About This Guide

This section desribes the audience, purpose, and organization of the *Cisco MGX 8800/8900 Series Hardware Installation Guide*. It also explains the conventions used to present information in this guide.

Audience

This guide is intended for use by installers, operators, network designers, and managers responsible for installing, configuring, or maintaining Cisco MGX switches or media gateways. These users should be familiar with telecommunications products and networking systems.

Purpose

This hardware installation guide describes how to set up and install the Cisco MGX 8850, Cisco MGX 8850/B, Cisco MGX 8950, Cisco MGX 8830 and Cisco MGX 8830/B switches. It also describes how to setup and install the MGX 8880 Media Gateway.

After completing the installation procedures covered in this guide, refer to the appropriate related documents to configure the switch or gateway. Refer to "Documentation" later in this preface for guidance on which documents to use.

Organization

This guide is organized as follows:

- Chapter 1, "Product Overviews," provides an overview of the MGX switches, MGX media gateway, and their related components.

- Chapter 2, "Illustrated Card List for MGX Switches and the MGX 8880 Media Gateway," provides an overview of all cards used in Cisco MGX switches and the MGX 8880 Media Gateway from MGX software Releases 2 through 5.1.

- Chapter 3, "Preparing for Installation," lists site specifications and tools required for installing each switch or gateway and its related components.

- Chapter 4, "Planning for Card Redundancy, Line Redundancy, and Bulk Distribution," describes how to plan for card redundancy, line redundancy, and bulk distribution.

- Chapter 5, "Installing the Cisco MGX Switch or Gateway," contains procedures for installing each Cisco MGX chassis, whether in a rack or in a Cisco-supplied cabinet.

- Chapter 6, "Maintaining the Cisco MGX Switch or Gateway," provides maintenance procedures for each switch or gateway.

- Appendix A, "Front Card Specifications," provides technical specifications for cards and modules.

- Appendix B, "Cable Specifications," provides cabling and pinout information for cables used with each chassis and its cards.

- Appendix C, "Earthing and Bonding Recommendations," discusses the techniques and policies that Cisco practices with regard to DC power, earthing, and bonding of Cisco equipment. It also explains why these techniques are the best practice.

- Appendix D, "Guide to Transceivers (SFPs) Used with MGX Back Cards," summarizes the small form-factor pluggable (SFP) transceivers used with MGX back cards.

- The glossary defines all acronyms used throughout this guide.

Conventions

This guide uses the conventions listed in this section and in Table 1. *MGX switches* collectively refers to all the multiservice switches and gateways documented in this guide.

Table 1   Conventions Used in this Guide

Convention	Definition	Sample
boldface font	Commands and keywords are in **boldface**. Also used for names of some elements in a graphical user interface (GUI).	This is similar to the UNIX **route** command.
italic font	Arguments for which you supply values are in *italics*. Also used for publication names and for emphasis.	See the *Regulatory Compliance and Safety Information for Cisco Multiservice Switch Products (MGX, BPX, and SES)* for further details.
`screen` font	Terminal sessions and information the system displays are in `screen` font.	`Are you ready to continue? [Y]`
`boldface screen` font	Information you must enter is in `boldface screen` font.	Login: `root` Password: `<password>`
^	The symbol ^ represents the Control key labeled *Ctrl*.	^D This key combination in a screen display means hold down the Control key while you press the D key.
[ ]	Elements in square brackets are optional. Also used for default responses to system prompts.	[**no**] **offset-list** {**in** | **out**} *offset*
{x | y | z}	Alternative keywords are grouped in braces and separated by vertical bars.	**offset-list** {**in** | **out**} *offset*
< >	Nonprinting characters such as passwords are in angle brackets.	`Password: <cisco123>`

Table 1   Conventions Used in this Guide (continued)

Convention	Definition	Sample
{ }	Braces indicate a required choice.	**offset-list** {**in** | **out**} *offset*
[{ }]	Braces within a bracket indicate a required choice within an optional element.	[{*letter\number*}**Enter**]

Notes, Warnings, and Cautions

This section explains the conventions used for notes, warnings, and cautions.

Note A Note highlights helpful information, such as suggestions or references to material not covered in the guide.

Tip A Tip contains information that might help you solve a problem or save time.

Caution A Caution emphasizes a situation in which equipment can be damaged or data can be corrupted or lost.

Warning **A Warning emphasizes a safety concern, where a very serious and hazardous situation could result if instructions are not carefully adhered to.**

Notes about Warnings

Warnings used in this document are translated into many languages in the *Regulatory Compliance and Safety Information for Cisco Multiservice Switch Products (MGX, BPX, and SES)*.

