



## About This Publication

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This section discusses the objectives, audience, organization, and conventions of the *Cisco WAN Modeling Tools User Guide*.

## Document Objectives

This publication provides instructions for using the WAN Modeling Tools, a design aid for WANs. The WAN Modeling Tools consist of the following software tools:

- Network Modeling Tool (NMT). UNIX and PC versions are available.
- Map Tool to display a graphical model of network topology.
- Configuration Extraction Tool (CET) for retrieving existing topologies from the Cisco Wan Manager (CWM) database.
- Conversion Plug-ins: the Third-Party Interface (TPI) for sharing NMT information with WANDL and the SpreadSheet Interface (SSI) for exchanging NMT configurations with Microsoft Excel. These tools are integrated into NMT, but are also available as UNIX stand alone commands.
- Cisco Network Designer (CND) importing tool for importing and storing topologies in a project format.

## Audience

This publication is intended for anyone who operates or manages a WAN and has a general understanding of data communications concepts, some knowledge of UNIX and/or PC desktop, and knowledge of the interfaces used by devices connected to their WAN.

## Document Conventions

Command descriptions use these conventions:

- Commands and keywords are in **boldface**.
- Elements in square brackets ([ ]) are optional.

Examples use the following conventions:

- Terminal sessions and information the system displays are printed in `screen` font.
- Information you enter is in **boldface** `screen` font or **boldface** font.



**Note**

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

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## Related Documentation

This section describes the technical manuals and release notes that support the April 2004 release of Cisco Multiservice Switch products.

## Technical Manual Order of Use

Use the technical manuals listed here in the following order:

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- Step 1** Refer to the documents that ship with your product. Observe all safety precautions.
- *Regulatory Compliance and Safety Information for Cisco Multiservice Switch and Media Gateway Products (MGX, BPX, and SES)*—This document familiarizes you with safety precautions for your product.
  - *Guide to Cisco Multiservice Switch and Media Gateway Documentation*—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*
  - *Cisco WAN Manager User's Guide, Release 15*
- Step 4** If your network contains MGX and SES products, refer to this manual for planning information:
- *Cisco PNNI Network Planning Guide for MGX and SES Products*
- Step 5** Refer to these manuals for information about installing cards and cables in the MGX chassis:
- *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, Cisco MGX 8830, and Cisco MGX 8880 Hardware Installation Guide, Releases 2 Through 5* 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 manuals that help you configure your MGX switch and processor cards:
- *Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, Cisco MGX 8830, and Cisco MGX 8880 Configuration Guide, Release 5* 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 manual that supports the additional cards you intend to install in your switch. For example:
- The services books can help you establish ATM, Frame Relay, or circuit emulation services on your switch.
  - The VISM book can help you set up your switch as a voice gateway, and the RPM book can help you implement IP on the switch.
- Step 8** Additional books, such as command reference guides and error message books, can help with the daily operation and maintenance of your switch.
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**Note**


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Manual titles may be different for earlier software releases. The titles shown in [Table 1](#) are for the April 2004 release.

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## Technical Manual Titles and Descriptions

[Table 1](#) lists the technical manuals and release notes that support the April 2004 multiservice switch product releases. Books and release notes in [Table 1](#) are listed in order of use and include information about which multiservice switch or media gateway the document supports.

The books for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) switches were not updated for the April 2004 release, therefore, some information about configuring and using the new MPSM-8-T1E1 card in these switches is included in the following books:

- *Cisco ATM Services (AUSM/MPSM) Configuration Guide and Command Reference for MGX Switches, Release 5*
- *Cisco Frame Relay Services (FRSM/MPSM) Configuration Guide and Command Reference for MGX Switches, Release 5*
- *Cisco Circuit Emulation Services (CESM/MPSM) Configuration Guide and Command Reference for MGX Switches, Release 5*

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 1.3.00*.

