



GigaVUE Cloud Suite Deployment Guide - VMware (ESXi)

GigaVUE Cloud Suite

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GigaVUE Cloud Suite Deployment Guide - VMware (ESXi)

GigaVUE Cloud Suite for VMware helps you see and manage traffic in your VMware environment. It captures virtual machine (VM) traffic, filters it, and sends only the needed data to your monitoring and security tools.

This solution works with the Gigamon Deep Observability Pipeline to provide complete visibility. It helps avoid missing traffic in private cloud setups or service provider NFV deployments.

This guide helps you learn how to install, set up, and manage GigaVUE V Series in VMware.

Sections in this Guide

- [Overview of GigaVUE Cloud Suite for VMware](#)
- [Architecture for GigaVUE Cloud Suite for VMware ESXi](#)
- [Points to Note \(VMware vCenter\)](#)
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- [Configure Monitoring Session](#)
- [Migrate Application Intelligence Session to Monitoring Session](#)
- [Monitor Cloud Health](#)
- [Configure VMware Settings](#)
- [Analytics for Virtual Resources](#)

Overview of GigaVUE Cloud Suite for VMware

GigaVUE Cloud Suite for VMware enables you to manage and monitor network traffic in virtual environments. It captures, improves, and sends selected network traffic to your security and monitoring tools.

This solution works closely with VMware tools to give you clear visibility into traffic from virtual machines. It helps you understand what's happening in your private cloud.

GigaVUE-FM, a key part of the Cloud Suite, works with VMware vCenter to automatically set up GigaVUE V Series Node to support a growing private cloud infrastructure. It also helps track changes in workloads and keeps traffic policies working properly.

Benefits:

- **Flexible Traffic Acquisition:** Collects traffic using port mirroring in VMware ESXi.
- **Automated Visibility Provisioning:** Automatically sets up and applies traffic rules as new users or groups are added.
- **Improved Tool Efficiency:** Filters and balances traffic to reduce the load on your monitoring tools.
- **Application Intelligence Solution:** Detects thousands of applications and accesses over 7,000 application metadata elements to understand your network better.

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.

Main Components

Component	Description
GigaVUE-FM fabric manager (GigaVUE-FM)	<p>Represents a web-based tool that helps you manage physical and virtual network traffic that forms GigaVUE Cloud Suite for VMware. It gives you complete visibility and control of your entire VMware cloud suite from one dashboard.</p> <p>GigaVUE-FM generates a complete network map to easily see which cloud systems are connected to the deep observability pipeline. It can manage hundreds of visibility nodes across on-premises and cloud environments. It also handles the setup for all other components in your platform.</p>
GigaVUE® V Series Node	<p>Represents a node that collects mirrored traffic, applies filters, and processes data using GigaSMART applications. It then sends the optimized traffic to your cloud-based tools or back to on-premises tools.</p>

Cloud Overview Page (VMware)

The Overview page lets you view and manage all Monitoring Sessions in one place. You can quickly find issues to help with troubleshooting or take simple actions like viewing, editing, cloning, or deleting sessions.

This page shows key information at a glance, including:

- Basic statistics
- V Series alarms
- Connection status
- Volume usage vs. allowance
- A summary table of active monitoring sessions

You can edit a Monitoring Session directly from this page without switching to each platform's session page.

How to Access the Overview Page

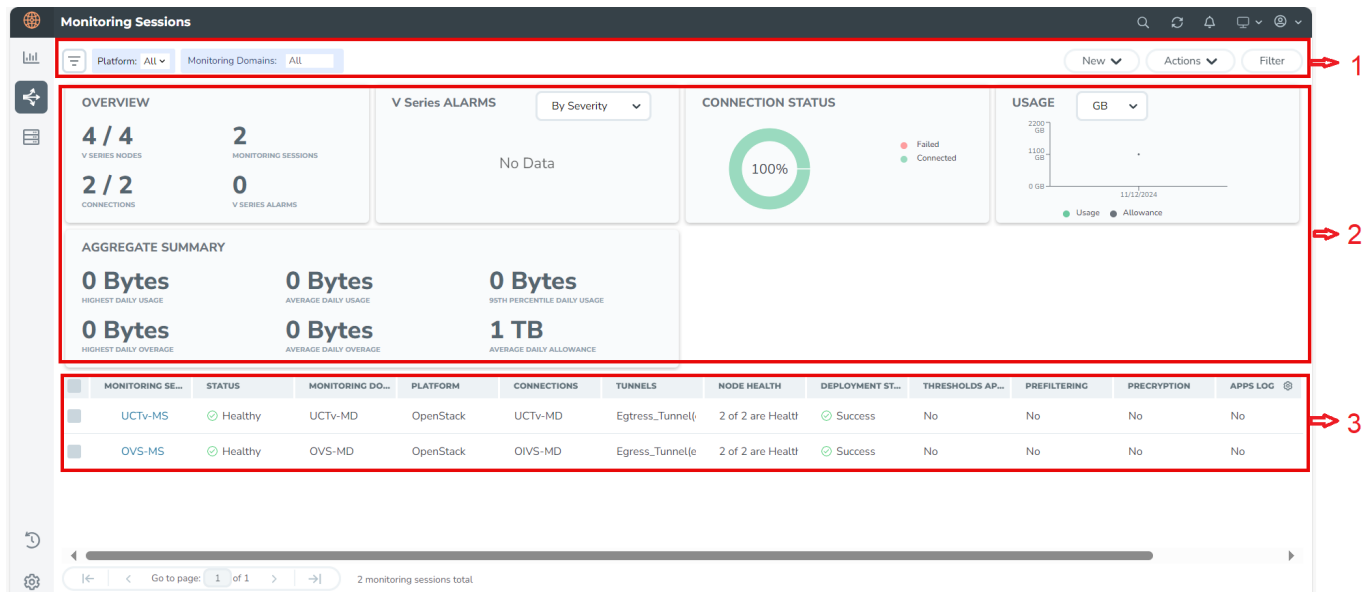
You can access the overall Cloud overview or the platform-specific Cloud overview.

Perform one of the following:

- Go to Traffic > Virtual > Overview for the overall cloud overview page.

- For the Platform-specific cloud overview details:
 1. Go to Traffic > Virtual > Overview.
 2. On the top-left menu from the Platform drop-down option, select the name of your cloud.

The **Monitoring Sessions** page appears.



Page Layout for Easy Use

The page is split into three main sections for easier navigation, as displayed in the screenshot and explained in the following table:

Number	Section	Description
1	Top Menu	Refer to Cloud Overview Page (VMware) .
2	Charts	Refer to Cloud Overview Page (VMware) .
3	Monitoring Session Details	On the Overview page, you can view the Monitoring Session details of all the cloud platforms. For details, refer to the Cloud Overview Page (VMware) section.

Top Menu

The Top menu consists of the following options:

Options	Description
New	Allows to create a new Monitoring Session and new Monitoring Domain.
Actions	Allows the following actions:

Options	Description
	<ul style="list-style-type: none"> • 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. For details, refer to the <i>Monitor Cloud</i> section. • Apply Policy: Enables functions like Precryption, Prefiltering, or Secure Tunnel.
Filter	You can filter the Monitoring Session details based on a criterion or a combination of criteria. For more information, refer to Cloud Overview Page (VMware) .


Filters

On the Monitoring Sessions page, you can apply the filters using the following options:

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

Filter on the left corner



1. From the **Platform** drop-down list, select the required platform.
2. Select  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

Use this filter to narrow down results with one or more of the following:

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

Viewing Charts on the Overview Page

You can view the following charts on the overview page:

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

Overview

This chart shows:

- The number of active GigaVUE V Series Nodes.
- The number of configured Monitoring Sessions and connections.
- The number of V Series alarms triggered.

V Series Alarms

This widget uses a pie chart to display V Series alarms.

- Each alarm type has its own color that is visible in the legend.
- Hover over a section to see the total number of alarms triggered.

Connection Status

This pie chart shows the status of connections in a Monitoring Domain.

- Successful and failed connections are marked in different colors.
- Hover over a section to view the total number of connections.

Usage

The Usage chart shows daily traffic volume through the V Series Nodes.

- Each bar represents one day's usage.
- Hovering over a bar helps you see the volume used and the limit for that day.

Aggregate Summary


This summary shows key volume usage stats:

- Highest daily volume usage
- Average daily volume usage
- Highest daily over-usage
- Average daily over-usage
- 95th percentile daily usage
- Average daily volume allowance

Viewing Monitoring Session Details

The overview table shows key details about each monitoring session. You can use this table to check session health, view settings, or take actions quickly.

Details	Description
Monitoring Sessions	Displays the name of each session. Select a name to open the Monitoring Session's page in the selected cloud platform.
Status	Displays the Health status of the Monitoring Session.
Monitoring Domain	Displays the name of the Monitoring Domain to which the Monitoring Session is associated.
Platform	Indicates the Cloud platform in which the session is created.
Connections	Displays Connection details of the Monitoring Session.
Tunnels	Lists the Tunnel details related to the Monitoring Session.
Node Health	Displays the Health status of the GigaVUE V Series Node.
Deployment Status	Displays the status of the deployment.
Threshold Applied	Specifies if the threshold is applied.
Prefiltering	Specifies if Prefiltering is configured.
Preencryption	Specifies if Preencryption is configured.
APPS logging	Specifies if APPS logging is configured.
Traffic Mirroring	Specifies if Traffic Mirroring is configured.

NOTE: Select the settings icon  and customize the options visible in the table.

Architecture for GigaVUE Cloud Suite for VMware ESXi

This document highlights how to deploy GigaVUE V Series Node on the VMware ESXi platforms and set up traffic monitoring sessions using these nodes.

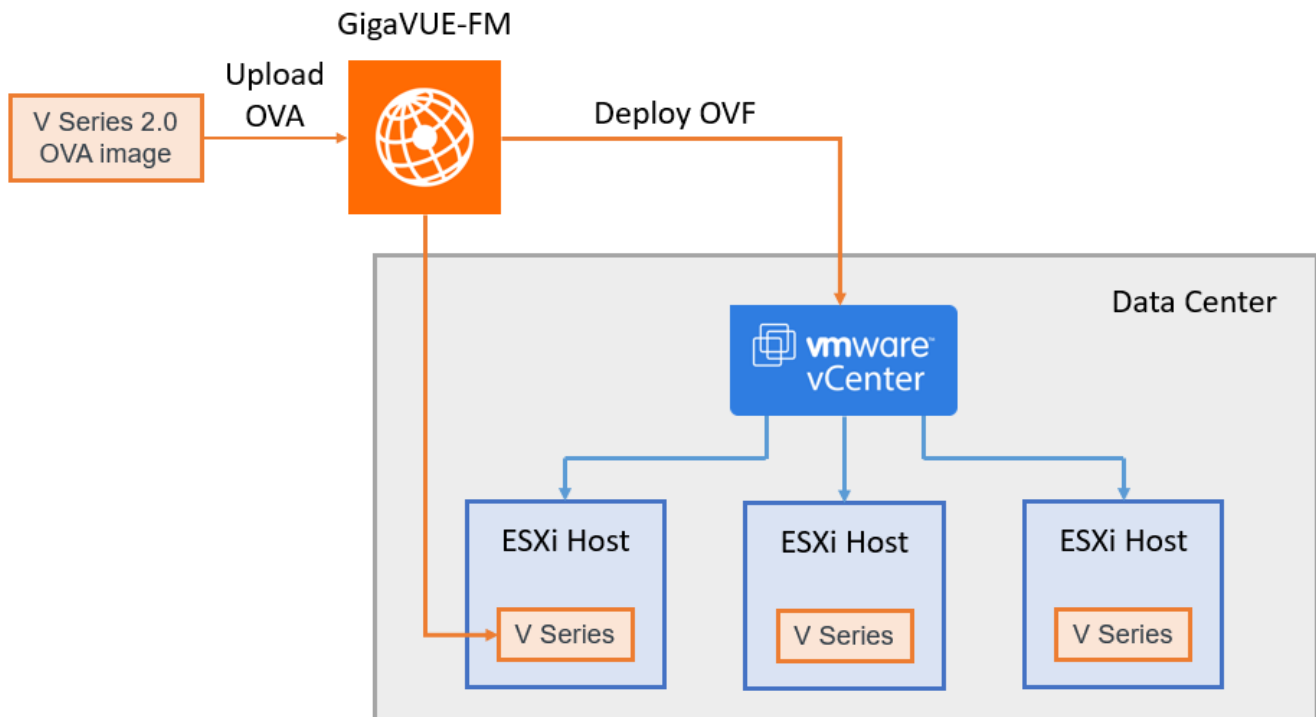
The GigaVUE V Series Nodes provide traffic visibility on the following VMware network types:

- vSphere Standard Switch
- vSphere Distributed Switch

Based on your setup, GigaVUE-FM creates, updates, and deletes the GigaVUE V Series Nodes on the ESXi hosts. Each GigaVUE V Series must run on the same ESXi host as the virtual machines (VMs) it monitors. It receives mirrored traffic directly from those VMs.

You can deploy only one GigaVUE V Series Node on a single ESXi host. GigaVUE-FM communicates directly with the GigaVUE V Series Nodes.

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



Points to Note (VMware vCenter)

1. **VMware vCenter Setup:** These steps assume that VMware vCenter is installed and configured. For details, refer to [VMware Documentation](#).
2. **Virtual Switch Configuration:** Ensure the source virtual machine and the monitoring tool are connected to different virtual standard switches. If both are on the same switch, traffic may loop back, causing issues.
3. **Handling Latency from NGFW with DPI:** If NextGen Firewall (NGFW) with Deep Packet Inspection (DPI) is enabled to inspect your east-west traffic, expect an increase in latency due to mirrored traffic. To avoid increased latency, perform one of the following:
 - Create an exception rule for the tunneled traffic (mirrored traffic from the GigaVUE V Series Nodes to the tool).
 - Configure a private VDS that can bypass the NGFW rules for this traffic.
4. **NSX N-VDS Support:** NSX Virtual Distributed Switch (N-VDS) based segments are not supported in **VMware vCenter** Monitoring Domain. N-VDS is supported only on NSX versions less than or equal to 3.0. For details, refer to [VMware Documentation](#).

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 reflect the data volume flowing through the V Series Nodes, with the usage statistics of all licensed applications that run on these nodes.

