monitoring Service connects to a Log Server to get device log data.</p>
Log Server Domain	<p>Text box.</p> <p>Enter the domain number for the Monitoring Service to publish its log information on.</p> <p>Note: This should be different to the Client Domain.</p>
Log Server Interface(s)	<p>Drop down box.</p> <p>Click in the cell and select the server network interface(s) for the service to use to communicate with the Log Server. More than one interface may be selected.</p> <p>By default this cell is empty, in this case, all interfaces will be used by the service.</p> <p>When one or more interfaces have been selected the service will use only those interfaces listed.</p> <p>To delete an item from the list, click on its adjacent x.</p> <p>Note: When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding Log Server(s).</p>
Log Server IP 1	<p>Text box.</p> <p>Enter IP address of the Log Server that the service is connected to. See Monitoring Redundancy, on page 18.</p>
Log Server IP 2	<p>Text box.</p> <p>Enter IP address of any second Log Server that the service is using. See Monitoring Redundancy, on page 18.</p>

Table 2-1: Orbit Monitoring Service - System Settings (continued)

Setting	Description
Write Mode	<p>Drop-down box.</p> <p>Select if the service gets data from and/or sends data to the Log server:</p> <ul style="list-style-type: none"> • Send and Receive - Monitoring Service sends and receives data to/from Log Server. • Send Only - Typical multiviewer mode. The Monitoring Service sends data to Log Server. The Monitoring Service does not process log field messages from the Log Server. • Receive Only - Typical Orbit Monitoring Service mode. the service receives data from Log Server and produces any corresponding alarm messages. including alarms for categories. Category log fields are not sent back to the Log Server.
SDC-03 Enabled	<p>Yes/No check box.</p> <p>Select to enable the SDC-03 interface. See SDC-03 Interface, on page 18.</p> <p>This requires a service Stop/Start.</p>
Enable Categories	<p>Yes/No check box.</p> <ul style="list-style-type: none"> • Select to enable 'Categories' in the Monitoring Service. • Deselect to disable. <p>When disabled, the Monitoring Service will not add additional log field categories.</p> <p>This requires a service Stop/Start.</p>
Monitoring Service Purge	<p>Button.</p> <p>Click to force the Monitoring Service to remove log fields which are grayed-out - for example, because their source publisher has gone away.</p>

Client Interface Selection

Network interface selection for the service should be used to limit traffic on different networks.

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

Monitoring Redundancy

Dual-redundancy can be achieved by running two Monitoring Services, each connected to its own single Log Server.

Further resilience can be achieved if both Monitoring Services are connected to both Log Servers. This configuration does result in extra data on the 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 STATE Log Field and Category Log Field system information. Detailed log data is not available over this interface.

For information on the SDC-03 status monitoring protocol, please contact Grass Valley Support.

Save Settings Changes

Finally, to apply changes made to items on the Monitoring Service's System Settings page:

- Press the **Save Changes** button. Click **OK** on the 'Save Complete' dialog.

Alternatively, to discard changes:

- Press the **Cancel Changes** button.

Categories Page

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.

Figure 2-6 shows the Monitoring Service **Categories** web page and describes the screen controls and features.

[Categories Example](#), on page 21, shows an example of setting up a new **Category**.

Click to **Save Changes** made on this page.

Click to **Cancel Changes** made on this page.

Click to **Edit** the Category item

Click to create a **New Category** item.

Click to **Delete** the Category

List of **Categories** created

Indicates a change has been made, but not yet saved.

The screenshot shows the 'Categories' page in the Orbit Service Manager. The page has a sidebar with 'System', 'Categories', 'Headers', and 'Units'. The main content area is titled 'Categories' and includes a description: 'Categories can be used to display the 'state' of a number of other log fields. For example, where a Unit contains INPUT_1, INPUT_2 etc, a category can be used to add a new log field INPUT which contains the state of all the INPUT_n values.' Below the description are three buttons: 'Save Changes' (checked), 'Cancel Changes', and '+ New Category'. A table lists various categories with their 'Category Name', 'Target Header', and 'Edit/Delete' actions. Annotations with arrows point to these elements: 'Save Changes' (green arrow), 'Cancel Changes' (red arrow), '+ New Category' (blue arrow), 'Edit' (blue arrow), 'Delete' (red arrow), and the table (orange arrow). A red circle highlights a red dot in the 'Input Video State' row, indicating an unsaved change.

Category Name	Target Header	Edit	Delete
PTP Error	PTP_ERROR	Edit	Delete
LAN Port 1 Packet Drop	LAN_PORT_1_PKT_DRP	Edit	Delete
LAN Port 2 Packet Drop	LAN_PORT_2_PKT_DRP	Edit	Delete
SDI CRC	INPUT_SDI_ERRCNT	Edit	Delete
Temperature State	TEMP_STATE	Edit	Delete
Fan State	FAN_STATE	Edit	Delete
Input Video State	INPUT_STATE	Edit	Delete
Input Audio State	AUDIO_STATE	Edit	Delete
Input ANC State	ANC_STATE	Edit	Delete
Gateway Fault	GW_FAULT	Edit	Delete
Lan Port 1 State	LAN_1_STATE	Edit	Delete
Lan Port 2 State	LAN_2_STATE	Edit	Delete
RTP Error	RTP_ERROR	Edit	Delete
MAC Error	MAC_ERROR	Edit	Delete
FEC Error	FEC_ERROR	Edit	Delete
Input Output 1 Error	IO_1_ERROR	Edit	Delete
SPIGOT_16_STATE	SPIGOT_16_STATE	Edit	Delete
TIME_REF	TIME_REF	Edit	Delete
DEVICE_HEALTH	DEVICE_HEALTH	Edit	Delete

Category name, a human-readable name

HEADER name used by the Category

Fig. 2-6: Monitoring Service - Categories

Categories Example

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

To create a new Category:

- 1 Open the **Categories** page of the Monitoring Service.
- 2 Click **+New Category**.

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

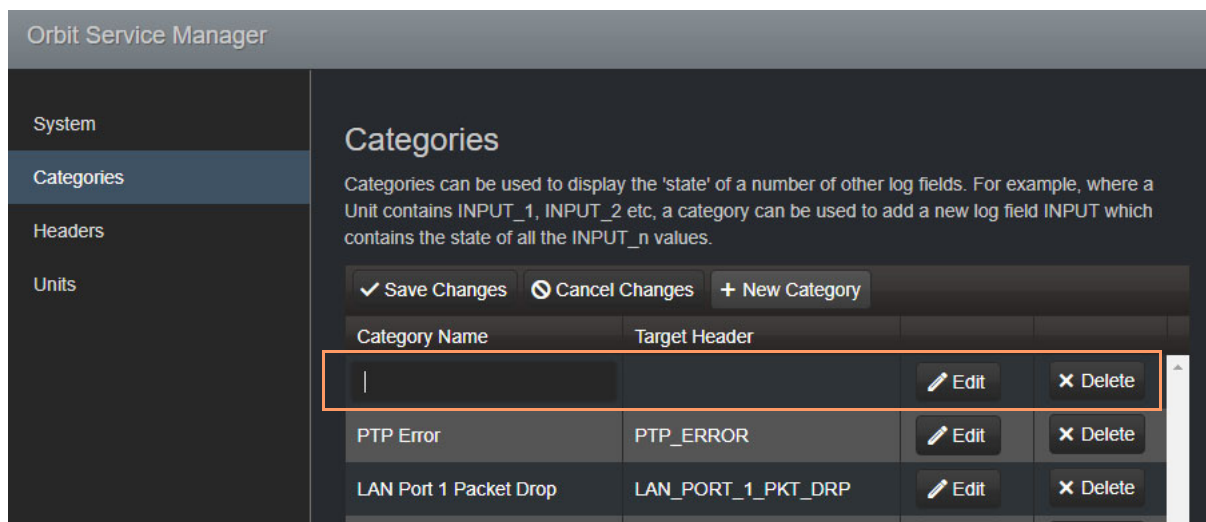


Fig. 2-7: New Blank Category Item

- 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.

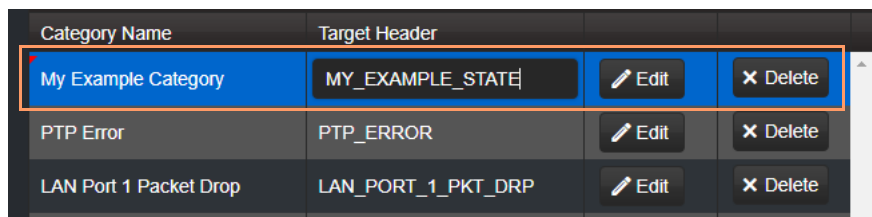


Fig. 2-8: New Category Name and Header

- 5 Click **Save Changes**.
- 6 Click **Edit** to edit the new Category item. See Figure 2-9.

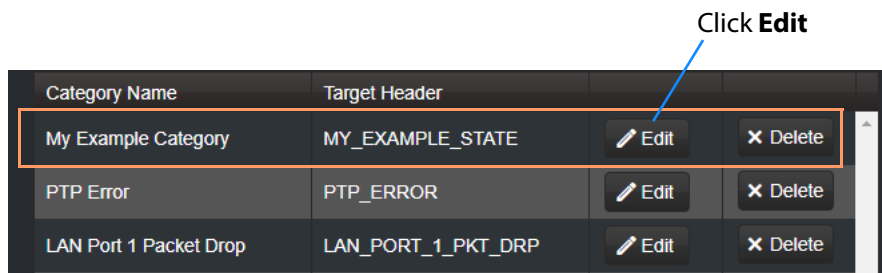


Fig. 2-9: Edit New Category

The **Edit Category** dialog is shown. See Figure 2-10.

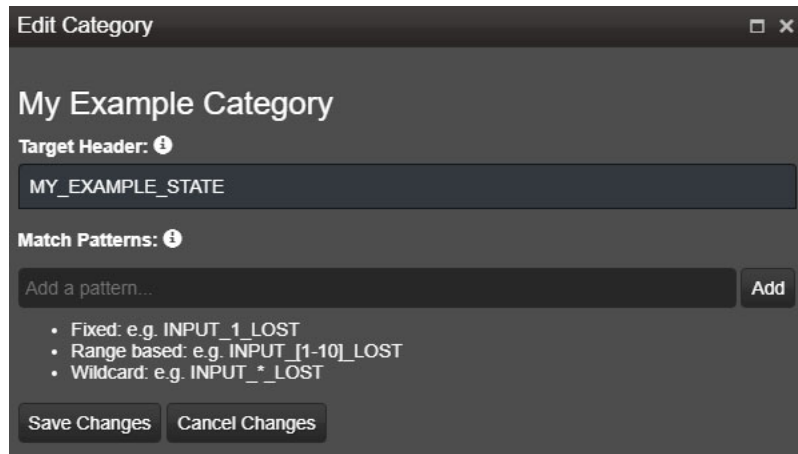


Fig. 2-10: Edit Category Dialog

- 7 Begin entering a Header **Match Pattern** text string in the **Match Patterns** text box. For example, "INPUT_".

As the text string is entered, a drop-down list appears showing all the Header names filtered on the entered text. See Figure 2-11.

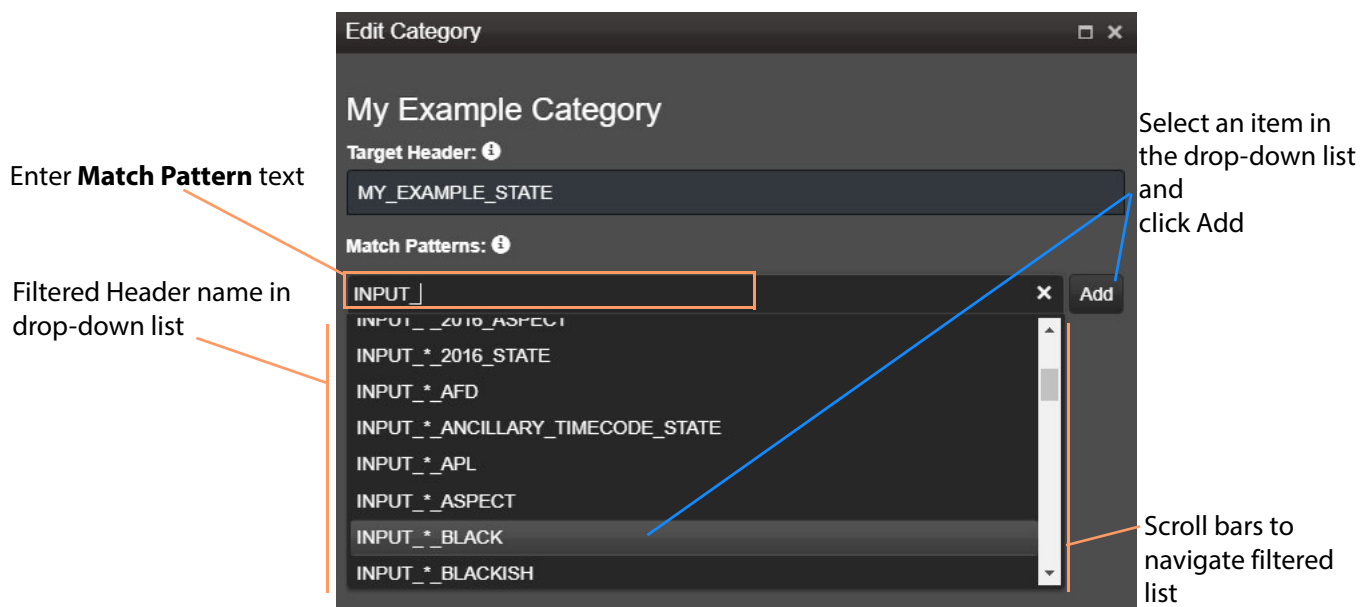


Fig. 2-11: Entering a Match Pattern

- 8 Select the **Match Pattern** from the drop-down list. For example, INPUT_*_BLACK.
- 9 If required, edit the selected Match Pattern string further. (For example, replace the wild-card '*' character with a range, INPUT_[1-8]_BLACK, to look for black detection status only on inputs 1 to 8.)
- 10 Click **Add**.

One **Match Pattern** has been set up for this **Category**. To select more **Match Patterns** in the **Category**:

- 11 Begin entering another Header **Match Pattern** text string and select the required name item in the drop-down list. See Figure 2-12.

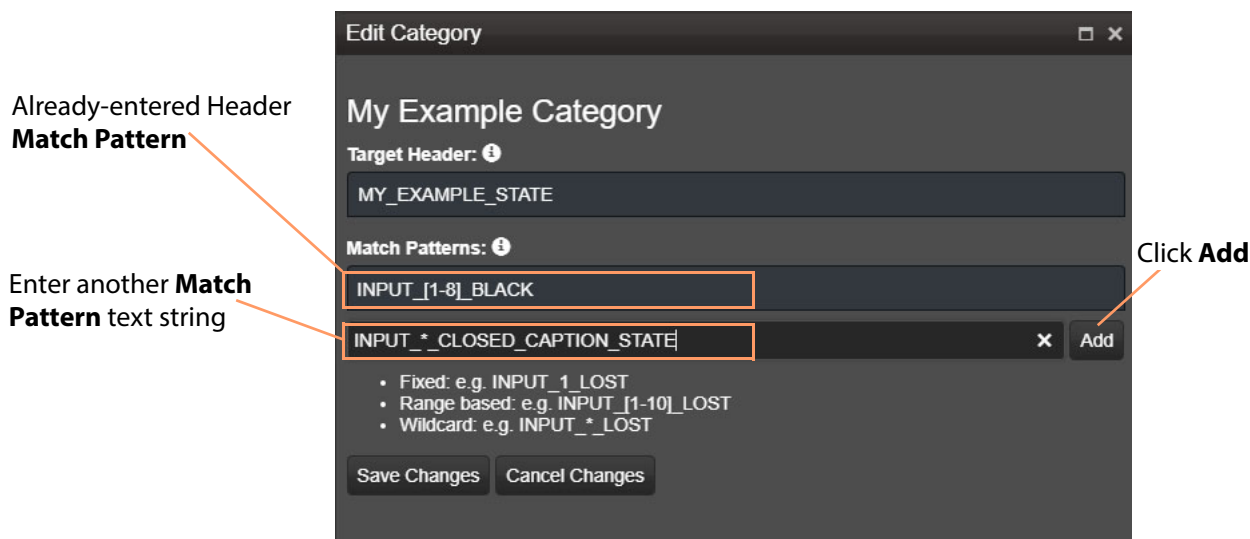


Fig. 2-12: Entering Another Header Match Pattern

12 Click **Add**.

Two Header **Match Patterns** have been set up for this **Category**. See Figure 2-13.

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

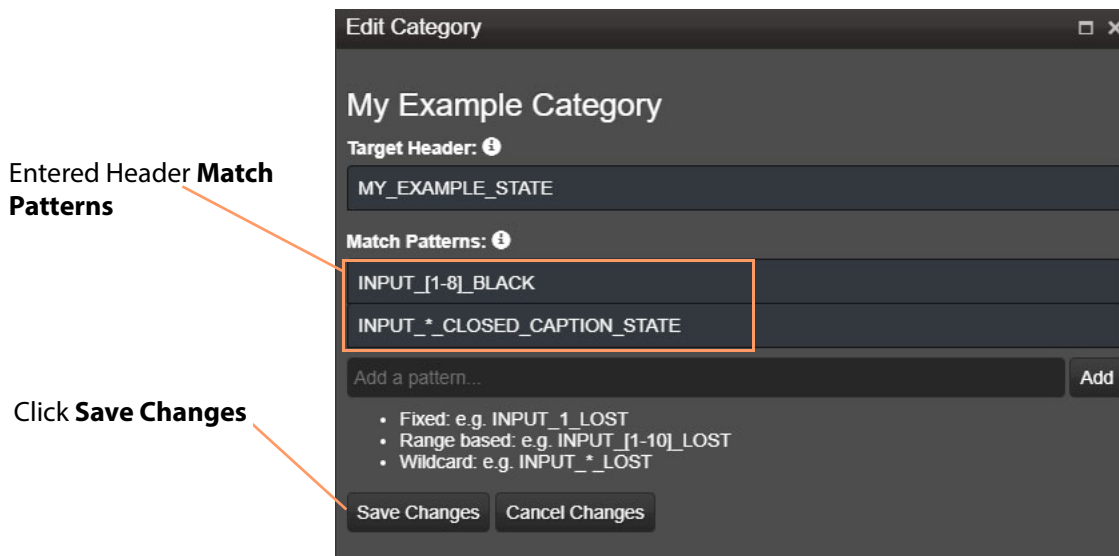
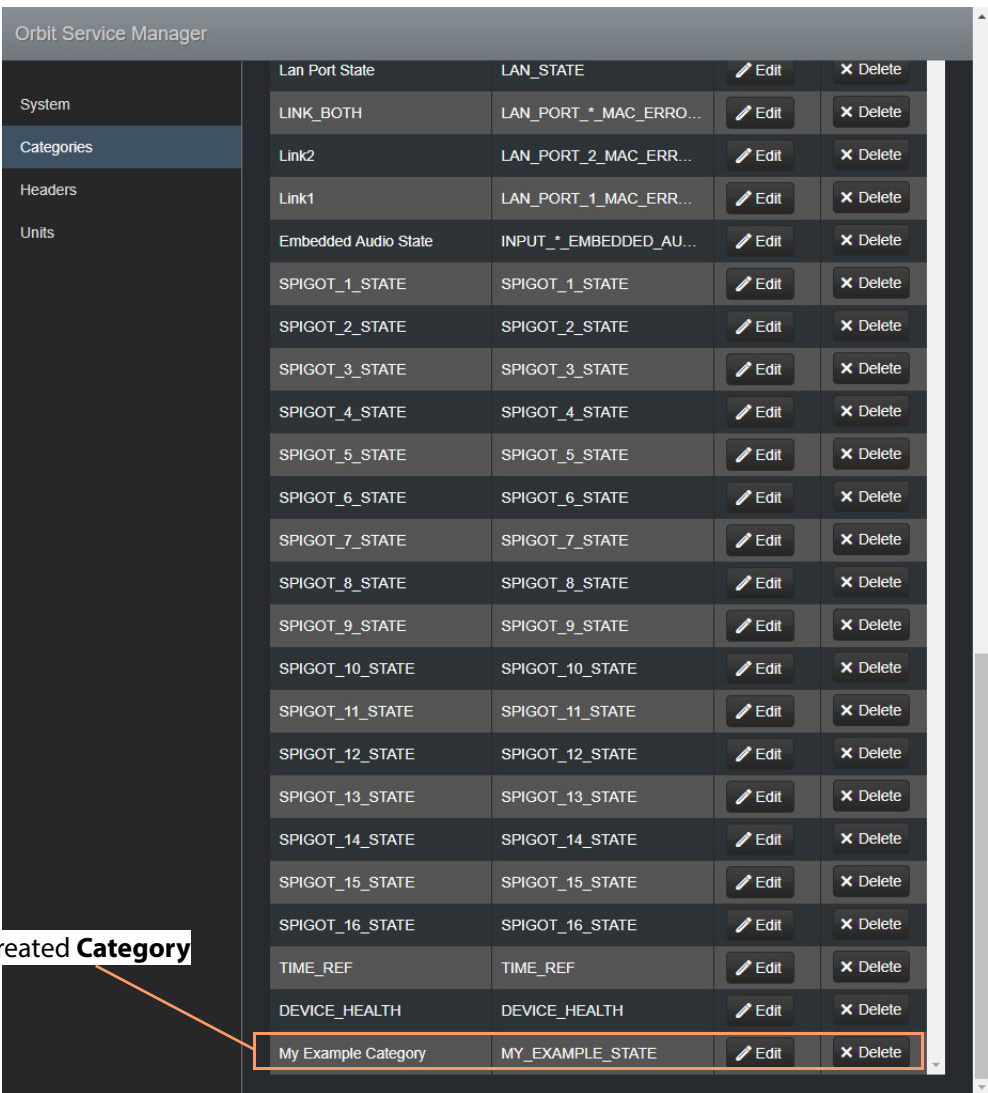


Fig. 2-13: Header Match Patterns Set Up

13 Click **Save Changes**.

The Category edited changes are saved and the dialog is closed.

