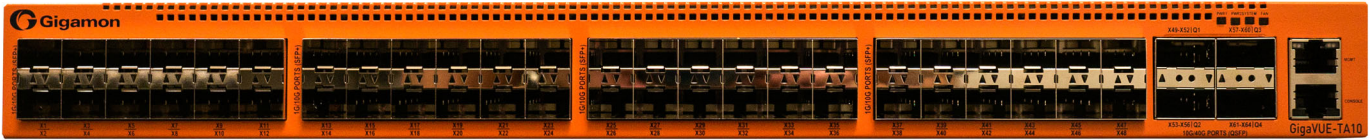




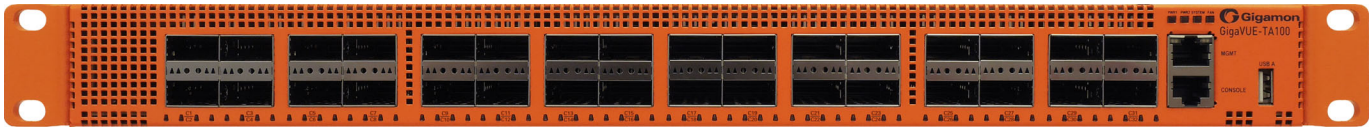
GigaVUE-TA1 and GigaVUE-TA10



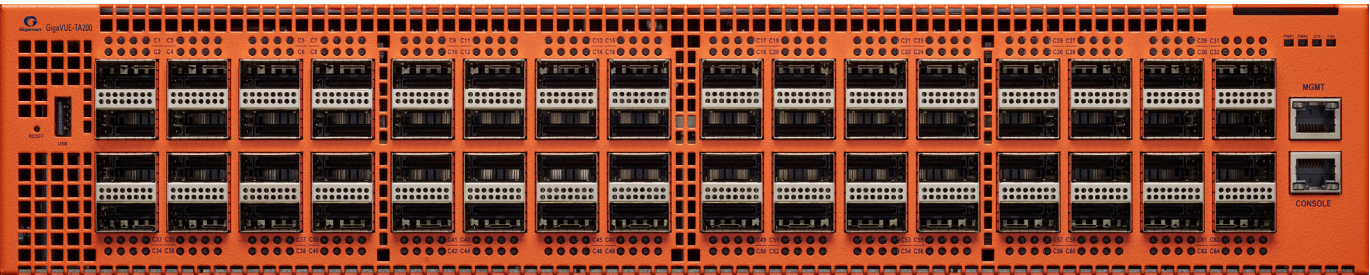
GigaVUE-TA40



GigaVUE-TA100



GigaVUE-TA200



GigaVUE TA Series Hardware Installation Guide

GigaVUE-OS 5.6.00

Document Version: 2.0 (Change Notes)

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Change Notes

When a document is updated, the document revision number on the cover page will indicate a new revision number, the Document Revision date is updated on the title page, and this table will describe what changed.

Rev	Date	Change
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rev 2	04/12/2019	Bug fixes and technical review updates.

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Introducing the GigaVUE TA Series

This chapter introduces the GigaVUE TA Series nodes, describes their features and functions, and provides an orientation to the physical layout of each node.

Refer to the following sections for details:

- [About the GigaVUE Family on page 7](#)
- [GigaVUE TA Series Overview on page 8](#)
- [GigaVUE TA Series Nodes on page 10](#)
- [GigaVUE TA Series Features and Benefits on page 12](#)
- [Introducing the GigaVUE-TA10 Chassis on page 15](#)
- [Introducing the GigaVUE-TA40 Chassis on page 18](#)
- [Introducing the GigaVUE-TA100 Chassis on page 20](#)
- [Introducing the GigaVUE-TA100-CXP Chassis on page 28](#)
- [Introducing the GigaVUE-TA200 Chassis on page 36](#)
- [Configure the Card Mode – 40Gb/10Gb Support on page 45](#)
- [Configure the Port Mode on page 46](#)

About the GigaVUE Family

Gigamon's TA Series and H Series of GigaVUE Visibility Platform nodes deliver unprecedented switching capacity, port density, and from 1Gb up to 100Gb support. The GigaVUE H Series and GigaVUE TA Series include the following models that run GigaVUE-OS:

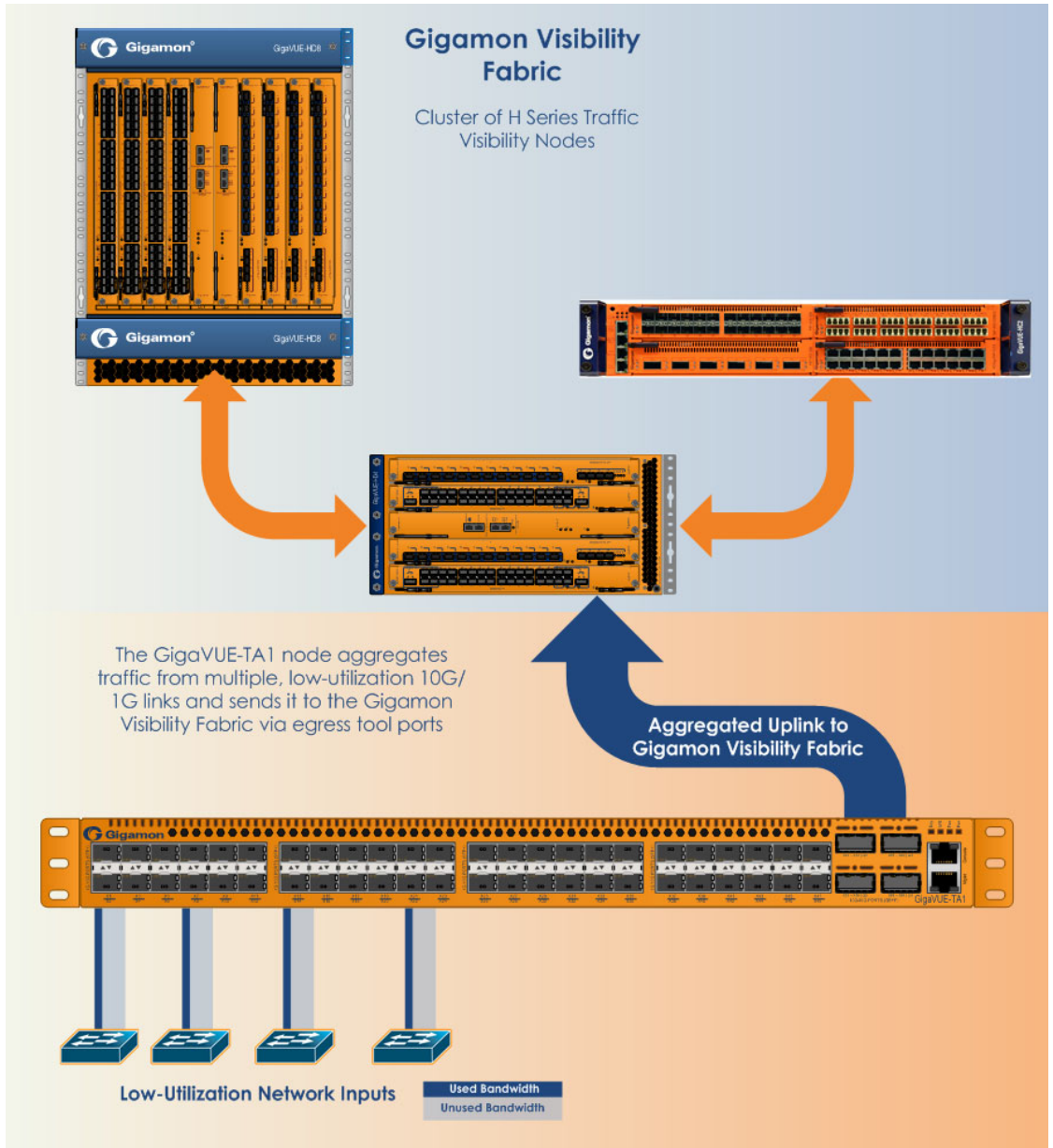
- GigaVUE-HB1
- GigaVUE-HC1
- GigaVUE-HC2
- GigaVUE-HC3
- GigaVUE-HD4
- GigaVUE-HD8
- GigaVUE-TA1
- GigaVUE-TA10

- GigaVUE-TA40
- GigaVUE-TA100
- GigaVUE-TA100-CXP
- GigaVUE-TA200
- Certified Traffic Aggregation White Boxes

GigaVUE TA Series Overview

Gigamon's TA Series nodes allow you to aggregate the traffic from multiple low-utilization links before sending the traffic to the GigaVUE H Series or G Series nodes that form your Gigamon Visibility Platform.


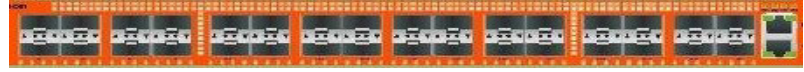


IMPORTANT: The GigaVUE TA Series support network, tool, clustering, and stack port connections to other GigaVUE nodes, including both GigaVUE H Series nodes or G Series (for example, a GigaVUE-2404 node, a GigaVUE-HD8 node).



GigaVUE TA Series Nodes

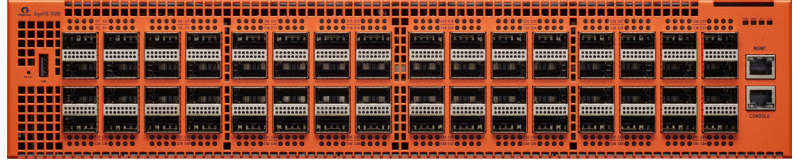
GigaVUE TA Series includes the following models:

- GigaVUE-TA10
- GigaVUE-TA40
- GigaVUE-TA100
- GigaVUE-TA100-CXP
- GigaVUE-TA200

GigaVUE-TA10	<ul style="list-style-type: none">• 1RU Footprint• 48 1Gb/10Gb ports• 4 40Gb ports• Flexible 10Gb/1Gb support• Optional patch or breakout panel support• Cluster with H Series nodes	 A 1RU network node with a blue front panel. It features 48 1Gb/10Gb ports, 4 40Gb ports, and a flexible 10Gb/1Gb support. The node is shown in a perspective view.
GigaVUE-TA40	<ul style="list-style-type: none">• 1RU Footprint• 32 40Gb ports• Optional patch or breakout panel support• Cluster with H Series nodes	 A 1RU network node with a blue front panel. It features 32 40Gb ports and optional patch or breakout panel support. The node is shown in a perspective view.
GigaVUE-TA100	<ul style="list-style-type: none">• 1RU Footprint• 32 100Gb/40Gb ports• Optional patch or breakout panel support• Cluster with H Series nodes	 A 1RU network node with a blue front panel. It features 32 100Gb/40Gb ports and optional patch or breakout panel support. The node is shown in a perspective view.
GigaVUE-TA100-CXP	<ul style="list-style-type: none">• 1RU Footprint• 20 100Gb CXP ports, 8 100Gb QSFP28 ports	 A 1RU network node with a blue front panel. It features 20 100Gb CXP ports and 8 100Gb QSFP28 ports. The node is shown in a perspective view.

GigaVUE-TA200

- 2RU Footprint
- 64 100Gb/40Gb ports
- Optional patch or breakout panel support
- Cluster with H Series nodes



GigaVUE TA Series Features and Benefits

GigaVUE TA Series nodes allow you to aggregate traffic from multiple network links from 1Gb up to 100Gb. The GigaVUE TA Series can pre-filter traffic for monitoring or be integrated into the GigaVUE H Series cluster for end-to-end Flow Mapping and management. The GigaVUE H Series and TA Series products share the same GigaVUE-OS software and are managed by GigaVUE-FM Fabric Manager for simplified operations. Traffic from any of these ports can be processed by GigaSMART traffic intelligence functions to further optimize the traffic before it is sent to the tools.

GigaVUE TA Series nodes offer the following features and benefits:

- High-density visibility for 1Gb, 10Gb, 25Gb, 40Gb, and 100Gb.
- Low profile 1RU (2RU for GigaVUE-TA200) design offers easy deployment at the top of rack or end of row in data centers.
- Depending on the model, the GigaVUE TA Series supports a wide variety of Gigamon® transceivers. Transceivers purchased from other vendors are not supported.
- Optional patch panel or breakout panel allows use of 40Gb ports as four individual 10Gb ports on all the GigaVUE TA Series nodes, or 100Gb ports as four individual 25Gb ports on GigaVUE-TA200.
- Front to back cooling.
- Fan modules.
- AC or DC power. Included with each node is the redundant second power supply.

NOTE: Clustering is not supported on the GigaVUE-TA100-CXP.

Standard H Series Features

In addition to the features described above, the GigaVUE TA Series offers many standard features from the GigaVUE H Series nodes:

Benefit	Descriptions
Remote Management	Configure the GigaVUE Traffic Aggregator's operations from a command-line interface: <ul style="list-style-type: none">• Local access over the serial console port.• Remote network access using Telnet or SSH2 over the 10/100/1000 Ethernet Mgmt port.• Secure access to the CLI, either through local authentication or optional RADIUS/TACACS+/LDAP support.• Powerful and flexible logging, including event notification via syslog, email, and SNMP traps.
Aggregate Links	Send the data from multiple different network ports to a tool port or GigaStream, allowing you to combine traffic from multiple access points into a single stream for uplink to the Gigamon Visibility Platform.
CLI Management	The GigaVUE TA Series nodes feature a common CLI with other GigaVUE H Series nodes.
Command Abbreviation	Type only as many letters of a command as are needed to positively differentiate from other available commands. For example, you only need to type con t to enter Config mode, not the full configure terminal command.
SNMP Support	Rely on secure SNMP v3 access to the onboard SNMP agent as well as v1/v2 SNMP traps.
Email Notifications	Use email alerts for proactive notification of a wide variety of GigaVUE TA Series node events, helping you keep tabs on system status in real time.
Scalable Port Density	<p>The GigaVUE-TA10 can have either twenty-four (24) or forty-eight (48) 1Gb/10Gb ports enabled. The 24-port GigaVUE-TA10 is called the GigaVUE-TA10A. A license is available to expand the GigaVUE-TA10A to include all 48 1Gb/10Gb ports as well as the four (4) 40Gb ports.</p> <p>The GigaVUE-TA100 can have either sixteen (16), twenty-four (24), or thirty-two (32) 100Gb ports enabled. Licenses are available for the additional two sets of 8 ports.</p> <p>The GigaVUE-TA200 can have either thirty-two (32) or sixty-four (64) 100Gb ports enabled. A license is available for the additional 32 ports.</p> <p>The GigaVUE TA Series nodes make it easy to leverage the system's 10Gb or 40Gb port density, aggregating multiple underused 40Gb/10Gb/1Gb network ports to 40Gb/10Gb tool ports for uplink to the Gigamon Visibility Platform.</p>
Flexible 10Gb/1Gb Support	All 10Gb ports in GigaVUE-TA10 Traffic Aggregator can be used with 1Gb Ethernet media by inserting a copper or optical SX/LX SFP instead of an SFP+. Interoperability and support are ensured by purchasing SFPs from Gigamon – transceivers purchased from other vendors are not supported.
Clustering	The GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, and GigaVUE-TA200 nodes can cluster with other GigaVUE H Series nodes. This allows you to take advantage of the benefits of features such as GigaSMART.
Ingress VLAN Tagging	VLAN Tags can be added to the ingress packets on a per-port basis. This can help identify, differentiate or track incoming sources of traffic.

Benefit	Descriptions
H-VUE Web Support	H-VUE is the Gigamon Web Interface that allows users to setup, configure, update and review settings on either a standalone node or clustered GigaVUE nodes. To learn more, refer to the <i>GigaVUE-OS H-VUE User's Guide</i> .
FM (Centralized Management System)	Use the centralized Fabric Management System to review, configure, and update GigaVUE TA Series just like other GigaVUE H Series.

Introducing the GigaVUE-TA10 Chassis

This section describes the physical layout of the GigaVUE-TA10 chassis, including a description of all ports and connectors. The GigaVUE-TA10 chassis consists of a 1RU, rack-mountable, 19"-wide chassis with management, network, and tool ports at the front and power connections at the rear. [Figure 1-1](#) shows the ports at the front of the GigaVUE-TA10 chassis. Refer to [Table 1-1](#) for a description of each of the ports.

10Gb/1Gb Ports

The GigaVUE-TA10 Traffic Aggregator provides either 24 or 48 10Gb/1Gb ports (x1..x24 or x1..x48). There are also four 40Gb ports (q1..q4) included with the 48-port GigaVUE-TA10. The 24-port GigaVUE-TA10 is called the GigaVUE-TA10A.

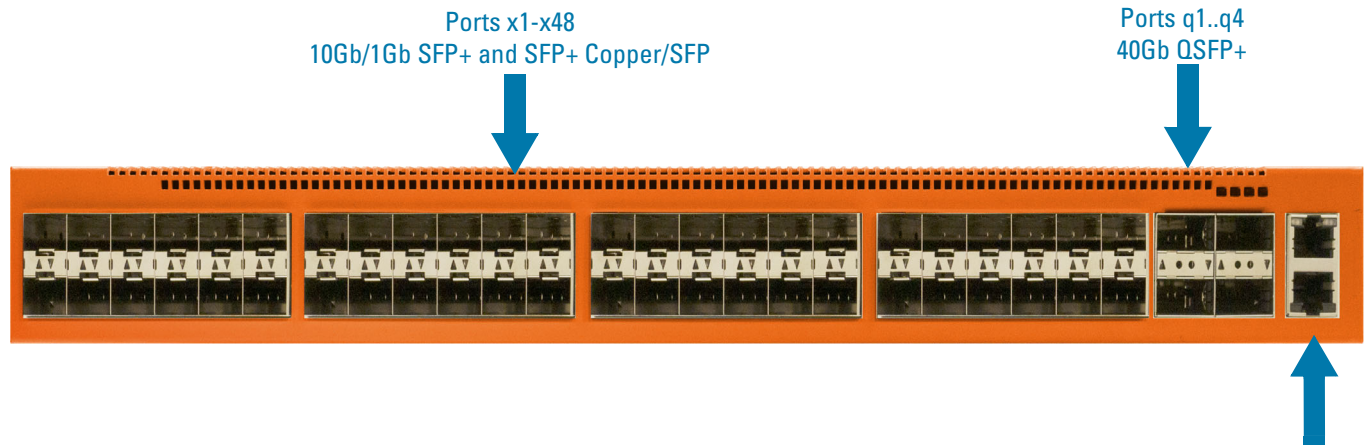
The 10Gb ports support SR/LR/ER/LRM optical and direct attach copper SFP+ transceivers. You can also use 1Gb SX/LX or copper SFPs in the 10Gb ports for 1Gb support.

In a cluster configuration, these ports can either be set as network ports or as stack-link ports.

40Gb Ports

GigaVUE-TA10 Traffic Aggregator also includes four 40Gb ports (q1..q4) suitable for use as tool ports for aggregated output to a matching 40Gb port on a GigaVUE H Series node.

You can also configure card modes that let a 40Gb port operate as four logical 10Gb ports. Once configured, cable a 40Gb port operating as four 10Gb ports to an optical patch panel or breakout panel, which takes a 40Gb QSFP+ input from the GigaVUE-TA10 and splits it to four independent 10Gb output ports.



Console and Mgmt Ports

Console Port

Use the Console port for serial terminal connections to the GigaVUE CLI. Unless you requested custom factory settings, the serial settings are 8N1, 115,200 bps.

Management Port

Standard 10/100/1000 RJ45 Ethernet ports support remote connections to the GigaVUE CLI using Telnet/SSH.

Green LED shows link status; amber LED shows activity.

This port is also used in a cluster configuration to manage cluster traffic.

Figure 1-1: The GigaVUE-TA10 Chassis

Table 1-1: GigaVUE-TA10 Ports

Port	Description
Mgmt	Use the Mgmt port for remote configuration of the GigaVUE-TA10 Traffic Aggregator over a 10/100/1000 Ethernet network. Refer to Connecting Serial Console and Mgmt Ports on page 63 for information on establishing a Telnet or SSH configuration session with the GigaVUE-TA10 Traffic Aggregator.
Console	Use the Console port for local configuration of the GigaVUE-TA10 Traffic Aggregator over a serial connection. Refer to Access the Command-Line Interface over the console Port on page 64 for information on establishing a serial configuration session with the GigaVUE-TA10 Traffic Aggregator in a terminal window.
Ports x1..x24 or Ports x1..x48	<p>The GigaVUE-TA10 provides either 24 or 48 10Gb/1Gb ports, depending on the version. Each of the 10Gb/1Gb ports can be used as either a network (ingress) or tool (egress) port.</p> <ul style="list-style-type: none"> • 10Gb SFP+ transceivers are available for optical (SR/LR/ER/LRM) media and direct-attach copper media. • You can also use 1Gb SFP transceivers for 1Gb speeds. 850 nm multimode or 1310 nm singlemode SFP transceivers are available as standard options. <p>Refer to Supported Transceivers by GigaVUE Node's Port Type on page 98 for details on supported transceivers.</p> <p>Refer to Port Licensing on page 69 for license information to expand the 24-port GigaVUE-TA10A to 48 ports, including the four 40Gb ports.</p>
Ports q1..q4 (or as x49..x64)	<p>GigaVUE-TA10 also includes four 40Gb ports (q1..q4). The 40Gb ports can be used as a 40Gb ingress port, or, as a high-speed tool port for aggregated output to a matching 40Gb port on a GigaVUE H Series node.</p> <p>In addition, you can also configure card modes that let either two (q1..q2) or all four (q1..q4) of the 40Gb ports operate as four logical 10Gb ports (x49..x64). This is useful when deploying the GigaVUE-TA10 in an environment that does not yet include 40Gb interfaces. Refer to Configuring the Card Mode on GigaVUE-TA10 on page 45.</p> <p>Once a 40Gb port has been configured to operate as four 10Gb ports, cable it to an optical patch panel or breakout panel, which takes a 40Gb QSFP+ input from the GigaVUE-TA10 and splits it to four independent 10Gb output ports. Refer to Breakout Panels on page 48.</p> <p>The q1..q4 ports accept 40Gb QSFP+ connections using active-fiber QSFP+ SR or PLR4 transceivers.</p> <p>The q1..q4 ports accept 40Gb QSFP+ BiDi connections using QSFP+ SR transceivers (RX-only or full duplex). RX-only BiDi only supports RX on network ports. Full Duplex (RX/TX) supports network and tool ports.</p> <p>Refer to Port Licensing on page 69 for license information to expand the 24-port GigaVUE-TA10A to 48 ports, including the four 40Gb ports.</p>
Transceivers	Refer to Table 5-1 on page 98 for supported transceivers.

Air Flow Direction

The air flow direction is from the front of the GigaVUE chassis to the rear. The rear-mounted fans pull air from the front to the back of the chassis. For environments with hot/cold aisles, install the chassis so the intake air at the front of the chassis is cold.

AC and DC-Powered GigaVUE-TA10 Models

Gigamon provides both AC and DC-powered versions of the GigaVUE-TA10 Traffic Aggregator. Refer to [Connecting -48V DC Power Supplies on page 60](#) for information on connecting DC power supplies.

Displaying Power and Voltage Information

The output of the following show commands display power information on a GigaVUE-TA10 node:

- `show chassis`
- `show environment type psu`
- `show environment type psu psu-detail [all | psu-id]`

NOTE: To increase the i2c stability in a GigaVUE-TA10 node, the frequency of updating the power supply module information is reduced. As a result, GigaVUE-TA10 PSU information displayed in the CLI output is not real time.

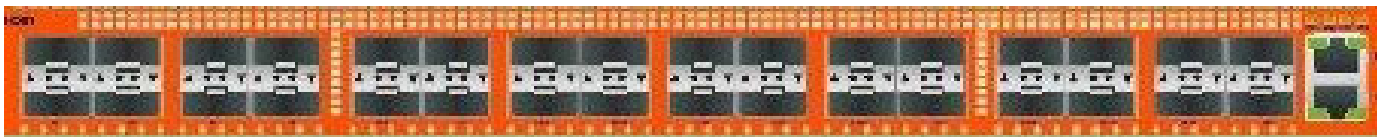
Introducing the GigaVUE-TA40 Chassis

This section describes the physical layout of the GigaVUE-TA40 chassis, including a description of all ports and connectors. The GigaVUE-TA40 chassis consists of a 1RU, rack-mountable, 19"-wide chassis with management, network, and tool ports at the front and power connections at the rear. [Figure 1-2](#) shows the ports at the front of the GigaVUE-TA40 chassis. Refer to [Table 1-2](#) for a description of each of the ports.

40Gb Ports

GigaVUE-TA40 Traffic Aggregator includes 32 40Gb ports (q1..q32) suitable for use as tool ports for aggregated output to a matching 40Gb port on a GigaVUE H Series node.

You can also configure card modes that let a 40Gb port operate as four logical 10Gb ports. Once configured, cable a 40Gb port operating as four 10Gb ports to an optical patch panel or breakout panel, which takes a 40Gb QSFP+ input from the GigaVUE-TA40 and splits it to four independent 10Gb output ports.



Console and Mgmt Ports

Console Port

Use the console port for serial terminal connections to the GigaVUE CLI. Unless you requested custom factory settings, the serial settings are 8N1, 115,200 bps.

Management Port

Standard 10/100/1000 RJ45 Ethernet ports support remote connections to the GigaVUE CLI using Telnet/SSH.

Green LED shows link status; amber LED shows activity.

This port is also used in a cluster configuration to manage cluster traffic.

Figure 1-2: The GigaVUE-TA40 Chassis

Table 1-2: GigaVUE-TA40 Ports

Port	Description
Mgmt	Use the Mgmt port for remote configuration of the GigaVUE-TA40 Traffic Aggregator over a 10/100/1000 Ethernet network.
Console	Use the console port for local configuration of the GigaVUE-TA40 Traffic Aggregator over a serial connection.
Ports q1..q32	<p>GigaVUE-TA40 includes 32 40Gb ports (q1..q32). The 40Gb ports can be used as a 40Gb ingress port, or, as a high-speed tool port for aggregated output to a matching 40Gb port on a GigaVUE H Series node.</p> <p>In software version 5.5, GigaVUE-TA40 supports 4x10G breakout at port level. Port breakout mode in GigaVUE-TA40 is configured as follows:</p> <ul style="list-style-type: none"> • 24 out of the 32 ports provide 4x10Gb breakout support. The first 12 ports and the last 12 ports provide support for breakout functionality (with 96 sub-ports operating as 10Gb ports:) <ul style="list-style-type: none"> Ports q1 to q12 and q21 to q32 support breakout functionality Ports q13 to q20 do not support breakout functionality • After breakout, sub-ports (breakout ports) are named as q1x1....q1x4, q2x1...q2x4 (similar to other hardware platforms) to support the breakout functionality.
Transceivers	Refer to Table 5-2 on page 99 for supported transceivers.

Air Flow Direction

The air flow direction is from the front of the GigaVUE-TA40 chassis to the rear. The rear-mounted fans pull air from the front to the back of the chassis. Install the chassis so the intake air at the front of the chassis is cold.

