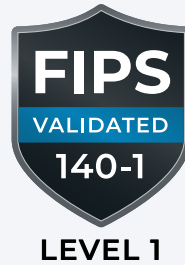


GigaVUE Cloud Suite for Google Cloud

The Power of Deep Observability for
Your GCP Workloads



GigaVUE Cloud Suite™, a key component of the Gigamon Deep Observability Pipeline, is a fully Google Cloud-certified product that acquires and processes traffic from your GCP environments before distributing optimized network-based intelligence to the security, monitoring, and observability tools of your choice. You get complete application, flow, and packet-level visibility into all data-in-motion running within your Google Cloud Platform — without having to invest in new tools.

GigaVUE Cloud Suite can be deployed in multiple public and private clouds. This data sheet describes the specific deployment with GCP, including integrations with many GCP services.

By extending your existing on-prem or cloud tools to monitor and secure your GCP workloads and applications, you can:

- Ensure a consistent security and compliance posture across hybrid and multi-cloud environments

- Eliminate network blind spots, including East-West and container traffic, where threats can hide
- Lower operational friction associated with cloud migration and the need to learn new tools and processes
- Speed up troubleshooting by going deeper than GCP native tools to identify exactly where, when and how a network transaction occurred

The Gigamon Deep Observability Pipeline goes even further by augmenting the capabilities of your current metrics, events, logs, and traces (MELT), or MELT-based SIEM, APM, and observability tools with actionable network-derived intelligence. This powerful combination of network-based data and MELT helps NetOps, SecOps, and CloudOps teams speed issue resolution and root cause analysis. It also brings new security use cases to your current set of observability tools, such as detecting unauthorized activities like crypto mining or compliance risks such as expiring TLS certificates.

How Gigamon Works in Google Cloud

Traffic acquisition can be done through native Packet Mirroring, Cloud VPN Tunnels, or GigaVUE® Universal Cloud Tap (UCT). Best of all, there's minimal impact on resources and no need to implement individual tool agents just to get traffic to a specific tool. Gigamon also supports GCP VPC network gateways to ensure visibility for tools across interconnected VPCs and on-premises networks. Visibility is also available for workloads deployed in the Google Kubernetes Engine (GKE).

After Gigamon is deployed, it removes operational burdens by offering the same level of elastic scalability you expect in your GCP deployments. Gigamon automatically detects changes in the number and locations of GCP VPCs being monitored. Gigamon cloud visibility nodes are then expanded (or contracted) to whatever levels are required.

