



Preface



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.

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

This section provides the following information:

- [Revision History](#)
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- [Obtaining Optical Networking Information](#)
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Revision History

Date	Notes
October 2007	- Added NTP-G194 Set Up the ONS 15454 in Secure Mode. - Added a new procedure, NTP-G195 Convert a Protected ROADM Node from two Separate Nodes to a Single Multishelf Node, in the “Upgrade, Add, and Remove Cards and Nodes” chapter. - Added a note to configure the Committed Burst Size and Excess Burst Size based on the expected packet size in the “Provision Transponder and Muxponder Cards” chapter. - Updated the procedure steps for NTP-G186 Perform the Four-Degree and Eight-Degree Mesh Patch Panel Acceptance Test in the “Perform Node Acceptance Tests” chapter. - Updated task DLP-G8 Install the Air Ramp in the “Install the Shelf and Common Control Cards” chapter.
November 2007	- Added two new procedures, NTP-G192 Force FPGA Update and NTP-G196 Force FPGA Update when the Card is part of a Protection Group, in the “Provision Transponder and Muxponder Cards” chapter. - Added a note on CC Fan tray and SFPs in the Install an SFP or XFP section in the Turn Up a Node chapter.
February 2008	Updated note in DLP-G63 in Chapter 3, Turn Up a Node.
March 2008	- Deleted a sentence about MMU in NTP-G188 in Chapter 4, Perform Node Acceptance Tests. - Updated the procedure to delete a Y-Cable Protection Group and added a note in the “DLP-G177 Delete a Y-Cable Protection Group” section in Chapter 10, “Manage the Node”. - Added a note stating that provisioning ANS may impact traffic in the “NTP-G37 Run Automatic Node Setup” section in Chapter 3. - Added a note indicating that the Administrative State - IS,AINS is not supported on the ADM-10G card. Table 5-33 contains this update and can be located under the procedure “DLP-G397 Change the ADM-10G Line Settings”.

Date	Notes
April 2008	- Updated note in NTP-G33 and DLP-G380 in Chapter 8, Provision Transponder and Muxponder Cards. Added two new notes for Mode and Flow Control parameter in DLP-G380 in Chapter 8, Provision Transponder and Muxponder Cards. - Added new NTP-G200, DLP-G464, DLP-G465, DLP-G466, and DLP-G467 in Chapter 7, Create Circuits and Provisionable Patchcords. - Added a new parameter in Table 11-37 “40-WXC-C Optical Line Parameter Settings” in the DLP-G408 Change 40-WXC-C Optical Line Parameters section of Chapter 11, Change DWDM Card Settings. - Added a note in the NTP-G24 Set Up Name, Date, Time, and Contact Information section of Chapter 3, Turn Up a Node. - Added a note about the impact of removing an SFP from working and protected ports under DLP-G64 Remove an SFP or XFP.
May 2008	- Added a note in the “DLP- G141 View Optical Power Statistics for 32MUX-O, 32WSS, 32WSS-L, 32DMX-O, 32DMX, 32DMX-L, 40-WSS-C, 40-WSS-CE, 40-WXC-C, 40-MUX-C, 40-DMX-C, and 40-DMX-CE Cards” section of Chapter 8, Monitor Performance. - Deleted a bullet from the “DLP- G141 View Optical Power Statistics for 32MUX-O, 32WSS, 32WSS-L, 32DMX-O, 32DMX, 32DMX-L, 40-WSS-C, 40-WSS-CE, 40-WXC-C, 40-MUX-C, 40-DMX-C, and 40-DMX-CE Cards” section of Chapter 8, Monitor Performance.
June 2008	Updated MTU and Mode parameters in DLP-G469 in Chapter 8, Provision Transponder and Muxponder Cards.
July 2008	- Added a note in Chapter 7, Create Optical Channel Circuits and Provisionable Patchcords, section DLP-G437 Set OCH Circuit Attributes. - Added DLP-G475 View the PM Parameters for All Facilities to Chapter 8, Monitor Performance. - Updated DLP-G429 in Chapter 11, Change DWDM Card Settings. - Added new NTP-G209 Create, Edit, and Delete Optical Sides and DLPs within the NTP. - Updated the fuse ratings in the following sections in Chapter 1, Install the Shelf and Common Control Cards: - DLP-G5 Mount the Shelf Assembly in a Rack (One Person) - NTP-G7 Install the Power and Ground - DLP-G19 Turn On and Verify Office Power - DLP-G6 Mount the Shelf Assembly in a Rack (Two People) - DLP-G7 Mount Multiple Shelf Assemblies in a Rack

