

G-TAP A Series 2 Hardware Installation Guide

GigaVUE H Series

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Change Notes

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

	Document Version	Date Updated	Change Notes
5.9.00	1.2	04/16/2020	 Updated Connections topic with grounding screw details . Fixed file name issues
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5.9.00	1.0	04/3/2020	Original release of this document with 5.9.00 GA.

Change Notes

Contents

G-TAP A Series 2 Hardware installation Guide	I
Change Notes	3
Introducing G-TAP A Series 2	6
G-TAP A-TX21 Overview	7
G-TAP A-TX21 Equipment	8
Introducing the G-TAP A-TX21 Chassis	8
Chassis Cooling	9
Ports & LEDs	10
G-TAP A-TX21 Specifications	12
Power Adapter Specifications	13
Battery Specification	13
Assembling G-TAP A-TX21	14
Installing and Removing a Fan Tray	14
Rack-Mounting G-TAP A-TX21	15
Safety Precautions	16
Rack-Mounting Procedure	17
Connecting and Configuring G-TAP A-TX21	18
Connecting Power to the G-TAP A-TX21	18
Remove or Replace the Power Adapter	19
Installing the G-TAP A-TX21 Battery	19
Connecting Console and Mgmt Ports	21
Connecting to the G-TAP A-TX21 CLI	21
Access the Command-Line Interface over the Console Port	22
Run the Jump-Start Script	23
Initial User Account Configuration	24
Need to Change Any Settings?	
Command Line Basics	
Configuring Network/ TAP Ports on the G-TAP A-TX21	28

SNMP Trap Events	29
Tapping a Link with G-TAP A-TX21	30
Registering G-TAP A-TX21 with GigaVUE- FM	31
Connecting a G-TAP A-TX21 to GigaVUE-FM	31
Add a Physical Node	31
Managing the G-TAP A-TX21 Node	31
System Compliance	34
Safety	34
Electromagnetic Regulations	34
Power Supply Markings	35
Installation Instructions G-TAP A-TX21	35
Intrabuilding or Intra-connection for G-TAP A-TX21	35
Intrabuilding Ports (RJ45)	35
Class A2 Voltage Accessibility	35
Class B Voltage Accessibility	35
Equipment Grounding Systems	36
Communication Equipment Grounding	36
Bonding of Battery Return (BR) Input Terminals	36
Connections	36
Input AC/DC Voltage	37
Commercial Power Ports	37
Maintenance	37
Additional Sources of Information	38
Documentation	38
How to Download PDFs from My Gigamon	40
Documentation Feedback	41
Contact Technical Support	41
Contact Sales	41
Premium Support	41
The Gigamon Community	41

Introducing G-TAP A Series 2

G-TAP A-TX21 is the first installment in a line of active TAPs from G-TAP A Series 2 , that are designed to eliminate network link downtime on network connections , monitoring link state and power state of connected devices, as well as, providing network security . This section introduces G-TAP A-TX21 with a detailed description on the features , functions and an orientation to the physical layout of the TAP .

G-TAP A-TX21 Overview

The G-TAP A-TX21 is an active network TAP that mirrors 100% of network traffic,implements the "Always-On" architecture, has increased density and improved security. The new G-TAP A-TX21 will function on GigaVUE-OS (X86 base) used by the GigaVUE H Series, and can be managed in G-TAP A Series 2.

A network TAP is a hardware component device that connects directly to the cabling infrastructure to split or copy packets of network to use in analysis, security or general network management. Active TAPs are a type of network TAP that require power source to regenerate signals. These TAPs provide visibility to sections of the network that would otherwise go unmonitored.

Active taps (G-TAP A-TX21) offer battery backup to extend usage of the TAP during power failures. During a power outage, an active TAP cannot regenerate the signal, so it becomes a point of failure. G-TAP A-TX21 incorporates bypasses to mitigate this issue. When the battery begins to die, the TAP will offer additional failover capabilities

For example, when G-TAP A-TX21 loses power, electromagnetic relays fall into place to physically close a link to allow traffic to continue flowing through the network. The monitoring traffic stops, but at least the network traffic is protected. Do be aware that when the relay closes, a renegotiation takes place so a few packets would be affected

TAP and data diode function as illustrated below.

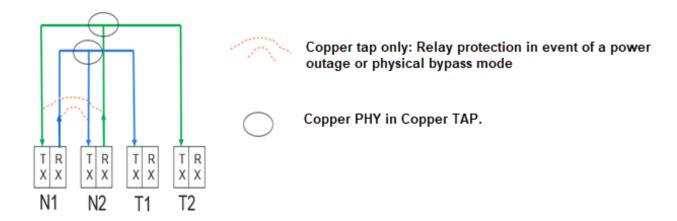


Figure 1: TAP and Diode Function

G-TAP A-TX21 Equipment

The G-TAP A Series 2 introduces the following TAP models:

G-TAP A-TX21

G-TAP A-TX21

- 1 Rack Unit Footprint
- Four Copper Taps (10 M /100 M /1000 M). Each TAP has two network ports and two tool ports.
- 2 x 40 mm Fans
- Front to Rear airflow
- External AC/DC power adapter
- Increased Security (SSH and SNMPv3 support)
- Supported by GigaVUE-OS
- Manageable from GigaVUE-FM

Introducing the G-TAP A-TX21 Chassis

The G-TAP A-TX21 chassis consists of a 1RU, 8.5" wide chassis with management, network, and tool ports at the front and power connections at the rear. G-TAP A-TX21 Front Chassis shows the ports at the front of the chassis

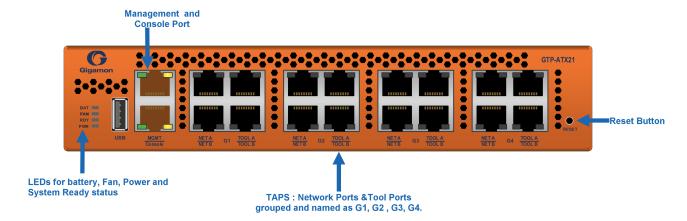


Figure 2: The G-TAP A-TX21 Front Chassis

G-TAP A-TX21 Rear Chassis shows the rear of the chassis which includes fans and power supply modules.

