



About This Manual

Welcome to the command line interface (CLI) documentation for Release 4 of the Cisco MGX™ 8950, Cisco MGX™ 8850, and Cisco MGX™ 8830 wide area routing switches. In particular, the command descriptions in this reference apply to the CLI on the PXM45 and PXM1E. For command descriptions related to other products, see the tables in the section, “[Related Documentation](#),” in this preface.

This chapter discusses:

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Objectives

This publication provides instructions for using commands on the CLI of the PXM45 or PXM1E running in a Cisco MGX 8850, Cisco MGX 8950, or Cisco MGX 8830 switch.

Audience

The Cisco Command Line Interface (CLI) lets you control the network from a level somewhat below that provided by Cisco WAN Manager. This document helps network designers and operators to set up, manage, and troubleshoot networks.

Organization

Chapter 1 is an introduction to the CLI commands.

Chapter 2 is an alphabetical listing of the CLI commands, including command descriptions, syntax, parameter descriptions, related commands, attributes, and examples.

Related Documentation

The following Cisco publications contain additional information related to the operation of this product and associated equipment in a Cisco WAN switching network.

Cisco WAN Manager Release 12

[Table 1](#) lists the product documentation for the Cisco WAN Manager (CWM) network management system for Release 12.

Table 1 Cisco WAN Manager Release 12 Documentation

Title	Description
<i>Cisco WAN Manager Installation Guide for Solaris 8, Release 12</i> OL-3837-01	Provides procedures for installing Release 12 of the CWM network management system and Release 5.4 of CiscoView on a Solaris 8 platform.
<i>Cisco WAN Manager User's Guide, Release 12</i> OL-3838-01	Describes how to use the CWM Release 12 software, which consists of user applications and tools for network management, connection management, network configuration, statistics collection, and security management.
<i>Cisco WAN Manager SNMP Service Agent Guide, Release 12</i> OL-3840-01	Provides information about the CWM Simple Network Management Protocol Service Agent, an optional adjunct to CWM that is used for managing Cisco WAN switches using SNMP.
<i>Cisco WAN Manager Database Interface Guide, Release 12</i> OL-3839-01	Provides information about accessing the CWM Informix OnLine database that is used to store information about the network elements.

Cisco MGX 8850 (PXM45) Multiservice Switch Release 4

[Table 2](#) lists the product documentation for the installation and operation of the Cisco MGX 8850 (PXM45) Multiservice Switch Release 4.

Table 2 Cisco MGX 8850 (PXM45) Release 4 Documentation

Title	Description
<i>Cisco MGX 8850 (PXM45 and PXM1E) Hardware Installation Guide, Release 4</i> OL-3842-01	Describes how to install the Cisco MGX 8850 multiservice switch. This guide explains what the switch does and covers site preparation, grounding, safety, card installation, and cabling. The Cisco MGX 8850 switch uses either a PXM45 or a PXM1E controller card and provides support for both broadband and narrow band service modules.
<i>Frame Relay Software Configuration Guide and Command Reference for the Cisco MGX 8850 FRSM12 Card, Release 3</i> DOC-7810327=	Describes how to use the high-speed Frame Relay (FRSM-12-T3E3) commands that are available in the CLI of the Cisco MGX 8850 (PXM45) switch.

Table 2 Cisco MGX 8850 (PXM45) Release 4 Documentation (continued)