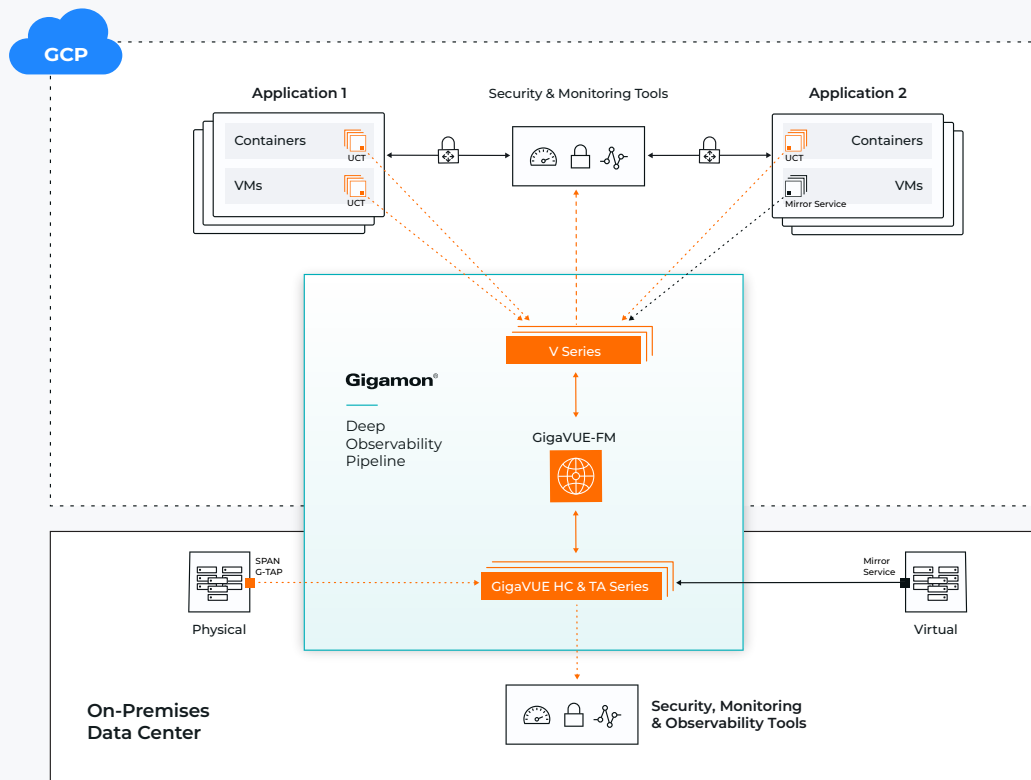


Figure 1. The Gigamon Deep Observability Pipeline acquires, processes, and forwards traffic within an GCP VPC.

The Gigamon Deep Observability Pipeline acquires traffic in GCP Infrastructure-as-a-Service (IaaS), intelligently processes this data, and then sends optimized network traffic and/or application metadata to your security, monitoring, and observability tools.

Solution Highlights

Strengthen Security and Compliance Within GCP

- IT teams can use proven, familiar security tools to monitor GCP workloads.
- Gigamon Application Metadata Intelligence (AMI), generated from deep packet inspection, provides thousands of important application attributes to observability and SIEM tools.
- Gigamon **Pre encryption™** redefines security for applications running in GCP environments, delivering plaintext visibility of encrypted lateral traffic.

Increase Tool Efficiency and Effectiveness

- Traffic intelligence features, such as Application Filtering Intelligence, Application Metadata Intelligence, Packet Slicing, Advanced Flow Slicing, De-duplication, and NetFlow generation, work to streamline traffic and reduce the burden on monitoring and security tools.

Easily Acquire Traffic and Scale Observability

- GigaVUE Cloud Suite supports traffic acquisition from VMs or containers within GCP infrastructure using either native Packet Mirroring or lightweight (and free) Gigamon UCT.
- Google VPC gateway support ensures tools also see traffic across interconnected VPCs without the inefficiency of VPC Peering or other routing complexities.

