# GV CONVERGENT

Version 1.3.1

# Release Notes

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# Installation and Network Requirements

This section details the requirements that must be met prior to installing or upgrading a system with the current version of GV Convergent. It also provides upgrading and configuration guidelines, as well as tips to improve performance.

## Hardware Requirements

### System Requirements for running GV Convergent Client

The client platform must meet the following system specifications for optimal performance:

| | |
|---|---|
| Operating system | Microsoft Windows 10, Windows 8.1, Windows 8, or Windows 7. |
| Processor | Intel Core i3, the minimum required by the operating system, or better. |
| Memory | 8 GB RAM minimum, the minimum required by the operating system, or more. |
| Disk Space | The minimum required by the operating system plus one GB, or more. |
| Supported Web Browser | Google Chrome only (most recent version) |

### Supported Servers

GV Convergent version 1.3.1 is supported on the following server only: A 1-RU SuperMicro© SYS-6018R-MTR server built and configured to Grass Valley specifications.

## Software Requirements

To run the GV Convergent Client, Grass Valley recommends that the most recent version of Google Chrome is installed on your PC.

# Network Requirements

Users can access the GV Convergent Controller from a client PC using a standard Web browser (Google Chrome). When a client logs in and launches an GV Convergent module, the software is automatically downloaded from the Controller. Consequently, no other application software is needed, which greatly simplifies installation and system maintenance.

It is recommended that the GV Convergent Controller (as well as the associated equipment it controls) be installed on a dedicated LAN, using the existing security infrastructure. A qualified system administrator should verify that the setup follows your organization's security standards. Refer to the  *GV Convergent Quick Start Guide* for software installation information.

## TCP/UDP Port Usage

The various GV Convergent communication protocols require access to specific ports. In networks where a firewall is present between device A and device B, the ports used to communicate from device A to device B must be open on the incoming (external) side of the firewall.

The following network ports must be open on PCs running GV Convergent Client:

| Port Number | Application / Protocol |
|---|---|
| 5001 to 5010 Inbound and outbound | GV Convergent Client replication engine. This is needed so that the client can receive updates from the server and other currently open clients connected to the same server. |
| 80 Outbound | Web port needs to be available on GV Convergent server in order to access the web administration page. Communication with some devices and services is done via REST (Cisco DCNM, Densité Manager, AMWA NMOS). |

The following network ports must be open inbound and outbound for GV Convergent servers:

| Port Number | Application / Protocol |
|---|---|
| 5001 to 5010 | GV Convergent Client replication engine. This is needed so that the client can receive updates from the server and other currently open clients connected to the same server. |
| 80 | Web port needs to be available on GV Convergent server in order to access the web administration page. Communication with some devices and services is done via REST (Cisco DCNM, Densité Manager, AMWA NMOS). |
| 5100 | Port used by Densité Manager to control Densité cards and GV Node. |
| 5194 | NP0016 protocol southbound communication port. |
| 9193 | NP0017 protocol southbound communication port. |
| 14000 | Probel SW-P-08 protocol southbound communication port. |
| 37800 | Sony NS-BUS protocol southbound communication port. |

| Port Number | Application / Protocol |
|---|---|
| 12345 | GVG Native protocol northbound communication port. |
| 5193+Area External ID | NP0016 protocol northbound communication port. The Area External ID can be looked up in the GV Convergent client Area Configurator by selecting the area that needs to be controlled and looking at the External ID property. |
| 9193+Area External ID | NP0017 protocol northbound communication port. The Area External ID can be looked up in the GV Convergent client Area Configurator by selecting the area that needs to be controlled and looking at the External ID property. |

# Software Component Compatibility

Grass Valley recommends you use the following software components and the stated versions for optimal performance and compatibility with GV Convergent version 1.3.1:

**GV Convergent Inter-Operation System Component Compatibility**

| Product | Requirement for GV Convergent Compatibility |
| --- | --- |
| GV Node | Software Versions 1.3.1, 2.0.5, 2.1.2, 2.1.3, 2.1.4, 2.1.8 |
| IPG-3901 (Densité 3 Frame IP Gateway)<br>IPG-3911 (Densité 3+ FR4 Frame IP Gateway)<br>IPG-4901 (GV Node Frame IP Gateway) | Software Version 1.3.4 |
| Router protocols | NP00016 Compact Router<br>NP0016 Enterprise Router<br>NS-BUS<br>NV9000 Serial<br>NV9000 TCP/IP<br>SAM SW-P-08 Serial<br>SAM SW-P-08 TCP/IP |
| Panel protocols | NV96XX Panel Control |
| External Control Interface Protocols | NP0017<br>SW-P-08<br>GVG Native Protocol (names-based for K-frame switcher) |
| RCP-200 Remote Control Panel | Software version 1.7 or later |
| Kaleido-X | Software version 6.70 or later |
| Kaleido-IP | Software version 6.70 or later |
| Densité CPU-ETH2 | Software version 2.0.4 or later |
| EdgeVision | Software version 1.21 or later |
| NV9000 | Software version 6.3.0 build 1873 or later |

# Release Notes

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The Release Notes include a lists of new features and enhancements, bugs fixed, and known issues and limitations associated with the latest version of the GV Convergent software.

## Overview

GV Convergent version 1.3.1 is the first major customer release containing key features to meet the needs of our customers (see ).

## New Features and Enhancements in GV Convergent

The following is a complete list of features and enhancements introduced in GV Convergent 1.3.1 and 1.30.

