



INDEX

Symbols

* (asterisk)

host time stamps [14-53](#)

A

active zone sets

considerations [7-13](#)

enabling distribution [7-29](#)

aliases

switching between global device aliases and FC aliases [8-11](#)

B

BB_credits

FICON port swapping [14-20](#)

broadcast

routing [10-6](#)

Brocade

native interop mode [15-5](#)

C

CIM

description [15-1](#)

displaying information [15-22](#)

CIM servers

displaying information [15-22, 15-24](#)

Cisco SAN-OS features

changed (table) [1-2](#)

new (table) [1-2](#)

code pages

FICON text string formatting [14-30](#)

company IDs

FC ID allocations [15-4](#)

configuration

saving automatically for FICON [14-14](#)

configuration files

FICON [14-16](#)

Configuring FCoE Using DCNM for SAN [9-3](#)

Control Unit Port. See CUP in-band management

CUP in-band management

blocking restriction [14-37](#)

description [14-19](#)

displaying information [14-57](#)

placing CUPs in zones [14-47](#)

D

dead time intervals

configuring for FSPF [10-13](#)

description [10-3](#)

default VSANs

description [4-7](#)

default zones

configuring access permissions [7-24](#)

configuring policies [7-38](#)

configuring QoS priorities [7-37](#)

description [7-6](#)

interoperability [15-6](#)

policies [7-6](#)

destination IDs

in-order delivery [10-6](#)

path selection [4-9](#)

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

device alias database

- committing changes [8-8](#)
- disabling distribution [8-9](#)
- discarding changes [8-9](#)
- distribution to fabric [8-5](#)
- enabling distribution [8-9](#)
- overriding fabric lock [8-5](#)

device aliases

- comparison with zones (table) [8-4](#)
- creating [8-7](#)
- default settings [8-6](#)
- displaying information [?? to 8-14](#)
- features [8-3](#)
- modifying the database [8-5](#)
- requirements [8-4](#)

device allegiance

- FICON [14-34](#)

domain IDs

- configuring fcalias members [7-6](#)
- interoperability [15-6](#)

DPVM

- displaying configurations [6-16](#)
- enabling [6-6](#)
- requirements [6-2](#)
- sample configuration [?? to 6-19](#)
- using DPVM Setup Wizard (procedure) [6-6](#)

DPVM databases

- autolearned entries [6-3](#)
- clearing [6-9](#)
- comparing differences [6-14](#)
- configuring CFS distribution [?? to 6-13](#)
- copying [6-4](#)
- description [6-2](#)
- displaying [6-16](#)
- enabling autolearning [6-9](#)

drop latency time

- configuring [10-19](#)
- configuring for FSPF in-order delivery [10-19](#)
- displaying information [10-23](#)

Dynamic Port VSAN Membership. See DPVM

E

EBCDIC

- FICON string format [14-30](#)

enhanced zones

- advantages over basic zones [7-11](#)
- broadcast frames [7-48](#)
- changing from basic zones [7-43](#)
- configuring default full database distribution [7-49](#)
- configuring default switch-wide zone policies [7-49](#)
- creating attribute groups [7-46](#)
- displaying information [7-59 to 7-62](#)
- enabling [7-44](#)
- merging databases [7-11](#)
- modifying database [7-45](#)

E ports

- FSPF topologies [10-1](#)
- recovering from link isolations [7-8](#)

exchange IDs

- in-order delivery [10-6](#)
- path selection [4-9](#)

Extended Binary-Coded Decimal Interchange Code. See EBCDIC [14-30](#)

F

Fabric-Device Management Interface. See FDMI

Fabric Manager features

- changed (table) [1-2](#)
- new (table) [1-2](#)

fabric pWWNs

- zone membership [7-2](#)

