



INDEX

A

aaa accounting dot1x command **2-1**
aaa authentication dot1x command **2-3, 2-846**
aaa authorization network command **2-5, 2-24, 2-30, 2-32, 2-34, 2-36, 2-38, 2-148, 2-316, 2-485, B-7, B-34**
AAA methods **2-3, 2-846**
access control entries
 See ACEs
access control lists
 See ACLs
access groups
 IP **2-203**
 MAC, displaying **2-613**
 access list, IPv6 **2-273**
 access map configuration mode **2-332**
 access mode **2-803**
 access ports **2-803**
 ACEs **2-133, 2-409**
 ACLs
 deny **2-131**
 displaying **2-466**
 for non-IP protocols **2-320**
 IP **2-203**
 matching **2-332**
 on Layer 2 interfaces **2-203**
 permit **2-407**
 action command **2-6**
 address aliasing **2-380**
 aggregate-port learner **2-395**
 allowed VLANs **2-823**
 archive copy-sw command **2-8**
 archive download-sw command **2-11**

archive tar command **2-15**
archive upload-sw command **2-18**
arp access-list command **2-20**
authentication command bounce-port ignore **2-22**
authentication command disable-port ignore **2-23**
authentication control-direction command **2-24**
authentication event command **2-26**
authentication failed VLAN
 See dot1x auth-fail vlan
authentication fallback command **2-30**
authentication host-mode command **2-32**
authentication mac-move permit command **2-34**
authentication open command **2-36**
authentication order command **2-38**
authentication periodic command **2-40**
authentication port-control command **2-42**
authentication priority command **2-44**
authentication timer command **2-46**
authentication violation command **2-48**
auth-fail max-attempts
 See dot1x auth-fail max-attempts
auth-fail vlan
 See dot1x auth-fail vlan
auth open command **2-36**
auth order command **2-38**
authorization state of controlled port **2-168**
auth timer command **2-46**
autonegotiation of duplex mode **2-181**
auto qos classify command **2-50**
auto qos trust command **2-53**
auto qos voip command **2-56**

B

BackboneFast, for STP **2-724**

backup interfaces

- configuring **2-796**

- displaying **2-543**

boot (boot loader) command **A-2**

boot auto-copy-sw command **2-62**

boot auto-download-sw command **2-63**

boot config-file command **2-66**

boot enable-break command **2-67**

boot helper command **2-68**

boot helper-config file command **2-69**

booting

- Cisco IOS image **2-72**

- displaying environment variables **2-479**

- interrupting **2-63, 2-67**

- manually **2-70**

boot loader

- accessing **A-1**

booting

- Cisco IOS image **A-2**

- helper image **2-68**

directories

- creating **A-15**

- displaying a list of **A-7**

- removing **A-19**

displaying

- available commands **A-12**

- memory heap utilization **A-13**

- version **A-26**

environment variables

- described **A-20**

- displaying settings **A-20**

- location of **A-21**

- setting **A-20**

- unsettting **A-24**

boot loader (continued)

files

- copying **A-5**

- deleting **A-6**

- displaying a list of **A-7**

- displaying the contents of **A-4, A-16, A-23**

- renaming **A-17**

file system

- formatting **A-10**

- initializing flash **A-9**

- running a consistency check **A-11**

prompt **A-1**

resetting the system **A-18**

boot manual command **2-70**

boot private-config-file command **2-71**

boot system command **2-72**

BPDU filtering, for spanning tree **2-725, 2-759**

BPDU guard, for spanning tree **2-727, 2-759**

broadcast storm control **2-780**

C

candidate switches

See clusters

cat (boot loader) command **A-4**

Catalyst 3750G Integrated Wireless LAN Controller Switch **2-457**

CDP, enabling protocol tunneling for **2-297**

channel-group command **2-75**

channel-protocol command **2-79**

Cisco SoftPhone

- auto-QoS configuration **2-56**

- trusting packets sent from **2-371**

CISP

- See Client Information Signalling Protocol

cisp

- debug platform cisp command **B-34**

cisp enable command **2-80**

class command **2-81**

- class-map command **2-84**
- class maps
- creating **2-84**
 - defining the match criteria **2-334**
 - displaying **2-486**
- class of service
- See CoS
- clear dot1x command **2-86**
- clear eap sessions command **2-87**
- clear errdisable interface **2-88**
- clear ip arp inspection log command **2-89**
- clear ip arp inspection statistics command **2-90**
- clear ipc command **2-93**
- clear ip dhcp snooping database command **2-91**
- clear ipv6 dhcp conflict command **2-94**
- clear l2protocol-tunnel counters command **2-95**
- clear lacp command **2-96**
- clear mac address-table command **2-97, 2-99**
- clear nmsp statistics command **2-100**
- clear pagp command **2-101**
- clear port-security command **2-102**
- clear spanning-tree counters command **2-104**
- clear spanning-tree detected-protocols command **2-105**
- clear vmps statistics command **2-106**
- clear vtp counters command **2-107**
- Client Information Signalling Protocol **2-80, 2-148, 2-485, B-7, B-34**
- cluster commander-address command **2-108**
- cluster discovery hop-count command **2-110**
- cluster enable command **2-111**
- cluster holdtime command **2-112**
- cluster member command **2-113**
- cluster outside-interface command **2-115**
- cluster run command **2-116**
- clusters
- adding candidates **2-113**
 - binding to HSRP group **2-117**
 - building manually **2-113**
 - communicating with
 - devices outside the cluster **2-115**
 - members by using Telnet **2-437** - debug messages, display **B-8**
 - displaying
 - candidate switches **2-489**
 - debug messages **B-8**
 - member switches **2-491**
 - status **2-487** - hop-count limit for extended discovery **2-110**
 - HSRP standby groups **2-117**
 - redundancy **2-117**
 - SNMP trap **2-713**
- cluster standby-group command **2-117**
- cluster timer command **2-119**
- command modes defined **1-2**
- command switch
- See clusters
- configuration files
- password recovery disable considerations **A-1**
 - specifying the name **2-66, 2-71**
- configuring multiple interfaces **2-199**
- controller, wireless **2-457**
- copy (boot loader) command **A-5**
- CoS
- assigning default value to incoming packets **2-341**
 - assigning to Layer 2 protocol packets **2-300**
 - overriding the incoming value **2-341**
- CoS-to-DSCP map **2-345**
- CPU ASIC statistics, displaying **2-493**
- crashinfo files **2-192**
- critical VLAN **2-27**

