Maximizing performance and value of Cisco ACI infrastructure
Overview

Organizations of all kinds are transitioning to software-defined networking (SDN) for its flexibility and efficiency. The benefits they are expecting include virtualized datacenters, smoother network scaling, policy-driven provisioning, and lower operating costs. SDN delivers these benefits by automating and centralizing IT and network operations tasks that teams used to do manually. With software handling those tasks, IT and NetOps team members can focus on more important projects.

To actually gain all of SDN’s compelling benefits, organizations need to address and overcome the operational challenges that come with this technology. One of these is handling the new network performance monitoring requirements that SDN creates with its speed, complexity, and dynamic functions. Another is achieving unified network monitoring when this next-generation technology is added to a network that still has traditional segments. Then there’s the need to keep performance monitoring on par as the network environment grows and evolves over time.

These issues have delayed the progress of many organizations’ SDN projects or put them on hold indefinitely. But now SevOne offers enterprises, MSPs, and CSPs a way to get past these roadblocks and accelerate their SDN initiatives. That breakthrough is the SevOne SDN Monitoring Solution.
Network Performance Monitoring that Encompasses SDN

The SevOne SDN Monitoring Solution is built on the industry’s most powerful and scalable network performance solution, the SevOne Network Data Platform. It is designed specifically for deployment with Cisco ACI, the top SDN solution on the market. The SevOne SDN Monitoring solution complements and extends Cisco ACI’s built-in control layer with performance management insight into both the software overlay and Nexus switch-based underlay network. This insight further extends to include multi-fabric views that add entirely new dimensions of performance monitoring functionality across their entire Cisco ACI deployment.

With the SevOne SDN Monitoring Solution, IT and NetOps teams no longer have to use multiple performance monitoring tools to watch over the varied segments of their network environments. They don’t have to spend time gathering performance data from their networks’ varied segments, and cobble it together to produce useful reports and dashboards.

Instead, with the SevOne SDN Monitoring Solution, those time-consuming tasks are automated, and the integrated results are delivered on a single pane of glass. IT and NetOps teams have access to the key performance indicators of the overlay and underlay networks in the datacenter, without having to directly interact with the Cisco ACI controller and management system user interface. This SevOne solution integrates with those systems automatically – enabling IT and NetOps teams to view the entire network in real-time, producing complete and unified visibility of mixed legacy and next-gen network environments. It’s an effective way to ‘democratize’ performance data, generating more business value by making it more accessible, more understandable, and useful for more individuals and teams across organizations.

Key Features and Capabilities

The SevOne SDN Monitoring Solution makes it easy for technical and business users to instantly see and understand the performance status and overall health of a specific part of a network, or an entire networking environment. Following are some of the Solution’s key features and capabilities.

MULTI-FABRIC PERFORMANCE MONITORING

This SevOne SDN Monitoring Solution delivers unique insights into both the virtual and physical components of an infrastructure, along with the relationships between them. Leveraging the SevOne Network Data Platform, it provides broad coverage, deriving baselining and trending intelligence from all types of network segments - old and new, and stores that data to enable subsequent real-time and historical analysis. These unique, multi-fabric views make it faster and easier for teams to spot and fix performance issues. They also yield insights about how to optimize network resources and deployments that are valuable for business continuity, capacity planning, and other operational functions.

AUTOMATED KPI MONITORING

This solution integrates directly with the ACI Control layer and the underlying physical infrastructure for complete visibility into all the entities comprising a Cisco ACI-based deployment. This integration enables operations and engineering teams to visualize and understand the health and performance of both the virtual (overlay) and the physical (underlay) components of an infrastructure, along with the relationships between them. Below is a list of some of the more important Cisco ACI components monitored by the SevOne SDN Monitoring Solution.

- ACI Contract
- APIC Status
- Application Profile
- Bridge Domain
- Capacity
- Controller Memory
- Controller CPU
- Controller Interface
- End Point
- End Point Group
- Fabric
- Fabric Group Reference
- Fan Tray
- Hypervisor NIC
- Leaf/Spine CPU
- Leaf/Spine Memory
- Management NIC
- Physical Interface
- Power Supply
- Private Network
- Sensor
- Storage
- Supervisor Card
- Switch Capacity
- Tenant
Broader and Deeper Views of Cisco ACI, Plus More Context

With Cisco ACI, network operators get a single fabric view within the Cisco ACI embedded management tools. While this is useful, it is even more useful when it’s presented in the broader context of a full network environment. This Solution delivers multi-fabric views by folding in Cisco ACI data, along with performance intelligence gathered differently architected segments and resources, such as other core elements of a typically multi-vendor datacenter (e.g. Cisco ASA firewalls, Cisco UCS servers, F5 load balancers), and the rest of their network, including campus routing and switching, SD-WAN, Wi-Fi, branch offices and more.

The SevOne SDN Monitoring Solution includes enhanced Cisco ACI fabric and switch capacity analysis dashboards for at-a-glance visibility into resource consumption information. It automatically collects and updates metadata related to Cisco ACI components, including the recognition of ACI Contract objects. This collection provides important configuration-related details within reports and dashboards, and provides additional metadata for enhanced reporting.

Interactive Dashboards

The SevOne SDN Monitoring Solution’s intuitive and interactive dashboards make it easy for networking and engineering teams to visualize and work with all types of network performance data. These pre-built dashboards are designed to communicate the health and performance of everything, from a single device or object up to an entire infrastructure. They show teams at a glance how network performance is affecting their applications and services. They also ease transitions to Cisco ACI by providing unified views, enabling teams to monitor both traditional and new ACI segments on one screen. The Solution also automatically starts to monitor Cisco ACI infrastructure as soon as it is deployed.
Automated Logical-to-Physical Mapping

One of the most daunting challenges for networking teams making a transition to SDN, especially while troubleshooting, is identifying a resource’s location. It’s unlike the case with traditional network architectures, where IT and NetOps people could use things like IP and MAC addresses to track back to a bare-metal server or even a VM. In the software-defined things are more fluid and changes more rapidly. That makes it very difficult for networking staff to pinpoint the location of any particular resource, and its relationships to other resources at any particular point in time. That, of course, makes incident response, troubleshooting, and basically all network operations tasks much more difficult in these next-gen environments.

The SevOne SDN Monitoring Solution eliminates this problem. It enables users to quickly map, filter, and search on the logical and physical relationships of any network resource. This includes the relationships between tenants, application profiles, end point groups, IP address/OS/state, domains, controllers, VLANs, pods, and switches’ names and ports. The Solution leverages this information and report linking to produce visualizations of real time and historical performance.

Professional Services, Support and Training

For this and all of its Solutions, SevOne offers a complete set of services. Services that support the SDN Monitoring Solution are designed to help organizations ensure a successful transition to a Cisco ACI. For customers that have already made the move, the services are geared toward helping them to maximize their Cisco ACI investment. These service offerings include:

- Quick Start Program
- Post-implementation services
- Customized integrations
- Gold and Platinum maintenance
- Customer training

About SevOne

SevOne provides the world’s largest CSPs, MSPs and enterprises with the most comprehensive and scalable network and infrastructure management platform for enabling the transition to virtualized networks and cloud services. The company’s solutions acquire and analyze data and automate network and infrastructure operations with actionable real-time insight. SevOne serves organizations that are looking to use complex, dynamic next-generation infrastructure, such as software-defined networks, orchestrated containers and cloud technologies, to achieve their business goals. To learn more, visit our website at: sevone.com.