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

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

Related Information

- [Contact Sales](#): For purchasing licenses with the Volume-Based License (VBL) option.
- For more information, refer to the Data Sheet for the required GigaVUE Cloud Suite.

Base Bundles

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

- CoreVUE
- NetVUE
- SecureVUE Plus

The bundles are available as SKUs¹. The SKUs are named such that the number indicates the total volume allowance of the SKU for that base bundle. For example, VBL-250T-BN-CORE indicates a daily volume allowance of 250 Terabytes (250T) for the CoreVUE bundle.

The features supported for base bundle licenses are given in the following table:

Feature	CoreVUE	NetVUE	SecureVUE Plus
Slicing	√	√	√
Masking	√	√	√
Advanced Load Balancing	√	√	√
Advanced Tunneling	√	√	√
Deduplication	-	√	√
NetFlow Generation	-	√	√
Adaptive Packet Filtering (APF)	-	-	√
Application Filtering Intelligence (AFI)	-	-	√
Application Metadata Intelligence (AMI)	-	-	√
Application Metadata Exporter (AMX)	-	-	√
Inline Decryption	-	-	√
OOB Decryption	-	-	√
Precryption	-	-	√
Gigamon Enriched Metadata	-	-	√

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

Bundle Replacement Policy

Refer to the following notes:

- You can only upgrade to a higher bundle.
- You cannot have two different base bundles at the same time. However, you can have multiple base bundles of the same type.
- As soon as you upgrade to a higher bundle, the existing lower bundles are automatically deactivated.

Add-on Packages

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

The following add-on SKUs are available:

- VBL-50T-ADD-5GC
- VBL-250T-ADD-5GC
- VBL-2500T-ADD-5GC
- VBL-25KT-ADD-5GC

Rules for add-on packages:

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

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

- [GigaVUE 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](#)

How GigaVUE-FM Tracks Volume-Based License Usage

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

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

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

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

Related Information

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- VBL-2500T-ADD-5GC
- VBL-25KT-ADD-5GC

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

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

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- [GigaVUE Cloud Suite for Azure Data Sheet](#)
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- [GigaVUE Cloud Suite for Nutanix](#)

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

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

Default Trial Licenses

After installing GigaVUE-FM, you receive a one-time, free 1TB SecureVUE Plus trial Volume-Based License (VBL) for 60 days, starting from the installation date.

This license includes the following applications:

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

NOTE: If you do not have any other volume-based licenses installed, the deployed monitoring sessions are undeployed from the existing GigaVUE V Series Nodes after 60 days at the expiration of the trial license.

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

License Requirements for Monitoring Sessions

You must use one of the following GigaVUE Cloud Suite™ licenses to deploy any supported application in a Monitoring Session:


- CoreVUE Base Bundle (minimum required)
- NetVUE
- SecureVUE Plus

The default GigaVUE-FM licenses do not provide entitlement for deploying Monitoring Session applications.

The default trial VBL license (SecureVUE Plus) will support deploying applications in Monitoring Sessions only for the duration of the trial license.

Activate Volume-Based Licenses

To activate Volume-Based Licenses,

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

Manage Volume-Based Licenses

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

View active Volume-Based License

To view active Volume-Based License (VBL):

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

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


Field	Description
SKU	Unique identifier associated with the license.
Bundle	Bundle to which the license belongs to.
Volume	Total daily allowance volume.
Starts	License start date.
Ends	License end date.
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, select the column setting configuration option to enable the Entitlement ID field.

View Inactive Volume-Based License

To view inactive Volume-Based License (VBL):

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


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

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

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

Activate Volume-Based Licenses

To activate Volume-Based Licenses,

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

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

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

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

Supported Hypervisors for VMware

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

Tested Platforms- vSphere ESXi			
	vCenter Server	ESXi	GigaVUE-FM
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, v6.10.00, v6.11.00, v6.12.00
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, v6.10.00, v6.11.00, v6.12.00, v6.13.00

Tested Platforms- vSphere NSX-T			
	vCenter Server	ESXi	GigaVUE-FM
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, v6.10.00, v6.11.00, v6.12.00, v6.12.00
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
	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, 6.10.00, v6.11.00, v6.12.00, v6.13.00

Introduction to Supported Features for GigaVUE Cloud Suite for VMware ESXi

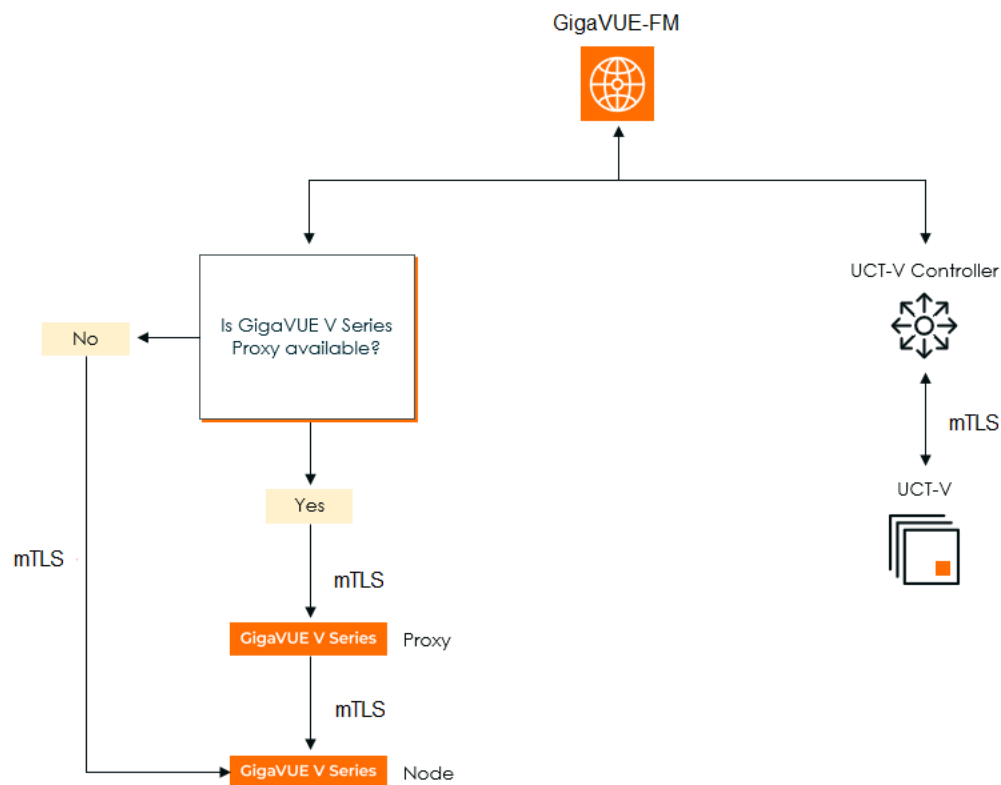
GigaVUE Cloud Suite for VMware (ESXi) supports the following features:

- [Rediscover](#)
- [Analytics for Virtual Resources](#)
- [Sharing the Same Host across Different Monitoring Domains](#)
- [Cloud Health Monitoring](#)
- [Selective Source Selection](#)

Secure Communication between GigaVUE Fabric Components

The Secure Communication feature in GigaVUE-VM uses mutual TLS (mTLS) authentication to improve network security. It ensures all GigaVUE Fabric Components communicate over encrypted, verified connections using certificates issued by a Certificate Authority (CA), without relying on static credentials.

How it Works!



In this setup:

- GigaVUE-FM establishes an mTLS connection and checks for GigaVUE V Series Proxy availability.
- If GigaVUE V Series Proxy is unavailable, it directly connects to the GigaVUE V Series Node through mTLS.

- If a GigaVUE V Series is available, GigaVUE-FM first connects to the GigaVUE V Series Proxy and establishes an mTLS connection with the GigaVUE V Series Node.
- GigaVUE-FM also initiates an mTLS connection to the UCT-V Controller, establishing an mTLS connection with UCT-V.

This structured flow ensures secure communication using mTLS-based authentication across all the fabric components.

GigaVUE-FM acts as the PKI

GigaVUE-FM manages all certificates for fabric components. It acts as a private PKI and uses Step-CA with the ACME protocol to issue and renew certificates. This automated process reduces the need for manual certificate handling and avoids external dependencies.

Bring Your Own CA

If your organization already uses a corporate CA, you can import those certificates into GigaVUE-FM. This allows your existing PKI infrastructure to work with Gigamon's secure communication system.

For more details on how to integrate your PKI infrastructure with GigaVUE-FM, refer to [Integrate Private CA](#)

Secure Communication in FMHA Mode

In FMHA (Fabric Manager High Availability) mode:

- The active GigaVUE-FM instance shares intermediate CA files with all standby nodes.
- Only the active instance handles certificate requests. In case of a failover, a standby node takes over.
- The root and intermediate CAs are copied to all nodes to ensure continuity.
- If an instance is removed, it generates a new self-signed CA on restart.

Supported Platforms

- AWS
- Azure
- OpenStack
- Nutanix
- Third Party Orchestration

- VMware ESXi
- VMware NSX-T

Supported Components

- GigaVUE V Series Node
- GigaVUE V Series Proxy
- UCT-V
- UCT-V Controller

Rules and Notes

- If a public IP is revoked in public cloud platforms, you can issue a new certificate to remove the old IP.
- This feature is optional.
- Ensure NTP (Network Time Protocol) runs if GigaVUE-FM and components are on different hosts.
- Applying a certificate may temporarily cause a component to show as Down, but it recovers automatically.
- In AWS, disable the Source/Destination Check on network interfaces for GigaVUE V Series Proxy.

Note: Enabling this check may block traffic if the IP address does not match the associated interface.

Rediscover

Sometimes, changes made to a GigaVUE V Series Node in VMware vCenter can cause its settings to go out of sync with what's shown in GigaVUE-FM. When this happens, you can use the Rediscover button in GigaVUE-FM to fix the mismatch:

Rediscovery updates the following settings:

- GigaVUE V Series Node name
- Datastore
- Management IP address
- Tunnel IP address
- Network name for Management Interface
- Network name for Tunnel Interface

NOTE: GigaVUE-FM automatically performs rediscovery every 24 hours to keep settings in sync.

To manually rediscover a node:

1. Go to **Inventory > VIRTUAL > VMware vCenter (V Series)**, and select **Monitoring Domain**. The **Monitoring Domain** page appears.
2. Select **Actions > Rediscover**.

NOTE: You can only rediscover GigaVUE V Series Nodes that are in the **OK** state.

Analytics for Virtual Resources

Analytics in GigaVUE-FM is a separate tool that helps you see your data through visual charts.

With Analytics, you can:

- Create charts and turn them into visualizations.
- Group visualizations into dashboards.
- Build search objects to find specific data.

These items, Dashboards, Visualizations, and Search Objects, are called Analytics objects.

For details, refer to [Analytics for Virtual Resources](#).

Sharing the Same Host across Different Monitoring Domains

GigaVUE-FM enables you to share a host between VMware ESXi and VMware NSX-T monitoring domains. 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.

As a result, you can monitor the workload of virtual machines using the following two options:

- Connected to NSX segments using the V Series nodes deployed in NSX-T monitoring domain.
- Connected to regular VSS / VDS networks using the V Series node deployed in the ESXi monitoring domain.

NOTE: GigaVUE-FM cannot provide visibility in the ESXi platform to a Virtual Machine with NICs attached to both VMware NSX-T segments and ESXi VDS or VSS port groups.

Cloud Health Monitoring

GigaVUE-FM helps you track the health of your monitoring sessions. You can check traffic flow and configuration status for each session and its parts.

This section explains how to:

- View the health of your monitoring sessions.
- Verify the status of each component.

For more information, refer to [Monitor Cloud Health](#).

Selective Source Selection

This feature enables you to select an individual network adapter of a virtual machine as a target while creating a map.

For details, refer to [Create a New Map \(VMware ESXi\)](#).

Customer Orchestrated Source - Use Case

Customer Orchestrated Source is a traffic capture method that allows to tunnel traffic directly to the GigaVUE V Series Nodes. This method is practical when some restrictions or a firewall prevent the setting up of UCT-V or VPC Mirroring. You can tunnel the traffic to a GigaVUE V Series Node to filter and process.

When using this method, you can:

- Set up tunnels or raw endpoints directly in the monitoring session.
- Apply tools like Slicing, Masking, Application Metadata, and Application Filtering to process the tunneled traffic.

To learn how to configure tunnels and endpoints, see:

- [Create Ingress and Egress Tunnel \(VMware vCenter\)](#)
- [Create Raw Endpoint \(VMware vCenter\)](#)

To set up,

1. Configure an Ingress tunnel in the Monitoring Session.
2. Use the GigaVUE V Series Node IP address as the destination IP address,

The traffic is directly tunneled to that GigaVUE V Series Node.

Prerequisites for Integrating V Series Nodes with VMware vCenter

- Learn about supported VMware vCenter, VMware ESXi and VMware NSX-T versions. For details, refer to [Supported Hypervisors for VMware](#).
- Ensure the ESXi hosts have the minimum vCPU and memory resources to host the GigaVUE V Series Nodes. For details, refer to [Recommended Form Factor for VMware vCenter \(Instance Types\)](#).
- Set the vCenter character encoding to UTF-8 to support internationalized characters in the VMware vCenter environment.
- Access to GigaVUE V Series Node device OVA image file. You can download from [Gigamon Customer Portal](#).
- Verify that all the target VMs have VMware guest tools or Open VM tools if you use IP-based filtering.
- Ensure that Port 8889 is available for GigaVUE-FM to access GigaVUE V Series Nodes.
- Ensure that TCP Port 443 is open between the GigaVUE-FM instance and the ESXi host to upload the OVA files. For details, refer to [Network Firewall Requirements](#)
- Ensure a minimum of **Intel Sandy Bridge** CPU compatibility for proper operation and optimal performance to enable **VMware EVC** in VMware vCenter. Recommended option: **Skylake** and above.

Refer to the following topics for more information:

- [Recommended Form Factor for VMware vCenter \(Instance Types\)](#)
- [Network Firewall Requirements](#)
- [Required VMware Virtual Center Privileges](#)
- [Default Login Credentials](#)

Recommended Form Factor for VMware vCenter (Instance Types)

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

Instance types can differ for GigaVUE V Series Nodes in different ESXi hosts. Small is the default type.