D

debug authentication **B-2**
 debug auto qos command **B-4**
 debug backup command **B-6**
 debug cisp command **B-7**
 debug cluster command **B-8**
 debug dot1x command **B-10**
 debug dtp command **B-12**
 debug eap command **B-13**
 debug etherchannel command **B-14**
 debug ilpower command **B-15**
 debug interface command **B-16**
 debug ip dhcp snooping command **B-17**
 debug ip igmp filter command **B-19**
 debug ip igmp max-groups command **B-20**
 debug ip igmp snooping command **B-21**
 debug ip verify source packet command **B-18**
 debug lacp command **B-22**
 debug lldp packets command **B-23**
 debug mac-notification command **B-24**
 debug matm command **B-25**
 debug matm move update command **B-26**
 debug monitor command **B-27**
 debug mvrdbg command **B-28**
 debug nmfp command **B-29**
 debug nvram command **B-30**
 debug pagp command **B-31**
 debug platform acl command **B-32**
 debug platform backup interface command **B-33**
 debug platform cisp command **B-34**
 debug platform cli-redirection main command **B-35**
 debug platform configuration command **B-36, B-44**
 debug platform cpu-queues command **B-37**
 debug platform device-manager command **B-39**
 debug platform dot1x command **B-40**
 debug platform etherchannel command **B-41**
 debug platform fallback-bridging command **B-42**
 debug platform forw-tcam command **B-43**

debug platform ip arp inspection command **B-45**
 debug platform ipc command **B-56**
 debug platform ip dhcp command **B-46**
 debug platform ip igmp snooping command **B-47**
 debug platform ip multicast command **B-49**
 debug platform ip source-guard command **B-52**
 debug platform ip unicast command **B-53**
 debug platform ip wccp command **B-55**
 debug platform led command **B-57**
 debug platform matm command **B-58**
 debug platform messaging application command **B-59**
 debug platform phy command **B-60**
 debug platform pm command **B-62**
 debug platform port-asic command **B-64**
 debug platform port-security command **B-65**
 debug platform qos-acl-tcam command **B-66**
 debug platform remote-commands command **B-67**
 debug platform resource-manager command **B-68**
 debug platform snmp command **B-69**
 debug platform span command **B-70**
 debug platform stack-manager command **B-71**
 debug platform supervisor-asic command **B-72**
 debug platform sw-bridge command **B-73**
 debug platform tcam command **B-74**
 debug platform udld command **B-77**
 debug platform vlan command **B-78**
 debug platform wireless-controller **B-103**
 debug pm command **B-79**
 debug port-security command **B-81**
 debug qos-manager command **B-82**
 debug spanning-tree backbonefast command **B-85**
 debug spanning-tree bpdu command **B-86**
 debug spanning-tree bpdu-opt command **B-87**
 debug spanning-tree command **B-83**
 debug spanning-tree mstp command **B-88**
 debug spanning-tree switch command **B-90**
 debug spanning-tree uplinkfast command **B-92**
 debug sw-vlan command **B-93**
 debug sw-vlan ifs command **B-95**

- debug sw-vlan notification command **B-96**
 debug sw-vlan vtp command **B-98**
 debug udld command **B-100**
 debug vqpc command **B-102**
 define interface-range command **2-120**
 delete (boot loader) command **A-6**
 delete command **2-122**
 deny (ARP access-list configuration) command **2-124**
 deny (IPv6) command **2-126**
 deny command **2-131**
 detect mechanism, causes **2-183**
 DHCP snooping
 accepting untrusted packets from edge switch **2-234**
 enabling
 on a VLAN **2-240**
 option 82 **2-232, 2-234**
 trust on an interface **2-238**
 error recovery timer **2-189**
 rate limiting **2-237**
 DHCP snooping binding database
 binding file, configuring **2-230**
 bindings
 adding **2-228**
 deleting **2-228**
 displaying **2-563**
 clearing database agent statistics **2-91**
 database agent, configuring **2-230**
 displaying
 binding entries **2-563**
 database agent status **2-565, 2-567**
 renewing **2-444**
 dir (boot loader) command **A-7**
 directories, deleting **2-122**
 domain name, VTP **2-860**
 dot1x auth-fail max-attempts **2-142**
 dot1x auth-fail vlan **2-144**
 dot1x command **2-140**
 dot1x control-direction command **2-146**
 dot1x credentials (global configuration) command **2-148**
 dot1x critical global configuration command **2-149**
 dot1x critical interface configuration command **2-151**
 dot1x default command **2-153**
 dot1x fallback command **2-154**
 dot1x guest-vlan command **2-155**
 dot1x host-mode command **2-158**
 dot1x initialize command **2-160**
 dot1x mac-auth-bypass command **2-161**
 dot1x max-reauth-req command **2-163**
 dot1x max-req command **2-165**
 dot1x multiple-hosts command **2-166**
 dot1x pae command **2-167**
 dot1x port-control command **2-168**
 dot1x re-authenticate command **2-170**
 dot1x re-authentication command **2-171**
 dot1x reauthentication command **2-172**
 dot1x supplicant force-multicast command **2-173**
 dot1x test eapol-capable command **2-174**
 dot1x test timeout command **2-175**
 dot1x timeout command **2-176**
 dot1x violation-mode command **2-179**
 dropping packets, with ACL matches **2-6**
 drop threshold, Layer 2 protocol tunneling **2-297**
 DSCP-to-CoS map **2-345**
 DSCP-to-DSCP-mutation map **2-345**
 DTP **2-804**
 DTP flap
 error detection for **2-183**
 error recovery timer **2-189**
 DTP negotiation **2-808**
 dual-purpose uplink ports
 displaying configurable options **2-546**
 duplex command **2-180**
 dynamic-access ports
 configuring **2-792**
 restrictions **2-793**

dynamic ARP inspection

ARP ACLs

apply to a VLAN **2-211**

define **2-20**

deny packets **2-124**

display **2-470**

permit packets **2-399**

clear

log buffer **2-89**

statistics **2-90**

display

ARP ACLs **2-470**

configuration and operating state **2-558**

log buffer **2-558**

statistics **2-558**

trust state and rate limit **2-558**

enable per VLAN

2-221

error detection for

2-183

error recovery timer

2-189

log buffer

clear **2-89**

configure **2-215**

display **2-558**

rate-limit incoming ARP packets

2-213

statistics

clear **2-90**

display **2-558**

trusted interface state

2-217

type of packet logged

2-222

validation checks

2-219

dynamic auto VLAN membership mode

2-803

dynamic desirable VLAN membership mode

2-803

Dynamic Host Configuration Protocol (DHCP)

