

GigaVUE-OS Upgrade Guide

GigaVUE-OS

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GigaVUE-OS Upgrade

This chapter describes how to upgrade GigaVUE H Series and GigaVUE TA Series nodes to the GigaVUE-OS 5.8.xx release. Refer to the following sections for details:

- Before You Begin Required Items on page 5
- Upgrade Summary/Path Standalone Nodes on page 7
- Upgrade Summary Clustered Nodes on page 9
- Bootloader Code by GigaVUE-OS Release on page 11
- Gateway Ports Converted to Tool Ports on page 17
- GigaVUE TA Series Licenses on page 17

Before You Begin – Required Items

Use this upgrade guide to upgrade to software version 5.8.xx. This guide is for nodes running the previous General Availability (GA) releases or the previous Long Term Support (LTS) release, which is 5.7.xx.

Obtaining Software Images

To obtain software images, register on the Gigamon Community portal and download the software. You will need to provide the serial number of any one of the nodes to register and download the software. Use the **show chassis** command to retrieve a node's serial number.

To reach the Gigamon Community portal, use the following link:

https://gigamoncp.force.com/gigamoncp/

For assistance, contact Technical Support at the following email address:

support@gigamon.com

Separate Software Images for Different Nodes

The software image upgrade procedure is slightly different depending on the node you are upgrading. Relevant files and documentation are available on the customer portal. Note the filenames in Table 2: Required Items for System Upgrade.

Note: For installing GigaVUE-OS on a white box, follow the instructions highlighted in the GigaVUE-OS Installation Guide on a White Box.

Table 1: Software Image Filenames Unique to the Node

Control Card or Node	Required Items	Description
GigaVUE-HC1	hc1_58xx.img	Binary image file containing the updated software for the GigaVUE-HC1. The xx indicates the exact build number.
GigaVUE-HC2	hc2_58xx.img	Binary image file containing the updated software for the GigaVUE-HC2. The xx indicates the exact build number.
GigaVUE-HC3	hc3_58xx.img	Binary image file containing the updated software for the GigaVUE-HC3. The xx indicates the exact build number.
GigaVUE-TA10	ta10_58xx.img	Binary image file containing the updated software for the GigaVUE-TA10. The xx indicates the exact build number.
GigaVUE-TA40	ta40_58xx.img	Binary image file containing the updated software for the GigaVUE-TA40. The xx indicates the exact build number.
GigaVUE-TA100	ta100_58xx.img	Binary image file containing the updated software for the GigaVUE-TA100. The xx indicates the exact build number.
GigaVUE-TA100- CXP	tacx100_ 58xx.img	Binary image file containing the updated software for the GigaVUE-TA100-CXP. The xx indicates the exact build number.
GigaVUE-TA200	ta200_58xx.img	Binary image file containing the updated software for the GigaVUE-TA200. The xx indicates the exact build number.

Required Items for Upgrades

The following table summarizes the items you will need to perform the upgrade to GigaVUE-OS 5.8.xx:

Table 2: Required Items for System Upgrade

Node Type/Version	Protocols	Description
All	FTP, TFTP, SFTP, SCP,	You will need to fetch the GigaVUE nodes' software packages from a file server using one of the supported protocols.
	HTTP, HTTPS, or USB	NOTE: Only the GigaVUE-HC1, GigaVUE-HC3, GigaVUE-TA100, GigaVUE-TA100CXP, and GigaVUE-TA200 support the USB parameter.
		The GigaVUE nodes will need the file server's IP address so that it can connect to the server and download the image.
		NOTE: There are freeware file servers available on the Internet for a variety of operating systems. A Web search will provide links to many implementations.
		You can also upload a new software build directly from your PC using GigaVUE-FM.

Upgrade Summary/Path – Standalone Nodes

Use the procedures in this chapter to upgrade GigaVUE H Series and GigaVUE TA Series nodes to GigaVUE-OS 5.8.xx.

Note: All upgrades start and end by saving the node's configuration with the **write memory** command.

NOTE: Before any upgrade, save your current configuration.

Refer to Upgrade Summary – Clustered Nodes on page 9 for considerations when upgrading nodes in a cluster.

Table 3: GigaVUE-OS Upgrade Summary from Different Software Versions

Starting Version	GigaVUE TA Series Upgrade Summary	GigaVUE-HC1/GigaVUE-HC2/GigaVUE- HC3	
		Upgrade Summary	
From 5.7.xx to 5.8.xx	GigaVUE TA Series nodes running 5.7.xx can be upgraded to a 5.8.xx release using the following procedure: a. Delete all available image files using the image delete <filename.img> command. Use the show images command to display the existing image filenames. b. Fetch and install the 5.8.xx software image (based on the node information) and bootloader, set next boot, and reload.</filename.img>	GigaVUE-HC1, GigaVUE-HC2, and GigaVUE-HC3 nodes running 5.7.xx can be upgraded to a 5.8.xx release using the following procedure: a. Delete all available image files using the image delete <filename.img> command. Use the show images command to display the existing image filenames. b. Fetch and install 5.8.xx software image and bootloader, set next boot, and reload.</filename.img>	
From 5.6.xx to 5.8.xx	The recommended upgrade path is 5.6.xx > 5.7.xx > 5.8.xx.	The recommended upgrade path is 5.6.xx > 5.7.xx > 5.8.xx.	
From 5.5.xx to 5.8.xx1	The recommended upgrade path is 5.5.xx > 5.7.xx > 5.8.xx.	The recommended upgrade path is 5.5.xx > 5.7.xx > 5.8.xx. For GigaVUE-HC2, the recommended upgrade path is 5.5.xx > 5.6.xx > 5.7.xx > 5.8.xx.	
From 5.4.xx to 5.8.xx1	The recommended upgrade path is 5.4.xx > 5.7.xx > 5.8.xx.	The recommended upgrade path is 5.4.xx > 5.7.xx > 5.8.xx. For GigaVUE-HC2, the recommended upgrade path is 5.4.xx > 5.6.xx > 5.7.xx > 5.8.xx.	
From 5.3.xx to 5.8.xx1	The recommended upgrade path is 5.3.xx > 5.4.xx > 5.7.xx > 5.8.xx.	The recommended upgrade path is 5.3.xx > 5.4.xx > 5.7.xx > 5.8.xx. For GigaVUE-HC2, the recommended upgrade path is 5.3.xx > 5.4.xx > 5.6.xx > 5.7.xx > 5.8.xx.	
From 5.2.xx to 5.8.xx1	The recommended upgrade path is 5.2.xx > 5.3.xx > 5.4.xx > 5.7.xx > 5.8.xx.	The recommended upgrade path is 5.2.xx > 5.3.xx > 5.4.xx > 5.7.xx > 5.8.xx. For GigaVUE-HC2, the recommended upgrade path is 5.2.xx > 5.3.xx > 5.4.xx > 5.6.xx > 5.7.xx > 5.8.xx.	
From 5.1.xx to 5.8.xx1	The recommended upgrade path is 5.1.xx > 5.4.xx > 5.7.xx > 5.8.xx.	The recommended upgrade path is 5.1.xx > 5.4.xx > 5.7.xx > 5.8.xx. For GigaVUE-HC2, the recommended upgrade path is 5.1.xx > 5.4.xx > 5.6.xx > 5.7.xx > 5.8.xx.	