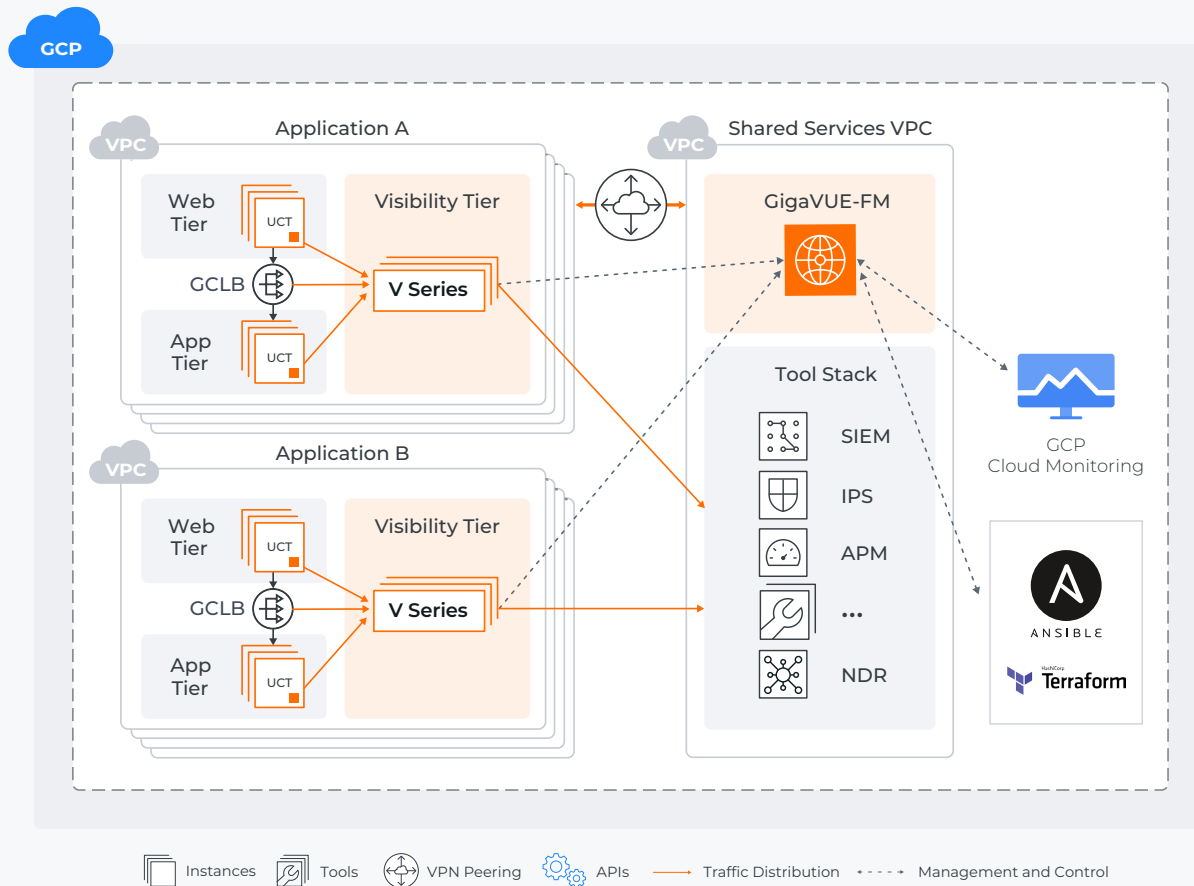


Figure 2. GigaVUE Cloud Suite acquires, processes, and forwards traffic across multiple GCP VPCs.

- Automatic Target Selection® enables dynamic discovery and monitoring of new workloads — without any manual action.
- Traffic steering and tool load-balancing techniques optimize traffic distribution across multiple tools to ensure high availability.

Get Unified Orchestration and Management

- One common platform — GigaVUE-FM fabric manager — supports orchestration and management of your entire observability fabric across physical, cloud, and virtual environments.
- Or choose native orchestration and services or third-party tools like Ansible and Terraform to simplify management.

GigaVUE Cloud Suite for GCP supports multiple VPCs and integrates with Google cloud management tools to enable automation. Use native Packet Mirroring or GigaVUE UCT to collect all traffic VM and container streams.

Components of GigaVUE Cloud Suite

GigaVUE UCT

The next generation of GigaVUE UCT takes advantage of advanced Linux functionality to mirror production traffic and send to GigaVUE V Series node. This enhances performance and reduces resource impact in VM-based environments and makes it easier to tap VMs, and can be deployed using FM or third party orchestration.

GigaVUE V Series

Visibility nodes deployed in GCP aggregate, replicate, and select traffic of interest, then optimize and distribute acquired traffic to multiple tools located in any VPC. Take advantage of Flow Mapping® and tool load balancing functions to reduce burden on tools.

GigaSMART® Applications

GigaSMART® applications, running on top of V Series, provide application and traffic intelligence, including Application Filtering Intelligence, Application Metadata Intelligence, Packet De-duplication, Adaptive Packet Filtering, and Packet Slicing and Masking.

GigaVUE-FM

GigaVUE-FM fabric manager provides centralized orchestration and management across all environments, including GCP, AWS, and Azure; private clouds (Nutanix, OpenStack, and VMware); and on-prem physical infrastructure. Traffic policies for GigaVUE V Series are configured using a simple drag-and-drop user interface.

