



About this Guide



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:

- [Document Objectives](#)
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Revision History

Date	Notes
March 2007	Revision History table added. Added a step in DLP-D121 to enable IPPM and clarified Manual Restart definition in ALS Mode.
April 2007	Added new procedure, NTP-A354, to Chapter 10 for mixed grooming mode.
August 2007	Updated About this Guide chapter.
September 2007	Added a note after the steps in the section “DLP-A255 Cross-Connect Card Side Switch Test” in the “DLPs A200 to A299” chapter.
October 2007	Added a note after the steps in the section “NTP-A324 Create Protection Groups” in the “Turn up a Node” chapter.

Date	Notes
November 2007	<p>Added a Note in the sections, DLP-A69 and DLP-A73 in the DLPs A1 to A99 chapter.</p> <p>Added NTP-A360 Enable EMS Secure Access in the Turn up a Node chapter.</p>
July 2008	Deleted the note in User-Supplied Materials section in Chapter 1, Install the Shelf and Backplane Cable.
September 2008	Added a note in NTP-A333 Upgrade the XCVT/XC10G Card to the XC-VXC-10G Card in Chapter 12, Upgrade Cards and Spans.
November 2008	<ul style="list-style-type: none"> • Added new DLPs A596 and A597. • Added a note on display of port name in circuit table in the procedures to provision Ethernet and POS ports for CE-Series and ML Series cards.
March 2009	Updated Caution in DLP-A553 Upgrade DS3XM-6 Cards in a 1:1 Configuration to High-Density DS3XM-12 Electrical Cards section in Chapter 22, DLPs A500 TO A599.
June 2009	<ul style="list-style-type: none"> • Updated the Figure AEP Wire-Wrap Connections to Backplane Pins in Chapter 1, Shelf and Backplane Hardware. • Updated Step 1 in “NTP-A94 Upgrade OC-N Cards and Spans Automatically” in Chapter 12, Upgrade Cards and Spans. • Added a note, Step 3, and Step 10 to “NTP-A333 Upgrade the XCVT/XC10G Card to the XC-VXC-10G Card” in Chapter 12, Upgrade Cards and Spans. • Added “DLP-A600 Perform BLSR Lockout” in Chapter 23, DLPs A600 to A699. • Added “DLP-A601 Remove BLSR Lockout” in Chapter 23, DLPs A600 to A699.
August 2009	<ul style="list-style-type: none"> • Updated the “Add a Path Protection Node” procedure in Chapter 14, “Add and Remove Nodes”. • Updated the shelf assembly part number in Chapter 1, “Install the Shelf and Backplane Cable”.
October 2009	<ul style="list-style-type: none"> • Updated the “Clean Fiber Connectors” procedure in Chapter 15, “Maintain the Node”. • Added the “Clean Multi Fiber-Optic Cable Connectors” procedure in Chapter 19, DLPs A200 to A299. • Added a note in the sections “Create a 1:1 Protection Group,” “Create a 1:N Protection Group,” and “Create a 1+1 Protection Group” in the Chapter 17, DLPs A1 to A99.
November 2009	<ul style="list-style-type: none"> • Added a note in “Delete a PPM from the MRC-12 or OC192-XFP Card” procedure in the chapter, “DLPs A400 to A499”.
December 2009	<ul style="list-style-type: none"> • Updated the fan tray caution in the section “NTP-A7 Install the Fan-Tray Assembly” in the chapter “Install the Shelf and Backplane Cable”.