There are 3 types of Warnings in hardware guides:

- EMC (electromagnetic compatibility)
- Safety
- Telecom

Warning statements are numbered. The numbering makes it clearer which Warning translation goes with which source Warning.

Scope of this Guide

This guide consolidates the following guides into one document and adds information about MGX Release 5 (and greater) hardware features. Thus, this guide covers all MGX switches supported by software Release 2.0 through 5.1, and makes the following guides obsolete:

- *Cisco MGX 8850 Hardware Installation Guide, Release 2*
- *Cisco MGX 8850 Hardware Installation Guide, Release 2.1*

- *Cisco MGX 8950 Hardware Installation Guide, Release 2.1*
- *Cisco MGX 8850 (PXM45 and PXM1E) Hardware Installation Guide, Release 3*
- *Cisco MGX 8950 Hardware Installation Guide, Release 3*
- *Cisco MGX 8830 Hardware Installation Guide, Release 3*
- *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Hardware Installation Guide, Releases 2 Through 4*

New Hardware Introduced in Releases 4.0.10 through 5.3

This guide was updated to describe the modules and hardware introduced in MGX Releases 4.0.10 through 5.1 (see Table 2).

Table 2　　Hardware Introduced in Releases 4.0.10 or 5.3, by Chassis

Hardware Introduced in MGX Release 4.0.10 through 5.1	MGX 8850 (PXM1E)	MGX 8850 (PXM45)	MGX 8850/B	MGX 8830	MGX 8830/B	MGX 8950	MGX 8880
MGX 8880 Media Gateway	—	—	—	—	—	—	x
MGX 8850/B	—	—	—	—	x	—	—
MGX 8830/B	—	—	x	—	—	—	—
AXSM-16-155-XG 16-port OC3 Module with VSVD	—	x	x	—	—	x	—
MGX8950-EXTDR-CON connector card	—	—	—	—	—	x	—
RCON-IT05-8850 connector card[1]	—	—	—	—	—	—	x
RCON-IT03-8850 connector card[1]	—	—	x	—	—	—	—
RCON-IT03-8830 connector card[1]	—	—	—	—	x	—	—
MGX-VXSM-4-155 Voice Switch Service Module (VXSM), 4 OC3/STM-1	—	x	x	—	—	—	x
MGX-VXSM-48T1E1 Voice Switch Service Module (VXSM)	—	x	x	—	—	—	x
MPSM-8-T1E1 Multiprotocol Service Module	x	x	x	x	x	—	—
MPSM-T3E3-155 Multiprotocol Service Module	x	x	x	x	x	—	—
MPSM-16-T1E1 Multiprotocol Service Module	x	x	x	x	x	—	—
SRME/B Enhanced Service Resource Module	x	x	x	x	x	—	x
MGX-VXSM-T3	—	x	x	—	—	—	x

1. Pre-installed in chassis.

New Back Cards Introduced in Releases 4.0.10 through 5.3

The following back cards were introduced in MGX Releases 4.0.10 through 5.1:

- BNC-3-T3E3 3-port T3E3
- MCC-16-E1-1N
- MGX-2GE
- MGX-2OC12POS
- MGX-BNC-3T3-M
- MGX-STM1-EL-1
- RBBN-16-T1E1-1N
- RED-16-T1E1
- SFP-2-155
- SMB-2-155-EL
- VXSM-BC-3T3
- MGX-RJ45-5-ETH

Documentation

A *Finding Cisco User Documentation Online* document ships with your product. That guide contains general information about how to locate Cisco MGX, BPX, SES, and CWM documentation online.

Documentation Notes for these Product Releases

This release includes new hardware or features for the following releases:

- Cisco MGX Release 5.2 introduces the Cisco MGX 8850/B multiservice switch
- Cisco MGX Release 5.2, for these multiservice switches:
    - Cisco MGX 8850 (PXM1E)
    - Cisco MGX 8850 (PXM45)
    - Cisco MGX 8950
    - Cisco MGX 8830
- Cisco MGX Release 1.3, for these multiservice switches:
    - Cisco MGX 8850 (PXM1)
    - Cisco MGX 8230
    - Cisco MGX 8250
- Cisco MGX Release 5.2, for the Route Processor Modules (RPM-XF and RPM-PR)
- Cisco WAN Manager Release 15.1. CWM Release 15 introduced a helpful new documentation feature: web-based *online help*. To invoke online help, press **F1** on a PC, press the **Help** key on a UNIX workstation, or select **Help** from the main or popup menu. Cisco WAN Manager online help has been updated for Release 15.1.

Other components of multiservice WAN products, such as the Service Expansion Shelf (SES) and WAN switching software have no new features for this release.