AC and DC-Powered GigaVUE-TA40 Models

Gigamon provides both AC and DC-powered versions of the GigaVUE-TA40. Refer to [Connecting -48V DC Power Supplies on page 60](#).

Introducing the GigaVUE-TA100 Chassis

This section describes the physical layout of the GigaVUE-TA100 chassis, including a description of all ports and connectors. The GigaVUE-TA100 chassis consists of a 1RU, rack-mountable, 19"-wide chassis with management, network, and tool ports at the front and power connections and fans at the rear. Figure 1-3 shows the ports at the front of the GigaVUE-TA100 chassis. Refer to Table 1-3 for a description of each of the ports. Figure 1-4 shows the fan modules and power supply units at the rear of the GigaVUE-TA100 chassis. Refer to *Chassis Cooling on page 22* for information on fans and temperature monitoring.

The GigaVUE-TA100 provides thirty-two ports, supporting high-density aggregation. Depending on the transceiver, QSFP+ or QSFP28, the ports run at speeds of either 40Gb or 100Gb. With QSFP+ transceivers, a 40Gb port can be broken out into four (4) times 10Gb ports, called **4x10G** mode.

The 100Gb/40Gb ports on GigaVUE-TA100 can be used as network, tool, hybrid, or stack-link ports.

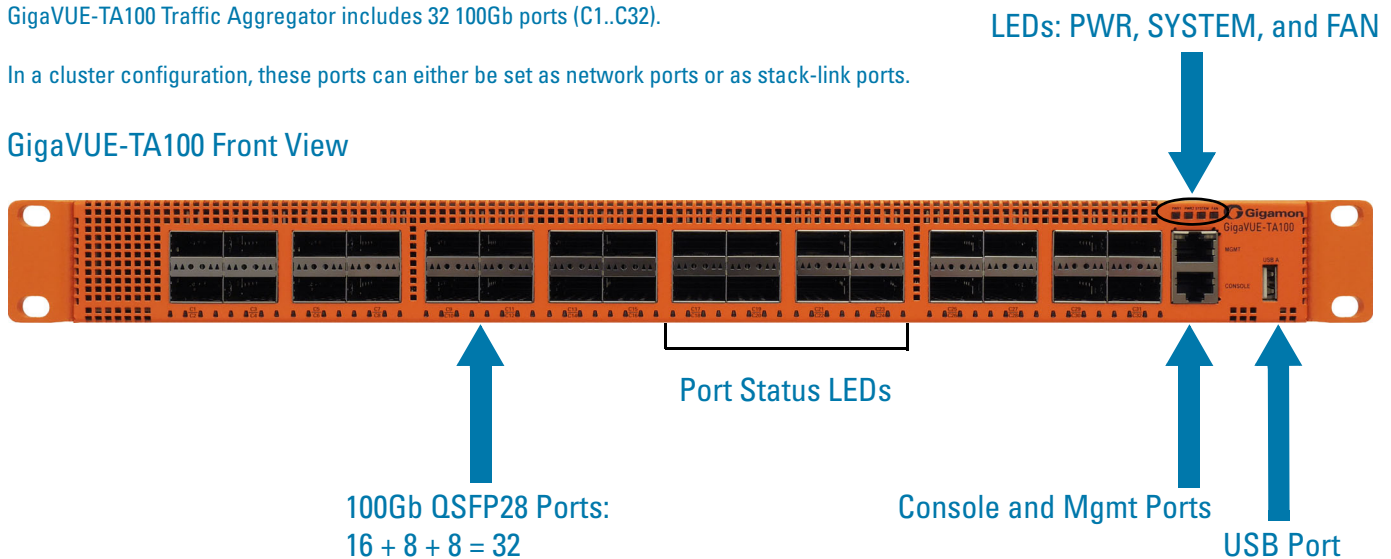
The GigaVUE-TA100 node in standalone mode must be running software version 4.6.01 or higher. The GigaVUE-TA100 node in a cluster environment must be running software version 4.8 or higher.

100Gb Ports

GigaVUE-TA100 Traffic Aggregator includes 32 100Gb ports (C1..C32).

In a cluster configuration, these ports can either be set as network ports or as stack-link ports.

GigaVUE-TA100 Front View



100Gb/40Gb Ports

The 100Gb ports can operate at 40Gb with QSFP+ transceivers.

You can configure a port mode that let a QSFP+ transceiver (40Gb port) operate as four logical 10Gb ports. Once configured, cable a 40Gb port operating as four 10Gb ports to an optical patch panel or breakout panel, which takes a 40Gb QSFP+ input from the GigaVUE-TA100 and splits it to four independent 10Gb output ports.

Console Port

Use the console port for serial terminal connections to the GigaVUE CLI. Unless you requested custom factory settings, the serial settings are 8N1, 115,200 bps.

Management Port

Standard 10/100/1000 RJ45 Ethernet ports support remote connections to the GigaVUE CLI using Telnet/SSH. Green LED shows link status; amber LED shows activity.

This port is also used in a cluster configuration to manage cluster traffic.

Figure 1-3: The GigaVUE-TA100 Chassis Front View

Table 1-3: GigaVUE-TA100 Ports

Port	Description
Mgmt	Use the Mgmt port for remote configuration of the GigaVUE-TA100 Traffic Aggregator over a 10/100/1000 Ethernet network.
Console	Use the console port for local configuration of the GigaVUE-TA100 Traffic Aggregator over a serial connection.
USB	Use the USB port to upgrade software on the GigaVUE-TA100 using a software image on an external USB drive. Refer to Software Upgrade using USB Drive on page 26 .
Ports c1..c32 or c1x1..c1x4, c2x1..c2x4, c3x1..c3x4, ...	<p>GigaVUE-TA100 includes 32 100Gb ports (c1..c32). These ports also support 40Gb speeds.</p> <p>Any of the 100Gb ports on the GigaVUE-TA100 can operate at 40Gb with a QSFP+ transceiver. With a QSFP+ transceiver, a port can be broken out into 4 times 10Gb ports, called subports. The subports will all have the same speed (10Gb). Subports will have x1 to x4 appended to their port ID, for example, 1/1/c2x1. For details, refer to Configure the Port Mode on page 46.</p> <p>Once a 40Gb port has been configured to operate as four 10Gb ports, cable it to an optical patch panel or breakout panel, such as PNL-M341, which takes a 40Gb QSFP+ input from the GigaVUE-TA100 and splits it to four independent 10Gb output ports. Refer to Breakout Panels on page 48.</p> <p>The ports accept 40Gb QSFP+ connections using QSFP+ SR or PLR4 transceivers.</p> <p>The ports accept 40Gb QSFP+ BiDi connections using QSFP+ SR transceivers (RX-only or full duplex). RX-only BiDi only supports RX on network ports. Full Duplex (RX/TX) supports network and tool ports.</p>
Transceivers	Refer to Table 5-3 on page 99 for supported transceivers.

GigaVUE-TA100 Rear View

Fan Modules and Power Supplies

GigaVUE-TA100 has three (3) fan modules and two (2) power supply units (PSU). Each fan module contains four fans per module.

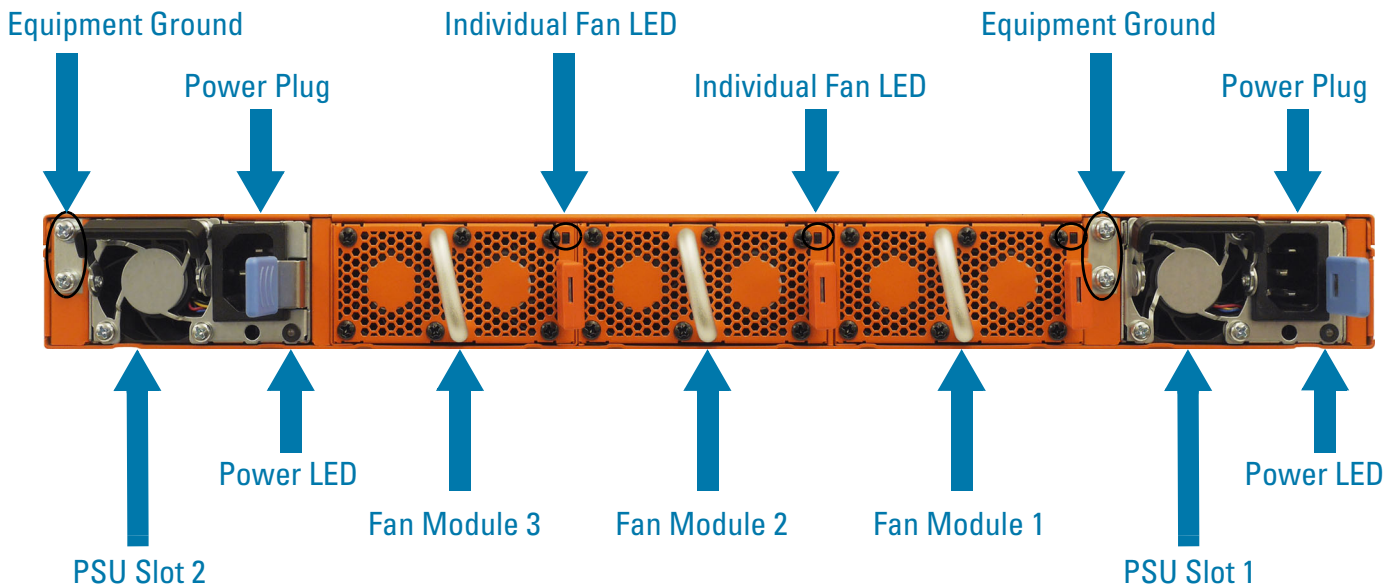


Figure 1-4: The GigaVUE-TA100 Chassis Rear View

Chassis Cooling

The fans on the GigaVUE-TA100 run at 100% of their maximum speed on power up, then drop to approximately 60% during normal operations. The temperatures of four components: transceivers, exhaust, CPU, and switch CPU, are monitored. When a component crosses a pre-defined threshold, the fan speed is adjusted dynamically, in increments of approximately 10%.

An SNMP trap is sent when a component reaches the threshold for warning, alert, or critical temperature conditions. Refer to [Table 1-4](#) for the temperatures at which the warning, alert, and critical traps are sent and any additional action that occurs at a threshold.

Table 1-4: Component Temperature Thresholds and Actions

Transceiver Temperature	Exhaust Temperature	CPU Temperature	Switch CPU Temperature
70°C	85°C	90°C	105°C
Warning trap sent	Warning trap sent	Warning trap sent	Warning trap sent
80°C	90°C	95°C	115°C
Alert trap sent; Transceiver power disabled	Alert trap sent	Alert trap sent	Alert trap sent; Switch CPU put in reset
95°C	95°C	100°C	140°C
Critical trap sent	Critical trap sent	Critical trap sent	Critical trap sent

The output of the following CLI command displays the current exhaust, CPU, and switch CPU temperatures, as well as the intake temperature:

(config) show environment

```

...
Card 1 (TA100-C32):
Intake temperature :          40 C
Exhaust temperature :        45 C
CPU temperature :           32 C
Switch_CPU temperature :     54 C

```

The output of the following CLI command displays the transceiver temperature:

(config) show port params port-list 1/1/c1..c2

```

          Parameter          1/1/c1          1/1/c2
=====
...
          SFP type:          qsfp28 sr          qsfp28 sr
...
SFP Power (1-2) (dBm):    -40.00 -40.00    -40.00 -40.00
SFP Power (3-4) (dBm):    -40.00 -40.00    -40.00 -40.00
SFP Power (5-6) (dBm):      -         -         -         -
SFP Power (7-8) (dBm):      -         -         -         -
SFP Power (9-10) (dBm):     -         -         -         -
          SFP Temperature (C):          20.94          21.12
...

```

The output of the following CLI command displays the fan speed in RPM (the normal operational speed is approximately 12000 RPM; the maximum speed is approximately 19000 RPM):

(config) show environment

```
...
Fan tray 1 (FAN-TAC00):
1st fan :                12136 RPM
2nd fan :                12288 RPM
3rd fan :                12136 RPM
4th fan :                11988 RPM
...
```

Power LEDs

The power LEDs on the front of the chassis (PWR1 and PWR2) are as follows:

- Solid GREEN indicates that the power supply unit (PSU) has power and is operating normally
- Solid AMBER indicates a Power-On Self-Test (POST) is in progress
- Blinking AMBER indicates that the PSU is present but without power.
- Off indicates that the PSU is not inserted in the chassis.

System LED

The system LED on the front of the chassis is as follows:

- Off indicates no power
- Blinking GREEN indicates the node is booting or the system is in diagnostic mode
- Solid GREEN indicates normal operation
- Solid RED indicates a critical alarm
- Blinking RED indicates a non-critical alarm

Port Status LEDs

For each port, there are four (4) port status LEDs on the front of the chassis. At 40Gb and 100Gb speeds, only the first LED operates as follows:

- AMBER indicates the port is administratively disabled
- GREEN indicates the link is operationally up
- Off indicates the link is operationally down
- Blinking GREEN indicates the port is operationally up and there is traffic flowing through the port

The other three LEDs operate when ports are in breakout mode as follows:

- Off indicates the port is in non-breakout mode
- GREEN indicates the link is operationally up
- AMBER indicates the port is administratively disabled

Global Fan LED

The global fan LED on the front of the chassis is as follows:

- GREEN indicates all fans are operating normally
- AMBER indicates one or more fans have failed

Individual Fan LEDs

The individual fan LEDs on the rear of the chassis are as follows:

- GREEN indicates the fan is operating normally
- AMBER indicates the fan has failed

Individual Power LEDs

The individual power LEDs on the rear of the chassis are as follows:

- GREEN indicates the PSU is operating normally
- Off indicates the PSU is not operational

GigaVUE-TA100 Notes and Rules

Keep in mind the following notes and rules when using the GigaVUE-TA100:

GigaVUE-TA100 Notes

Transceivers

The GigaVUE-TA100 can be used with the following transceivers. The port speed, 100Gb or 40Gb, is based on the optics type, as follows:

- 100Gb QSFP28 100GBASE-SR4
- 100Gb QSFP28 100GBASE-ER4
- 100Gb QSFP28 100GBASE-LR4
- 100Gb QSFP28 100GBASE-CWDM4
- 100Gb QSFP28 100GBASE-BiDi
- 40Gb QSFP+ 40GBASE-SR4
- 40Gb QSFP+ 40GBASE-LR4
- 40Gb QSFP+ 40GBASE-PLR4
- 40Gb QSFP+ SR BiDi (RX-only)
- 40Gb QSFP+ SR BiDi Full Duplex (RX/TX)

Refer to the following troubleshooting tips:

- Always use the correct cables for SR and LR optics.

Network, Tool, Hybrid, or Stack-Link Port

The 100Gb/40Gb ports on GigaVUE-TA100 can be used as network, tool, hybrid, or stack-link ports. Subports created from **4x10G** mode on the GigaVUE-TA100 can function as network, tool, hybrid, or stack-link ports.

For stack-link support, refer to [Stack-Links at 10Gb on page 25](#), [Stack-Links at 40Gb on page 25](#), and [Stack-Links at 100Gb on page 25](#).

Stack-Links at 10Gb

The 10G stacking to other GigaVUE nodes is supported when 40Gb ports on GigaVUE-TA100 are fanned out to **4x10G** mode, but only in the following combinations:

- GigaVUE-HC1 to GigaVUE-TA100
- GigaVUE-HC2 control card version 1 (CCv1) to GigaVUE-TA100
- All modules on GigaVUE-HC2 control card version 2 (CCv2), except the PRT-HC0-C02 module, to GigaVUE-TA100
- GigaVUE-TA10 to GigaVUE-TA100
- PRT-H00-Q02X32 on GigaVUE HD Series to GigaVUE-TA100
- GigaVUE-TA100 to GigaVUE-TA100

Stack-Links at 40Gb

The GigaVUE-TA100 can connect to all GigaVUE nodes that support 40Gb through a 40Gb stack-link, using SR4 and LR4 optics, with the following exception:

- PRT-HC0-C02 on GigaVUE-HC2

Stack-Links at 100Gb

The GigaVUE-TA100 can connect to the following nodes, modules, and line cards through a 100Gb stack-link:

- GigaVUE-TA100 (SR4, LR4, and CWDM4)
- GigaVUE-TA200 (SR4, LR4, and CWDM4)
- PRT-HC3-C08Q08, PRT-HC3-C16, and SMT-HC3-C05 on GigaVUE-HC3 (SR4, LR4, and CWDM4)
- PRT-HD0-C06X24 on GigaVUE HD Series (LR4 and CWDM4 only on C06 ports)

Stack-Links to Other Node Types

To ensure the stack-links become operationally *up* when the GigaVUE-TA100 is connected to a node of a different type:

- Configure specified ports as stack ports.
- Configure the stack-link between the stack ports.

GigaStream	Any port on the GigaVUE-TA100 can be used to create a GigaStream with other ports. All participating ports must be running the same speed and must use the same port type.
Map Rules and Port Filters	The GigaVUE-TA100 supports 256 map rules per chassis and 20 egress port filters per chassis.
Port Licensing	On the GigaVUE-TA100, only the first 16 out of 32 ports are enabled. Two port licenses are available to enable an additional 8 or 16 ports. Refer to Port Licensing on page 69 for license information to expand from 16 ports to 24 or 32 ports.
Advanced Features License	Connecting a GigaVUE-TA100 to a cluster requires the Advanced Features License.

Dual BIOS Images

The GigaVUE-TA100 has a dual Basic Input/Output System (BIOS). The BIOS image is packaged with the software image, starting in software version 4.6.01. The BIOS contents are stored in flash memory, allowing the BIOS to be upgraded. There are two flash components, a primary and a secondary.

The following CLI command displays the two flash components and indicates the BIOS image from which the system booted using asterisks:

(config) show version

```
...
1st flash version: coreboot-ta100-1.0.0 Wed Aug 23 16:10:34 CST 2017 **
2nd flash version: coreboot-ta100-1.0.0 Wed Aug 23 16:10:34 CST 2017
...
```

If there is a component failure in the primary flash, the GigaVUE-TA100 boots from a backup golden BIOS image in the secondary flash. An SNMP trap can be configured to be sent when the system has booted from the secondary flash. The trap may indicate that the primary flash component needs to be serviced. The trap is as follows:

```
2ndflashboot: Secondary flash boot notification
```

If a BIOS upgrade is needed for enhancements in future releases, the BIOS can be manually upgraded from the CLI using the **coreboot install** command.

Software Upgrade using USB Drive

If a GigaVUE-TA100 does not have network access, there is a USB port on the front of the chassis.

A software image can be downloaded to a USB drive, the drive can be inserted into the USB port on the GigaVUE-TA100, and the software image can be installed from the drive. Use the format, fat32, for the USB drive.

The following are ways to download a software image to a USB drive:

- Insert the drive into your computer or laptop and drag and drop the software image onto the drive.
- Insert the drive into a GigaVUE-TA100 with network access and use the **image fetch** CLI command with the **usb** parameter.

Air Flow Direction

The air flow direction is from the front of the GigaVUE-TA100 chassis to the rear. The rear-mounted fans pull air from the front to the back of the chassis. Install the chassis so the intake air at the front of the chassis is cold.

AC and DC-Powered GigaVUE-TA100 Models

Gigamon provides both AC and DC-powered versions of the GigaVUE-TA100. Refer to [Connecting -48V DC Power Supplies on page 60](#).

Battery Caution

A disposable, non-rechargeable, Real Time Clock (RTC) Lithium metal coin cell battery is in the GigaVUE-TA100. Note the following:

- There is a risk of fire if the battery is replaced with an incorrect type.
- Use only CR-2032L type Lithium metal coin cell battery and replace with the same.

Introducing the GigaVUE-TA100-CXP Chassis

This section describes the physical layout of the GigaVUE-TA100-CXP chassis, including a description of all ports and connectors. The GigaVUE-TA100-CXP chassis consists of a 1RU, rack-mountable, 19"-wide chassis with management, network, and tool ports at the front and power connections and fans at the rear. [Figure 1-5](#) shows the ports at the front of the GigaVUE-TA100-CXP chassis. Refer to [Table 1-5](#) for a description of each of the ports. [Figure 1-6](#) shows the fan modules and power supply units at the rear of the GigaVUE-TA100-CXP chassis.

The GigaVUE-TA100-CXP provides twenty-eight 100Gb ports, supporting high-density aggregation. Twenty (20) ports are 100Gb CXP ports. Eight (8) ports are 100Gb QSFP28 ports. Depending on the transceiver inserted in the eight ports, QSFP+ or QSFP28, the eight ports run at speeds of either 40Gb or 100Gb. With QSFP+ transceivers, a 40Gb port can be broken out into four (4) times 10Gb ports, called **4x10G** mode.

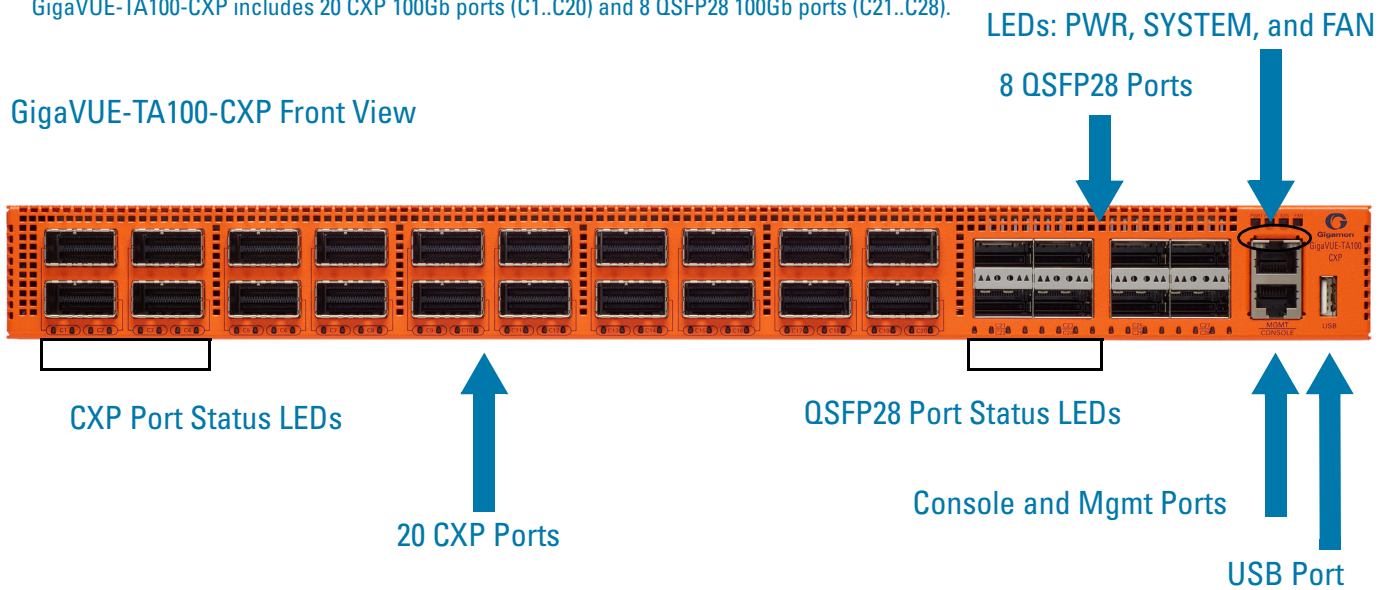
The QSFP28 and CXP ports on GigaVUE-TA100-CXP can be used as network, tool, or hybrid ports. They cannot be used as stack ports. Subports created from **4x10G** mode can function as network, tool, or hybrid ports. They cannot be used as stack ports.

The GigaVUE-TA100-CXP node must be running software version 5.0 or higher.

100Gb Ports

GigaVUE-TA100-CXP includes 20 CXP 100Gb ports (C1..C20) and 8 QSFP28 100Gb ports (C21..C28).

GigaVUE-TA100-CXP Front View



CXP Ports

The 100Gb CXP ports operate at 100Gb.

QSFP28 Ports

The 100Gb QSFP28 ports operate at 100Gb with QSFP28 transceivers or at 40Gb with QSFP+ transceivers.

You can configure a port mode that let a QSFP+ transceiver (40Gb port) operate as four logical 10Gb ports. Once configured, cable a 40Gb port operating as four 10Gb ports to an optical patch panel or breakout panel, which takes a 40Gb QSFP+ input from the GigaVUE-TA100-CXP and splits it to four independent 10Gb output ports.

Console Port

Use the console port for serial terminal connections to the GigaVUE CLI. Unless you requested custom factory settings, the serial settings are 8N1, 115,200 bps.

Management Port

Standard 10/100/1000 RJ45 Ethernet ports support remote connections to the GigaVUE CLI using Telnet/SSH. Green LED shows link status; amber LED shows activity.

Figure 1-5: The GigaVUE-TA100-CXP Chassis Front View

Table 1-5: GigaVUE-TA100-CXP Ports

Port	Description
Mgmt	Use the Mgmt port for remote configuration of the GigaVUE-TA100-CXP over a 10/100/1000 Ethernet network.
Console	Use the console port for local configuration of the GigaVUE-TA100-CXP over a serial connection.
USB	Use the USB port to upgrade software on the GigaVUE-TA100-CXP using a software image on an external USB drive. Refer to Software Upgrade using USB Drive on page 35 .

Table 1-5: GigaVUE-TA100-CXP Ports

Port	Description
Ports c1..c20, c21..c28 or c21x1..c21x4, c22x1..c22x4, c23x1..c23x4, ...	<p>GigaVUE-TA100-CXP includes twenty-eight (28) 100Gb ports (c1..c28). Twenty (20) ports (c1..c20) are 100Gb CXP ports. Eight (8) ports (c21..c28) are 100Gb QSFP28 ports. Depending on the transceiver inserted in the eight ports, either QSFP+ or QSFP28, the ports run at speeds of either 40Gb or 100Gb.</p> <p>With a QSFP+ transceiver, the QSFP28 ports can be broken out into 4 times 10Gb ports, called subports. The subports will all have the same speed (10Gb). Subports will have x1 to x4 appended to their port ID, for example, 1/1/c21x1. For details, refer to Configure the Port Mode on page 46.</p> <p>Once a 40Gb port has been configured to operate as four 10Gb ports, cable it to an optical patch panel or breakout panel, such as PNL-M341, which takes a 40Gb QSFP+ input from the GigaVUE-TA100-CXP and splits it to four independent 10Gb output ports. Refer to Breakout Panels on page 48.</p> <p>In software version 5.3, port breakout is only supported on 40Gb QSFP+ 40GBASE-SR4.</p>
Transceivers	Refer to Table 5-4 on page 99 for supported transceivers.

GigaVUE-TA100-CXP Rear View

Fan Modules and Power Supplies

GigaVUE-TA100-CXP has three (3) fan modules and two (2) power supply units (PSU). Each fan module contains four fans per module.

