

Cisco Monitor Manager 1.1.2: Agent for Cisco Monitor Director

Product Overview

Cisco[®] Monitor Manager 1.1.2 is a comprehensive management application designed for the needs of small and medium-sized businesses (SMBs) with as many as 250 IP phones. It provides monitoring of key device parameters on Cisco network devices including routers and switches, access points, IP phones, and Cisco Unified Communications applications. Cisco Monitor Manager also provides support for any Simple Network Management Protocol (SNMP)–capable and IP-addressable devices from other vendors in the network. It monitors the network 24 hours a day, periodically polling and collecting inventory and performance-monitoring data from the managed devices.

Applications

Cisco Monitor Manager can be used by SMBs as a self-managed network monitoring application or by service providers as part of a managed service offering. This gives greater flexibility to SMBs and creates revenue-generating opportunities for managed service providers (MSPs).

Self-Managed Solution

You can manage and monitor your SMB's network using a single copy of Cisco Monitor Manager at your corporate office. The application operates in a standalone mode and remotely discovers, monitors, and proactively manages the entire network, including remote offices. Reports and alerts are generated as required to provide 24-hour visibility into the health of the network. Cisco Monitor Manager also supports launching of Cisco device managers when they are needed to perform advanced configurations.

Cisco Monitor Manager performs automatic discovery of the entire network infrastructure and Cisco Unified Communications system to provide a real-time physical view, service-level details, and the current operational status of each element in the network. See Figure 1.

Managed Service Solution

As a Cisco value-added reseller (VAR) MSP, you can deploy Cisco Monitor Manager at your SMB customers' sites (Figure 2). This model provides you with an economical, 24-hour network management solution for your customers that help them to focus on their core business rather than their network. Operating as an agent for Cisco Monitor Director it collects relevant network information and syslogs from your customer's network and selectively forwards them to your <u>Cisco</u> <u>Monitor Director</u> server at your network operation center over a highly secure and reliable communication channel. You have full visibility into your SMB customers' networks and can anticipate network issues before their businesses are affected. For more information on Cisco Monitor Director solution please visit <u>http://www.cisco.com/go/cmd</u>.

Figure 1. Cisco Monitor Manager in a Small-Business Network



Figure 2. Cisco Monitor Manager with Cisco Monitor Director



Key Features and Benefits

Cisco Monitor Manager provides the following key features and benefits:

- Voice and data network discovery and topology
- Networkwide inventory collection and reporting
- Cisco IP telephony monitoring
- Support for Cisco devices, SNMP-capable multivendor devices, and Internet Control Message Protocol (ICMP) ping-based monitoring
- Key end-user monitoring component in an MSP upgrade

- · SNMP and highly secure, reliable HTTPS-based communication
- Cisco device performance monitoring
- · Interface status and traffic monitoring
- · Real-time alerts and notifications
- Reports
- Configuration archive
- Troubleshooting tools

Voice and Data Network Discovery and Topology

Cisco Monitor Manager allows you to discover and view the complete topology of your network across all locations and remote offices. It supports seed device, SNMP sweep, ICMP ping, and Cisco Configuration Assistant import-based discovery. It uses Cisco Discovery Protocol and Address Resolution Protocol (ARP) neighbor data to discover the entire underlying data and voice network and then visualizes it in an intuitive graphical display. Its real-time autorefresh display shows network and device-level status, faults, inventory, connectivity, and manageability information for all the managed networking elements in the network. Cisco Monitor Manager periodically rediscovers the topology and generates alerts if it finds new devices in the network. The graphical topology display is a central navigation point to initiate various context-sensitive right-click menus used to obtain detailed status; to obtain real-time as well as historical performance data, reports, and alerts; and to launch device managers for in-depth configuration. See Figure 3.

A single copy of Cisco Monitor Manager deployed at the main office facilitates monitoring of all remote sites as well as the main office.



Figure 3. Cisco Monitor Manager Network Topology

Networkwide Inventory Collection and Reporting

Cisco Monitor Manager periodically collects inventory information, including cards and interface data, from all managed devices in the network and stores it in an embedded database for reporting purposes. The application provides device-inventory reports that show all the managed devices with their operational cards and interfaces. These reports are also periodically sent to the Cisco Monitor Director server when managed by a VAR MSP. Cisco Monitor Manager also collects a

detailed inventory of all Cisco voice devices in the network and stores the information in its embedded database for detailed voice-related reports. See Figure 4.

