



GigaVUE Cloud Suite Deployment Guide - VMware (NSX-T)

GigaVUE Cloud Suite

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GigaVUE Cloud Suite Deployment Guide - VMware (NSX-T)

GigaVUE Cloud Suite for VMware provides an intelligent filtering technology that allows virtual machine (VM) traffic flows of interest to be selected, forwarded, and delivered to the monitoring infrastructure centrally attached to the Gigamon Deep Observability Pipeline, thereby eliminating any traffic blind spots in the enterprise private clouds or service provider NFV deployments.

This guide describes how to install, deploy, and operate the GigaVUE V Series Nodes in VMware.

Topics:

- [Overview of GigaVUE Cloud Suite for VMware](#)
- [Architecture for GigaVUE Cloud Suite for VMware NSX-T](#)
- [Introduction to Supported Features in GigaVUE Cloud Suite for VMware NSX-T](#)
- [Volume-Based License](#)
- [Supported Hypervisors for VMware](#)
- [Points to Note \(VMware NSX-T\)](#)
- [Prerequisites for Integrating GigaVUE V Series Nodes with NSX-T](#)
- [Install and Upgrade GigaVUE-FM](#)
- [Deployment Options for GigaVUE Cloud Suite for VMware \(NSX-T\)](#)
- [Deploy GigaVUE Cloud Suite for VMware \(NSX-T\)](#)
- [Upgrade GigaVUE V Series Node for VMware NSX-T](#)
- [Cloud Overview Page \(VMware\)](#)
- [Configure Monitoring Session](#)
- [Migrate Application Intelligence Session to Monitoring Session](#)
- [Monitor Cloud Health](#)
- [Configure VMware Settings](#)
- [Analytics for Virtual Resources](#)
- [Remove Gigamon Service from NSX-T and GigaVUE-FM](#)
- [GigaVUE V Series Deployment Clean up](#)

Overview of GigaVUE Cloud Suite for VMware

GigaVUE Cloud Suite for VMware acquires, optimizes, and distributes selected traffic to your monitoring and security tools. GigaVUE Cloud Suite for VMware provides tight integration with orchestration tools to deliver intelligent network traffic visibility for workloads running in Virtual machine in VMware. GigaVUE-FM , part of the Cloud Suite, works with VMware vCenter to automatically deploy GigaVUE V Series Node to support a growing private cloud infrastructure. GigaVUE-FM leverages dynamic service chaining and workload relocation monitoring to ensure visibility and policy integrity.

GigaVUE Cloud Suite for VMware provides the following benefits:

Flexible Traffic Acquisition: Acquires traffic through port mirroring in VMware ESXi.

Automated Visibility Provisioning: Dynamically provisions and applies traffic policies as new tenants come on board or as groups scale.

Increased Tool Efficiency: Reduces load on tools by selectively filtering, de-duplicating, and load balancing traffic sent to security and performance monitoring tools.

Application Intelligence solution: You can use Application Intelligence to identify thousands of applications and utilize over 7,000 application metadata elements.

Components for GigaVUE Cloud Suite for VMware

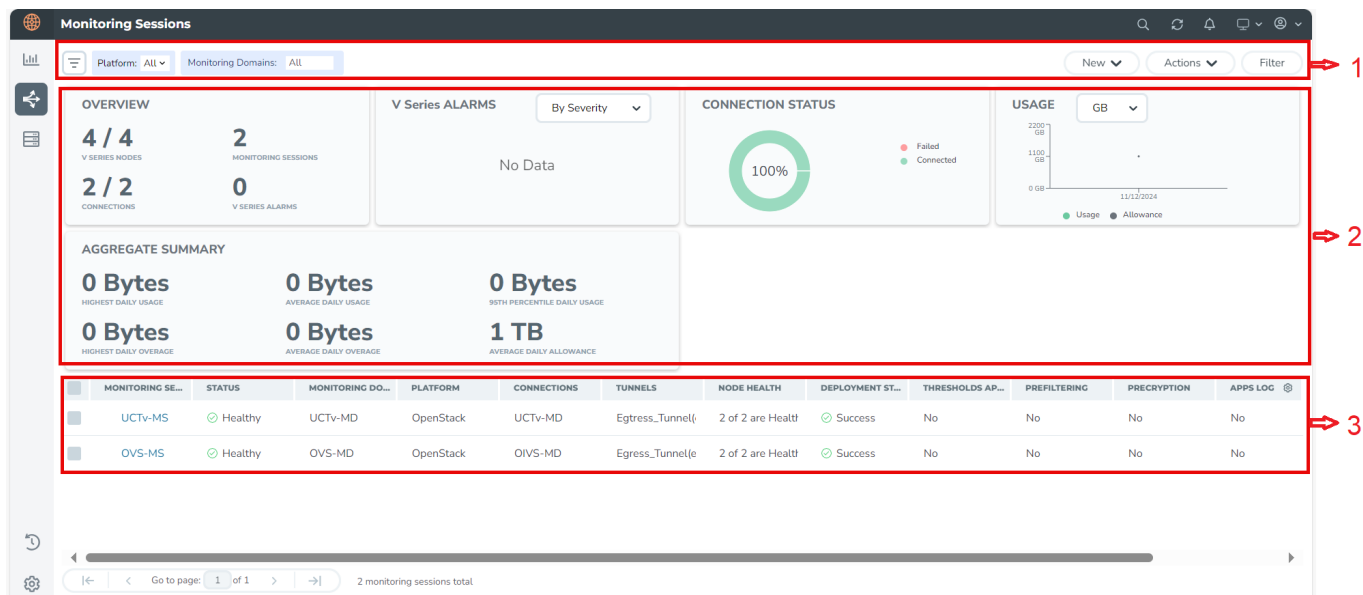
GigaVUE Cloud Suite for VMware comprises multiple elements that enable traffic acquisition, aggregation, intelligence and distribution, along with centralized, single-pane-of-glass orchestration and management. The solution consists of these components:

Component	Description
GigaVUE-FM fabric manager (GigaVUE-FM)	<p>GigaVUE-FM is a web-based fabric management and orchestration interface that provides a single pane of glass visibility, management, and orchestration of both the physical and virtual traffic that form the GigaVUE Cloud Suite Cloud Suite for VMware.</p> <p>GigaVUE-FM generates an end-to-end topology view through a single-pane-of-glass GUI, which gives you insights into which cloud instances are or are not part of the deep observability pipeline. A single instance of GigaVUE-FM can manage hundreds of visibility nodes across on-premises and multi-cloud environments. GigaVUE-FM manages the configuration of the rest of the components in your cloud platform.</p>
GigaVUE® V Series Node	<p>A visibility node that aggregates mirrored traffic. It applies filters, manipulates the packets using GigaSMART applications, and distributes the optimized traffic to cloud-based tools or back haul to on premise device or tools.</p>

Cloud Overview Page (VMware)

The overview page is a central location to view and monitor all the Monitoring Sessions in a single place. You can use this overview page to spot issues which will help in troubleshooting, or perform basic actions like view, edit, clone, and delete. This page provides a quick overview of basic statistics, V Series Alarms, Connection Status and Volume Usage vs Allowance and a table to summarize the active monitoring sessions details. You can also edit the Monitoring Session from this page instead of navigating to the Monitoring Session page in each platform.

To view the overall cloud overview page, go to **Traffic > Virtual > Overview**.



For easy understanding of the Monitoring Sessions page, the above image is split into three major sections as described in the following table:

Number	Section	Description
1	Top Menu	Refer to Top Menu .
2	Charts	Refer to Viewing Charts .
3	Monitoring Session Details	In the Overview page, you can view the Monitoring Session details of all the cloud platforms. Refer to Viewing Monitoring Session Details section for more details.

Top Menu

The Top menu consists of the following options:


Options	Description
New	You can create a new Monitoring Session and new Monitoring Domain.
Actions	You can do the following actions using the Action button: Edit - Opens the edit page for the selected Monitoring Session. Delete - Deletes the selected Monitoring Session. Clone - Duplicates the selected Monitoring Session. Deploy - Deploys the selected Monitoring Session. Undeploy - Undeploys the selected Monitoring Session. Apply Threshold - Applies the threshold template created for monitoring cloud traffic health. Refer to <i>Monitor Cloud</i> section for details.
Filter	You can filter the Monitoring Session details based on a criterion or combination of criteria. For more information, refer to Filters .

Filters

You can apply the filters on the Monitoring Sessions page in the below two ways:

- [Filter on the left corner](#)
- [Filter on the right corner](#)

Filter on the left corner

1. Select the required platform from the **Platform** drop- down list.
2. Click  and select the Monitoring Domain.

You can select one or multiple domains. You can also edit and create a new Monitoring Domain in the filter section.

Filter on the right corner

You can filter Monitoring Session and Monitoring Domain details based on a criterion or by providing multiple criteria as follows:

- Monitoring Session
- Status
- Monitoring Domain
- Platform
- Connections
- Tunnel
- Deployment Status

Viewing Charts

You can view the following charts on the overview page:

- Overview
- V Series Alarms
- Connection Status
- Usage
- Aggregate Summary

Overview

The overview dashboard displays the number of GigaVUE V Series Nodes active in GigaVUE-FM, the number of Monitoring Sessions and connections configured, and the number of alarms triggered in V Series Nodes.

V Series Alarms

The V Series Alarms widget presents a pie chart that helps you to quickly view the V Series alarms generated. Each type of alarm triggered is assigned a color in the graph, which is specified by the legend. Hovering the mouse over an area in the chart displays the total number of V Series alarms triggered.

Connection Status

The connection status presents a pie chart that helps you to quickly view the connection status of connections configured in the Monitoring Domain. The success and failed connection status is differentiated by the color in the graph, which is specified by the legend. Hovering the mouse over an area in the chart displays the total number of connections.

Usage

The Usage widget displays the traffic that flows through the GigaVUE V Series Nodes. Each bar in the graph indicates the volume usage on a particular day. Hovering the mouse over a bar in the graph displays the volume allowance and volume usage on that day.

Aggregate Summary


The aggregate summary displays the highest daily volume usage, average daily volume usage, highest daily volume over usage, average daily volume over usage, 95th percentile daily volume usage and the average daily volume allowance.

Viewing Monitoring Session Details

You can view the following details in the overview table:

Details	Description
Monitoring Sessions	Name of the Monitoring Session. When you click the name of the session, you will be redirected to the platform specific Monitoring Session page.
Status	Health status of the Monitoring Session.
Monitoring Domain	Name of the Monitoring Domain to which the Monitoring Session is associated.
Platform	Cloud platform in which the session is created.
Connections	Connection details of the Monitoring Session.
Tunnels	Tunnel details related to the Monitoring Session.
Node Health	Health status of the GigaVUE V Series Node.
Deployment Status	Status of the deployment.

Details	Description
Threshold Applied	Specifies whether the threshold is applied or not.
Prefiltering	Specifies whether Prefiltering is configured or not.
Preencryption	Specifies whether Preencryption is configured or not.
APPS logging	Specifies whether APPS logging is configured or not.
Traffic Mirroring	Specifies whether Traffic Mirroring is configured or not.

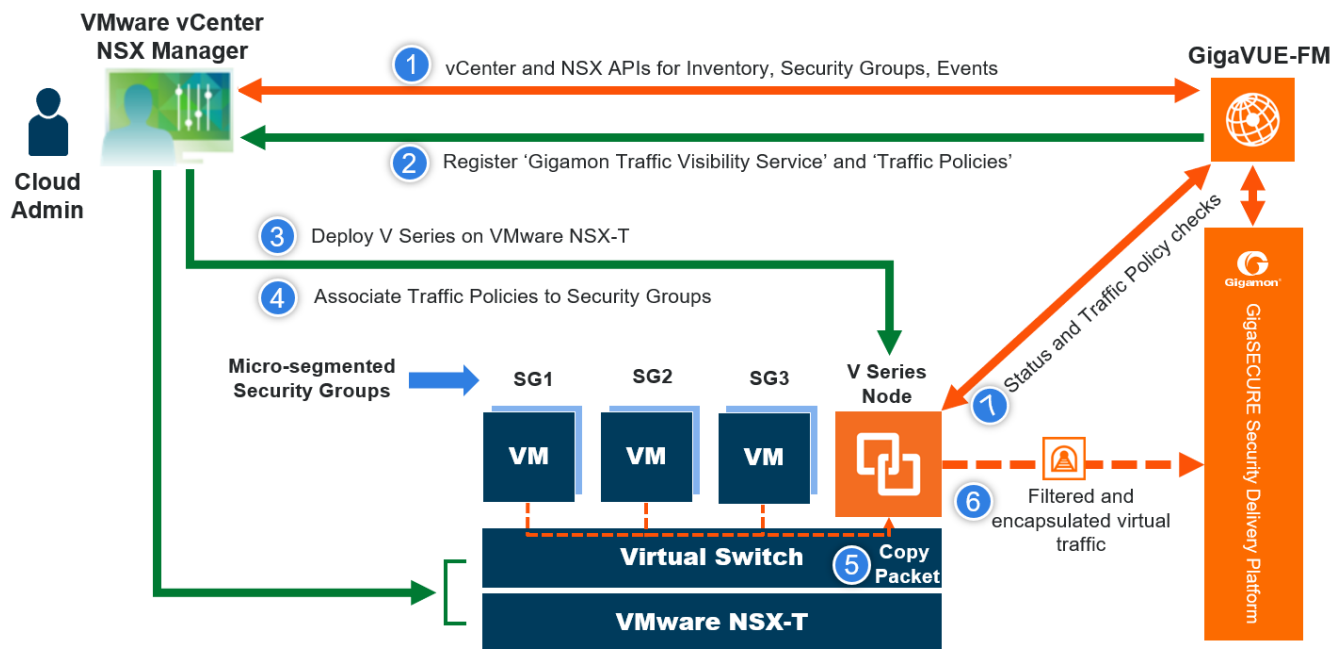
NOTE: Click the settings icon  to select the required options to appear in the table.

Architecture for GigaVUE Cloud Suite for VMware NSX-T

This section provides an overview of the GigaVUE V Series Node deployment on the VMware NSX-T platform and describes the procedure for setting up the traffic monitoring sessions using the GigaVUE V Series Nodes. The GigaVUE V Series Nodes support traffic visibility on the NSX-T NVDS switch.

GigaVUE-FM creates, manages and deletes the GigaVUE V Series Nodes in the VMware NSX-T based on the configuration information provided by the user. GigaVUE-FM can communicate directly with the GigaVUE V Series Nodes.

The following diagram provides a high-level overview of the deployment:



Refer to the following Gigamon Validated Designs for more detailed information:

- [Deploying GigaVUE Cloud Suite for VMware NSX-T 3.1.2 using V Series](#)
- [Deploying GigaVUE Cloud Suite for VMware NSX-T using V Series](#)
- [Deploying GigaVUE Cloud Suite for VMware NSX-T 2.5.1 using V Series](#)

Introduction to Supported Features in GigaVUE Cloud Suite for VMware NSX-T

GigaVUE Cloud Suite for VMware (NSX-T) supports the following features:

- [Increase or Decrease GigaVUE V Series Node](#)
- [Sharing the Same Host across Different Monitoring Domains](#)
- [Analytics for Virtual Resources](#)
- [Cloud Health Monitoring](#)

Increase or Decrease GigaVUE V Series Node

You can add more nodes or remove nodes from an existing monitoring domain using GigaVUE-FM or VMware NSX-T manager, based on method you have deployed the GigaVUE V Series Nodes.

Refer to the following topics for more detailed information:

- [Increase or Decrease GigaVUE V Series Nodes using GigaVUE-FM](#)
- [Increase or Decrease GigaVUE V Series Nodes using VMware NSX-T Manager](#)

Sharing the Same Host across Different Monitoring Domains

GigaVUE-FM has the ability to share a host between VMware ESXi and VMware NSX-T monitoring domain. You can deploy multiple V Series nodes from VMware NSX-T monitoring domain and one V Series Node from VMware ESXi monitoring domain on the same host. This way the workload virtual machines connected to NSX segments can be monitored using the V Series nodes deployed in NSX-T monitoring domain and workload virtual machines connected to regular VSS / VDS networks can be monitored using the V Series node deployed in the ESXi monitoring domain.

NOTE: If a Virtual Machine has NICs attached to both VMware NSX-T segments and ESXi VDS or VSS port groups then GigaVUE-FM cannot provide visibility to those virtual machines in ESXi platform.

Analytics for Virtual Resources

Analytics in GigaVUE-FM is a standalone service that provides data visualization capabilities. Using Analytics you can create visual elements such as charts that are embedded as visualizations. The visualizations are grouped together in dashboards. You can also create search objects using Analytics. Dashboards, Visualizations and Search Objects are called Analytics objects.

Refer to [Analytics for Virtual Resources](#) for more detailed information.

Cloud Health Monitoring

GigaVUE-FM allows you to monitor the traffic and configuration health status of the monitoring session and its individual components. This section provides detailed information on how to view the traffic and configuration health status of the monitoring session and its individual components.

For more information on how to configure cloud health monitoring, refer to the topic [Monitor Cloud Health](#).

Customer Orchestrated Source - Use Case

Customer Orchestrated Source is a traffic acquisition method that allows to tunnel traffic directly to the GigaVUE V Series Nodes. In cases where UCT-V or Traffic Mirroring cannot be configured due to firewall or other restrictions, you can use this method and tunnel the traffic to GigaVUE V Series Node, where the traffic is processed.

When using Customer Orchestrated Source, you can directly configure tunnels or raw endpoints in the monitoring session, where you can use other applications like Slicing, Masking, Application Metadata, Application Filtering, etc., to process the tunneled traffic. Refer to [Create Ingress and Egress Tunnel \(VMware NSX-T\)](#) for more detailed information on how to configure Tunnels in the Monitoring Session.

You can configure an Ingress tunnel in the Monitoring Session with the GigaVUE V Series Node IP address as the destination IP address, then the traffic is directly tunneled to that GigaVUE V Series Node.

Volume-Based 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 provide information on the actual data volume that flows through the V Series Nodes. All licensed applications, when running on the node, generate usage statistics.

Licensing for GigaVUE Cloud Suite is volume-based. In the Volume-Based Licensing (VBL) scheme, a license entitles specific applications on your V Series Nodes to use a specified amount of total data volume over the term of the license. The distribution of the license to individual nodes becomes irrelevant for Gigamon accounting purpose. GigaVUE-FM tracks the total amount of data processed by the various licensed applications and provides visibility on the actual amount of data each licensed application is using on each node, and tracks the overuse, if any.

Volume-based licenses are available as monthly subscription licenses with a service period of one month. Service period is the period of time for which the total usage or overage is tracked.

For purchasing licenses with the Volume-Based License (VBL) option, contact our Sales.

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 SKUs¹. The number in the SKU indicates the total volume allowance of the SKU for that base bundle. For example, VBL-250T-BN-CORE has a daily volume allowance of 250 terabytes for 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 always upgrade to a higher bundle, but you cannot move to a lower version.
- You cannot have two different base bundles at the same time however, you can have multiple base bundles of the same type.
- Once upgraded to a higher bundle, the existing lower bundles will be automatically deactivated.

Add-on Packages

GigaVUE-FM allows you to add additional packages called 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.

Rules for add-on packages:

- Add-on packages can only be added when there is an active base bundle available in GigaVUE-FM.
- The base bundle limits the total volume usage of the add-on package.
- If your add-on package has a volume allowance 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, then when the base bundle expires, the volume allowance of the add-on package will be reduced to zero until a new base bundle is added.

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 tracks the license usage for each GigaVUE V Series Node as follows:

- When you create and deploy a monitoring session, GigaVUE-FM allows you to use only those applications that are licensed at that point (applicable only for ACTIVE licenses).
- When a license expires, you will be notified with an audit log. 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 will not be undeployed.
 - For releases prior to 6.4:
 - The Monitoring Sessions using the corresponding license will be undeployed (but not deleted from the database).
 - When a license is later renewed or newly imported, any undeployed monitoring sessions are redeployed.

NOTE: When the license expires, GigaVUE-FM displays a notification on the screen.

Default Trial Licenses

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

SKU	BUNDLE	VOLUME	STARTS	ENDS	GRACE PERIOD	ACTIVATION ID	STATUS	TYPE
VBL-1T-BN-SVP-TRIAL	SecureVUEPlus	1024GB daily	10/16/2024	11/15/2024	0 days	4e8cb5a4-7e...	Active	Trial
VBL-2500T-BN-NV	NetVUE	2560000GB d...	10/04/2024	04/02/2025	30 days	62a2ba16-ba...	Active	Internal

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, then after 30 days, on expiry of the trial license, any deployed Monitoring Sessions will be undeployed from the existing GigaVUE V Series Nodes.

When you install a new Volume-Based License (VBL), the existing trial license will remain active alongside the new VBL. Once the trial license period expires, it will be automatically deactivated. After deactivation, the trial license will be moved to the **Inactive** tab in the **VBL** page.

Activate Volume-Based Licenses

To activate Volume-Based Licenses:


1. On the left navigation pane, click .
2. Go to **System > Licenses**. From the top navigation bar, select the **VBL** from the **Activation** drop-down.
3. Click **Activate Licenses**. The **Activate License** page appears.
4. Select **IP Address** or **Hostname** to include this information. If you exclude the IP Address or Hostname, you will have to identify the chassis or GigaSMART card by its ID when activating.
5. Download the fabric inventory file that contains information about GigaVUE-FM. Click **Next**. Refer to the What is a Fabric Inventory File section in *GigaVUE Licensing Guide* for more details.
6. Click **Gigamon License Portal** to navigate to the Licensing Portal. Upload the Fabric Inventory file in the portal. Once the fabric inventory file is uploaded, select the required license and click **Activate**. A license key is provided. Record the license key or keys.
7. Return to GigaVUE-FM and upload the file by clicking **Choose File** button.

