



## Data Sheet

# GigaSMART

### Product Description

GigaSMART® technology extends the intelligence and value of the Gigamon Security Delivery Platform by enhancing the monitoring of your network infrastructure and improving security tool performance. A range of applications are available to optimize the traffic sent from your network to the tools you rely upon to monitor, manage, and secure the network. GigaSMART's advanced processing engine can be accessed anywhere within the Gigamon Visibility Platform without port- or card-based restrictions. GigaSMART engines can be combined to manage higher traffic loads and optimized for specific applications. Applications can be combined or service chained so traffic benefits from multiple functions that can be achieved at once, such as generating NetFlow and other network metadata or decrypting SSL/TLS traffic after packet duplicates have been removed, or stripping VLAN headers before load balancing the traffic and sending it out to the appropriate tools.



Network monitoring tools can perform more efficiently by eliminating unwanted content with the de-duplication and packet slicing features. SSL/TLS decryption provides visibility into encrypted sessions, sending decrypted packets to both inline and out-of-band security tools. Masking allows network security teams to hide confidential information like passwords, financial accounts, or medical data, helping companies to meet SOX, HIPAA and PCI compliance regulations. Organizations can improve accuracy by adding source or timing information at the point of collection with the GigaSMART source port labeling and time stamping capabilities. Enhanced packet distribution features available with Adaptive Packet Filtering or load balancing enable enhanced visibility into packet contents and, when combined with header stripping, allow tools to operate more effectively by removing unwanted protocol headers. GigaSMART's Application Session Filtering allows you to identify and forward traffic corresponding to application sessions to security appliances increasing their efficacy and performance.








The advanced processing capabilities of the GigaSMART engine can also be leveraged to summarize and generate NetFlow plus other metadata statistics from incoming traffic streams. Offloading NetFlow and metadata generation to the out-of-band Gigamon Visibility Platform eliminates the risk of expending expensive production network resources in generating these analytics. Generation of metadata from the network allows security devices to operate on relevant security information versus raw packet streams. Enhanced flow-level visibility across remote locations and Big Data environments can be used to derive usage patterns, top talkers, top applications, and more, for effective capacity planning and enforcing security policies.

With GTP correlation, service providers can more reliably filter and forward specified subscriber sessions (both GTP-c and GTP-u) to monitoring and analytic tools. Gigamon's FlowVUE® application offers a sampling paradigm for active subscriber's device IPs (UE IPs) across GTP-u tunnels. The integrity of the sampled subscriber flows is preserved by forwarding all of the packets associated with the user-endpoint to the probes. The ability to filter and sample on subscriber devices and transmit all of the associated sessions of interest to the monitoring tool intelligently reduces the amount of data while enabling Big Data throughput processing with existing cost structures.

GigaSMART technology is available on the GigaVUE H Series visibility nodes. GigaSMART applications can be applied to any network or tool port on the chassis or the entire cluster, allowing maximum flexibility in configuration and provisioning.








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Table 1: Software Features and Benefits