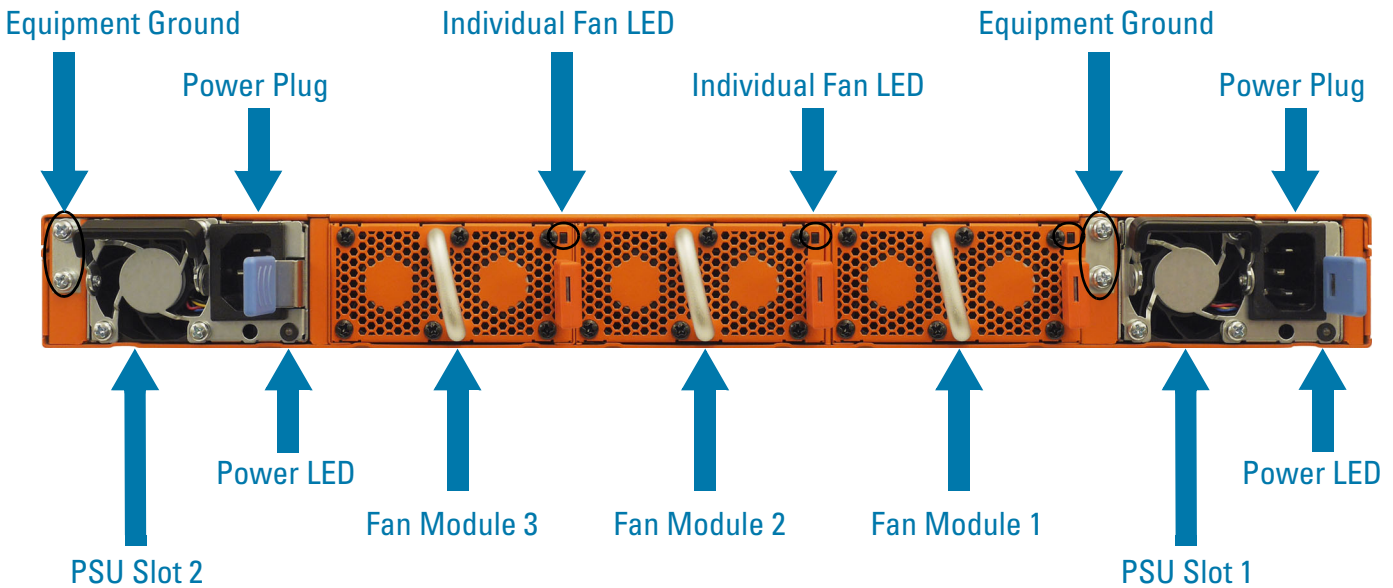


Figure 1-6: The GigaVUE-TA100-CXP Chassis Rear View

Chassis Cooling

The fans on the GigaVUE-TA100-CXP run at 100% of their maximum speed on power up, then drop to approximately 60% during normal operations. The temperatures of four components: transceivers, exhaust, CPU, and switch CPU, are monitored. When a component crosses a pre-defined threshold, the fan speed is adjusted dynamically, in increments of approximately 10%.

An SNMP trap is sent when a component reaches the threshold for warning, alert, or critical temperature conditions. Refer to [Table 1-6](#) for the temperatures at which the warning, alert, and critical traps are sent and any additional action that occurs at a threshold.

Table 1-6: Component Temperature Thresholds and Actions

Transceiver Temperature	Exhaust Temperature	CPU Temperature	Switch CPU Temperature
70°C	85°C	90°C	105°C
Warning trap sent	Warning trap sent	Warning trap sent	Warning trap sent
80°C	90°C	95°C	115°C
Alert trap sent; Transceiver power disabled	Alert trap sent	Alert trap sent	Alert trap sent; Switch CPU put in reset
95°C	95°C	100°C	140°C
Critical trap sent	Critical trap sent	Critical trap sent	Critical trap sent

The output of the following CLI command displays the current exhaust, CPU, and switch CPU temperatures, as well as the intake temperature:

```
(config) show environment
...
Card 1 (TACX-C28):
Intake temperature :          31 C
Exhaust temperature :        39 C
CPU temperature :            30 C
Switch_CPU temperature :     52 C
```

The output of the following CLI command displays the transceiver temperature:

```
(config) # show port params port-list 1/1/c1
...
          SFP type:           cxp sr
SFP vendor name:             GIGAMON
SFP vendor PN:               FTLD10CE3C-GM
SFP vendor SN:               XWG0J50
SFP Power (1-2) (dBm):       -40.00 -40.00
SFP Power (3-4) (dBm):       -40.00 -40.00
SFP Power (5-6) (dBm):       -40.00 -40.00
SFP Power (7-8) (dBm):       -40.00 -40.00
SFP Power (9-10) (dBm):      -40.00 -40.00
SFP Temperature (C):         23.88
```

The output of the following CLI command displays the fan speed in RPM (the normal operational speed is approximately 12000 RPM; the maximum speed is approximately 19000 RPM):

(config) show environment

```
...
Fan tray 1 (FAN-TAC00):
1st fan :                12136 RPM
2nd fan :                12288 RPM
3rd fan :                12136 RPM
4th fan :                11988 RPM
...
```

Power LEDs

The power LEDs on the front of the chassis (PWR1 and PWR2) are as follows:

- Solid GREEN indicates that the power supply unit (PSU) has power and is operating normally.
- Solid AMBER indicates a Power-On Self-Test (POST) is in progress.
- Blinking AMBER indicates that the PSU is present but without power.
- Off indicates that the PSU is not inserted in the chassis.

System LED

The system LED on the front of the chassis is as follows:

- Solid GREEN indicates normal operation
- Blinking GREEN indicates the node is booting or the system is in diagnostic mode
- Solid RED indicates a critical alarm
- Blinking RED indicates a non-critical alarm
- Off indicates no power

QSFP28 Port Status LEDs

For each QSFP28 port, there are four (4) port status LEDs on the front of the chassis. At 40Gb and 100Gb speeds, only the first LED operates as follows:

- AMBER indicates the port is administratively disabled
- GREEN indicates the link is operationally up
- Off indicates the link is operationally down
- Blinking GREEN indicates the port is operationally up and there is traffic flowing through the port

The other three LEDs operate when ports are in breakout mode as follows:

- Off indicates the port is in non-breakout mode
- GREEN indicates the link is operationally up
- AMBER indicates the port is administratively disabled

CXP Port Status LEDs

Each CXP port on the front of the chassis is as follows:

- AMBER indicates the port is administratively disabled
- GREEN indicates the link is operationally up

Global Fan LED

The global fan LED on the front of the chassis is as follows:

- Solid GREEN indicates all fans are operating normally
- Solid AMBER indicates one or more fans have failed

Individual Fan LEDs

The individual fan LEDs on the rear of the chassis are as follows:

- Solid GREEN indicates the fan is operating normally
- Solid AMBER indicates the fan has failed

Individual Power LEDs

The individual power LEDs on the rear of the chassis are as follows:

- GREEN indicates the PSU is operating normally
- Off indicates the PSU is not operational

GigaVUE-TA100-CXP Notes and Rules

Keep in mind the following notes and rules when using the GigaVUE-TA100-CXP:

GigaVUE-TA100-CXP Notes

Transceivers

The GigaVUE-TA100-CXP can be used with the following transceivers. The port speed, 100Gb or 40Gb, is based on the optics type, as follows:

- 100Gb CXP 100GBASE-SR10
- 100Gb QSFP28 100GBASE-SR4
- 100Gb QSFP28 100GBASE-LR4
- 100Gb QSFP28 100GBASE-CWDM4
- 100Gb QSFP28 100GBASE-BiDi
- 40Gb QSFP+ 40GBASE-SR4
- 40Gb QSFP+ 40GBASE-LR4

Refer to the following troubleshooting tips:

- Always use the correct cables for SR and LR optics.

Network, Tool, or Hybrid Ports

The QSFP28 and CXP ports on GigaVUE-TA100-CXP can be used as network, tool, or hybrid ports.

Stack Ports

The GigaVUE-TA100-CXP does not support stack ports.

GigaStream

Ports on the GigaVUE-TA100-CXP can be used to create a GigaStream with other ports. All participating ports must be running the same speed and must use the same port type.

Map Rules and Port Filters

The GigaVUE-TA100-CXP supports 256 map rules per chassis and 20 egress port filters per chassis.

Port Licensing

There is no port licensing on GigaVUE-TA100-CXP. All 28 ports are enabled.

Clustering

The GigaVUE-TA100-CXP does not support clustering.

Dual BIOS Images

The GigaVUE-TA100-CXP has a dual Basic Input/Output System (BIOS). The BIOS image is packaged with the software image, starting in software version 4.8.01. The BIOS contents are stored in flash memory, allowing the BIOS to be upgraded. There are two flash components, a primary and a secondary.

The following CLI command displays the two flash components and indicates the BIOS image from which the system booted using asterisks:

```
(config) show version
```

```
...
1st flash version: coreboot-ta100cxp-1.0.0_20170110 Tues Jan 10 08:55:30 UTC 2017 **
2nd flash version: coreboot-ta100cxp-1.0.0_20170110 Tues Jan 10 08:55:30 UTC 2017
...
```

If there is a component failure in the primary flash, the GigaVUE-TA100-CXP boots from a backup golden BIOS image in the secondary flash. An SNMP trap can be configured to be sent when the system has booted from the secondary flash. The trap may indicate that the primary flash component needs to be serviced. The trap is as follows:

```
2ndflashboot: Secondary flash boot notification
```

If a BIOS upgrade is needed for enhancements in future releases, the BIOS can be manually upgraded from the CLI using the **coreboot install** command.

Software Upgrade using USB Drive

If a GigaVUE-TA100-CXP does not have network access, there is a USB port on the front of the chassis.

A software image can be downloaded to a USB drive, the drive can be inserted into the USB port on the GigaVUE-TA100-CXP, and the software image can be installed from the drive. Use the format, fat32, for the USB drive.

The following are ways to download a software image to a USB drive:

- Insert the drive into your computer or laptop and drag and drop the software image onto the drive.
- Insert the drive into a GigaVUE-TA100-CXP with network access and use the **image fetch** CLI command with the **usb** parameter.

Air Flow Direction

The air flow direction is from the front of the GigaVUE-TA100-CXP chassis to the rear. The rear-mounted fans pull air from the front to the back of the chassis. Install the chassis so the intake air at the front of the chassis is cold.

AC and DC-Powered GigaVUE-TA100-CXP Models

Gigamon provides both AC and DC-powered versions of the GigaVUE-TA100-CXP.

Battery Caution

A disposable, non-rechargeable, Real Time Clock (RTC) Lithium metal coin cell battery is in the GigaVUE-TA100-CXP. Note the following:

- There is a risk of fire if the battery is replaced with an incorrect type.
- Use only CR-2032L type Lithium metal coin cell battery and replace with the same.

Introducing the GigaVUE-TA200 Chassis

This section describes the physical layout of the GigaVUE-TA200 chassis, including a description of all ports and connectors. The GigaVUE-TA200 chassis consists of a 2RU, rack-mountable, 19"-wide chassis with management, network, and tool ports at the front and power connections and fans at the rear. [Figure 1-7](#) shows the ports at the front of the GigaVUE-TA200 chassis. Refer to [Table 1-7](#) for a description of each of the ports. [Figure 1-8](#) shows the fan modules and power supply units at the rear of the GigaVUE-TA200 chassis. Refer to [Chassis Cooling on page 40](#) for information on fans and temperature monitoring.

The GigaVUE-TA200 provides sixty-four ports, supporting high-density aggregation. Depending on the transceiver, QSFP+ or QSFP28, the ports run at speeds of either 40Gb or 100Gb. With QSFP28 SR4 transceivers, a 100Gb port can be broken out into four (4) times 25Gb ports, called **4x25G** mode. With 40G SR4, 40GESR4 and PLR4 QSFP+ transceivers (QSF-502, QSF-507, and QSF-506, respectively), a 40Gb port can be broken out into four (4) times 10Gb ports, called **4x10G** mode.

The 40Gb/100Gb ports on the GigaVUE-TA200 can be used as network, tool, hybrid, or stack ports. Stacking is not supported on the 25Gb ports created from **4x25G** modes. The GigaVUE-TA200 can be connected to a cluster using a 40Gb or 100Gb port.

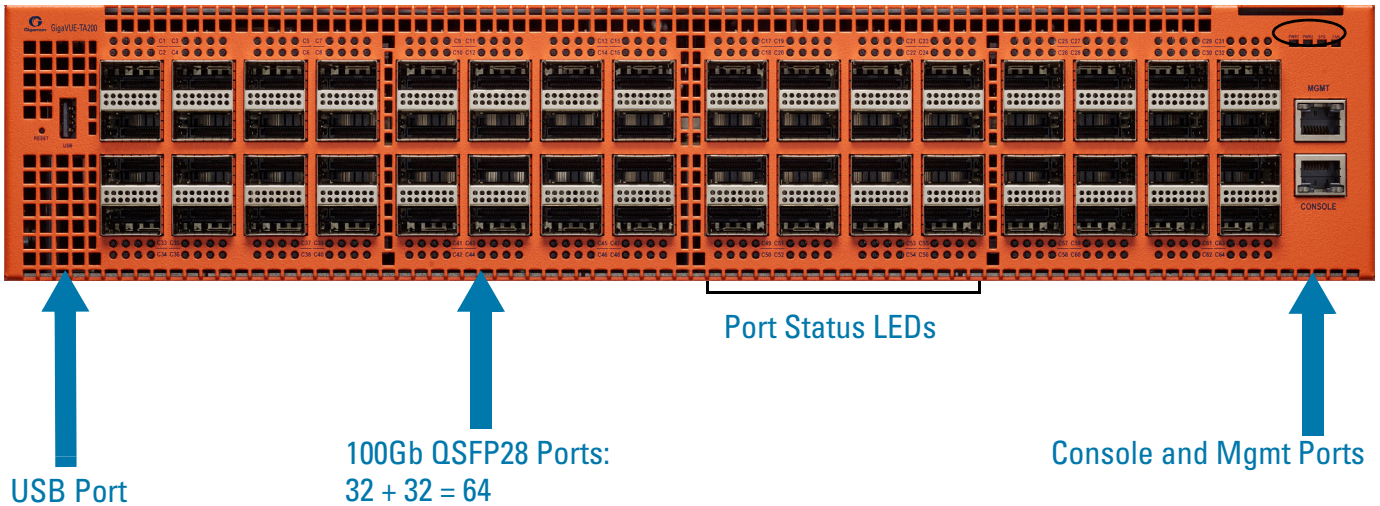
100Gb Ports

GigaVUE-TA200 Traffic Aggregator includes 64 100Gb ports (C1..C64). The top two rows are ports C1 to C32. The bottom two rows are ports C33 to C64.

In a cluster configuration, these ports can either be set as network ports or as stack-link ports.

LEDs: PWR, SYS, and FAN

GigaVUE-TA200 Front View



100Gb/40Gb Ports

The GigaVUE-TA200 provides 64 QSFP28 ports, each labeled with a C prefix. The ports are designated as C1 to C64 from left to right when viewed from the front.

The ports are arranged in rows. The upper ports of each slot have odd numbers: C1, C3, .. C31, and C33, C35, .. C63, while the lower ports of each slot have even numbers: C2, C4, .. C32, and C34, C36, .. C64.

The 100Gb ports can operate at 40Gb with QSFP+ transceivers.

Console Port

Use the console port for serial terminal connections to the GigaVUE CLI. Unless you requested custom factory settings, the serial settings are 8N1, 115,200 bps.

Management Port

Standard 10/100/1000 RJ45 Ethernet ports support remote connections to the GigaVUE CLI using Telnet/SSH.

Green LED shows link status; amber LED shows activity.

This port is also used in a cluster configuration to manage cluster traffic.

Figure 1-7: The GigaVUE-TA200 Chassis Front View

Table 1-7: GigaVUE-TA200 Ports

Port	Description
Mgmt	Use the Mgmt port for remote configuration of the GigaVUE-TA200 Traffic Aggregator over a 10/100/1000 Ethernet network.
Console	Use the console port for local configuration of the GigaVUE-TA200 Traffic Aggregator over a serial connection.
USB	The USB port is not supported in software version 5.3.

Table 1-7: GigaVUE-TA200 Ports

Port	Description
<p>Ports c1..c64</p> <p>or</p> <p>c1x1..c1x4 to c10x1..c10x4 and c23x1..c23x4 to c32x1..c32x4</p>	<p>GigaVUE-TA200 includes 64 100Gb ports (c1..c64). These ports also support 40Gb speeds.</p> <p>The 100Gb ports on the GigaVUE-TA200 can be broken out into 4 times 25Gb ports, called subports. The subports will all have the same speed (25Gb). Subports will have x1 to x4 appended to their port ID, for example, 1/1/c2x1. Port breakout is supported on the first 32 ports (ports c1 .. c32). On the first and last 10 ports of the top two rows (ports c1 .. c10 and c23 .. c32), there is no impact on the lower ports. On the middle 12 ports, there is an impact on the lower ports. Refer to “Ports c11..c22” below. For details on 4x25G port breakout mode, refer to Configure the Port Mode on page 46.</p> <p>Once a 100Gb port has been configured to operate as four 25Gb ports, cable it to an optical patch panel or breakout panel, such as PNL-M341, which takes input from the GigaVUE-TA200 and splits it to four independent 25Gb output ports. Refer to Breakout Panels on page 48.</p> <p>In software version 5.4, the 40Gb ports on the GigaVUE-TA200 can be broken out into 4 times 10Gb ports, called subports. The subports will all have the same speed (10Gb). Subports will have x1 to x4 appended to their port ID, for example, 1/1/c2/x1. Port breakout is supported on the first 32 ports (ports c1 .. c32). On the first and last 10 ports of the top two rows (ports c1 .. c10 and c23 .. c32), there is no impact on the lower ports. On the middle 12 ports, there is an impact on the lower ports. Refer to “Ports c11..c22” below. For details on 4x10G port breakout mode, refer to Configure the Port Mode on page 46.</p> <p>Once a 40Gb port has been configured to operate as four 10Gb ports, cable it to an optical patch panel or breakout panel, such as PNL-M341, which takes input from the GigaVUE-TA200 and splits it to four independent 10Gb output ports. Refer to Breakout Panels on page 48.</p>
<p>Ports c11..c22</p> <p>or</p> <p>c11x1..c11x4 to c22x1..c22x4</p>	<p>When you use ports c11 .. c22 for port breakout, there is an impact on the ports in the lower row of the GigaVUE-TA200. In the following list, the ports on the right will be inactive when you use the port on the left for port breakout.</p> <p>c11 → c33, c34</p> <p>c12 → c40, c41, c42</p> <p>c13 → c43, c44, c45</p> <p>c14 → c35, c36</p> <p>c15 → c37, c38, c39</p> <p>c16 → c46, c47, c48</p> <p>c17 → c49, c50</p> <p>c18 → c52, c57, c59</p> <p>c19 → c60, c61, c62</p> <p>c20 → c51, c53</p> <p>c21 → c54, c55, c56</p> <p>c22 → c58, c63, c64</p> <p>For example, if you use c11 for port breakout, ports c33 and c34 will be inactive.</p> <p>Ensure that the ports on the right are disabled. You will receive an error message, if you try, for example, to breakout port c11 when c33 or c34 are enabled.</p>
Transceivers	Refer to Table 5-5 on page 100 for supported transceivers.

GigaVUE-TA200 Rear View

Fan Modules and Power Supplies

GigaVUE-TA200 has four (4) fan modules and two (2) power supply units (PSU).
Each fan module contains two fans per module.

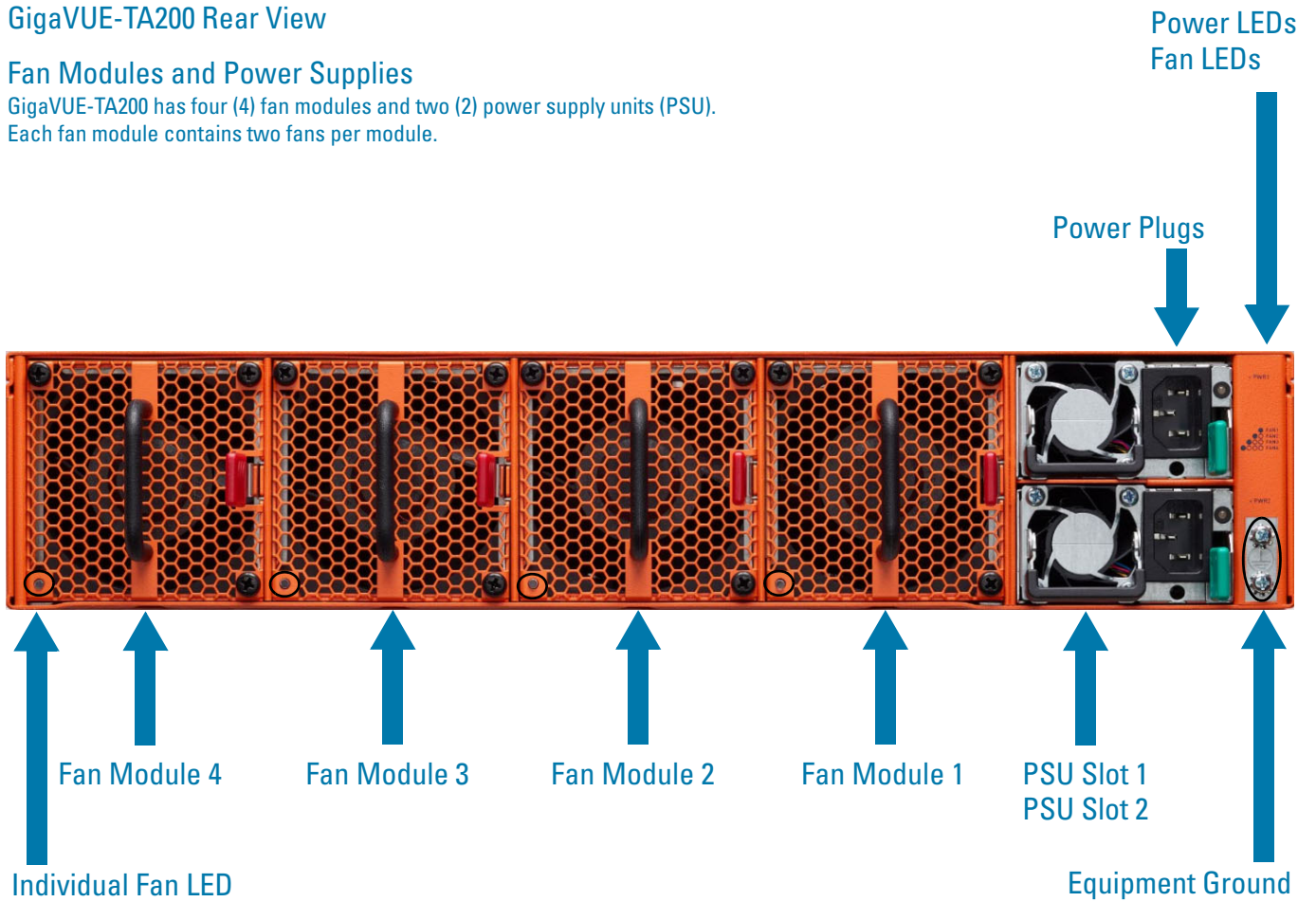


Figure 1-8: The GigaVUE-TA200 Chassis Rear View

Chassis Cooling

The fans on the GigaVUE-TA200 run at 100% of their maximum speed on power up, then drop to approximately 40% during normal operations. The temperatures of four components: transceivers, exhaust, CPU, and switch CPU, are monitored. When a component crosses a pre-defined threshold, the fan speed is adjusted dynamically, in increments of approximately 15%.

An SNMP trap is sent when a component reaches the threshold for warning, alert, or critical temperature conditions. Refer to [Table 1-8](#) for the temperatures at which the warning, alert, and critical traps are sent and any additional action that occurs at a threshold.

Table 1-8: Component Temperature Thresholds and Actions

Transceiver Temperature	Exhaust Temperature	CPU Temperature	Switch CPU Temperature
75°C	70°C	95°C	100°C
Warning trap sent	Warning trap sent	Warning trap sent	Warning trap sent
80°C	75°C	100°C	105°C
Alert trap sent; Transceiver power disabled	Alert trap sent	Alert trap sent	Alert trap sent; Switch CPU put in reset
85°C	80°C	105°C	110°C
Critical trap sent	Critical trap sent	Critical trap sent	Critical trap sent

The output of the following CLI command displays the current exhaust, CPU, and switch CPU temperatures, as well as the intake temperature:

(config) show environment

```

...
Card 1 (TA200-C64):
Intake temperature :          29 C
Exhaust temperature :         28 C
CPU temperature :            36 C
Switch CPU temperature :      54 C

```

The output of the following CLI command displays the transceiver temperature:

(config) show port params port-list 3/1/c1

```

Parameter          3/1/c1
=====
...
SFP type:          qsfp28 sr
...
SFP Power (1-2) (dBm): -40.00 -40.00
SFP Power (3-4) (dBm): -40.00 -40.00
SFP Power (5-6) (dBm): -         -
SFP Power (7-8) (dBm): -         -
SFP Power (9-10) (dBm): -         -
SFP Temperature (C):          19.75
...

```


The output of the following CLI command displays the fan speed in RPM (the normal operational speed is approximately 5000 RPM; the maximum speed is approximately 12500 RPM):

(config) show environment

```
...
-----
Fan tray 1 (FAN-TAC20):
1st fan :                12136 RPM
2nd fan :                12522 RPM
-----
Fan tray 2 (FAN-TAC20):
1st fan :                12173 RPM
2nd fan :                12443 RPM
-----
Fan tray 3 (FAN-TAC20):
1st fan :                12249 RPM
2nd fan :                12404 RPM
-----
Fan tray 4 (FAN-TAC20):
1st fan :                12288 RPM
2nd fan :                12326 RPM
-----
...
```

Power LEDs

The power LEDs on the front of the chassis (PWR1 and PWR2) are as follows:

- Solid GREEN indicates that the power supply unit (PSU) has power and is operating normally.
- Blinking AMBER indicates that the PSU is not inserted in the chassis.
- Off indicates that the PSU is present but without power.

System LED

The system LED on the front of the chassis (SYS) is as follows:

- Off indicates no power
- Blinking GREEN indicates the node is booting or the system is in diagnostic mode
- Solid GREEN indicates normal operation
- Solid RED indicates the system has failed

Port Status LEDs

For each port, there are four (4) port status LEDs on the front of the chassis. At 40Gb and 100Gb speeds, only the first LED operates as follows:

- AMBER indicates the port is administratively disabled
- GREEN indicates the link is operationally up

- Off indicates the link is operationally down
- Blinking GREEN indicates the port is operationally up and there is traffic flowing through the port

The other three LEDs operate when ports are in breakout mode as follows:

- Off indicates the port is in non-breakout mode
- GREEN indicates the link is operationally up
- AMBER indicates the port is administratively disabled

Global Fan LED

The global fan LED on the front of the chassis (FAN) is as follows:

- Solid GREEN indicates all fans are operating normally
- Solid AMBER indicates one or more fans have failed

Individual Fan LEDs

The individual fan LEDs on the rear of the chassis are as follows:

- GREEN indicates the fan is operating normally
- AMBER indicates the fan has failed

Individual Power LEDs

The individual power LEDs on the rear of the chassis (PWR1 and PWR2) are as follows:

- GREEN indicates the PSU is operating normally
- AMBER indicates the input cord is unplugged, the input power has been lost, or there is a critical event that has caused the PSU to shutdown

GigaVUE-TA200 Notes and Rules

Keep in mind the following notes and rules when using the GigaVUE-TA200:

GigaVUE-TA200 Notes

Transceivers

The GigaVUE-TA200 can be used with the following transceivers. The port speed, 100Gb or 40Gb, is based on the optics type, as follows:

- 100Gb QSFP28 100GBASE-SR4
- 100Gb QSFP28 100GBASE-ER4
- 100Gb QSFP28 100GBASE-LR4
- 100Gb QSFP28 100GBASE-CWDM4
- 100Gb QSFP28 100GBASE-BiDi
- 40Gb QSFP+ 40GBASE-SR4
- 40Gb QSFP+ 40GBASE-ESR4
- 40Gb QSFP+ 40GBASE-LR4
- 40Gb QSFP+ 40GBASE-PLR4
- 40Gb QSFP+ SR BiDi (RX-only)
- 40Gb QSFP+ SR BiDi Full Duplex (RX/TX)

Refer to the following troubleshooting tips:

- Always use the correct cables for SR and LR optics.

