

GigaVUE Licensing Guide

GigaVUE-FM and GigaVUE-OS

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Gigamon Inc. 3300 Olcott Street Santa Clara, CA 95054 408.831.4000

Change Notes

When a document is updated, the document version number on the cover page will indicate a new version and will provide a link to this Change Notes table, which will describe the updates.

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About this Guide

Gigamon offers both fixed and floating licensing options for its various product portfolios. This guide describes the different types of software licenses and provides details on how to install, activate, and manage the licenses.

Refer to the following sections for details:

- License Models
- GigaVUE-FM Licenses
- GigaSMART Application Licenses
- GigaVUE-OS and GigaVUE-OS Module Licenses
- GigaVUE TA Series Licenses
- Volume-Based Licenses (Cloud License)
- Licenses GUI Options in GigaVUE-FM
- License Command
- Term License Behavior after expiry (from Software Version 6.1.00)
- Gigamon License Portal
- FAQs For Licensing

Note: This guide does not provide details on the licenses for the hardware devices.

About this Guide

License Models

The following licensing models are implemented at Gigamon:

Model	Description	Features
Fixed Licensing Model	Licenses of this model are termed as Node-locked licenses. License is attached to a specific card serial number or chassis serial number.	 License key is generated through the licensing portal. You can manage the licenses from CLI or through GigaVUE-FM GUI. Automatic renewal of licenses is not supported. You must manually create the license in the Licensing Portal, import the licenses to GigaVUE-FM and assign the new licenses in GigaVUE-FM.
Flexible Licensing Model	Licenses of this type are termed as Floating licenses . License is not attached to a specific card or chassis. You can move the licenses across the cards within a chassis or across the chassis.	 License file with pooled floating licenses is generated in License Portal, and imported into GigaVUE-FM through GUI. You can manage the licenses using
	Note: Only the GigaSMART application licenses can be moved across the chassis or cards. Note that you can move licenses only within the same platform devices.	GigaVUE-FM. • Automatic renewal of licenses is supported.
Volume-based Licensing Model	Licenses are offered based on volume. Licenses of this type are termed as Volume-based licenses .	License file with bundled volume license is generated in the License Portal, and imported into GigaVUE-FM through GUI.

Based on the duration, licenses can be term licenses or perpetual licenses:

	Software and Feature Usability	Support	Expiry and Renewal
 Term Licenses can be: Evaluation Subscriptions: Subscription licenses are available as monthly or yearly subscriptions (1, 3, 5, and 7 year term) 	Until the license expires	Elite Support included with the license.	License expires and must be renewed. Evaluation licenses expire after 45 days. You must upgrade to a fully licensed software at the end of the evaluation period. Subscription licenses expire at the end of the subscription period and can be either renewed or upgraded.

License Models

Perpetual Licenses	Can be used	Elite support	Does not expire.
	indefinitely	to be	
		purchased separately.	
		separately.	

Notes

- **Managing Licenses:** GigaVUE-FM must be installed for purchasing and managing floating licenses. Node-locked licenses can be managed either from the GigaVUE-FM GUI or using the Command Line Interface.
- **Term License Behavior:** Refer to the Term License Behavior after expiry (from Software Version 6.1.00) section for more details.

License Models 7

GigaVUE-FM Licenses

GigaVUE-FM is provisioned by default with a base license. With the base license you can add one physical node, one virtual node, and 10 virtual tap points for each of the applicable cloud platforms. Contact your Gigamon representative to get an evaluation license for GigaVUE-FM.

Table 1: GigaVUE-FM Evaluation License Package

License Types	Physical Nodes	Virtual Nodes	OpenStack/AWS/Azure	Features available	Notes
GigaVUE-FM Evaluation	Up to 200	1 (included as Base)	10 Virtual TAP Points	All features available with Prime for the evaluation period.	License automatically expires after 45 days.

Evaluation licenses are not recommended for deployment in production environment. At the end of the evaluation period, if you fail to upgrade GigaVUE-FM to a fully licensed version, the features are disabled automatically.

Note: To run only GigaVUE-VM, there is no requirement to purchase additional licenses for GigaVUE-FM. For information about GigaVUE-VM licensing, refer to the *GigaVUE Cloud Suite Deployment Guide - VMware*.

GigaVUE-FM License Packages

Upgrade packages for GigaVUE-FM are available if you have already purchased GigaVUE-FM. The packages allow users to upgrade from a 5-pack option to a 10-pack or a Prime package. There is also an option to upgrade from a 10-pack to a Prime package. To find out more about the upgrade purchase, contact your Gigamon Sales representative.

The following table summarizes the GigaVUE-FM License packages.

Table 2: GigaVUE-FM License Packages

Features	Base / Evaluation License (Free of charge)	5-Pack	10-Pack	Prime
Physical Node Count	1	Up to 5	Up to 10	¹ Greater than 10 nodes.
Rest API	Yes	Yes	Yes	Yes
Audit, Events Logs	Yes	Yes	Yes	Yes

GigaVUE-FM Licenses

Features	Base / Evaluation License (Free of charge)	5-Pack	10-Pack	Prime
Firmware Upgrade	Yes	Yes	Yes	Yes
Configuration Backup	Yes	Yes	Yes	Yes
Dashboard	Only the following Static Widgets are displayed:	Customizable	Customizable	Customizable
	Top 10 Network Ports by Traffic			
	• Top 10 Tool Ports by Traffic			
	Top 10 Maps by TrafficAudit Logs By Result			
	Events By Severity			
	Ports Link Status Summary			
	Unhealthy Maps Status Summary			
	Unhealthy Flows			
Reports	No	Yes	Yes	Yes
Trending Data	1 Day	1 Week	1 Month	1 Month

 $[\]ensuremath{^{1}\text{Refer}}$ to the GigaVUE-FM specifications for the maximum number of nodes.

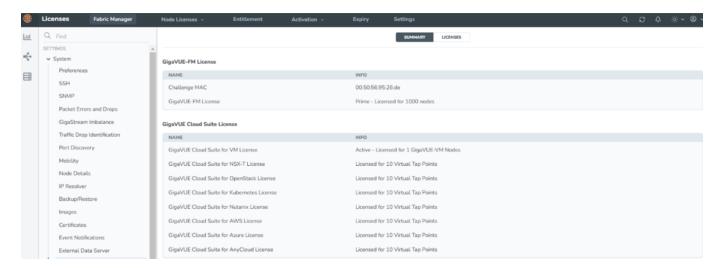
GigaVUE-FM Licenses

Manage GigaVUE-FM License

You can manage GigaVUE-FM licenses from the GigaVUE-FM GUI. To access the GigaVUE-FM license(s) page:

- 1. On the left navigation pane, click
- 2. Select System > Licenses > Fabric Manager.

This page lists the Challenge MAC address of GigaVUE-FM, GigaVUE-FM license type and the applicable licenses for the various cloud platforms and the virtual nodes.



Use the following buttons to manage GigaVUE-FM licenses:

Button	Description
Activate License	Use this button to activate the GigaVUE-FM licenses. Refer to Activate GigaVUE-FM License section for more information.
Delete	Use this button to delete the licenses. Refer to Delete GigaVUE-FM License the details.
Revoke	Use to button to revoke the licenses. Refer to Revoke License section for details.
Export	Use this button to export the details in the Activate Licenses page to a CSV or XLSX page.

Obtaining a New License

Contact your Sales representative to obtain a new license for GigaVUE-FM Nodes (see Contact Sales for the contact information).

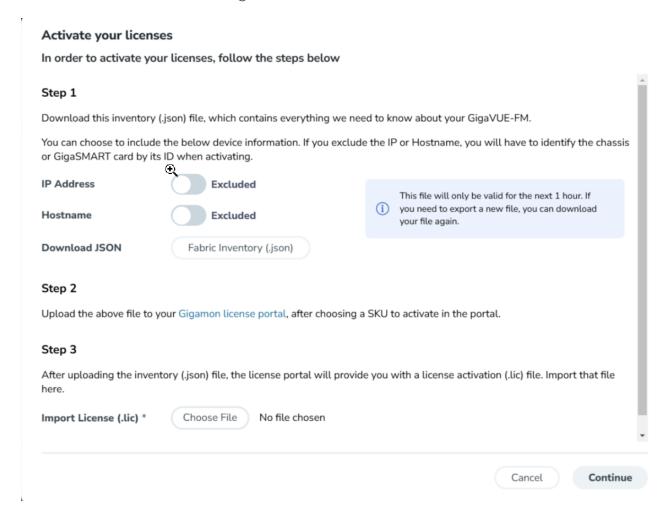
Activate GigaVUE-FM License

To activate the license key, you need the following:

Entitlement ID	Locate the email sent to you by Gigamon containing the licensing information for your installation. This email contains one or more EID (Entitlement ID) values.
Challenge MAC	Locate the Challenge MAC displayed in the GigaVUE-FM GUI. The license is only valid with the corresponding MAC address. If GigaVUE-FM is deleted or re-installed, contact Gigamon Support

To activate a license:

- 1. On the left navigation pane, click , and select **System** > **Licenses** > **Fabric Manager**.
- 2. Click Activate to activate a GigaVUE-FM license.



- 3. The Activate your license pop-up appears with instructions to:
 - a. Download the Fabric Inventory File, which is a JSON file that contains the details about GigaVUE-FM.For more information about fabric inventory file, refer to the section What is a Fabric Inventory File? in the FAQs for Licensing chapter.
 - b. Upload the Fabric Inventory file to the Gigamon License Portal. Refer to the Gigamon License Portal section for instructions on how to activate the licenses from the portal.
 - c. After activating the license, record the license key or keys.
 - i. Return to GigaVUE-FM GUI.
 - ii. Click the **Add FM License** link in the pop-up that appears. The Add License page is displayed. Enter the license key.
 - iii. To add more than one license, click the + button.
 - iv. Click Save.

The license and its description is added to the Licenses page.

Delete GigaVUE-FM License

To delete a license, do the following:

- 1. On the left navigation pane, click 🕸.
- 2. Go to System > Licenses > Fabric Manager.
- 3. Select the license key to be deleted.
- 4. Click **Delete** to delete the license.

A deleted license can be added again to GigaVUE-FM and can be reused.

Revoke License

To revoke a license, do the following:

- 1. On the left navigation pane, click 🕸.
- 2. Go to System > Licenses > Fabric Manager.
- 3. Select the license key to be revoked.
- 4. Click **Revoke** to remove the license.

Once a license is revoked, you cannot add the license again in GigaVUE-FM.

Note: A separate revocation key is not generated for revoked licenses.

Retrieving a Lost License

If you lost an existing license, contact Gigamon Technical Support for assistance. For the contact information, refer to *Contact Technical Support*.

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

Integrated License Management in GigaVUE-FM

In the existing license model, managing licenses involves several manual steps. You must:

- Download the inventory file from GigaVUE-FM, which contains details such as the virtual MAC address and software version of GigaVUE-FM, as well as the physical nodes and associated cards that GigaVUE-FM manages.
- 2. Upload the inventory file to the license portal and activate the license.
- 3. Download the activated license from the portal and import it back into GigaVUE-FM for the license to function.

This process requires multiple back-and-forth actions between GigaVUE-FM and the license portal, which can be time-consuming and error-prone.

With the introduction of the integrated license feature, the process becomes significantly streamlined. You can now establish direct communication between GigaVUE-FM and the license portal by generating a token from the license portal and registering it in GigaVUE-FM. Once registered, you can view, manage, and activate entitlements directly from GigaVUE-FM, eliminating the need to upload and download files manually. Additionally, the volume-based license (VBL) usage data is automatically captured from each GigaVUE-FM instance and sent to the license portal for tracking.

This section contains the following topics:

- Key Benefits
- License Management Workflow
- Reclaim Licenses in GigaVUE-FM

Key Benefits

- **Self-service management**: You can activate and manage entitlements directly from GigaVUE-FM, removing the need to constantly switch between GigaVUE-FM and the license portal.
- **Seamless license activation**: When an entitlement expires, call Gigamon Sales team and renew it. Once you renew, you can view the new entitlement in GigaVUE-FM, from which you can activate the license.
- **Flexible licensing**: A license pool offered by an entitlement can be redistributed between multiple GigaVUE-FMs, allowing greater flexibility to accommodate changing licensing needs across the set of devices monitored by each GigaVUE-FM.
- **Reclaim and Reuse license**: You can reclaim the license from one GigaVUE-FM instance and use it in another GigaVUE-FM. You can reclaim the license for VBL and Floating types of licenses. To reuse the license, the GigaVUE-FM should be in connected mode.
- **Traceability of Renewals**: When you renew your licenses, GigaVUE-FM allows you to trace which license was renewed and update your entitlements.

This feature greatly simplifies the license management process, reduces the potential for manual errors, and offers customers enhanced control and flexibility over their licensing.

License Management - Workflow

To manage the license, you must do the following:

- Register GigaVUE-FM with the License Server
- View Entitlements in GigaVUE-FM
- Activate Licenses in GigaVUE-FM

Register GigaVUE-FM with the License Server

To establish direct communication between the license server and GigaVUE-FM, you must generate a token from the license portal and register the token in GigaVUE-FM. GigaVUE-FM authenticates the token and enables you to view and manage your entitlements.

This is a one-time activity, and registration is valid until you opt out of GigaVUE-FM.

To register GigaVUE-FM with the license server:

- 1. Log in to the Gigamon Community Portal.
- 2. Select License Portal from the More drop-down list.
- 3. In the License Portal, click the **GigaVUE-FM Token Generation** tab.
 - A dialog box **Token Generator for GigaVUE-FM** appears.
- 4. Click Generate GigaVUE-FM Token.