GigaVUE UCT Controller and GigaVUE V Series Proxy (optional)

For hybrid and multi-GCP deployments, GigaVUE uses a controller-based design to proxy the command-and-control APIs while preserving existing IP addressing schemes or Network Address Translation (NAT). The UCT Controller proxies commands from GigaVUE-FM to the UCT instances (see Figure 3 on next page), while the GigaVUE V Series Proxy proxies commands from GigaVUE-FM to the GigaVUE V Series nodes.

For customers who wish to leverage programmability to manage GigaVUE V Series at scale, the GigaVUE V Series API Proxy Server can proxy commands from GigaVUE-FM to the GigaVUE V Series nodes across the GCP deployment.

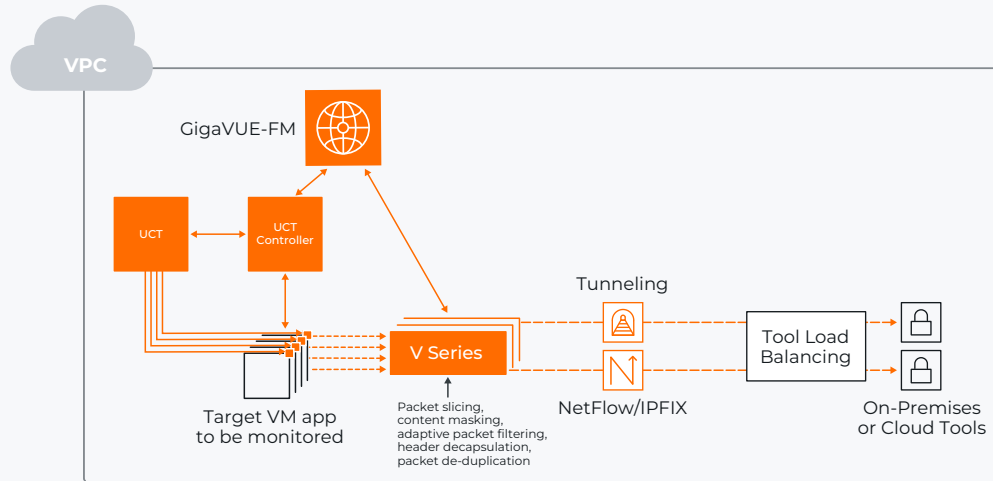


Figure 3. GigaVUE Cloud Suite for GCP is composed of GigaVUE V Series for optimization, transformation, and brokering, as well as GigaVUE-FM for management. For access to workload traffic, GigaVUE Cloud Suite also includes the components UCT and UCT Controller, which are optional, but may be preferred in situations where free workload-level visibility is preferred over paid GCP services.

Key Features and Benefits

<p>GigaVUE UCT</p> <p>Optional lightweight instances, available at no cost, mirror traffic and send to GigaVUE V Series.</p>	<p>Simplified Traffic Mirroring</p> <p>If packet mirroring is not an option, deploy just one lightweight agent per Google compute instance (vs. one per security tool), reducing impact on compute CPU utilization and operational overhead.</p> <p>Reduce Application Downtime</p> <p>No infrastructure redesign needed to add new agents as applications or tools scale out in GCP.</p> <p>Scale What's Being Monitored</p> <p>Integration between GigaVUE-FM and Google Cloud management enables agents to automatically scale as compute instances scale.</p> <p>Minimize Production Changes</p> <p>Use the production Network Interface or separate Network Interface Card (NIC) to mirror workload traffic. The separate NIC option allows IT to preserve application traffic policies.</p>
<p>GigaVUE V Series</p> <p>Visibility nodes that aggregate, select, optimize, and distribute traffic. V Series nodes work seamlessly with Google Cloud management templates.</p>	<p>Traffic Brokering with Flow Mapping®</p> <p>Acquire, Aggregate, Select, Replicate and Distribute</p> <ul style="list-style-type: none"> • Acquire traffic from multiple compute instances via GRE or VXLAN tunnels, using packet mirroring, UCT, or third-party sources. • Support tunnel-as-a-source to gather encapsulated traffic from other virtual TAPs. • Aggregate traffic from the various acquisition sources and replicate to send to different tools.

