# **GigaVUE HC Series**





GigaVUE-HC1



GigaVUE-HC2



GigaVUE-HC3

#### **Key Benefits**

#### **Network Operations**

- Deliver up to 800Gbps of processing power for optional GigaSMART® technologies, per appliance
- Scales up to 100GB network speeds and 32-node clusters with modular design

## **Security Operations**

- Consolidate and simplify security infrastructure
- Enhance network security with GigaSECURE traffic intelligence applications
- Strengthen security while ensuring network availability with inline bypass solution
- Decrypt SSL traffic and send to both inline and out-of-band tools for further analysis

## Traffic Intelligence that Scales for Large Enterprises, Service Providers and Remote and Branch Offices

Enterprises are seeing higher volumes of data traveling at faster speeds through their network, leading to more complexity, greater costs and ultimately more vulnerability to security threats.

The GigaVUE HC Series nodes enable comprehensive traffic and security intelligence at scale to enhance your security and monitoring solutions. Users also gain network traffic visibility into cloud and remote sites, with L2GRE and VXLAN tunnel de-encapsulation included on all HC Series platforms.

Offering up to 25Tbps of traffic intelligence across 32 clustered nodes, the HC Series enables greater network traffic visibility into data in motion, minimizes traffic overloads and provides more effective options for deploying both inline and out-of-band security and monitoring tools.

The HC Series family consists of the following:

GigaVUE-HC1: A 1RU form factor that meets the needs of remote and branch offices or small enterprises .

GigaVUE-HC2: A 2RU form factor that enables traffic intelligence at scale to security and monitoring solutions across medium size enterprises.

GigaVUE-HC3: A 3RU form factor that offers traffic intelligence at scale to the most demanding large enterpises and service providers.

### Use Cases

### **Application and Service Monitoring**

- · Eliminate contention for network data
- Centralize Netflow/IPFIX/CEF Generation
- Filter streaming media and custom Layer 7 applications

### Leverage Legacy Investments

- Take advantage of legacy tools with mismatched throughput connectivity
- Get network visibility during network upgrades

### **Security Posture Optimization**

- Active security remediation with inline bypass
- Identify malware activity through metadata
- Expose potential hidden threats by decrypting SSL/TLS traffic

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## **Key Features**

#### Flow Mapping®

- Provide high-speed, line-rate performance with purpose-build hardware
- Optimize tool performance by sending each tool only the traffic of interest
- Distribute traffic across multiple tools with GigaStream technology
- Replicate traffic to multiple tool ports, enabling a range of tools to access the same traffic
- Share network ports among multiple user groups, each with their own maps and tools

#### **Modular Chassis**

- Customize port capacity, speed mix and GigaSMART processing power to the needs of your network
- · Reduce cost and reserve space for future expandability

#### Field-replaceable control card

 Upgrade features and capabilities without replacing the chassis or even removing it from the rack.

#### Clustering

- Extend Gigamon Platform to 32 nodes, thousands of ports, and over 200Tb of traffic
- End-to-end Flow Mapping® across clusters to scale network visibility across hundreds of nodes with Fabric Maps
- Utilize optional GigaSMART applications and services from anywhere in the cluster

#### Traffic Intelligence with GigaSMART

- Leverage up to 800Gbps of traffic intelligence processing per appliance
- Enhance visibility into encrypted sessions
- Optimize traffic sent to tools
- Eliminate unnecessary traffic analysis of irrelevant data
- Hide confidential data to help meet compliance requirements
- Generate sampled or unsampled NetFlow and other network metadata from any monitored traffic flow after packet duplicates have been removed
- Enable mobile service providers to monitor subscriber data in GTP tunnels

### Application Filtering Intelligence with GigaSMART

- Automatically identify and classify over 3,200 business and consumer applications traversing the network
- Extract and treat each application, or family of applications, uniquely based on threat potential and each tool's needs
- Bring application-awareness to your SOC and NOC helping teams make better decisions faster

#### Inline Bypass Protection

- Safely deploy inline tools by monitoring their health and bypassing them in case of failure
- Scale inline deployments by distributing traffic across multiple tools and/or bypassing specific traffic
- Solve the security blind spot in asymmetric routing by implementing resilient network architectures
- Send specific traffic to tools optimized for that traffic
- · Migrate out-of-band tools to inline mode
- Replicate traffic to out-of-band tools
- Protect network uptime with physical bypass protection for 100Gb SR4, 40Gb SR4, 10Gb and SR 10/100/1000Mb

### Inline and Out of Band SSL/TLS Decryption

- Improve efficiency of security tools by offloading processor-intensive SSL decryption
- Architecture allows for decryption/re-encryption of traffic once for inspection by multiple tools
- Supports Thales HSM for the storage and management of SSL keys for Out of Band SSL only

## Management and Orchestration through GigaVUE-FM

- Single pane of glass view of HC nodes
- Reduce time to identify and resolve issues with customizable dashboards
- Accelerate deployment and troubleshooting with configuration wizards
- Decrease maintenance windows for scheduled upgrades and backups

## Tool Capacity Planning with GigaVUE-FM Tool View

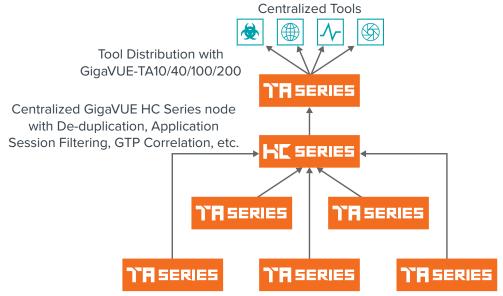
- Ensure the tool is optimally utilized
- Enable users to select the best tool to route traffic based on resource availability
- Track the tool's storage capacity and data wrap-around time

