



INDEX

Symbols

* (asterisk)

first operational port [8-23](#)

Numerics

12-port 4-Gbps switching modules

BB_credit buffers [6-12](#)

configuration guidelines [5-23](#)

default settings [5-20](#)

See also switching modules

16-port switching modules

configuring BB_credits [6-2](#)

LEDs [2-11](#)

See also switching modules

24-port 4-Gbps switching modules

bandwidth fairness [5-14](#)

default settings [5-20](#)

example configurations [5-46, 5-48, 6-11](#)

oversubscription [5-12](#)

shared resources [5-11](#)

See also switching modules

24-port 8-Gbps switching modules

default settings [5-21](#)

example configurations [6-7](#)

32-port switching modules

configuring BB_credits [6-2](#)

See also switching modules

4/44-port 8-Gbps switching modules

default settings [5-21](#)

example configurations [6-8](#)

48-port 4-Gbps switching modules

bandwidth fairness [5-14](#)

default settings [5-20](#)

example configurations [5-46, 5-47, 6-9](#)

oversubscription [5-12](#)

shared resources [5-11](#)

See also switching modules

48-port 8-Gbps switching modules

default settings [5-21](#)

example configurations [5-45, 6-6](#)

See also switching modules

4-port 10-Gbps switching modules

BB_credit buffers [6-14](#)

configuration guidelines [5-24](#)

default settings [5-20](#)

See also switching modules

A

ACL adjacency sharing

disabling for downgrading [5-42](#)

administrative speeds

configuring [2-10, 2-24](#)

administrative states

description [2-6](#)

setting [2-21](#)

ALPA caches

allocation [2-53](#)

clearing [2-30](#)

description [2-14](#)

displaying contents [2-54](#)

inserting entries manually [2-30](#)

auto mode

configuring [2-23](#)

Send documentation comments to dcnm-san-docfeedback@cisco.com

auto port mode
 description [2-6](#)
 interface configuration [2-2](#)
 autosensing speed
 Generation 2 switching modules [2-10](#)

B

bandwidth fairness
 disabling [5-38](#)
 enabling [5-38](#)
 BB_credit buffers
 12-port 4-Gbps switching module allocations [6-12](#)
 12-port 4-Gbps switching module considerations [6-13](#)
 24-port 4-Gbps switching module allocations [6-11](#)
 24-port 4-Gbps switching module considerations [6-11, 6-12](#)
 24-port 8-Gbps switching module considerations [6-7](#)
 4/44-port 8-Gbps switching module considerations [6-8](#)
 48-port 4-Gbps switching module considerations [6-9](#)
 48-port 8-Gbps switching module considerations [6-6](#)
 4-port 10-Gbps switching module allocations [6-14](#)
 4-port 10-Gbps switching module considerations [6-14, 6-15](#)
 allocation defaults (table) [6-6, 6-7, 6-8, 6-9](#)
 BB_credits
 configuring [6-20](#)
 description [6-1](#)
 reason codes [2-8](#)
 BB_SC
 enabling [6-19, 6-24](#)
 beacon modes
 configuring [2-28](#)
 identifying LEDs [2-11](#)
 bit errors
 reasons [2-12](#)
 bit error thresholds
 configuring [2-12, 2-28](#)

description [2-12, 2-28](#)

B port mode
 description [2-6](#)
 interface modes [2-6](#)
 bridge port mode. See B port mode
 buffer pools
 Generation 2 switching modules [6-2](#)
 buffer-to-buffer credits. See BB_credits
 buffer-to-buffer start change. See BB_SC

C

Cisco MDS 9216i switches
 configuring extended BB_credits [6-17](#)
 configuring NPV [9-10](#)

D

dedicated rate mode
 description [5-6](#)
 migrating from shared rate mode [5-22](#)
 migrating to shared rate mode [5-22](#)
 destination IDs
 exchange based [8-5](#)
 flow based [8-4](#)
 domain IDs
 assignment failures [2-9](#)
 domain manager
 isolation [2-9](#)
 downgrading
 disabling ACL adjacency sharing [5-42](#)
 dynamic bandwidth management
 description [5-9](#)

E

EISLs
 PortChannel links [8-2](#)

Send documentation comments to dcnm-san-docfeedback@cisco.com

enhanced ISLs. See EISLs

E port mode

classes of service [2-3](#)

description [2-3](#)

E ports

32-port guidelines [2-18](#)

32-port switching module configuration guidelines [8-14](#)

configuring [2-22](#)

isolation [2-9](#)

Ethernet interface

configuring [3-1](#)

default settings [3-1](#)

interface information [3-2](#)

Device Manager [3-2](#)

Fabric Manager [3-2](#)

overview [3-1](#)

exchange link parameter. See ELP

expansion port mode. See E port mode

extended BB_credits

configuring [6-22](#)

displaying information [6-25](#)

Generation 2 switching modules [6-16](#)

licensing [6-16](#)

F

fabric loop port mode. See FL port mode

fabric port mode. See F port mode

fcdomains

overlap isolation [2-9](#)

FCoE Configuration Wizard [4-6](#)

Fiber Channel interfaces

configuring system default port mode f [2-23](#)