The new Category appears at the bottom of the Category list in the Categories page. See Figure 2-14.



Orbit Service Manager

	Category Name	State Name	Edit	Delete
System	Lan Port State	LAN_STATE	Edit	Delete
	LINK_BOTH	LAN_PORT_*_MAC_ERROR...	Edit	Delete
Categories	Link2	LAN_PORT_2_MAC_ERR...	Edit	Delete
Headers	Link1	LAN_PORT_1_MAC_ERR...	Edit	Delete
Units	Embedded Audio State	INPUT*_EMBEDDED_AU...	Edit	Delete
	SPIGOT_1_STATE	SPIGOT_1_STATE	Edit	Delete
	SPIGOT_2_STATE	SPIGOT_2_STATE	Edit	Delete
	SPIGOT_3_STATE	SPIGOT_3_STATE	Edit	Delete
	SPIGOT_4_STATE	SPIGOT_4_STATE	Edit	Delete
	SPIGOT_5_STATE	SPIGOT_5_STATE	Edit	Delete
	SPIGOT_6_STATE	SPIGOT_6_STATE	Edit	Delete
	SPIGOT_7_STATE	SPIGOT_7_STATE	Edit	Delete
	SPIGOT_8_STATE	SPIGOT_8_STATE	Edit	Delete
	SPIGOT_9_STATE	SPIGOT_9_STATE	Edit	Delete
	SPIGOT_10_STATE	SPIGOT_10_STATE	Edit	Delete
	SPIGOT_11_STATE	SPIGOT_11_STATE	Edit	Delete
	SPIGOT_12_STATE	SPIGOT_12_STATE	Edit	Delete
	SPIGOT_13_STATE	SPIGOT_13_STATE	Edit	Delete
	SPIGOT_14_STATE	SPIGOT_14_STATE	Edit	Delete
	SPIGOT_15_STATE	SPIGOT_15_STATE	Edit	Delete
	SPIGOT_16_STATE	SPIGOT_16_STATE	Edit	Delete
	TIME_REF	TIME_REF	Edit	Delete
	DEVICE_HEALTH	DEVICE_HEALTH	Edit	Delete
	My Example Category	MY_EXAMPLE_STATE	Edit	Delete

Newly-created **Category**

Fig. 2-14: Created New Category in Category List

Headers Page

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

State Matching Rules

Numeric State Matching Rule

This rule operates on a Log Field with a numeric value. The rule derives an alarm state value (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 2-15.

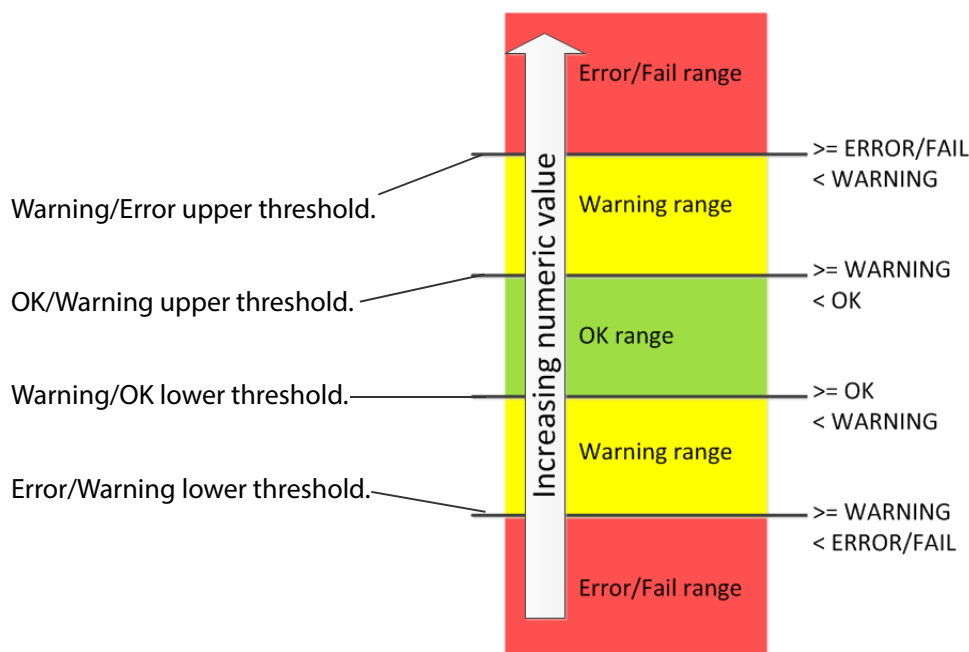


Fig. 2-15: Numeric Value Rule Thresholds

Custom numeric state matching rules can be created.

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 value (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 2-16.

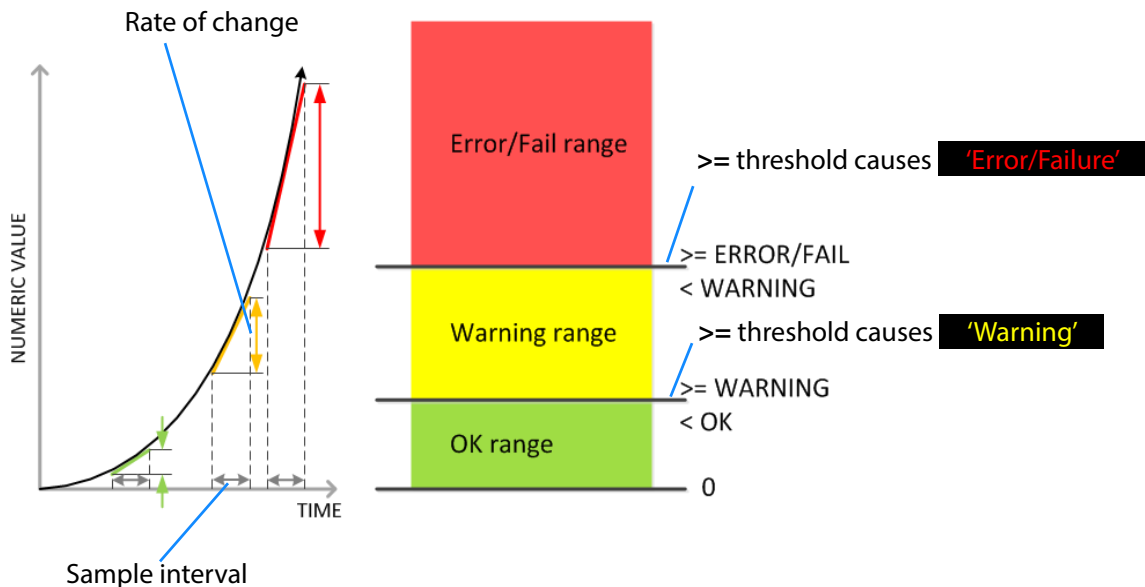


Fig. 2-16: Rate of Change Rule Thresholds

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

String State Matching Rule

This rule operates on a Log Field with text string values. The rules assign Alarm state values (OK, Warning, Error/Failure) 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 26.) 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 26.)

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 Web Page

The Headers web page defines the rules for each Header in the system.

Small red triangle indicates a change has been made, but not yet saved.

Click to **Save Changes** made on this page.

Click to **Cancel Changes** made on this page.

Click to create a **New Header** rule item.

Click to **Edit** the Header rule item.

Click to **Delete** the Category item.

List of Header rules.

Header	Title	String State	Number State	Ack Delay	
3G	3G	Default	None	-1	✕ Delete
ACTIVE_MSG	Active Unit State	None	None	-1	✕ Delete
ADDRESS	Address	Default	None	-1	✕ Delete
AES	AES	Default	None	-1	✕ Delete
AESREF	AES Ref	Default	None	-1	✕ Delete
AES_1	AES 1	Default	None	-1	✕ Delete
AES_2	AES 2	Default	None	-1	✕ Delete
AES_3	AES_3	Default	None	-1	✕ Delete
AES_4	AES_4	Default	None	-1	✕ Delete
AES_5	AES_5	Default	None	-1	✕ Delete
AES_6	AES_6	Default	None	-1	✕ Delete
AES_7	AES_7	Default	None	-1	✕ Delete
AES_8	AES_8	Default	None	-1	✕ Delete
AES_INPUT_*_TYPE	AES Input * Type	Default	None	-1	✕ Delete
AES_OUTPUT_*_TYPE	AES Output * Type	Default	None	-1	✕ Delete
AFD_CONFLICT	AFD Conflict	Default	None	-1	✕ Delete
ALL	All	Default	None	-1	✕ Delete
ALL_ERR_CNT	All Err Cnt	Default	None	-1	✕ Delete
ALL_ERROR_COUNT	All Error Count	Default	None	-1	✕ Delete
ALL_STATS	All Stats	Default	None	-1	✕ Delete

Navigation bar

Header name

Header rule title, human-readable name

String state rule used

Numeric state rule used

Total number of items

Auto-acknowledge time period

Fig. 2-17: Monitoring Service - Header Rules

Navigation

The Header rules list is presented in one or more pages, which may be navigated using the navigation bar, see Figure 2-17. The number of items per page can be set with a drop-down box and the total number of items is shown.

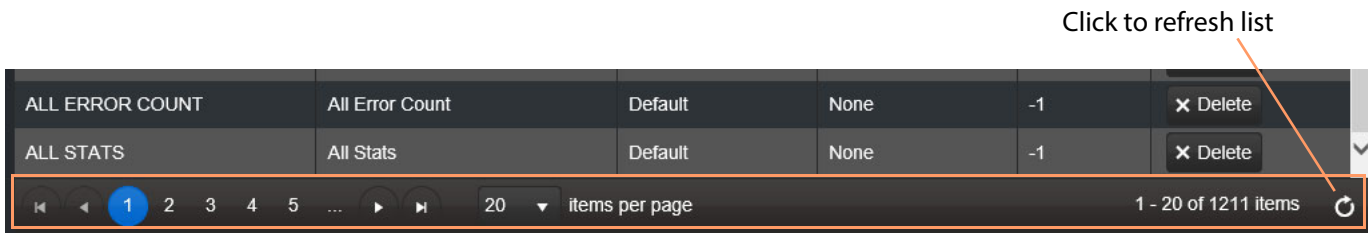


Fig. 2-18: Navigation Bar

Alphabetical Sorting

The Header and Title columns can be alphabetically sorted by clicking on the column heading. This toggles sorting A-to-Z or Z-to-A.

Click column heading to toggle A-to-Z, Z-to-A sorting of list

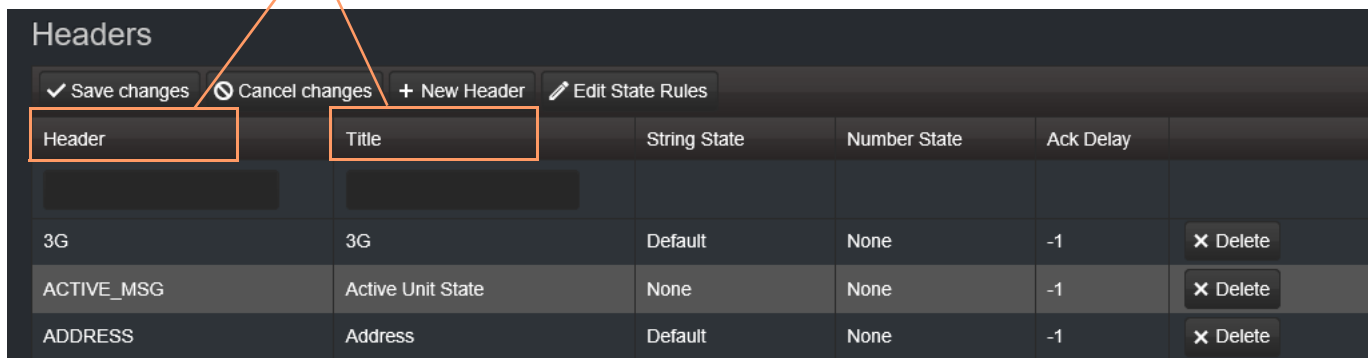


Fig. 2-19: Alphabetical Sorting List

Filtering

The list can be filtered to reduce the number of displayed items. See Figure 2-20.

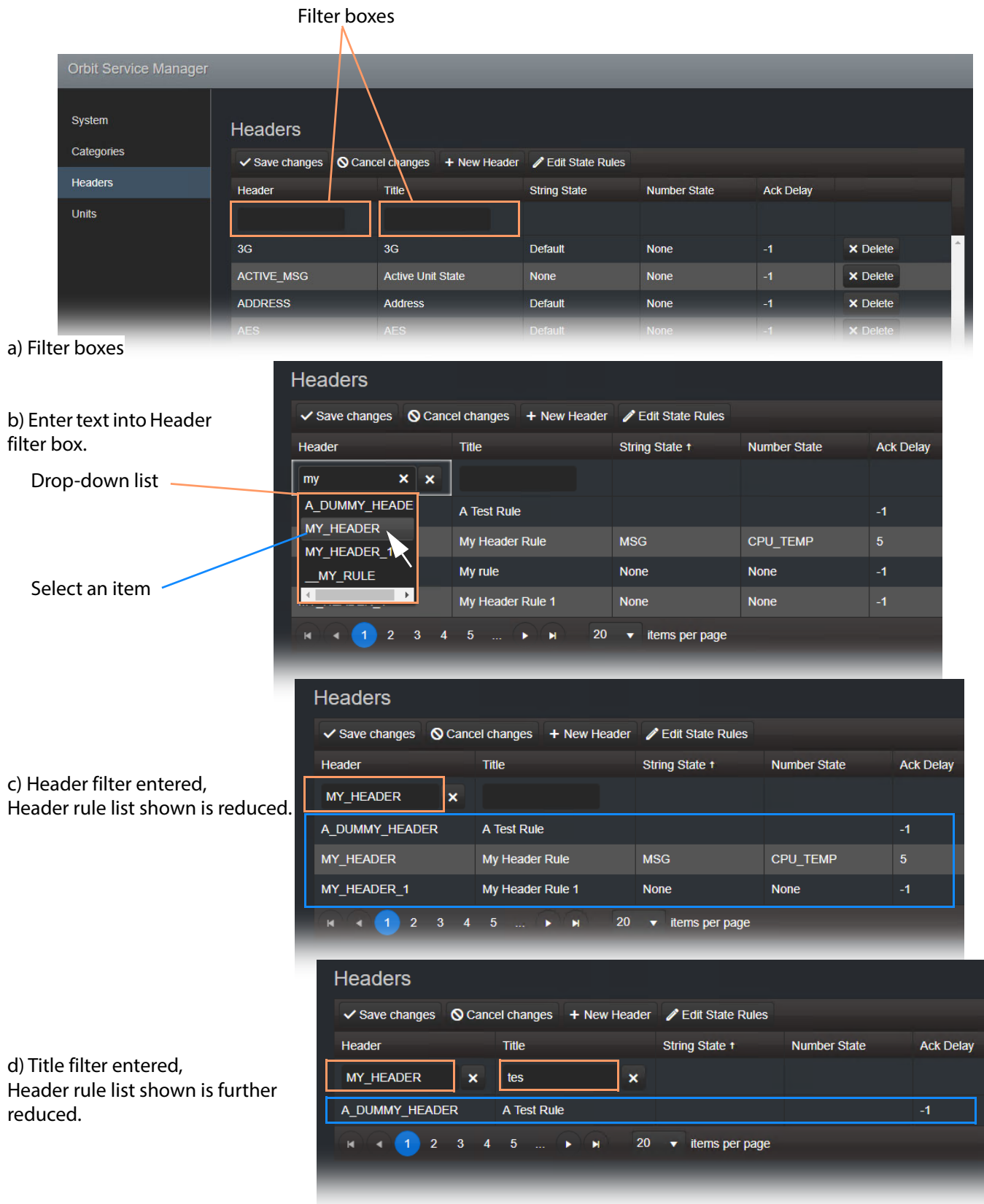


Fig. 2-20: Filtering Header Rule Items

New Header Rule

To create a new Header rule:

- 1 Open the Headers web page of the Monitoring Service.
- 2 Click **+New Header**.
- 3 Enter the Header name for the new Header rule. See Figure 2-21.

Click **+New Header**

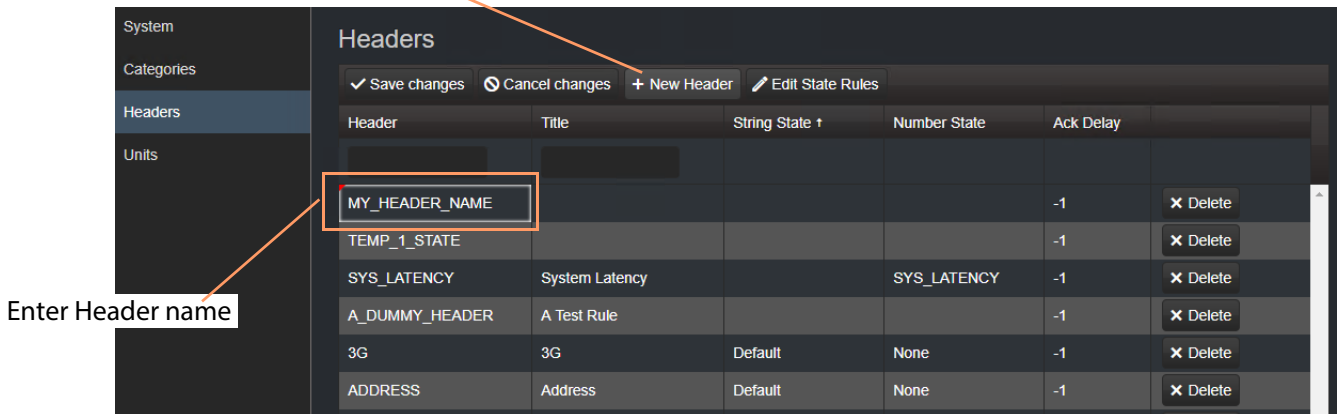


Fig. 2-21: Enter Header Name that the New Rule will Apply to.

- 4 Enter a Header rule name (title) for the new Header rule. See Figure 2-22.

Enter Header rule title,
a human-readable text string

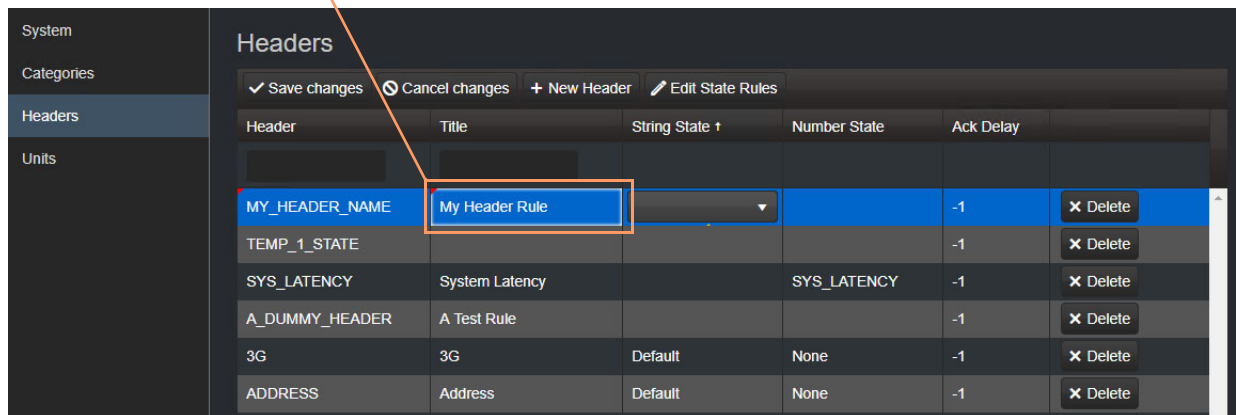


Fig. 2-22: Enter a Name (Title) for the Header Rule

- 5 Select a **String State** rule to use (and/or a **Number State** rule). See Figure 2-23.