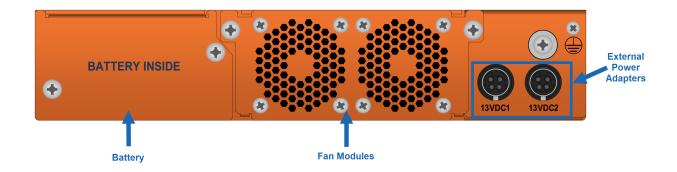


Figure 3: The G-TAP A-TX21 Rear Chassis

Chassis Cooling

G-TAP A-TX21 has one fan module in chassis. The fan module has 2×40 mm fans assembly and a PCB assembly with protection mechanism on main board . The fan assemblies will plug into the main board directly. The chassis is designed for front to back airflow with fans on the rear of the chassis drawing cool air from the front

The fans would run at 50 percentage of maximum RPM at the start of chassis . The temperature sensor has unique thresholds such as ;Start Ramp, Max Speed, OverTemp and Shutdown. If temperature is higher than the threshold, the software would shut down the chassis. If a removed or a failed fan tray is running on the system, then the software will detect a temperature rise and trigger the shutdown at the appropriate measurement.

Ports & LEDs

The Port description and LED status of G-TAP A-TX21 are as described in below tables G-TAP A-TX21 Chassis Ports and G-TAP A-TX21 Chassis LED Status respectively.

Ports	Description
USB Port	The USB port is used to upgrade software using a software image on an external USB drive.
Management Ports	The Standard 10/100/1000 RJ45 Ethernet port supports remote connections to the GigaVUE-OS using SSH .
	Note: Power over Ethernet connections (PoE) are not applicable for G-TAP A-TX21.
Console Ports	Initial tap configuration is performed in the G-TAP CLI over the serial RJ-45 Console port. Serial Console port accepts terminal connections for configuration of G-TAP A Series settings, including time, network, and SNMP settings.
Network & Tool Ports	The network ports tap the link .There are two network ports, NA, NB for each TAP ports .Tool ports feed the tapped data to connected tools. There are two tool ports, TA, TB .The relays or cross-point switches enable the bypass between network port NA and network NB when power is down and the backup battery drops below 5% of charge capacity. Network ports allow POE /POE + pass through .
Reset Button	The reset button allows to hard reset the chassis of TAP.

Table 1: G-TAP A-TX21 Chassis Ports

LED Name	Color	Description
System LED	OFFSolid GreenSolid Red	No Power to SystemNormal OperationAlarm
Fan Status	OFFGreenRed	Fan Tray AbsentNormal OperationFan Failed

G-TAP A Series 2 Hardware Installation Guide

LED Name	Color	Description
Power	OFF Solid Green	Power is DisconnectedNormal Operation
Battery	OFFSolid GreenBlinking GreenRed	 Battery Absent Normal Operation Battery Test is running Battery charge is less than 25%.

Table 2: G-TAP A-TX21 Chassis LED Status

G-TAP A-TX21 Specifications

This section describes the physical ,environmental , power adapter and battery management specifications of G-TAP A-TX21 .Refer to Physical Dimensions and Weight and Environmental Specifications for details:

Table 3: Physical Dimensions and Weight

Specification	Value
Width	8.75"
Height	1.75"
Depth	10.25"
Weight	5 .5 lbs
Weight (Shipping)	8.64 lbs

Table 4: Environmental Specifications

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 15,000ft. (4.6km)

Power Adapter Specifications

G-TAP A-TX21 uses external AC-DC desktop power adapters that provides 1+1 redundancy. The power adapters are operational for the normal working of chassis and if one of the adapters fails, the other adapter provides the required power to system. One power supply fail, will not cause an interruption on the expected performance of the chassis. The shipment package will include only one adapter, please order beforehand to receive the redundant adapter.

The power adapter specifications for G-TAP A-TX21 are explained in the table below:

Table 5: Power Adapter Specifications

Input	90~264 VAC
AC input plug	Available in multiple regions, e.g. US, EU, UK, and Australia
Output	13 VDC @ (100W ~ 120W),
Temperature range	5~45°C
Efficiency standard level	VI
Compliance	FCC, CE, UL, ROHS, please see chapter System Compliance for details.

Battery Specification

G-TAP A-TX21 offers backup battery up-to one hour to continue normal operation after an external power failure .If the battery shuts down before the external power can recover, the network ports will be bypassed by mechanical relays, all other ports including tool ports, will be shut down.

Note: Battery back-up power is guaranteed for at least forty-five minutes .

Assembling G-TAP A-TX21

IMPORTANT: Always use an ESD -preventive wrist or ankle strap and ensure that it makes good skin contact when installing or removing tap and its Fan, battery and adapter. The strap can be connected to one of the following:

- ESD wrist strap connector.
- Any unpainted surface on the chassis.