Title	Description
Cisco AXSM Software Configuration Guide and Command Reference for Cisco MGX 8850 (PXM45) and Cisco MGX 8950, Release 4 OL-3852-01	Explains how to configure the AXSM cards and a command reference that describes the AXSM commands in detail. The AXSM cards covered in this manual are the AXSM-XG, AXSM/A, AXSM/B, AXSM-E, and AXSM-32-T1E1-E.
Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Software Configuration Guide, Release 4 OL-3845-01	Describes how to configure the Cisco MGX 8850 (PXM1E) and the Cisco MGX 8830 switches with PXM1E controller cards to operate as ATM edge switches. This guide also provides some operation and maintenance procedures.
Cisco MGX 8830, Cisco MGX 8850 (PXM45 and PXM1E), and Cisco MGX 8950 Command Reference, Release 4 OL-3846-01	Describes the PXM commands that are available on the CLI of the Cisco MGX 8830, Cisco MGX 8850, and Cisco MGX 8950 switches.
Circuit Emulation Software Configuration Guide and Command Reference for MGX Switches (PXM1E/PXM45) OL-3853-01	Provides software configuration procedures for provisioning connections and managing the CESM cards supported in this release. Also provides descriptions for all CESM commands.
PNNI Network Planning Guide for MGX and SES Products OL-3847-01	Provides guidelines for planning a PNNI network that uses Cisco MGX 8850 (PXM45 and PXM1E), Cisco MGX 8950, and Cisco BPX 8600 switches. When connected to a PNNI network, each Cisco BPX 8600 series switch requires an SES for PNNI route processing.
Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide, Release 4 OL-3186-01	Describes how to install and configure the Cisco MGX Route Processor Module (RPM-XF) in the Cisco MGX 8850 Release 4 switch. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.
Cisco VISM Installation and Configuration Guide, Release 3 OL-2521-01	Describes how to install and configure VISM ¹ in the Cisco MGX 8850, Cisco MGX 8250, and Cisco MGX 8230 Release 4 switches. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and Cisco CLI configuration information.
Regulatory Compliance and Safety Information for the Cisco MGX 8830, MGX 8850 (PXM45 and PXM1E), and MGX 8950 Switches DOC-7814790=	Provides regulatory compliance, product warnings, and safety recommendations for the Cisco MGX 8830, Cisco MGX 8850 (PXM45 and PXM1E), and Cisco MGX 8950 switches.

1. VISM = Voice Interworking Service Module

Cisco MGX 8850 (PXM1E) Multiservice Switch Release 4

Table 3 lists the product documentation for the installation and operation of the Cisco MGX 8850 (PXM1E) Multiservice Switch Release 4.

Table 3 Cisco MGX 8850 (PXM1E) Release 4 Documentation

Title	Description
<p><i>Cisco MGX 8850 (PXM45 and PXM1E) Hardware Installation Guide, Release 4</i></p> <p>OL-3842-01</p>	<p>Describes how to install the Cisco MGX 8850 routing switch. This documentation explains what the switch does and covers site preparation, grounding, safety, card installation, and cabling. The Cisco MGX 8850 switch uses either a PXM45 or a PXM1E controller card and provides support for both broadband and narrow band service modules.</p>
<p><i>Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Software Configuration Guide, Release 4</i></p> <p>OL-3845-01</p>	<p>Describes how to configure the Cisco MGX 8850 (PXM1E) and the Cisco MGX 8830 switches with PXM1E controller cards to operate as ATM edge switches. This guide also provides some operation and maintenance procedures.</p>
<p><i>Cisco MGX 8830, Cisco MGX 8850 (PXM45 and PXM1E), and Cisco MGX 8950 Command Reference, Release 4</i></p> <p>OL-3846-01</p>	<p>Describes the PXM commands that are available on the CLI of the Cisco MGX 8830, Cisco MGX 8850, and Cisco MGX 8950 switches.</p>
<p><i>Circuit Emulation Software Configuration Guide and Command Reference for MGX Switches (PXM1E/PXM45)</i></p> <p>OL-3853-01</p>	<p>Provides software configuration procedures for provisioning connections and managing the CESM cards supported in this release. Also provides descriptions for all CESM commands.</p>
<p><i>Frame Relay Software Configuration Guide and Command Reference for MGX Switches (PXM1E/PXM45)</i></p> <p>OL-3851-01</p>	<p>Provides software configuration procedures for provisioning connections and managing the FRSM cards supported in this release. Also provides descriptions for all FRSM commands.</p>
<p><i>Cisco AUSM Software Configuration Guide and Command Reference for Cisco MGX 8850 (PXM1E) and Cisco MGX 8830, Release 3</i></p> <p>DOC-7814254=</p>	<p>Provides software configuration procedures for provisioning connections and managing the AUSM cards supported in this release. Also provides descriptions for all AUSM commands.</p>
<p><i>PNNI Network Planning Guide for MGX and SES Products</i></p> <p>OL-3847-01</p>	<p>Provides guidelines for planning a PNNI network that uses Cisco MGX 8850 (PXM45 and PXM1E), Cisco MGX 8950, and Cisco BPX 8600 switches. When connected to a PNNI network, each Cisco BPX 8600 series switch requires an SES for PNNI route processing.</p>
<p><i>Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide, Release 4</i></p> <p>OL-3186-01</p>	<p>Describes how to install and configure the Cisco MGX Route Processor Module (RPM-XF) in the Cisco MGX 8850 Release 4 switch. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.</p>

