Cisco Extensible Network Controller - Monitor Manager Application

Product Overview

Every enterprise depends on the smooth running of its business applications and the underlying infrastructure. Visibility into application traffic has traditionally been important for infrastructure operations to maintain security, resolve problems, and perform resource planning. Now, however, as a result of technological advances and the ubiquity of the Internet, organizations increasingly are seeking not just visibility but real-time feedback about their business systems to more effectively engage their customers. Essentially, traffic monitoring is evolving from a tool to manage network operations to a tool for achieving smart business agility that can tangibly affect the revenue of the business.

Using the Cisco® Extensible Network Controller (XNC), the Monitor Manager application, and Cisco Nexus 3000 Series Switches that support OpenFlow, Cisco provides a new software-defined networking (SDN)-based solution that is scalable, cost-effective and programmable tapping and monitoring environment.

Traditional approaches to network traffic visibility have used a purpose-built matrix network to which the monitoring and analysis tools are connected. Figure 1 shows the traditional approach to network traffic monitoring.

**Figure 1.**   Traditional Approach to Network Traffic Visibility
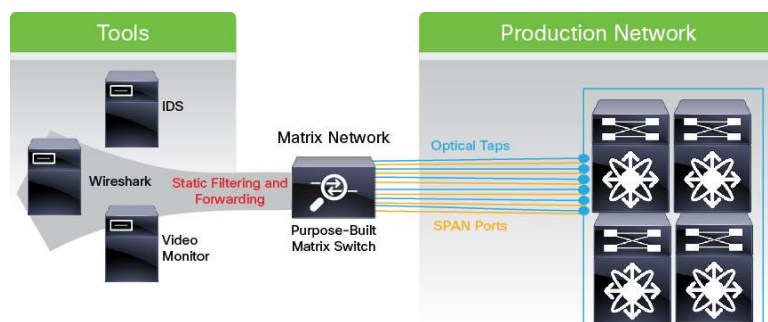
The traditional approach poses three primary challenges:

- The approach is too expensive to scale the visibility to meet today's business requirements.
- The purpose-built switches are statically programmed with predetermined filtering and forwarding rules, and so they cannot act in an event-based way to provide traffic visibility in real time. This limitation lengthens response times as coverage increases.
- As the need for visibility into traffic patterns unique to a specific data center becomes more common, third-party tools cannot provide adequate coverage, resulting in coverage gaps.

Using the Monitor Manager application, Cisco's approach replaces the matrix network with one or more Cisco Nexus 3000 Series Switches enabled for OpenFlow. The traffic is tapped into this bank of Cisco Nexus 3000 Series Switches in the same manner as in a matrix network. However, with Cisco XNC the filtering and forwarding rules can change dynamically, based on business logic, allowing unique traffic patterns to flow directly to the tools in real time. In addition, because Cisco XNC supports common programmable interfaces such as Java and REST, network operators can write applications to detect and capture unique traffic, closing any coverage gaps. Figure 2 shows the solution using Cisco XNC, the Monitor Manager application, and Cisco Nexus 3000 Series Switches.

Figure 2.   Cisco Monitor Manager Solution for Network Traffic Visibility
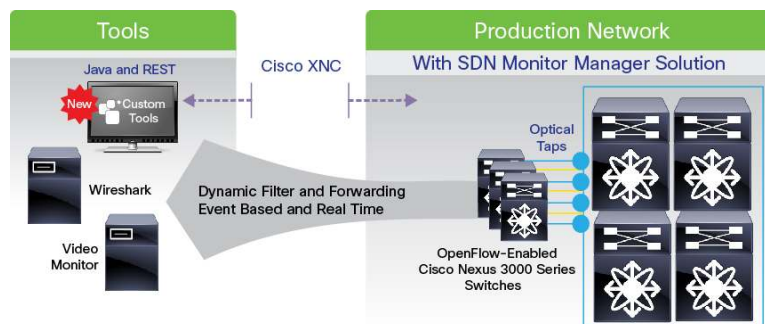
The Cisco approach provides superior economics, saving both capital expenditures (CapEx) and operating expenses (OpEx), when compared with the matrix network approach. The Cisco approach also helps ensure short response times and full coverage as monitoring needs scale.

Cisco XNC is built for extensibility using the Java OSGi (Open Services Gateway initiative) application framework. This framework provides the flexibility needed for Cisco and Cisco partners and customers to extend the functions of the controller based on business needs. Cisco XNC also provides robust northbound Representational State Transfer (REST) APIs for business applications to access and program policies. One such solution is the Cisco XNC Monitor Manager application.

Features and Benefits

Table 1 summarizes the main features and benefits of the Cisco XNC Monitor Manager solution.