Copy the token that appears at the bottom of the dialog box.

- 5. Log in to GigaVUE-FM.
- 6. On the left navigation pane, click and then select **Licenses** > **Settings**.
- 7. Click Register with License Server.

The Enter Registration Token dialog box appears.

Note: For a direct connection to the license portal and for a successful registration, the firewall must permit outbound connections to https://gigamoninc.prod.sentinelcloud.com/ on port 443.

- 8. Paste the token you copied from the License portal into the dialog box.
- 9. Click OK.

After successful registration, you can view the following options on the **Settings** page and enable them as required:

- Digital License Management and Performance Analytics
- Volume Usage Event Notification
- License Expiry Event Notifications

Digital License Management and Performance Analytics

In the Digital license management and performance analytics, you can enable:

- **Automatic Entitlement Retrieval**—When you enable Automatic Entitlement Retrieval, GigaVUE-FM performs the following:
 - License entitlements and activations are automatically retrieved from the license server. GigaVUE-FM also reports Volume-Based License (VBL), VBL usage volumes, and in-use hardware and software assets. For more information, refer to View Entitlements in GigaVUE-FM.
 - o GigaVUE-FM sends details about hardware SKUs, software SKUs, cloud SKUs, GigaVUE- OS version, and GigaVUE-FM version. It will not send details regarding Accessories SKUs, PSU or Fan information, Support SKUs, and GigaVUE Cloud Suite™ virtual inventory collection. The information is sent once a week during offhours. The frequency is not configurable but can be adjusted by Gigamon staff. To adjust the frequency, you can reach out to Technical Support. You need to open a one-way port for communication between GigaVUE-FM and Gigamon. All communications between GigaVUE-FM and Gigamon should be secure and encrypted. The information shared must also be encrypted. If sending information fails, the node will retry up to 3 times. GigaVUE-FM shares SKU-level information without any PII (Personally Identifiable Information) implications. No sensitive data, such as IP addresses, host names, or usernames/passwords, will be shared.

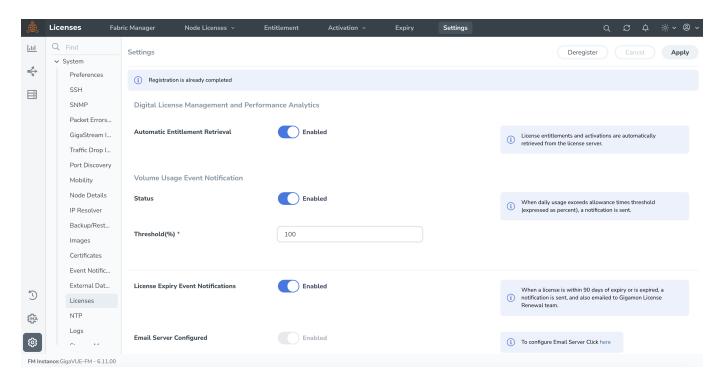
Volume Usage Event Notification

In the Volume Usage Event Notification, you can enable:

- **Status** GigaVUE-FM sends a notification when the daily usage exceeds the allowance time threshold (in percentage).
- Threshold (%) You can configure the percentage of threshold beyond which GigaVUE-FM sends a notification.

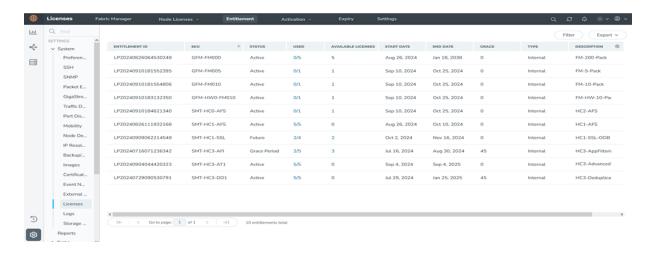
License Expiry Event Notifications

When you enable License Expiry Event Notifications, GigaVUE-FM sends a notification when a license is within 90 days of expiry or if it is expired and sends an email to the Gigamon License Renewal team.

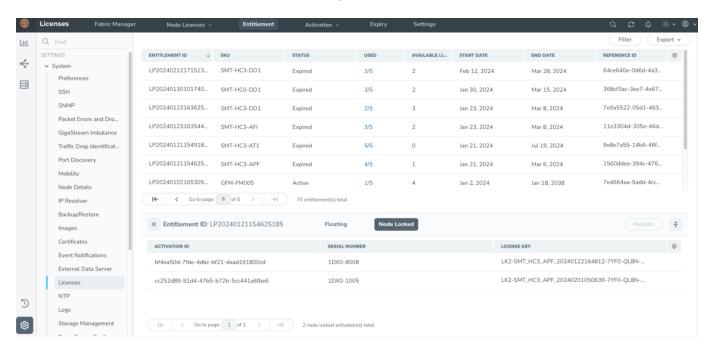


View Entitlements in GigaVUE-FM

After successfully registering GigaVUE-FM with the license portal, you can view the SKUs you purchased and the licenses you are entitled to in GigaVUE-FM. On the left navigation pane, click , and then select **Licenses** > **Entitlement**.



The number in the **Used** column denotes the licenses used by the GigaVUE-FM or the device from the entitled license. The number in the numerator represents the number of activated licenses, and the denominator denotes the total number of licenses. When you click on the link in the Used column, you can view the license details for that entitlement at the bottom of the screen, as shown in the figure.



You can view the following tabs in Floating License:

- Floating In the floating tab, you can view the details such as Activation ID, MAC Address, Number of licenses used by the GigaVUE-FM (Quantity), and whether the license is used by the current GigaVUE-FM (Owner GigaVUE-FM).
- **Node Locked**—The node-locked tab allows you to view the device's details, such as the Activation ID, Serial number, and License Key.

You can view the following tab in the VBL License:

• **Activation** – In the Activation tab, you can view the details such as Activation ID, MAC Address, Number of licenses used by the GigaVUE-FM (Quantity), whether the license is used by the current GigaVUE-FM (Owner GigaVUE-FM).



Activate Licenses in GigaVUE-FM

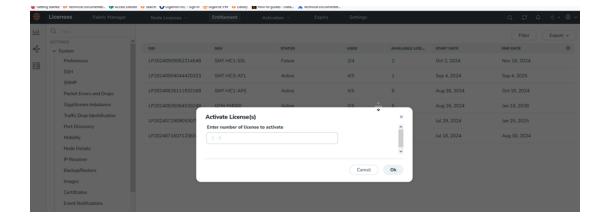
To activate the license in GigaVUE-FM:

- 1. On the left navigation pane, click and then select Licenses > Entitlement.
- 2. Click the numbers in the **Available License** column. An **Activate License** (s) dialog box appears.
- 3. Enter the number of licenses that need to be activated.
- 4. Click OK.

Notes:

You cannot activate the license using the entitlement page for the following:

- For SKUs that only support node-locked licenses.
- Recently Expired and Expired licenses.



Reclaim Licenses in GigaVUE-FM

You can reclaim the license from one GigaVUE-FM instance and use it in another GigaVUE-FM. You can also reclaim the license for VBL and Floating types of licenses. To reclaim the license, the GigaVUE-FM should be in connected mode.

GigaVUE-FM allows to reclaim the licenses for:

- Floating License
- Volume Based License

Floating License

To reclaim the floating license activations in GigaVUE-FM:

- 1. Unassign the floating license from any Node or card it is bound to. To unassign:
 - a. On the left navigation pane, click
 - b. Select the Activation drop-down list on the top navigation bar and then select **Floating**.
 - c. Click the hyperlink on the **Used** column corresponding to the floating license that you want to unassign.
 - d. In the bottom section, unassign the floating license from all the Nodes or card(s) to which they are assigned.
- 2. Reclaim the activations:
 - a. Select **the Entitlements** tab on the top navigation bar.
 - b. Click the numbers in the **Used Licenses** column.
 - c. In the bottom section, select **Floating**.
 - d. Select the activation you want to reclaim by clicking the checkbox next to the Activation ID.
 - e. Click Reclaim.

The Available Licenses column against the Entitlement ID displays the increase in the count by the number of reclaimed licenses.

Volume Based License

To reclaim the Volume Based License activations in GigaVUE-FM:

1. Select **the Entitlements** tab on the top navigation bar.

- 2. Click the numbers in the **Used Licenses** column.
- 3. In the bottom section, select **Activation**.
- 4. Select the activation you want to reclaim by clicking the checkbox next to the Activation ID.
- 5. Click Reclaim.

Upgrade and Downgrade License Packages

- Upgrading of license packages is available at all times.
- To purchase a new license, please contact Gigamon Sales Representative.
- Licenses can be either term or perpetual licenses.
- Licenses can be upgraded from Base to either a 45 day evaluation or to a paid version.
- Licenses can be deleted and re-entered as long as the MAC address tied to the license is still valid.

In case of expiration of the evaluation license, GigaVUE-FM will revert back to supporting only 1 physical and 1 virtual node.

The list below shows the node priorities in case a License is invalid and nodes are deactivated. In such a case, the nodes will be visible but deactivated. They can be reactivated if the license is reinstalled. This is especially important if the evaluation license expires and you need extra time to enter a valid license.

(1) If a cluster exists:

Leader

In case of multiple clusters, the cluster with the top level priorities as shown in standalone will take over. For example, a cluster with leader as GigaVUE-FM and GigaVUE-OS-2404 will have preference over a cluster with leader.

- Standalone node (Based on the node priority levels as shown below)
- o Standby leader, in case the leader is removed
- Stack/Cluster member
- Unreachable
- Unknown

(2) If there is no cluster

- o GigaVUE-HC3
- 。 GigaVUE-HC1
- GigaVUE-FM and GigaVUE-OS-TA100

In cases where nodes have connectivity issues as listed below, the next level nodes as shown in Scenarios (1) and (2) will take effect:

- o Nodes should not have any connectivity issue
- o Nodes can be reached but node response has parsing problem
- o Nodes can be reached but authentication is invalid
- Node cannot be reached
- Nodes cannot be added

GigaSMART Application Licenses

GigaSMART applications improve network visibility, traffic handling, and tool efficiency. You need licensing keys to enable GigaSMART applications in the devices. GigaSMART licenses can be procured as either node-locked or floating and are available in the following licensing models:

Licensing Modal	Description
Evaluation	Use an evaluation license to evaluate GigaSMART applications. During the evaluation period of 45 days, you will have access to the full functionality of the GigaSMART applications under evaluation. You can obtain an evaluation license for any GigaSMART application, for either a single or for a number of GigaSMART applications combined into a bundle.
Subscription	Few GigaSMART applications, such as De-duplication, Inline SSL, and Application Intelligence, are available only as bundles through a subscription license.
Perpetual	Perpetual licenses are node-locked to a specific card. These can be managed from CLI as well as GigaVUE-FM

GigaSMART licenses can be purchased individually or as bundles. Refer to the GigaSMART Data Sheet for the GigaSMART License SKU for the various devices.

Note: Bundled features can only run on the corresponding GigaSMART hardware.

Base GigaSMART Applications

- **GigaVUE-FM and GigaVUE-OS-HC0 Module** The base applications include Packet Slicing, Masking, Trailer, and IP and L2GRE Tunnel Decap.
- GigaVUE-HC3 SMT-HC3-C05 Module and GigaVUE-HC3 SMT-HC3-C08 Module The base applications include Packet Slicing, Masking, Trailer, and IP and L2GRE Tunnel Decap.
- **GigaVUE-HC1 Node** The base applications include Packet Slicing, Masking, and Trailer.

GigaSMART applications with the Base license available on GigaVUE-FM and GigaVUE-OS HC Series nodes:

- GigaSMART Packet Slicing
- GigaSMART Masking
- Using GigaSMART Trailers
- GigaSMART IP Encapsulation/Decapsulation (GigaSMART Tunnel)
- GigaSMART Layer 2 GRE Tunnel Encapsulation/Decapsulation
- GigaSMART VXLAN Tunnel Decapsulation
- GigaSMART Custom Tunnel Decapsulation

Advanced Tunneling License/Tunneling License

Note: Advanced Tunneling license on and GigaVUE-HC3. Referred to as "Tunneling license" on GigaVUE-HC1.

The **Advanced Tunneling License/Tunneling License** enables the following GigaSMART applications:

- GigaSMART IP Encapsulation/Decapsulation (GigaSMART Tunnel)
- GigaSMART Layer 2 GRE Tunnel Encapsulation/Decapsulation
- GigaSMART VXLAN Tunnel Decapsulation
- GigaSMART Custom Tunnel Decapsulation
- GigaSMART ERSPAN Tunnel Decapsulation

De-duplication License

The **De-duplication License** enables the following GigaSMART applications:

GigaSMART De-duplication

Header Stripping License

The **Header Stripping License** enables the following applications:

- GigaSMART Header Addition
- GigaSMART Header Stripping

Adaptive Packet Filtering (APF) License

The Adaptive Packet Filtering License enables the following GigaSMART applications:

GigaSMART Adaptive Packet Filtering (APF)

Application Session Filtering (ASF) License

The Application Session Filtering License enables the following GigaSMART applications:

GigaSMART Application Session Filtering (ASF) and Buffer ASF

GTP Filtering & Correlation License

The GTP Filtering & Correlation License enables the following GigaSMART applications:

- GigaSMART GTP Correlation
- GigaSMART GTP Whitelisting and GTP Flow Sampling
- GTP Scaling
- GTP Stateful Session Recovery

SIP/RTP Correlation License

The SIP/RTP Correlation License enables the following GigaSMART application:

GigaSMART SIP/RTP Correlation

FlowVUF License

The FlowVUE License enables the following GigaSMART applications:

GigaSMART FlowVUE

NetFlow Generation License

The NetFlow Generation License enables the following GigaSMART applications:

GigaSMART NetFlow Generation

SSL Decryption Licenses

The SSL Decryption Licenses enable the following GigaSMART applications:

- GigaSMART Passive SSL Decryption
- GigaSMART SSL Decryption for Inline and Out-of-Band Tools

NOTES:

- GigaSMART load balancing does not require a separate license. Stateless load balancing is included with base licenses. Stateful load balancing for GTP and ASF are included with the GTP Filtering & Correlation and Application Session Filtering (ASF) licenses. Stateful load balancing for tunnel is included with the tunneling licenses. Refer to GigaSMART Load Balancing in GigaVUE Fabric Management Guide.
- GigaSMART MPLS traffic performance enhancement does not require a separate license. Refer to GigaSMART MPLS Traffic Performance Enhancement in GigaVUE Fabric Management Guide.