Table 3 Cisco MGX 8850 (PXM1E) Release 4 Documentation (continued)

Title	Description
<i>Cisco VISM Installation and Configuration Guide, Release 3</i> OL-2521-01	Describes how to install and configure VISM in the Cisco MGX 8850, Cisco MGX 8250, and Cisco MGX 8230 Release 4 switches. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and Cisco CLI configuration information.
<i>Regulatory Compliance and Safety Information for the Cisco MGX 8830, MGX 8850 (PXM45 and PXM1E), and MGX 8950 Switches</i> DOC-7814790=	Provides regulatory compliance, product warnings, and safety recommendations for the Cisco MGX 8830, Cisco MGX 8850 (PXM45 and PXM1E), and Cisco MGX 8950 switches.

Cisco MGX 8950 Multiservice Service Release 4

Table 4 lists the product documentation for the installation and operation of the Cisco MGX 8950 Release 4 switch.

Table 4 Cisco MGX 8950 Switch Release 4 Documentation

Title	Description
<i>Cisco MGX 8950 Hardware Installation Guide, Release 4</i> OL-3843-01	Describes how to install the Cisco MGX 8950 core switch. This documentation explains what the switch does and covers site preparation, grounding, safety, card installation, and cabling. The Cisco MGX 8950 switch uses a PXM45/B controller card and provides support for broadband service modules.
<i>Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Software Configuration Guide, Release 4</i> OL-3845-01	Describes how to configure the Cisco MGX 8850 (PXM1E) and the Cisco MGX 8830 switches with PXM1E controller cards to operate as ATM edge switches. This guide also provides some operation and maintenance procedures.
<i>Cisco MGX 8830, Cisco MGX 8850 (PXM45 and PXM1E), and Cisco MGX 8950 Command Reference, Release 4</i> OL-3846-01	Describes the PXM commands that are available on the CLI of the Cisco MGX 8830, Cisco MGX 8850, and Cisco MGX 8950 switches.
<i>Cisco AXSM Software Configuration Guide and Command Reference for Cisco MGX 8850 (PXM45) and Cisco MGX 8950, Release 4</i> OL-3852-01	This guide explains how to configure the AXSM cards and a command reference that describes the AXSM commands in detail. The AXSM cards covered in this manual are the AXSM-XG, AXSM/A, AXSM/B, AXSM-E, and AXSM-32-T1E1-E.
<i>PNNI Network Planning Guide for MGX and SES Products</i> OL-3847-01	Provides guidelines for planning a PNNI network that uses Cisco MGX 8850 (PXM45 and PXM1E), Cisco MGX 8950, and Cisco BPX 8600 switches. When connected to a PNNI network, each Cisco BPX 8600 series switch requires an SES for PNNI route processing.

Table 4 Cisco MGX 8950 Switch Release 4 Documentation (continued)

Title	Description
<p><i>Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide, Release 4</i> OL-3186-01</p>	<p>Describes how to install and configure the Cisco MGX Route Processor Module (RPM-XF) in the Cisco MGX 8850 Release 4 switch. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.</p>
<p><i>Regulatory Compliance and Safety Information for the Cisco MGX 8830, MGX 8850 (PXM45 and PXM1E), and MGX 8950 Switches</i> DOC-7814790=</p>	<p>Provides regulatory compliance, product warnings, and safety recommendations for the Cisco MGX 8830, Cisco MGX 8850 (PXM45 and PXM1E), and Cisco MGX 8950 switches.</p>

SES PNNI Release 4

Table 5 lists the product the product documentation for the understanding, the installation, and the operation of the Service Expansion Shelf (SES) Private Network-to-Network Interface (PNNI) Controller.

