GigaVUE Cloud Suite for Nutanix

Overview

Nutanix offers a single platform to run all your apps and data across clouds while simplifying operations and freeing companies to focus on business outcomes. The Nutanix Cloud Platform is a secure, resilient, and self-healing platform for building a hybrid multicloud infrastructure. It supports all kinds of workloads and use cases across public and private clouds, multiple hypervisors, and containers—with varied compute, storage, and network requirements.

The GigaVUE® Cloud Suite™ for Nutanix is a key component of the Gigamon Deep Observability Pipeline and ensures network performance, security, and IT agility with complete visibility across all layers of traffic. This solution aggregates, optimizes, and delivers the right traffic to the right tools so organizations can better protect their networks, improve performance, and prevent outages.

Key Benefits for Business and IT

- Optimize traffic processing and distribution with 100 percent visibility into apps while reducing load on compute instances and tools

- Identify over 3,500 apps with 5,000 L4–7 metadata attributes to send the right traffic to the right tool with contextual insights

- Simplify network management with full automation through integrated and certified tool suites

- Dramatically improve security tools' effectiveness, improve performance, accelerate troubleshooting, and reduce TCO

Networking and Security Challenges

Organizations managing modern applications deployed on hybrid clouds require complete visibility at not only packet but application layers. Administrators need insights into all VMs and containers to fully understand traffic flows and avoid blind spots.

Legacy schemes only provide sampled NetFlow data and involve SPAN ports that get only a subset of traffic due to the impact on networking equipment. If raw data is distributed, this results in duplicated and complex packets with excessive bandwidth use. Tools are overloaded and their effectiveness and accuracy are reduced.

Solution Overview

Together, Nutanix and Gigamon's GigaVUE Cloud Suite for Nutanix help deliver end-to-end solutions for hybrid clouds:

- Provide packet and application layer visibility for distributed virtual workloads in Nutanix AHV-powered private clouds
- Deliver VM flows of interest to the Gigamon Deep Observability Visibility Pipeline for aggregation and advanced processing
- Automate the provisioning and configuration of Gigamon fabric components with tight integration with Nutanix Prism
- Nutanix Flow and GigaVUE-FM fabric manager enable granular traffic selection within micro-segmented security groups
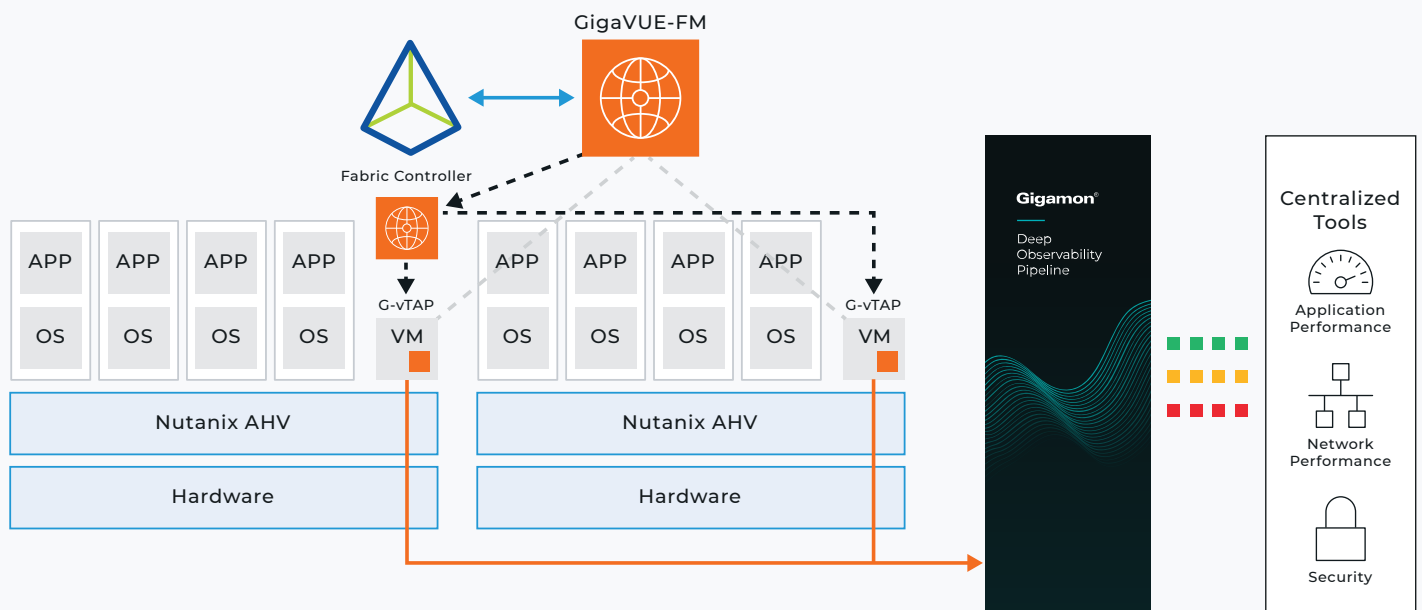

Figure 1. Traffic acquisition with Gigamon G-vTAP™.

Technical Details

The Gigamon Deep Observability Pipeline includes G-vTAPs that provide traffic mapping, VM/port filtering, L2GRE tunneling, and packet slicing. Distributed physical (GigaVUE HC Series platforms) visibility nodes provide traffic aggregation and advanced processing, including data de-duplication, header stripping, tool load balancing, and TLS decryption. At the heart of the fabric is the Gigamon patented Flow Mapping® technology that identifies and directs incoming traffic to single or multiple tools based on user-defined rules implemented from a centralized fabric management console, GigaVUE-FM.