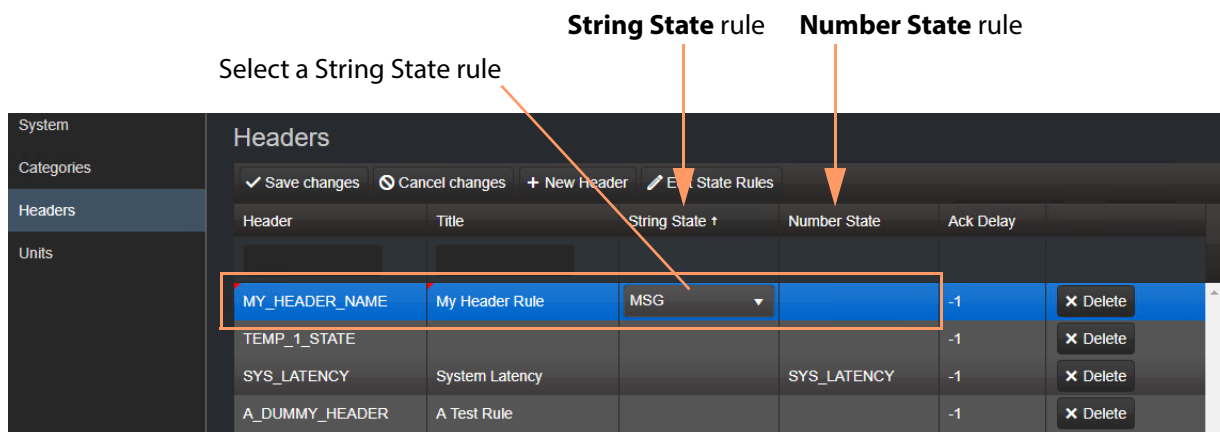


Fig. 2-23: Select a State Rule to Use (String or Number)

Note: Custom state rules (**String State** or **Numeric State**) can be set up. See [State Rules](#), on page 33.

- 6 If an auto-acknowledge is required, set the timeout period (**Ack Delay** figure in seconds, -1 = no auto-acknowledge). See Figure 2-24.

Select an auto-acknowledge **Ack Delay** (seconds) (-1 = no auto-acknowledge)

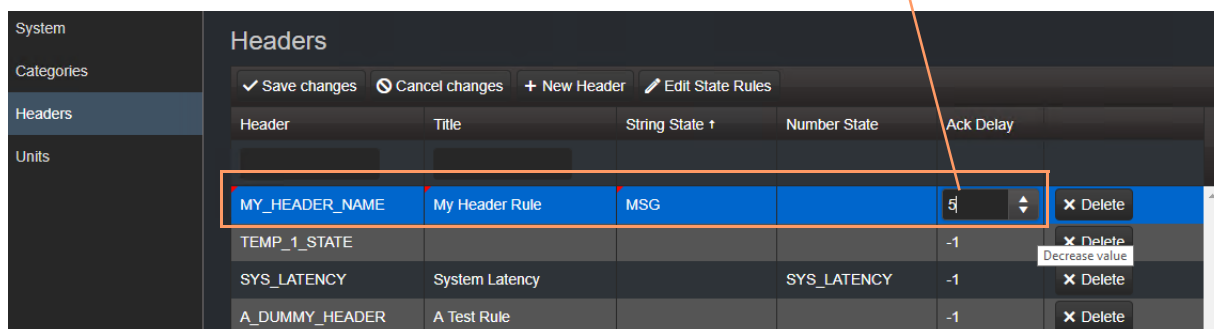


Fig. 2-24: Select an Ack Delay Figure (seconds)

- 7 Click **Save Changes**.
A new Header rule has been created.

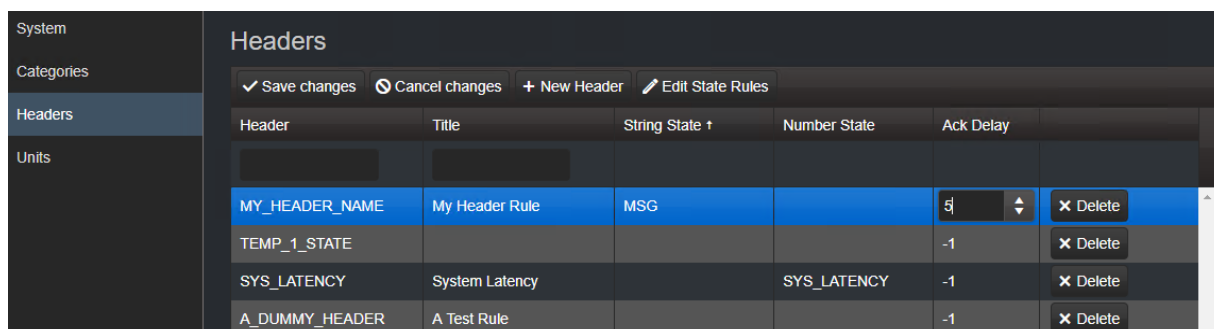


Fig. 2-25: New Header Rule Created

State Rules

The Monitoring Service has some default state rules already defined for processing Header values. Custom state rules can be generated on the Headers web page and then used in any Header rule. A custom rule for String Matching, Number matching or for processing Rate of Change can be generated.

Edit a State Rule

To edit a state rule:

- 1 Click **Edit State Rules** in the Headers web page, see Figure 2-26.
- 2 The **Edit States** dialog is shown, see Figure 2-27.

Click to **Edit State Rules** to edit or create state rules

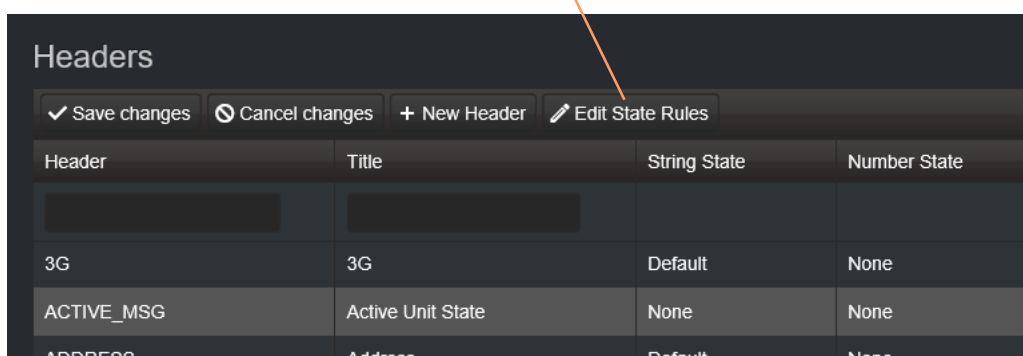
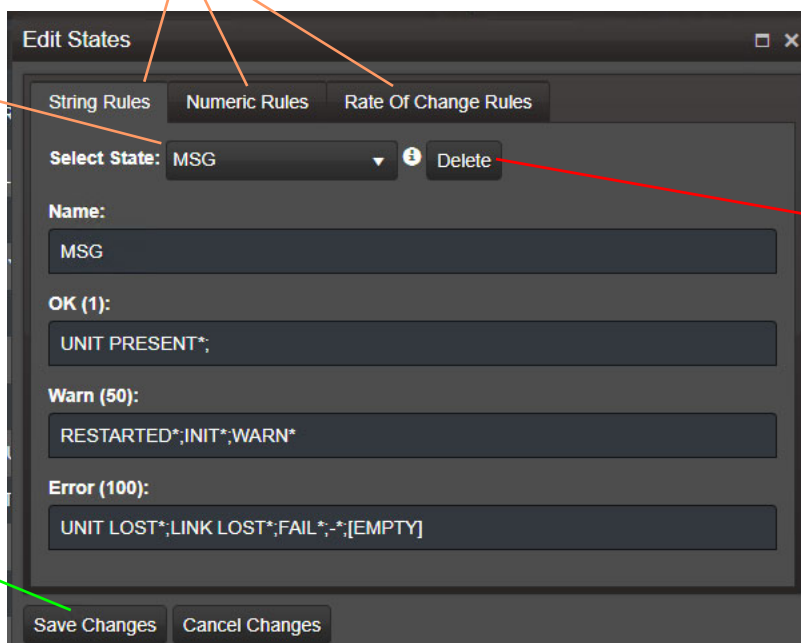


Fig. 2-26: Edit States Button

Tabs for selecting type of rule - 'String', 'Numeric' and 'Rate Of Change'

Select State drop-down box



Click to **Delete** the selected state rule

Save Changes button

Fig. 2-27: Edit States Dialog

- 3 Select the type of state rule to edit by clicking on a tab. (Tabs are: 'String' Rules, 'Numeric' Rules, or 'Rate Of Change' Rules')
- 4 Select the state rule to edit from the **Select State** drop-down list. See Figure 2-28.

Select State
drop-down list

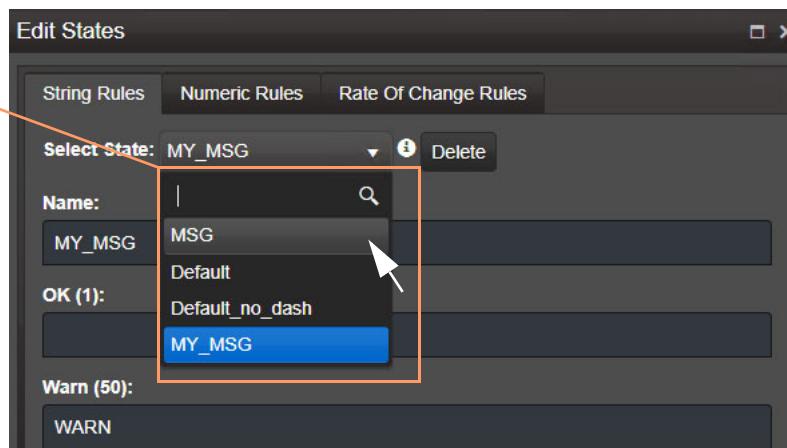


Fig. 2-28: Select State

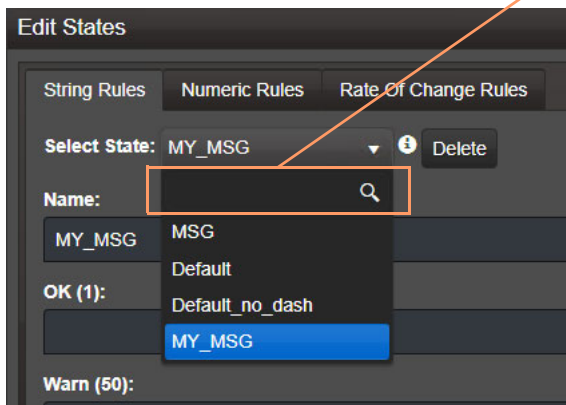
- 5 Edit the settings see:
 - [String State Rule Settings](#), on page 36;
 - [Numeric State Rule Settings](#), on page 37; or
 - [Rate Of Change State Rule Settings](#), on page 38).
- 6 Click **Save Changes**.

Create a New State Rule

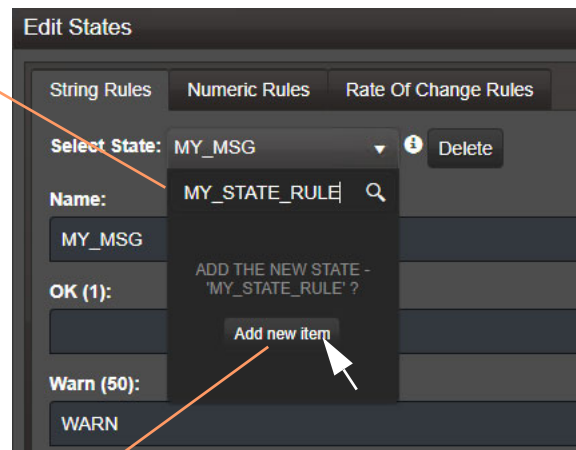
To create a new state rule:

- 1 Click **Edit State Rules** in the Headers web page.
The **Edit States** dialog is shown.
- 2 Select the type of state rule to edit by clicking on a tab.
(Tabs are: '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.
Orbit detects that this is a new name. See Figure 2-29a.
- 4 Click **Add new item** in the drop-down list. See Figure 2-29b.
The new name is added into the drop-down list. See Figure 2-29c.
- 5 Select the new **State Rule** item in the drop-down list by clicking on it.
A new blank **State Rule** is created and shown in the dialog. See Figure 2-29d.

Enter a new **State Rule** name

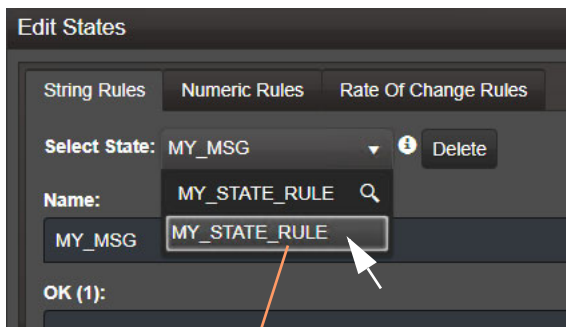


a) Enter new **State Rule** name



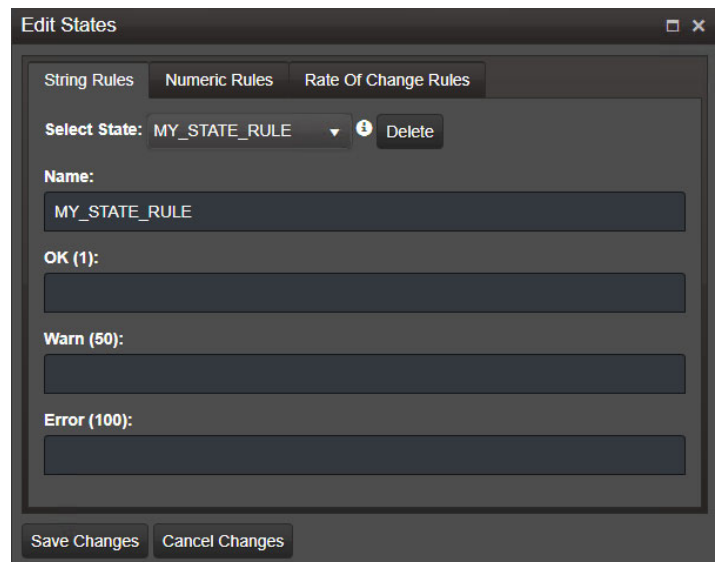
b)

Click **Add new item**



c) Name added to drop-down list

Select new item



d)

Fig. 2-29: New State Name

- 6 Edit the settings, see:
 - [String State Rule Settings](#), on page 36;
 - [Numeric State Rule Settings](#), on page 37; or
 - [Rate Of Change State Rule Settings](#), on page 38).
- 7 Click **Save Changes**.

State Rule Settings

A **State Rule** describes how to derive an Alarm state from a log message. A message's Header value is processed and some 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

Text rules are entered for Alarm states 'OK', 'Warning', and 'Failure/Error'. The rules are semicolon-separated lists of text conditions. (See [String State Matching Rule](#), on page 26.)

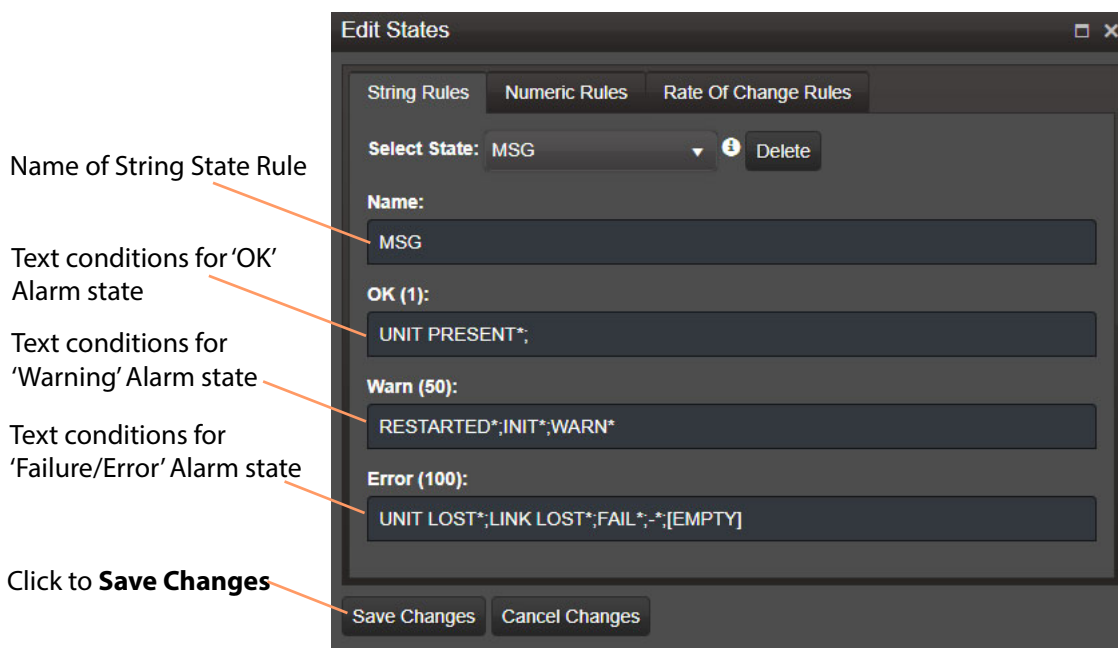


Fig. 2-30: String State Rule Tab

- 1 Enter the text conditions for each Alarm state.
- 2 Click **Save Changes**.

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', and 'Failure/Error') to value ranges/bands. These are specified with threshold values. (See [Numeric State Matching Rule](#), on page 25, for a description.)

See Figure 2-31.

Name of Numeric State Rule

Threshold values:

- below which **'Failure/Error'**
- below which **'Warning'**
- at or above which **'Warning'**
- at or above which **'Failure/Error'**

Fig. 2-31: Numeric State Rule Tab

- 1 Enter the threshold value conditions for each Alarm state.
- 2 Click **Save Changes**.

Rate Of Change State Rule Settings

Rate of Change rules have parameters which map Alarm states ('OK', 'Warning', and 'Failure/Error') to a changing value. These are specified with a sample interval (a duration) and threshold values. (See [Rate of Change State Matching Rule](#), on page 25, for a description.)

See Figure 2-31.

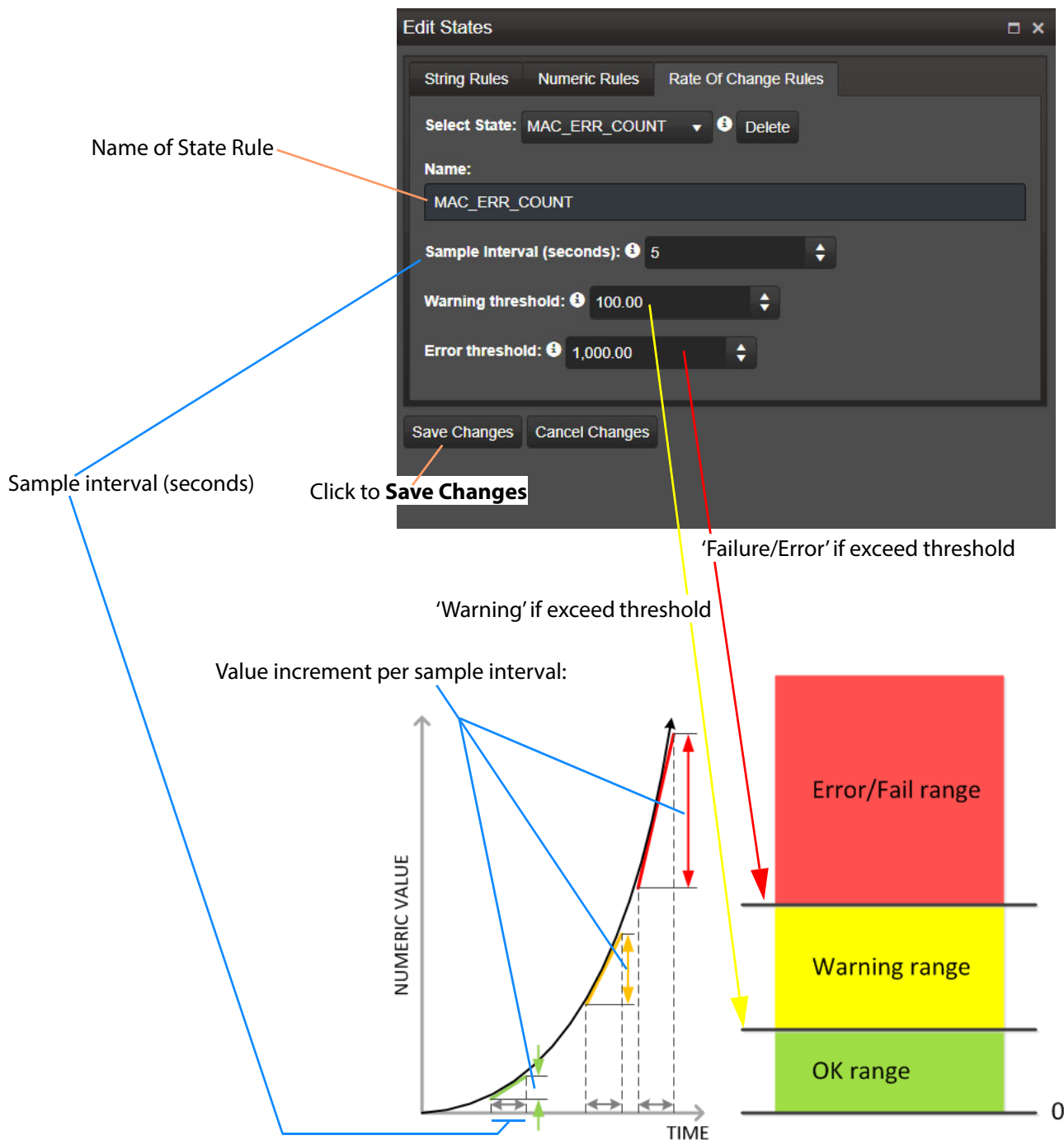


Fig. 2-32: Rate Of Change State Rule Tab

- 1 Enter the:
 - sample interval;
 - Warning threshold value; and
 - Error threshold value.
- 2 Click **Save Changes**.