Related Documentation

This section describes the user guides and release notes that support this release of Cisco Multiservice Switch products.

User Guide—Order of Use

Use the guides listed here in the following order:

Step 1 Refer to the documents that ship with your product. Observe all safety precautions.

- *Regulatory Compliance and Safety Information for Cisco Multiservice Switch Products (MGX, BPX, and SES)*—This document familiarizes you with safety precautions for your product.

- *Finding Cisco User Documentation Online*—This document explains how to find documentation for MGX, BPX, and SES multiservice switches and media gateways as well as CWM network management software. These documents are available only online.

- *Installation Warning Card*—This document provides precautions about installing your cards. It explains such subjects as removing the shipping tab and inserting cards properly into the correct slots.

Step 2 Refer to the release notes for your product.

Step 3 If your network uses the CWM network management system, upgrade CWM. (If you are going to install CWM for the first time, do so *after* Step 4.) Upgrade instructions are included in the following documents:

- *Cisco WAN Manager Installation Guide, Release 15.3.00*

- *Cisco WAN Manager User's Guide, Release 15.3.00*

Step 4 If your network contains MGX and SES products, refer to this guide for planning information:

- *Cisco PNNI Network Planning Guide for MGX and SES Products*

Step 5 Refer to these guides for information about installing cards and cables in the MGX chassis:

- *Cisco MGX 8800/8900 Hardware Installation Guide, Releases 2 - 5.3* for installing cards and cables in these chassis.

- *Cisco MGX 8xxx Edge Concentrator Installation and Configuration Guide* for installing cards and cables in the Cisco MGX 8230, Cisco MGX 8250, or Cisco MGX 8850 (PXM1) chassis.

Step 6 Refer to the guides that help you configure your MGX switch and processor cards:

- *Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2* for these chassis.

- *Cisco MGX 8xxx Edge Concentrator Installation and Configuration Guide* for the Cisco MGX 8230, Cisco MGX 8250, or Cisco MGX 8850 (PXM1) chassis.

Step 7 Refer to the guide that supports the additional cards you intend to install in your switch. For example:

- Services guides can help you establish ATM, Frame Relay, or circuit emulation services on your switch.

- VISM guides can help you set up your switch as a voice gateway, and an RPM guide can help you implement IP on the switch.

Step 8   Additional guides, such as command reference guides and error message documentation, can help with the daily operation and maintenance of your switch.

> ✎
> **Note**   User guide titles may be different for earlier software releases. The titles shown in Table 3 are for the September 2005 release.

User Guide Titles and Descriptions

Table 3 lists the technical guides and release notes that support the September 2005 multiservice switch product releases. User documentation and release notes in Table 3 are listed in order of use and include information about which multiservice switch or media gateway the document supports.

The Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) switch documentation was not updated for the September 2005 release. Therefore, some information about configuring and using the new MPSM-8-T1E1 card in these switches is included in the following guides:

- *Cisco ATM Services (AUSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*
- *Cisco Frame Relay Services (FRSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*
- *Cisco Circuit Emulation Services (CESM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*

Information about how to install or upgrade to the MPSM-8-T1E1 card in Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) switches is in the *Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.14*.

> ✎
> **Note**   Refer to each product's release notes for the latest information on features, bug fixes, and more.

Terms

Two main types of ATM cards are used in MGX switches: AXSM and AUSM. *AXSM* stands for ATM Switching Service Module. *AUSM* stands for ATM UNI (User Network Interface) Service Module.

CWM stands for Cisco WAN Manager, our multiservice switch network management system.

Legacy service module refers to a previously introduced card. For this release, the term is used specifically for the CESM-8-T1E1, FRSM-8-T1E1, and AUSM-8-T1E1 cards, which can now be replaced by the new MPSM-8-T1E1 card.

MPSM stands for Multiprotocol Service Module.

RPM stands for Route Processor Module.

SES stands for Service Expansion Shelf.

VISM stands for Voice Interworking Service Module.

VXSM stands for Voice Switch Service Module.

