



Gigamon Containerized Broker Configuration Guide

GigaVUE Cloud Suite

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(See Change Notes for document updates.)

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Change Notes

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

Product Version	Document Version	Date Updated	Change Notes
5.10.01	1.0	08/28/2020	Original release of this document with 5.10.01 GA.

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Gigamon Containerized Broker

Gigamon Containerized Broker (GCB) is a containerized component that provides the network broker features in a containerized form. GCB can perform traffic acquisition, aggregation, basic filtering, replication, and tunneling with encryption support. GCB can be deployed in its own POD as a Kubernetes service where your workloads are running. There are various components based on multiple scenarios and requirements that the GCB receives the traffic from.

This guide provides an overview of Gigamon Containerized Broker and also describes how to install, and deploy G-vTAP Containers in your PODs.

Topics:

- [About Gigamon Containerized Broker](#)
- [Get Started with Gigamon Containerized Broker](#)
- [Interaction between GCB and GigaVUE-FM](#)
- [Configure Gigamon Containerized Broker](#)
- [View GCB statistics in GigaVUE-FM](#)

About Gigamon Containerized Broker

Gigamon Containerized Broker (GCB) is a containerized component that provides the network broker features in a containerized form. GCB is deployed by Kubernetes orchestrator and not by GigaVUE-FM.

GCB initiates the traffic acquisition process with G-vTAP containers and enhances the support of the features.

Following are the modules implemented in GCB:

- **Traffic Acquisition using CNI Modules:** GCB supports traffic acquisition by reading the traffic from the Container Network Interface (CNI) modules like AWS ENI, Calico, Flannel, etc. During initialization, GCB receives the configuration information from the YML file. CNI supports any combination of ingress, egress, and management process. GCB configures itself suitable for various customers environment to acquire traffic.

NOTE: After GCB registration, you cannot change the number of CNI, and CNI types. If required, a new GCB instance configured and registered.

- **Traffic Aggregation** - When GCB is running in its own POD, GCB itself serves as a traffic aggregator.
- **Filtering Module** - GCB allows basic filtering, forwarding policy, and enrichment.
- **Encryption Module** - GCB maintains the required certificates to support TLS and HTTPS encryption.

Components for Gigamon Containerized Broker

The Gigamon Containerized Broker works with the following components:

- **GigaVUE® Fabric Manager (GigaVUE-FM)** is a web-based fabric management and orchestration interface that provides a single pane of glass visibility, management, and orchestration of both the physical and virtual traffic that form the GCB.
- **G-vTAP Container** is the Traffic Acquisition Component of Gigamon's Network Visibility Offering. It receives mirrored traffic from various Networking Infrastructures and overlays (VXLAN) them to Gigamon Containerized Broker.
- **GCB Controller** is the management component of GCB that controls the registration and deregistration with GigaVUE-FM. GCB Controller also sends the collected stats of GCB and G-vTAP Containers to GigaVUE-FM.
- **GCB S3** is the storage service component of GCB that collect the mirrored packets from GCB Controller, convert to PCAP file and upload it into Amazon S3.

