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Arista plans data lake to consolidate silos and create a foundation for analytics

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The company's strategy of data-driven networking emphasizes the use of data analytics to better operate not just the network, but all of the things that connect to the network, such as applications, devices, security products and services. Arista has shown it's a force to be reckoned with in the datacenter, making inroads in niche but demanding segments like financial services and HPC.

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Introduction

Networks and network services generate large volumes of data that is collected and consumed entirely within a single application stack. Multiple IT management, performance and security analytics software tools and appliances are also collecting and storing the same or similar data, which is both inefficient and creates data silos.

Data lakes exist to centralize data collected by multiple applications that, in turn, can be analyzed in aggregate. According to 451 Research's 2021 Voice of the Enterprise, Data & Analytics, Data Platforms report, data lakes are delivering on the promise of supporting multiple workloads. More than one-quarter (28%) of enterprises that are already in deployment or proof-of-concept with data lakes, and are running analytics, data science and operational workloads on them.

THE TAKE

Arista has proven it's a force to be reckoned with in the datacenter, taking share from Cisco and making inroads in niche but demanding segments like financial services and HPC. Its strategy of using consistent software across platforms and leveraging the ubiquity of merchant silicon networking platforms to offer better price/performance to the enterprise has been a consistent differentiator. However, incumbents are entrenched in the campus networking segment, and the demands are often such that enterprises are looking for broader features, namely security and device management. Arista's new data-driven strategy and its forthcoming data lake will help it bring new analytics and management features and capabilities to its customers, and should offer more opportunities to partner with adjacent vendors and integrators.

Context

Arista is a top-tier competitor in the datacenter networking space, and is a challenger in the campus wired and wireless market segments. According to the company's Q3 10-Q, its product revenue increased $123.9m, or 25.8%, for the quarter, and $397.2m, or 30.3%, for the last nine months ending September 30, 2021 compared to the same periods in 2020.

As a relative newcomer to the campus networking competitive landscape, Arista has avoided some of the product feature and architecture pitfalls experienced by incumbents, and it has a unified product line across branch, campus and datacenter, something both Extreme and Juniper can also lay claim to. The company has committed to its CloudVision management platform for on-premises and cloud network management, which simplifies system management and operations as well as migration from one model to another. Product and management consistency across domains is attractive to a growing portion of enterprise IT, and Arista presents an interesting alternative to competitors.

Strategy

Arista's strategy of data-driven networking emphasizes the use of data analytics to better operate the network, as well as all the things that connect to the network like applications, connectivity devices, security products and services. Arista's goal – and to date much of what it has announced is aspirational – is to create a data lake environment that its own and others' products can pour data into, and then expose relevant data and indexes to other IT systems via standardized or common programmatic interfaces.

By forming and feeding the data lake, which will be offered as a cloud service or on-premises environment, integrated analytics and operational systems can glean insights and highlight problems before they manifest widely. The vision is to enable near real-time recommendations for implementing improvements to the network, create useful visualizations for IT analysis, and drive any necessary changes in the network or application architecture.

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Naturally, for this strategy to be successful, Arista will require third-party vendors to pour data into its data lake or pull data out for analysis. Given the number of other vendors that offer data lakes of their own, this has become a control point for which there will be a great deal of competition to attract and retain relevant integrated vendors.

Products

Arista is best known for its datacenter switching platforms featuring leaf-spine architectures that are highly programmable, fast and dense. Arista also has special purpose switching for customers with specific workloads in data analytics and high-frequency trading that need extremely low-latency platforms, as well as programmable platforms with available FPGAs that can be programmed to execute specific code in-line on the network.

Arista entered the enterprise wireless networking segment with the acquisition of Mojo Networks in 2018, and launched its campus wired networking products in 2019. Both the wireless acquisition and launch of the campus networking product line extended the company's reach into the campus, and formed the impetus for its CloudVision-as-a-Service. With the same EOS operating system spanning the datacenter and campus, along with unified management on-premises or as a service, with CloudVision, Arista has built a robust portfolio of enterprise networking products.