Table 3 User Guides and Release Notes for Cisco MGX and BPX Switches and Media Gateways

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5.3	MGX 8850 (PXM1E) Rel. 5.3	MGX 8850 (PXM45) Rel. 5.3	MGX 8950 Rel. 5.3	MGX 8880 Rel. 5.3.
Overview and Safety Documents									
Finding Cisco User Documentation Online DOC-7814807=	x	x	x	x	x	x	x	x	x
Installation Warning Card DOC-7812348=	x	x	x	x	x	x	x	x	x
Regulatory Compliance and Safety Information for Cisco Multiservice Switch Products (MGX, BPX, and SES) DOC-7814790=	x	x	x	x	x	x	x	x	x
Release Notes for the Cisco MGX 8880 Media Gateway, Release 5.3.00 OL-8892-01	—	—	—	—	—	—	—	—	x
Release Notes for Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Switches, Release 5.3.00 OL-8891-01	—	—	—	—	x	x	x	x	
Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.14 OL-8973-01	—	x	x	x	—	—	—	—	—
Release Notes for the Cisco Voice Switch Service Module (VXSM), Release 5.3.00 OL-10285-01	—	—	—	—	—	—	x	—	x
Release Notes for Cisco WAN Manager, Release 15.3.00 OL-10216-01	x	x	x	x	x	x	x	x	x
Release Notes for the Cisco Voice Interworking Service Module (VISM), Release 3.3.25 OL-8428-01	—	x	x	x	x	x	x	—	x

Table 3   User Guides and Release Notes for Cisco MGX and BPX Switches and Media Gateways (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5.3	MGX 8850 (PXM1E) Rel. 5.3	MGX 8850 (PXM45) Rel. 5.3	MGX 8950 Rel. 5.3	MGX 8880 Rel. 5.3.
Release Notes for Cisco MGX Route Processor Module (RPM-XF) IOS Release 12.4(6)T1 for PXM45-based Switches, Release 5.3.00 OL-8893-01	—	—	—	—	x	—	x	x	x
Release Notes for Cisco MGX Route Processor Module (RPM-PR) IOS Release 12.4(6)T1 for MGX Releases 1.3.14 and 5.3.00 OL-8894-01	—	x	x	x	x	x	x	x	x
Cisco MGX 8230 Edge Concentrator Overview, Release 1.1.3[1] DOC-7812899=	—	x	—	—	—	—	—	—	—
Cisco MGX 8250 Edge Concentrator Overview, Release 1.1.3[1] DOC-7811576=	—	—	x	—	—	—	—	—	—
Cisco MGX 8850 Multiservice Switch Overview, Release 1.1.3[1] OL-1154-01	—	—	—	x	—	—	—	—	—
Hardware Installation Guides									
Cisco MGX 8800/8900 Hardware Installation Guide, Releases 2 - 5.3 OL-4545-01	—	—	—	—	x	x	x	x	x
Cisco Service Expansion Shelf Hardware Installation Guide, Release 1[1] DOC-786122=	x	—	—	—	—	—	—	—	—
Planning and Configuration Guides									
Cisco PNNI Network Planning Guide for MGX and SES Products OL-3847-01	x	—	—	—	x	x	x	x	x
Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2 OL-6482-01	—	—	—	—	x	x	x	x	x

Table 3   User Guides and Release Notes for Cisco MGX and BPX Switches and Media Gateways (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5.3	MGX 8850 (PXM1E) Rel. 5.3	MGX 8850 (PXM45) Rel. 5.3	MGX 8950 Rel. 5.3	MGX 8880 Rel. 5.3.
Cisco WAN Manager Installation Guide, Release 15.3.00 OL-10358-01	x	x	x	x	x	x	x	x	x
Cisco WAN Manager User's Guide, Release 15.3.00 OL-10427-01	x	x	x	x	x	x	x	x	x
Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3[1] DOC-7811223=	—	—	—	x	—	—	—	—	—
Cisco SES PNNI Controller Software Configuration Guide, Release 3[1] DOC-7814258=	x	—	—	—	—	—	—	—	—
Cisco MGX 8230 Edge Concentrator Installation and Configuration, Release 1.1.3[1] DOC-7811215=	—	x	—	—	—	—	—	—	—
Cisco MGX 8250 Edge Concentrator Installation and Configuration, Release 1.1.3[1] DOC-7811217=	—	—	x	—	—	—	—	—	—
Service Module Configuration and Reference Guides									
Cisco MGX Route Processor Module (RPM-PR) Installation and Configuration Guide, Release 5.2[1] OL-7349-01	—	x	x	x	—	—	—	—	—
Frame Relay Software Configuration Guide and Command Reference for the Cisco MGX 8850 FRSM12 Card, Release 3[1] DOC-7810327=	—	—	—	—	—	—	x	—	—
Cisco ATM Services (AUSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2[2] OL-6479-01	—	[2]	[2]	[2]	x	x	x	—	—