Starting Version	GigaVUE TA Series Upgrade Summary	GigaVUE-HC1/GigaVUE-HC2/GigaVUE- HC3 Upgrade Summary
From pre- 5.1.xx to 5.8.xx11	The recommended upgrade path is pre-5.1.xx > 5.1.xx > 5.4.xx > 5.7.xx > 5.8.xx.	The recommended upgrade path is pre-5.1.xx > 5.1.xx > 5.4.xx > 5.7.xx > 5.8.xx. For GigaVUE-HC2, the recommended upgrade path is pre-5.1.xx > 5.1.xx > 5.4.xx > 5.6.xx > 5.7.xx > 5.8.xx.

1Refer to the GigaVUE-OS Upgrade Guides of the respective versions (GigaVUE H Series Upgrade Guide or GigaVUE TA Series Upgrade Guide) for details.

NOTE: Upgrades of the GigaVUE-HC1, GigaVUE-HC2, and GigaVUE-HC3 can skip all steps related to Control Card Version 2.

Upgrade Summary – Clustered Nodes

This section summarizes the upgrade procedure for nodes operating in a cluster.

The upgrade procedure for an individual node in a cluster is nearly identical to that for a standalone node. The only difference is that instead of reloading individual nodes as you upgrade them, you perform a single **cluster reload** after the master node has completed the image upgrade. For instructions about how to upgrade individual nodes, refer to "Upgrading GigaVUE Nodes Using GigaVUE-OS CLI" on page 20.

Note that a GigaVUE TA Series can never be a master in a cluster configuration. However since the GigaVUE-OS versions are shared amongst the GigaVUE nodes, it is important to upgrade all nodes per instructions prior to using the **cluster reload** command.

Licensing for Clustered Nodes in GigaVUE-OS

The license required for the clustering feature is Advanced Features License (AD_Features).

- When upgrading to GigaVUE-OS v5.8.xx, if the node already has a Clustering License, it will automatically be updated to Advanced Features License (AD_Features) upon upgrade.
- If a license has not been generated yet, or if an earlier version of the license has been generated but not yet installed, then you need to generate (or regenerate) a license from the Gigamon Community portal after upgrading to 5.8.xx. Install and activate the new license.

Note: The license requirement for clustering changed in GigaVUE-OS 5.4.00. If you are upgrading to 5.4.00 from a previous release, the name changed from "Clustering License" to "Advanced Features License". However, the instructions remain the same.

Upgrade Sequence

Gigamon recommends the following upgrade sequence for clusters:

- 1. Use the **write memory** command on each node in the cluster to preserve settings that are stored locally rather than globally (for example, AAA and hostname settings).
- 2. Use the **image delete <filename.img>** command to delete all the available image files.

Note: Use the **show images** command to verify if there are any images existing on the node.

3. On the individual nodes including the master node, fetch and install 5.8.xx software image and bootloader, and set the next boot.

Note: Do not reload the nodes as you upgrade them.

4. Use the **cluster reload** command from the master to reestablish the cluster settings.

Note: The time it takes for the cluster to complete the cluster reload and re-establish packet distribution will vary depending on the number of nodes in the cluster and the complexity of the packet distribution to restore. An average cluster reload will interrupt traffic for five minutes. However, an eight-node cluster with complex packet distribution in place can take as long as 20 minutes to reload completely.

Note: After reloading the cluster, use the **show cluster global brief** command to determine the roles assigned to each node in the cluster.

5. After completing the upgrade, run the **show version** command on each node in the cluster to make sure they are all running a 5.8.xx build. If any node does not show the correct version number, upgrade it individually.

Figure 1: Cluster Upgrade Summary summarizes the cluster upgrade sequence.

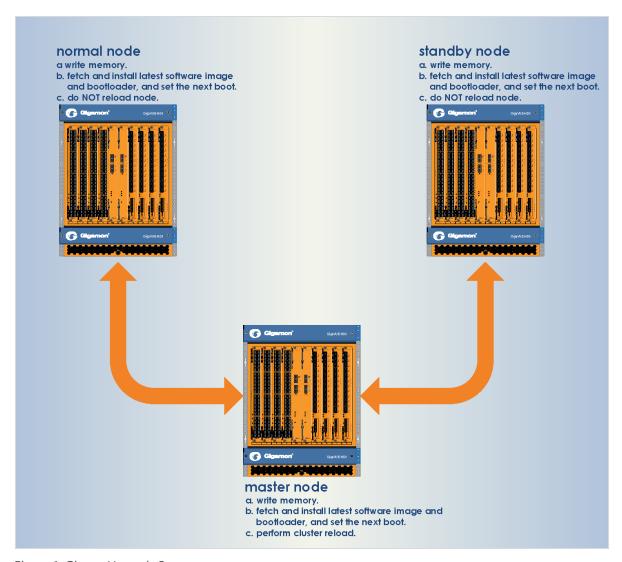


Figure 1: Cluster Upgrade Summary

Adding a New Node to an Existing Cluster

Before adding a new node to a cluster, make sure that the node is upgraded to the same version as other nodes in the cluster.

Note: For a GigaVUE TA Series nodes, ensure that the applicable licenses are activated.

Bootloader Code by GigaVUE-OS Release

The following table summarizes the version of bootloader code associated with each GigaVUE node type and software release. Use the **show version** command to check the currently installed bootloader and software image versions.