Table 5 SES PNNI Controller Release 4 Documentation

Title	Description
<p><i>Cisco SES PNNI Controller Software Configuration Guide, Release 3</i> DOC-7814258=</p>	<p>Describes how to configure, operate, and maintain the SES PNNI Controller.</p>
<p><i>Cisco SES PNNI Controller Command Reference, Release 3</i> DOC-7814260=</p>	<p>Provides a description of the commands used to configure and operate the SES PNNI Controller.</p>
<p><i>PNNI Network Planning Guide for MGX and SES Products</i> OL-3847-01</p>	<p>Provides guidelines for planning a PNNI network that uses Cisco MGX 8850 (PXM45 and PXM1E), Cisco MGX 8950, and Cisco BPX 8600 switches. When connected to a PNNI network, each Cisco BPX 8600 series switch requires an SES for PNNI route processing.</p>

Cisco MGX 8830 Multiservice Switch Release 4

Table 6 lists the product documentation for the installation and operation of the Cisco MGX 8830 Release 4 switch.

Table 6 Cisco MGX 8830 Release 4 Documentation

Title	Description
<i>Cisco MGX 8830 Hardware Installation Guide, Release 4</i> OL-3841-01	Describes how to install the Cisco MGX 8830 edge switch. This documentation explains what the switch does and covers site preparation, grounding, safety, card installation, and cabling. The Cisco MGX 8830 switch uses a PXM1E controller card and provides PNNI support for narrow band service modules.
<i>Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Software Configuration Guide, Release 4</i> OL-3845-01	Describes how to configure the Cisco MGX 8850 (PXM1E) and the Cisco MGX 8830 switches with PXM1E controller cards to operate as ATM edge switches. This guide also provides some operation and maintenance procedures.
<i>Cisco MGX 8830, Cisco MGX 8850 (PXM45 and PXM1E), and Cisco MGX 8950 Command Reference, Release 4</i> OL-3846-01	Describes the PXM commands that are available on the CLI of the Cisco MGX 8830, Cisco MGX 8850, and Cisco MGX 8950 switches.
<i>Circuit Emulation Software Configuration Guide and Command Reference for MGX Switches (PXM1E/PXM45)</i> OL-3853-01	Provides software configuration procedures for provisioning connections and managing the CESM cards supported in this release. Also provides descriptions for all CESM commands.
<i>Frame Relay Software Configuration Guide and Command Reference for MGX Switches (PXM1E/PXM45)</i> OL-3851-01	Provides software configuration procedures for provisioning connections and managing the FRSM cards supported in this release. Also provides descriptions for all FRSM commands.
<i>Cisco AUSM Software Configuration Guide and Command Reference for MGX 8850 (PXM1E) and MGX 8830, Release 3</i> DOC-7814254=	Provides software configuration procedures for provisioning connections and managing the AUSM cards supported in this release. Also provides descriptions for all AUSM commands.
<i>PNNI Network Planning Guide for MGX and SES Products</i> OL-3847-01	Provides guidelines for planning a PNNI network that uses Cisco MGX 8850 (PXM45 and PXM1E), Cisco MGX 8950, and Cisco BPX 8600 switches. When connected to a PNNI network, each Cisco BPX 8600 series switch requires an SES for PNNI route processing.
<i>Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide, Release 4</i> OL-3186-01	Describes how to install and configure the Cisco MGX Route Processor Module (RPM-XF) in the Cisco MGX 8850 Release 4 switch. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.