The table below lists the available form factors (instance types) based on memory and the number of vCPUs for a single GigaVUE V Series Node.

Type	Memory	vCPU	Disk space	vNIC
Small	4GB	2 vCPU	8GB	1 Management interface, 1 Tunnel interface, and 8 vTAP interfaces
Medium	8GB	4 vCPU		
Large	16GB	8 vCPU		

NOTE: When running GigaSMART applications such as Application Visualization, Application Metadata, and Application Filtering, use the **Large instance size (8 vCPU and 16 GB RAM)**. The Large instance supports up to 200k flows on VMware. You can contact your account manager or Gigamon Technical Support to identify a suitable form factor.

Minimum Virtual Computing Requirements

When deploying GigaVUE V Series Nodes, your Virtual Distributed Switch (VDS) must have a minimum number of ports available in its port groups. The required number of ports depends on how many port groups you use in each deployment.

If using a Single Port Group:

- Each GigaVUE V Series Node needs 10 ports from that port group.
- So, the port group must support: $10 \times (\text{Number of GigaVUE V Series Nodes})$

If using Two Port Groups:

When using two port groups in one deployment (typically one for Management and one for Tunnel traffic):

- Management Port Group
Needs: 1 port per GigaVUE V Series Node
- Tunnel Port Group
Needs: 9 ports per GigaVUE V Series Node

Use these calculations to ensure your port groups are sized correctly before deploying.

Network Firewall Requirements

Network Firewall Requirements for GigaVUE V Series Node deployment

Source	Destination	Source Port	Destination Port	Protocol	Service	Purpose
GigaVUE-FM	ESXi hosts vCenter	Any (1024-65535)	443	TCP	https	Allows GigaVUE-FM to communicate with vCenter and all ESXi hosts to import the V Series OVA files. OVA files require access to the host IP/URL for bulk deployment
GigaVUE-FM	GigaVUE V Series Nodes	Any (1024-65535)	8889	TCP	Custom API	Allows GigaVUE-FM to communicate with GigaVUE V Series Node
GigaVUE-FM	GigaVUE V Series Nodes	Any (1024-65535)	5671	TCP	Custom TCP	Allows GigaVUE-FM to receive the traffic health updates with GigaVUE V Series Node
GigaVUE-FM	GigaVUE V Series Nodes	Any (1024-65535)	80	TCP	Custom TCP	Allows GigaVUE-FM to send ACME challenge requests to GigaVUE V Series Node.

Administrator	GigaVUE-FM	Any (1024-65535)	443	TCP	https	Facilitates Management connection to GigaVUE-FM .
			22		ssh	
Administrator	GigaVUE V Series Nodes	Not Applicable	22		ssh	Facilitates troubleshooting GigaVUE V Series Nodes.
Remote Source	GigaVUE V Series Nodes	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 to the Tunnel Ingress option only)
			N/A	IP 47	GRE	
			4754	UDP	UDPGRE	
GigaVUE V Series Nodes	Tool/ GiagVUE 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
			Not Applicable	IP 47	GRE	
GigaVUE V Series Nodes	Tool/ GigaVUE HC Series instance	Not Applicable	Not Applicable	ICMP	Echo Request	(Optional) Allows GigaVUE V Series Node to health check tunnel destination traffic
					Echo Response	
GigaVUE V Series Nodes	GigaVUE-FM	Any (1024-65535)	Any (1024-65535)	TCP	Custom TCP	Allows GigaVUE V Series Nodes to communicate the traffic health updates with GigaVUE-FM
GigaVUE V Series Nodes	GigaVUE-FM	Any (1024-65535)	9600	TCP	Custom TCP	Allows GigaVUE-FM to receive certificate requests from GigaVUE V Series Node.

Required VMware Virtual Center Privileges

This topic lists the minimum privileges required for the GigaVUE-FM user in Virtual Center.

You assign privileges to Virtual Center users. To assign privileges, from the left pane, select **Administration** and go to **Access Control > Roles**.

Important! You must apply the roles at the vSphere Virtual Center level, not at the data center or Host levels.

The following table lists the minimum permissions required for GigaVUE-FM to manage the virtual center user with the specified roles:

Category	Required Privilege	Purpose
Datastore	Allocate space	V Series Node Deployment
Distributed Switch	VSPAN Operation	VDS Tapping
Folder	Create Folder	V Series Node Deployment
Host	Configuration <ul style="list-style-type: none"> Network Configuration 	VSS Tapping
	Inventory <ul style="list-style-type: none"> Modify Cluster 	Pin V Series Node to the host in cluster configurations to prevent automatic migration.
Network	<ul style="list-style-type: none"> Assign network Configure 	<ul style="list-style-type: none"> V Series Node Deployment/VSS Tapping V Series Node Deployment
Resource	Assign virtual machine to resource pool	V Series Node Deployment
vApp	<ul style="list-style-type: none"> Import vApp instance configuration vApp application configuration 	V Series Node Deployment
Virtual machine	Configuration <ul style="list-style-type: none"> Add new disk Add or remove device Modify device settings Rename 	V Series Node Deployment V Series Node Deployment/VSS Tapping
	Interaction	

Category	Required Privilege	Purpose
	<ul style="list-style-type: none"> Connect devices Power on Power Off Reset 	V Series Node Deployment
	Inventory <ul style="list-style-type: none"> Create from existing Remove 	V Series Node Deployment
	Provisioning <ul style="list-style-type: none"> Clone virtual machine 	V Series Node Deployment

Default Login Credentials

You can use the default credentials to log in to the GigaVUE V Series Node by using the default credentials.

Product	Login credentials
GigaVUE V Series Node	<p>You can login to the GigaVUE V Series Node by using ssh. The default username and password is:</p> <ul style="list-style-type: none"> Username: gigamon Password: Enter the password provided during the fabric launch configuration. <p>For more details, see Configure GigaVUE V Series Nodes for VMware ESXi.</p>

Install and Upgrade GigaVUE-FM

You have the flexibility of installing GigaVUE-FM on various supported platforms, including both cloud and on-premises environments.

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

Reference links

- **Installation:** Refer to [GigaVUE-FM Installation and Upgrade](#).
- **Upgrade:** Refer to [Upgrade GigaVUE-FM](#).

Deploy GigaVUE V Series Nodes for VMware (ESXi)

To integrate GigaVUE V Series Nodes with VMware vCenter, perform the following steps:

- [Upload GigaVUE V Series Node Image into GigaVUE-FM](#)
- [Create Monitoring Domain for VMware ESXi](#)
- [Configure GigaVUE V Series Nodes for VMware ESXi](#)
- [Rediscover](#)

The table below outlines each step to deploy GigaVUE V Series Nodes for VMware, helping you gain visibility into both physical and virtual network traffic.

Review the VMware ESXi System Requirements and [Prerequisites for Integrating V Series Nodes with VMware vCenter](#) sections for prerequisites.

Step No	Task	Refer the following topics
1	Upload the GigaVUE V Series Node Image (OVA File) into GigaVUE-FM	Upload GigaVUE V Series Node Image into GigaVUE-FM
2	Create a Monitoring Domain	Create Monitoring Domain for VMware ESXi
3	Deploy GigaVUE V Series Node using GigaVUE-FM	Configure GigaVUE V Series Nodes for VMware ESXi Refer to <i>Deploy GigaVUE V Series Nodes using GigaVUE-FM</i> section.
4	Create Monitoring session	Create a Monitoring Session (VMware)
7	Add Applications to the Monitoring Session	Add Applications to Monitoring Session
8	Deploy Monitoring Session	Deploy Monitoring Session
9	View Monitoring Session Statistics	View Monitoring Session Statistics

Upload GigaVUE V Series Node Image into GigaVUE-FM

This step is optional. You can upload the GigaVUE V Series Node image to GigaVUE-FM even while deploying the GigaVUE V Series Node. For details, refer to [Configure GigaVUE V Series Nodes for VMware ESXi](#).

To upload the V Series image into GigaVUE-FM,

1. Go to **Inventory > VIRTUAL > VMware vCenter (V Series)**, and select **Settings > OVA Files**.
2. In the **OVA Files** page, select **Browse**, and then select the image file. For example, *gigamon-gigavue-vseries-node-x.x.x-0-xxxxxx.ova*. You can upload three OVA files to GigaVUE-FM for VMware vCenter.
3. Select **Upload to Server**. You have uploaded the OVA image file to the GigaVUE-FM server.

Integrate Private CA

You can integrate your own PKI infrastructure with GigaVUE-FM. To integrate,


1. Generate a Certificate Signing Request (CSR).
2. Get a signature of the Certificate Authority (CA) on the CSR.
3. Upload it back to GigaVUE-FM.

Rules and Notes

- Always place the root CA in a separate file.
- When using multiple intermediate CAs, consider the following:
 - Include all intermediate CAs in a single file in the correct order.
 - Place the last intermediate CA in the chain at the top.
 - Place the preceding CAs in descending order.

Generate CSR

To create an intermediate CA certificate:


1. Go to  > **System > Certificates**.
2. In the top navigation bar, from the **PKI** drop-down list, select **CSR**. The **Generate Intermediate CA Certificate** page appears.
3. Enter details in the following fields:
 - **Country:** Enter the name of your country.
 - **Organization:** Enter the name of your organization.
 - **Organization Unit:** Enter the name of the department or unit.
 - **Common Name:** Enter the common name associated with the certificate.
4. From the **Algorithm** drop-down list, select the desired encryption algorithm used to encrypt your private key.
5. Select **Generate CSR**.

The CSR is downloaded successfully.

Upload CA Certificate

Get the CSR signed from your Enterprise PKI or any public PKI and upload the signed intermediate CA certificate to GigaVUE-FM.

To upload the signed CA certificate to GigaVUE-FM:

1. Go to  > **System > Certificates**.
2. In the top navigation bar, from the **PKI** drop-down list, select **CA**. The **CA Certificate** page appears.
3. From the **Actions** drop-down list, select **Upload CA**. The **Upload CA** pop-up appears.
4. Next to **Intermediate CA**, select **Choose File** to upload the signed intermediate CA certificate.
5. Next to **Root CA**, select **Choose File** to upload the corresponding root or intermediate CA.

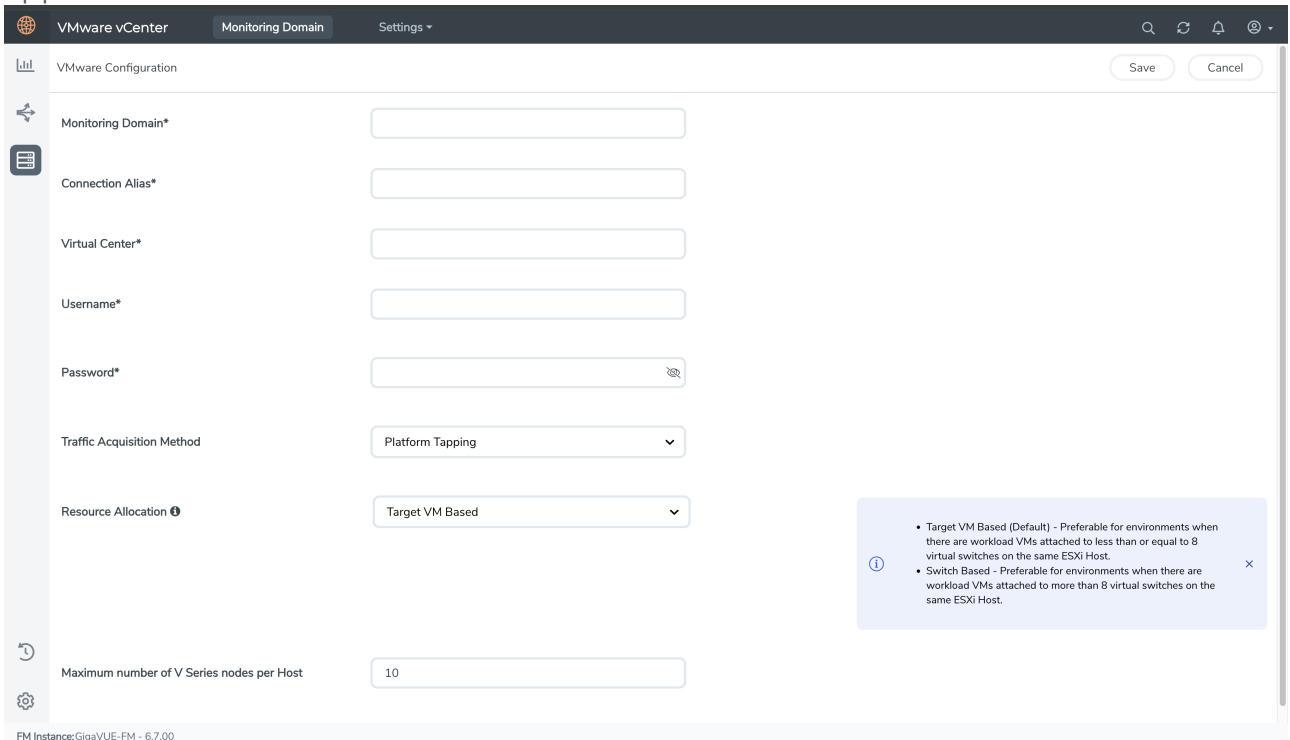
The **CA Certificate** page displays the uploaded CA certificate.

Create Monitoring Domain for VMware ESXi

This chapter describes how to create a monitoring domain for deploying GigaVUE V Series Nodes in VMware vCenter environment through GigaVUE-FM. You must establish a connection between GigaVUE-FM and VMware vCenter. Creating a monitoring domain in GigaVUE-FM allows you to establish a connection between vCenter and GigaVUE-FM.

To create a monitoring domain in GigaVUE-FM for VMware vCenter,

1. Go to **Inventory > VIRTUAL > VMware vCenter (V Series)**, and select **Monitoring Domain**. The **Monitoring Domain** page appears.
2. On the **Monitoring Domain** page, select **New**. The **VMware Configuration** page appears.