Table 3   User Guides and Release Notes for Cisco MGX and BPX Switches and Media Gateways (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5.3	MGX 8850 (PXM1E) Rel. 5.3	MGX 8850 (PXM45) Rel. 5.3	MGX 8950 Rel. 5.3	MGX 8880 Rel. 5.3.
Cisco Frame Relay Services (FRSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2[2] OL-6480-01	—	[2]	[2]	[2]	x	x	x	—	—
Cisco Circuit Emulation Services (CESM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2[2] OL-6481-01	—	[2]	[2]	[2]	x	x	x	—	—
Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide, Release 5.2[1] OL-6594-01	—	—	—	—	—	—	x	x	x
Cisco ATM Services (AXSM) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-6484-01	—	—	—	—	—	—	x	x	x
Cisco ATM and Frame Relay Services (MPSM-T3E3-155 and MPSM-16-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-6487-01	—	—	—	—	x	—	x	—	—
Cisco Voice Switch Services Configuration Guide for MGX Switches and Media Gateways, Release 5.3 OL-10284-01	—	—	—	—	—	—	x	—	x
Cisco Voice Interworking Services (VISM) Configuration Guide and Command Reference, Release 3.3 OL-5358-01	—	x	x	x	x	x	x	—	x
Reference Guides									
Cisco MGX 8230 Multiservice Gateway Error Messages, Release 1.1.3[1] DOC-78112113=	—	x	—	—	—	—	—	—	—

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Releases 2 - 5.2, Part Number OL-4545-01, Rev. H0, May 2006   **xliii**

Table 3   User Guides and Release Notes for Cisco MGX and BPX Switches and Media Gateways (continued)

Document Title and Part Number	BPX with SES Rel. 4	MGX 8230 Rel. 1.3	MGX 8250 Rel. 1.3	MGX 8850 (PXM1) Rel. 1.3	MGX 8830 Rel. 5.3	MGX 8850 (PXM1E) Rel. 5.3	MGX 8850 (PXM45) Rel. 5.3	MGX 8950 Rel. 5.3	MGX 8880 Rel. 5.3.
Cisco MGX 8230 Multiservice Gateway Command Reference, Release 1.1.3[1] DOC-7811211=	—	x	—	—	—	—	—	—	—
Cisco MGX 8250 Multiservice Gateway Command Reference, Release 1.1.3[1] DOC-7811212=	—	—	x	—	—	—	—	—	—
Cisco MGX 8250 Multiservice Gateway Error Messages, Release 1.1.3[1] DOC-7811216=	—	—	x	—	—	—	—	—	—
Cisco MGX 8800 Series Switch Command Reference, Release 1.1.3[1] DOC-7811210=	—	x	x	x	—	—	—	—	—
Cisco MGX 8800 Series Switch System Error Messages, Release 1.1.3[1] DOC-7811240=	—	x	x	x	—	—	—	—	—
Cisco SES PNNI Controller Command Reference, Release 3[1] DOC-7814260=	x	—	—	—	—	—	—	—	—
Cisco MGX 8800/8900 Series Command Reference, Release 5.2 OL-6483-01	—	—	—	—	x	x	x	x	x
Cisco Voice Switch Services Command Reference for MGX Switches and Media Gateways, Release 5.3 OL-10283-01	—	—	—	—	—	—	x	—	x
Cisco WAN Manager SNMP Service Agent, Release 15.3.00 OL-10190-01	x	x	x	x	x	x	x	x	x
Cisco WAN Manager Database Interface Guide, Release 15.3.00 OL-10140-01	x	x	x	x	x	x	x	x	x

1. This document was not updated for the September 2005 release.

2. Some configuration and command information is included in this guide for using the multiprotocol service module (MPSM-8-T1E1/MPSM-16-T1E1) in a Cisco MGX 8230, MGX 8250, or MGX 8850 (PXM1) switch.

> **Note** For the September 2005 product release, there are no new features for the Service Expansion Shelf (SES) of the BPX switch and BPX WAN switching software. Therefore, documentation for these items was not updated. Table 3 lists the most recent user guides and release notes for these products.

Table 3 also lists the latest documentation available for the Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) switches. These switches use the PXM1 processor card. Although there are new features in MGX Release 1.3 for these switches, only the release notes were updated. And the following guides contain some information about configuring the MPSM-8-T1E1 and MPSM-16-T1E1 cards for use in these switches:

- *Cisco Circuit Emulation Services (CESM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*

- *Cisco Frame Relay Services (FRSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*

- *Cisco ATM Services (AUSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2*

Table 4 lists the documents that ship with product.

Table 5 contains alphabetized titles and descriptions of all the guides and release notes listed in Table 3.