Table 6 Cisco MGX 8830 Release 4 Documentation (continued)

Title	Description
<p><i>Cisco VISM Installation and Configuration Guide, Release 3</i> OL-2521-01</p>	<p>Describes how to install and configure VISM in the Cisco MGX 8850, Cisco MGX 8250, and Cisco MGX 8230 Release 4 switches. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and Cisco CLI configuration information.</p>
<p><i>Regulatory Compliance and Safety Information for the Cisco MGX 8830, MGX 8850 (PXM45 and PXM1E), and MGX 8950 Switches</i> DOC-7814790=</p>	<p>Provides regulatory compliance, product warnings, and safety recommendations for the Cisco MGX 8830, Cisco MGX 8850 (PXM45 and PXM1E), and Cisco MGX 8950 switches.</p>

Cisco WAN Switching Software Release 9.4

Table 7 lists the product documentation for the installation and operation of the Cisco WAN Switching Software Release 9.4.

Table 7 Cisco WAN Switching Release 9.4 Documentation

Title	Description
<p><i>Cisco BPX 8600 Series Installation and Configuration, Release 9.3.30</i> DOC-7812907=</p>	<p>Provides a general description and technical details of the Cisco BPX broadband switch.</p>
<p><i>Cisco WAN Switching Command Reference, Release 9.3.30</i> DOC-7812906=</p>	<p>Provides detailed information on the general command line interface commands.</p>
<p><i>Cisco IGX 8400 Series Installation Guide, Release 9.3.30</i> OL-1165-01</p>	<p>Provides hardware installation and basic configuration information for Cisco IGX 8400 Series switches that are running Switch Software Release 9.3.30 or earlier.</p>
<p><i>Cisco IGX 8400 Series Provisioning Guide, Release 9.3.30</i> OL-1166-01</p>	<p>Provides information for configuration and provisioning of selected services for the Cisco IGX 8400 Series switches that are running Switch Software Release 9.3.30 or earlier.</p>
<p><i>9.4.00 Version Software Release Notes Cisco WAN Switching System Software</i> OL-3189-01</p>	<p>Provides new feature, upgrade, and compatibility information, as well as known and resolved anomalies.</p>
<p><i>Cisco IGX 8400 Series Regulatory Compliance and Safety Information</i> DOC-7813227=</p>	<p>Provides regulatory compliance, product warnings, and safety recommendations for the Cisco IGX 8400 Series switch.</p>

MGX 8850 Edge Concentrator Release 1.2.20

Table 8 lists the product documentation for the installation and operation of the Cisco MGX 8850 Edge Concentrator.

Table 8 *MGX 8850 Edge Concentrator Release 1.2.20 Documentation*

Title	Description
<i>Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3</i> DOC-7811223=	Provides installation instructions for the Cisco MGX 8850 edge concentrator.
<i>Cisco MGX 8800 Series Switch Command Reference, Release 1.1.3</i> DOC-7811210=	Provides detailed information on the general command line for the Cisco MGX 8850 edge concentrator.
<i>Cisco MGX 8800 Series Switch System Error Messages, Release 1.1.3</i> DOC-7811240=	Provides error message descriptions and recovery procedures.
<i>Cisco MGX 8850 Multiservice Switch Overview, Release 1.1.3</i> OL-1154-01	Provides a technical description of the system components and functionality of the Cisco MGX 8850 edge concentrator from a technical perspective.
<i>Cisco MGX Route Processor Module Installation and Configuration Guide, Release 1.1</i> DOC-7812278=	Describes how to install and configure the Cisco MGX Route Processor Module (RPM/B and RPM-PR) in the Cisco MGX 8850, the Cisco MGX 8250, and the Cisco MGX 8230 Release 1 edge concentrators. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.
<i>Cisco VISM Installation and Configuration Guide, Release 3</i> OL-2521-01	Describes how to install and configure VISM in the Cisco MGX 8850, Cisco MGX 8250, and Cisco MGX 8230 Release 4 switches. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and Cisco CLI configuration information.
<i>Release Notes for Cisco WAN MGX 8850 Release 1, MGX 8250, and MGX 8230 Software Version 1.2.20</i> OL-3244-01	Provides new feature, upgrade, and compatibility information, as well as known and resolved anomalies.