SW Version	Node Type Software Imag		Bootloader Filename	Bootloader Version
5.8.00	GV-HC1	hc1_5800.img	N/A*	N/A*
	GV-HC2	hc2_5800.img	hc2_5500.bin	2011.06.9
	GV-HC3	hc3_5800.img	N/A*	N/A*
	GV-TA10	ta10_5800.img	ta10_5500.bin	2014.01.01
	GV-TA40	ta40_5800.img	ta40_5500.bin	2014.01.01
	GV-TA100	ta100_5800.img	N/A*	N/A*
	GV-TA100-CXP	tacx100_5800.img	N/A*	N/A*
	GV-TA200	ta200_5800.img	N/A**	N/A**
5.7.00	GV-HC1	hc1_5700.img	N/A*	N/A*
	GV-HC2	hc2_5700.img	hc2_5500.bin	2011.06.9
	GV-HC3	hc3_5700.img	N/A*	N/A*
	HCCv2	hdd5700.img	hdd5500.bin	2011.06.20
	GV-TA10	ta10_5700.img	ta10_5500.bin	2014.01.01
	GV-TA40	ta40_5700.img	ta40_5500.bin	2014.01.01
	GV-TA100	ta100_5700.img	N/A*	N/A*
	GV-TA100-CXP	tacx100_5700.img	N/A*	N/A*
	GV-TA200	ta200_5700.img	N/A**	N/A**
5.6.00	GV-HC1	hc1_5600.img	N/A*	N/A*
	GV-HC2	hc2_5600.img	hc2_5500.bin	2011.06.9
	GV-HC3	hc3_5600.img	N/A*	N/A*
	HCCv2	hdd5600.img	hdd5500.bin	2011.06.20
	GV-TA10	ta10_5600.img	ta10_5500.bin	2014.01.01
	GV-TA40	ta40_5600.img	ta40_5500.bin	2014.01.01
	GV-TA100	ta100_5600.img	N/A*	N/A*
	GV-TA100-CXP	tacx100_5600.img	N/A*	N/A*
	GV-TA200	ta200_5600.img	N/A**	N/A**

SW Version	Node Type	Software Image Filename	Bootloader Filename	Bootloader Version
5.5.00	GV-HC1	hc1_5500.img	N/A*	N/A*
	GV-HC2	hc2_5500.img	hc2_5500.bin	2011.06.9
	GV-HC3	hc3_5500.img	N/A*	N/A*
	HCCv2	hdd5500.img	hdd5500.bin	2011.06.20
	GV-TA1	ta1_5500.img	ta1_5500.bin	2010.06.16
	GV-TA10	ta10_5500.img	ta10_5500.bin	2014.01.01
	GV-TA40	ta40_5500.img	ta40_5500.bin	2014.01.01
	GV-TA100	ta100_5500.img	N/A*	N/A*
	GV-TA100-CXP	tacx100_5500.img	N/A*	N/A*
	GV-TA200	ta200_5500.img	N/A**	N/A**
5.4.00	GV-HB1	hb1_5400.img	hb1_5400.bin	2010.06.5
	GV-HC1	hc1_5400.img	N/A*	N/A*
	GV-HC2	hc2_5400.img	hc2_5400.bin	2011.06.9
	GV-HC3	hc3_5400.img	N/A*	N/A*
	HCCv2	hdd5400.img	hdd5400.bin	2011.06.20
	GV-TA1	ta1_5400.img	ta1_5400.bin	2010.06.16
	GV-TA10	ta10_5400.img	ta10_5400.bin	2014.01.01
	GV-TA40	ta40_5400.img	ta40_5400.bin	2014.01.01
	GV-TA100	ta100_5400.img	N/A*	N/A*
	GV-TA100-CXP	tacx100_5400.img	N/A*	N/A*
	GV-TA200	ta200_5400.img	N/A**	N/A**

SW Version	Node Type	Software Image Filename	Bootloader Filename	Bootloader Version
5.3.00	GV-HB1	hb1_5300.img	hb1_5300.bin	2010.06.5
	GV-HC1	hc1_5300.img	N/A*	N/A*
GV-HC2		hc2_5300.img	hc2_5300.bin	2011.06.9
	GV-HC3	hc3_5300.img	N/A*	N/A*
	HCCv2	hdd5300.img	hdd5300.bin	2011.06.20
	GV-TA1	ta1_5300.img	ta1_5300.bin	2010.06.16
	GV-TA10	ta10_5300.img	ta10_5300.bin	2014.01.01
	GV-TA40	ta40_5300.img	ta40_5300.bin	2014.01.01
	GV-TA100	ta100_5300.img	N/A*	N/A*
	GV-TA100-CXP	tacx100_5300.img	N/A*	N/A*
	GV-TA200	ta200_5300.img	N/A**	N/A**
5.2.00	GV-HB1	hb1_5200.img	hb1_5200.bin	2010.06.5
	GV-HC1	hc1_5200.img	N/A*	N/A*
	GV-HC2	hc2_5200.img	hc2_5200.bin	2011.06.9
	GV-HC3	hc3_5200.img	N/A*	N/A*
	HCCv2	hdd5200.img	hdd5200.bin	2011.06.20
	GV-TA1	ta1_5200.img	ta1_5200.bin	2010.06.16
	GV-TA10	ta10_5200.img	ta10_5200.bin	2014.01.01
	GV-TA40	ta40_5200.img	ta40_5200.bin	2014.01.01
	GV-TA100	ta100_5200.img	N/A*	N/A*
	GV-TA100-CXP tacx100_5200.		N/A*	N/A*

SW Version	Node Type Software Image Filename		Bootloader Filename	Bootloader Version
5.1.00	GV-HB1	hb1_5100.img	hb1_5100.bin	2010.06.5
	GV-HC1	hc1_5100.img	N/A*	N/A*
	GV-HC2	hc2_5100.img	hc2_5100.bin	2011.06.8
	GV-HC3 hc3_5100.img		N/A*	N/A*
	HCCv2	hdd5100.img	hdd5100.bin	2011.06.20
	GV-TA1	ta1_5100.img	ta1_5100.bin	2010.06.16
	GV-TA10	ta10_5100.img	ta10_5100.bin	2014.01.01
	GV-TA40	ta40_5100.img	ta40_5100.bin	2014.01.01
	GV-TA100	ta100_5100.img	N/A*	N/A*
	GV-TA100-CXP tacx100_5100.img		N/A*	N/A*