Installing and Removing a Fan Tray

The G-TAP A-TX21 is shipped with its fan tray installed. The fan tray is field-replaceable in case one of the fan fails. During normal operation, to stop the fan use GigaVUE-FM or GigaVUE-OS CLI rather than fan tray removal. Follow the below steps to install or remove a fan tray:

1. Place the tap upright on a flat surface or on rack.

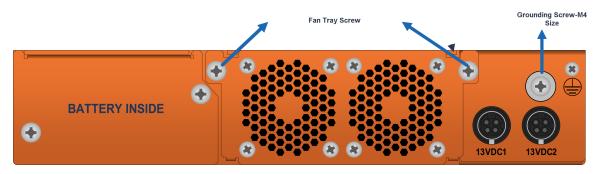
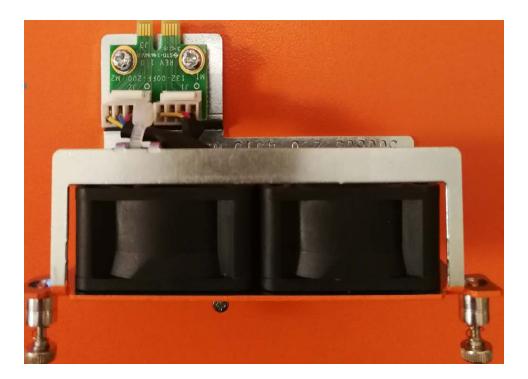


Figure 4: G-TAP A-TX21 Rear Chassis

- 2. Loosen the screws on the fan tray.
- 3. Gently pull the fan tray out.



- 4. Insert the new fan tray in to the chassis with care.
- 5. Tighten the screws .If the fan was stopped by command before fan replacement, please restart fan after tightening the screw.

Note: Fan tray replacement must be done in two minutes to avoid running the system from over temperature or heating.

Rack-Mounting G-TAP A-TX21

This section describes how to rack-mount the G-TAP A-TX21 chassis in a standard 1RU rack space using the hardware provided with the chassis. You can install the G-TAP A-TX21 two-post racks with a minimum depth of 7 inches.

Safety Precautions

Before you get started rack-mounting the G-TAP A-TX21, make sure you have read the following safety precautions:

- 1. There are a wide variety of racks available on the market.
- 2. Consult your rack vendor for mounting instructions before installing the G-TAP A-TX21. Ensure you install any stabilizers provided for the rack before installing the chassis. Unsecured racks can tip over and cause injury or death.
- 3. Ensue that you install devices from the bottom up with the heaviest devices at the rack bottom.
- 4. Make sure you provide adequate ventilation to the nodes installed in the rack.

Rack-Mounting Procedure

The G-TAP A-TX21 is shipped with its rack ears (and screws) attached. Install the rack ears facing towards the node for a front-mounting position. You can reverse the direction of the rack-ears to center-mount the node.

Use the following procedure to rack-mount G-TAP A-TX21:

1. Decide whether you want to front-mount or center-mount the chassis and whether you want to mount single tap or two taps together. Refer Rack Ears for Front Mount , to center-mount reverse the Rack ears.

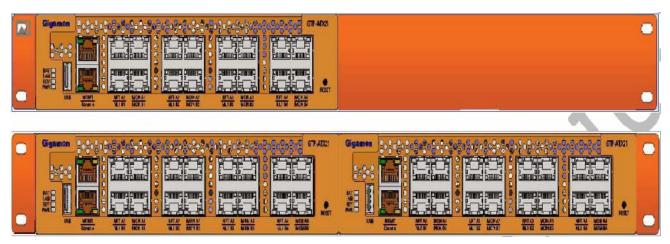


Figure 5: Rack Ears for Front Mount

- 2. Make sure you have not installed battery pack in the chassis yet. Gigamon recommends rack-mounting the G-TAP A-TX21 before installing battery pack to make it easier to handle the chassis during installation.
- 3. Select a suitable location for the rack that will hold the G-TAP A-TX21 chassis. Choose a location that is clean, dust free, and well-ventilated. You will need access to grounded power sources. Avoid areas where heat, electrical wire, and electromagnetic fields are generated. Plan for enough clearance in front of a rack so you can access the ports easily approximately 25 inches (63.50 cm) and enough clearance in the back of the rack to allow sufficient airflow and installation of the rear components such as power supply and battery.
- 4. Carefully lift the chassis into the rack and place a screw on each side to hold the chassis.
- 5. Tighten the screws and add additional screws to secure the node

The G-TAP A-TX21 comes with one shot rack ear, one long rack ear, and one splicer plate. Install single chassis with one shot ear and one long ear; and to install two chassis together, first install splicer and then install taps with two shot rears.

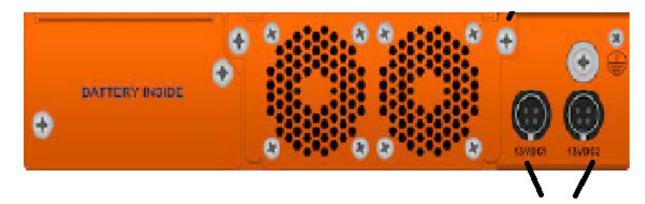
Connecting and Configuring G-TAP A-TX21

This section describes how to assemble, connect, and configure the G-TAP A-TX21 device.