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Figure 4. Cisco Monitor Manager Networkwide Inventory Report

Cisco IP Telephony Monitoring

The application remotely polls and collects data continuously as it monitors the different Cisco IP telephony elements such as Cisco Unified Communications 500 Series, Cisco Unified Communications Manager Express, Cisco Unity[®] Express, Cisco voice gateways, and Cisco Unified IP Phones. It provides real-time information and raises alerts for connectivity-related and registration-related outages and provides additional contextual information to locate and identify the affected Cisco Unified IP Phones. It uses open interfaces such as SNMP and HTTP/HTTPS to periodically collect data from the Cisco Unified Communications system and the underlying transport infrastructure.

Cisco Monitor Manager provides a rich set of reports that include trunk utilization, voice port utilization, and IP phone reports. The IP phone inventory reports give network managers instant access to status information about every IP phone in the network. Such reports are available for both Session Initiation Protocol (SIP)–based and Skinny Client Control Protocol (SCCP)–based IP phones. Cisco Monitor Manager also provides voicemail monitoring that keeps track of mailbox sizes and creates alerts based on configured threshold limits.

SNMP and HTTPS-Based Communication

Cisco Monitor Manager uses SNMP to discover and retrieve configuration and performance information and manage network elements in your network. It also uses the highly secure and reliable HTTPS protocol to manage Cisco security appliances and certain aspects of the application. Cisco Monitor Manager also uses ICMP ping to manage non-SNMP-capable devices. With protocol fallback, Cisco Monitor Manager uses HTTP if a managed Cisco device does not support HTTPS.

In MSP deployments, Cisco Monitor Manager periodically communicates with Cisco Monitor Director over an encrypted Secure Sockets Layer (SSL) connection. Every instance of Cisco Monitor Manager is authenticated using a unique ID number and license key. For improved security, the SSL port is configurable on both Cisco Monitor Manager and Cisco Monitor Director.

Cisco Device Performance Monitoring

Cisco Monitor Manager provides a GUI for monitoring important device parameters such as CPU, memory, reachability, availability, and public switched telephone network (PSTN) trunk utilization. The application periodically polls devices for these parameters and stores them in its embedded database for real-time graphing, historical analysis, and reporting purposes. The application also allows you to configure thresholds for these parameters to notify operators of a threshold breach. Alerts are generated and dispatched through e-mail or pager messages and optionally sent to a Cisco Monitor Director server. See Figure 5.





Interface Status and Traffic Monitoring

Cisco Monitor Manager monitors traffic status and important interface parameters such as packet rates, interface status, traffic counters, errors, and interface utilization. The application periodically polls devices for these parameters and stores them in its embedded database. It also allows you to configure thresholds for these monitored parameters to notify operators of a threshold breach. See Figure 6.

Figure 6. Cisco Monitor Manager Interface Monitoring



Real-Time Alerts and Notifications

Cisco Monitor Manager collects syslogs from all managed devices and displays real-time faultmonitoring information to help you anticipate issues before they affect users. It converts emergency, alert, and critical syslogs into alert notifications and notifies network managers through e-mail and pager messages. In addition to displaying user-friendly charts and graphs, Cisco Monitor Manager also compares monitoring data against user-defined thresholds and notifies network managers of a threshold breach. It also raises alerts on Cisco Unified Communications devices based on their service status. Alerts are stored in the embedded database for historical reporting purposes. See Figure 7.

Figure 7. Cisco Monitor Manager Notification and Alerts

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Reports

Cisco Monitor Manager provides in-depth reporting capabilities that are easy to interpret, present, and print. Data from the graphical reports can be filtered based on site, device family, or a particular managed device. Cisco Monitor Manager supports the following networkwide, easy-to-use graphical reports. See Figure 8.