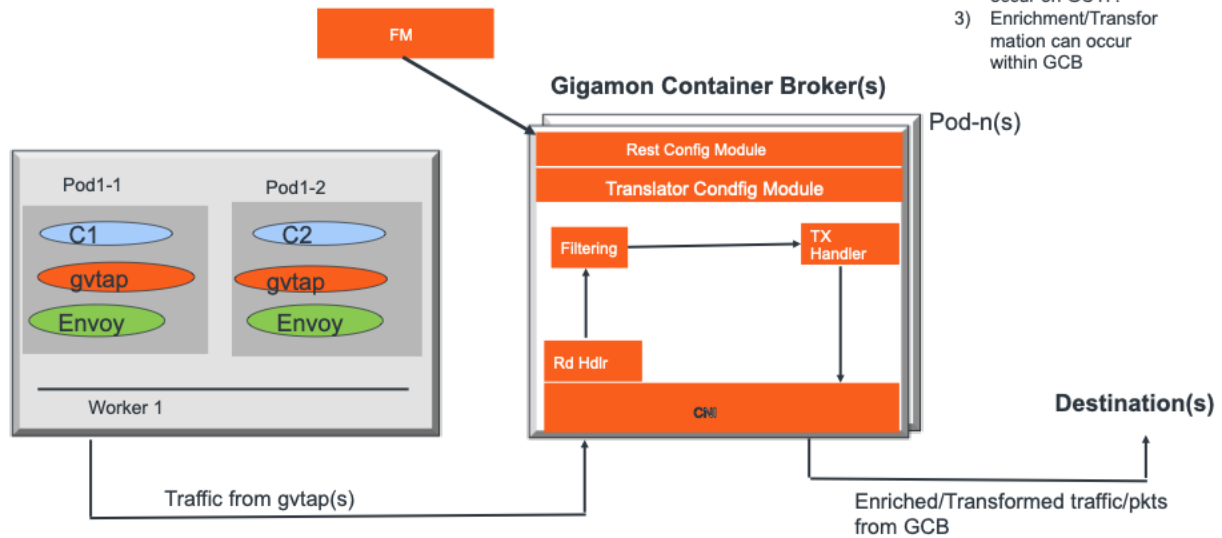
Architecture of Gigamon Containerized Broker

GCB with GigaVUE-FM deployment

With GCB in its own POD, you can choose an orchestrator (other than GigaVUE-FM) like K8S to spin up/down the GCB pods.

Gigamon Containerized Broker(GCB):

Option 2: GCB running within it's own POD



During GCB initialization, the GCB Controller tries to connect with the GigaVUE-FM IP that you provided in the YAML file. GigaVUE-FM have a server certificate and GCB have a client certificate, so that GigaVUE-FM and GCB can identify the connection and traffic flow. GigaVUE-FM doesn't control the GCB spin up/down. The GCB parameter definition and deployment is done through Kubernetes orchestrator and not by GigaVUE-FM.

Get Started with Gigamon Containerized Broker

This chapter describes how to initiate GCB deployment with the required licenses and network requisites.

Refer to the following sections for details:

- [Components for Gigamon Containerized Broker](#)
- [Architecture of Gigamon Containerized Broker](#)
- [License Information](#)

- Network requirements

Components for Gigamon Containerized Broker

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- **GigaVUE® Fabric Manager (GigaVUE-FM)** is a web-based fabric management and orchestration interface that provides a single pane of glass visibility, management, and orchestration of both the physical and virtual traffic that form the GCB.
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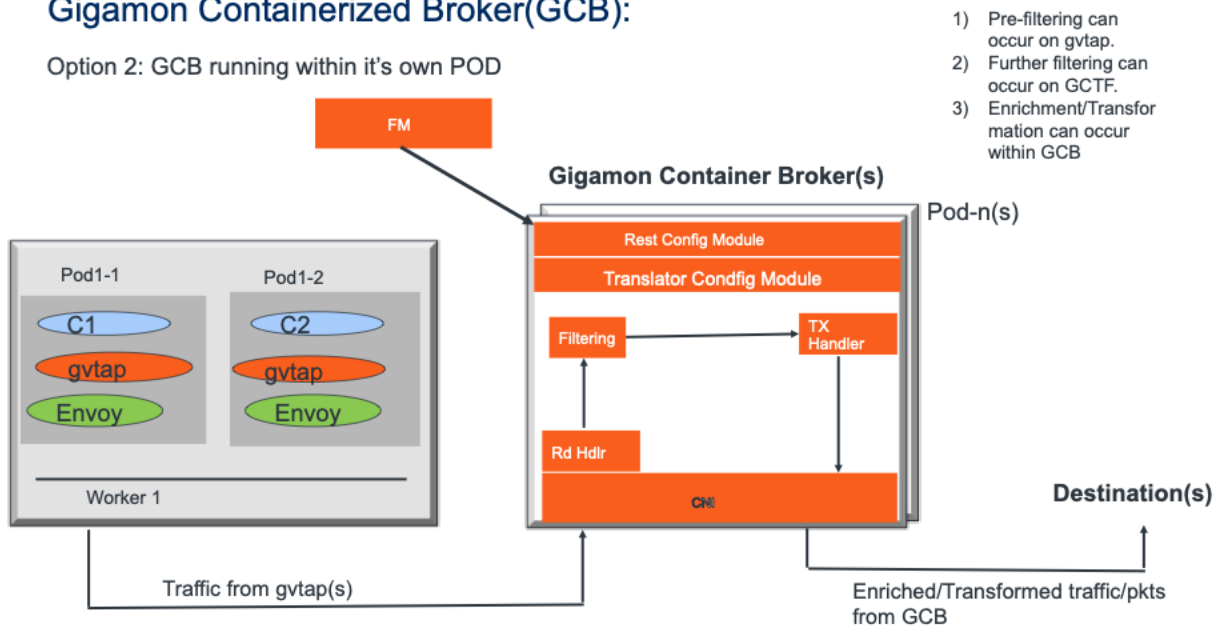
Architecture of Gigamon Containerized Broker