### Enhancements in Version 1.3.1

This section lists the enhancements and bugs fixed in GV Convergent 1.3.1:

★ [Ref. #PEG-8594] **GV Convergent restarts the active controller on failover:** When you click the Force Active button on the standby controller, GV Convergent restarts the currently active controller. This allows for a cleaner transfer of the services to the newly active controller. This also serves another purpose of severing the synchronization between controllers until the inactive system is back online a very short time later.

★ [Ref. #PEG-8453] **Active and standby states are redefined in the GV Convergent Controller redundancy model:** This ensures that the controller and database are valid and can provide the required factors to set the active or standby state on a GV Convergent controller at startup. Previously, the cluster could be in an inconsistent state when network interruptions occurred. For example, the standby controller may not have fully started or data may not have been synced between the active and standby controllers.

### New and Enhanced in Version 1.3.0

This release adds the following enhancements:

• [Ref. #PEG-5156] **NV9647 Panel support:** The NV9647 panel is now supported by GV Convergent.

• [Ref. #PEG-7673] **GV Node 23.98sf support:** GV Convergent can control signals going through GV Node with 23.98sf frame rate.

- [Ref. #PEG-7566] **GV Convergent support for GV Node 2.1.x (TR03 with 72 redundant sources):** GV Node 2.1.x has the ability to utilize all 24 ports in redundancy to have 72 TR03 sources. This is an adjustment from using only 36 TR03 sources in the previous version. The GV Node driver will display the correct configuration in the topology upon connecting to the GV Node of this version in an active GV Convergent topology.

- [Ref. #PEG-7377] **Sony LSM scalability:** It is possible to support up to 3,000 sources and 1,000 destinations for each of the 3 physical levels exposed by Sony LSM NS-BUS protocol.

- [Ref. #PEG-7105] **Bulk logical device configuration:** It is possible to assign streams to multiple logical devices in bulk. To do this, select the required streams and drag them to a logical device level. This assigns all selected streams to the logical device and sequentially to the following ones for the level column the streams were dragged into.

- [Ref. #PEG-5935] **Stream bandwidth management:** It is possible to manage the bandwidth associated with a stream via the Topology Configurator stage task Property Editor. Select the device and choose the port then the stream that needs modify and change the bandwidth property. The value can be specified in kilobytes, megabytes, or gigabytes by using a K, M or G suffix (i.e: 1.5G for gigabytes).

- [Ref. #PEG-6974] **Logical device table:** Sources and destinations generated automatically from edge devices, like cameras and monitors, cannot be modified from the logical device table.

- [Ref. #PEG-6946] **DCNM host and flow policy scalability:** TR-03 full setup with a 9272Q switch can handle a total of 4,608 sender host policies and 9,216 flow policies.

- [Ref. #PEG-6945] **Dynamic bandwidth change with DCNM:** GV Convergent is capable of changing the allocated bandwidth of a stream within DCNM. In order to circumvent an issue with DCNM where an established flow cannot dynamically change bandwidth, GV Convergent will first change the default bandwidth to a small value to stop the flow before applying the new one. This can add a delay for the new bandwidth and must to be taken into account.

- [Ref. #PEG-6938] **DCNM High Availably status:** If GV Convergent is actively communicating with a DCNM-managed network, the health of the DCNM software is shown on the GV Convergent Client > System Status stage task and updated dynamically.

- [Ref. #PEG-6648] **Breakaway Support:** GV Convergent supports breakaway of Video, Ancillary, and Audio essences by using the multiplexing capabilities of a GV Node automatically.

- [Ref. #PEG-6836] **Logical device table filtering:** In the logical device table stage task, it is possible to filter out sources and destinations, automatically generated by GV Convergent, by clicking on any column filter icon and checking the "Hide automatic sources" or "Hide automatic destinations" checkboxes.

- [Ref. #PEG-5945] **GV Convergent redundant path support:** GV Convergent is capable of handling redundant paths using in 2022-7 and ST2110 workflows by configuring redundant ports on sources and destinations so that joining IP streams is done on both networks automatically.

- [Ref. #PEG-5927] **DCNM support:** GV Convergent is able to control a DCNM network by creating a network switch virtual device and assigning it a DCNM control port. Once configured, any device connected to that network switch is configured in DCNM automatically.

- [Ref. #PEG-5977] **NP0017 ID management:** In the GV Convergent Alias Editor, it is possible to display the NP0017 ID of sources and destinations by checking the "Show NP0017 ID Columns" checkbox on the top toolbar. Note that these IDs are read-only, because they are globally unique to the system, and not per-topology like External IDs.

- [Ref. #PEG-6290] **Invalid backup protection:** If a backup file that has been corrupted or tampered with is being restored, GV Convergent automatically reverts the restore operation and return the system to the original database.

- [Ref. #PEG-6955] **Path Visualization UI:** In the Path Manager stage task, it is possible to see a detailed view of the signal paths by selecting the destinations tab on the right and selecting the destination for which you want to see the signal path.

- [Ref. #PEG-6193] **Raid 1 (Mirror) support on physical servers:** Newly imaged physical servers with GV Convergent software version 1.3.0 will now be installed with a Linux-level software raid 1. In the event of a hard disk failure, the raid array will automatically be repaired once the failed disk is replaced with a healthy one.

- [Ref. #PEG-4785] **1+1 Redundancy status and control:** If a pair of GV Convergent servers is configured in a 1+1 cluster, the GV Convergent > System Status stage task displays the health of both servers, along with a button that allows manual failover of one server to the other. The button is labeled "Force Active". Clicking it triggers a failover, which usually completes within a few seconds. Operation of the system may be impacted during that time window.