Network, Tool, Hybrid, or Stack-Link Port

The 100Gb/40Gb ports on GigaVUE-TA200 can be used as network, tool, hybrid, or stack-link ports.

For stack-link support, refer to [Stack-Links at 10Gb on page 43](#), [No Stack-Links at 25Gb on page 43](#), [Stack-Links at 40Gb on page 43](#), and [Stack-Links at 100Gb on page 43](#).

Stack-Links at 10Gb

When ports on the GigaVUE-TA200 are broken out into **4x10G** mode, they support stack-links.

No Stack-Links at 25Gb

When ports on the GigaVUE-TA200 are broken out into **4x25G** mode, they do not support stack-links.

Stack-Links at 40Gb

The GigaVUE-TA200 can connect to the following nodes, modules, and line cards through a 40Gb stack-link:

- GigaVUE-TA200
- GigaVUE-TA100
- GigaVUE-TA40
- PRT-HC3-C08Q08, PRT-HC3-C16, and SMT-HC3-C05 on GigaVUE-HC3

Stack-Links at 100Gb

The GigaVUE-TA200 can connect to the following nodes and modules through a 100Gb stack-link:

- GigaVUE-TA200 (SR4, LR4, and CWDM4)
- GigaVUE-TA100 (SR4, LR4, and CWDM4)
- PRT-HC3-C08Q08, PRT-HC3-C16, and SMT-HC3-C05 on GigaVUE-HC3 (SR4, LR4, and CWDM4)
- PRT-HD0-C06X24 on GigaVUE HD Series (LR4 and CWDM4 only on C06 ports)

Stack-Links to Other Node Types

To ensure the stack-links become operationally *up* when the GigaVUE-TA200 is connected to a node of a different type:

- Configure specified ports as stack ports.
- Configure the stack-link between the stack ports.

GigaStream

Any port on the GigaVUE-TA200 can be used to create a GigaStream with other ports. All participating ports must be running the same speed and must use the same port type.

Map Rules and Port Filters

The GigaVUE-TA200 supports 256 map rules per chassis and 20 egress port filters per chassis.

Port Licensing

On the GigaVUE-TA200, only the first 32 out of 64 ports are enabled. A port license is available to enable an additional 32 ports. Refer to [Port Licensing on page 69](#).

Cluster Licensing

Connecting a GigaVUE-TA200 to a cluster requires the Advanced Features License.

AMI BIOS Images

The GigaVUE-TA200 has an AMI Basic Input/Output System (BIOS). The BIOS image is packaged with the software image, starting in software version 5.3. The BIOS contents are stored in flash memory, allowing the BIOS to be upgraded. There are two flash components, a primary and a secondary.

The following CLI command displays the two flash components and indicates the BIOS image from which the system booted using asterisks:

(config) show version

```
...
1st flash version: amibios-ta200-1.0.9 Fri Feb 9 04:52:22 UTC 2018**
2nd flash version: amibios-ta200-1.0.9 Fri Feb 9 04:52:22 UTC 2018
SW BIOS version: amibios-ta200-1.0.9 Fri Feb 9 04:52:22 UTC 2018
...
```

If there is a component failure in the primary flash, the GigaVUE-TA200 boots from a backup golden BIOS image in the secondary flash. An SNMP trap can be configured to be sent when the system has booted from the secondary flash. The trap may indicate that the primary flash component needs to be serviced. The trap is as follows:

```
2ndflashboot: Secondary flash boot notification
```

Air Flow Direction

The air flow direction is from the front of the GigaVUE-TA200 chassis to the rear. The rear-mounted fans pull air from the front to the back of the chassis. Install the chassis so the intake air at the front of the chassis is cold.

AC and DC-Powered GigaVUE-TA200 Models

Gigamon provides both AC and DC-powered versions of the GigaVUE-TA200. Refer to [Connecting -48V DC Power Supplies on page 60](#).

Battery Caution

A disposable, non-rechargeable, Real Time Clock (RTC) Lithium metal coin cell battery is in the GigaVUE-TA200. Note the following:

- There is a risk of fire if the battery is replaced with an incorrect type.
- Use only CR-2032L type Lithium metal coin cell battery and replace with the same.

Configure the Card Mode – 40Gb/10Gb Support

GigaVUE-TA10 and GigaVUE-TA40 also enable the first four 40Gb ports (q1..q4). By default, these ports are available for use as single, logical 40Gb ports.

Refer to [Configuring the Card Mode on GigaVUE-TA10 on page 45](#) and [Configuring the GigaVUE-TA40 Card on page 46](#). Then refer to [Breakout Panels on page 48](#).

Changing the card mode resets all port and packet distribution settings, therefore, set the card mode during the initial configuration.

NOTE: The GigaVUE-TA100, GigaVUE-TA100-CXP, and GigaVUE-TA200 do not support the card mode, but support the port mode. Refer to [Configure the Port Mode on page 46](#). Then refer to [Breakout Panels on page 48](#).

Configuring the Card Mode on GigaVUE-TA10

The following card modes are available for the GigaVUE-TA10:

- **48x** (default) – Four 40Gb ports (q1..q4) and 48 10Gb ports (x1..x48)
- **56x (use with patch panel or breakout cables)** – Two 40Gb ports (q3..q4) and 56 10Gb ports. Port q1 is used as x49..x52 on the patch panel. Port q2 is used as x53..56 on the patch panel.
- **64x (use with patch panel or breakout cables)** – 64 10Gb ports (x1..x64). Port q1..q4 are connected at the patch panel as follows:
 - **q1** – x49..x52
 - **q2** – x53..x56
 - **q3** – x57..x60
 - **q4** – x61..x64

To specify card modes use the following procedure:

1. Deconfigure the card with the following command:

no card slot 1

NOTE: This removes all port and traffic settings for the system.

2. To set the new card mode for GigaVUE-TA10:

card slot 1 mode <48x | 56x | 64x>

The settings for each available mode are summarized in [Table 1-9](#):

Table 1-9: 40Gb Port Settings by Card Mode on GigaVUE-TA10

Card Mode	Physical 40Gb Interface on GigaVUE-TA10			
	q1	q2	q3	q4
48x (default)	40Gb (q1)	40Gb (q2)	40Gb (q3)	40Gb (q4)
56x	10Gb (x49..x52)	10Gb (x53..x56)	40Gb (q3)	40Gb (q4)
64x	10Gb (x49..x52)	10Gb (x53..x56)	10Gb (x57..x60)	10Gb (x61..x64)

Notes on GigaVUE-TA10 Card Modes

- The default card mode is 48x.
- When a 40Gb port is used as four 10Gb ports, removing the QSFP+ will affect the connections for all four 10Gb ports. For example, removing the QSFP from q1 results in a loss of signal event for x49..x52.
- The q1..q4 40Gb ports include a single link LED on the GigaVUE-TA10 faceplate. When a physical 40Gb interface is used as four 10Gb ports, the 40Gb port LED indicates the status of the *first* of the four 10Gb ports on the patch panel (for example x49 in the x49..x52 group, x53 in the x53..x56 group, and so on). The other three ports in the group do not affect the link LED for the 40Gb port on the GigaVUE-TA10 faceplate.

Once the card mode has been configured, refer to [Breakout Panels on page 48](#).

Configuring the GigaVUE-TA40 Card

To configure the card for GigaVUE-TA40, use the following command:

card slot 1

To deconfigure the card, use the following command:

no card slot 1

NOTE: Starting in software version 5.5, GigaVUE-TA40 supports port-level breakout functionality. Therefore, card mode is deprecated from the card configuration command.

If you upgrade from an earlier version, GigaVUE-TA40 ports will have the updated nomenclature. Refer to section [Introducing the GigaVUE-TA40 Chassis on page 18](#) for details about port nomenclature.

Configure the Port Mode

The port breakout modes are as follows:

- **4x10G**—Specifies the **4x10G** port breakout mode. This mode applies to GigaVUE-TA40, GigaVUE-TA100 and GigaVUE-TA200 nodes and to QSFP28

ports on GigaVUE-TA00-CXP nodes. This mode provides a 4 x 10Gb breakout option for 40Gb ports.

- **4x25G**—Specifies the **4x25G** port breakout mode. This mode applies to GigaVUE-TA200 nodes. This mode provides a 4 x 25Gb breakout option for 100Gb ports.
- **none**—Specifies no port breakout mode. This is the default mode for GigaVUE nodes.

Any of the 100Gb ports on the GigaVUE-TA100 (1/1/c1 to 1/1/c32), the first 32 ports on the GigaVUE-TA200 (1/1/c1 to 1/1/c32), or the eight QSFP28 ports (1/1/c21 to 1/1/c28) on the GigaVUE-TA100-CXP can operate at 40Gb with QSFP+ SR transceivers. A 40Gb port can be broken out into four times 10Gb ports, called subports. The parent port must be configured to have a port breakout mode of **4x10G**.

The subports will all have the same speed (10Gb). Subports will have x1 to x4 appended to their port ID, for example, when port 1/1/c2 on GigaVUE-TA100 is configured to **4x10G** mode, the subports will be: 1/1/c2x1, 1/1/c2x2, 1/1/c2x3, and 1/1/c2x4. When port 1/1/c21 on GigaVUE-TA100-CXP is configured to **4x10G** mode, the subports will be: 1/1/c21x1, 1/1/c21x2, 1/1/c21x3, and 1/1/c21x4.

In **4x10G** mode, the subports can function as network, tool, or hybrid ports, as well as GigaStream port members. Subports on GigaVUE-TA100 and GigaVUE-TA200 can also function as stack ports. In addition, the first 10 and the last 10 ports in GigaVUE-TA40 can also function as stack ports. Stacking is not supported on other GigaVUE TA Series nodes.

- The maximum number of 10Gb subports on a GigaVUE-TA100 is 128 (32 x 4).
- The maximum number of 10Gb subports on a GigaVUE-TA100-CXP is 32 (8 x 4).
- The maximum number of 10G subports on a GigaVUE-TA200 is 128 (32 x 4).
- The maximum number of 10G subports on a GigaVUE-TA40 is 96 (24 x 4).

NOTE: Starting in software version 5.5, GigaVUE-TA40 supports 4x10G breakout at port level. Port breakout mode in GigaVUE-TA40 is configured as follows:

- 24 out of the 32 ports provide 4x10Gb breakout support.
- The first 12 ports and the last 12 ports provide support for breakout functionality with 96 sub-ports operating as 10Gb ports:
 - Ports q1 to q12 and q21 to q32 support breakout functionality
 - Ports q13 to q20 do not support breakout functionality
- Ports, after breakout, are named as q1x1...q1x4, q2x1...q2x4 (similar to other hardware platforms) to support the breakout functionality

The 100Gb QSFP28 ports (1/1/c1 to 1/1/c10 and 1/1/c23 to 1/1/c32) on the GigaVUE-TA200 can be broken out into four times 25Gb ports, called subports. The parent port must be configured to have a port breakout mode of **4x25G**.

The subports will all have the same speed (25Gb). Subports will have x1 to x4 appended to their port ID, for example, when port 1/1/c2 on GigaVUE-TA200 is configured to **4x25G** mode, the subports will be: 1/1/c2x1, 1/1/c2x2, 1/1/c2x3, and 1/1/c2x4.

In **4x25G** mode, the subports can function as network, tool, or hybrid ports, as well as GigaStream port members. They cannot function as stack ports.

The maximum number of 25Gb subports on a GigaVUE-TA200 is 80 (20 x 4).

There are rules for configuring parent ports and subports. For more information, refer to the **port** command in the reference section of the *GigaVUE-OS CLI Reference Guide*.

Once the port breakout mode has been configured, refer to [Breakout Panels on page 48](#).

Table 1-10: Ports Speed metrics on TA series

Type	1Gb SFP	10Gb SFP+	25Gb SFP28	40Gb QSFP+	100Gb QSFP28
TA1	Supported	Supported	Not supported	Supported	Not supported
TA10	Supported	Supported	Not supported	Supported with card level breakout	Not supported
TA40	Not Supported	<ul style="list-style-type: none"> No Native 10Gb support Supported on 4x10G breakout 	Not supported	Supported	Not supported
TA100	Not Supported	Supported on 4x10G	Not supported	Supported on Native ports	Supported on Native ports
TA200	Not supported	<ul style="list-style-type: none"> No Native 10Gb support Supported on 4x10G breakout 	<ul style="list-style-type: none"> No Native 25Gb support Supported on 4x25G breakout 	Supported on Native ports	Supported on Native ports

Breakout Panels

Breakout panels let you connect ports on a GigaVUE node to a tool or network port or TAP for port breakout or aggregation.

The following breakout panels are available:

- PNL-M341
- PNL-M343

Refer to *G-TAP M Series Hardware Guide* for details.

Installation and Setup Roadmap

This chapter provides the steps needed to unpack, rack-mount, and connect a GigaVUE Traffic Aggregator. It also describes how to perform the initial configuration setup.

Refer to the following section for details:

- [Getting Unpacked, Racked, Installed and Connected on page 49](#)

Getting Unpacked, Racked, Installed and Connected

Figure 2-1 shows the steps required to get a GigaVUE Traffic Aggregator mounted and running:

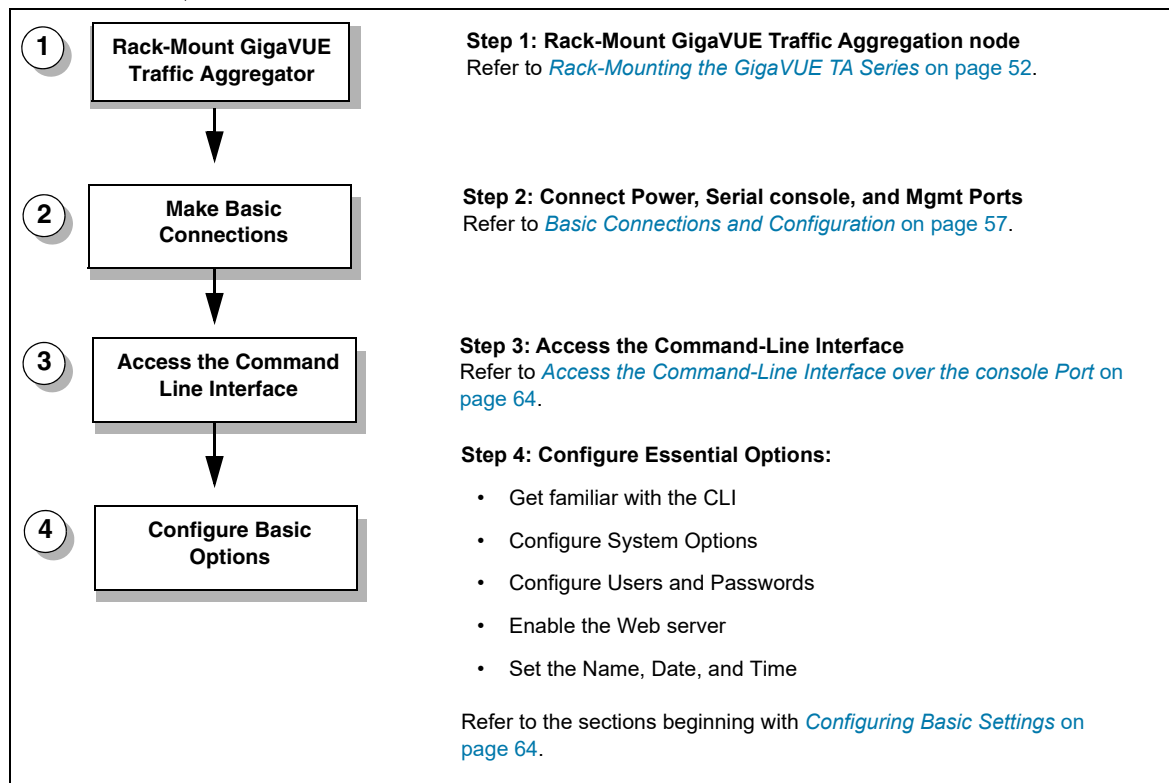


Figure 2-1: Getting Started

Rack-Mounting GigaVUE TA Series

This chapter describes how to unpack and rack-mount the GigaVUE Traffic Aggregation nodes. Refer to the following sections for details:

- [Unpacking the GigaVUE Traffic Aggregator on page 51](#)
- [Rack-Mounting the GigaVUE TA Series on page 52](#)

Unpacking the GigaVUE Traffic Aggregator

Unpack the GigaVUE Traffic Aggregator and inspect the box it was shipped in. If the carton was damaged, please file a claim with the carrier who delivered it.

Remove the protective shipping covers and screws. Save the protective shipping covers and replace the screws in the holes on the system so that they are easily saved in case you need to ship the system again.

Next, select a suitable location for the rack unit that will hold the GigaVUE Traffic Aggregation node. Choose a location that is clean, dust free, and well ventilated. You will need access to a grounded power outlet. Avoid areas where heat, electrical wire, and electromagnetic fields are generated.

Plan for enough clearance in front of a rack so you can open the front door completely (approximately 25in) and enough clearance in the back of the rack to allow sufficient airflow.

Rack-Mounting the GigaVUE TA Series

Safety Precautions

There are a wide variety of racks available on the market. Consult the instructions provided by the rack vendor for detailed mounting instructions before installing the GigaVUE Traffic Aggregation node.

NOTE: Before rack-mounting the GigaVUE TA Series, please read the following safety precautions:

- Install any stabilizers provided for the rack before installing the chassis. Unsecured racks can tip over.
- Install boxes in the rack from the bottom up with the heaviest boxes at the bottom.
- Ensure adequate ventilation to the systems installed in the rack.

This section describes how to rack-mount the GigaVUE Traffic Aggregation node in a standard 1RU rack space using the hardware provided with the chassis. The node mounts in an EIA-standard 19in or 24in telco rack or equipment cabinet, up to 39in deep.

GigaVUE Traffic Aggregation nodes are shipped with rack ears for front-mounting or rear-mounting ([Figure 3-1](#)) in either a two-post or four-post rack.

Two-Post Rack Methods:

Most GigaVUE Traffic Aggregation nodes can either be front mounted or rear mounted using the rack ears as shown below. GigaVUE-TA200 can only be front mounted.



Front-Mounting Rack Ears

In this picture, the rack ears are attached facing towards the front of the chassis.

Rear-Mounting Rack Ear Position

You can also attach the rack ears at the rear of the unit for a rear-mount installation.

Does not apply to GigaVUE-TA200.

Figure 3-1: GigaVUE Traffic Aggregator Rack Ears in Front-Mount Position

To mount the GigaVUE Traffic Aggregation node in a rack:

1. Attach the orange rack ears to the front or rear of the unit (rear mounting does not apply to GigaVUE-TA200) using the supplied screws.
As shown in [Figure 3-1](#), the rack ears can be attached for a front-mount or rear-mount installation. Select the installation that best fits the needs. For example, one position may provide better clearance for rack doors at the front of the chassis.
2. While one person supports the weight of the unit with the rack ears flush to the chassis, a second person can attach the ears to the rack with the supplied screws.

Four-Post Rack Methods:

GigaVUE Traffic Aggregation nodes also come with a pair of full length mounting rails. These rails can be used for four point mounting on four-post racks. The keyhole rivets on the sides of each node can be used to adjust the fit of the node to the desired position or dimension on the rack.

Rear of the rack

Rails are screwed to the back of the rack after the node is mounted



Keyhole Rivets

Position of the node can be adjusted using these rivets to mount to the rack dimensions. There are 4 rivets to enable adjusting to different dimensions of the rack.

Rails

You can slide in the rails for a four post mounting to a rack.

Figure 3-2: GigaVUE Traffic Aggregator with Rail Mounting for Four-Post Racks

To mount the GigaVUE Traffic Aggregation node in a four-post rack:

1. Attach the orange rack ears to the front of the unit using the supplied screws.



Figure 3-3: Front View of the Mounted Node to the Four-Post Rack

2. Slide in the provided rails on to the node. The position of the rails can be adjusted to fit the dimensions of the rack by sliding over the rivets and placing them securely over the rivets once set in the desired position.



Figure 3-4: Rear View of the Mounted Node and Rails on the Four-Post Rack

3. Last, tighten the rails to the rear posts using the supplied screws.

Basic Connections and Configuration

This chapter describes how to establish your first configuration session with the GigaVUE Traffic Aggregator and set the basic initial configuration options necessary to get you up and running.

Refer to the following sections for details:

- [Grounding the GigaVUE TA Series Chassis](#) on page 58
- [Connecting Power to the GigaVUE TA Series](#) on page 59
- [Replacing Fans](#) on page 62
- [Connecting Serial Console and Mgmt Ports](#) on page 63
- [Configuring Basic Settings](#) on page 64
- [Port Licensing](#) on page 69
- [Advanced Features Licensing](#) on page 71
- [Command-Line Basics](#) on page 72
- [The Basic Commands](#) on page 76
- [Completing the Initial Setup](#) on page 78

Grounding the GigaVUE TA Series Chassis



The GigaVUE TA Series chassis is drilled for ground screws at the rear of the chassis. Connect grounding wire with spade lugs to the ground screws on the chassis and earth ground using the following procedure.

1. Locate the grounding holes at the rear of the chassis. Refer to [Figure 4-1](#) or [Figure 4-2](#).



Figure 4-1: Ground Screws (GigaVUE-TA10 Shown)



Figure 4-2: Ground Screws (GigaVUE-TA200 Shown)

2. Install ground screws meeting the following specifications:
#8 Panhead, Phillips-drive, Exterior SEM screw
Thread size = 32
Length = 1/2in (1.27cm)
3. Connect grounding wire with spade lugs both to the ground screws and to earth ground. The specifications for the ground wire and lugs are as follows:
Standard Wire 14 (AWG); Stud Size #6 (0.138in/0.351cm); Spade Width 0.32in/0.813cm
4. Tighten the screws to secure both the chassis ground screws and the earth ground screws.

Avoid Electrostatic Damage!

IMPORTANT: Always take precautions to avoid electrostatic damage:

- Always use an ESD-preventive wrist or ankle strap and ensure that it makes good skin contact. The strap can be connected to one of the following:
 - Captive installation screws on chassis.
 - Any unpainted surface on the chassis.
- Avoid contact between the cards and clothing. The wrist strap protects only the chassis from ESD voltages on the body. ESD voltages on clothing can still cause damage.

Connecting Power to the GigaVUE TA Series

The procedure below describes how to supply power to the GigaVUE TA Series node.

1. Plug an approved C13 power cable into each of the power supplies at the rear of the GigaVUE TA Series as shown in [Figure 4-3](#) to [Figure 4-5](#).

NOTE: For information on connecting the optional DC power supplies, Refer to [Connecting -48V DC Power Supplies on page 60](#).



Figure 4-3: Connecting AC Power

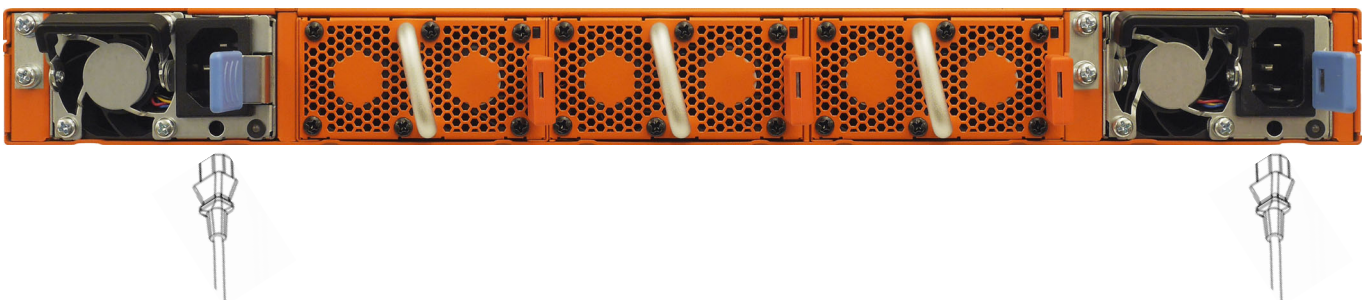


Figure 4-4: Connecting AC Power on a GigaVUE-TA100



Figure 4-5: Connecting AC Power on a GigaVUE-TA200

2. Plug the other end of the power cable(s) into a power source that can supply adequate power.

NOTE: If you are using the optional second power supply provided with the node, plug the two power supplies into separate circuits for optimal power protection.

For information on the GigaVUE TA Series power requirements, refer to [Power Requirements on page 108](#).

NOTE: The GigaVUE TA Series does not have power switches – once you connect the system to power, it automatically powers on.

Refer to [Connecting Serial Console and Mgmt Ports on page 63](#) for information on how to connect to the GigaVUE TA Series command-line interface (CLI).

Connecting -48V DC Power Supplies

The GigaVUE Traffic Aggregator is available with two DC power supplies instead of the standard AC power supply. This section provides instructions for connecting a -48V DC power source to the DC power supplies.

To connect a -48V DC input to the DC power supply:

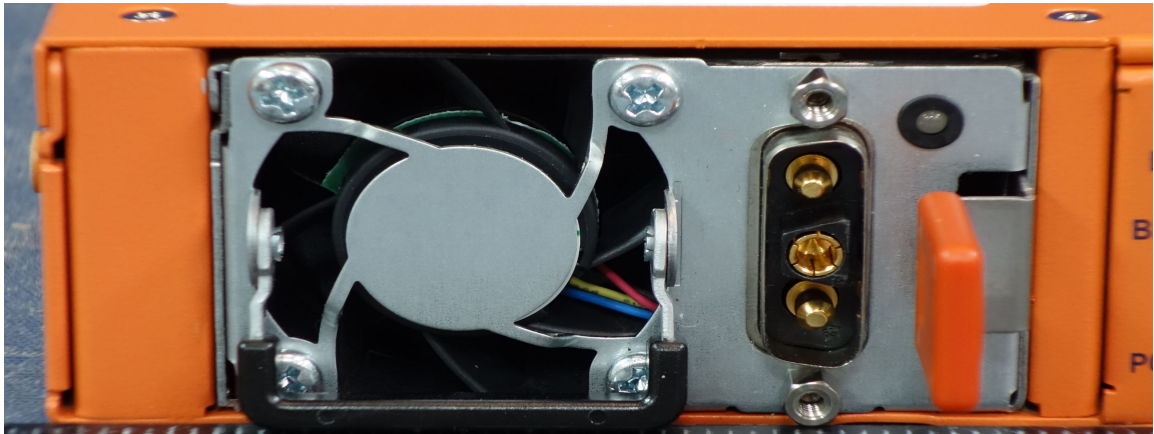


Figure 4-6: Connecting -48V DC Power Cable Adapter

1. Plug the DC power cable adapter into the DC power supply.

NOTE: Terminal block supports 10AWG.