^{*} GigaVUE-HC1, GigaVUE-HC3, GigaVUE-TA100, and GigaVUE-TA100-CXP do not have U-boot. They are preloaded with coreboot. The following table summarizes the coreboot versions for GigaVUE-HC1, GigaVUE-HC3, GigaVUE-TA100, and GigaVUE-TA100-CXP:

SW Version	Node Type	Software Image Filename	Coreboot Version
5.8.00	GV-HC3	hc3_5800.img	1.0.4
	GV-HC1	hc1_5800.img	1.0.1
	GV-TA100	ta100_5800.img	0.2.5/1.0.0
	GV-TA100-CXP	tacx100_5800.img	1.0.0
5.7.00	GV-HC3	hc3_5700.img	1.0.4
	GV-HC1	hc1_5700.img	1.0.1
	GV-TA100	ta100_5700.img	0.2.5/1.0.0
	GV-TA100-CXP	tacx100_5700.img	1.0.0
5.6.00	GV-HC3	hc3_5600.img	1.0.4
	GV-HC1	hc1_5600.img	1.0.1
	GV-TA100	ta100_5600.img	0.2.5/1.0.0
	GV-TA100-CXP	tacx100_5600.img	1.0.0

SW Version	Node Type	Software Image Filename	Coreboot Version
5.5.00	GV-HC3	hc3_5500.img	1.0.4
	GV-HC1	hc1_5500.img	1.0.1
	GV-TA100	ta100_5500.img	0.2.5/1.0.0
	GV-TA100-CXP	tacx100_5500.img	1.0.0
5.4.00	GV-HC3	hc3_5400.img	1.0.3
	GV-HC1	hc1_5400.img	1.0.1
	GV-TA100	ta100_5400.img	0.2.5/1.0.0
	GV-TA100-CXP	tacx100_5400.img	1.0.0
5.3.00	GV-HC3	hc3_5300.img	1.0.3
	GV-HC1	hc1_5300.img	1.0.1
	GV-TA100	ta100_5300.img	0.2.5
	GV-TA100-CXP	tacx100_5300.img	1.0.0
5.2.00	GV-HC3	hc3_5200.img	1.0.3
	GV-HC1	hc1_5200.img	1.0.1
	GV-TA100	ta100_5200.img	0.2.5
	GV-TA100-CXP	tacx100_5200.img	1.0.0
5.1.00	GV-HC3	hc3_5100.img	1.0.3
	GV-HC1	hc1_5100.img	1.0.1
	GV-TA100	ta100_5100.img	0.2.5
	GV-TA100-CXP	tacx100_5100.img	1.0.0

^{**} GigaVUE-TA200 does not have U-boot. They are preloaded with AMI BIOS. The following table summarizes the versions for GigaVUE-TA200:

Table 4: AMI BIOS Version for GigaVUE-TA200

SW Version	Node Type	Software Image Filename	AMI BIOS Version
5.8.00	GV-TA200	ta200_5800.img	1.0.9
5.7.00	GV-TA200	ta200_5700.img	1.0.9

SW Version	Node Type	Software Image Filename	AMI BIOS Version
5.6.00	GV-TA200	ta200_5600.img	1.0.9
5.5.00	GV-TA200	ta200_5500.img	1.0.9
5.4.00	GV-TA200	ta200_5400.img	1.0.9
5.3.00	GV-TA200	ta200_5300.img	1.0.9

Gateway Ports Converted to Tool Ports

During an upgrade to 4.7.xx or higher release (from a prior software version), gateway ports and gateway mirrors are automatically converted to tool ports and tool mirrors.

Refer to the following notes and considerations for GigaVUE TA Series nodes starting in software version 4.7.00 (including GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, and Certified Traffic Aggregation White Box):

- Gateway ports on GigaVUE TA Series nodes are removed and converted to tool ports. In addition, gateway mirrors are removed and converted to tool mirrors.
- Tool ports on GigaVUE TA Series nodes can continue to be used to aggregate traffic.
- Tool ports on GigaVUE TA Series nodes can also be used to directly connect to tools, such as firewalls, Intrusion Prevention Systems, or Application Performance Monitors.
- GigaVUE TA Series nodes support network, tool, stack, and hybrid port types.
- Hybrid ports are fully supported in both standalone and cluster mode on GigaVUE TA Series nodes. When a GigaVUE TA Series node is in a cluster, hybrid ports can be configured.
- GigaVUE TA Series nodes can continue to be clustered with GigaVUE H Series nodes. Tool ports are supported on GigaVUE TA Series nodes in a cluster.
- When GigaVUE TA Series nodes are in a cluster, bidirectional traffic flow is enabled on the stack links of GigaVUE TA Series nodes.

GigaVUE TA Series Licenses

There are two types of licenses: Port Licenses and Advanced Features Licenses.

Port Licenses

The GigaVUE-TA10 can have either twenty-four (24) or forty-eight (48) 1Gb/10Gb ports enabled. The 24-port GigaVUE-TA10 is called the GigaVUE-TA10A. A port license is available to expand the GigaVUE-TA10A to include all 48 1Gb/10Gb ports as well as the four (4) 40Gb ports. For details, refer to the *GigaVUE TA Series Hardware Installation Guide*.

On the GigaVUE-TA100, only the first 16 out of 32 ports are enabled. Two port licenses are available to enable an additional 8 or 16 ports to expand to 24 or 32 ports. For details, refer to the *GigaVUE TA Series Hardware Installation Guide*.

On the GigaVUE-TA200, only the first 32 out of 64 ports are enabled. A port license is available to enable an additional 32 ports.

NOTE: GigaVUE-TA10, GigaVUE-TA40, and GigaVUE-TA100-CXP have all ports enabled.

Advanced Features Licenses

GigaVUE-TA10 and GigaVUE-TA10A, GigaVUE-TA40, GigaVUE-TA100, and GigaVUE-TA200 nodes require an Advanced Features License to be enabled when clustering with other Gigamon nodes. For details, refer to the *GigaVUE TA Series Hardware Installation Guide*

Upgrading GigaVUE Nodes

Use the procedures in this chapter to upgrade GigaVUE H Series and GigaVUE TA Series nodes to GigaVUE-OS 5.8.xx.