GigaVUE-OS and GigaVUE-OS Module Licenses

Starting in software version 5.12.00, Gigamon hardware devices can be manufactured with or without a software license:

License Type	Supported Platforms
Fully licensed devices (integrated devices)	Provisioned with both hardware and software licenses. Software license is a perpetual license.
Hardware-only licensed devices (suffixed with "-HW" in the hardware type)	Provisioned with only the hardware license. Need additional software licenses for the device to be fully operational.

The following software licenses must be installed in the hardware-only licensed devices for the chassis and the modules to be active and operational:

- GigaVUE-OS License.
- GigaVUE-OS Module License.

Refer to the following notes:

- GigaVUE-OS and GigaVUE-OS Module licenses support both Term and Perpetual licensing.
- You can activate the GigaVUE-OS and GigaVUE-OS Module licenses from the Gigamon Licensing portal or from the GigaVUE-FM GUI. Refer to Manage GigaSMART, GigaVUE-OS, and GigaVUE-OS Module Licenses
 - When assigning GigaVUE-OS licenses, only the relevant chassis (based on the model) is available for assignment (GigaVUE-HC1, GigaVUE-HC3, GigaVUE-HC1Plus) based on the specific SKU.
 - When assigning GigaVUE-OS module licenses, only the relevant cards (based on the card type) is available for assignment (PRT-, BPS-, TAP-, SMT-) based on the specific SKU of the card.
- Activation of licenses from GUI is applicable only for the following devices:
 - GigaVUE-HC1
 - GigaVUE-HC1-Plus
 - GigaVUE-HC3
- Devices must be running software version 6.2.00. GigaVUE-FM does not allow you to activate licenses for devices running earlier software versions.
- You cannot transfer the GigaVUE-OS and GigaVUE-OS Modules licenses across chassis and cards.
- On the GigaVUE-OS and GigaVUE-OS Module licenses that are activated from the GigaVUE-FM GUI, an F-icon is displayed.

Refer to the GigaVUE HC Series Data Sheet for the license SKUs.

Supported Hardware Devices

The following table shows the licenses applicable for the GigaVUE HC series and TA series devices and expiry of the license.

License Type	Supported Platforms	Installation of License	Uninstallation/Expiry of License	Term License Behavior	
GigaVUE-OS License	• GigaVUE-HC1/ GigaVUE-HC1- Plus • GigaVUE-HC3	Chassis will be operationally up and active.	 All the modules except the CC cards will be in shutdown state. You cannot bring the cards up through CLI or GigaVUE-FM until the licenses are renewed. 	Refer to Term License Behavior after expiry (from Software Version	
	 GigaVUE-TA25 GigaVUE-TA25E GigaVUE-TA100 GigaVUE-TA200 GigaVUE-TA200E GigaVUE-TA400 GigaVUE-TA400 	 Default ports will be up and active. Non-default ports (Pseudo slot) will require appropriate port license. 	 All ports in the device will go to inactive state. Port level configurations (such as, admin enable, port type change) are not allowed until licenses are renewed. 	6.1.00) for details.	
	GigaVUE-TA400E	Default ports will be up and active until 100Gb speed. To upgrade to 400Gb speed, you require an upgrade license.	All ports in the device will go to inactive state.		
GigaVUE-OS Module License	• GigaVUE-HC1/ GigaVUE-HC1- Plus • GigaVUE-HC3	Ports will be up and active.	 Ports will be in inactive state. Port level configurations (such as, admin enable, port type change) are not allowed until licenses are renewed. 		
			Note: The GigaVUE-HC1-X12G4 card does not require a separate module license. The GigaVUE-OS license is used to bring up / down the card.		

Appropriate banner notifications will be displayed on expiry of licenses.



The Gigamon G-TAP/Dell platforms do not support GigaVUE-OS and GigaVUE-OS Module License. The GigaVUE TA Series devices do not support GigaVUE-OS Module license.

The following table provides additional details on the dependency between the chassis and the modules types for software version 5.12.00 and above (for the GigaVUE HC Series devices):

Chassis License Type	Module License Type	Dependency
Chassis with Hardware only license	Module with Hardware only license	GigaVUE-OS license and GigaVUE-OS Module license are required for the chassis and the modules to be operationally up and active.
Chassis with integrated license	Module with integrated license	No license requirement for chassis and module to be operationally up.
Chassis with Hardware only license	Module with integrated license	GigaVUE-OSlicense is required for the modules to be operationally up. No license requirement for the ports.
Chassis with integrated license	Module with Hardware only license	GigaVUE-OS Module license is required for the ports to be in active state. No license requirement for the chassis.

If the GigaVUE-OS Module license expires on the BPS card, physical bypass is enabled on all protected inline-networks in the card, allowing traffic to be physically bypassed when licenses are expired.

Rules and Notes

- For OOB clusters, it is recommended to install license for all the nodes from the leader.
- For Inband clusters, GigaVUE-OS and GigaVUE-OS module licenses (as applicable) must be installed in the individual nodes before the cluster is formed.
- On expiry of the GigaVUE-OS or GigaVUE-OS Module licenses:
 - Inband cluster will break.
 - Logical inline traffic flows will get affected.
 - config switch-to Will fail.
 - Switching to FIPS/Crypto Mode will fail

Note: Renew the licenses for the above functionality/commands to work.

Install GigaVUE-OS and GigaVUE-OS Module license

Use the license command to install the GigaVUE-OS and GigaVUE-OS Module license:

For example: To install the GigaVUE-OS license:

(config) # license install box 1 key LK2-GVOS-***-***-***-***-***-***-***-***-***

_****

NOTE: Execute the **Write Memory** command after installing the license.

To verify that the GigaVUE-OS license is installed:

show license

Box 2

Slot Feature Parameters Start Date Expiration Date

1 GVOS-module - Never

Chassis-Feature Parameters Start Date Expiration Date

GVOS - 2021/02/22 Never

To verify that the cards and ports are operationally up:

show card

Box ID: 2

Slot Config Oper Status HW Type Product Code Serial Num HW Rev PowerReq PowerPriority

2	yes	up	PRT-HC3-C08Q08	132-00DW	1DW0-2001
1.0-0	160	2			
3 1.0-0	yes 200	up (unlicensed)	SMT-HC3-C05-HW	132-00DX	1DX0-1005
4 1.0-0	yes 160	up (unlicensed) 4	PRT-HC3-C08Q08-HW	132-00DW	1DW0-2002

The above **show card** output indicates the following:

- GigaVUE-OS license is installed for the chassis: cc1 is displayed as licensed.
- GigaVUE-OS Module license is installed for Module 1: Module 1 is displayed as licensed.
- Module 2 (PRT-HC3-C08Q08) is displayed as licensed, since it has the integrated license.
- The rest of the modules are displayed as unlicensed (highlighted in gray).

Note: To assign GigaVUE-OS and GigaVUE-OS Module licenses from GUI Refer to Activate Licenses section.

Troubleshooting Scenarios

Use the following table to troubleshoot issues that you might encounter on expiry of the GigaVUE-OS and GigaVUE-OS Module licenses.

Problem	Solution
On expiry of the GigaVUE-OS Module license, installing the new term license or perpetual license will not move the ports to active state.	 Uninstall the new license and re-install it. Execute the write memory command after installing the license.
GigaVUE TA Series devices: On expiry of the GigaVUE-OS license, installing the new term license or perpetual license will not bring up the cards.	Uninstall the new license and re-install it. Execute the write memory command after installing the license.
GigaVUE HC Series devices: On expiry of the GigaVUE-OS license, installing the new term license or perpetual license will not bring up the cards.	 Execute the no card slot <slot number=""> down command for all the cards.</slot> If the problem persists, uninstall the new license and re-install it. Execute the write memory command after installing the license.
During new cluster formation or adding a node to a cluster, the leader does not detect member nodes license that have been installed before the cluster formation.	 Install the member nodes license once again from the leader after the cluster is formed. If the problem persists, uninstall the new license and re-install it. Execute the write memory command.

Manage GigaSMART, GigaVUE-OS, and GigaVUE-OS Module Licenses

You can manage the following licenses from the GigaVUE-FM GUI:

- GigaSMART License
- GigaVUE-OS License
- GigaVUE-OS Module License

To access the licenses page for managing the above:

- 1. On the left navigation pane, click 🕸.
- 2. Select System > Licenses > Activation > Floating.

This page displays the license details of the nodes managed by GigaVUE-FM.

Use the following buttons to manage the licenses:

Button	Description
Activate Licenses	Use this button to activate the licenses. Refer to Manage GigaSMART, GigaVUE-OS, and GigaVUE-OS Module Licenses for more information.
Deactivate	Use this button to deactivate the licenses. Refer to Deactivate Licenses for more information.
Replace Licenses	Use this button to replace licenses.
Renewal	Use this button to renew the licenses.
Export	Use this button to export the details in the Activate Licenses page to a CSV or XLSX page.
Filter	Use this button to narrow down the list of active GigaSMART Licenses that are displayed on the VBL active page.

Activate Licenses

Prior to activating the licenses, ensure that you have the following information:

- Entitlement IDs: Locate the email sent to you by Gigamon containing the licensing information for your installation. This email contains one or more EID (Entitlement ID) values. You will use these EIDs to generate License Keys on the Gigamon Licensing Website.
- **Challenge MAC Address**: Locate the Challenge MAC address of the virtual network adapter associated with the GigaVUE-FM installation.

To activate or find the license or licenses, do the following:

1. On the left navigation pane, click 🕸.

2. Go to System > Licenses > Activation > Floating.

You can use this page to access the Gigamon license portal where you can activate licenses. You can then use this page to assign the active licenses to the devices.

- 3. Click Activate Licenses > With License Portal:
- 4. Follow the instructions on the screen to activate your licenses.

In these next steps you will:

- Download the fabric inventory (.json) file from GigaVUE-FM. For more details, refer to What is a Fabric Inventory File?
- o Go to the Gigamon license portal and find license you want to activate and complete the three screens to activate your license. On the second screen, you will be prompted to upload the fabric inventory (.json) file. Refer to the Gigamon License Portal section for instructions on how to activate the licenses from the portal.
- After activating the license, you can download the license (.lic) files or record the license key or keys.

Note: When downloading the license file, ensure to not include special characters such as '(', ')' in the name of the license file.

- Return to GigaVUE-FM, log in as an administrator, and return to the license activation screen.
 - Click the gear icon. Navigate to System > Licenses > Activation > Floating. You can either,
 - Click Activate Licenses > With License Portal and complete the activation by importing the downloaded License (.lic) files.
 - Or, Click Activate Licenses > With License Key and complete the activation by entering the license key.

NOTE: To access the Gigamon license portal, directly, you can go to the Gigamon Community Portal, click More, and select License Portal.

Note: Please contact technical support team for assistance.

Deactivate Licenses

This section explains about:

- Deactivate expired licenses for GigaVUE-FM and GigaVUE-OS Nodes
- Deactivate expired licenses for GigaVUE Cloud Suite

Note: To remove the expiry banner, ensure that any expired license is deactivated in both the Floating and VBL tabs. The banner will appear when there is an expired license in either tab.

For floating licenses, both Recently Expired and Expired licenses will be in the Active tab.

Deactivate expired licenses for GigaVUE-FM and GigaVUE-OS Nodes

You can deactivate licenses that have expired and also the license must not be assigned to any node. GigaVUE-FM displays both Recently Expired and Expired licenses in the **Activated** page.

To deactivate the licenses:

- 1. On the left navigation pane, click 🕸
- 2. Go to **System > Licenses > Activation > Floating**. Click **Activated**.

You can view the details of both Recently Expired and Expired licenses.

3. Select the license that you want to deactivate and Select the **Deactivate** button from the **Actions** drop-down list. GigaVUE-FM allows to you to select only one license at a time to deactivate

The license will get deactivated and will be added to the list view in the **Deactivated** tab.

Deactivate expired licenses for GigaVUE Cloud Suite

You can deactivate licenses that have expired. GigaVUE-FM displays the licenses in Recently Expired state in **ACTIVE** page and licenses in Expired State in **INACTIVE** page.

To deactivate the licenses:

- 1. On the left navigation pane, click 🕸
- 2. Go to System > Licenses > Activation > VBL.
- 3. Click **INACTIVE** tab.

You can view the details of licenses in Expired state.

Note: To view the list of licenses in Recently Expired, click ACTIVE tab.

- 4. Select the license that you want to deactivate. GigaVUE-FM allows to you to select only one license at a time to deactivate.
- 5. Select the **Deactivate** button.

The license gets deactivated.