- Alert report
- IP phone report, Cisco Unified Communications Manager Express, and Cisco Unity Express inventory report
- PSTN trunk utilization reports
- Device performance report
- Syslog report
- End-of-sale/end-of-life
- Device inventory report
- · Configuration archive report
- Discovered devices report
- Device availability report

Figure 8. Cisco Monitor Manager Reports

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Configuration Archive

The Cisco Monitor Manager GUI helps you perform on-demand backup and restore of startup configuration files for all the managed Cisco devices in your network. Its configuration archive feature also supports backup and restore of the VLAN database for all managed Cisco Catalyst[®] switches in the network. With this feature, network managers can also save running configurations to startup configurations before performing a manual backup. See Figure 9.

Figure 9.	Cisco Monitor Manager Configuration Archive	
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Troubleshooting Tools

Cisco Monitor Manager provides effective troubleshooting tools such as traceroute, ping, and port search. The port search feature helps network administrators locate end stations like Cisco IP Phones, access points, and workstations on the network by specifying their MAC address or IP addresses. Traceroute and ping help debug and locate network connectivity-related conditions.

Device Support Levels

Table 1 lists the mapping between features and device support levels.

Table 1.Device Support Level

Feature	Premium Cisco	Generic SNMP Devices	Basic Ping Only
Device discovery	Automatic	Automatic	Manual
Inventory	Devices Cards Interfaces	Devices Interfaces	Devices
ICMP ping-based device monitoring: Up/down, response time, and packet loss	Yes	Yes	Yes
Syslog-based alerting and reporting	Yes	Yes	Yes
Real-time alerts and notifications through e-mail, pager, trouble-ticketing systems	Yes	Yes	Yes
Persistent storage of monitored data in the built-in database	Yes	Yes	Yes
Protocols used for monitoring	SNMP, HTTP, HTTPS, ICMP	SNMP ICMP	ICMP
System details: Host name, system uptime, device model, device type, vendor	Yes	Yes	
Interface utilization monitoring: Bandwidth, receive, and transmit utilization	Yes	Yes	
Detailed interface monitoring: Receive and transmit bitrates, octets, packet rate, and error counters	Yes		
Link discovery/topology	Yes		
Cisco device manager launch: Cisco Router and Security Device Manager, Cisco Adaptive Security Device Manager, access point Web interface	Yes		
Device performance monitoring: CPU, memory, and bandwidth utilization	Yes		
Configuration backup and restore	Yes		
Troubleshooting tools: Ping, traceroute, and port search	Yes		
Cisco voice-over-IP (VoIP) monitoring	Yes		
End-of-sale and end-of-life reports	Yes		
Discovery and monitoring of VPN peers	Yes		

Features and Benefits

Table 2 lists the features and benefits of Cisco Monitor Manager.

Table 2.

Features and Benefits

Feature	Benefits
Ease of use and low initial investment	 Specifically designed for SMBs Intuitive and easy to use Low-cost initial deployment

