



Cisco Media Gateway Controller Node Manager Version 2.4.1

Q. What is new in Cisco Media Gateway Controller (MGC) Node Manager V2.4.1?

A. The Cisco® MGC Node Manager now provides Cisco PGW 2200 Softswitch Version 9.4.1 support. Cisco Voice Services Provisioning Tool (VSPT) features are also now included with the product's media kit and launched as the product's provisioning tool.

Q. What is Cisco MGC Node Manager?

A. The Cisco MGC Node Manager is one of the Cisco element managers that provide device-specific fault, configuration, accounting, performance, and security (FCAPS) management capability for Cisco service provider products. It manages the Cisco PGW 2200 Softswitch, previously known as Cisco SC 2200 Signaling Controller and also known as the Cisco VSC3000 Virtual Switch Controller. The Cisco PGW 2200 uses a core software technology, invented by Cisco and called media gateway control (MGC), which is the term used to represent the call-control functional layer to provide a bridge between the legacy Public Switched Telephone Network (PSTN) and next-generation packet networks -- supporting either simple Signaling System 7 (SS7) interconnect or providing intelligent call control and routing functions in Service Provider networks. The Cisco MGC Node Manager provides fault, configuration, performance and security management and integrates management access to all PGW 2200 Softswitch components, effectively representing them as an SS7 node to the network operator.

Q. What is an element management system (EMS)?

A. The element management system (EMS) is the first management layer in the Telecommunication Management Network (TMN) architecture. It provides element-specific network-management functions, such as alarm collection, device configuration, performance measurement collection with display, and user administration for access and security.

A higher-level manager called the Network Management System (NMS) handles functions that require network-level information and can join together interfaces from multiple element managers.

Q. What are Cisco element managers?

A. Cisco element managers provide consistent element management for a wide range of Cisco networking devices, including core, edge, and access routers; switches; cable and DSL modems; voice over IP (VoIP) softswitches; and voice gateways. Cisco Element Managers provide a highly scalable, fully integrated element management solution for the service

provider market. All Element Managers aggregate necessary fault, configuration, performance, and accounting information to simplify information flow and provide a common set of interface and element management services to applications such as Cisco Packet Telephony Center and Cisco Info Center, as well as to legacy operating support system (OSS) applications. By providing common and consistent interfaces across multiple element managers, Cisco element managers help service providers minimize training costs and reduce total cost of ownership. Cisco Element Manager System 3.2 software is included in the Cisco MGC Node Manager Version 2.4.1 Media Kit.

Q. What does Cisco MGC Node Manager 2.4.1 manage?

A. Cisco MGC Node Manager 2.4.1 is the latest release of the Cisco MGC Node Manager product set and is compatible with all previous versions. It can be used for all listed Cisco PGW 2200 and SC2200 versions; however, each solution is tested with a particular version of Cisco MGC Node Manager, so check the individual solution recommendations prior to ordering. Not all the solutions listed in Table 1 use all the versions listed.

Table 1 Managed Element Versions

| Managed Element / Device | Version | Solution |
|--|--------------------------|---|
| Cisco PGW 2200 Softswitch | 9.2, 9.3.1, 9.3.2, 9.4.1 | <ul style="list-style-type: none"> • Cisco Voice Infrastructure and Applications (VIA) • Cisco PSTN Gateway • Cisco Broadband Local Integrated Services Solution (BLISS) for cable • Cisco Managed Voice Services OSS |
| Cisco SC2200 Signaling Controller | 7.4.12 | <ul style="list-style-type: none"> • Wholesale Dial • Wholesale Voice • Cisco Any Service, Any Port (ASAP) |
| Cisco Signaling Link Terminal (SLT) | IOS Image 12.2 | All |
| Cisco Integrated SLT | 12.2(15)T | Cisco AS5400 Series and AS5350 gateways |
| Cisco Catalyst® 5500 LAN switch | 5.x | All |
| Cisco Catalyst 2900 Series XL LAN switch | 12.x | All |
| Cisco Billing and Measurements Server (BAMS) | Release 3.13 | All |
| Cisco H.323 Signaling Interface adjunct | 2.20, 2.21, 4.1 | Cisco PSTN Gateway |

Q. Does Cisco MGC Node Manager support fault, configuration, performance, accounting and security (FCAPS) management functions?

A. Cisco MGC Node Manager provides features that support fault, configuration, performance, and security management. See note below about accounting management.