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 FQDN of the vCenter Note: To ensure the validity of VMware virtual central certificates issued by a trusted Certificate Authority (CA), you must enable the Trust Store. For details, refer to Cloud solution in Trust Store section in the GigaVUE Administration Guide.
Username	Username of the vCenter user with minimum privileges as described in the Prerequisites for Integrating V Series Nodes with VMware vCenter section. Note: Whenever you change the vCenter credentials in VMware vCenter, edit the Monitoring Domain to update that in GigaVUE-FM. Otherwise, the connection status reaches an authentication failure state.
Password	vCenter password to connect to the vCenter

Field	Description
Traffic Acquisition Method	<p>Select a Traffic Acquisition Method.</p> <p>Platform Tapping: Platform tapping is performed in two ways.</p> <ul style="list-style-type: none"> • VSS: Used when a workload Virtual Machine is connected to a Virtual Standard Switch network. GigaVUE-FM creates a promiscuous network on the VSS switch for tapping traffic. • VDS: Used when a workload Virtual Machine is connected to a Virtual Distributed Switch portgroup. Port Mirroring is created on the VDS switch by GigaVUE-FM for tapping the traffic <p>Customer Orchestrated Source: If you select Customer Orchestrated Source as the tapping method, you can use a tunnel or raw endpoint where traffic is directly tunneled to GigaVUE V Series Nodes.</p> <p>Note: Select the Traffic Acquisition Method as Customer Orchestrated Source if you want to deploy an AMX application in the Monitoring Session for this Monitoring Domain.</p>
<p>Resource Allocation</p> <p>Note: This field is applicable only when using Platform Tapping as the Traffic Acquisition Method.</p>	<p>When deploying multiple GigaVUE V Series Node in a single host, select any one of the following options:</p> <p>Target VM Based: Choose this option if your deployment workload VMs attached to less than or equal to 8 vSwitches on the same ESXi host. This resource allocation type distributes the workload VMs across multiple GigaVUE V Series Nodes on the same ESXi host.</p> <p>Switch Based: A single GigaVUE V Series Node can tap a maximum of 8 vSwitches. Choose this option if you have traffic monitoring VMs running on ESXi hosts connected to more than 8 vSwitches in a single host. The vSwitches are mapped to the GigaVUE V Series Node in a round-robin manner. In this model, vSwitches are evenly distributed across the available GigaVUE V Series Nodes on the same host.</p> <p>Note: Ensure to undeploy all the Monitoring Session associated with the connection before changing the Resource Allocation type.</p>
Maximum Number of V Series Nodes per Host	Enter the maximum number of GigaVUE V Series Nodes possible to deploy in a single host. The default value is 10.

4. Select **Save**. The **VMware Fabric Launch Configuration** page appears. For details on how to deploy GigaVUE V Series Nodes in the **VMware Fabric Launch Configuration** page, refer to [Configure GigaVUE V Series Nodes for VMware ESXi](#)



Notes:

- Ensure that all V Series Nodes within a Monitoring Domain run the same version. Mixing different versions in the same Monitoring Domain may lead to inconsistencies when configuring Monitoring Session traffic elements.



- Similarly, when upgrading a V Series Node, ensure that the GigaVUE-FM version is the same or higher than the V Series Node version.

The Monitoring Domain created in this section is listed on the **Monitoring Domain** page.



Points to Note:

- Whenever you change the vCenter credentials in VMware vCenter, edit the Monitoring Domain to update that in GigaVUE-FM. Otherwise, the connection status reaches an authentication failure state.
- When the Monitoring Domain is in a "Not Connected" state, updating the vCenter credentials will only refresh the information stored in the GigaVUE-FM database.

To establish the connection:

1. Navigate to the **Monitoring Domain** page.
2. Select **Actions** and select **Connect**.

By following these steps, you can ensure that your vCenter credentials are updated and the connection is established correctly.

You can perform the following actions in the Monitoring domain page:

Actions	Description
Edit	Use to edit a monitoring domain.
Deploy Fabric	Use to deploy GigaVUE V Series Nodes.
Upgrade Fabric	Use to upgrade GigaVUE V Series Nodes. For details, refer to Upgrade GigaVUE V Series Node in GigaVUE-FM for ESXi
Delete Monitoring Domain	Use to delete a Monitoring Domain.
Delete Fabric Nodes	Use to delete a GigaVUE V Series Node.
Connect / Disconnect	<p>Disconnect: This option appears when the Monitoring Domain is Connected. Use it to stop communication between GigaVUE-FM and the VMware vCenter.</p> <p>Connect: This option appears when the Monitoring Domain is disconnected. Use it to start communication between GigaVUE-FM and the VMware vCenter.</p>
Rediscover	The changes made in vCenter for the GigaVUE V Series is reflected in GigaVUE-FM. Refer to Rediscover topic for more detailed information.
Power On	You can select an individual GigaVUE V Series Node and power it on. The status of the GigaVUE V Series Node is changed to Ok .
Power Off	You can select an individual GigaVUE V Series Node and power it off. If the GigaVUE V Series Node is turned off from GigaVUE-FM, then it is not considered as part of Cloud Health Monitoring and GigaVUE-FM does not try to turn it on. The status of the GigaVUE V Series Node is changed to

Actions	Description
	Down.
Reboot	You can select an individual GigaVUE V Series Node and reboot it.
Edit SSL Configuration	You can use this option to add Certificate Authority and the SSL Keys when using the Secure Tunnels.
Generate Sysdump	<p>You can select one or multiple GigaVUE V Series Nodes (Maximum 10) to generate the system files. The generation of sysdump takes a few minutes in a GigaVUE V Series Node. You can proceed with other tasks, and upon completion, the status appears in the GUI. These system files are helpful for troubleshooting.</p> <p>For more information, refer to Debuggability and Troubleshooting.</p>
Manage Certificates	<p>You can use this button to perform the following actions:</p> <ul style="list-style-type: none"> • Re-issue: Required to address security compromises, key changes, or configuration updates, like validity period adjustments. • Renew: Extends the expiration date and usually happens automatically unless you decide to do it during scheduled downtime. Auto-renewal is performed based on the duration specified in the Certificate Settings page. For details, refer to Configure Certificate Settings

More information

- To view and manage the generated sysdump files, select the GigaVUE V SeriesNode and select the **Sysdump** tab in the lower pane.
- To view the certificates associated with the fabric, select the fabric nodes and select the **Certificates** tab in the lower pane.

Configure GigaVUE V Series Nodes for VMware ESXi

This section provides step-by-step instructions on how to deploy GigaVUE V Series Nodes in VMware vCenter Monitoring Domain.

To deploy GigaVUE V SeriesNodes using GigaVUE-FM, follow these steps:

1. Go to the **VMware Fabric Launch Configuration** page using one of the following options:
 - **Automatic Option:** Create a monitoring domain, and the page opens automatically.
 - **Manual Option:** 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 vCenter (V Series)**.
 - Select **Actions > Deploy Fabric**.

The **VMware Fabric Launch Configuration** page appears.

VMware Fabric Launch Configuration

Datacenter*

Cluster*

V Series Node Image*

Form Factor*

Enable Custom Certificates

Host* Import Host Info from File Add Host Info Manually

Common Configuration

Datastores Datastore Clusters

Datastore

V Series Node Name Prefix

V Series Node Name Suffix

Name Server

SSL Key

No. of V Series Nodes Per Host

Management

Network*

IP Type

MTU

Tunnel

Network*

IP Type

Gateway IP

MTU

Use IPv6

Virtual Disk Format

Deployment Folder

User Password* (gigamon)

Confirm User Password*

2. On the **VMware Fabric Launch Configuration** page, enter or select the following details:

Field	Description
Datacenter	vCenter Data Center with the ESXi hosts to be provisioned with GigaVUE V Series Nodes.
Cluster	Cluster where you want to deploy the GigaVUE V Series Nodes.
V Series Node Image	<p>Select the OVA file uploaded in the Upload GigaVUE V Series Node Image into GigaVUE-FM, from the drop-down menu.</p> <p>You can also add OVA files when launching the fabric. To add OVA files:</p> <ol style="list-style-type: none"> Click on the Add button. The Upload Image dialog box opens. In the Upload Image dialog box, click Browse to select the <i>gigamon-gigavue-vseries-node-x.x.x-0-xxxxxx.ova</i> file. Select Upload to Server to upload the selected OVA image file to GigaVUE-FM server.
Form Factor	<p>Instance size of the GigaVUE V Series Node. For details, refer to Prerequisites for Integrating V Series Nodes with VMware vCenter.</p> <p>Note:</p> <ul style="list-style-type: none"> Small Form Factor is not supported when using applications like Application Visualization, Application Metadata, Application Filtering. Select 80GB Disk Space, when using AMX Application.
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 unavailable 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>
Certificate Note: This field appears only when Enable Custom Certificates field is enabled.	Select the custom certificate from the drop-down menu. You can also upload the custom certificate for GigaVUE V Series Nodes. For more information, refer to Secure Communication between GigaVUE Fabric Components .
Hosts	<p>Select the ESXi hosts for GigaVUE V Series Node deployment.</p> <p>Note: You can select up to 250 hosts manually.</p> <p>Select Import Host Info from file or Add Host Info Manually.</p> <p>Import Host Info from file:</p> <p>To import host details from a .csv file:</p> <ol style="list-style-type: none"> Download the .csv template file. Enter the required values in the Excel sheet and save the file.

Field	Description
	<p>c. Select Browse and select the .csv file saved in the previous step.</p> <p>Note:</p> <ul style="list-style-type: none"> To deploy more than one GigaVUE V SeriesNode on the same host, add more rows in the Excel sheet with the same host value for each extra GigaVUE V SeriesNode you want to deploy. If your GigaVUE-FM version is above 6.5 and GigaVUE V Series Nodes are on a version below 6.5, Name Server and MTU are not supported. Therefore, these fields in the .csv file must be empty. <p>Add Host Info Manually:</p> <p>Select the ESXi hosts for GigaVUE V Series Node deployment.</p> <p>The Common Configuration drop-down wizard appears. Expand the Common Configuration drop-down wizard and update the following details to apply the configuration to all the selected hosts.</p> <p>You can expand the individual hosts and add or delete GigaVUE V Series Node. You can expand the individual GigaVUE V Series Node and modify the configurations applied in the Common Configuration.</p>
Common Configuration	
Datastore	Network datastore shared among all ESXi hosts.
V Series Node Name Prefix	Enter a prefix for the GigaVUE V SeriesNode name.
V Series Node Name Suffix	Enter a suffix for the GigaVUE V Series Node name.
Name Server	The server that stores the mapping between the domain names and the IP addresses. The maximum number of name servers that can be entered is three. Enter valid IPv4 addresses, separated by a comma.
No. of V Series Nodes per Host	Enter the number of GigaVUE V Series Nodes to be deployed in each host.
Management	
Network	Management network for GigaVUE V Series Nodes.
IP Type	Select the management network IP type as Static or DHCP.
Gateway IP Note: This field appears only when the Management IP type is Static.	Gateway IP address of the Management Network.
Netmask Length Note: This field	Management network's subnet mask value in CIDR format. For example, 21 for /21.

Field	Description
	appears only when the Management 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.
Data Interfaces - When using Customer Orchestrated Source as the Traffic Acquisition Method, you must configure two data interfaces.	
Use IPv6 Note: This field appears only when Customer Orchestrated Source as the Traffic Acquisition Method.	Enable to use IPv6.
Network	Tunnel Network for the GigaVUE 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.
Netmask Length Note: This field appears only when the Tunnel IP type is Static.	Tunnel network's subnet mask value in CIDR format. For example, 21 for /21.
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.
IPv6 Prefix Length Note: This field appears only when the Use IPv6 toggle button is enabled.	Enter the IPv6 prefix length as 64.
Virtual Disk Format	Select the Virtual Disk Format from the drop-down menu
Deployment Folder	Enter the folder name in vCenter, under which the GigaVUE V SeriesNodes must be deployed.
Password	Enter the password you wish to use for the GigaVUE V Series Node.

3. Select **Deploy**. After deployment in vCenter, it appears on the **Monitoring Domain** page under the Monitoring Domain, where the GigaVUE V Series Node is deployed.

NOTE: GigaVUE-FM can process a maximum of ten GigaVUE V Series Nodes deployment requests in parallel on VMware vCenter. Each deployment request can have multiple GigaVUE V Series Nodes for deployment.

Upgrade GigaVUE V Series Node in GigaVUE-FM for ESXi

This section explains the available methods to upgrade the GigaVUE V Series Nodes and provides instructions on how to upgrade GigaVUE V Series Nodes.



IMPORTANT

Before upgrading the Fabric Components to version 6.10.00 or above, ensure the following actions are performed:

- Open the required ports in the cloud platform. For details, refer to Network Firewall Requirement for GigaVUE Cloud Suite.
- When using FMHA configuration, follow the steps in the [Configure Secure Communication between Fabric Components in FMHA](#) section.

Update GigaVUE V Series Nodes

Use one of the following two options:

1. Upgrade all the GigaVUE V Series Nodes in a monitoring Domain:
 - a. Select the Monitoring Domain.
 - b. Select **Actions > Upgrade Fabric**.
2. Upgrade a single or a group of GigaVUE V Series Node. When upgrading a group of GigaVUE V Series Nodes, ensure all the GigaVUE V Series Nodes deployed on the same ESXi hosts are selected.

Upgrade Considerations

- You can select an entire monitoring domain and upgrade all the GigaVUE V Series Nodes in that particular monitoring domain, or you can select an entire host and upgrade all the GigaVUE V Series Node deployed in that particular host.
- When multiple GigaVUE V Series Nodes are deployed on the same ESXi host and only if a part of GigaVUE V Series Nodes are selected in that particular host, then the **Upgrade Fabric** button is disabled.
- When upgrading GigaVUE V Series Nodes, if a host of a particular GigaVUE V Series Node is under maintenance mode, then the **Upgrade Fabric** button is disabled.

- Unselect the GigaVUE V Series Node whose host is under maintenance mode, and upgrade that GigaVUE V Series Node when the host is out of the maintenance mode.

NOTE: GigaVUE-FM supports only (n, n-1, n-2) GigaVUE V Series Node versions.

Upgrade the GigaVUE V Series Node in GigaVUE-FM:

1. Go to **Inventory > VIRTUAL > VMware vCenter (V Series)**, then click **Monitoring Domain**. The **Monitoring Domain** page appears.
2. Select an entire monitoring domain or an entire host and select **Actions**.
3. From the drop-down list, select **Upgrade Fabric**. The **V Series Node Upgrade Task** dialog box appears.