To begin, prepare the GigaVUE nodes for upgrade by following the procedure in Preparing for the Upgrade on page 19.

Note: If your nodes and GigaVUE-FM instance are running software version 5.6.xx or earlier, ensure that you add all the nodes to GigaVUE-FM, upgrade the GigaVUE-FM to 5.8.xx, and then upgrade the nodes to 5.8.xx. This is to ensure that the flexible inline maps added to the nodes before the upgrade are visible in the canvas in GigaVUE-FM. For the recommended upgrade path, refer to "Upgrade Summary/Path – Standalone Nodes" on page 7.

Preparing for the Upgrade

- 1. Copy the 5.8.xx installation file to your file server.
- 2. Use the **write memory** command on each node in the cluster to preserve settings that are stored locally rather than globally (for example, AAA and hostname settings).

Back up the running configuration using either of the following methods:

Back Up by
Copying and
Pasting

(config) # show running-config

This command displays the commands necessary to recreate the node's running configuration on the terminal display. You can copy and paste the output from this command into a text file and save it on your client system. The file can later be pasted back into the CLI to restore the configuration.

Back up to FTP/TFTP/SCP/SF TP Server

```
(config) # configuration text generate active
running upload <upload URL> <filename>
```

This command uses FTP, TFTP, SCP, or SFTP to upload the running configuration to a text file on remote storage. The format for the **<upload URL>** is as follows:

```
[protocol]://username
[:password]@hostname/path/filename
```

For example, the following command uploads a text configuration file based on the active running configuration and uploads it to an FTP server at 192.168.1.49 with the name **config.txt**:

```
(config) # configuration text generate
active running upload
ftp://myuser:mypass@192.168.1.49/ftp/config
.txt
```

3. Next, follow the procedure: Upgrading GigaVUE Nodes Using GigaVUE-OS CLI on page 20 to upgrade GigaVUE H Series nodes.

Upgrading GigaVUE Nodes Using GigaVUE-OS CLI

Refer to the following sections to upgrade GigaVUE H Series and GigaVUE TA Series nodes:

- Before You Begin on page 20
- Install the Software Image on page 22
- Install U-Boot (If a Newer Version is Available) on page 24
- Install Coreboot (If a Newer Version is Available) on page 25
- Verify Version Numbers on page 25

Before You Begin

Before you start installing the software image, perform the following checks:

- Change Default admin Password on page 20
- Check Number of Images on page 21
- Check U-Boot Version on page 21
- Check Coreboot Version on page 22

Change Default admin Password

Check the password on the admin account. If it is the default password (admin123A!), change it.

Starting in software version 4.7.00, the default password on the **admin** account is no longer allowed. If you are using the default password on this account, the best practice is to change it to a non-default password before you upgrade to 4.7.xx or higher release.

When the upgrade to 4.7.xx or higher release is complete and the node has rebooted, log in with your non-default password.

If you have not changed the default password before the upgrade, when the upgrade is complete and the node has rebooted, you will be prompted to enter a non-default password. The **jump-start** script will automatically launch and prompt the system administrator to change the password on the **admin** account.

Check Number of Images

Check the number of images currently available for installation on the node with the following command:

```
(config) # show images
```

The maximum number of images allowed on GigaVUE H Series or GigaVUE TA Series nodes at any one time is three.

If there is already the maximum number of images listed in the **Images available to be installed** section of the **show images** output, use the **image delete** command to remove at least one of the existing images before you fetch a new one.

The recommendation is to delete any unused images.

Note: Once an image is installed, you can delete the uploaded image.

Check U-Boot Version

If you are upgrading from an older software version, check the U-Boot version using the following command:

```
(config) # show version
```

For example on a GigaVUE-HC2 node, the following output is displayed:

```
U-Boot version: 2011.06.8
```

Check that the U-Boot version matches the version listed in Bootloader Code by GigaVUE-OS Release on page 11 in the Bootloader Version column.

If you do not have the same version, you will have to do a U-Boot installation, after the image installation. Refer to Install U-Boot (If a Newer Version is Available) on page 24.

Check Coreboot Version

If you are upgrading from an older software version, check the coreboot version using the following command:

```
(config) # show version
```

For example on a GigaVUE-TA100 node, the following output is displayed:

```
1st flash version: coreboot-ta100-0.2.4 Wed Jan 20 15:19:09 CST 2016 ** 2nd flash version: coreboot-ta100-0.2.5 Fri Sep 25 19:54:15 CST 2015
```

Check that the coreboot version matches the version listed in Bootloader Code by GigaVUE-OS Release on page 11 in the Coreboot Version column.

If you do not have the same version, you will have to do a coreboot installation, after the image installation. Refer to Install Coreboot (If a Newer Version is Available) on page 25.

Install the Software Image

- 1. Log in on the GigaVUE node to be updated as an admin user and switch to Configure mode.
- 2. Use the **image fetch** command to retrieve the software image from your file server. For example, the following command uses SCP to retrieve the **hdd58xx** image from the **builds** folder on 192.168.1.25:

```
(config) # image fetch scp://user:password@192.168.1.25/builds/hdd58xx.img
```

The CLI shows you the progress of the image fetch with a series of hash marks, returning you to the system prompt when complete.

3. Use the **image install** command to install the downloaded image file. For example, to install the image downloaded in the previous step:

```
(config) # image install hdd58xx.img
```

The GigaVUE-OS CLI presents a series of status messages as it verifies and uncompresses the image, creates file systems, and extracts the image, returning you to the system prompt when complete.

4. The next step is to tell the GigaVUE node which node image to load at the next system boot. The GigaVUE node has two partitions, each of which has a separate image installed. When you install a new image, it automatically installs on the "next" partition – the one you are not using now. The **image boot next** command tells the GigaVUE node to boot from the next partition after the one currently booted – the one where you just installed the new image:

```
(config) # image boot next
```

Note: In order for sync to work properly following a reload, ensure that the installation file for the active configuration is present after the **image boot next** command in the previous step.

5. Save the current configuration with the following command:

```
(config) # write mem
```

- 6. Is this node part of a cluster?
 - **No** Reboot with the following command.

```
(config) # reload
```

When the node comes back up, save the configuration with write memory.