State Rule Defaults

This screenshot shows the configuration for the 'Default' state rule under the 'String Rules' tab. The 'Select State' dropdown is set to 'Default'. The 'Name' field contains 'Default'. The 'OK (1):' field is empty. The 'Warn (50):' field contains the string 'WARN*;INIT*;NONE*;UNKNOWN*;-'. The 'Error (100):' field contains the string 'FAIL*;LOST*;ERR*'. There are tabs for 'String Rules', 'Numeric Rules', and 'Rate Of Change Rules' at the top.

a) String Rules

This screenshot shows the configuration for 'Custom State 2' under the 'String Rules' tab. The 'Select State' dropdown is set to 'Custom State 2'. The 'Name' field contains 'Custom State 2'. The 'OK (1):' field is empty. The 'Warn (50):' field contains the string 'WARN*;LO*;INIT*;NONE*;UNKNOWN*'. The 'Error (100):' field contains the string 'FAIL*;LOST*;ERR*'. There are tabs for 'String Rules', 'Numeric Rules', and 'Rate Of Change Rules' at the top.

Custom state rules Custom State 2 to 20 are available for editing and use.

This screenshot shows the configuration for the 'Default' state rule under the 'Numeric Rules' tab. The 'Select State' dropdown is set to 'Default'. The 'Name' field contains 'Default'. There are four threshold settings: 'Error/Warning lower threshold' at 25.00, 'Warning/Ok lower threshold' at 40.00, 'Ok/Warning upper threshold' at 60.00, and 'Warning/Error upper threshold' at 75.00. There are tabs for 'String Rules', 'Numeric Rules', and 'Rate Of Change Rules' at the top.

b) Numeric Rules

This screenshot shows the configuration for the 'Default' state rule under the 'Rate Of Change Rules' tab. The 'Select State' dropdown is set to 'Default'. The 'Name' field contains 'Default'. There are three settings: 'Sample Interval (seconds)' at 5, 'Warning threshold' at 100.00, and 'Error threshold' at 1,000.00. There are tabs for 'String Rules', 'Numeric Rules', and 'Rate Of Change Rules' at the top.

c) Rate of Change Rules

This screenshot shows the configuration for the 'SDI_ERR' state rule under the 'Rate Of Change Rules' tab. The 'Select State' dropdown is set to 'SDI_ERR'. The 'Name' field contains 'SDI_ERR'. There are three settings: 'Sample Interval (seconds)' at 5, 'Warning threshold' at 100.00, and 'Error threshold' at 1,000.00. There are tabs for 'String Rules', 'Numeric Rules', and 'Rate Of Change Rules' at the top.

Fig. 2-33: Default State Rules

Units Page

All the available devices/units (in a domain) are listed on the **Units** page. System devices/units available to a Monitoring Service are defined by the RollCall+ domain used by the Monitoring Service and the devices/units. (See [System Settings Page](#), on page 15, 'Client Domain' setting.)

Figure 2-34 shows the **Units** page.

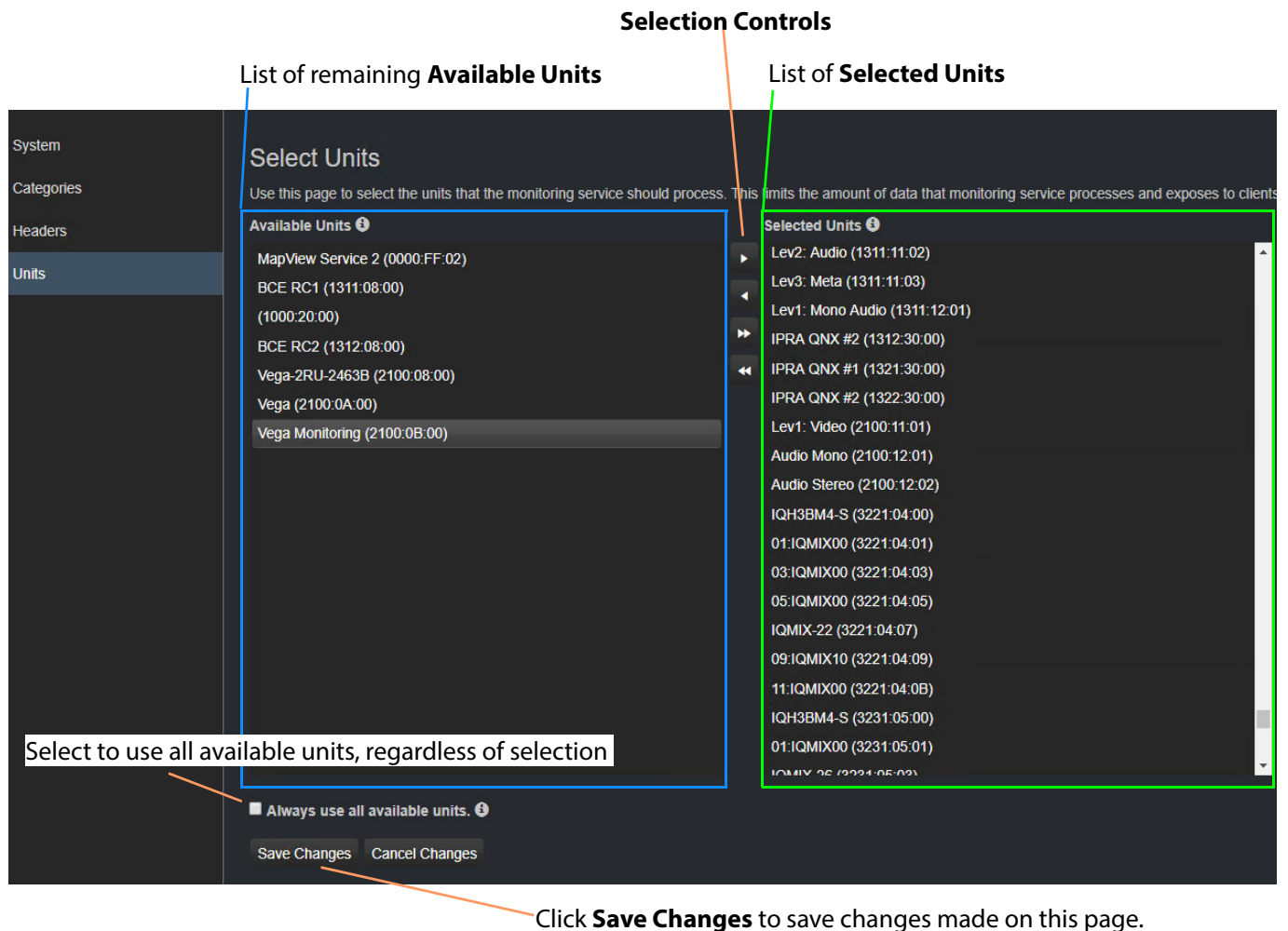


Fig. 2-34: Units Page

A selected sub-set of the available units (**Selected Units** in Figure 2-34) are processed by the Monitoring Service. All the available devices can be used, if required (select **Always use all available units** in Figure 2-34).

Note: Using a sub-set of the available units will reduce the amount of data that the Monitoring Service processes and exposes to clients.

Selected Units List

To add one or more units to a **Selected Units** list:

- Select one or more units (CTRL-click) in the **Available Units** list and click the Right-arrow button in the **Selection Controls**.

To remove one or more units from the **Selected Units** list:

- Select the unit item(s) and click the Left-arrow control.

To move all items, use the double-arrow controls.

Use All Available Units

To use all available units:

- Select **Always use all available units**.

If **Always use all available units** is:

- Deselected - Monitoring Service only processes Log Fields from **Selected Units**.
- Selected - Monitoring Service processes Log Fields from all available units (ignoring the **Selected Units** list).

3 MapView Service

Chapter contents:

MapView Service

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Purpose

The **MapView Service** runs on a server computer and performs some functions for an Orbit MapView client project.

An Orbit MapView project's client screen(s) typically comprise a soft control/monitoring user panel(s) running on a client computer. The **MapView Service** performs any server-side functionality to support the Orbit MapView project; such server-side processing can continue without the client application running.

Key **MapView Service** functions are:

- **Alarm State** - Provide 'alarm state' information to a client MapView project for any:
 - 'Link state' of the MapView project screen hierarchy.
 - Exception Monitoring widgets in screens.
 - User folder status in the Network View tree-view pane.
- **Remote Values** - Hold values based on RollCall commands which can be used in a MapView project.
- **Server-side Functionality** - Carry out any server-side functionality for a MapView project.

A GIT repository may be used to hold Orbit projects. This ensures the same project (and same version of the project) is running throughout an Orbit system.

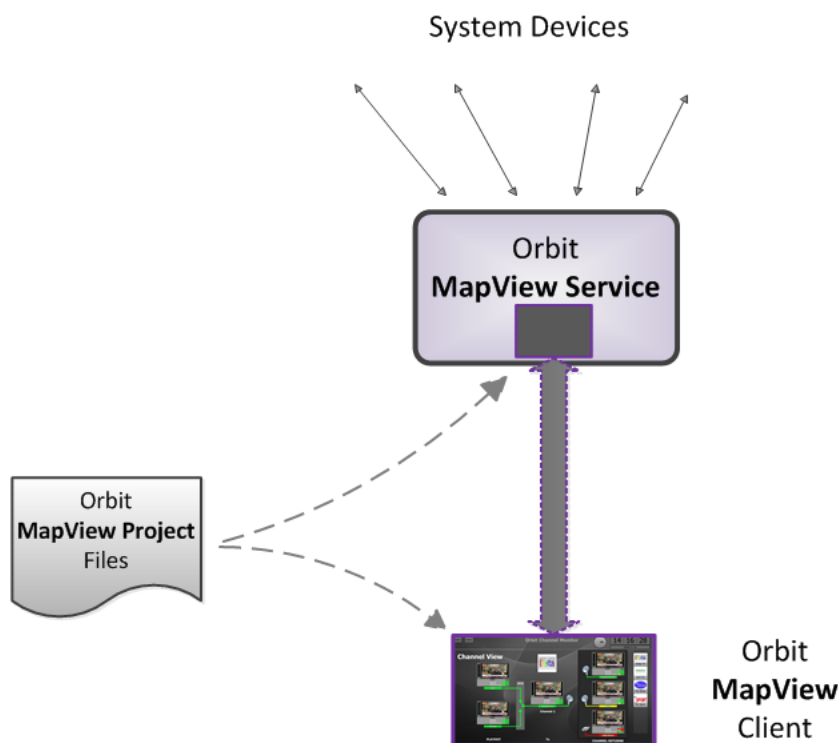


Fig. 3-1: Orbit MapView Service

Link State

The service evaluates the alarm state of *all* MapView screens of a designated project. Typically, MapView screens are linked in some hierarchy. The service publishes overall, live project 'Link state' alarm information to the client MapView project. This enables any on-screen 'linking' icons (i.e. widgets using a Link Behaviour which link to other screens) to actively indicate the overall state of the screen they link to. (For example, a 'linking' icon may show a flashing red border to indicate an error state in its 'linked-to' monitoring screen.)

It is important for the MapView service and MapView clients to be using the *same* version of the *same* project.

CAUTION To ensure that the 'state' of all the 'Links' in a MapView project are correctly shown on a screen, the MapView Service and the Orbit Client(s) must be using the *same* version of the *same* MapView project.
If versions are different, then grayed-out links on-screen may be shown.

Remote Values

The user can define a list of variables for the MapView Service to hold. These **Remote Values** are stored by the MapView Service and are based on RollCall commands. The values persist and will, for example, survive a server reboot or a MapView project reopening/change. The values can be written to or read by an Orbit MapView project screen using a RollCall+ Orbit Behaviour.

On a MapView project, **Remote Values** may be used to bind to MapView 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 MapView Service itself. An example application for this is:

- User-defined RollCall+ commands can be created. The MapView project can issue these via a RollCall+ 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 MapView Service carries out server-side functionality defined in an Orbit MapView project in Global files. This processing runs even without the client project running. The Global files are defined as part of the MapView Project, but will run on the server.

It is important for the MapView service and MapView clients to be using the *same* version of the *same* project.

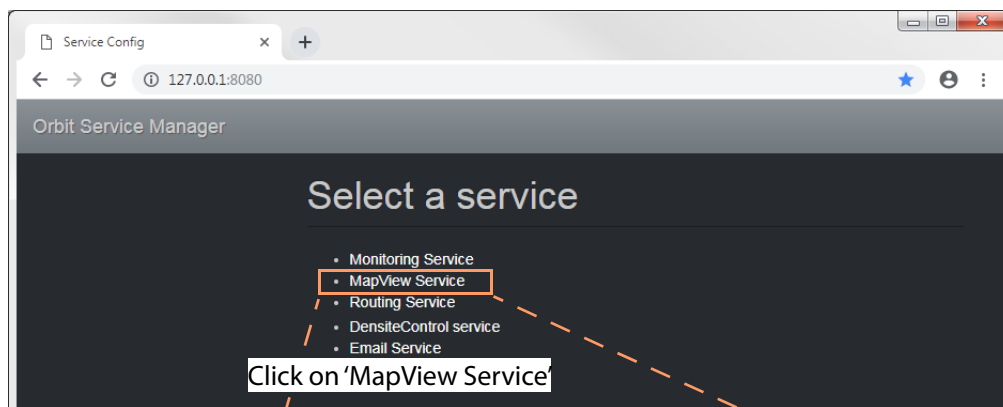
Configuration Pages

Access the MapView Service web page from the Orbit Service Manager main screen (see Figure 3-2); or access it directly in a web browser at the web address <IP_Address>:<IP_Port>/rollmap/ (for example, <http://127.0.0.1:8080/rollmap/>).

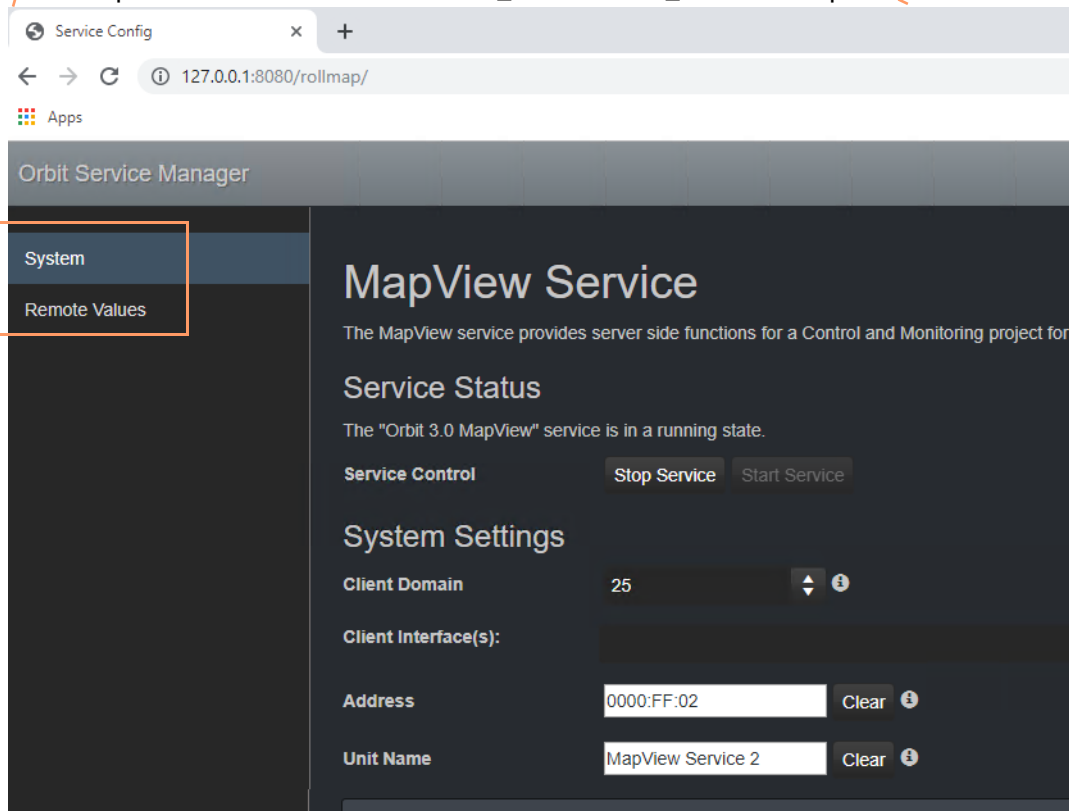
The web page contains two side-tabs:

- System. (See [System Settings](#), on page 47.)
- Remote Values. (See [Remote Values](#), on page 50.)

Orbit Services Manager main screen



MapView Service main screen at <IP_Address>:<IP_Port>/rollmap/



Side-tabs:

- System.
- Remote Values

Fig. 3-2: Orbit Services - MapView Service

System Settings

Table 3-1 below describes the System Settings of the MapView Service configuration web page of Figure 3-3.

The screenshot displays the 'MapView Service' configuration page within the 'Orbit Service Manager'. The page is divided into several sections:

- Service Status:** Indicates the service is in a running state.
- Service Control:** Includes 'Stop Service' and 'Start Service' buttons.
- System Settings:**
 - Client Domain:** Set to 25.
 - Client Interface(s):** A dropdown menu.
 - Address:** Set to 0000:FF:02, with a 'Clear' button.
 - Unit Name:** Set to MapView Service 2, with a 'Clear' button.
- Project Settings:**
 - Repository Type:** Set to Git Repository.
 - Repository Path:** Set to http://172.19.79.9:8081/Bonobo.Git.Server/SLP_MapView.git, with a 'Clear' button.
 - Status:** The repository is OK.
 - Startup Delay (seconds):** Set to 20.

At the bottom of the configuration area, there are two buttons: 'Save Changes' and 'Cancel Changes'.

Press **Save Changes** to apply changes made to setting items on the configuration page.
Press **Cancel Changes** to discard changes to settings.