**Note**


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

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## 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 1** *Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (April 2004 Product Releases)*

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	MGX 8850 (PXM1E) Rel. 5	MGX 8850 (PXM45) Rel. 5	MGX 8950 Rel. 5	MGX 8880 Rel. 5.
<b>Overview and Safety Documents</b>									
<i>Guide to Cisco Multiservice Switch and Media Gateway Documentation</i> DOC-7814807=	x	x	x	x	x	x	x	x	x
<i>Installation Warning Card</i> DOC-7812348=	x	x	x	x	x	x	x	x	x
<i>Regulatory Compliance and Safety Information for Cisco Multiservice Switch and Media Gateway Products (MGX, BPX, and SES)</i> DOC-7814790=	—	x	x	x	x	x	x	x	x
<i>Release Notes for the Cisco MGX 8880 Media Gateway, Release 5.0.00</i> OL-5190-01	—	—	—	—	—	—	—	—	x
<i>Release Notes for Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Switches, Release 5.0.00</i> OL-4538-01	—	—	—	—	x	x	x	x	
<i>Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.00</i> OL-4539-01	—	x	x	x	—	—	—	—	—
<i>Release Notes for the Cisco Voice Switch Service Module (VXSM), Release 5.0</i> OL-4627-01	—	—	—	—	—	—	x	—	x
<i>Release Notes for Cisco WAN Manager, Release 15.0.00</i> OL-4151-01	—	—	—	—	x	x	x	x	x
<i>Release Notes for the Cisco Voice Interworking Service Module (VISM), Release 3.2.1</i> OL-4544-01	—	x	x	x	x	x	x	—	x

**Table 1** *Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (April 2004 Product Releases) (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	MGX 8850 (PXM1E) Rel. 5	MGX 8850 (PXM45) Rel. 5	MGX 8950 Rel. 5	MGX 8880 Rel. 5.
<i>Release Notes for Cisco MGX Route Processor Module (RPM-XF) IOS Release 12.3(2)T5 for PXM45-based Switches, Release 5.0.00</i> OL-4536-01	—	—	—	—	—	—	x	x	x
<i>Release Notes for Cisco MGX Route Processor Module (RPM-PR) IOS Release 12.3(2)T5 for MGX Releases 1.3.00 and 5.0.00</i> OL-4535-1	—	x	x	x	x	x	x	x	x
<i>Cisco MGX 8230 Edge Concentrator Overview, Release 1.1.3<sup>1</sup></i> DOC-7812899=	—	x	—	—	—	—	—	—	—
<i>Cisco MGX 8250 Edge Concentrator Overview, Release 1.1.3<sup>1</sup></i> DOC-7811576=	—	—	x	—	—	—	—	—	—
<i>Cisco MGX 8850 Multiservice Switch Overview, Release 1.1.3<sup>1</sup></i> OL-1154-01	—	—	—	x	—	—	—	—	—
<b>Hardware Installation Guides</b>									
<i>Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, Cisco MGX 8830, and Cisco MGX 8880 Hardware Installation Guide, Releases 2 Through 5</i> OL-4545-01	—	—	—	—	x	x	x	x	x
<i>Cisco Service Expansion Shelf Hardware Installation Guide, Release 1<sup>1</sup></i> DOC-786122=	x	—	—	—	—	—	—	—	—
<b>Planning and Configuration Guides</b>									
<i>Cisco PNNI Network Planning Guide for MGX and SES Products</i> OL-3847-01	x	—	—	—	x	x	x	x	x