Date	Notes
September 2008	Following changes made in Chapter 3, Turn Up a Node: • Added a note in G152 Create and Verify Internal Patchcords section • Added notes in G209 Create, Edit, and Delete Optical Sides section • Removed reference to 40-DMX-CE card in the following procedures: – NTP-G185 Install Fiber-Optic Cables between Mesh Nodes – DLP-G430 Install Fiber-Optic Cables from the 40-MUX-C and 40-DMX-C Cards in a Mesh Node to the 40-Channel Patch-Panel Tray
November 2008	Updated the procedure, "NTP-G159: Configure a Cisco Catalyst 2950 for a Multishelf Node" in the chapter Install the Shelf and Common Control Cards.
December 2008	• Updated the NTP-G194 procedure title to read as Set Up EMS Secure Access to the ONS 15454. • Added new "NTP-G229 Provision DCN Extension for a Network Using GCC/DCC" and "DLP-G472 Merge two OCHNC DCN Circuits" in Chapter 7, Create Optical Channel Circuits and Provisionable Patchcords. • Added a note in the "Change the 10G Data Muxponder Port Mode" section of Chapter 5 Provision Transponder and Muxponder Cards
January 2009	• Added "DLP-G507 Enable a Different GE_XP or 10GE_XP Card as the Master Card" in Chapter 5, Provision Transponder and Muxponder Cards. • Updated "DLP-G506 Provision the ADM-10G Client Port Alarm and TCA Thresholds" in Chapter 5, Provision Transponder and Muxponder Cards.
February 2009	• Updated NTP-G188 in Chapter 4, Perform Node Acceptance Tests. • Added a note in the "Create a Y-Cable Protection Group" section of Chapter 5 Provision Transponder and Muxponder Cards. • Updated note in DLP-G387 in Chapter 5, Provision Transponder and Muxponder Cards.
May 2009	• Updated Ingress COS description in DLP-G380 in Chapter 5, Provision Transponder and Muxponder Cards. • Updated DLP-G381 in the chapter, Provision Transponder and Muxponder Cards. • Added note on CVLAN range in DLP- G384 in Chapter 5, Provision Transponder and Muxponder Cards. • Updated "CTC Menu and Toolbar Options" section in Appendix A, CTC Information and Shortcuts.
June 2009	• Updated NTP-G200, DLP-G395, DLP-G463, DLP-G464, DLP-G467, and DLP-G466 in the chapter, Create Circuits and Provisionable Patchcords. • Added a note to the table, GE_XP and 10GE_XP Ethernet RMON Variables in the chapter, Provision Transponder and Muxponder Cards.
July 2009	• Added a note on UNI/NNI port in DLP-G380 in Chapter 5, Provision Transponder and Muxponder Cards.
September 2009	• Added a note in "G144 Provision a Multishelf Node" section of Chapter 3, Turn Up a Node.

Date	Notes
October 2009	- Updated the “Clean Fiber Optic Connectors” procedure in Chapter 13, “Maintain the Node”. - Added the “Clean Multi Fiber-Optic Cable Connectors” procedure in Chapter 13, “Maintain the Node”.
November 2009	- Added a note in “10GE_XP or GE_XP Ethernet Settings” table of Chapter , Provision Transponder and Muxponder Cards. - Updated the figure for fan tray assembly (ANSI) in Chapter, “Install the Shelf and Common Control Cards” and Chapter, “Maintain the Node”. - Added a note in “Delete a PPM” procedure in the chapter, “Provision Transponder and Muxponder Cards”. - Updated the section “DLP-G381 Provision the GE_XP and 10GE_XP Layer 2 Protection Settings” in the chapter “Provision Transponder and Muxponder Cards”.
January 2010	Updated NTP-G184 in the chapter, Create Optical Channel Circuits and Provisionable Patchcords.
March 2010	Updated the table 10GE_XP or GE_XP Ethernet Settings in the chapter Provision Transponder and Muxponder Cards.
April 2010	Added a note after the “10GE_XP or GE_XP Ethernet Settings” table.
June 2010	Updated the table with EAP cable length in NTP-G145 in the chapter, Install the Shelf and Common Control Cards.
July 2010	Deleted the section “DLP-G313 Verify OSC-CSM Transmit Power” in the chapter “Turn Up a Node”.
October 2010	- Added a note in the chapters, “Maintain the node” and “Install the Shelf and Common Control Cards”. - Updated the section “DLP-G314 Verify OSCM Transmit Power” in the chapter “Turn Up a Node”.
November 2010	- Added Step 11 and a note to Step 9 in the procedure, “DLP-G18 Connect Office Power to the ONS 15454 ANSI”. - Updated Step 1 in the procedure “DLP-G19 Turn On and Verify Office Power”. - Updated step 21 in “NTP-G42 Perform the Terminal Node with 32WSS and 32DMX Cards Acceptance Test” - Updated step 22 in "NTP-G153 Perform the Terminal Node with 32WSS-L and 32DMX-L Cards Acceptance Test" - Updated step 21 in "NTP-G167 Perform the Terminal Node with 40-WSS-C and 40-DMX-C Cards Acceptance Test"
March 2011	Added a note in the sections “Set the 40-WXC-C OCHNC Parameters”, “Perform the Native Mesh Node Acceptance Test”, and “Perform the Node Upgrade Acceptance Test”.