Fig. 3-3: MapView Service - System Settings

Table 3-1: Orbit MapView Service - Settings

Setting	Description
Service Status	<p>Indicates if the service is running or stopped.</p> <p>The MapView Service is configured to automatically start when the host machine is restarted. After installation if the host machine is not restarted the service should be started manually.</p>
Service Control: Stop Service Start Service	<p>Buttons.</p> <p>Click to stop the service.</p> <p>Click to start the service.</p>
System Settings: Client Domain	<p>Text box.</p> <p>Enter a RollCall domain number that the MapView Service is to use.</p> <p>The Client Domain should be set to match the RollCall domain used by the Orbit Project to be served by the MapView Service.</p> <p>The valid range is 1 to 232.</p> <p>See RollCall Domain, on page 89 for information on Domains.</p> <p>Note: If the Orbit Client and Orbit Service are on different domains they cannot communicate and see each other's data.</p>
Client Interfaces	<p>Drop down box.</p> <p>Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected.</p> <p>By default this cell is empty, in this case, all interfaces will be used by the service.</p> <p>When one or more interfaces have been selected the service will use only those interfaces listed.</p> <div data-bbox="724 1312 1441 1630" data-label="Image"> </div> <div data-bbox="724 1682 1399 1798" data-label="Image"> </div> <p>To delete an item from the list, click on its adjacent x.</p> <p>Note: When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding Orbit Client(s).</p>

Table 3-1: Orbit MapView Service - Settings (continued)

Setting	Description
Address	<p>Text box.</p> <p>Enter RollCall address to use for the MapView Service. This will uniquely identify the service in the Orbit system. This will be used for publishing the service's remote values.</p> <p>See RollCall Address, on page 89 for information about RollCall address.</p> <p>The user is free to define the RollCall addresses for a system.</p>
Unit Name	<p>Text box.</p> <p>Enter a name for the MapView Service, to be a human-readable identifier for the service which appears in the Orbit client Network View.</p>
Project Settings:	<p>The MapView Service requires access to the Orbit MapView project that it will serve. Project files may be stored in some shared storage area or in a repository which both the Orbit service and the Orbit client have access to.</p>
Repository Type	<p>Drop-down box.</p> <p>Select the type of shared storage area where the Orbit MapView project is held:</p> <ul style="list-style-type: none"> • Local Folder - a folder containing the project files which is accessible from the server computer. The service watches the folder and automatically picks up any project changes. • Git Repository - a version control system repository holding the project files. The repository is polled for project changes, which are automatically picked up.
Repository Path	<p>Text box.</p> <p>Enter the path to the project files folder in shared storage area or repository.</p> <p>For example:</p> <ul style="list-style-type: none"> • C:\Orbit_Projects\MapView_Projects\Live_Studio_1 • http://172.19.10.11:8081/Bonobo.Git.Server/Live_Studio_1
Status	<p>Status information, read-only.</p> <p>Indicates the status of the service's connection to the MapView project files.</p>
Startup Delay (seconds)	<p>Text box.</p> <p>Enter a delay (in seconds) from the start-up of the service to when it begins to publish data onto the domain.</p> <p>This is used for dual-redundant use-cases, to give a freshly-started MapView Service time calculate all current 'states'.</p> <p>(This prevents a newly-starting service from publishing initial start-up data values to a system.)</p>

Remote Values

The **Remote Values** defined in the MapView 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 MapView Service. A value for each user-defined RollCall+ command is stored by the MapView Service.

Click on the **Remote Values**' side-tab to see the **Remote Values** page which holds a list of 'Remote Value' items. See Figure 3-4.

Press **Save Changes** to apply user changes to Remote Value items on the page.

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

Click **+New** to create a new Remote Value item.

Click to **Delete** an item

List of **Remote Value** items

Command Number	Description	Initial Value	Current Value	Type	
2000	My Test Command	73	5	Int	✕ Delete
2001	My Test String	OK	2000	String	✕ Delete
2002	My Test Boolean	True	True	Boolean	✕ Delete
2003	My Test Float	12.5	12.5	Float	✕ Delete

Click **Refresh Current Values** to refresh all current values to their initial value.

Click **Reset Current Values** to set all current values to their initial value.

Fig. 3-4: MapView Service - Remote Values List

New Remote Value

To create a new **Remote Value**:

- 1 Open the MapView Service web page and go to the **Remote Values** tab.
- 2 Click **+New**.
A new **Remote Value** item appears in the list.

Current Values

The following remote values have been defined. Note: Connect to these in Orbit using a RollCall+ behaviour with the address set to that of the MapView service.

Save changes
 Cancel changes

Command Number	Description	Initial Value	Current Value	Type	
2004					<input type="button" value="X Delete"/>
2000	My Test Command	73	5	Int	<input type="button" value="X Delete"/>
2001	My Test String	OK	2000	String	<input type="button" value="X Delete"/>
2002	My Test Boolean	True	True	Boolean	<input type="button" value="X Delete"/>
2003	My Test Float	12.5	12.5	Float	<input type="button" value="X Delete"/>

Fig. 3-5: New Remote Value Item

- 3 Enter a new 'Command Number'. (**Note:** This must be unique for this MapView Service.)
For example, '2004'.
- 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.
- 6 From the drop-down list, select the type of value that is stored by the RollCall+ command (text string, integer number, logical Boolean, or floating point number).
For example, select 'Int' for integer type.

Command Number	Description	Initial Value	Current Value	Type	
2004	My Remote Value	1		Int	<input type="button" value="X Delete"/>
2000	My Test Command	73	5	String	<input type="button" value="X Delete"/>
2001	My Test String	OK	2000	Int	<input type="button" value="X Delete"/>
2002	My Test Boolean	True	True	Boolean	<input type="button" value="X Delete"/>
2003	My Test Float	12.5	12.5	Float	<input type="button" value="X Delete"/>

Fig. 3-6: Selecting Remote Value Type from Drop-Down List

- 7 Click **Save Changes**.

The following remote values have been defined. Note: Connect to these in Orbit using a RollCall+ behaviour with the address set to that of the MapView service.

Save changes
 Cancel changes

Command Number	Description	Initial Value	Current Value	Type	
2004	My Remote Value	1		Int	<input type="button" value="X Delete"/>
2000	My Test Command	73	5	Int	<input type="button" value="X Delete"/>
2001	My Test String	OK	2000	String	<input type="button" value="X Delete"/>
2002	My Test Boolean	True	True	Boolean	<input type="button" value="X Delete"/>
2003	My Test Float	12.5	12.5	Float	<input type="button" value="X Delete"/>

Fig. 3-7: New Remote Value Item

Exercising a Remote Value

Once a user-defined **Remote Value** is set up on the MapView Service, a client MapView project screen can read from or write to the values via a RollCall+ command; this uses an Orbit RollCall+ Behaviour with the MapView Service's RollCall Address and the corresponding command number.

On the MapView **Remote Values** web page, all the displayed 'Current Values' can be refreshed and updated by clicking **Refresh Current Values**.

The example below uses a simple MapView project to display and to change a value which is stored as a Remote Value.

MapView Project

The simple MapView project screen contains a 'count value'. The screen is designed so that a new 'count value' can be entered into the on-screen text box, or the value can be incremented or zeroed by clicking an on-screen button. See Figure 3-9.

The **Remote Value** already created with RollCall+ command number 2004 is used (from [New Remote Value](#), on page 51). The on-screen 'count value' is linked directly to a RollCall+ Behaviour and a RollCall+ command is sent out upon a 'count value' change.

The MapView Service stores any new values of the RollCall+ command, allowing the project see any external **Remote Value** changes. A project can get an initial start-up 'count value' from the service.

- Enter a new value at Text Box widget;
- click Zero Count to set a value of 0;
- click Increment Count to increment value by 1.

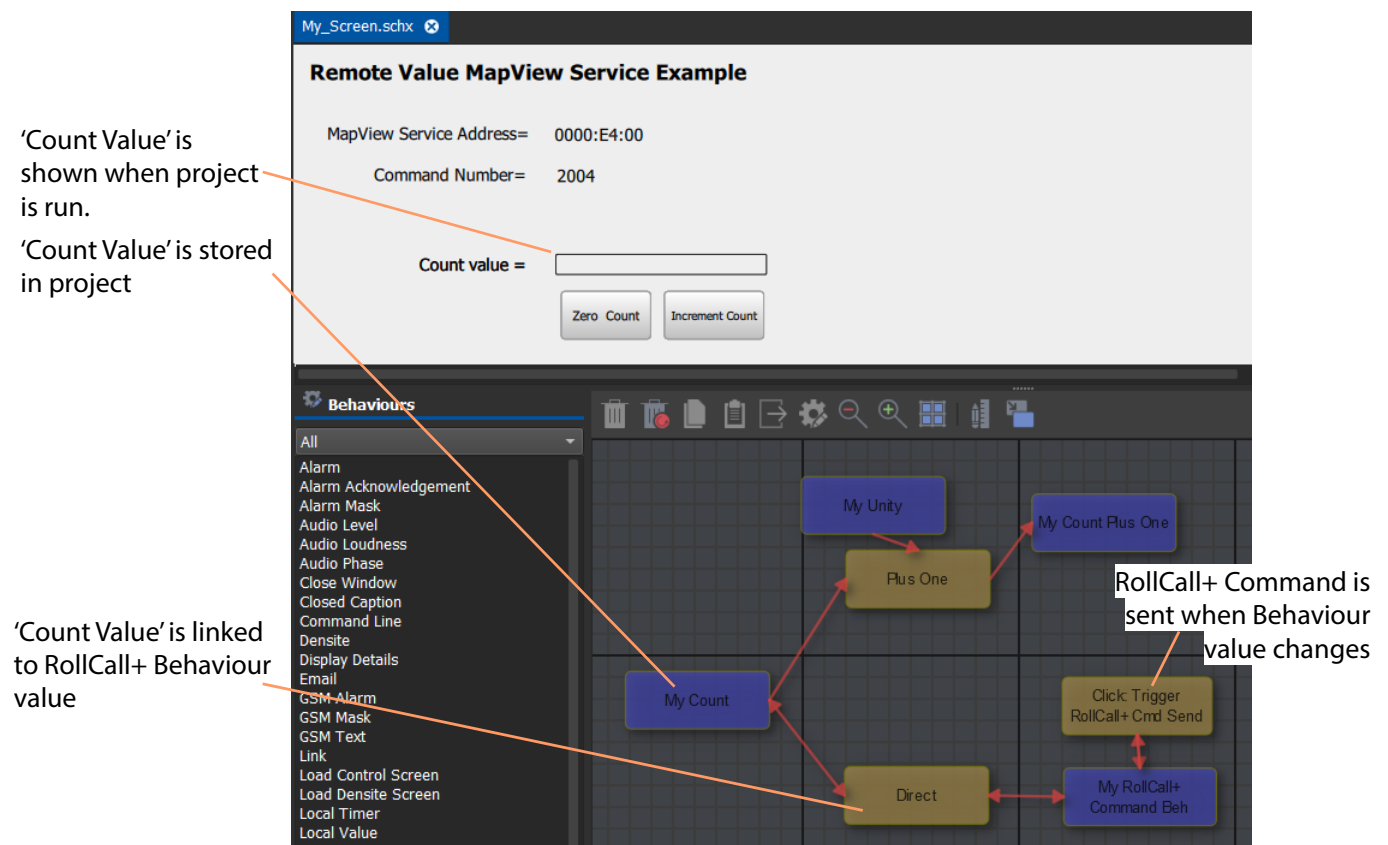
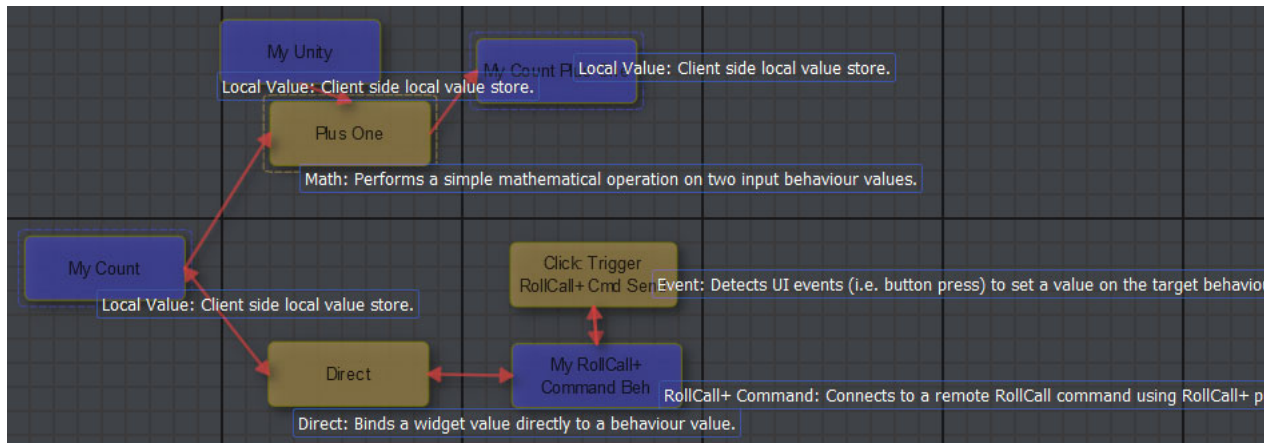
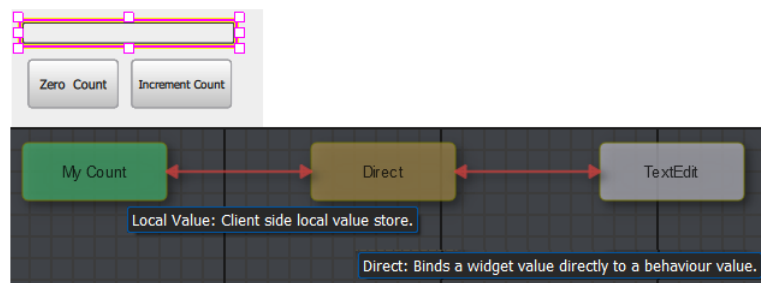


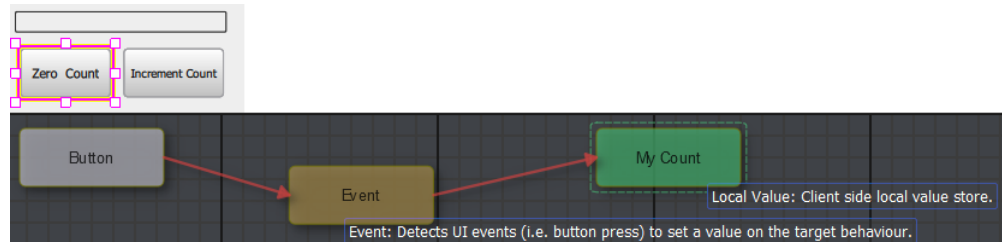
Fig. 3-8: MapView Project - Remote Values Example



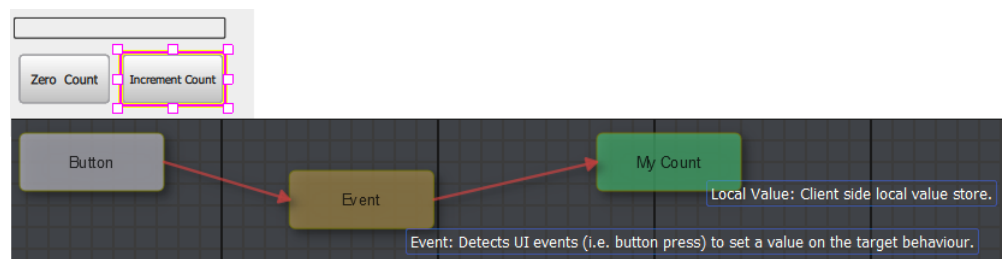
a) Annotated Behaviours and Bindings graphical editor - main screen.



b) Annotated graphical editor - Text Box widget.



c) Annotated graphical editor - **Zero Count** Button.



d) Annotated graphical editor - **Increment Count** Button.

Fig. 3-9: Annotated Behaviour and Bindings Graphical Editor for;
 a) Main screen.
 b) Text Box widget.
 c) Zero Count button.
 d) Increment Count button.

Exercising a Remote Value

The example MapView project is now used to exercise the new **Remote Value**. The steps are:

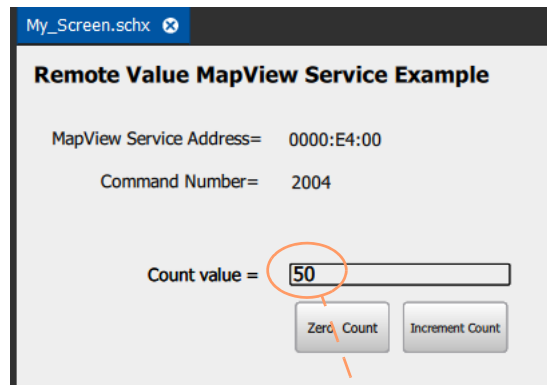
- 1 With the MapView service running, show the MapView Service **Remote Values** web page.
- 2 Open the client MapView project in Orbit, log in and open the MapView screen.

The remainder of the steps are given in Table 3-2, where the values shown by the MapView project and on the MapView Service **Remote Values** web page are given for each step.

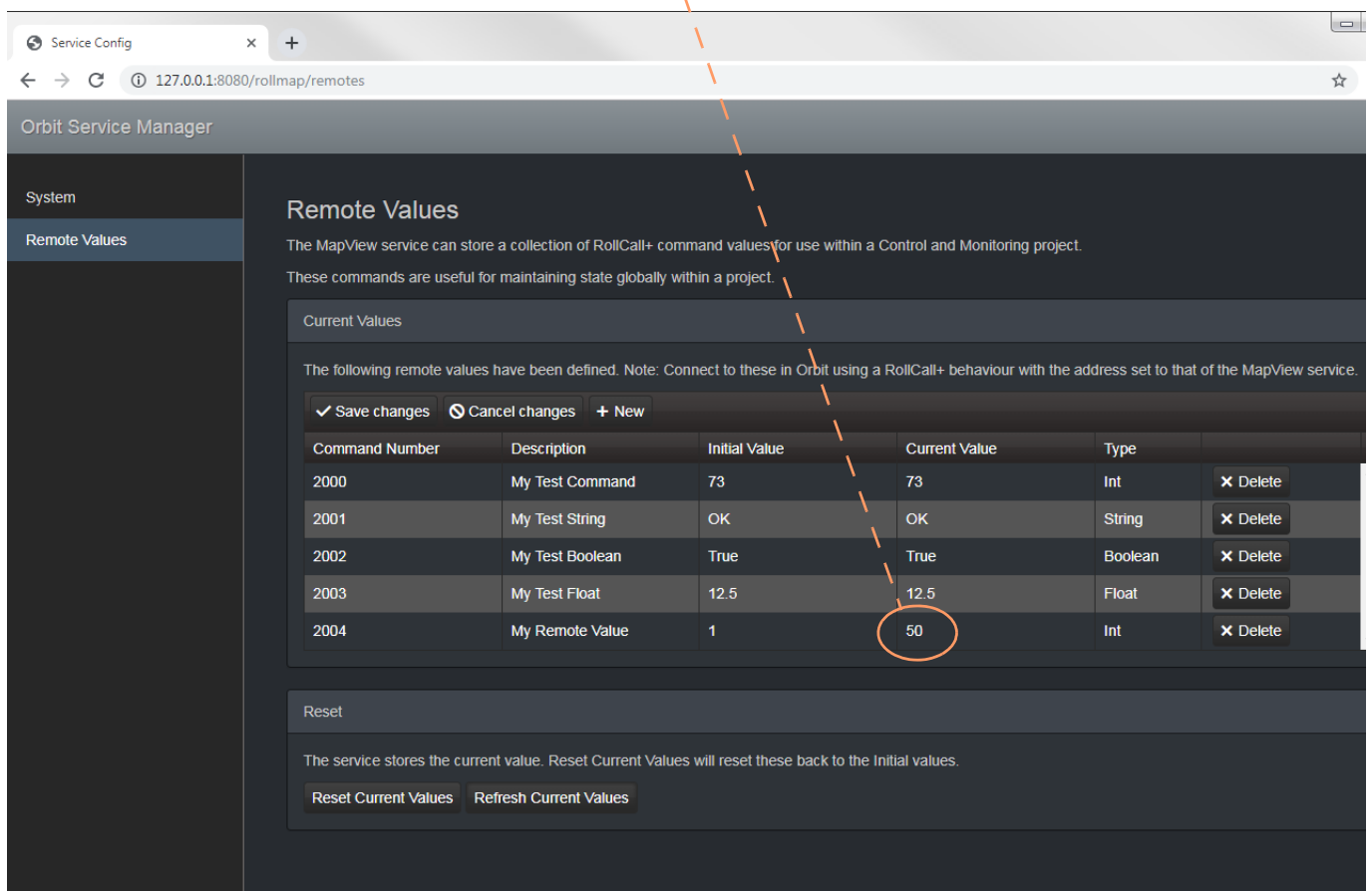
Table 3-2: Exercising Steps Continued

Action / Result	MapView project client screen See Figure 3-10a displayed Count Value	MapView Service web page See Figure 3-10b RollCall+ Command Number 2004 'Current Value'
3 On the Remote Values web page, click Reset Current Values to set the 'Current Values' to their 'Initial Values'. The 'Current Value' shown is the 'Initial Value' set up on the web page. The MapView screen 'Count Value' reflects this.	1	1
4 Change the 'Count Value' on the MapView screen by either: <ul style="list-style-type: none"> • clicking Increment Count one or more times; or • entering a new number into the text box (for example, 50). 	50	1
5 Click Refresh Current Values and the web page 'Current Value' shows the changed value.	50	50
6 Close down the MapView screen.		
7 Close the Project.		
8 Close Orbit client.	N/A	50
9 Click Refresh Current Values . The web page 'Current Value' is unchanged. (I.e. it persists; it is non-volatile.)	N/A	50
10 Re-open the MapView project, log in, open the MapView screen, and run the project. The 'Count Value' shown in the MapView screen reflects the value shown on the Remotes Values web page.	50	50
11 Click Refresh Current Values . Values are unchanged.	50	50
12 Change the 'Count Value' on the MapView screen by clicking Zero Count . The 'Count' Value' is set to zero. This change is sent to the Remote Value via the RollCall+ command number 2004 and is stored by the MapView Service. The displayed value is <i>not</i> automatically refreshed.	0	50
13 Click Refresh Current Values . The web page 'Current Value' is updated to show the changed value.	0	0

This is a simple demonstration of how a **Remote Value** can be written to from a MapView screen and how a **Remote Value** can be used by a MapView project (in this case it is used to initialize with).



a) MapView screen



b) Remote Values Web Page

Fig. 3-10: Count Value Shown on a) MapView Screen; b) Remote Values Web Page.

