



INDEX

Numerics

1000 W power supplies

- AC power cords [A-13](#)
- form factor (figure) [A-10](#)
- overview [A-10](#)
- specifications [A-11](#)

100-MB SFP transceivers [B-1 to B-3](#)

10-GB transceivers [B-10 to B-16](#)

- X2 transceivers [B-10 to B-16](#)
 - modules supported on [B-10](#)
 - optical transmit and receive specifications [B-14](#)
 - physical and environmental specifications table [B-16](#)
- XENPAK transceivers [B-10 to B-16](#)
 - modules supported on [B-10](#)
 - physical form (figure) [B-11](#)
 - polish face types supported [B-10](#)
 - specifications and cabling distances table [B-11](#)

1300 W AC-input power supplies

- AC power cords [A-17](#)
- form factor (figure) [A-14](#)
- overview [A-13](#)
- specifications [A-15](#)

1300 W DC-input power supplies

- form factor (figure) [A-14](#)
- overview [A-13](#)
- specifications [A-16](#)

1400 W power supplies

- AC power cords [A-21](#)
- form factor (figure) [A-19](#)
- overview [A-18](#)
- power entry module [A-18](#)

- removing and installing [4-3, 4-9](#)
- specifications [A-19](#)

1-GB transceivers

- See either GBIC transceivers or SFP transceivers

2500 W AC-input power supplies

- AC power cords [A-28](#)
- form factor (figure) [A-23](#)
- overview [A-23](#)
- specifications [A-24](#)

2500 W DC-input power supplies

- form factor (figure) [A-24](#)
- overview [A-23](#)
- specifications [A-25](#)

2700 W AC-input power supplies

- AC power cords [A-35](#)
- form factor (figure) [A-29](#)
- overview [A-29](#)
- removing and installing [4-6](#)
- specifications [A-31](#)

2700 W DC-input power supplies

- form factor (figure) [A-30](#)
- overview [A-29](#)
- specifications [A-32](#)

3000 W power supplies

- AC power cords [A-40](#)
- form factor (figure) [A-36](#)
- overview [A-36](#)
- specifications [A-37](#)

4000 W AC-input power supplies

- AC power cords [A-46](#)
- form factor (figure) [A-41](#)
- overview [A-41](#)
- specifications [A-42](#)

- 4000 W DC-input power supplies
 - form factor (figure) [A-42](#)
 - installing [4-42](#)
 - overview [A-41](#)
 - specifications [A-44](#)
- 6000 W AC-input power supplies
 - AC power cords [A-53](#)
 - chassis supported [A-46](#)
 - form factor (figure) [A-47](#)
 - overview [A-46](#)
 - specifications [A-48](#)
- 6000 W DC-input power supplies
 - specifications [A-51](#)
- 8700 W AC-input power supplies
 - AC power cords [A-62](#)
 - chassis supported [A-54](#)
 - form factor (figure) [A-55](#)
 - NEBS system ground restrictions [A-55](#)
 - overview [A-54](#)
 - relay controller box switch [A-60](#)
 - remote power cycling feature [A-60](#)
 - remote power cycling terminal block [A-60](#)
 - specifications [A-55](#)
- 950 W AC-input power supplies
 - AC power cords [A-9](#)
 - form factor (figure) [A-5](#)
 - overview [A-5](#)
 - removing and installing [4-3, 4-9](#)
 - specifications [A-6](#)
- 950 W DC-input power supplies
 - overview [A-5](#)
 - removing and installing [4-3, 4-9, 4-15](#)
 - specifications [A-8](#)
- repacking [C-1](#)
- AC-input PEM
 - installing [4-78](#)
 - removing [4-76](#)
- AC-input power cords
 - 1000 W power supply [A-13](#)
 - 1300 W power supply [A-17](#)
 - 1400 W power supply [A-21](#)
 - 2500 W power supply [A-28](#)
 - 2700 W power supply [A-35](#)
 - 3000 W power supply [A-40](#)
 - 4000 W power supply [A-46](#)
 - 6000 W power supply [A-53](#)
 - 8700 W power supply [A-62](#)
 - 950 W power supply [A-9](#)
 - illustrations [A-63 to A-73](#)
- AC-input power supplies
 - handling (figure) [4-12](#)
 - heat dissipation [D-2, D-3, D-4, D-15](#)
 - installing [4-5, 4-13](#)
 - LEDs [E-4](#)
 - redundancy [A-73](#)
 - removing [4-4](#)
 - removing and replacing [4-9](#)
 - source circuit requirements [2-22](#)
 - troubleshooting [E-4](#)
 - weight (caution) [4-10](#)
- acoustic noise
 - Catalyst 6503-E switches [1-12](#)
 - Catalyst 6503 switches [1-6](#)
 - Catalyst 6504-E switches [1-17](#)
 - Catalyst 6506-E switches [1-28](#)
 - Catalyst 6506 switches [1-22](#)
 - Catalyst 6509-E switches [1-40](#)
 - Catalyst 6509-NEB-A switches [1-53](#)
 - Catalyst 6509-NEB switches [1-47](#)
 - Catalyst 6509 switches [1-34](#)
 - Catalyst 6509-V-E switches [1-59](#)
 - Catalyst 6513-E switches [1-72](#)