Note: You can view the Deactivate button, only when you select Recently Expired, Expired or Node-Locked licenses,.

Manage GigaSMART Application Licenses using CLI

Install GigaSMART Licenses

Generate the license key from the licensing portal. GigaSMART licenses can be either node-locked or floating licenses. use the **license** command to associate the hardware to the license key.

The key consists of a long string beginning with LK2, which is a protocol, followed by the line card or module (SMT_HC0_R), followed by the content of the license key.

Notify Evaluation License Expiry

After installation, the evaluation license will expire after 45 days, on a specific date.

To notify you as the evaluation license approaches the expiry date, you can enable a notification. When enabled, the notification will be sent when there are 30, 15, 10, 5, 4, 3, 2, and 1 days remaining before the license expires.

Use the following CLI command to enable the evaluation license reminder:

(config) # snmp-server enable notify evallicensereminder

You can also use the **show license** command to display the expiration date of an evaluation license.

How to Combine Evaluation and Perpetual Licenses

An evaluation license can be for a number of GigaSMART applications combined in a bundle. If you have a perpetual license for one GigaSMART application, for example, de-duplication, and you want to evaluate a bundle that contains 10 GigaSMART applications, including deduplication, the 45-day evaluation period will apply to the other 9 GigaSMART applications, while the perpetual license will apply to de-duplication.

If you obtain a perpetual license after an evaluation license, the perpetual license will overwrite the evaluation license.

GigaSMART Application after Expiry

Once an evaluation license expires, access to the GigaSMART application is disabled. If maps were configured using GigaSMART applications on the evaluation license, traffic will be dropped when the evaluation license expires.

Note: Traffic will flow through maps with perpetually licensed GigaSMART applications.

In addition, the **gsop** command will not be available once the evaluation license has expired.

However, if a new evaluation license for the same GigaSMART application is installed, a new 45-day evaluation period will begin.

Move Evaluation and Perpetual Licenses

Evaluation and perpetual license keys are saved on the GigaSMART line card or module, while license information is stored in the configuration database. The license key on the line card or module has to match the license information stored in the database, otherwise a license mismatch will result.

Line cards or modules may sometimes need to be moved or swapped. For the procedure to move a license, refer to Move Licensed GigaSMART Line Card to a New Slot. This procedure will clear a license mismatch under certain circumstances. Moving a license depends on the license type, as well as the expiry date, as follows:

License Key Saved on GigaSMART Line Card/Module	License Information Stored on Configuration Database	Can be Moved?
Perpetual License	Evaluation License	Yes
Evaluation License	Perpetual License	No
Evaluation License with an earlier expiry date than the one stored on the configuration database	Evaluation License	No
Evaluation License with a later expiry date than the one stored on the configuration database	Evaluation License	Yes

Move Licensed GigaSMART Line Card to a New Slot

On the GigaVUE-FM and GigaVUE-OS HD Series, you can move a GigaSMART line card from one slot to another. On the GigaVUE-HC3, you can move a GigaSMART front module from one bay to another.

If there are no GigaSMART operations (gsops) configured on the line card or module to be moved, you can move the line card or module to the new slot or bay.

If there are GigaSMART operations (gsop), GigaSMART groups (gsgroup), and maps configured on the line card or module to be moved, the system will report a license mismatch if you try to move it without first removing the related configuration.

To clear the settings related to the GigaSMART line card or module from its previous slot, allowing you to create new GigaSMART operations, GigaSMART groups, and maps using the GigaSMART line card or module in its new slot, use the following procedure:

1. Issue the following CLI command:

(config) # show running-config

- 2. Copy and paste the output to a file such as Notepad, for reference.
- 3. Remove the map that uses the gsop defined on the gsgroup of the GigaSMART line card or module to be moved, using the following CLI command:

(config) # no map alias <alias>

4. Remove the gsop that was defined on the gsgroup of the GigaSMART line card or module to be moved, using the following CLI command:

(config) # no gsop alias <alias>

5. Remove the gsgroup that was defined on GigaSMART line card or module to be moved, using the following CLI command:

(config) # no gsgroup alias <alias>

6. Issue the following CLI command on GigaSMART line card or module to be moved:

(config) # no card slot <slot ID>

7. Assuming that the new slot does not have a GigaSMART line card or module inserted, issue the following CLI command on the new slot:

(config) # no card slot <slot ID>

8. Issue the following CLI command on the new slot:

(config) # card slot <slot ID>

On the new slot, configure gsgroup, gsop, and reapply the map that uses the gsop on the GigaSMART line card or module.

GigaSMART applications are enabled using license keys. Refer to the **license** command in the *GigaVUE-OS CLI Configuration Guide* for details.

Contact your Sales Representative for information on obtaining a license key to enable additional GigaSMART applications.

Note: The "show license" command also displays the start time and end time to support term licenses.

For **perpetual licenses**, the Expiration Date column has the word Never to indicate that there is no expiration date.

For **evaluation licenses**, the Expiration Date column has a specific date on which the license expires. For more information on evaluation licenses, refer to Install GigaSMART Licenses.

GigaSMART Evaluation Licenses

Use an evaluation license to evaluate GigaSMART applications. During the evaluation period of 45 days, you will have access to the full functionality of the GigaSMART applications under evaluation. You can obtain an evaluation license for any GigaSMART application, for either a single or for a number of GigaSMART applications combined in a bundle.

To obtain an evaluation license, contact your Sales Representative. A license key will be generated by Gigamon and sent to you. You then install the license, which enables the GigaSMART application for evaluation purposes.

Install Evaluation Licenses

You install an evaluation license the same way you install a perpetual license, using the **license** command.

The key consists of a long string beginning with LK2, which is a protocol, followed by the line card or module (SMT_HC0_R), followed by the content of the license key.

Notify Evaluation License Expiry

After installation, the evaluation license will expire after 45 days, on a specific date.

To notify you as the evaluation license approaches the expiry date, you can enable a notification. When enabled, the notification will be sent when there are 30, 15, 10, 5, 4, 3, 2, and 1 days remaining before the license expires.

Use the following CLI command to enable the evaluation license reminder:

(config) # snmp-server enable notify evallicensereminder

You can also use the **show license** command to display the expiration date of an evaluation license.

How to Combine Evaluation and Perpetual Licenses

An evaluation license can be for a number of GigaSMART applications combined in a bundle. If you have a perpetual license for one GigaSMART application, for example, de-duplication,

and you want to evaluate a bundle that contains 10 GigaSMART applications, including deduplication, the 45-day evaluation period will apply to the other 9 GigaSMART applications, while the perpetual license will apply to de-duplication.

If you obtain a perpetual license after an evaluation license, the perpetual license will overwrite the evaluation license.

GigaSMART Application after Expiry

Once an evaluation license expires, access to the GigaSMART application is disabled. If maps were configured using GigaSMART applications on the evaluation license, traffic will be dropped when the evaluation license expires.

Note: Traffic will flow through maps with perpetually licensed GigaSMART applications.

In addition, the **gsop** command will not be available once the evaluation license has expired.

However, if a new evaluation license for the same GigaSMART application is installed, a new 45-day evaluation period will begin.

Move Evaluation and Perpetual Licenses

Evaluation and perpetual license keys are saved on the GigaSMART line card or module, while license information is stored in the configuration database. The license key on the line card or module has to match the license information stored in the database, otherwise a license mismatch will result.

Line cards or modules may sometimes need to be moved or swapped. For the procedure to move a license, refer to Move Licensed GigaSMART Line Card to a New Slot. This procedure will clear a license mismatch under certain circumstances. Moving a license depends on the license type, as well as the expiry date, as follows:

License Key Saved on GigaSMART Line Card/Module	License Information Stored on Configuration Database	Can be Moved?
Perpetual License	Evaluation License	Yes
Evaluation License	Perpetual License	No
Evaluation License with an earlier expiry date than the one stored on the configuration database	Evaluation License	No
Evaluation License with a later expiry date than the one stored on the configuration database	Evaluation License	Yes

Move Licensed GigaSMART Line Card to a New Slot

On the GigaVUE-FM and GigaVUE-OS HD Series, you can move a GigaSMART line card from one slot to another. On the GigaVUE-HC3, you can move a GigaSMART front module from one bay to another.

If there are no GigaSMART operations (gsops) configured on the line card or module to be moved, you can move the line card or module to the new slot or bay.

If there are GigaSMART operations (gsop), GigaSMART groups (gsgroup), and maps configured on the line card or module to be moved, the system will report a license mismatch if you try to move it without first removing the related configuration.

To clear the settings related to the GigaSMART line card or module from its previous slot, allowing you to create new GigaSMART operations, GigaSMART groups, and maps using the GigaSMART line card or module in its new slot, use the following procedure:

1. Issue the following CLI command:

(config) # show running-config

- 2. Copy and paste the output to a file such as Notepad, for reference.
- 3. Remove the map that uses the gsop defined on the gsgroup of the GigaSMART line card or module to be moved, using the following CLI command:

(config) # no map alias <alias>

4. Remove the gsop that was defined on the gsgroup of the GigaSMART line card or module to be moved, using the following CLI command:

(config) # no gsop alias <alias>

5. Remove the gsgroup that was defined on GigaSMART line card or module to be moved, using the following CLI command:

(config) # no gsgroup alias <alias>

6. Issue the following CLI command on GigaSMART line card or module to be moved:

(config) # no card slot <slot ID>

7. Assuming that the new slot does not have a GigaSMART line card or module inserted, issue the following CLI command on the new slot:

(config) # no card slot <slot ID>

8. Issue the following CLI command on the new slot:

(config) # card slot <slot ID>

On the new slot, configure gsgroup, gsop, and reapply the map that uses the gsop on the GigaSMART line card or module.

GigaVUE TA Series Licenses

GigaVUE TA Series devices need the following licenses:

- Port Licenses
- Advanced Feature
- Flexible Inline Arrangement License

Port licenses and advanced feature licenses are node-locked licenses and can be activated only from the License portal. You need the Chassis Serial number to activate the licenses. For instructions on how to activate node-locked licenses refer to Activate Node-locked licenses section, for details.

Port Licenses

Table 1: GigaVUE TA Series License Types lists perpetual licenses available on GigaVUE-FM and GigaVUE-OS TA Series nodes.

Table 1: GigaVUE TA Series License Types

Table 1. digavae 1A series electise types		
Port License		
GigaVUE-OS	To enable ports on a white box after installing GigaVUE-OS, the appropriate license needs to be installed on the whitebox. The license can be purchased by calling the Gigamon representative. The initial key sent to the user is the Gigamon Installation Key.	
	Using the digital footprint and serial number of the white box along with the EID, the license key can be obtained from the Gigamon licensing portal. After obtaining the license key, install it directly on the white box from either the CLI or GigaVUE-FM.	
	This enables all ports on the white box.	
GigaVUE-TA25/GigaVUE- TA25A	The GigaVUE-TA25 can have either twenty-four (24) or forty-eight (48) 1Gb/10Gb/25Gb ports enabled.	
	• The GigaVUE-TA25 devices with all forty-eight (48) 1Gb/10Gb/25Gb ports and eight (8) 40/100Gb ports enabled does not require a port license.	
	• The 24-port GigaVUE-TA25 is called the GigaVUE-TA25A. A port license is available to expand the GigaVUE-TA25A to include all 48 1Gb/10Gb/25Gb ports as well as the eight (8) 40/100Gb ports.	
	For details, refer to the GigaVUE-TA25 Hardware Installation Guide.	
GigaVUE-TA100	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 <i>Hardware Installation Guide</i> .	

Port License	
GigaVUE-TA200	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. For details, refer to the GigaVUE-TA200 Hardware Installation Guide.
GigaVUE-TA200E	On the GigaVUE-TA200E, only the first 32 out of 64 ports are enabled. A port license is available to enable an additional 32 ports. For details, refer to the GigaVUE-TA200E Hardware Installation Guide.
GigaVUE-TA400E	On the GigaVUE-TA400E, all ports are enabled by default.
	The GigaVUE-TA400E has a perpetual Chassis and HTL Chassis.
	Perpetual Chassis:
	The GigaVUE-TA400E have thirty-two (32) 100Gb/40Gb ports and two (2) 10Gb ports enabled.
	• The GVS-TAC41E/GVS-TAC42E (HW Type: TA400E-Chassis) all 32 x 400Gb ports, and two (2) 10Gb ports enabled do not require a GVOS/upgrade license.
	• An upgrade license is available all 32 x 100Gb to expand the GVS-TAC41EA/GVS-TAC42EA (HW Type: TA400EA-Chassis) Chassis.
	o UPG-TAC40EA-SW-TM: D1-D16 Ports (100Gb to 400Gb)
	o UPG-TAC40EB-SW-TM: D17-D32 Ports (100Gb to 400Gb)
	HTL Chassis:
	• The GigaVUE-TA400E HTL chassis has thirty-two (32) 400Gb/100Gb/40Gb ports, and two (2) 10Gb ports.
	• The GVS-TAC40E-SW-TM has thirty-two (32) ports x 400Gb and two (2) 10Gb ports do not require a GVOS/upgrade license.
	An upgrade license is available to expand the GVS-TAC40EA-SW-TM.
	o UPG-TAC40EA-SW-TM: D1-D16 Ports (100Gb to 400Gb)
	o UPG-TAC40EB-SW-TM: D17-D32 Ports (100Gb to 400Gb)
	Refer to GigaVUE-TA400E Hardware Installation Guide.

Note: GigaVUE-TA25E, GigaVUE-TA40, and GigaVUE-TA400 have all ports enabled. No separate port license is required for these devices.