Table 4   Documents that Ship with Multiservice Switch Products

Document Title	Description
Finding Cisco User Documentation Online DOC-7817081=	Describes how to find the guides and release notes that support multiservice switches and network management products. These documents are available only online. **This guide ships with product.**
Installation Warning Card DOC-7812348=	**Contains precautions that you should take before you insert a card into a slot. This Warning Card ships with product.**
Regulatory Compliance and Safety Information for Cisco Multiservice Switch Products (MGX, BPX, and SES) DOC-7814790=	Provides regulatory compliance information, product warnings, and safety recommendations for all the Cisco MGX multiservice switches: MGX 8230, MGX 8250, MGX 8850 (PXM1), MGX 8850 (PXM45), MGX 8850 (PXM1E), MGX 8830 and MGX 8950. Also provides such information for the MGX 8880 Media Gateway. **This guide ships with product.**

Table 5   User Guides and Release Notes for Cisco Multiservice Switch Products

Document Title	Description
Cisco ATM and Frame Relay Services (MPSM-T3E3-155 and MPSM-16-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-6487-01	Provides software configuration procedures for provisioning ATM and Frame Relay connections on the new MPSM-T3E3-155 multiprotocol service module. Also describes all MPSM-T3E3-155 commands.
Cisco ATM Services (AUSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-6479-01	Provides software configuration procedures for provisioning connections and managing the AUSM cards supported in this release. Also describes all AUSM commands. Includes software configuration procedures for provisioning connections and managing the MPSM-8-T1E1 card as an AUSM card replacement.
Cisco ATM Services (AXSM) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-4548-01	Explains how to configure the AXSM cards and provides a command reference that describes the AXSM commands in detail. The AXSM cards covered in this guide are the AXSM-XG, AXSM/A, AXSM/B, AXSM-E, and AXSM-32-T1E1-E.
Cisco Circuit Emulation Services (CESM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-6481-01	Provides software configuration procedures for provisioning connections and managing the Circuit Emulation Service Module (CESM) cards supported in this release. Also describes all CESM commands. Includes software configuration procedures for provisioning connections and managing the MPSM-8-T1E1 card as a CESM card replacement.
Cisco Frame Relay Services (FRSM/MPSM-8-T1E1) Configuration Guide and Command Reference for MGX Switches, Release 5.2 OL-6480-01	Provides software configuration procedures for provisioning connections and managing the Frame Relay Service Module (FRSM) cards supported in this release. Also describes all FRSM commands. Includes software configuration procedures for provisioning connections and managing the MPSM-8-T1E1 card as an FRSM card replacement.
Cisco MGX 8230 Edge Concentrator Installation and Configuration, Release 1.1.3 DOC-7811215=	Provides installation instructions for the Cisco MGX 8230 edge concentrator.
Cisco MGX 8230 Edge Concentrator Overview, Release 1.1.3 DOC-7812899=	Describes the system components and function of the Cisco MGX 8250 edge concentrator.
Cisco MGX 8230 Multiservice Gateway Command Reference, Release 1.1.3 DOC-7811211=	Provides detailed information on the general command line interface commands.
Cisco MGX 8230 Multiservice Gateway Error Messages, Release 1.1.3 DOC-78112113=	Provides error message descriptions and recovery procedures.
Cisco MGX 8250 Edge Concentrator Installation and Configuration, Release 1.1.3 DOC-7811217=	Provides installation instructions for the Cisco MGX 8250 edge concentrator.

Table 5   User Guides and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
Cisco MGX 8250 Edge Concentrator Overview, Release 1.1.3 DOC-7811576=	Describes the system components and function of the Cisco MGX 8250 edge concentrator.
Cisco MGX 8250 Multiservice Gateway Command Reference, Release 1.1.3 DOC-7811212=	Provides detailed information on the general command line interface commands.
Cisco MGX 8250 Multiservice Gateway Error Messages, Release 1.1.3 DOC-7811216=	Provides error message descriptions and recovery procedures.
Cisco MGX 8800 Series Switch Command Reference, Release 1.1.3 DOC-7811210=	Provides detailed information on the general command line for the Cisco MGX 8850 (PXM1), Cisco MGX 8250, and Cisco MGX 8230 edge concentrators.
Cisco MGX 8800 Series Switch System Error Messages, Release 1.1.3 DOC-7811240=	Provides error message descriptions and recovery procedures for Cisco MGX 8850 (PXM1), Cisco MGX 8250, and Cisco MGX 8230 edge concentrators.
Cisco MGX 8800/8900 Hardware Installation Guide, Releases 2 - 5.3 OL-4545-01	Describes how to install the Cisco MGX 8950, the Cisco MGX 8850 (PXM1E/PXM45), the Cisco MGX 8850/B (PXM1E/PXM45), and the Cisco MGX 8830 switches. Also describes how to install the MGX 8880 Media Gateway. This document explains what each 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 serial bus-based and cell bus-based service modules. The Cisco MGX 8830 switch uses a PXM1E controller card and supports cell bus-based service modules. The Cisco MGX 8950 supports only serial bus-based service modules. The Cisco MGX 8880 uses a PXM45/C controller card, and supports only serial bus-based service modules. *This hardware installation guide replaces all previous hardware guides for these switches.*
Cisco MGX 8800/8900 Series Configuration Guide, Release 5.2 OL-6482-01	Describes how to configure the Cisco MGX 8880 Media Gateway. Also describes how to configure Cisco MGX 8850 (PXM1E), Cisco MGX 8850 (PXM45), the Cisco MGX 8850/B (PXM1E/PXM45), and Cisco MGX 8830 switches to operate as ATM edge switches and the Cisco MGX 8950 switch to operate as a core switch. This guide also provides some operation and maintenance procedures.
Cisco MGX 8800/8900 Series Command Reference, Release 5.2 OL-6483-01	Describes the PXM commands that are available in the CLI of the Cisco MGX 8850 (PXM45), Cisco MGX 8850 (PXM1E), Cisco MGX 8950, and Cisco MGX 8830 switches. Also describes the PXM commands that are available in the CLI of the Cisco MGX 8880 Media Gateway.