**Table 1** *Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (April 2004 Product Releases) (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	MGX 8850 (PXM1E) Rel. 5	MGX 8850 (PXM45) Rel. 5	MGX 8950 Rel. 5	MGX 8880 Rel. 5.
<i>Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, Cisco MGX 8830, and Cisco MGX 8880 Configuration Guide, Release 5</i> OL-4546-01	—	—	—	—	x	x	x	x	x
<i>Cisco WAN Manager Installation Guide, Release 15</i> OL-4550-01	—	—	—	—	x	x	x	x	x
<i>Cisco WAN Manager User's Guide, Release 15</i> OL-4552-01	—	—	—	—	x	x	x	x	x
<i>Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3<sup>1</sup></i> DOC-7811223=	—	—	—	x	—	—	—	—	—
<i>Cisco SES PNNI Controller Software Configuration Guide, Release 3<sup>1</sup></i> DOC-7814258=	x	—	—	—	—	—	—	—	—
<i>Cisco MGX 8230 Edge Concentrator Installation and Configuration, Release 1.1.3<sup>1</sup></i> DOC-7811215=	—	x	—	—	—	—	—	—	—
<i>Cisco MGX 8250 Edge Concentrator Installation and Configuration, Release 1.1.3<sup>1</sup></i> DOC-7811217=	—	—	x	—	—	—	—	—	—
<b>Service Module Configuration and Reference Guides</b>									
<i>Cisco MGX Route Processor Module (RPM-PR) Installation and Configuration Guide, Release 2.1</i> 78-12510-02	—	x	x	x	—	—	—	—	—
<i>Cisco Frame Relay Software Configuration Guide and Command Reference for the Cisco MGX 8850 (PXM45) FRSM-12-T3E3 Card, Release 3<sup>1</sup></i> DOC-7810327=	—	—	—	—	—	—	x	—	—

**Table 1** *Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (April 2004 Product Releases) (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	MGX 8850 (PXM1E) Rel. 5	MGX 8850 (PXM45) Rel. 5	MGX 8950 Rel. 5	MGX 8880 Rel. 5.
<i>Cisco ATM Services (AUSM/MPSM) Configuration Guide and Command Reference for MGX Switches, Release 5<sup>2</sup></i> OL-4540-01	—	2	2	2	x	x	—	—	—
<i>Cisco Frame Relay Services (FRSM/MPSM) Configuration Guide and Command Reference for MGX Switches, Release 5<sup>2</sup></i> OL-4541-01	—	2	2	2	x	x	x	—	—
<i>Cisco Circuit Emulation Services (CESM/MPSM) Configuration Guide and Command Reference for MGX Switches, Release 5<sup>2</sup></i> OL-0453-01	—	2	2	2	x	x	x	—	—
<i>Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide, Release 4<sup>1</sup></i> OL-5087-01	—	—	—	—	—	—	x	x	—
<i>Cisco ATM Services (AXSM) Configuration Guide and Command Reference for MGX Switches, Release 5</i> OL-4548-01	—	—	—	—	—	—	x	x	x
<i>Cisco ATM and Frame Relay Services (MPSM-T3E3-155) Configuration Guide and Command Reference for MGX Switches, Release 5</i> OL-4554-01	—	—	—	—	x	x	x	—	—
<i>Cisco Voice Switch Services (VXSM) Configuration Guide and Command Reference for MGX Switches and Media Gateways, Release 5</i> OL-4625-01	—	—	—	—	—	—	x	—	x
<i>Cisco Voice Interworking Services (VISM) Configuration Guide and Command Reference, Release 3.2<sup>1</sup></i> OL-4359-01	—	x	x	x	x	x	x	—	x