GCB with GigaVUE-FM deployment

With GCB in its own POD, you can choose an orchestrator (other than GigaVUE-FM) like K8S to spin up/down the GCB pods.

Gigamon Containerized Broker(GCB):

Option 2: GCB running within it's own POD



During GCB initialization, the GCB Controller tries to connect with the GigaVUE-FM IP that you provided in the YAML file. GigaVUE-FM have a server certificate and GCB have a client certificate, so that GigaVUE-FM and GCB can identify the connection and traffic flow. GigaVUE-FM doesn't control the GCB spin up/down. The GCB parameter definition and deployment is done through Kubernetes orchestrator and not by GigaVUE-FM.

License Information

All the G-vTAP instances connected to GCB periodically reports the stats to GCB. Then the GCB periodically reports the collective stats of G-vTAPs and its own stats to GigaVUE-FM for Volume-Based Licensing. GigaVUE-FM adds the required licensing tags into the Elasticsearch.

In the Volume-Based Licensing scheme, a license entitles specific applications on your devices to use a specified amount of total data volume over the term of the license. The distribution of the license to individual nodes or devices becomes irrelevant for Gigamon's accounting purpose. GigaVUE-FM tracks the total amount of data processed by the various licensed applications and provides visibility into the actual amount of data, each licensed application is using on each node, and track the overuse if any.

Network requirements

A security group defines the virtual firewall rules for your instance to control inbound and outbound traffic. When you launch GigaVUE-FM, Gigamon Containerized Broker, and G-vTAP Containers in your project, you add rules that control the inbound traffic to instances, and a separate set of rules that control the outbound traffic.

It is recommended to create a separate security group for each component using the rules and port numbers.

Direction	Type	Protocol	Port	CIDR	Purpose
Gigamon Containerized Broker deployed inside EKS worker node					
Inbound	HTTPS	TCP	443	Any IP address	Allows GCB Controller to communicate with GigaVUE-FM

Interaction between GCB and GigaVUE-FM

Following are the interaction between GCB and GigaVUE-FM:

- [GCB Registration](#)
- [GCB Deregistration](#)
- [GCB Heartbeats](#)
- [GCB Stats](#)

GCB Registration

When GCB comes up in the Kubernetes environment, GCB registers itself with GigaVUE-FM. When GigaVUE-FM is unreachable, GCB tries to connect with five retries of increasing time periods. Kubernetes deployment of GCB fails, if GigaVUE-FM is unreachable even after the retries. GCB only supports IPv4 protocol.



GCB Deregistration

When GCB is terminated normally, GCB sends the deregistration message to GigaVUE-FM. If GCB goes down abnormally, it might not get deregistered. The G-vTAPs associated to GCB might then get moved to other GCB. Similarly, if a GCB goes down, the feeding G-vTAPs are moved to other GCB, then GigaVUE-FM doesn't store G-vTAPs information.