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**. 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.
Type	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. To display the Entitlement ID field, click on 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**. 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.
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.

For more 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	GigaVUE

	Report	Administration Guide
Fabric Health Analytics dashboards for Volume-Based Licenses usage	Dashboards for Volume Based Licenses Usage	GigaVUE-FM User Guide

Supported Hypervisors for VMware

The following table lists the supported hypervisor versions for vCenter, VMware ESXi and VMware NSX-T.

GigaVUE V Series Node Supported Hypervisors	Tested Platforms			
		vCenter Server	ESXi	GigaVUE-FM
vSphere ESXi	v6.7	v6.7U3	v6.7U3	v5.10.02, v5.11.01, v5.12.00, v5.13.00, v5.13.01
	v7.0	v7.0	v7.0	v5.10.02, v5.11.01, v5.12.00, v5.13.00, v5.13.01, v5.14.00, v5.15.00, v5.16.00, v6.0.00, v6.1.00
	v7.0	v7.0U3	v7.0U3	v5.15.00, v5.16.00, v6.0.00, v6.1.00, v6.2.00, v6.3.00, v6.4.00, v6.5.00, v6.6.00, v6.7.00, v6.8.00, v6.9.00
	v8.0	v7.0U3	v8.0U2	v6.9.00
	v8.0	v8.0	v8.0	v6.3.00, v6.4.00, v6.5.00, v6.6.00, v6.7.00, v6.8.00, v6.9.00
	v8.0	v8.0U2, v8.0U3	v8.0U2, v8.0U3	v6.8.00, v6.9.00

GigaVUE V Series Node Supported Hypervisors	Tested Platforms			
		vCenter Server	ESXi	GigaVUE-FM
vSphere NSX-T	v3.1.0	v7.0	v7.0	v5.11.01, v5.12.00
	v3.1.2	v7.0	v6.7U3, v7.0U1	v5.12.00, v5.13.00, v5.13.01
	v3.1.3	v7.0	v6.7U3, v7.0U1	v5.13.01, v5.14.00, v6.0.00
	v3.2.0	v7.0, v7.0U3	v6.7U3, v7.0U1, v7.0U3	v5.14.01, v5.15.00, v5.16.00, v6.0.00
	v3.2.1	v7.0U3	v6.7U3, v7.0U1, v7.0U3	v6.0.00, v6.1.00, v6.2.00
	v3.2.2	v7.0U3	v7.0U3	v6.3.00, v6.4.00
	v3.2.3	v7.0U3	v7.0U3	v6.5.00, v6.6.00, v6.7.00, v6.8.00, v6.9.00
	v4.0.0	v7.0U3	v7.0U3	v6.0.00, v6.1.00, v6.2.00, v6.3.00
	v4.1.0	v7.0U3	v7.0U3	v6.3.00, v6.4.00, v6.5.00
	v4.1.0	v8.0U2	v8.0U2	v6.5.00, v6.6.00, v6.7.00
	v4.1.2	v8.0U2, v8.0U3	v8.0U2, v8.0U3	v6.8.00, v6.9.00
	v4.2	v8.0U2	v8.0U2, v8.0U3	v6.9.00

Points to Note (VMware NSX-T)

- The steps in the documentation assume that VMware NSX-T is installed and configured. Refer to [VMware Documentation](#) for configuration details.
- GigaVUE-FM supports service insertion only for overlay transport zone associated with the E-W traffic. Service insertion is not supported for VLAN transport zone associated with the N-S traffic or when the VMware NSX-T manager is in federation mode. However, the traffic from the workload virtual machines in NSX-T federated environments can be acquired using UCT-V. Refer to [Configure GigaVUE Fabric Components using Third party Orchestration on NSX-T Federation Environment in GigaVUE Cloud Suite Deployment Guide - Third Party Orchestration](#) for more detailed information on how to deploy UCT-V, UCT-V Controller to acquire traffic from NSX-T federated environment.

Prerequisites for Integrating GigaVUE V Series Nodes with NSX-T

The following are the prerequisites for integrating GigaVUE V Series Nodes with VMware NSX-T:

- ESXi hosts must be prepared as NSX-T Data Center transport nodes by using transport node profiles.
- ESXi hosts where workload VMs that needs to be monitored must be attached to the overlay transport zone.
- GigaVUE-FM supports service insertion only for overlay transport zone associated with the E-W traffic. Service insertion is not supported on VLAN transport zone associated with the N-S traffic or when the VMware NSX-T manager in federation mode.
- Before deploying GigaVUE V Series Nodes using GigaVUE-FM, Service segment must be created in the NSX-T manager on Overlay Transport Zone. Refer to [Create a Service Segment in VMware NSX-T](#) for step-by-step instructions on how to create service segment.
- Refer to [Supported Hypervisors for VMware](#) for supported VMware vCenter, VMware ESXi and VMware NSX-T versions.
- Only IPv4 traffic is supported.
- If a guest VM running on an ESXi host is connected to a VLAN segment. and that ESXi host is not configured to an Overlay Transport zone, then the traffic destined to a service VM is disrupted. Such a configuration can also cause traffic to be routed to a black hole.
- For more detailed VMware requirements on East-West traffic monitoring, refer to the below links and select the appropriate NSX-T version.
 - [NSX-T Data Center Requirements for East-West Traffic](#) - For versions 3.x.x
 - [NSX Requirements for East-West Traffic](#) - For versions 4.x.x
- Refer to [Prerequisites for Integrating GigaVUE V Series Nodes with NSX-T](#) for ESXi host resource requirement to deploy GigaVUE V Series Nodes.
- GigaVUE V Series Node device OVA image file.

NOTE: An external HTTP(S) server for hosting the GigaVUE V Series image OVFs and VMDK file (extracted from the OVA file) when using **Use External Image** Option in Monitoring Domain. Refer to [Create Monitoring Domain for VMware NSX-T](#) for more detailed information on what is an external image and how to configure it.

The GigaVUE V Series Node OVA image files can be downloaded from [Gigamon Customer Portal](#).

Unsupported Configurations when using VMware NSX-T:

- Service Insertion is not supported on Global NSX-T managers in federation mode. Use Local NSX-T Managers for deploying our solution in this case.
- Service Insertion is not supported on Multi tenancy environments.
- Multiple monitoring domains cannot be configured with same NSX-T manager.

Refer to the following topics for the requirements:

- [Network Firewall Requirements](#)
- [Recommended Form Factor \(Instance Types\)](#)
- [Required VMware Virtual Center Privilege](#)
- [Required Roles in VMware NSX-T](#)
- [Disable Certification Validation in VMware NSX-T](#)
- [Default Login Credentials](#)

Network Firewall Requirements

Following are the Network Firewall Requirements for GigaVUE V Series Node deployment.

Source	Destination	Source Port	Destination Port	Protocol	Service	Purpose
GigaVUE-FM	NSX-T Manager	Any (1024-65535)	443	TCP	https	Allows GigaVUE-FM to communicate with vCenter and NSX-T.
	vCenter					
GigaVUE-FM	GigaVUE V Series Node	Any (1024-65535)	8889	TCP	Custom API	Allows GigaVUE-FM to communicate with GigaVUE V Series Node
Administrator	GigaVUE-FM	Any (1024-65535)	443	TCP	https	Management connection to GigaVUE-FM
			22		ssh	
Administrator	GigaVUE V Series Nodes	Not Applicable	22		ssh	Troubleshooting GigaVUE V Series Nodes.
GigaVUE-FM	GigaVUE V Series Node	Any (1024-65535)	5671	TCP	Custom TCP	Allows GigaVUE-FM to receive the traffic health updates with GigaVUE V Series Node

Remote Source	GigaVUE V Series Node	Custom Port (VXLAN and UDPGRE),N/A for GRE	4789	UDP	VXLAN	Allows to UDPGRE Tunnel to communicate and tunnel traffic to GigaVUE V Series Nodes (Applicable for Tunnel Ingress option only)
			N/A	IP 47	GRE	
			4754	UDP	UDPGRE	
GigaVUE V Series Node	Tool/ GigaVUE HC Series instance	Custom Port (VXLAN),N/A for GRE	4789	UDP	VXLAN	Allows GigaVUE V Series Node to communicate and tunnel traffic to the Tool
			N/A	IP 47	GRE	
GigaVUE V Series Node	Tool/ GigaVUE HC Series instance	N/A	N/A	ICMP	echo Request	Allows V Series node to health check tunnel destination traffic (Optional)
					echo Response	
GigaVUE V Series Node	GigaVUE-FM	Any (1024-65535)	5671	TCP	Custom TCP	Allows GigaVUE V Series Nodes to communicate the traffic health updates with GigaVUE-FM
GigaVUE-FM	External Image Server URL	Any (1024-65535)	Custom port on web Server	TCP	http	Access to image server to image lookup and checks, and downloading the image
NSX-T Manager						
vCenter						
NSX-T Manager	GigaVUE-FM	Any (1024-65535)	443	TCP	http	When using GigaVUE-FM as the image server for uploading the GigaVUE V Series Image.
vCenter						

Recommended Form Factor (Instance Types)

The form factor (instance type) size of the GigaVUE V Series Node is configured on the OVF file and packaged as part of the OVA image file. The following table lists the available form

factors and sizes based on memory and the number of vCPUs for a single V Series node. Instances sizes can be different for GigaVUE V Series Nodes in different ESXi hosts and the default size is Small.

Type	Memory	vCPU	Disk space
Small	4GB	2vCPU	8GB
Medium	8GB	4 vCPU	8GB
Large	16GB	8 vCPU	8GB

Required VMware Virtual Center Privilege

This section lists the minimum privileges required for the GigaVUE-FM user in vCenter.

Category	Required Privilege	Purpose
vApp	<ul style="list-style-type: none"> vApp application configuration 	V Series Node Deployment
Virtual machine	Interaction <ul style="list-style-type: none"> Power on Power Off 	<ul style="list-style-type: none"> V Series Node Deployment Used to power on and power off GigaVUE V Series Node.

Required Roles in VMware NSX-T

This section lists the minimum roles required for the GigaVUE-FM user in VMware NSX-T.

Deploying GigaVUE V Series Node using GigaVUE-FM

When deploying GigaVUE V Series Node using GigaVUE-FM, the following is the minimum required role combination:

For **NSX-T version 3.2.x** and **NSX-T version 4.x.x**, select the following Role combination:

- NETX Partner Admin and Security Admin

For **NSX-T version 3.1.x**, select LDAP with any one of the following Role combinations:

- NETX Partner Admin and Security Operator
- NETX Partner Admin and Network Operator

Refer to [Deploy GigaVUE V Series Nodes using GigaVUE-FM](#) section for more detailed information on how to deploy GigaVUE V Series Nodes using GigaVUE-FM

Deploying GigaVUE V Series Nodes using VMware NSX-T

When deploying GigaVUE V Series Node using VMware NSX-T manager, the minimum required role is NETX Partner Admin.

Refer to [Deploy GigaVUE V Series Nodes using VMware NSX-T Manager](#) section for more detailed information on how to deploy GigaVUE V Series Nodes using VMware NSX-T Manager.

Disable Certification Validation in VMware NSX-T

When using uncertified GigaVUE V Series Node image, due to certificate validation requirement in VMware NSX-T, GigaVUE V Series Node deployment may fail. Before deploying the GigaVUE V Series Nodes, disable the certificate validation as follows.

1. Login to each NSX-T manager using CLI with root credentials.
2. Open `/config/vmware/auth/ovf_validation.properties` file
3. Set a value for **THIRD_PARTY_OVFS_VALIDATION_FLAG** as **2**. The definition of the legends are as follows:
 - 0: only VMware-signed OVF's are allowed for deployment
 - 1: only VMware-signed and well-known CA-signed OVF's are allowed for deployment
 - 2: no validation
4. Save and Exit the file.

Default Login Credentials

You can login to the GigaVUE V Series Node, GigaVUE V Series proxy, and UCT-V Controller by using the default credentials.

Product	Login credentials
GigaVUE V Series Node	You can login to the GigaVUE V Series Node by using ssh. The default username and password is: Username: gigamon Password: Gigamon123!

Install and Upgrade GigaVUE-FM

You have the flexibility of installing GigaVUE-FM across various supported platforms. Additionally, you can effectively manage deployments in any of the cloud platform as long as there exists IP connectivity for seamless operation.

You can install and upgrade the GigaVUE-FM fabric manager (GigaVUE-FM) on cloud platforms or on-premises.

- Installation: Refer to GigaVUE-FM Installation and Upgrade Guide available in the [Gigamon Documentation Library](#).
- Upgrade: Refer to Upgrade GigaVUE-FM topic in GigaVUE-FM Installation and Upgrade Guide.

Deployment Options for GigaVUE Cloud Suite for VMware (NSX-T)

This section provides detailed information on the multiple ways in which GigaVUE Cloud Suite for VMware can be configured to provide visibility for physical and virtual traffic. Based on the method in which you want to deploy the GigaVUE V Series Nodes, there are two ways in which you can configure GigaVUE Cloud Suite for VMware (NSX-T). Refer to the [Prerequisites for Integrating GigaVUE V Series Nodes with NSX-T](#) section for prerequisites that are required to be configured. For more detailed information and the work flow refer the following topics:

- [Deploy GigaVUE V Series Nodes using GigaVUE-FM](#)
- [Deploy GigaVUE V Series Nodes using VMware NSX-T Manager](#)

Deploy GigaVUE V Series Nodes using GigaVUE-FM

Step No	Task	Refer the following topics
1	Create users in GigaVUE-FM and VMware NSX-T for communication.	Create Users in VMware vCenter, VMware NSX-T, and GigaVUE-FM
2	Upload the GigaVUE V Series Node Image (OVA File) into GigaVUE-FM (optional- use only when using GigaVUE-FM as the image server)	Upload GigaVUE V Series Node Image into GigaVUE-FM
3	Create a service segment in NSX-T	Create a Service Segment in VMware NSX-T

Step No	Task	Refer the following topics
4	Create a Monitoring Domain	Create Monitoring Domain for VMware NSX-T
5	Deploy GigaVUE V Series Nodes using GigaVUE-FM	Configure GigaVUE V Series Nodes for VMware NSX-T Refer to <i>Deploy GigaVUE V Series Nodes using GigaVUE-FM</i> section
6	Create Monitoring session	Create a Monitoring Session (VMware NSX-T)
7	Create a Ingress and Egress Tunnels to tunnel traffic	Create Ingress and Egress Tunnel (VMware NSX-T)
8	Add Applications to the Monitoring Session	Add Applications to Monitoring Session
9	Deploy Monitoring Session	Deploy Monitoring Session
10	View Monitoring Session Statistics	View Monitoring Session Statistics
11	Create NSX-T Group and Service chain	Create Service Chain and NSX-T Group

Deploy GigaVUE V Series Nodes using VMware NSX-T Manager

Step No	Task	Refer the following topics
1	Create users in GigaVUE-FM and VMware NSX-T for communication.	Create Users in VMware vCenter, VMware NSX-T, and GigaVUE-FM
2	Upload the GigaVUE V Series Node Image (OVA File) into GigaVUE-FM (optional- use only when using GigaVUE-FM as the image server)	Upload GigaVUE V Series Node Image into GigaVUE-FM
3	Create a service segment in NSX-T	Create a Service Segment in VMware NSX-T
4	Create a Monitoring Domain	Create Monitoring Domain for VMware NSX-T
5	Deploy GigaVUE V Series Nodes using GigaVUE-FM	Configure GigaVUE V Series Nodes for VMware NSX-T Refer to <i>Deploy GigaVUE V Series Nodes using VMware NSX-T Manager</i> section
6	Create Monitoring session	Create a Monitoring Session (VMware NSX-T)
7	Create a Ingress and Egress Tunnels to tunnel traffic	Create Ingress and Egress Tunnel (VMware NSX-T)
8	Add Applications to the Monitoring Session	Add Applications to Monitoring Session

Step No	Task	Refer the following topics
9	Deploy Monitoring Session	Deploy Monitoring Session
10	View Monitoring Session Statistics	View Monitoring Session Statistics
11	Create NSX-T Group and Service chain	Create Service Chain and NSX-T Group

Deploy GigaVUE Cloud Suite for VMware (NSX-T)

To integrate V Series nodes with NSX-T, perform the following steps:

- [Create Users in VMware vCenter, VMware NSX-T, and GigaVUE-FM](#)
- [Create a Service Segment in VMware NSX-T](#)
- [Upload GigaVUE V Series Node Image into GigaVUE-FM](#)
- [Install Custom Certificate](#)
- [Create Monitoring Domain for VMware NSX-T](#)
- [Configure GigaVUE V Series Nodes for VMware NSX-T](#)
- [Increase or Decrease GigaVUE V Series Nodes using GigaVUE-FM](#)
- [Increase or Decrease GigaVUE V Series Nodes using VMware NSX-T Manager](#)

Create Users in VMware vCenter, VMware NSX-T, and GigaVUE-FM

For VMware NSX-T and GigaVUE-FM to communicate, an user must be created in VMware NSX-T Manager, VMware vCenter, and GigaVUE-FM.

NOTE: GigaVUE-FM connects to NSX-T Manager that supports TLSv1.0, TLSv1.1, and TLSv1.2.

Refer to the following topics for step-by-step instructions on how to create users in vCenter, NSX-T Manager and GigaVUE-FM:

- [Create User in VMware vCenter](#)
- [Create User in NSX-T manager](#)
- [Create user in GigaVUE-FM](#)

Create User in VMware vCenter

For GigaVUE-FM to communicate with vCenter, you must first create a user with the minimum required privileges in VMware vCenter.

Refer to [Required VMware Virtual Center Privilege](#) for the minimum privileges required in VMware vCenter.

Create User in NSX-T manager

For GigaVUE-FM to communicate with NSX-T, you must first create a user with the minimum required role in NSX-T manager.

To create a user in VMware NSX-T:

1. In NSX-T, navigate to **System > Settings > User Management** and click **User Role Assignment** tab.
2. On the **User Role Assignment** tab, click **ADD**. Select the Roles based on the GigaVUE V Series Node deployment type as mentioned in [Required Roles in VMware NSX-T](#)
3. Click **Save** and then a GigaVUE-FM user is created in NSX-T.

Create user in GigaVUE-FM

For VMware NSX-T Manager to be able to communicate with GigaVUE-FM, you need to create a user in GigaVUE-FM who has the admin role.

Refer to [Add Users](#) section in *GigaVUE Administration Guide* for detailed and step-by-step instructions on how to create users in GigaVUE-FM.

Tips: You can follow these tips to easily identify the user created for VMware NSX-T.

- In the **Name** field, enter the name of the call back user. For example, you can use NSX-T Manager Callback as the user name to help you associate this user with the NSX-T Manager.
- In the **Username** field, enter a username for the user. For example, you can use nsxv to help you remember that this user is associated with NSX-T.

The username and password created for vCenter, NSX-T Manager, and GigaVUE-FM in this section will be used when creating Monitoring Domain in GigaVUE-FM. Refer to [Create Monitoring Domain for VMware NSX-T](#) for step-by-step instructions on how to create monitoring domain.

Create a Service Segment in VMware NSX-T

Registering the NSX-T details on GigaVUE-FM is a prerequisite to create the service segment.

To create a service segment in VMware NSX-T:

1. On the NSX manager, go to **Security** and select **Network Introspection** from the left navigation pane. The **Network Introspection Settings** page opens. Select **Service Segment** from the top navigation bar. Then, the Service Segment page appears.
2. On the Service Segment page, click **ADD SERVICE SEGMENT** and a new row appears to create a service segment.
3. Enter the name and map it to the overlay transport zone created for the VMs.
4. Click **Save**.

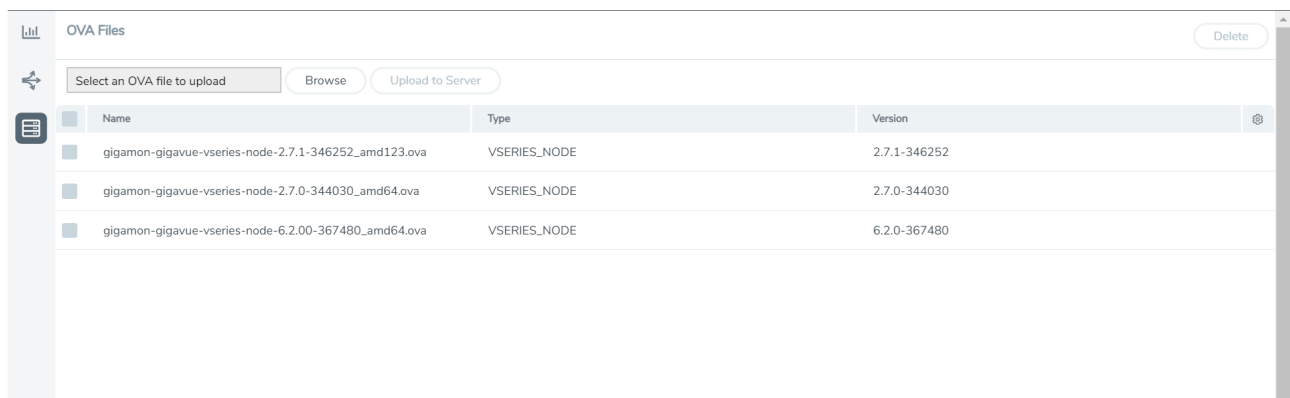
The segment created in this section will be used as service attachment when deploying GigaVUE V Series Nodes using GigaVUE-FM. Refer to [Deploy GigaVUE V Series Nodes using GigaVUE-FM](#) for more detailed information on how to deploy GigaVUE V Series Node using GigaVUE-FM.