GigaSMART		GigaVUE H Series <sup>1</sup>	GigaVUE-HC1
Features/Applications	Benefits		
 <b>Adaptive Packet Filtering</b>	<ul style="list-style-type: none"> <li>Filter across advanced encapsulation headers including VXLAN, VN-Tag, GTP, MPLS, etc., and inner (encapsulated) Layer 3/Layer 4 packet contents</li> <li>Provide advanced visibility into the application layer using pattern matching regular expressions-based filters</li> <li>Mask private and sensitive data in the packet before it gets stored, maintaining SOX, PCI, and HIPAA compliance</li> <li>Included with GTP correlation</li> </ul>	✓	✗
 <b>Application Session Filtering</b>	<ul style="list-style-type: none"> <li>Forward traffic corresponding to application sessions to security appliances increasing their efficacy and performance</li> <li>Classify flows of interest using signatures to filter applications such as video streaming, email, web 2.0, and other business applications</li> <li>Provide complete visibility into traffic flows by forwarding all packets from session initiation to termination to security and monitoring tools</li> </ul>	✓	✗
 <b>De-duplication</b>	<ul style="list-style-type: none"> <li>Relieve tool processing resources when packets are gathered from multiple collection points along a path by only forwarding a packet once</li> <li>Remove packet duplication caused by inter-VLAN communication or incorrect switch configuration</li> </ul>	✓	✓
 <b>ERSPAN Termination</b>	<ul style="list-style-type: none"> <li>Terminate ERSPAN tunnels to consolidate, filter, and forward relevant ERSPAN traffic</li> <li>Translate the ERSPAN III timestamp into a format readable by monitoring tools (GigaVUE H Series only)</li> </ul>	✓	✓
 <b>FlowVUE</b>	<ul style="list-style-type: none"> <li>Perform flow-aware sampling of active subscriber devices to selectively reduce traffic bound to monitoring and analytic tools</li> <li>Preserve or increase CEM based on real-time reduced data analytic throughput</li> <li>Turn Big Data into manageable data with deterministic results at a fraction of the data rate</li> </ul>	✓	✗
 <b>GTP Correlation</b>	<ul style="list-style-type: none"> <li>Optimize tool infrastructure by accurate filtering, replicating, and forwarding monitored subscriber sessions</li> <li>Correlate subscriber sessions (control and data) to offload tools, increasing throughput</li> <li>Facilitate drilldowns into roaming users across peer networks</li> <li>Includes Adaptive Packet Filtering license; GTP Whitelisting requires FlowVUE license</li> </ul>	✓	✗
 <b>Header Stripping</b>	<ul style="list-style-type: none"> <li>Eliminate the need for monitoring tools to decipher protocols</li> <li>Allow easy filtering, aggregation, and load balancing of packets with headers removed</li> <li>Headers and protocols removed: ISL, Cisco FabricPath, VXLAN, VN-Tag, VLAN, MPLS, GRE, and GTP-U</li> </ul>	✓	✓

<sup>1</sup> Includes GigaVUE-HD8, GigaVUE-HD4, GigaVUE-HC3, GigaVUE-HC2, and GigaVUE-HB1, excluding GigaVUE-HC1. See Table 2 for hardware requirements.

Table 1: Software Features and Benefits continued


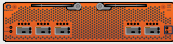


GigaSMART		GigaVUE H Series <sup>1</sup>	GigaVUE-HC1
Features/Applications	Benefits		
 <b>Load Balancing</b>	<ul style="list-style-type: none"> <li>Distribute traffic among multiple ports based on a variety of options: hashing, bandwidth, cumulative traffic, packet rate, connections, and round robin</li> <li>Apply weighting to the traffic distribution, supporting different tool capacities</li> <li>Utilize hashing options such as IP, IP-and-Port, five-tuple, and GTP-u tunnel ID</li> <li>Load balancing is included with all GigaVUE H Series GigaSMART licenses except NetFlow (including the Metadata Engine)</li> </ul>	✓	✗
 <b>Masking</b>	<ul style="list-style-type: none"> <li>Overwrite packet data between a 64-9000 byte offset</li> <li>Conceal private data including financial and medical information</li> </ul>	✓	✓
 <b>NetFlow and Metadata Generation</b>	<ul style="list-style-type: none"> <li>Offload NetFlow and metadata generation from network elements and generate critical security specific metadata such as URLs and HTTP response codes from any traffic</li> <li>Obtain high-fidelity, unsampled, 1:1 flow statistics</li> <li>Export records to up to six (6) collectors supporting</li> <li>NetFlow v5/v9, IPFIX as well as extensions for other metadata (ex. URL, HTTP response codes, SIP, DNS, and Certificates)</li> </ul>	✓	✓
 <b>Packet Slicing</b>	<ul style="list-style-type: none"> <li>Reduce packet size to increase processing and monitoring throughput</li> <li>Process fewer bits while maintaining the vital, relevant portions of each packet</li> <li>Significantly increase the capacity of forensic recording tools</li> </ul>	✓	✓
 <b>Source Port Labeling</b>	<ul style="list-style-type: none"> <li>Add labels to packets indicating the ingress port</li> <li>Easily identify the origin of a packet</li> </ul>	✓	✓
 <b>SSL/TLS Decryption</b>	<ul style="list-style-type: none"> <li>Provide automatic visibility into SSL/TLS traffic regardless of TCP port or application</li> <li>Selectively decrypt traffic using intelligent policies based on URL categories, IP address, ports, VLAN tags, domain names, and more</li> <li>Scale performance with additional GigaSMART modules</li> <li>Integrate with other GigaSMART applications for comprehensive traffic management (e.g. de-duplication, masking, slicing)</li> <li>Protect private server certificates and keys with encryption and role-based access controls</li> <li>Send decrypted packets to multiple inline (e.g. IPS, NGFW) and out-of-band tools (e.g. DLP, APM, SIEM, analytics) security tools simultaneously*</li> </ul>	✓	✗
 <b>Tunneling</b>	<ul style="list-style-type: none"> <li>Forward packets from remote sites to centralized monitoring tools using IP/UDP or L2GRE encapsulation</li> <li>Integrate virtualized tools into the Visibility Fabric via L2GRE tunnels</li> </ul>	✓	✓