Connecting Power to the G-TAP A-TX21

The G-TAP A-TX21 uses AC/DC adapter, and the 1+1 redundant configuration is optional . To operate the node only a single power supply module is required . The steps to connect power adapters are as follows:

1. Plug power adapter DC header into each power input modules at the rear of the G-TAP A-TX21.



Power inputs

- 2. Plug an approved C5 power cable into each of the power adapter. Plug the other end of the power cables into a power source that can supply adequate power. For optimal power protection, plug the power adapters into separate circuits.
- 3. When connecting to an external AC power source, ensure that a Surge Protective Device (SPD) is installed at the AC power inlet.
- 4. If you have not installed the battery pack, the power is turned on when the adapter is plugged in, and power is turned off when the adapter is removed. If you have installed the battery, G-TAP A-TX21 will remain always on until battery drains.

To remove or replace a power adapter, refer to Remove or Replace the Power Adapter

Remove or Replace the Power Adapter

To remove or replace a power adapter follow below steps:

- 1. Disconnect the AC power cord to power down the adapter.
- 2. Disconnect adapter's DC header.
- 3. If new adapter is needed, replace the adapter and connect it back.
- 4. Repeat the first and second steps for other power adapter in the G-TAP A-TX21 chassis.

Refer Installing the G-TAP A-TX21 Battery to install the battery.

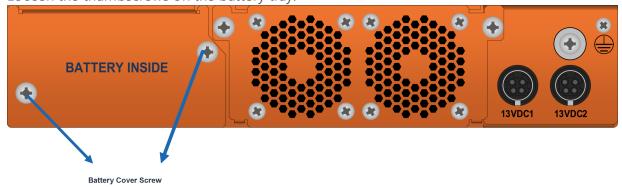
Installing the G-TAP A-TX21 Battery

The G-TAP A-TX21 is shipped with its backup battery uninstalled. The instructions below helps to install the backup battery. The backup battery provides a fail-safe in case all primary power sources (AC, DC) are unavailable. Primary power sources constantly charge the backup battery so it's ready to consume the power load in the event of a power failure on the primary sources. Battery charging from empty to full will take up to three hours

Note: You can install the battery without disconnecting any existing power connections.

Install the backup battery as follows:

- 1. Locate the backup battery in your product shipment.
- 2. Place the tap upright on a flat surface.
- 3. Loosen the thumbscrews on the battery tray.



4. Remove tape completely from golden finger of battery tray. After tape removal, handle the battery with care, to avoid golden finger's contact with any metal surface.

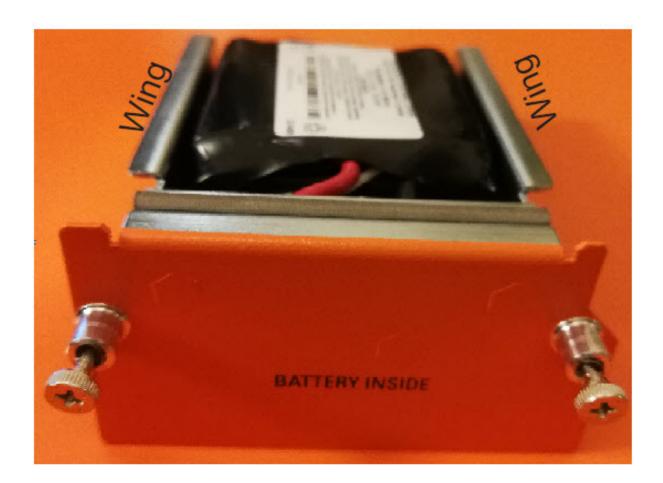
5. Remove edge card protection tape from battery pack.

battery card guides



Battery cover removed

6. Align battery pack's wings to the card guides on the chassis and fully insert battery pack in chassis .



7. Orient the battery tray to insert it into the chassis

8. Slide the battery tray into the battery slot. When the battery is fully installed, you should be able to read the text on the battery tray.

Power supply to the G-TAP A-TX21 is ensured with the AC/DC desktop adapters that would provide 1+1 redundancy and battery. In shipment package, only one adapter is included, please refer to the SKU adapter data-sheet to order redundant one.

CAUTION: ALWAYS USE BATTERIES PROVIDED BY Gigamon Inc. RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

When a battery is installed to a G-TAP A-TX21 for the first time, it is recommended that you do a manual battery exercise cycle to ensure that battery management is set to the normal condition. The battery exercise cycle can be done by running BET command either in GigaVUE-FM or in CLI.

Connecting Console and Mgmt Ports

G-TAP A-TX21 TAPs include both a serial Console port and a 10/100/1000 Mgmt port .Follow the below instructions to connect the Console and Mgmt ports:

- 1. Connect the RJ45 end of the DB9-RJ45 serial cable, to the Console port.
- 2. Connect the DB9 end of the cable to a COM port on a PC or terminal server.
- 3. Use a standard Ethernet cable to connect the Mgmt port to a network with access to a destination station for SNMP traps.

Note: Auto-negotiation is always enabled on the G-TAP A-TX21 node's Mgmt port. To avoid duplex mismatches, make sure auto-negotiation is also enabled on the network port to which you connect the Mgmt port.

Connecting to the G-TAP A-TX21 CLI

The initial configuration of the G-TAP A-TX21 is performed over the Console port. Once you have used the Console port to configure the Mgmt port's network properties, you can configure the TAP remotely over the Mgmt port's network connection. The same commands are available in the command-line interface regardless of whether you use the Console or Mgmt port.

Note: You must configure the Mgmt port in order to send SNMP traps and download application images. These features are not available over the Console port

Access the Command-Line Interface over the Console Port

Use the console port on the left side of the base chassis to access the G-TAP A-TX21 as follows:

- 1. Make the basic power and console cable connections described in Connecting and Configuring G-TAP A series
- 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 control module. 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

Setting COM Port Properties for the Console Connection shows an example of how these settings are configured in Hyper-terminal.