2. If PSM grounding is required, connect earth ground to the SAFETY GROUND (green/yellow) terminal using a straight blade screwdriver.
3. Connect the positive and negative power wires to the appropriate terminals using a straight blade screwdriver.
 - Connect the positive source wire to the + RETURN (black) terminal using a straight blade screwdriver.
 - Connect the -48V source wire to the -48V (blue) terminal using a straight blade screwdriver.

IMPORTANT: The leads to the DC power supply modules on the GigaVUE-TA Series node should attach from the side of the chassis **away** from the terminal block. Run the wires to avoid obstructing airflow for the adjacent fans.

4. Repeat Step 1 through Step 3 for the other power supply modules.

Replacing Fans

Fans are field-replaceable. If a fan fails, you can replace it. Identify the fan that failed, and replace it with a working fan using the procedures in this section.

To remove a fan:

1. Locate lever and handle as shown in [Figure 4-7](#).

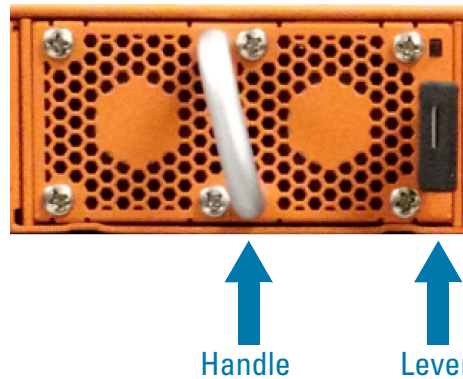


Figure 4-7: Replacing a Fan (GigaVUE-TA10 Shown)

2. Push lever towards handle.
3. Pull on handle to remove the fan from the slot.

To insert a fan:

1. Place fan in empty slot.
2. Use handle to slide fan into slot.
3. When fan is fully inserted, it locks in place.

Connecting Serial Console and Mgmt Ports

To make basic connections (serial console and Mgmt ports):

1. Locate the DB9-to-RJ45 serial cable provided with the GigaVUE TA Series node. This cable is called a *console cable*.

NOTE: This cable is Cisco-compatible. Refer to [Console Port Signaling and Cabling on page 117](#) for pinout details.

2. Connect the RJ45 end of the console cable to the **console** port.

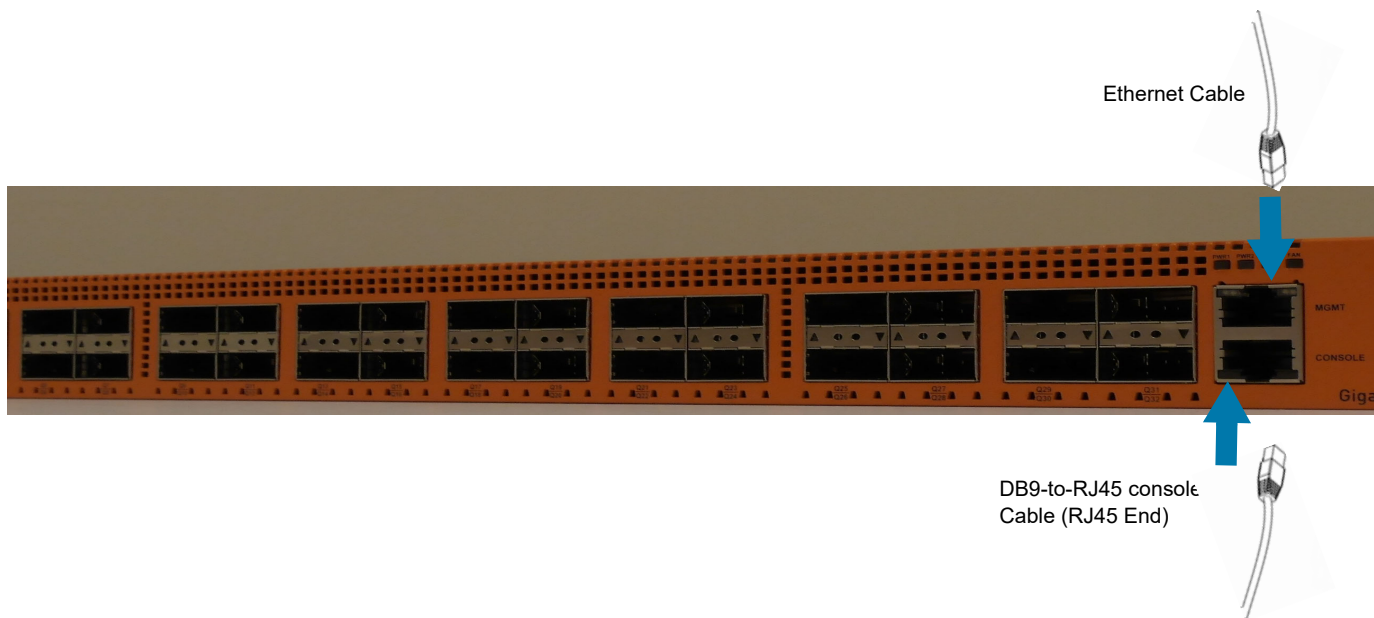


Figure 4-8: Connecting the Console and Management Ports

3. Connect the DB9 end of the console cable to a PC's COM port.
4. Connect a standard Ethernet cable (Cat5 or better) to the 10/100/1000 **Mgmt** port.
5. Connect the other end of the Ethernet cable to an Ethernet network.

Configuring Basic Settings

This section describes how to perform the initial configuration of basic settings over a serial terminal connection to the console port.

The system administrator must initially log in with a default **admin** account using a default password, and then must immediately change the password through the **jump-start** script. Refer to [Access the Command-Line Interface over the console Port on page 64](#).

Once you have used the console port to configure the Mgmt port's network properties, you can configure the GigaVUE TA Series node remotely using the Mgmt port's network connection.

NOTE: The same commands are available in the command-line interface regardless of how you connect.

Access the Command-Line Interface over the console Port

1. Make the basic power and console cable connections described in [Connecting Serial Console and Mgmt Ports on page 63](#) and power on the GigaVUE TA Series node.
2. Start a terminal application on the PC. Common terminal applications include TeraTerm, PuTTY, and Hyperterminal.
3. Select the COM port connected to the console cable attached to the console port. For example, **COM1**.
4. Configure the port settings for the console connection as follows:
 - **Bits per second** – 115,200
 - **Data bits** – 8
 - **Parity** – None
 - **Stop bits** – 1
 - **Flow control** – None

NOTE: On the GigaVUE-TA10 and GigaVUE-TA40, you can change the console port's speed if you need to by using the procedure in [Changing the Console Port's Speed on page 66](#).

If you experience problems connecting to a Cisco Terminal Server, try changing the console Port's speed to 9600 bps using the procedure in [Changing the Console Port's Speed on page 66](#) and reconnecting.

NOTE: The GigaVUE-TA100, GigaVUE-TA100-CXP, and GigaVUE-TA200 support only a fixed serial baud rate of 115,200bps.

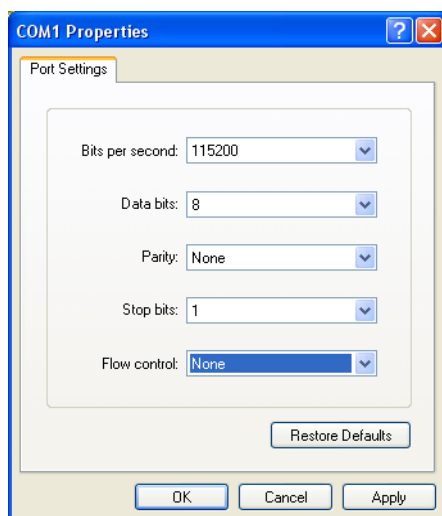


Figure 4-9: Setting COM Port Properties for the Console Connection

5. Start the terminal connection. You may need to press **Enter** a few times before you see the **login:** prompt.
6. Log in to the command-line interface with the following default user account and password:

User	admin
Password	admin123A!

Starting in software version 4.7, the **configuration jump-start** automatically starts and forces a password change.

The system administrator must change the password on the default **admin** account through the **jump-start** script. The default password (admin123A!) is no longer allowed. Refer to [Run the Jump-Start Script on page 66](#) for details.

A password must meet the following standards:

- include 8-30 characters
- include at least one numeral
- include at least one upper case letter
- include at least one lower case letter
- include at least one special character (for example, !, @, #, \$, %, ^, &, or * –, ASCII 0x21, 0x2F, 0x3A, 0x40, 0x5B, 0x5F, 0x7B, 0x7E)

At the Admin password? prompt in the **jump-start** script, enter a new password that meets the standards, then confirm the password.

Changing the Console Port's Speed

By default, the console port operates at 115,200bps. You can change the speed of the console port to 9600bps on the GigaVUE-TA10 and GigaVUE-TA40 with the **serial baudrate <9600 | 115200>** command.

Keep in mind the following points when changing the console port's speed:

- After changing the console port's speed, you must save the active configuration and reload the system for the change to take effect.
- After setting the console port to 9600bps, the u-boot output will appear correctly on the connected serial console. However, you will need to press the spacebar once or twice for the CLI login prompt to appear.
- You can use the **show serial baudrate** command to view the currently configured console port speed.

Run the Jump-Start Script

Gigamon provides the GigaVUE nodes with a **jump-start** script that walks you through the process of configuring basic settings. Run this script as follows:

1. Switch to **Config** mode.

There are three command entry modes, each with increasingly powerful rights – **Standard**, **Enable**, and **Config**. The jump-start script is only available in config mode:

- a. Type **en <Enter>** to switch to Enable mode.

The system prompt changes from **[hostname] >** to **[hostname] #**.

- b. Type **config t <Enter>** to switch to Config mode.

The system prompt changes from **[hostname] #** to **[hostname] (config) #**.

2. Reset the terminal settings to match the current window with the following command:

```
terminal resize
```

3. Type **config jump-start** to run the jump-start script.
4. Follow the jump-start script's prompts to set each of the settings listed below.

NOTE: If you change your mind about a particular setting, you'll have a chance to change it at the end of the script.

Hostname	The hostname appears in the system prompt and is used to identify the chassis in SNMP traps.
Management Port Network Settings	Use either DHCP or specify a static IP address and netmask. If you do not use DHCP, you are prompted to configure the following additional options: <ul style="list-style-type: none"> • Default Gateway Supply the IP address of the default gateway for the node. • DNS Server Supply the IP address of the DNS server for the node. Note that a valid DNS server is required for successful use of both Telnet and TACACS+. • Domain Name Supply the domain name for the node (for example, mycompany.com).
Default Gateway	Supply the IP address of the default gateway for the system.
DNS Server	Supply the IP address of the DNS server for the system. Note that a valid DNS server is required for successful use of both Telnet and TACACS+.
Domain Name	Supply the domain name for the system (for example, mycompany.com).
Enable IPv6?	You can enable the use of IPv6 for the management port. IPv6 is used in addition to IPv4 if you enable this option. If you enable the IPv6 you have the option of enabling IPv6 autoconfiguration or specifying a static address.
Security Settings	Enable the following security settings: <ul style="list-style-type: none"> • secure cryptography mode • secure passwords mode • minimum password length Refer to the <i>GigaVUE-OS CLI Reference Guide</i> for information on security.
Admin Password	The password for the admin account must be changed to a non-default password.

Cluster Enable?	<p>Enable cluster support if this node will be a part of a cluster of connected GigaVUE nodes. If you enable cluster support, the jump-start script prompts you to supply the Cluster ID, Cluster Name, and Cluster Mgmt Virtual IP Address. You can join an existing cluster by supplying values that match existing settings.</p> <p>If clustering is enabled, you will not be prompted for a box ID in the next step.</p> <p>Refer to the <i>GigaVUE-OS CLI Reference Guide</i> for information on setting up a cluster.</p> <p>NOTE: Connecting a Traffic Aggregator to a cluster requires a license.</p>
Box ID for the Node	<p>Supply a numerical box ID for the node. This box ID is used to identify network/tool ports in the node – the format is box ID/ slot ID/ port ID.</p> <p>You will be prompted for a box ID only if clustering was not enabled in the previous step.</p>

5. Review your settings. You can change a setting by specifying its listed line number and re-entering the setting.
6. When you are satisfied with your settings, exit the script as prompted. The system automatically saves your settings.
7. Restart the system with the **reload** command.

Need to Change Any Settings?

If you need to change any of the settings you made in the jump-start script, you can either run the script again or change individual settings using the following commands in the Configure command mode:

- Use the **hostname** command to change the system's hostname.
- Use the **interface eth0** command to reconfigure or fine-tune Mgmt port settings, including basic IP settings (DHCP or static address and subnet mask) and physical parameters (duplex, MTU, and speed).
- Use the **ip** command to change the default gateway, DNS server, and domain name.
- You can also use the **username admin password <password>** command to change the **admin** user's password. Refer to [Changing the admin Account Password on page 82](#).

Refer to [Completing the Initial Setup on page 78](#) for a quick summary of the available GigaVUE commands for TA Series nodes.

Port Licensing

GigaVUE-TA10, GigaVUE-TA40, and GigaVUE-100-CXP have all ports enabled.

Additional ports are available through licenses for the following GigaVUE products:

- [GigaVUE-TA10A on page 69](#)
- [GigaVUE-TA100 on page 69](#)
- [GigaVUE-TA200 on page 70](#)

Contact your Sales representative for port licenses. Refer to [Contacting Sales on page 124](#).

GigaVUE-TA10A

The GigaVUE-TA10 has all forty-eight (48) 1Gb/10Gb ports and four (4) 40Gb ports enabled. It has serial numbers Dxxxx and does not require a port license.

A twenty-four (24) port GigaVUE-TA10 version, called the GigaVUE-TA10, is available with only the first 24 1Gb/10Gb ports enabled. The GigaVUE-TA10A has serial numbers Gxxxx and product code 132-00D1. A license is needed to expand a GigaVUE-TA10A to include all 48 1Gb/10Gb ports as well as the four (4) 40Gb ports.

Use the following CLI command to display the GigaVUE-TA10A chassis information:

```
# show chassis
```

```
Chassis:
Box ID           : 5*
Hostname         : BAT-ta10
Config           : yes
Mode             : normal
Oper Status      : up
HW Type         : TA10A-Chassis
Vendor           : Gigamon
Product Code   : 132-00D1
Serial Num     : G1234
HW Rev           : 1.0
SW Rev           : 4.6.01
```

GigaVUE-TA100

On the GigaVUE-TA100, only the first 16 out of 32 100Gb ports are enabled. Two port licenses are available to enable an additional 8 or 16 ports to expand from 16 ports to 24 ports or from 16 ports to 32 ports and then to 32 ports.

GigaVUE-TA200

On the GigaVUE-TA200, only the first 32 out of 64 100Gb ports are enabled. A port license is available to enable an additional 32 ports to expand from 32 ports to 64 ports.

Enabling Additional Ports

Contact your Sales Representative for information on obtaining a license key. Once you have obtained the license key for additional ports on GigaVUE-TA10A, GigaVUE-TA100, or GigaVUE-TA200, use the following command:

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

where:

- box ID is the box ID of the GigaVUE TA Series node
- license key is the license key obtained for the purposes of enabling additional ports

Use the following procedure to enable ports before starting to issue commands in the CLI:

1. Connect to the console port as described in the previous section.
2. Wait at least two minutes after the system prompt appears for the system to be initialized and then switch to **Configure** mode.

The GigaVUE TA Series node provides three command entry modes, each with increasingly powerful rights – **Standard**, **Enable**, and **Configure**. The jump-start script is only available in Configure mode:

- a. Type **en** <Enter> to switch to Enable mode.

The system prompt changes from *[hostname]* > to *[hostname]* #.

- b. Type **config t** <Enter> to switch to Config mode.

The system prompt changes from *[hostname]* # to *[hostname]* **(config)** #.

3. Reset the terminal settings to match the current window with the following command:

```
terminal resize
```

4. Use the **port** command with the **admin** argument to enable ports. For example, the following two commands enable all available ports on a fully licensed GigaVUE-TA10A:

```
(config) # port 1/1/q1..q4 params admin enable  
(config) # port 1/1/x24..x48 params admin enable
```

5. Save your changes so that ports come up automatically at the next reboot:

```
write memory
```

Advanced Features Licensing

GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, and GigaVUE-TA200 nodes can be clustered with GigaVUE H Series nodes. Clustering is enabled with an Advanced Features License.

Contact your Sales representative for Advanced Features Licenses. Refer to [Contacting Sales on page 124](#).

Command-Line Basics

This section provides a quick orientation to the GigaVUE TA Series command-line interface – how to enter commands, how to get help, and so on.

Command-Line Modes

The GigaVUE-OS can operate in one of three modes, each with its own set of available commands – Standard, Enable, and Configure. When you first launch the CLI, you start in Standard mode with access to a limited amount of commands used to review system status. As you move from **Standard** mode to **Enable** mode to **Configure** mode, both the power and the number of commands available increase, as summarized in Figure 4-10.

NOTE: If you are working simultaneously with multiple GigaVUE nodes, you may want to assign each a separate hostname so its easy to identify separate terminal sessions from the system prompt. Admin users can do this in Configure mode with the **hostname <name>** command.

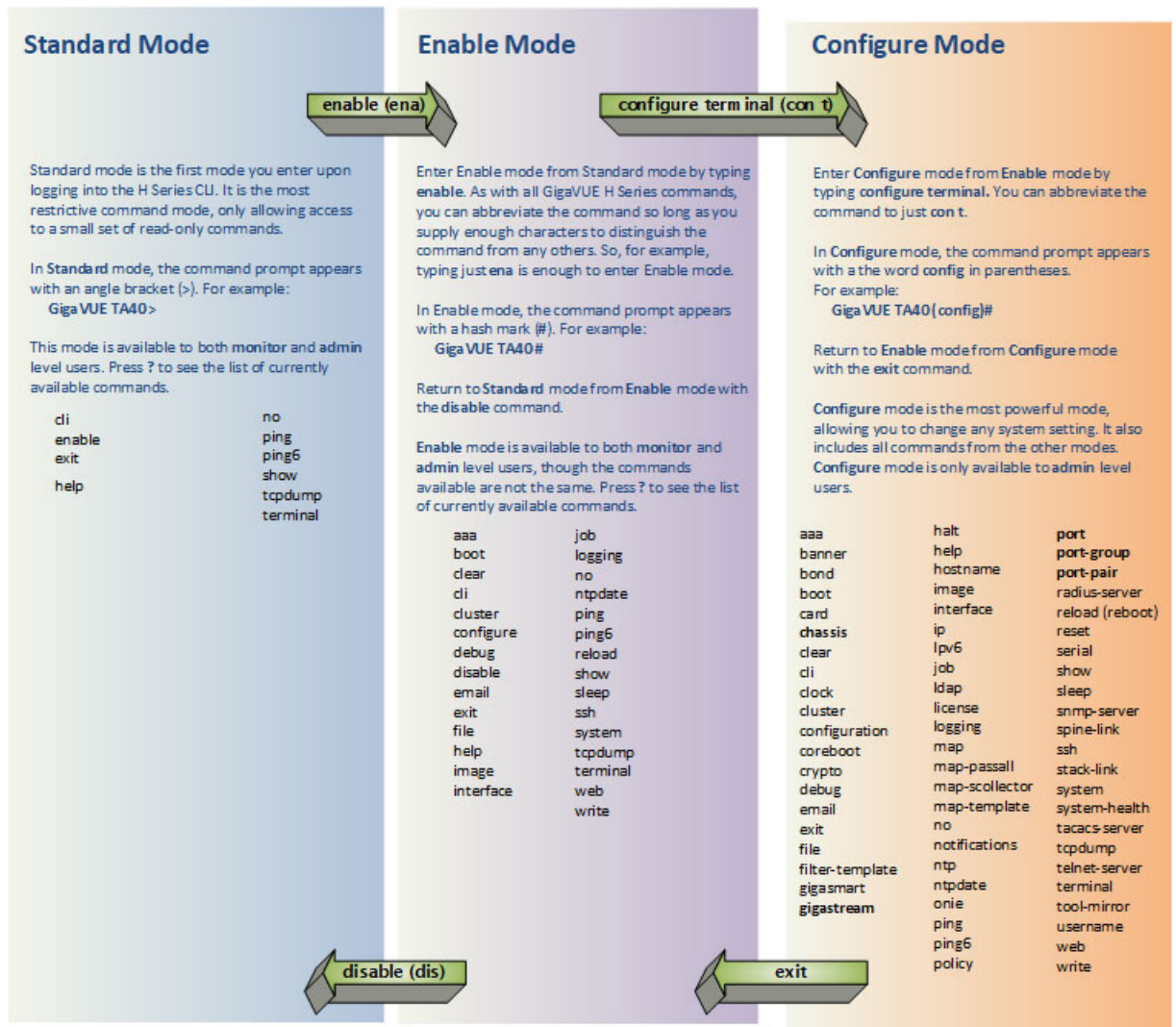


Figure 4-10: GigaVUE-OS Command-Line Modes

Entering Commands in the CLI

The GigaVUE CLI provides several conventions that make it easy to identify available commands and enter them quickly:

Technique	Description
Context-Sensitive Help	<p>The ? symbol is the key to receiving help wherever you are in the CLI:</p> <ul style="list-style-type: none">Type the ? by itself to see a list of all available commands.Word Help – Type a partial word with a ? mark immediately following the partially-typed word to see a list of all possible commands using the word entered so far. For example, if you typed i? in Configure mode, the CLI would return the following possible commands based on what you've entered so far: image interface ipCommand Help – Type a command followed by a question mark to see all possible arguments for the command as entered. If the system returns <cr>, that means the command can be entered as-is. For example, if you entered gigastream ?, you would see alias. You can build your way through the entire command tree by entering ? after each new argument. For example, after entering gigastream alias myalias ?, you would see the next valid argument – port-list. <p>NOTE: Typing ? accesses the help system immediately – you do not need to press <Enter>.</p>
Partial Command Entry	<p>For all GigaVUE commands and arguments, you only need to enter enough characters to distinguish the command from all other available commands. So, for example, you do not have to enter the full command username – there is only one command starting with the letter u, so you only have to enter u.</p>
Command Completion	<p>If you have partially typed a command, you can press Tab and the CLI will attempt to complete the command for you based on what's been entered so far.</p> <p>It is helpful to use the Command Completion feature together with partial command entry – you can press Tab while entering a command to see a list of all available commands matching what you've entered so far. For example, you can press p<Tab> and the system will return:</p> <p>pass-all ping port port-pair</p> <p>Based on this information, you know that you only need to enter the letter pa to uniquely identify what you've entered as pass-all.</p>

Command-Line Syntax – Entering Commands

You enter configuration commands for the GigaVUE node in the command-line interface by typing enough characters to uniquely identify the command and pressing **<Enter>**.

When entering commands, keep in mind the following rules:

- Successful commands return no response in the CLI; commands with errors return an error response beginning with %, followed by a short error description.
- All commands are case-sensitive and entered in lower case.
- Port numbers are entered in **<box ID>/<slot ID>/<port ID>** format. For the GigaVUE TA Series nodes, the chassis ID and slot number are always **1**.
- Strings must consist entirely of alphanumeric characters with no spaces. The only exceptions are the underscore (_), hyphen (-), exclamation point (!), “at” symbol (@), and period (.) characters. Those are allowed.

For example, in Config mode, **port 1/1/q12 alias My_Alias** is legal, but **port 1/1/q12 alias My Alias** is not.

NOTE: Some string fields do accept spaces provided the input is made inside quotation marks

Config Mode Syntax

When using the GigaVUE CLI, the “config” part of the command is implied whenever you are working in Configure mode. The system prompt helps you remember this by including the word **(config)** in parentheses. For example:

```
(config) #
```

So, instead of entering **config map** to connect a network port to a tool port, you just enter **map** followed by the necessary arguments. The **config** part is implied because you are already working in the Configure command mode. For example:

```
(config) # map alias myTA40map from 1/1/q1 to 1/1/q5
```

Paging through CLI Output

By default, the GigaVUE CLI returns output exceeding the configured terminal length in pages. The CLI provides the same features for working through the paged output as the Linux programs **less** and **more**. Press the **h** key to see paging options – [Figure 4-11](#) provides an example.

If you prefer, you can disable paging either for the current session or by default:

- **Disable for Current Session**

```
(config) # no cli session paging enable
```

- **Disable for All Sessions (Default)**

```
(config) # no cli default paging enable
```

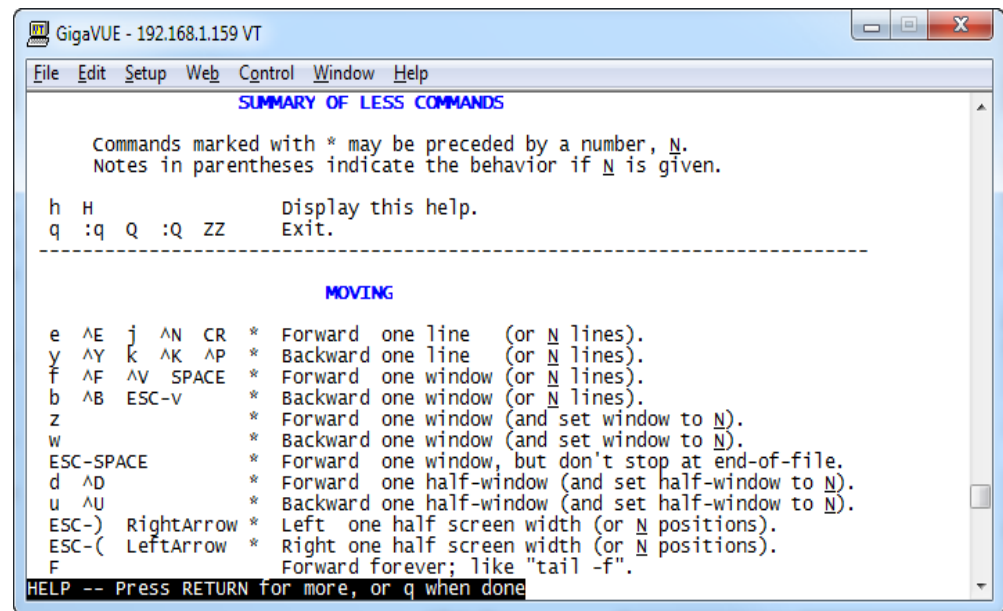


Figure 4-11: Viewing Paging Options

The Basic Commands

The following table lists each of the top level commands for the GigaVUE-OS CLI in Configure mode. Most commands have multiple supported arguments. You can see the exact arguments available at any point of command entry by typing it into the CLI followed by ?.