Date	Notes
April 2011	- Updated step 5 in the procedures “DLP-G463 Create an Automatically Routed STS or VC Circuit” and “DLP-G464 Create a Manually Routed STS or VC Circuit” in the chapter “Create Optical Channel Circuits and Provisionable Patchcords” - Added a note in the procedure “DLP-G403 Create the ADM-10G Peer Group” in the chapter “Provision Transponder and Muxponder Cards”.
June 2011	Updated step 5 in the procedure “Remove Permanently or Remove and Replace DWDM Cards” of the chapter, “Upgrade, Add, and Remove Cards and Nodes”.
October 2011	Updated step 6 in the procedure “DLP-G384 Provision the GE_XP and 10GE_XP QinQ Settings” in the chapter “Provision Transponder and Muxponder Cards”.
December 2011	- Updated the procedure “DLP-G76 Provision DCC/GCC Terminations” in the chapter “Create Optical Channel Circuits and Provisionable Patchcords”. - Updated the following procedures in the chapter “Manage the Node”: - NTP-G85 Modify or Delete OSC Terminations, DCC/GCC Terminations, and Provisionable Patchcords - DLP-G184 Change a DCC/GCC Termination - DLP-G185 Delete a DCC/GCC Termination
February 2012	- Updated the procedure “DLP-G379 Change the GE_XP or 10GE_XP Card Mode” in the chapter “Provision Transponder and Muxponder Cards”. - Updated the Mode parameter in the table “ADM-10G Card Ethernet Settings” in the chapter “Provision Transponder and Muxponder Cards”. - Updated the procedure “DLP-G278 Provision the Optical Line Rate” in the chapter “Provision Transponder and Muxponder Cards”.
March 2012	- Updated the bandwidth parameter in the procedure, “DLP-G383 Provision the GE_XP and 10GE_XP Quality of Service Settings” of the chapter “Provision Transponder and Muxponder Cards”. - Added a note in the procedure “NTP-G354 Create an Internal Patchcord Manually” in the chapter “Turn Up a Node”.
April 2012	Added a note in the procedure “DLP-G368 Change the 10G Multirate Transponder Trunk Wavelength Settings” in the chapter “Provision Transponder and Muxponder Cards”.
May 2012	- Added a note in the procedure “DLP-G507 Enable a Different GE_XP, 10GE_XP, GE_XPE, or 10GE_XPE Card as the Master Card” in the chapter “Provision Transponder and Muxponder Cards”. - Updated the “Set Up SNMP” procedure in the chapter “Turn Up a Node”.
June 2012	Document Part Number revisioned to 78-18108-02 and a full length book-PDF was generated.

Date	Notes
July 2012	- Updated the table “GE_XP and 10GE_XP Ethernet RMON Variables” in the chapter “Provision Transponder and Muxponder Cards”. - Updated the task “NTP-G130 Remove a DWDM Node” in the chapter “Add and Remove Nodes”.
September 2012	- Added the “NTP-G333 Add an ADM-10G Card to an Existing Topology” in the chapter “Provision Transponder and Muxponder Cards”. - Updated the procedures “NTP-G60 Create and Delete Overhead Circuits” and “DLP-G76 Provision DCC/GCC Terminations” in the chapter “Create Optical Channel Circuits and Provisionable Patchcords”. - Updated the procedure “NTP-G38 Provision OSC Terminations” in the chapter “Turn Up a Node”.