Fault management

Cisco MGC Node Manager provides fault collection for all components of the Cisco MGC Node, including MGC Host; Cisco BAMS; Cisco Catalyst 5500 Series, Catalyst 2900 Series XL, and Catalyst 6509 switches; Cisco SLT and Integrated SLT; and Cisco H.323 Signaling Interface.

Configuration management

- Cisco MGC Node Manager Provisioning tool (MNM-PT), previously the Cisco VSPT, is incorporated as part of Cisco MGC Node Manager and is launched for Cisco PGW 2200, Cisco BAMS and Cisco MGX® 8000 Series Carrier Voice Gateway Voice Interworking Service Module (VISM) card provisioning functions.

- Cisco MNM-PT provides a provisioning graphical user interface (GUI) for all signaling, trunk group, trunk, route, and dial plan information required for Cisco PGW 2200 in all solutions and configurations.
- Cisco MNM-PT provides end-to-end voice provisioning for the Cisco PGW 2200 Softswitch and the MGX 8000 Series Carrier Voice Gateway in the Cisco PSTN Gateway solution, such that commands common to both network elements can be entered once, prior to deployment, and all the voice-related parameters can be displayed on the screen together.
- Cisco MNM-PT provides provisioning for Cisco SC 2200 Signaling Controller in all solutions, but does not provision the gateway (network access server [NAS], or Cisco AS5000s). Cisco AS5000 gateways are provisioned using their native command-line interfaces (CLIs) or by using Cisco Universal Gateway Manager.
- Man-Machine Language (MML) and CLI commands can also be used to set all provisioning parameters on Cisco PGW 2200 softswitches, Cisco SLT and Cisco BAMS. They can be typed in directly or added to a script file for batch activation of provisioning parameters.
- Automated discovery of Cisco PGW 2200 softswitches, Cisco SLT, Cisco Catalyst Switches and Cisco BAMS is accomplished using a seed file or graphic workflow templates.
- Performance management
- Performance statistics and measurements are gathered and reported graphically.
- Cisco MGC Node Manager performance records can be exported in comma separated value (.csv), tab, or space-delimited format.

Accounting management

Some inventory information is displayed on the Cisco MGC Node Manager GUI; however, the traditional concept of inventory and billing report generation is not provided. Billing records are presented in Bell AMA Format (BAF) by Cisco BAMS, and as an ASCII flat file using .csv formatting.

Security management

- Cisco MGC Node Manager provides role-based user-access management for all functions directly controlled by it, such as discovery, alarm viewing, and configuration.
- Sun Solaris security is applied for Cisco PGW 2200 direct CLI login.
- Cisco IOS[®] Software login security is used on the Cisco SLT and Cisco Catalyst switch CLI.

Q. How can I forward alarm traps from the Cisco MGC Node Manager?

A. All alarms that result from traps received or events generated by Cisco MGC Node Manager are sent to a northbound Simple Network Management Protocol (SNMP) manager. Cisco MGC Node Manager accepts clear commands back from the northbound SNMP manager to synchronize the alarm queue. Cisco Element Management System (EMS) 3.2 patch 7 contains the best support for clear and acknowledge commands from Cisco Info Center as a northbound SNMP manager.

Q. Does Cisco MGC Node Manager manage the CISCO AS5000 and MGX8000 Series gateways?

A. Cisco MGC Node Manager does not manage the CISCO AS5000 and MGX8000 Series gateways; however, Cisco MGC Node Manager supports co-resident operation with Cisco Media Gateway Manager and Cisco Universal Gateway Manager to effectively provide alarm and object map integration for all three EMSs.

Q. How many users does Cisco MGC Node Manager support?

A. Cisco MGC Node Manager currently supports up to 10 users per application server and a maximum of 30 active out of 50 total users. The best configuration to support this number of users today is a client-server configuration, consisting of the presentation server and the management server. The presentation server offloads the X-terminal CPU workload so the management server can handle the database and polling chores.

Q. How can I get alarm traps from the Cisco MGC Node devices?

A. The MGC Node components report their alarms using SNMP. Each device is configured during installation to report its traps to the Cisco MGC Node Manager management server IP address. In addition, Cisco MGC Node Manager also provides a "presence poll" to check each device periodically to make sure it is responding, the applications on the device are alive, and the device will be able to send traps when appropriate alarm events occur.

Q. What hardware configuration is best?

A. Each solution and network configuration has certain characteristics that may influence the Sun hardware platform selected to support Cisco MGC Node Manager. The hardware component requirements are defined in Table 2.