Command	Description
<i>aaa</i>	Configure authentication, authorization, and accounting settings.
<i>banner</i>	Set a system login banner.
<i>bond</i>	Configure bonded interface settings.
<i>boot</i>	Configure system boot parameters.
<i>card</i>	Configure a card. On TA Series nodes, use the card command to enable additional ports on GigaVUE TA Series nodes.
<i>chassis</i>	Configure the chassis.
<i>clear</i>	Reset statistics or clear caches.
<i>cli</i>	Configure CLI shell options.
<i>clock</i>	Set the system clock or timezone.
<i>cluster</i>	Configure a cluster of connected nodes.
<i>configuration</i>	Manage configuration files.
<i>configure</i>	Enter Configure mode.
<i>coreboot</i>	Upgrades the BIOS image on GigaVUE-TA100, GigaVUE-TA100-CXP, GigaVUE-HC1, and GigaVUE-HC3.
<i>crypto</i>	Manage X.509 certificates for the node's Web server.
<i>debug</i>	Generate a dump file for use in debugging issues with Gigamon Technical Support.
<i>disable</i>	Leave Enable mode and return to Standard mode.
<i>email</i>	Configure email and event notification via email.
<i>enable</i>	Enter Enable mode.
<i>exit</i>	Leave Configure mode and return to Enable mode or log out of the CLI.
<i>file</i>	Manage TCP and debug dump files on disk.
<i>filter-template</i>	Configures flexible filter templates on GigaVUE-HC3 and GigaVUE-TA100.
<i>gigasmart</i>	Configures a stack port interface to provide Internet connectivity for a GigaSMART card or module.
<i>gigastream</i>	Configure a GigaStream – a group of ports acting as a single addressable tool port destination or stack-link.
<i>halt</i>	Shut down the system without powering it off.
<i>help</i>	View a description of the interactive help system.
<i>hostname</i>	Specify the system's hostname. The hostname appears in the system prompt and in SNMP traps.
<i>ib-pathway</i>	Reserved for future use.
<i>image</i>	Manage system software images.

Command	Description
<i>interface</i>	Configure network interfaces.
<i>ip</i>	Configure IP settings for the eth0 Mgmt port.
<i>ipv6</i>	Configure IPv6 settings for the eth0 Mgmt port.
<i>job</i>	Configure scheduled jobs.
<i>ldap</i>	Configure LDAP server settings for authentication.
<i>license</i>	<p>Activate features using license keys. On GigaVUE-TA10A and GigaVUE-TA100, use this command to enable additional ports. (GigaVUE-TA10, 0GigaVUE-TA40, and GigaVUE-TA100-CXP have all ports enabled.)</p> <p>Use this command to enable clustering on the following TA Series nodes: GigaVUE-TA10, GigaVUE-TA40, and GigaVUE-TA100.</p>
<i>logging</i>	Configure event logging.
<i>map</i>	Configure maps and map rules to manage GigaVUE traffic distribution.
<i>map-passall</i>	Create a pass-all map to send all traffic on a network port to a tool port irrespective of the other packet distribution in place on the port.
<i>map-scollector</i>	Configure shared collector map parameters.
<i>map-template</i>	Create a map template.
<i>no</i>	Delete or clear certain configuration options.
<i>notifications</i>	Configures notification settings.
<i>ntp</i>	Enable and disable the use of NTP, as well as add NTP servers.
<i>ntpdate</i>	Set system clock once from a remote server using NTP.
<i>pcap</i>	Configures packet capture.
<i>ping</i>	Send ICMP echo requests to a specified host.
<i>ping6</i>	Send ICMPv6 echo requests to a specified host.
<i>policy</i>	Configures an active visibility policy.
<i>port</i>	Configure port type, parameters, and filters.
<i>port-group</i>	Create a group of ports.
<i>port-pair</i>	Configure a port-pair on a pair of network ports within the same node. A port-pair is a bidirectional connection in which traffic arriving on one port in the pair is transmitted out the other (and vice-versa) as a passthrough TAP.
<i>radius-server</i>	Configure RADIUS server settings for authentication.
<i>reload(reboot)</i>	Reboot or shut down the node.
<i>reset</i>	Reset specified portions of the system configuration to their factory states.
<i>serial</i>	Set options for the serial console port.
<i>sfp</i>	Reserved for future use.
<i>show</i>	Display configuration and status information for a wide variety of settings and entities.
<i>sleep</i>	Sleep for a specified number of seconds.

Command	Description
<i>snmp-server</i>	Configure SNMP settings, including the local SNMP server, notification events, and notification destinations.
<i>spine-link</i>	Configures spine links in a cluster with a leaf and spine architecture.
<i>ssh</i>	Enable and disable SSH access, as well as manage settings.
<i>stack-link</i>	Configure a stack-link between two nodes in a cluster. Stack-links are used to carry data traffic between nodes in a cluster.
<i>system</i>	Change system settings.
<i>system-health</i>	Configures system health behaviors.
<i>tacacs-server</i>	Configure TACACS+ server settings for authentication.
<i>tcpdump</i>	Display packets from any eth x port in the node on a network.
<i>telnet-server</i>	Enable or disable Telnet access.
<i>terminal</i>	Set terminal parameters, including width and length.
<i>tool-mirror</i>	Configures a tool-mirror connection between two tool ports. A tool-mirror connection sends all packets arriving on one tool port to a second tool port on the same node.
<i>traceroute</i>	Trace the route packets take to a destination.
<i>tunnel</i>	Reserved for future use.
<i>uboot</i>	Installs new uboot software.
<i>username</i>	Manage user accounts.
<i>web</i>	Configure the Web server used for H-VUE GUI support on the node.
<i>write</i>	Save the running configuration to persistent storage.

Completing the Initial Setup

At this point, you have logged in to the command-line interface using the **admin** account, configured the **Mgmt** port's network properties for Telnet or SSH access, and have explored the command-line interface.

There are a few more steps you should perform to complete the initial configuration before you set up network ports, tool ports, and aggregate traffic. These tasks include:

- Switch to the Configure mode.
Refer to [Enter the Configure Command-Line Mode on page 80](#).
- Configure Telnet and SSH access to the node.
Refer to [SSH, Telnet, or Both? on page 80](#).
- Configure some basic user accounts.
Refer to [Initial User Account Configuration on page 82](#).
- Configure the node name.
Refer to [Configuring the GigaVUE TA Series Host Name on page 83](#).

- Configure time and date options for the node.
Refer to [Configuring GigaVUE TA Series Node's Time Options on page 84](#).
- Enable the Web server for Web-based GUI access.
Refer to [Enabling the Web Server on page 86](#).
- Save your changes!
Refer to [Saving Changes on page 89](#).

Enter the Configure Command-Line Mode

Keep in mind that the GigaVUE-OS have three different command modes for the CLI – **Standard**, **Enable**, and **Configure**. The commands described in the sections below are all only available in Configure mode. Switch to configure mode as follows:

Command	Notes
> enable	You only need to supply enough of each command to positively identify it among the other available commands. So, in this example, you could just type ena and press Enter.
# configure terminal	Similarly, this command can be entered as con t .
(config) #	Notice how the system prompt changes with each command mode. Command modes offer greater control over the box as you ascend from Standard to Enable to Configure .

SSH, Telnet, or Both?

Both Telnet and SSH2 are available for remote connections to the GigaVUE Traffic Aggregator's **Mgmt** port. By default, SSH2 is enabled and Telnet is disabled. Use the **ssh** and **telnet-server** commands in Configure mode to enable or disable the corresponding connections. To disable the corresponding connection, you include **no** before the command, as demonstrated in the table below. For example:

Command	Notes
Enable: (config) # ssh server enable	When SSH2 is enabled, you can use any compliant SSH2 client to connect to the command-line interface remotely. For example, to connect using the SSH2 client, PuTTY: <ol style="list-style-type: none">Start PuTTY and enter the GigaVUE Traffic Aggregator's IP address in the Host Name field.Click the SSH protocol radio button.Click Open to open a connection. If this is your first connection PuTTY warns you that the host key presented by the GigaVUE node is not in your cache. You can add the key, connect without adding the key, or cancel the connection. Refer to Verifying Host Keys During Connection on page 81 for information on how to verify that the host key shown is the correct one.Log in with GigaVUE credentials.
Disable: (config) # no ssh server enable	

Command	Notes
Enable: (config) # telnet-server enable Disable: (config) # no telnet-server enable	When Telnet is enabled, you can use any compliant Telnet client to connect to the command-line interface remotely. For example, to connect using the Telnet client provided with Microsoft Windows: <ol style="list-style-type: none"> Open a command prompt window and type Telnet. Type open <Mgmt Port IP Address>. Log in with GigaVUE credentials.

Advantages of SSH2

SSH2 is a more secure choice for remote connections than Telnet, providing an encrypted channel instead of relying on clear text. It also provides stronger user authentication capabilities, including the use of a public *host key*. Host keys uniquely identify a server, helping guarantee that the server you're connecting to is the server you think it is.

The GigaVUE nodes also include default RSA v1/v2 and DSAv2-encrypted public host keys (SSH2 supports both RSA and DSA encryption algorithms). The first time you connect to the GigaVUE TA Series node with an SSH2 client, the client will warn you that the host keys are not in your local cache and show you the actual host key presented by the node. Your client will most likely give you the option of trusting the key, adding it to your local cache. Once you've trusted the key, your client will alert you during connection if a different key is presented.

Verifying Host Keys During Connection

To verify that the host key presented during an SSH2 connection is in fact the GigaVUE node's, you can connect over the console port (refer to [Access the Command-Line Interface over the console Port on page 64](#)) and use the **show ssh server host-keys** command to see the current public host keys and fingerprints for the GigaVUE node. Paste these in a file and keep them nearby when you connect via SSH2 the first time. This way, you'll be able to compare the actual host key to what your SSH2 client says is being presented. Once you've verified that they are the same, you can choose to trust the host key, allowing future connections to take place seamlessly.

Changing Host Keys

You can use the **ssh server host-key generate** command to change the default host keys provided with the GigaVUE TA Series node. The command has the following syntax:

```
ssh server host-key <rsa1 | rsa2 | dsa2> <private-key | public-key> generate
```

For example, to configure a new RSAv1 public hostkey, you could use the following command:

```
(config) # ssh server host-key rsa1 public-key generate
```

Initial User Account Configuration

Before you start mapping traffic, you must change the password for the **admin** account and add a few other accounts for use by different level users. (You may have already used the jump-start script to change the password for the **admin** account.)

Changing the admin Account Password

1. To change the password for the **admin** account using the **username** command, refer to the following:

```
(config) # username admin password <password>
```

Passwords must meet the following standards:

- Include 8-30 characters.
- Include at least one numeral
- Include at least one capital letter
- Include at least one special character (for example, **!**, **@**, **#**, **\$**, **%**, **^**, **&**, or ***** – ASCII [0x21, 0x2F], [0x3A, 0x40], [0x5B, 0x5F], [0x7B,0x7E]).

Enter a new password that meets the standards and confirm the password.

Setting Up Some Basic Accounts

The TA Series node has a local account database that can optionally integrate with an LDAP, RADIUS, or TACACS+ server for authentication. Any account you want to authenticate using an external AAA server must have a matching account name in the local database.

Authentication, user levels, and roles are discussed in detail in the *GigaVUE-OS CLI User's Guide*. For now, however, it is easiest to simply create a few basic user accounts with different privilege levels. In general, user privileges are as follows:

- Admin users have access to all command modes, including Standard, Enable, and Configure. They also have full permissions for all network, tool, and stack ports.
- Operator users have access to all command modes, including Standard, Enable, and Configure. However, they only have access to the network and tool ports associated with their user group. New users are created with the operator role by default. You can add additional roles with the **username <username> roles add <roles>** command.
- Monitor users have access to the Standard and Enable command modes. They cannot configure packet distribution (or any other global GigaVUE TA Series node options), but they can use the show command to review many of the settings in place on the node.

The following username commands create a new admin user and a new operator user:

Command	Comments
<pre>(config) # username psandoval password Nine9.Eight8! (config) # username psandoval roles add admin</pre>	Creates a new account named psandoval with a password and grants it admin privileges.
<pre>(config) # username bcrawford password Seven7.Six6!</pre>	Creates a new account named bcrawford with a password. New users are automatically created with default operator level privileges, so there is no need to grant an additional role.

- Once you have configured these basic user accounts, use the **show usernames** command to review your settings. [Figure 4-12](#) shows some sample **show usernames** output after several users have been added.

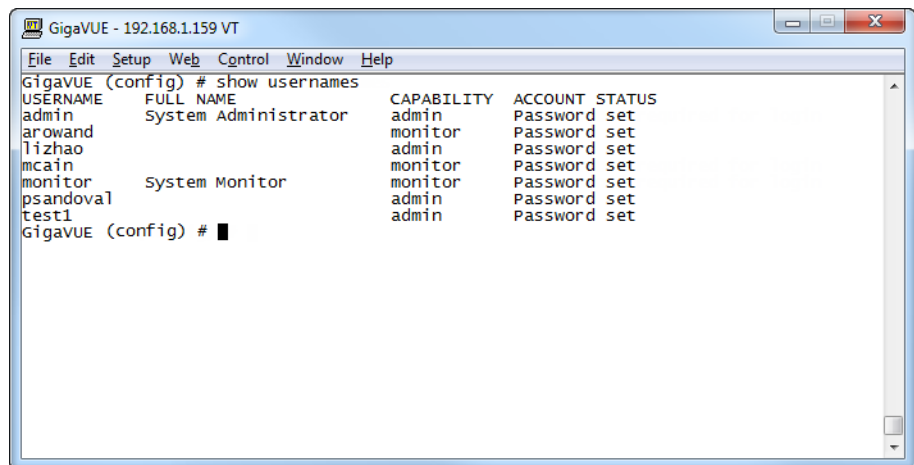


Figure 4-12: Reviewing the User List

Configuring the GigaVUE TA Series Host Name

It is generally a good idea to configure the GigaVUE node's name, date, and time as part of your initial configuration. The following command shows how to set the system name. Refer to [Configuring GigaVUE TA Series Node's Time Options on page 84](#) for information on setting options related to time and date.

Setting the System Name

- Use the **hostname** command to specify the system name. For example:

```
(config) # hostname GigaVUE-Customer
```

Configuring GigaVUE TA Series Node's Time Options

The GigaVUE TA Series nodes include a variety of features for setting the time, including:

Method	CLI Command	For more information:
System Clock	<code>clock set hh:mm:ss yyyy/mm/dd</code>	Setting Time Manually on page 84
One-Time NTP Synchronization	<code>ntpdate <ntpserver address></code>	Performing One-Time NTP Server Synchronization on page 84
Persistent NTP Synchronization	Add server using <code>ntp server</code> command. Enable use of ntp with <code>ntp enable</code> command.	Using NTP Time Server for System Clock Synchronization on page 84

Setting Time Manually

The easiest way to set the GigaVUE node's time is manually with the **clock set** command. For example:

```
(config) # clock set 05:18:38 2011/05/24
```

NOTE: Even if you are using NTP/SNTP, It is a good idea to configure time manually as well. The GigaVUE node will automatically fall back to the manual time setting if it is unable to synchronize with the specified time server.

The **show ntp** will show the current state of the NTP server in use; the **show clock** command shows the current GigaVUE node's time.

Performing One-Time NTP Server Synchronization

You can perform a one-time synchronization with an NTP server using the **ntpdate** command. For example:

```
(config) # ntpdate time.nist.gov
```

Note that this method does not provide updates to correct clock drift over time. It is generally preferable to use persistent NTP synchronization with the **ntp** commands.

Using NTP Time Server for System Clock Synchronization

The GigaVUE nodes can optionally use one or more NTP servers for its time setting. Use the following procedure to add an NTP server to the GigaVUE node's list and enable the use of NTP.

1. Specify the address of the time server. For example, if the time server is on 192.168.1.10, you would use the following command:

```
(config) # ntp server 192.168.1.10
```

NOTE: There are many public NTP servers available on the Internet.

2. Turn on NTP with the following command:

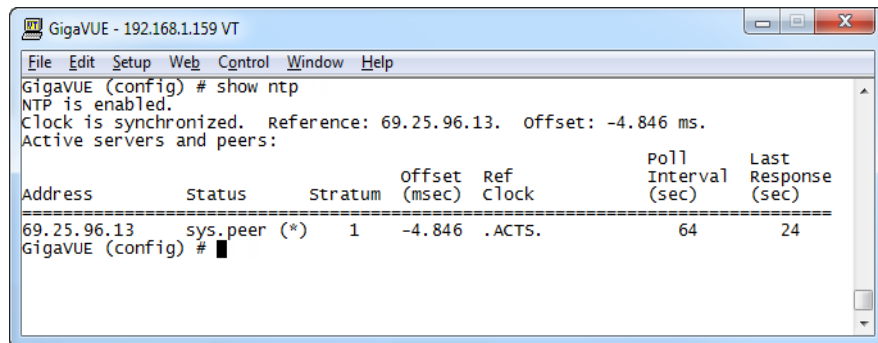
```
(config) # ntp enable
```

3. The GigaVUE node connects to the specified NTP server and synchronizes to its time.
4. NTP reports times in UTC. Because of this, It is a good idea to specify the GigaVUE node's timezone so that UTC can be converted to the local timezone.

You specify the timezone in terms of the offset from UTC (either plus or minus). For example, to set the timezone for a GigaVUE node in the United States for Pacific Standard Timezone, you would use the following command:

```
(config) # clock timezone America North United_States Pacific
```

Once you've finished configuring NTP options, use the **show ntp** command to check the status of clock synchronization (Figure 4-13).



The screenshot shows a terminal window titled "GigaVUE - 192.168.1.159 VT". The terminal output is as follows:

```
GigavUE (config) # show ntp
NTP is enabled.
Clock is synchronized. Reference: 69.25.96.13. Offset: -4.846 ms.
Active servers and peers:
-----
Address          Status      Stratum  Offset  Ref  Poll  Last
(msec)  Clock  Interval Response
(sec)      (sec)
-----
69.25.96.13     sys.peer (*)  1      -4.846  .ACTS.  64    24
GigavUE (config) #
```

Figure 4-13: Checking NTP Status and Configuration

Enabling the Web Server

H-VUE is Gigamon's Web-based management interface for the GigaVUE-OS, including the GigaVUE TA Series nodes. You can use H-VUE or GigaVUE-FM for many system configuration, management, and operations tasks.

To use H-VUE with a GigaVUE node, you must enable its Web server with the **web enable** command. For example:

```
(config) # web enable
```

Check the status of the Web server using the **show web** command. Make sure that **Web-based management console enabled:** is set to **yes**, indicating that the Web server is enabled. For example:

```
(config) # show web
Web-based management console enabled: yes

HTTP enabled:                yes
HTTP port:                   80
HTTP redirect to HTTPS:     yes
HTTPS enabled:               yes
HTTPS port:                  443
Require certificates from DoD CA: no
HTTPS certificate name:      default-cert
Listen enabled:              yes
No Listen Interfaces.

Inactivity timeout:          15 min
Session auto-logout:         2 hr 30 min
Session renewal:             30 min

Web client (for file transfers)
Proxy enabled: no
HTTPS server cert verify: yes
HTTPS supplemental CA list: default-ca-list
```

Connecting to GigaVUE-OS from H-VUE

After you enable the GigaVUE node's Web server, it automatically listens for connections from H-VUE using either HTTP on port 80 or HTTPS on port 443. Use the following procedure to connect to a GigaVUE node using H-VUE.

NOTE: You can configure whether the GigaVUE node redirects all incoming HTTP connections to the HTTPS port with the **web http redirect** command.

1. Open a supported browser. For the list of the latest browser support available, refer to the *GigaVUE-OS CLI Reference Guide* for the release you have installed on the GigaVUE node.
2. Enter one of the following URLs:

```
https://<GigaVUE Node IP Address>
http://<GigaVUE Node IP Address>
```

3. The first time you connect to H-VUE, your browser will prompt you regarding an invalid security certificate. Depending on the browser you are using, you can avoid these warnings either by installing a certificate or adding an exception.

NOTE: Gigamon provides the nodes with self-signed certificates for use with H-VUE; you can also create and install a third-party certificate on these nodes.

Add an exception in Firefox as follows:

- a. Click the **Or you can add an exception** link.
- b. Click the **Add Exception** button.
- c. Click the **Get Certificate** button.
- d. Click the **Confirm Security Exception** button.

The H-VUE login page appears.

4. Enter a valid user name and password and click **Login**.

Configuring Internet Explorer for Use with H-VUE

H-VUE works best in Internet Explorer when the browser is configured to check for newer versions of stored pages every time pages are visited.

Enable this option as follows:

1. Open Internet Explorer.
2. Select the **Tools > Internet Options** command.
3. In the **General** tab, locate the **Browsing history** section and click its **Settings** button.
4. Set the **Check for newer version of stored pages:** option to **Every time I visit the webpage**.
5. Click **OK** on the Temporary Internet Files and History Settings dialog.
6. Click **OK** on the Internet Options dialog.

Configuring Automatic Email Notifications

The GigaVUE nodes provide powerful email notification capabilities, automatically sending emails to specified addresses when any of a wide variety of events take place on the system. Gigamon strongly recommends that you configure this feature so you have immediate visibility of events affecting system health.

You configure automatic email notifications with the **email** command and its arguments. Start by making sure the CLI is in Configure mode. If the **(config)** entry appears in the system prompt, you are in Configure mode. If not, use the **enable** and **configure terminal** commands sequentially to change to Configure mode. Then, configure email notifications as follows:

Description	Command
First, use the email mailhub command to specify the mail server to use for notification emails. In this example, the email server named smtp.emailsrvr.com is used. IP address can be used instead of a hostname.	(config) # email mailhub smtp.emailsrvr.com
Next, use the email auth command to supply the email account username and password. In this example, alerts@mycompany.com is shown with a password of mypassword123 .	(config) # email auth username alerts@mycompany.com (config) # email auth password mypassword123
Once account is setup turn on email authentication.	(config) # email auth enable
Now that the settings are configured, let the system send emails. Set up who to send them to and when to send them. Use email notify recipient to configure the destinations for event notification emails. Multiple destinations can be specified by separating by commas with no spaces.	(config) # email notify recipient cday@mycompany.com,mfelton@mycompany.com
The email notify event command lets you configure which events will trigger automatic emails. There are quite a few events available – start by entering email notify event ? to see the list of available events. You can either enable individual events, or, use the all argument to enable them all.	(config) # email notify event all
It is a good idea to check your settings and make sure emails are sent successfully. You can do that with the email send-test command. If you do not receive the email, check the show log output to make sure the email was sent. Then, reconfigure email settings, if necessary.	(config) # email send-test

Description	Command
<p>You may also want to configure and enable autosupport emails. Autosupport emails are sent directly to Gigamon's Technical Support department when specified events take place, enabling proactive problem resolution. The GigaVUE TA Series is preconfigured with the correct destination address – you just need to enable the feature with the following command.</p> <p>Use <code>show email events</code> to see the list of events for which autosupport emails will be sent. You can change the list with the (no) email autosupport event command.</p>	<p>(config) email autosupport enable</p>
<hr/> <p>That's it! Emails will now be sent automatically to the configured addresses when any of the selected events take place.</p> <p>There are many other options for fine-tuning automatic email settings, including how to handle “dead letters” (emails that did not reach their recipient), how the email address of the GigaVUE TA Series should appear, the port for the email server, the reply-to address, and so on.</p> <hr/>	

Using a Custom Banner

The GigaVUE nodes can display a customizable text banner at system startup before a user logs in. This way, users connecting to the system see the banner before they log in, giving them an idea of which system they are logging in to. The banner also appears after a user logs out.

Use the **banner login** “<string>” command to configure the login banner. For example:

```
(config) # banner login "Pacific Call Center"
```

NOTE: You only need to use quotation marks for the <string> if it includes spaces.

The next time you log in or out of the GigaVUE node, you will see the customizable banner.

Saving Changes

It is a good idea to get into the habit of using the **write memory** command to save changes as you make them. Later on, when you start setting up packet distribution, your changes will be added to the active configuration right away but would not be saved across a system reboot unless you use the **write memory** command to save your changes to flash.

NOTE: The name of the factory-provided configuration file is **initial**. You can refer to the name of the most recently booted configuration file by using the **show running-configuration** command (or **show configuration**) and look for the **## Running database** entry.

Connecting Ports on GigaVUE TA Series

This appendix provides information on the transceivers supported for use with the GigaVUE TA Series.

IMPORTANT: Always use transceivers purchased from Gigamon to ensure interoperability and performance. Gigamon only supports transceivers purchased from Gigamon. Gigamon does not support transceivers purchased from other vendors.

After removing an optical transceiver, the best practice is to wait ten (10) or more seconds before re-inserting the same or different optical transceiver.

Refer to the following sections for details:

- [BiDi Optics Considerations](#) on page 91
- [Identifying Transceivers](#) on page 92
- [Supported Transceivers by GigaVUE Node's Port Type](#) on page 98
- [Transceiver Specifications](#) on page 101
- [Transceiver Installation Instructions](#) on page 101
- [Cabling](#) on page 104

BiDi Optics Considerations

There are several nuances to consider due to the complexity in 40Gb BiDi technology.

Because of the nature of 40Gb BiDi technology, the same BiDi optic (Full Duplex or RX-only) cannot be used in all of the following situations. For example:

- On SPAN sessions, RX-only BiDi optics cannot be used. Full Duplex BiDi optics must be used.
- When receiving traffic from network links, RX-only BiDi optics must be used due to the way traffic is multiplexed over the fiber pair in 40Gb BiDi technology.
- When deploying over inline 40Gb BiDi links, Full Duplex BiDi optics must be used.


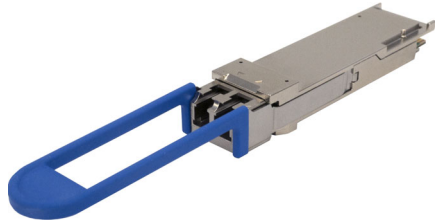
- When connecting two GigaVUE nodes through a cascade connection, Full Duplex BiDi optics must be used for the tool port. The network port may be either Full Duplex or RX-only BiDi optics.
- When stacking multiple GigaVUE nodes, 40Gb BiDi optics must not be used on stack links because the 40Gb BiDi technology is not compatible with the Gigamon stack protocol.