- [Ref. #PEG-3550] **GV Convergent DHCP configuration:** DHCP is enabled by default on Ethernet port em2 of GV Convergent servers. The IP range is 10.1.3.40 to 10.1.3.139. If GV Convergent is configured in 1+1 redundancy, the secondary server's IP range is 10.1.3.140 to 10.1.3.254.

**Configuring DHCP using PuTTY (SSH)**

To configure DHCP with PuTTY"

1. Change the network interface on which DHCP is active like this:
   `Edit /etc/default/isc-dhcp-server`

2. Identify the line with `INTERFACES=` and set the interface you want, e.g.:
   `INTERFACES="p15p1"`

3. You can change the addresses used and other parameters like this:
   `Edit /etc/dhcp/dhcpd.conf`

4. Set the subnet, the netmask, and the range of addresses.

5. Make sure the these values correspond to the network configuration as done in /etc/network/interfaces for the interface of interest. Typically the DHCP server can only serve addresses in the subnet assigned to the interface.

6. Restart the DHCP server: `/etc/init.d/isc-dhcp-server restart`

7. View the logs from the DHCP server in `/var/log/syslog`

- [Ref. #PEG-5936] **Automatic DCNM bandwidth management:** When a specific device, like an IPG or a GV Node, is configured to send SD, HD or 3G signals, GV Convergent will automatically update the flow policies in DCNM to allow the newly set bandwidth from the device.

  Bandwidth can also be manually configured via the property editor in the Topology Configurator stage task at the stream level.

- [Ref. #PEG-6232] **Crosspoint logging:** GV Convergent writes all crosspoint changes in an audit log file. This file can be viewed in the GV Convergent Admin> Audit Logs.

- [Ref. #PEG-5634] **NP0016 error reporting:** When a take operation sent via NDAC NP0016 fails within GV Convergent, an error response is now sent back to the NDAC client.

- [Ref. #PEG-1153] **Take operation error reporting:** In the GV Convergent Client Router Control stage task, error messages are now reported when take operations fail.

- [Ref. #PEG-7103] **SSM address support:** When configured to do so, GV Convergent is capable of setting the SSM address field when making IP joins on GV Node versions that support SSM. In order for GV Convergent to push the SSM address value, a GV Node, port or stream must have the "SSM Enabled" checkbox checked in the Topology Configurator stage task Property Editor.

- [Ref. #PEG-6830] **Clean switch configuration:** In order to ensure that switching to a destination is made clean, a column was added to the logical device table with a checkbox. Enabling this checkbox will instruct the GV Convergent path finding engine to ensure that the switch is clean. Doing so will make the take operation slower.

- [Ref. #PEG-6941] **Export of sources and destinations to Excel:** In the logical device table, a new button was added to export all of the sources and destinations in the current topology to Microsoft Excel.

- [Ref. #PEG-6641] **Logical level editor:** There is a new logical level editor UI that allows a user to mange existing levels, create new ones, change compatibility, and create composite levels.

- [Ref. #PEG-5730] **Path Manager destination highlighting:** The Path Manager has two modes for viewing the signal path from a source to a destination. The detailed mode shows the inputs and outputs. This is displayed when you first select a destination in the Destinations tab. When you click the Overview button, the topology graph is displayed, with the signal path highlighted in green.

- [Ref. #PEG-2018] **1+1 Redundancy support:** A pair of GV Convergent servers can be configured to be in a cluster by going into the Area configurator and changing the number of system controllers to two. Then, set the IP address of Controller 2 In the Property Editor, and it automatically joins a new cluster as the standby server.

  A failover is triggered automatically if the standby server is unable to communicate with the active server for a two second period.

- [Ref. #PEG-4782] **Panel status is displayed on the System Status stage task:** The System Status Devices tab displays a health status widget for all configured panels in the active topology. The widget is green as long as the panel is online. It turns red if the panel becomes offline.

- [Ref. #PEG-4997] **GV Node health reported in System Status Page:** When a GV Node is configured in an active topology, the communication status between GV Convergent and the Node will be reported in the System Status Page.

- [Ref. #PEG-4996] **Communication status with IP end points:** All devices under GV Convergent control like IPG-3901, GV Node or NP0016 routers, will have a health widget in the System Status stage task that represents if the software is able to reach those end points (green) or not (red).

- [Ref. #PEG-4994] **IPG-3901 health reporting:** The System Status stage task contains widgets for every IPG-3901 controlled which tells if the software is able to communicate with it (green) or not (red).

- [Ref. #PEG-5813] **Audit log viewing:** All audit logs can be viewed under GV Convergent Admin > Audit logs.

- [Ref. #PEG-5622] **GV Node support as a single device:** You can configure and control a GV Node from GV Convergent. To do this, open the Topology Configurator stage task. Then, drag and drop a GV Node from the Virtual Devices column to the topology graph. Define the IP address of the GV Node frame when the topology graph is inactive. This composite device contains all the SDI and IP capabilities.

- [Ref. #PEG-3778] **Server health reporting:** From the System Status stage task, you can see the health of GV Convergent server hardware. This includes CPU and memory usage, fan status, and network adapter health.

- [Ref. #PEG-4319] **Virtual IP support for 1+1 redundancy:** When configured with 1+1 redundancy, a pair of GV Convergent servers can be configured to use a Virtual IP. To do this, go to the Area Configurator stage task and select the System Controller group. Then, set the desired IP in the Property Editor >Virtual IP Address field.

- [Ref. #PEG-5364] **IPG-3901 2022-7 support:** When configured in 2022-7, a receiving IPG-3901 card is automatically instructed to join streams on both networks when available.

- [Ref. #PEG-5792] **User and security management:** The GV Convergent Client > User Management stage task is available for administrators to create, modify, and delete user accounts, as well as to assign pre-defined roles on a per-area basis.