- Yes Is this the last node in the cluster?
- No Do not the reload at this time. Proceed to upgrade the next node in the cluster.
- Yes If this the last node to be upgraded in the cluster (that is, it is the master), reload the cluster
 using the following CLI command.

```
(config) # cluster reload
```

7. Save the current configuration with the following command:

```
(config) # write mem
```

Bootloader Installation

GigaVUE-FM supports the installation of bootloader on GigaVUE H Series and GigaVUE TA Series nodes during the GigaVUE-OS image upgrade, but it does not automatically activate it.

Note: Depending on your configuration, you may need to enable physical bypass mode before performing the GigaVUE-OS image upgrade, and then restore it after the upgrade is complete.

During the GigaVUE-OS image upgrade, GigaVUE-FM v5.6.xx (and above) first upgrades the GigaVUE-OS image and then reboots the system. After the GigaVUE H Series or GigaVUE TA Series node has rebooted with the new GigaVUE-OS image, the bootloader installation will automatically initiate from GigaVUE-FM.

Note: The bootloader upgrade will only apply if there is a bootloader version change in the specific GigaVUE-OS software release.

When the process completes, a message about the bootloader installation will appear in the GigaVUE-FM Task Log Details, such as, "New bootloader version may have been staged based on device bootloader version. Any future reload of device will pick the new version." This means that the bootloader binary has been installed on the device and is ready to become active upon the next reload.

Important: The newer bootloader version only goes into effect after an additional manual reboot. You must explicitly reload the GigaVUE H series or GigaVUE TA series device to update the bootloader version. This additional reboot will cause the optical-protection switches of relevant the Bypass Modules to change states multiple times (close > open > close > open). (Table 1 provides the list of relevant modules.) **Recommendation**: To avoid this state-change behavior, enable the physical bypass before performing the GigaVUE-OS image upgrade.

Refer to Configure Inline Bypass Examples section in the GigaVUE-OS CLI Reference Guide for instructions on how to enable the physical bypass.

Install U-Boot (If a Newer Version is Available)

After checking the U-Boot version, if a newer version is available, you will have to do a U-Boot installation.

Install U-Boot after the image installation if it does not match the Bootloader Version column in Bootloader Code by GigaVUE-OS Release on page 11. Use this procedure in particular when you are upgrading from an older software version.

After the image installation of 5.8.xx, use the following command (type **uboot** in full):

```
(config) # show uboot
```

If there is a newer U-Boot version available, the output of the **show uboot** command displays it. For example in the following output, the installed U-Boot is 2011.06.8, but 2011.06.9 is available for installation.

```
* Installed U-Boot binary: 2011.06.8 (Dec 06 2016 - 04:35:29)
* U-Boot binary from active/booted image: 2011.06.9 (Feb 09 2017-02:16:26)
```

If there is a newer U-Boot version available, use the following command to install it:

```
(config) # uboot install
```

The binary bootloader code included with the installed image is installed.

Note: The newer U-Boot version only goes into effect after a reload.

Install Coreboot (If a Newer Version is Available)

After checking the coreboot version, if a newer version is available, you will have to do a coreboot installation.

Install coreboot after the image installation if it does not match the Coreboot Version column in Bootloader Code by GigaVUE-OS Release on page 11. Use this procedure in particular when you are upgrading from an older software version.

After the image installation of 5.8.xx, use the following command:

```
(config) # show version
```

If there is a newer coreboot version available, the output of the **show version** command displays it.

If there is a newer coreboot version available, use the following command to install it:

```
(config) # coreboot install
```

The binary bootloader code included with the installed image is installed.

Note: The newer coreboot version only goes into effect after a reload.

Verify Version Numbers

After completing the upgrade to GigaVUE-OS 5.8.xx, run the **show version** command on all upgraded nodes to make sure they are all running a 5.8.xx build. If any node does not show the correct version number, upgrade it individually.

Upgrade Software on a GigaVUE Node or a Cluster from GigaVUE-FM

This section describes the steps to upgrade the software on GigaVUE nodes and clusters using GigaVUE-FM. You can upgrade software by using an image that is located on an external image server, or you can use GigaVUE-FM as the image server for H Series and TA Series nodes.

Note: When using GigaVUE-FM to upgrade software on the nodes, it is imperative that the minimum version on the node be at version 4.3.xx. If the software is not updated to version 4.3.xx, refer to the *H Series Upgrade Guide* and use either the CLI or GigaVUE-FM at the node level to upgrade the node to the latest revision.

Refer to the following sections

- Before You Begin on page 26
- Upgrade from an External Image Server on page 27
- Upgrade with GigaVUE-FM as the Image Server on page 29

Before You Begin

Before upgrading a node or a cluster, it is important to note the following:

- GigaVUE-FM can upgrade up to 32 nodes at a time. For example, if you select a cluster with 8 nodes and 28 standalone nodes, GigaVUE-FM will fail to upgrade as the total number of nodes exceeds the limit.
- Check if the device that you want to upgrade has enough disk space. The disk space is computed based on the last synchronized time. A newly added node may sometimes show low disk space. Wait for approximately 5 minutes for the configuration sync to complete or rediscover the device and then check the disk space.
- When the upgrade process is complete, a post-upgrade sanity check is performed. Physical
 inventory snapshot of nodes, cards, ports, maps, and GigaSMART operations are captured and
 the numbers from before and after the upgrade are compared. Sometimes, these numbers do
 not match immediately after the upgrade, as the device is still being configured. GigaVUE-FM
 checks every minute whether the nodes have joined the cluster. If the nodes joined do not
 increment in 30 minutes, then the sanity check will fail.
 - After the nodes join the cluster, GigaVUE-FM again checks every minute for other configuration objects to come up. If the configuration objects do not increment in 10 minutes, the sanity check will fail. When the sanity check fails, GigaVUE-FM provides an ability to view the configuration object that failed the sanity check.
- GigaVUE-FM v5.5.00 supports the installation of bootloader on GigaVUE H Series and GigaVUE TA Series nodes during the GigaVUE-OS image upgrade, but it does not automatically activate it.

Note: Depending on your configuration, you may need to enable physical bypass mode before performing the GigaVUE-OS image upgrade, and then restore it after the upgrade is complete.

During the GigaVUE-OS image upgrade, GigaVUE-FM v5.5.00 first upgrades the GigaVUE-OS image and then reboots the system. After the GigaVUE H Series or GigaVUE TA Series node has rebooted with the new GigaVUE-OS image, the bootloader installation will automatically initiate from GigaVUE-FM.