Upload GigaVUE V Series Node Image into GigaVUE-FM

You can upload your V Series Node image into GigaVUE-FM. This step is optional, follow the steps given below only if you wish to use GigaVUE-FM as an internal image server.

To upload the V Series image into GigaVUE-FM:

1. Go to **Inventory > VIRTUAL > VMware NSX-T (V Series)**, and then click **Settings > OVA Files**. The OVA Files page appears.



2. In the OVA Files page, click **Browse** to select the *gigamon-gigavue-vseries-node-x.x.x-0-xxxxxx.ova* file.
3. Click **Upload** to Server to upload the selected OVA image file to GigaVUE-FM server.

NOTE: The maximum number of OVA files that can be uploaded to GigaVUE-FM for VMware NSX-T is three.

Install Custom Certificate

GigaVUE V Series Node, GigaVUE V Series Proxy, and UCT-V Controllers have default self-signed certificates installed. The communication between GigaVUE-FM and the fabric components happens in a secure way using these default self-signed certificates, however you can also add custom certificates like SSL/TLS certificate to avoid the trust issues that occurs when the GigaVUE V Series Nodes, GigaVUE V Series Proxy, or UCT-V Controllers run through the security scanners.

You can upload the custom certificate in two ways:

- [Upload Custom Certificates using GigaVUE-FM](#)
- [Upload Custom Certificate using Third Party Orchestration](#)

Upload Custom Certificates using GigaVUE-FM

To upload the custom certificate using GigaVUE-FM follow the steps given below:

1. Go to **Inventory > Security > Custom SSL Certificate**. The **Custom Certificate Configuration** page appears.
2. On the Custom Certificate Configuration page, click **Add**. The **New Custom Certificate** page appears.
3. Enter or select the appropriate information as shown in the following table.

Field	Action
Certificate Name	Enter the custom certificate name.
Certificate	Click on the Upload Button to upload the certificate.
Private Key	Click on the Upload Button to upload the private key associated with the certificate.

4. Click **Save**.

You must also add root or the leaf CA certificate in the Trust Store. For more detailed information on how to add root CA Certificate, refer to Trust Store topic in *GigaVUE Administration Guide*.

The certificates uploaded here can be linked to the respective GigaVUE V Series Node, GigaVUE V Series Proxy, and UCT-V Controller in the Fabric Launch Configuration Page. Refer to *Configure GigaVUE Fabric Components in GigaVUE-FM* topic in the respective cloud guides for more detailed information.

NOTE: The minimum value for the authentication key encryption length provided during the key generation is 2048.

Upload Custom Certificate using Third Party Orchestration

You can also upload custom certificates to GigaVUE V Series Nodes, GigaVUE V Series Proxy, and UCT-V Controller using your own cloud platform at the time of deploying the fabric components. Refer to the following topics on more detailed information on how to upload custom certificates using third party orchestration in the respective platforms:

For integrated mode:

- [Configure GigaVUE Fabric Components in AWS](#)
- [Configure GigaVUE Fabric Components in Azure](#)
- [Configure GigaVUE Fabric Components in OpenStack](#)

For generic mode:

- [Configure GigaVUE Fabric Components in AWS](#)
- [Configure GigaVUE Fabric Components in Azure](#)
- [Configure GigaVUE Fabric Components in GCP](#)
- [Configure GigaVUE Fabric Components in Nutanix](#)
- [Configure GigaVUE Fabric Components in OpenStack](#)
- [Configure GigaVUE V Series Nodes using VMware ESXi](#)

Create Monitoring Domain for VMware NSX-T

This chapter describes how to create a Monitoring Domain for deploying GigaVUE V Series Nodes in the VMware NSX-T environment through GigaVUE-FM. You must establish a connection between GigaVUE-FM and the VMware NSX-T Manager. Creating a Monitoring Domain in GigaVUE-FM allows you to establish a connection between your VMware NSX-T environment and GigaVUE-FM.



Points to Note:



- You can create multiple Monitoring Domains using a single VMware NSX-T Manager. However, each Monitoring Domain must have unique VMware vCenters associated with it.
- When editing a Monitoring Domain that has GigaVUE V Series Nodes deployed, the **Use External Image** and **Use FM to Launch Fabric** toggle buttons are disabled. However, for a Monitoring Domain that does not have any GigaVUE V Series Nodes deployed, the **Use External Image** toggle button is enabled.
- Whenever you change the NSX-T user password in VMware NSX-T manager, you should update that in GigaVUE-FM by editing the Monitoring Domain. Otherwise, the NSX-T connection status will be in an authentication failure state.

Prerequisites:

- If you wish to use the **Use External Image** option, before creating a Monitoring Domain ensure all the contents of the OVA file are extracted into VMDK and OVF files and placed in the directory that represents the Image URL.
- If you wish to use GigaVUE-FM as your image server, save the OVA files in the dedicated directory before creating a Monitoring Domain. Refer to [Upload GigaVUE V Series Node Image into GigaVUE-FM](#) for more detailed instructions on uploading the OVA files to GigaVUE-FM.

To create a Monitoring Domain in GigaVUE-FM for VMware NSX-T:

1. Go to **Inventory > VIRTUAL > VMware NSX-T (V Series)**, and then click **Monitoring Domain**. The **Monitoring Domain** page appears.
2. On the **Monitoring Domain** page, click **New**. The **VMware Configuration** page appears.

VMware Configuration

Monitoring Domain*	<input type="text" value="Enter a monitoring domain name"/>
Connection Alias*	<input type="text" value="Alias"/>
Virtual Center*	<input type="text" value="Virtual Center"/>
Username*	<input type="text" value="Username"/>
Password*	<input type="password" value="Password"/>
NSX-T Manager*	<input type="text" value="IP address or hostname"/>
NSX-T Username*	<input type="text" value="NSX-T Manager username"/>
NSX-T Password*	<input type="password" value="NSX-T Manager password"/>
FM Username*	<input type="text" value="FM username"/>
FM Password*	<input type="password" value="FM password"/>
Use External Image	<input type="checkbox"/> <input type="text" value="Select an image"/>
Use FM to Launch Fabric®	<input checked="" type="checkbox"/>

3. In the **VMware Configuration** page, enter or select the following details:

Field	Description
Monitoring Domain	Name of the Monitoring Domain.
Connection Alias	Name of the connection.
Virtual Center	IP address or Hostname of the vCenter.
Username	Username of the vCenter user.
Password	vCenter password that is used to connect to the vCenter.
NSX-T Manager	IP address or Hostname of your VMware NSX-T.
NSX-T Username	Username of your NSX-T account.
NSX-T Password	Password of your NSX-T account.
FM Username	Username of your GigaVUE-FM account.
FM Password	Password of your GigaVUE-FM account.
Use External Image	<p>This toggle button allows you to choose between an external or internal image. If you wish to use the Use External Image option, you can use an external server (http or https server) to place all the OVF files and provide the URL of the web server. Otherwise, you can upload the OVA files to GigaVUE-FM and use it as an internal image server.</p> <ol style="list-style-type: none"> Yes: Select this option to use an external image. To use an external image, enter the web server URL of the directory where VMDK and OVF files are available. The Web Server URL must be in the following format: <i>http(s)://<server-IP:port>/<path to where the OVF files are saved></i> and the port can be any valid number. The default port number is 80. No: Select this option to use an internal image. To use an internal image, select the uploaded OVA files from the Select an image drop-down list.
Use FM to Launch Fabric	<p>Enable this toggle button if you wish to deploy GigaVUE V Series Nodes using GigaVUE-FM.</p> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p>NOTE: If you disable this option, then you must deploy GigaVUE V Series Nodes using VMware NSX-T manager. Refer to Deploy GigaVUE V Series Nodes using VMware NSX-T Manager section for more detailed information.</p> </div>

4. Click **Save**.

The newly created Monitoring Domain appears in the list view of the **Monitoring Domain** page. The **Status** column displays the overall connection status for both VMware vCenter and VMware NSX-T Manager. To view the individual connection statuses for each, hover over the connection status.

When creating multiple Monitoring Domains with the same NSX-T Manager, each Monitoring Domain is associated with a unique service name. You can view the service name of each Monitoring Domain on the **Monitoring Domain** page.

To edit a Monitoring Domain, select the Monitoring Domain and click **Actions**. From the drop-down list, select **Edit**, the **VMware configuration** page appears.

What to do next:

- **Use FM to Launch Fabric** is enabled: You are navigated to the **VMware NSX-T Fabric Deployment** page. Refer to [Deploy GigaVUE V Series Nodes using GigaVUE-FM](#) for more detailed information on how to deploy GigaVUE V Series Node using GigaVUE-FM.
- **Use FM to Launch Fabric** is disabled: You must deploy GigaVUE V Series Nodes using VMware NSX-T Manager. Refer to [Deploy GigaVUE V Series Nodes using VMware NSX-T Manager](#) for more detailed information on how to deploy GigaVUE V Series Nodes using VMware NSX-T Manager.

Configure GigaVUE V Series Nodes for VMware NSX-T

This section provides step-by-step information on how to deploy GigaVUE V Series Nodes.

GigaVUE V Series Nodes can be deployed in GigaVUE-FM using two ways. You can either directly use VMware NSX-T manager to deploy your GigaVUE V Series Nodes or use GigaVUE-FM to deploy your GigaVUE V Series Nodes.



Points to Note:

- When VMware NSX-T is configured in a cluster on multiple hosts, ensure all the hosts are in a connected state. Even if one of the hosts is in a disconnected state then GigaVUE V Series Node host-based deployment will be unsuccessful.
- If a GigaVUE V Series Node is restarted, then the existing flows that is received by that GigaVUE V Series Node will not be forwarded to the other available GigaVUE V Series Nodes (if any). However, the new flows will be forwarded to any available GigaVUE V Series Node.

Refer to the following section for more detailed information:

- [Deploy GigaVUE V Series Nodes using GigaVUE-FM](#)
- [Deploy GigaVUE V Series Nodes using VMware NSX-T Manager](#)

Deploy GigaVUE V Series Nodes using GigaVUE-FM

After creating a monitoring domain in GigaVUE-FM for VMware NSX-T, which establishes a connection between VMware NSX-T manager and GigaVUE-FM, GigaVUE-FM launches the **VMware NSX-T Fabric Deployment** page. Refer to [Create Monitoring Domain for VMware NSX-T](#) section for more detailed information on how to create a monitoring domain in GigaVUE-FM for VMware NSX-T.

Deploy GigaVUE V Series Node from GigaVUE-FM

1. After creating a monitoring domain, you are navigated to the **VMware Fabric Launch Configuration** page.

2. You can also open **VMware Fabric Launch Configuration** page from the **Monitoring Domain** page. To launch the **VMware Fabric Launch Configuration** from the Monitoring Domain, go to **Inventory > VIRTUAL > VMware NSX-T (V Series)**. Click **Actions > Deploy Fabric**. The **VMware Fabric Launch Configuration** page appears.

VMware NSX-T Fabric Deployment

Deployment Name*

Datacenter*

Cluster*

Enable Custom Certificates

Datastore*

SSL Key

Name Server

Management

Network*

MTU

IP Type

Tunnel

Network*

MTU

IP Type

Gateway IP

Use IPv6

User Password: (gigamon)

Confirm User Password

Form Factor

Service Attachment

Deployment Type

Deploy GigaVUE Cloud Suite for VMware (NSX-T)

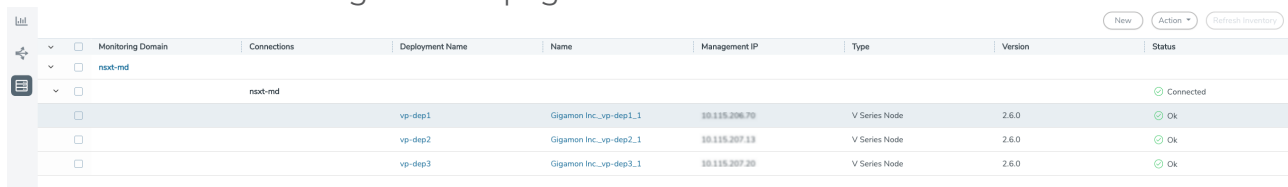
Configure GigaVUE V Series Nodes for VMware NSX-T

3. Select or enter the following details in the VMware Fabric Launch Configuration page:

Field	Description
Deployment Name	Name of the deployment (NSX-T service deployment)
Datacenter	vCenter Data Center with the NSX-T hosts to be provisioned with V Series nodes
Cluster	Cluster where you want to deploy GigaVUE V Series Nodes
Enable Custom Certificates	<p>Enable this option to validate the custom certificate during SSL Communication. GigaVUE-FM validates the Custom certificate with the trust store. If the certificate is not available in Trust Store, communication does not happen, and a handshake error occurs.</p> <p>NOTE: If the certificate expires after the successful deployment of the fabric components, then the fabric components move to failed state.</p>
Custom SSL Certificate <p>NOTE: This field appears only when Enable Custom Certificates is enabled.</p>	Select the custom certificate from the drop-down menu. You can also upload the custom certificate for GigaVUE V Series Nodes. For more detailed information, refer to Install Custom Certificate .
Datastore	Network datastore shared among all NSX-T hosts in a cluster.
SSL Key	Reserved for future use.
Name Server	The server that stores the mapping between the domain names and the IP address. The maximum number of name servers that can be entered is three. Enter the valid IPv4 address, separated by comma.
Management	
Network	Management network for GigaVUE V Series Nodes
IP Type	Select the management network IP type as Static or DHCP
IP Pool	Select the IP Pool
	<p>NOTE: This field appears only when the Management IP type is Static.</p>
MTU	The Maximum Transmission Unit (MTU) is the maximum size of each packet that can be transferred as a single entity in a network connection. Enter value between 1280 to 9000.
Tunnel	
Network	Tunnel Network for the V Series nodes
IP Type	Select the tunnel network IP address type as Static or DHCP
Gateway IP (optional)	Gateway IP address of the Tunnel Network
IP Pool	Select the IP Pool

Field	Description
NOTE: This field appears only when the Tunnel IP type is Static.	
MTU	The Maximum Transmission Unit (MTU) is the maximum size of each packet that can be transferred as a single entity in a network connection. Enter value between 1280 to 9000.
Use IPv6	Enable to use IPv6.
User Password: (gigamon)	SSH Password for the built-in user, ' gigamon ' on the V Series node
Confirm Password	Confirm the SSH Password of the GigaVUE V Series Node
Form Factor	Instance size of the GigaVUE V Series Node. (eg: Small, Medium or Large)
Service Attachment	Service segment created in VMware NSX-T Manager. Refer to Create a Service Segment in VMware NSX-T for more detailed instructions on how to create service segment in VMware NSX-T.
Deployment Type	Type of GigaVUE V Series Node deployment. It can be either Clustered or Host-Based deployment type. NOTE: Select the deployment type as Clustered if you wish to increase or decrease the number of nodes in a cluster using GigaVUE-FM. Refer Deploy GigaVUE V Series Nodes using GigaVUE-FM for more detailed information.
Deployment Count (for Clustered deployment type)	Number of GigaVUE V Series Nodes (Service Instances) to deploy

- Click **Deploy**. After the GigaVUE V Series Node is deployed in vCenter, it appears on the Monitoring Domain page under the deployment name of the selected Monitoring Domain. You can select a specific service deployment by clicking on the deployment name on the Monitoring Domain page.



Monitoring Domain	Connections	Deployment Name	Name	Management IP	Type	Version	Status
nsxt-md							
		vp-dep1	Gigamon Inc._vp-dep1.1	10.115.206.70	V Series Node	2.6.0	Connected
		vp-dep2	Gigamon Inc._vp-dep2.1	10.115.207.13	V Series Node	2.6.0	Ok
		vp-dep3	Gigamon Inc._vp-dep3.1	10.115.207.20	V Series Node	2.6.0	Ok

To view the fabric launch configuration specification of a fabric component, click on a GigaVUE V Series Node, and a quick view of the Fabric Launch Configuration appears on the Monitoring Domain page.

Points to Note:



- The deployed GigaVUE V Series Node name is created automatically by VMware NSX-T. Do not change the name of the GigaVUE V Series Node in the vCenter.
- When rebooting a GigaVUE V Series Node, the existing traffic flows redirected to the GigaVUE V Series Node will stop being redirected to the GigaVUE V Series Nodes. However, new flows initiated after the reboot will be redirected to the GigaVUE V Series Nodes.

Deploy GigaVUE V Series Nodes using VMware NSX-T Manager

You can deploy your GigaVUE V Series Nodes using VMware NSX-T Manager. The GigaVUE V Series Nodes register themselves with GigaVUE-FM using the information provided by the user in the NSX-T Manager. Once the nodes are registered with GigaVUE-FM, you can configure Monitoring Session and related services in GigaVUE-FM.

Refer to the following sections for details:

- [Getting Started](#)
- [Deploying GigaVUE V Series Nodes in VMware NSX-T Manager](#)
- [Delete GigaVUE V Series Nodes and Monitoring Domain](#)

Getting Started

To register your GigaVUE V Series Nodes using VMware NSX-T Manager, follow the steps given below:

1. Create a Monitoring Domain in GigaVUE-FM. Refer to [Create Monitoring Domain for VMware NSX-T](#) for detailed instructions.
2. In the **VMware Configuration** page, select **No** for the **Use FM to Launch Fabric** field as you wish to deploy GigaVUE V Series Nodes using VMware NSX-T Manager.

The screenshot shows the 'VMware Configuration' page with the following fields and controls:

- Monitoring Domain*: Text input field with placeholder 'Enter a monitoring domain name'
- Connection Alias*: Text input field with placeholder 'Alias'
- Virtual Center*: Text input field with placeholder 'Virtual Center'
- Username*: Text input field with placeholder 'Username'
- Password*: Text input field with placeholder 'Password'
- NSX-T Manager*: Text input field with placeholder 'IP address or hostname'
- NSX-T Username*: Text input field with placeholder 'NSX-T Manager username'
- NSX-T Password*: Text input field with placeholder 'NSX-T Manager password'
- FM Username*: Text input field with placeholder 'FM username'
- FM Password*: Text input field with placeholder 'FM password'
- Use External Image: Toggle switch (currently off) and a dropdown menu with placeholder 'Select an image'
- Use FM to Launch Fabric: Toggle switch (currently on)

NOTE: When creating the Monitoring Domain for deploying GigaVUE V Series Nodes, you can use the VMware NSX-T username and password that has at least "NETX Partner Admin" role assigned to it.

After creating your monitoring domain, you can use VMware NSX-T manager to deploy your GigaVUE V Series Nodes. When creating multiple Monitoring Domain with the same NSX-T Manager, a unique service name is associated with it. You can view the service name of each Monitoring Domain in the **Monitoring Domain** page.

Deploying GigaVUE V Series Nodes in VMware NSX-T Manager

1. In the Service Deployment page of the VMware NSX-T manager, select **Deployment**. Then, select the service name of the Monitoring Domain from the **Partner Service** drop-down in which you wish to deploy the GigaVUE V Series Nodes. For detailed information, refer to [Deploy a Partner Service](#) topic in VMware Documentation.
2. After selecting the **Deployment template** and **Deployment Specification**, click **Configure Attributes**. The **Configure Attributes** page appears.

3. In the **Configure Attributes** page, enter the Service VM Host Name and Admin user password details. If you wish to use custom certificate for GigaVUE V Series Node, then enter the **SSL Private Key** and the **SSL Certificate**. For more details on Custom Certificate refer to [Install Custom Certificate](#) topic for more detailed information on Custom Certificates.
4. Once the GigaVUE V Series Node is successfully deployed, the deployed node is registered with GigaVUE-FM after the run time status of the node is displayed as **UP** in VMware NSX-T manager.

The GigaVUE V Series Node deployed in your VMware NSX-T manager appears on the Monitoring Domain page of GigaVUE-FM. In GigaVUE-FM the **Status** of the node is displayed as **Launching** and once the node is successfully registered the **Status** is changed to **Ok**.

Monitoring Domain	Connection	Name	Management IP	Type	Version	Status
nsxt-202-13-md						
nsxt-202-45-md						Connected
		Gigamon Inc._vp-3rd-...	10.10.10.10	V Series Node	3.4.0	Ok

- IPv6 address is not supported for gateway of the tunnel interface when nodes are deployed through the VMware NSX-T manager.
- When you deploy nodes using VMware NSX-T manager, ensure all your GigaVUE V Series Nodes are of the same version. GigaVUE-FM does not support GigaVUE V Series Nodes with different version in the Monitoring Domain.
- The deployed GigaVUE V Series Node name is created automatically by VMware NSX-T. Do not change the name of the GigaVUE V Series Node in the vCenter.

Delete GigaVUE V Series Nodes and Monitoring Domain

NOTE: When you deploy your V Series Nodes using VMware NSX-T manager, you cannot directly delete your GigaVUE V Series Node in GigaVUE-FM. In this case, the Delete button in GigaVUE-FM is disabled, so the Service Deployment in NSX-T Manager must be deleted first.