A

accessory kit

- console port cable [B-32](#)
- contents [3-5, B-32](#)

- Catalyst 6513 switches [1-66](#)
- adapters
 - console port mode 2 [B-35](#)
 - DB-25 [B-34](#)
 - DB-9 [B-34](#)
 - modem [B-35](#)
- air filter
 - installing [4-93](#)
 - part numbers [4-93](#)
 - recommended change intervals [4-98](#)
- airflow
 - Catalyst 6503 (figure) [2-6](#)
 - Catalyst 6503-E (figure) [2-6](#)
 - Catalyst 6503-E switches [1-12](#)
 - Catalyst 6503 switches [1-7](#)
 - Catalyst 6504-E (figure) [2-7](#)
 - Catalyst 6504-E switches [1-17](#)
 - Catalyst 6506 (figure) [2-7](#)
 - Catalyst 6506-E (figure) [2-8](#)
 - Catalyst 6506-E switches [1-29](#)
 - Catalyst 6506 switches [1-23](#)
 - Catalyst 6509 (figure) [2-9](#)
 - Catalyst 6509-E (figure) [2-10](#)
 - Catalyst 6509-E switches [1-41](#)
 - Catalyst 6509-NEB (figure) [2-11](#)
 - Catalyst 6509-NEB-A (figure) [2-12](#)
 - Catalyst 6509-NEB-A switches [1-54](#)
 - Catalyst 6509-NEB switches [1-48](#)
 - Catalyst 6509 switches [1-35](#)
 - Catalyst 6509-V-E switches [1-60](#)
 - Catalyst 6513 (figure) [2-13](#)
 - Catalyst 6513-E (figure) [2-14](#)
 - Catalyst 6513-E switches [1-73](#)
 - Catalyst 6513 switches [1-67](#)
 - chassis requirements (table) [2-6](#)
 - description [2-5](#)
- alarms
 - major [E-5](#)
 - minor [E-5](#)

- attenuators, using with 1000BASE-ZX GBIC [B-5](#)
- audience, document [iii-xi](#)

B

- brackets
 - See crossbar brackets, shelf brackets, stabilizer brackets
- branch circuit requirements [2-22](#)

C

- cable guides
 - installing on Catalyst 6506-E switches [3-17](#)
 - installing on Catalyst 6506 switches [3-17](#)
 - installing on Catalyst 6509-E switches [3-21](#)
 - installing on Catalyst 6509-NEB switches [3-27](#)
 - installing on Catalyst 6509 switches [3-21](#)
 - installing on Catalyst 6513 switches [3-45](#)
- cable management system (Catalyst 6509-NEB-A switches)
 - installing [3-31](#)
 - replacing the cable guide [3-33](#)
- cabling
 - console ports [B-32](#)
 - requirements and guidelines [2-24](#)
- Catalyst 6503-E switches
 - acoustic noise [1-12](#)
 - airflow [1-12](#)
 - airflow (figure) [2-6](#)
 - chassis, dimensions [1-12](#)
 - environmental specifications [1-11](#)
 - fan trays [1-10](#)
 - features table [1-9](#)
 - form factor (figure) [1-8](#)
 - physical characteristics [1-12](#)
 - power entry modules
 - description [1-10](#)
 - removing and installing [4-75](#)