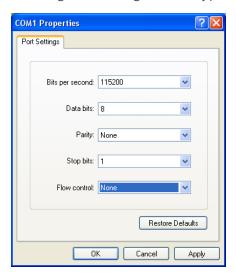


Figure 6: Setting COM Port Properties for the Console Connection

- 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:

Useradmin

Passwordadmin123A!

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 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.

You will also configure some Admin and Monitor level users with the procedure described in Initial User Account Configuration.

Run the Jump-Start Script

Gigamon provides G-TAP A-TX21 with a **jump-start** script that walks you through the process of configuring basic settings. Run this script as follows:

1. Switch to **Configure** mode.

The GigaVUE H Series 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 Configure mode.
 - The system prompt changes from [hostname] # to [hostname] (config) #.
- 2. Run the jump-start script with the following command:
 - (config) # config jump-start
- 3. Follow the jump-start script's prompts to configure each of the settings listed in the following table.

Note: If you change your mind about a particular setting, you will 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:
	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. A valid DNS server is required for successful use of TACACS+.
	Domain Name
	Supply the domain name for the node (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 auto-configuration or specifying a static address.
Admin Password	The password for the admin account must be changed to a non-default password.

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

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

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

Next, you will probably want to set a few user accounts with different access levels.

The TAP 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 Reference 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 > 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 H 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
(config) # username psandoval password Nine9.Eight8! (config) # username psandoval roles add admin	Creates a new account named psandoval with a password, and grants it admin privileges.
(config) # username bcrawford password Seven7.Six6!	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.

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 node'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.

Refer to *The Basic Commands* for a quick summary of the available G-TAP A-TX21 commands.

Command Line Basics

The G-TAP A-TX21 command-line interface provides a simple environment for configuring TAP settings. Once you have logged in to the system, the CLI appears with the **GigaVUE > prompt**. The basic CLI commands for G-TAP A-TX21 are listed below:

Table 6: The Basic Commands

Command	Description
aaa	Configure authentication, authorization, and accounting settings
banner	Set a system login banner
boot	Configures system boot parameters
battery	Views the battery presence, status and execute test results. The commands are as follows: show battery status battery test executive
	battery text cancel
clear	Resets statistics, caches, counters, or can be used to reset information
cli	Configure CLI shell options.
clock	Set the system clock or timezone
configuration	Manage configuration files

Command	Description
coreboot	Upgrades the BIOS image on G-TAP
debug	Generates a dump file for debugging issues with Gigamon Technical Support
email	Configures automatic email notifications for events
exit	Exits Configure mode and returns to Enable mode or logs out of the CLI.
file	Manages TCP and debug dump files on disk.
help	Views a description of the interactive help system.
halt	Shuts down the node without powering it off.
hostname	Specifies the node's host name. The host name appears in the system prompt and in SNMP traps.
image	Manages node software images.
interface	Configures network interfaces.
ip	Configures IP settings for the eth0 Mgmt port.
ipv6	Configures IPv6 settings for the eth0 Mgmt port.
job	Configures scheduled jobs
ldap	Configures LDAP server settings for authentication
logging	Configures event logging.
no	Deletes or clears certain configuration options.
ntp	Enables and disables the use of NTP, as well as adds NTP servers
ntpdate	Sets node clock once from a remote server using NTP.
ping	Sends ICMP echo requests to a specified host.
ping6	Sends IPMPv6 echo requests to a specified IPv6 host.
port	Configures port type, parameters, and filters.
radius-server	Configures RADIUS server settings for authentication.
reload	Reboots or shuts down the node
reset	Resets specified portions of the node configuration to their factory states.
show	Display configuration and status information for a wide variety of settings and entities.
sleep	Sleeps for a specified number of seconds.
snmp-server	Configures SNMP settings, including the local SNMP server, notification events, and notification destinations.

Command	Description	
ssh	Enables and disables SSH access, as well as manages settings	
system	Changes system settings	
system-health	Configures system health behaviors.	
tacacs-server	Configures TACACS+ server settings for authentication	
tcpdump	Display packets from any ethx port in the node on a network.	
terminal	Set terminal parameters, including width and length.	
traceroute	Trace the route packets take to a destination.	
username	Manage user accounts.	
web	Configure the Web server used for GigaVUE-FM GUI support on the node.	
write	Save the running configuration to persistent storage.	

Refer to GigaVUE-OS-CLI Reference Guide for further details on how to use the above commands .

Configuring Network/ TAP Ports on the G-TAP A-TX21

The G-TAP A-TX21 is shipped with auto-negotiation enabled on the Network/ TAP ports and can be used out of the box by simply supplying power and connecting network cables. You can explicitly set the admin/ auto-negotiation /duplex /speed/ Ifp /relay parameters for each group. Each group consists of two network and two monitor ports.

Example,

Port * params admin enable

Port* auto-negotiation enable

Port* speed 100

Port* duplex full

Port * Ifp enable

Port * relay active.

Where Port* is G1, G2, G3 or G4.

SNMP Trap Events

The G-TAP A-TX21 supports the SNMP Trap events listed in the table below. To configure SNMP traps ,please refer SNMP Server section in CLI configuration guide .