To delete a GigaVUE V Series Node deployed using VMware NSX-T Manager, follow the steps given below:

1. Delete the **Policy** and **Service Chain** in the VMware NSX-T manager.
2. Then, delete the Monitoring Session in GigaVUE-FM.
3. Delete the node in VMware NSX-T manager. Then, the node will be unregistered from the Monitoring Domain in GigaVUE-FM.
4. Finally, delete the Monitoring Domain in GigaVUE-FM.

Increase or Decrease GigaVUE V Series Nodes using GigaVUE-FM

You can add more nodes or remove nodes from an existing monitoring domain using GigaVUE-FM. These steps are applicable only when you deploy GigaVUE V Series Nodes using GigaVUE-FM.

NOTE: Increasing or Decreasing the number of nodes in a cluster is only applicable when using Clustered based deployment.

Refer to the following topics for more detailed information on how to add or remove GigaVUE V Series Node deployed using GigaVUE-FM for an existing monitoring domain :

- [Add V Series Nodes to Existing Monitoring Domain](#)
- [Decrease V Series Nodes from Existing Monitoring Domain](#)

Add V Series Nodes to Existing Monitoring Domain

To increase the number of V Series Node in an existing monitoring domain follow the steps given below:

1. On the Monitoring domain page, select the monitoring domain to which you wish to add more V Series Nodes.
2. Click on the **Actions** button and select **Deploy Fabric**.
3. The VMware Fabric Deployment page opens. Enter the details as mentioned in [Increase or Decrease GigaVUE V Series Nodes using GigaVUE-FM](#)



- The Deployment type must be Clustered to have multiple deployment on the same cluster.
- A cluster can have only one Host Based Deployment, however there can be multiple clustered deployment on the same cluster.

4. Enter the number of V Series Nodes you wish to add in the **Deployment Count** column.
5. Click Deploy.

The newly added V Series Nodes will be displayed under the existing monitoring domain with the new Deployment Name.

Decrease V Series Nodes from Existing Monitoring Domain

To decrease the number of nodes in an existing monitoring domain follow the steps given below:

1. On the Monitoring domain page, select the **Deployment** from which you wish to remove the V Series Nodes or select the entire monitoring domain to remove all the deployments from the monitoring domain.

NOTE: You can select the Deployment either by using the check-box on the left side or by clicking on the deployment name

2. Click on the **Actions** button and select **Delete Deployment**.
3. All the V Series Nodes under that deployment will be deleted.

The number of V Series Nodes in the monitoring domain will be decreased by the number of nodes in the deployment that were deleted.

Example use-case for Increase or Decrease V Series Nodes using GigaVUE-FM

This feature can be used in a scenario where you are migrating from GigaVUE-VM visibility solution to GigaVUE V Series visibility solution, you can simply add the V Series node to the existing monitoring domain instead of undeploying and redeploying the monitoring domain every time you wish to add more V Series nodes to the monitoring domain.

Increase or Decrease GigaVUE V Series Nodes using VMware NSX-T Manager

You can now add more nodes or remove nodes from an existing monitoring domain using VMware NSX-T Manager. These steps are applicable only when you deploy GigaVUE V Series Nodes using VMware NSX-T Manager.

Refer to the following topics for more detailed information on how to add or remove GigaVUE V Series Node deployed using NSX-T manager for an existing monitoring domain :

- [Add V Series Nodes to Existing Monitoring Domain](#)
- [Decrease V Series Nodes from Existing Monitoring Domain](#)

Add V Series Nodes to Existing Monitoring Domain

To increase the number of V Series Node in an existing monitoring domain using VMware NSX-T Manager follow the steps given below:

1. On the Service Deployment page of the VMware NSX-T manager, select **Deployment**. This page lists the service deployments that are already deployed.
2. Then, click **Deploy Service** button. For more details on how to deploy a service refer [Deploy a Partner Service](#).
3. Enter the same details as given for the service mapped to the existing monitoring domain in GigaVUE-FM to which you wish to add more nodes.

4. In the **Clustered Deployment Count**, enter the number of nodes you wish to add to the existing monitoring domain.
5. Click **Save**.

Once the Service deployment is successful and the nodes are deployed, you can view the nodes on the monitoring domain page of GigaVUE-FM.

Example - Consider a scenario where the monitoring domain in GigaVUE-FM has two V Series Nodes. To increase the number of nodes in this monitoring domain, go to VMware NSX-T Manager and create a new service using the steps mentioned above. Then, the number of V Series Nodes in the monitoring domain in GigaVUE-FM goes up by the number you have mentioned in **Clustered Deployment Count** column in the VMware NSX-T.

Decrease V Series Nodes from Existing Monitoring Domain

To decrease the number of nodes in an existing monitoring domain using VMware NSX-T follow the steps given below:

1. On the **Service Deployment** page of the VMware NSX-T manager, select **Deployment**.
2. The service deployment page lists the service deployments that are already deployed. .
3. Select the service deployment that you want to delete. The GigaVUE V Series Nodes that are part of that service deployment will be deleted from the host. These GigaVUE V Series Nodes will also be removed from the monitoring domain in the GigaVUE-FM. This way the number of service VMs (V Series nodes) can be decreased in a monitoring domain

Example - Consider a scenario where the monitoring domain in GigaVUE-FM has five V Series Nodes. To reduce the number of nodes in this monitoring domain, go to VMware NSX-T Manager and delete a service deployment using the steps mentioned above. Then, the number of V Series Nodes in the monitoring domain in GigaVUE-FM goes down by the number you have mentioned in **Clustered Deployment Count** column of the service you have deleted.

Upgrade GigaVUE V Series Node for VMware NSX-T

GigaVUE V Series Nodes can be deployed in two ways. You can either directly use VMware NSX-T manager to deploy your GigaVUE V Series Nodes or use GigaVUE-FM to deploy your GigaVUE V Series Nodes. Based on the method you deploy GigaVUE V Series Nodes, you can upgrade them in two ways. Refer to the following topic for more detailed information.

- Upgrade GigaVUE V Series Nodes Deployed using GigaVUE-FM
- Upgrade GigaVUE V Series Node Deployed using VMware NSX-T Manager

Upgrade GigaVUE V Series Nodes Deployed using GigaVUE-FM

Before upgrading the nodes ensure that all the current V Series nodes are of same version. To upgrade GigaVUE V Series Node in GigaVUE-FM:

1. Go to **Inventory > VIRTUAL > VMware NSX-T (V Series)**, and then click **Monitoring Domain**. The **Monitoring Domain** page appears.
2. Select a deployed monitoring domain and click **Actions**. From the drop-down list, select **Upgrade Fabric**, the **V Series Node Upgrade** dialog box appears.

V Series Node Upgrade

Current Version 2.3.1

Use External Image No

Change Form Factors

Select an image

- gigamon-gigavue-vseries-node-2.3.1-275864_amd64.ova>
- gigamon-gigavue-vseries-node-2.3.3-284615_amd64.ova>

Upgrade Cancel

3. Use the **Use External Image** toggle button to choose between internal and external image.
 - **Yes** to use an external image. Enter the Image URL of the latest V Series Node OVA image
 - **No** to use an internal image. To use an internal image, select the uploaded OVA files from the **Select an image** drop-down menu.
4. Click the **Change Form Factors** check box to modify the form factor (instance) size.

NOTE: Both the new and the current V Series nodes appears on the same monitoring domain until the new nodes replaces the current and the status changes to **Ok**.

5. Click **Upgrade**.

You can view the status of the upgrade in the Status column of the **Monitoring Domain** page.

To view the detailed upgrade status click **Upgrade in progress** or **Upgrade successful**, the **V Series Node Upgrade Status** dialog box appears.

V Series Node Upgrade Status

Monitoring Domain: esxi-md

Summary

Success: 1 **Failed: 0** **In Progress: 0** **Total: 1**

Node Statuses

Node	Status
VSeries- esxi-md -node1-10-210-27-202	OK

Click **Clear** to delete the logs of successfully upgraded nodes.

NOTE: Monitoring Domain upgrade can be only done when there is a single service deployment in the monitoring domain.

Upgrade GigaVUE V Series Node Deployed using VMware NSX-T Manager

NOTE: When you deploy your V Series Nodes using VMware NSX-T manager, you cannot directly upgrade V Series Node in GigaVUE-FM. In this case, the upgrade button in GigaVUE-FM is disabled.

To upgrade V Series Nodes deployed using VMware NSX-T, follow the steps given below:

1. Delete the existing V Series Node in VMware NSX-T Manager.
2. Click **Actions > Edit** in the Monitoring Domain page. The **VMware Configuration** page appears.
3. Enter the new **Image URL** or select a new image if **Use External Image** toggle button is disabled.
4. Then, deploy the new V Series Nodes in the VMware NSX-T manager

Configure Monitoring Session

GigaVUE-FM collects inventory data on all V Series nodes deployed in your environment through vCenter connections. You can design your monitoring session to include or exclude the target VMs that you want to monitor. You can also choose to monitor egress, ingress, or all traffic. When a new target VM is added to your environment, GigaVUE-FM automatically detects it and based on the selection criteria, the detected target VMs are added into your monitoring session. Similarly, when a traffic monitoring target VM is removed, it updates the monitoring sessions to show the removed instance. Before deploying a monitoring session, you need to deploy a V Series node in each host where you want to monitor the traffic.

NOTE:

- Link transformation and multiple links between two entities are not supported in V Series nodes of ESXi.
- Pre-filtering is not supported on VMware ESXi running with V Series nodes.

Refer to the following topics for details:

- [Create a Monitoring Session \(VMware NSX-T\)](#)
- [Interface Mapping](#)
- [Create Ingress and Egress Tunnel \(VMware NSX-T\)](#)
- [Create a New Map](#)
- [Add Applications to Monitoring Session](#)
- [Deploy Monitoring Session](#)
- [View Monitoring Session Statistics](#)

Create a Monitoring Session (VMware NSX-T)

GigaVUE-FM automatically collects inventory data on all target instances available in your cloud environment. You can design your Monitoring Session to include or exclude the instances that you want to monitor. You can also choose to monitor egress, ingress, or all traffic.

When a new target instance is added to your cloud environment, GigaVUE-FM automatically detects and adds the instance to your Monitoring Session. Similarly, when an instance is removed, it updates the Monitoring Sessions.

For the connections without UCT-Vs, there are no targets that are automatically selected. You can use Customer Orchestrated Source in the Monitoring Session to accept a tunnel from anywhere.

You can create multiple Monitoring Sessions per Monitoring Domain.

To create a new Monitoring Session:

1. Go to **Traffic > Virtual > Orchestrated Flows** and select your cloud platform. The **Monitoring Session** page appears.
2. Click **New Monitoring Session** button to open the **New Monitoring Session** configuration page.
3. In the **Alias** field, enter a name for the Monitoring Session.
4. From the **Monitoring Domain** drop-down list, select the desired monitoring domain.
5. From the **Connections** drop-down list, select the appropriate connection.
6. Click **Save**. The Monitoring Session Overview page appears.



Points to Note:

- In a Monitoring Session, if a selected VM is connected to VSS and VDS, then the GigaVUE-FM can create tapping for both VSS and VDS network.
- When you undeploy or edit a Monitoring Session and redeploy it, the existing traffic flows redirected to the GigaVUE V Series Node will stop being redirected to the GigaVUE V Series Nodes. However, new flows initiated after the redeployment will be redirected to the GigaVUE V Series Nodes.

Monitoring Session Page



You can view the following tabs on the Monitoring Session page:

Tab	Description
Overview	You can view the high level information of the selected Monitoring Session such as, connections, tunnel details, health status, deployment status, and information related to Application Intelligence statistics. You can also view the statistics of the incoming and outgoing traffic on an hourly, daily, weekly, and monthly basis. You can filter the statistics based on the elements associated with the Monitoring Session. For more information, refer to View Monitoring Session Statistics
Sources	Displays the sources and target details monitored by the Monitoring Session. You can view and edit the connection details of the Monitoring Session. You can view the deployment status, number of targets, and targets source health. <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p>NOTE: In the case of OVS Mirroring, the Sources tab also displays the Hypervisor details along with the Instances.</p> </div>

Tab	Description
Traffic Acquisition	You can enable or disable Prefiltering, Precryption, and Secure Tunnel here. You can also create a prefiltering template and apply it to the Monitoring Session. Refer to Configure Monitoring Session Options for more detailed information. NOTE: Traffic Acquisition is only applicable for Monitoring Domain created with UCT-V as Acquisition method.
Traffic Processing	You can view, add, and configure applications, tunnel endpoints, raw endpoints, and maps. You can view the statistical data for individual applications and also apply threshold template, enable user defined applications, and enable or disable distributed De-duplication. Refer to Configure Monitoring Session Options for more detailed information.
V Series Nodes	You can view the V Series nodes associated with the Monitoring Session. In the split view, you can view details such as name of the V Series Node, health status, deployment status, Host VPC, version, and Management IP. You can also change the interfaces mapped to an individual GigaVUE V Series Node. Refer to Interface Mapping section for details.

The Monitoring Session page **Actions** button has the following options. The Actions menu is placed common in all the tabs explained above.

Button	Description
Delete	Deletes the selected Monitoring Session.
Clone	Duplicates the selected Monitoring Session.
Deploy	Deploys the selected Monitoring Session.
Undeploy	Undeploys the selected Monitoring Session.

You can use the  icon on the left side of the Monitoring Session page to view the Monitoring Sessions list. Click  to filter the Monitoring Sessions list. In the side bar, you can perform the following bulk actions by selecting a single or multiple Monitoring Sessions:

- Delete
- Deploy
- Undeploy

Configure Monitoring Session Options

In the Monitoring Session page, you can perform the following actions in the **TRAFFIC PROCESSING** tab.

- Apply Threshold Template
- Enable User-defined applications

- Enable Distributed De-duplication

To navigate to **TRAFFIC PROCESSING** tab, follow the steps given below:

1. Go to **Traffic > Virtual > Orchestrated Flows > Select your cloud platform**.
2. Select a Monitoring Session from the Monitoring Sessions list view on the left side of the screen and click **TRAFFIC PROCESSING** tab.

You can perform the following actions in the **TRAFFIC PROCESSING** page:

Apply Threshold Template

To apply threshold, follow the steps given below:

1. In the Monitoring Session **TRAFFIC PROCESSING** page, select **Thresholds** under **Options** menu.
2. Select the template you wish to apply from the drop-down. Click **Apply**. Refer to [Traffic Health Monitoring](#) section for more details on Threshold Template.

Enable User Defined Applications

To enable user defined application, follow the steps given below:

1. In the Monitoring Session **TRAFFIC PROCESSING** page, click **User Defined Applications** under **Options** menu.
2. Enable the **User-defined Applications** toggle button. Refer to [User Defined Application](#) section in the GigaVUE V Series Applications Guide for more detailed information.

Enable Distributed De-duplication

Enabling the "Distributed De-duplication" option identifies duplicate packets across different GigaVUE V Series Nodes when traffic from various targets is routed to these instances for monitoring. Refer to [Distributed De-duplication](#) section for more details.



Notes:


- Distributed De-duplication is only supported on V Series version 6.5.00 and later.
- From version 6.9, Traffic Distribution option is renamed to Distributed De-duplication.

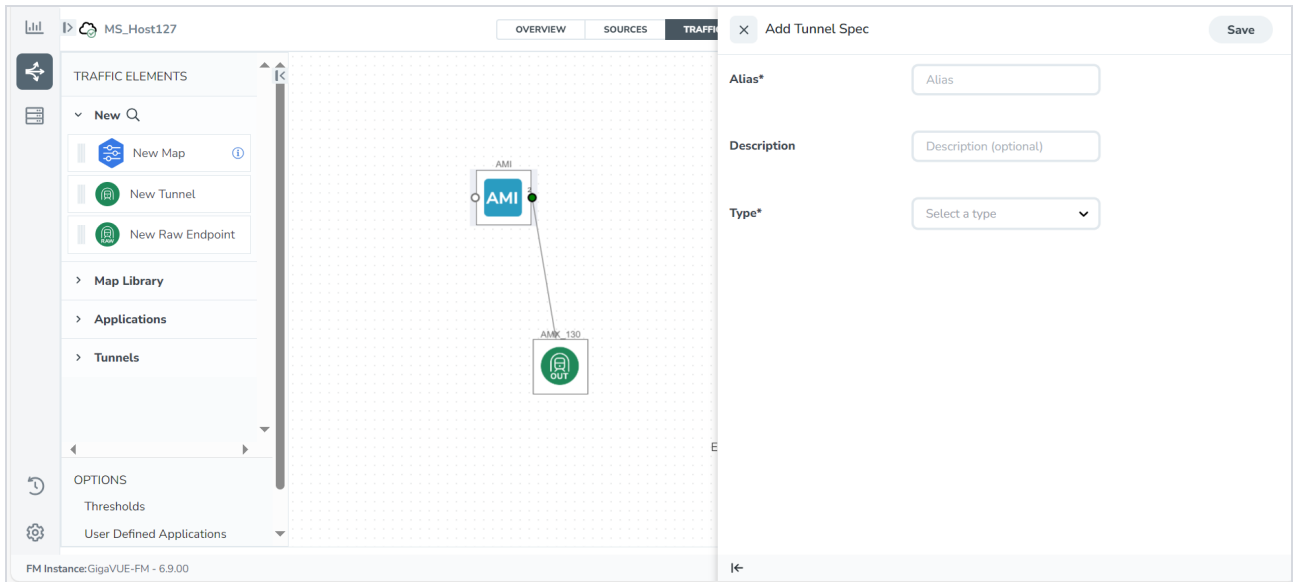
Create Ingress and Egress Tunnel (VMware NSX-T)

Traffic from the GigaVUE V Series Node is distributed to tunnel endpoints in a monitoring session. A tunnel endpoint can be created using a standard L2GRE, VXLAN, UDPGRE, or ERSPAN tunnel.

NOTE: GigaVUE-FM allows you to configure ingress Tunnels in the Monitoring Session, when the **Traffic Acquisition Method** is UCT-V.

To create a new tunnel endpoint:

1. After creating a new Monitoring Session or on an existing Monitoring Session, navigate to the **TRAFFIC PROCESSING** tab. The GigaVUE-FM Monitoring Session canvas page appears.
2. In the canvas, click the  icon on the left side of the page to view the traffic processing elements. Select **New > New Tunnel**, drag and drop a new tunnel template to the workspace. The **Add Tunnel Spec** quick view appears.



3. On the New Tunnel quick view, enter or select the required information as described in the following table.

Field	Description	
Alias	The name of the tunnel endpoint.	
Description	The description of the tunnel endpoint.	
Admin State	<p>Use this option to send or stop the traffic from GigaVUE-FM to the egress tunnel endpoint. Admin State is enabled by default.</p> <p>You can use this option to stop sending traffic to unreachable tools or tools that are in a down state. Each egress tunnel configured on the GigaVUE V Series Node has an administrative state that enables GigaVUE-FM to halt the tunnel's traffic flow. The tunnels will only be disabled by GigaVUE-FM when it receives a notification via REST API indicating that a tool or group of tools is down.</p> <p>NOTE: This option is not supported for TLS-PCAPNG tunnels.</p>	
Type	The type of the tunnel. Select from the below options to create a tunnel. ERSPAN, L2GRE, VXLAN, TLS-PCAPNG, UDP, or UDPGRE.	
VXLAN		
Traffic Direction		
The direction of the traffic flowing through the GigaVUE V Series Node.		
<p>NOTE: In the scenario where secure tunnels need to be established between a GigaVUE V Series Node and a GigaVUE HC Series, you can utilize the Configure Physical Tunnel option provided in the GigaVUE V Series Secure Tunnel page. This allows you to conveniently configure secure tunnels on your physical device. Refer to the Secure Tunnels section.</p>		
In	Choose In (Decapsulation) for creating an ingress tunnel, which will carry traffic from the source to the GigaVUE V Series Node.	
	IP Version	The version of the Internet Protocol. Select IPv4 or IPv6.
	Remote Tunnel IP	For ingress tunnel, the Remote Tunnel IP is the IP address of the tunnel source.
	VXLAN Network Identifier	Unique value which is used to identify the VXLAN. The value ranges from 1 to 16777215.
	Source L4 Port	The port from which the connection will be established to the target. For example, if A is the source and B is the destination, this port value belongs to A.
	Destination L4 Port	The port to which the connection will be established from the source. For example, if A is the source and B is the destination, this port value belongs to B.
Out	Choose Out (Encapsulation) for creating an egress tunnel from the GigaVUE V Series Node to the destination endpoint.	
	Remote Tunnel IP	For egress tunnel, the Remote Tunnel IP is the IP address of the tunnel destination endpoint.
	MTU	The Maximum Transmission Unit (MTU) is the maximum size of each packet that the tunnel endpoint can carry. The default value is 1500.