Note: The bootloader upgrade will apply only if there is a bootloader version change in the specific GigaVUE-OS software release. Refer to the GigaVUE H Series Upgrade Guide and GigaVUE TA Series Upgrade Guide for the upgrade procedures and to check the bootloader version changes.

When the installation process completes, a message about the bootloader installation will appear in the GigaVUE-FM Task Log Details.

IMPORTANT: The newer bootloader version only goes into effect after an additional manual reboot. You must explicitly reload the GigaVUE H series or GigaVUE TA series device to update the bootloader version. This additional reboot will cause the optical-protection switches of the relevant Bypass Modules to change states multiple times.

RECOMMENDATION: To avoid this state-change behavior, enable the physical bypass before performing the GigaVUE-OS image upgrade. Refer to "Configuring Inline Bypass Examples: Protected Inline Bypass Using Bypass Combo Modules" in the GigaVUE-OS CLI User's Guide for instructions on how to enable the physical bypass.

Note: Starting in GigaVUE-OS software version 4.7, the default password admin123A! for the admin user is no longer valid when logging in to the node. When upgrading from the CLI, the configuration jump-start script requires the user to change the default password for the admin user. However, if the node is upgraded to software version 4.7 or later using GigaVUE-FM, the admin password on the node is not changed.

Upgrade from an External Image Server

This section provides the steps for upgrading the GigaVUE nodes and clusters from an image stored on an external server. The image can be transferred from the server to the node using either SCP or TFTP file protocols.

In a cluster configuration, to upgrade the software on the GigaVUE nodes, all the relevant images must be available to GigaVUE-FM. All nodes should be updated to the same version of software.

To upgrade a node or a cluster from an image stored on an external image server, do the following:

- 1. Upload the image to the external image server to make it available to GigaVUE-FM.
 - To obtain software images, register on the customer portal (https://gigamoncp.forc.com/gigamoncp/) and download the software. You must provide the serial number for each node you want to update.
 - To view the chassis serial number, login to H-VUE and select **Chassis** from the navigation pane. Click **List View**.

- 2. Click **Physical** on the top navigation link.
- 3. On the Physical Nodes page, select one or more nodes or clusters to upgrade.
- 4. Select **Actions > Image Upgrade**.
- 5. Enter the following information:

Table 1: Image Upgrade

Menu	Description	
Task Name	The name of the upgrade task.	
Image Server	 The location from where the image can be uploaded. Do the following: For Image Server, choose External Server. From the drop-down list, select the external image server added to GigaVUE-FM in Step 1. If the external image server is not available, click Add External Server. In the Add External Server quick view, enter the following: In the Alias field, enter the name of the external server. In the Server Address field, enter the host IP address of the server. In the Type drop-down list, select SCP or TFTP as the file transfer protocol. If you select SCP, enter the username and password of the server in the Username and Password fields respectively. Click Add. In the text box, enter the image path and the image name. Note: For a cluster, the images can reside on different paths. However, the image server and the protocol for file transfer should be the same for all the nodes. 	
Backup Config Before Upgrade	The check box to back up the configuration changes prior to performing the upgrade.	
Reboot After Upgrade	The check box to reboot the server after performing the upgrade.	
Time	The time for performing the upgrade. There are two options: Immediate—The upgrade is performed immediately. Scheduled—The upgrade is performed at a scheduled time. Select the date and time.	

NOTE: If the disk space of a physical node or a node in a cluster is low, a message is displayed indicating that the node will not be upgraded due to low disk space.

2. Click **Upgrade**.

Upgrade with GigaVUE-FM as the Image Server

This section provides the steps for upgrading the GigaVUE nodes and clusters when GigaVUE-FM is used as the file server instead of an external server.

Note: Only H Series and TA Series devices can be upgraded using GigaVUE-FM as the image server. To upgrade G Series devices with GigaVUE-FM, you must use an external server.

To upgrade a node or a cluster using internal image files, do the following:

- 1. Download the images from the Gigamon website and place them where they can be available for uploading to GigaVUE-FM.
 - To obtain software images, register on the customer portal (https://gigamoncp.forc.com/gigamoncp/) and download the software. You must provide the serial number for each node you want to update.
 - To view the chassis serial number, login to GigaVUE-OS and select **Chassis** from the navigation pane. Click **List View**.
- 2. Click **Physical** on the top navigation link.
- 3. On the Physical Nodes page, select one or more nodes or clusters to upgrade.
- Select Actions > Image Upgrade. Under Selected Nodes, the disk space of all the nodes are displayed.

Note: If the disk space of the selected node or a node in the cluster is low, a message will be displayed indicating that the node will not be upgraded due to low disk space.

5. Enter the following information:

Table 2: Image Upgrade

Menu	Description
Task Name	The name of the upgrade task.

Menu	Description	
Image Server	 The location from where the image can be uploaded. Do the following: Choose Internal Server. From the Version drop-down list, select the version to which you want to upgrade. Click Add Image Files. In the Add Image File quick view, click Choose Files and select the image files that you downloaded in Step 1. Click Add. NOTE: If there is an image file missing in a cluster configuration, the 	
	Image file missing error is displayed.	
Backup Config Before Upgrade	The check box to back up the configuration changes prior to performing the upgrade.	
Reboot After Upgrade	The check box to reboot the server after performing the upgrade. If you do not select Reboot After Upgrade , you must reload the node manually. To reload the node manually, select the node on the Physical Nodes page and click Actions > Reboot .	
Time	The time for performing the upgrade. There are two options: Immediate—The upgrade is performed immediately. Scheduled—The upgrade is performed at a scheduled time. Select the date and time.	

2. Click **Upgrade**.

Note: When the GigaVUE-FM IP address is changed through jump-start configuration, the GigaVUE-FM internal database and in-memory caches are not be updated. The Database continues to have the old GigaVUE-FM IP address, and attempting an image upgrade with the internal server option doesn't work. To fix this, you must restart the GigaVUE-FM.

Credentials for Admin Account on New GigaVUE-OS Systems

All GigaVUE H Series and TA Series devices shipped have the following default login credentials:

Username: adminPassword: admin123A!