See DHCP snooping

Dynamic Trunking Protocol

See DTP

E

EAP-request/identity frame

maximum number to send **2-165**

response time before retransmitting **2-176**

encapsulation methods

2-823

environment variables, displaying

2-479

epm access-control open

2-182

errdisable detect cause command

2-183

errdisable detect cause small-frame comand

2-186

errdisable recovery cause small-frame

2-188

errdisable recovery command

2-189

error conditions, displaying

2-529

error disable detection

2-183

error-disabled interfaces, displaying

2-543

EtherChannel

assigning Ethernet interface to channel group **2-75**

creating port-channel logical interface **2-197**

debug EtherChannel/PAgP, display **B-14**

debug platform-specific events, display **B-41**

displaying **2-533**

enabling Layer 2 protocol tunneling for

LACP **2-298**

PAgP **2-298**

UDLD **2-298**

interface information, displaying **2-543**

LACP

clearing channel-group information **2-96**

debug messages, display **B-22**

displaying **2-603**

modes **2-75**

port priority for hot-standby ports **2-301**

restricting a protocol **2-79**

system priority **2-303**

load-distribution methods **2-417**

EtherChannel (continued)

PAgP

- aggregate-port learner [2-395](#)
- clearing channel-group information [2-101](#)
- debug messages, display [B-31](#)
- displaying [2-662](#)
- error detection for [2-183](#)
- error recovery timer [2-189](#)
- learn method [2-395](#)
- modes [2-75](#)
- physical-port learner [2-395](#)
- priority of interface for transmitted traffic [2-397](#)

Ethernet controller, internal register display [2-495](#)

Ethernet statistics, collecting [2-447](#)

exception crashinfo command [2-192](#)

extended discovery of candidate switches [2-110](#)

extended-range VLANs

- and allowed VLAN list [2-823](#)

- and pruning-eligible list [2-823](#)

extended system ID for STP [2-733](#)

F

- fallback profile command [2-193](#)
- fallback profiles, displaying [2-536](#)
- fan information, displaying [2-523](#)
- file name, VTP [2-860](#)
- files, deleting [2-122](#)
- flash_init (boot loader) command [A-9](#)
- flexible authentication ordering [2-38](#)
- Flex Links
 - configuring [2-796](#)
 - configuring preferred VLAN [2-799](#)
 - displaying [2-543](#)
- flowcontrol command [2-195](#)
- format (boot loader) command [A-10](#)
- forwarding packets, with ACL matches [2-6](#)
- forwarding results, display [C-6](#)
- frame forwarding information, displaying [C-6](#)

front-end controller, counter and status information [C-8](#)

fsck (boot loader) command [A-11](#)

G

global configuration mode [1-2, 1-4](#)

H

hardware ACL statistics [2-466](#)

help (boot loader) command [A-12](#)

hierarchical policy maps [2-415](#)

hop-count limit for clusters [2-110](#)

host connection, port configuration [2-802](#)

host ports, private VLANs [2-806](#)

Hot Standby Router Protocol

See HSRP

HSRP

- binding HSRP group to cluster [2-117](#)

- standby group [2-117](#)

I

IEEE 802.1Q trunk ports and native VLANs [2-852](#)

IEEE 802.1Q tunnel ports

- configuring [2-803](#)

- displaying [2-512](#)

- limitations [2-804](#)

IEEE 802.1x

- and switchport modes [2-804](#)

- violation error recovery [2-189](#)

- See also port-based authentication

IEEE 802.1X Port Based Authentication

- enabling guest VLAN supplicant [2-143, 2-154, 2-194](#)

IGMP filters

- applying [2-243](#)

- debug messages, display [B-19](#)

IGMP groups, setting maximum [2-244](#)

- IGMP maximum groups, debugging **B-20**
- IGMP profiles
- creating **2-246**
 - displaying **2-570**
- IGMP snooping
- adding ports as a static member of a group **2-262**
 - displaying **2-571, 2-576, 2-578**
 - enabling **2-248**
 - enabling the configurable-leave timer **2-250**
 - enabling the Immediate-Leave feature **2-259**
 - flooding query count **2-256**
 - interface topology change notification behavior **2-258**
 - multicast table **2-574**
 - querier **2-252**
 - query solicitation **2-256**
 - report suppression **2-254**
 - switch topology change notification behavior **2-256**
- images
- See software images
- Immediate-Leave feature, MVR **2-382**
- immediate-leave processing **2-259**
- Immediate-Leave processing, IPv6 **2-293**
- interface configuration mode **1-2, 1-4**
- interface port-channel command **2-197**
- interface range command **2-199**
- interface-range macros **2-120**
- interfaces
- assigning Ethernet interface to channel group **2-75**
 - configuring **2-180**
 - configuring multiple **2-199**
 - creating port-channel logical **2-197**
 - debug messages, display **B-16**
 - disabling **2-709**
 - displaying the MAC address table **2-625**
 - restarting **2-709**
- interface speed, configuring **2-769**
- interface vlan command **2-201**
- internal registers, displaying **2-495, 2-505**
- Internet Group Management Protocol
- See IGMP
- invalid GBIC
- error detection for **2-183**
 - error recovery timer **2-189**
- ip access-group command **2-203**
- ip address command **2-206**
- IP addresses, setting **2-206**
- IP address matching **2-332**
- ip admission command **2-208**
- ip admission name proxy http command **2-209**
- ip arp inspection filter vlan command **2-211**
- ip arp inspection limit command **2-213**
- ip arp inspection log-buffer command **2-215**
- ip arp inspection trust command **2-217**
- ip arp inspection validate command **2-219**
- ip arp inspection vlan command **2-221**
- ip arp inspection vlan logging command **2-222**
- ip device tracking command **2-226**
- ip device tracking probe command **2-224**
- IP DHCP snooping
- See DHCP snooping
- ip dhcp snooping binding command **2-228**
- ip dhcp snooping command **2-227**
- ip dhcp snooping database command **2-230**
- ip dhcp snooping information option allow-untrusted command **2-234**
- ip dhcp snooping information option command **2-232**
- ip dhcp snooping information option format remote-id command **2-236**
- ip dhcp snooping limit rate command **2-237**
- ip dhcp snooping trust command **2-238**
- ip dhcp snooping verify command **2-239**
- ip dhcp snooping vlan command **2-240**
- ip dhcp snooping vlan information option format-type circuit-id string command **2-241**
- ip igmp filter command **2-243**
- ip igmp max-groups command **2-244, 2-268, 2-270**
- ip igmp profile command **2-246**
- ip igmp snooping command **2-248**

