



INDEX

A

- aaa accounting dot1x command [2-1](#)
- aaa authentication dot1x command [2-3](#)
- aaa authorization network command [2-5, 2-24, 2-30, 2-32, 2-34, 2-36, 2-38, 2-145, 2-312, B-7, B-32](#)
- AAA methods [2-3](#)
- access control entries
 - See ACEs
- access control lists
 - See ACLs
- access groups
 - IP [2-195](#)
- access list, IPv6 [2-269](#)
- access map configuration mode [2-338](#)
- access mode [2-781](#)
- access ports [2-781](#)
- ACEs [2-129, 2-415](#)
- ACLs
 - deny [2-127](#)
 - for non-IP protocols [2-316](#)
 - IP [2-195](#)
 - matching [2-338](#)
 - on Layer 2 interfaces [2-195](#)
 - permit [2-413](#)
- action command [2-6](#)
- aggregate-port learner [2-402](#)
- allowed VLANs [2-801](#)
- archive copy-sw command [2-8](#)
- archive download-sw command [2-11](#)
- archive tar command [2-15](#)
- archive upload-sw command [2-18](#)
- arp (boot loader) command [A-2](#)
- arp access-list command [2-20](#)
- 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 [2-162](#)
- auth timer command [2-46](#)
- autonegotiation of duplex mode [2-172](#)
- auto qos classify command [2-50](#)
- auto qos trust command [2-53](#)
- auto qos video command [2-56](#)
- auto qos voip command [2-59](#)

B

BackboneFast, for STP [2-703](#)

backup interfaces

 configuring [2-775](#)

boot (boot loader) command [A-3](#)

boot auto-copy-sw command [2-66](#)

boot auto-download-sw command [2-68](#)

boot config-file command [2-71](#)

boot enable-break command [2-72](#)

boot helper command [2-73](#)

boot helper-config file command [2-74](#)

booting

 Cisco IOS image [2-77](#)

 interrupting [2-72](#)

 manually [2-75](#)

boot loader

 accessing [A-1](#)

 booting

 Cisco IOS image [A-3](#)

 helper image [2-73](#)

 directories

 creating [A-19](#)

 displaying a list of [A-8](#)

 removing [A-23](#)

 displaying

 available commands [A-13](#)

 memory heap utilization [A-14](#)

 version [A-30](#)

 environment variables

 described [A-24](#)

 displaying settings [A-24](#)

 location of [A-25](#)

 setting [A-24](#)

 unsetting [A-28](#)

 files

 copying [A-6](#)

 deleting [A-7](#)

 displaying a list of [A-8](#)

 displaying the contents of [A-5, A-20, A-27](#)

 renaming [A-21](#)

 file system

 formatting [A-11](#)

 initializing flash [A-10](#)

 running a consistency check [A-12](#)

 prompt [A-1](#)

 resetting the system [A-22](#)

boot manual command [2-75](#)

boot private-config-file command [2-76](#)

boot system command [2-77](#)

BPDU filtering, for spanning tree [2-704, 2-738](#)

BPDU guard, for spanning tree [2-706, 2-738](#)

broadcast storm control [2-759](#)

C

cat (boot loader) command [A-5](#)

CDP, enabling protocol tunneling for [2-295](#)

channel-group command [2-79](#)

channel-protocol command [2-83](#)

Cisco IP camera

 auto-QoS configuration [2-56](#)

Cisco SoftPhone

 auto-QoS configuration [2-59](#)

 trusting packets sent from [2-379](#)

Cisco Telepresence System

 auto-QoS configuration [2-56](#)

CISP

 See Client Information Signalling Protocol

cisp

 debug platform cisp command [B-32](#)

cisp enable command [2-84](#)

class command [2-85](#)

class-map command [2-88](#)

class maps

 creating [2-88](#)

 defining the match criteria [2-340](#)

- class of service
 - See CoS
- clear dot1x command [2-90](#)
- clear eap command [2-91](#)
- clear errdisable interface [2-92](#)
- clear ip arp inspection log command [2-93](#)
- clear ip arp inspection statistics command [2-94](#)
- clear ipc command [2-99](#)
- clear ip dhcp snooping database command [2-95, 2-97](#)
- clear ipv6 dhcp conflict command [2-100](#)
- clear l2protocol-tunnel counters command [2-101](#)
- clear lacp command [2-102](#)
- clear logging command [2-103](#)
- clear mac address-table command [2-104, 2-105](#)
- clear nmsp statistics command [2-106](#)
- clear pagp command [2-107](#)
- clear port-security command [2-108](#)
- clear psp counter [2-110](#)
- clear psp counter command [2-110](#)
- clear spanning-tree counters command [2-111](#)
- clear spanning-tree detected-protocols command [2-112](#)
- clear vmpls statistics command [2-113](#)
- clear vtp counters command [2-114](#)
- Client Information Signalling Protocol [2-84, 2-145, B-7, B-32](#)
- command modes defined [1-2](#)
- configuration files
 - password recovery disable considerations [A-1](#)
 - specifying the name [2-71, 2-76](#)
- configuring multiple interfaces [2-191](#)
- config-vlan mode
 - commands [2-825](#)
 - entering [2-824](#)
- copy (boot loader) command [A-6](#)
- copy logging onboard command [2-115](#)
- CoS
 - assigning default value to incoming packets [2-349](#)
 - assigning to Layer 2 protocol packets [2-298](#)
 - overriding the incoming value [2-349](#)