Document Objectives

This document explains installation, turn up, provisioning, and maintenance for Cisco ONS 15454 dense wavelength division (DWDM) systems. Use this document in conjunction with the appropriate publications listed in the [Related Documentation](#) section.

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

Table 1 *Cisco ONS 15454 Procedure Guide Chapters*

Title	Summary
Chapter 1, “Install the Shelf and Common Control Cards”	Explains how to install the Cisco ONS 15454 ETSI and Cisco ONS 15454 ANSI shelf assemblies.
Chapter 2, “Connect the PC and Log into the GUI”	Explains how to connect Windows PCs and Solaris workstations to the Cisco ONS 15454 and how to log into Cisco Transport Controller (CTC) software.
Chapter 3, “Turn Up a Node”	Explains how to provision a single Cisco ONS 15454 dense wavelength division multiplexing (DWDM) node and turn it up for service.

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

Title	Summary
Chapter 4, “Perform Node Acceptance Tests”	Provides test procedures to verify that installed cards are operating correctly in a Cisco ONS 15454 dense wavelength division multiplexing (DWDM) node.
Chapter 5, “Provision Transponder and Muxponder Cards”	Explains how to provision transponder (TXP), muxponder (MXP), Xponder (GE_XP and 10GE_XP), and ADM-10G cards.
Chapter 6, “Turn Up a Network”	Explains how to turn up and test a Cisco ONS 15454 dense wavelength division multiplexing (DWDM) network.
Chapter 7, “Create Optical Channel Circuits and Provisionable Patchcords”	Explains how to create Cisco ONS 15454 dense wavelength division multiplexing (DWDM) optical channel client connections (OCHCCs), optical channel network connections (OCHNCs), and optical trail circuits.
Chapter 8, “Monitor Performance”	Explains how to enable and view performance monitoring (PM) statistics for the Cisco ONS 15454.
Chapter 9, “Manage Alarms”	Contains the procedures for viewing and managing the alarms and conditions on a Cisco ONS 15454.
Chapter 10, “Manage the Node”	Explains how to modify node provisioning for the Cisco ONS 15454 and perform common management tasks such as monitoring the dense wavelength division multiplexing (DWDM) automatic power control (APC) and span loss values.
Chapter 11, “Change DWDM Card Settings”	Explains how to change line, performance monitoring (PM), and threshold settings on Cisco ONS 15454 DWDM cards.
Chapter 12, “Upgrade, Add, and Remove Cards and Nodes”	Provides procedures for adding and removing dense wavelength division multiplexing (DWDM) cards and nodes.
Chapter 13, “Maintain the Node”	Provides procedures for maintaining the Cisco ONS 15454, including database backup and restoration, removing and replacing cards, viewing the ONS 15454 audit trail, and hardware maintenance procedures.
Chapter 14, “Power Down a Node”	Explains how to power down a node and stop all node activity on the Cisco ONS 15454 ANSI or ETSL.

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

Title	Summary
Appendix A, “CTC Information and Shortcuts”	Describes the Cisco Transport Controller (CTC) views, menus options, tool options, shortcuts, and table display options.
Appendix B, “Installation Without Cisco TransportPlanner”	Explains how to provision ONS 15454 automatic node setup (ANS) parameters without the Cisco TransportPlanner NE Update file.

Related Documentation

Use the *Cisco ONS 15454 DWDM Procedure Guide* in conjunction with the following referenced publications:

- *Cisco ONS 15454 DWDM Reference Manual, Release 8.5*
- *Cisco ONS 15454 DWDM Troubleshooting Guide, Release 8.5*
- *Cisco ONS SONET TL1 Command Guide, Release 8.5*
- *Cisco ONS SONET TL1 Reference Guide, Release 8.5*
- *Cisco ONS SONET TL1 Command Quick Reference Guide, Release 8.5*
- *Cisco ONS 15454 SDH TL1 Command Guide, Release 8.5*
- *Cisco ONS 15454 SDH TL1 Reference Guide, Release 8.5*
- *Cisco ONS 15454 SDH TL1Command Quick Reference Guide, Release 8.5*
- *Release Notes for Cisco ONS 15454 Release 8.5*
- *Release Notes for Cisco ONS 15454 SDH Release 8.5*
- *Cisco TransportPlanner DWDM Operations Guide, Release 8.5*

For an update on End-of-Life and End-of-Sale notices, refer to http://www.cisco.com/en/US/products/hw/optical/ps2006/prod_eol_notices_list.html.