  Note that it is not possible to change roles or modify the permissions contained within those roles in 1.3.0.

- [Ref. #PEG-5548] **Path Manager tieline view:** From the Path Manager stage task, it is possible to click on the link between devices that represent a set of tielines in order to have a detailed table that lists them.

  The table displays each tieline and shows wether they are free or used. If used, statistics like bandwidth, port, source, and destination are shown.

- [Ref. #PEG-6135] **Logical device table:** It is possible to create logical sources and destinations composed of user-defined streams in the logical device table. From the UI, you can create new sources and destinations and assign streams to each available level for the current topology.

- [Ref. #PEG-5888] **Automatic backup when doing software upgrades:** To create automatic backups when you perform software upgrades or rollbacks, select the checkboxes in GV Convergent Admin > Software Update. These checkboxes are selected by default.

- [Ref. #PEG-3787] **GV Convergent Client auto-reconnect on failover:** When configured in 1+1 redundancy, if a failover occurs while a GV Convergent Client is connected to a server, the client automatically reconnects to the new server once it is ready to receive this connection. This process usually takes a few seconds.

- [Ref. #PEG-5983] **Rollback support:** From GV Convergent Admin > Software Update, it is possible to roll back the current GV Convergent software to a previously installed version. You can choose to keep the current database, delete it, or roll back to the previous database. Note: you can also restore a previous database from Database Backup and Restore..

- [Ref. #PEG-63] **Sony LSM support:** GV Convergent can now control Sony LSM switchers via the NS-BUS protocol. This is limited to individual control of each physical matrix exposed by NS-BUS.

- [Ref. #PEG-4191] **Bandwidth rules during path finding:** When GV Convergent looks for a path to bring a source and destination that needs to go through IP fabric, the software will take into account current bandwidth usage and capacity and allow or deny the take if it would cause oversubscription on the link.

- [Ref. #PEG-5929] **DCNM startup configuration:** When connecting to DCNM after configured for the first time or being offline, GV Convergent will update the policies in DCNM to match the configuration of the active topology.

- [Ref. #PEG-5938] **DCNM exclusive control:** When a DCNM control port is configured to be in exclusive mode, any policy that is not created by GV Convergent will automatically be removed.

- [Ref. #PEG-5834] **NP0017 device-based crosspoints and label support:** GV Convergent supports all of the NP0017 commands required to allow NV9000 to control edge devices in Convergent.

- [Ref. #PEG-5022] **NP0016 Coherent take command:** GV Convergent supports the 0x0000 0055 coherent take NP0016 command along with the normal 0x0000 0050 take command.

- [Ref. #PEG-3772] **NP0017 Port-based crosspoints and Labels:** NP0017 can be used with GV Convergent for Northbound control of the logical devices within its topology. This also makes pulling labels, or mnemonics, from Convergent possible with NP0017. The following commands were added as part of this story:
  - Get physical level dimensions.
  - Perform port crosspoint changes.
  - Notify of crosspoint changed.
  - Query device, source and destination mnemonics.
  - Notify of mnemonic changes.

- [Ref. #PEG-5739] **Support of GV Node 1.3.1 2022-7 workflows:** GV Convergent is capable of automatically handling the redundant paths configured with a GV Node with version 1.3.1. In order to use 2022-7 with GV Node, simply configure the network to use the appropriate redundant lanes on separate network switch devices, and the software will automatically instruct receiving GV Node to join on both networks.

- [Ref. #PEG-5607] **Logical Destinations that control GV Node can be configured for Clean Switch:** Within the logical destination table, on the far right of the logical levels, a check box can be set for GV Node Clean Switch. This will force the takes within a single GV Node to traverse the aggregation ports to maintain a single timing plane. This will also utilize the join-before-leave rule for the aggregation ports to insure that the secondary cross point switches, internal to the GV Node, are clean at the destination.

- [Ref. #PEG-4783; 4784] **Router Connection Status Available on the System Status Page:** Routers configured within the GV Convergent topology are displayed in the GV Convergent Client > System Status stage task. Their connection status is indicated by color - Green, for connected, Red, for not connected.

- [Ref. #PEG-5939] **DCNM topology visualization:** In the Path Manager stage task, if one or more network switches are managed by DCNM, it is now possible to expand the network switch to see the spine-and-leaf topology with each individual switch.

  Bandwidth usage between switches is displayed along with their health. Clicking on a link or on the switch itself will show a detailed status page on the right to see which ports are disabled or in error state.

- [Ref. #PEG-7572] **DCNM flow error visualization:** When a flow is not properly established in DCNM, it is possible to view the error in the Path Manager signal path detailed view. The path will show the devices from source to destination and the IP network leaves the devices are connected to. The part where the flow failed is depicted by an unknown network bubble.

- [Ref. #PEG-6697] **Implemented the GVG Native Protocol External Interface for Northbound Control:** The GVG Native Protocol External Interface is utilized by the Grass Valley switcher to pull mnemonics and perform router control through Convergent. This implementation utilizes the Names-based version of the protocol over the index-based.

- [Ref. #PEG-6082] **NMOS Registry:** To start the GV NMOS registry service from the GV Convergent Client, open the Area Configurator and select the System Controller group. Select "Enable NMOS Registry" checkbox under System Controller Group Properties on the right. Note that in a 1+1 redundancy model, the NMOS registry runs on the active controller only, not on the standby controller.

- [Ref. #PEG-7596] **NMOS registry priority configuration:** From the Area Configurator, select the system controller. In the property editor, a field called "NMOS Registry Priority" has been added to change the priority of the registry. 0 is the highest priority and it can go as low as 255.