**Table 1** Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (April 2004 Product Releases) (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	MGX 8850 (PXM1E) Rel. 5	MGX 8850 (PXM45) Rel. 5	MGX 8950 Rel. 5	MGX 8880 Rel. 5.
<b>Reference Guides</b>									
<i>Cisco MGX 8230 Multiservice Gateway Error Messages, Release 1.1.3<sup>1</sup></i> DOC-78112113=	—	x	—	—	—	—	—	—	—
<i>Cisco MGX 8230 Multiservice Gateway Command Reference, Release 1.1.3<sup>1</sup></i> DOC-7811211=	—	x	—	—	—	—	—	—	—
<i>Cisco MGX 8250 Multiservice Gateway Command Reference, Release 1.1.3<sup>1</sup></i> DOC-7811212=	—	—	x	—	—	—	—	—	—
<i>Cisco MGX 8250 Multiservice Gateway Error Messages, Release 1.1.3<sup>1</sup></i> DOC-7811216=	—	—	x	—	—	—	—	—	—
<i>Cisco MGX 8800 Series Switch Command Reference, Release 1.1.3<sup>1</sup></i> DOC-7811210=	—	x	x	x	—	—	—	—	—
<i>Cisco MGX 8800 Series Switch System Error Messages, Release 1.1.3<sup>1</sup></i> DOC-7811240=	—	x	x	x	—	—	—	—	—
<i>Cisco SES PNNI Controller Command Reference, Release 3<sup>1</sup></i> DOC-7814260=	x	—	—	—	—	—	—	—	—
<i>Cisco MGX 8850 (PXM45/PXM1E), Cisco MGX 8950, Cisco MGX 8830, and Cisco MGX 8880 Command Reference, Release 5</i> OL-4547-01	—	—	—	—	x	x	x	x	x
<i>Cisco WAN Manager SNMP Service Agent, Release 15</i> OL-4551-01	—	—	—	—	x	x	x	x	x

**Table 1** *Technical Manuals and Release Notes for Cisco MGX and BPX Switches and Media Gateways (April 2004 Product Releases) (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	MGX 8850 (PXM1E) Rel. 5	MGX 8850 (PXM45) Rel. 5	MGX 8950 Rel. 5	MGX 8880 Rel. 5.
<i>Cisco WAN Manager Database Interface Guide, Release 15</i> OL-4587-01	—	—	—	—	x	x	x	x	x
<i>Cisco MGX and Service Expansion Shelf Error Messages, Release 5</i> OL-4553-01	x	—	—	—	x	x	x	x	x

1. This document was not updated for the April 2004 release.
2. Some configuration and command information is included in this book for using the multiprotocol service module (MPSM-8-T1E1) in a Cisco MGX 8230, MGX 8250, or MGX 8850 (PXM1) switch.

**Note**

For the April 2004 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 1](#) lists the most recent technical manuals and release notes for these products.

[Table 1](#) 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 books contain some information about configuring the MPSM-8-T1E1 card for use in these switches:

- *Cisco Circuit Emulation Services (CESM/MPSM) Configuration Guide and Command Reference for MGX Switches, Release 5*
- *Cisco Frame Relay Services (FRSM/MPSM) Configuration Guide and Command Reference for MGX Switches, Release 5*
- *Cisco ATM Services (AUSM/MPSM) Configuration Guide and Command Reference for MGX Switches, Release 5*

Table 2 lists the documents that ship with product.

Table 3 contains alphabetized titles and descriptions of all the manuals and release notes listed in Table 1.

**Table 2 Documents that Ship with Multiservice Switch Products**

Document Title	Description
<i>Guide to Cisco Multiservice Switch and Media Gateway Documentation</i> DOC-7814807=	Describes how to find the manuals and release notes that support multiservice switches and network management products. These documents are available only online. <b>This guide ships with product.</b>
<i>Installation Warning Card</i> DOC-7812348=	<b>Contains precautions that you should take before you insert a card into a slot. This Warning Card ships with product.</b>
<i>Regulatory Compliance and Safety Information for Cisco Multiservice Switch and Media Gateway Products (MGX, BPX, and SES)</i> 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. <b>This book ships with product.</b>