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.

Convention**Application**

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.

boldface 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. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS**Waarschuwing****BELANGRIJKE VEILIGHEIDSINSTRUCTIES**

Dit waarschuwingssymbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij elektrische schakelingen betrokken risico's en dient u op de hoogte te zijn van de standaard praktijken om ongelukken te voorkomen. Gebruik het nummer van de verklaring onderaan de waarschuwing als u een vertaling van de waarschuwing die bij het apparaat wordt geleverd, wilt raadplegen.

BEWAAR DEZE INSTRUCTIES**Varoitus****TÄRKEITÄ TURVALLISUUSOHJEITA**

Tämä varoitusmerkki merkitsee vaaraa. Tilanne voi aiheuttaa ruumiillisia vammoja. Ennen kuin käsittelet laitteistoa, huomioi sähköpiirien käsittelemiseen liittyvät riskit ja tutustu onnettomuuksien yleisiin ehkäisytapoihin. Turvallisuusvaroitusten käännökset löytyvät laitteen mukana toimitettujen käännettyjen turvallisuusvaroitusten joukosta varoitusten lopussa näkyvien lausuntonumeroiden avulla.

SÄILYTÄ NÄMÄ OHJEET

Attention IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS**Warnung WICHTIGE SICHERHEITSHINWEISE**

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.**Avvertenza IMPORTANTI ISTRUZIONI SULLA SICUREZZA**

Questo simbolo di avvertenza indica un pericolo. La situazione potrebbe causare infortuni alle persone. Prima di intervenire su qualsiasi apparecchiatura, occorre essere al corrente dei pericoli relativi ai circuiti elettrici e conoscere le procedure standard per la prevenzione di incidenti. Utilizzare il numero di istruzione presente alla fine di ciascuna avvertenza per individuare le traduzioni delle avvertenze riportate in questo documento.

CONSERVARE QUESTE ISTRUZIONI**Advarsel VIKTIGE SIKKERHETSINSTRUKSJONER**

Dette advarselssymbolet betyr fare. Du er i en situasjon som kan føre til skade på person. Før du begynner å arbeide med noe av utstyret, må du være oppmerksom på farene forbundet med elektriske kretser, og kjenne til standardprosedyrer for å forhindre ulykker. Bruk nummeret i slutten av hver advarsel for å finne oversettelsen i de oversatte sikkerhetsadvarslene som fulgte med denne enheten.

TA VARE PÅ DISSE INSTRUKSJONENE**Aviso INSTRUÇÕES IMPORTANTES DE SEGURANÇA**

Este símbolo de aviso significa perigo. Você está em uma situação que poderá ser causadora de lesões corporais. Antes de iniciar a utilização de qualquer equipamento, tenha conhecimento dos perigos envolvidos no manuseio de circuitos elétricos e familiarize-se com as práticas habituais de prevenção de acidentes. Utilize o número da instrução fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham este dispositivo.

GUARDE ESTAS INSTRUÇÕES

¡Advertencia! INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES**Varning! VIKTIGA SÄKERHETSANVISNINGAR**

Denna varningssignal signalerar fara. Du befinner dig i en situation som kan leda till personskada. Innan du utför arbete på någon utrustning måste du vara medveten om farorna med elkretsar och känna till vanliga förfaranden för att förebygga olyckor. Använd det nummer som finns i slutet av varje varning för att hitta dess översättning i de översatta säkerhetsvarningar som medföljer denna anordning.

SPARA DESSA ANVISNINGAR**FONTOS BIZTONSÁGI ELOÍRÁSOK**

Ez a figyelmeztető jel veszélyre utal. Sérülésveszélyt rejtő helyzetben van. Mielőtt bármely berendezésen munkát végezte, legyen figyelemmel az elektromos áramkörök okozta kockázatokra, és ismerkedjen meg a szokásos balesetvédelmi eljárásokkal. A kiadványban szereplő figyelmeztetések fordítása a készülékhez mellékelt biztonsági figyelmeztetések között található; a fordítás az egyes figyelmeztetések végén látható szám alapján kereshető meg.