<sup>1</sup> Includes GigaVUE-HD8, GigaVUE-HD4, GigaVUE-HC3, GigaVUE-HC2, and GigaVUE-HB1, excluding GigaVUE-HC1.

See Table 2 for hardware requirements.

\*Sending decrypted packets to multiple inline and out-of-band tools only available on GigaVUE-HC2.

Table 2: GigaSMART Performance<sup>2</sup>

Product	Description
<b>GigaSMART for GigaVUE-HD4/HD8</b> 	<ul style="list-style-type: none"> <li>Processing up to 80Gb per line card</li> <li>No additional ports</li> <li>Multiple GigaSMART line cards can be combined into a single system to provide scalable performance up to 160Gb on the GigaVUE-HD4 and 320Gb on the GigaVUE-HD8</li> </ul>
<b>GigaSMART for GigaVUE-HC3</b> 	<ul style="list-style-type: none"> <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, or 4 x 10Gb*</li> </ul>
<b>GigaSMART for GigaVUE-HC2</b>  	<p><i>GigaSMART front module</i></p> <ul style="list-style-type: none"> <li>Processing up to 40Gb</li> <li>Includes 16 SFP+/SFP ports**</li> <li>Includes slicing, masking, source port, and GigaVUE tunneling de-encapsulation</li> </ul> <p><i>GigaSMART rear module</i></p> <ul style="list-style-type: none"> <li>Processing up to 40Gb</li> <li>No additional ports</li> <li>Includes slicing, masking, source port and GigaVUE tunneling de-encapsulation</li> <li>Up to 5 GigaSMART modules (front and rear) can be populated per GigaVUE-HC2 to provide scalable performance up to 200Gb</li> </ul>
<b>GigaSMART for GigaVUE-HC1 (integrated)</b>	Processing up to 20Gb
<b>GigaSMART for GigaVUE-HB1 (integrated)</b>	Processing up to 10Gb

<sup>2</sup> Performance reflects processor speed and not bandwidth, which is dependent upon packet size, packet rate, and specific GigaSMART applications applied.

\*Requires MPO-to-4xLC breakout cable or PNL-M341 module for G-TAP M Series

\*\* 10Gb (10GBASE-SR/LR/ER/LRM), 1Gb optical SFP (1000BASE-SX/LX/ZX), 1Gb SFP copper (RJ45, 1000BASE-T)

Table 3: Physical Dimensions &amp; Weight

GigaSMART Line Card/Module	Height	Width	Depth	Weight
<b>For GigaVUE-HD4 and GigaVUE-HD8 fabric nodes</b>	1.61in (4.08cm)	15.75in (40.01cm)	11.55in (29.33cm)	9.06lbs (4.11kg)
<b>For GigaVUE-HC3 fabric node</b>	1.9in (4.7cm)	8.5in (21.7cm)	16.1in (41.0cm)	4.40lbs (2.00kg)
<b>For GigaVUE-HC2 fabric node GigaSMART front plus 16 x 10Gb module</b>	1.6in (4.1cm)	8.0in (20.3cm)	10.2in (26.0cm)	4.40lbs (2.00kg)
<b>For GigaVUE-HC2 fabric node GigaSMART rear module</b>	1.6in (4.1cm)	9.3in (23.5cm)	13.2in (33.6cm)	4.39lbs (1.99kg)

## Support and Services

Gigamon offers a range of support and maintenance services. For details regarding Gigamon's Limited Warranty and its Product Support and Software Maintenance Programs, visit [www.gigamon.com/support-and-services/overview-and-benefits](http://www.gigamon.com/support-and-services/overview-and-benefits)