Fabric Shortest Path First. See FSPF

fabric WWNs. See fWWNs

fault tolerant fabrics

- example (figure) [10-26](#)

fcalias

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

- adding members [7-26](#)
- cloning [7-35](#)
- configuring for zones [7-6](#)
- creating [7-25](#)
- renaming [7-34](#)
- FC ID allocation
 - FICON implementation [14-12](#)
- FC IDs
 - allocating [15-4](#)
 - allocating default company ID lists [15-4](#)
 - allocating for FICON [14-12](#)
 - allocation for HBAs [15-4](#)
 - configuring fcalias members [7-6](#)
- FCIP
 - FICON support [14-5](#)
 - reserving ports for FICON [14-12](#)
- FCIP interfaces
 - binding to FICON port numbers [14-36](#)
- FCoE
 - configuring [9-1](#)
 - Device Manager [9-4](#)
 - enabling [9-2](#)
- FCP
 - intermixing protocols [14-5](#)
- ftimers
 - displaying configured values [15-24](#)
 - distribution [15-3](#)
- FDMI
 - description [12-2](#)
 - displaying database information [12-15](#)
- Fibre Channel
 - time out values [15-2 to ??](#)
 - TOVs [15-10](#)
- Fibre Channel interfaces
 - default settings [4-9, 5-7, 6-5, 7-15, 8-6, 10-9, 12-5, 14-21, 15-7](#)
 - displaying VSAN membership [4-16](#)
- Fibre Channel Protocol. See FCP
- Fibre Connection. See FICON
- FICON
 - advantages on MDS switches [14-3 to 14-7](#)
 - automatic configuration save [14-14](#)
 - basic configuration [14-24](#)
 - calculating flow load balance (procedure) [14-48](#)
 - cascading [14-7](#)
 - clearing device allegiance [14-34](#)
 - configuration files [14-15 to 14-43](#)
 - configuring [?? to 14-35](#)
 - configuring ports [14-35 to 14-41](#)
 - CUP in-band management [14-19](#)
 - default settings [14-21](#)
 - description [?? to 14-8](#)
 - FC4 protocols [14-2](#)
 - FC ID allocations [14-12](#)
 - FCIP support [14-5](#)
 - host timestamp control [14-32](#)
 - implemented ports [14-11](#)
 - installed ports [14-11](#)
 - manually enabling [14-28](#)
 - MDS-supported features [14-5](#)
 - PortChannel support [14-5](#)
 - port numbering [?? to 14-12](#)
 - port swapping [14-16 to ??](#)
 - prohibited ports [14-61](#)
 - RLIRs [14-15 to 14-55](#)
 - saving configuration changes [14-14](#)
 - suspending a VSAN [14-29](#)
 - tape acceleration [14-17 to 14-45](#)
 - text string formatting codes [14-30](#)
 - unimplemented port [14-11](#)
 - VSAN offline state [14-29, 14-30](#)
- FICON configuration files
 - applying to running configuration [14-41](#)
 - copying [14-42](#)
 - displaying [14-55](#)
 - displaying information [14-59](#)
 - editing [14-41](#)
 - view latest information [14-42](#)

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

FICON port numbers

- assigning to slots [14-22](#)
- default numbering scheme [14-8](#)
- displaying assignments [14-50](#)
- FCIP interfaces [14-12](#)
- implemented addresses [14-11](#)
- installed ports [14-11](#)
- logical interfaces [14-12](#)
- numbering guidelines [14-20](#)
- PortChannel interfaces [14-12](#)
- port swapping [14-10](#)
- reserved numbering scheme [14-11](#)
- unimplemented addresses [14-11](#)
- uninstalled ports [14-11](#)

FICON ports

- assigning address names [14-39](#)
- assigning address names using Device Manager [14-39](#)
- binding to FCIP interfaces [14-36](#)
- binding to PortChannels [14-36](#)
- blocking [14-37](#)
- configuring prohibiting default state [14-37](#)
- displaying address information [14-57](#)
- displaying administrative states [14-61](#)
- prohibiting [14-15](#)
- swapping configurations [14-43](#)

FICON port swapping

- configuring (procedure) [14-44](#)
- guidelines [14-20](#)

FICON tape acceleration

- configuration considerations [14-21](#)
- configuring [14-44](#)
- description [14-17](#)

FICON tape read acceleration

- configuring [14-45](#)

FLOGI

- displaying details [12-12](#)

flow statistics

- clearing [10-20](#)
- counting [10-20](#)

description [10-8](#)

displaying [10-23](#)

FL ports

DPVM support [6-3](#)

F ports

DPVM support [6-3](#)

