Cisco ACI for Splunk Enterprise: Comprehensive Visibility into Cisco Application Centric Infrastructure

Network Monitoring Challenges

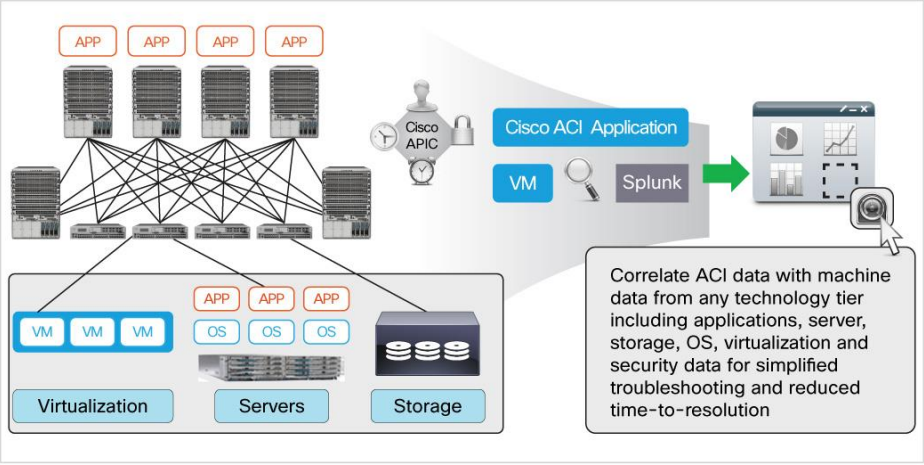
In modern data centers, networks increasingly play a critical role in delivering end-to-end technology stacks, going beyond simply connecting endpoints or nodes. To address the ever-increasing demands of applications and devices, networks are expected to be flexible, open, and simple to manage. In addition, monitoring the network infrastructure in isolation from applications and from computing and storage resources leads to a static infrastructure that is not responsive to the dynamic demands of today's applications.

Cisco® Application Centric Infrastructure (ACI), an innovative new approach for modern data center networking, delivers networking resources to meet application demands. Cisco ACI offers a holistic architecture with policy-based application profiles that generates comprehensive network statistics directly tailored to the requirements of applications deployed across virtual and physical infrastructure. To take advantage of these detailed statistics, IT professionals need a flexible and scalable solution that can help them understand networking systems not only in the context of corresponding applications requirements, but also in the context of attached storage, computing resources, and virtualization domains.

The Solution

Cisco ACI for Splunk Enterprise offer a flexible approach to monitoring Cisco ACI and all other elements of your technology stack. Splunk Enterprise is a scalable and versatile platform for searching, monitoring, and analyzing device data such as logs, events, and performance and configuration metrics. Use Splunk software to centrally monitor and analyze performance metrics and events in real time across your physical and virtual environment, including applications, operating systems, storage resources, and networking infrastructure such as Cisco ACI (Figure 1).

Figure 1. Cisco ACI for Splunk Enterprise: Single-Console Visibility into Cisco ACI Health



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Correlate Cisco ACI data with device data from any technology tier - including application, server, storage, OS, virtualization, and security data - for simplified troubleshooting and reduced time-to-resolution.

The Cisco ACI for Splunk Enterprise application provides real-time and historical dashboards that provide detailed insight into system health, inventory, and faults across your entire Cisco ACI environment. It provides visibility into the performance of Cisco ACI by tracking key metrics such as the health scores of all Cisco ACI entities, including the Cisco Application Policy Infrastructure Controller (APIC), fabric, tenants, endpoint groups (EPGs), and applications. It offers per-administrative-role visibility into faults and affected objects, offering unique identification of problems and simplifying troubleshooting: important in complex multitenant deployments. Navigate quickly to the source of degradation with visibility into the actual cause of the problem. View fabric health and path degradation without the need to deploy traffic analyzers because the important fabric statistics are accessible through the API. Bridge physical and virtual domains and identify the networking problems of connected virtual machines and VMware ESXi hosts. Splunk Enterprise enables end-to-end visibility and correlation of machine data from Cisco ACI with data across other technology tiers, such as applications, storage resources, operating systems, computing resources, and other networking elements.

Benefits of Cisco ACI for Splunk Enterprise

Cisco ACI for Splunk Enterprise offers these main benefits:

- Reduced resolution time with accelerated root-cause analysis
  - Centrally view the operational health of your entire Cisco ACI environment and underlying entities, including Cisco APIC devices, fabric, tenants, and applications.
  - In multitenant environments, accelerate root-cause investigation and quickly navigate to the source of application problems using flexible per-role visibility into Cisco ACI performance.
- Central proactive monitoring of Cisco ACI
  - Get real-time proactive notification of any Cisco ACI faults with the location and affected objects, including physical components, logical and virtual components, fabrics, tenants, applications, virtual machines, leaf nodes, and ports.
- Operation analytics
  - Optimize your network capacity and prevent service deterioration with detailed visibility into fabric path degradation.
  - Meet compliance and security requirements with user analytics, including authentication tracking reports.
  - Correlate data from Cisco ACI with data from storage resources, operating systems, applications, and virtual and physical infrastructure for enterprisewide visibility.

Features of Cisco ACI for Splunk Enterprise

Cisco ACI Health and User Reports

Gain visibility into Cisco ACI health and key performance indicators (KPIs) with dashboards that include:

- At-a-glance view of all Cisco APIC devices with their uptime, history of overall fabric health scores over five days, summary of physical inventory including spine and leaf elements, and summary of logical and virtual inventory including tenants, applications, and virtual machines
- Help desk dashboard with context-specific faults grouped by acknowledgment status, time, severity, type, rule, cause, and affected objects

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- Tenant dashboard with reports highlighting tenant health scores, affected tenants, and application and EPG health score details with visibility into the endpoint where degradation occurred
- Innovative Cisco ACI fabric architecture, which offers flexible multipath capabilities including network telemetry with atomic counters, to avoid network outages; view fabric path degradation with insight into actual packet loss across any path, without the need to deploy network sniffers to understand the optimal fabric trajectory
- Authentication tracking with eight prebuilt reports, including reports of successful and failed logins, active and inactive users, and user audit and event logs

Cisco ACI and VMware Correlation for Deeper Visibility into Virtual Network Traffic

With the expansion of data center virtualization, insight into both virtual and physical network connectivity is critical for root-cause analysis of problems in virtual environments. Because Splunk Enterprise can harness machine data from any technology, it offers single-console visibility across multiple technology tiers, even bridging virtual and physical domains. Cisco ACI for Splunk Enterprise provides visibility not only into the Cisco ACI fabric, but into attached virtual infrastructure such as connected VMware ESXi hosts and virtual machines. If problems occur in the virtual environment, the user can view the particular virtual machine alarm or VMware ESXi host error logs, significantly reducing time-to-resolution. In addition, this application provides visibility into network statistics such as errored packets, in both the transmit and receive directions, from virtual machines and VMware ESXi hosts.

For More Information

- To learn more about Cisco Application Centric Infrastructure, visit http://www.cisco.com/go/aci.
- To learn more about Splunk software, visit http://www.splunk.com.

About Splunk

Splunk Inc. provides the leading platform for Operational Intelligence. Splunk® software searches, monitors, analyzes and visualizes machine-generated big data from websites, applications, servers, networks, sensors and mobile devices. More than 7,000 organizations use Splunk software to deepen business and customer understanding, mitigate cybersecurity risk, improve service performance and reduce costs.

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