Arista CloudEOS extends management and connectivity to the cloud

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Introduction

Arista's CloudEOS brings end-to-end network management on-premises and in the cloud. As enterprises continue to shift applications to cloud services, the drive to unify networking and network management in all operating environments – on-premises or off – will only increase as IT strives to make its processes more efficient and automated. Consistency in the network will become a paramount requirement.

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Arista's CloudEOS platform extends Arista's cloud networking and management capabilities by providing a complete set of capabilities that interconnect multiple public and private cloud platforms and integrate cloud networks into a unified management domain. Enterprises looking for an alternative to their existing datacenter networking vendor, or that are expanding to campus wired and wireless networking, datacenter and cloud, will find a solid roadmap and product set with Arista. The consistency of Arista's approach and its focus on enabling end-to-end automated management make it a strong competitor alongside other established networking vendors.

Details

Arista CloudEOS is adding a number of features specifically for networking in and between cloud services like AWS, Google Cloud Platform and Microsoft Azure, as well as container networking with Kubernetes using standards-based protocols for interoperation. CloudEOS provides a network-centric view of networking and compute resources without impacting cloud operations. The management capabilities are focused on Arista products and are not entirely competitive with multi-vendor management or orchestration platforms. However, with a full set of integration APIs, CloudVision and CloudEOS can be integrated with other management and automation tools.

CloudEOS's multi-cloud capabilities include uniform and consistent management of inter- and intra-cloud networking between company-owned datacenters, AWS, GCP and Azure with a consistent topology and management model. Connectivity is provided via automated IPSec VPN creation, including the generation and management of VPN encryption keys automating away the overhead that IT spends on VPN management. The cloud connectivity also supports auto-scaling, ensuring that adequate performance is available. Finally, per flow dynamic path selection uses the optimal paths for inter- and intra-cloud traffic based on policy and performance metrics like latency, loss and jitter. Selection criteria can also include the real dollar cost of WAN use based on current cloud data transfer prices.

Cisco's CloudACI and Arista's CloudEOS go head-to-head; the cloud strategies by themselves are insufficient to impact buyers, but as part of an overall integrated and consistent networking strategy, having the same capabilities and controls wherever workloads reside will be important. Both vendors support multi-cloud and on-premises architectures, as well as a cloud-only deployment model, but there are differences. Cisco's CloudACI is a management translation layer between ACI management objects and constructs and those in the cloud environment. This allows CLoudACI to use the native networking capabilities within the service. Cisco's Cloud Service Router 1000v (CRS1000v) is used for interconnection between cloud services and on-premises datacenters, similar to Arista's CloudEOS. A primary difference is that Arista's CloudVision manages the entire Arista EOS network from campus to cloud, while Cisco's end-to-end management approach is multiple management systems with evolving integration between the product domains.

CloudEOS provides visualizations and topologies for network resources CloudVision manages, which allows network IT to see all of the network elements and connected nodes across all the environments it is managing. With integrated data collection, CloudVision can also present performance data on network nodes, including third-party products. The holistic vision allows network IT to monitor and operate the network centrally without impacting the workflows or tools used by other IT administrators. CloudVision is able to collect in-band telemetry from CloudEOS as well as third-party networking products supporting OpenConfig, GRPC and even SNMP, providing CloudVision with a holistic view of the network.

CloudEOS also supports multi-cloud connectivity and segmentation with a feature called Cloud Network Private Segments (CNPS), which can have their own routing and security policies. CNPS are similar to virtual routing and forwarding domains where network elements in multiple cloud services and datacenters can be logically connecting into their own network. CNPS complement micro-segmentation strategies by connecting compute and storage resources into administrative and connectivity domains, while micro-segmentation technologies control communication between individual nodes.

Arista and VMware have a strong technical alliance with deep integration between Arista's CloudVision and EOS and VMware software such as vCenter, vRealize and NSX. However, the two companies are going to compete more in the cloud networking space since both companies are offering automated cloud networking management and interconnection capabilities. Dell EMC and VMware are providing end-to-end management in campus, datacenter and cloud networking. VMware is a subsidiary of Dell Technologies and operates independently, but there is increasing integration between VMware and Dell EMC, which will result is more competitive pressure with existing VMware partners like Arista.