FSCN

displaying databases [13-5](#)

FSPF

clearing counters [10-15](#)

clearing VSAN counters [10-12](#)

computing link cost [10-12](#)

configuring globally [10-2 to 10-12](#)

configuring Hello time intervals [10-3](#)

configuring link cost [10-3](#)

configuring on a VSAN [10-10](#)

configuring on interfaces [?? to 10-15](#)

dead time intervals [10-3](#)

default settings [10-9](#)

description [10-1](#)

disabling [10-11](#)

disabling on interfaces [10-14](#)

disabling routing protocols [10-11](#)

displaying database information [10-24](#)

displaying databases [10-21](#)

displaying global information [10-23](#)

displaying information [?? to 10-26](#)

enabling [10-11](#)

fail-over with PortChannels [10-27](#)

fault tolerant fabrics [10-26](#)

in-order delivery [10-6 to 10-23](#)

interoperability [15-7](#)

link state record defaults [10-3](#)

multicast root switches [10-6, 10-17](#)

reconvergence times [10-2](#)

redundant links [10-26](#)

resetting configuration [10-11](#)

resetting to defaults [10-11](#)

retransmitting intervals [10-4](#)

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

- routing services [10-1](#)
 - topology examples [?? to 10-28](#)
 - FSPF multicast roots
 - configuring switches [10-17](#)
 - FSPF routes
 - configuring [10-16](#)
 - description [10-4](#)
 - FSPF routing
 - multicast [10-6](#)
 - full zone sets
 - considerations [7-13](#)
 - enabling distribution [7-29](#)
 - fWWNs
 - configuring fcalias members [7-6](#)
 - Fx ports
 - VSAN membership [4-5](#)
-
- H**
- hard zoning
 - description [7-7](#)
 - HBAs
 - device aliases [8-1](#)
 - FC ID allocations [15-4](#)
 - Hello time intervals
 - configuring for FSPF [10-13](#)
 - description [10-3](#)
 - host control
 - FICON [14-31](#)
-
- I**
- IBM PPRC
 - FICON support [14-5](#)
 - in-band management
 - CUP [14-19](#)
 - in-order delivery
 - configuring drop latency time [10-18](#)
 - displaying status [10-22](#)
 - enabling for VSANs [10-18](#)
 - enabling globally [10-17](#)
 - guidelines [10-8](#)
 - reordering network frames [10-7](#)
 - reordering PortChannel frames [10-7](#)
 - interfaces
 - assigning to VSANs [4-11](#)
 - configuring fcalias members [7-7](#)
 - default settings [4-9, 5-7, 6-5, 7-15, 8-6, 10-9, 12-5, 14-21, 15-7](#)
 - VSAN membership [4-7](#)
 - interoperability
 - configuring interop mode 1 [15-15](#)
 - description [15-5](#)
 - verifying status [15-18](#)
 - VSANs [4-9](#)
 - interop modes
 - configuring mode 1 [15-15](#)
 - default settings [15-7](#)
 - description [15-5](#)
 - IOD. See in-order delivery
 - IPv4 addresses
 - configuring fcalias members [7-7](#)
 - IPv6 addresses
 - configuring fcalias members [7-2, 7-7](#)
 - isolated VSANs
 - description [4-7](#)
 - displaying membership [4-16](#)
 - IVR
 - SDV limitations [5-6](#)
-
- L**
- link costs
 - configuring for FSPF [10-12](#)
 - description [10-3](#)
 - Link Incident Records. See LIRs
 - LIRs

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

- description [14-15](#)
- load balancing
 - attributes [4-9](#)
 - attributes for VSANs [4-6](#)
 - configuring [4-13](#)
 - description [4-9](#)
 - guarantees [4-13](#)
- logical unit numbers. See LUNs
- LUNs
 - displaying automatically discovered SCSI targets [13-6](#)
 - displaying customized discovered SCSI targets [13-6](#)
 - displaying discovered SCSI targets [13-5](#)
- LUN zoning
 - configuring [7-41](#)
 - description [7-10](#)