- [Ref. #PEG-5821] **Coherent sources and destinations configuration (for GV Node destinations only):** From the Logical Device Table stage task, it is possible to create coherent sources and destinations by first creating custom sources or destinations (from the appropriate tab) and assigning streams from configured edge devices to the custom source or destinations levels.

  For example, a 4K source and destination would require four custom levels. Then sources and destinations can be created and four streams assigned to them on each of the four individual levels.

  The source can then be taken to destination normally.

- [Ref. #PEG-7732] **GV Convergent Admin independent login:** It is possible to log in to the GV Convergent server while the software is offline.

- [Ref. #PEG-7012] **IP address validation:** On a per-network basis, GV Convergent is able to detect collisions on port and multicast IP addresses. When connected port IP addresses change or when physical connections are made, the software will warn the user that duplicate IP addresses have been connected to the same network.

  These errors are logged in the main audit log which is viewable in GV Convergent Admin > Audit Logs.

- [Ref. #PEG-7795] **Salvo execution from GV Convergent Client:** From the Router Control stage task, it is possible to list available salvos by selecting the "Salvos" radio button. Once a salvo is selected, pressing the take button will execute the selected salvo.

- [Ref. #PEG-6597] **Salvo creation and editing:** From the Router Control stage task in the GV Convergent client, a Salvo Editor tab is available on the right-side panel.

  From this tab, new salvos can be created, edited and deleted. To edit a salvo, select one from the list on top. This will populate the list at the bottom with all of the operations contained within that salvo. The toolbar on top of the operations list can be use to add, replace and edit operations by choosing sources and destinations from the left and center panels and pressing the take, lock, protect, release and force release buttons of the toolbar.

- [Ref. #PEG-7319] **Manual control of stream shown in Path Manager:** When a stream that is part of a tieline is configured to be manually controlled via its "Expose Stream" property, it will be automatically be considered as used in the percentages displayed in the Path Manager stage task.

  For example, if 5 out of 10 tielines have been configured for manual control between two routers, the Path Manager will show 50% usage since half of the tielines are reserved for manual control.

- [Ref. #PEG-6533] **Direct Flow Orchestration (DCNM Static Joins):** This supports the use cases where a destination IP device does not have an API exposed to cause its receivers to join send streams. GV Convergent can control the egress ports of a network switch to statically stitch flows feeding the IP device. It is also necessary to remove the network interface ports from the available resources for dynamically stitching flows via IGMP joins. Another way of stating this - it is necessary to remove paths from the available tielines.

- [Ref. #PEG-7314] **Manual control of streams:** In order to manually bring signals to devices in the middle of a topology, it is possible to set the "Expose Stream" checkbox in the Property Editor of the Topology Configurator to checked. Once exposed, a source and destination can be created to bring sources to the stream and from the stream to a destination.

  The tieline connected to the stream is considered reserved, so if any other take operation is made, the manually controlled stream will never be recycled or re-used by takes that do not involve the source or destination at that location.

- [Ref. #PEG-6599] **Salvo button for software and hardware panels:** From the GV Convergent Client Topology Configurator stage task, it is possible to drag-and-drop salvo buttons into any panel behavior configured in the system. Each salvo button is its own salvo, and can be executed individually from a panel by pressing it and then the take button.

- [Ref. #PEG-7728] **Panel buttons status available for failed takes:** Only the source, destination and level buttons involved in the failed take will flash. The take button does not flash.

  The flashing currently consists of changing the color to red, then repetitively toggling from low to high tally for a total of 6 times, each time for 300ms. So it gives about 2 seconds of flashing. After that the buttons go back to their normal state.

  The color for flashing is configurable on the source, quick source, destination, indexed destination and level buttons. The state is "In Error".

## Bugs Fixed in GV Convergent

### Fixed in 1.3.1

★ [Ref. #PEG-8465] **Invalid configuration files can no longer be restored:** Functionality to ensure that invalid configuration files cannot be uploaded and restored has been migrated to the new GV Convergent Admin.

★ [Ref. #PEG-8583] **GV Nodes migrated from unreleased versions of GV Convergent must be manually deleted:** If you added GV Nodes to a topology created prior to GV Convergent 1.3.0 Build 810, you need to perform the following fix. Open the topology in the GV Convergent Client > Topology Configurator. Delete the GV Nodes. Add new GV Nodes to the topology and redo the physical connection.

★ [Ref. #PEG-8440] **Undo functionality is now completely removed.** Previously, you could use the keyboard shortcut Ctrl + Z to reverse an action, even though the Undo button was removed. This is no longer possible.

★ [Ref. #PEG-8424] **System Controllers can now be removed from the Area Configurator stage task in all deployments:** A unique bug, logged by a user who was unable to remove a system controller in the Area Configurator, was fixed. The user's database had been corrupted due to redundancy testing.

★ [Ref. #PEG-8380] **Incorrect warning of IP address conflict is no longer displayed:** Previously, a warning message was displayed incorrectly because the IP address validation did not detect the last Ethernet port pair as the same port. This has been resolved.

★ [Ref. #PEG-8379] **Disabled streams on the IPG's incorrectly displayed:** Based on the configuration of an IPG, certain streams will be disabled, but will maintain their multicast group IP.  The process that warns the user of duplicate IP's identifies those as duplicates. They should be ignored due to the fact that those streams are disabled.

★ [Ref. #PEG-7768] **Some host policies, created from the DCNM web interface were not removed. when GV Convergent was in exclusive mode:** Previously, the GV Convergent cache that contained the DCNM host policies was not cleared. The cache is updated before the synchronization with the DCNM host policies and after a host policy delete.