**Table 3 Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products**

Document Title	Description
<i>Cisco ATM and Frame Relay Services (MPSM-T3E3-155) Configuration Guide and Command Reference for MGX Switches, Release 5</i> OL-4554-01	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.
<i>Cisco ATM Services (AUSM/MPSM) Configuration Guide and Command Reference for MGX Switches, Release 5</i> OL-4540-01 A0	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 new MPSM-8-T1E1 card as an AUSM card replacement.
<i>Cisco ATM Services (AXSM) Configuration Guide and Command Reference for MGX Switches, Release 5</i> 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 manual are the AXSM-XG, AXSM/A, AXSM/B, AXSM-E, and AXSM-32-T1E1-E.
<i>Cisco Circuit Emulation Services (CESM/MPSM) Configuration Guide and Command Reference for MGX Switches, Release 5</i> OL-0453-01	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 new MPSM-8-T1E1 card as a CESM card replacement.

**Table 3** Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
<i>Cisco Frame Relay Services (FRSM/MPSM) Configuration Guide and Command Reference for MGX Switches, Release 5</i> OL-4541-01	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 new MPSM-8-T1E1 card as an FRSM card replacement.
<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 Edge Concentrator Overview, Release 1.1.3</i> DOC-7812899=	Describes the system components and function of the Cisco MGX 8250 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 8250 Edge Concentrator Installation and Configuration, Release 1.1.3</i> DOC-7811217=	Provides installation instructions for the Cisco MGX 8250 edge concentrator.
<i>Cisco MGX 8250 Edge Concentrator Overview, Release 1.1.3</i> DOC-7811576=	Describes the system components and function of the Cisco MGX 8250 edge concentrator.
<i>Cisco MGX 8250 Multiservice Gateway Command Reference, Release 1.1.3</i> DOC-7811212=	Provides detailed information on the general command line interface commands.
<i>Cisco MGX 8250 Multiservice Gateway Error Messages, Release 1.1.3</i> DOC-7811216=	Provides error message descriptions and recovery procedures.
<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 (PXM1), Cisco MGX 8250, and Cisco MGX 8230 edge concentrators.
<i>Cisco MGX 8800 Series Switch System Error Messages, Release 1.1.3</i> DOC-7811240=	Provides error message descriptions and recovery procedures for Cisco MGX 8850 (PXM1), Cisco MGX 8250, and Cisco MGX 8230 edge concentrators.

**Table 3** Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
<i>Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, Cisco MGX 8830, and Cisco MGX 8880 Hardware Installation Guide, Releases 2 Through 5</i> OL-4545-01	Describes how to install the Cisco MGX 8950, the Cisco MGX 8850 (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. <i>This hardware installation guide replaces all previous hardware guides for these switches.</i>
<i>Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, Cisco MGX 8830, and Cisco MGX 8880 Configuration Guide, Release 5</i> OL-4546-01	Describes how to configure the Cisco MGX 8880 Media Gateway. Also describes how to configure Cisco MGX 8850 (PXM1E), Cisco MGX 8850 (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.
<i>Cisco MGX 8850 (PXM45/PXM1E), Cisco MGX 8950, Cisco MGX 8830, and Cisco MGX 8880 Command Reference, Release 5</i> OL-4547-01	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.
<i>Cisco MGX 8850 Edge Concentrator Installation and Configuration, Release 1.1.3</i> DOC-7811223=	Provides installation instructions for the Cisco MGX 8850 (PXM1) edge concentrator.
<i>Cisco MGX 8850 Multiservice Switch Overview, Release 1.1.3</i> OL-1154-01	Describes the system components and function of the Cisco MGX 8850 (PXM1) edge concentrator.
<i>Cisco MGX and Service Expansion Shelf Error Messages, Release 5</i> OL-4553-01	Provides error message descriptions and recovery procedures.
<i>Cisco MGX Route Processor Module (RPM-XF) Installation and Configuration Guide, Release 4</i> OL-5087-01	Describes how to install and configure the Cisco MGX Route Processor Module (RPM-XF) in the Cisco MGX 8850 (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.