ip igmp snooping last-member-query-interval command **2-250**
 ip igmp snooping querier command **2-252**
 ip igmp snooping report-suppression command **2-254**
 ip igmp snooping tcn command **2-256**
 ip igmp snooping tcn flood command **2-258**
 ip igmp snooping vlan immediate-leave command **2-259**
 ip igmp snooping vlan mrouter command **2-260**
 ip igmp snooping vlan static command **2-262**
 IP multicast addresses **2-379**
 IP phones
 auto-QoS configuration **2-56**
 trusting packets sent from **2-371**
 IP-precedence-to-DSCP map **2-345**
 ip snap forwarding command **2-264**
 ip source binding command **2-265**
 IP source guard
 disabling **2-272**
 displaying
 binding entries **2-580**
 configuration **2-581**
 dynamic binding entries only **2-563**
 enabling **2-272**
 static IP source bindings **2-265**
 ip ssh command **2-267**
 IPv6 access list, deny conditions **2-126**
 ipv6 access-list command **2-273**
 ipv6 address dhcp command **2-275**
 ipv6 dhcp client request vendor command **2-276**
 ipv6 dhcp ping packets command **2-277**
 ipv6 dhcp pool command **2-278**
 ipv6 dhcp server command **2-280**
 ipv6 mld snooping command **2-282**
 ipv6 mld snooping last-listener-query count command **2-284**
 ipv6 mld snooping last-listener-query-interval command **2-286**
 ipv6 mld snooping listener-message-suppression command **2-288**
 ipv6 mld snooping robustness-variable command **2-289**

ipv6 mld snooping tcn command **2-291**
 ipv6 mld snooping vlan command **2-293**
 IPv6 SDM template **2-448**
 ipv6 traffic-filter command **2-295**
 ip verify source command **2-272**

J

jumbo frames
 See MTU

L

l2protocol-tunnel command **2-297**
 l2protocol-tunnel cos command **2-300**
 LACP
 See EtherChannel
 lacp port-priority command **2-301**
 lacp system-priority command **2-303**
 Layer 2 mode, enabling **2-790**
 Layer 2 protocol ports, displaying **2-600**
 Layer 2 protocol-tunnel
 error detection for **2-183**
 error recovery timer **2-189**
 Layer 2 protocol tunnel counters **2-95**
 Layer 2 protocol tunneling error recovery **2-298**
 Layer 2 traceroute
 IP addresses **2-837**
 MAC addresses **2-834**
 Layer 3 mode, enabling **2-790**
 line configuration mode **1-3, 1-5**
 Link Aggregation Control Protocol
 See EtherChannel
 link flap
 error detection for **2-183**
 error recovery timer **2-189**
 link state group command **2-305**
 link state track command **2-307**

load-distribution methods for EtherChannel **2-417**
location (global configuration) command **2-308**
location (interface configuration) command **2-310**
logging event command **2-312**
logging event power-inline-status command **2-313**
logging file command **2-314**
logical interface **2-197**
loopback error
 detection for **2-183**
 recovery timer **2-189**
loop guard, for spanning tree **2-735, 2-739**

M

mab request format attribute 32 command **2-316**
mac access-group command **2-318**
MAC access-groups, displaying **2-613**
MAC access list configuration mode **2-320**
mac access-list extended command **2-320**
MAC access lists **2-131**
MAC addresses
 disabling MAC address learning per VLAN **2-323**
 displaying
 aging time **2-619**
 all **2-617**
 dynamic **2-623**
 MAC address-table move updates **2-628**
 notification settings **2-627, 2-630**
 number of addresses in a VLAN **2-621**
 per interface **2-625**
 per VLAN **2-634**
 static **2-632**
 static and dynamic entries **2-615**
 dynamic
 aging time **2-322**
 deleting **2-97**
 displaying **2-623**
 enabling MAC address notification **2-327**
 enabling MAC address-table move update **2-325**

MAC addresses (continued)
 matching **2-332**
 persistent stack **2-777**
 static
 adding and removing **2-329**
 displaying **2-632**
 dropping on an interface **2-330**
 tables **2-617**
MAC address notification, debugging **B-24**
mac address-table aging-time **2-318, 2-332**
mac address-table aging-time command **2-322**
mac address-table learning command **2-323**
mac address-table move update command **2-325**
mac address-table notification command **2-327**
mac address-table static command **2-329**
mac address-table static drop command **2-330**
macros
 interface range **2-120, 2-199**
maps
 QoS
 defining **2-345**
 displaying **2-644**
 VLAN
 creating **2-849**
 defining **2-332**
 displaying **2-700**
match (access-map configuration) command **2-332**
match (class-map configuration) command **2-334**
maximum transmission unit
 See MTU
mdix auto command **2-336**
member switches
 See clusters
memory (boot loader) command **A-13**
mkdir (boot loader) command **A-15**

MLD snooping
 configuring [2-288, 2-289](#)
 configuring queries [2-284, 2-286](#)
 configuring topology change notification [2-291](#)
 displaying [2-590, 2-592, 2-594, 2-596](#)
 enabling [2-282](#)

MLD snooping on a VLAN, enabling [2-293](#)

mls qos aggregate-policer command [2-339](#)

mls qos command [2-337](#)

mls qos cos command [2-341](#)

mls qos dscp-mutation command [2-343](#)

mls qos map command [2-345](#)

mls qos queue-set output buffers command [2-349](#)

mls qos queue-set output threshold command [2-351](#)

mls qos rewrite ip dscp command [2-353](#)

mls qos srr-queue input bandwidth command [2-355](#)

mls qos srr-queue input buffers command [2-357](#)

mls qos-srr-queue input cos-map command [2-359](#)

mls qos srr-queue input dscp-map command [2-361](#)

mls qos srr-queue input priority-queue command [2-363](#)

mls qos srr-queue input threshold command [2-365](#)

mls qos-srr-queue output cos-map command [2-367](#)

mls qos srr-queue output dscp-map command [2-369](#)

mls qos trust command [2-371](#)

mls qos vlan-based command [2-373](#)

mode, MVR [2-379](#)

Mode button, and password recovery [2-452](#)

modes, commands [1-2](#)

monitor session command [2-374](#)

more (boot loader) command [A-16](#)

MSTP

- displaying [2-677](#)
- interoperability [2-105](#)
- link type [2-737](#)

MSTP (continued)

MST region

- aborting changes [2-742](#)
- applying changes [2-742](#)
- configuration name [2-742](#)
- configuration revision number [2-742](#)
- current or pending display [2-742](#)
- displaying [2-677](#)
- MST configuration mode [2-742](#)
- VLANs-to-instance mapping [2-742](#)
- path cost [2-744](#)
- protocol mode [2-740](#)
- restart protocol migration process [2-105](#)
- root port

 - loop guard [2-735](#)
 - preventing from becoming designated [2-735](#)
 - restricting which can be root [2-735](#)
 - root guard [2-735](#)

- root switch

 - affects of extended system ID [2-733](#)
 - hello-time [2-747, 2-755](#)
 - interval between BDPU messages [2-748](#)
 - interval between hello BPDU messages [2-747, 2-755](#)
 - max-age [2-748](#)
 - maximum hop count before discarding BPDU [2-749](#)
 - port priority for selection of [2-751](#)
 - primary or secondary [2-755](#)
 - switch priority [2-754](#)