On the Cisco DCNM, the host ID is not always reliable between queries.

Therefore, in case the host policy ID has changed since the last query was executed, GV Convergent verifies that the last and correct host ID is present, before executing the delete query.

★ [Ref. #PEG-8450] **Buttons on panels are no longer flashing:** This was reported during some on-site testing, but a fix was introduced to resolve the issue. The panel buttons should no longer flash on fail over of the GVC servers.

★ [Ref. #PEG-8484] **Initial third party updates slow down takes in the first minutes after failover:** The fix was to consider the port direction while doing the initialization of all ports and streams, only enabling the streams and ports of the proper direction. It no longer takes an excessive amount of time before 3rd party takes are allowed after fail over.

# Known Issues and Limitations

The following is a list of known issues and limitations associated with GV Convergent version 1.3.0 and later. The star (★) symbol indicates a new issue in GV Convergent version 1.3.1.

- ★ [Ref. #PEG-6303] **Two automatic logical sources are created for Redundant Generic IP devices**
  *Workaround:* If this occurs, manually click on the automatically create source checkbox for the redundant port to clear the check. This removes the automatically created source for the redundant port.

- [Ref. #PEG-7737] **Status of the destination buttons are not updated on Router Control in GV Convergent Client when topology is edited:** Removing a physical component of the GV Convergent topology could create a situation where the status on the Router Control page of the client is incorrect.
  *Workaround:* Close and reopen the GV Convergent Client > Router Control stage task and the source will be cleared for the destination.

- [Ref. #PEG-7283] **Keystroke does not work when suffix is composed of a letter and a number**
  *Workaround:* If this occurs, either use only numbers or use only a single letter for the suffix/keystroke for selecting devices within a category.

- [Ref. #PEG-7554] **Custom video flow policies are not re-created when you revert back from the default value to the initial value**
  *Workaround:* If this occurs, change the bandwidth again then revert back.

- [Ref. #PEG-7676] **After a failover or restart, the hard panel displays two panel configurations**
  *Workaround:* If this occurs, then change the stage task and go back on the panel.

- [Ref. #PEG-7694] **Panel Status displays offline after a restore of the configuration**
  *Workaround:* If this occurs, then delete the panel from the topology and create it again.

- [Ref. #PEG-7825] **DCNM properties are blank after activating a topology**
  *Workaround:* If this occurs, then deactivate and reactivate the topology.

- [Ref. #PEG-7879] **Get HTTP 401 Unauthorized when connecting on DCNM server during startup**
  *Workaround:* If this occurs, then attempt to deactivate and activate the topology.

- [Ref. #PEG-7926] **Property Editor does not show any properties when restarting the Pegasus service while GV Convergent Client remains open**
  *Workaround:* If this occurs, close the Topology Configurator stage task and re-open it.

- [Ref. #PEG-7967] **Deleting an alias column in Alias Editor is not reflected in Router Control UI:** After you delete an alias column in GV Convergent Client > Alias Editor while the Alias is selected in Router Control UI, the alias is still shown in Router Control UI although expanding the list will not show it as a list item.
  *Workaround:* If you reopen another Router Control stage task, None is show in the Alias list, as expected.

- [Ref. #PEG-8007] **Some clients do not automatically reconnect to the server when online after a reboot**
  *Workaround:* If this occurs, then close and reopen GV Convergent Client.

- [Ref. #PEG-8040] **Topology in Path Manager does not show new tieline created at the output of the switch to the input of the gateway**
  *Workaround:* If this occurs, then click on the Refresh button in the Path Manager.

- [Ref. #PEG-8083] **The following scenario causes GV Convergent Client to lose force unlock/unprotect permission:** GV Convergent Client is open. You open a second client as a user, who does not have force unlock/unprotect permissions. The client that was open loses this permission.
  *Workaround:* If this occurs, change the role of the user to administrator. Then, log out and log back in with administrator privileges.

- [Ref. #PEG-8117] **Changing control port type of a network switch could cause wrong display in Path Manager:** If you configure a network switch with a Cisco control port and then change it to a dummy control port, Path Manager always displays the network switch with Cisco control port.
  *Workaround:* If this occurs, then restart Pegasus service in PuTTY.

- [Ref. #PEG-8120] **Backup/Restore URL restored to processBackupRestoreConfirmation after deleting a backup:** Refreshing the page does not change the URL.
  *Workaround:* If this occurs, click on the Backup/Restore link to refresh the page.

- [Ref. #PEG-8235] **Deleting devices by decreasing the device count is faster when all other GV Convergent Client stage tasks are closed**: If the device count is changed when only the Topology Configurator stage task is open, the deletion is much faster. As soon as you open the Router Control or Path Manager stage task, it starts to slow down..

- [Ref. #PEG-8240] **Router control UI does not update tallies correctly when router XPTs changed while the topology is offline:** After reactivating the topology, the Router Control UI should update with correct XPT status.
  *Workaround:* If this does not occur, then close and reopen the Router Control UI.

- [Ref. #PEG-8255] **System Status page displaying routers that have been deleted:** After deleting dummy routers on the loaded topology, the System Status UI was still showing the statuses of the deleted routers without their labels.
  *Workaround:* Close/reopen the System Status UI.

- [Ref. #PEG-8283] **Device properties not updated on the IPG while operating in aggregation mode**: With an IPG-3901 in Aggregation mode, if you change an IP output from Eth2 to Eth1, the corresponding streams are not removed on the Eth2, but they are correctly added to Eth1.
  *Workaround:* If this occurs, then you may need to remove the gateway and re-add it to the topology.