- CoS-to-DSCP map [2-353](#)

- crashinfo files [2-182](#)

- 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 dot1x command [B-8](#)
- debug dtp command [B-9](#)
- debug eap command [B-10](#)
- debug etherchannel command [B-11](#)
- debug fastethernet command [B-12](#)
- debug interface command [B-15](#)
- debug ip dhcp snooping command [B-13](#)
- debug ip igmp filter command [B-16](#)
- debug ip igmp max-groups command [B-17](#)
- debug ip igmp snooping command [B-18](#)
- debug ip verify source packet command [B-14](#)
- debug lacp command [B-19](#)
- debug lldp packets command [B-20](#)
- debug mac-notification command [B-21](#)
- debug matm command [B-22](#)
- debug matm move update command [B-23](#)
- debug monitor command [B-24](#)
- debug mvrdbg command [B-25](#)
- debug nmsp command [B-26](#)
- debug nvram command [B-27](#)
- debug pagp command [B-28](#)
- debug platform acl command [B-29](#)
- debug platform backup interface command [B-31](#)
- debug platform cisp command [B-32](#)
- debug platform cli-redirection main command [B-33](#)
- debug platform configuration command [B-34](#)
- debug platform cpu-queues command [B-35](#)
- debug platform device-manager command [B-37](#)
- debug platform dot1x command [B-38](#)

- debug platform etherchannel command [B-39](#)
- debug platform fallback-bridging command [B-40](#)
- debug platform forw-tcam command [B-41](#)
- debug platform ip arp inspection command [B-42](#)
- debug platform ipc command [B-51](#)
- debug platform ip dhcp command [B-43](#)
- debug platform ip igmp snooping command [B-44](#)
- debug platform ip multicast command [B-46](#)
- debug platform ip unicast command [B-48](#)
- debug platform ip wccp command [B-50](#)
- debug platform led command [B-52](#)
- debug platform matm command [B-53](#)
- debug platform messaging application command [B-54](#)
- debug platform phy command [B-56](#)
- debug platform pm command [B-58](#)
- debug platform port-asic command [B-60](#)
- debug platform port-security command [B-61](#)
- debug platform qos-acl-tcam command [B-62](#)
- debug platform remote-commands command [B-63](#)
- debug platform resource-manager command [B-64](#)
- debug platform snmp command [B-65](#)
- debug platform span command [B-66](#)
- debug platform stack-manager command [B-67](#)
- debug platform supervisor-asic command [B-68](#)
- debug platform sw-bridge command [B-69](#)
- debug platform tcam command [B-70](#)
- debug platform uddl command [B-73](#)
- debug platform vlan command [B-74](#)
- debug pm command [B-75](#)
- debug port-security command [B-77](#)
- debug qos-manager command [B-78](#)
- debug spanning-tree backbonefast command [B-81](#)
- debug spanning-tree bpdu command [B-82](#)
- debug spanning-tree bpdu-opt command [B-83](#)
- debug spanning-tree command [B-79](#)
- debug spanning-tree mstp command [B-84](#)
- debug spanning-tree switch command [B-86](#)
- debug spanning-tree uplinkfast command [B-88](#)
- debug sw-vlan command [B-89](#)
- debug sw-vlan ifs command [B-91](#)
- debug sw-vlan notification command [B-92](#)
- debug sw-vlan vtp command [B-94](#)
- debug uddl command [B-96](#)
- debug vqpc command [B-98](#)
- define interface-range command [2-117](#)
- delete (boot loader) command [A-7](#)
- delete command [2-119](#)
- deny (ARP access-list configuration) command [2-120](#)
- deny (IPv6) command [2-122](#)
- deny command [2-127](#)
- detect mechanism, causes [2-175](#)
- DHCP snooping
 - accepting untrusted packets from edge switch [2-227](#)
 - enabling
 - on a VLAN [2-233](#)
 - option 82 [2-225, 2-227](#)
 - trust on an interface [2-231](#)
 - error recovery timer [2-179](#)
 - rate limiting [2-230](#)
- DHCP snooping binding database
 - binding file, configuring [2-223](#)
 - bindings
 - adding [2-221](#)
 - deleting [2-221](#)
 - clearing database agent statistics [2-95, 2-97](#)
 - database agent, configuring [2-223](#)
 - renewing [2-445](#)
- dir (boot loader) command [A-8](#)
- directories, deleting [2-119](#)
- domain name, VTP [2-840](#)
- dot1x auth-fail max-attempts [2-139](#)
- dot1x auth-fail vlan [2-141](#)
- dot1x command [2-137](#)
- dot1x control-direction command [2-143](#)
- dot1x credentials (global configuration) command [2-145](#)
- dot1x critical global configuration command [2-146](#)
- dot1x critical interface configuration command [2-148](#)
- dot1x default command [2-150](#)