Cisco Discovery Protocol and ARP- based network discovery and complete topology	 Discovers entire data and Cisco Unified Communications voice network Discovers SNMP-capable and IP-addressable multivendor devices Graphical topology views span multiple customer locations, displaying the total network with unified topologies and interconnections Displays network and device-level fault information, device connectivity, and
Support for Cisco devices, SNMP- capable devices, and ICMP ping- based monitoring	 manageability information Premium support for supported Cisco devices (see Table 4) Generic SNMP-based management for SNMP-capable multivendor devices Basic monitoring for non-SNMP-capable devices
Device system parameters configuration	 Provides easy-to-use configuration of basic system parameters; for in-depth data and voice configuration use Cisco Configuration Assistant
SNMP and highly secure and reliable channel to managed devices	 Uses SNMP to discover, retrieve configuration and performance information, and manage network elements Uses HTTPS to manage Cisco security appliances and certain aspects of the application Uses ICMP ping to manage non-SNMP-capable devices
Networkwide inventory collection and reporting	 Provides complete device-inventory information, including card and interface details for all managed devices in the network Provides inventory reports that can be used to keep track of devices and cards in the network
Built-in troubleshooting tools	 Facilitates debugging of network issues by providing troubleshooting tools such a traceroute and ping
IP telephony monitoring	 Discovery, inventory, and monitoring of Cisco Unified IP telephony elements Provides real-time information about connectivity and registration status of Cisco Unified IP telephony elements Raises alerts on Cisco Unified IP telephony elements based on service status Through voice mailbox monitoring, keeps track of the size of the mailbox and creates alerts based on the configured threshold limits Monitors PSTN trunk and voice port utilization
Performance and interface traffic monitoring	 Collects, stores, and displays important real-time monitoring information with output options of charts and graphs Compares monitoring data against user-defined thresholds and generates threshold-crossing alerts Monitors interface traffic statistics and displays interface utilization Monitors CPU and memory utilization for all managed devices
Real-time alerts and notifications through e-mail and pager	 Sends e-mail or pager messages for notification of possible discovery, syslogs, or monitoring alerts
Applications	 SMB-managed solution: Cisco Monitor Manager operating as a standalone application and managed onsite Managed solution: Cisco Monitor Manager operating as the agent for Cisco Monitor Director solution
Highly secure and reliable communication	Uses SSL connection to communicate with Cisco Monitor Director Configurable SSL port for improved security
Configuration archive	 Facilitates backup and restore of startup configuration files Network managers can also save running configuration files prior to manual or periodic backup
End-of-sale and end-of-life reports (selected Cisco devices only)	 Provides product end-of-sale and end-of-life reports to predict network upgrade requirements
Syslog-based alerting and reporting	 Collects and stores syslog messages from managed devices Generates alerts and reports of syslog messages
Device manager launch point	 Supports the launch of various Cisco device managers such as Cisco Adaptive Security Device Manager, Cisco Router and Security Device Manager, and Cisco PIX[®] Device Manager
Persistent storage of monitored data and device credentials for historical reporting with built-in database	 Uses built-in database to store inventory, performance, and syslog data Supports the ability to view, report, and analyze historical data
Discovery and monitoring of VPN peers	 Discovers VPN peers across locations Monitors status and traffic parameters of VPN tunnels

Product Specifications and Supported Devices

Table 3 lists product specifications for Cisco Monitor Manager, and Table 4 provides information about supported device software.

Table 3.Product Specifications

Description	Specifications	
Scalability criteria	"Medium" License	
	Devices: up to 70 devices	
	Cisco Unified IP Phones: up to 250	
	"Small" License	
	Devices: up to 25 devices	
	Cisco Unified IP Phones: up to 48	
Operating systems	Windows XP Professional (Service Pack 2)	
Protocols	HTTP/HTTPS, SNMP, Cisco Discovery Protocol, ICMP, ARP, TFTP	
Processor	Pentium IV 1.2 GHz	
Memory	2 GB RAM or more	
Disk space	1 GB or more	

 Table 4.
 Premium Support for Cisco Devices

Device Family	Devices	Software Release*	
Cisco Wireless Devices	Cisco Aironet 1100, 1200 Series, AIR- LAP521G, AP521, and WLC526	12.2(15)JA and later	
Cisco routers	Cisco 830/850/870 Routers, Cisco 1700/1800/1841/1861 Routers, Cisco 2600/ 2800 Series, Cisco 3600/ 3700/ 3800 Series, Cisco Unified Communications 500 Series for Small Business	12.2(13)ZH and later	
	Cisco SBS 101/106/107/200	12.3(8)YG and later	
Cisco Catalyst Switches	Cisco Catalyst 2900XL, 2940, 2950, 2955, 2960, 2970, 3550, 3500XL, 3560, and 3750 Series, and Catalyst Express 500 Series	12.0(5.1)XU and later	
Cisco ASA and Cisco PIX Security Appliances	Cisco ASA 5505 and 5510 Cisco PIX 501, 506, 506E, 515, and 515E	7.0 and later	
Cisco Unified Communications Express	Cisco Unified Communications Manager Express	3.3 and above	
	Cisco Unity Express	2.0 and above	
Cisco Unified IP Phones	Cisco IP Phones 7900 Series, Cisco 3911 and Cisco 3951 SIP-based IP Phones	-	
Cisco Voice Modules	 Voice Interface Modules: VIC2-2FXS, VIC VIC-4FXS/DID, VIC-2BRI-NT/TE, VWIC2- T1/E1, VWIC-1MFT-T1, VWIC-2MFT-T1, E1, VWIC-2MFT-E1-DI Voice Network Modules: NM-HD-1V, NM- 4FXS, NM-HDV2, NM-HDV2-1T1/E1, NM- 	1MFT-T1/E1, VWIC2-2MFT- VWIC-2MFT-T1-DI, VWIC-1MFT- HD-2V, NM-HD-2VE, NM-HDA-	
	 Voice Expansion Modules: EVM-HD-8FXS 6FXO, EM-HDA-3FXS/4FXO, EM-4BRI-N 4FXO, EM2-HDA-4FXO 		

* Indicates minimum software version supported by device family. Individual devices in the family may require later versions.