Advanced Feature Licenses

With Advanced Feature licenses, the following capabilities are available on the GigaVUE TA Series devices:

Capability	Description
Clustering	Clustering is enabled with an Advanced Features License.
	• GigaVUE-TA25
	• GigaVUE-TA25E
	• GigaVUE-TA100
	• GigaVUE-TA200
	• GigaVUE-TA200E

	GigaVUE-TA400GigaVUE-TA400E
Stack Port	For ports containing stacking enabled will be moved to disabled state after license expired. Once the license is renewed, the stack port needs to be manually enabled. Disabling of stack port will stop the traffic flowing.
Circuit Port	After license expiry, all the maps containing circuit port or circuit GigaStream will moved to disabled state and the traffic is dropped. Upon license renewal, the map will be enabled again.
PTP/Time Stamping	After license expiry, all the ports having PTP / Timestamp enabled will be moved to disabled state. Upon license renewal, the PTP / Timestamp is enabled again on the port.
Tunnels	Tunneling is a communication protocol that is used to transmit data from one network to another by encapsulating the data. The following tunnel types require advanced feature license:
	Circuit-ID Tunnels
	Layer 2 Generic Routing Encapsulation (L2GRE) Tunnels
	Virtual Extensible LAN (VXLAN) Tunnels
IP Address Rewrite	Internet Protocol (IP) address rewrite converts the incoming traffic's IP address (source, destination, or both) with a user configured IP address.
	Ensure you have advanced feature license enabled for your GigaVUE TA Series device.
MAC Address Rewrite	Media Access Control (MAC) address rewrite converts the incoming traffic's MAC address (source, destination, or both) with a user configured MAC address. The modified packets are then delivered as per flow mapping configurations. This allows the user to maintain confidentiality of the outgoing MAC address.
	Ensure you have advanced feature license enabled for your GigaVUE TA Series device.

Flexible Inline Arrangement License

The Flexible Inline Arrangement feature can be configured in GigaVUE-TA200, GigaVUE-TA200E, GigaVUE-TA25, GigaVUE-TA25E, GigaVUE-TA400, and GigaVUE-TA400E only if you have the necessary license. Licensing can be either of the below two types:

- **Perpetual Subscription**: The license is applicable to GigaVUE-TA200, GigaVUE-TA200E, GigaVUE-TA25E, GigaVUE-TA400, and GigaVUE-TA400E per node.
- Monthly Subscription: This license is applicable per node and can be renewed monthly

.

Licensing Rules and Notes

- Without the license you will not be allowed to create Inline-net and inline-tool ports.
- If your license has expired or uninstalled then the Inline-net and inline-tool ports will move to inactive state port params edit such as speed change and admin enable option will be blocked except for port type modification.

Manage Licenses for GigaVUE-FM and GigaVUE-OS Nodes

To view all the licenses assigned to a GigaVUE node:

- 1. From the device view, select **Settings > Config and Licenses** from the navigation pane.
- 2. Click Licenses.

You can view the list of licenses. GigaVUE TA Series device licenses may be one of the following:

- Advanced Features Licenses start with ADV
- Ports licenses start with PRT

For all licenses, the **Expiration Date** column has the word Never to indicate that there is no expiration date. Evaluation licenses are currently not available for GigaVUE-FM and GigaVUE-OS TA Series.

To view the serial numbers:

- 1. From the device view, select **System > Chassis** from the navigation pane.
- 2. Click Table View.

The serial number is displayed in the Serial Number column under Properties.

To install licenses:

- 1. From the device view, select **Settings > Config and Licenses > Licenses** from the navigation pane.
- 2. Click Add.
- 3. In the Add Licenses page, enter the license key in the Licensel field and select the **Box ID** of the chassis to which to apply the license.
- 4. Use the +/- option to add additional licenses.
- 5. Click **Install** to install the license.

For standalone nodes, the Box ID of the selected node will be available.

For clusters you must select the required Box ID from the drop-down. Use the +/- option to add licenses for other Box IDs.

Volume-Based Licenses (Cloud License)

All the GigaVUE V Series Nodes connected to GigaVUE-FM periodically report statistics on the amount of traffic that flows through the V Series Nodes. The statistics reflect the data volume flowing through the V Series Nodes, with the usage statistics of all licensed applications that run on these nodes.

GigaVUE Cloud Suite uses volume-based licensing (VBL), available as monthly subscription licenses. In the Volume-based Licensing (VBL) scheme, specific applications on the V Series Nodes are entitled to a specified amount of total data volume over the term of the license.

Distributing the license to individual nodes becomes irrelevant for Gigamon accounting purposes. GigaVUE-FM monitors overall consumption across all nodes and tracks individual application usage and overages.

Related Information

- For purchasing licenses with the Volume-Based License (VBL) option, contact our Sales team.
- For more information, refer to the Data Sheet for the required GigaVUE Cloud Suite.

Base Bundles

In volume-based licensing scheme, licenses are offered as bundles. The following three base bundle types are available:

- CoreVUE
- NetVUE
- SecureVUEPlus

The bundles are available as SKUs ¹. The SKUs are named such that the number indicates the total volume allowance of the SKU for that base bundle. For example, VBL-250T-BN-CORE indicates a daily volume allowance of 250 Terabytes (250T) for the CoreVUE bundle.

Bundle Replacement Policy

Refer to the following notes:

¹Stock Keeping Unit. Refer to the What is a License SKU? section in the FAQs for Licenses chapter.

• You can only upgrade to a higher bundle.

You cannot have two different base bundles at the same time. However, you can have multiple base bundles of the same type.

As soon as you upgrade to a higher bundle, the existing lower bundles are automatically deactivated.

Add-on Packages

GigaVUE-FM allows you to add add-on packages to the base bundles. These add-on packages allow you to add additional applications to your base bundles. Add-on packages have their own start/end date and volume specifications.

The following add-on SKUs are available:

Rules for add-on packages:

- An active base bundle is required to use an Add-on package.
- Your base bundle limits the total volume usage of the add-on package in the following ways:
 - If the volume allowance of your add-on package is less than the base bundle, then your add-on package can only handle the volume allocated for the add-on package.
 - When the life term of an add-on package extends beyond the base bundle, and the base bundle expires, the add-on package's volume allowance is reduced to zero until you add a new base bundle.
 - The total volume is cumulative when multiple base bundles of the same type are active within the same time interval.

For more information about SKUs, refer to the respective Data Sheets as follows:

GigaVUE Data Sheets GigaVUE Cloud Suite for VMware Data Sheet GigaVUE Cloud Suite for AWS Data Sheet GigaVUE Cloud Suite for Azure Data Sheet

GigaVUE Cloud Suite for OpenStack

GigaVUE Cloud Suite for Nutanix

GigaVUE Cloud Suite for Kubernetes

How GigaVUE-FM Tracks Volume-Based License Usage

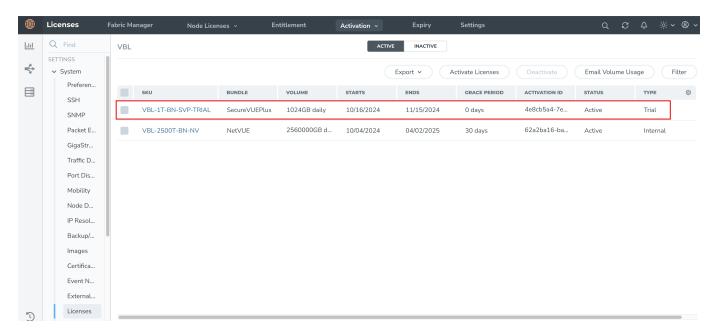
GigaVUE-FM applies the following methods to track the license usage for each GigaVUE V Series Node:

- When you create and deploy a monitoring session, GigaVUE-FM allows you to use only applications with active licenses.
- When a license expires, you are notified with an audit log. For more information, refer to the *About Audit Logs* section in the respective GigaVUE Cloud Suite Deployment Guide.
- When a license expires (and has not been renewed yet), the monitoring sessions using the corresponding license are not undeployed.
- For releases prior to 6.4:
 - The Monitoring Sessions using the corresponding license are undeployed, but not deleted from the database.
 - Any undeployed monitoring sessions are redeployed when you renew a license or newly import the same.

Note: Note: GigaVUE-FM displays a notification on the screen when the license expires.

Default Trial Licenses

After you install GigaVUE-FM, you receive a one-time, free 1TB SecureVUE Plus trial Volume-Based License (VBL) for 30 days, starting from the installation date.



This license includes the following applications:

- ERSPAN
- GENEVE
- Slicing
- Masking

- Trailer
- Tunneling
- Load Balancing
- Enhanced Load Balancing
- Flow map
- Header Stripping
- Header Addition
- De-duplication
- NetFlow
- Application Packet Filtering
- Application Filtering Intelligence
- Application Metadata Intelligence
- Application Metadata Exporter
- Inline SSL
- SSL Decrypt
- Precryption

Note: If you do not have any other volume-based licenses installed, the deployed monitoring sessions are undeployed from the existing GigaVUE V Series Nodes after 30 days at the expiration of the trial license.

When you install a new Volume-Based License (VBL), the existing trial license remains active alongside the new VBL. When the trial license period expires, it is automatically deactivated. After deactivation, the trial license moves to the Inactive tab on the VBL page.

Activate Volume-Based Licenses

To activate Volume-Based Licenses:

- 1. On the left navigation pane, select 🕸
- 2. Go to System > Licenses.
- 3. From the top navigation bar, select the **VBL** from the **Activation** drop-down.
- 4. Select **Activate Licenses**. The **Activate License** page appears.
- 5. Select **IP Address** or **Hostname** to include this information. If you exclude the IP Address or Hostname, dentify the chassis or GigaSMART card by its ID when activating.
- 6. Download the fabric inventory file that contains information about GigaVUE-FM.
- 7. Select **Next**. For details, refer to the What is a Fabric Inventory File section in *GigaVUE Licensing Guide*

- 8. Select **Gigamon License Portal** to navigate to the Licensing Portal.
- 9. Upload the Fabric Inventory file in the portal.
- 10. Select the required license and select **Activate**. A license key is provided.
- 11. Record the license key or keys.
- 12. Return to GigaVUE-FM and select **Choose File to** upload the file.

Manage Volume-Based Licenses

This section provides information on how to manage active and inactive Volume-Based Licenses in GigaVUE-FM.

Manage active Volume-Based License

To manage active Volume-Based License (VBL):

- 1. On the left navigation pane, click 🕸
- 2. Go to **System > Licenses**.
- 3. From the top navigation bar, select the **VBL** from the **Activation** drop-down list and click **Active**.

This page lists the following information about the active Volume-Based Licenses.

Field	Description
SKU	Unique identifier associated with the license.
Bundle	Bundle to which the license belongs to.
Volume	Total daily allowance volume.
Starts	License start date.
Ends	License end date.
Туре	Type of license (Commercial, Trial, Lab, and other license types).
Activation ID	Activation ID.
Entitlement ID	Entitlement ID. Entitlement ID is the permission with which the acquired license can be activated online.
Reference ID	Reference ID.
Status	License status.

Note: The License Type and Activation ID are displayed by default in the Active tab in the VBL page.

Note: Note: To display the Entitlement ID field, select the column setting configuration option to enable the Entitlement ID field.

Manage Inactive Volume-Based License

To manage inactive Volume-Based License (VBL):

- 1. On the left navigation pane, click 🕸
- 2. Go to **System > Licenses**.
- 3. From the top navigation bar, select the **VBL** from the **Activation** drop-down and click **Inactive**.

This page lists the following information about the inactive Volume-Based Licenses.

Field	Description
SKU	Unique identifier associated with the license.
Bundle	Bundle to which the license belongs to.
Ends	License end date.
Deactivation Date	Date the license got deactivated.
Revocation Code	License revocation code.
Status	License status.

Note: The License Type, Activation ID and Entitlement ID fields are not displayed by default in the Inactive tab of VBL page. To display these fields, click on the column setting configuration option and enable these fields.

Use the following buttons to manage your VBL.

Button	Description
Activate Licenses	Use this button to activate a Volume-Based License. For more information, refer to the topic Manage Volume-Based Licenses of the GigaVUE Licensing Guide .
Email Volume Usage	Use this button to send the volume usage details to the email recipients. Refer to Add Email Notification Recipients for more details on how to add email recipients.
Filter	Use this button to narrow down the list of active Volume-Based Licenses that are displayed on the VBL active page.
Export	Use this button to export the details in the VBL active page to a CSV or XLSX file.
Deactivate	Use this button to deactivate the licenses. You can only deactivate licenses that have expired.

Note: If a VBL is deactivated after a bundle upgrade, you cannot create or edit Monitoring Sessions that include applications from the deactivated VBL during the grace period. You should manually deactivate the upgraded license during the grace period to move the inactive lower bundle license back to active status.