- state changes

 - blocking to forwarding state [2-761](#)
 - enabling BPDU filtering [2-725, 2-759](#)
 - enabling BPDU guard [2-727, 2-759](#)
 - enabling Port Fast [2-759, 2-761](#)
 - forward-delay time [2-746](#)
 - length of listening and learning states [2-746](#)
 - rapid transition to forwarding [2-737](#)
 - shutting down Port Fast-enabled ports [2-759](#)

- MSTP (continued)
- state information display **2-676**
- MTU
- configuring size **2-831**
 - displaying global setting **2-689**
- Multicast Listener Discovery
- See MLD
- multicast group address, MVR **2-382**
- multicast groups, MVR **2-380**
- Multicast Listener Discovery
- See MLD
- multicast router learning method **2-260**
- multicast router ports, configuring **2-260**
- multicast router ports, IPv6 **2-293**
- multicast storm control **2-780**
- multicast VLAN, MVR **2-379**
- multicast VLAN registration
- See MVR
- Multiple Spanning Tree Protocol
- See MSTP
- MVR
- and address aliasing **2-380**
 - configuring **2-379**
 - configuring interfaces **2-382**
 - debug messages, display **B-28**
 - displaying **2-652**
 - displaying interface information **2-654**
 - members, displaying **2-656**
 - mvr (global configuration) command **2-379**
 - mvr (interface configuration) command **2-382**
 - mvr vlan group command **2-383**
-
- N**
- native VLANs **2-823**
 - native VLAN tagging **2-852**
 - network-policy (global configuration) command **2-386**
 - network-policy command **2-385**
- network-policy profile (network-policy configuration) command **2-387**
- nmsp attachment suppress command **2-390**
- nmsp command **2-389**
- no authentication logging verbose **2-391**
- no dot1x logging verbose **2-392**
- no mab logging verbose **2-393**
- nonegotiate, speed **2-769**
- nonegotiating DTP messaging **2-808**
- non-IP protocols
- denying **2-131**
 - forwarding **2-407**
- non-IP traffic access lists **2-320**
- non-IP traffic forwarding
- denying **2-131**
 - permitting **2-407**
- non-stop forwarding **2-394**
- normal-range VLANs **2-848**
- nsf command **2-394**
-
- O**
- online diagnostics
- displaying
 - configured boot-up coverage level **2-509**
 - current scheduled tasks **2-509**
 - event logs **2-509**
 - supported test suites **2-509**
 - test ID **2-509**
 - test results **2-509**
 - test statistics **2-509**
- global configuration mode
- clearing health monitoring diagnostic test schedule **2-89**
 - clearing test-based testing schedule **2-136**
 - setting health monitoring diagnostic testing **2-89**
 - setting test-based testing **2-136**
 - setting up health monitoring diagnostic test schedule **2-89**

online diagnostics (continued)
 global configuration mode
 setting up test-based testing **2-136**
 health monitoring diagnostic tests, configuring **2-134**
 scheduled switchover
 disabling **2-136**
 enabling **2-136**
 scheduling
 enabling **2-136**
 removing **2-136**
 testing, starting **2-138**
 test interval, setting **2-136**

P

PAgP
 See EtherChannel
 pagp learn-method command **2-395**
 pagp port-priority command **2-397**
 password, VTP **2-861**
 password-recovery mechanism, enabling and
 disabling **2-452**
 permit (ARP access-list configuration) command **2-399**
 permit (IPv6) command **2-401**
 permit (MAC access-list configuration) command **2-407**
 per-VLAN spanning-tree plus
 See STP
 physical-port learner **2-395**
 PID, displaying **2-557**
 PIM-DVMRP, as multicast router learning method **2-260**
 PoE
 configuring the power budget **2-421**
 configuring the power management mode **2-418**
 displaying controller register values **2-503**
 displaying power management information **2-669**
 logging of status **2-313**
 police aggregate command **2-412**
 police command **2-410**
 policed-DSCP map **2-345**
 policy-map command **2-414**
 policy maps
 applying to an interface **2-454, 2-461**
 creating **2-414**
 displaying **2-664**
 hierarchical **2-415**
 policers
 displaying **2-637**
 for a single class **2-410**
 for multiple classes **2-339, 2-412**
 policed-DSCP map **2-345**
 traffic classification
 defining the class **2-81**
 defining trust states **2-839**
 setting DSCP or IP precedence values **2-459**
 Port Aggregation Protocol
 See EtherChannel
 port-based authentication
 AAA method list **2-3, 2-846**
 configuring violation modes **2-179**
 debug messages, display **B-10**
 enabling IEEE 802.1x
 globally **2-140**
 per interface **2-168**
 guest VLAN **2-155**
 host modes **2-158**
 IEEE 802.1x AAA accounting methods **2-1**
 initialize an interface **2-160, 2-175**
 MAC authentication bypass **2-161**
 manual control of authorization state **2-168**
 PAE as authenticator **2-167**
 periodic re-authentication
 enabling **2-172**
 time between attempts **2-176**
 quiet period between failed authentication
 exchanges **2-176**
 re-authenticating IEEE 802.1x-enabled ports **2-170**
 resetting configurable IEEE 802.1x parameters **2-153**

port-based authentication (continued)
 switch-to-authentication server retransmission time **2-176**
 switch-to-client frame-retransmission number **2-163 to 2-165**
 switch-to-client retransmission time **2-176**
 test for IEEE 802.1x readiness **2-174**
 port-channel load-balance command **2-417**
 Port Fast, for spanning tree **2-761**
 port ranges, defining **2-120**
 ports, debugging **B-79**
 ports, protected **2-821**
 port security
 aging **2-815**
 debug messages, display **B-81**
 enabling **2-810**
 violation error recovery **2-189**
 port trust states for QoS **2-371**
 port types, MVR **2-382**
 power information, displaying **2-523**
 power inline command **2-418**
 power inline consumption command **2-421**
 Power over Ethernet
 See PoE
 power rps command (user EXEC) **2-423**
 priority-queue command **2-425**
 priority value, stack member **2-684, 2-785**
 private-vlan command **2-427**
 private-vlan mapping command **2-430**
 private VLANs
 association **2-819**
 configuring **2-427**
 configuring ports **2-806**
 displaying **2-695**
 host ports **2-806**
 mapping
 configuring **2-819**
 displaying **2-543**
 promiscuous ports **2-806**

privileged EXEC mode **1-2, 1-3**
 product identification information, displaying **2-557**
 promiscuous ports, private VLANs **2-806**
 protected ports, displaying **2-549**
 pruning
 VLANs **2-823**
 VTP
 displaying interface information **2-543**
 enabling **2-861**
 pruning-eligible VLAN list **2-825**
 PVST+
 See STP