4 Routing Service

Chapter contents:

Routing Service

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Routing Service Settings	61
Router Controller Connection Settings	62
Name Length Selection Settings	62
SW-P-08 Settings (SW-P-08 Connection Only)	63
Save Settings Changes	63

Purpose

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

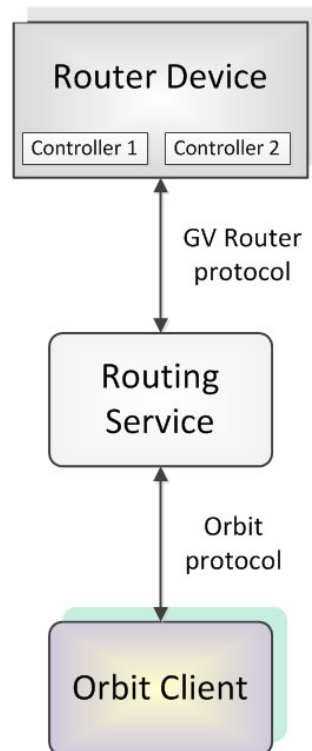


Fig. 4-1: Orbit Routing Service

Routing Service Settings Page

Access the Routing Service web page from the Orbit Service Manager main screen, see Figure 4-2.

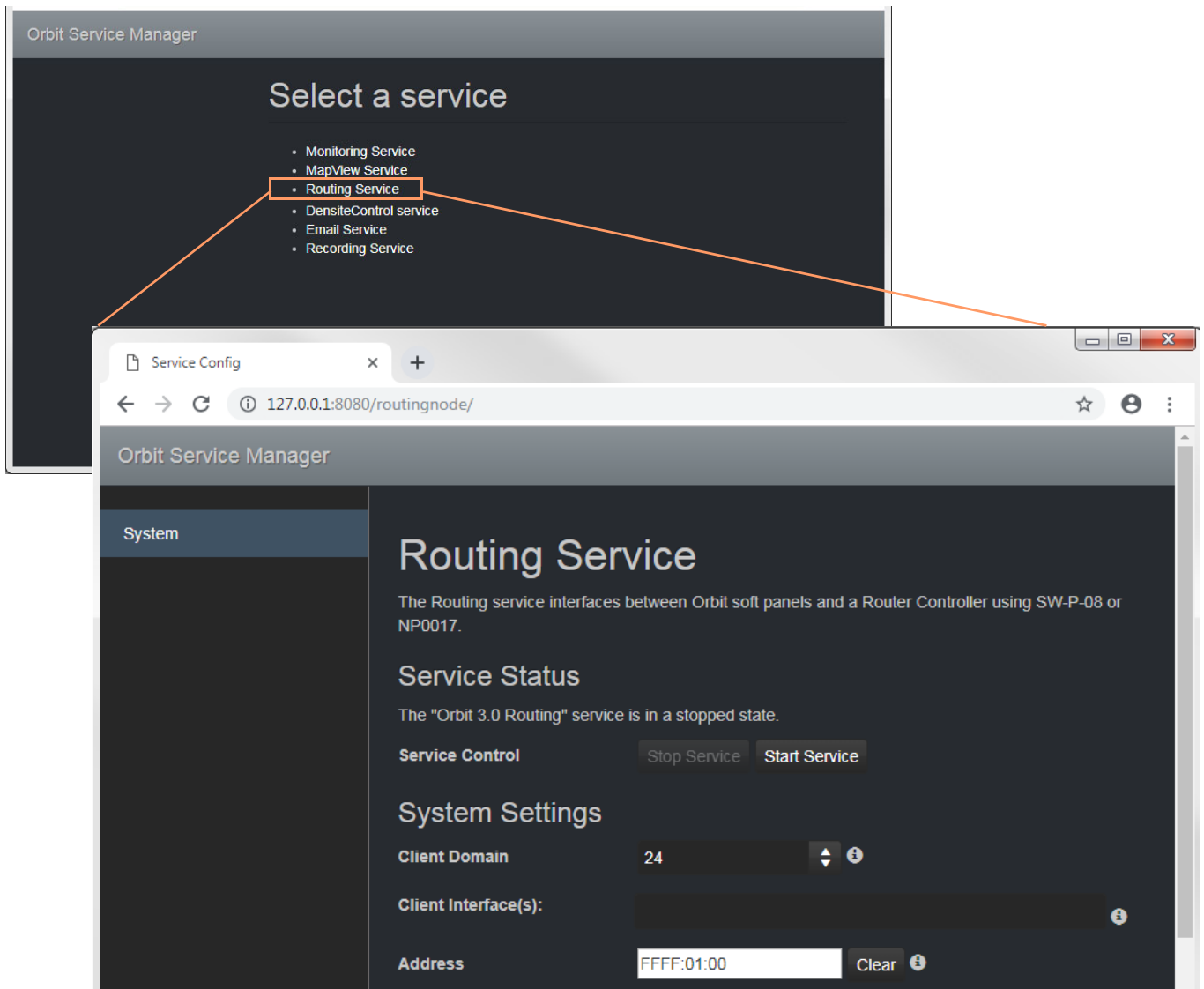


Fig. 4-2: Orbit Services - Routing Service

The full configuration screen is shown in Figure 4-3.

Orbit Service Manager

System

Routing Service

The Routing service interfaces between Orbit soft panels and a Router Controller using SW-P-08 or NP0017.

Service Status

The "Orbit 3.0 Routing" service is in a running state.

Service Control

See Table 4-1, on page 60.

System Settings

Client Domain: 25

Client Interface(s): Corporate X

See Table 4-2, on page 61.

Routing Service Settings

Logging Address: 0000:FD:02

Logging Name: Routing Service (.137)

Control Address: 0000:FD:03

Control Name: Routing Service Control

See Table 4-3, on page 62.

Router Controller Connection Settings

Primary IP: 172.19.77.72

Primary Port: 9194

Redundant IP: Enter IPv4 Address

Redundant Port:

Connection Protocol: NP0017

See Table 4-4, on page 62.

Name Length Selection

Name Length: Extended Names

See Table 4-5, on page 63.

SW-P-08

Matrix: 1

Levels: 1:Video

Use Level Names: YES

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

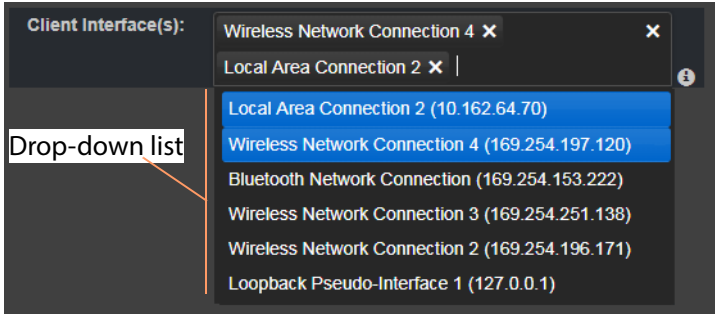
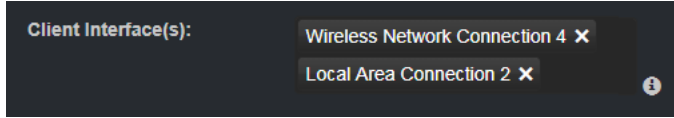
Press **Save Changes** to apply changes made to setting items on the configuration page.

Fig. 4-3: Orbit Routing Service - Configuration Web Page

System Settings

The table below describes the 'Service Status' and 'System Settings' of the Routing Service configuration web page of [Figure 4-3](#) on page 59.

Table 4-1: System Settings

Setting	Description
Service Status	Indicates if the service is running or stopped. The Routing Service is configured to automatically start when the host machine is restarted. After installation if the host machine is not restarted the service should be started manually.
Service Control:	Buttons.
Stop Service	Click to stop the service. (Grayed-out when service is stopped.)
Start Service	Click to start the service. (Grayed-out when service is running.)
System Settings:	
Client Domain	Text box. Enter a RollCall domain number that the Orbit services/clients will use. The valid range is 1 to 232. See RollCall Domain , on page 89 for information on Domains. Note: The Client Domain should be set to match the RollCall domain used by an Orbit Project in an Orbit Client. If the Orbit Client and Routing Service are on different domains they cannot see each other's data.
Client 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. 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 Orbit Client(s).

Routing Service Settings

The table below describes the 'Routing Service Settings' of the Routing Service configuration web page of [Figure 4-3](#) on page 59.

Table 4-2: Routing Service Settings

Setting	Description
Logging Address	<p>Text box. Enter RollCall address to use for the Routing Service to use to log its state. This will uniquely identify the Routing Service in the Orbit system.</p> <p>The user is free to define the RollCall addresses for a system. Note: Use a <i>different</i> address to that used for Control Address below.</p> <p>See RollCall Address, on page 89 for information about RollCall address.</p> <p style="text-align: right;">See Note 1.</p>
Logging Name	<p>Text box. Enter a user-definable name for the unit, to be a human-readable identifier for the Routing Service.</p> <p style="text-align: right;">See Note 1.</p>
Control Address	<p>Text box. Enter a RollCall address to be is used for an Orbit soft routing control panel/XY Panel/MapView project to connect to the Routing Service. This device address appears in an Orbit Network View pane and can be right-clicked on to open an Orbit Bulk Routing Panel. Note: Use a <i>different</i> address to that used for Logging Address.</p> <p style="text-align: right;">See Note 1.</p>
Control Name	<p>Text box. Enter a user-definable name for the control connection of the Routing Service. This is the name of the device that appear in an Orbit Network View pane.</p> <p style="text-align: right;">See Note 1.</p>
Note:	<p>Redundant Routing Services:</p> <p>With redundant Routing Services:</p> <ul style="list-style-type: none"> • Each service should have a <i>unique</i>: <ul style="list-style-type: none"> • Logging Address. • Logging Name. • The following should be <i>common</i> to both services: <ul style="list-style-type: none"> • Control Address. • Control Name.

Note: The **Logging Address** used by the Routing Service must be different from the **Control Address** used.

In this way:

- there is a unique logging address used for Log Fields; and
 - for redundant systems, a common Control Address is used for main and backup Routing Services.
-

Router Controller Connection Settings

The table below describes the Router Controller settings of the Routing Service configuration web page of [Figure 4-3](#) on page 59.

Table 4-3: Router Controller Connection Settings

Setting	Description
Router Controller Connection Settings:	
Primary IP	Text box. Enter the IP address of the router controller that is considered as the <i>main</i> controller.
Primary Port	Text box. Enter the IP port number to use to connect to the main router controller. Note: The IP port number is specific to the router controller type and, typically, is defined for a specific protocol. Router control protocols: <ul style="list-style-type: none"> • SW-P-08 - Orbit services use IP port number 2000. • NP0017 - Orbit services use IP port number 9194 upwards. (IP port number 9194 is used for GV Convergent routing 'Area 1', IP port 9195 is used for 'Area 2', IP port 9196 for 'Area 3', etc.
Redundant IP	Text box. Enter the IP address of the router controller that is considered as the <i>secondary</i> , redundant, backup controller. If there is no secondary, leave cell blank.
Redundant Port	Text box. Enter the IP Port of the router controller that is considered as the secondary, redundant, backup controller. Note: The IP port number is specific to the router controller and, typically, is defined for a specific protocol or matrix/area.
Connection Protocol	Drop down box. Select the router control protocol to use by the Routing Service for its router controller connection(s). The Routing Service supports the following protocols: <ul style="list-style-type: none"> • NP0017 ('NP17'). • SW-P-08.

Name Length Selection Settings

The table below describes the Name Length Selection settings of the Routing Service configuration web page of [Figure 4-3](#) on page 59.

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

Setting	Description
Name Length	Drop down box. Select '8-character' or 'Extended' signal names to be used. When in: <ul style="list-style-type: none"> • 'SW-P-08' mode, the Routing Service will use 32 character names when in the 'Extended Name' mode. • 'NP0017' mode, the Routing Service will use names longer than 8 characters.

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

The table below describes the SW-P-08 settings of the Routing Service configuration web page of [Figure 4-3](#) on page 59.

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

Table 4-5: SW-P-08 Settings

Setting	Description
SW-P-08:	Only relevant if the Routing Service connection to the router controller is in 'SW-P-08' mode.
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. (Levels in a router normally numbered from 1 onwards and may route SDI signals or audio signals. Not all levels may require control by the Routing Service. This list specifies which levels and their names.) Enter CSV items in the format: Index:Name , for example: 1:video,2:metadata,3:aud1,4:aud2
Reset	Button. Click to clear the Levels text box.
Use Level Names	Yes/No check box. Select how router signal ports are named. <ul style="list-style-type: none"> 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.

Save Settings Changes

Finally, to apply changes made to items on the configuration page:

- Press the **Save Changes** button.
Click **OK** on the subsequent 'Save Complete' dialog.

Alternatively, to discard changes:

- Press the **Cancel Changes** button.

5 Email Service

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Email Service

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Purpose

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

Note: **Using a Global file:**
Typically when designing an Orbit MapView project, use an Orbit Global file to hold the Email Behaviour and any triggering 'logic' for it. This is type of file runs on the server and not on the Orbit client.

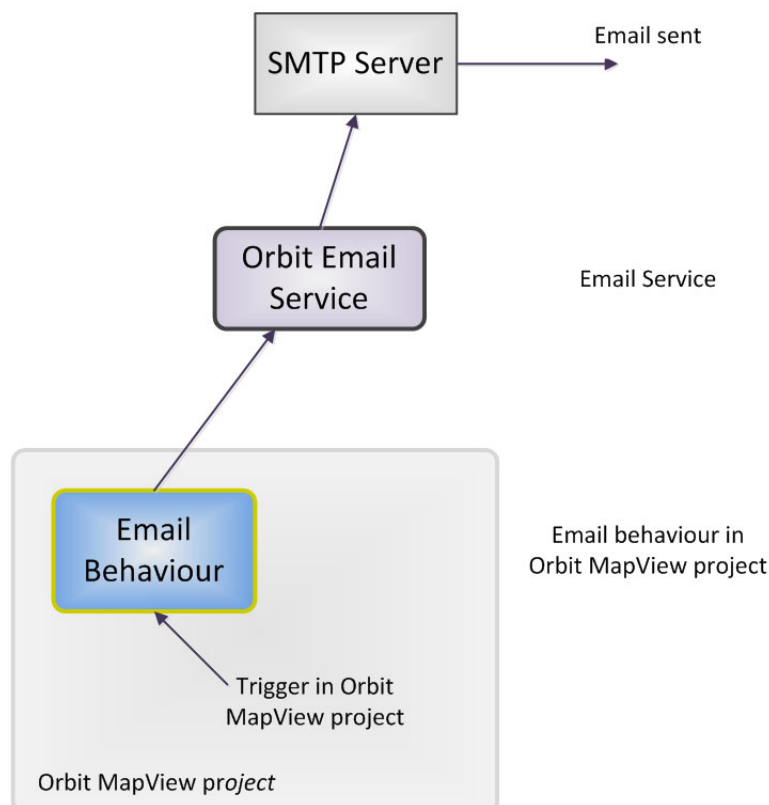


Fig. 5-1: Orbit Email Service

Email Service System Page

Access the Email Service web page from the Orbit Service Manager main screen by clicking on 'Email Service', see Figure 5-2.

Orbit Services Manager main screen

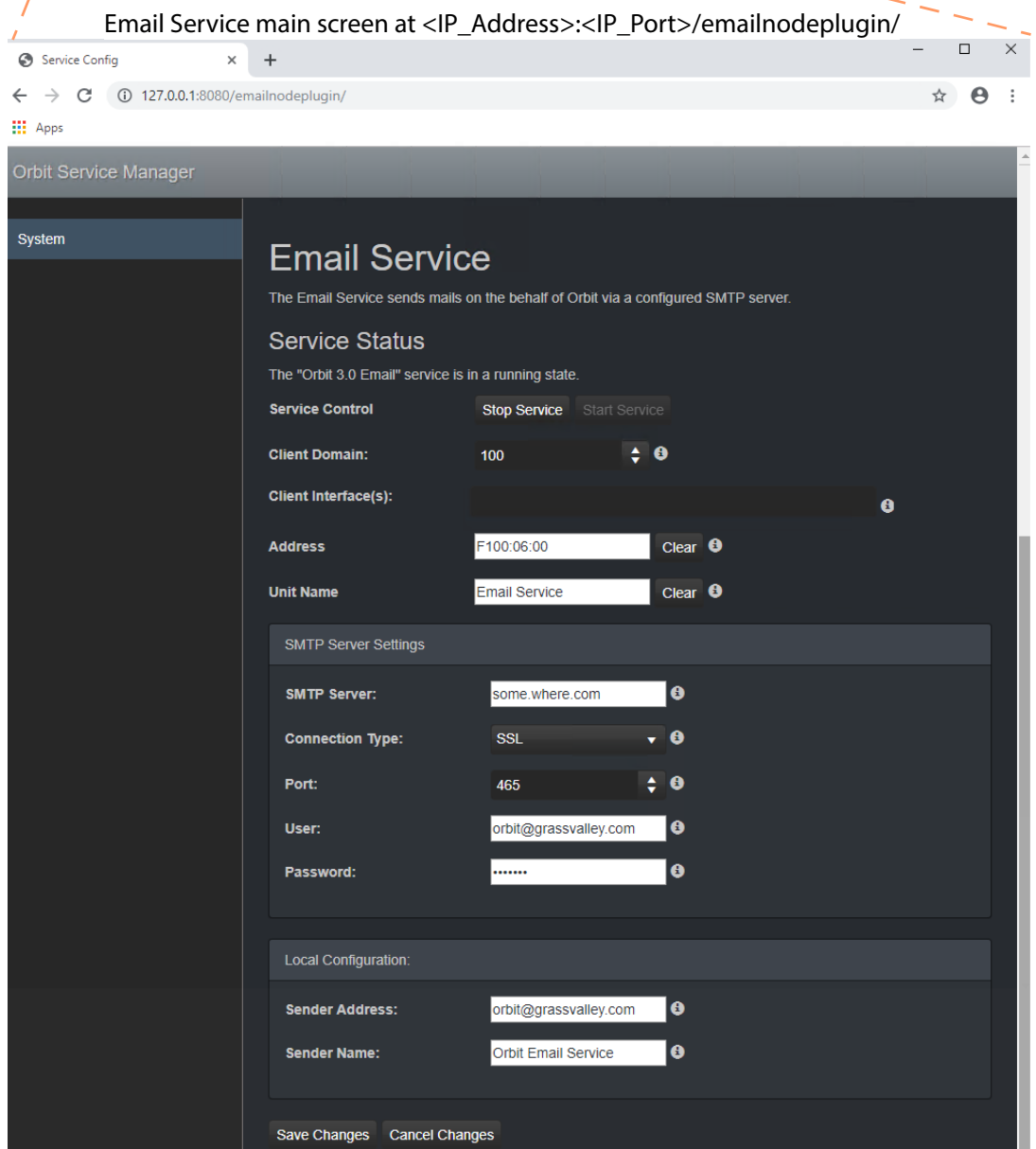
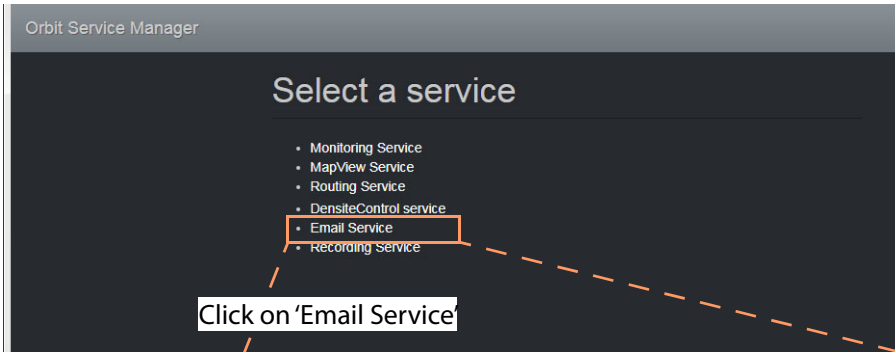


Fig. 5-2: Orbit Services - Email Service Main Screen

Settings

Table 5-1 below describes the System Settings of the Email Service web page.