For detailed information on dashboards and report generation for Volume-Based Licensing refer to the following table:

For details about:	Reference section	Guide
How to generate Volume-Based License reports	Generate VBL Usage Reports	GigaVUE Administration Guide
Volume-Based License report details	Volume Based License Usage Report	GigaVUE Administration Guide
Fabric Health Analytics dashboards for Volume- Based Licenses usage	Dashboards for Volume Based Licenses Usage	GigaVUE-FM User Guide

Licenses - GUI Options in GigaVUE-FM

The licenses page in the GigaVUE-FM GUI allows you to perform the following tasks:

Table 1: Licensing Tasks from GigaVUE-FM GUI

Task	Description	Refer to
Activate Licenses	To Activate licenses for the following:	
	- GigaVUE-FM	Manage GigaVUE-FM License
	- GigaSMART	Manage GigaSMART License
	- GigaVUE-OS and GigaVUE-OS Module Licenses	
	Volume-based Licenses	Manage Volume-Based Licenses
	Advanced Feature and Port Licenses	Manage Licenses for GigaVUE-FM and GigaVUE-OS Nodes
View Activated, Deactivated, and Unlicensed Hardware	View details of activated, deactivated, and Unlicensed Hardware for GigaSMART and GigaVUE-OS and GigaVUE-OS Module.	Floating
View Expired Licenses	View details of expired licenses	Expiry
Configure Settings for Event Notifications	Configure the settings for event notifications	Settings
View Node-locked Licenses	View hierarchical and list view pages for the nodes	Node Licenses

Floating

The Floating page displays the license details of floating licenses. This page has the following three tabs:

 Activated: The Activated tab displays the list of active licenses. You can activate, deactivate, and replace licenses from this page. To activate a license, refer to Activate Licenses.

Note: The **License Type** and **Activation ID** fields are displayed by default in the Activated page. To display the **Entitlement ID** field, click on the column setting configuration option to enable the Entitlement ID field.

Deactivated: The Deactivated tab displays the list of deactivated licenses. The License
Type, Activation ID, and Entitlement ID fields are not by default displayed in the
Deactivated page. To display these fields, click on the column setting configuration
option and enable these fields.

• **Unlicensed Hardware**: The Unlicensed Hardware tab displays the list of GigaVUE-OS and GigaVUE-OS module licenses that are missing or not installed on a particular chassis or card.

Note: Floating licenses display the license type field. Node-locked licenses also display the license type field (Type), **only** if the license is imported through the GigaVUE-FM GUI. If a node-locked license is imported through CLI, then it must be re-imported through GigaVUE-FM (the license key must be saved in a .key file which is then imported), so that the node-locked license is visible on the floating activations page.

Licenses	FM/Clou	nd Node Locked	Floating	Volume Usage	Expiry	Settings
Activated	Deactivated	Missing				

GigaVUE-OS module license missing on 6 cards:

- Cluster mughil, Box id 1, Slot 2, Serial number 1DW0-2001
- Cluster mughil, Box id 1, Slot 3, Serial number 1DX0-1005
- Cluster mughil, Box id 1, Slot 4, Serial number 1DW0-2002
- Cluster mughil, Box id 2, Slot 2, Serial number 1DW0-2001
- Cluster mughil, Box id 2, Slot 3, Serial number 1DX0-1005
- Cluster mughil, Box id 2, Slot 4, Serial number 1DW0-2002

Node Licenses

To access the Node Licenses page:

On the left navigation pane, click and select System > Licenses > Node Licenses.

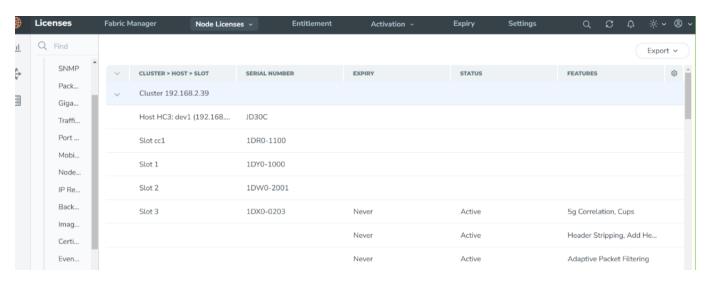
The following views are available in the **Node Licenses** drop down list:

- Hierarchical View
- List View

Hierarchical View

This is a view only page showing the cluster-host-slot details along with the license expiry information. In hierarchical view:

- The cluster-host-slot is displayed as an expandable column.
- The serial number column shows chassis or card serial number, depending on the row it represents.
- The collapse all/expand all on the top right corner of the page allows you to collapse and expand in a single click.
- You can drill down in to the license information on each card of any cluster or chassis.



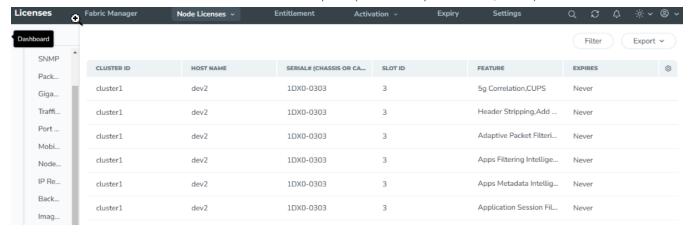
List View

The list view provides a flat view of all licenses as retrieved from the devices. This is a view only page showing the node and cluster details along with the license expiry information.

Note: When you login to GigaVUE-FM, a notification is displayed on the top of the page with license expiry details for the nodes which have validity less than 30 days. Click the **Go To Licenses** option to go to the **Licenses** page.

The **Expires** option indicates the status of the license:

- **Never**: License is a life time license and will never expire
- **Expired:** License has already expired
- Exact date: Date when the license will expire (for example Oct 12, 2019)

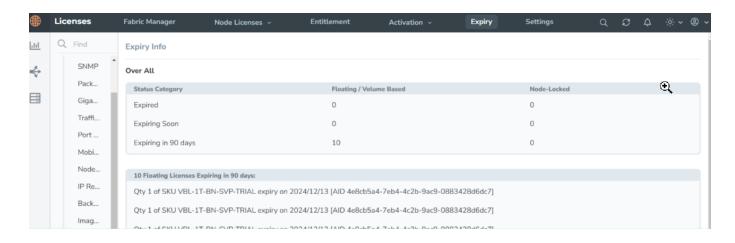


Expiry

The Expiry tab displays the list of node-locked licenses (licenses that are locked to specific cards or chassis serial numbers) and floating licenses (licenses that are pooled and dynamically re-assignable from one card to another) in the following three categories:

- Expired: License has already expired
- Expiring Soon: License expiry is within the notification period
- Expiring in 90 Days

The license expiry events are triggered accordingly and can be seen in the Events page. Click on an event related to expiry of license in the Events page to navigate to the Expiry page.

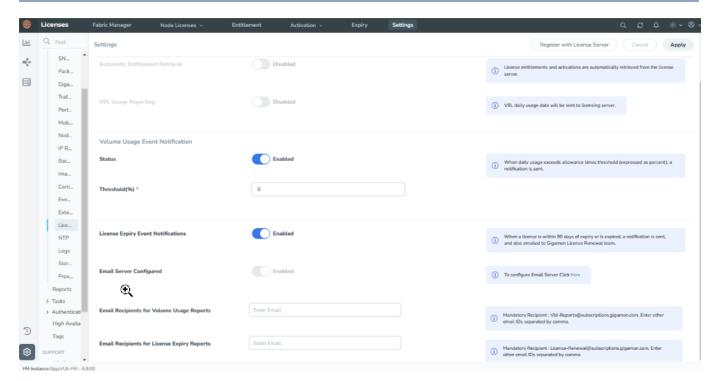


Settings

The Settings page allows you to configure the settings for event notifications and emails. You can configure the following:

Table 1: Configure License settings

Field	Description
Digital License Management and Performance License	
Volume Usage Event Notification	Enable this to receive a notification when daily volume usage exceeds the threshold. Configure the required threshold level for volume usage.
License Expiry Event Notifications	Enable this to receive a notification when license is within 90 days of expiry or has expired.
Email Server Configured	Configure the email server for receiving emails. Click on the link to navigate to the Email Servers page.
Email Recipients for Volume Usage Reports	Enter the email recipients for receiving volume usage reports.
Email Recipients for License Expiry Notifications	Enter the email recipients for license expiry notifications.



License Command

The following licenses can be managed from the command line interface:

- GigaSMART Licenses
- GigaVUE-OS and GigaVUE-OS Module Licenses
- Advanced Feature Licenses
- Port Licenses

The license command is used to configure and manage licenses from CLI.

License Command

license

Required Command-Line Mode = Configure

Use the **license** command to enable additional GigaVUE-FM and GigaVUE-OS features. Some license keys enable GigaSMART applications. Other license keys enable ports or clustering.

The following products have GigaSMART licensing:

- GigaVUE-HC1
- GigaVUE-HC1-Plus
- GigaVUE-HC3
- GigaVUE-HCT

For GigaSMART licensing details, refer to the "Working with GigaSMART Operations" chapter in the GigaVUE Fabric Management Guide.

The following products have port licensing:

- GigaVUE-TA25A (a 24-port version of GigaVUE-TA25)
- GigaVUE-TA100
- GigaVUE-TA200
- GigaVUE-TA200E
- GigaVUE-TA400E
- Certified Traffic Aggregation White Box

Note: GigaVUE-TA25 have all ports enabled.

The following products have Advanced Features License:

- GigaVUE-TA25 and GigaVUE-TA25A
- GigaVUE-TA25E
- GigaVUE-TA100
- GigaVUE-TA200
- GigaVUE-TA200E
- GigaVUE-TA400
- GigaVUE-TA400E

For port licensing and Advanced Features License details, refer to the respective **Hardware Installation Guide**.

The license command has the following syntax:

(config) # license install box-id <box ID> key <license key>

For example:

(config) # license install box-id 1 key LK2-SMT_HC0_R-7YF0-QL2M-1G5L-Q32C-T27X-C0VU-CD5H-NJUK-77XC-0UB1-EDMN-JUK7-7XC0-W3JC-5LNQ-RBJ7-XHY1-T7AU-KECM-N6JU-K741-6L2G-RW60-Q3LC-A479-0L6E-HH70-W30E-9T8G-V20Q-UFEM-P78F-9Q86-GT6B-BH3Y-N8QQ-9H20-056C-BHQQ-8KUV

The key is generated by Gigamon. It consists of a long string beginning with LK2, which is a protocol, followed by the card or module (SMT_HC0_R), followed by the content of the license key.

The following table describes the arguments for the **license** command:

Argument	Description
box-id <box id=""></box>	Configures the system's box ID. The box ID identifies the node in the system.
key <license key=""></license>	Configures the license key.
revoke key <license key=""></license>	Revokes the license key. Once the license is revoked, the same key cannot be used for the same device at anytime.

Related Commands

The following table summarizes other commands related to the license command:

Task	Command
Displays all installed	# show license
licenses.	Note: The license type is displayed in the show license command output. For licenses obtained before 5.7 release, the license type field is displayed as NA.
Displays the installed licenses on a specified node.	# show license box-id 1

Term License Behavior after expiry (from Software Version 6.1.00)

Gigamon offers a uniform 45 day window of time after a term license expires during which normal operation continues. During the time window:

- There is no impact to the flow of traffic.
- Creating new maps and editing existing map configurations are allowed.
- Appropriate notifications are displayed in GigaVUE-OS CLI and GigaVUE-FM.

At the end of the 45 day window, you will not be allowed to create new maps or edit existing maps. There is no impact to the flow of traffic during 45 days and beyond.

The following tables summarizes the configuration behavior based on the state of the license for the different license types.

For GigaVUE HC Series devices:

License State	Restrictions / Permissions	GigaVUE- OS License	GigaVUE- OS Module License	GigaSMART License
Not Installed	All cards in the node will be in a down state.	√	-	-
	All ports of the card will be in an inactive state.	-	√	-
	Configuring new maps with GigaSMART operations.	-	-	Cannot be configured
Upon Expiration	Creating new maps and editing existing maps.	√	√	✓
	Periodic notification from GigaVUE-FM and devices.	✓	√	✓
	Banner Notification in CLI.	✓	✓	✓
At Expiration +45 days	Creating new maps and editing existing maps.	Cannot create new maps / edit existing maps		t existing maps
	Periodic notification from GigaVUE-FM and devices.	✓	√	✓
	Banner Notification in CLI.	✓	✓	✓

GigaVUE TA Series devices:

License State	Permissions / Restrictions	GigaVUE- OS License	Port License
Not Installed	All ports will be inactive.	✓	-
	Ports that need licenses for activation will be in an inactive state.		✓
Upon Expiration	Creating new maps and editing existing maps.	✓	✓
	Periodic notification from GigaVUE-FM and devices.	✓	√
	Banner Notification in CLI.	✓	✓
At Expiration +45 days	Creating new maps and editing existing maps.	Cannot create new maps / edit existing maps	
	Periodic notification from GigaVUE-FM and devices.	✓	✓
	Banner Notification in CLI.	✓	✓

Term license behavior for **Inline Bypass license** is as follows:

License State	Restrictions for GigaVUE TA Series Devices (applicable only for GigaVUE-TA25 and GigaVUE-TA200)
Not Installed	You are not allowed to configure inline network and inline tool ports.
Installed and not	You can:
expired	Configure inline network and inline tool ports.
	Edit port parameters (admin enable, port type change).
Upon Expiration	You can create or edit flexible inline maps.
	Periodic notification from GigaVUE-FM and devices.
	Banner Notification in CLI.
At Expiration + 45	You cannot create or edit flexible inline maps.
days	Periodic notification from GigaVUE-FM and devices.
	Banner Notification in CLI.

Term license behavior for **Volume-Based Licenses** is as follows. For more information on Volume-Based Licenses, refer to Volume-Based Licenses (Cloud License) and Manage Volume-Based Licenses.

License State	Permissions / Restrictions
Not Installed	You are not allowed to create a Monitoring Session.
Installed and not expired	You can create, edit, delete, deploy, and redeploy a Monitoring Session.
Upon	You cannot create, edit, deploy, or redeploy a Monitoring Session.

License State	Permissions / Restrictions
Expiration	You can delete a Monitoring Session.Traffic continues to pass.
At Expiration	 You cannot create, edit, deploy, or redeploy a Monitoring Session. You can delete a Monitoring Session. Traffic continues to pass.