GigaVUE V Series, cont'd

Visibility nodes that aggregate, select, optimize, and distribute traffic. V Series nodes work seamlessly with Google Cloud Platform templates.

- Select traffic of interest with a variety of L2–L4 criteria policies and then forward it to specific tools. Criteria can include IP addresses/subnets, TCP/UDP ports, protocols, instance tags, and more.
- Distribute selected traffic to multiple tools anywhere: Support for 5-tuple load balancing to tool instances improves tool deployment efficiency and eliminates the need for discrete load balancers.

Traffic Intelligence:

Transform, Optimize, and Obfuscate

- Reduce traffic volume by removing duplicated packets, slicing superfluous content, and sampling packet flows to reduce tool overload and traffic backhaul.
- Remove unwanted protocols by stripping specific headers and encapsulations to reduce tool overload.
- Obfuscate confidential, private, or sensitive information by masking specific data to maintain compliance.

Application Intelligence

- Close to 6,000 protocols, applications, and user behaviors L4-7 attributes spanning over 4,000 standard and custom apps.
- Integrate with Gigamon Application Visualization, Application Filtering, De-duplication from GigaVUE-FM fabric manager.
- Leverage use case based application and attribute templates for metadata extraction.
- Export metadata in NetFlow v5/v9, IPFIX, CEF and JSON over HTTP/S and Kafka.

Elastic Scale and Performance

- Automatic Target Selection: Automatically extract traffic of interest anywhere in the infrastructure being monitored.
- Automatically scale based on varying number of compute instances without lowering performance of visibility node.
- Process at multi-Gbps rates per instance.

GigaVUE-FM

Centralized management and orchestration.

Centralized Orchestration and Management

- Centralized orchestration and single-pane-of-glass enable visualization across your entire infrastructure — physical, virtual, and cloud.
- Configure all policies in GigaVUE V Series and manage their self-registration process in conjunction with the orchestration tool used; drag-and-drop user interface simplifies definition of traffic policies.
- GigaVUE-FM monitors heartbeat communications from all fabric elements to help ensure high availability and give detailed information on fabric health.
- Software-Defined Networking constructs enable configuration of intelligent traffic policies.

Automation

- Integration with third-party orchestration tools enables instantiation of all deep observability pipeline components: UCT, UCT Controller, V Series nodes, and their proxy (if needed).
- Open REST APIs published by GigaVUE-FM can be consumed by tools to dynamically adjust traffic received or to orchestrate new traffic policies. GigaVUE-FM automatically scales V Series based on traffic levels, not on the number of VMs.

Topology View

- Auto-discovery and end-to-end topology visualization provide insight into visibility tier and compute instances.

Minimum Requirements for GigaVUE Cloud Suite for GCP

Recommended Minimum Compute Specifications

Solution Component	Minimum Compute Instance Type	Description
UCT	Any	Linux: Available as an RPM or Debian package Windows: Available for Windows Server 2012/2016/2019
UCT Controller	UCT-V: e2.micro UCT-C: own pod	Command-and-Control component for the UCT instances
GigaVUE V Series Node	c2-standard-4 for 2 interfaces c2-standard-8 for 3 interfaces	Requires minimum of two NICs NIC 1: Management NIC 2: Traffic acquisition and distribution NIC 3+: Optional additional data acquisition and distribution
GigaVUE V Series Proxy	e2.micro	Requires minimum of two NICs NIC 1: Management NIC 2: Traffic acquisition and distribution NIC 3+: Optional additional data acquisition and distribution
GigaVUE-FM	e2-standard-4 40GB root disk 40GB data disk	GigaVUE-FM must be able to access both the controller instances for relaying the commands. GigaVUE-FM automatically spins up additional V Series nodes based on a pre-defined configuration in the user interface. For on-premises GigaVUE-FM requirements and ordering information, please refer to the GigaVUE-FM data sheet .

Based on the number of virtual TAP points, GigaVUE V Series nodes will be auto-launched by GigaVUE-FM.