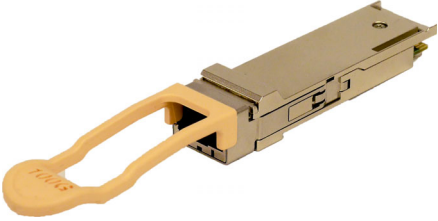
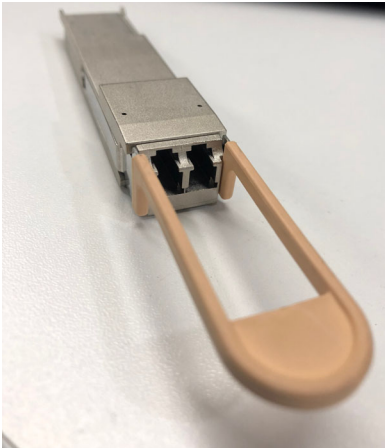
Identifying Transceivers



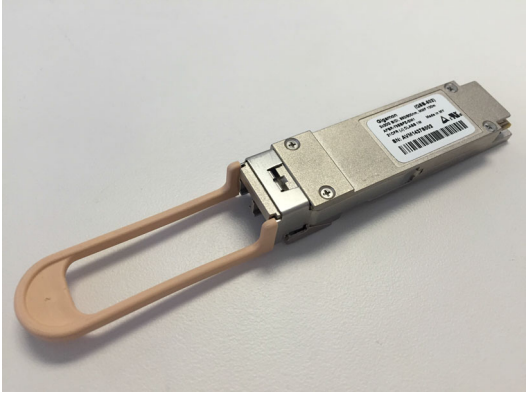
Gigamon provides a variety of transceivers for use with the 100Gb/40Gb/10Gb/1Gb ports in GigaVUE node's ports.





It is not always easy to tell the difference between various transceivers. Use the following tips to keep track of your transceivers:





- SFP+ transceivers use **metal** bail and latch assemblies. The color of the metal bail corresponds to the SFP+ type, as summarized in the table below.
- 1Gb SFP transceivers use either bail and latch assemblies with a colored plastic sheath around the bail or assemblies made entirely of plastic (SX SFP). The color of the plastic sheath corresponds to the SFP type, as summarized in the table below.

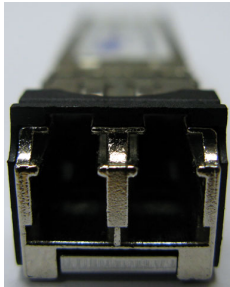
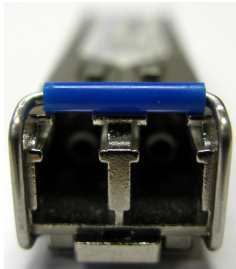
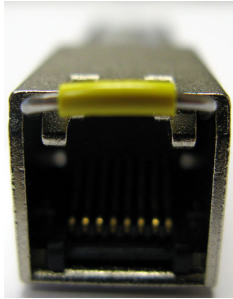
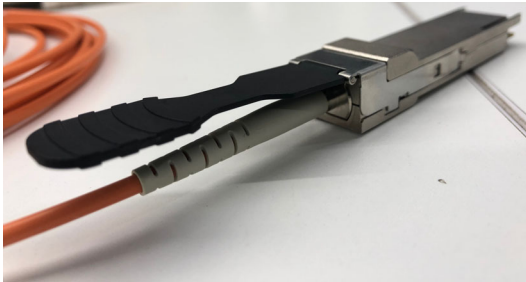
Media/Transceiver	Description
CXP-502 100Gb SR10 CXP	Beige Pull Tab 
Q28-503 100Gb LR4 QSFP28	Blue Pull Tab 

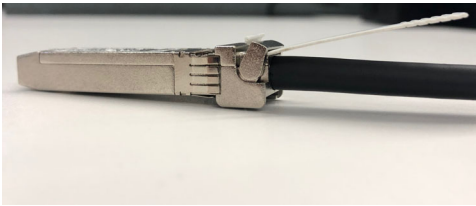
Media/Transceiver	Description
Q28-502 100Gb SR4 QSFP28	Beige Pull Tab 
Q28-513 100Gb QSFP28 CWDM4	Green Pull Tab 
QSB-512 100Gb QSFP28 BiDi	Beige Pull Tab 

Media/Transceiver	Description
QSF-502 40Gb SR QSFP+	Beige Pull Tab 
QSB-501 40Gb SR BiDi QSFP+ RX-only	Black Pull Tab 
QSB-502 40Gb SR BiDi QSFP+ Full Duplex (RX/TX)	Beige Pull Tab 

Media/Transceiver	Description
QSF-503 40Gb LR4 QSFP+	Blue Pull Tab 
QSF-506 40Gb QSFP+ Singlemode PLR4	Blue Pull Tab 
QSF-507 40Gb QSFP+ ESR4	Beige Pull Tab 
SFP-531 10Gb T SFP+	Metal Bail 

Media/Transceiver	Description
SFP-532 10Gb SR SFP+	Silver Metal Bail 
SFP-533 10Gb LR SFP+	Blue Metal Bail 
SFP-534 10Gb ER SFP+	Metal Bail 
SFP-535 10Gb LRM SFP+	Orange Metal Bail 

Media/Transceiver	Description
SFP-502 1Gb SX SFP	Black Plastic Bail 
SFP-503 1Gb LX SFP	Blue Plastic Sheath over Metal Bail 
SFP-501 1Gb Copper SFP	Yellow Plastic Sheath over Metal Bail 
CBL-405, CBL-410, CBL-415 40Gb Active Optic Cable (AOC)	Black Pull Tab 

Media/Transceiver	Description
CBL-205 10Gb Direct Attach Copper Cable (DAC)	White Pull Tab 

Supported Transceivers by GigaVUE Node's Port Type

The tables below lists the optical/copper transceivers supported by individual ports in the GigaVUE Traffic Aggregation nodes. Keep in mind the following rule of thumb for GigaVUE Traffic Aggregator port numbers:

- Port numbers starting with a c (for example, c1) are 100Gb.
- Port numbers starting with a q (for example, q1) are 40Gb.
- Port numbers starting with an x (for example, x10) are 10Gb or 1Gb depending on the transceiver installed.

NOTE: The 40Gb QSFP+ SR BiDi Full Duplex (RX/TX) transceiver is not supported in conjunction with a BiDi TAP.

Table 5-1: Supported Transceivers by Node Port Type on GigaVUE-TA10

GigaVUE Node's Port	Supported Transceivers	Speeds
Ports x<number> Note: Transceiver type determines port speed.	SFP (SX, LX)	1Gb Ethernet
	SFP (RJ45)	1000BASE-T
	SFP+ (SR, LR, ER, LRM)	10Gb Ethernet
	SFP+ Copper	10Gb BASE-T
Ports q<number>	QSFP+ 40GBASE SR4 (MM)	40Gb
	QSFP+ 40GBASE LR4 (SM)	40Gb
	QSFP+ 40GBASE PLR4 (SM)	40Gb
	QSFP+ 40GBASE ESR4 (MM)	40Gb
	BiDi QSFP+ (MM, SR, RX-only)	40Gb
	BiDi QSFP+ (MM, SR, Full Duplex)	40Gb
Cables	SFP+ to SFP+ Direct Attach Copper cable, 5m (CBL-205)	10Gb
	QSFP+ Active Fiber Cables (5, 10, or 50m), (CBL-405, CBL-410, CBL-415)	40Gb

Table 5-2: Supported Transceivers by Node Port Type on GigaVUE-TA40

GigaVUE Node's Port	Supported Transceivers	Speeds
Ports q<number>	QSFP+ 40GBASE SR4 (MM)	40Gb
	QSFP+ 40GBASE ESR4 (MM)	40Gb
	QSFP+ 40GBASE LR4 (SM)	40Gb
	QSFP+ 40GBASE PLR4 (SM)	40Gb
	BiDi QSFP+ (MM, SR, RX-only)	40Gb
	BiDi QSFP+ (MM, SR, Full Duplex)	40Gb
Cables	QSFP+ Active Fiber Cables (5, 10, or 50m), (CBL-405, CBL-410, CBL-415)	40Gb

Table 5-3: Supported Transceivers by Node Port Type on GigaVUE-TA100

GigaVUE Node's Port	Supported Transceivers	Speeds
Ports c<number>	QSFP+ 40GBASE SR4 (MM)	40Gb
	QSFP+ 40GBASE ESR4 (MM)	40Gb
	QSFP+ 40GBASE LR4 (SM)	40Gb
	QSFP+ 40GBASE PLR4 (SM)	40Gb
	BiDi QSFP+ (MM, SR, RX-only)	40Gb
	BiDi QSFP+ (MM, SR, Full Duplex)	40Gb
Ports c<number>	QSFP28 (MM, 850nm SR)	100Gb
	QSFP28 (MM, 100m Bidi)	100Gb
	QSFP28 (SM, 10km LR)	100Gb
	QSFP28 CWDM4 (SM, 2km LR)	100Gb
Cables	QSFP+ Active Fiber Cables (5, 10, or 50m), (CBL-405, CBL-410, CBL-415)	40Gb

Table 5-4: Supported Transceivers by Node Port Type on GigaVUE-TA100-CXP

GigaVUE Node's Port	Supported Transceivers	Speeds
Ports c<number>, c1..c20	CXP 100GBASE-SR10 (MM, 850nm)	100Gb
Ports c<number>, c21..c28	QSFP28 (MM, 850nm SR)	100Gb
	QSFP28 (SM, 10km LR)	100Gb
	QSFP28 CWDM4 (SM, 2km LR)	100Gb
	QSFP28 BiDi (MM, 100m)	100Gb

Table 5-4: Supported Transceivers by Node Port Type on GigaVUE-TA100-CXP

GigaVUE Node's Port	Supported Transceivers	Speeds
Ports c<number>, c21..c28	QSFP+ (MM, 850nm SR)	40Gb
	QSFP+ (MM, 850nm ESR4)	40Gb
	QSFP+ (SM LR)	40Gb
Cables	QSFP+ Active Fiber Cables (5, 10, or 50m), (CBL-405, CBL-410, CBL-415)	40Gb

Table 5-5: Supported Transceivers by Node Port Type on GigaVUE-TA200

GigaVUE Node's Port	Supported Transceivers	Speeds
Ports c<number>	QSFP+ 40GBASE SR4 (MM)	40Gb
	QSFP+ 40GBASE ESR4 (MM)	40Gb
	QSFP+ 40GBASE LR4 (SM)	40Gb
	QSFP+ 40GBASE PLR4 (SM)	40Gb
	BiDi QSFP+ (MM, SR, RX-only)	40Gb
	BiDi QSFP+ (MM, SR, Full Duplex)	40Gb
	QSFP28 (MM, 850nm SR)	100Gb
	QSFP28 (SM, ER)	100Gb
	QSFP28 (SM, 10km LR)	100Gb
	QSFP28 CWDM4 (SM, 2km LR)	100Gb
	QSFP28 BiDi (MM, 100m)	100Gb

Transceiver Installation Instructions

Gigamon transceivers are keyed and can only be installed in one direction. Transceivers are hot-swappable – they can be installed or removed with the power on or off. Use the following procedures to install and remove SFPs from GigaVUE node.

IMPORTANT: Always use an ESD-preventive wrist or ankle strap and ensure that it makes good skin contact when installing or removing transceivers.

Installing Transceivers

1. Remove the dust cap from the port if present.
2. Orient the transceiver with the opening and insert it into the slot.
3. Push gently but firmly until the transceiver is seated in the slot.
4. Close the latch on the SFP to lock it into the slot.

Removing Transceivers

1. Disconnect the cable (if any) from the transceiver.
2. If you are removing a fiber-optic transceiver, install dust caps in the transceiver to protect the optical interfaces.
3. Open the latch on the transceiver and gently remove it from the slot.
4. If you are not installing a new transceiver, install a dust cap in the open slot.

Transceiver Specifications

Table 5-6 provides specifications on the transceivers used by the GigaVUE Traffic Aggregator. Keep in mind the following important notes regarding the information in Table 5-6:

Note 1	Launch power and sensitivity values provided here are for reference only.
Note 2	Multimode distance shown in the tables below is dependent on the cable's modal bandwidth. Refer to your cable manufacturer's specifications for detailed information.
Note 3	Multimode fibers can be 62.5/125 or 50/125. Mixing different fiber types can cause link distance to degrade.

Table 5-6: Transceiver Specifications

Type	Operating Wavelength (nm)	Link Distance (See Note 2)	Cable Type (See Note 3)	Connector Type	Average Launch Power (dBm)	Receive Sensitivity (dBm)	Comments
SFP	850	200-550m	Multimode fiber	LC	-9.5	-17	
	1310	10km	Singlemode fiber	LC	-9.5	-19	
	CAT5 copper cable 100BASE-T	100m	UTP CAT-5 or better	RJ45	N/A	N/A	
SFP+	850	300m	Multimode fiber	LC	-7.3	-11.1	
	1310	10km	Singlemode fiber	LC	-5.2 (OMA)	-12.6 (OMA)	
	1310 (LRM)	220m	Multi-mode fiber	LC	-4.5	-6.5	1310nm on multi-mode Special order
	1550	40km	Singlemode fiber	LC	-1.7	-11.3	Special order
QSFP+	850 (SR4)	100m (OM3) 150m (OM4)	OM3/OM4 Multimode fiber	MPO/MTP (12 position)	-7.6	-9.5	Refer to Cabling on page 104 .
	850 (ESR4)	100m (OM3) 150m (OM4)	OM3/OM4 Multimode fiber	MPO/MTP (12 position)	-7.6	-9.5	
	1310	10km	Singlemode fiber	LC	-7.0	-13.7	
	1310 (PLR4)	10km	Singlemode fiber	MTP/APC	-4.5 (OMA)	-12.6 (OMA)	Use four parallel lanes for port breakout. Refer to Cabling on page 104 .
	850 - 900 BiDi	100m (OM3) 150m (OM4)	OM3/OM4 Multimode fiber (BiDi)	LC	-	-5.3	40Gb BiDi only supports RX on network ports
	850 - 900 BiDi	100m (OM3 or OM4)	OM3/OM4 Multimode fiber (BiDi)	LC	-4.0	-5.3	Full Duplex (RX/TX) supports network and tool ports. It is not supported in conjunction with a BiDi TAP.

Table 5-6: Transceiver Specifications

Type	Operating Wavelength (nm)	Link Distance (See Note 2)	Cable Type (See Note 3)	Connector Type	Average Launch Power (dBm)	Receive Sensitivity (dBm)	Comments
QSFP28	850 (SR4)	70m (OM3) 100m (OM4)	Multimode fiber	MPO/MTP (12 position)	-7.3	-8.5	Refer to Cabling on page 104 .
	BiDi	100m (OM4/OM5)	Multimode Fiber	LC			
	1310 (LR4)	10km	Singlemode fiber	LC	-4.3	-8.6	
	1271, 1291, 1311, 1331 (CWDM4)	2km	Singlemode fiber	LC	-6.5	-10.0	
CXP	850 (SR10)	100m (OM3)	Multimode fiber	MPO/MTP (24 position)	-7.6	-9.5	Refer to Cabling on page 104 .

Cabling

Refer to the following sections for cabling:

- [MPO/MTP 12 Position Fiber Cable for Use with SR4 Transceivers](#) on page 104
- [MTP/APC Fiber Cable for Use with QSFP+ PLR4 Transceivers](#) on page 104
- [MPO/MTP 24 Position Fiber Cable for Use with SR10 Transceivers](#) on page 105

MPO/MTP 12 Position Fiber Cable for Use with SR4 Transceivers

This is a female to female Multi-fiber Push On (MPO) / Ultra Polished Connector (UPC) of cable type B. [Figure 5-1 on page 104](#) provides cabling details for MPO/MTP 12 position fiber cable for use with 40Gb SR4 QSFP+, 40Gb ESR4 QSFP+, and 100Gb ER4 QSFP28 and 100Gb SR4 QSFP28 transceivers.

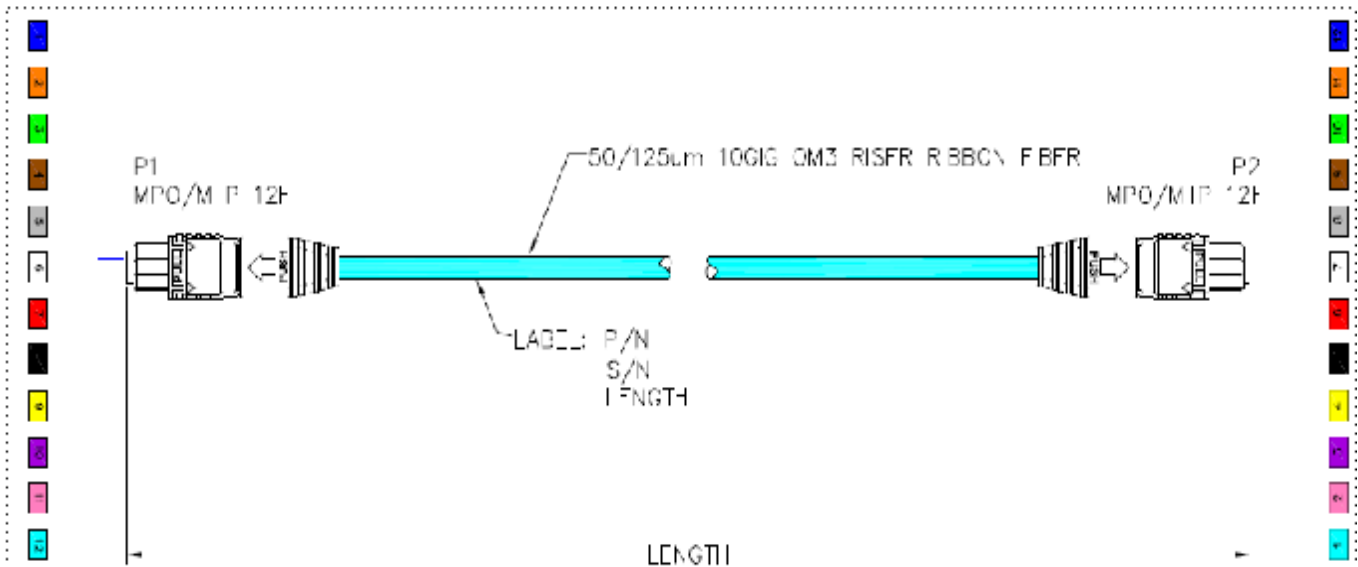


Figure 5-1: MPO/MTP 12 Position Fiber Cable

MTP/APC Fiber Cable for Use with QSFP+ PLR4 Transceivers

The MTP cable is a high performance MPO connector. This is a female to female Angled Polished Connector (APC) of cable type B with an 8-degree angled end-face and a diameter of 9/125 μ m. [Figure 5-2](#) provides details for MTP/APC cable for use with 40Gb QSFP+ PLR4 transceivers on the GigaVUE-TA10, GigaVUE-TA40, or GigaVUE-TA100 node.

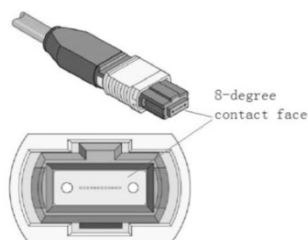
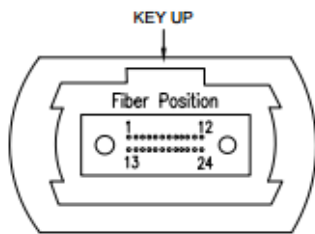
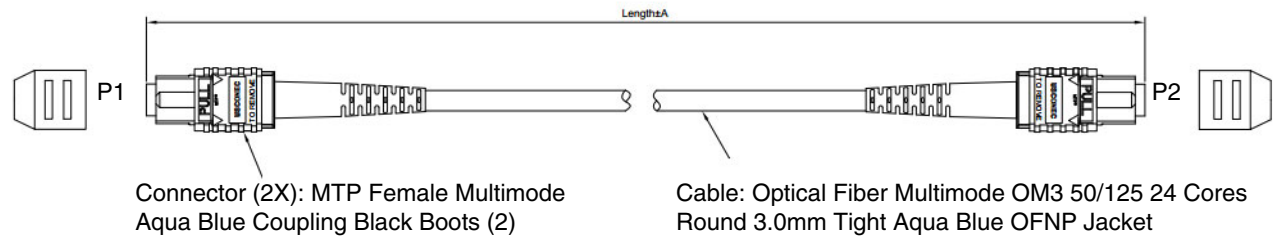


Figure 5-2: MTP/APC Cable

MPO/MTP 24 Position Fiber Cable for Use with SR10 Transceivers

This is a female to female Ultra Polished Connector (UPC) of cable type B. [Figure 5-3](#) provides cabling details for MPO/MTP 24 position fiber cable for use with 100Gb SR10 CXP transceivers.



P1	Jacket Color	P2
1	Blue	13
2	Orange	14
3	Green	15
4	Brown	16
5	Slate	17
6	White	18
7	Red	19
8	Black	20
9	Yellow	21
10	Violet	22
11	Rose	23
12	Aqua	24

P1	Jacket Color	P2
13	Blue 2	1
14	Orange 2	2
15	Green 2	3
16	Brown 2	4
17	Slate 2	5
18	White 2	6
19	Red 2	7
20	Black 2	8
21	Yellow 2	9
22	Violet 2	10
23	Rose 2	11
24	Aqua 2	12

Figure 5-3: MPO/MTP 24 Position Fiber Cable

GigaVUE TA Series Specifications

This appendix provides the physical specifications, power requirements and environmental specifications for the GigaVUE Traffic Aggregation nodes, GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, GigaVUE-TA100-CXP, and GigaVUE-TA200. Compliance for safety, emissions and immunity are also provided.

Refer to the following sections for details:

- *Physical Dimensions and Weight* on page 108
- *Power Requirements* on page 108
- *Environmental Specifications* on page 110
- *Standards and Protocols* on page 111
- *Compliance* on page 111
- *Warranty* on page 114
- *Regulatory Labels* on page 114

Physical Dimensions and Weight

The following table summarizes the dimensions for the GigaVUE Traffic Aggregation nodes, GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, GigaVUE-TA100-CXP, and GigaVUE-TA200:

Product	Height	Width	Depth	Weight (AC Version)
GigaVUE-TA10 with mounting brackets	1.74in (1RU) (4.42cm)	19.00in (48.26cm) with ears	Metal to Metal 18.12in (46.0cm)	19.05lb (8.64kg)
		17.32in (44cm) without ears	Including latches 19.25in (48.89cm)	
GigaVUE-TA40 with mounting brackets	1.74in (1RU) (4.42cm)	19.00in (48.26cm) with ears	Metal to Metal 18.12in (46.0cm)	20.15lb/ (9.14kg)
		17.32in (44cm) without ears	Including latches 19.25in (48.89cm)	
GigaVUE-TA100 with mounting brackets	1.74in (1RU) (4.42cm)	19.00in (48.26cm) with ears	Metal to Metal 18.12in (46.0cm)	22.99lb (10.43kg)
		17.32in (44cm) without ears	Including latches 19.25in (48.89cm)	
GigaVUE-TA100-CXP with mounting brackets	1.74in (1RU) (4.42cm)	19.00in (48.26cm) with ears	Metal to Metal 18.12in (46.0cm)	24.89lb (11.29kg)
		17.32in (44cm) without ears	Including latches 19.25in (48.89cm)	
GigaVUE-TA200 with two power supplies	3.48in (2RU) (8.84cm)	19.00in (48.26cm) with ears	Metal to Metal 19.68in (50cm)	33.6lb (15.24kg)
		17.32in (44cm) without ears	Including latches 21.25in (54cm)	

Power Requirements

Each GigaVUE TA Series node come standard with dual, load sharing power supplies. [Table B-1](#) to [Table B-5](#) summarize the electrical characteristics for the GigaVUE Traffic Aggregation nodes, GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, GigaVUE-TA100-CXP, and GigaVUE-TA200.

NOTE: Refer to [Connecting -48V DC Power Supplies on page 60](#) for instructions on how to connect -48V DC power supplies.

Table B-1: Power Requirements for GigaVUE-TA10

Power Configurations	1+1 Power: 2 Power Supply Modules
Max Power Consumption/ Heat Output	220 Watts; 751 BTU/hr

Table B-1: Power Requirements for GigaVUE-TA10

AC Power Supply Modules	Min/Max Voltage: 100V–127V AC, 200V–240V AC, 50/60Hz Max PSM Input Current: 5.8A@100V, 2.9A@200V
DC Power Supply Modules	Min/Max Voltage: -40.5 to -60V DC Max PSM Input Current: 24A@ -40.5V

Table B-2: Power Requirements for GigaVUE-TA40

Power Configurations	1+1 Power: 2 Power Supply Modules
Max Power Consumption/Heat Output	280 Watts; 954.8 BTU/hr
AC Power Supply Modules	Min/Max Voltage: 100V–127V AC, 200V–240V AC, 50/60Hz Max PSM Input Current: 5.8A@100V, 2.9A@200V
DC Power Supply Modules	Min/Max Voltage: -40.5V to -60V DC Max PSM Input Current: 24A@ -40.5V

Table B-3: Power Requirements for GigaVUE-TA100 and GigaVUE-TA100-CXP

Power Configurations	1+1 Power: 2 Power Supply Modules
Max Power Consumption/Heat Output	550 Watts; 1892.7 BTU/hr
AC Power Supply	Min/Max Voltage: 100V–127V AC, 200V–240V AC, 47-63Hz Max PSM Input Current: 9.4A@100V, 4.72A@200V
DC Power Supply	Min/Max Voltage: -40.5V to -60V DC Max PSM Input Current: 24A@40.5V

Table B-4: Power Requirements for GigaVUE-TA200

Power Configurations	1+1 Power: 2 Power Supply Modules
Max Power Consumption/Heat Output	1069 Watts; 3645.29 BTU/hr
AC Power Supply	Min/Max Voltage: 100V–127V AC, 200V–240V AC, 47-63Hz Max PSM Input Current: 13.8A@100V, 8.5A@200V
DC Power Supply	Min/Max Voltage: -36V to -72V DC Max PSM Input Current: 42A@-36V

Fan Tray Specification for GigaVUE-TA100 and TA100-CXP

The GigaVUE-TA100 and GigaVUE-TA100-CXP use a fan tray for cooling. [Table B-5](#) summarizes the characteristics of the fan tray.

Table B-5: GigaVUE-TA100 and TA100-CXP Fan Tray Specifications

Rated Voltage	12V DC
Input Power	Maximum 18W
Maximum Speed	19000 RPM
Type	Dual axial flow fans

Fan Tray Specification for GigaVUE-TA200

The GigaVUE-TA200 uses a fan tray for cooling. [Table B-6](#) summarizes the characteristics of the fan tray.

Table B-6: GigaVUE-TA200 Fan Tray Specifications

Rated Voltage	12V DC
Input Power	Maximum 96W
Maximum Speed	13200 RPM
Type	Tubeaxial (dual) 80mm x 80mm

Environmental Specifications

[Table B-7](#) summarizes the environmental specifications for the GigaVUE Traffic Aggregation nodes, GigaVUE-TA10 and GigaVUE-TA40. [Table B-8](#) summarizes the environmental specifications for the GigaVUE-TA100, GigaVUE-TA100-CXP, and GigaVUE-TA200.