#### **REST API Support**

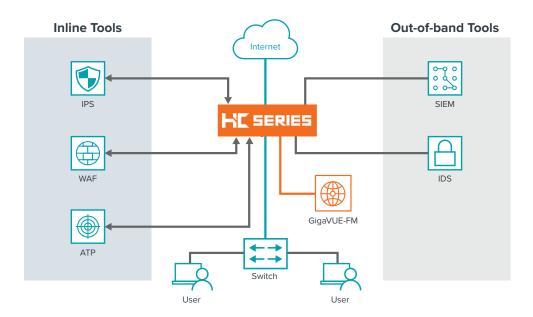
- Programmatic access to the platform via REST APIs exposed from the Fabric Manager, GigaVUE-FM
- Allow implementation of Software-Defined Visibility paradigm by system administrators.
- Integrate with tools, controllers and other IT systems to enable rapid programmatic response to events

## **Deployment Options**

### Centralized Deployment of the GigaVUE-HC Series node for Pervasive Visibility



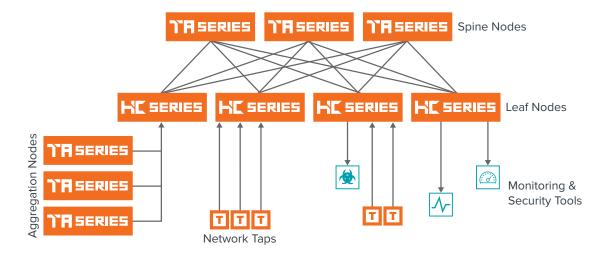
Tapping at Edge with GigaVUE-TA10/40/100/200



The HC Series node installed inline can support both inline and out-of-band tools as shown. The HC Series node can distribute the right traffic to the right tools therefore maximizes tool utilization. Inline tools can be upgraded and/or replaced without network downtime.

Any HC Series node can be managed by a single pane of glass using GigaVUE-FM. The HC Series node in this deployment ensures network availability while strengthening security.

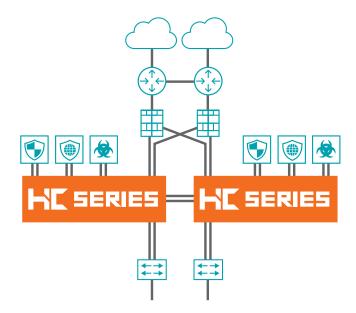
### Leaf-spine Deployment of the GigaVUE HC Series nodes



In this architecture, if one of the TA Series or HC Series nodes goes down the traffic is distributed amongst the remaining live nodes. this ensures high availability of the network.

This architecture also ensures that the security tools attached to the HC Series nodes are available even if one of the TA Series in the Spine Nodes fail.

## Fully redundant (dual path) network architecture that addresses asymmetric routing security blind spots



One side of the network is protected by the inline GigaVUE HC Series node and its tools, the other network protected by a second GigaVUE HC Series node and its tools. Notice the two inline GigaVUE HC Series nodes are connected as traffic flows between them the same way as the traffic flows between the switches and firewalls above them. This allows the tools to be shared across the redundant network paths. The tools on the left can be looking at traffic coming from either side of the network and the same is the case with the tools on the right.

## HC Series Comparison

|                            | GigaVUE-HC1                               | GigaVUE-HC2   | GigaVUE-HC3  |
|----------------------------|---|---|--|
| Size                       | "Small" (1RU)                             | "Medium" (2RU)  | "Large" (3RU)  |
| # of Modules               | 2   | 4 + 1 Rear GigaSMART  | 4  |
| Maximum Capacity           | 284Gbps                                   | 960Gbps   | 3.2Tbps <sup>†</sup> or 6.4Tbps <sup>‡</sup>   |
| Port Speeds                | 10/100Mb, 1Gb, 10Gb                       | 10/100Mb**, 1Gb, 10Gb, 40Gb,<br>100Gb   | 10Gb, 25Gb‡, 40Gb, 100Gb   |
| Physical Bypass<br>Options | 10/100/1000BASE-T<br>1Gb/10Gb SX/SR Fiber | 10/100/1000BASE-T<br>1Gb/10Gb SX/SR Fiber<br>1Gb/10Gb LX/LR Fiber<br>40Gb SR4 Fiber | 40Gb/100Gb SR4 Fiber<br>10Gb SR Fiber using breakout<br>panel<br>40Gb LR4 Fiber<br>100Gb LR4 Fiber |
|                            |   | ** Tap/bypass only  | † Control Card Version 1<br>‡ Control Card Version 2   |