- power supplies
 - description [1-11](#)
 - removing and installing procedures [4-3](#)
- shock and vibration specifications [1-12](#)
- specifications [1-11](#)
- supervisor engines [1-9](#)
- Catalyst 6503 switches
 - acoustic noise [1-6](#)
 - airflow [1-7](#)
 - airflow (figure) [2-6](#)
 - chassis, dimensions [1-7](#)
 - environmental specifications [1-6](#)
 - fan trays [1-4](#)
 - features table [1-3](#)
 - form factor (figure) [1-2](#)
 - physical characteristics [1-7](#)
 - power entry modules
 - description [1-5](#)
 - removing and installing [4-75](#)
 - power supplies
 - description [1-5](#)
 - installation procedure, AC-input [4-5](#)
 - installation procedure, DC-input [4-18](#)
 - removal procedure, AC-input [4-3](#)
 - removal procedure, DC-input [4-16](#)
 - shock and vibration specifications [1-6](#)
 - specifications [1-6](#)
 - supervisor engines [1-3](#)
- Catalyst 6504-E switches
 - acoustic noise [1-17](#)
 - airflow [1-17](#)
 - airflow (figure) [2-7](#)
 - chassis, dimensions [1-17](#)
 - environmental specifications [1-16](#)
 - fan trays [1-15](#)
 - features table [1-14](#)
 - physical characteristics [1-17](#)
 - power supplies
 - description [1-15](#)
- shock and vibration specifications [1-16](#)
- specifications [1-16](#)
- supervisor engines [1-14](#)
- Catalyst 6506-E switches
 - acoustic noise [1-28](#)
 - airflow [1-29](#)
 - airflow (figure) [2-8](#)
 - environmental specifications [1-28](#)
 - fan trays [1-26](#)
 - features table [1-24](#)
 - installing L brackets and cable guides [3-17](#)
 - physical characteristics [1-29](#)
 - power supplies [1-27](#)
 - shock and vibration specifications [1-28](#)
 - specifications [1-28](#)
 - supervisor engines [1-25](#)
- Catalyst 6506 switches
 - acoustic noise [1-22](#)
 - airflow [1-23](#)
 - airflow (figure) [2-7](#)
 - environmental specifications [1-22](#)
 - fan trays [1-20](#)
 - features table [1-19](#)
 - form factor (figure) [1-18, 1-24](#)
 - installing L brackets and cable guides [3-17](#)
 - physical characteristics [1-23](#)
 - power supplies [1-21](#)
 - rack-mounting [3-48](#)
 - repacking the switch [C-1](#)
 - shock and vibration specifications [1-22](#)
 - specifications [1-22](#)
 - supervisor engines [1-19](#)
- Catalyst 6509-E switches
 - acoustic noise [1-40](#)
 - airflow [1-41](#)
 - airflow (figure) [2-10](#)
 - environmental specifications [1-40](#)
 - fan trays [1-38](#)
 - features table [1-37](#)