- dot1x fallback command [2-151](#)
- dot1x guest-vlan command [2-152](#)
- dot1x host-mode command [2-154](#)
- dot1x initialize command [2-155](#)
- dot1x mac-auth-bypass command [2-156](#)
- dot1x max-reauth-req command [2-158](#)
- dot1x max-req command [2-160](#)
- dot1x pae command [2-161](#)
- dot1x port-control command [2-162](#)
- dot1x re-authenticate command [2-164](#)
- dot1x reauthentication command [2-165](#)
- dot1x supplicant force-multicast command [2-166](#)
- dot1x timeout command [2-167](#)
- dot1x violation-mode command [2-170](#)
- dropping packets, with ACL matches [2-6](#)
- drop threshold, Layer 2 protocol tunneling [2-295](#)
- DSCP-to-CoS map [2-353](#)
- DSCP-to-DSCP-mutation map [2-353](#)
- DTP [2-782](#)
- DTP flap
 - error detection for [2-175](#)
 - error recovery timer [2-179](#)
- DTP negotiation [2-786](#)
- dual IPv4 and IPv6 templates [2-408](#)
- duplex command [2-172](#)
- dynamic-access ports
 - configuring [2-771](#)
 - restrictions [2-772](#)
- dynamic ARP inspection
 - ARP ACLs
 - apply to a VLAN [2-203](#)
 - define [2-20](#)
 - deny packets [2-120](#)
 - permit packets [2-406](#)
 - clear
 - log buffer [2-93](#)
 - statistics [2-94](#)
 - enable per VLAN [2-213](#)
 - error detection for [2-175](#)

- error recovery timer [2-179](#)
- log buffer
 - clear [2-93](#)
 - configure [2-207](#)
- rate-limit incoming ARP packets [2-205](#)
- statistics
 - clear [2-94](#)
- trusted interface state [2-209](#)
- type of packet logged [2-214](#)
- validation checks [2-211](#)
- dynamic auto VLAN membership mode [2-781](#)
- dynamic desirable VLAN membership mode [2-781](#)
- Dynamic Host Configuration Protocol (DHCP)
 - See DHCP snooping
- Dynamic Trunking Protocol
 - See DTP

E

- EAP-request/identity frame
 - maximum number to send [2-160](#)
 - response time before retransmitting [2-167](#)
- encapsulation methods [2-801](#)
- epm access-control open [2-174](#)
- errdisable detect cause command [2-175](#)
- errdisable detect cause small-frame comand [2-177](#)
- errdisable recovery cause small-frame [2-181](#)
- errdisable recovery command [2-179](#)
- error disable detection [2-175](#)
- EtherChannel
 - assigning Ethernet interface to channel group [2-79](#)
 - creating port-channel logical interface [2-189](#)
 - debug EtherChannel/PAgP, display [B-11](#)
 - debug platform-specific events, display [B-39](#)
 - enabling Layer 2 protocol tunneling for
 - LACP [2-296](#)
 - PAgP [2-296](#)
 - UDLD [2-296](#)

EtherChannel (continued)

LACP

- clearing channel-group information [2-102, 2-103](#)
- debug messages, display [B-19](#)
- modes [2-79](#)
- port priority for hot-standby ports [2-299](#)
- restricting a protocol [2-83](#)
- system priority [2-301](#)

load-distribution methods [2-424](#)

PAgP

- aggregate-port learner [2-402](#)
- clearing channel-group information [2-107](#)
- debug messages, display [B-28](#)
- error detection for [2-175](#)
- error recovery timer [2-179](#)
- learn method [2-402](#)
- modes [2-79](#)
- physical-port learner [2-402](#)
- priority of interface for transmitted traffic [2-404](#)

Ethernet Management port, debugging [B-12](#)exception crashinfo command [2-182, 2-187](#)

extended-range VLANs

- and allowed VLAN list [2-801](#)
- and pruning-eligible list [2-801](#)
- configuring [2-824](#)

extended system ID for STP [2-712](#)

F
fallback profile command [2-183](#)fan information, displaying [2-518](#)file name, VTP [2-840](#)files, deleting [2-119](#)flash_init (boot loader) command [A-10](#)flexible authentication ordering [2-38](#)

Flex Links

- configuring [2-775](#)

flowcontrol command [2-185](#)format (boot loader) command [A-11](#)forwarding packets, with ACL matches [2-6](#)forwarding results, display [C-9](#)frame forwarding information, displaying [C-9](#)front-end controller counter and status information [C-11](#)fsck (boot loader) command [A-12](#)