Table 1: GigaVUE-HC1/HC2/HC3 Modules

| Product  | 70E-HCI/HCZ/HC3 WIOdules | Description   |
|--|--------------------------|---|
| GigaVUE-HC1  | Modules                  |   |
| 2000 Email.  | BPS-HC1-D25A24           | <ul> <li>1Gb/10Gb Bypass combo module</li> <li>2 pairs of SX/SR 50/125μm BPS + 4 x 10Gb/1Gb (SFP+/SFP) ports</li> </ul>   |
|  | TAP-HC1-G10040           | <ul> <li>Embedded TAP and bypass module</li> <li>4 pairs of copper (RJ-45) TAPs or BPS</li> <li>Each pair can be individually configured into TAP or BPS</li> </ul>   |
| GigaVUE-HC2  | 2 Modules                |   |
| , बंबबबबब बंबबबबर्ब  | PRT-HC0-X24              | <ul> <li>24 x 10Gb/1Gb (SFP+/SFP) ports</li> <li>A GigaVUE-HC2 fabric node fully populated with 4 PRT-HC0-X24 modules provides 96 x 10Gb ports</li> </ul>             |
|  | PRT-HC0-Q06              | <ul> <li>6 x 40Gb (QSFP+) ports</li> <li>A GigaVUE-HC2 fabric node fully populated with 4 PRT-HC0-Q06 modules provides 24 x 40Gb ports</li> </ul>                     |
|  | PRT-HC0-C02              | <ul> <li>2 x 100Gb (QSFP28 ports) supporting 100GBASE-SR4</li> <li>PRT-HC0-C02 requires Control Card version 2</li> </ul>   |
| (a) (a) (b) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c   | BPS-HC0-Q25A28           | <ul> <li>Bypass combo module</li> <li>2 pairs of 40G SR4 BPS + 8 x 10Gb/1Gb (SFP+/SFP) ports</li> </ul>   |
| THE RESERVE THE PROPERTY OF TH | BPS-HC0-D25A4G           | <ul> <li>Bypass combo module</li> <li>4 pairs of SX/SR 50/125μm BPS + 16 x 10Gb/1Gb (SFP+/SFP) ports</li> </ul>   |
|  | BPS-HC0-D25B4G           | <ul> <li>Bypass combo module</li> <li>4 pairs of SX/SR 62.5/125μm BPS + 16 x 10Gb/1Gb (SFP+/SFP) ports</li> </ul>   |
|  | BPS-HC0-D35C4G           | <ul> <li>Bypass combo module</li> <li>4 pairs of LX/LR singlemode BPS + 16 x 10Gb/1Gb (SFP+/SFP) ports</li> </ul>   |
|  | TAP-HC0-D25AC0           | <ul> <li>Embedded TAP module</li> <li>12 x SX/SR 50/125μm TAPs</li> <li>50/50 split ratio</li> </ul>  |
|  | TAP-HC0-D25BC0           | <ul> <li>Embedded TAP module</li> <li>12 x SX/SR 62.5/125μm</li> <li>50/50 split ratio</li> </ul>   |
| ACCUMENT TO THE PARTY TO THE PA | TAP-HC0-D35CC0           | <ul> <li>Embedded TAP module</li> <li>12 x LX/LR TAPs</li> <li>50/50 split ratio</li> </ul>   |
|  | TAP-HC0-G100C0           | <ul> <li>Embedded TAP module and bypass</li> <li>12 pairs of copper (RJ-45) TAPs or BPS</li> <li>Each pairs can be individually configured into TAP or BPS</li> </ul> |

Table 1: GigaVUE-HC1/HC2/HC3 Modules continued

| Product   |                     | Description  |
|---|---------------------|--|
| GigaVUE-HC2   | 2 Modules continued |  |
|   | SMT-HC0-X16         | <ul> <li>GigaSMART front module with 16 x 10Gb/1Gb (SFP+/SFP) ports</li> <li>Includes slicing, masking, source port and GigaVUE tunneling de-encapsulation</li> <li>Additional GigaSMART licenses are available for other features such as SSL/TLS decryption, de-duplication, Adaptive Packet Filtering, and NetFlow and Metadata Generation Engine</li> <li>See the GigaSMART data sheet for more information</li> </ul> |
| ·   | SMT-HC0-R           | <ul> <li>GigaSMART rear module</li> <li>Includes slicing, masking, source port and GigaVUE tunneling de-encapsulation</li> <li>Additional GigaSMART licenses are available for other features such as de-duplication, Adaptive Packet Filtering, and NetFlow and Metadata Generation</li> </ul>  |
| GigaVUE-HC  | 3 Modules           |  |
|   | PRT-HC3-C16         | <ul> <li>16 x 100Gb/40Gb (QSFP28/QSFP+) ports</li> <li>Port Modes: 1 x 100Gb/40Gb, 4 x 25Gb<sup>1, 2</sup>, or 4 x 10Gb<sup>1</sup></li> </ul>   |
|   | PRT-HC3-C08Q08      | <ul> <li>8 x 100Gb QSFP28 ports</li> <li>Port Modes: 1 x 100Gb, 2 x 40Gb, 4 x 25Gb<sup>1, 2</sup>, or 4 x 10Gb<sup>1</sup></li> </ul>  |
| :555 55:  | SMT-HC3-C05         | <ul> <li>2 GigaSMART engines with 100Gbps processing power per engine</li> <li>5 x 100Gb QSFP ports</li> <li>Port Modes: 1 x 100Gb, 1 x 40Gb, 4 x 25Gb<sup>1, 2</sup>, or 4 x 10Gb<sup>1</sup></li> </ul>  |
| BREEFE CHEEFE   | PRT-HC3-X24         | • 24 x 25Gb <sup>2</sup> /10Gb (SFP28/SFP+) ports  |
| THE REFERENCE OF  | BPS-HC3-C25F2G      | <ul> <li>100Gb/40Gb/25Gb/10Gb Bypass combo module</li> <li>2 pairs of 100Gb/40Gb SR4 BPS; up to 8 pairs of 10Gb SR BPS</li> <li>16 x 25Gb²/10Gb (SFP28/SFP+) ports</li> </ul>  |
| annan anna 2  | BPS-HC3-Q35C2G      | <ul> <li>40Gb/25Gb/10Gb Bypass combo module</li> <li>2 pairs of 40Gb LR4 BPS</li> <li>16 x 25Gb²/10Gb (SFP28/SFP+) ports</li> </ul>  |
| and a series of the series of | BPS-HC3-C35C2G      | <ul> <li>100Gb/40Gb/25Gb/10Gb Bypass combo module</li> <li>2 pairs of 100Gb LR4 BPS</li> <li>16 x 25Gb²/10Gb (SFP28/SFP+) ports</li> </ul>   |