V Series Node	Form Factor	Version
VSeries.vp-esxi-	Small, 2vCPU, 4GB RAM, 8GB ...	6.4.00
VSeries.vp-esxi-	Small, 2vCPU, 4GB RAM, 8GB ...	6.4.00

4. Enter a name for the V Series Node upgrade task.
5. Select the latest GigaVUE V Series Node OVA image from the **Image** drop-down list. When upgrading the GigaVUE V Series Nodes to any version equal to or greater than 6.5.00, the **Name Server** field is displayed. This field is optional. Name Server is a 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 valid IPv4 address, separated by comma.
6. (Optional) Select the **Change Form Factors** check box if you want to modify the form factor (instance) size.

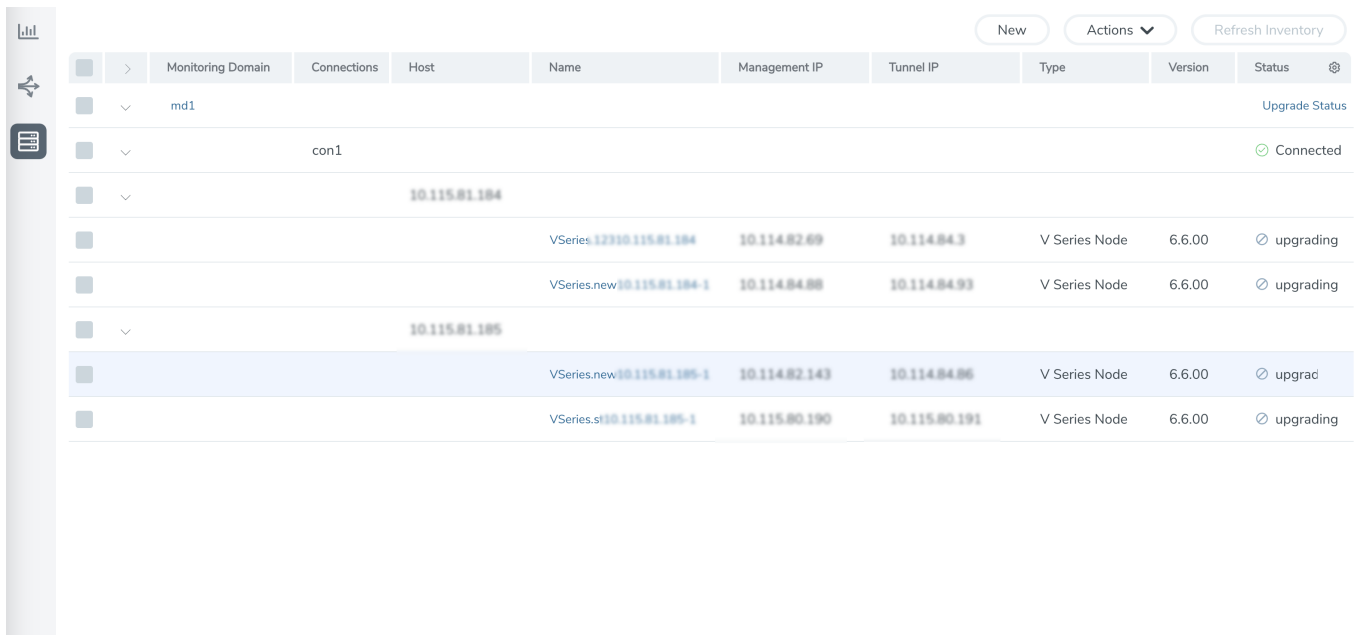
7. Select the form factor from the Default Form Factor drop-down menu to change the form factor of all the selected V Series Nodes.
You can use the **Use Current** option to use the existing form factor of the individual GigaVUE V Series Node. You can also change the form factor of an individual GigaVUE V Series Node from the **Form Factor** drop-down menu of the respective GigaVUE V Series Node. The form factor selected here overwrites the form factor selected in the **Default Form Factor**.

NOTE: All the GigaVUE V Series Node with Static IP address retain their old IP address even after the upgrade.

8. Select **Upgrade** to launch the GigaVUE V Series Node upgrade.

NOTE: Both the new and the current GigaVUE V Series Nodes appear in the same Monitoring Domain until the new nodes replace the current, and the status changes to **Ok**.

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



	Monitoring Domain	Connections	Host	Name	Management IP	Tunnel IP	Type	Version	Status
	md1								Upgrade Status
		con1							Connected
			10.115.81.184						
				VSeries.127310.115.81.184	10.114.82.69	10.114.84.3	V Series Node	6.6.00	upgrading
				VSeries.new.10.115.81.184-1	10.114.84.88	10.114.84.93	V Series Node	6.6.00	upgrading
			10.115.81.185						
				VSeries.new.10.115.81.185-1	10.114.82.143	10.114.84.86	V Series Node	6.6.00	upgrad
				VSeries.sl.10.115.81.185-1	10.115.80.190	10.115.80.191	V Series Node	6.6.00	upgrading

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

V Series Node Upgrade Status

Monitoring Domain Name: esxi-md-202-13

Upgrade Tasks

▼ Upgrade_GigaVUE_VSERIES_Node | SUCCESS

Clear

Summary

Success: 2
 Failed: 0
 In Progress: 0
 Total: 2

Node Statuses

Node	Status
VSeries.vp-redscvr- <small>10.115.202.46</small>	OK
VSeries.vp-redscvr- <small>10.115.202.46</small> renamed2	OK

▼ Upgrade | IN_PROGRESS

Summary

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

Node Statuses

Node	Status
VSeries.vp-redscvr- <small>10.115.202.46</small> upgrade	launching

- Select **Clear** to delete the monitoring domain upgrade status history of successfully upgraded nodes.
- If the GigaVUE V Series Node upgrade fails or is interrupted for any reason, select **Retry** on the **V Series Node Upgrade Status** dialog box.

NOTE: You cannot modify the node configurations when you are using **Retry** option. GigaVUE-FM uses the same values defined in the initial fabric upgrade configuration.

Configure Secure Communication between Fabric Components in FMHA

IMPORTANT: Before upgrading the Fabric Components to version 6.10 or later, complete the following steps after upgrading GigaVUE-FM to version 6.10 or later.

Follow these steps:

1. Access the active GigaVUE-FM via CLI.
2. Archive the stepCA directory using the following commands:

```
sudo su
cd /var/lib
tar -cvf /home/admin/stepca.tar stepca
```
3. Set the permissions of the tar file using the following commands:

```
chmod 666 /home/admin/stepca.tar
```
4. Copy the tar file to all standby instances in the **/home/admin/ directory** using scp:

```
scp /home/admin/stepca.tar <standby-node>:/home/admin/
```
5. Download the **runstepca_fmha** script from the Community Portal.
6. Log in to the standby instance using CLI.
7. Copy the script in the standby instance in the **/home/admin directory** and execute it using the following command:

```
sh /home/admin/runstepca_fmha
```

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 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. If the detected VM matches the defined selection criteria, your monitoring session displays it.

Similarly, when a traffic monitoring target VM is removed, the monitoring sessions are updated to show the removed instance.

Important! Before deploying a monitoring session, you need to deploy a V Series node on each host where you want to monitor traffic.

Limitations:

- 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.
- Pre-filtering is not supported on VMware ESXi running with V Series nodes.

Refer to the following topics for details:

- [Create a Monitoring Session \(VMware\)](#)
- [Monitoring Session Page \(VMware\)](#)
- [Create Raw Endpoint \(VMware vCenter\)](#)
- [Create a New Map \(VMware ESXi\)](#)
- [Add Applications to Monitoring Session](#)
- [Interface Mapping](#)
- [Deploy Monitoring Session](#)
- [View Monitoring Session Statistics](#)
- [Visualize the Network Topology \(VMware ESXi\)](#)
- [Configure VMware Settings](#)

Create a Monitoring Session (VMware)

GigaVUE-FM automatically collects inventory data on all target instances in your cloud environment. You can design your Monitoring Session to:

- Include or exclude the instances that you want to monitor.
- Monitor egress, ingress, or all traffic.

Target Instance

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

You can create multiple Monitoring Sessions within one 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. Select **New Monitoring Session** to open the New Monitoring Session configuration page.
3. In the configuration page, perform the following:
 - In the **Alias** field, enter the name of the Monitoring Session.
 - From the **Monitoring Domain** drop-down list, select the desired Monitoring Domain or select **Create New** to create a Monitoring Domain. For details, refer to the Create a Monitoring Domain section in the respective cloud guides.
 - From the **Connections** drop-down list, select the required connections to include as part of the Monitoring Domain.
 - From the **VPC** drop-down list, select the required VPCs to include as part of the Monitoring Domain.
 - Enable the **Distributed Deduplication** option to identify duplicate packets across different GigaVUE V Series Nodes when traffic from various targets is routed to these instances for monitoring. Distributed Deduplication is only supported on GigaVUE V Series Node version 6.5.00 and later.
4. Select **Save**. The Monitoring Session Overview page appears.

Monitoring Session Page (VMware)

The Monitoring Session page provides a comprehensive view of each monitoring session in your VMware environment. This topic provides detailed insights into session configuration, traffic analysis, and network topology.

Tabs Menu

Tab	Description
Overview	Displays key information about the selected monitoring session, such as connections, tunnel and health status, deployment state, and information related to Application Intelligence statistics. You can view traffic trends (ingress/egress) hourly, daily, weekly, or monthly. You can filter statistics by associated elements. For more information, refer to View Monitoring Session Statistics
Sources	Lists all monitored sources and targets. You can view/edit connection details, check deployment status, number of targets, and source health. For OVS Mirroring, the source tab also displays hypervisor and instance details. In the Selection Status section, you can view the VM status. The status indicates whether the VM is supported, not supported, selected, or not selected. When you hover over the status, a tooltip displays the reason for that status.

Tab	Description
Traffic Processing	Allows you to add and configure applications, tunnel endpoints, raw endpoints, and maps. View stats for each application, apply threshold templates, enable user-defined apps, and toggle distributed de-duplication. For more information, refer to Configure Monitoring Session Options (VMware ESXi)
V Series Nodes	Shows the V Series Nodes tied to the session. In the split view, you can view the node name, health, deployment status, host VPC, version, and management IP. You can also change the interfaces mapped to an individual GigaVUE V Series Node. For more information, refer to the Interface Mapping
Topology	Visualizes the monitored network fabric, showing connections, subnets, and instances. You can explore topology by selecting specific connections, offering a clear visualization of the monitored network elements. For more information, refer to Visualize the Network Topology (VMware ESXi) .


NOTE: Ensure that the GigaVUE V Series Node and GigaVUE-FM are time synchronized or configure NTP time synchronization.

Actions Button

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.

Sidebar

You can use the  icon on the left side of the Monitoring Session page to view the Monitoring Sessions list.

Select  to filter the Monitoring Sessions list. In the side bar, you can:

- Create a new Monitoring Session
- Rename a Monitoring Session
- Hover over, click the check box of the required Monitoring Session(s) and perform bulk actions (Delete, Deploy, or Undeploy).

Configure Monitoring Session Options (VMware ESXi)

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](#)

Access the TRAFFIC PROCESSING tab

To navigate to **TRAFFIC PROCESSING** tab, follow these steps:

1. Go to **Traffic > Virtual > Orchestrated Flows > Select your cloud platform.**
2. On the left pane with the Monitoring Sessions list view, select a Monitoring Session.
3. Select the **TRAFFIC PROCESSING** tab.

Apply Threshold Template

You can apply the Threshold configuration to a Monitoring Session before deployment.

To apply a threshold,

1. In the **TRAFFIC PROCESSING** page, select **Options > Thresholds.**
2. Select an existing threshold template from the **Select Template** drop-down list. You can create a template using **New Threshold Template** option and apply it.
3. Select **Apply.**

For more information, refer to the [Traffic Health Monitoring](#) section.

The template is added to the Monitoring Session.



Notes:

- Undeploying the Monitoring Session does not remove the applied Thresholds.
- You can also view the details related to the applied thresholds, such as traffic element, metrics, type, trigger values, and time intervals, in the threshold window.

Select **Clear Thresholds** to clear the applied thresholds across the selected Monitoring Session.

Enable User-Defined Applications

To enable a defined application,

1. In the Monitoring Session **TRAFFIC PROCESSING** page, select **Options > User Defined Applications**.
2. Enable the **User-defined Applications** toggle button.
3. From the **Actions** drop-down, add one of the existing applications or create a User-Defined Application.

For more information, refer to [User Defined Application](#).

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. For more information, refer to [Distributed De-duplication](#).

To enable,

1. In the TRAFFIC PROCESSING page, select **Options > Distributed De-duplication**.
2. Enable the toggle.



Notes:

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

Create Ingress and Egress Tunnel (VMware vCenter)


GigaVUE-FM Series Node sends traffic to tunnel endpoints in a monitoring session. You can create a tunnel endpoint using L2GRE, VXLAN, UDPGRE, TLS-PCAPNG, UDP, or ERSPAN.