Table B-7: Environmental Specifications for GigaVUE-TA10 and GigaVUE-TA40

Specification	Value
Operating Temperature	32°F to 104°F (0°C to 40°C)
Operating Relative Humidity	20% to 80%, non-condensing
Recommended Storage Temperature	-4°F to 158°F (-20°C to 70°C)
Recommended Storage Relative Humidity	15% to 85%, non-condensing
Altitude	Up to 10000ft (3.05km)

Table B-8: Environmental Specifications for GigaVUE-TA100, TA100-CXP, and TA200

Specification	Value
Operating Temperature	32°F to 104°F (0°C to 40°C)
Operating Relative Humidity	10% to 90%, non-condensing
Recommended Storage Temperature	-4°F to 158°F (-20°C to 70°C)
Recommended Storage Relative Humidity	15% to 85%, non-condensing
Altitude	Up to 10000ft (3.05km) for GigaVUE-TA100 and GigaVUE-TA100-CXP Up to 16405ft (5.00km) for GigaVUE-TA200

Standards and Protocols

IEEE 802.3-2012, IEEE 802.1Q VLAN, IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX, IEEE 802.3ab 1000BASE-T, IEEE 802.3z 1000BASE-X, IEEE 802.3ae 10000BASE-X, IEEE 802.3ba, RFC 783 TFTP, RFC 791 IP, RFC 793, TCP, RFC 826 ARP, RFC 854 Telnet, RFC 768 UDP, RFC 792 ICMP, SNMP v1/v2c, RFC 2131 DHCP client, RFC 1492 TACACS+, and support for IPv4 and IPv6.

Compliance

This section provides compliance information for GigaVUE Traffic Aggregation nodes, GigaVUE TA Series.

Safety

GigaVUE Traffic Aggregation nodes are compliant with the following safety regulations:

- UL 60950-1, 2nd Edition
- CAN/CSA C22.2 No. 60950-1-07, 2nd Edition
- EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013
- IEC 60950-1:2005 (2nd Edition) + Am 1:2009 + Am 2:2013
- BSMI (GigaVUE-TA100 and GigaVUE-TA200)
- CCC, EAC (GigaVUE-TA100 and GigaVUE-TA200)

Emissions

GigaVUE Traffic Aggregation nodes are compliant with the following emissions regulations:

- FCC Part 15, Class A

- VCCI Class A. Refer to [VCCI](#) on page 113. (not applicable on GigaVUE-TA100-CXP)
- EN 55032/CISPR 32 Class A
- Australia/New Zealand AS/NZS CISPR-32 Class A (not applicable on GigaVUE-TA100-CXP)
- KCC Class A (not applicable on GigaVUE-TA100-CXP)
- BSMI (GigaVUE-TA100 and GigaVUE-TA200)
- CCC, EAC (GigaVUE-TA100 and GigaVUE-TA200)

Immunity

GigaVUE Traffic Aggregation nodes are compliant with the following immunity regulations:

- ETSI EN300 386 V1.6.1:2012 (not applicable on GigaVUE-TA200)
- EN61000-4-2
- EN61000-4-3
- EN61000-4-4
- EN61000-4-5
- EN61000-4-6
- EN61000-4-8
- EN61000-4-11
- EN61000-3-2
- EN61000-3-3

Environmental

GigaVUE Traffic Aggregation nodes are compliant with the following environmental regulations:

- EU RoHS 6, EU directive 2011/65/EU
- NEBS Level 3 (GigaVUE-TA10, GigaVUE-TA40, and GigaVUE-TA100). Refer to [NEBS Level 3 Compliance](#) on page 119.

Security

GigaVUE Traffic Aggregation nodes are compliant with the following security certifications:

- FIPS 140-2 (GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, and GigaVUE-TA100-CXP). Refer to “FIPS 140-2 Compliance” in the *GigaVUE-OS CLI User's Guide*.
- UC APL (option available for GigaVUE-TA10 and GigaVUE-TA40). Refer to “UC APL Compliance” in the *GigaVUE-OS CLI User's Guide*.

- Common Criteria (option available for GigaVUE-TA10 and GigaVUE-TA40). Refer to “Common Criteria” in the *GigaVUE-OS CLI User's Guide*.

BSMI RoHS

The RoHS label for Taiwan BSMI for GigaVUE-TA200 is as follows:

設備名稱：乙太網交換機 Equipment name		型號（型式）：GigaVUE-TA200 Type designation (Type)				
單元 Unit	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛Lead (Pb)	汞 Mercury (Hg)	鎘 Cadmium (Cd)	六價鉻 Hexavalent chromium (Cr ⁶⁺)	多溴聯苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominate d diphenyl ethers (PBDE)
金屬部件 (Metal Parts)	—	○	○	○	○	○
電路模組 (Circuit Modules)	—	○	○	○	○	○
塑膠和聚合物部件 (Plastic and Polymeric parts)	○	○	○	○	○	○
電源元件 (Power Assemblies)	—	○	○	○	○	○
備考1. “超出0.1 wt %”及“超出0.01 wt %”係指限用物質之百分比含量超出百分比含量基準值。 Note 1: “Exceeding 0.1 wt %” and “exceeding 0.01 wt %” indicate that the percentage content of the restricted substance exceeds the reference percentage value of presence condition.						
備考2. “○”係指該項限用物質之百分比含量未超出百分比含量基準值。 Note 2: “○” indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.						
備考3. “—”係指該項限用物質為排除項目。 Note 3: The “—” indicates that the restricted substance corresponds to the exemption.						

VCCI

The Class A Information Technology Equipment (ITE) label for Japan is as follows:

Type of Equipment	User's Guide
A급 기기 (업무용 방송통신기자재)	이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.
Class A Equipment (Industrial Broadcasting & Communication Equipment)	This equipment is Industrial (Class A) electromagnetic wave suitability equipment and seller or user should take notice of it, and this equipment is to be used in the places except for home.

この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

この装置は、クラスA機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

警告使用者:
這是甲類的資訊產品, 在居住的環境中使用時, 可能會造成射頻干擾, 在這種情況下, 使用者會被要求採取某些適當的對策。

Translation of Statement for Class A VCCI-certified Equipment

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective action.

Warranty

Gigamon offers a range of premium support and extended services. For details regarding warranty, visit:
<https://www.gigamon.com/support-and-services/warranty>

Regulatory Labels

This section provides regulatory labels for GigaVUE TA Series nodes.

GigaVUE-TA10



GigaVUE-TA10

This area reserved for
Serial Number and Barcode

Change patent numbers to these: 7424018, 7436832, 7440467, 7792047, 7835358, 7889748, 8391285. Other patents pending.



상호명: Delta Networks, Inc.
기자재의 명칭 (모델명): GigaVUE-TA10
제조년월:
제조사/제조국: Delta Networks, Inc./중국



FCC: per section 15.19 (3) of 47 CFR part 15 subpart B Class A
This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
1) this device may not cause harmful interference, and
2) this device must accept any interference received, including interference that may cause undesired operation.

CAN ICES-3 (A)/NMB-3(A)
この装置は、クラス A 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A
产品名称/產品型號: GigaVUE-TA10
产品名稱/產品名稱: 以太网交换机/以太网交换机
额定輸入: 200~240Vac, 2.9A Max, 50/60Hz (每个电源的輸入)
製造商/製造商: 達創科技股份有限公司/達創科技股份有限公司
仅适用于在海拔2000m以下地区安全使用
此为A級产品, 在生活环境中该产品可能会造成无线电干扰。
在这种情况下可能需要用户对其它措施采取切实可行措施。

Supports dual, redundant, hot-swap power-supplies.
AC CONFIGURATION:
Input: 100-127 / 200-240V~, 5.8/2.9A, 50/60Hz (for each power supply)
Nom. Power Consumption: 220W
Nom. BTU Output: 751BTU/hr
DC CONFIGURATION:
Input: -10.5V ~ -50V / 24A-16A (for each power supply)
Nom. Power Consumption: 220W
Nom. BTU Output: 751BTU/hr
CAUTION: TO COMPLETELY REMOVE POWER FROM THE UNIT, FIRST TURN OFF POWER AND REMOVE POWER CABLES.
Attention: pour déconnecter complètement l'alimentation électrique de l'équipement il est d'abord nécessaire d'appuyer sur le bouton de coupure puis d'enlever les câbles électriques.



05410-17-10660

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400216-B1

GigaVUE-TA40



GigaVUE-TA40

This area reserved for
Serial Number and Barcode

Change patent numbers to these: 7424018, 7439832, 7440467, 7732047, 7838358, 7889748, 8391286. Other patents pending.



MSIP-REM-DNI-GigaVUE-TA40

상 호 명: Delta Networks, Inc.

기 자 재 의 영 정 (모 델 명): GigaVUE-TA40

제 조 년 월:

제 조 자 / 제 조 국 : Delta Networks, Inc. / 중국









FCC: per section 15.19 (3) of 47 CFR part 15 subpart B Class A
This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
1) this device may not cause harmful interference, and
2) this device must accept any interference received, including interference that may cause undesired operation.

CAN ICES-3 (A)/NMB-3(A)
この製品は、クラス A 情報技術製品です。この製品を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。
VCCI-A
产品型号/產品型號: GigaVUE-TA40
产品名称/產品名稱: 以太网交换机/以太网交换机
额定输入: 200-240Vac, 2.8A Max, 50/60Hz (每个电源的输入)
制造商/製造商: 达创科技股份有限公司/達創科技股份有限公司
仅适用于在海拔2000m以下地区安全使用
此为A级产品。在生活环境中该产品可能会造成无线电干扰。在这种情况下可能需要用户对其它干扰采取切实可行的措施。

Supports dual, redundant, hot-swap power-supplies.

AC CONFIGURATION:
Input: 100-127 / 200-240V~, 5.8/2.8A, 50/60Hz (for each power supply)
Nom. Power Consumption: 260W
Nom. BTU Output: 885.6 BTU/hr

DC CONFIGURATION:
Input: -40.5V ~ -60V / 24A ~ 16A (for each power supply)
Nom. Power Consumption: 280W
Nom. BTU Output: 954.8 BTU/hr

CAUTION: TO COMPLETELY REMOVE POWER FROM THE UNIT, FIRST TURN OFF POWER AND REMOVE POWER CABLES.
Attention: pour déconnecter complètement l'alimentation électrique de l'équipement il est d'abord nécessaire d'appuyer sur le bouton de coupure puis d'enlever les câbles électriques.



05410-17-10660

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400215-B1

GigaVUE-TA100



GigaVUE-TA100

This area reserved for
Serial Number and Barcode

Change patent numbers to these: 7424018, 7439832, 7440467, 7732047, 7838358, 7889748, 8391286. Other patents pending.



MSIP-REM-DNI-GigaVUE-TA100

상 호 명: Delta Networks, Inc.

기 자 재 의 영 정 (모 델 명): GigaVUE-TA100

제 조 년 월:

제 조 자 / 제 조 국 : Delta Networks, Inc. / 중국









FCC: per section 15.19 (3) of 47 CFR part 15 subpart B Class A
This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
1) this device may not cause harmful interference, and
2) this device must accept any interference received, including interference that may cause undesired operation.

CAN ICES-3 (A)/NMB-3(A)
この製品は、クラス A 情報技術製品です。この製品を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。
VCCI-A
产品型号/產品型號: GigaVUE-TA100
产品名称/產品名稱: 以太网交换机/以太网交换机
额定输入: 200-240Vac, 4.72A Max, 50/60Hz (每个电源的输入)
制造商/製造商: 达创科技股份有限公司/達創科技股份有限公司
仅适用于在海拔2000m以下地区安全使用
此为A级产品。在生活环境中该产品可能会造成无线电干扰。在这种情况下可能需要用户对其它干扰采取切实可行的措施。

Supports dual, redundant, hot-swap power-supplies.

AC CONFIGURATION:
Input(輸入): 100-127 / 200-240V~, 9.4/4.72A, 50/60Hz (for each power supply)
Nom. Power Consumption: 540W
Nom. BTU Output: 1841.4 BTU/hr

DC CONFIGURATION:
Input(輸入): -40.5V ~ -60V / 24A ~ 16A (for each power supply)
Nom. Power Consumption: 550W
Nom. BTU Output: 1852.65 BTU/hr

CAUTION: TO COMPLETELY REMOVE POWER FROM THE UNIT, FIRST TURN OFF POWER AND REMOVE POWER CABLES.
Attention: pour déconnecter complètement l'alimentation électrique de l'équipement il est d'abord nécessaire d'appuyer sur le bouton de coupure puis d'enlever les câbles électriques.





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GigaVUE TA Series Specifications






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GigaVUE-TA100-CXP





GigaVUE-TA100-CXP

This area reserved for
Serial Number and Barcode

FCC: per section 15.19 (3) of 47 CFR part 15 subpart B Class A
 This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
 1) this device may not cause harmful interference, and
 2) this device must accept any interference received, including interference that may cause undesired operation.
 CAN ICES-3 (A)/NMB-3(A)

Supports dual, redundant, hot-swap power-supplies.
 AC CONFIGURATION:
 Input: 100-127 / 200-240V~, 9.44, 7.2A, 50/60Hz (for each power supply)
 Nom. Power Consumption: 540W
 Nom. BTU Output: 1841.4 BTU/hr
 DC CONFIGURATION:
 Input: -40.5V  -60V  /34A-16A (for each power supply)
 Nom. Power Consumption: 550W
 Nom. BTU Output: 1892.65 BTU/hr
CAUTION: TO COMPLETELY REMOVE POWER FROM THE UNIT, FIRST TURN OFF POWER AND REMOVE POWER CABLES.
 Attention : pour déconnecter complètement l'alimentation électrique de l'équipement il est d'abord nécessaire d'appuyer sur le bouton de coupure puis d'enlever les câbles électriques.

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400346-A0

GigaVUE-TA200



GigaVUE-TA200

This area reserved for
Serial Number and Barcode

Change patent numbers to these: 7424018, 7436832, 7440467, 7792047, 7835358, 7889748, 0391286, Other patents pending.







상 호 명: Gigamon Inc.
 가지처의 명칭 (모델명): GigaVUE-TA200
 제조년월:
 제조자/제조국 : Gigamon Inc./대한민국

FCC: per section 15.19 (3) of 47 CFR part 15 subpart B Class A
 This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
 1) this device may not cause harmful interference, and
 2) this device must accept any interference received, including interference that may cause undesired operation.
 CAN ICES-3 (A)/NMB-3(A)
 この装置は、クラスA機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A
 产品型号/產品型號: GigaVUE-TA200
 产品名称/產品名稱: 以太网交换机/以太网交换机
 额定输入: 200-240Vac, 5A, 47-63Hz (每个电源的输入)
 制造商/製造商: 达创科技股份有限公司/達創科技股份有限公司
 此为A级产品, 在生活环境中该产品可能会造成无线电干扰, 在这种情况下可能需要用户对其干扰采取确实可行措施。
 (警告: 多电源供电, 断开电源时多个电源同时断开)

Supports dual, redundant, hot-swap power-supplies.
 AC CONFIGURATION:
 Input (輸入): 100-127 / 200-240V~, 10.5A, 47-63Hz (for each power supply)
 Nom. Power Consumption: 1000W
 Nom. BTU Output: 3410 BTU/hr
 DC CONFIGURATION:
 Input (輸入): -36V  -72V  /42A (for each power supply)
 Nom. Power Consumption: 1069W
 Nom. BTU Output: 3645.29 BTU/hr
CAUTION: TO COMPLETELY REMOVE POWER FROM THE UNIT, FIRST TURN OFF POWER AND REMOVE POWER CABLES.
 Attention : pour déconnecter complètement l'alimentation électrique de l'équipement il est d'abord nécessaire d'appuyer sur le bouton de coupure puis d'enlever les câbles électriques.

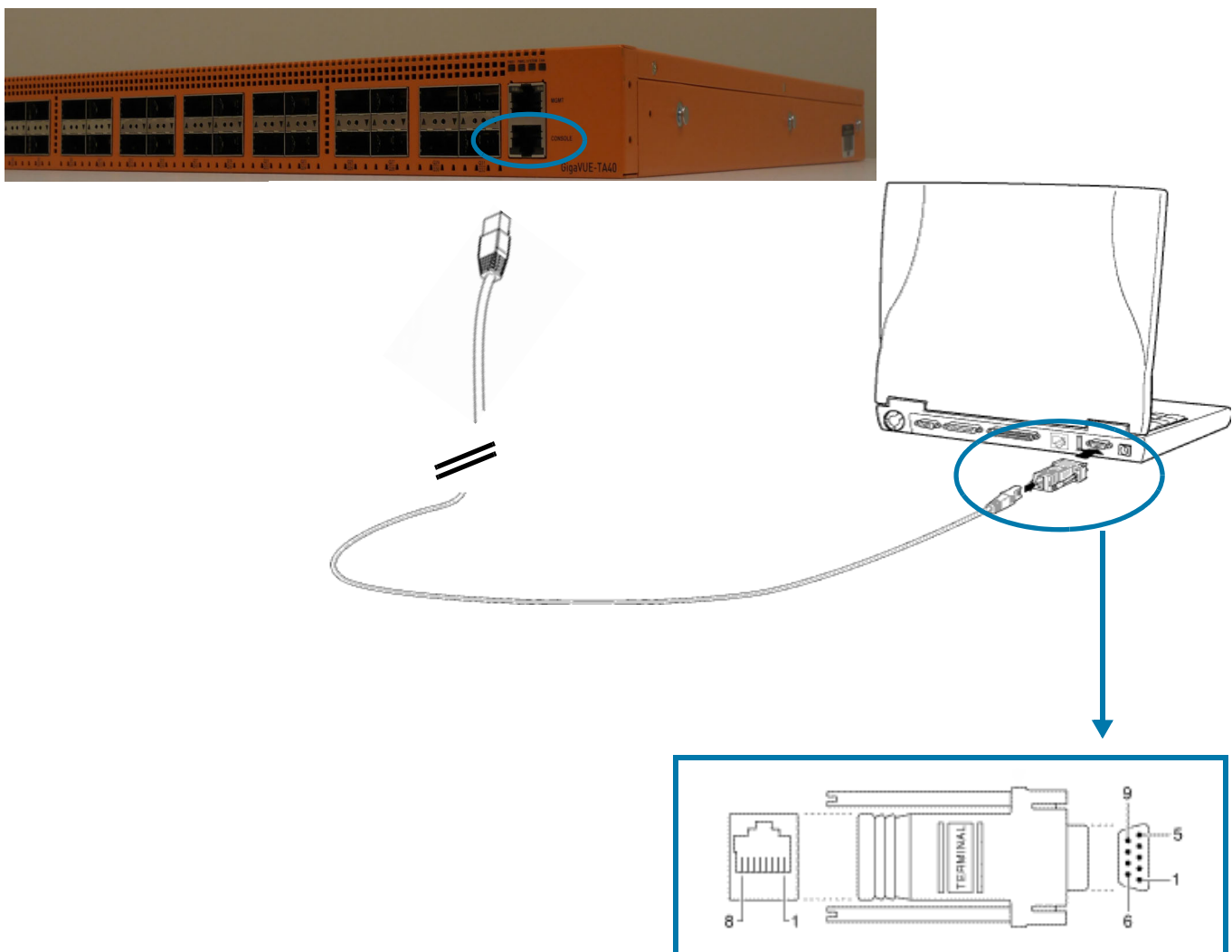
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Console Port Signaling and Cabling

This appendix provides the pinouts for the RJ-45-to-RJ-45 rollover cable and RJ-45-to-DB-9 adapter provided with the GigaVUE Traffic Aggregator for connections from the system's console port to a PC's COM port.

The figure below shows how to connect the RJ-45-to-RJ-45 rollover cable from the GigaVUE Traffic Aggregator's console port to a COM port on a PC using the RJ-45-to-DB-9 adapter.



The table below lists the pinouts for the connection illustrated above.

Console Port from RJ45 Jack	RJ-45-to-RJ-45 Rollover Cable		RJ-45-to-DB-9 Terminal Adapter	Console Device on PC
Signal	RJ-45 Pin	RJ-45 Pin	DB-9 Pin	Signal
N/A	1	8	8	N/A
N/A	2	7	6	N/A
TxD	3	6	2	RxD
GND	4	5	5	GND
GND	5	4	5	GND
RxD	6	3	3	TxD
N/A	7	2	4	N/A
N/A	8	1	7	N/A

NEBS Level 3 Compliance

This appendix provides installation instructions for GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, and GigaVUE-TA200 Network Equipment-Building System (NEBS) Level 3 compliance. Refer to the following:

- [Installation Instructions GigaVUE-TA10, TA40, TA100, TA200 on page 119](#)

Installation Instructions GigaVUE-TA10, TA40, TA100, TA200

The following sections detail installation instructions for GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, and GigaVUE-TA200.

Intrabuilding or Intra-connection for GigaVUE-TA10

WARNING: The intra-building ports:

- RJ45: Management port, Console port
- 1G/10G SFP/SFP+: X1 - X48
- 40G QSFP+: Q1-Q4

GigaVUE-TA10 equipment or subassembly are suitable for connection to intrabuilding or unexposed wiring or cabling only. The intra-building port(s) of the equipment or subassembly **MUST NOT** be metalically connected to interfaces that connect to the OSP or its wiring. These interfaces are designed for use as intra-building interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE, Issue 6) and require isolation from the exposed OSP cabling. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metalically to OSP wiring.

Intrabuilding or Intra-connection for GigaVUE-TA40

WARNING: The intra-building ports:

- RJ45: Management port, Console port
- 40G QSFP+: Q1-Q32

GigaVUE-TA40 equipment or subassembly are suitable for connection to intrabuilding or unexposed wiring or cabling only. The intra-building port(s) of the equipment or subassembly **MUST NOT** be metallicity connected to interfaces that connect to the OSP or its wiring. These interfaces are designed for use as intra-building interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE, Issue 6) and require isolation from the exposed OSP cabling. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metallicity to OSP wiring.

Intrabuilding or Intra-connection for GigaVUE-TA100

WARNING: The intra-building ports:

- RJ45: Management port, Console port
- 100G QSFP28: C1-C32
- 40G QSFP+: C1-C32

GigaVUE-TA100 equipment or subassembly are suitable for connection to intrabuilding or unexposed wiring or cabling only. The intra-building port(s) of the equipment or subassembly **MUST NOT** be metallicity connected to interfaces that connect to the OSP or its wiring. These interfaces are designed for use as intra-building interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE, Issue 6) and require isolation from the exposed OSP cabling. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metallicity to OSP wiring.

Intrabuilding or Intra-connection for GigaVUE-TA200

WARNING: The intra-building ports:

- RJ45: Management port, Console port
- 100G QSFP28: C1-C64
- 40G QSFP+: C1-C64

GigaVUE-TA200 equipment or subassembly are suitable for connection to intrabuilding or unexposed wiring or cabling only. The intra-building port(s) of the equipment or subassembly **MUST NOT** be metallicity connected to interfaces that connect to the OSP or its wiring. These interfaces are designed for use as intra-building interfaces only (Type 2 or Type 4 ports as described in GR-1089-CORE, Issue 6) and require isolation from the exposed OSP cabling. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metallicity to OSP wiring.

Intrabuilding Ports (RJ45)

WARNING: The intrabuilding ports (RJ45) shall be connected to shielded and grounded cables at both ends.

Class A2 Voltage Accessibility

The GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, or GigaVUE-TA200 shall be located in a restricted access location where only crafts personnel are allowed access.

Class B Voltage Accessibility

The GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, or GigaVUE-TA200 shall be located in a restricted access location where only crafts personnel are allowed access.

Equipment Grounding Systems

The GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, or GigaVUE-TA200 shall be installed and connected to the (CBN).

Communication Equipment Grounding

The GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, or GigaVUE-TA200 is suitable for connection to the (Central Office and CPE).

Bonding of Battery Return (BR) Input Terminals

The battery returns of the GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, or GigaVUE-TA200 shall be connected as (DC-I).

Connections

- a. The GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, or GigaVUE-TA200 shall be grounded via a copper ground conductor #6 AWG for CPE installation.
- b. All bare grounding connection points to the GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, or GigaVUE-TA200 shall be cleaned and coated with an antioxidant solution before connections are made.
- c. All surfaces on the GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, or GigaVUE-TA200 that are unplated shall be brought to a bright finish and treated with an antioxidant solution before connections are made.
- d. All non-conductive surfaces on the GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, or GigaVUE-TA200 shall be removed from all threads and connection points to ensure electrical continuity.
- e. Multiple connectors shall not be secured by the same bolt assemblies.

- f. Unplated connection surfaces that are to be intentionally joined to form a bonding or grounding path shall be brought to a bright finish and then coated with an antioxidant before they are joined (electrical connections).
- g. Listing fastening hardware shall be compatible with materials being joined and shall preclude loosening deterioration, and electrochemical corrosion of the hardware and joined materials.
- h. Non-conductive coatings (such as paint, lacquer, and enamel) on the equipment to be bonded or grounded shall be removed from threads and other contact surfaces to assure electrical continuity.
- i. GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, or GigaVUE-TA200 utilizes a Spade width 0.32in/.81cm with a Standard Wire 14-16 (AWG) that utilizes 5in-lbs of torque to secure it to the frame and EUT. Only listed two-hole compression-type connectors shall be used in making connection to flat surfaces (such as bus bars, frames, racks, or cabinets). Torquing and bolts assembly requirements for securing the connector shall be as specified by the connector supplier.
- j. Anti-rotation devices, such as lock washers, will be used on grounding lugs to minimize the possibility of loosening from rotation during installation and maintenance activities.

Input AC/DC Voltage

The GigaVUE-TA10, GigaVUE-TA40, GigaVUE-TA100, or GigaVUE-TA200 is capable of operating input 100-240V AC, 15-6A, 50-60Hz and/or -48V DC, 10A slow-blow, 10A @ -48V DC.

Commercial Power Ports

The manufacturer recommends that Surge Protection Device (SPD) is intended to be used with AC-power equipment. The SPD, if used, is installed at the AC power entrance (Refer to definition in the NEC).

Maintenance

CAUTION: Remove all power sources before servicing. (TO COMPLETELY REMOVE POWER FROM THE UNIT, FIRST TURN OFF THE POWER SWITCH AND REMOVE BOTH POWER CABLES).

Additional Sources of Information

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

- [Documentation on page 123](#)
- [Documentation Feedback on page 123](#)
- [Contacting Technical Support on page 124](#)
- [Contacting Sales on page 124](#)
- [The Gigamon Community on page 124](#)

Documentation

Gigamon provides additional documentation for the GigaVUE TA Series on the [Gigamon Customer Portal](#).

Document	Summary
GigaVUE-OS CLI Reference Guide	Describes how to configure and operate the GigaVUE-OS software from the command-line interface.
GigaVUE-OS H-VUE Administration Guide	Describes how to use the Web-based H-VUE interface to administer the GigaVUE H Series and GigaVUE TA Series software.
GigaVUE-OS H-VUE Online Help	Accessible through H-VUE, describes the Web-based GUI for the GigaVUE H Series.
GigaVUE-OS Upgrade Guide	Describes how to upgrade a GigaVUE H Series or a GigaVUE TA Series node to the latest release.
GigaVUE-FM User's Guide	Describes how to install, deploy, and operate the GigaVUE® Fabric Manager (GigaVUE-FM).
GigaVUE-OS Release Notes	Describes new features, fixed and known issues in the release.

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>

Contacting Technical Support

See <http://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.

Contacting Sales

Table i shows how to reach the Sales Department at Gigamon.

Table i: Sales Contact Information

Telephone	+1.408.831.4025 (US Pacific Time)
Sales	inside.sales@gigamon.com

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