



About this Guide

This section explains the objectives, intended audience, and organization of this publication and describes the conventions that convey instructions and other information.



Note

The terms "Unidirectional Path Switched Ring" and "UPSR" may appear in Cisco literature. These terms do not refer to using Cisco ONS 15xxx products in a unidirectional path switched ring configuration. Rather, these terms, as well as "Path Protected Mesh Network" and "PPMN," refer generally to Cisco's path protection feature, which may be used in any topological network configuration. Cisco does not recommend using its path protection feature in any particular topological network configuration.

Revision History

Date	Notes
03/30/2007	Revision History Table added for the first time
08/20/2007	Updated About this Guide chapter
11/01/2007	Updated About this Guide chapter
June, 2009	Updated Figure AEP Wire-Wrap Connections to Backplane Pins.

This section provides the following information:

- [Document Objectives](#)
- [Audience](#)
- [Document Organization](#)
- [Related Documentation](#)
- [Document Conventions](#)
- [Where to Find Safety and Warning Information](#)
- [Obtaining Documentation](#)
- [Documentation Feedback](#)
- [Obtaining Technical Assistance](#)
- [Obtaining Additional Publications and Information](#)

Document Objectives

This guide provides procedures for installation, turn up, provisioning, and acceptance of ONS 15454 nodes and ONS 15454 networks.

Audience

To use this publication, you should be familiar with Cisco or equivalent optical transmission hardware and cabling, telecommunications hardware and cabling, electronic circuitry and wiring practices, and preferably have experience as a telecommunications technician.

Document Organization

The organization of the guide reflects Cisco's recommended work flow for new installations. This organization also provides easy access to procedures and tasks used to modify existing installations. Verification procedures are provided, where necessary, to allow contract vendors to complete the physical installation and then turn over the site to craft personnel for verification, provisioning, turn up, and acceptance.

The front matter of the book appears in the following sequence:

1. Title Page
2. Table of Contents
3. List of Figures
4. List of Tables
5. List of Procedures
6. List of Tasks

The information in the book follows a task-oriented hierarchy using the elements described below.

Chapter (Director Level)

The guide is divided into logical work groups (chapters) that serve as director entry into the procedures. For example, if you are arriving on site after a contractor has installed the shelf hardware, proceed to [Chapter 2, "Install Cards and Fiber-Optic Cable"](#) and begin verifying installation and installing cards. You may proceed sequentially (recommended), or locate the work you want to perform from the list of procedures on the first page of every chapter (or turn to the front matter or index). [Table 1](#) describes the guide chapters.

Table 1 Cisco ONS 15454 Procedure Guide Chapters

Title	Summary
Chapter 1, “Install the Shelf and Backplane Cable”	Includes procedures for installing the shelf assembly, electrical interface assemblies (EIAs), power and ground, fan-tray assembly, alarm expansion panel, backplane wires, external wire-wrap panel, electrical card cables, and optional dense wavelength division multiplexing (DWDM) equipment. Also included is the shelf installation acceptance test.
Chapter 2, “Install Cards and Fiber-Optic Cable”	Includes procedures to install common control cards, optical cards, transponder and muxponder cards, electrical cards, Ethernet cards and connectors, FC_MR-4 cards, and DWDM cards. Also included are procedures for removing and replacing a card, preprovisioning a slot, and installing and routing fiber-optic cables.
Chapter 3, “Connect the PC and Log into the GUI”	Includes procedures to install the Cisco Transport Controller (CTC), set up a computer for different connection types, and log into the Cisco ONS 15454.
Chapter 4, “Turn Up Node”	Includes procedures to verify the card installation; create users and assign security; set up name, date, time and contact information; set up network access, firewall access, and timing; create protection groups; and provision Simple Network Management Protocol (SNMP).
Chapter 5, “Turn Up a DWDM Node”	Includes procedures to verify TCC2 card installation and provision the DWDM node.
Chapter 6, “Turn Up Network”	Includes procedures to verify the node turn up, and provision and test the following networks: point-to-point, linear ADM, bidirectional line switched ring (BLSR), and path protection. It also includes procedures for subtending rings.
Chapter 7, “Turn Up DWDM Network”	Includes procedures to verify DWDM node turn up; provision DWDM or hybrid network connections; run automatic node setup; verify optical service channel module power; and perform a hub or terminal node acceptance test.
Chapter 8, “Create Circuits and VT Tunnels”	Includes procedures to verify network turn up; create manually or automatically routed circuits or VT tunnels; create unidirectional circuits with multiple drops; create VT aggregation points, half circuits, Ethernet circuits, and overhead circuits; provision a DWDM optical channel network connection; and create virtual concatenated (VCAT) circuits.