Table 5 **User Guides and Release Notes for Cisco Multiservice Switch Products (continued)**

Document Title	Description
Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3 DOC-7811223=	Provides installation instructions for the Cisco MGX 8850 (PXM1) edge concentrator.
Cisco MGX 8850 Multiservice Switch Overview, Release 1.1.3 OL-1154-01	Describes the system components and function of the Cisco MGX 8850 (PXM1) edge concentrator.
Cisco MGX and Service Expansion Shelf Error Messages, Release 5.0 OL-6485-01	Provides error message descriptions and recovery procedures.
Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide, Release 5.2 OL-6954-01	Describes how to install and configure the Cisco MGX Route Processor Module (RPM-XF) in the Cisco MGX 8850 (PXM45), Cisco MGX 8880 (PXM45), and Cisco MGX 8950 switch. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.
Cisco MGX Route Processor Module (RPM-PR) Installation and Configuration Guide, Release 5.2 OL-7349-01	Describes how to install and configure the Cisco MGX Route Processor Module (RPM/B or RPM-PR) in the Cisco MGX 8850 (PXM1), the Cisco MGX 8250, and the Cisco MGX 8230 edge concentrators. Also provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and basic Cisco IOS configuration information.
Cisco PNNI Network Planning Guide for MGX and SES Products OL-3847-01	Provides guidelines for planning a PNNI network that uses Cisco MGX 8830, Cisco MGX 8850 (PXM45 and PXM1E), Cisco MGX 8950, or Cisco BPX 8600 switches or the MGX 8880 Media Gateway. When connected to a PNNI network, each Cisco BPX 8600 Series switch requires an SES for PNNI route processing.
Cisco Service Expansion Shelf Hardware Installation Guide, Release 1 DOC-786122=	Provides instructions for installing and maintaining an SES controller.
Cisco SES PNNI Controller Command Reference, Release 3 DOC-7814260=	Describes the commands used to configure and operate the SES PNNI controller.
Cisco SES PNNI Controller Software Configuration Guide, Release 3 DOC-7814258=	Describes how to configure, operate, and maintain the SES PNNI controller.
Cisco Voice Interworking Services (VISM) Configuration Guide and Command Reference, Release 3.3 OL-5358-01	Describes how to install and configure the Voice Interworking Service Module (VISM) in the Cisco MGX 8830, Cisco MGX 8850 (PXM45), and Cisco MGX 8850 (PXM1E) multiservice switches. Provides site preparation procedures, troubleshooting procedures, maintenance procedures, cable and connector specifications, and Cisco CLI configuration information.