ORIZZE MEG EZEKET AZ UTASÍTÁSOKAT!**Предупреждение ВАЖНЫЕ ИНСТРУКЦИИ ПО СОБЛЮДЕНИЮ ТЕХНИКИ БЕЗОПАСНОСТИ**

Этот символ предупреждения обозначает опасность. То есть имеет место ситуация, в которой следует опасаться телесных повреждений. Перед эксплуатацией оборудования выясните, каким опасностям может подвергаться пользователь при использовании электрических цепей, и ознакомьтесь с правилами техники безопасности для предотвращения возможных несчастных случаев. Воспользуйтесь номером заявления, приведенным в конце каждого предупреждения, чтобы найти его переведенный вариант в переводе предупреждений по безопасности, прилагаемом к данному устройству.

СОХРАНИТЕ ЭТИ ИНСТРУКЦИИ**警告 重要的安全性说明**

此警告符号代表危险。您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾提供的声明号码来找到此设备的安全性警告说明的翻译文本。

请保存这些安全性说明

警告 安全上の重要な注意事項

「危険」の意味です。人身事故を予防するための注意事項が記述されています。装置の取り扱い作業を行うときは、電気回路の危険性に注意し、一般的な事故防止策に留意してください。警告の各国語版は、各注意事項の番号を基に、装置に付属の「Translated Safety Warnings」を参照してください。

これらの注意事項を保管しておいてください。

주의 중요 안전 지침

이 경고 기호는 위험을 나타냅니다. 작업자가 신체 부상을 일으킬 수 있는 위험한 환경에 있습니다. 장비에 작업을 수행하기 전에 전기 회로와 관련된 위험을 숙지하고 표준 작업 관례를 숙지하여 사고를 방지하십시오. 각 경고의 마지막 부분에 있는 경고문 번호를 참조하여 이 장치와 함께 제공되는 번역된 안전 경고문에서 해당 번역문을 찾으십시오.

이 지시 사항을 보관하십시오.

Aviso INSTRUÇÕES IMPORTANTES DE SEGURANÇA

Este símbolo de aviso significa perigo. Você se encontra em uma situação em que há risco de lesões corporais. Antes de trabalhar com qualquer equipamento, esteja ciente dos riscos que envolvem os circuitos elétricos e familiarize-se com as práticas padrão de prevenção de acidentes. Use o número da declaração fornecido ao final de cada aviso para localizar sua tradução nos avisos de segurança traduzidos que acompanham o dispositivo.

GUARDE ESTAS INSTRUÇÕES**Advarsel** VIGTIGE SIKKERHEDSANVISNINGER

Dette advarselssymbol betyder fare. Du befinder dig i en situation med risiko for legemesbeskadigelse. Før du begynder arbejde på udstyr, skal du være opmærksom på de involverede risici, der er ved elektriske kredsløb, og du skal sætte dig ind i standardprocedurer til undgåelse af ulykker. Brug erklæringsnummeret efter hver advarsel for at finde oversættelsen i de oversatte advarsler, der fulgte med denne enhed.

GEM DISSE ANVISNINGER**تحذير****إرشادات الأمان الهامة**

يوضح رمز التحذير هذا وجود خطر. وهذا يعني أنك متواجد في مكان قد ينتج عنه التعرض لإصابات. قبل بدء العمل، احذر مخاطر التعرض للصدمات الكهربائية وكن على علم بالإجراءات القياسية للحيولة دون وقوع أي حوادث. استخدم رقم البيان الموجود في آخر كل تحذير لتحديد مكان ترجمته داخل تحذيرات الأمان المترجمة التي تأتي مع الجهاز. قم بحفظ هذه الإرشادات

Upozorenje VAŽNE SIGURNOSNE NAPOMENE

Ovaj simbol upozorenja predstavlja opasnost. Nalazite se u situaciji koja može prouzročiti tjelesne ozljede. Prije rada s bilo kojim uređajem, morate razumjeti opasnosti vezane uz električne sklopove, te biti upoznat sa standardnim načinima izbjegavanja nesreća. U prevedenim sigurnosnim upozorenjima, priloženima uz uređaj, možete prema broju koji se nalazi uz pojedino upozorenje pronaći i njegov prijevod.