Q

QoS
 auto-QoS
 configuring **2-56**
 debug messages, display **B-4**
 displaying **2-475**
 auto-QoS trust
 configuring **2-53**
 class maps
 creating **2-84**
 defining the match criteria **2-334**
 displaying **2-486**
 defining the CoS value for an incoming packet **2-341**
 displaying configuration information **2-475, 2-636**
 DSCP transparency **2-353**
 DSCP trusted ports
 applying DSCP-to-DSCP-mutation map to **2-343**
 defining DSCP-to-DSCP-mutation map **2-345**

- QoS (continued)
- egress queues
 - allocating buffers [2-349](#)
 - defining the CoS output queue threshold map [2-367](#)
 - defining the DSCP output queue threshold map [2-369](#)
 - displaying buffer allocations [2-640](#)
 - displaying CoS output queue threshold map [2-644](#)
 - displaying DSCP output queue threshold map [2-644](#)
 - displaying queueing strategy [2-640](#)
 - displaying queue-set settings [2-647](#)
 - enabling bandwidth shaping and scheduling [2-773](#)
 - enabling bandwidth sharing and scheduling [2-775](#)
 - limiting the maximum output on a port [2-771](#)
 - mapping a port to a queue-set [2-432](#)
 - mapping CoS values to a queue and threshold [2-367](#)
 - mapping DSCP values to a queue and threshold [2-369](#)
 - setting maximum and reserved memory allocations [2-351](#)
 - setting WTD thresholds [2-351](#)
 - enabling [2-337](#)
 - ingress queues
 - allocating buffers [2-357](#)
 - assigning SRR scheduling weights [2-355](#)
 - defining the CoS input queue threshold map [2-359](#)
 - defining the DSCP input queue threshold map [2-361](#)
 - displaying buffer allocations [2-640](#)
 - displaying CoS input queue threshold map [2-644](#)
 - displaying DSCP input queue threshold map [2-644](#)
 - displaying queueing strategy [2-640](#)
 - displaying settings for [2-638](#)
 - enabling the priority queue [2-363](#)
- QoS (continued)
- ingress queues
 - mapping CoS values to a queue and threshold [2-359](#)
 - mapping DSCP values to a queue and threshold [2-361](#)
 - setting WTD thresholds [2-365](#)
 - maps
 - defining [2-345, 2-359, 2-361, 2-367, 2-369](#)
 - displaying [2-644](#)
 - policy maps
 - applying an aggregate policer [2-412](#)
 - applying to an interface [2-454, 2-461](#)
 - creating [2-414](#)
 - defining policers [2-339, 2-410](#)
 - displaying policers [2-637](#)
 - displaying policy maps [2-664](#)
 - hierarchical [2-415](#)
 - policed-DSCP map [2-345](#)
 - setting DSCP or IP precedence values [2-459](#)
 - traffic classifications [2-81](#)
 - trust states [2-839](#)
 - port trust states [2-371](#)
 - queues, enabling the expedite [2-425](#)
 - statistics
 - in-profile and out-of-profile packets [2-640](#)
 - packets enqueued or dropped [2-640](#)
 - sent and received CoS values [2-640](#)
 - sent and received DSCP values [2-640](#)
 - trusted boundary for IP phones [2-371](#)
 - VLAN-based [2-373](#)
 - quality of service
 - See QoS
 - querytime, MVR [2-379](#)
 - queue-set command [2-432](#)

R

radius-server dead-criteria command [2-433](#)
 radius-server host command [2-435](#)
 rapid per-VLAN spanning-tree plus
 See STP
 rapid PVST+
 See STP
 rcommand command [2-437](#)
 re-authenticating IEEE 802.1x-enabled ports [2-170](#)
 re-authentication
 periodic [2-172](#)
 time between attempts [2-176](#)
 receiver ports, MVR [2-382](#)
 receiving flow-control packets [2-195](#)
 recovery mechanism
 causes [2-189](#)
 display [2-88, 2-481, 2-527, 2-531](#)
 timer interval [2-190](#)
 redundancy for cluster switches [2-117](#)
 redundant power supply
 See RPS
 reload command [2-439](#)
 remote command [2-441](#)
 remote-span command [2-442](#)
 Remote Switched Port Analyzer
 See RSPAN
 rename (boot loader) command [A-17](#)
 renew ip dhcp snooping database command [2-444](#)
 reset (boot loader) command [A-18](#)
 resource templates, displaying [2-672](#)
 restricted VLAN
 See dot1x auth-fail vlan
 rmdir (boot loader) command [A-19](#)
 rmon collection stats command [2-447](#)
 root guard, for spanning tree [2-735](#)
 routed ports
 IP addresses on [2-207](#)
 number supported [2-207](#)

RPS 2300

configuring [2-423](#)
 managing [2-423](#)

RSPAN

configuring [2-374](#)
 displaying [2-650](#)
 filter RSPAN traffic [2-374](#)
 remote-span command [2-442](#)
 sessions
 displaying [2-650](#)

S

scheduled switchover
 disabling [2-136](#)
 enabling [2-136](#)
 SDM mismatch mode [2-449, 2-685](#)
 sdm prefer command [2-448](#)
 SDM templates
 allowed resources [2-450](#)
 and stacking [2-449](#)
 displaying [2-672](#)
 dual IPv4 and IPv6 [2-448](#)
 secure ports, limitations [2-812](#)
 sending flow-control packets [2-195](#)
 service password-recovery command [2-452](#)
 service-policy command [2-454](#)
 session command [2-457](#)
 set (boot loader) command [A-20](#)
 set command [2-459](#)
 setup command [2-461](#)
 setup express command [2-464](#)
 show access-lists command [2-466](#)
 show archive status command [2-469](#)
 show arp access-list command [2-470](#)
 show authentication command [2-471](#)
 show auto qos command [2-475](#)
 show boot command [2-479](#)
 show cable-diagnostics tdr command [2-481](#)