Table 1 **Cisco ONS 15454 Procedure Guide Chapters (continued)**

Title	Summary
Chapter 9, “Manage Alarms”	Includes procedures to document existing node data, view and delete alarms, view alarm-affected circuits and LCD alarm counts, manage alarm profiles, filter alarms, suppress alarms, and provision external alarms.
Chapter 10, “Monitor Performance”	Includes procedures to change the performance monitoring (PM) display, monitor performance, and manage remote monitoring (RMON) thresholds.
Chapter 11, “Manage Circuits”	Includes procedures to view circuits and cross-connect resource usage, modify and delete circuits and tunnels, convert and upgrade CTC and TL1 circuits, monitor circuits, and create a J1 path trace.
Chapter 12, “Change Node Settings”	Includes procedures to change node management information, CTC network access and view, and DWDM node settings; change or delete card protection settings; delete SONET data communication channel (DCC), line data communication channel (LDCC), generic communication channel (GCC), and DWDM optical service channel (OSC) terminations; and change node timing, security, and Simple Network Management Protocol (SNMP).
Chapter 13, “Change Card Settings”	Includes procedures to modify line settings and PM parameter thresholds for cards, modify alarm interface controller settings, and upgrade DS-1 and DS-3 1:1 protection to 1:N protection.
Chapter 14, “Upgrade Cards and Spans”	Includes procedures to prevent an OC-N protection switch during cross-connect upgrades, upgrade or downgrade cards, and upgrade spans automatically or manually.
Chapter 15, “Convert Network Configurations”	Includes procedures to convert network configurations, modify a BLSR, and manage BLSR switches.
Chapter 16, “Add and Remove Nodes”	Includes procedures to add or remove BLSR, path protection, or linear nodes from a network configuration.
Chapter 17, “Maintain the Node”	Includes procedures to inspect and manage the air filter, backup and restore the database, restore the node to factory configuration, off load the security audit trail log, inhibit card protection switching, revert software, clean fiber connectors, reset the TCC2 card using CTC, view Ethernet card maintenance information, change the node timing reference, and view the timing report.

Table 1 *Cisco ONS 15454 Procedure Guide Chapters (continued)*

Title	Summary
Chapter 18, “Power Down the Node”	Includes the procedure to power down the node.
Appendix A, “CTC Information and Shortcuts”	Includes a description of the CTC views and window features.
Appendix B, “Specifications”	Lists the ONS 15454 specifications.

Non-Trouble Procedure (NTP)

Each NTP is a list of steps designed to accomplish a specific procedure. Follow the steps until the procedure is complete. If you need more detailed instructions, refer to the Detailed Level Procedure (DLP) specified in the procedure steps.

**Note**

Throughout this guide, NTPs are referred to as “procedures” and DLPs are termed “tasks.” Every reference to a procedure includes its NTP number, and every reference to a task includes its DLP number.

Detailed Level Procedure (DLP)

The DLP (task) supplies additional task details to support the NTP. The DLP lists numbered steps that lead you through completion of a task. Some steps require that equipment indications be checked for verification. When the proper response is not obtained, the DLP provides a trouble clearing reference.

Related Documentation

Use the *Cisco ONS 15454 Procedure Guide, R4.6* with the following referenced publications:

- *Cisco ONS 15454 Reference Manual, R4.6*—Provides reference material for the Cisco ONS 15454 node and network.
- *Cisco ONS 15454 Troubleshooting Guide, R4.6*—Provides general troubleshooting procedures, alarm descriptions and troubleshooting procedures, and hardware replacement instructions.
- *Cisco ONS 15454 and Cisco ONS 15327 TL1 Command Guide, R4.6*—Provides a comprehensive list of TL1 commands for the ONS 15454 and ONS 15327.
- *Release Notes for the Cisco ONS 15454, R4.6*—Provides caveats, closed issues, and new feature and functionality information.

Document Conventions

This publication uses the following conventions:

Convention	Application
boldface	Commands and keywords in body text.
<i>italic</i>	Command input that is supplied by the user.
[]	Keywords or arguments that appear within square brackets are optional.
{ x x x }	A choice of keywords (represented by x) appears in braces separated by vertical bars. The user must select one.
Ctrl	The control key. For example, where Ctrl + D is written, hold down the Control key while pressing the D key.
screen font	Examples of information displayed on the screen.
screen font	Examples of information that the user must enter.
< >	Command parameters that must be replaced by module-specific codes.

**Note**

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

**Caution**

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

**Warning****IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. To see translations of the warnings that appear in this publication, refer to the translated safety warnings that accompanied this device.

Note: SAVE THESE INSTRUCTIONS

Note: This documentation is to be used in conjunction with the specific product installation guide that shipped with the product. Please refer to the Installation Guide, Configuration Guide, or other enclosed additional documentation for further details.

Where to Find Safety and Warning Information

For safety and warning information, refer to the *Cisco Optical Transport Products Safety and Compliance Information* document that accompanied the product. This publication describes the international agency compliance and safety information for the Cisco ONS 15xxx systems. It also includes translations of the safety warnings that appear in the ONS 15xxx system documentation.

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/univercd/home/home.htm>

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

Ordering Documentation

You can find instructions for ordering documentation at this URL:

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).

Cisco Optical Networking Product Documentation CD-ROM

Optical networking-related documentation, including Cisco ONS 15454 product documentation, is available in a CD-ROM package that ships with your product. The Optical Networking Product Documentation CD-ROM is updated periodically and may be more current than printed documentation.

Documentation Feedback

You can send comments about technical documentation to 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, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on [Cisco.com](http://www.cisco.com) features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

Cisco Technical Support Website

The Cisco Technical Support 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, 365 days a year at this URL:

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

Access to all tools on the Cisco Technical Support 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>

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 automatically provides recommended solutions. If your issue is not resolved using the recommended resources, your service request will be assigned to a Cisco TAC 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 TAC 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)—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.

Severity 2 (S2)—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.

Severity 3 (S3)—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.

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.

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

<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 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>

- *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>

- 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>