**Table 3** Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
<i>Cisco MGX Route Processor Module (RPM-PR) Installation and Configuration Guide, Release 2.1</i> 78-12510-02	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.
<i>Cisco PNNI Network Planning Guide for MGX and SES Products</i> 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.
<i>Cisco Service Expansion Shelf Hardware Installation Guide, Release 1</i> DOC-786122=	Provides instructions for installing and maintaining an SES controller.
<i>Cisco SES PNNI Controller Command Reference, Release 3</i> DOC-7814260=	Describes the commands used to configure and operate the SES PNNI controller.
<i>Cisco SES PNNI Controller Software Configuration Guide, Release 3</i> DOC-7814258=	Describes how to configure, operate, and maintain the SES PNNI controller.
<i>Cisco Voice Interworking Services (VISM) Configuration Guide and Command Reference, Release 3.2</i> OL-4359-01	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.
<i>Cisco Voice Switch Services (VXSM) Configuration and Command Reference Guide for MGX Switches, Release 5</i> 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.
<i>Cisco WAN Manager Database Interface Guide, Release 15</i> OL-4587-01	Provides information about accessing the CWM Informix database that is used to store information about the network elements.
<i>Cisco WAN Manager Installation Guide, Release 15</i> OL-4550-01	Provides procedures for installing Release 5 of the CWM network management system.
<i>Cisco WAN Manager SNMP Service Agent, Release 15</i> OL-4551-01	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.

**Table 3** Descriptions of Technical Manuals and Release Notes for Cisco Multiservice Switch Products (continued)

Document Title	Description
<i>Cisco WAN Manager User's Guide, Release 15</i> OL-4552-01	Describes how to use the CWM Release 15 software, which consists of user applications and tools for network management, connection management, network configuration, statistics collection, and security management.  <b>Note</b> The CWM interface now has built-in documentation support in the form of online Help. On a PC, press <b>F1</b> to access Help; on a UNIX workstation, press the <b>Help</b> key. Alternatively, on either system you can select <b>Help</b> from the main or popup menu.
<i>Cisco Frame Relay Software Configuration Guide and Command Reference for the Cisco MGX 8850 (PXM45) FRSM-12-T3E3 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.
<i>Release Notes for Cisco MGX 8230, Cisco MGX 8250, and Cisco MGX 8850 (PXM1) Switches, Release 1.3.00</i> OL-4539-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
<i>Release Notes for Cisco MGX 8850 (PXM1E/PXM45), Cisco MGX 8950, and Cisco MGX 8830 Switches, Release 5.0.00</i> OL-4538-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
<i>Release Notes for the Cisco MGX 8880 Media Gateway, Release 5.0.00</i> OL-5190-01	Provides new feature and compatibility information, as well as information about known and resolved anomalies.
<i>Release Notes for Cisco MGX Route Processor Module (RPM-PR) IOS Release 12.3(2)T5 for MGX Releases 1.3.00 and 5.0.00</i> OL-4535-01	Provides upgrade and compatibility information, as well as information about known and resolved anomalies.
<i>Release Notes for Cisco MGX Route Processor Module (RPM-XF) IOS Release 12.3(2)T5 for PXM45-based Switches, Release 5.0.00</i> OL-4536-01	Provides upgrade and compatibility information, as well as information about known and resolved anomalies.
<i>Release Notes for the Cisco Voice Interworking Service Module (VISM), Release 3.2.1</i> OL-4544-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
<i>Release Notes for the Cisco Voice Switch Service Module (VXSM), Release 5.0</i> OL-4627-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.
<i>Release Notes for Cisco WAN Manager, Release 15.0.00</i> OL-4151-01	Provides new feature, upgrade, and compatibility information, as well as information about known and resolved anomalies.