 $^1$ Requires MPO-to-4xLC breakout cable or the PNL-M341 or PNL-M343 modules for G-TAP M Series  $^2$ 25Gb requires Control Card Version 2 (CTL-HC3-002)

## **Product Specifications**

Table 2: Physical Dimensions & Weight

| Product   | Height                    | Width   | Depth  | Weight   |
|---|---------------------------|---|--|--|
| GigaVUE-HC1   |                           |   |  |  |
| GigaVUE-HC1 base unit                                       | 1RU<br>1.75in<br>(4.45cm) | 17.26in (438.5mm)  With ears mounted: 19.00in (483.5mm) | 19.5in (495mm)  With PSU handle and card ejector: 20.92in (531.8mm)            | 20.88lbs<br>(9.47kg)<br>With ears:<br>21.12lbs<br>(9.58kg) |
| BPS-HC1-D25A24 Bypass Combo Module                          | 1.6in                     | 4.65in  | 10.13in  | 2.2lb  |
|   | (4.10cm)                  | (11.80cm)   | (24.98cm)  | (0.99kg)   |
| TAP-HC1-G10040<br>Copper (RJ-45) 4 TAP and<br>Bypass Module | 1.6in<br>(4.10cm)         | 4.65in<br>(118mm)                                       | 10.13in<br>(249.8mm)   | 1.50lbs<br>(.68kg)   |
| GigaVUE-HC2   |                           |   |  |  |
| GigaVUE-HC2 base unit                                       | 2RU<br>3.5in<br>(8.9cm)   | 19.0in<br>(48.3cm)                                      | 24.2in (61.6cm) without cable management 27.0in (68.6cm) with cable management | 36.80lbs<br>(16.70kg)                                      |
| PRT-HC0-X24   | 1.6in                     | 8.0in   | 9.4in  | 2.12lbs  |
|   | (4.1cm)                   | (20.3cm)  | (23.8cm)   | (0.96kg)   |
| PRT-HC0-Q06   | 1.6in                     | 8.0in   | 9.4in  | 2.40lbs  |
|   | (4.1cm)                   | (20.3cm)  | (23.8cm)   | (1.09kg)   |
| PRT-HC0-C02   | 1.6in                     | 8.0in   | 9.4in  | 2.30lbs  |
|   | (4.1cm)                   | (20.3cm)  | (23.8cm <b>)</b>   | (1.09kg)   |
| BPS-HC0-Q25A28  | 1.6in                     | 8.0in   | 10.5in   | 3.14lbs  |
|   | (4.1cm)                   | (20.3cm)  | (26.7cm <b>)</b>   | (1.42kg)   |
| BPS-HC0-D25A4G  | 1.6in                     | 8.0in   | 10.5in   | 3.60lbs  |
|   | (4.1cm)                   | (20.3cm)  | (26.7cm)   | (1.63kg)   |
| BPS-HC0-D25B4G  | 1.6in                     | 8.0in   | 10.5in   | 3.60lbs  |
|   | (4.1cm)                   | (20.3cm)  | (26.7cm)   | (1.63kg)   |
| BPS-HC0-D35C4G  | 1.6in                     | 8.0in   | 10.5in   | 3.60lbs  |
|   | (4.1cm)                   | (20.3cm)  | (26.7cm)   | (1.63kg)   |
| TAP-HC0-D25AC0  | 1.6in                     | 8.0in   | 9.4in  | 3.50lbs  |
|   | (4.1cm)                   | (20.3cm)  | (23.8cm)   | (1.59kg)   |
|   |                           |   |  |  |