Table 5-1: Orbit Email Service - System Settings

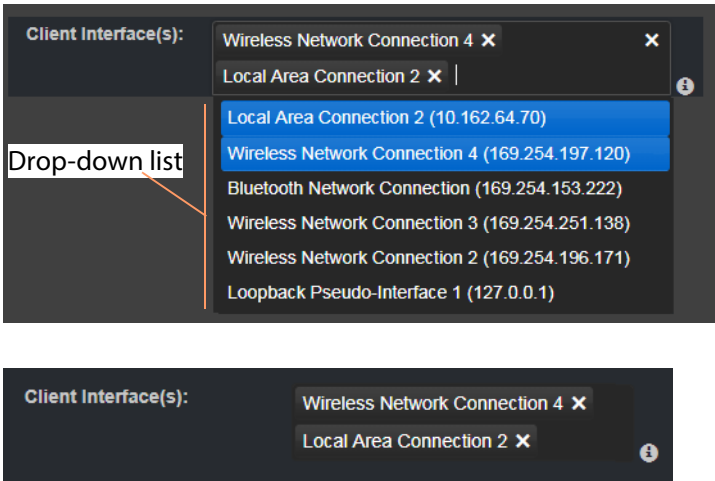
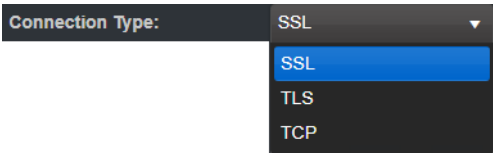
Setting	Description
Service Status	Indicates if the service is running or stopped. The Email Service is configured to automatically start when the host machine is restarted. After installation if the host machine is not restarted, the service should be started manually.
Service Control: Stop Service Start Service	Buttons. Click to stop the service. Click to start the service.
System Settings: Client Domain	Text box. Enter a RollCall domain number that the Email Service will monitor. The valid range is 1 to 232. See RollCall Domain , on page 89 for information on Domains. Note: The Client Domain should be set to match the RollCall domain used by an Orbit Project in an Orbit Client. If the Orbit Client and Email Service are on different domains they cannot see each other's data.
Client 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. 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 Orbit Client(s).

Table 5-1: Orbit Email Service - System Settings (continued)

Setting	Description
Address	Text box. Enter RollCall address to use for the Email Service. This will uniquely identify the service in the Orbit system. This will be used when the service publishes its own log data. See RollCall Address , on page 89 for information about RollCall address. The user is free to define the RollCall addresses for a system.
Unit Name	Text box. Enter a name for the Email Service, to be a human-readable identifier for the Email Service which appears in the Orbit client Network View.
SMTP Server Settings:	
SMTP Server	Text box. Enter the web address (IP network domain name) of the SMTP server. For example, 'my.mailserver.com'.
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 with.
Local Configuration:	
Sender Address	Text box. Enter a default sender email address to use for emails sent by the Orbit system. For example, 'Orbit@My_Company.com'.
Sender Name	Text box. Enter a default sender name to use for emails sent by the Orbit system. For example, 'The Orbit Email Service'.

Save Settings Changes

Finally, to apply changes made to items on the System Settings page:

- Press the **Save Changes** button. Click **OK** on the 'Save Complete' dialog.

Alternatively, to discard changes:

- Press the **Cancel Changes** button.

6 Recording Service

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Purpose

The Orbit Recording Service captures alarms and device status messages in a 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.)

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

The service offers the facility to search for and browse recorded information within a web browser. Additionally, the service can expose a data connection for each log file, allowing the logged data to be displayed inside an Orbit client using the purpose-made Alarm List graphical widget.

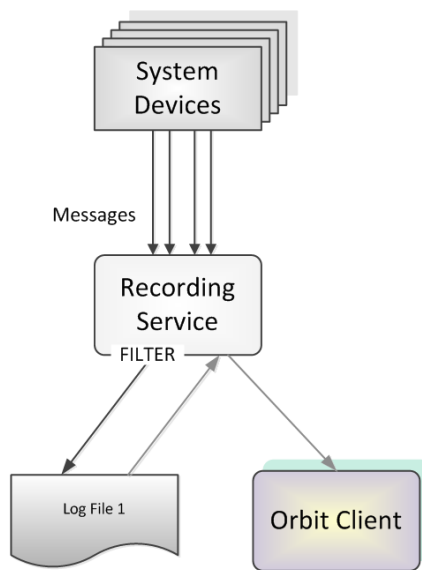


Fig. 6-1: Orbit Recording Service

Recording Service Pages

Access the Recording Service web page from the Orbit Service Manager main screen, see Figure 6-2. The web page contains three side tabs:

- System. (See [System Settings Page](#), on page 72.)
- Log setup. (See [Log Setup Settings Page](#), on page 74.)
- Log Viewer. (See [Log Viewer](#), on page 83.)

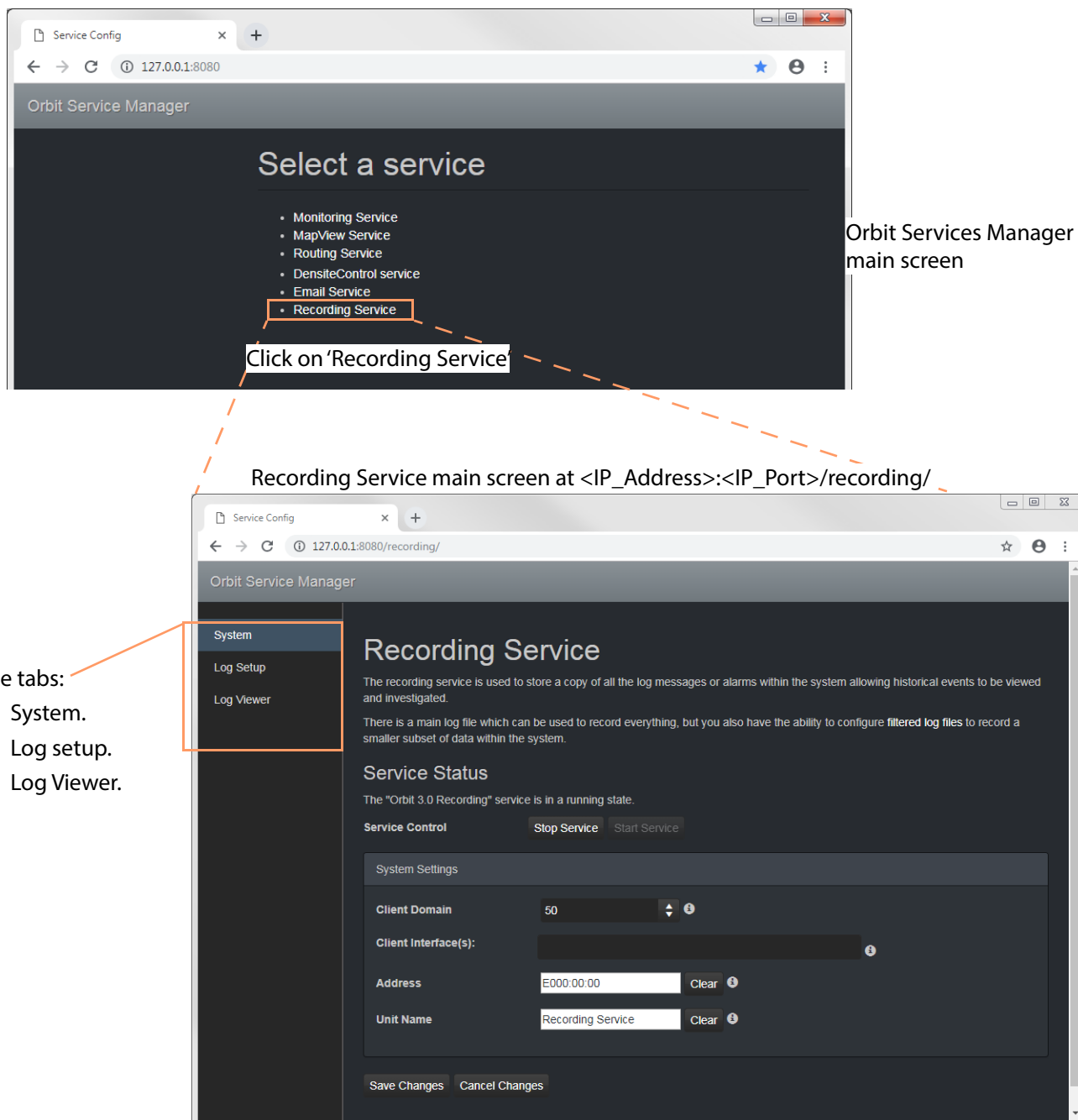
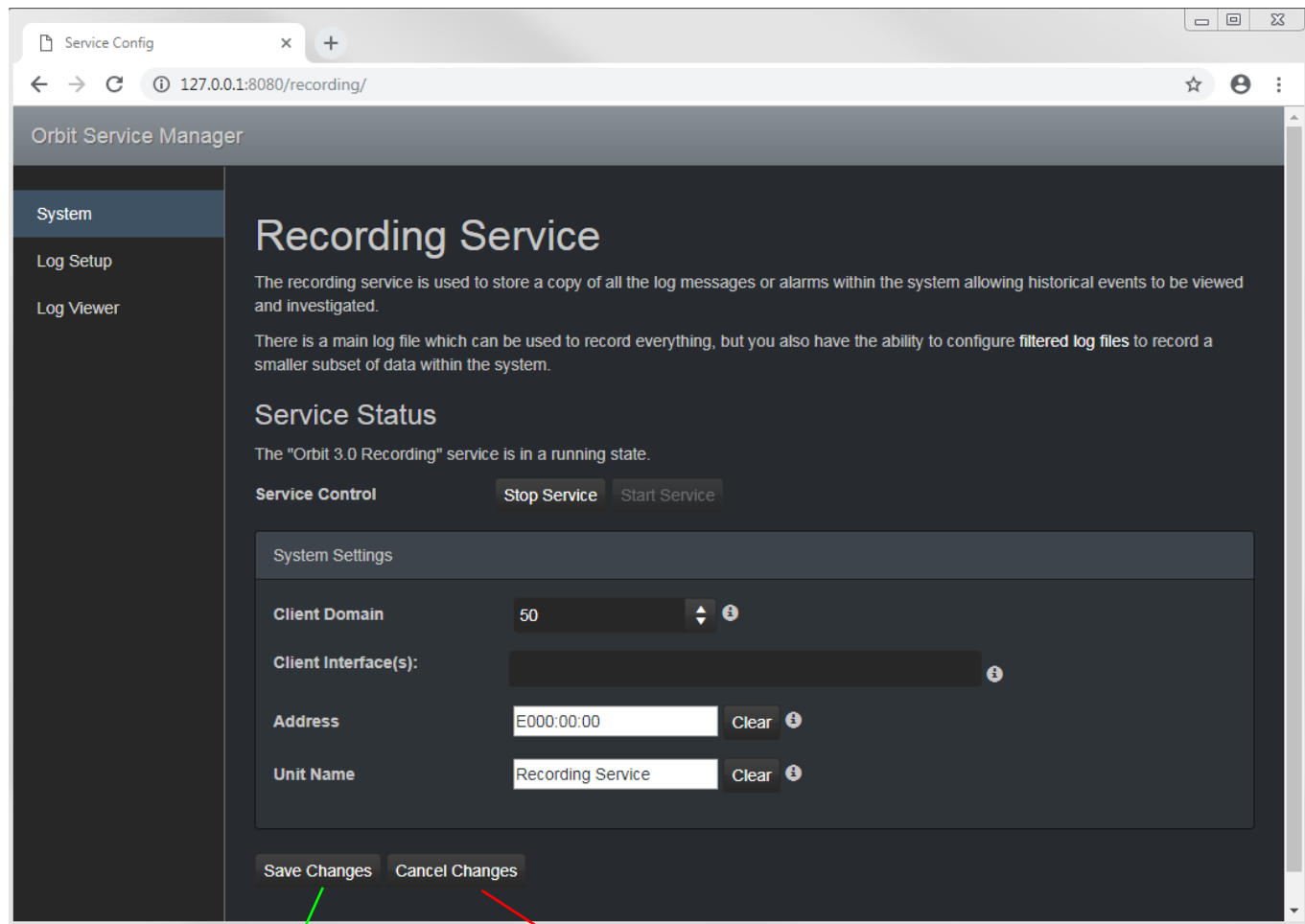


Fig. 6-2: Orbit Services - Recording Service Main Screen

System Settings Page

Table 6-1 below describes the System Settings of the Recording Service configuration web page of Figure 6-3.

Recording Service main screen at <IP_Address>:<IP_Port>/recording/



Press **Cancel Changes** to discard changes to settings.
Press **Save Changes** to apply changes made to setting items on the configuration page.

Fig. 6-3: Orbit Services - Recording Service - System Settings

Table 6-1: Orbit Recording Service - Settings

Setting	Description
Service Status	Indicates if the service is running or stopped. The Recording Service is configured to automatically start when the host machine is restarted. After installation if the host machine is not restarted the service should be started manually.
Service Control:	Buttons.
Stop Service	Click to stop the service.
Start Service	Click to start the service.

Table 6-1: Orbit Recording Service - Settings (continued)

Setting	Description
<p>System Settings:</p> <p>Client Domain</p>	<p>Text box.</p> <p>Enter a RollCall domain number that the Recording Service will monitor. Messages published onto this domain will be recorded.</p> <p>The valid range is 1 to 232.</p> <p>See RollCall Domain, on page 89 for information on Domains.</p> <p>Note: The Client Domain should be set to match the RollCall domain used by an Orbit Project in an Orbit Client.</p> <p>If the Orbit Client and Recording Service are on different domains they cannot see each other's data.</p>
<p>Client Interfaces</p>	<p>Drop down box.</p> <p>Click in the cell and select the server network interface(s) for the service to use. More than one interface may be selected.</p> <p>By default this cell is empty, in this case, all interfaces will be used by the service.</p> <p>When one or more interfaces have been selected the service will use only those interfaces listed.</p> <div data-bbox="724 947 1442 1263" data-label="Image"> </div> <div data-bbox="724 1361 1406 1478" data-label="Image"> </div> <p>To delete an item from the list, click on its adjacent x.</p> <p>Note: When selecting the interface(s) to use, ensure selected interface(s) are on the same network as the corresponding Orbit Client(s).</p>

Table 6-1: Orbit Recording Service - Settings (continued)

Setting	Description
Address	Text box. Enter RollCall address to use for the Recording Service. This will uniquely identify the service in the Orbit system. This will be used when the service publishes its own log data. See RollCall Address , on page 89 for information about RollCall address. The user is free to define the RollCall addresses for a system.
Unit Name	Text box. Enter a name for the Recording Service, to be a human-readable identifier for the Recording Service which appears in the Orbit client Network View.

Log Setup Settings Page

Table 6-2 below describes the **Log Setup** settings of the Recording Service configuration web page of Figure 6-4. **Log Setup** main screen at <IP_Address>:<IP_Port>/recording/logsetup.

Orbit Service Manager

System

Log Setup

Log Viewer

Log Setup

The recording service may be used to store a subset of alarms into a separate log file. For example just for a specific address or a set of addresses/headers.

Use this page to configure the log files generated by the recording service.

Current Log File Configurations ⓘ

Log Files: [Dropdown] ⓘ

New Delete

See [Current Log File Configurations](#), on page 76, and Table 6-2, on page 76.

Log File Configuration ⓘ

Enable this log file YES ⓘ

Identifier: [Text Field] ⓘ

Filter

Add the address/headers that should be captured in this log file. You may enter an address with no header to capture everything from that address, or a header with no address to capture those headers from all units. You may also prefix the address or header with a - character to exclude those entries from any capture.

- F000:01:00 - Records everything for this address. Other addresses are omitted.
- F000:02:00 with MSG - Records the MSG field for this address only. Other log fields and other addresses not specified are omitted.
- F000:02:00 with -MSG - Captures all alarms except MSG for this address. Other addresses not specified are
- LOG_* - Captures LOG_1, LOG_2 etc.
- -LOG_* - Excludes LOG_1, LOG_2 etc.
- -F000:02:00 - Captures all addresses but this one.
- F000:00:00-F000:01:00 - Captures all log fields for all units within this range.
- -F000:00:00-F000:01:00 - Captures all log fields for all units outside of this range.

+ New

Address	Header	
		<input type="button" value="X Delete"/>
		<input type="button" value="X Delete"/>

Directory: [Text Field: Path on disk] Reset ⓘ

Retain days: [Spinner: 0] Reset ⓘ

Max file size (MB): [Spinner: 0] Reset ⓘ

Recording Mode: [Dropdown: Everything] ⓘ

Publish to Alarm Widget: NO ⓘ

Save Changes Cancel Changes

Press **Cancel Changes** to discard changes to settings.
Press **Save Changes** to apply changes made to setting items on the configuration page.

Fig. 6-4: Orbit Services - Recording Service - Log Setup Settings

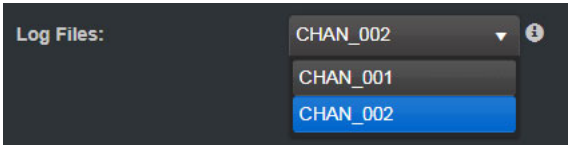
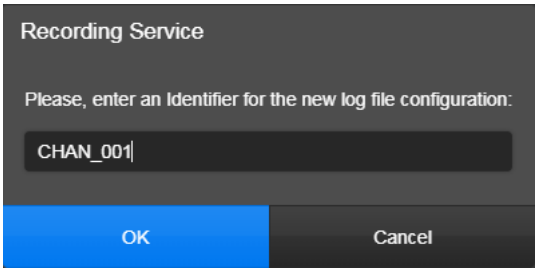
Current Log File Configurations

This screen panel (see [Figure 6-4](#) on page 75) allows the user to add new log file configurations and select a configuration for editing.

The Recording 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 recorded for, for example, just alarms from devices for one channel. Different log file configurations can be set up differently.

Log file configuration settings also allow time periods to be set up for automatically cleaning files and setting a maximum size, in mega bytes, (MB), for each file.

Table 6-2: Current Log File Configuration Settings

Setting	Description
Log Files	<p>Drop down box.</p> <p>Shows the selected log file configuration and can show a list of all currently configured log file configurations within the system.</p> <ul style="list-style-type: none"> Click to show a drop-down list of all log file configurations on the Recording Service. Click on a configuration name to select it for configuration editing.  <p>The selected log file configuration settings are editable in the Log File Configuration panel, see Log File Configuration, on page 77.</p>
New	<p>Button.</p> <p>To create a new log file configuration:</p> <ul style="list-style-type: none"> Click to create a new log file configuration. Enter an identifier for the log file configuration in the dialog. (See Identifier and Log File Name, on page 77 for information on how the identifier is used.) Click OK. 
Delete	<p>Button.</p> <p>Click to delete the selected log file configuration.</p>

Identifier and Log File Name

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

Log File Name Format

The following log file name format is used:

IDENT-YYYY-MM-DD-N.log

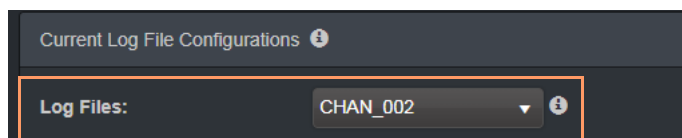
Where:

- 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 indicating different parts of a log file.

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.

Log File Configuration



Settings for the log file configuration selected in the 'Log Files' drop-down box can be changed in the **Log File Configuration** panel. The settings and controls are described in Table 6-3.

Table 6-3: Log File Configuration Settings

Setting	Description
Enable this log file	Yes/No check box. <ul style="list-style-type: none"> • 'Yes' - enables logging to the log file. • 'No' - disable logging to file.
Identifier:	Shows the selected log file configuration identifier (read-only).
Filter:	Filter rules list: Set up log message filtering rules in this panel, which can reduce the data that is logged. 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 78 for more information about entering filter rules and some example filter list items.

Table 6-3: Log File Configuration Settings (continued)

Setting	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. (See Filter List , on page 78 for more information about entering filter rules and some example filter list items.)
Header	Column heading. Enter a log header message type as part of filter rule. (See Filter List , on page 78 for more information about entering filter rules and some example filter list items.)
Delete	Button. Click to delete the address/header filter item.
Directory	Text box. Enter the directory path to where the log files will be saved. Note: Log files are automatically named using the syntax IDENT-YYYY-MM-DD-N.log (see Identifier and Log File Name , on page 77).
Retain days	Text box. Enter the number of days after which log files are automatically cleared from the logging directory. Set to '0' to disable clearing of the log file.
Max file size (MB)	Text box. Enter the maximum log file size in mega bytes (MB). After this file size has been reached, a new log file will be created with a new index suffix (N).
Recording Mode	Drop-down box. Select the recording mode. <ul style="list-style-type: none"> Everything. Alarms Only. Note: Regardless of this setting, user interactions, such as alarm acknowledgments, will be recorded.
Publish to Alarm Widget	Yes/No check box. 'Yes' - the Recording 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 an MapView screen running in an Orbit client, or on a multiviewer video wall).