Fibre Channel interfaces

administrative states [2-6](#)

BB_credits [6-1](#)

configuring [2-21](#)

configuring auto port mode [2-23](#)

configuring beacon modes [2-28](#)

configuring bit error thresholds [2-12, 2-28](#)

configuring descriptions [2-26](#)

configuring frame encapsulation [2-10](#)

configuring port modes [2-22](#)

configuring port speed group [2-25](#)

configuring receive data field sizes [6-20](#)

configuring speeds [2-10, 2-24](#)

default settings [2-19, 5-20, 7-10, 8-16](#)

deleting from PortChannels [8-9](#)

disabling [2-21](#)

displaying capabilities on Generation 2 switching modules [5-43](#)

displaying information [2-44 to 2-51](#)

enabling [2-21](#)

graceful shutdown [2-9](#)

modes [2-2 to 2-6](#)

operational states [2-6](#)

performance buffers [6-2](#)

reason codes [2-7](#)

states [2-6](#)

taking out of service on Generation 2 switching modules [5-39](#)

troubleshooting operational states [2-8](#)

See also interfaces [2-6](#)

FL port mode

classes of service [2-3](#)

description [2-3](#)

FL ports

configuring [2-22](#)

description [2-3](#)

nonparticipating code [2-9](#)

See also Fx ports

F port mode

classes of service [2-3](#)

description [2-3](#)

F ports

configuring [2-22](#)

description [2-3](#)

Send documentation comments to dcnm-san-docfeedback@cisco.com

See also Fx ports

frame encapsulation

configuring [2-10](#)

Fx ports

32-port default [2-18](#)

configuring [2-22](#)

description [2-5](#)

interface modes [2-5](#)

See also F ports; FL ports [2-5](#)

G

Generation 1 switching modules

extended BB_credits [6-17](#)

port index allocations [5-15](#)

Generation 2 switching modules

buffer groups [6-2 to 6-14](#)

configuring port speeds [5-26](#)

configuring rate modes [5-27](#)

default settings [5-20](#)

description [5-1 to 5-3](#)

disabling ACL adjacency sharing [5-42](#)

displaying port resources [5-40](#)

dynamic bandwidth management [5-9](#)

extended BB_credits [6-16, 6-18](#)

interface capabilities [5-43](#)

out-of-service interfaces [5-11](#)

port groups [5-3](#)

port index allocations [5-15](#)

port rate modes [5-4](#)

recovering from powered-down state [5-18](#)

releasing shared resources [5-41](#)

taking interfaces out of service [5-39](#)

Generation 3 switching modules

default settings [5-21](#)

interfaces

adding to PortChannels [8-8, 8-20](#)

configuring data field size [6-25](#)

configuring descriptions [2-26](#)

default settings [2-19, 5-20, 7-10, 8-16](#)

deleting from PortChannels [8-9](#)

displaying information [2-44 to 2-51](#)

displaying SFP information [2-50](#)

forced addition to PortChannels [8-9, 8-21](#)

isolated states [8-9](#)

SFP types [2-53](#)

suspended states [8-9](#)

interface statistics

gathering [2-52](#)

IPv4 default gateways

configuring mgmt0 interfaces [2-17](#)

ISLs

PortChannel links [8-2](#)

L

LEDs

beacon mode states [2-11](#)

speed [2-11](#)

licenses

extended BB_credits [6-16, 6-17](#)

load balancing

description [8-4](#)

PortChannels [8-2](#)

M

management interfaces

configuring [2-17, 2-39](#)

default settings [2-19, 5-20, 7-10, 8-16](#)

displaying information [2-57](#)

features [2-17](#)

Send documentation comments to dcnm-san-docfeedback@cisco.com

mgmt0 interfaces

configuring [2-17, 2-39](#)

default settings [2-19, 5-20, 7-10, 8-16](#)

features [2-17](#)

MPS-14/2 modules

configuring extended BB_credits [6-17](#)

N

NL ports

interface modes [2-6](#)

nonparticipating codes

description [2-9](#)

NPIV

description [9-2](#)

enabling [9-10](#)

NP links [9-5](#)

N port identifier virtualization. See NPIV

NL ports

See also Nx ports

NP-ports [9-5](#)

NPV, configuring [9-10](#)

NPV mode [9-4](#)

O

operational states

configuring on Fibre Channel interfaces [2-22](#)

description [2-6](#)

out-of-service interfaces

description [5-11](#)

oversubscription

disabling restrictions [5-33](#)

enabling restrictions [5-36](#)

Generation 2 switching modules [5-12](#)

ratios [5-12](#)

P

performance buffers

configuring [6-22](#)

description [6-2](#)

PortChannel modes

description [8-6](#)

PortChannel Protocol

autocreation [8-12](#)

configuring autocreation [8-22](#)

converting autocreated groups to manually configured [8-12](#)

creating channel group [8-10](#)

description [8-9](#)

enabling autocreation [8-22](#)