The company has now enhanced its CloudVision management product and service, adding network automation workflows and observability tools. CloudVision Studios enhances network operations in the datacenter and the campus via reusable configlets. These are configuration templates that can be applied to network devices.

Studios uses a data model of the network and has a GUI-enabled workspace so that administrators of Arista's gear can create automated workflows for use by less skilled IT professionals – i.e., simply fill out a form and submit the configuration job. CloudVision Studios ships with a number of prebuilt workflows, and new automations can be easily created and customized by administrators using an intuitive low-code canvas.

Arista continues to build on its Cognitive Campus strategy, recently adding its own set of Wi-Fi 6E access points, joining competitors in the march to faster wireless. The new APs, the C-360, feature security capabilities such as wireless IPS, MACsec encryption for dual 10Gb Ethernet connections and WPA-3. The APs also serve as telemetry end points to collect data to feed CloudVision and Arista's newly announced and forthcoming data lake.

Arista has been acquiring companies to fill gaps in its product line such as network visibility and performance monitoring with Big Switch in January 2020 andAwake Security in September 2020, adding AI and network detection and response to its portfolio. Its DANZ Monitoring Fabric uses existing or dedicated switches to capture network traffic and send it to service nodes for packet services such as slicing and filtering. The collected data can be sent to Arista's own analytics in CloudVision, as well as other performance and security analytics tools.

The company has support for in-band telemetry. This shows latency performance between Arista network devices, allowing IT to quickly troubleshoot application issues by either finding the root cause or showing the network is not at fault. Arista also added visibility for its wireless networking with historical reporting for RF spectrum via its RF Explorer Dashboard.

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Competition

Arista is shoring up its product portfolio and integrating it under CloudVision. Few networking vendors can claim consistent on-premises and cloud-based management for campus wired and wireless, datacenter and within cloud services. Networking industry titan Cisco has multiple product lines targeted at particular use cases, and can tailor products for those use cases while creating integration at the infrastructure and management planes. However, disparate product lines increase management overhead. This is becoming a sensitivity for enterprises looking to streamline operations – which creates a competitive opportunity.

Aruba, Cisco and Juniper have longer-established cloud managed networking portfolios than Arista, but we believe it can catch up on features, and it offers the advantage of seamless migration from on-premises management to cloud based management. Aruba, Cisco, Extreme and Juniper all have a large set of customers using cloud managed services, and those vendors are leveraging the collected data to provide insights and recommendations to customers on capacity, architecture and potential issues. Arista's newly announced data lake will be its own engine for similar features, but it will take time to collect enough data and mine it to reach parity derived from its own use of machine learning and artificial intelligence.

SWOT Analysis

STRENGTHS

Arista is a well-established brand in the datacenter with a focused set of products and demonstrated success in partnering to fill capability gaps in its portfolio. Its launch into the campus takes advantage of its unified software strategy, and streamlines operations for enterprises.

WEAKNESSES

It's difficult to achieve differentiation from incumbent competitors in the campus networking product category. Arista also has feature and product gaps in offerings adjacent to campus and branch networking such as security and SD-WAN, and currently has to rely on partners to bridge them. Arista is less well known in campus wireless compared to Aruba, Cisco and Juniper/Mist.

OPPORTUNITIES

Managed service providers and channel organizations like VARs and integrators want to explore managed services, and Arista could offer its CloudVision-as-a-Service as a white label or co-branded management service with a path for the channel partner to self-host.

THREATS

Competitors have a substantial lead in AI-driven architectures. Collecting the data, developing the ML and AI algorithms, and demonstrating accuracy and relevancy in results that will actually save customers time and produce better outcomes takes time to develop. Competitors are quickly expanding into new use cases, extending their applicability to enterprise IT.

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