- form factor (figure) [1-36](#)
- installing L brackets and cable guides [3-21](#)
- physical characteristics [1-41](#)
- power supplies [1-39](#)
- shock and vibration specifications [1-40](#)
- specifications [1-40](#)
- supervisor engines [1-37](#)
- Catalyst 6509-NEB-A switches
 - acoustic noise [1-53](#)
 - airflow [1-54](#)
 - airflow (figure) [2-12](#)
 - cable management system [3-31](#)
 - dimensions, chassis [1-54](#)
 - environmental specifications [1-53](#)
 - fan trays [1-51](#)
 - features table [1-50](#)
 - form factor (figure) [1-49](#)
 - installing the stabilizer kit [3-50](#)
 - optional air filter [4-93](#)
 - physical characteristics [1-54](#)
 - power supplies
 - description [1-52](#)
 - installation procedure, DC-input [4-15](#)
 - shock and vibration specifications [1-53](#)
 - specifications [1-53](#)
 - supervisor engines [1-50](#)
 - weight [1-54](#)
- Catalyst 6509-NEB switches
 - acoustic noise [1-47](#)
 - airflow [1-48](#)
 - airflow (figure) [2-11](#)
 - environmental specifications [1-47](#)
 - fan trays [1-45](#)
 - features table [1-43](#)
 - form factor (figure) [1-42](#)
 - installing L brackets and cable guides [3-27](#)
 - installing the stabilizer kit [3-50](#)
 - physical characteristics [1-48](#)
 - power supplies [1-46](#)
 - shock and vibration specifications [1-47](#)
 - specifications [1-47](#)
 - supervisor engines [1-43](#)
- Catalyst 6509 switches
 - acoustic noise [1-34](#)
 - airflow [1-35](#)
 - airflow (figure) [2-9](#)
 - environmental specifications [1-34](#)
 - fan trays [1-32](#)
 - features table [1-31](#)
 - form factor (figure) [1-30](#)
 - installing L brackets and cable guides [3-21](#)
 - physical characteristics [1-35](#)
 - power supplies [1-33](#)
 - repacking the switch [C-1](#)
 - shock and vibration specifications [1-34](#)
 - specifications [1-34](#)
 - supervisor engines [1-31](#)
- Catalyst 6509-V-E switches
 - acoustic noise [1-59](#)
 - airflow [1-60](#)
 - dimensions, chassis [1-60](#)
 - environmental specifications [1-59](#)
 - fan trays [1-57](#)
 - features table [1-56](#)
 - form factor (figure) [1-55](#)
 - physical characteristics [1-60](#)
 - power supplies
 - description [1-58](#)
 - shock and vibration specifications [1-59](#)
 - specifications [1-59](#)
 - supervisor engines [1-56](#)
 - weight [1-60](#)
- Catalyst 6513-E switches
 - acoustic noise [1-72](#)
 - airflow [1-73](#)
 - airflow (figure) [2-14](#)
 - environmental specifications [1-72](#)
 - fan trays [1-70](#)

- features table [1-69](#)
- form factor (figure) [1-68](#)
- installing the stabilizer kit [3-50](#)
- physical characteristics [1-73](#)
- power supplies [1-71](#)
- shock and vibration specifications [1-72](#)
- specifications [1-72](#)
- supervisor engines [1-69](#)
- Catalyst 6513 switches
 - acoustic noise [1-66](#)
 - airflow [1-67](#)
 - airflow (figure) [2-13](#)
 - environmental specifications [1-66](#)
 - fan trays [1-64](#)
 - features table [1-62](#)
 - form factor (figure) [1-61](#)
 - installing cable guides [3-45](#)
 - installing the stabilizer kit [3-50](#)
 - physical characteristics [1-67](#)
 - power supplies [1-65](#)
 - shock and vibration specifications [1-66](#)
 - specifications [1-66](#)
 - supervisor engines [1-62](#)
- category 5e static electricity caution [2-16, 2-18, 2-24, B-24, B-26](#)
- category 6a static electricity caution [2-16, 2-18, 2-24, B-24](#)
- category 6 static electricity caution [2-16, 2-18, 2-24, B-24, B-26](#)
- chassis airflow [2-5](#)
- checklist, site preparation [2-24](#)
- cleaning
 - guidelines [B-39](#)
- connecting
 - console ports [B-32](#)
 - modems [3-62](#)
 - power sources [4-13](#)
 - system ground [3-53](#)
 - terminals [3-62](#)
 - uplink ports [3-63](#)
- connectors
 - fiber optic [B-39](#)
 - LC optical [B-30](#)
 - MT-RJ [B-29](#)
 - SC optical [B-28](#)
- connector specifications
 - See specific types of connectors
- console ports
 - DB-25 adapters [B-34](#)
 - DB-9 adapter [B-34](#)
 - mode 1 pinout (table) [B-34](#)
 - port mode switches [B-33](#)
 - signaling
 - mode 1 [B-34](#)
 - signaling and pinouts
 - mode 2 [B-35](#)
- conventions, documentation [iii-xii](#)
- crossbar brackets
 - installing [3-48](#)
- customer service [E-7](#)
- CWDM GBIC transceivers
 - description [B-17](#)
 - modules supported on [B-17](#)
 - physical form (figure) [B-19](#)
- CWDM GBIC transceivers
 - wavelength table [B-19](#)
- CWDM SFP transceivers
 - description [B-18](#)
 - modules supported on [B-18](#)
 - physical form (figure) [B-21](#)
 - product numbers and color codes [B-21](#)