- [Ref. #PEG-8332] **Router Control UI not updated after multi-select take on NV9654 hardware panel**
  *Workaround:* If this occurs, then close and reopen the GV Convergent Client.

★ Ref. #PEG-8513] **Ports must be opened on the firewall of Client PC**

Normally, the only particular ports that would need to be configured on a firewall are those for the GVC Client software on client PCs (ports 5001-5010).

All other listed ports are used server side and communicate to other devices directly

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| Port | Description |
|---|---|
| 5001 to 5010 | GVC Client replication engine. This is needed so that the client can receive updates from the server and other currently open clients connected to the same server. |
| 80 | Web port needs to be available on GVC server in order to access the web administration page.<br><br>Communication with some devices and services is done via REST (Cisco DCNM, Densité Manager, AMWA NMOS). |
| 5100 | Port used by Densité Manager to control Densité cards and GV Node. |
| 5194 | NP0016 protocol southbound communication port. |
| 9193 | NP0017 protocol southbound communication port. |
| 14000 | Probel SW-P-08 protocol southbound communication port. |
| 37800 | Sony NS-BUS protocol southbound communication port. |
| 12345 | GVG Native protocol northbound communication port. |
| 5193+ | Area External IDNP0016 protocol northbound communication port. The Area External ID can be looked up in the GVC client Area Configurator by selecting the area that needs to be controlled and looking at the External Id property. |
| 9193+ | Area External IDNP0017 protocol northbound communication port. The Area External ID can be looked up in the GVC client Area Configurator by selecting the area that needs to be controlled and looking at the External Id property. |

★ [Ref. #PEG-8602] **The last take operation added to a salvo can appear incorrectly at the beginning:** When adding take operations to a salvo, the last take operation added appears at the beginning of the list, but should appear at the bottom of the list in a salvo.
*Workaround:* If this occurs, then delete the unsorted operation and re-add it again.

★ [Ref. #PEG-8615] **Client could lose access to the server while idle over night:** If the client loses access to the server while open over night, the user can restart the Pegasus server to restore communication.

• [Ref. #PEG-6749] **GV Convergent Client does not automatically reconnect when changing the management IP address**
*Workaround:* If this occurs, then close and relaunch the client. Login with the new IP address.

• [Ref. #PEG-7029] **New hosts policies failed to be added while DCNM removing unwanted hosts policies**
*Workaround:* If this occurs, then users can deactivate and reactivate topology.

• [Ref. #PEG-7491] **Panel destination status stops updating after performing audio breakaway if the video level button is not added to the panel**
*Workaround:* If this occurs, the user can add the video level to the panel configuration.

• [Ref. #PEG-7830] **Black screen when opening Panel Configurator stage:**
*Workaround:* If you receive the black screen when opening or selecting the Topology Configurator stage, close and reopen the stage.

• [Ref. #PEG-7994] **Aliases disappear after deleting an alias column:** after deleting Alias columns, adding aliases on a new column, and then adding another Alias column, the alias labels disappear from the cells.
*Workaround:* Close and reopen the GV Convergent Client > Alias Editor.

- [Ref. #PEG-8009] **Tielines view is not updated dynamically when a short name is changed:** when changing the short name of a device, the Path Management (Tielines view) is not dynamically updated.
*Workaround:* Click the Refresh button.

- [Ref. #PEG-8015] **Physical Connections Candidate tab shows incompatible ports after all SDI ports have been connected via the Quick Connect feature:** in the case where we select SDI ports output ports and IP input ports, the Candidate tab shows a red connect icon after it has been selected. However if we go back to the builder tab and we connect the SDI ports, the Candidate tab will still show the red icon until we select the tab.
*Workaround:* If this occurs, click the candidate tab. This clears the warning.

- [Ref. #PEG-8018] **Ports appearing in "Other" physical connections table are not dynamically updated after changes are made to the device:** when changing the device short name or device count for the corresponding ports appearing in the "Other" table, the table is not dynamically updated.
*Workaround:* If this occurs, deselect/select the link.

- [Ref. #PEG-8027] **Changing a port/stream short name for a device does not show the broken link:** When you change the short name of a device port or stream, the broken link icon does not show up.
*Workaround:* If this occurs, unselect/select the port/stream tab.

  The same refresh issue applies when changing the port/stream name with multiple instances of GV Convergent Client opened. The second client is not updated until the port/stream is un-selected/selected. Also, if we break the link for the modified properties for streams, the link is still shown as broken. The same workaround applies in this case.

- [Ref. #PEG-8096] **Category Configurator is very slow to assign and delete large numbers of sources and destinations:** if you are experiencing a delay, then as soon as you see the sources are deleted from the screen, close the client and reopen it. This way you skip the unnecessary delays.

  As for the creation of the category, you can do the same thing. Close the client after a while. and reopen it.

- [Ref. #PEG-8097] **Logs fill with stack traces when external controller is configured with incorrect matrix ID:** fix the matrix ID or stop the external control system from accessing NDAC, or change log level for this module (which may well hide other important errors in this same module).

- [Ref. #PEG-8162] **While trying to add operations in a Salvo, the operations list became locked**
*Workaround:* If this occurs, close and reopen the Router Control/Salvo Editor stage task.

- [Ref. #PEG-8223] **Physical Connections Table Reload button:** if the user has selected a physical connection and then activated the topology, the Physical Connections table is stuck at loading.
*Workaround:* If this occurs, click the reload button at the bottom of the table.

- [Ref. #PEG-8284] **Alias Editor not updating dynamically when physical connections are deleted in the topology:** if the Alias Editor stage task is open and the user severs physical connections in the Topology Configurator task, switching back to the Alias Editor may not reflect the deletion.
*Workaround:* If this occurs, click on the refresh button on the Alias Editor.

