

# About This Manual

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This section discusses the objectives, audience, organization, and conventions of the *LightStream 2020 Hardware Reference & Troubleshooting Guide*. It also lists related Cisco documentation for the LightStream 2020.

Cisco documentation and additional literature are available on a CD called Cisco Connection Documentation, Enterprise Series. The CD is updated and shipped monthly so it might be more current than printed documentation. To order the CD, contact your local sales representative or call Customer Service. The CD is available by itself (as a single CD) and through an annual subscription. You can also access Cisco technical documentation on the World Wide Web, using URL <http://www.cisco.com>.

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**Note** The Cisco Connection Documentation, Enterprise Series CD was previously called UniverCD.

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## Document Objectives

This document describes the hardware components of the LightStream 2020 multiservice ATM switch (LS2020) and explains how to:

- Use diagnostic software and other methods to isolate hardware faults
- Correct problems by replacing hardware components
- Configure jumpers and fantails

## Audience

The audience for this book includes anyone who needs information on resolving hardware problems in LS2020 switches.



**Warning** This book is intended for use only by qualified service personnel. Tasks described here can expose unqualified personnel to mechanical and electrical hazards.

## Document Organization

This manual is organized as follows:

- Chapter 1, “Hardware Overview,” describes and illustrates the LS2020’s processor, switch, and I/O cards, disk drives, blowers, power trays, and I/O fanout devices.
- Chapter 2, “Interface Modules,” describes in detail the elements of each interface module.
- Chapter 3, “Hardware Troubleshooting,” explains how to use hardware diagnostics and troubleshooting procedures to identify and isolate hardware problems.
- Chapter 4, “Replacing FRUs,” tells you how to replace faulty field-replaceable units.
- Chapter 5, “Hardware Configuration,” shows how to set jumpers and switches on LS2020 components, and explains how many network processors, line cards, switch cards, etc. can coexist in a system.
- Appendix A, “LEDs,” explains the meaning of each LED that appears on a line card, access card, switch card, or network processor card.
- Appendix B, “Diagnostic Tests,” lists the diagnostic tests for network processor cards and line cards.
- Appendix C, “Field-Replaceable Units and Expansion Modules,” lists the names and part numbers of components.

## Document Conventions

The following conventions distinguish different types of text:

- Commands and keywords are in **boldface**.
- Screen output appears in `screen` font.
- In interactive examples, user input is in **boldface**.
- In command syntax statements:
  - Variables that you must replace with specific values are surrounded by angle brackets (<>).
  - Optional arguments are surrounded by square brackets ( [ ] ).
  - Alternative arguments are separated by vertical bars, and are grouped within curly brackets.
- The control key is indicated by a caret preceding a letter: ^A means Control-A.

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

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



**Warning** 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 familiar with standard practices for preventing accidents.

## Related Documentation

The following is a list of LS2020 manuals and other material relevant to LS2020 switch users.

- *LightStream 2020 System Overview*  
Introduces the LS2020 switch and the Asynchronous Transfer Mode (ATM) technology on which the LS2020 product is based. It describes traffic flow through an LS2020 network and presents key features, such as traffic and network management.
- *LightStream 2020 Site Planning and Cabling Guide*  
Provides guidelines you can use as you prepare your site to receive LS2020 hardware. It includes space, environmental, and electrical requirements; rack selection guidelines; requirements for the management workstation; and information on cables and connectors.
- *LightStream 2020 Installation Guide*  
Tells you how to install and set up LS2020 nodes and how to install StreamView management software on your network management workstation.
- *LightStream 2020 Hardware Reference & Troubleshooting Guide*  
Describes LS2020 hardware components and tells you how to troubleshoot and diagnose component problems. It also gives procedures for configuring and replacing individual components.
- *LightStream 2020 Configuration Guide*  
Provides the information you need to configure LS2020 switches. It describes the configuration tools and the procedures for using them, introduces the configuration database, and defines all configurable attributes and their settings. The guide also provides step-by-step configuration procedures.
- *LightStream 2020 Network Operations Guide*  
Presents an overview of network tasks. It introduces the command line interface (CLI) and the graphical user interface (GUI), and it describes GUI-based monitoring procedures. The manual also describes facilities for viewing statistics and collecting traffic data.
- *LightStream 2020 CLI Reference Manual*  
Presents the syntax and functions of all CLI commands, describes the LS2020 private MIB, and discusses test and control system (TCS) hub commands.
- *LightStream 2020 Command Line Interface (CLI) Reference Card*  
Compactly summarizes the syntax and arguments for all CLI commands.
- *LightStream 2020 Traps Reference Manual*  
Discusses LS2020 traps and outlines the procedures used to determine whether traps will be logged and where they will be viewed. The manual also describes the major SNMP, operational, and informational traps.
- *LightStream 2020 NP O/S Reference Manual*  
Discusses the most frequently used LynxOS commands and the bash shell. It also provides a tutorial and reference guide for the vi editor.
- *LightStream 2020 upgrade procedures and release notes*  
Upgrade procedures outline steps involved in upgrading software. Release notes describe new features and special considerations (including known software bugs). Release notes and upgrade procedures are provided for both the platform software and the network management software.

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**Note** The upgrade procedures and release notes include important information that was not available when the other documents were printed.

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- *Internetworking Terms and Acronyms*

Presents information on internetworking terms and acronyms, including material of interest to users of the LS2020 switch.

- *LightStream 2020 Online Help*

The LS2020 CLI and GUI network management tools support online help facilities.

To order these or other Cisco publications, contact your sales representative. (The customer order number for each manual is printed at the bottom of the manual's title page.) Customer service can give you the name of your sales representative if necessary.

Phone: 1 (800) 553-NETS (6387) or (415) 326-1941

E-mail: [customer-service@cisco.com](mailto:customer-service@cisco.com)