D

- DB-9 adapters
 - console port mode 1 [B-34](#)
- DC-input power supplies
 - connecting system ground [3-53](#)
 - figure [4-20, 4-21](#)

- installing [4-24](#)
- LEDs [E-4](#)
- redundancy [A-73](#)
- removing [4-16, 4-19, 4-79](#)
- removing and replacing [4-9](#)
- troubleshooting [E-4](#)
- weight (caution) [4-20](#)

DC-input power supply

- installing [4-18, 4-81](#)

differential mode delay

- See DMD

dimensions, chassis

- Catalyst 6503-E switches [1-12](#)
- Catalyst 6503 switches [1-7](#)
- Catalyst 6504-E switches [1-17](#)
- Catalyst 6506-E switches [1-29](#)
- Catalyst 6506 switches [1-23](#)
- Catalyst 6509-E switches [1-41](#)
- Catalyst 6509-NEB-A switches [1-54](#)
- Catalyst 6509-NEB switches [1-48](#)
- Catalyst 6509 switches [1-35](#)
- Catalyst 6509-V-E switches [1-60](#)
- Catalyst 6513-E switches [1-73](#)
- Catalyst 6513 switches [1-67](#)

DMD

- correcting [B-38](#)
- description [B-37](#)

documentation

- audience [iii-xi](#)
- conventions [iii-xii](#)
- organization [iii-xi](#)
- related [iii-xix](#)

DWDM GBIC transceivers

- description [B-17](#)
- modules supported on [B-17](#)
- physical form (figure) [B-19](#)
- product numbers and ITU channel numbers [B-20](#)

DWDM XENPAK transceivers

- description [B-18](#)

- modules supported on [B-18](#)
- physical form (figure) [B-23](#)
- product numbers and ITU channel numbers [B-21](#)

E

environmental monitoring

- supervisor engine and switching modules [E-5](#)

environmental specifications

- Catalyst 6503-E switches [1-11](#)
- Catalyst 6503 switches [1-6](#)
- Catalyst 6504-E switches [1-16](#)
- Catalyst 6506-E switches [1-28](#)
- Catalyst 6506 switches [1-22](#)
- Catalyst 6509-E switches [1-40](#)
- Catalyst 6509-NEB-A switches [1-53](#)
- Catalyst 6509-NEB switches [1-47](#)
- Catalyst 6509 switches [1-34](#)
- Catalyst 6509-V-E switches [1-59](#)
- Catalyst 6513-E switches [1-72](#)
- Catalyst 6513 switches [1-66](#)

ESD

- guidelines [2-20](#)
- preventing [2-20](#)

excessive link spans [B-38](#)

F

fan assemblies

- checking the installation [4-92](#)
- fan status LED [2-5, E-5](#)
- fan tray removal warning [4-84](#)
- installing [4-92](#)
- troubleshooting [E-5](#)

fan tray removal warning [4-84](#)

features

- Catalyst 6503-E switches [1-9](#)
- Catalyst 6503 switches [1-3](#)

Catalyst 6504-E switches [1-14](#)
 Catalyst 6506-E switches [1-24](#)
 Catalyst 6506 switches [1-19](#)
 Catalyst 6509-E switches [1-37](#)
 Catalyst 6509-NEB-A switches [1-50](#)
 Catalyst 6509-NEB switches [1-43](#)
 Catalyst 6509 switches [1-31](#)
 Catalyst 6509-V-E switches [1-56](#)
 Catalyst 6513-E switches [1-69](#)
 Catalyst 6513 switches [1-62](#)

ferrite bead [A-60](#)