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

H
health monitoring diagnostic tests [2-130](#)help (boot loader) command [A-13](#)hierarchical policy maps [2-422](#)host connection, port configuration [2-780](#)host ports, private VLANs [2-784](#)

I
IEEE 802.1Q trunk ports and native VLANs [2-831](#)

IEEE 802.1Q tunnel ports

- configuring [2-781](#)
- limitations [2-782](#)

IEEE 802.1x

- and switchport modes [2-782](#)
- violation error recovery [2-179](#)
- See also port-based authentication

IGMP filters

- applying [2-236](#)
- debug messages, display [B-16](#)

IGMP groups, setting maximum [2-238](#)IGMP maximum groups, debugging [B-17](#)

IGMP profiles

- creating [2-240](#)

- IGMP snooping
 - adding ports as a static member of a group [2-256](#)
 - enabling [2-242](#)
 - enabling the configurable-leave timer [2-244](#)
 - enabling the Immediate-Leave feature [2-253](#)
 - flooding query count [2-250](#)
 - interface topology change notification behavior [2-252](#)
 - querier [2-246](#)
 - query solicitation [2-250](#)
 - report suppression [2-248](#)
 - switch topology change notification behavior [2-250](#)
- images
 - See software images
- Immediate-Leave processing
 - IGMP [2-253](#)
 - IPv6 [2-291](#)
 - MVR [2-389](#)
- interface configuration mode [1-2, 1-4](#)
- interface port-channel command [2-189](#)
- interface range command [2-191](#)
- interface-range macros [2-117](#)
- interfaces
 - assigning Ethernet interface to channel group [2-79](#)
 - configuring [2-172](#)
 - configuring multiple [2-191](#)
 - creating port-channel logical [2-189](#)
 - debug messages, display [B-15](#)
 - disabling [2-689](#)
 - restarting [2-689](#)
- interface speed, configuring [2-749](#)
- interface vlan command [2-193](#)
- Internet Group Management Protocol
 - See IGMP
- ip access-group command [2-195](#)
- ip address command [2-198](#)
- IP addresses, setting [2-198](#)
- IP address matching [2-338](#)
- ip admission command [2-200](#)
- ip admission name proxy http command [2-201](#)
- ip arp inspection filter vlan command [2-203](#)
- ip arp inspection limit command [2-205](#)
- ip arp inspection log-buffer command [2-207](#)
- ip arp inspection trust command [2-209](#)
- ip arp inspection validate command [2-211](#)
- ip arp inspection vlan command [2-213](#)
- ip arp inspection vlan logging command [2-214](#)
- ip device tracking command [2-216](#)
- ip device tracking probe command [2-218](#)
- IP DHCP snooping
 - See DHCP snooping
- ip dhcp snooping binding command [2-221](#)
- ip dhcp snooping command [2-220](#)
- ip dhcp snooping database command [2-223](#)
- ip dhcp snooping information option allow-untrusted command [2-227](#)
- ip dhcp snooping information option command [2-225](#)
- ip dhcp snooping information option format remote-id command [2-229](#)
- ip dhcp snooping limit rate command [2-230](#)
- ip dhcp snooping trust command [2-231](#)
- ip dhcp snooping verify command [2-232](#)
- ip dhcp snooping vlan command [2-233](#)
- ip dhcp snooping vlan information option format-type circuit-id string command [2-234](#)
- ip igmp filter command [2-236](#)
- ip igmp max-groups command [2-238, 2-263, 2-265](#)
- ip igmp profile command [2-240](#)
- ip igmp snooping command [2-242](#)
- ip igmp snooping last-member-query-interval command [2-244](#)
- ip igmp snooping querier command [2-246](#)
- ip igmp snooping report-suppression command [2-248](#)
- ip igmp snooping tcn command [2-250](#)
- ip igmp snooping tcn flood command [2-252](#)
- ip igmp snooping vlan immediate-leave command [2-253](#)
- ip igmp snooping vlan mrouter command [2-254](#)
- ip igmp snooping vlan static command [2-256](#)
- IP multicast addresses [2-386](#)

IP phones

- auto-QoS configuration [2-59](#)
- trusting packets sent from [2-379](#)

IP-precedence-to-DSCP map [2-353](#)ip snap forwarding command [2-258](#)ip source binding command [2-259](#)

IP source guard

- disabling [2-267](#)
- enabling [2-267](#)
- static IP source bindings [2-259](#)

ip ssh command [2-261](#)IPv6 access list, deny conditions [2-122](#)ipv6 access-list command [2-269](#)ipv6 address dhcp command [2-271](#)ipv6 dhcp client request vendor command [2-272](#)ipv6 dhcp ping packets command [2-273](#)ipv6 dhcp pool command [2-275](#)ipv6 dhcp server command [2-277](#)ipv6 mld snooping command [2-279](#)ipv6 mld snooping last-listener-query count command [2-281](#)ipv6 mld snooping last-listener-query-interval command [2-283](#)ipv6 mld snooping listener-message-suppression command [2-285](#)ipv6 mld snooping robustness-variable command [2-287](#)ipv6 mld snooping tcn command [2-289](#)ipv6 mld snooping vlan command [2-291](#)ipv6 traffic-filter command [2-293](#)ip verify source command [2-267](#)lACP port-priority command [2-299](#)lACP system-priority command [2-301](#)Layer 2 mode, enabling [2-769](#)