GCB Heartbeats

GCB periodically sends heartbeats to GigaVUE-FM. By default, the status of GCB is marked as **Connected**. Following are the status situations where the GCB status changes.

- If the heartbeats are missed 3 times in a row, GigaVUE-FM marks the status as **Disconnected**.
- If the heartbeats are missed 2 times in a row, GigaVUE-FM marks the status as **Pending**.
- If GigaVUE-FM doesn't receive GCB heartbeat for 30 days, then GigaVUE-FM removes the GCB, considering it as stale.

STATUS SUMMARY: GIGAMON CONTAINERIZED BROKERS						
UUID	IP Address	Status	Up Time	Down Time	Deregistered	
12831ad5-5280-4c79-a971-b8c30035b2d6	10.0.144.106	Disconnected	7:25:00	72:45:56	No	
1fd06f08-5d89-4add-9d28-b17516c86391	10.0.144.81	Connected	16:22:00	0:00:00	No	

GCB Stats

GCB sends its traffic statistics and its associated G-vTAPs to GigaVUE-FM. The highest traffic and lowest traffic widgets in GigaVUE-FM dashboard shows the details of 10 highest and 10 lowest GCB traffic statistics.

GCB continues to send the stats even when there is no traffic flowing. The GCB stats are not stored in cache even if GigaVUE-FM is not reachable by GCB at that instant of time.

LOWEST TRAFFIC: GIGAMON CONTAINERIZED BROKERS		
		1 Day
UUID	IP Address	Rx (Mbps)
ab2f601e-7c13-461d-a11e-29a19f2291dd	10.0.144.45	48.3

HIGHEST TRAFFIC: GIGAMON CONTAINERIZED BROKERS		
		1 Day
UUID	IP Address	Rx (Mbps)
ab2f601e-7c13-461d-a11e-29a19f2291dd	10.0.144.45	48.3

Configure Gigamon Containerized Broker

This chapter describes how to configure GCB in your environment. Refer to the following section for details.

- [Deploy G-vTAP Containers](#)
- [Launch GigaVUE-FM](#)
- [Launch Gigamon Containerized Broker](#)
- [Store traffic data in S3 bucket](#)

Deploy G-vTAP Containers

Follow the below instructions to deploy G-vTAP Containers in your node:

1. In your Kubernetes orchestrator, enter the G-vTAP Container image name, commands and the required information in a YAML file. Following is the example data to be entered in the your YAML file:

```
image: gigamon/gvtap-container: :<version>
#imagePullPolicy: Never
#imagePullPolicy: Always
#imagePullPolicy: IfNotPresent
command: ["/gvtap", "1", "eth0", "eth0", "10.9.0.216", "4789", "45"]
```
2. Using the YAML file, Kubernetes automatically downloads the defined G-vTAP Container and deployed in the selected PODs in which traffic acquisition is required.

Launch GigaVUE-FM

The recent GigaVUE-FM image files can be downloaded from [Gigamon Customer Portal](#). After fetching the image, upload and launch GigaVUE-FM inside or outside your VPC. For assistance, [Contact Technical Support](#) of Gigamon.

Launch Gigamon Containerized Broker

Follow the below instructions to deploy GCB in your node:

1. In your Kubernetes orchestrator, enter the GCB Controller and GCB S3 image name, commands and the required information in a YAML file. Following is the example data to be entered in the your YAML file:

```
image: gigamon/gcb-s3:<version>
- command:
- gcb-s3
- <pkt_filter_type(ip|tcp|udp)>
- <i_iface: eth0, eth1>
- <s3_bucket_name> (Ex: gcb_s3_bucket)
- <s3_region> (Ex: us-east-2)
- <AWS Account-ID>
- <max_pkt_per_pcap>
- <idle_timeout (in sec)>
- <stats_active (0/1)>
- <gcm port>
- <stats_interval(in sec)>
- <filtering rule>
- <gcb vxlan port>

image: gigamon/gcb-cntlr:<version>
- command:
- /gcb-cntlr
- <GigaVUE-FM IP>
- <PORT ID for GCB controller to communicate with GigaVUE-FM>
```

2. Using the YAML file, Kubernetes automatically downloads the defined GCB Controller and GCB S3. Then both are deployed in a new POD.
3. Connect the deployed G-vTAP Containers to the GCB installed in the same node.
4. Register GCB with the GigaVUE-FM launched inside or outside your VPC.