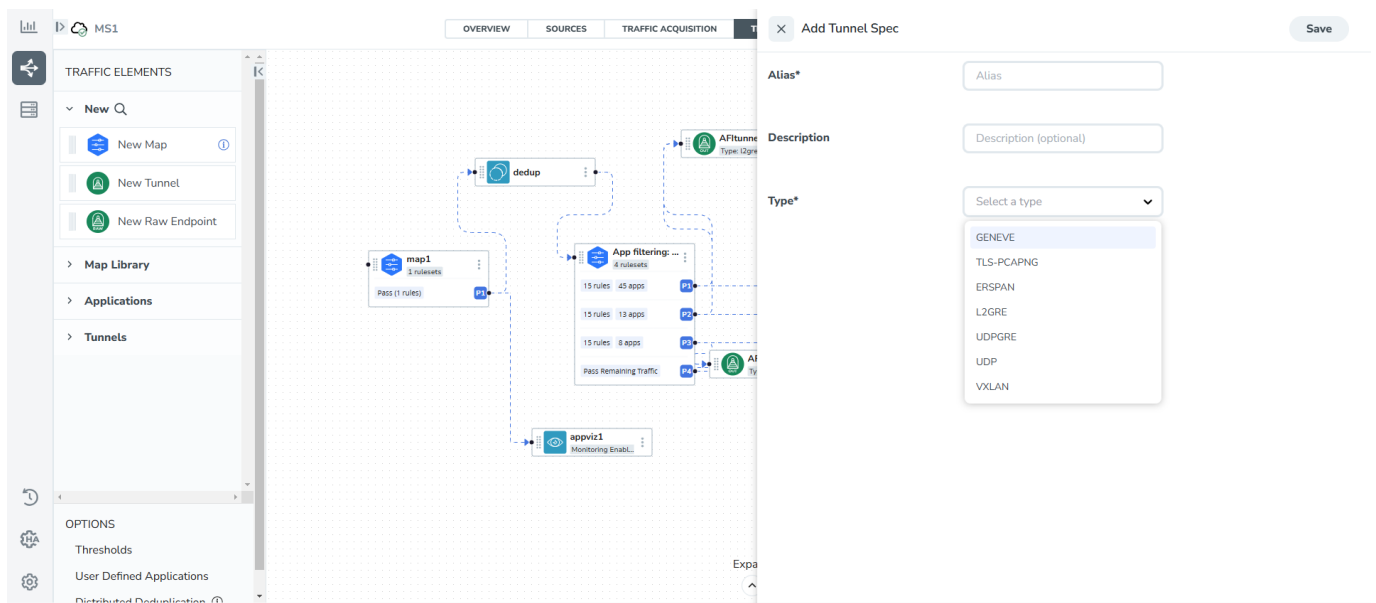
Create a new tunnel endpoint

To create,

1. Perform one of the following and navigate to the **TRAFFIC PROCESSING** tab:
 - Create a new monitoring session
 - Select **Actions > Edit** on an existing monitoring session.


The GigaVUE-FM Monitoring Session canvas page appears.

- On the left pane of the canvas, select the  icon 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.
- Enter the **Alias**, **Description**, and **Type** details.
For details, refer to [Details - Add Tunnel Specifications](#) table.
- Select **Save**.



To delete a tunnel, select the  menu button of the required tunnel and select **Delete**.

Apply a threshold template to Tunnel End Points

- Select the  menu button of the required tunnel endpoint on the canvas and click **Details**.
- In the quick view, go to the **Threshold** tab.

For details on creating or applying a threshold template, refer to the Monitor Cloud Health topic in the respective Cloud guides.


You can use the configured Tunnel End Points 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. Select the numbers of tunnels displayed in the **OVERVIEW** tab to view the tunnel names and their respective **ADMIN STATUS** and **HEALTH STATUS**.

Table 1: Details - Add Tunnel Specifications

Field	Description	
Alias	The name of the tunnel endpoint.	
Description	The description of the tunnel endpoint.	
Admin State Note: This option appears only after the Monitoring session deployment.	Use this option to send or stop the traffic from GigaVUE-FM to the egress tunnel endpoint. Admin State is enabled by default. You can use this option to stop sending traffic to unreachable or down tools. Each egress tunnel configured on the GigaVUE V SeriesNode has an administrative state that enables GigaVUE-FM to halt the tunnel's traffic flow. GigaVUE-FM only disable the tunnels when it receives a notification via REST API indicating that a tool or group of tools is down. Note: This option is not supported for TLS-PCAPNG tunnels.	
Type	The type of the tunnel. Select from the options below 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. 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 configure secure tunnels on your physical device conveniently. For details, refer to Secure Tunnels .		
In	Choose In (Decapsulation) for creating an ingress tunnel to 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 that is used to identify the VXLAN. The value ranges from 1 to 16777215.
	Source L4 Port	The port used to establish the connection 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 used to establish 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	

Field	Description
	to the destination endpoint.

Field	Description	
	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.
	VXLAN Network Identifier	Unique value which is used to identify the VXLAN. The value ranges from 1 to 16777215.
	Multi Tunnel	<p>Enable the multi-tunnel flag to create multiple tunnels for flow distribution to the 5G-Cloud application. Refer to 5G-Cloud Ericson SCP Support.</p> <p>Applicable Platforms: OpenStack, Third Party Orchestration, VMware ESXi</p> <div data-bbox="683 1108 1468 1751" style="border: 1px solid #ccc; padding: 10px; background-color: #f0f8ff;"> <p> Notes:</p> <ul style="list-style-type: none"> ▪ You can configure either a single-tep or multi-tep setup for the egress tunnel. Switching between these configurations is not allowed; to make changes, you must undeploy and redeploy the Monitoring Session. ▪ When you enable Multi-Tunnel on a VXLAN tunnel and set the number of tunnels, GigaVUE-FM automatically creates the additional VXLAN tunnel endpoints. Any later changes to the original VXLAN tunnel, such as disabling Multi-Tunnel or modifying Domain Tagging do not update these auto created endpoints. They continue to retain the configuration that existed at the time they were created. </div>

Field	Description
	 To apply updated settings, you must delete the VXLAN TEP and the associated LB application, then recreate the LB and VXLAN TEP with the new configuration, and re-establish the link between them.
Source L4 Port	The port from which the connection is 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 is established from the source. For example, if A is the source and B is the destination, this port value belongs to B.
Domain Tagging	Enable this option to tag packets on the egress tunnel with the Ericsson domain-specific VLAN IDs derived from the PCAPng Domain VLAN Mapping. NOTE: This setting is available only when Domain Classification is enabled in the associated PCAPng application. Refer to PCAPng Application for details.
UDPGRE	
Traffic Direction	
The direction of the traffic flowing through the GigaVUE V Series Node.	
In	Choose In (Decapsulation) for creating an ingress tunnel to 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 routes 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 is 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 is 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.	

Field	Description	
<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. For details, refer to the Secure Tunnels.</p>		
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.
	Domain Tagging	Enable this option to tag packets on the egress tunnel with the Ericsson domain-specific VLAN IDs derived from the PCAPng Domain VLAN Mapping. <div data-bbox="683 1703 1471 1787" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: This setting is available only when Domain Classification is enabled in the associated PCAPng application. Refer to</p> </div>

Field	Description	
		PCAPng Application for details.
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		
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 . For details, refer to Secure Tunnels section.</p>		

Field	Description	
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 is 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 is 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 for 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 helps network devices identify the higher or lower priority to handle traffic. 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 is 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 is 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 the receipt of acknowledgments.
	Sync Retries	Enter the number of times you can try the sync. The value ranges from 1 to 6.
	Delay Acknowledgments	Enable the receipt of acknowledgments when there is a delay.
UDP:		

Field	Description	
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. For details, refer to Application Metadata Exporter .
	Source L4 Port	The port from which the connection is 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 is established from the source. For example, if A is the source and B is the destination, this port value belongs to B.

Create Raw Endpoint (VMware vCenter)

This topic provides instructions on configuring a RAW Endpoint (REP) in the Monitoring Session.

Rules and Notes

Ingress REP works only when you select the Traffic Acquisition Method as **Customer Orchestrated Source** while configuring the Monitoring Domain.

For details, refer to [Create Monitoring Domain for VMware ESXi](#)

Consideration

When deploying GigaVUE V Series Nodes in the Monitoring Domain, the number of interfaces varies based on the Traffic Acquisition Method. See the table below for details.

Traffic Acquisition Methods - Customer Orchestrated Source

Display Name	Interface Name	Role	Comments
Network Adapter 1	ens160	Management	
Network Adapter 2	ens192	Data	Supports Tunnel and RAW endpoint. Available for Ingress and Egress REP
Network Adapter 3	ens224	Data	Supports Tunnel and RAW endpoint. Available for Ingress and Egress REP


Traffic Acquisition Methods - Platform Tapping

Display Name	Interface Name	Role	Comments
Network Adapter 1	ens160	Management	
Network Adapter 2	ens192	Data	Supports Tunnel and Egress RAW endpoint.
Network Adapter 3 - 10	-	Data	Reserved and used for platform tapping (Port Mirroring)

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 configure,

1. From the New expand menu, drag and drop **New Raw Endpoint** to the graphical workspace.
2. On the new raw endpoint icon, select the  menu button and select **Details**. The **Raw** quick view page appears.
3. Enter the Alias and Description details for the Raw End Point and select **Save**.
4. Perform the following steps to deploy the Monitoring Session after adding the Raw Endpoint:
 - a. From the **Actions** drop-down list on the **TRAFFIC PROCESSING** page, select **Deploy**. The **Deploy Monitoring Session** dialog box appears.
 - b. Select the V Series Nodes to deploy the Monitoring Session.
 - c. From the drop-down menu of the selected individual V Series Nodes, select the interfaces for each REPs and the TEPs deployed in the Monitoring Session.
 - d. Select **Deploy**.
5. Select **Export** to download all or selected V Series Nodes in the CSV and XLSX formats.

Create a New Map (VMware ESXi)

If you're a new user, the free trial lasts for 30 days. After that, GigaVUE-FM asks you to buy a license. For details, refer to [GigaVUE Licensing Guide](#).

A map filters traffic that flows through GigaVUE V Series Nodes. It includes one or more rules, each defining what traffic to match. Traffic can match one or more rules in the map.

Refer to this table to configure traffic filter maps and enable automatic target selection in GigaVUE V Series Nodes.

Parameters to create a map

Parameter	Description
Rules	A rule (R) includes filtering conditions that traffic must match. It also defines traffic direction (ingress or egress) and target.
Priority	Sets the rule execution order. Use values from 1 (highest) to 5 (lowest).
Pass	Sends traffic from the VM to the destination.
Drop	Drops the traffic from the virtual machine when passing through the map.
Traffic Filter Maps	A set of maps 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 follows:</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. <p>Note:</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.
Group	A group is a collection of pre-defined maps saved in the map library for reuse.

Rules and Notes:

- Directional rules do not work on single NIC VMs 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.
- If a packet is fragmented, then all the fragments are destined to the same application end point. You can find the stats of mapped fragmented traffic in GigaVUE-FM. For details, refer to "Review Map Statistics with Map Rule Counters" section in *GigaVUE Fabric Management Guide*.

Create a Map

To create a map,

1. Drag and drop **New Map** from the **New** expand menu to the graphical workspace. The **Map** quick view appears.

2. On the new Map quick view, select the **General** tab and enter the required information as described below.
 - **Name:** Name of the new map
 - **Description:** Details of the map
 - **Application Filtering:** Enable this option if you wish to use Application Filtering Intelligence. Enabling this option allows you to filter traffic based on Application name or family. For details, refer to [Application Filtering Intelligence](#).
 - **Selected Virtual Machines:** Using this option, you can select an individual Network adapter of a virtual machine as a target. Both ingress and egress traffic of the network adapter chosen are redirected for monitoring. You can also view and filter the list of virtual machines available. When using this option, you cannot use Automatic Target Selection (ATS)

- **Virtual Machine List:** Save the list or filter.

To save,

- Select **Virtual Machine List**.

The Virtual Machine List quick view opens.


- Select the virtual machines you wish to use as the target.
- Select **Apply** in the Virtual Machine List quick view to save your changes.

To filter,

- Select **Filter** and select one of the following criteria:
 - Data Center
 - Cluster
 - Host Name
 - VM Name
 - VM Tag Category
 - VM Tag Name
- After selecting the details, select **Apply** in the filter dialog box to apply the filters.

The list of virtual machines appears based on the filter criteria.


- Select the virtual machines you wish to use as the target, and select **Apply** in the Virtual Machine List quick view to save your changes.
- VMware tools are not required to discover targets, as GigaVUE-FM can discover targets with ATS using the tags attached to the VMs.
- Targets are selected when you provide the VM's node name or the hostname as selection criteria. A host is selected when the hostname matches all the active targets.

- Pass and Drop rule selection with Automatic Target Selection (ATS) differs 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
3. Select the **Rule Sets** tab and perform the following:
 - a. Create a new rule set:
 - i. Click **Actions > New Ruleset**.
 - 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. Create a new rule:
 - i. Click **Actions > New Rule**.
 - ii. Select a required condition from the drop-down list.
 - iii. Select  and select **Add Condition**.
 - iv. Select the rule to **Pass** or **Drop** through the map.
 4. Select **Save**.

Through the map, packets is 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.

You must select at least one rule condition to add ATS rules for an Inclusion/Exclusion map. For details, refer to [Create a New Map \(VMware ESXi\)](#).

You can also perform the following actions on the Monitoring session canvas.

- To edit a map, select the  menu button of the required map on the canvas and select **Details**, or select **Delete** to delete the map.
- To apply the threshold template to maps, select the required map on the canvas and select **Details**. The quick view appears. Select the Thresholds tab. For more details on how to create or apply threshold templates, refer to [Monitor Cloud Health](#).
- Hover over the rules and apps buttons on the map to view the rules and applications configured for the selected map.
- Select the rules and apps buttons to open the quick view menu for RULESETS.

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.

To create a map,

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. Select 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** is excluded.

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

Map Library

Map Library is available in the **TRAFFIC PROCESSING** canvas page. You can add and use the maps from the Monitoring Session.

To add a map,

1. From the **Monitoring Session** screen, select **TRAFFIC PROCESSING**.
The GigaVUE-FMCanvas page appears.
2. From the page, select the desired map and save it as a template.

3. Select **Details**.

The Application quick view appears.

4. Select **Add to Library** and perform one of the following:

- From the **Select Group** list, select an existing group.
- Select **New Group** to create a new one.

5. In the **Description** field, add details, and select **Save**.

The map is added to Map Library. You can use the added map for all the monitoring sessions.

Reusing a map

From the **Map Library**, drag and drop the saved map.

Add Applications to Monitoring Session

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

For more details about supported V Series applications, refer to [Supported V Series Applications](#).

- Application Visualization
- Application Filtering Intelligence
- Application Metadata Intelligence
- Slicing
- Masking
- De-duplication
- Load Balancing
- PCAPng Application
- Header Stripping
- Application Metadata Exporter
- SSL Decrypt
- GigaSMART NetFlow Generation
- 5G-Service Based Interface Application
- 5G-Cloud Application

For details on configuring these applications, refer to *GigaVUE V Series Applications Guide*.

Interface Mapping

You can remap interfaces for individual GigaVUE V Series Nodes within a Monitoring Session.

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

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 the **V SERIES NODES** tab and select **Interface Mapping**.

The **Deploy Monitoring Session** dialog box appears.