Flash code, troubleshooting [E-3](#)

G

GBIC transceivers [B-3 to B-6](#)

attenuators [B-5](#)

cabling specifications (table) [B-5](#)

modules supported on [B-4](#)

optical GBICs physical form (figure) [B-5](#)

WS-G5483 copper GBICs physical form (figure) [B-4](#)

Gigabit Ethernet

DMD occurrences [B-37](#)

grounding. See system ground

guidelines, rack-mounting the switch [3-3](#)

I

IEEE 802.3z [B-37](#)

installing

patch cords [B-37](#)

shelf brackets [3-48](#)

installing the switch

rack-mounting

tools required [3-48](#)

troubleshooting [E-1](#)

IP phones

power and heat numbers [D-3](#)

L

lasers

transmission comparison (figure) [B-38](#)

LC connectors

figure [B-30](#)

LC optical connectors [B-30](#)

LEDs

at startup [E-3](#)

fan assemblies [E-5](#)

modules [E-5](#)

power supplies [E-4](#)

transmission [B-37](#)

transmission comparison (figure) [B-38](#)

light pathways

See modes

link spans

excessive limits [B-38](#)

LX/LH GBICs [B-36](#)

M

modem adapters [B-35](#)

modes

fiber [B-37](#)

modules

LEDs [E-5](#)

status LED [E-2](#)

troubleshooting [E-5](#)

MT-RJ connectors

cleaning [B-39](#)

description [B-29](#)

O

organization, document [iii-xi](#)

overfilled launch condition [B-37](#)

P

packing material [C-1](#)

patch cords

configuration example [B-36](#)

differential mode delay [B-37](#)

figure [B-37](#)

installation [B-37](#)

LX/LH GBICs [B-36](#)

PEM

installing [4-78](#)

removing [4-76](#)

removing and installing [4-75](#)

physical and environmental specifications tables

transceivers

1-GB SFP transceivers [B-9](#)

physical and environmental specifications tables

transceivers

100-MB SFP transceivers [B-3](#)

GBIC transceivers [B-6](#)

X2 transceivers [B-16](#)

physical characteristics

Catalyst 6503 [1-7](#)

Catalyst 6503-E [1-12](#)

Catalyst 6504-E [1-17](#)

Catalyst 6506-E switches [1-29](#)

Catalyst 6506 switches [1-23](#)

Catalyst 6509-E [1-41](#)

Catalyst 6509-NEB-A switches [1-54](#)

Catalyst 6509-NEB switches [1-48](#)

Catalyst 6509 switches [1-35](#)

Catalyst 6509-V-E switches [1-60](#)

Catalyst 6513-E switches [1-73](#)

Catalyst 6513 switches [1-67](#)

port mode switches

mode 1 [B-34](#)

mode 2 [B-35](#)

using [B-33](#)

power

shut down sequence [A-77](#)

troubleshooting [E-2](#)

power and heat values

chassis [D-2](#)

fan trays [D-2](#)

IP phones [D-3](#)

modules [D-15](#)

supervisor engines [D-4](#)

power cords

See AC-input power cords

power down sequence [A-77](#)

power entry modules

Catalyst 6503-E switches requirement [1-10](#)

Catalyst 6503 switches requirement [1-5](#)

description [A-18](#)

form factor (figure) [A-5](#)

overview [A-5](#)

removing and installing [4-75](#)

power requirements

branch circuit requirements [2-22](#)

site preparation [2-22](#)

UPS selection [2-22](#)

power supplies

AC power cord figures [A-63](#)

Catalyst 6503-E switches [1-11](#)

Catalyst 6503 switches [1-5](#)

Catalyst 6504-E switches [1-15](#)

Catalyst 6506-E switches [1-27](#)

Catalyst 6506 switches [1-21](#)

Catalyst 6509-E switches [1-39](#)

Catalyst 6509-NEB-A switches [1-52](#)

Catalyst 6509-NEB switches [1-46](#)

Catalyst 6509 switches [1-33](#)

Catalyst 6509-V-E switches [1-58](#)

Catalyst 6513-E switches [1-71](#)