Field	Description	
	Time to Live	Enter the value of the time interval for which the session needs to be available. The value ranges from 1 to 255. The default value is 64.
	DSCP	Differentiated Services Code Point (DSCP) is a value that network devices use to identify traffic to be handled with higher or lower priority. The values ranges from 0 to 63 with 0 being the highest priority and 63 being the lowest priority.
	Flow Label	Unique value, which is used to identify packets that belong to the same flow. A flow is a sequence of packets that need to be treated as a single entity that may require special handling. The accepted value is between 0 and 1048575.
	VXLAN Network Identifier	Unique value which is used to identify the VXLAN. The value ranges from 1 to 16777215.
	Source L4 Port	The port from which the connection will be established to the target. For example, if A is the source and B is the destination, this port value belongs to A.
	Destination L4 Port	The port to which the connection will be established from the source. For example, if A is the source and B is the destination, this port value belongs to B.
UDPGRE		
Traffic Direction		
The direction of the traffic flowing through the GigaVUE V Series Node.		
In	Choose In (Decapsulation) for creating an ingress tunnel, which will carry traffic from the source to the GigaVUE V Series Node.	
	IP Version	The version of the Internet Protocol. Select IPv4 or IPv6.
	Remote Tunnel IP	For ingress tunnel, the Remote Tunnel IP is the IP address of the tunnel source.
	Key	Identifier used to differentiate different UDPGRE/L2GRE tunnels. It is used to route the encapsulated frames to the appropriate tunnel on the remote endpoint. Enter a value between 0 and 4294967295.
	Source L4 Port	The port from which the connection will be established to the target. For example, if A is the source and B is the destination, this port value belongs to A.
	Destination L4 Port	The port to which the connection will be established from the source. For example, if A is the source and B is the destination, this port value belongs to B.
L2GRE		
Traffic Direction		
The direction of the traffic flowing through the GigaVUE V Series Node.		
<p>NOTE: In the scenario where secure tunnels need to be established between a GigaVUE V Series and a GigaVUE HC Series, you can utilize the Configure Physical Tunnel option provided in the GigaVUE V Series Secure Tunnel page. This allows you to conveniently configure secure tunnels on your physical</p>		

Field	Description	
device . Refer to the Secure Tunnels section.		
In	Choose In (Decapsulation) to create an ingress tunnel, which will carry traffic from the source to the GigaVUE V Series Node.	
	IP Version	The version of the Internet Protocol. Select IPv4 or IPv6.
	Remote Tunnel IP	For ingress tunnel, the Remote Tunnel IP is the IP address of the tunnel source.
	Key	Identifier used to differentiate different UPDGRE/L2GRE tunnels. It is used to route the encapsulated frames to the appropriate tunnel on the remote endpoint. Enter a value between 0 and 4294967295.
Out	Choose Out (Encapsulation) for creating an egress tunnel from the V Series Node to the destination endpoint.	
	Remote Tunnel IP	For egress tunnel, the Remote Tunnel IP is the IP address of the tunnel destination endpoint.
	MTU	The Maximum Transmission Unit (MTU) is the maximum size of each packet that the tunnel endpoint can carry. The default value is 1500.
	Time to Live	Enter the value of the time interval for which the session needs to be available. The value ranges from 1 to 255. The default value is 64.
	DSCP	Differentiated Services Code Point (DSCP) is a value that network devices use to identify traffic to be handled with higher or lower priority. The values ranges from 0 to 63 with 0 being the highest priority and 63 being the lowest priority.
	Flow Label	Unique value, which is used to identify packets that belong to the same flow. A flow is a sequence of packets that need to be treated as a single entity that may require special handling. The accepted value is between 0 and 1048575.
	Key	Identifier used to differentiate different UPDGRE/L2GRE tunnels. It is used to route the encapsulated frames to the appropriate tunnel on the remote endpoint. Enter a value between 0 and 4294967295.
ERSPAN		
Traffic Direction		
The direction of the traffic flowing through the GigaVUE V Series Node.		
In	IP Version	The version of the Internet Protocol. Select IPv4 or IPv6.
	Remote Tunnel IP	For ingress tunnel, the Remote Tunnel IP is the IP address of the tunnel source.
	Flow ID	The ERSPAN flow ID is a numerical identifier that distinguishes different ERSPAN sessions or flows. The value ranges from 1 to 1023.
TLS-PCAPNG		
Traffic Direction		

Field	Description	
	The direction of the traffic flowing through the GigaVUE V Series Node.	
	<p>NOTE: In the scenario where secure tunnels need to be established between a GigaVUE V Series and a GigaVUE HC Series, you can utilize the Configure Physical Tunnel option provided in the GigaVUE V Series Secure Tunnel page. This allows you to conveniently configure secure tunnels on your physical device. Refer to the Secure Tunnels section.</p>	
In	IP Version	The version of the Internet Protocol. Only IPv4 is supported.
	Remote Tunnel IP	For ingress tunnel, the Remote Tunnel IP is the IP address of the tunnel source.
	MTU	The Maximum Transmission Unit (MTU) is the maximum size of each packet that the tunnel endpoint can carry. The default value is 1500.
	Source L4 Port	The port from which the connection will be established to the target. For example, if A is the source and B is the destination, this port value belongs to A.
	Destination L4 Port	The port to which the connection will be established from the source. For example, if A is the source and B is the destination, this port value belongs to B.
	Key Alias	Select the Key Alias from the drop-down.
	Cipher	Only SHA 256 is supported.
	TLS Version	Only TLS Version 1.3.
	Selective Acknowledgments	Enable to receive the acknowledgments.
	Sync Retries	Enter the number of times the sync has to be tried. The value ranges from 1 to 6.
	Delay Acknowledgments	Enable to receive the acknowledgments when there is a delay.

Field	Description	
Out	IP Version	The version of the Internet Protocol. Only IPv4 is supported.
	Remote Tunnel IP	For ingress tunnel, the Remote Tunnel IP is the IP address of the tunnel source.
	MTU	The Maximum Transmission Unit (MTU) is the maximum size of each packet that the tunnel endpoint can carry. The default value is 1500.
	Time to Live	Enter the value of the time interval for which the session needs to be available. The value ranges from 1 to 255. The default value is 64.
	DSCP	Differentiated Services Code Point (DSCP) is a value that network devices use to identify traffic to be handled with higher or lower priority. The values ranges from 0 to 63 with 0 being the highest priority and 63 being the lowest priority.
	Flow Label	Unique value which is used to identify packets that belong to the same flow. A flow is a sequence of packets that need to be treated as a single entity that may require special handling. The accepted value is between 0 and 1048575.
	Source L4 Port	The port from which the connection will be established to the target. For example, if A is the source and B is the destination, this port value belongs to A.
	Destination L4 Port	The port to which the connection will be established from the source. For example, if A is the source and B is the destination, this port value belongs to B.
	Cipher	Only SHA 256 is supported.
	TLS Version	Only TLS Version 1.3.
	Selective Acknowledgments	Enable to receive the acknowledgments.
	Sync Retries	Enter the number of times the sync has to be tried. The value ranges from 1 to 6.
Delay Acknowledgments	Enable to receive the acknowledgments when there is a delay.	
UDP:		
Out	L4 Destination IP Address	Enter the IP address of the tool port or when using Application Metadata Exporter (AMX), enter the IP address of the AMX application. Refer to Application Metadata Exporter for more detailed information.
	Source L4 Port	The port from which the connection will be established to the target. For example, if A is the source and B is the destination, this port value belongs to A.
	Destination L4 Port	The port to which the connection will be established from the source. For example, if A is the source and B is the destination, this port value belongs to B.

4. Click **Save**.

To delete a tunnel, select the required tunnel and click **Delete**.

To apply a threshold template to Tunnel End Points, select the required tunnel end point on the canvas and click **Details**. The quick view appears, click on the Threshold tab. For more details on how to create or apply a threshold template, refer to the *Monitor Cloud Health* topic in the respective GigaVUE Cloud Suite Guides.

Tunnel End Points configured can also be used to send or receive traffic from GigaVUE HC Series and GigaVUE TA Series. Provide the IP address of the GigaVUE HC Series and GigaVUE TA Series as the Source or the Destination IP address as required when configuring Tunnel End Points.

After configuring the tunnels and deploying the Monitoring Session, you can view the number of ingress and egress tunnels configured for a Monitoring Session. Click on the numbers of tunnels displayed to view the tunnel names and their respective **ADMIN STATUS** and **HEALTH STATUS**.

Tunnel End Points created will be listed in the **Tunnel Specifications** page. You can create, edit, and delete tunnel end point from this page. Refer to [Create Tunnel Specifications](#) for more detailed information on how to create tunnel end points.

Create Raw Endpoint (VMware NSX-T)

This section provides step-by-step instructions on configuring a RAW Endpoint (REP) in the Monitoring Session.

Refer to the below sections for more detailed information:

- [Rules and Notes](#)
- [Create Raw Endpoint \(VMware NSX-T\)](#)
- [Configure Raw Endpoint in Monitoring Session](#)
- [Configuration Support for Non IP-Addressable \(I2 supported\) Tools](#)

Rules and Notes

- When using VMware NSX-T, Monitoring session supports only egress RAW Endpoint.
- REP is not supported on NSX Segments, you can use Virtual Standard Switch (VSS) port group to configure REPs.
- GigaVUE-FM expects the IP address to be configured on the GigaVUE V Series Node interface which will be used for creating RAW Endpoint (REP).

Points to Note:

Refer to the following table for more detailed information on the number of interfaces, their roles for the GigaVUE V Series Nodes deployed in the Monitoring Domain.

Display Name	Interface Name	Role	Comments
Network Adapter 1	ens160	Management	-
Network Adapter 2	ens192	Tunnel	Supports Tunnel and Egress RAW endpoint.
Network Adapter 3	ens224	Data	Reserved and used by NSX-T for Service Insertion (Traffic Acquisition)

Configure Raw Endpoint in Monitoring Session

Raw End Point (REP) is used to pass traffic from an interface. REP is used to ingress data from a physical interface attached to GigaVUE V Series Nodes. You can optionally use this end point to send traffic to the applications deployed in the monitoring session.

To add Raw Endpoint to the monitoring session:

1. Drag and drop **New Raw Endpoint** from **NEW** to the graphical workspace.
2. Click the new raw icon and select **Details**. The **Raw** quick view page appears.
3. Enter the alias and description. In the **Alias** field, enter a name for the Raw End Point and click **Save**.
4. To deploy the monitoring session after adding the Raw Endpoint click the **Deploy** from the **Actions** drop-down menu on the Monitoring Session page.
5. The **Select nodes to deploy the Monitoring Session** dialog box appears. Select the V Series Nodes for which you wish to deploy the monitoring session.
6. After selecting the V Series Node, select the interfaces for each of the REPs and the TEPs deployed in the monitoring session from the drop-down menu for the selected individual V Series Nodes. Then, click **Deploy**.

Configuration Support for Non IP-Addressable (I2 supported) Tools

Follow the steps given below to deliver RAW traffic to tools or sensors that do not have IP address support:

1. Create a Virtual Standard Switch (VSS) with the details given below. No uplink is required (and hence no physical NIC is required).
2. Create two port groups on the vSwitch created in the previous step:
 - a. Create a port group (For example, EgressPortgroup for GigaVUE V Series Node to egress RAW packets)
 - b. Create a port group (IngressPortgroup) with promiscuous mode enabled for mirroring the packets.

NOTE: Refer to [Port Group Configuration for Virtual Machines](#) section in the VMware Documentation for more detailed information on how to create a VSS and how to configure the port groups.

3. Connect the tool or sensor interface to IngressPortgroup.



NOTE:

- The sensor or tool should be deployed on the same host where the GigaVUE V Series Node is deployed.
- The GigaVUE V Series Node should be deployed using Host Based Deployment. Refer to [Deploy GigaVUE V Series Nodes using GigaVUE-FM](#) for more detailed information on how to deploy GigaVUE V Series Node using Host Based deployment type.

4. Deploy GigaVUE V Series Node on the ESXi host where the tool or sensor is deployed.
5. Select EgressPortgroup for the GigaVUE V Series Node Tunnel Interface (Network Adapter 2 or ens192) while deploying the GigaVUE V Series Node.
6. Deploy Monitoring Session with RAW Endpoint for egress and then select ens192 as the interface during interface mapping step as in the [Configure Raw Endpoint in Monitoring Session](#).

NOTE: Promiscuous mode Port Group will mirror the entire switch traffic


Create a New Map

For new users, the free trial bundle will expire after 30 days, and the GigaVUE-FM prompts you to buy a new license. For licensing information, refer to *GigaVUE Licensing Guide*.


A map is used to filter the traffic flowing through the GigaVUE V Series Nodes. It is a collection of one or more rules (R). The traffic passing through a map can match one or more rules defined in the map.

Keep in mind the following when creating a map:


Parameter	Description
Rules	A rule (R) contains specific filtering criteria that the packets must match. The filtering criteria lets you determine the targets and the (egress or ingress) direction of tapping the network traffic.
Priority	Priority determines the order in which the rules are executed. The priority value can range from 1 to 5, with 1 being the highest and 5 is the lowest priority.
Pass	The traffic from the virtual machine will be passed to the destination.
Drop	The traffic from the virtual machine is dropped when passing through the map.
Traffic Filter Maps	A set of maps that are used to match traffic and perform various actions on the matched traffic.
Inclusion Map	An inclusion map determines the instances to be included for monitoring. This map is used only for target selection.

Exclusion Map	An exclusion map determines the instances to be excluded from monitoring. This map is used only for target selection.
Automatic Target Selection (ATS)	<p>A built-in feature that automatically selects the cloud instances based on the rules defined in the traffic filter maps, inclusion maps, and exclusion maps in the Monitoring Session.</p> <p>The below formula describes how ATS works:</p> <p>Selected Targets = Traffic Filter Maps \cap Inclusion Maps - Exclusion Maps</p> <p>Below are the filter rule types that work in ATS:</p> <ul style="list-style-type: none"> mac Source mac Destination ipv4 Source ipv4 Destination ipv6 Source ipv6 Destination VM Name Destination VM Name Source VM Tag Destination - Not applicable to Nutanix. VM Tag Source - Not applicable to Nutanix. VM Category Source - Applicable only to Nutanix VM Category Destination - Applicable only to Nutanix. Host Name -Applicable only to Nutanix and VMware. <p>The traffic direction is as follow:</p> <ul style="list-style-type: none"> For any rule type as Source - the traffic direction is egress. For Destination rule type - the traffic direction is ingress. For Hostname - As it doesn't have Source or Destination rule type, the traffic direction is Ingress and Egress. <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p> Notes:</p> <ul style="list-style-type: none"> For OpenStack environment, Subnet Name Source and Subnet Name Destination are the exclusion filters available as part of Exclusion Maps with Traffic Acquisition method as OVS Mirroring in the Monitoring Domain. If no ATS rule filters listed above are used, all VMs and vNICs are selected as targets. When any ATS rule results in a null set, no target is selected and V Series Node does not receive traffic from any VM or vNIC. </div>
Group	A group is a collection of maps that are pre-defined and saved in the map library for reuse.


To create a new map:

1. After creating a new Monitoring Session, or on an existing Monitoring Session, navigate to the **TRAFFIC PROCESSING** tab. The GigaVUE-FM Monitoring Session canvas appears.
2. In the canvas, click on the  icon expand icon on the left side of the page to view the traffic processing elements. Select **New > New Map**, drag and drop a new map template to the workspace. The New Map quick view appears.
3. On the New Map quick view, click on **General** tab and enter the required information as described in the following table:

Field	Description
Name	Name of the new map
Description	Description of the map

 Pass and Drop rule selection with Automatic Target Selection (ATS) differ with the Map type as follows:

- Traffic Map—Only Pass rules for ATS
- Inclusion Map—Only Pass rules for ATS
- Exclusion Map—Only Drop rules for ATS

4. Click on **Rule Sets** tab. Through the map, packets can be dropped or passed based on the highest to lowest rule priority. You can add 5 rule sets on a map. Use the + and - buttons to add or remove a rule set in the map. Each rule set can have only 25 rules per map and each rule can have a maximum of 4 conditions. To add ATS rules for an Inclusion/Exclusion map, you must select at least one rule condition. Refer to [Example-Create a New Map using Inclusion and Exclusion Maps](#) for more detailed information on how to configure Inclusion and Exclusion maps using ATS.
 - a. **To create a new rule set:**
 - i. Click **Actions > New Rule Set**.
 - ii. Enter a **Priority** value from 1 to 5 for the rule with 1 being the highest and 5 is the lowest priority.
 - iii. Enter the Application Endpoint in the Application EndPoint ID field.
 - iv. Select a required condition from the drop-down list.
 - v. Select the rule to **Pass** or **Drop** through the map.
 - b. **To create a new rule:**
 - i. Click **Actions > New Rule**.
 - ii. Select a required condition from the drop-down list. Click  and select **Add Condition** to add more conditions.
 - iii. Select the rule to **Pass** or **Drop** through the map.
5. Click **Save**.

NOTE: If a packet is fragmented then all the fragments will be destined to the same application end point. You can find the stats of mapped fragmented traffic in GigaVUE-FM. Refer to "Review Map Statistics with Map Rule Counters" section in *GigaVUE Fabric Management Guide* for detailed information.

To edit a map, select the map and click **Details**, or click **Delete** to delete the map.

To apply threshold template to maps, select the required map on the canvas and click **Details**. The quick view appears, click on the Thresholds tab. For more details on how to create or apply threshold templates, refer to [Traffic Health Monitoring](#).

Rules and Notes:

- Directional rules do not work on single NIC VMs that are running a Windows UCT-V.
- Loopback captures bidirectional traffic from both ingress and egress. To prevent duplicate tapping, only egress tapping is permitted.
- If you are running GigaVUE Cloud Suite on OpenStack, you can add a subnet to the exclusion map. To do this, create an exclusion map and select the Subnet name in the ruleset.

Example- Create a New Map using Inclusion and Exclusion Maps

Consider a Monitoring Session with 5 cloud instances. Namely target-1-1, target-1-2, target-1-3, target-2-1, target-2-2.

1. Drag and drop a new map template to the workspace. The New map quick view appears.
2. In the **GENERAL** tab, enter the name as Map 1 and enter the description. In the **RULESETS** tab, enter the priority and Application Endpoint ID.
3. Select the condition as VM Name and enter the **target**. This includes the instances target-1-1, target-1-2, target-1-3, target-2-1, and target-2-2.
4. Click on the Expand icon at the bottom of the Monitoring session canvas. The Inclusion Maps and Exclusion Maps section appears.
5. Drag and drop a new map template to the Inclusion Maps region. The New Map quick view appears. Enter the Name and Description of the map.
 - a. In the **GENERAL** tab, enter the name as Inclusionmap1 and enter the description. In the **RULESETS**, enter the priority and Application Endpoint ID.
 - b. Select the condition as VM Name and enter the VM Name as **target-1**. Then the instance with VM name **target-1-1**, **target-1-2**, and **target-1-3** will be included.

6. Drag and drop a new map template to the Exclusion Maps region. The New Map quick view appears. Enter the details as mentioned in the above section.
 - a. In the **GENERAL** tab, enter the name as Exclusionmap1 and enter the description. In the **RULESETS** tab, enter the priority and Application Endpoint ID.
 - b. Select the condition as VM Name and enter the VM Name as **target-1-3**. Then the instance **target-1-3** will be excluded.

Based on this configuration, the Automatic Target Selection will select the instances target-1-1 and target-1-2 as target.

Map Library

To reuse a map,

1. In the Monitoring Session page, click **TRAFFIC PROCESSING**. The GigaVUE-FM canvas page appears.
2. Click the map you wish to save as a template. Click **Details**. The Application quick view appears.
3. Click **Add to Library**. Select an existing group from the **Select Group** list or create a **New Group** with a name.
4. Enter a description in the **Description** field, and click **Save**.

The Map is saved to the **Map Library** in the **TRAFFIC PROCESSING** canvas page. This map can be used from any of the Monitoring Session. To reuse the map, drag and drop the saved map from the Map Library.

Add Applications to Monitoring Session

GigaVUE Cloud Suite with GigaVUE V Series Node supports the following GigaSMART applications in the GigaVUE-FM canvas:

- Application Visualization
- Application Filtering Intelligence
- Application Metadata Intelligence
- Slicing
- Masking
- De-duplication
- Load Balancing
- PCAPng Application
- GENEVE Decap
- Header Stripping
- Application Metadata Exporter

- SSL Decrypt
- GigaSMART NetFlow Generation
- 5G-Service Based Interface Application
- 5G-Cloud Application

For more detailed information on how to configure these application, refer to *GigaVUE V Series Applications Guide*.

Interface Mapping

You can change the interface of individual GigaVUE V Series Nodes deployed in a Monitoring Session. After deploying the Monitoring Session, if you wish to change the interfaces mapped to an individual GigaVUE V Series Node, you can use the **Interface Mapping** button to map the interface to the respective GigaVUE V Series Nodes. To perform interface mapping:

1. Go to **Traffic > Virtual > Orchestrated Flows** and select your cloud platform. The **Monitoring Sessions** landing page appears.
2. Navigate to **V SERIES NODES** tab and click **Interface Mapping**.
3. The **Deploy Monitoring Session** dialog box appears. Select the GigaVUE V Series Nodes for which you wish to map the interface.
4. After selecting the GigaVUE V Series Node, select the interfaces for each of the REPs and the TEPs deployed in the Monitoring Session from the drop-down menu for the selected individual GigaVUE V Series Nodes. Then, click **Deploy**.

NOTE: When using Raw and Tunnel In, Interface Mapping is mandatory before you deploy the Monitoring Session.

Deploy Monitoring Session

To deploy the Monitoring Session:

1. Drag and drop the following items to the canvas as required:
 - Ingress tunnel (as a source) from the **New** section
 - Maps from the **Map Library** section
 - Inclusion and Exclusion maps from the Map Library to their respective section at the bottom of the workspace.
 - GigaSMART apps from the **Applications** section
 - Egress tunnels from the **Tunnels** section

2. After placing the required items in the canvas, hover your mouse on the map, click the red dot, and drag the arrow over to another item (map, application, or tunnel).