Table 2 Table 2 - Hardware Sizing

| Cisco PGW 2200 Network Size | Small Network 1-3 Ops 1-5 Nodes 24 Traps/Minute | Mid-sized Network*** 4-6 Operators 6-10 Nodes 36-42 Traps/Minute | Large Network 7-10 Operators 11-20 Nodes 42-54 Traps/Minute | | |
|-----------------------------|--|---|--|----------------------|-------------------|
| | One machine | Presentation server | Management server | Presentation server* | Management server |
| RAM (GB) | 2 | 2 | 2 | 2 | 4 |
| Swap (GB) | 4 | 2 | 4 | 2 | 8 |
| Disk drives (9 GB minimum) | 4** | 1 | 4 | 1 | 4-6 |
| CPU (MHz) | 2 x 440-1.05G | 2 x 440-1.05G | 2 x 440-1.05G | 4 x 1.05G | 4 x 1.05G |

*Additional presentation servers may be added, if necessary, to maintain good operator response time in large networks with heavy alarm traffic. Additional operator support will be tested in a future release.

**Two (2) disk machines will work for smaller networks with less traffic and fewer operators. Response time to operator commands will slow down as the network grows and additional operators are added.

***Presentation and management servers can run co-resident for medium networks when faster Sun CPUs are used or operator loads are light. Adding more presentation servers increases the number of operators supported.

Q. What version of Solaris is required?

A. Solaris 8

Q. Does Cisco sell Sun hardware for Cisco MGC Node Manager?

A. No, Cisco does not offer Sun hardware configurations designed specifically for Cisco MGC Node Manager at this time. Sun provides many workstation and server configurations that are compatible with the Cisco MGC Node Manager software and readily available worldwide. By purchasing directly from Sun, customers save money and benefit from a wider range of hardware options. Cisco does offer Sun Netra servers that are packaged as host platforms for the Cisco PGW 2200; however, the Netra configuration gives up price and performance in return for Network Equipment Building Standards (NEBS) compliance.

The Sun 280r provides the basic building blocks for an excellent EMS server because it supports two (2) Fibre Channel hard drives in a single rack-mount AC power package. A sample configuration from the Sun Website is shown in Table 3. Other Sun platforms in the UltraSPARC II and III families are also supported.

Table 3 Table 3 - Typical Hardware Configuration for a Midsized Network or Co-Resident Configuration

| Quantity | Description |
|----------|---|
| 1 | A35-WBF2-8GRB1 Sun Fire 280R Server, 21.2-GHz UltraSPARC III Processors w/8MB External Cache, 8GB memory, 2 73GB 10,000 RPM FC-AL Disk Drives, 1 DVD-ROM, 2 560-Watt Power Supplies, Solaris 8 & 9 Operating Environments Pre-Installed |
| 1 | SLS9S-200-W9YM Solaris PC NetLink 2.0, Software Media Kit & HTML Documentation, No Licence Required |
| 1 | SOLZS-080B9AYM Solaris 8 Media Kit with Multilingual CD & DVD Media & English Installation Documentation |
| 2 | X311L Power Cord Kit, North American/Asian |

Q. How do I configure the Cisco SLT and the Cisco Catalyst 5500 Series, Catalyst 6509, and Catalyst 2900 Series XL switches?

A. CiscoView is provided with Cisco MGC Node Manager as a bundled application for this purpose and is launched from the Cisco MGC Node Manager object map icon menu. It is a GUI-based device-management software application that lets you access dynamic status, statistics, and view/change some configuration information for Cisco Systems® switch and internetworking products. CiscoView provides a graphical representation of the device chassis, showing the cards as they are installed. The many chassis and physical port parameters are set by selecting the card and port from the GUI and choosing the appropriate setting from a pop-up list.

The Cisco SLT and Cisco Catalyst 5500 Series, Catalyst 6509, and Catalyst 2900 Series XL switches can also be completely configured from their CLIs, accessible through Telnet on Cisco MGC Node Manager. Future plans include incorporating the Cisco Catalyst Switch Manager as a co-resident EMS application with Cisco MGC Node Manager to expand the breadth of supported switches.

Q. How does patching work, and where can I get patches?

A. Cisco MGC Node Manager and Cisco VSPT (previous versions) patches are available on Cisco.com for download. Log in to the Website and access the following link: www.cisco.com/kobayashi/sw-center/sw-netmgmt.shtml

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