

# Managing Commercial Midsize Cisco Networks with Cisco netManager

## Executive Summary

Midsize companies (100–1000 users) experiencing the benefits of advanced Cisco® solutions such as Cisco Unified Communications, security, and wireless networking, often have limited budgets, staff, and expertise to manage them. To meet this need, Cisco offers IT infrastructure management capabilities at a midsize scale and price with Cisco netManager, an easy-to-use management solution for discovering, monitoring, alerting, and reporting on the IP infrastructure and Unified Communications components of commercial midsize networks.

This discussion outlines the budget, staffing, and operational challenges that midsize companies face in managing their networks as they grow. It then introduces the two versions of Cisco netManager and provides examples of how it delivers the capabilities that address the specific challenges of midsize network management.

## Challenge: Finding the Right Fit

When it comes to shopping for IT solutions, midsize companies can be frustrated by the lack of solutions targeted for their needs. Too big for small-business solutions, they need enterprise-class functionality but cannot afford enterprise-class prices. They may also have limited IT staff resources, yet no longer find it cost-effective or desirable to hire managed service providers. The IT staff is typically a small group of jacks-of-all-trades without the time to devote to full-time monitoring of specific systems. They are also concerned about hidden costs: how buying one solution can trigger the need to upgrade existing systems and strain limited IT budgets.

IT vendors tend to offer midmarket companies pared-down versions of their enterprise management solutions that do not fit their particular requirements. Instead, midsize businesses need an inexpensive, easy-to-use network monitoring system with enterprise-class capabilities that help them identify and resolve issues quickly. It should offer real-time network visibility and device status, with automated, configurable alerts and robust reporting. It should integrate into their existing environments without requiring extensive upgrades and scale as the network grows.

## Solution: Cisco netManager

Cisco netManager, a proactive monitoring and troubleshooting application, meets the unique needs of midsize networks, budgets, and staff. Delivering real-time operational and performance monitoring for converged Cisco networks, Cisco netManager is easy to use. It has automated capabilities that increase productivity and speed troubleshooting. It supports a wide range of Cisco platforms, Cisco applications, and non Cisco devices.

Cisco netManager is available in two versions: Cisco netManager IP Infrastructure and Cisco netManager Unified Communications.

Cisco netManager IP Infrastructure facilitates day-to-day management of Cisco routers, Cisco switches, Cisco PIX® firewalls, Cisco Intrusion Prevention Systems (IPSs), Cisco Adaptive Security

Appliances (ASAs), and Cisco wireless networking solutions, along with visibility of non Cisco devices and servers. Among its capabilities are the following:

- **Discovery:** Automatically collects and presents a detailed device inventory
- **Visualization and mapping:** Shows network status through a single monitoring interface; displays IP network interconnections and alert indications for each device
- **Monitoring:** A customizable dashboard allows administrators to monitor real-time network status with visibility into performance metrics such as CPU utilization, interface utilization, and response times for network devices
- **Alerting and troubleshooting:** Administrators can configure flexible monitoring thresholds and alarms. Contextual diagnostic tools such as ping, traceroute, Domain Name System (DNS) lookup, and easy, one-click access to devices facilitate rapid troubleshooting. Proactive and reactive alerts can launch applications, sending event notices to administrators using email, Short Message Service (SMS) text alerts, Simple Network Management Protocol (SNMP) traps, or Windows popup messages.
- **Trend analysis:** A powerful reporting tool allows administrators to view short-term and long-term historical trends for daily maintenance and capacity planning purposes, with an extensive list of preconfigured reporting templates.
- **Web 2.0 interface:** Facilitates ease of use by making netManager available anytime, anywhere through a browser connection. The netManager homepage and information are customizable on a per user basis, making it easier for administrators to access those devices and capabilities for which they are responsible.

Cisco netManager Unified Communications extends the capabilities of Cisco netManager IP Infrastructure to also include the following:

- Support for Cisco Unified Communications elements such as Cisco Unified Communications Manager, Cisco Unified Communications Manager Business Edition, Cisco Unified Communications Manager Express and more. It also supports third-party Skinny Call Control Protocol (SCCP) and Session Initiation Protocol (SIP) phones.
- Real-time portals for both network and Unified Communications status
- Actionable, service-level view for Unified Communications deployments, showing clusters, gateways, and operational status of Unified Communications applications
- Unified Communications-specific reports on phone status change and phone search

Cisco netManager can monitor and troubleshoot these Cisco Unified Communications elements and applications: Cisco Unified Communications Manager, Cisco Unified Communications Manager Business Edition, Cisco Unified Communications Manager Express, Cisco Unity®, Cisco Unity Express, Cisco Unity Connection, Cisco Unified Contact Center Express, Cisco Unified Presence Server, Cisco Unified MeetingPlace® Express, and all Cisco IP phones.