Once the GCB is registered with GigaVUE-FM, the GCB starts to collect the traffic from the G-vTAP Containers and periodically sends the heartbeats and stats to GigaVUE-FM. For more information on GCB and GigaVUE-FM interaction, refer to [Interaction between GCB and GigaVUE-FM](#)

Store traffic data in S3 bucket

By default the traffic information from GCB is saved into Amazon S3 bucket. All the parameters of the S3 bucket are defined in the yaml files.

Following are the S3 bucket parameters defined in yaml file:

Parameter	Description
s3_bucket_name	Name of the Amazon S3 bucket
s3_region	AWS region (Example: us-east-2)
AWS Account-ID	ID of AWS user account
max_pkt_per_pcap	Maximum packets required to create a PCAP file
idle_timeout (in sec)	Idle time limit to create PCAP file without waiting to collect the maximum packets defined.

Follow the below instructions to store the traffic data from GCB to your Amazon S3 bucket.

1. Save the traffic data from the GCB as a PCAP file with the Server Side Encryption technology.
2. Transfer and Save the encrypted PCAP files to your Amazon S3 bucket.

NOTE: Naming convention of the PCAP file and the folder in S3 bucket are as follows.

- PCAP file name: **<AWS Account ID>_pod_<POD IP>_YYYY_MM_DD_HH_mm_ss_<milliseconds>.pcap**
- S3 folder name: **[S3 bucket name]/account_id/MM-DD-YYYY/[file-name]/**

View GCB statistics in GigaVUE-FM

You can view the traffic information of GCB in GigaVUE-FM as the collective traffic from G-vTAPs and GCB are periodically transferred to GigaVUE-FM.

GigaVUE-FM dashboard displays the GCB stats in the following widgets:

- Status Summary
- Lowest Traffic
- Highest Traffic

To view the GCB stats in GigaVUE-FM:

1. On the top navigation bar, click **Dashboard**.
2. In the left navigation pane of the Dashboard page, click **Physical & Virtual**.
3. Click **Add Widget** and select Status Summary, Lowest Traffic, and Highest Traffic widgets. The widgets display the GCB status summary, lowest and highest traffic.

The screenshot shows the GigaVUE-FM dashboard interface. The top navigation bar includes 'GigaVUE-FM', 'Dashboards', 'Traffic', and 'Inventory'. The left sidebar shows 'OVERVIEW' with 'Physical & Virtual' selected, and 'SYSTEM' with 'Alarms', 'Audit Logs', 'Events', and 'FM Health'. The main content area displays three widgets for GCB (Gigamon Containerized Broker) statistics. The 'Profile' is set to 'GCB' and the date is 'Aug 6, 2020 11:12:46'. An 'Add Widget' button is visible in the top right of the main area.

STATUS SUMMARY: GIGAMON CONTAINERIZED BROKERS

UUID	IP Address	Status	Up Time	Down Time	Deregistered
12831ad5-5280-4c79-a971-b8c30035b2d6	10.0.144.108	Disconnected	7:25:00	72:45:56	No
1fd06f08-5d89-4add-9d28-b17516c86391	10.0.144.81	Connected	16:22:00	0:00:00	No

LOWEST TRAFFIC: GIGAMON CONTAINERIZED BROKERS

1 Day

UUID	IP Address	Rx (Mbps)
ab2f601e-7c13-461d-a11e-29a19f2291dd	10.0.144.45	48.3

HIGHEST TRAFFIC: GIGAMON CONTAINERIZED BROKERS

1 Day

UUID	IP Address	Rx (Mbps)
ab2f601e-7c13-461d-a11e-29a19f2291dd	10.0.144.45	48.3

Additional Sources of Information

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

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

Documentation

ATTENTION: 5.10.00 was delivered as embedded software on new hardware only. The updated PDFs for the 5.10.01 software release are coming soon! Check back on 8/29/2020 for the latest.

