

GigaVUE Cloud Suite for Kubernetes

Network Visibility into Containerized Applications

GigaVUE Cloud Suite for Kubernetes provides an industry-leading solution for network visibility and security analytics.

This visibility fabric enables traffic flows of interest from Docker-based containers managed by Kubernetes to be acquired, aggregated, processed and delivered to the appropriate security, network and application performance monitoring tools.

The GigaVUE Cloud Suite for Kubernetes is proven interoperable with Kubernetes Cluster Manager to enable infrastructure automation.

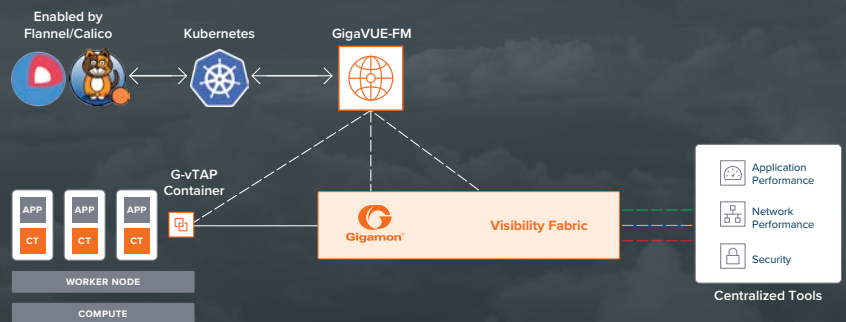


Figure 1. GigaVUE Cloud Suite for Kubernetes is a holistic visibility fabric for Docker containerized applications with full automation support

KEY FEATURES

- G-vTAP Containers automatically deployed within each worker node and send traffic to V Series or HC nodes
- GigaSMART intelligence – includes slicing, masking, and for HC nodes, Application Intelligence
- Integration with Kubernetes Cluster Manager with support for Flannel and Calico
- GigaVUE-FM provisions and configures G-vTAP containers and sets up mirrored traffic

KEY BENEFITS

- Visibility into Docker container traffic and scales to support any number of containers and pods
- Automatically discover new workloads and modify the visibility tier
- Delivery of optimized traffic to the proper security and monitoring tools
- Interoperable with Kubernetes-native environments and supports public and private clouds

Complete Container Visibility

Having visibility into container network traffic becomes critical to avoid blind spots. Yet, container deployment presents challenges. Administrators must ensure workload automation, scalability to handle potentially millions of microservices, proper discovery of new applications and adjust policy configurations, all without manual intervention.

As containers are constantly provisioned, in-motion and removed, GigaVUE Fabric Manager works with the container orchestrator to maintain visibility anywhere Kubernetes is deployed, including public and private clouds.

The suite includes support for Gigamon V Series virtual appliances and physical HC appliances. For HC models, Application Filtering Intelligence with identification and select extraction of over 3000 applications and Application Metadata Intelligence with 7000 L4-7 attributes contextual insights are available.

Key Considerations

IT, cloud and security architects are responsible for addressing the following questions before they can successfully deploy applications in containers with Kubernetes-based orchestration and ensure the resultant traffic is optimally processed and distributed:

- How can I get visibility into inter-container traffic as containers are ephemeral and constantly in-motion?
- Can I ensure scalable visibility as deployed apps grow and can span hundreds of microservices each?
- What if the underlying network architecture changes with a different virtual switch methodology?
- Is there a way to automate the configured policies across thousands of containers in real-time?

Not addressing these considerations slows down the transition to container-based applications, limits the use of datacenter automation and leaves the organization vulnerable to potential security breaches, with potential impact to reputation and brand.

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THE SOLUTION

Gigamon CloudVUE Cloud Suite for Kubernetes delivers intelligent network traffic visibility for workloads running in containers and deployed on-premise, public or private cloud environments.

It enables increased security, operational efficiency and scales across an unlimited number of containers.

- Optimize traffic processing and distribution with 100 percent visibility into containerized apps and their component microservices
- Leverage GigaSMART application intelligence to deliver optimized traffic to the right tool

The solution consists of three key components:

- Traffic acquisition using G-vTAP Container agents
- Traffic aggregation, intelligence and distribution using GigaVUE V Series and HC hardware appliances
- Centralized orchestration and management using GigaVUE-FM

G-vTap Containers

Lightweight containerized G-vTAP Containers are deployed within each worker node and receives copied packets from all other containers on the same node via Calico or Flannel network overlay. Key benefits include:

Single, lightweight container per worker node minimizes impact on compute nodes and delivers several gigabits/sec. of traffic per instance

No need to run special software or make changes to kernel modules

Reduction in application downtime — there is no need to redesign applications when adding new tools

GigaVUE V Series and HC Nodes

Traffic aggregation, intelligence and distribution occurs within the GigaVUE virtual or hardware nodes, which are deployed within the visibility tier. Key benefits include:

Automatic Target Selection (ATS): Automatically extract traffic of interest from any containerized workload

Header Transformation: Modify content in the header (L2-L4) to ensure security and segregation of sensitive information

GigaSMART intelligence: Slice, sample and mask packets to optimize traffic sent to tools, reducing tool overload

For HC appliances, leverage Application Intelligence to identify thousands of applications and extract traffic as appropriate as well as utilize over 7000 application metadata L4-7 attributes for granular insights unavailable from NetFlow

GigaVUE-FM

Centralized orchestration and management are handled by GigaVUE-FM. Using its tight coupling to the Kubernetes Cluster Manager, this tool instantiates and configures G-vTAP Containers. Key benefits include:

Detect changes in container location or scale and automatically provision G-vTAP Containers and adjust the visibility tier

Integration with third-party tools to dynamically process traffic or to orchestrate new policies

Auto-discover and visualize end-to-end network topology, including container workloads by using a drag-and-drop user interface

Conclusion

Whether your organization is already using Docker containers with Kubernetes or considering a future migration, GigaVUE Cloud Suite for Kubernetes provides intelligent network traffic visibility for container workloads running on-premise or in the cloud.

Integration with Kubernetes APIs automatically deploys and scales a visibility tier in all required locations, collects aggregated traffic and applies advanced intelligence prior to sending selected traffic to existing security tools. With GigaVUE Cloud Suite for Kubernetes, organizations can obtain consistent insight into their infrastructure across Kubernetes-based environments.

For more information on GigaVUE Cloud Suite for Kubernetes, visit our website at www.gigamon.com