## Ordering Information

**Table 4: GigaSMART for the GigaVUE-HD4 and GigaVUE-HD8 Fabric Nodes**

Part Number	Description
<b>SMT-HD0</b>	GigaSMART, HD Series blade (includes Slicing, Masking, Source Port & GigaVUE Tunneling De-Encapsulation SW)
<b>SMT-HD0-APF</b>	GigaSMART, HD Series, Adaptive Packet Filtering feature license per GigaSMART blade
<b>SMT-HD0-ASF</b>	GigaSMART, HC Series, Application Session Filtering feature license per GigaSMART blade; requires SMT-HD0-APF
<b>SMT-HD0-AT1</b>	GigaSMART, HD Series, Advanced Tunneling feature license per GigaSMART blade
<b>SMT-HD0-DD1</b>	GigaSMART, HD Series, De-Duplication feature license per GigaSMART blade
<b>SMT-HD0-FVU</b>	GigaSMART, HD Series, FlowVUE feature license per GigaSMART blade
<b>SMT-HD0-GTP250</b>	GigaSMART, HD Series, GTP Filtering & Correlation feature license per GigaSMART blade, 250K subscribers
<b>SMT-HD0-GTP500</b>	GigaSMART, HD Series, GTP Filtering & Correlation feature license per GigaSMART blade, 500K subscribers
<b>SMT-HD0-GTPMAX</b>	GigaSMART, HD Series, GTP Filtering & Correlation feature license per GigaSMART blade, Maximum subscribers
<b>SMT-HD0-HS1</b>	GigaSMART, HD Series, Header Stripping feature license per GigaSMART blade
<b>SMT-HD0-NF1</b>	GigaSMART, HD Series, NetFlow Generation feature license per GigaSMART blade
<b>SMT-HD0-SSL</b>	GigaSMART, HD Series, SSL Decryption feature license per GigaSMART blade

**Table 5: GigaSMART for the GigaVUE-HC3 Fabric Node**

Part Number	Description
<b>SMT-HC3-C05</b>	GigaSMART, GigaVUE-HC3, 5x100G QSFP28 cages (includes Slicing, Masking, Source Port & GigaVUE Tunneling De-Encapsulation SW)
<b>SMT-HC3-DD1</b>	GigaSMART, GigaVUE-HC3, De-Duplication Feature License per GigaSMART module
<b>SMT-HC3-HS1</b>	GigaSMART, GigaVUE-HC3, Header Stripping Feature License per GigaSMART module
<b>SMT-HC3-AT1</b>	GigaSMART, GigaVUE-HC3, Advanced Tunneling Feature License per GigaSMART module
<b>SMT-HC3-FVU</b>	GigaSMART, GigaVUE-HC3, FlowVUE Feature License per GigaSMART module
<b>SMT-HC3-APF</b>	GigaSMART, GigaVUE-HC3, Adaptive Packet Filtering Feature License per GigaSMART module
<b>SMT-HC3-ASF</b>	GigaSMART, GigaVUE-HC3, Application Session Filtering Feature License per GigaSMART module; requires SMT-HC3-APF
<b>SMT-HC3-NF1</b>	GigaSMART, GigaVUE-HC3, NetFlow Generation Feature License per GigaSMART module
<b>SMT-HC3-SSL</b>	GigaSMART, GigaVUE-HC3, SSL Decryption for Out of Band Tools Feature License per GigaSMART module
<b>SMT-HC3-GTPMAX</b>	GigaSMART, GigaVUE-HC3, GTP Filtering & Correlation Feature License per GigaSMART module, Maximum subscribers