Table 1.   Main Features and Benefits

Feature	Benefit
Supported topology for Monitor Manager network	• Support for any type of topology for the monitoring environment using Cisco Nexus 3000 Series Switches • Capability to configure delivery ports at which various monitoring tools are connected • Capability to set end-device names for easy identification in the topology • Point-to-multipoint and any-to-multipoint support for delivery of traffic to the endpoint devices
Rules for matching monitored traffic	• Capability to match traffic based on Layer 1 through Layer 4 criteria • Capability to send only the required traffic to the monitoring tools without flooding the tools with unnecessary traffic • Capability to forward traffic to multiple destinations connected across the monitoring network • Option to configure action to set the VLAN ID for the matched traffic
Role-based access control (RBAC)	• Application access integrated with Cisco XNC RBAC (Role Based Access Control) • Capability to create port groups and associate the port groups with roles • Capability to assign users to specific roles and port groups; users can manage only those ports
Northbound interface support for Monitor Manager application	• All application configuration support through northbound REST interface • Dynamic creation of matching rules through northbound API based on network traffic patterns

Feature	Benefit
Cost-effective and safe approach to introducing SDN in the network environment	• Cost effective compared to conventional network tapping solutions • Scalable network traffic monitoring solution based on Cisco Nexus 3000 Series • Introduction of SDN to the network environment without affecting production network traffic

The Cisco XNC Monitor Manager application has a built-in GUI. Figure 3 shows an example of the GUI.

Figure 3. Cisco XNC Monitor Manager Application GUI
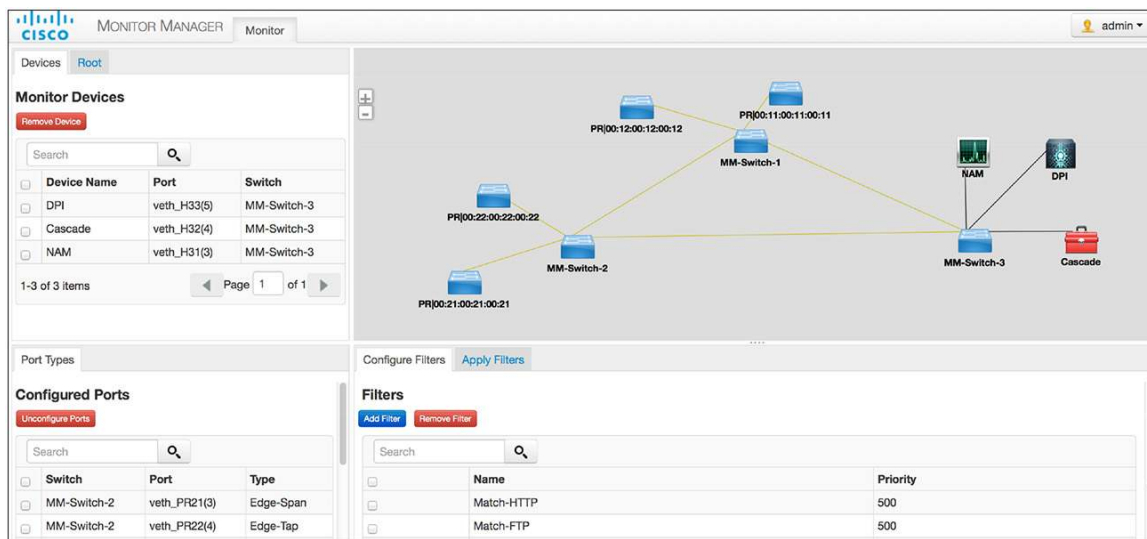
Licensing and Ordering Information

Table 2 presents ordering information for the Cisco XNC Monitor Manager application.

Table 2. Cisco XNC and Application Promotional Bundles

Part Number	Description
L-XNC-MM-B-ST-K9	Starter Bundle that includes one instance of Cisco XNC and Monitor Manager application RTM 5 Top of Rack (1-2 RU) Nexus fixed switches
L-XNC-MM-B-S-K9	Small size deployment Bundle that includes two instance of Cisco XNC for HA and Monitor Manager application RTM 10 Top of Rack (1-2 RU) Nexus fixed switches
L-XNC-MM-B-M-K9	Medium size deployment Bundle that includes two instance of Cisco XNC for HA and Monitor Manager application RTM 25 Top of Rack (1-2 RU) Nexus fixed switches
L-XNC-MM-B-L-K9	Large size deployment Bundle that includes two instance of Cisco XNC for HA and Monitor Manager application RTM 50 Top of Rack (1-2 RU) Nexus fixed switches

Table 3. Combined Cisco XNC and Hardware Bundles for Monitor Manager Application

Part Number	Description
N3K-XNC-MM-B-ST	Starter bundle that includes XNC with Monitor Manager application and flexibility to choose up to 5 Nexus 3000 devices (3048/3064/3016)
N3K-XNC-MM-B-SM	Small size deployment bundle that includes XNC with Monitor Manager application and flexibility to choose up to 10 Nexus 3000 devices (3048/3064/3016)

For More Information

For more information about Cisco XNC, visit http://www.cisco.com/go/xnc or contact your local account representative.

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