PortChannels

adding interfaces [8-8, 8-20](#)

administratively down [2-9](#)

comparison with trunking [8-3](#)

compatibility checks [8-8](#)

creating [8-18](#)

default settings [8-16](#)

deleting [8-7](#)

deleting interfaces [8-9](#)

examples [8-2](#)

forcing interface additions [8-9, 8-21](#)

Generation 2 switching module interfaces [5-18](#)

interface states [8-9](#)

load balancing [8-4](#)

misconfiguration error detection [8-13](#)

verifying configurations [8-23 to 8-26](#)

port groups

assigning extended BB_credits [6-17](#)

description [5-3](#)

Generation 2 Fibre Channel switching modules [5-3](#)

Generation 3 Fibre Channel switching modules [5-7](#)

port indexes

description [5-15](#)

port modes

Send documentation comments to dcnm-san-docfeedback@cisco.com

- auto [2-6](#)
- description [2-2 to 2-6](#)
- port rate modes
 - configuring [5-27](#)
 - dedicated [5-6](#)
 - description [5-4](#)
 - oversubscribed [5-7](#)
 - shared [5-7](#)
- See also rate modes
- port speed group
 - configuring [2-25](#)
- port speeds
 - configuring [2-10, 2-24](#)
 - configuring on Generation 2 switching module interfaces [5-26](#)
 - displaying configuration [5-26](#)
- private devices
 - TL ports [2-53](#)

R

- rate modes
 - configuring on Generation 2 switching module interfaces [5-27](#)
 - verifying configuration [5-28](#)
- See also port rate modes
- reason codes
 - description [2-7](#)
- receive buffer groups. See buffer groups
- receive data field sizes
 - configuring [6-20](#)
- recovery
 - from powered-down state [5-18](#)

S

- SD port mode
 - description [2-5](#)
 - interface modes [2-5](#)

- SD ports
 - configuring [2-22](#)
- SFPs
 - displaying transmitter types [2-50, 2-53](#)
 - transmitter types [2-12](#)
- shared rate mode
 - description [5-7](#)
 - migrating from dedicated rate mode [5-22](#)
 - migrating to dedicated rate mode [5-22](#)
 - oversubscription [5-12](#)
- source IDs
 - exchange based [8-5](#)
 - flow based [8-4](#)
- SPAN destination port mode. See SD port mode
- SPAN tunnel port mode. See ST port mode
- ST port mode
 - description [2-5](#)
 - interface modes [2-5](#)
 - limitations [2-5](#)
- ST ports
 - interface modes [2-5](#)
- subnet masks
 - configuring mgmt0 interfaces [2-17](#)
- switch ports
 - configuring attribute default values [2-29](#)

T

- TE port mode
 - classes of service [2-4](#)
 - description [2-4](#)
- TE ports
 - trunking restrictions [7-3](#)
- TF port mode
 - classes of service [2-5](#)
 - description [2-5](#)
- TL port mode
 - classes of service [2-4](#)
 - description [2-4](#)

Send documentation comments to dcnm-san-docfeedback@cisco.com

TL ports

- ALPA caches [2-14](#)
- configuring [2-22, 2-29](#)
- description [2-13](#)
- displaying information [2-53](#)
- private devices [2-53](#)
- virtual devices [2-54](#)

translative loop port mode. See TL port mode

trunk-allowed VSAN lists

- description [7-5 to 7-7](#)

trunking

- comparison with PortChannels [8-3](#)
- configuration guidelines [7-10](#)
- configuring modes [7-4](#)
- link state [7-4](#)
- merging traffic [7-10](#)
- restrictions [7-3, 7-7](#)

trunking E port mode. See TE port mode

trunking F port mode. See TF port mode

trunking protocol

- default settings [7-11](#)
- default state [7-4](#)
- detecting port isolation [7-10](#)
- disabling [7-11](#)
- enabling [7-11](#)

trunk mode

- administrative default [2-29](#)
- configuring [7-4, 7-12](#)
- status [7-4](#)

trunk ports

- displaying information [7-14](#)

Device Manager [4-4](#)

Fabric Manager [4-3](#)

creating

Device Manager [4-12](#)

default settings [4-13](#)

deleting [4-13](#)

limitations [4-1](#)

overview [4-1](#)

virtual interface

configuring

FCoE Configuration Wizard [4-6](#)

VLANs

mapping to VSANs [4-5](#)

using Device Manager [4-5](#)

using Fabric Manager [4-5](#)

VSAN IDs

allowed list [7-10](#)

multiplexing traffic [2-4, 2-5](#)

VSAN interfaces

creating [2-40](#)

description [2-17](#)

displaying information [2-58](#)

VSANs

allowed-active [7-7](#)

configuring allowed-active lists [7-13](#)

configuring trunk-allowed lists [7-5 to 7-13](#)

loop devices [2-53](#)

mismatches [2-9](#)

TE port mode [2-4](#)

TF port mode [2-5](#)

trunk-allowed [7-7](#)

VSAN trunking. See trunking

V

virtual devices

- TL ports [2-54](#)

virtual FC interface

- assigning to VSANs [4-6](#)
- configuring [4-2](#)

W

WWNs

suspended connections [2-9](#)

Send documentation comments to dcnm-san-docfeedback@cisco.com

Z

zones

merge failures [2-9](#)