MGX 8250 Edge Concentrator Release 1.2.20

Table 9 lists the product documentation for the installation and operation of the Cisco MGX 8250 Edge Concentrator.

Table 9 MGX 8250 Multiservice Gateway Documentation

Title	Description
<p><i>Cisco MGX 8250 Edge Concentrator Installation and Configuration, Release 1.1.3</i> DOC-7811217=</p>	<p>Provides installation instructions for the Cisco MGX 8250 Edge Concentrator.</p>
<p><i>Cisco MGX 8250 Multiservice Gateway Command Reference, Release 1.1.3</i> DOC-7811212=</p>	<p>Provides detailed information on the general command line interface commands.</p>
<p><i>Cisco MGX 8250 Multiservice Gateway Error Messages, Release 1.1.3</i> DOC-7811216=</p>	<p>Provides error message descriptions and recovery procedures.</p>
<p><i>Cisco MGX 8250 Edge Concentrator Overview, Release 1.1.3</i> DOC-7811576=</p>	<p>Describes the system components and functionality of the Cisco MGX 8250 Edge Concentrator from a technical perspective.</p>
<p><i>Cisco MGX Route Processor Module Installation and Configuration Guide, Release 1.1</i> DOC-7812278=</p>	<p>Describes how to install and configure the Cisco MGX Route Processor Module (RPM/B and RPM-PR) in the Cisco MGX 8850, the Cisco MGX 8250, and the Cisco MGX 8230 Release 1 edge concentrators. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.</p>
<p><i>Cisco VISM Installation and Configuration Guide, Release 3</i> OL-2521-01</p>	<p>Describes how to install and configure VISM in the Cisco MGX 8850, Cisco MGX 8250, and Cisco MGX 8230 Release 4 switches. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and Cisco CLI configuration information.</p>
<p><i>Release Notes for Cisco WAN MGX 8850 Release 1, MGX 8250, and MGX 8230 Software Version 1.2.20</i> OL-3244-01</p>	<p>Provides new feature, upgrade, and compatibility information, as well as known and resolved anomalies.</p>

MGX 8230 Edge Concentrator Release 1.2.20

Table 10 lists the product documentation for the installation and operation of the Cisco MGX 8230 Edge Concentrator.

Table 10 MGX 8230 Edge Concentrator Documentation

Title	Description
<i>Cisco MGX 8230 Edge Concentrator Installation and Configuration, Release 1.1.3</i> DOC-7811215=	Provides installation instructions for the Cisco MGX 8230 Edge Concentrator.
<i>Cisco MGX 8230 Multiservice Gateway Command Reference, Release 1.1.3</i> DOC-7811211=	Provides detailed information on the general command line interface commands.
<i>Cisco MGX 8230 Multiservice Gateway Error Messages, Release 1.1.3</i> DOC-78112113=	Provides error message descriptions and recovery procedures.
<i>Cisco MGX 8230 Edge Concentrator Overview, Release 1.1.3</i> DOC-7812899=	Provides a technical description of the system components and functionality of the Cisco MGX 8250 Edge Concentrator from a technical perspective.
<i>Cisco MGX Route Processor Module Installation and Configuration Guide, Release 1.1</i> DOC-7812278=	Describes how to install and configure the Cisco MGX Route Processor Module (RPM/B and RPM-PR) in the Cisco MGX 8850, the Cisco MGX 8250, and the Cisco MGX 8230 Release 1 edge concentrators. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.
<i>Cisco VISM Installation and Configuration Guide, Release 3</i> OL-2521-01	Describes how to install and configure VISM in the Cisco MGX 8850, Cisco MGX 8250, and Cisco MGX 8230 Release 4 switches. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and Cisco CLI configuration information.
<i>Release Notes for Cisco WAN MGX 8850 Release 1, MGX 8250, and MGX 8230 Software Version 1.2.20</i> OL-3244-01	Provides new feature, upgrade, and compatibility information, as well as known and resolved anomalies.

Conventions

This publication uses the following conventions.