Catalyst 6513 switches [1-65](#)

chassis compatibility matrix [A-2](#)

DC power cable leads color coding [2-23](#)

mixing AC-input and DC-input in the same chassis [A-2](#)
 See specific AC-input power supplies or DC-input power supplies

R

R/O WDM GBIC transceivers

description [B-17](#)
 modules supported on [B-17](#)

R/O WDM XENPAK transceivers

description [B-18](#)
 modules supported on [B-18](#)

rack-mount kits

guidelines [3-3](#)
 installation restrictions [3-48](#)

redundancy, power supplies [A-73](#)

Regulatory Compliance and Safety Information [iii-xix](#)

remote power cycling feature

8700W power supply terminal block [A-60](#)
 components (figure) [A-60](#)
 ferrite bead [A-60](#)
 operation [A-61](#)
 overview [A-60](#)
 relay controller box [A-60](#)
 switch settings and operation [A-61](#)

removal and replacement procedures

AC-input PEM [4-75](#)
 AC-input power supplies [4-6, 4-9, 4-10](#)
 cable management system [3-31](#)
 DC-input power supplies [4-19](#)
 DC-input power supply [4-16, 4-79](#)

repacking switches [C-1](#)

RJ-21 connectors

description [B-25](#)
 figure [B-25](#)
 pinout (table) [B-26](#)
 pinout (table) (WS-X6624-FXS only) [B-27](#)

RJ-45 connectors

description [B-24](#)

figure [B-24](#)

rollover cables

figure [B-33](#)

identifying colors [B-33](#)

S

SC connectors

description [B-28](#)
 figure [B-28](#)

selecting a UPS [2-22](#)

service and support [E-7](#)

SFP transceivers [B-7 to B-9](#)

100-MB SFP transceivers [B-1 to B-3](#)

cabling specifications (table) [B-2](#)

description [B-1](#)

physical and environmental specifications table [B-3](#)

physical form (figure) [B-2](#)

1-GB SFP transceivers [B-3 to B-9](#)

cabling specifications (table) [B-8](#)

modules supported on [B-4](#)

physical and environmental specifications table [B-9](#)

physical form, optical (figure) [B-7](#)

physical form copper (figure) [B-7](#)

shelf brackets

installation [3-48](#)

shock and vibration specifications

Catalyst 6503-E switches [1-12](#)

Catalyst 6503 switches [1-6](#)

Catalyst 6504-E switches [1-16](#)

Catalyst 6506-E switches [1-28](#)

Catalyst 6506 switches [1-22](#)

Catalyst 6509-E switches [1-40](#)

Catalyst 6509-NEB-A switches [1-53](#)

Catalyst 6509-NEB switches [1-47](#)

Catalyst 6509 switches [1-34](#)