3. Select the GigaVUE V Series Nodes to which you wish to map the interface.
4. From the drop-down menu of the GigaVUE V Series Nodes, select the interfaces for the following deployed in the Monitoring Session:
 - REPs (Raw Endpoints)
 - TEPs (Tunnel Endpoints)

5. Select **Deploy**.

NOTE: The updated mappings take effect when deployed.

Deploy Monitoring Session

You can deploy the Monitoring Session on all the nodes and view the report.

To deploy the Monitoring Session,

1. **Add components to the canvas**

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. **Connect components**

Perform the following steps after placing the required items in the canvas.

- a. Hover your mouse on the map
- b. Select the dotted lines
- c. Drag the arrow over to another item (map, application, or tunnel).

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

3. **(Optional) Review Sources**

Select the **SOURCES** tab to view details about the subnets and monitored instances.

The monitored instances and the subnets are visible in orange.

Not applicable for NSX-T solution and Customer Orchestrated Source as Traffic Acquisition Method.

4. **Deploy the Monitoring Session**

From the **Actions** menu, select **Deploy**.

After successful deployment on all the V Series Nodes, the status appears as **Success** on the **Monitoring Sessions** page.

View the Deployment Report

You can view the Monitoring Session Deployment Report in the **SOURCES** and **V SERIES NODES** tab.

- When you select the **Status** link, the Deployment Report is displayed.
- When the deployment is incorrect, the Status column displays one of the following errors:
 - **Success:** Not deployed on one or more instances due to V Series Node failure.
 - **Failure:** Not deployed on all V Series Nodes or Instances.

The **Monitoring Session Deployment Report** displays the errors that appeared during deployment.

The Monitoring Session Deployment includes two key configuration:

- [Interface Mapping](#)
- [Tool Exclusion](#)

Interface Mapping

It allows to associate specific network interfaces (from monitored instances) with monitoring tools. This ensures that traffic from selected sources is accurately mirrored and routed for analysis. You can:

- Select interfaces from available instances.
- Map each interface to one or more monitoring tools.
- Apply filters or conditions to refine traffic selection.

Tool Exclusion

It excludes specific monitoring tools from receiving mirrored traffic during a monitoring session. This option is available only when the Traffic Acquisition method is set to **VPC Traffic Mirroring**.

Deploy Monitoring Session

INTERFACE MAPPING **TOOL EXCLUSION**

Tool instances should be excluded to avoid traffic looping. Review the instances with the same IP address below and select the tool instance to exclude.

IP ADDRESS	TOOL EXCLUSION	VM NAME	ID
10.10.10.100	Excluded	VM100	i-0cae6ab7c57a9d237
10.10.10.200	--	<input checked="" type="checkbox"/> Tool	i-0cae6ab7c57a9d328
10.10.10.300	Excluded	VM200	i-0cae6ab7c57a9f395

Cancel Deploy

- Review the list of available monitoring tools.
- Select the tools to exclude from traffic flow.
- Confirm the exclusion before deploying the session.

View Monitoring Session Statistics

The OVERVIEW page of Monitoring Session allows you to analyze the incoming and outgoing traffic across multiple time intervals. For example, hourly, daily, weekly, and monthly.

You can view the high-level information of the selected Monitoring Session, such as:

- Connections
- Tunnel details
- Health status
- Deployment status
- Information related to Application Intelligence statistics.

You can view the detailed statistics of an individual traffic processing element in the **TRAFFIC PROCESSING** tab.

View Statistics with Multiple Filters

You can apply different filters per the data analysis requirements to view the statistics.

GigaVUE-FM allows you to perform the following actions on the Monitoring Session Statistics page:

- Full Screen View
- Time Interval Options
- View with Traffic Data
- Per-Node Statistics
- Element-Level Insights

Option 1: View Full Screen

You can view the Statistics on full screen.

To view in full screen,

1. From the right side of the window, select the Actions drop-down list.
2. Select Full Screen.

Statistics appear in full screen.

Option 2: View using Time Interval

Select the options from the drop-down list box to view the incoming and outgoing traffic hourly, daily, weekly, and monthly.

Interval	Frequency of data points
Hourly	Every five minutes
Daily	Every one hour
Weekly	Every six hours
Monthly	Everyday

The most recent data point shown is slightly earlier than the current time (for example, viewing hourly stats at 11:30 will show the latest point at 11:25).

For each interval, the data displayed reflects the period starting from that data point. For instance, a data point marked 11:30 in daily view represents traffic from 11:30 to 12:30.

Option 3: View with Traffic Data

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.

Option 4: View Per-Node

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,

1. On the bottom-left corner of the OVERVIEW page, go to the GigaVUE V Series Node drop-down list.
2. Select the name of the V Series Node for which you want to view the statistics.

Option 5: Element-level statistics

You can view the statistics of the elements involved in the Monitoring Session.

To view the statistics,

1. Go to the Select Chart Options page.
2. Select the elements associated with the session.
3. On the graph, directly select the following options to view the statistics individually:
 - Incoming(Mbps)
 - Outgoing (Mbps)
 - Ratio (Out/In) (Mbps)

Raw EndPoint (REP)

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

Visualize the Network Topology (VMware ESXi)

You can have multiple connections in GigaVUE-FM. Each connection can have multiple Monitoring Sessions configured within it. The Topology tab provides a visual representation of the monitored elements within a selected connection and Monitoring Session.

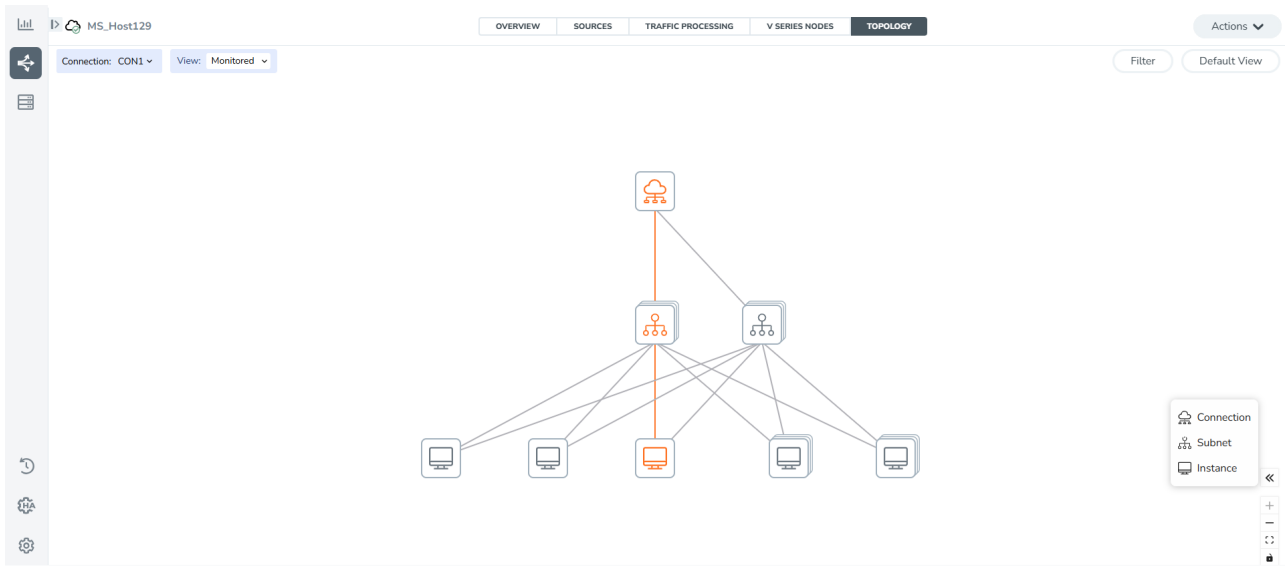
To view the topology in GigaVUE-FM:

1. Go to **Traffic > Virtual > Orchestrated Flows** and select your cloud platform. The **Monitoring Sessions** landing page appears.
2. Create a Monitoring Session or select an existing Monitoring Session,
3. Open the **TOPOLOGY** tab.
4. From the **Connection** list on the Topology page, select a connection.

The topology view of the monitored subnets and instances in the selected session is displayed.

5. From **View**, select one of the following instance types:

- Fabric
- Monitored



6. (Optional) Hover over the subnet or VM group icons to view details such as the subnet ID, subnet range, and the total number of subnets and instances.
7. Select the subnet or VM group icons to explore the subnets or instances within the group.

In the Topology page, you can also perform the following:

- Use the **Filter** button to filter the instances based on the VM name, VM IP, OS Type, 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 monitored instances.
- Apply Navigation controls, such as:
 - Use the arrows at the bottom-right corner to move the topology page up, down, left, or right.
 - Use **+** or **-** icons to zoom in and zoom out of the topology view.
 - Select the **Fit View** icon to fit the topology diagram according to the width of the page.

Migrate Application Intelligence Session to Monitoring Session

Starting from Software version 6.5.00, you must configure the Application Intelligence solution 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 a virtual environment from the **Application Intelligence** page.

The following actions are available only when using the existing Application Intelligence Session:

- View Details
- Delete
- Forced Delete

We recommend to migrate the existing sessions to Monitoring Session for full functionality. GigaVUE-FM seamlessly migrates all your virtual Application Intelligence sessions and their connections. If migration fails, all sessions return to their original states.



Points to Note:

- You must have write access for the **Traffic Control Management** Resource in GigaVUE-FM to perform this migration. For details, refer to Create Roles section In GigaVUE Administration Guide
- The migration does not proceed:
 - If any of the existing Application Intelligence Session is in PENDING or SUSPENDED. Resolve the issue and start the migration process.
 - If any of the existing Application Intelligence Session is in FAILED state due to incorrect configuration. Resolve the issue and start the migration process.
 - If an existing Monitoring Session has the same name as the Application Intelligence Session. Change the existing Monitoring Session name to continue with the migration process.
- You cannot continue the session 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. In the Monitoring Session, the fifth Rule Set supports either Pass All or Advanced Rules as Drop. 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 assistance.

Migrate your existing Application Intelligence Session to Monitoring Session Page

Follow these steps:

1. In the left navigation pane, select **Traffic > Solutions > Application Intelligence**. You cannot create a new Application Intelligence Session from this page. When you have an existing virtual Application Intelligence Session in the above page, the **Migrate Virtual Application Intelligence** dialog box appears.
2. Review the message and select **Migrate**. The **Confirm Migration** dialog box appears with the list of Application Intelligence Session that you need to migrate.
3. Review the list and select **Migrate**. GigaVUE-FM verifies the requirements and then migrates the Application Intelligence Sessions to the Monitoring Session Page.
4. Select **Go to Monitoring Session Page**.

You can view that all the virtual Application Intelligence Sessions in the Application Intelligence page are 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:

1. Secure Tunnels in the Options page

If you wish to enable Secure tunnels after migrating the Application Intelligence Session, follow these steps:

- a. Enable Secure Tunnels in the **Options** page.

For more information, refer to [Configure Monitoring Session Options \(VMware ESXi\)](#)

- b. Go to **Traffic > Virtual > Orchestrated Flows** and select your cloud platform.

The **Monitoring Sessions** page appears.

- c. Select the Monitoring Session for which you enabled Secure Tunnels.

- d. Select **Actions > Undeploy**.

The monitoring session is undeployed.

- e. Select the Monitoring Session for which you enabled Secure Tunnels.

- f. Select **Actions > Edit**.

The **Edit Monitoring Session** Canvas page appears.

- g. Add the Application Intelligence applications.

- h. 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

- 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..
- If the rate of unique UDP sessions per second exceeds the threshold—calculated as maximum number of flows per second divided by the UDP timeout value—the system may fail to classify applications correctly. In such cases, AFI may not filter packets accurately, resulting in incorrect packet passes or drops. However, this limitation does not apply to DNS flows.

- i. Select **Deploy**.

For details, refer to Application Intelligence section in the GigaVUE V Series Applications Guide

2. Temporary Loss of Statistics with Version Mismatch

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 is possible while redeploying the monitoring session.

3. Configuration Changes Post-Migration

To make configuration changes post-migration, make sure that the GigaVUE V Series Node version is 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 detailed information about the configuration and deployment status of the deployed monitoring session.

It supports specific 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	✓	✓	✓	✗	✗
VPC Mirroring	✓	✗	✗	✗	✗
OVS Mirroring and VLAN Trunk Port	✗	✗	✓	✗	✗

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

Traffic Health Monitoring

GigaVUE-FM monitors the traffic health of the entire Monitoring Session and each individual GigaVUE V Series Node in that session. It checks for issues like packet drops or traffic overflows.

When it detects a problem, GigaVUE-FM updates the health status of the related Monitoring Session. It monitors traffic health in near real-time.

The GigaVUE V Series Node tracks traffic levels. If traffic goes above or below the configured threshold, it alerts GigaVUE-FM. Then, GigaVUE-FM then uses this data to calculate traffic health.

If you deploy GigaVUE-FM and GigaVUE V Series Nodes in different cloud platforms, you must add the GigaVUE-FM public IP address as the Target Address in the Data Notification Interface on the Event Notifications page.

For details, refer to the section in the *GigaVUE Administration Guide*.

This feature supports GigaVUE V Series Nodes on the respective cloud platforms:

For V Series Nodes:

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

For instructions on creating and applying threshold templates across a Monitoring Session or an application, and viewing the traffic health status, refer to the following topics:

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

Consideration to configure 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 reapplies all the threshold policies associated with that Monitoring Session.
- Deleting the Monitoring Session clears all the threshold policies associated with that Monitoring Session.
- Threshold configuration is applied before deploying a Monitoring Session and remains even if the session is undeployed.
- 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. Refer to [Create Threshold Templates](#) and [Apply Threshold Template](#) sections for details on Threshold types and Threshold events.