Command descriptions use these conventions:

- Commands and keywords are in **boldface**.
- Arguments for which you supply values are in *italics*.
- Required command arguments are inside angle brackets (<>).
- Optional command arguments are in square brackets ([]).
- Alternative keywords are separated by vertical bars (|).

Examples use these conventions:

- Terminal sessions and information the system displays are in `screen font`.

- Information you enter is in **boldface screen** font.
- Nonprinting characters, such as passwords, are in angle brackets (< >).
- Default responses to system prompts are in square brackets ([]).



Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.



Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.



Tips

Means *the following information will help you solve a problem*. The information might not be troubleshooting or even an action but could be useful information, similar to Timesaver.



Warning

This warning symbol means *danger*. You are in a situation that could cause bodily injury. Before you work on any equipment, you must be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. (To see translated versions of this warning, refer to the *Regulatory Compliance and Safety Information* document that accompanied the product.)

Obtaining Documentation

Cisco provides several ways to obtain documentation, technical assistance, and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation on the World Wide Web at this URL:

http://www.cisco.com/en/US/support/tsd_documentation.html

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco web sites can be accessed from this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

Registered Cisco.com users can order the Documentation CD-ROM (product number DOC-CONDOCCD=) through the online Subscription Store:

<http://www.cisco.com/cgi-bin/mrktpl/marketplace/welcome.pl>

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpck/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:
<http://www.cisco.com/en/US/partner/ordering/index.shtml>
- Registered Cisco.com users can order the Documentation CD-ROM (Customer Order Number DOC-CONDOCCD=) through the online Subscription Store:
<http://www.cisco.com/go/subscription>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

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Cisco Systems
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170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com, which includes the Cisco Technical Assistance Center (TAC) Website, as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from the Cisco TAC website. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC website, including TAC tools and utilities.

Cisco.com

Cisco.com offers a suite of interactive, networked services that let you access Cisco information, networking solutions, services, programs, and resources at any time, from anywhere in the world.

Cisco.com provides a broad range of features and services to help you with these tasks:

- Streamline business processes and improve productivity
- Resolve technical issues with online support
- Download and test software packages
- Order Cisco learning materials and merchandise
- Register for online skill assessment, training, and certification programs

To obtain customized information and service, you can self-register on Cisco.com at this URL:

<http://www.cisco.com>

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC website and the Cisco TAC Escalation Center. The avenue of support that you choose depends on the priority of the problem and the conditions stated in service contracts, when applicable.

We categorize Cisco TAC inquiries according to urgency:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Cisco TAC Website

You can use the Cisco TAC website to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC website, go to this URL:

<http://www.cisco.com/tac/>

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC website. Some services on the Cisco TAC website require a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

<http://tools.cisco.com/RPF/register/register.do>

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC website, you can open a case online at this URL:

<http://www.cisco.com/en/US/support/index.html>

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC website so that you can describe the situation in your own words and attach any necessary files.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- The *Cisco Products & Services* Web page describes the networking products offered by Cisco Systems as well as ordering and customer support services. Access the *Cisco Products & Services* Web page at this URL:
<http://www.cisco.com/en/US/products/index.html>
- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary*, *Internetworking Technology Handbook*, *Internetworking Troubleshooting Guide*, and the *Internetworking Design Guide*. For current Cisco Press titles and other information, go to Cisco Press online at this URL:
<http://www.ciscopress.com>
- *Packet* magazine is the Cisco monthly periodical that provides industry professionals with the latest information about the field of networking. You can access *Packet* magazine at this URL:
http://www.cisco.com/en/US/about/ac123/ac114/about_cisco_packet_magazine.html
- *iQ Magazine* is the Cisco monthly periodical that provides business leaders and decision makers with the latest information about the networking industry. You can access *iQ Magazine* at this URL:
<http://www.cisco.com/web/about/ac123/iqmagazine/index.html>
- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in the design, development, and operation of public and private internets and intranets. You can access the *Internet Protocol Journal* at this URL:
http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html
- Training—Cisco offers world-class networking training, with current offerings in network training listed at this URL:
http://www.cisco.com/en/US/learning/le31/learning_recommended_training_list.html