- Catalyst 6509-V-E switches [1-59](#)
 - Catalyst 6513 [1-66](#)
 - Catalyst 6513-E [1-72](#)
 - signaling and pinouts
 - terminal setup [3-62](#)
 - site preparation
 - checklist [2-24](#)
 - site requirements
 - airflow [2-5](#)
 - altitude [2-14](#)
 - corrosion [2-15](#)
 - dust and contamination [2-15](#)
 - EMI [2-15](#)
 - humidity [2-14](#)
 - power interruptions [2-16](#)
 - shock and vibration [2-16](#)
 - temperature [2-2](#)
 - specifications
 - Catalyst 6503-E switches [1-11](#)
 - Catalyst 6503 switches [1-6](#)
 - Catalyst 6504-E switches [1-16](#)
 - Catalyst 6506-E switches [1-28](#)
 - Catalyst 6506 switches [1-22](#)
 - Catalyst 6509 [1-34](#)
 - Catalyst 6509-E switches [1-40](#)
 - Catalyst 6509-NEB-A switches [1-53](#)
 - Catalyst 6509-NEB switches [1-47](#)
 - Catalyst 6509-V-E switches [1-59](#)
 - Catalyst 6513-E switches [1-72](#)
 - Catalyst 6513 switches [1-66](#)
 - stabilizer kits
 - brackets (figure) [3-51](#)
 - installing [3-51](#)
 - startup, troubleshooting [E-2](#)
 - STATUS LEDs
 - alarms [E-5](#)
 - status LEDs [E-2, E-3](#)
 - supervisor engines
 - checking LEDs [E-3](#)
 - troubleshooting [E-3, E-5](#)
 - uplink ports [3-63](#)
 - switches
 - See specific Catalyst switches
 - system ground
 - accessory kit [3-53](#)
 - Catalyst 6503 connector location (figure) [3-54](#)
 - Catalyst 6503-E connector location (figure) [3-54](#)
 - Catalyst 6504-E connector location (figure) [3-55](#)
 - Catalyst 6506 connector location (figure) [3-56](#)
 - Catalyst 6506-E connector location (figure) [3-57](#)
 - Catalyst 6509 connector location (figure) [3-56](#)
 - Catalyst 6509-E connector location (figure) [3-57](#)
 - Catalyst 6509-NEB-A connector location (figure) [3-58](#)
 - Catalyst 6509-NEB connector location (figure) [3-56](#)
 - Catalyst 6513 connector location (figure) [3-57](#)
 - Catalyst 6513-E connector location (figure) [3-57](#)
 - connecting [3-53](#)
 - grounding lug [3-53](#)
 - guidelines [2-17](#)
 - tools required [3-53](#)
-
- ## T
- tools, required for installation [3-48](#)
 - transceivers
 - 10-GBASE-X XENPAKs [B-10](#)
 - 1-GB transceivers [B-3 to B-9](#)
 - troubleshooting
 - contacting customer service [E-7](#)
 - fan assemblies [E-5](#)
 - Flash code [E-3](#)
 - initial boot [E-1](#)
 - methodology [E-2](#)
 - modules [E-5](#)
 - power supplies [E-4](#)
 - startup [E-2](#)
 - supervisor engines [E-5](#)

U

uplink ports

connecting [3-63](#)

V

voltage

specifications [A-26, A-32](#)

W

warnings

conventions [iii-xiv](#)

translations [iii-xiv](#)

warning definition [iii-xiv](#)

WDM transceivers [B-17 to B-23](#)

CWDM GBIC transceivers

CWDM GBICs physical form (figure) [B-19](#)

description [B-17](#)

modules supported on [B-17](#)

wavelength table [B-19](#)

CWDM SFP transceivers

description [B-18](#)

modules supported on [B-18](#)

physical form (figure) [B-21](#)

product numbers and color codes [B-21](#)

DWDM GBIC transceivers

description [B-17](#)

modules supported on [B-17](#)

physical form (figure) [B-19](#)

product numbers and ITU channel numbers [B-20](#)

DWDM XENPAK transceivers

description [B-18](#)

modules supported on [B-18](#)

physical form (figure) [B-23](#)

product numbers and ITU channel numbers [B-21](#)

R/O WDM GBIC transceivers

description [B-17](#)

modules supported on [B-17](#)

R/O WDM XENPAK transceivers

description [B-18](#)

modules supported on [B-18](#)

weight

Catalyst 6503-E switches [1-12](#)

Catalyst 6503 switches [1-7](#)

Catalyst 6504-E switches [1-17](#)

Catalyst 6506-E switches [1-29](#)

Catalyst 6506 switches [1-23](#)

Catalyst 6509-E switches [1-41](#)

Catalyst 6509-NEB-A switches [1-54](#)

Catalyst 6509-NEB switches [1-48](#)

Catalyst 6509 switches [1-35](#)

Catalyst 6509-V-E switches [1-60](#)

Catalyst 6513-E switches [1-73](#)

Catalyst 6513 switches [1-67](#)

XX2 transceivers [B-13 to B-16](#)

cabling specifications [B-14](#)

form factor (figure) [B-13](#)

modules supported on [B-10](#)

optical transmit and receive specifications [B-14](#)

serial number locator (figure) [B-16](#)

support on WS-X6708-10G-xx modules [B-15](#)

XENPAK transceivers [B-10 to B-12](#)

modules supported on [B-10](#)

physical form (figure) [B-11](#)

polish face types supported [B-10](#)

specifications and cabling distances table [B-11](#)