Layer 2 protocol-tunnel

- error detection for [2-175](#)
- error recovery timer [2-179](#)

Layer 2 protocol tunnel counters [2-101](#)Layer 2 protocol tunneling error recovery [2-296](#)

Layer 2 traceroute

- IP addresses [2-815](#)
- MAC addresses [2-812](#)

Layer 3 mode, enabling [2-769](#)line configuration mode [1-3, 1-5](#)

Link Aggregation Control Protocol

- See EtherChannel

link flap

- error detection for [2-175](#)
- error recovery timer [2-179](#)

link state group command [2-303](#)link state track command [2-305](#)load-distribution methods for EtherChannel [2-424](#)location (global configuration) command [2-306](#)location (interface configuration) command [2-308](#)logging file command [2-310](#)logical interface [2-189](#)

loopback error

- detection for [2-175](#)
- recovery timer [2-179](#)

loop guard, for spanning tree [2-714, 2-718](#)**L**l2protocol-tunnel command [2-295](#)l2protocol-tunnel cos command [2-298](#)

LACP

- See EtherChannel

Mmab request format attribute 32 command [2-312](#)mac access-group command [2-314](#)MAC access list configuration mode [2-316](#)mac access-list extended command [2-316](#)MAC access lists [2-127](#)

MAC addresses

- disabling MAC address learning per VLAN [2-319](#)

- dynamic

- aging time [2-318](#)

- deleting [2-104](#)

- enabling MAC address notification [2-323](#)

- enabling MAC address-table move update [2-321](#)

- matching [2-338](#)

- persistent stack [2-757](#)

- static

- adding and removing [2-325](#)

- dropping on an interface [2-326](#)

- MAC address notification, debugging [B-21](#)

- mac address-table aging-time [2-314, 2-338](#)

- mac address-table aging-time command [2-318](#)

- mac address-table learning command [2-319](#)

- mac address-table move update command [2-321](#)

- mac address-table notification command [2-323](#)

- mac address-table static command [2-325](#)

- mac address-table static drop command [2-326](#)

- macro apply command [2-328](#)

- macro description command [2-331](#)

- macro global command [2-332](#)

- macro global description command [2-335](#)

- macro name command [2-336](#)

- macros

- adding a description [2-331](#)

- adding a global description [2-335](#)

- applying [2-332](#)

- creating [2-336](#)

- interface range [2-117, 2-191](#)

- specifying parameter values [2-332](#)

- tracing [2-332](#)

- maps

- QoS

- defining [2-353](#)

- VLAN

- creating [2-829](#)

- defining [2-338](#)

- match (access-map configuration) command [2-338](#)

- match (class-map configuration) command [2-340](#)

- maximum transmission unit

- See MTU

- mdix auto command [2-343](#)

- memory (boot loader) command [A-14](#)

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

- mgmt_init (boot loader) command [A-17, A-18](#)

- mkdir (boot loader) command [A-19](#)

- MLD snooping

- configuring [2-285, 2-287](#)

- configuring queries [2-281, 2-283](#)

- configuring topology change notification [2-289](#)

- enabling [2-279](#)

- enabling on a VLAN [2-291](#)

- mls qos aggregate-policer command [2-347](#)

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

- mls qos cos command [2-349](#)

- mls qos dscp-mutation command [2-351](#)

- mls qos map command [2-353](#)

- mls qos queue-set output buffers command [2-357](#)

- mls qos queue-set output threshold command [2-359](#)

- mls qos rewrite ip dscp command [2-361](#)

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

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

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

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

- mls qos srr-queue input priority-queue command [2-371](#)

- mls qos srr-queue input threshold command [2-373](#)

- mls qos-srr-queue output cos-map command [2-375](#)

- mls qos srr-queue output dscp-map command [2-377](#)

- mls qos trust command [2-379](#)

- mls qos vlan-based command [2-381](#)

- mode, MVR [2-386](#)

- modes, commands [1-2](#)

- monitor session command [2-382](#)

- more (boot loader) command [A-20](#)