Table 2: Physical Dimensions & Weight continued

| Product        | Height                     | Width               | Depth  | Weight               |
|----------------|----------------------------|---------------------|--|----------------------|
| TAP-HC0-D25BC0 | 1.6in                      | 8.0in               | 9.4in  | 3.50lbs              |
|                | (4.1cm)                    | (20.3cm)            | (23.8cm)   | (1.59kg <b>)</b>     |
| TAP-HC0-D35CC0 | 1.6in                      | 8.0in               | 9.4in  | 3.50lbs              |
|                | (4.1cm)                    | (20.3cm)            | (23.8cm)   | (1.59kg)             |
| TAP-HC0-G100C0 | 1.6in                      | 8.0in               | 9.4in  | 3.20lbs              |
|                | (4.1cm)                    | (20.3cm)            | (23.8cm <b>)</b>   | (1.45kg)             |
| SMT-HC0-X16    | 1.6in                      | 8.0in               | 10.2in   | 4.40lbs              |
|                | (4.1cm)                    | (20.3cm)            | (26.0cm <b>)</b>   | (2.00kg <b>)</b>     |
| SMT-HC0-R      | 1.6in                      | 9.3in               | 13.2in   | 4.40lbs              |
|                | (4.1cm)                    | 23.5cm              | (33.6cm <b>)</b>   | (2.00kg)             |
| GigaVUE-HC3    |                            |                     |  |                      |
| GigaVUE-HC3    | 3RU<br>5.25in<br>(13.34cm) | 19.0in<br>(48.26cm) | 29.1in (74.0cm)<br>without cable<br>management<br>33.5in (85.0cm) with<br>cable management | 88.0lbs<br>(40.00kg) |
| PRT-HC3-C16    | 1.9in                      | 8.5in               | 16.1 in  | 6.0lbs               |
|                | (4.7cm)                    | (21.7cm)            | (41.0cm)   | (2.72kg)             |
| PRT-HC3-C08Q08 | 1.9in                      | 8.5in               | 16.1in   | 2.40lbs              |
|                | (4.7cm)                    | (21.7cm)            | (41.0cm)   | (1.09kg)             |
| SMT-HC3-C05    | 1.9in                      | 8.5in               | 16.1in   | 4.40lbs              |
|                | (4.7cm)                    | (21.7cm)            | (41.0cm)   | (2.00kg <b>)</b>     |
| PRT-HC3-X24    | 1.9in                      | 8.5in               | 16.1in   | 2.12lbs              |
|                | (4.7cm)                    | (21.7cm)            | (41.0cm)   | (0.96kg <b>)</b>     |
| BPS-HC3-C25F2G | 1.9in                      | 8.5in               | 16.1in   | 6.40lbs              |
|                | (4.7cm)                    | (21.7cm)            | (41.0cm)   | (2.90kg)             |
| BPS-HC3-Q35C2G | 1.9in                      | 8.5in               | 16.1in   | 6.05lbs              |
|                | (4.7cm)                    | (21.7cm)            | (41.0cm)   | (2.74kg)             |
| BPS-HC3-C35C2G | 1.9in                      | 8.5in               | 16.1in   | 6.05lbs              |
|                | (4.7cm)                    | (21.7cm)            | (41.0cm)   | (2.74kg)             |

## **Table 3: Power Specifications**

| уре                              |  |
|----------------------------------|--|
| gaVUE-HC1                        |  |
| ower Configurations              | • 1+1 Power: 2 Power Supply Modules  |
| x Power Consumption/Heat Output  | <ul><li>212 Watts; 722.9 BTU/hr</li><li>Fully populated system with all ports at 100% traffic load</li></ul>   |
| Power Supply Modules             | <ul> <li>Min/Max Voltage: 100V - 127V AC, 200V - 240V AC, 50/60Hz</li> <li>Max PSM Input Current: 5.8A @ 100V, 2.9A @ 200V</li> </ul>  |
| Power Supply Modules             | <ul> <li>Min/Max Voltage: -40.5V to -60V DC</li> <li>Max PSM Input Current: 24A @ -40.5V</li> </ul>  |
| gaVUE-HC2                        |  |
| ower Configurations              | • 1+1 Power: 2 Power Supply Modules  |
| ax Power Consumption/Heat Output | <ul> <li>960 Watts; 3276 BTU/hr (Control Card versions 1 &amp; 2)</li> <li>Fully populated system with all ports at 100% traffic load</li> </ul>   |
| Power Supply Modules             | <ul> <li>Min/Max Voltage: 100V - 240V AC, 47-63Hz</li> <li>Max PSM Input Current: 14A @ 100V</li> </ul>  |
| Power Supply Modules             | <ul> <li>Min/Max Voltage: -36V to -72V DC</li> <li>Max PSM Input Current: 35A @ -36V</li> </ul>  |
| aVUE-HC3                         |  |
| wer Configurations               | <ul><li>1+1 Power: 2 Power Supply Modules</li><li>2+2 Power: 4 Power Supply Modules</li></ul>  |
| x Power Consumption/Heat Output  | <ul> <li>1850 Watts; 6312.4 BTU/hr (Control Card version 1)</li> <li>2000 Watts; 6824.3 BTU/hr (Control Card version 2)</li> <li>Fully populated system with all ports at 100% traffic load</li> </ul> |
| Power Supply Modules             | <ul> <li>Min/Max Voltage: 100V - 115V AC, 200V - 240V AC, 50/60Hz</li> <li>Max PSM Input Current: 14A @ 100V, 10A @ 200V</li> </ul>  |
| Power Supply Modules             | <ul> <li>Min/Max Voltage: -40V to -72V DC</li> <li>Max PSM Input Current: 48A @ -40V</li> </ul>  |

## **Table 4: Environmental Specifications**

| Туре                                  | GigaVUE-HC1/HC2/HC3           |
|---------------------------------------|-------------------------------|
| 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 15,000 ft (4.57km)      |

## Table 5: Standards & Protocols

| Туре                    | GigaVUE-HC1/HC2/HC3   |
|-------------------------|---|
| 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 802.3ab 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 & v3, RFC 2131 DHCP client, RFC 1492 TACACS+, and support for IPv4 and IPv6 |