- show cisp command **2-485**
 show class-map command **2-486**
 show cluster candidates command **2-489**
 show cluster command **2-487**
 show cluster members command **2-491**
 show controllers cpu-interface command **2-493**
 show controllers ethernet-controller command **2-495**
 show controllers power inline command **2-503**
 show controllers tcam command **2-505**
 show controller utilization command **2-507**
 show dot1q-tunnel command **2-512**
 show dot1x command **2-513**
 show dtp **2-518**
 show eap command **2-520**
 show env command **2-523**
 show errdisable detect command **2-527**
 show errdisable flap-values command **2-529**
 show errdisable recovery command **2-531**
 show etherchannel command **2-533**
 show fallback profile command **2-536**
 show flowcontrol command **2-538**
 show idprom command **2-540**
 show interfaces command **2-543**
 show interfaces counters command **2-554**
 show inventory command **2-557**
 show ip arp inspection command **2-558**
 show ipc command **2-583**
 show ip dhcp snooping binding command **2-563**
 show ip dhcp snooping command **2-562**
 show ip dhcp snooping database command **2-565, 2-567**
 show ip igmp profile command **2-570**
 show ip igmp snooping address command **2-592**
 show ip igmp snooping command **2-571, 2-590**
 show ip igmp snooping groups command **2-574**
 show ip igmp snooping mrouter command **2-576, 2-594**
 show ip igmp snooping querier command **2-578, 2-596**
 show ip source binding command **2-580**
 show ipv6 access-list command **2-587**
 show ipv6 dhcp conflict command **2-589**
 show ipv6 route updated **2-598**
 show ip verify source command **2-581**
 show l2protocol-tunnel command **2-600**
 show lacp command **2-603**
 show link state group command **2-611**
 show lldp command **2-607**
 show location **2-608**
 show mac access-group command **2-613**
 show mac address-table address command **2-617**
 show mac address-table aging time command **2-619**
 show mac address-table command **2-615**
 show mac address-table count command **2-621**
 show mac address-table dynamic command **2-623**
 show mac address-table interface command **2-625**
 show mac address-table learning command **2-627**
 show mac address-table move update command **2-628**
 show mac address-table notification command **2-99, 2-630, B-26**
 show mac address-table static command **2-632**
 show mac address-table vlan command **2-634**
 show mls qos aggregate-policer command **2-637**
 show mls qos command **2-636**
 show mls qos input-queue command **2-638**
 show mls qos interface command **2-640**
 show mls qos maps command **2-644**
 show mls qos queue-set command **2-647**
 show mls qos vlan command **2-649**
 show monitor command **2-650**
 show mvr command **2-652**
 show mvr interface command **2-654**
 show mvr members command **2-656**
 show network-policy profile command **2-658**
 show nmsp command **2-659**
 show pagp command **2-662**
 show platform acl command **C-2**
 show platform backup interface command **C-3**
 show platform configuration command **C-4**
 show platform etherchannel command **C-5**
 show platform forward command **C-6**

- show platform frontend-controller command **C-8**
 show platform igmp snooping command **C-9**
 show platform ipc trace command **C-17**
 show platform ip multicast command **C-11**
 show platform ip unicast command **C-12**
 show platform ipv6 unicast command **C-18**
 show platform ip wccp command **C-16**
 show platform layer4op command **C-20**
 show platform mac-address-table command **C-21**
 show platform messaging command **C-22**
 show platform monitor command **C-23**
 show platform mvr table command **C-24**
 show platform pm command **C-25**
 show platform port-asic command **C-26**
 show platform port-security command **C-31**
 show platform qos command **C-32**
 show platform resource-manager command **C-33**
 show platform snmp counters command **C-35**
 show platform spanning-tree command **C-36**
 show platform stack manager command **C-38**
 show platform stp-instance command **C-37**
 show platform tb command **C-42**
 show platform tcam command **C-44**
 show platform vlan command **C-47**
 show policy-map command **2-664**
 show port security command **2-666**
 show power inline command **2-669**
 show sdm prefer command **2-672**
 show setup express command **2-675**
 show spanning-tree command **2-676**
 show storm-control command **2-682**
 show switch command **2-684**
 show system mtu command **2-689**
 show trust command **2-839**
 show udld command **2-690**
 show version command **2-693**
 show vlan access-map command **2-700**
 show vlan command **2-695**
 show vlan command, fields **2-697**
 show vlan filter command **2-701**
 show vmps command **2-702**
 show vtp command **2-704**
 shutdown command **2-709**
 shutdown threshold, Layer 2 protocol tunneling **2-297**
 shutdown vlan command **2-710**
 small violation-rate command **2-711**
 SNMP host, specifying **2-718**
 SNMP informs, enabling the sending of **2-713**
 snmp-server enable traps command **2-713**
 snmp-server host command **2-718**
 snmp trap mac-notification change command **2-722**
 SNMP traps
 enabling MAC address notification trap **2-722**
 enabling the MAC address notification feature **2-327**
 enabling the sending of **2-713**
 SoftPhone
 See Cisco SoftPhone
 software images
 copying **2-8**
 deleting **2-122**
 downloading **2-11**
 upgrading **2-8, 2-11**
 uploading **2-18**
 software version, displaying **2-693**
 source ports, MVR **2-382**
 SPAN
 configuring **2-374**
 debug messages, display **B-27**
 displaying **2-650**
 filter SPAN traffic **2-374**
 sessions
 add interfaces to **2-374**
 displaying **2-650**
 start new **2-374**
 spanning-tree backbonefast command **2-724**
 spanning-tree bpdufilter command **2-725**
 spanning-tree bpduguard command **2-727**
 spanning-tree cost command **2-729**

- spanning-tree etherchannel command **2-731**
- spanning-tree extend system-id command **2-733**
- spanning-tree guard command **2-735**
- spanning-tree link-type command **2-737**
- spanning-tree loopguard default command **2-739**
- spanning-tree mode command **2-740**
- spanning-tree mst configuration command **2-742**
- spanning-tree mst cost command **2-744**
- spanning-tree mst forward-time command **2-746**
- spanning-tree mst hello-time command **2-747**
- spanning-tree mst max-age command **2-748**
- spanning-tree mst max-hops command **2-749**
- spanning-tree mst port-priority command **2-751**
- spanning-tree mst pre-standard command **2-753**
- spanning-tree mst priority command **2-754**
- spanning-tree mst root command **2-755**
- spanning-tree portfast (global configuration) command **2-759**
- spanning-tree portfast (interface configuration) command **2-761**
- spanning-tree port-priority command **2-757**
- Spanning Tree Protocol
- See STP
- spanning-tree transmit hold-count command **2-763**
- spanning-tree uplinkfast command **2-764**
- spanning-tree vlan command **2-766**
- speed command **2-769**
- srr-queue bandwidth limit command **2-771**
- srr-queue bandwidth share command **2-775**
- SSH, configuring version **2-267**
- stack-mac persistent timer command **2-777**
- stack member
- access **2-457**
 - number **2-684, 2-788**
 - priority value **2-785**
 - provisioning **2-786**
 - reloading **2-439**
- stacks, switch
- disabling a member **2-783**
 - enabling a member **2-783**
 - MAC address **2-777**
 - provisioning a new member **2-786**
 - reloading **2-439**
 - stack member access **2-457**
 - stack member number **2-684, 2-788**
 - stack member priority value **2-684, 2-785**
 - static-access ports, configuring **2-792**
 - statistics, Ethernet group **2-447**
 - sticky learning, enabling **2-810**
 - storm-control command **2-780**
- STP
- BackboneFast **2-724**
 - counters, clearing **2-104**
 - debug messages, display
 - BackboneFast events **B-85**
 - MSTP **B-88**
 - optimized BPDUs handling **B-87**
 - spanning-tree activity **B-83**
 - switch shim **B-90**
 - transmitted and received BPDUs **B-86**
 - UplinkFast **B-92**
 - detection of indirect link failures **2-724**
 - enabling protocol tunneling for **2-297**
 - EtherChannel misconfiguration **2-731**
 - extended system ID **2-733**
 - path cost **2-729**
 - protocol modes **2-740**
 - root port
 - accelerating choice of new **2-764**
 - loop guard **2-735**
 - preventing from becoming designated **2-735**
 - restricting which can be root **2-735**
 - root guard **2-735**
 - UplinkFast **2-764**