M

- MAC addresses
 - configuring secondary [15-13](#)
- mainframes
 - FICON parameters [14-32](#)
 - VSAN clock [14-33](#)
- management interfaces
 - default settings [4-9, 5-7, 6-5, 7-15, 8-6, 10-9, 12-5, 14-21, 15-7](#)
- McData
 - native interop mode [15-6](#)
- mgmt0 interfaces
 - default settings [4-9, 5-7, 6-5, 7-15, 8-6, 10-9, 12-5, 14-21, 15-7](#)
- multicast root switches
 - configuring [10-17](#)
 - description [10-6](#)

N

- name servers

- displaying database entries [12-2](#)
- interoperability [15-7](#)
- LUN information [13-1](#)
- proxy feature [12-2](#)
- registering proxies [12-2](#)
- rejecting duplicate pWWNs [12-6](#)
- NL ports
 - hard zoning [7-7](#)
 - zone enforcement [7-7](#)
- node world wide names. See nWWNs
- N ports
 - hard zoning [7-7](#)
 - zone enforcement [7-7](#)
 - zone membership [7-2](#)
- See also Nx ports
- nWWNs
 - DPVM [6-1](#)

P

- PLOGI
 - name server [12-2](#)
- port addresses
 - FICON [14-10](#)
- PortChannels
 - binding to FICON port numbers [14-36](#)
 - configuring Fibre Channel routes [10-16](#)
 - FICON support [14-5](#)
 - in-order guarantee [10-8](#)
 - interoperability [15-6](#)
 - link changes [10-7](#)
 - link failures [10-27](#)
 - reserving ports for FICON [14-12](#)
- port numbers. See FICON port numbers
- ports
 - VSAN membership [4-7](#)
- port swapping. See FICON port swapping
- port world wide names. See pWWNs
- prohibited ports

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

FICON [14-61](#)

proxies

registering for name servers [12-2](#)

pWWNs

configuring fcalias members [7-6](#)

DPVM [6-1](#)

rejecting duplicates [12-6](#)

zone membership [7-2](#)

R

read-only zones

configuration guidelines [7-14](#)

configuring [7-42](#)

description [7-11](#)

redundancy

VSANs [4-5](#)

redundant physical links

example (figure) [10-27](#)

Registered Link Incident Reports. See RLIRs

Registered State Change Notifications. See RSCNs

retransmitting intervals

configuring for FSPF [10-14](#)

description [10-4](#)

RLIRs

clearing information [14-40](#)

conditional receive [14-53](#)

description [14-15](#)

displaying information [14-51 to 14-55](#)

displaying information (procedure) [14-55](#)

specifying preferred host [14-39](#)

route costs

computing [10-3](#)

routing

multicast [10-6](#)

See also broadcast routing

See also IP routing

routing protocols

disabling [10-11](#)

RSCNs

clearing statistics [12-8](#)

default settings [12-5](#)

description [12-3](#)

displaying information [12-16](#)

multiple port IDs [12-3](#)

suppressing domain format SW-RSCNs [12-7](#)

RSCN timers

configuration distribution using CFS [12-4 to 12-18](#)

configuring [12-9](#)

runtime checks

static routes [10-5](#)

S

scalability

VSANs [4-5](#)

SCSI

displaying LUN discovery results [13-6](#)

SCSI LUNs

customized discovery [13-2](#)

discovering targets [13-1](#)

displaying information [13-4](#)

starting discoveries [13-3](#)

SDV

IVR limitations [5-6](#)

secondary MAC addresses

configuring [15-13](#)

small computer system interface. See SCSI

SNMP

FICON control [14-33](#)

soft zoning

description [7-7](#)

See also zoning

source IDs

in-order delivery [10-6](#)

path selection [4-9](#)

SPF

computational hold times [10-3](#)

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

static routes

runtime checks [10-5](#)

T

tape acceleration

FICON [14-17 to 14-45](#)

TE ports

FSPF topologies [10-1](#)

interoperability [15-6](#)

recovering from link isolations [7-8](#)

time out values. See TOVs

timestamps

FICON host control [14-32](#)

TOVs

configuring across all VSANs [15-9](#)

configuring for a VSAN [15-10](#)

default settings [15-7](#)

interoperability [15-6](#)

ranges [15-2](#)

traffic isolation

VSANs [4-5](#)

trunking

interoperability [15-6](#)

trunking ports

associated with VSANs [4-7](#)