## Table 6: Compliance

| Туре          |   |
|---------------|---|
| GigaVUE-HC1   |   |
| Safety        | UL 60950-1; CSA C22.2 EN 60950-1; IEC-60950-1:2005(2nd Edition) + Am 1:2009 + Am 2:2013   |
| Emissions     | FCC Part 15, Class A; VCCI Class A; EN55022/CISPR-22 Class A; Australia/New Zealand AS/NZS CISPR-22 Class A: RCM; EU: CE Mark EN 55022 Class A, CCC China, BSMI Taiwan, Korea KCC, Russia EAC |
| Immunity      | ETSI EN300 386 V1.3.2, EN61000-4-2, EN 61000-4-3, 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-3-2   |
| Environmental | RoHS 6: EU directive 2002/95/EC   |
| NEBS          | Level 3   |

## Table 6: Compliance continued

| Туре          |   |
|---------------|---|
| GigaVUE-HC2   |   |
| Safety        | UL 60950-1; CSA C22.2 EN 60950-1; IEC-60950-1   |
| Emissions     | FCC Part 15, Class A; VCCI Class A; EN55022/CISPR-22 Class A; Australia/New Zealand AS/NZS CISPR-22 Class A; CE Mark EN 55022 Class A CCC; BSMI; EAC; KCC                               |
| Immunity      | ETSI EN300 386 V1.3.2, EN61000-4-2, EN 61000-4-3, 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-3-2   |
| Environmental | RoHS 6, EU directive 2002/95/EC, NEBS Level 1 (GVS-HC201/2), NEBS Level 3 (GVS-HC2A1/2)   |
| Security      | FIPS 140-2, UC APL, Common Criteria   |
| GigaVUE-HC3   |   |
| Safety        | 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           |
| Emissions     | FCC Part 15, Class A; VCCI Class A; EN55022/CISPR-22 Class A; Australia/New Zealand AS/NZS CISPR-22 Class A; EU:CE Mark EN 55022 Class A; CCC China; BSMI Taiwan; KCC Korea; EAC Russia |
| Immunity      | ETSI EN300 386 V1.6.1:2012; EN61000-3-2; EN61000-3-3; EN61000-4-2; EN61000-4-3; EN61000-4-4; EN61000-4-5; EN61000-4-6; EN61000-4-8; EN61000-4-11  |
| Environmental | EU RoHS 6, EU Directive 2011/65/EU; 2006/1907/EC (REACH); ISTA 2A   |
| Security      | FIPS 140-2  |
| NEBS          | Level 1 (GVS-HC301/2)   |

## Ordering Information

| Part Number            | Description   |
|------------------------|---|
| GigaVUE-HC1            |   |
| Base Hardware          |   |
| GVS-HC101              | GigaVUE-HC1 node, 12 1G/10G cages, 4 10/100/1000M Copper, fan tray, 2 power supplies, AC power      |
| GVS-HC102              | GigaVUE-HC1 node, 12 1G/10G cages, 4 10/100/1000M Copper, fan tray, 2 power supplies, DC power      |
| BPS-HC1-D25A24         | Bypass Combo Module, GigaVUE-HC1, 2 SX/SR 50/125 BPS pairs, 4 10G cages                             |
| TAP-HC1-G10040         | TAP and Bypass module, GigaVUE-HC1, 10/100/1000M Copper, 4 TAPs or BPC pairs                        |
| Licenses               |   |
| SMT-HC1-BSE            | GigaSMART, GigaVUE-HC1 license combo, includes Slicing, Masking, & Source Port features             |
| SMT-HC1-DD1            | GigaSMART, GigaVUE-HC1 license, De-Duplication feature  |
| SMT-HC1-HS1            | GigaSMART, GigaVUE-HC1 license, Header Stripping feature  |
| SMT-HC1-TUN            | GigaSMART, GigaVUE-HC1 license, Tunneling feature (includes ERSPAN De-Encapsulation)                |
| SMT-HC1-NF1            | GigaSMART, GigaVUE-HC1 license, NetFlow Generation feature  |
| SMT-HC1-FVU            | GigaSMART, GigaVUE-HC1 license, FlowVUE feature license   |
| SMT-HC1-APF            | TAP and Bypass Module, HC Series, Copper, 12 TAP or BPS pairs                                       |
| SMT-HC1-ASF            | GigaSMART, GigaVUE-HC1 license, Application Session Filtering feature license; requires SMT-HC1-APF |
| SMT-HC1-SSL            | GigaSMART, GigaVUE-HC1, SSL Decryption for Out of Band Tools Feature License                        |
| SMT-HC1-INSSL          | GigaSMART, GigaVUE-HC1, SSL Decryption for Inline and Out of Band Tools Feature License             |
| Fan and Power Supplies |   |
| FAN-TAXQ0              | GigaVUE-TA10, TA40, HC1 fan assembly, each (2 required on TA10, 3 on TA40 and HC1)                  |
| PWR-TAXQ1              | Power Supply Module, GigaVUE-TA10, TA40, or HC1, AC, each   |
| PWR-TAXQ2              | Power Supply Module, GigaVUE-TA10, TA40, or HC1 DC, each  |
|                        |   |