Table 7: SNMP TRAP Events and Description

Trap	Description
System Reset	Generated when system resets by warm or cold reset .
Configuration Save	Generated to save configuration file.
Module Change	Generated when Module is changed.
Link Speed Status	Generated when The Port link status is changed
System Shut Down Unexpectedly	Generated when the system shuts down unexpectedly
User Authentication Fail	Generated when user log in fails
Power Supply Status Change	Generated when the Power supply status of adapters change.
Fan Status Change	Generated when the Fan status has changed from normal operations.
Watchdog Reset	Generates when watchdog timer triggers system reset function
Firmware Change	Generates when a Firmware is being modified.
IP gateway status update notification	Generate when the status of IP gateway address has been updated.
Battery Presence	Generates to indicate if the Battery is present or not.
Battery Charge Level Threshold	Generates to indicate the battery charge level
Battery Exercise Test Complete	Generates when the Battery exercise test has been competed
Battery Temperature	Generate when the battery temperature crosses the threshold level.
Exhaust temperature notification	Generated when the Exhaust temperature crosses a threshold level
CPU temperature notification	Generated when the CPU temperature crosses a threshold level
Secondary flash boot notification	Generates notification when secondary flash boot is performed.
Throttle report notification	Generates a notification when throttle report is triggered.

Tapping a Link with G-TAP A-TX21

To tap a link with G-TAP A-TX21 follow the below steps:

- 1. Disconnect any existing link between two network devices, example; a connection between an access switch and a distribution network.
- 2. Reconnect the link so that data flows through the tap
- 3. Connect the test traffic to Network A / B ports, close with tap relay in passive mode, and verify that traffic flows through the G-TAP.
- 4. Once the traffic flow is confirmed in passive mode, switch it back to active mode and connect the production link.
- 5. Connect the Ethernet cable from one network device to the Network A port.
- 6. Connect another cable from the second network device to the Network B port.
- 7. Connect the Monitor/Tool ports either to a network analysis tool or to a GigaVUE data access switch for intelligent distribution to multiple tools.

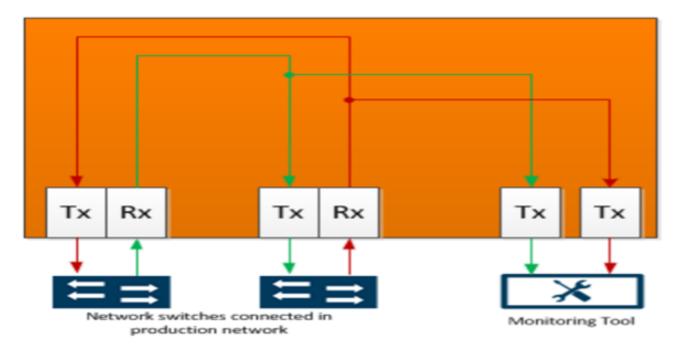


Figure 7: G-TAP A-TX21 Data Flow per Group

Once the tap is operating successfully in active mode, traffic is sent to the Monitor/Tool ports, as shown in G-TAP A-TX21 Data Flow per Group. If the primary sources of power is lost and backup battery drops to 5 percent of charge capacity, then G-TAP A-TX21 will automatically close its relays and switch back to passive mode.

Registering G-TAP A-TX21 with GigaVUE- FM

G-TAP A-TX21 can be registered and is manageable by GigaVUE-FM. Once registered, GigaVUE-FM can upgrade the software for G-TAP's, monitor the overall health of the device and notify all critical events as a TRAP such as; Port UP/ DOWN, Power Outage, crossing threshold Battery level, Relay State etc.

Connecting a G-TAP A-TX21 to GigaVUE-FM

To register a G-TAP A-TX21 with GigaVUE-FM, you can manually add a physical node. The procedures are explained below:

Add a Physical Node

The process to add a physical node is as follows:

- 1. Click Physical on the top navigation bar.
- 2. On the Physical Nodes page, click **Add.** The Add Physical Node page displays.
- 3. Select Add Manually.
- 4. Enter the necessary details such as Node Name, Device Family, Custom Log in Credentials and SNMP Version .
- 5. Click **Submit** to add the node or nodes to the list of physical nodes GigaVUE-FM is managing.

Note: G-TAP A-TX21 is manageable by GigaVUE-FM without a dedicated node license.

Managing the G-TAP A-TX21 Node

The following left menu options will be available for the registered G-TAP A-TX21 node. Refer to the table below for more details:

Table 8: Managing the G-TAP A-TX21 Node

Left Navigation Menu	Description	
Overview	The overview page displays the board temperature, resources ,battery status, power status , Fan module status, Ports status.	
	Schedule Battery Test – In The Battery widget, you can schedule to run a Battery test, to check the status of the battery power. In Order to view the progress/status of the battery test, user has to enable the trap Battery BET Complete.	
	User can configure the trap in two methods which are:	
	G-TAP Node > Settings > Global Settings > SNMP Traps > Trap Settings	
	Administration > System > SNMP Traps > Edit .	
Ports	This would list all the ports of the node. Each tap port is a group of two network ports (Na, Nb) and two tool ports (Ta, Tb) .	
Chassis	This page would display the chassis image of the G-TAP A-TX21	
Health	The G-TAP node health status of the individual components such as Ports, Card, etc. Refer to the health status table given below	
Settings	This includes all settings such as Date and Time, Global Settings , Interface and Reboot and Upgrade.	
	For information on configuring email notifications, refer to the "Notifications" section in the GigaVUE-OS and GigaVUE-FM Administration Guide.	