MSTP

- interoperability [2-112](#)
- link type [2-716](#)
- MST region
 - aborting changes [2-722](#)
 - applying changes [2-722](#)
 - configuration name [2-722](#)
 - configuration revision number [2-722](#)
 - current or pending display [2-722](#)
 - MST configuration mode [2-722](#)
 - VLANs-to-instance mapping [2-722](#)
- path cost [2-724](#)
- protocol mode [2-720](#)
- restart protocol migration process [2-112](#)
- root port
 - loop guard [2-714](#)
 - preventing from becoming designated [2-714](#)
 - restricting which can be root [2-714](#)
 - root guard [2-714](#)
- root switch
 - affects of extended system ID [2-712](#)
 - hello-time [2-727, 2-734](#)
 - interval between BDPU messages [2-728](#)
 - interval between hello BPDU messages [2-727, 2-734](#)
 - max-age [2-728](#)
 - maximum hop count before discarding BPDU [2-729](#)
 - port priority for selection of [2-730](#)
 - primary or secondary [2-734](#)
 - switch priority [2-733](#)
- state changes
 - blocking to forwarding state [2-741](#)
 - enabling BPDU filtering [2-704, 2-738](#)
 - enabling BPDU guard [2-706, 2-738](#)
 - enabling Port Fast [2-738, 2-741](#)
 - forward-delay time [2-726](#)
 - length of listening and learning states [2-726](#)

- rapid transition to forwarding [2-716](#)
- shutting down Port Fast-enabled ports [2-738](#)

MTU

- configuring size [2-809](#)

Multicast Listener Discovery

See MLD

- multicast group address, MVR [2-389](#)
- multicast groups, MVR [2-387](#)
- multicast router learning method [2-254](#)
- multicast router ports, configuring [2-254](#)
- multicast router ports, IPv6 [2-291](#)
- multicast storm control [2-759](#)
- multicast VLAN, MVR [2-386](#)
- multicast VLAN registration

See MVR

- multiple hosts on authorized port [2-154](#)

Multiple Spanning Tree Protocol

See MSTP

MVR

- configuring [2-386](#)
- configuring interfaces [2-389](#)
- debug messages, display [B-25](#)
- mvr (global configuration) command [2-386](#)
- mvr (interface configuration) command [2-389](#)
- mvr vlan group command [2-390](#)

N

- native VLANs [2-801](#)
- native VLAN tagging [2-831](#)
- network-policy (global configuration) command [2-392](#)
- network-policy command [2-391](#)
- network-policy profile (network-policy configuration) command [2-393](#)
- nmosp attachment suppress command [2-396](#)
- nmosp command [2-395](#)
- no authentication logging verbose [2-397](#)
- no dot1x logging verbose [2-398](#)
- no mab logging verbose [2-399](#)

nonegotiate

DTP messaging [2-786](#)

non-IP protocols

denying [2-127](#)

forwarding [2-413](#)

non-IP traffic access lists [2-316](#)

non-IP traffic forwarding

denying [2-127](#)

permitting [2-413](#)

non-stop forwarding [2-400](#)

normal-range VLANs [2-824](#)

no vlan command [2-824](#)

nsf command [2-400](#)

O

online diagnostics

configuring health monitoring diagnostic tests [2-130](#)

enabling

scheduling [2-132](#)

syslog messages [2-130](#)

global configuration mode

clearing health monitoring diagnostic test
schedule [2-130](#)

clearing test-based testing schedule [2-132](#)

setting health monitoring diagnostic
testing [2-130](#)

setting test-based testing [2-132](#)

setting up health monitoring diagnostic test
schedule [2-130](#)

setting up test-based testing [2-132](#)

removing scheduling [2-132](#)

scheduled switchover

disabling [2-132](#)

enabling [2-132](#)

setting test interval [2-132](#)

specifying health monitoring diagnostic tests [2-130](#)

starting testing [2-134](#)

P

PAgP

See EtherChannel

pagp learn-method command [2-402](#)

pagp port-priority command [2-404](#)

password, VTP [2-841](#)

permit (ARP access-list configuration) command [2-406](#)

permit (IPv6) command [2-408](#)

permit (MAC access-list configuration) command [2-413](#)

per-VLAN spanning-tree plus

See STP

physical-port learner [2-402](#)

PIM-DVMRP, as multicast router learning method [2-254](#)

platform chassis-management command [2-416](#)

police aggregate command [2-419](#)

police command [2-417](#)

policed-DSCP map [2-353](#)

policy-map command [2-421](#)

policy maps

creating [2-421](#)

hierarchical [2-422](#)

policers

for a single class [2-417](#)

for multiple classes [2-347, 2-419](#)

policed-DSCP map [2-353](#)

traffic classification

defining the class [2-85](#)

defining trust states [2-817](#)

Port Aggregation Protocol

See EtherChannel

port-based authentication

AAA method list [2-3](#)

configuring violation modes [2-170](#)

debug messages, display [B-8](#)

enabling guest VLAN supplicant [2-140, 2-151](#)

enabling IEEE 802.1x

globally [2-137](#)

per interface [2-162](#)

port-based authentication (continued)

- guest VLAN [2-152](#)
- host modes [2-154](#)
- IEEE 802.1x AAA accounting methods [2-1](#)
- initialize an interface [2-155](#)
- MAC authentication bypass [2-156](#)
- manual control of authorization state [2-162](#)
- multiple hosts on authorized port [2-154](#)
- PAE as authenticator [2-161](#)
- periodic re-authentication
 - enabling [2-165](#)
 - time between attempts [2-167](#)

port-based authentication (continued)