| Part Number    | Description  |
|----------------|--|
| GigaVUE-HC2    |  |
| Base Hardware  |  |
| GVS-HC2A1      | GigaVUE-HC2 base unit w/ chassis, Control Card Version 2, 1 Fan Tray, CLI, 2 power supplies, AC power                              |
| GVS-HC2A2      | GigaVUE-HC2 base unit w/ chassis, Control Card Version 2, 1 Fan Tray, CLI, 2 power supplies, DC power                              |
| PRT-HC0-X24    | Port Module, HC Series, 24x10G   |
| PRT-HC0-Q06    | Port Module, HC Series, 6x40G  |
| PRT-HC0-C02    | Port Module, HC Series, 2x100G QSFP28 cages. Requires Control Card Version 2   |
| BPS-HC0-D25A4G | Bypass Combo Module, HC Series, 4 SX/SR 50/125 BPS pairs, 16 10G cages   |
| BPS-HC0-D25B4G | Bypass Combo Module, HC Series, 4 SX/SR 62.5/125 BPS pairs, 16 10G cages   |
| BPS-HC0-D35C4G | Bypass Combo Module, HC Series, 4 LX/LR BPS pairs, 16 10Gb cages   |
| BPS-HC0-Q25A28 | Bypass Combo Module, GigaVUE-HC2, 2 40G SR4 BPS pairs, 8 10G cages   |
| TAP-HC0-D25AC0 | TAP module, HC Series, SX/SR Internal TAP module 50/125, 12 TAPs   |
| TAP-HC0-D25BC0 | TAP module, HC Series, SX/SR Internal TAP module 62.5/125, 12 TAPs   |
| TAP-HC0-D35CC0 | TAP module, HC Series, LX/LR Internal TAP module, 12 TAPs  |
| TAP-HC0-G100C0 | TAP and Bypass Module, HC Series, Copper, 12 TAP or BPS pairs  |
| SMT-HC0-R      | GigaSMART, HC Series, Rear Module (includes Slicing, Masking, Source Port & GigaVUE Tunneling De-Encapsulation SW)                 |
| SMT-HC0-X16    | GigaSMART, HC Series, Front Module, 16 10Gb cages (includes Slicing, Masking, Source Port & GigaVUE Tunneling De-Encapsulation SW) |
|                |  |

| 3                      |  |
|------------------------|--|
| Part Number            | Description  |
| GigaVUE-HC2            |  |
| Licenses               |  |
| SMT-HC0-APF            | GigaSMART, GigaVUE-HC2, Adaptive Packet Filtering feature license per GigaSMART module                           |
| SMT-HC0-ASF            | GigaSMART, GigaVUE-HC2, Application Session Filtering feature license per GigaSMART module; requires SMT-HC0-APF |
| SMT-HC0-AT1            | GigaSMART, GigaVUE-HC2, Advanced Tunneling feature license per GigaSMART module                                  |
| SMT-HC0-DD1            | GigaSMART, GigaVUE-HC2, De-Duplication feature license per GigaSMART module                                      |
| SMT-HC0-FVU            | GigaSMART, GigaVUE-HC2, FlowVUE feature license per GigaSMART module   |
| SMT-HC0-GTP250         | GigaSMART, GigaVUE-HC2, GTP Filtering & Correlation feature license per GigaSMART module 250K subscribers        |
| SMT-HC0-GTP500         | GigaSMART, GigaVUE-HC2, GTP Filtering & Correlation feature license per GigaSMART module 500K subscribers        |
| SMT-HC0-GTPMAX         | GigaSMART, GigaVUE-HC2, GTP Filtering & Correlation feature license per GigaSMART module Maximum subscribers     |
| SMT-HC0-HS1            | GigaSMART, GigaVUE-HC2, Header Stripping feature license per GigaSMART module                                    |
| SMT-HC0-NF1            | GigaSMART, GigaVUE-HC2, NetFlow Generation feature license per GigaSMART module                                  |
| SMT-HC0-SSL            | GigaSMART, GigaVUE-HC2, SSL Decryption for Out of Band Tools feature license per GigaSMART module                |
| SMT-HC0-INSSL          | GigaSMART, GigaVUE-HC2, SSL Decryption for Inline and Out of Band Tools feature license per GigaSMART module     |
| Fan and Power Supplies | s  |
| FAN-HC200              | GigaVUE-HC2 Fan Assembly, each (1 required)  |
| PWR-HC201              | ower Supply Module, GigaVUE-HC2, AC  |
| PWR-HC202              | ower Supply Module, GigaVUE-HC2, DC  |
|                        |  |