- GigaVUE-FM directs Prism to instantiate G-vTAP VMs, directs traffic policy configurations, and monitors operations

- GigaVUE-FM directs compute VMs running workloads to copy traffic from micro-segments and send this to the visibility nodes

- GigaVUE-FM configures and monitors HC series appliances and directs traffic to the security and monitoring tools

- GigaSMART® for optimized traffic processing, including application filtering and application metadata generation

GigaVUE Cloud Suite for Nutanix

A key component of the Gigamon Deep Observability Pipeline, GigaVUE Cloud Suite for Nutanix delivers intelligent network traffic visibility for workloads running in VMs and deployed on-premises or in private cloud environments managed by Nutanix Prism/Flow. The joint solution enables increased security and operational efficiency and scales across an unlimited number of VMs.

The solution consists of three key functions:

- Traffic acquisition using agentless G-vTAP VM

- Traffic aggregation, intelligence, and distribution using physical GigaVUE HC series appliances

- Centralized orchestration and management using GigaVUE-FM

G-vTAP VM

For traffic acquisition, agentless, light-footprint, virtualized G-vTAPs are deployed as a Nutanix guest VM on each hypervisor. GigaVUE-FM leverages Prism APIs to deploy G-vTAPs and configure traffic redirection from the Acropolis hypervisor; copied packets from each of the VMs on the same server are sent to the G-vTAPs through a virtual switch. They subsequently send this mirrored traffic via tunneling to a GigaVUE HC Series for aggregation and processing.

Key benefits include:

- Single, lightweight VM per hypervisor minimizes impact on compute nodes and delivers Gbps per instance

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

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

- Auto-pinned to a host so movement of VMs across different servers does not impact continuous traffic visibility

GigaVUE-FM Fabric Manager

Centralized orchestration and management are handled by GigaVUE-FM. Using RESTful APIs and its tight coupling to Prism, this tool directs Prism to instantiate G-vTAP VMs on each hypervisor where visibility is needed and configures policies for these virtualized instances within multiple environments — essentially any deployment where Prism orchestration is utilized. Key benefits include:

- Detect additional VM locations and automatically instantiate G-vTAP VMs and adjust the visibility tier through pre-built integration with Prism APIs

- Track change of location events across the high-availability (HA) cluster environments, enabling visibility policies of the G-vTAP VMs to be tied to the monitored VMs as workloads move across physical hosts

- Publish REST APIs: Integrate with third-party systems and tools to dynamically adjust traffic received or to orchestrate new traffic policies
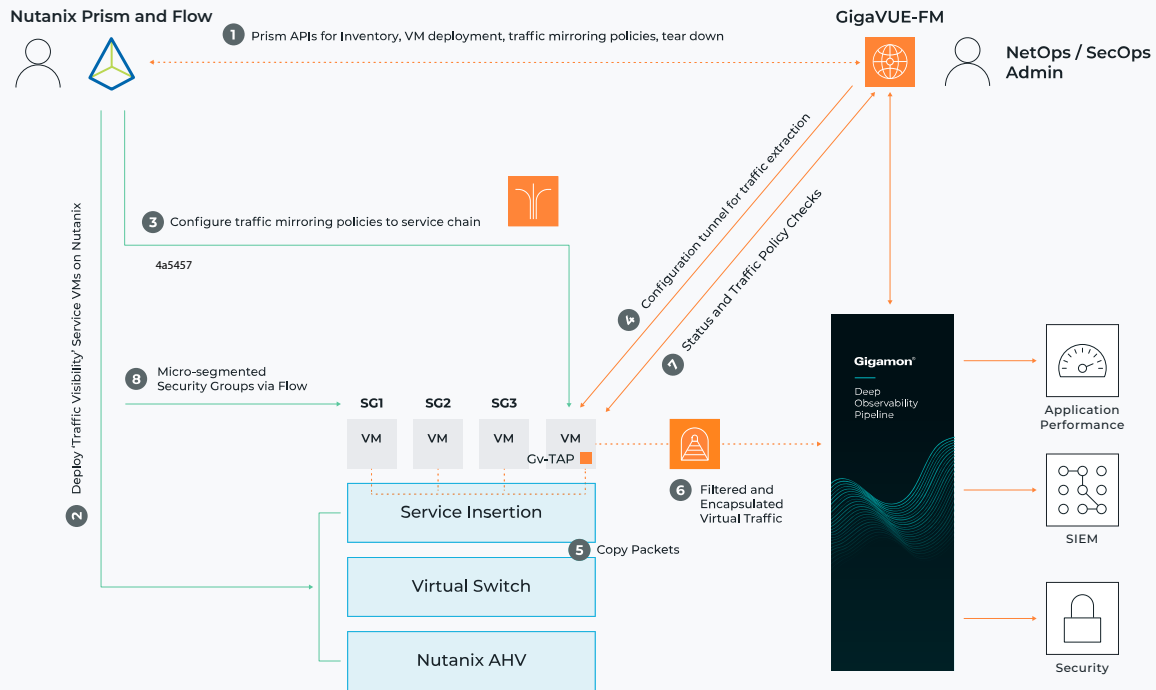
Figure 2. Centralized management with Prism and GigaVUE-FM.

- Auto-discover and visualize the end-to-end network topology, including VM workloads, by using an intuitive drag-and-drop user interface
- Eliminate manual processes and errors by automatically identifying each new workload and their associated traffic mirroring via ATS, then configuring the G-vTAP VMs to direct traffic to physical appliance nodes

Technical Resources

- GigaVUE Cloud Suite for Nutanix Data Sheet
- Configuration Guide
- Gigamon Validated Design

For more information on Gigamon and Nutanix please visit
gigamon.com | nutanix.com

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