## 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/univercd/home/home.htm>

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco websites can be accessed from this URL:

[http://www.cisco.com/public/countries\\_languages.shtml](http://www.cisco.com/public/countries_languages.shtml)

### Ordering Documentation

You can find instructions for ordering documentation at this URL:

[http://www.cisco.com/univercd/cc/td/doc/es\\_inpk/pdi.htm](http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm)

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Ordering tool:  
<http://www.cisco.com/en/US/partner/ordering/index.shtml>
- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, USA) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

### Finding Documentation for Cisco MGX, BPX, SES, and CWM Products

The previous “Ordering Documentation” section applies to other Cisco documentation. Starting in 2003, all documents listed in the “Related Documentation” section are available online only unless stated otherwise. You can find the documents listed in [Table 1](#) online as follows:

- In your browser’s URL field, enter **www.cisco.com**. In the top right search field, enter the complete document part number (for example, enter **OL-4538-01**, including the -01 suffix). Click on GO.
- For the Cisco Wide Area Network Manager (CWM) documents, in your browser’s URL field, enter **http://www.cisco.com/univercd/cc/td/doc/product/wanbu/svplus/index.htm** and look for the CWM release number.
- For all other documents, in your browser’s URL field, enter **http://www.cisco.com/univercd/cc/td/doc/product/wanbu/index.htm**. Look for the switch name and release number. For example, look for *MGX 8850 (PXM1E)*, then *Release 5*.

## Documentation Feedback

You can submit e-mail comments about technical documentation to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

You can submit comments 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.

## Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, the Cisco Technical Assistance Center (TAC) provides 24-hour-a-day, award-winning technical support services, online and over the phone. Cisco.com features the Cisco TAC website as an online starting point for technical assistance. If you do not hold a valid Cisco service contract, please contact your reseller.

### Cisco TAC Website

The Cisco TAC website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The Cisco TAC website is available 24 hours a day, 365 days a year. The Cisco TAC website is located at this URL:

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

Accessing all the tools on the Cisco TAC website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a login ID or password, register at this URL:

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

### Opening a TAC Case

Using the online TAC Case Open Tool is the fastest way to open P3 and P4 cases. (P3 and P4 cases are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Case Open Tool automatically recommends resources for an immediate solution. If your issue is not resolved using the recommended resources, your case will be assigned to a Cisco TAC engineer. The online TAC Case Open Tool is located at this URL:

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

For P1 or P2 cases (P1 and P2 cases are those in which your production network is down or severely degraded) or if you do not have Internet access, contact Cisco TAC by telephone. Cisco TAC engineers are assigned immediately to P1 and P2 cases to help keep your business operations running smoothly.

To open a case 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 listing of Cisco TAC contacts, go to this URL:

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

## TAC Case Priority Definitions

To ensure that all cases are reported in a standard format, Cisco has established case priority definitions.

Priority 1 (P1)—Your 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.

Priority 2 (P2)—Operation of an existing network is severely degraded, or significant aspects of your business operation 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.

Priority 3 (P3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Priority 4 (P4)—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.

- Cisco Marketplace provides a variety of Cisco books, reference guides, and logo merchandise. Go to this URL to visit the company store:  
<http://www.cisco.com/go/marketplace/>
- The *Cisco Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:  
<http://cisco.com/univercd/cc/td/doc/pcat/>
- *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 online at this URL:  
<http://www.ciscopress.com>
- *Packet* magazine is the Cisco quarterly publication that provides the latest networking trends, technology breakthroughs, and Cisco products and solutions to help industry professionals get the most from their networking investment. Included are networking deployment and troubleshooting tips, configuration examples, customer case studies, tutorials and training, certification information, and links to numerous in-depth online resources. You can access Packet magazine at this URL:  
<http://www.cisco.com/packet>
- *iQ Magazine* is the Cisco bimonthly publication that delivers the latest information about Internet business strategies for executives. You can access iQ Magazine at this URL:  
<http://www.cisco.com/go/iqmagazine>

- *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>
- Training—Cisco offers world-class networking training. Current offerings in network training are listed at this URL:  
<http://www.cisco.com/en/US/learning/index.html>