NOTE: You can drag multiple arrows from a single map and connect them to different maps.

3. (Not applicable for NSX-T solution and Customer Orchestrated Source as Traffic Acquisition Method) Click **SOURCES** tab to view details about the subnets and monitored instances.
4. Click **Deploy** from the **Actions** menu to deploy the Monitoring Session. The status is displayed as **Success** in the Monitoring Sessions page. The session is successfully deployed on all the V Series Nodes.
5. You can view the Monitoring Session Deployment Report in the **SOURCES** and **V SERIES NODES** tab. When you click on the Status link, the Deployment Report is displayed. If the Monitoring Session is not deployed properly, then one of the following errors is displayed in the Status column.
 - Success—The session is not deployed on one or more instances due to V Series Node failure.
 - Failure—The session is not deployed on any of the V Series Nodes or Instances. The **Monitoring Session Deployment Report** displays the errors that appeared during deployment.

View Monitoring Session Statistics

The Monitoring Session **OVERVIEW** page lets you analyze the incoming and outgoing traffic on an hourly, daily, weekly, and monthly basis.

You can view the high level information of the selected Monitoring Session such as, connections, tunnel details, health status, deployment status, and information related to Application Intelligence statistics. You can view the detailed statistics of an individual traffic processing element in the **TRAFFIC PROCESSING** tab.

You can view the statistics by applying different filters as per the requirements of analyzing the data. GigaVUE-FM allows you to perform the following actions on the Monitoring Session Statistics page:

- You can view the incoming and outgoing traffic on an hourly, daily, weekly, and monthly basis.
- You can filter the traffic and view the statistics based on factors such as **Incoming, Outgoing, Ratio (Out/In), Incoming Packets, Outgoing Packets, Ratio (Out/In) Packets**. You can select the options from the drop-down list box in the **TOTAL TRAFFIC** section of the **OVERVIEW** page.
- You can also view the statistics of the Monitoring Session deployed in the individual V Series Nodes. To view the statistics of the individual GigaVUE V Series Node, select the

name of the **V Series Node** for which you want to view the statistics from the GigaVUE V Series Node drop-down list on the bottom left corner of the **OVERVIEW** page.



Raw EndPoint (REP) is a part of the monitoring session but can also receive the bypassed traffic that is not filtered by the map, so it is recording more packets than expected. For example, if the map has a rule as IPv4, but the REP can receive the bypassed (non-ipv4) traffic. The recorded number of packets from the V Series node can be more than expected.

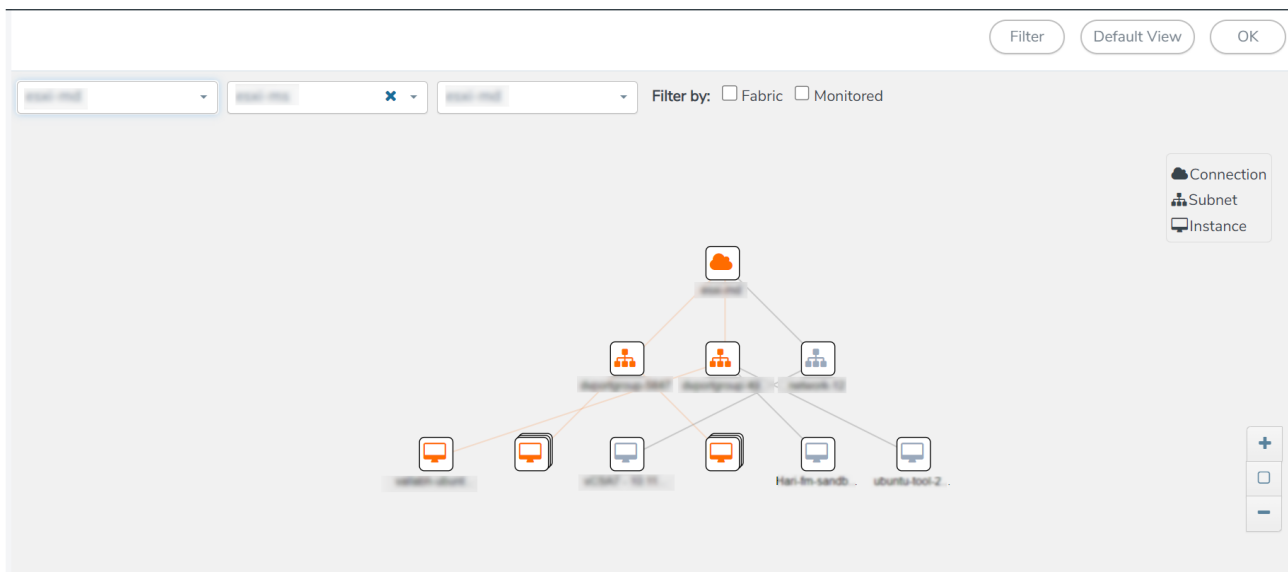
Visualize the Network Topology

Visualize the Network Topology

You can have multiple connections in GigaVUE-FM. Each connection can have multiple monitoring sessions configured within them. You can select the connection and the monitoring session to view the selected subnets and instances in the topology view.

To view the topology diagram in GigaVUE-FM:

1. On the Monitoring Session page, select **Topology** tab. The Topology page appears.
2. Select a monitoring domain from the **Select monitoring domain...** list.
3. Select a connection from the **Select monitoring session...**list.
4. Select a monitoring session from the **Select connection...** list. The topology view of the monitored subnets and instances in the selected session are displayed.



- (Optional) Hover over or click the subnet or VM Group icons to view the subnets or instances present within the group.

In the topology page, you can also do the following:

- Use the **Filter** button to filter the instances based on the VM name, VM IP, Subnet ID, or Subnet IP, and view the topology based on the search results.
- Use the **Default View** button to view the topology diagram based on the source interfaces of the monitoring instances.
- Use the arrows at the right-bottom corner to move the topology page up, down, left, or right. Click the **Fit-to-Width** icon to fit the topology diagram according to the width of the page.
- Use **+** or **-** icons to zoom in and zoom out the topology view.

Create Service Chain and NSX-T Group

A VMware NSX-T group and service chain must be created to redirect network traffic to the GigaVUE Cloud Suite. A VMware NSX-T group defines which VMs are to be monitored. The service chain associates the GigaVUE Cloud Suite and maps the profile to the group.

Create Service Chain

The steps presented in this section create a service chain with the source virtual machines defined as the virtual machines in the applied groups. Additional configurations of the service chain are available. For additional details on creating security policies, refer to the

“Service Composer” chapter of the *NSX Administration Guide* in the VMware documentation.

To create the service chain in VMware NSX-T:

1. Select **Security > Settings > Network Introspection** and then click **SERVICE CHAINS** tab.
2. On the SERVICE CHAINS tab, click **ADD CHAIN**.
3. On the New Service Chain, do the following:
 - a. In the **Name** and **Description** fields, enter a name and description for the service chain, respectively.
 - b. For **Service Segments**, select a service segment.
 - c. Click **Forward Path** and a **Set Forward Path** dialog box appears.
 - Select a Service Profile for Forward Path.
 - d. For the **Reverse Path**, select or deselect the **Inverse Forward Path** to define the direction of the traffic.
 - e. For **Failure Policy**, specify whether to allow or block the service chain.
4. Click **Save**. A Service Chain is created.

Create Group

A group should be created that contains the VMs to forward NSX-T network traffic to the GigaVUE Cloud Suite.

To create the group, do the following in the NSX-T:

1. In the VMware NSX manager, select **Inventory > Groups**. The Groups page appears.
2. On the Groups page, click **ADD GROUP**.
3. On the New Group, enter or select the values as follows.
 - a. Enter a name for the new group.
 - b. Click **Set Members** and the **Select Members** dialog box appears.
4. Click **Save** and then a group is created and appears on the **Groups** page.
 - Add or select Membership Criteria, Members, IP/MAC Addresses, and AD Groups.
 - a. Enter the description for the group.

Create and Publish a Policy

A Policy is a set of rules defined to filter the traffic. A Policy is to be created and published for passing the traffic from NSX-T to the configured tunnel endpoint.

To create and publish a policy in NSX-T:

1. In the VMware NSX manager, select **Security > Service Chain Management > Network Introspection (E-W)**.
2. Click **ADD POLICY**.
3. On the New Policy, enter or select the values as follows:
 - a. Enter a name for the policy.
 - b. Select the **Sources** of the traffic.
 - c. Select the **Destinations** of the traffic.
 - d. Select the **Services** for the traffic.
 - e. For the **Applied To** field, select the appropriate groups.



Points to Note:

- When using the same NSX-T manager to create multiple Monitoring Domains, if you prefer to associate a single vCenter with each Monitoring Domain, ensure that you select only the members of the vCenter related to that specific Monitoring Domain.
- All the workload VMs from the vCenters that are selected in the **Applied To** group will send traffic to the GigaVUE V Series Node. Ensure to select only the workload VMs from the vCenters that are associated with the Monitoring Domain, else the GigaVUE V Series Node will receive traffic from the vCenters that are not associated with the Monitoring Domain.

- f. On the **Action** field, specify whether to redirect the traffic or not.
4. Click **Publish**. On publishing the rule or policy you can view the traffic flow from the GigaVUE V Series Nodes to the tunnel endpoint.

Migrate Application Intelligence Session to Monitoring Session

Starting from Software version 6.5.00, Application Intelligence solution can be configured from Monitoring Session Page. After upgrading to 6.5.00, you cannot create a new Application Intelligence Session or edit an existing Application Intelligence Session for virtual environment from the **Application Intelligence** page. The following operations can only be performed using the existing Application Intelligence Session:

- View Details
- Delete
- Forced Delete

It is highly recommended to migrate the existing sessions to Monitoring Session for full functionality. GigaVUE-FM will migrate all your virtual Application Intelligence sessions and their connections seamlessly. All sessions will be rolled back to their original states if the migration fails.



Points to Note:

- You must be a user with write access for the **Traffic Control Management** Resource in GigaVUE-FM to perform this migration. Refer to Create Roles section In GigaVUE Administration Guide for more detailed information on how to configure roles with write access for the Traffic Control Management resource.
- If any of the existing Application Intelligence Session is in PENDING or SUSPENDED, then the migration will not be triggered. Resolve the issue and start the migration process.
- If any of the existing Application Intelligence Session is in FAILED state due to incorrect configuration, then the migration will not be triggered. Resolve the issue and start the migration process.
- If an existing Monitoring Session has a same name as the Application Intelligence Session, then the migration will not be triggered. Change the existing Monitoring Session name to continue with the migration process.
- If any of the existing Application Intelligence Session has Application Filtering configured with Advanced Rules as Drop Rule and No Rule Match Pass All in the 5th rule set, you cannot continue with the migration. In the Monitoring Session either only Pass All or Advanced Rules as Drop is supported in the fifth Rule Set. Please delete this session and start the migration.
- When migrating the Application Intelligence Session, in rare scenarios, the migration process might fail after the pre-validation. In such cases, all the Application Intelligence Session roll back to the Application Intelligence page. Contact Technical Support for migrating the Application Intelligence Session in these scenarios.

To migrate your existing Application Intelligence Session to Monitoring Session Page, follow the steps given below:

1. On the left navigation pane, select **Traffic > Solutions > Application Intelligence**. You cannot create a new Application Intelligence Session from this page.
2. When you have an existing virtual Application Intelligence Session in the above page, the **Migrate Virtual Application Intelligence** dialog box appears.
3. Review the message and click **Migrate**.
4. The **Confirm Migration** dialog box appears. The list Application Intelligence Session that will be migrated appears here.
5. Review the message and click **Migrate**.
6. GigaVUE-FM checks for the requirements and then migrates the Application

Intelligence Sessions to the Monitoring Session Page.

7. Click on the **Go to Monitoring Session Page** button to view the Application Intelligence Session that are migrated to the monitoring session page.

All the virtual Application Intelligence Sessions in the Application Intelligence page is migrated to the Monitoring Session Page.

Post Migration Notes for Application Intelligence

After migrating Application Intelligence session to Monitoring Session page, you must consider the following things:

1. If you wish to enable Secure tunnels after migrating the Application Intelligence Session, follow the steps given below.
 - a. Go to **Traffic > Virtual > Orchestrated Flows > Select your cloud platform**.
 - b. Select a Monitoring Session from the Monitoring Sessions list view on the left side of the screen and click the **TRAFFIC ACQUISITION** tab.
 - c. Enable Secure tunnels. Refer to the *Configure Monitoring Session Options* topic in the respective GigaVUE Cloud Suite Deployment Guide for information about how to enable secure tunnel for a Monitoring Session.
 - d. Go to **Traffic > Virtual > Orchestrated Flows** and select your cloud platform. The **Monitoring Sessions** page appears. Select the Monitoring Session for which you enabled Secure Tunnels. Click **Actions > Undeploy**. The Monitoring Session is undeployed.
 - e. Select the Monitoring Session for which you enabled Secure Tunnels and edit the Monitoring Session.
 - f. Add the Application Intelligence applications.
 - g. Modify the Number of Flows as per the below table:

Cloud Platform	Instance Size	Maximum Number of Flows
VMware	Large (8 vCPU and 16GB RAM)	200k
AWS	AMD - Large (c5n.2xlarge)	300k
	AMD - Medium (t3a.xlarge)	100k
	ARM - Large (c7gn.2xlarge)	100k
	ARM - Medium (m7g.xlarge)	200k
Azure	Large (Standard_D8s_V4)	500k
	Medium (Standard_D4s_v4)	100k
Nutanix	Large (8 vCPU and 16GB RAM)	200k

NOTE: Medium Form Factor is supported for VMware ESXi only when secure tunnels option is disabled. The maximum Number of Flows for VMware ESXi when using a medium Form Factor is 50k.

- h. Click **Deploy**. Refer to Application Intelligence section in the GigaVUE V Series Applications Guide for more detailed information on how to deploy the Application Intelligence applications.
2. When GigaVUE-FM version is 6.5.00, and the GigaVUE V Series Node version is below 6.5.00, after migrating the Application Intelligence Session to the Monitoring Session and redeploying the monitoring session, a momentary loss in the statistical data of the Application Visualization application will be seen while redeploying the monitoring session.

3. After migrating the Application Intelligence Session to monitoring session, if you wish to make any configuration changes, then the GigaVUE V Series Node version must be greater than or equal to 6.3.00.

Monitor Cloud Health

GigaVUE-FM allows you to monitor the traffic and configuration health status of the monitoring session and its individual components. This section provides detailed information on how to view the traffic and configuration health status of the monitoring session and its individual components. Refer to the following topics for more detailed information on configuration health, traffic health and how to view the health status:

- [Configuration Health Monitoring](#)
- [Traffic Health Monitoring](#)
- [View Health Status](#)

Configuration Health Monitoring

The configuration health status provides us detailed information about the configuration and deployment status of the deployed monitoring session.

This feature is supported for the following fabric components and features on the respective cloud platforms:

Configuration Health Monitoring	GigaVUE Cloud Suite for AWS	GigaVUE Cloud Suite for Azure	GigaVUE Cloud Suite for OpenStack	GigaVUE Cloud Suite for VMware	GigaVUE Cloud Suite for Nutanix
GigaVUE V Series Nodes	✓	✓	✓	✓	✓
UCT-V	✓	✓	✓	✗	✗
Traffic Mirroring	✓	✗	✗	✗	✗
OVS Mirroring and VLAN Trunk Port	✗	✗	✓	✗	✗

To view the configuration health status, refer to the [View Health Status](#) section.

Traffic Health Monitoring

GigaVUE-FM allows you to monitor the traffic health status of the entire Monitoring Session and also the individual V Series Nodes for which the Monitoring Session is configured. Traffic health monitoring focuses on identifying any discrepancies (packet drop or overflow etc) in the traffic flow. When any such discrepancies are identified, GigaVUE-FM propagates the health status to corresponding Monitoring Session. GigaVUE-FM monitors the traffic health status in near real-time. GigaVUE V Series Node monitors the traffic, when the traffic limit goes beyond the upper or lower threshold values that is configured, it notifies GigaVUE-FM, based on which traffic health is computed.

NOTE: When GigaVUE-FM and GigaVUE V Series Nodes are deployed in different cloud platforms, then the GigaVUE-FM public IP address must be added to the **Data Notification Interface** as the Target Address in the Event Notifications page. Refer to the section in the *GigaVUE Administration Guide* for configuration details.

This feature is supported for GigaVUE V Series Nodes on the respective cloud platforms:

For V Series Nodes:

- AWS
- Azure
- OpenStack
- VMware
- Third Party Orchestration

The following section gives step-by-step instructions on creating and applying threshold templates across a Monitoring Session or an application, and viewing the traffic health status. Refer to the following section for more detailed information:

- [Supported Resources and Metrics](#)
- [Create Threshold Templates](#)
- [Apply Threshold Template](#)
- [Clear Thresholds](#)

Keep in mind the following points when configuring a threshold template:

- By default, Threshold Template is not configured to any Monitoring Session. If you wish to monitor the traffic health status, then create and apply threshold template to the Monitoring Session.
- Editing or redeploying the Monitoring Session will reapply all the threshold policies associated with that Monitoring Session.
- Deleting or undeploying the Monitoring Session will clear all the threshold policies associated with that Monitoring Session.

- After applying threshold template to a particular application, you need not deploy the Monitoring Session again.

Supported Resources and Metrics

The following table lists the resources and the respective metrics supported for traffic health monitoring

Resource	Metrics	Threshold types	Trigger Condition
Tunnel End Point	<ol style="list-style-type: none"> 1. Tx Packets 2. Rx Packets 3. Tx Bytes 4. Rx Bytes 5. Tx Dropped 6. Rx Dropped 7. Tx Errors 8. Rx Errors 	<ol style="list-style-type: none"> 1. Difference 2. Derivative 	<ol style="list-style-type: none"> 1. Over 2. Under
RawEnd Point	<ol style="list-style-type: none"> 1. Tx Packets 2. Rx Packets 3. Tx Bytes 4. Rx Bytes 5. Tx Dropped 6. Rx Dropped 7. Tx Errors 8. Rx Errors 	<ol style="list-style-type: none"> 1. Difference 2. Derivative 	<ol style="list-style-type: none"> 1. Over 2. Under
Map	<ol style="list-style-type: none"> 1. Tx Packets 2. Rx Packets 3. Packets Dropped 	<ol style="list-style-type: none"> 1. Difference 2. Derivative 	<ol style="list-style-type: none"> 1. Over 2. Under
Slicing	<ol style="list-style-type: none"> 1. Tx Packets 2. Rx Packets 3. Packets Dropped 	<ol style="list-style-type: none"> 1. Difference 2. Derivative 	<ol style="list-style-type: none"> 1. Over 2. Under
Masking	<ol style="list-style-type: none"> 1. Tx Packets 2. Rx Packets 3. Packets Dropped 	<ol style="list-style-type: none"> 1. Difference 2. Derivative 	<ol style="list-style-type: none"> 1. Over 2. Under
Dedup	<ol style="list-style-type: none"> 1. Tx Packets 2. Rx Packets 	<ol style="list-style-type: none"> 1. Difference 2. Derivative 	<ol style="list-style-type: none"> 1. Over 2. Under

	3. Packets Dropped		
HeaderStripping	1. Tx Packets 2. Rx Packets 3. Packets Dropped	1. Difference 2. Derivative	1. Over 2. Under
TunnelEncapsulation	1. Tx Packets 2. Rx Packets 3. Packets Dropped	1. Difference 2. Derivative	1. Over 2. Under
LoadBalancing	1. Tx Packets 2. Rx Packets 3. Packets Dropped	1. Difference 2. Derivative	1. Over 2. Under
SSLDecryption	1. Tx Packets 2. Rx Packets 3. Packets Dropped	1. Difference 2. Derivative	1. Over 2. Under
Application Metadata	1. Tx Packets 2. Rx Packets 3. Packets Dropped	1. Difference 2. Derivative	1. Over 2. Under
AMI Exporter	1. Tx Packets 2. Rx Packets 3. Packets Dropped	1. Difference 2. Derivative	1. Over 2. Under
Geneve	1. Tx Packets 2. Rx Packets 3. Packets Dropped	1. Difference 2. Derivative	1. Over 2. Under

5G-SBI	<ol style="list-style-type: none"> 1. Tx Packets 2. Rx Packets 3. Packets Dropped 	<ol style="list-style-type: none"> 1. Difference 2. Derivative 	<ol style="list-style-type: none"> 1. Over 2. Under
SBIPOE	<ol style="list-style-type: none"> 1. Tx Packets 2. Rx Packets 3. Packets Dropped 	<ol style="list-style-type: none"> 1. Difference 2. Derivative 	<ol style="list-style-type: none"> 1. Over 2. Under
PCAPNG	<ol style="list-style-type: none"> 1. Tx Packets 2. Rx Packets 3. Packets Dropped 	<ol style="list-style-type: none"> 1. Difference 2. Derivative 	<ol style="list-style-type: none"> 1. Over 2. Under

Create Threshold Templates

To create threshold templates:

1. Go to **Inventory > Resources > Threshold Templates**.
2. The **Threshold Templates** page appears. Click Create to open the New Threshold Template page.
3. Enter the appropriate information for the threshold template as described in the following table.