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 	<ol style="list-style-type: none"> 1. Difference 	<ol style="list-style-type: none"> 1. Over

	<ol style="list-style-type: none"> 2. Rx Packets 3. Packets Dropped 	<ol style="list-style-type: none"> 2. Derivative 	<ol style="list-style-type: none"> 2. Under
Dedup	<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
HeaderStripping	<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
TunnelEncapsulation	<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
LoadBalancing	<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
SSLDecryption	<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
Application Metadata	<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
AMX	<ol style="list-style-type: none"> 1. Tx Packets 2. Rx Packets 3. Packets Dropped 4. Ingestor - Rx packets 5. Ingestor - Packets Dropped 6. Ingestor - Rx Octets 7. Ingestor - Octets Dropped 8. Ingestor - Records Dropped 9. Workload - Records Dropped 10. Workload - Req Auth Errors 11. Workload - Req Timedout Errors 	<ol style="list-style-type: none"> 1. Difference 2. Derivative 	<ol style="list-style-type: none"> 1. Over 2. Under

	12. Workload - Req Errors 13. Exporter - Avg File Size 14. Exporter - File Uploads 15. Exporter - File Uploads Errors 16. Enrichment - One Minute Percent		
Geneve	1. Tx Packets 2. Rx Packets 3. Packets Dropped	1. Difference 2. Derivative	1. Over 2. Under
5G-SBI	1. Tx Packets 2. Rx Packets 3. Packets Dropped	1. Difference 2. Derivative	1. Over 2. Under
SBIPOE	1. Tx Packets 2. Rx Packets 3. Packets Dropped	1. Difference 2. Derivative	1. Over 2. Under
PCAPNG	1. Tx Packets 2. Rx Packets 3. Packets Dropped	1. Difference 2. Derivative	1. Over 2. Under

Create Threshold Templates

To create threshold templates:

1. Go to **Inventory > Resources > Threshold Templates**.

The **Threshold Templates** page appears.

2. Select **Create** to open the New Threshold Template page.

- 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	
Traffic Element	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	Difference: The difference between the stats counter at the start and end time of an interval, for a given metric. Derivative: Average value of the statistics counter in a time interval, for a given metric.
Condition	Over: Checks if the statistics counter value is greater than the 'Set Trigger Value'. Under: Checks if the statistics counter value is lower than the 'Set Trigger Value'.
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.

- Select **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 these steps:

- On the left pane in GigaVUE-FM, select **Traffic > Virtual > Orchestrated Flows** and select your cloud platform. The **Monitoring Session** page appears.
- In the **TRAFFIC PROCESSING** tab, select **Options>Thresholds** menu.
- From the **Select Template** drop-down list, select the template you wish to apply across the Monitoring Session.
- Select **Apply**.

NOTE: You can apply the Threshold configuration to a Monitoring Session before it is deployed. Furthermore, undeploying the Monitoring Session does not remove the applied Thresholds.

Apply Threshold Template to Applications

Applying threshold template across Monitoring Session does not overwrite the threshold value applied specifically for an application. When a threshold value is applied to a particular application, it overwrites the existing threshold value for that particular application.

To apply the threshold template to a particular application in the Monitoring Session, follow these steps:

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

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

Clear Thresholds across the Monitoring Session

To clear the applied thresholds across a Monitoring Session, follow these steps:

1. On the left navigation pane in GigaVUE-FM, go to **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**,
3. Select **Clear Thresholds**.
4. On the **Clear Threshold** pop-up appears, select **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. Go to **Traffic > Virtual > Orchestrated Flows** and select your cloud platform.
2. Select a Monitoring Session and navigate to the **TRAFFIC PROCESSING** tab.
3. Select the application for which you wish to see the health status and select **Details**. The quick view page appears.
4. Select the **HEALTH STATUS** tab.

This displays the application's **Configuration Health**, **Traffic Health**, and the **Operational Health**, along with the thresholds applied to each.

NOTE: The secure tunnel status is refreshed 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 Operational Health Status of an Application

When you configure the Application Metadata Exporter to use **Kubernetes** as the workload platform, the V Series Node transmits failure and error events to GigaVUE-FM, which processes them and updates the node's health status on the Monitoring Session page. When interacting with Kubernetes workloads, the system may encounter errors while retrieving resources such as pods, services, nodes, or endpoints. Refer to [Errors](#) for additional error details.

Operational events for Exporter:

Refer below for message format and messages that indicate common issues that can occur during the operations:

Format: <Server Type>_<Message>

Server Types: CLOUD EXPORT, KAFKA

Message	Description
UPLOAD_MAX_TRIES_EXCEED	Upload retries exceeded the maximum limit Example: CLOUDEXPORTER_UPLOAD_MAX_TRIES_EXCEED
REACHABILITY_FROM_AMX_TO_TOOLS	AMX failed to reach the tool (Cloud Exporter server or Kafka server) Example: CLOUDEXPORTER_REACHABILITY_FROM_AMX_TO_TOOLS
NO_IP_ADDRESS	No IP address was configured on the interface Example: CLOUDEXPORTER_NO_IP_ADDRESS
EXPORTER_UPLOAD_ERROR	Upload to the exporter failed Example: CLOUDEXPORTER_EXPORTER_UPLOAD_ERROR

Operational events for Enrichment:

Refer below for message format and messages that indicate common issues that can occur during the operations:

Format: <Operation Type>_<Message>

Operation Types: GETSERVICES, GETPODS, GETNODES, GETENDPOINTSPLICES, WATCHALL

Message	Description
K8S_AUTHORIZATION_FAILURE	The request was denied due to insufficient permissions Example: GETPODS_K8S_AUTHORIZATION_FAILURE
K8S_AUTHENTICATION_FAILURE	Authentication failed. Verify your credentials Example: GETPODS_K8S_AUTHENTICAIION_FAILURE
K8S_UNHANDLED_ERROR	An unspecified error occurred. Check the error description Example: GETPODS_K8S_UNHANDLED_ERROR

View Health Status for Individual GigaVUE V Series Nodes

You can also 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, select the required Monitoring Session from the list view.
2. In the **Overview** tab, view the health status of the required GigaVUE V Series Node from the chart options.

View Application Health Status for Individual V Series Nodes

To view the application configuration and traffic health status of the GigaVUE V Series Nodes:

1. On the Monitoring Session page, select the required Monitoring Session from the list view.
2. On the Overview tab, select the GigaVUE V Series Node from the All V Series Nodes drop-down menu.

The list view displays the list of applications for the selected GigaVUE V Series Node and the health status of each application.

Configure VMware Settings

This section describes 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,

1. Go to **Inventory > VIRTUAL > VMware vCenter (V Series)**
2. Select **Settings > Advanced Settings** to edit the VMware vCenter settings.

Advanced Settings

Edit

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

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.

Configure Certificate Settings

To configure certificate settings:

1. Go to **Inventory > VIRTUAL**.
2. Select your cloud platform.
3. Select **Settings > Certificate Settings**.
The **Certificate Settings** page appears.
4. From the **Algorithm** drop-down list, select the algorithm that determines the cryptographic security of the certificate.

NOTE: If selecting RSA 8192, the certificate generation may take longer due to the increased key size.

5. In the **Validity** field, enter the total validity period of the certificate.
6. In the **Auto Renewal** field, enter the number of days before expiration of the auto-renewal process should begin.
7. Select **Save**.

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. For details, refer to [Analytics](#).

Rules and Notes:

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


- 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.

For details, 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.

How to access the dashboards

- Go to  -> **Analytics** -> **Dashboards**.
- Select the required dashboard to view the visualizations.

The following table lists the various virtual dashboards:

Dashboard	Displays	Visualizations	Displays
Inventory Status (Virtual)	Statistical details of the virtual inventory based on the platform and the health status. You can view the following metric details at the top of the dashboard: <ul style="list-style-type: none"> Number of Monitoring Sessions Number of V Series Nodes Number of Connections Number of GCB Nodes You can filter the visualizations based on the following control filters: <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

Dashboard	Displays	Visualizations	Displays
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>	<p>Line chart that displays maximum CPU usage trend of the V Series node in 5 minutes interval, for the past one hour.</p> <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>
		<i>V Series Node with Most CPU Usage For Past 5 minutes</i>	<p>Line chart that displays Maximum CPU usage of the V Series node for the past 5 minutes.</p> <p>Note: You cannot use the time based filter options to filter and visualize the data.</p>
		<i>V Series Node Rx Trend</i>	<p>Receiving trend of the V Series node in 5 minutes interval, for the past one hour.</p>
		<i>V Series Network Interfaces with Most Rx for Past 5 mins</i>	<p>Total packets received by each of the V Series network interface for the past 5 minutes.</p>

Dashboard	Displays	Visualizations	Displays
			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	<p>Displays visualizations related to Dedup application.</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>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.
		<i>Dedup Packets Detected/Dedup Packets Overload Percentage</i>	Percentage of the de-duplicated packets received against the de-duplication application overload.
		<i>Total Traffic In/Out Dedup</i>	Total incoming traffic against total outgoing traffic
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>	<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"> • 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 • Transmitted Errored Packets • Transmitted Dropped Packets 	<p><i>Tunnel Packets</i></p>	<p>Displays packet-level statistics for input and output tunnels that are part of a monitoring session.</p>
<p>App (Virtual)</p>	<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><i>App Bytes</i></p>	<p>Displays received traffic vs transmitted traffic, in Bytes.</p>

Dashboard	Displays	Visualizations	Displays
	<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 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.

Debuggability and Troubleshooting

Use the following information to help diagnose and resolve GigaVUE V Series Nodes issues.

Sysdumps

A sysdump is a log and system data package generated when a GigaVUE V Series Node experiences a crash (such as kernel, application, or hardware failure). These files are essential for debugging.

You cannot download sysdump files if the associated fabric component is deleted or unreachable.

Sysdumps—Rules and Notes

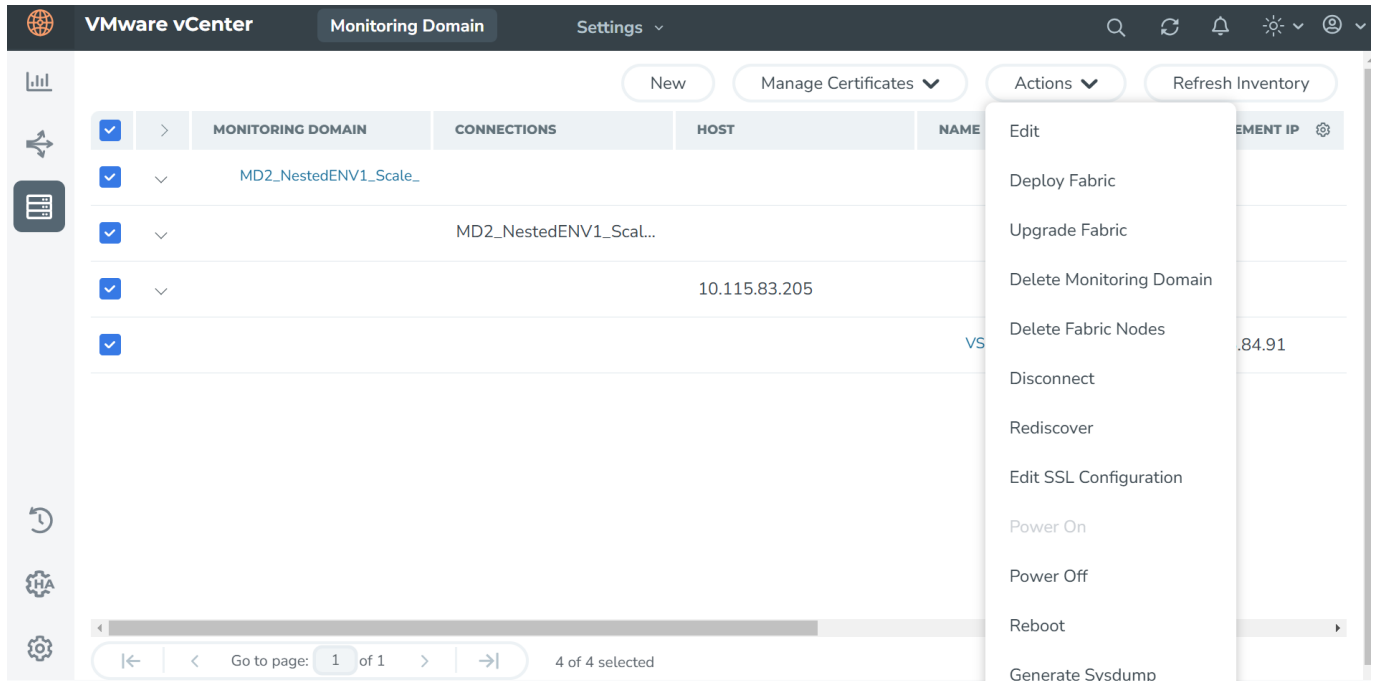
Consider the following points before you generate sysdumps:

- You can generate only one sysdump file at a time for a GigaVUE V Series Node.
- You cannot generate a sysdump file when generation of another sysdump file is in progress.
- The limit of sysdump files available per GigaVUE V Series Node is six. When you generate a seventh sysdump file, the file overwrites the first sysdump file.
- You can download only one sysdump file per GigaVUE V Series Node at a time.
- You can delete sysdump files in bulk for a GigaVUE V Series Node.
- To ensure efficient usage, the system limits the number of simultaneous sysdump generation requests to 10 GigaVUE V Series Nodes.
- GigaVUE V Series Node sysdumps are not stored in Fabric Manager but generated and stored on the GigaVUE V Series Node itself.

Generate a Sysdump File

To generate a sysdumps file:

1. Select the required node, and use one of the following options to generate a sysdump file:
 - Select **Actions > Generate Sysdump**.
 - In the lower pane, go to **Sysdump**, and select **Actions > Generate Sysdump**.
2. View the latest status, click **Refresh**.



Other Actions

- To download a sysdump file, select the file in the lower pane, and then click **Actions > Download**.
- To delete a sysdump file,
 1. Select the file in the lower pane.
 2. Select the desired sysdump file.
 3. Select **Actions > Delete**.
- To bulk delete, select all the sysdump files, and then select **Actions > Delete All**.

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 6.13 Hardware and Software Guides	
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.
Hardware	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
	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 6.13 Hardware and Software Guides

GigaVUE-TA200 Hardware Installation Guide

GigaVUE-TA200E Hardware Installation Guide

GigaVUE-TA400 Hardware Installation Guide

GigaVUE-TA400E 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

GigaVUE Application Intelligence Solutions Guide

GigaVUE Inline Solutions Guide (**NEW**) (previously included in the **GigaVUE Fabric Management Guide**)

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 6.13 Hardware and Software Guides

GigaVUE Cloud Suite Deployment Guide - Third Party Orchestration

Universal Cloud TAP - Container Deployment Guide

Gigamon Containerized Broker Deployment Guide

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)