V

virtual interface

limitations [9-1](#)

VSAN IDs

description [4-6](#)

range [4-5](#)

VSAN membership [4-5](#)

VSANs

advantages [4-4](#)

broadcast addresses [10-6](#)

clocks [14-32](#)

comparison with zones (table) [4-5](#)

configuring FSPF [10-2](#)

default settings [4-9](#)

default VSANs [4-7](#)

deleting [4-8](#)

description [?? to 4-5](#)

displaying configuration [4-17](#)

displaying membership [4-16](#)

displaying usage [4-17](#)

fabric optimization for FICON [14-3](#)

FC IDs [4-1](#)

features [4-1](#)

FICON-enabled [4-9, 14-30](#)

flow statistics [10-19](#)

FSPF [10-10](#)

FSPF connectivity [10-2](#)

interop mode [15-6](#)

isolated [4-7](#)

load balancing [4-9](#)

load balancing attributes [4-6](#)

multiple zones [7-13](#)

names [4-6](#)

name server [12-2](#)

operational states [4-8](#)

port membership [4-7](#)

states [4-6](#)

suspending for FICON [14-29](#)

timer configuration [15-10](#)

TOVs [15-10](#)

traffic isolation [4-4](#)

trunking ports [4-7](#)

W

wizards

Quick Config Wizard [7-19](#)

world wide names. See WWNs

WWNs

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

configuring [15-3](#)
 displaying information [15-24](#)
 link initialization [15-4](#)
 secondary MAC addresses [15-13](#)

X

XRC

FICON support [14-5](#)

Z

zone attribute groups

cloning [7-35](#)

zone databases

migrating a non-MDS database [7-35](#)
 release locks [7-45](#)

zone members

adding to zones [7-18](#)
 converting to pWWN members [7-26](#)
 displaying information [7-24](#)

zones

access control [7-5](#)
 adding to zone sets [7-27](#)
 adding zone members [7-18](#)
 analyzing [7-62](#)
 assigning LUNs to storage subsystems [7-42](#)
 backing up (procedure) [7-9](#)
 changing from enhanced zones [7-44](#)
 cloning [7-35](#)
 compacting for downgrading [7-50](#)
 comparison with device aliases (table) [8-4](#)
 comparison with VSANs (table) [4-5](#)
 configuring [?? to 7-27](#)
 configuring aliases [7-6](#)
 configuring broadcasting [7-9](#)
 configuring fcaliases [7-6](#)
 CUPs [14-47](#)

default policies [7-2](#)
 displaying information [7-52 to 7-58](#)
 editing full zone databases [7-4](#)
 enforcing restrictions [7-7](#)
 exporting databases [7-8](#)
 features [7-3](#)
 importing databases [7-8](#)
 LUN-based [7-10](#)
 membership using pWWNs [4-5](#)
 renaming [7-34](#)
 restoring (procedure) [7-9](#)
 viewing information [7-58](#)
 See also default zones
 See also hard zoning; soft zoning
 See also LUN zoning
 See also read-only zones
 See also zoning; zone sets

zone server databases

clearing [7-36](#)

zone sets

activating [7-23](#)
 adding member zones [7-27](#)
 analyzing [7-62](#)
 cloning [7-35](#)
 configuring [7-5 to 7-25](#)
 considerations [7-13](#)
 copying [7-8](#)
 creating [7-5, 7-27](#)
 displaying information [7-52 to 7-58](#)
 distributing configuration [7-7](#)
 enabling distribution [7-29](#)
 exporting [7-31](#)
 exporting databases [7-8](#)
 importing [7-31](#)
 importing databases [7-8](#)
 one-time distribution [7-30](#)
 recovering from link isolations [7-8](#)
 renaming [7-34](#)
 viewing information [7-58](#)

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

See also active zone sets

See also active zone sets; full zone sets

See also zones; zoning

zone traffic priorities

configuring [7-36](#)

description [7-9](#)

zoning

configuring broadcasting [7-9](#)

implementation [7-3](#)

Quick Config Wizard [7-19 to 7-21](#)

See also LUN zoning