### Usage Scenario: Cisco netManager

To illustrate the capabilities of Cisco netManager, consider a midsize business with five retail stores that connect to corporate services on a Cisco network. The network supports a distributed point-of-sale (POS) application and a central customer resource management (CRM) system. The company also has a basic Time Division Multiplexing (TDM) phone system and outsources voicemail to its telecommunications provider.

## Deployment and Discovery

The business deploys Cisco netManager IP Infrastructure to manage the 50-device network from corporate headquarters. The management solution is scalable to 100 network devices and wireless access points and 10 remote connections, supporting future business growth. Cisco netManager first discovers network elements, developing a detailed inventory about each Cisco device and drawing a topology map with icons and capabilities that represent each element. Clicking any Cisco device on the map or table yields specific information about the device, such as serial number, software version, MIBs, CPU status, ports, and interfaces. The corresponding inventory table also lists information about all non Cisco workstations, servers, and printers connected to the network.

By default, Cisco netManager monitors and logs all network actions and events. Administrators can verify the operational status of any device from the topology map. The administrators configure the reporting feature to generate daily reports such as network device utilization, bandwidth utilization, and faults.

## Event: Bandwidth Utilization

The daily report reveals a bandwidth utilization spike every day between 10 and noon on the WAN link between headquarters and one of the stores. The simple solution would be to upgrade the WAN, but budget is tight. Closer examination reveals that the POS client at the store was accidentally set to back itself up to headquarters every day starting at 10 a.m., not 10 p.m. A simple configuration change eliminates the problem.

## Event: Slow Application

A few weeks later, Cisco netManager sends an alert telling the staff that CPU utilization on the CRM application server is very high at 6 a.m., before anyone is online for the day. The Web 2.0 support allows the administrator to respond to a pager alert from home and begin troubleshooting the problem immediately. The symptom indicates the presence of a virus, which the team scrubs from the server before users start to complain about slow response.

## Upgrade to Unified Communications

A few months later, the company decides to deploy Cisco Unified Communications Manager Business Edition to replace the outdated phone system and voicemail, reducing operational costs by bringing voicemail in-house and using the existing WAN to carry calls between headquarters and stores. To manage the converged network, the company also upgrades to Cisco netManager Unified Communications with a 250-phone license. As the company grows, it can scale its Cisco netManager Unified Communications license up to 1000 phones.

As with basic Cisco netManager IP Infrastructure, Cisco netManager Unified Communications can be configured to generate daily reports that allow administrators to proactively monitor activity and changes with IP phones. Reports can audit phones, track moves, adds, and changes, and provide a service-level view of phones and registration status.

## Event: No Dial Tone

Just after installation, a store manager calls the help desk on her mobile phone to report that the new Cisco IP Phone does not work. Using Cisco netManager Unified Communications, the help desk operator quickly learns that the switch port associated with the phone is shut down. The operator activates the port, the phone registers, and all is well. To make sure this is an isolated

incident, the operator checks all the other phones associated with Cisco Unified Communications Manager Business Edition and finds them all online.

#### **Event: Voicemail Threshold Exceeded**

While fine-tuning the new Cisco Unity voicemail system, the administrator sets a storage threshold. A week later, Cisco netManager sends an alert that the threshold is over limit, and soon the system would be unable to store new messages. After evaluating the situation, the IT staff uses Cisco netManager to configure a policy in Cisco Unity that automatically deletes voicemail messages more than seven days old. The IT manager sends an email to the entire company informing personnel of this new policy to help ensure that callers can always leave messages.

#### **Event: Code Yellow**

Cisco netManager is configured to alert administrators whenever call processing reaches “code yellow”: when response time slows enough to affect voice quality. Cisco Unified Communications Manager Business Edition sends syslog information to Cisco netManager to support real-time monitoring and troubleshooting. This allows the staff to fix the problem before the Cisco Unified Communications Manager Business Edition server goes “code red” and shuts down. There are numerous potential causes of call processing overload, and Cisco netManager provides information that helps the staff troubleshoot the problem.

### **Cisco netManager: a Practical Solution for Midsize Companies**

In a typical midsize business, IT staffers have many demands on their time, reacting to many issues throughout the day. Network management should not stretch the resources further. Cisco netManager offers a proactive, easy-to-use management system for Cisco IP and Unified Communications networks. It provides real-time visibility and monitoring information that helps busy IT administrators isolate and troubleshoot problems before they become incidents that affect service. This solution gives administrators more time to support business activities through efficient IT system management and growth, perhaps someday becoming a large enterprise.

#### **For More Information**

The [Cisco netManager product page](#) includes information about the Cisco netManager IP Infrastructure and Cisco netManager Unified Communications solutions, with introductory videos and device support tables.



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