- STP (continued)
- root switch
 - affects of extended system ID **2-733, 2-767**
 - hello-time **2-766**
 - interval between BDPU messages **2-766**
 - interval between hello BPDU messages **2-766**
 - max-age **2-766**
 - port priority for selection of **2-757**
 - primary or secondary **2-766**
 - switch priority **2-766**
 - state changes
 - blocking to forwarding state **2-761**
 - enabling BPDU filtering **2-725, 2-759**
 - enabling BPDU guard **2-727, 2-759**
 - enabling Port Fast **2-759, 2-761**
 - enabling timer to recover from error state **2-189**
 - forward-delay time **2-766**
 - length of listening and learning states **2-766**
 - shutting down Port Fast-enabled ports **2-759**
 - state information display **2-676**
 - VLAN options **2-754, 2-766**
 - SVIs, creating **2-201**
 - SVI status calculation **2-794**
 - Switched Port Analyzer
 - See SPAN
 - switching characteristics
 - modifying **2-790**
 - returning to interfaces **2-790**
 - switchport access command **2-792**
 - switchport autostate exclude command **2-794**
 - switchport backup interface command **2-796**
 - switchport block command **2-800**
 - switchport command **2-790**
 - switchport host command **2-802**
 - switchport mode command **2-803**
 - switchport mode private-vlan command **2-806**
 - switchport nonegotiate command **2-808**
 - switchport port-security aging command **2-815**
 - switchport port-security command **2-810**
 - switchport priority extend command **2-817**
 - switchport private-vlan command **2-819**
 - switchport protected command **2-821**
 - switchports, displaying **2-543**
 - switchport trunk command **2-823**
 - switchport voice vlan command **2-826, 2-827**
 - switch priority command **2-783, 2-785**
 - switch provision command **2-786**
 - switch renumber command **2-788**
 - system env temperature threshold yellow command **2-829**
 - system message logging **2-313**
 - system message logging, save message to flash **2-314**
 - system mtu command **2-831**
 - system resource templates **2-448**
-
- T**
- tar files, creating, listing, and extracting **2-15**
- TDR, running **2-833**
- Telnet, using to communicate to cluster switches **2-437**
- temperature information, displaying **2-523**
- templates, system resources **2-448**
- test cable-diagnostics tdr command **2-833**
- traceroute mac command **2-834**
- traceroute mac ip command **2-837**
- trunking, VLAN mode **2-803**
- trunk mode **2-803**
- trunk ports **2-803**
- trunks, to non-DTP device **2-804**
- trusted boundary for QoS **2-371**
- trusted port states for QoS **2-371**
- tunnel ports, Layer 2 protocol, displaying **2-600**
- type (boot loader) command **A-23**

U

UDLD

- aggressive mode **2-841, 2-843**
- debug messages, display **B-100**
- enable globally **2-841**
- enable per interface **2-843**
- error recovery timer **2-189**
- message timer **2-841**
- normal mode **2-841, 2-843**
- reset a shutdown interface **2-845**
- status **2-690**

udld command **2-841**udld port command **2-843**udld reset command **2-845**unicast storm control **2-780**

UniDirectional Link Detection

See UDLD

unknown multicast traffic, preventing **2-800**unknown unicast traffic, preventing **2-800**unset (boot loader) command **A-24**

upgrading

- software images
- copying **2-8**
- downloading **2-11**
- monitoring status of **2-469**

UplinkFast, for STP **2-764**user EXEC mode **1-2, 1-3****V**version (boot loader) command **A-26**version mismatch mode **2-685, C-39**vlan access-map command **2-849**VLAN access map configuration mode **2-849**

VLAN access maps

- actions **2-6**
- displaying **2-700**

VLAN-based QoS **2-373**

VLAN configuration mode

commands

- VLAN **2-848**
- VTP **2-866**
- description **1-4**
- entering **2-851**
- summary **1-3**

vlan dot1q tag native command **2-852**vlan filter command **2-853**VLAN filters, displaying **2-701**

VLAN maps

- applying **2-853**
- creating **2-849**
- defining **2-332**
- displaying **2-700**

VLAN Query Protocol

See VQP

VLANs

- configuring **2-848**
- debug messages, display
- ISL **B-96**
- VLAN IOS file system error tests **B-95**
- VLAN manager activity **B-93**
- VTP **B-98**
- displaying configurations **2-695**
- enabling guest VLAN supplicant **2-143, 2-154, 2-194**

MAC addresses

- displaying **2-634**
- number of **2-621**
- normal-range **2-848**
- private **2-806**

configuring **2-427**displaying **2-695**

See also private VLANs

restarting **2-710**shutting down **2-710**SNMP traps for VTP **2-716, 2-719**suspending **2-710**

VLAN Trunking Protocol

See VTP

VM mode **2-685, C-39**

VMPS

configuring servers **2-858**

displaying **2-702**

error recovery timer **2-190**

reconfirming dynamic VLAN assignments **2-855**

vmps reconfirm (global configuration) command **2-856**

vmps reconfirm (privileged EXEC) command **2-855**

vmps retry command **2-857**

vmps server command **2-858**

voice VLAN

configuring **2-826, 2-827**

setting port priority **2-817**

VQP

and dynamic-access ports **2-793**

clearing client statistics **2-106**

displaying information **2-702**

per-server retry count **2-857**

reconfirmation interval **2-856**

reconfirming dynamic VLAN assignments **2-855**

VTP

changing characteristics **2-860**

clearing pruning counters **2-107**

configuring

domain name **2-860**

file name **2-860**

mode **2-860**

password **2-861**

counters display fields **2-705**

displaying information **2-704**

enabling

pruning **2-861**

tunneling for **2-297**

Version 2 **2-861**

enabling per port **2-865**

mode **2-860**

pruning **2-861**

VTP (continued)

statistics **2-704**

status **2-704**

status display fields **2-707**

vtp (global configuration) command **2-860**

vtp interface configuration) command **2-865**

vtp primary command **2-867**

W

wireless controller, accessing **2-457**

wireless controller switch. **B-103**

X

XENPAK module serial EEPROM information **2-499, 2-540**