- [Ref. #PEG-8328] **Take should fail with incorrect physical level configured on a router:** if the user has configured a router, with the incorrect physical level value, GV Convergent will attempt to perform the take. If the physical level does not exist on the router, no actual XPTs are switched.

- [Ref. #PEG-8333] **GV Convergent Client does not automatically reconnect after a network cable is disconnected on the active controller:** after disconnecting the network cable on the active controller, the standby controller becomes the active controller. However, GV Convergent Client may not reconnect to the new active controller.
  *Workaround:* If this happens, shut down and launch GV Convergent Client again.

- [Ref. #PEG-8337] **Logical Level on device group properties does not propagate to "Device Properties" when automatic Source/Destination is off**
  *Workaround:* If this occurs, manually configure the logical level on the device properties.

- [Ref. #PEG-8449] **Changing the standby server IP without breaking the cluster is not functional**
  *Workaround:* If the user must change the IP address of the standby server in a redundant cluster, then it is necessary to break the cluster. To do so, set the number of controllers in the Area Configurator to 1 and pres enter. Then, change the number of controllers back to 2 and enter a new IP address for Controller 2 in the Properties Editor.

- [Ref. #PEG-8469] **The Virtual IP address cannot be the same as the primary or secondary controller IP:** Also, do not use the same IP for both the primary and secondary controller.
  *Workaround:* If the Virtual IP address is the same as an IP address of a controller, or if the both controllers have the same IP address, you will need to edit the IP address of one, or both controllers in the GV Convergent > Area Configurator > Property Editor.

- ★ [Ref. #PEG-8520] **Hosts/flow policies are not being re-created after a DCNM HA failover**. If the active DCNM in a HA availability DCNM configuration goes offline, DCNM will fail over to the standby DCNM, but it will not have the hosts/flow policies that were currently available on the previously active DCNM. To fix this issue we have to deactivate and activate the topology one more time.

- ★ [Ref. # PEG-8542] **The wrong device graph is loaded after the area is switched:** When you create and activate a new topology, then create a new area, the original area may be displayed.
  *Workaround:* If this occurs, then click on the new area to display it.

- ★ [Ref. #PEG-8570] **In a system with a corrupted database, GV Convergent Client is unable to connect with GV Convergent Admin. Cluster ID 17 was not found in database:** Database corruption could cause ta connection problem; so that GV Convergent Client is unable to connect to GV Convergent Admin
  *Workaround:* The database can be fixed using a cluster since the problem will not replicate on the standby controller.
  1  For this fix, two GV Convergent Controllers are required: GVC A and GVC B
  2  Load the database on GVC A
     Connect to the GVC A database via GV Convergent Admin. It will fail
  3  Add the GVC B controller to the controller group with GVC A
     Connect to the GVC A database via GV Convergent Admin. It will fail
     Connect to GVC B database via GV Convergent Admin. It will work
  4  Remove GVC A from the controller group with the GVC B controller.
  5  Stop the service on GVC A and delete the database.

   6  Add the GVC A controller to the controller group with GVC B
Connect to GVC A database via GV Convergent Admin. It will work.
Connect to GVC B database via GV Convergent Admin. It will work.

When the procedure is complete, both controllers have a valid database.

- [Ref. #PEG-8585] **Ehternet NIC ports on GV Convergent Admin > Network Settings are listed in reverse order:** Currently, only the em1 interface is enabled on startup of GV Convergent Client. When editing the configuration of the interfaces in the web stage, it is important to note that, from the rear, the right most network port actually relates to p6p1. These interfaces also need to be manually enabled using the command, "ifconfig [interface] up" (i.e. ifconfig em2 up) through ssh to GVC, or on the Linux command line interface.

- [Ref. #PEG-7734] **Topology not refreshing after switching to full screen in Topology Configurator Stage:** The topology is disappearing if we make it fullscreen then bring it back to the original size by clicking the fullscreen button on the top right of the *Topology: Device Graph* window.
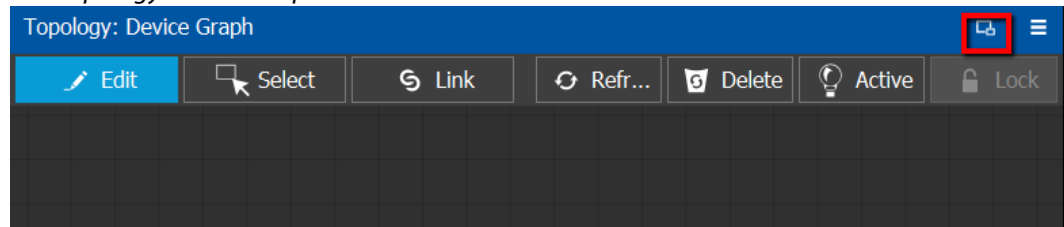


*Workaround:* If this occurs, close and reopen the Topology Configurator Stage.

- [Ref. #PEG-8317] **GV Convergent Admin Backup and Restore does not display the correct host name when the host name has a hyphen in it:** It is not recommended to use a hyphen in the host name.

- [Ref. #PEG-8473] **IPG3901 port labels are not being dynamically updated in GV Convergent**
*Workaround:* If this occurs, then deactivate/activate the topology.

## Grass Valley Technical Support

For technical assistance, contact our international support center, at
1-800-547-8949 (US and Canada) or +1-530-478-4148.

To obtain a local phone number for the support center nearest you, consult the Contact Us section of Grass Valley's website (www.grassvalley.com).

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

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