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.

Table 1: Documentation Set for Gigamon Products

GigaVUE Cloud Suite 5.10 Hardware and Software Guides	
Hardware	how to unpack, assemble, rack-mount, connect, and initially configure ports the respective GigaVUE Cloud Suite devices; reference information and specifications for the respective GigaVUE Cloud Suite devices
*G-TAP A Series 2 Installation Guide	
GigaVUE-HC1 Hardware Installation Guide	
GigaVUE-HC2 Hardware Installation Guide	
GigaVUE-HC3 Hardware Installation Guide	

GigaVUE Cloud Suite 5.10 Hardware and Software Guides

GigaVUE TA Series Hardware Installation Guide *(now including TA25)*

***GigaVUE-OS Installation Guide for DELL S4112F-ON**

how to install GigaVUE-OS and configure ports on COTS DELL S4112F-ON

Software Installation and Upgrade Guides

GigaVUE-FM Installation, Migration, and Upgrade Guide

how to install GigaVUE-FM on VMware ESXi, MS Hyper-V, and KVM

how to migrate GigaVUE-FM on VMware ESXi, Hardware Appliance, and AWS

GigaVUE-OS Upgrade Guide

how to upgrade the embedded GigaVUE-OS on GigaVUE H Series and GigaVUE TA Series nodes

Administration

GigaVUE-OS and GigaVUE-FM Administration Guide

how to administer the GigaVUE-OS and GigaVUE-FM software (note, new file name for PDF)

Fabric Management

GigaVUE-FM User's Guide

how to install, deploy, and operate GigaVUE-FM

how to configure GigaSMART operations

includes instructions for GigaVUE-FM and GigaVUE-OS features

Cloud Configuration and Monitoring

how to configure the GigaVUE Cloud Suite components and set up traffic monitoring sessions for the respective cloud platform

GigaVUE Cloud Suite for AnyCloud Configuration Guide

how to deploy the GigaVUE Cloud Suite solution in any cloud platform

GigaVUE Cloud Suite for AWS Configuration Guide

GigaVUE Cloud Suite for AWS Quick Start Guide

quick view of AWS deployment used in conjunction with the GigaVUE Cloud Suite for AWS Configuration Guide

GigaVUE Cloud Suite for AWS SecretRegions Configuration Guide

GigaVUE Cloud Suite for Azure Configuration Guide

GigaVUE Cloud Suite 5.10 Hardware and Software Guides

GigaVUE Cloud Suite for Kubernetes Configuration Guide

GigaVUE Cloud Suite for Nutanix Configuration Guide

GigaVUE Cloud Suite for OpenStack Configuration Guide

GigaVUE Cloud Suite for VMware Configuration Guide

Gigamon Containerized Broker

Reference

GigaVUE-OS-CLI Reference Guide

library of GigaVUE-OS CLI (Command Line Interface) commands used to configure and operate GigaVUE H Series and TA Series devices

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)

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 & Docs page on to [My Gigamon](#). Refer to .

In-Product Help

GigaVUE-FM Online Help

how to install, deploy, and operate GigaVUE-FM.

GigaVUE-OS H-VUE Online Help

provides links the online documentation.

How to Download from My Gigamon

Registered Customers can download software and corresponding Release Notes documents from the **Software & Docs** 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 & Documentation** link.
3. Use the **Product** and **Release** filters to find documentation for the current release. For example, select Product: "GigaVUE-FM" and Release: "5.6," 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

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

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

Contact Technical Support

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

Contact Sales

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

Telephone: +1.408.831.4025

Sales: inside.sales@gigamon.com

Partners: www.gigamon.com/partners.html

Premium Support

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

The Gigamon Community

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

Visit the Gigamon Community site to:

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

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

Register today at community.gigamon.com

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