For more information about system requirements, please refer to the Cisco Monitor Manager 1.1.2 Quick Start Guide at

http://www.cisco.com/en/US/products/ps7244/prod installation guides list.html.

Cisco Monitor Manager Licensing

Cisco Monitor Manager is a licensed application that supports number-based and usage-based licensing.

Number-Based Licensing

- "Medium" License: Allows up to 70 devices and 250 Cisco IP Phones
- "Small" License: Allows up to 25 devices and 48 Cisco IP Phones

Usage-Based Licensing

With each of the above "Medium" and "Small" licenses there are self-managed and VAR MSPmanaged licenses.

- SMB Self-Managed License: Perpetual license that allows network managers to selfmanage networks
- VAR MSP License: Yearly subscription license in which Cisco Monitor Manager is
 installed at the customer site, sending monitoring information to the MSP and working
 together with Cisco Monitor Director at the MSP's location for remote managing and
 proactive monitoring of the customer's network. For information on Cisco Monitor Director
 solution, please visit http://www.cisco.com/go/cmd.

Upgrade licenses allow you to scale your monitored network from 48 to 250 users or upgrade from a self-managed to an MSP-managed deployment. In a managed deployment, Cisco Monitor Manager operating as an agent for Cisco Monitor Director sends its license type and expiration status to Cisco Monitor Director at the MSP's site. The MSP can create license reports and proactively remind customers of upcoming renewals.

Ordering Information

Cisco Monitor Manager 1.1.2 is offered as a standalone application for SMBs. A 60-day free evaluation copy of Cisco Monitor Manager can be downloaded from http://www.cisco.com/cgi-bin/tablebuild.pl/CiscoMM-crypto. License purchases following the trial period are required for continued use of the product. Please refer to the online product bulletins for further ordering details. Cisco Monitor Manager is available through regular Cisco sales and distribution channels worldwide. To place an order, visit the <u>Cisco Ordering Homepage</u>.

To purchase a perpetual license for use beyond the evaluation period, contact your nearest Cisco channel partner or reseller.

Table 5 lists ordering information for self-managed Cisco Monitor Manager 1.1.2.

 Table 5.
 Ordering Information for Self-Managed Cisco Monitor Manager 1.1.2

Product/Part Number	Description
MON-1.1-STD-K9	Cisco Monitor Manager 1.1.2 Single SW, "Medium" Self-Managed Perpetual License
MON-1.1-LTD-K9	Cisco Monitor Manager 1.1.2 Single SW, "Small" Self-Managed Perpetual License
MON-1.1-STD20UP-K9	Cisco Monitor Manager 1.1.2 "Small" Self-Managed to "Medium" Self-Managed, Perpetual License
DIR-1.1-LMSPUP-K9	Cisco Monitor Director 1.1.2 "Small" Self-Managed to "Small" MSP Managed
DIR-1.1-SMSPUP-K9	Cisco Monitor Director 1.1.2 "Medium" Self-Managed to "Medium" MSP Managed

Cisco Monitor Manager licensing options are also described in detail in the product bulletin under the Cisco Monitor Manager "Product Literature" section at: http://www.cisco.com/en/US/products/ps7244/prod_bulletins_list.html.

Please visit http://www.cisco.com/go/cmd for ordering information and part numbers on Cisco

Monitor Director solution.

Service and Support

Using the Cisco lifecycle services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed, by technology and by network complexity, to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

For More Information

For more information about Cisco Monitor Manager, visit <u>http://www.cisco.com/en/US/products/ps7244/index.html.</u> or contact your local Cisco account representative.



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