| Part Number    | Description  |
|----------------|--|
| GigaVUE-HC3    |  |
| Base Hardware  |  |
| GVS-HC301      | GigaVUE-HC3 base unit w/ chassis, Control Card, 5 Fan Modules, CLI, 2 power supplies, AC power                               |
| GVS-HC302      | GigaVUE-HC3 base unit w/ chassis, Control Card, 5 Fan Modules, CLI, 2 power supplies, DC power                               |
| GVS-HC3A1      | GigaVUE-HC3 base unit w/ chassis, Control Card v2, 5 Fan Modules, CLI, 2 power supplies, AC power                            |
| GVS-HC3A2      | GigaVUE-HC3 base unit w/ chassis, Control Card v2, 5 Fan Modules, CLI, 2 power supplies, DC power                            |
| CTL-HC3-002    | Control Card Version 2, GigaVUE-HC3, each  |
| PRT-HC3-C16    | Port Module, GigaVUE-HC3, 16x100G QSFP28 cages   |
| PRT-HC3-C08Q08 | Port Module, GigaVUE-HC3, 8x100G QSFP28 cages and 8x40G QSFP+ cages  |
| SMT-HC3-C05    | GigaSMART, GigaVUE-HC3, 5x100G QSFP28 cages (includes Slicing, Masking, Source Port & GigaVUE Tunneling De-Encapsulation SW) |
| PRT-HC3-X24    | Port Module, GigaVUE-HC3, 24x10G   |
| BPS-HC3-C25F2G | Bypass Combo Module, GigaVUE-HC3, 2 100Gb SR4 BPS pairs, 16 10G cages  |
| BPS-HC3-Q35C2G | Bypass Combo Module, GigaVUE-HC3, 2 40Gb LR BPS pairs, 16 10G cages  |
| BPS-HC3-C35C2G | Bypass Combo Module, GigaVUE-HC3, 2 100Gb LR BPS pairs, 16 10G cages   |
| Licenses       |  |
| SMT-HC3-DD1    | GigaSMART, GigaVUE-HC3, De-Duplication Feature License per GigaSMART module  |
| SMT-HC3-HS1    | GigaSMART, GigaVUE-HC3, Header Stripping Feature License per GigaSMART module  |
| SMT-HC3-AT1    | GigaSMART, GigaVUE-HC3, Advanced Tunneling Feature License per GigaSMART module  |
| SMT-HC3-FVU    | GigaSMART, GigaVUE-HC3, FlowVUE Feature License per GigaSMART module   |
| SMT-HC3-APF    | GigaSMART, GigaVUE-HC3, Adaptive Packet Filtering Feature License per GigaSMART module                                       |
| SMT-HC3-ASF    | GigaSMART, GigaVUE-HC3, Application Session Filtering Feature License per GigaSMART module; requires SMT-HC3-APF             |
| SMT-HC3-NF1    | GigaSMART, GigaVUE-HC3, NetFlow Generation Feature License per GigaSMART module  |
| SMT-HC3-SSL    | GigaSMART, GigaVUE-HC3, SSL Decryption for Out of Band Tools Feature License per GigaSMART module                            |
| SMT-HC3-INSSL  | GigaSMART, GigaVUE-HC3, Inline SSL and Passive SSL Decryption feature license per GigaSMART module                           |
| SMT-HC3-GTPMAX | GigaSMART, GigaVUE-HC3, GTP Filtering & Correlation Feature License per GigaSMART module, Maximum subscribers                |

| Part Number            | Description   |
|------------------------|---|
| GigaVUE-HC3            |   |
| Fan and Power Supplies | 5   |
| FAN-HC300              | GigaVUE-HC3 Fan Assembly, each (5 required)                   |
| PWR-HC301              | Power Supply Module, GigaVUE-HC3, AC (each)                   |
| PWR-HC302              | Power Supply Module, GigaVUE-HC3, DC (each)                   |
| Optics for HC1/HC2/HC  | 3   |
| SFP-501                | 1Gb SFP, Copper, UTP with RJ45 interface                      |
| SFP-502                | 1Gb SFP, Multimode 850  |
| SFP-503                | 1Gb SFP, Singlemode 1310                                      |
| SFP-531                | 10 Gig SFP+, Copper 10GBASE-T, RJ45 interface                 |
| SFP-532                | 10Gb SFP+, Multimode 850nm SR                                 |
| SFP-533                | 10Gb SFP+, Singlemode 1310nm LR                               |
| SFP-534                | 10Gb SFP+, Singlemode 1550nm ER (special order)               |
| SFP-535                | 10Gb SFP+, Multimode 1310nm LRM (special order)               |
| QSB-501                | 40 Gig QSFP+ BiDi, Multimode SR RX-only                       |
| QSB-502                | 40 Gig QSFP+ BiDi, Multimode SR, Full Duplex                  |
| QSB-512                | 100 Gig QSFP28 BiDi, Multimode SR, Full Duplex                |
| QSF-502                | 40Gb QSFP+, Multimode 850nm SR4                               |
| QSF-503                | 40Gb QSFP+, Singlemode LR4                                    |
| QSF-506                | 40Gb QSFP+ Parallel Singlemode LR for 4x10G Breakout, 1310 nm |
| QSF-507                | 40 Gig QSFP+, Multimode SR4 Extended Reach                    |
| Q28-502                | 100 Gig QSFP28, Multimode SR4                                 |
| Q28-503                | 100 Gig QSFP28, Singlemode LR4                                |
| Q28-513                | 100 Gig QSFP28, Singlemode CWDM4                              |
|                        |   |

| Part Number                | Description   |  |
|----------------------------|---|--|
| Cabling for HC2/HC3        |   |  |
| CBL-205                    | SFP+ to SFP+ Direct Attach Copper cable, 5 meters   |  |
| CBL-310                    | SFP+ Active Fiber Cable, 10 meters  |  |
| CBL-405                    | Active Fiber cable, 5 meters (QSFP approved)  |  |
| CBL-410                    | Active Fiber cable, 10 meters (QSFP approved)   |  |
| CBL-450                    | Active Fiber cable, 50 meters (QSFP approved)   |  |
| Management for HC1/HC2/HC3 |   |  |
| GFM-HW0-FM010              | GigaVUE-FM Hardware Appliance, manages up to 10 Physical Visibility Fabric Nodes  |  |
| GFM-FM001                  | GigaVUE-FM, manage 1 Physical Visibility Fabric Node  |  |
| GFM-FM005                  | GigaVUE-FM, manage up to 5 Physical Visibility Fabric Nodes   |  |
| GFM-FM010                  | GigaVUE-FM, manage up to 10 Physical Visibility Fabric Nodes  |  |
| GFM-FM000                  | GigaVUE-FM Prime Edition, manage up to 200 Physical Visibility Fabric Nodes, includes FabricVUE Traffic Analyzer (GFM-FM-FTA) and VMware NSX Manager Integration (GFM-VM-NSX) add-ons |  |

## Support and Services

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