Field	Description
Threshold Template Name	The name of the threshold template.
Thresholds	
Monitored Objects	Select the resource for which you wish to apply the threshold template. Ex: TEP, REP, Maps, Applications like Slicing, De-dup etc
Time Interval	Frequency at which the traffic flow needs to be monitored.
Metric	Metrics that need to be monitored. For example: Tx Packets, Rx Packets.
Type	<p>Difference: The difference between the stats counter at the start and end time of an interval, for a given metric.</p> <p>Derivative: Average value of the statistics counter in a time interval, for a given metric.</p>
Condition	<p>Over: Checks if the statistics counter value is greater than the 'Set Trigger Value'.</p> <p>Under: Checks if the statistics counter value is lower than the 'Set Trigger Value'.</p>
Set Trigger Value	Value at which a traffic health event is raised, if statistics counter goes below or above this value, based on the condition configured.
Clear Trigger Value	Value at which a traffic health event is cleared, if statistics counter goes below or above this value, based on the condition configured.

4. Click **Save**. The newly created threshold template is saved, and it appears on the **Threshold** templates page.

Apply Threshold Template

You can apply your threshold template across the entire Monitoring Session and also to a particular application.

Apply Threshold Template to Monitoring Session

To apply the threshold template across a Monitoring Session, follow the steps given below:

1. In GigaVUE-FM, on the left navigation pane, select **Traffic > Virtual > Orchestrated Flows** and select your cloud platform. The **Monitoring Session** page appears.
2. In the **TRAFFIC PROCESSING** tab, select **Thresholds** under **Options** menu.
3. To apply a threshold template across a Monitoring Session, select the template you wish to apply across the Monitoring Session from the Threshold Template drop-down menu.
4. Click **Apply**.

Apply Threshold Template to Applications

To apply the threshold template to a particular application in the Monitoring Session follow the steps given below:

NOTE: Applying threshold template across Monitoring Session will not over write the threshold value applied specifically for an application. When a threshold value is applied to a particular application, it over writes the existing threshold value for that particular application.

1. On the **Monitoring Session** page. Click **TRAFFIC PROCESSING** tab. The Monitoring Session canvas page appears.
2. Click on the application for which you wish to apply or change a threshold template and click **Details**. The **Application** quick view opens.
3. Click on the **Thresholds** tab. Select the template you wish to apply from the Threshold Template drop-down menu or enter the threshold values manually.
4. Click **Save**.

Clear Thresholds

You can clear the thresholds across the entire Monitoring Session and also to a particular application.

Clear Thresholds for Applications

To clear the thresholds of a particular application in the Monitoring Session follow the steps given below:

1. On the **Monitoring Session** page. Click **TRAFFIC PROCESSING** tab. The Monitoring Session canvas page appears.
2. Click on the application for which you wish to clear the thresholds and click **Details**. The **Application** quick view opens.
3. Click on the **Thresholds** tab. Click **Clear All** and then Click **Save**.

Clear Thresholds across the Monitoring Session

To clear the applied thresholds across a Monitoring Session follow the steps given below:

1. In GigaVUE-FM, on the left navigation pane, select **Traffic > Virtual > Orchestrated Flows** and select your cloud platform. The **Monitoring Sessions** landing page appears.
2. Select the Monitoring Session and navigate to **TRAFFIC PROCESSING > Options > Thresholds**, click **Clear Thresholds**.
3. The **Clear Threshold** pop-up appears. Click **Ok**.

NOTE: Clearing thresholds at Monitoring Session level does not clear the thresholds that were applied specifically at the application level. To clear thresholds for a particular application refer to [Clear Thresholds for Applications](#)

View Health Status

You can view the health status of the Monitoring Session on the Monitoring Session details page. The health status of the Monitoring Session is healthy only if both the configuration health and traffic health are healthy.

View Health Status of an Application

To view the health status of an application across an entire Monitoring Session:

1. After creating a Monitoring Session, go to **Traffic > Virtual > Orchestrated Flows** and select your cloud platform. Select a Monitoring Session and navigate to **TRAFFIC PROCESSING** tab.
2. Click on the application for which you wish to see the health status and select **Details**. The quick view page appears.
3. Click on the **HEALTH STATUS** tab.

This displays the configuration health and traffic health of the application and also the thresholds applied to that particular application.

NOTE: The secure tunnel status is refreshed for every 5 minutes, and the GigaVUE-FM does not display UCT-V secure tunnel status that is older than 7 minutes. If the secure tunnel in the UCT-V is removed, it takes up to 7 minutes to reset the status on the GigaVUE-FM.

View Health Status for Individual GigaVUE V Series Nodes

You can also view the health status of the view the health status of an individual GigaVUE V Series Node. To view the configuration health status and traffic health status of the V Series Nodes:

1. On the Monitoring Session page, click the required Monitoring Session from the list view.
2. In the **Overview** tab, you can view the health status of the required GigaVUE V Series Node from the chart options.

Configure VMware Settings

This section provides information on how to configure the maximum number of connections, refresh intervals for instance and non-instance inventory, and maximum batch size for monitoring session updates.

To configure the VMware Settings:

Go to **Inventory > VIRTUAL > VMware NSX-T (V Series)**, and then click **Settings > Advanced Settings** to edit the VMware V Series NSX-T settings.

Advanced Settings

Maximum number of vCenter connections allowed	20
Refresh interval for VM target selection inventory (secs)	300
Refresh interval for fabric deployment inventory (secs)	86400
Traffic distribution tunnel range start	8000
Traffic distribution tunnel range end	8512
Traffic distribution tunnel MTU	9001
Maximum V Series node up wait time in minutes	5

Refer to the following table for details:

Settings	Description
Maximum number of vCenter connections allowed	Specifies the maximum number of vCenter connections you can establish in GigaVUE-FM
Refresh interval for VM target selection inventory (secs)	Specifies the frequency for updating the state of target VMs in VMware vCenter
Refresh interval for fabric deployment inventory (secs)	Specifies the frequency for updating the state of GigaVUE-FM fabrics deployed in VMware vCenter
Traffic distribution tunnel range start	Specifies the start range value of the tunnel ID.
Traffic distribution tunnel range end	Specifies the closing range value of the tunnel ID.
Traffic distribution tunnel MTU	Specifies the Tunnel MTU value.
Maximum V Series Node up wait time	Specifies the maximum amount of time taken for the GigaVUE Series Node state to go to OK.

Analytics for Virtual Resources

Analytics in GigaVUE-FM is a standalone service that provides data visualization capabilities. Using Analytics¹ you can create visual elements such as charts that are embedded as visualizations. The visualizations are grouped together in dashboards. You can also create search objects using Analytics. Dashboards, Visualizations and Search Objects are called Analytics objects. Refer to [Analytics](#) section in *GigaVUE Fabric Management Guide* for more detailed information on Analytics.

Rules and Notes:

- You cannot edit or delete these default dashboards. However, you can clone the dashboards and visualizations. Refer to the Clone Dashboard section in GigaVUE-FM Installation and Upgrade Guide for more details.
- Use the Time Filter option to select the required time interval for which you need to view the visualization.

Virtual Inventory Statistics and Cloud Applications Dashboard

Analytics dashboards allow users to monitor the physical and virtual environment and detect anomalous behavior and plan accordingly. Refer to the [Analytics](#) section in *GigaVUE Fabric Management Guide* for details on how to create a new dashboard, clone a dashboard, create a new visualization, and other information about the Discover page and Reports page.

¹Analytics uses the OpenSearch front-end application to visualize and analyze the data in the OpenSearch database of GigaVUE-FM.

To access the dashboards:

1. Go to  -> **Analytics -> Dashboards.**
2. Click on the required dashboard to view the visualizations.

The following table lists the various virtual dashboards:

Dashboard	Displays	Visualizations	Displays
Inventory Status (Virtual)	<p>Statistical details of the virtual inventory based on the platform and the health status.</p> <p>You can view the following metric details at the top of the dashboard:</p> <ul style="list-style-type: none"> • Number of Monitoring Sessions • Number of V Series Nodes • Number of Connections • Number of GCB Nodes <p>You can filter the visualizations based on the following control filters:</p> <ul style="list-style-type: none"> • Platform • Health Status 	<i>V Series Node Status by Platform</i>	Number of healthy and unhealthy V Series Nodes for each of the supported cloud platforms.
		<i>Monitoring Session Status by Platform</i>	Number of healthy and unhealthy monitoring sessions for each of the supported cloud platforms
		<i>Connection Status by Platform</i>	Number of healthy and unhealthy connections for each of the supported cloud platforms
		<i>GCB Node Status by Platform</i>	Number of healthy and unhealthy GCB nodes for each of the supported cloud platforms
V Series Node Statistics	<p>Displays the Statistics of the V Series node such as the CPU usage, trend of the receiving and transmitting packets of the V Series node.</p> <p>You can filter the visualizations based on the following control filters:</p> <ul style="list-style-type: none"> • Platform • Connection • V Series Node 	<i>V Series Node Maximum CPU Usage Trend</i>	Line chart that displays maximum CPU usage trend of the V Series node in 5 minutes interval, for the past one hour. <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p>NOTE: The maximum CPU Usage trend refers to the CPU usage for service cores only. Small form factor V Series nodes do not have service cores, therefore the CPU usage is reported as 0.</p> </div>
		<i>V Series Node with Most CPU Usage</i>	Line chart that displays Maximum

Dashboard	Displays	Visualizations	Displays
		<i>For Past 5 minutes</i>	CPU usage of the V Series node for the past 5 minutes. NOTE: You cannot use the time based filter options to filter and visualize the data.
		<i>V Series Node Rx Trend</i>	Receiving trend of the V Series node in 5 minutes interval, for the past one hour.
		<i>V Series Network Interfaces with Most Rx for Past 5 mins</i>	Total packets received by each of the V Series network interface for the past 5 minutes. NOTE: You cannot use the time based filter options to filter and visualize the data.
		<i>V Series Node Tunnel Rx Packets/Errors</i>	Displays the reception of packet at the Tunnel RX. This is the input to V Series Node, Grouping by tunnel identifier comprising {monDomain, conn, VSN, tunnelName}, before aggregation.
		<i>V Series Node Tunnel Tx Packets/Errors</i>	TX is for output tunnels from VSN. V Series Node Tunnel Tx Packets/Errors
Dedup	Displays visualizations related to Dedup application. You can filter the visualizations based on the following control filters: <ul style="list-style-type: none"> Platform 	<i>Dedup Packets Detected/Dedup Packets Overload</i>	Statistics of the total de-duplicated packets received (ipV4Dup, ipV6Dup and nonIPDup) against the de-duplication application overload.

Dashboard	Displays	Visualizations	Displays
	<ul style="list-style-type: none"> • Connection • V Series Node 	<p><i>Dedup Packets Detected/Dedup Packets Overload Percentage</i></p> <p><i>Total Traffic In/Out Dedup</i></p>	<p>Percentage of the de-duplicated packets received against the de-duplication application overload.</p> <p>Total incoming traffic against total outgoing traffic</p>
Tunnel (Virtual)	<p>Displays visualizations related to the tunneled traffic in both bytes as well as the number of packets.</p> <p>You can select the following control filters, based on which the visualizations will get updated:</p> <ul style="list-style-type: none"> • Monitoring session: Select the required monitoring session. The cloud platform, monitoring domain and connection within the monitoring domain that is used by the V Series node are shown in square brackets, comma-separated, after the name, to distinguish the whole path to it. • V Series node: Management IP of the V Series node. Choose the required V Series node from the drop-down. • Tunnel: Select any of the tunnels shown in the Tunnel drop-down. The direction for each tunnel is shown with the prefix in or out. <p>The following statistics are displayed for the tunnel:</p> <ul style="list-style-type: none"> • Received Bytes • Transmitted Bytes • Received Packets • Transmitted Packets • Received Errored Packets • Received Dropped Packets 	<i>Tunnel Bytes</i>	<p>Displays received tunnel traffic vs transmitted tunnel traffic, in bytes.</p> <ul style="list-style-type: none"> • For input tunnel, transmitted traffic is displayed as zero. • For output tunnel, received traffic is displayed as zero.

Dashboard	Displays	Visualizations	Displays
	<ul style="list-style-type: none"> • Transmitted Errored Packets • Transmitted Dropped Packets 	<i>Tunnel Packets</i>	Displays packet-level statistics for input and output tunnels that are part of a monitoring session.
App (Virtual)	<p>Displays Byte and packet level statistics for the applications for the chosen monitoring session on the selected V Series node.</p> <p>You can select the following control filters, based on which the visualizations will get updated:</p> <ul style="list-style-type: none"> • Monitoring session • V Series node • Application: Select the required application. By default, the visualizations displayed includes all the applications. <p>By default, the following statistics are displayed:</p> <ul style="list-style-type: none"> • Received Bytes • Transmitted Bytes • Received Packets • Transmitted Packets • Errored Packets • Dropped Packets 	<i>App Bytes</i>	Displays received traffic vs transmitted traffic, in Bytes.

Dashboard	Displays	Visualizations	Displays
		<i>App Packets</i>	Displays received traffic vs transmitted traffic, as the number of packets.
End Point (Virtual)	<p>Displays Byte and packet level statistics for the un-tunneled traffic deployed on the V Series nodes.</p> <p>The following statistics that are shown for Endpoint (Virtual):</p> <ul style="list-style-type: none"> • Received Bytes • Transmitted Bytes • Received Packets • Transmitted Packets • Received Errored Packets • Received Dropped Packets • Transmitted Errored Packets • Transmitted Dropped Packets <p>The endpoint drop-down shows <i><V Series Node Management IP address : Network Interface></i> for each endpoint.</p> <p>You can select the following control filters, based on which the visualizations will get updated:</p> <ul style="list-style-type: none"> • Monitoring session • V Series node • Endpoint: Management IP of the V Series node followed by the Network Interface (NIC) 	<i>Endpoint Bytes</i>	Displays received traffic vs transmitted traffic, in Bytes.
		<i>Endpoint Packets</i>	Displays received traffic vs transmitted traffic, as the number of packets.

NOTE: The Tunnel (Virtual), App (Virtual) and Endpoint (Virtual) dashboards do not show data from the previous releases if the *Monitoring Session [Platform : Domain : Connection]* dashboard filter is applied. This is because, this filter relies on the new attributes in the OpenSearch database, which are available only from software version 5.14.00 and beyond.



Remove Gigamon Service from NSX-T and GigaVUE-FM

To clean up the Gigamon Deep Observability Pipeline from VMware NSX-T and GigaVUE-FM, perform the following steps:

- [Step 1: Remove the Rule and Policy](#)
- [Step 2: Remove the Service Chain](#)
- [Step 3: Delete the Monitoring Session](#)
- [Step 4: Delete the Monitoring Domain](#)


Step 1: Remove the Rule and Policy

To delete the network monitoring services:

1. Select **Security > Service Chain Management > E-W Network Introspection**. The E-W Network Introspection page appears.
2. On the E-W Network Introspection page, expand the policy that was created for Gigamon tapping.
3. To delete the rule associated with the policy, click the  icon on the Rule Column and then select **Delete**
4. To delete the policy, Click the  icon on the policy and then select **Delete**.

Step 2: Remove the Service Chain

To delete the network monitoring services:

1. In NSX-T Manager, select **Security > Settings > Network Introspection**.
2. Select the **SERVICE CHAINS** tab.
3. On the service chain where service profile created for Gigamon is attached to it, click  and then select **Delete** to delete the selected Service Chain.

Step 3: Delete the Monitoring Session

To delete the Monitoring session from GigaVUE-FM:

1. From the left navigation pane, select **Traffic > VIRTUAL > Orchestrated Flows > VMware**. The Monitoring Sessions pertaining to all VMware deployment appears.
2. Select the NSX-T related Monitoring Session and click **Actions > Undeploy**. The Monitoring Session is Undeployed.
3. Select the Monitoring Session again and click **Actions > Delete**.
4. The service profile and the profile that corresponds to the Monitoring Session is deleted on NSX-T manager console.

Step 4: Delete the Monitoring Domain

To delete the Monitoring Domain and the GigaVUE V Series Node deployed in GigaVUE-FM:

1. From the left navigation pane, select **Inventory > VIRTUAL > VMware NSX-T > Monitoring Domain**. The Monitoring Domain page appears along with the deployed GigaVUE V Series Nodes.
2. Select the appropriate **Monitoring Domain**, click **Actions > Delete Monitoring Domain**.
3. The **Service Deployment** that corresponds to the Monitoring Domain is deleted from the NSX-T Manager.

GigaVUE V Series Deployment Clean up

On installation failure or incomplete service removal, you must clean up GigaVUE V Series Nodes before reattempting the installation. To clean up the V Series deployments from NSX-T and GigaVUE-FM, perform the following steps:

- [Delete Rule and Policy in NSX-T Manager](#)
- [Remove Service Deployments](#)
- [Remove Service Reference](#)
- [Remove Service Manager](#)
- [Remove Vendor Template and Service Definition](#)

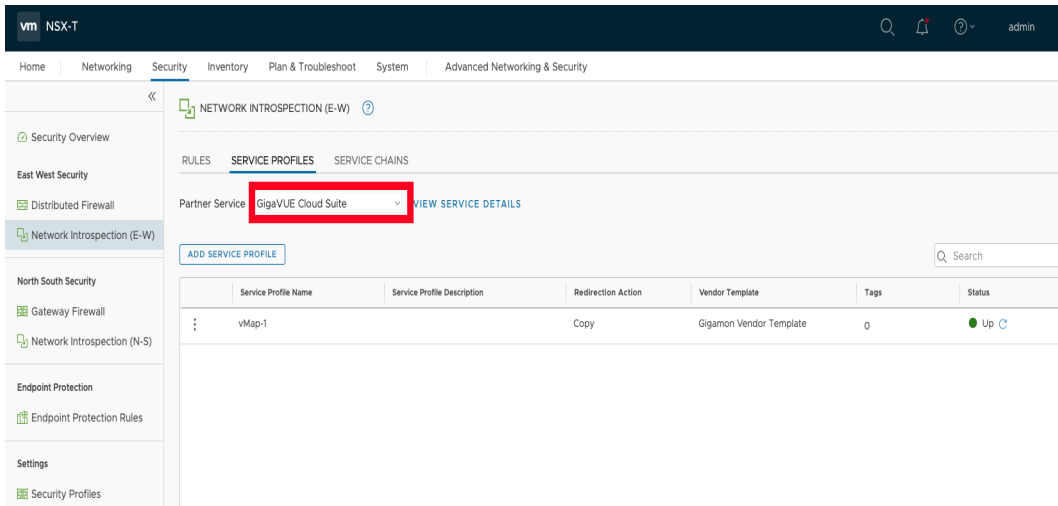
Delete Rule and Policy in NSX-T Manager

Delete Service Chain

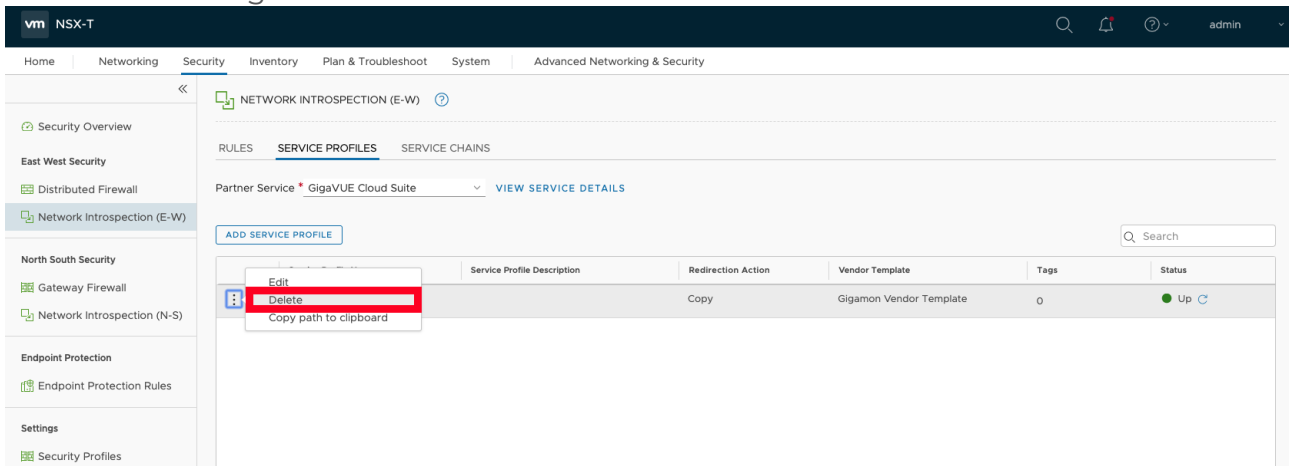
Delete Monitoring Session - Service Profile is deleted.

To remove Service Profiles:

1. From NSX-T Manager, navigate to **Security > Network Introspection (E-W)**.
2. In the **SERVICE PROFILES** tab, select the service name of the Monitoring Domain from the **Partner Service** drop-down.