The below table provides a detailed description of the different health status of G-TAP A-TX21:

Table 9: Port Health Status

Health Status	In Use	Operational Status
Green	Yes	Up
Green	No	N/A
Red	Enabled	Down

Table 10: Chassis Health Status

Health Status	Battery Health	Chassis Temperature Health	Ports Health	Resource Health (CPU, Memory, Disk)
Green	100%	Normal	Green (all ports are green)	Normal
Yellow	75% (Warning)	Normal	Green	Normal
Yellow	100%	High	Green	Normal
Yellow	100%	Normal	Green	High Usage
Yellow	100%	Normal	Red (50% of ports are red)	Normal
Red	Less than 50 % (Critical / Alarm)	Normal	Green	Normal
Red	100 %	Extreme High	Green	Normal
Red	100 %	Normal	Green	Extreme High Usage
Red	100 %	Normal	Red	-
Red	100 %	Normal	Red (More than 50% ports were Red)	-

Table 11: G-TAP A-TX21 Node Health

Health Status	GigaVUE-FM Reachable	Chassis Health
Green	Yes	Green
Yellow	Yes	Yellow
Red	No	N / A
Red	Yes	Red

System Compliance

This section provides system compliance information for G-TAP A-TX21 The different regulations are as follows:

Safety

G-TAP A-TX21are compliant with the following safety regulations:

- CAN/CSA-C22.2 No. 60950-1 (2007) ,62368-1 (2nd Ed)Information Technology Equipment
- UL 60950-1 (2nd Ed),62368-1 (2nd Ed)) Information Technology Equipment
- EN 60950-1 (2006+ A1:2010), 62328-1(2014)Information Technology Equipment
- IEC 60950-1 (2005 +A1:2009), 62368-1 (2nd Ed)Information Technology Equipment

Electromagnetic Regulations

G-TAP A-TX21 are complaint with the following electromagnetic regulations:

- EN 300 386 V1.6.1: 2012 Class A
- FCC Title 47 CFR, Part 15 Subpart B: 2012(for frequencies above 1GHz) Class A
- EN 55022: 2010+AC: 2011 Class A European Radiated Emissions
- VCCI V-3: 2013.04 (Japan) Class A
- BSMI CNS 13438 and NCC C6357 Taiwan Radiated Emissions
- AS/NZS CISPR 22: 2009+A1: 2010 Class A (Australia/New Zealand)
- ICES-003: 2012 Issue 5 (Canada)
- CNS 13438: 2006
- ETSI EN 300 : 386 V1.6.1 (2012-09)
- EN55024: 1998 + A1:2001 + A2:200
- CISPR 24: 1997+ A1:2001 + A2:2002
- EN 61000-3-2:2006 + a1:2009, CLASS A
- EN 61000-3-3:2008
- EN 61000-4-2,4-3, 4-4,4-5,4-6,4-8,4-11
- EN 61000-3-3:2008
- C-TICK (AUSTRAILIA) Certification
- VCCI (JAPAN) Certification

Power Supply Markings

The mandatory power supply markings for G-TAP A-TX21are as follow:

- UL, CSA: UL/ CSA 60950-1 (2007), 62368-1 (2nd Ed)
- FCC part 15 subpart B Class B (2006)
- EN60950 -1 2nd Edition (2006), 62368-1 (2nd Ed)
- CB/ IEC 60950-1 (2005 +A1: 2009), 62368-1 (2nd Ed)

Installation Instructions G-TAP A-TX21

The following sections, details on installation compliance instructions for G-TAP A-TX21:

Intrabuilding or Intra-connection for G-TAP A-TX21

WARNING: The intra-building ports:

- RJ45: Management port, Console port
- Four Groups with sixteen Copper Ports

G-TAP A-TX21 equipment or sub assembly are suitable for connection to intrabuilding or unexposed wiring or cabling only. The intra-building port(s) of the equipment or sub assembly MUST NOT be connected by metal 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 by metal 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 G-TAP A-TX21shall be located in a restricted access location where only crafts personnel are allowed access.

Class B Voltage Accessibility

The G-TAP A-TX21 shall be located in a restricted access location where only crafts personnel are allowed access.

Equipment Grounding Systems

The G-TAP A-TX21 shall be installed and connected to the (CBN).

Communication Equipment Grounding

The G-TAP A-TX21 is suitable for connection to the (Central Office and CPE).

Bonding of Battery Return (BR) Input Terminals

The battery returns of G-TAP A-TX21 shall be connected as (DC-I).

Connections

a. The G-TAP A-TX21 shall be grounded via a copper ground conductor 6 AWG for CPE installation. The grounding screw size is an M4 refer G-TAP A-TX21 Rear Chassis. Ensure that the lug size used matches the M4 screw hole.

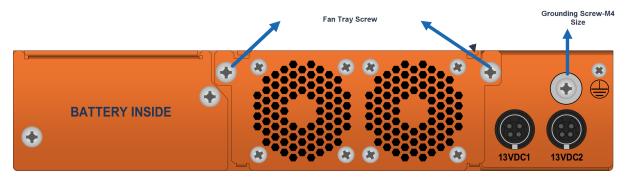


Figure 8: G-TAP A-TX21 Rear Chassis

- b. The bare grounding connection points of G-TAP A-TX21 should be cleaned and coated with an antioxidant solution prior to making connections .
- c. Surfaces on which G-TAP A-TX21 is placed, and that are not plated should brought to a bright finish and treated with an antioxidant solution prior to making connections.
- d. Non-conductive surfaces on which G-TAP A-TX21 is placed, 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. Non-plated 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 used for electrical connections.

- g. Listing fasting 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. G-TAP A-TX21 utilizes a spade width 0.32 in /.81 cm with a standard wire 14-16 (AWG) that requires 5 in-lbs of torque to secure it to the frame and EUT. The listed two-hole compression-type connectors only should be used in connecting 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 G-TAP A-TX211is capable of operating input 100-240V AC.