- quiet period between failed authentication exchanges [2-167](#)
- re-authenticating IEEE 802.1x-enabled ports [2-164](#)
- resetting configurable IEEE 802.1x parameters [2-150](#)
- switch-to-authentication server retransmission time [2-167](#)
- switch-to-client frame-retransmission number [2-158 to 2-160](#)
- switch-to-client retransmission time [2-167](#)

port-channel load-balance command [2-424](#)Port Fast, for spanning tree [2-741](#)port ranges, defining [2-115, 2-117](#)ports, debugging [B-75](#)ports, protected [2-799](#)

port security

- aging [2-793](#)
- debug messages, display [B-77](#)
- enabling [2-788](#)
- violation error recovery [2-179](#)

port trust states for QoS [2-379](#)port types, MVR [2-389](#)power information, displaying [2-518](#)priority-queue command [2-426](#)priority value, stack member [2-764](#)private-vlan command [2-428](#)private-vlan mapping command [2-431](#)

private VLANs

- association [2-797](#)
- configuring [2-428](#)
- configuring ports [2-784](#)
- host ports [2-784](#)
- mapping
 - configuring [2-797](#)
- promiscuous ports [2-784](#)

privileged EXEC mode [1-2, 1-3](#)promiscuous ports, private VLANs [2-784](#)

pruning

VLANs [2-801](#)

VTP

- enabling [2-841](#)

pruning-eligible VLAN list [2-803](#)psp [2-433](#)psp command [2-433](#)

PVST+

See STP

Q

QoS

auto-QoS

- configuring [2-59](#)
- debug messages, display [B-4](#)

auto-QoS trust

- configuring [2-53](#)

auto-QoS video

- configuring [2-56](#)

class maps

- creating [2-88](#)
- defining the match criteria [2-340](#)

defining the CoS value for an incoming packet [2-349](#)DSCP transparency [2-361](#)

DSCP trusted ports

- applying DSCP-to-DSCP-mutation map to [2-351](#)
- defining DSCP-to-DSCP-mutation map [2-353](#)

QoS (continued)

egress queues

- allocating buffers [2-357](#)
- defining the CoS output queue threshold map [2-375](#)
- defining the DSCP output queue threshold map [2-377](#)
- enabling bandwidth shaping and scheduling [2-753](#)
- enabling bandwidth sharing and scheduling [2-755](#)
- limiting the maximum output on a port [2-751](#)
- mapping a port to a queue-set [2-434](#)
- mapping CoS values to a queue and threshold [2-375](#)
- mapping DSCP values to a queue and threshold [2-377](#)
- setting maximum and reserved memory allocations [2-359](#)
- setting WTD thresholds [2-359](#)

enabling [2-345](#)

ingress queues

- allocating buffers [2-365](#)
- assigning SRR scheduling weights [2-363](#)
- defining the CoS input queue threshold map [2-367](#)
- defining the DSCP input queue threshold map [2-369](#)
- enabling the priority queue [2-371](#)
- mapping CoS values to a queue and threshold [2-367](#)
- mapping DSCP values to a queue and threshold [2-369](#)
- setting WTD thresholds [2-373](#)

maps

- defining [2-353, 2-367, 2-369, 2-375, 2-377](#)

policy maps

- applying an aggregate policer [2-419](#)
- creating [2-421](#)
- defining policers [2-347, 2-417](#)
- hierarchical [2-422](#)
- policed-DSCP map [2-353](#)

traffic classifications [2-85](#)trust states [2-817](#)port trust states [2-379](#)queues, enabling the expedite [2-426](#)trusted boundary for IP phones [2-379](#)VLAN-based [2-381](#)

quality of service

See QoS

querytime, MVR [2-386](#)queue-set command [2-434](#)

Rradius-server dead-criteria command [2-435](#)radius-server host command [2-437](#)

rapid per-VLAN spanning-tree plus

See STP

rapid PVST+

See STP

re-authenticating IEEE 802.1x-enabled ports [2-164](#)

re-authentication

periodic [2-165](#)time between attempts [2-167](#)receiver ports, MVR [2-389](#)receiving flow-control packets [2-185](#)

recovery mechanism

causes [2-179](#)display [2-92](#)timer interval [2-179](#)reload command [2-439](#)remote command [2-441](#)remote-span command [2-443](#)

Remote Switched Port Analyzer

See RSPAN

rename (boot loader) command [A-21](#)renew ip dhcp snooping database command [2-445](#)reset (boot loader) command [A-22](#)

restricted VLAN

See dot1x auth-fail vlan

rmdir (boot loader) command [A-23](#)

rmon collection stats command [2-449](#)

root guard, for spanning tree [2-714](#)

routed ports

IP addresses on [2-199](#)

number supported [2-199](#)