Table 6: GigaSMART for the GigaVUE-HC2 Fabric Node

Part Number	Description
<b>SMT-HC0-R</b>	GigaSMART, HC Series, Rear Module (includes Slicing, Masking, Source Port & GigaVUE Tunneling De-Encapsulation SW)
<b>SMT-HC0-X16</b>	GigaSMART, HC Series, Front Module, 16 10Gb cages (includes Slicing, Masking, Source Port & GigaVUE Tunneling De-Encapsulation SW)
<b>SMT-HC0-APF</b>	GigaSMART, HC Series, Adaptive Packet Filtering feature license per GigaSMART module
<b>SMT-HC0-ASF</b>	GigaSMART, HC Series, Application Session Filtering feature license per GigaSMART module; requires SMT-HC0-APF
<b>SMT-HC0-AT1</b>	GigaSMART, HC Series, Advanced Tunneling feature license per GigaSMART module
<b>SMT-HC0-DD1</b>	GigaSMART, HC Series, De-Duplication feature license per GigaSMART module
<b>SMT-HC0-FVU</b>	GigaSMART, HC Series, FlowVUE feature license per GigaSMART module
<b>SMT-HC0-GTP250</b>	GigaSMART, HC Series, GTP Filtering & Correlation feature license for 250K simultaneous subscribers per GigaSMART module
<b>SMT-HC0-GTP500</b>	GigaSMART, HC Series, GTP Filtering & Correlation feature license for 500K simultaneous subscribers per GigaSMART module
<b>SMT-HC0-GPTMAX</b>	GigaSMART, HC Series, GTP Filtering & Correlation feature license for maximum supported subscribers per GigaSMART module
<b>SMT-HC0-HS1</b>	GigaSMART, HC Series, Header Stripping feature license per GigaSMART module
<b>SMT-HC0-NF1</b>	GigaSMART, HC Series, NetFlow Generation feature license per GigaSMART module
<b>SMT-HC0-SSL</b>	GigaSMART, HC Series, SSL Decryption for Out of Band Tools feature license per GigaSMART module
<b>SMT-HC0-INSSL</b>	GigaSMART, HC Series, SSL Decryption for Inline and Out of Band Tools feature license per GigaSMART module

Table 7: GigaSMART for the GigaVUE-HC1 Fabric Node

Part Number	Description
<b>SMT-HC1-BSE</b>	GigaSMART, HC1 license combo, includes Slicing, Masking, & Source Port features
<b>SMT-HC1-DD1</b>	GigaSMART, HC1 license, De-Duplication feature
<b>SMT-HC1-HS1</b>	GigaSMART, HC1 license, Header Stripping feature
<b>SMT-HC0-NF1</b>	GigaSMART, HC1 license, NetFlow Generation feature
<b>SMT-HC1-TUN</b>	GigaSMART, HC1 license, Tunneling feature (includes tunnel generation/termination & ERSPAN termination)

Table 8: GigaSMART for the GigaVUE-HB1 Fabric Node

Part Number	Description
<b>SMT-HB0-APF</b>	GigaSMART, HB license, Adaptive Packet Filtering feature
<b>SMT-HB0-ASF</b>	GigaSMART, HB Series, Application Session Filtering feature license per GigaSMART module; requires SMT-HB0-APF
<b>SMT-HB1-BSE</b>	GigaSMART, HB license combo, includes Slicing, Masking, & Source Port features
<b>SMT-HB1-DD1</b>	GigaSMART, HB license, De-Duplication feature
<b>SMT-HB0-FVU</b>	GigaSMART, HB license, FlowVUE feature
<b>SMT-HB0-GTP250</b>	GigaSMART, HB license, GTP Filtering & Correlation feature, 250K subscribers
<b>SMT-HB1-HS1</b>	GigaSMART, HB license, Header Stripping feature
<b>SMT-HB0-NF1</b>	GigaSMART, HB license, NetFlow Generation feature
<b>SMT-HB1-SSL</b>	GigaSMART, HB license, SSL Decryption feature
<b>SMT-HB1-TUN</b>	GigaSMART, HB license, Tunneling feature (includes tunnel generation/termination & ERSPAN termination)

Table 9: Tunneling License

Feature	GigaVUE-HD8/HD4	GigaVUE-HC2	GigaVUE-HC1	GigaVUE-HB1
<b>Tunnel De-Encapsulation: L2GRE &amp; GMIP*</b>	Included with SMT-HD0	Included with SMT-HC0-X16 and SMT-HC0-R	SMT-HC1-TUN	SMT-HB1-TUN
<b>Tunnel Encapsulation: L2GRE &amp; GMIP*</b>	SMT-HD0-AT1	SMT-HC0-AT1	SMT-HC1-TUN	SMT-HB1-TUN
<b>ERSPAN Termination</b>	SMT-HD0-AT1	SMT-HC0-AT1	SMT-HC1-TUN	SMT-HB1-TUN

\*Gigamon IP/UDP tunneling

## For More Information

For more information about the Gigamon Visibility Platform or to contact your local representative, please visit:

[www.gigamon.com](http://www.gigamon.com)