Table 5   User Guides and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
Cisco Voice Switch Services (VXSM) Configuration and Command Reference Guide for MGX Switches, Release 5 OL-4625-01	Describes the features and functions of the new Voice Switch Service Module (VXSM) in the Cisco MGX 8880 Media Gateway and in the Cisco MGX8850 (PXM45 and PXM1E) multiservice switches. Also provides configuration procedures, troubleshooting procedures, and Cisco CLI configuration information.
Cisco WAN Manager Database Interface Guide, Release 15.3.00 OL-6261-01	Provides information about accessing the CWM Informix database that is used to store information about the network elements.
Cisco WAN Manager Installation Guide, Release 15.3.00 OL-6259-01	Provides procedures for installing Release 15.1 of the CWM network management system.
Cisco WAN Manager SNMP Service Agent, Release 15.3.00 OL-6260-01	Provides information about the CWM Simple Network Management Protocol service agent, an optional adjunct to CWM that is used for managing Cisco WAN switches through SNMP.
Cisco WAN Manager User's Guide, Release 15.3.00 OL-6257-01	Describes how to use the CWM Release 15.1 software, which consists of user applications and tools for network management, connection management, network configuration, statistics collection, and security management. **Note** The CWM interface now has built-in documentation support in the form of online Help. On a PC, press **F1** to access Help; on a UNIX workstation, press the **Help** key. Alternatively, on either system you can select **Help** from the main or popup menu.
Frame Relay Software Configuration Guide and Command Reference for the Cisco MGX 8850 FRSM12 Card, Release 3 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.
Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.14 OL-4539-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
Release Notes for Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Switches, Release 5.3.00 OL-6478-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
Release Notes for the Cisco MGX 8880 Media Gateway, Release 5.3.00 OL-6493-01	Provides new feature and compatibility information, as well as information about known and resolved anomalies.
Release Notes for Cisco MGX Route Processor Module (RPM-PR) IOS Release 12.4(6)T1 for MGX Releases 1.3.14 and 5.3.00 OL-7292-01	Provides upgrade and compatibility information, as well as information about known and resolved anomalies.

Table 5   User Guides and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
Release Notes for Cisco MGX Route Processor Module (RPM-XF) IOS Release 12.4(6)T1 for PXM45-based Switches, Release 5.3.00 OL-7059-01	Provides upgrade and compatibility information, as well as information about known and resolved anomalies.
Release Notes for the Cisco Voice Interworking Service Module (VISM), Release 3.3.25 OL-5357-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
Release Notes for the Cisco Voice Switch Service Module (VXSM), Release 5.3.00 OL-7088-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
Release Notes for Cisco WAN Manager, Release 15.3.00 OL-6495-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain 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 at this URL:

http://www.cisco.com/techsupport

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

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

Product Documentation DVD

The Product Documentation DVD is a comprehensive library of technical product documentation on a portable medium. The DVD enables you to access multiple versions of installation, configuration, and command guides for Cisco hardware and software products. With the DVD, you have access to the same HTML documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .PDF versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD= or DOC-DOCDVD=SUB) from Cisco Marketplace at this URL:

http://www.cisco.com/go/marketplace/

Ordering Documentation

Registered Cisco.com users may order Cisco documentation at the Product Documentation Store in the Cisco Marketplace at this URL:

http://www.cisco.com/go/marketplace/

Nonregistered Cisco.com users can order technical documentation from 8:00 a.m. to 5:00 p.m. (0800 to 1700) PDT by calling 1 866 463-3487 in the United States and Canada, or elsewhere by calling 011 408 519-5055. You can also order documentation by e-mail at tech-doc-store-mkpl@external.cisco.com or by fax at 1 408 519-5001 in the United States and Canada, or elsewhere at 011 408 519-5001.

Documentation Feedback

You can rate and provide feedback about Cisco technical documents by completing the online feedback form that appears with the technical documents on Cisco.com.

You can submit comments about Cisco documentation by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you will find information about how to:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories, security notices, and security responses for Cisco products is available at this URL:

http://www.cisco.com/go/psirt

To see security advisories, security notices, and security responses as they are updated in real time, you can subscribe to the Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed. Information about how to subscribe to the PSIRT RSS feed is found at this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you have identified a vulnerability in a Cisco product, contact PSIRT:

- For Emergencies only—security-alert@cisco.com

  An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- For Nonemergencies—psirt@cisco.com

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

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Tip We encourage you to use Pretty Good Privacy (PGP) or a compatible product (for example, GnuPG) to encrypt any sensitive information that you send to Cisco. PSIRT can work with information that has been encrypted with PGP versions 2.*x* through 9.*x*.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

The link on this page has the current PGP key ID in use.

If you do not have or use PGP, contact PSIRT at the aforementioned e-mail addresses or phone numbers before sending any sensitive material to find other means of encrypting the data.

Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

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

Note   Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests, or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—An existing network is down, or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operations are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of the network is impaired, while most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

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

- The *Cisco Product Quick Reference Guide* is a handy, compact reference tool that includes brief product overviews, key features, sample part numbers, and abbreviated technical specifications for many Cisco products that are sold through channel partners. It is updated twice a year and includes the latest Cisco offerings. To order and find out more about the Cisco Product Quick Reference Guide, go to this URL:

  http://www.cisco.com/go/guide

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

  http://www.cisco.com/go/iqmagazine

  or view the digital edition at this URL:

  http://ciscoiq.texterity.com/ciscoiq/sample/

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:

  http://www.cisco.com/en/US/products/index.html

- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:

  http://www.cisco.com/discuss/networking

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html