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. REMOVE THE BATTERY, BATTERY TRAY AND REMOVE BOTH POWER CABLES).

Additional Sources of Information

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

- Documentation
- Documentation Feedback
- Contact Technical Support
- Contact Sales
- The Gigamon Community

Documentation

The following table provides a list of the additional documentation provided for GigaVUE H Series and TA Series nodes. "*" indicates new documents in this release. "**" indicates documents that are renamed in this release.

Note: Release Notes are not included in the online documentation. Registered Customers
can download the Release Notes from the Software & Docs page on to My Gigamon. Refer
to How to Download PDFs from My Gigamon.

J	TIP: If you keep all PDFs for a particular release in common folder, you can easily search
	across the doc set by opening one of the files in Acrobat and choosing Edit > Advanced
	Search from the menu. This opens an interface that allows you to select a directory and
	search across all PDFs in a folder.

Table 1: Documentation Suite for Gigamon Products

Summary	Document
Hardware Installation Guides	
how to unpack, assemble, rack-mount, connect, and	**G-TAP A Series 2 Installation Guide
 initially configure the respective GigaVUE devices reference information and specifications for the respective GigaVUE devices 	GigaVUE-HC1 Hardware Installation Guide
	GigaVUE-HC2 Hardware Installation Guide

Summary	Document
	GigaVUE-HC3 Hardware Installation Guide
	GigaVUE TA Series Hardware Installation Guide
Software Installation and Upgrade Guides	
 how to install G-TAP A Series 2 on VMware ESXi, MS Hyper-V, and KVM how to migrate G-TAP A Series 2 on VMware ESXi, Hardware Appliance, and AWS 	**G-TAP A Series 2 Installation, Migration, and Upgrade Guide
how to upgrade the embedded GigaVUE-OS on GigaVUE H Series and GigaVUE TA Series nodes	GigaVUE-OS Upgrade Guide
Administration Guide	
how to administer the GigaVUE-OS and G-TAP A Series 2 software	GigaVUE-OS and GigaVUE-FM Administration Guide
Configuration and Monitoring Guides	
 how to install, deploy, and operate GigaVUE H Series how to configure GigaSMART operations 	GigaVUE-FM User's Guide
how to deploy the GigaVUE Cloud Suite solution in any cloud platform	GigaVUE Cloud Suite for AnyCloud Configuration Guide
how to configure the GigaVUE Cloud Suite components	GigaVUE Cloud Suite for AWS Configuration Guide
and set up traffic monitoring sessions for the respective cloud platform	GigaVUE Cloud Suite for AWS QuickStart Guide
	*GigaVUE Cloud Suite for AWS SecretRegions Configuration Guide
	GigaVUE Cloud Suite for Azure Configuration Guide
	GigaVUE Cloud Suite for Kubernetes Configuration Guide
	*GigaVUE Cloud Suite for Nutanix Configuration Guide
	GigaVUE Cloud Suite for OpenStack Configuration Guide
	GigaVUE Cloud Suite for VMware Configuration Guide
Reference Guides	
library of GigaVUE-OS CLI (Command Line Interface) commands used to configure and operate GigaVUE H Series and TA Series devices	GigaVUE-OS-CLI Reference Guide

Summary	Document	
guidelines for the different types of cables used to connect Gigamon devices	GigaVUE-OS Cabling Quick Reference Guide	
compatibility information and interoperability requirements for Gigamon devices	GigaVUE-OS Compatibility and Interoperability Matrix	
samples uses of the G-TAP A Series 2 Application Program Interfaces (APIs)	GigaVUE-FM REST API Reference in GigaVUE-FM User's Guide	
Release Notes		
 new features, resolved issues, and known issues in this release important notes regarding installing and upgrading to this release 	GigaVUE-OS, G-TAP A Series 2 , GigaVUE-VM, and GigaVUE Cloud Suite Release Notes	
In-Product Help		
how to install, deploy, and operate GigaVUE H Series. Provided from the GigaVUE H Series interface.	G-TAP A Series 2 Online Help	
the web-based GUI for the GigaVUE-OS. Provided from the GigaVUE-OS H-VUE interface.	GigaVUE-OS H-VUE Online Help	

Note: Registered customers can log in to My Gigamon to download documentation for specific releases under Software & Documentation Downloads. Refer to How to Download PDFs from My Gigamon.

How to Download PDFs from My Gigamon

To download release-specific PDFs:

- 1. Log in to My Gigamon
- 2. Click on the **Software & Documentation** link.
- 3. Use the **Product** and **Release** filters to find documentation for the current release. For example, select Product: "G-TAP A Series 2" and Release: "5.7," enter "pdf" in the search box, and then click **GO** to view all PDF documentation for G-TAP A Series 2 5.7.xx.

Documentation Feedback

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

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

Contact Technical Support

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

Contact Sales

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

Telephone: +1.408.831.4025

Sales: inside.sales@gigamon.com

Partners: www.gigamon.com/partners.html

Premium Support

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

The Gigamon Community

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

Visit the Gigamon Community site to:

- Find knowledge base articles and documentation
- Ask and answer questions and learn best practices from other members.
- Join special-interest groups to have focused collaboration around a technology, use-case, vertical market or beta release
- Take online learning lessons and tutorials to broaden your knowledge of Gigamon products.

- Submit and vote on feature enhancements and share product feedback. (Customers only)
- Open support tickets (Customers only)
- Download the latest product updates and documentation (Customers only)

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

Register today at community.gigamon.com

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