Ordering Information, Renewals

GigaVUE Cloud Suite for GCP, with all the solution components, can be purchased in the following way:

GigaVUE Cloud Suite for GCP uses a monthly term license and pricing is based on total volume of traffic processed daily. Users can purchase directly from Gigamon or associated partners. Customers receive an unlimited number of components (e.g., UCT instances or V Series instances) at no additional charge.

Part Numbers for the Solution

Part Number	Description
VBL-50T-BN-CORE	Monthly Term license for CoreVUE software up to 50TB per day in V Series for cloud and virtual environments. Capabilities included: Advanced Tunneling, Slicing, Masking, Advanced Load Balancing. Min Term is 12 months. Includes bundled Elite-Plus Support.
VBL-250T-BN-CORE	Monthly Term license for CoreVUE software up to 250TB per day in V Series for cloud and virtual environments. Capabilities included: Advanced Tunneling, Slicing, Masking, Advanced Load Balancing. Min Term is 12 months. Includes bundled Elite-Plus Support.

Part Numbers for the Solution, cont'd

Part Number	Description
VBL-2500T-BN-CORE	Monthly Term license for CoreVUE software up to 2,500TB per day in V Series for cloud and virtual environments. Capabilities included: Advanced Tunneling, Slicing, Masking, Advanced Load Balancing. Min Term is 12 months. Includes bundled Elite-Plus Support.
VBL-25KT-BN-CORE	Monthly Term license for CoreVUE software up to 25,000TB per day in V Series for cloud and virtual environments. Capabilities included: Advanced Tunneling, Slicing, Masking, Advanced Load Balancing. Min Term is 12 months. Includes bundled Elite-Plus Support.
VBL-50T-BN-NV	Monthly Term license for NetVUE software up to 50TB per day in V Series for cloud and virtual environments. Capabilities included: CoreVUE for V Series, De-duplication, NetFlow. Min Term is 12 months. Includes bundled Elite-Plus Support.
VBL-250T-BN-NV	Monthly Term license for NetVUE software up to 250TB per day in V Series for cloud and virtual environments. Capabilities included: CoreVUE for V Series, De-duplication, NetFlow. Min Term is 12 months. Includes bundled Elite-Plus Support.
VBL-2500T-BN-NV	Monthly Term license for NetVUE software up to 2,500TB per day in V Series for cloud and virtual environments. Capabilities included: CoreVUE for V Series, De-duplication, NetFlow. Min Term is 12 months. Includes bundled Elite-Plus Support.
VBL-25KT-BN-NV	Monthly Term license for NetVUE software up to 25,000TB per day in V Series for cloud and virtual environments. Capabilities included: CoreVUE for V Series, De-duplication, NetFlow. Min Term is 12 months. Includes bundled Elite-Plus Support.
VBL-50T-BN-SVP	Monthly Term license for SecureVUE Plus software up to 50TB per day in V Series for cloud and virtual environments. Capabilities included: NetVUE for V Series, App Metadata Intelligence, App Filter Intelligence. Min Term is 12 months. Includes bundled Elite-Plus Support.
VBL-250T-BN-SVP	Monthly Term license for SecureVUE Plus software up to 250TB per day in V Series for cloud and virtual environments. Capabilities included: NetVUE for V Series, App Metadata Intelligence, App Filter Intelligence. Min Term is 12 months. Includes bundled Elite-Plus Support.
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Note: Licenses are activated from GigaVUE-FM.

Support and Services

Gigamon offers a range of support and maintenance services. For details regarding Gigamon Limited Warranty and its Product Support and Software Maintenance Programs, visit gigamon.com/support-and-services/overview-and-benefits.

About Gigamon

Gigamon® offers a deep observability pipeline that efficiently delivers network-derived intelligence to cloud, security, and observability tools. This helps eliminate security blind spots and reduce tool costs, enabling you to better secure and manage your hybrid cloud infrastructure. Gigamon has served more than 4,000 customers worldwide, including over 80 percent of Fortune 100 enterprises, 9 of the 10 largest mobile network providers, and hundreds of governments and educational organizations. To learn more, please visit gigamon.com.

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