Additional Sources of Information

This appendix provides additional sources of information. Refer to the following sections for details:

- Documentation
- Documentation Feedback
- Contact Technical Support
- Contact Sales
- The Gigamon Community

Documentation

The following table provides a list of the additional documentation provided for GigaVUE H Series and TA Series nodes. "*" indicates new documents in this release.



TIP: If you keep all PDFs for a particular release in common folder, you can easily search across the doc set by opening one of the files in Acrobat and choosing **Edit > Advanced Search** from the menu. This opens an interface that allows you to select a directory and search across all PDFs in a folder.

Table 1: Documentation Suite for Gigamon Products

Summary	Document
complete doc set for the respective release, minus Release Notes, in a zip file	All-Documents Zip
new features, resolved issues, and known issues in this release	GigaVUE-OS, GigaVUE-FM, GigaVUE-VM, and GigaVUE Cloud Suite Release Notes
• important notes regarding installing and upgrading to this release	Note: Registered Customers can download the Release Notes from the Software & Docs page on to My
NOTE: In 5.7.00, the Release Notes documents combines GigaVUE-OS, GigaVUE-FM, and GigaVUE Cloud Suite into one document.	Gigamon. Refer to How to Download PDFs from My Gigamon.

Hardware Installation Guides

Summary	Document
how to unpack, assemble, rack-mount, connect, and	GigaVUE-HC1 Hardware Installation Guide
initially configure the respective GigaVUE devicesreference information and specifications for the respective	GigaVUE-HC2 Hardware Installation Guide
GigaVUE devices	GigaVUE-HC3 Hardware Installation Guide
	GigaVUE TA Series Hardware Installation Guide
Software Installation and Upgrade Guides	
 how to migrate GigaVUE-FM on VMware ESXi, Hardware Appliance, and AWS. 	*GigaVUE-FM Migration Guide
 how to install and upgrade GigaVUE-FM on VMware ESXi, MS Hyper-V, and KVM 	GigaVUE-FM Installation and Upgrade Guide
 how to upgrade the embedded GigaVUE-OS on GigaVUE H Series and GigaVUE TA Series nodes 	GigaVUE-OS Upgrade Guide
Administration Guide	
 how to administer the GigaVUE-OS and GigaVUE-FM software 	GigaVUE-OS and GigaVUE-FM Administration Guide
Configuration and Monitoring Guides	
 how to install, deploy, and operate GigaVUE-FM how to configure GigaSMART operations 	GigaVUE-FM User's Guide
how to deploy the GigaVUE Cloud Suite solution in any cloud platform	GigaVUE Cloud Suite for AnyCloud Configuration Guide
how to configure the GigaVUE Cloud Suite components	GigaVUE Cloud Suite for AWS Configuration Guide
and set up traffic monitoring sessions for the respective cloud platform	GigaVUE Cloud Suite for AWS QuickStart Guide
	*GigaVUE Cloud Suite for AWS Secret Regions Configuration Guide
	GigaVUE Cloud Suite for Azure Configuration Guide
	GigaVUE Cloud Suite for Kubernetes Configuration Guide
	*GigaVUE Cloud Suite for Nutanix Configuration Guide
	GigaVUE Cloud Suite for OpenStack Configuration Guide
	GigaVUE Cloud Suite for VMware Configuration Guide

Summary	Document
Reference Guides	
library of GigaVUE-OS CLI (Command Line Interface) commands used to configure and operate GigaVUE H Series and TA Series devices	GigaVUE-OS CLI Reference Guide
 guidelines for the different types of cables used to connect Gigamon devices 	GigaVUE-OS Cabling Quick Reference Guide
compatibility information and interoperability requirements for Gigamon devices	GigaVUE-OS Compatibility and Interoperability Matrix
 samples uses of the GigaVUE-FM Application Program Interfaces (APIs) 	GigaVUE-FM REST API Getting Started Guide
Note: Content will be merged into the GigaVUE-FM User's Guide in a future release.	
In-Product Help	
how to install, deploy, and operate GigaVUE-FM. Provided from the GigaVUE-FM interface.	GigaVUE-FM Online Help
the web-based GUI for the GigaVUE-OS. Provided from the GigaVUE-OS H-VUE interface.	GigaVUE-OS H-VUE Online Help

Note: Registered customers can log in to My Gigamon to download documentation for specific releases under Software & Documentation Downloads. Refer to How to Download PDFs from My Gigamon.

How to Download PDFs from My Gigamon

To download release-specific PDFs:

- 1. Log in to My Gigamon
- 2. Click on the **Software & Documentation** link.
- 3. Use the **Product** and **Release** filters to find documentation for the current release. For example, select Product: "GigaVUE-FM" and Release: "5.7," enter "pdf" in the search box, and then click **GO** to view all PDF documentation for GigaVUE-FM 5.7.xx.

Documentation Feedback

To send feedback and report issues in our documentation, complete the short survey at the following link:

https://www.surveymonkey.com/r/gigamondocumentationfeedback

Contact Technical Support

See https://www.gigamon.com/support-and-services/contact-support for Technical Support hours and contact information. You can also email Technical Support at support@gigamon.com.

Contact Sales

Use the following information to Gigamon channel partner or Gigamon sales representatives.

Telephone: +1.408.831.4025

Sales: inside.sales@gigamon.com

Partners: www.gigamon.com/partners.html

Premium Support

Email Gigamon at inside.sales@gigamon.com for information on purchasing 24x7 Premium Support. Premium Support entitles you to round-the-clock phone support with a dedicated Support Engineer every day of the week.

The Gigamon Community

The Gigamon Community is a technical site where Gigamon users, partners, security and network professionals and Gigamon employees come together to share knowledge and expertise, ask questions, build their network and learn about best practices for Gigamon products.

Visit the Gigamon Community site to:

- Find knowledge base articles and documentation
- Ask and answer questions and learn best practices from other members.
- Join special-interest groups to have focused collaboration around a technology, use-case, vertical market or beta release
- Take online learning lessons and tutorials to broaden your knowledge of Gigamon products.

- Submit and vote on feature enhancements and share product feedback. (Customers only)
- Open support tickets (Customers only)
- Download the latest product updates and documentation (Customers only)

The Gigamon Community is a great way to get answers fast, learn from experts and collaborate directly with other members around your areas of interest.

Register today at community.gigamon.com

Questions? Contact our Community team at community.gigamon.com