Notification Banners for Licenses

Notification banners associated with licenses are displayed in the GigaVUE-FM GUI in the following scenarios:

- Expiry of Licenses
- Excessive Volume Usage

Until appropriate action is taken, these notification banners continue to be displayed in the GigaVUE-FM GUI:

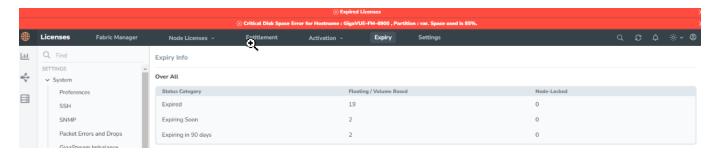
- To temporarily close the banner, click the **X** button on the banner. The banner does not appear again until the next login session.
- To permanently clear the banners:
 - Banners for expiry of licenses: Renew the licenses or deactivate the licenses.
 - Banners for excessive volume usage: Add licenses with sufficient allowance to compensate for the deficient volume.

Expiry of Licenses

A notification banner is displayed in the GigaVUE-FMGUI when one of the following licenses expires:

- GigaSMART Licenses
- GigaVUE-OS Licenses
- GigaVUE-OS Module Licenses
- Volume-based Licenses

Click on the Expired Licenses banner ribbon. You will be navigated to the **License Expiry** tab from where you can view the detailed status of the expired licenses.





Note: License expiry notification banner will automatically disappear when you deactivate the license. This is applicable for Volume-based licenses, GigaSMART licenses, and GigaVUE-OS and GigaVUE-OS Module licenses when the following conditions are true:

- Licenses that are in Expired state.
- Floating licenses are not assigned to any node.

Excessive Volume Usage

In the Volume-based Licensing scheme, only licensed applications can be used to process the traffic. GigaVUE-FM calculates the volume usage of the licensed applications and displays the same in the Fabric Health Analytics dashboards and reports.

To compute excessive volume usage, GigaVUE-FM calculates the average volume usage (in Terabytes per day) every day, starting from the 15th day after the license is installed, for the previous 14-day period. If license usage is higher than twice the allowed licensed volume, then GigaVUE-FM GUI:

- Displays a notification banner in the GUI to indicate excessive volume usage.
- Triggers an event in the Events page. Refer to the Event Notifications section in the GigaVUE Administration Guide for details on configuring email notifications for events.

Refer to the Notes section for details on license upgrade scenarios.

Excessive Volume Usage calculation

GigaVUE-FM calculates excessive volume usage using the following parameters:

- Average Allowed License Volume per day (A)
- Average Volume Usage per day (U)

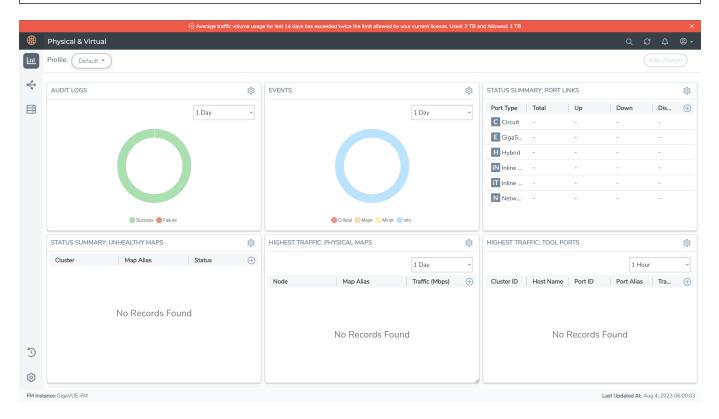
Ratio = Average Volume Usage per day (U)/ Average Allowed License Volume per day (A)

- If the U/A ratio is greater than or equal to 2, notification banners are triggered in the GUI. An event with a severity level of 'Critical' is displayed in the Events page.
- If the U/A ratio is equal to 1.25, an event with a severity level of 'Major' is displayed in the Events page.

Example:

For a VBL license, the allowed license volume **A** is 250 Terabytes per day. GigaVUE-FM calculates volume usage on a daily basis for the previous 14-day period starting from the 15th day. If the average usage **U**is 500 Terabytes on a particular day, then**U/A** is 2. Notification banners indicating excessive volume usage will be displayed in the GUI.

The average VBL usage is calculated on a daily basis and, therefore will be different for each day.



Notes

Refer to the following notes when upgrading licenses or importing additional licenses.

- When you upgrade the license, the licensed volume changes accordingly:
 - GigaVUE-FMdoes not display the excessive volume usage banner until the following midnight.
 - There is a net increase in the license allowance from the previous day to the next day (a behavior observed for the consecutive pair of days after licenses are upgraded). In this scenario, the banner will not be displayed for the upcoming 14-day period even if license usage is higher than twice the allowed licensed volume.
 - At the end of the 14-day period, the average volume usage (in Terabytes per day) is recalculated to determine if it is still over the 2x threshold. If it is more than the threshold ratio (2x), the banner is displayed in the GUI.

Note: Upgrade refers to upgrading to a higher bundle package or higher volume of the same bundle.

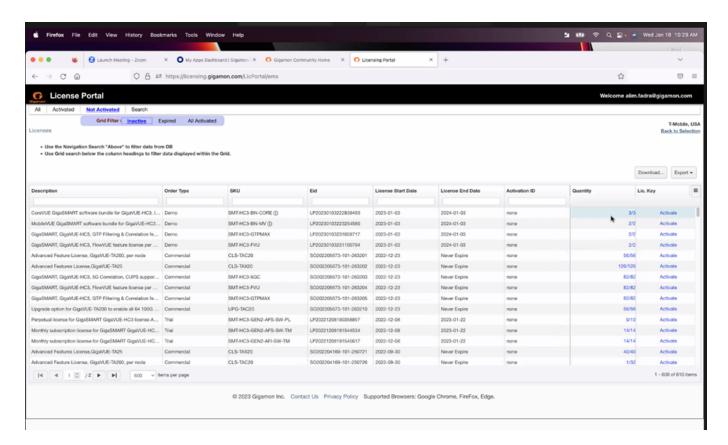
- When you import additional licenses, the licensed volume changes accordingly:
 - GigaVUE-FM does not display the excessive volume usage banner until the following midnight.
 - GigaVUE-FM then re-evaluates if a banner should be displayed or not. If license usage is higher than twice the allowed licensed volume, then the banner is displayed.

Note: Additional licenses refer to licenses belonging to the same base bundle.

Gigamon License Portal

The Gigamon License Portal is a web-based application that allows you to view the license entitlements for your purchased software. You can activate the licenses from the portal, as required.

Gigamon License Portal



The portal lists licenses of all the product/features that you have paid for and are available in your entitlement. These features are listed as Stock Keeping Units (SKUs).

The licensing portal consists of the following tabs:

All	Lists all the licenses
Activated	Lists the licenses activated
Not Activated	Lists only the licenses that have not been activated
Search	Use to search the portal and fetch the results

The licenses in the portal consists of the following fields:

Field	Description
Activation	Date the license got activated
Device Locked To	Device ID for node-locked licenses
	MAC Address for floating licenses
Customer	Customer who purchased the license
Description	Detailed description of the license
Order Type	Order type

Gigamon License Portal

SKU	SKU of the license
Туре	Type of license, either floating or node locked
Eid	Entitlement Id of the license
License Start Date	License start date
License End Date	License end date
Activation ID	Activation id for the license
Quantity	Number of licenses. This is displayed as a ratio of the activated verses total number of licenses.
Status	Status of licenses, whether activated or not-activated
Lic.key	License key. For inactive licenses, link to Activation is provided.
Revoke (button)	Indicated as revoked for revoked licenses.

The last three columns listed below are fixed. They will always be visible even when you resize the page:

- Quantity
- Status
- License Key

Activate Licenses from the Portal

You can activate both Node-locked and Floating licenses from the portal:

Activate Floating Licenses

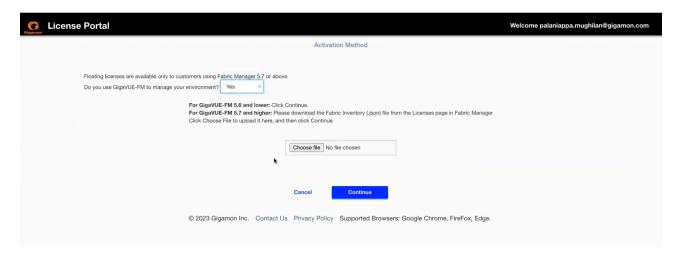
Prior to activating the licenses, ensure that you have the following information:

- Entitlement IDs: Locate the email sent to you by Gigamon containing the licensing information for your installation. This email contains one or more EID (Entitlement ID) values. You will use these EIDs to generate License Keys on the Gigamon Licensing Website.
- **Challenge MAC Address**: Locate the Challenge MAC address of the virtual network adapter associated with the GigaVUE-FM installation.
- Fabric Inventory File: Download the Fabric Inventory JSON file and save it in your local folder.

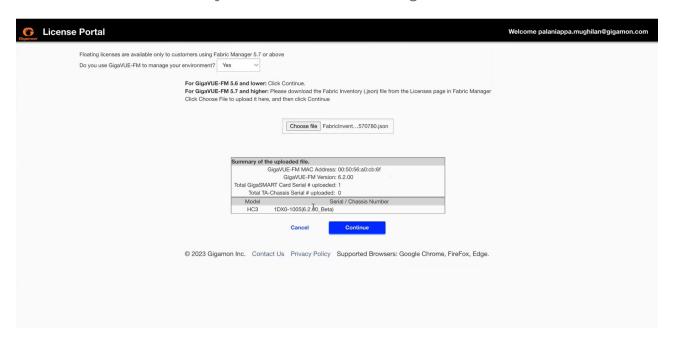
To activate a floating license:

- 1. Identify and select the license(s) that you want to activate from the list of available licenses.
- 2. Click **Activate**. The Activation Method page appears.
- 3. In the Do you use GigaVUE-FM to manage your environment option, select Yes.

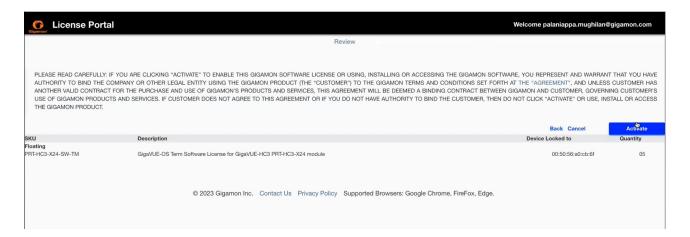
Gigamon License Portal 69



4. Choose the Fabric Inventory File downloaded from GigaVUE-FM and click **Continue**.



- 5. Select the required quantity of the licenses. Click **Review**.
- 6. After reviewing the license details, click Activate to activate the license.



The Activation Results page appears with the following details:

- Details of the SKU
- Device to which the license is locked to
- License file that can be downloaded.
- 7. Click **Download** to download the license file.

Note: License files downloaded from the portal have unique names. However, if you try to download the same license file again without deleting the already downloaded file, the file name is duplicated with the number 1 surrounded by parenthesis. For example: 'GigamonLic_NL_H2762_f5238c63-Oda0-4e16-a613-a81b7d8fa40b (1).lic'. Ensure to delete the number and the parenthesis as GigaVUE-FM does not import file names with parenthesis.

8. Navigate to GigaVUE-FM GUI and upload the license file.

A message prompts up in the GigaVUE-FM GUI to indicate that the license has been successfully activated.

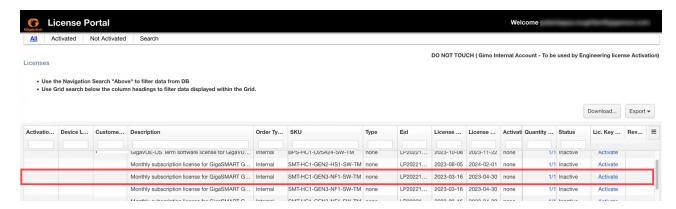
Activate Node-locked licenses

You need the following details for activating node-locked licenses:

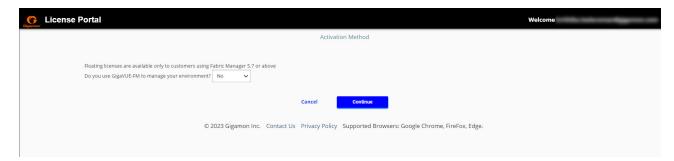
- Chassis Serial Number for the devices
- Challenge MAC Address for GigaVUE-FM

To activate a node-locked license:

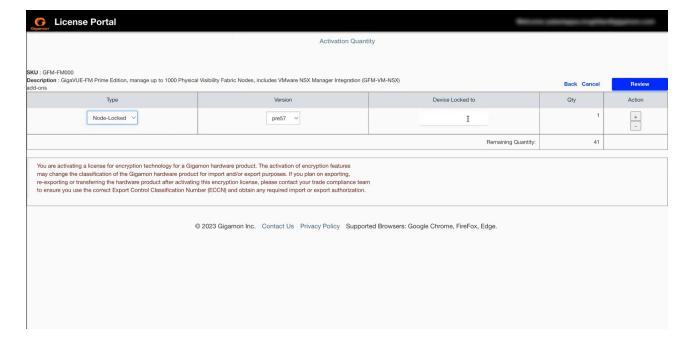
1. Identify and select the license that you want to activate.



2. Click Activate. The Activation Method page appears.



3. In the "Do you use GigaVUE-FM to manage your environment" option, select **No** and click **Continue**. The Activation Quantity page appears.