Date	Notes
January 2010	<ul style="list-style-type: none"> • Updated the sections “DLP-A600 Perform BLSR Lockout” and “DLP-A601 Remove BLSR Lockout” in the chapter “DLPs A600 to A699”. • Updated the section “NTP-A94 Upgrade OC-N Cards and Spans Automatically” in the chapter “Upgrade Cards and Spans”. • Updated the “Add a Path Protection Node” procedure in Chapter 14, “Add and Remove Nodes”. • Updated Step 11 in the procedure “DLP-A448 Convert DS3XM-6 or DS3XM-12 Cards From 1:1 to 1:N Protection”.
March 2011	<ul style="list-style-type: none"> • Added a note in the chapter, “Upgrade Cards and Spans”.
December 2011	<ul style="list-style-type: none"> • Updated the procedure, “NTP-A94 Upgrade OC-N Cards and Spans Automatically” in the chapter, “Upgrade Cards and Spans”.
May 2012	<ul style="list-style-type: none"> • Added a note to “NTP-A94 Upgrade OC-N Cards and Spans Automatically” procedure in the chapter, “Upgrade Cards and Spans”. • Added a new procedure “NTP-A370 Upgrade OC-N Cards Manually” to the chapter, “Upgrade Cards and Spans”. • Updated the “Set Up SNMP” procedure in the chapter “Turn Up a Node”.
August 2012	<ul style="list-style-type: none"> • The full length book-PDF was generated.

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). 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, provisioning 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 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.

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

Title	Summary
Chapter 7, “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.
Chapter 6, “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 8, “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 9, “Monitor Performance”	Includes procedures to change the performance monitoring (PM) display, monitor performance, and manage remote monitoring (RMON) thresholds.
Chapter 10, “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 11, “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 12, “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 13, “Convert Network Configurations”	Includes procedures to convert network configurations, modify a BLSR, and manage BLSR switches.
Chapter 14, “Add and Remove Nodes”	Includes procedures to add or remove BLSR, path protection, or linear nodes from a network configuration.

Table 1 Cisco ONS 15454 Procedure Guide Chapters (continued)

Title	Summary
Chapter 15, “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.
Chapter 16, “Power Down the Node”	Includes the procedure to power down the node.
Chapter 17, “DLPs A1 to A99”	Includes all current tasks (DLPs) from A1 to A99.
Chapter 18, “DLPs A100 to A199”	Includes all current tasks from A100 to A199.
Chapter 19, “DLPs A200 to A299”	Includes all current tasks from A200 to A299.
Chapter 20, “DLPs A300 to A399”	Includes all current tasks from A300 to A399.
Chapter 21, “DLPs A400 to A499”	Includes all current tasks from A400 to A499.
Chapter 22, “DLPs A500 to A599”	Includes all current tasks from A500 to A599.
Appendix A, “CTC Information and Shortcuts”	Includes a description of the CTC views and window features.

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* with the following referenced publications:

- *Cisco ONS 15454 Reference Manual*
Provides detailed card specifications, hardware and software feature descriptions, network topology information, and network element defaults.

- *Cisco ONS 15454 Troubleshooting Guide*
Provides alarm descriptions, alarm and general troubleshooting procedures, and performance monitoring and SNMP parameters.
- *Cisco ONS SONET TL1 Command Guide*
Provides a full TL1 command and autonomous message set including parameters, AIDs, conditions and modifiers for the Cisco ONS 15454, ONS 15327, ONS 15600 and ONS 15310-CL systems.
- *Cisco ONS SONET TL1 Reference Guide*
Provides general information, procedures, and errors for TL1 in the Cisco ONS 15454, ONS 15327, ONS 15600 and ONS 15310-CL systems
- *Ethernet Card Software Feature and Configuration Guide for the Cisco ONS 15454, Cisco ONS 15454 SDH, and Cisco ONS 15327*
Provides software features for all Ethernet cards and configuration information for Cisco IOS on ML-Series cards.
- *Release Notes for the Cisco ONS 15454 Release 6.0*
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.
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. Mielott 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 mellékelte 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 legemeskadedigelse. 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 للحيلولة 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 upoznati 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

הרהר

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

ВАЖНИ БЕЗБЕДНОСНИ НАПАТСТВИЈА

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 ОБИЕ 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, submitting a service request, and gathering additional information, 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>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