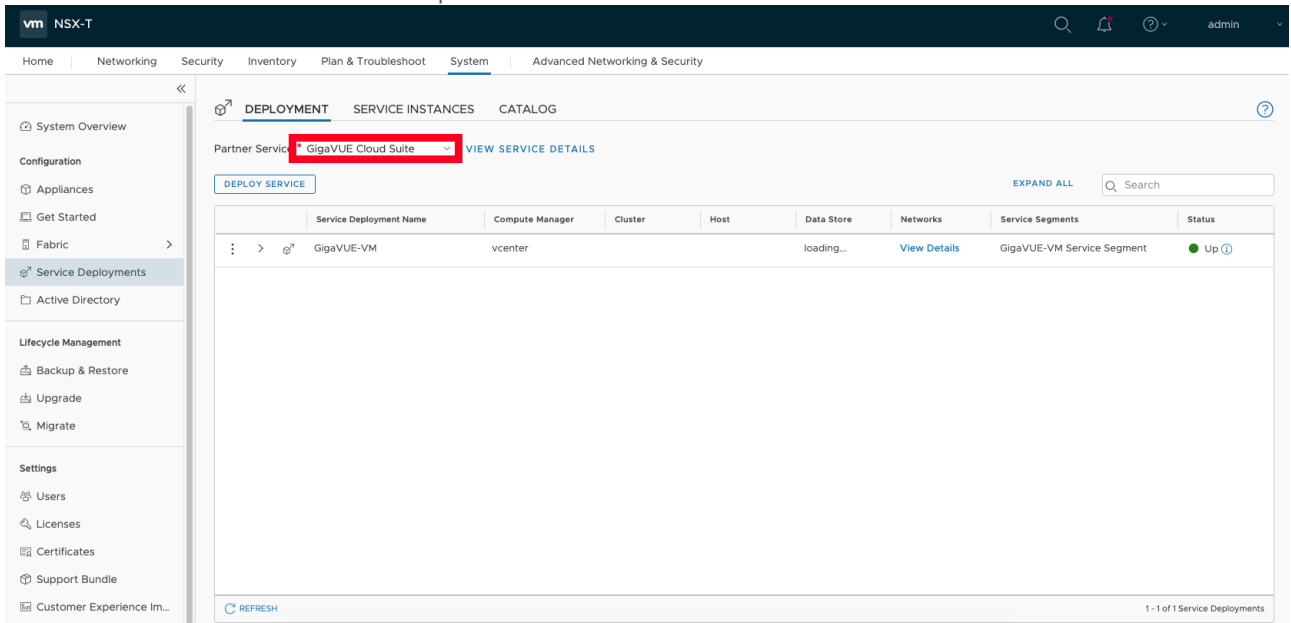
3. Delete all existing Service Profiles.



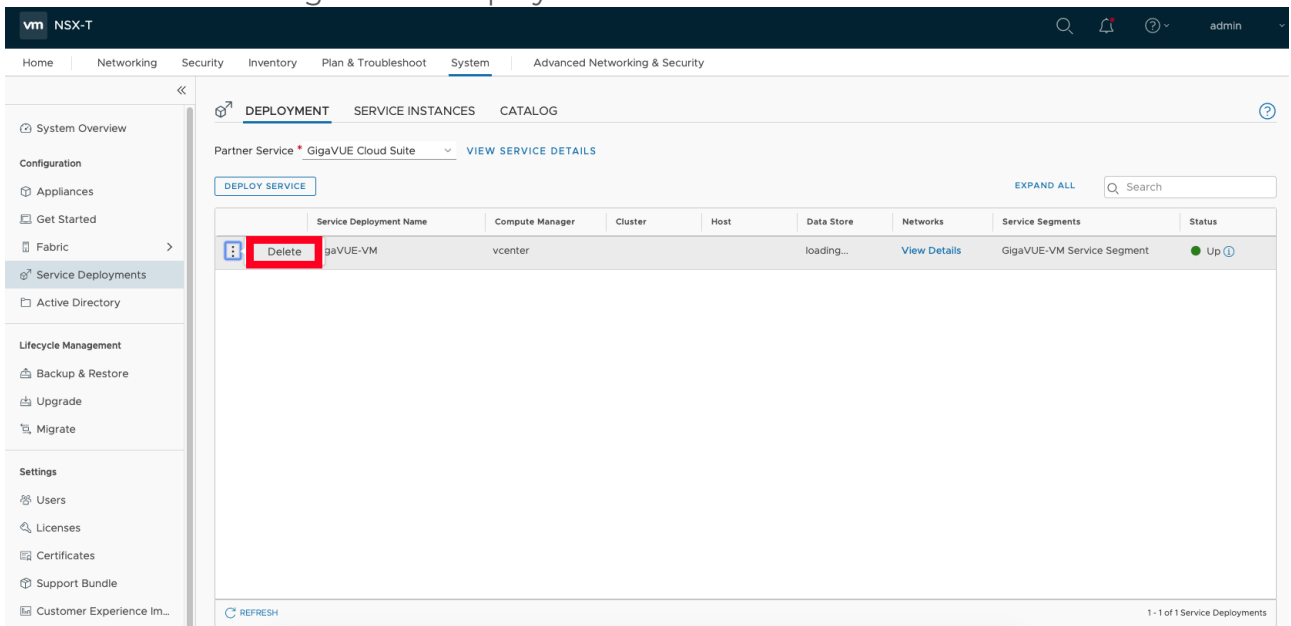
Remove Service Deployments

To remove Service Deployments:

1. From NSX-T Manager, navigate to **System > Service Deployments**.
2. In the **DEPLOYMENT** tab, Select the select the service name of the Monitoring Domain from the **Partner Service** drop-down.

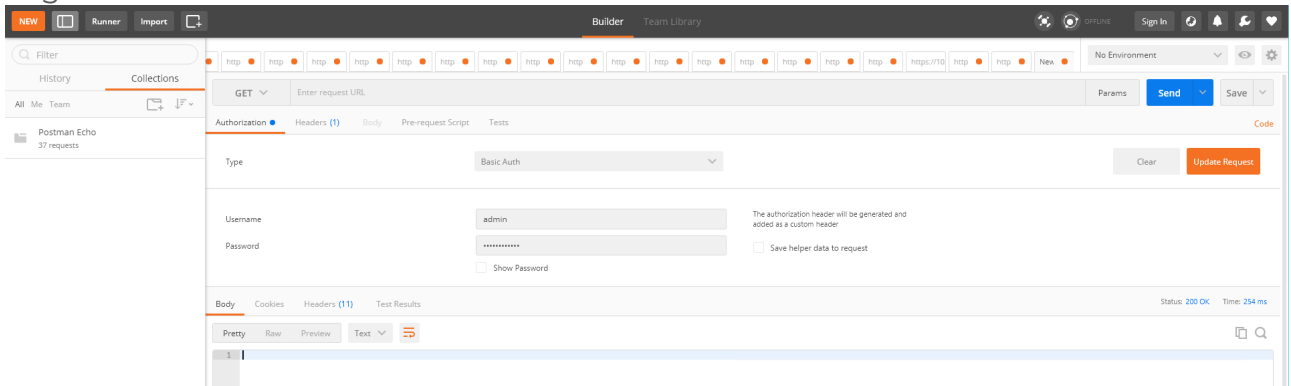


3. Delete all the existing Service Deployments.



To remove the Service Deployments through NSX-T API:

1. Login to Postman.

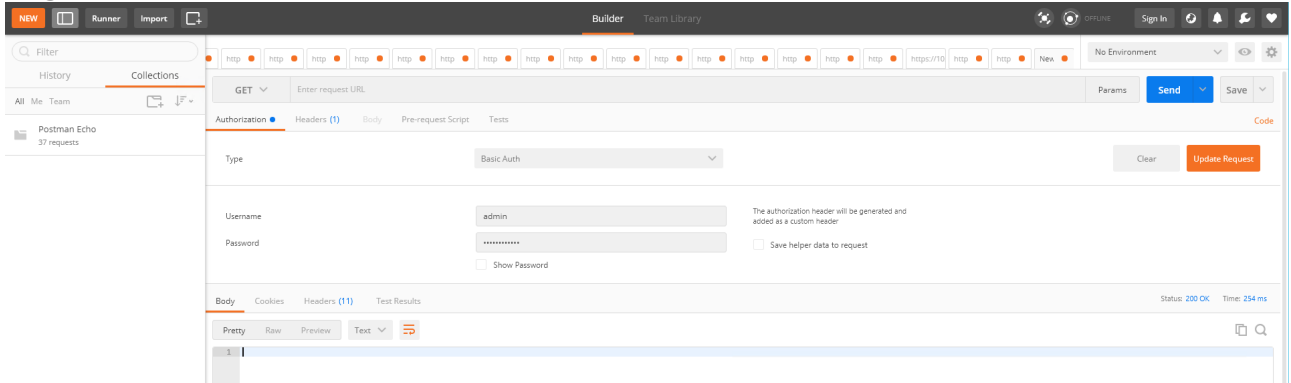


2. Get the Service ID. **GET** `https://<NSX_Manager_IP>/api/v1/serviceinsertion/services/`
3. Get the ID of the Service Deployments. **GET** `https://<NSX_Manager_IP>/api/v1/serviceinsertion/services/<Service_ID>/service-deployments/`
4. Delete all Service Deployments. **DELETE** `https://<NSX_Manager_IP>/api/v1/serviceinsertion/services/<Service_ID>/service-deployments/<Service_Deployment_ID>`

Remove Service Reference

To remove Service References through NSX-T API:

1. Login to Postman.

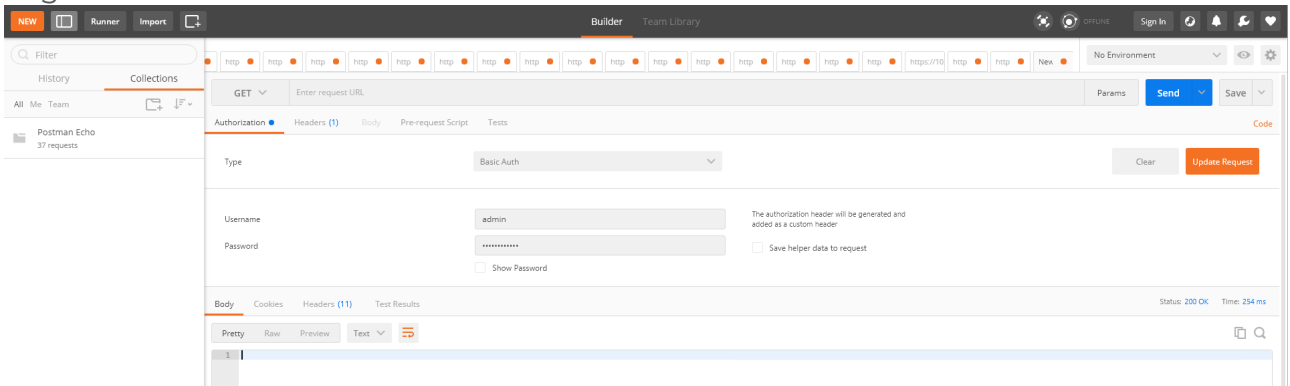


2. Get the Service Reference ID. **GET** `https://<NSX_Manager_IP>/policy/api/v1/infra/service-references/`
3. Delete the Service Reference. **DELETE** `https://<NSX_Manager_IP>/policy/api/v1/infra/service-references/<Service_Reference_ID>`

Remove Service Manager

To remove Service Manager through NSX-T API:

1. Login to Postman.

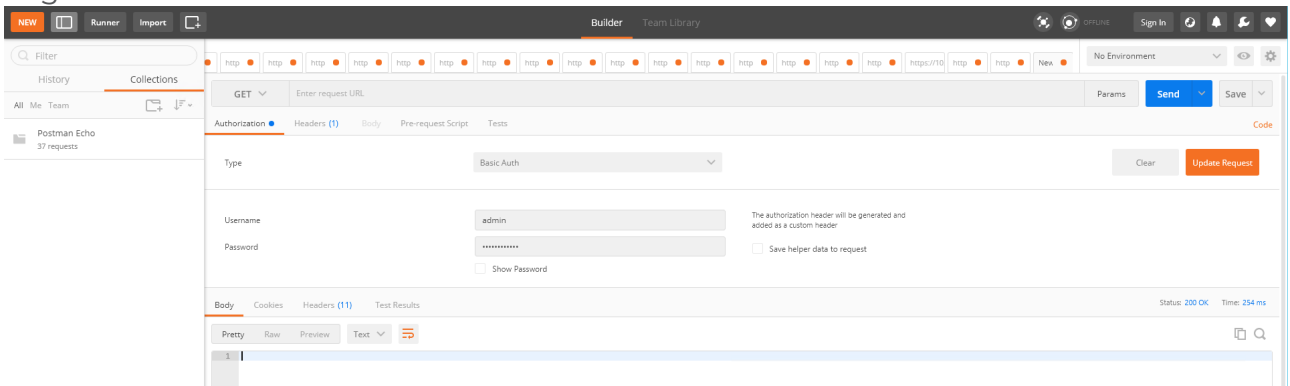


2. Get the Service Manager ID.**GET** https://<NSX_Manager_IP>/api/v1/serviceinsertion/service-managers/
3. Delete the Service Manager.**DELETE** https://<NSX_Manager_IP>/api/v1/serviceinsertion/service-managers/<Service_Manager_ID>

Remove Vendor Template and Service Definition

To remove Vendor Template and Service Definition through NSX-T API:

1. Login to Postman.



2. Get the Service ID.**GET** https://<NSX_Manager_IP>/api/v1/serviceinsertion/services/
3. Get the Vendor Templates' ID.**GET** https://<NSX_Manager_IP>/api/v1/serviceinsertion/services/<Service_ID>/vendor-templates/
4. Delete the Vendor Templates.**DELETE** https://<NSX_Manager_IP>/api/v1/serviceinsertion/services/<Service_ID>/vendor-templates/<Vendor_Template_ID>
5. Delete the Service.**DELETE** https://<NSX_Manager_IP>/api/v1/serviceinsertion/services/<Service_ID>

Additional Sources of Information

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

- [Documentation](#)
- [Documentation Feedback](#)
- [Contact Technical Support](#)
- [Contact Sales](#)
- [The VUE Community](#)

Documentation

This table lists all the guides provided for GigaVUE Cloud Suite software and hardware. The first row provides an All-Documents Zip file that contains all the guides in the set for the release.

NOTE: In the online documentation, view [What's New](#) to access quick links to topics for each of the new features in this Release; view [Documentation Downloads](#) to download all PDFs.

Table 1: Documentation Set for Gigamon Products

GigaVUE Cloud Suite 6.9 Hardware and Software Guides
<p>DID YOU KNOW? If you keep all PDFs for a release in common folder, you can easily search across the doc set by opening one of the files in Acrobat and choosing Edit > Advanced Search from the menu. This opens an interface that allows you to select a directory and search across all PDFs in a folder.</p>
<p>Hardware</p> <p>how to unpack, assemble, rackmount, connect, and initially configure ports the respective GigaVUE Cloud Suite devices; reference information and specifications for the respective GigaVUE Cloud Suite devices</p>
GigaVUE-HC1 Hardware Installation Guide
GigaVUE-HC3 Hardware Installation Guide
GigaVUE-HC1-Plus Hardware Installation Guide
GigaVUE-HCT Hardware Installation Guide
GigaVUE-TA25 Hardware Installation Guide
GigaVUE-TA25E Hardware Installation Guide
GigaVUE-TA100 Hardware Installation Guide

GigaVUE Cloud Suite 6.9 Hardware and Software Guides	
GigaVUE-TA200 Hardware Installation Guide	
GigaVUE-TA200E Hardware Installation Guide	
GigaVUE-TA400 Hardware Installation Guide	
GigaVUE-OS Installation Guide for DELL S4112F-ON	
G-TAP A Series 2 Installation Guide	
GigaVUE M Series Hardware Installation Guide	
GigaVUE-FM Hardware Appliances Guide	
Software Installation and Upgrade Guides	
GigaVUE-FM Installation, Migration, and Upgrade Guide	
GigaVUE-OS Upgrade Guide	
GigaVUE V Series Migration Guide	
Fabric Management and Administration Guides	
GigaVUE Administration Guide	covers both GigaVUE-OS and GigaVUE-FM
GigaVUE Fabric Management Guide	how to install, deploy, and operate GigaVUE-FM; how to configure GigaSMART operations; covers both GigaVUE-FM and GigaVUE-OS features
Cloud Guides	
how to configure the GigaVUE Cloud Suite components and set up traffic monitoring sessions for the cloud platforms	
GigaVUE V Series Applications Guide	
GigaVUE Cloud Suite Deployment Guide - AWS	
GigaVUE Cloud Suite Deployment Guide - Azure	
GigaVUE Cloud Suite Deployment Guide - OpenStack	
GigaVUE Cloud Suite Deployment Guide - Nutanix	
GigaVUE Cloud Suite Deployment Guide - VMware (ESXi)	
GigaVUE Cloud Suite Deployment Guide - VMware (NSX-T)	
GigaVUE Cloud Suite Deployment Guide - Third Party Orchestration	
Universal Cloud TAP - Container Deployment Guide	
Gigamon Containerized Broker Deployment Guide	

GigaVUE Cloud Suite 6.9 Hardware and Software Guides	
GigaVUE Cloud Suite Deployment Guide - AWS Secret Regions	
GigaVUE Cloud Suite Deployment Guide - Azure Secret Regions	
Reference Guides	
GigaVUE-OS CLI Reference Guide	library of GigaVUE-OS CLI (Command Line Interface) commands used to configure and operate GigaVUE HC Series and GigaVUE TA Series devices
GigaVUE-OS Security Hardening Guide	
GigaVUE Firewall and Security Guide	
GigaVUE Licensing Guide	
GigaVUE-OS Cabling Quick Reference Guide	guidelines for the different types of cables used to connect Gigamon devices
GigaVUE-OS Compatibility and Interoperability Matrix	compatibility information and interoperability requirements for Gigamon devices
GigaVUE-FM REST API Reference in GigaVUE-FM User's Guide	samples uses of the GigaVUE-FM Application Program Interfaces (APIs)
Factory Reset Guidelines for GigaVUE-FM and GigaVUE-OS Devices	Sanitization guidelines for GigaVUE Fabric Management Guide and GigaVUE-OS devices.
Release Notes	
GigaVUE-OS, GigaVUE-FM, GigaVUE-VM, G-TAP A Series, and GigaVUE Cloud Suite Release Notes	new features, resolved issues, and known issues in this release ; important notes regarding installing and upgrading to this release
	NOTE: Release Notes are not included in the online documentation.
	NOTE: Registered Customers can log in to My Gigamon to download the Software and Release Notes from the Software and Docs page on to My Gigamon . Refer to How to Download Software and Release Notes from My Gigamon .
In-Product Help	
GigaVUE-FM Online Help	how to install, deploy, and operate GigaVUE-FM.

How to Download Software and Release Notes from My Gigamon

Registered Customers can download software and corresponding Release Notes documents from the **Software & Release Notes** page on to [My Gigamon](#). Use the My Gigamon Software & Docs page to download:

- Gigamon Software installation and upgrade images,
- Release Notes for Gigamon Software, or
- Older versions of PDFs (pre-v5.7).

To download release-specific software, release notes, or older PDFs:

1. Log in to [My Gigamon](#).
2. Click on the **Software & Release Notes** link.
3. Use the **Product** and **Release** filters to find documentation for the current release. For example, select Product: "GigaVUE-FM" and Release: "5.6," enter "pdf" in the search box, and then click **GO** to view all PDF documentation for GigaVUE-FM 5.6.xx.

NOTE: My Gigamon is available to registered customers only. Newer documentation PDFs, with the exception of release notes, are all available through the publicly available online documentation.

Documentation Feedback

We are continuously improving our documentation to make it more accessible while maintaining accuracy and ease of use. Your feedback helps us to improve. To provide feedback and report issues in our documentation, send an email to:

documentationfeedback@gigamon.com

Please provide the following information in the email to help us identify and resolve the issue. Copy and paste this form into your email, complete it as able, and send. We will respond as soon as possible.

Documentation Feedback Form		
About You	Your Name	
	Your Role	
	Your Company	
For Online Topics	Online doc link	<i>(URL for where the issue is)</i>
	Topic Heading	<i>(if it's a long topic, please provide the heading of the section where the issue is)</i>

For PDF Topics	Document Title	<i>(shown on the cover page or in page header)</i>
	Product Version	<i>(shown on the cover page)</i>
	Document Version	<i>(shown on the cover page)</i>
	Chapter Heading	<i>(shown in footer)</i>
	PDF page #	<i>(shown in footer)</i>
How can we improve?	Describe the issue	<i>Describe the error or issue in the documentation. (If it helps, attach an image to show the issue.)</i>
	How can we improve the content? Be as specific as possible.	
	Any other comments?	

Contact Technical Support

For information about Technical Support: Go to **Settings**  > **Support** > **Contact Support** in GigaVUE-FM.

You can also refer to <https://www.gigamon.com/support-and-services/contact-support> for Technical Support hours and contact information.

Email Technical Support at support@gigamon.com.

Contact Sales

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

Telephone: +1.408.831.4025

Sales: inside.sales@gigamon.com

Partners: www.gigamon.com/partners.html

Premium Support

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

The VÜE Community

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

Visit the VÜE Community site to:

- Find knowledge base articles and documentation
- Ask and answer questions and learn best practices from other members.
- Join special-interest groups to have focused collaboration around a technology, use-case, vertical market or beta release
- Take online learning lessons and tutorials to broaden your knowledge of Gigamon products.
- Open support tickets (Customers only)
- Download the latest product updates and documentation (Customers only)

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

Register today at community.gigamon.com

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

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)

M

member node

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

N

no-decrypt list

no need to decrypt (formerly whitelist)

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)