Filter List

The filtering applies to alarm messages, log messages and status messages. The filtering affects what is recorded from the when the filtering is applied to the log file configuration.

For example, if a Recording Service has been recording all messages in a system and then a single address is added to the filtering, then only messages from that one address will be recorded. Messages already recorded are not affected.

Filtering rules can be set up, which can reduce the amount of data that is recorded in a log file:

- Initially, the list is empty, recording all messages.
- One or more filter rules can be set up to allow or block various messages from certain devices or from a range of devices.

- Filter rules are combined by being 'OR'ed together.
Note: There is no inter-dependency between rules.

Thus a filter list of RollCall addresses and log message Headers can be set up which define the messages be captured in the log file. The list can be scrolled through.

Note: The set of devices accessible by the Recording Service, and hence by the log file, is defined by the RollCall Domain number.

Red triangle indicates a 'Save' is required for changes to take effect.

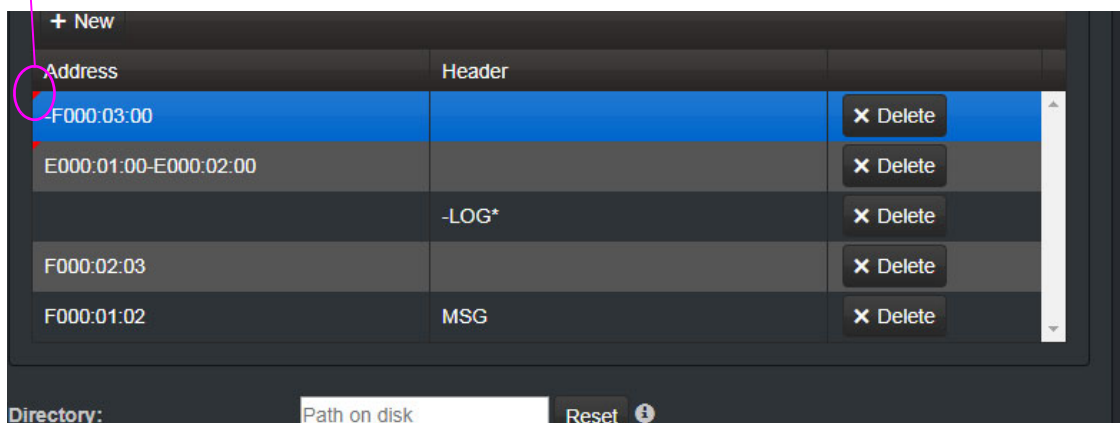


Fig. 6-5: Example Filter Rules List Screenshot

Filter List Item Examples

Example rules are listed in Table 6-4. Wild-card characters can be used to specify headers (e.g. LOG_*). An empty rules list will capture all messages.

Table 6-4: Filter Item Examples

Rule	Filter Rule Item Example		Description
	Address	Header	
Empty:			Captures all messages.
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 log fields for from device addresses in this range.
Header only:		MSG	Captures MSG messages for all device addresses in the RollCall domain.
Headers:		LOG_*	Captures messages with log headers LOG_1, LOG_2 etc.
Exclude headers:		-LOG_*	Excludes messages with log headers LOG_1, LOG_2 etc.

Table 6-4: Filter Item Examples (continued)

Rule	Filter Rule Item Example		Description
	Address	Header	
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 except MSG messages for this device address.

Note: Save changes:

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

Save Settings Changes

Finally, to apply changes made to items on the Log Setup page:

- Press the **Save Changes** button. Click **OK** on the 'Save Complete' dialog.

Alternatively, to discard changes:

- Press the **Cancel Changes** button.

Log File Format

The log file entries are in JavaScript Object Notation (JSON) format with a single entry appearing on a line. Entries are human-readable but are not easy to browse, see Figure 6-6.

```
10 {"address":"6151:20:0E","header":"INPUT_1_C_BIT_DEPTH","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"acked_
11 {"address":"7131:03:05","header":"INPUT_2_SDI_ERRCNT","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"acked_
12 {"address":"7131:03:05","header":"INPUT_3_SDI_ERRCNT","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"acked_
13 {"address":"7131:03:05","header":"INPUT_4_SDI_ERRCNT","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"acked_
14 {"address":"3271:0B:04","header":"INPUT_1_APL","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"acked_by":"","
15 {"address":"3271:0B:04","header":"INPUT_1_C_BIT_DEPTH","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"acked_
16 {"address":"3271:0B:04","header":"INPUT_1_EMBED_AUDIO_3_1_BIT_DEPTH","is_inverted":false,"is_masked":false,"latched_errors":[{"acked_
17 {"address":"3271:0B:04","header":"INPUT_1_EMBED_AUDIO_3_2_BIT_DEPTH","is_inverted":false,"is_masked":false,"latched_errors":[{"acked_
18 {"address":"3271:0B:04","header":"INPUT_1_EMBED_AUDIO_4_1_BIT_DEPTH","is_inverted":false,"is_masked":false,"latched_errors":[{"acked_
19 {"address":"3271:0B:04","header":"INPUT_1_EMBED_AUDIO_4_2_BIT_DEPTH","is_inverted":false,"is_masked":false,"latched_errors":[{"acked_
20 {"address":"3271:0B:0A","header":"LAN_PORT_1_CPU_TRAF_OUT_STATE","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":fa
21 {"address":"3271:0B:0A","header":"LAN_PORT_2_CPU_TRAF_OUT_STATE","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":fa
22 {"address":"6141:0B:0F","header":"FEC_1_CORRECTED_ERRORS","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"ack
23 {"address":"6141:0B:0F","header":"FEC_1_UNCORRECTED_ERRORS","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"a
24 {"address":"6141:0B:11","header":"FEC_2_CORRECTED_ERRORS","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"ack
25 {"address":"6141:0B:11","header":"FEC_2_UNCORRECTED_ERRORS","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"a
26 {"address":"7131:03:0A","header":"HYP_INPUT","is_inverted":false,"is_masked":false,"latched_errors":[{"acked":false,"acked_by":"","a
```

Fig. 6-6: Sample Log File Extract

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.
-

Log Message Examples

Example: Log Message (type=log)

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

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

Note: Depending on the Recording Service log file configuration's 'Recording Mode', value changes or just alarms may have been recorded in the log file.

Alarms are signified by a 'State' value > 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 recorded 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 recorded when a user applies any type of log message mask in 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 the device shown on an Orbit MapView project screen.

Unit Mask (type=unitmask)

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

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

Log Viewer

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

The **Log Viewer** is accessed in a web browser, either:

- from the Recording Service's web page (click 'Recording Service > Log Viewer' from the Orbit Services Manager top web page); or
- directly by entering a URL of the form:
`http://<IP_Address>:<IP_Port>/recording/logviewer`

where:

<IP_Address> is the IP address of the server running the Recording Service.

<IP_Port> is the IP port number used by the Recording Service.

(Settings are in the Recording Service web page, see [System Settings Page](#), on page 72.)

For example: <http://127.0.0.1:8080/recording/logviewer>

To view captured messages/data of a log file configuration, select the configuration's identifier in the **Log File Identifier** drop-down list. Log messages are shown in a scrollable, paged list below. The list can be searched by date and for a selectable time period.

Log Viewer
This page allows the log files produced by the recording service to be queried.

Search Parameters

Log File Identifier: CHAN_001

Date: 03 December 2018

Start Time: 12:21 PM

End Time: 12:51 PM

Reset to last 30 minutes Reset to last hour

See Table 6-5, on page 84.

Search Results Refresh Grid

See Search Results, on page 85, and Table 6-5, on page 84.

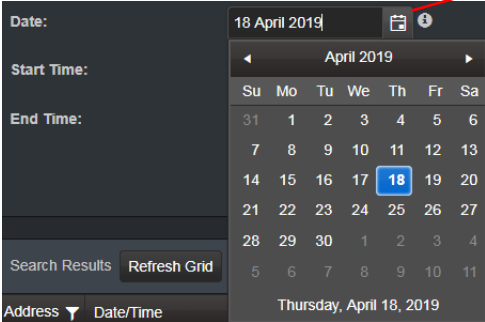
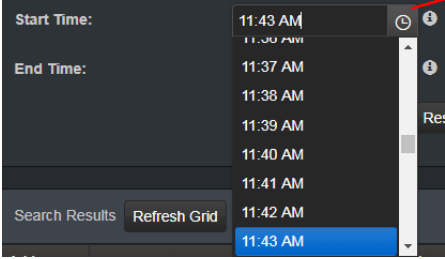
Address	Date/Time	Log Field	Value	State	Masked	Unmasked State	Latched State
E000:08:00	03/12/18 @ 12:44:17	LOG_1	WARN: Blar	50	false	50	50
E000:08:00	03/12/18 @ 12:45:44	STATE	100	100	false	100	100
E000:08:00	03/12/18 @ 12:45:44	LOG_1	FAIL: Error	100	false	100	100
E000:08:00	03/12/18 @ 12:50:56	LOG_1	Ack				
E000:08:00	03/12/18 @ 12:50:56	STATE	99	99	false	99	100
E000:08:00	03/12/18 @ 12:45:44	LOG_1	FAIL: Error	99	false	99	100
E000:08:00	03/12/18 @ 12:51:04	LOG_1	Reset Latch				
E000:08:00	03/12/18 @ 12:51:04	STATE	100	100	false	100	100
E000:08:00	03/12/18 @ 12:45:44	LOG_1	FAIL: Error	100	false	100	100
E000:08:00	03/12/18 @ 12:51:07	STATE	50	50	false	50	100
E000:08:00	03/12/18 @ 12:51:07	LOG_1	WARN: Blar	50	false	50	100

41 - 51 of 51 items

Fig. 6-7: Log File Viewer

Search Parameters

Table 6-5: Log Viewer - Search Parameters

Setting	Description
Log File Identifier	Drop-down box. Select the log file configuration to view. After selecting, the logged messages are shown, according to the search parameters.
Date	Date box. Click on the Date icon and set the date to query logs from.  <p>Note: Because of the number of potential entries in a log file, users are currently limited to querying for a specific day.</p>
Start Time	Time box. Click on the clock time icon and set a start time, from which to query captured log messages. 
End Time	Time box. Click on the clock time icon and set an end time, up to which to query captured log messages.
Reset to last 30 minutes	Button. Click to query messages that occurred in the last 30 minutes.
Reset to last Hour	Button. Click to query messages that occurred in the last hour.

Search Results

The **Search Results** panel (see Figure 6-8) displays the results for the log file query. If more than 20 results are returned, then results are presented in pages and paging buttons are provided to navigate the results.

Address	Date/Time	Log Field	Value	State	Masked	Unmasked State	Latched State
E000:08:00	03/12/18 @ 12:44:17	LOG_1	WARN: Blar	50	false	50	50
E000:08:00	03/12/18 @ 12:45:44	STATE	100	100	false	100	100
E000:08:00	03/12/18 @ 12:45:44	LOG_1	FAIL: Error	100	false	100	100
E000:08:00	03/12/18 @ 12:50:56	LOG_1	Ack				
E000:08:00	03/12/18 @ 12:50:56	STATE	99	99	false	99	100
E000:08:00	03/12/18 @ 12:45:44	LOG_1	FAIL: Error	99	false	99	100
E000:08:00	03/12/18 @ 12:51:04	LOG_1	Reset Latch				
E000:08:00	03/12/18 @ 12:51:04	STATE	100	100	false	100	100
E000:08:00	03/12/18 @ 12:45:44	LOG_1	FAIL: Error	100	false	100	100
E000:08:00	03/12/18 @ 12:51:07	STATE	50	50	false	50	100
E000:08:00	03/12/18 @ 12:51:07	LOG_1	WARN: Blar	50	false	50	100

Paging buttons to navigate results, if required

Fig. 6-8: Log Viewer - Search Results

The search results are presented in columns:

- **Address** - device address.
- **Date/Time**.
- **Log Field** - log message header type.
- **Value** - the value of the reported parameter. (Temperature, 'State', etc.)
- **State** - 'State' value.
- **Masked** - true/false, indicates if the message has been already masked by the user in the system.
- **Unmasked State** - 'State' value before masking.
- **Latched State** - 'State' value after it has been latched. This may be reset by the user in the system.

Filtering Search Results

For all columns except 'Date/Time', additional filtering of entries may be specified. For example, this may be used to help find only 'errors', or only 'entries for a specific device'. The filtering is done on all recorded data and just limits what is shown in the viewer.

Filtering of entries can be done on one or more of these columns. Filtering shows items whose column value satisfies up to two conditions, which can be combined in AND or OR ways.

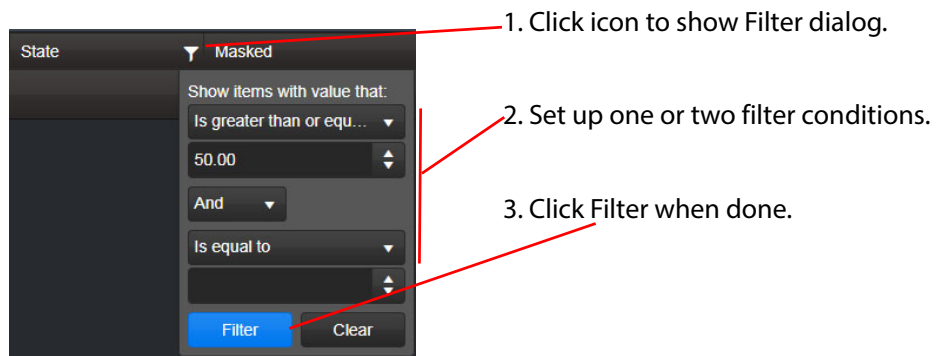


Fig. 6-9: Filter Search Result Dialog

The filter conditions include:

- 'is equal to';
- 'is not equal to';
- 'is greater than or equal to';
- 'is greater than';
- 'is less than or equal to';
- 'is less than';
- 'is null'; and
- 'is not null'.

Non-RollCall Devices

The Recording Service supports RollCall addresses, nevertheless messages from iControl or Densité devices may be recorded etc.

- 1 In an Orbit MapView project, create a **User Folder** in the Orbit Client screen's **Network View** pane. See Figure 6-10a.
- 2 Right-click on the **User Folder** and select 'Assign Address'.
Enter a RollCall address for the folder and click **OK**.
- 3 Drag the devices of interest that appear in the **Network View** pane into the user folder. See Figure 6-10b.

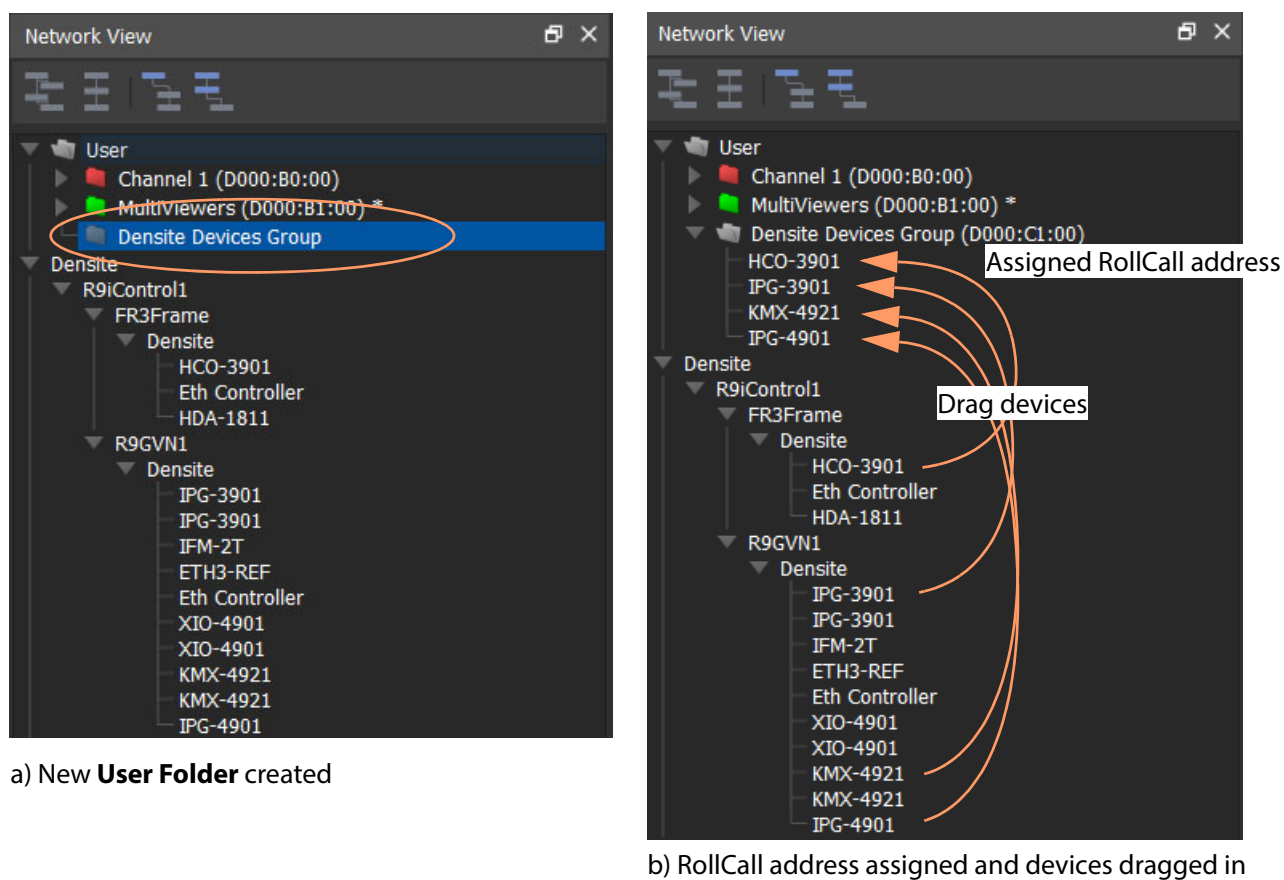


Fig. 6-10: User Folder with Assigned RollCall Address Containing Other Devices

- 4 Save the MapView project.
Note: The project must be saved where the Recording Service can access it. (Git repository or a shared folder.)

The Orbit services will aggregate the devices in the **User Folder** under the assigned RollCall address, and log messages may be recorded and hence viewed by an **Alarm List** widget on an Orbit MapView screen.

Alarm List Widget and Recording Service

Date/Time	Log Field	Alarm	Address	Unit Name	Value
3/12/18 @ 12:51:07	LOG_1	Warn	E000:08:00	Tim Test	WARN: Blar 50
3/12/18 @ 12:51:07	STATE	Warn	E000:08:00	Tim Test	
3/12/18 @ 12:45:44	LOG_1	Fail	E000:08:00	Tim Test	FAIL: Error 100
3/12/18 @ 12:51:04	STATE	Fail	E000:08:00	Tim Test	
3/12/18 @ 12:45:44	LOG_1	AFail	E000:08:00	Tim Test	FAIL: Error 99
3/12/18 @ 12:50:56	STATE	AFail	E000:08:00	Tim Test	
3/12/18 @ 12:45:44	LOG_1	Fail	E000:08:00	Tim Test	FAIL: Error 100
3/12/18 @ 12:45:44	STATE	Fail	E000:08:00	Tim Test	
3/12/18 @ 12:44:17	LOG_1	Warn	E000:08:00	Tim Test	WARN: Blar 50
3/12/18 @ 12:45:22	STATE	Warn	E000:08:00	Tim Test	

Clear All Clear except Fail

Fig. 6-11: Alarm List Widget Shown Running on a MapView Screen

The **Alarm List** widget is available to Orbit MapView screens and to MV-8 Series Multiviewer video walls. It can display the following log message information:

- “live” data from the Orbit Monitoring Service; or
- historical data from one of the Recording Service’s log file configurations.

Note: The **Publish to Alarm Widget** setting must be enabled within the Log File configuration of the Recording Service for the Alarm List widget to connect correctly.

See the Orbit MapView user manual for more widget information.

A

RollCall Terms

RollCall Address

A RollCall address is used by RollCall-enabled devices in a Grass Valley system. Addresses must be unique in a system.

Devices in a network that have the same RollCall network value will be placed within the same branch in the Network View pane in the Orbit Client. The address also defines the position of a device in the Network View pane.

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

The address format is:

NNNN:UU:PP

Where:

NNNN - RollCall network number. Four digits, no leading zeros.

UU - unit/device number. Two digits.

PP - RollCall port. Two digits.

RollCall Domain

Domains can be used to segregate data on a common network. 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 RollCall system, devices, 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.

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