SAČUVAJTE OVE UPUTE**Upozornění DŮLEŽITÉ BEZPEČNOSTNÍ POKYNY**

Tento upozorňující symbol označuje nebezpečí. Jste v situaci, která by mohla způsobit nebezpečí úrazu. Před prací na jakémkoliv vybavení si uvědomte nebezpečí související s elektrickými obvody a seznamte se se standardními opatřeními pro předcházení úrazům. Podle čísla na konci každého upozornění vyhledejte jeho překlad v přeložených bezpečnostních upozorněních, která jsou přiložena k zařízení.

USCHOVEJTE TYTO POKYNY**Προειδοποίηση ΣΗΜΑΝΤΙΚΕΣ ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ**

Αυτό το προειδοποιητικό σύμβολο σημαίνει κίνδυνο. Βρίσκεστε σε κατάσταση που μπορεί να προκαλέσει τραυματισμό. Πριν εργαστείτε σε οποιοδήποτε εξοπλισμό, να έχετε υπόψη σας τους κινδύνους που σχετίζονται με τα ηλεκτρικά κυκλώματα και να έχετε εξοικειωθεί με τις συνήθειες πρακτικές για την αποφυγή ατυχημάτων. Χρησιμοποιήστε τον αριθμό δήλωσης που παρέχεται στο τέλος κάθε προειδοποίησης, για να εντοπίσετε τη μετάφρασή της στις μεταφρασμένες προειδοποιήσεις ασφαλείας που συνοδεύουν τη συσκευή.

ΦΥΛΑΞΤΕ ΑΥΤΕΣ ΤΙΣ ΟΔΗΓΙΕΣ**אזהרה****הוראות בטיחות חשובות**

סימן אזהרה זה מסמל סכנה. אתה נמצא במצב העלול לגרום לפציעה. לפני שתעבוד עם ציוד כלשהו, עליך להיות מודע לסכנות הכרוכות במעגלים חשמליים ולהכיר את הנהלים המקובלים למניעת תאונות. השתמש במספר ההוראה המסופק בסופה של כל אזהרה כדי לאתר את התרגום באזהרות הבטיחות המתורגמות שמצורפות להתקן.

שמור הוראות אלה**Opomena VAŽNI BEZBEDNOSNI NAPATSTVIJA**

Симболот за предупредување значи опасност. Се наоѓате во ситуација што може да предизвика телесни повреди. Пред да работите со опремата, бидете свесни за ризикот што постои кај електричните кола и треба да ги познавате стандардните постапки за спречување на несреќни случаи. Искористете го бројот на изјавата што се наоѓа на крајот на секое предупредување за да го најдете неговиот период во преведените безбедносни предупредувања што се испорачани со уредот.

ЧУВАЈТЕ ГИ ОВИЕ НАПАТСТВИЈА

Ostrzeżenie WAŻNE INSTRUKCJE DOTYCZĄCE BEZPIECZEŃSTWA

Ten symbol ostrzeżenia oznacza niebezpieczeństwo. Zachodzi sytuacja, która może powodować obrażenia ciała. Przed przystąpieniem do prac przy urządzeniach należy zapoznać się z zagrożeniami związanymi z układami elektrycznymi oraz ze standardowymi środkami zapobiegania wypadkom. Na końcu każdego ostrzeżenia podano numer, na podstawie którego można odszukać tłumaczenie tego ostrzeżenia w dołączonym do urządzenia dokumencie z tłumaczeniami ostrzeżeń.

NINIEJSZE INSTRUKCJE NALEŻY ZACHOWAĆ**Upozornenie DÔLEŽITÉ BEZPEČNOSTNÉ POKYNY**

Tento varovný symbol označuje nebezpečenstvo. Nachádzate sa v situácii s nebezpečenstvom úrazu. Pred prácou na akomkoľvek vybavení si uvedomte nebezpečenstvo súvisiace s elektrickými obvodmi a oboznámte sa so štandardnými opatreniami na predchádzanie úrazom. Podľa čísla na konci každého upozornenia vyhľadajte jeho preklad v preložených bezpečnostných upozorneniach, ktoré sú priložené k zariadeniu.

USCHOVAJTE SI TENTO NÁVOD

Obtaining Optical Networking Information

This section contains information that is specific to optical networking products. For information that pertains to all of Cisco, refer to the [Obtaining Documentation and Submitting a Service Request](#) section.

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 15454 system. It also includes translations of the safety warnings that appear in the ONS 15454 system documentation.

Cisco Optical Networking Product Documentation CD-ROM

Optical networking-related documentation, including Cisco ONS 15xxx 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.

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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