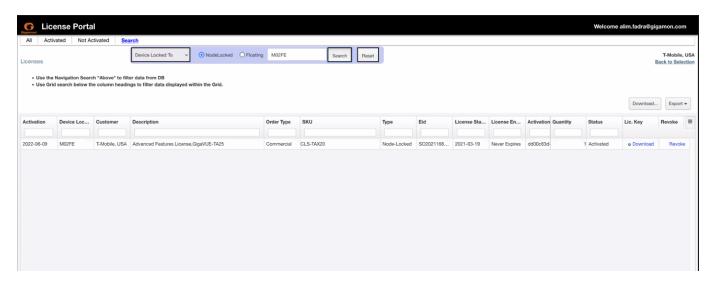
- 4. In the **Device Locked To** field, enter the serial number of the chassis or the serial number of the card for the devices. For GigaVUE-FM enter the Challenge MAC address of GigaVUE-FM.
- 5. Specify the required quantity of the licenses. Click the +/- options under **Action** column. Click **Review**.
- 6. Review the license you wish to activate. Click **Activate** to activate the license. The Activation Results page with the License Key is displayed.

Install the license keys either using the GigaVUE-FM GUI or the license command (for GigaVUE TA Series devices and Port licenses).

Search for Licenses in the Portal

Use the filter options in the Gigamon license portal to find the required license. The following search options are available.

- **Navigation Search**: Use navigational search to filter the data from the database. You can search based on the following criteria:
 - Device Locked To
 - EID SKU
 - Date Range
- **Grid Search**: Use the Grid Search below the column headings to further refine the data fetched from the navigation search.



The search operation performed from a specific page is applicable only for the items listed in the Grid on that specific page. For example, consider you are on Page 3 of the portal and perform the following searches:

- Specific **EID** from the navigation search menu
- Specific **License Start Date** from the Grid search.

Only Page 3 of the portal is updated with the search results. If you navigate to Page 4, it will still list all the items. Apply the search criteria again in each of the individual pages to get the updated results.

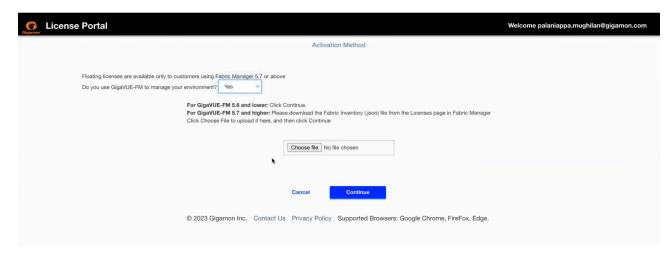
Activate Floating Licenses

Prior to activating the licenses, ensure that you have the following information:

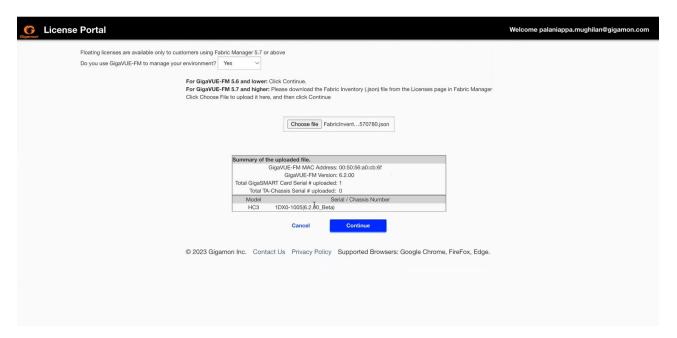
- Entitlement IDs: Locate the email sent to you by Gigamon containing the licensing information for your installation. This email contains one or more EID (Entitlement ID) values. You will use these EIDs to generate License Keys on the Gigamon Licensing Website.
- **Challenge MAC Address**: Locate the Challenge MAC address of the virtual network adapter associated with the GigaVUE-FM installation.
- Fabric Inventory File: Download the Fabric Inventory JSON file and save it in your local folder.

To activate a floating license:

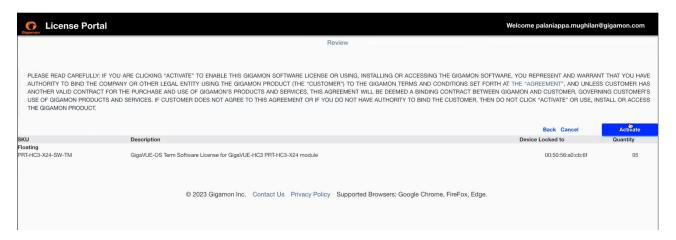
- 1. Identify and select the license(s) that you want to activate from the list of available licenses.
- 2. Click Activate. The Activation Method page appears.
- 3. In the Do you use GigaVUE-FM to manage your environment option, select **Yes**.



4. Choose the Fabric Inventory File downloaded from GigaVUE-FM and click Continue.



- 5. Select the required quantity of the licenses. Click **Review**.
- 6. After reviewing the license details, click Activate to activate the license.



The Activation Results page appears with the following details:

- · Details of the SKU
- Device to which the license is locked to
- License file that can be downloaded.
- 7. Click **Download** to download the license file.

Note: License files downloaded from the portal have unique names. However, if you try to download the same license file again without deleting the already downloaded file, the file name is duplicated with the number 1 surrounded by

parenthesis. For example: 'GigamonLic_NL_H2762_f5238c63-0da0-4e16-a613-a81b7d8fa40b (1).lic'. Ensure to delete the number and the parenthesis as GigaVUE-FM does not import file names with parenthesis.

8. Navigate to GigaVUE-FM GUI and upload the license file.

A message prompts up in the GigaVUE-FM GUI to indicate that the license has been successfully activated.

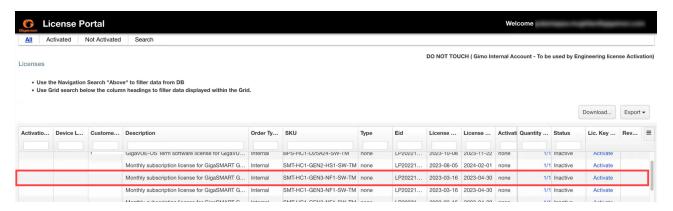
PreActivate Node-locked Licenses

You need the following details for activating node-locked licenses:

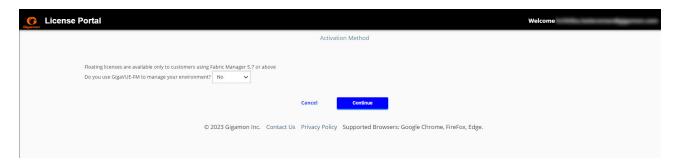
- Chassis Serial Number for the devices
- Challenge MAC Address for GigaVUE-FM

To activate a node-locked license:

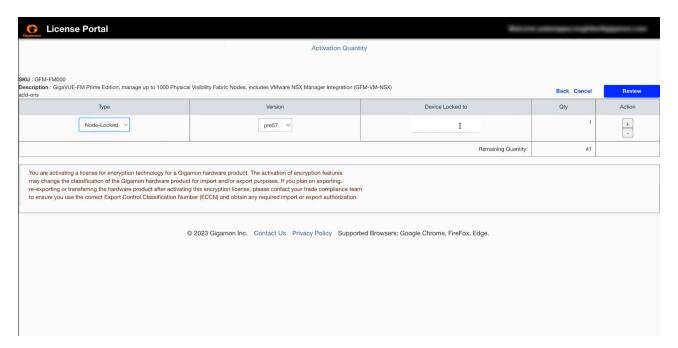
1. Identify and select the license that you want to activate.



2. Click **Activate**. The Activation Method page appears.



3. In the "Do you use GigaVUE-FM to manage your environment" option, select **No** and click **Continue**. The Activation Quantity page appears.



- 4. In the **Device Locked To** field, enter the serial number of the chassis or the serial number of the card for the devices. For GigaVUE-FM enter the Challenge MAC address of GigaVUE-FM.
- 5. Specify the required quantity of the licenses. Click the +/- options under **Action** column. Click **Review**.
- 6. Review the license you wish to activate. Click **Activate** to activate the license. The Activation Results page with the License Key is displayed.

Install the license keys either using the GigaVUE-FM GUI or the license command (for GigaVUE TA Series devices and Port licenses).

FAQs For Licensing

This section provides information about some of the issues that you may face while working with Licenses.

How to Clear License Mismatch when Moving Licenses Between Cards

A license mismatch may occur in the following cases:

- When a GigaSMART card crashes: It is possible for all licenses stored in the GigaSMART card to be erased.
- · When moving licenses between cards.

In the above cases, the show license command output displays license-mismatch.

Re-install one of the licenses to clear the license-mismatch flag on the card. This allows you to continue using the card with the newly installed license.

Note: It is always recommended to execute show license command before installing a new license. Ensure to re-install all licenses that are lost.

How to Activate License when GigaVUE-FM does not have network access?

In this case, the Fabric Inventory file (JSON file) downloaded from GigaVUE-FM cannot be uploaded in the Licensing portal. You must generate the license key manually by performing the following steps (applicable for):

On a system that can reach the License Portal:

1. Open a notepad and paste the below.

```
{
"virtualMac": "00:50:56:94:68:c1",
"fmSwVersion": "6.0.00",
"timeOfReportCreation": "2022-08-22T17:48:39Z",
"allocationMaps": [],
"revokedTargets": [],
"revokedFmLicences": []
}
```

- 2. Change the virtualMAC to the MAC address of GigaVUE-FM and change the timeOfReportCreation to reflect current Zulu time.
- 3. Save and change the file extension to .json.
- 4. Log in to the License Portal and select the required Volume-based License and click **Activate**.
- 5. In the next step, select **Yes** to manage with GigaVUE-FM.
- 6. Choose the JSON that file you created.
- 7. Review the information and change quantity accordingly.
- 8. Generate the .lic file that you can download. Move this file to the network where GigaVUE-FM resides.
- 9. Log into GigaVUE-FM. Go to **Settings** > **Licenses** > **Floating** > **Activated** > **Activated** Licenses > **With License Portal**.
- 10. In the dialogue box, select Import License (.Lic). Select the license file downloaded. Click **Open** > **Continue**

The required Volume-based License is successfully activated.

What is a Fabric Inventory File?

Fabric Inventory File is a JSON file that must be downloaded while activating the licenses. This file contains the following details.

- Details about GigaVUE-FM from which license is activated.
- Inventory of all the physical nodes connected to GigaVUE-FM.
- Inventory of GigaSMARTcards within the nodes
- License information of each of the GigaSMART cards.

The file must then be uploaded in the Licensing Portal. Refer to Activate floating licenses

Note: The file is encrypted to prevent unauthorized use. However, you can obtain an unencrypted version of the inventory information (in JSON format) using the following API: https://<fm-IP>/api/v1.3/licensing/inventory.

Refer to the following tables for details:

For GigaVUE-FM

The Virtual MAC address of GigaVUE-FM (the primary GigaVUE-FMs MAC address in a HA group)

Software version of GigaVUE-FM

Time of report creation

List of cards from which all license keys have been revoked (possibly because of card RMA)

List of GigaVUE-FM license keys that have been revoked

For each of the devices connected to GigaVUE-FM
Serial number of the chassis
IP address
Host name
The model of the chassis (GigaVUE-HC1 etc)
Name of the chassis cluster to which it belongs
The version of software running on the device
Whether the device is healthy
Information about all GigaSMART cards

For each GigaSMART Card
Serial Number of the card
Slot number in the chassis where the card is inserted
The type of card
Whether the card is healthy (operational etc.)

For each GigaSMART Card, the following information about all the license keys that are added on the card is collected:
License SKU
License start date
License end date
Encoded license key

What is a License SKU?

An SKU in the licensing portal is a unique identifier defined for the various products offered by Gigamon. Depending on the type of license, the SKU identifier varies. However, it has a consistent format.

The first three letters in the SKU indicate the product, as seen in the following table:

SKU	Product/Module
GFM	GigaVUE-FM
GVS	GigaVUE-OS
BPS	By Pass Switch
PRT	Port Module
SMT	GigaSMART Module
VBL	Volume-based license
TAP	TAP module
CLS	Advanced Features

Where can I find the license SKUs for the various products?

You can find the license SKUs in the respective product data sheets.

GigaVUE Data Sheets	
GigaVUE-FM Data Sheet	
GigaSMART Data Sheet	
GigaVUE HC Series Data Sheet	
GigaVUE TA Series Data Sheet	
GigaVUE Cloud Suite for VMware Data Sheet	
GigaVUE Cloud Suite for AWS Data Sheet	
GigaVUE Cloud Suite for Azure Data Sheet	
GigaVUE Cloud Suite for OpenStack	
GigaVUE Cloud Suite for Nutanix	
GigaVUE Cloud Suite for Kubernetes	

Glossary

D

decrypt list

need to decrypt (formerly blacklist)

decryptlist

need to decrypt - CLI Command (formerly blacklist)

drop list

selective forwarding - drop (formerly blacklist)

F

forward list

selective forwarding - forward (formerly whitelist)

L

leader

leader in clustering node relationship (formerly master)

М

member node

follower in clustering node relationship (formerly slave or non-master)

Ν

no-decrypt list

no need to decrypt (formerly whitelist)

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nodecryptlist

no need to decrypt- CLI Command (formerly whitelist)

P

primary source

root timing; transmits sync info to clocks in its network segment (formerly grandmaster)

R

receiver

follower in a bidirectional clock relationship (formerly slave)

S

source

leader in a bidirectional clock relationship (formerly master)

Glossary 83