RSPAN

configuring [2-382](#)

filter RSPAN traffic [2-382](#)

remote-span command [2-443](#)

sessions

add interfaces to [2-382](#)

start new [2-382](#)

S

scheduled switchover

disabling [2-132](#)

enabling [2-132](#)

sdm prefer command [2-450](#)

SDM templates

displaying [2-652](#)

secure ports, limitations [2-790](#)

sending flow-control packets [2-185](#)

service password-recovery command [2-454](#)

service-policy command [2-456](#)

set (boot loader) command [A-24](#)

set command [2-460](#)

setup command [2-462](#)

setup express command [2-465](#)

show access-lists command [2-467](#)

show archive status command [2-470](#)

show arp access-list command [2-471](#)

show authentication command [2-472](#)

show auto qos command [2-476](#)

show boot command [2-480](#)

show cable-diagnostics tdr command [2-483](#)

show cisp command [2-485](#)

show class-map command [2-486](#)

show controllers cpu-interface command [2-487](#)

show controllers ethernet-controller command [2-489](#)

show controllers ethernet-controller fastethernet
command [2-496](#)

show controllers tcam command [2-499](#)

show controller utilization command [2-501](#)

show dot1q-tunnel command [2-508](#)

show dot1x command [2-509](#)

show dtp [2-513](#)

show eap command [2-515](#)

show env command [2-518](#)

show errdisable detect command [2-520](#)

show errdisable flap-values command [2-522](#)

show errdisable recovery command [2-523](#)

show etherchannel command [2-525](#)

show fallback profile command [2-528](#)

show flowcontrol command [2-529](#)

show idprom command [2-531](#)

show interfaces command [2-533](#)

show interfaces counters command [2-544](#)

show inventory command [2-546](#)

show ip arp inspection command [2-547](#)

show ipc command [2-571](#)

show ip dhcp snooping binding command [2-552](#)

show ip dhcp snooping command [2-551](#)

show ip dhcp snooping database command [2-554, 2-556](#)

show ip igmp profile command [2-559](#)

show ip igmp snooping address command [2-579](#)

show ip igmp snooping command [2-560, 2-577](#)

show ip igmp snooping groups command [2-563](#)

show ip igmp snooping mrouter command [2-565, 2-581](#)

show ip igmp snooping querier command [2-566](#)

show ip source binding command [2-568](#)

show ipv6 access-list command [2-574](#)

show ipv6 dhcp conflict command [2-576](#)

show ipv6 route updated [2-585](#)

show ip verify source command [2-569](#)

- show l2protocol-tunnel command [2-587](#)
- show lacp command [2-589](#)
- show link state group command [2-593](#)
- show location command [2-595](#)
- show logging command [2-597](#)
- show mac address-table address command [2-605](#)
- show mac address-table command [2-603](#)
- show mac address-table count command [2-608](#)
- show mac address-table dynamic command [2-609](#)
- show mac address-table interface command [2-611](#)
- show mac address-table learning command [2-612](#)
- show mac address-table move update command [2-613](#)
- show mac address-table notification command [2-105](#), [2-614](#), [B-23](#)
- show mac address-table vlan command [2-618](#)
- show mls qos aggregate-policer command [2-621](#)
- show mls qos command [2-620](#)
- show mls qos input-queue command [2-622](#)
- show mls qos interface command [2-623](#)
- show mls qos maps command [2-626](#)
- show mls qos queue-set command [2-629](#)
- show mls qos vlan command [2-630](#)
- show monitor command [2-631](#)
- show network-policy profile command [2-638](#)
- show nmsp command [2-639](#)
- show pagp command [2-642](#)
- show parser macro command [2-644](#)
- show platform acl command [C-2](#)
- show platform backup interface command [C-3](#)
- show platform chassis command [C-4](#)
- show platform configuration command [C-6](#)
- show platform dl command [C-7](#)
- show platform etherchannel command [C-8](#)
- show platform forward command [C-9](#)
- show platform frontend-controller command [C-11](#)
- show platform igmp snooping command [C-12](#)
- show platform ipc trace command [C-19](#)
- show platform ip multicast command [C-13](#)
- show platform ip unicast command [C-14](#)
- show platform ipv6 unicast command [C-20](#)
- show platform ip wccp command [C-18](#)
- show platform layer4op command [C-22](#)
- show platform mac-address-table command [C-23](#)
- show platform messaging command [C-24](#)
- show platform monitor command [C-25](#)
- show platform mvr table command [C-26](#)
- show platform pm command [C-27](#)
- show platform port-asic command [C-28](#)
- show platform port-security command [C-33](#)
- show platform qos command [C-34](#)
- show platform resource-manager command [C-35](#)
- show platform snmp counters command [C-37](#)
- show platform spanning-tree command [C-38](#)
- show platform stack-manager command [C-40](#)
- show platform stp-instance command [C-39](#)
- show platform summary command [C-44](#)
- show platform tb command [C-45](#)
- show platform team command [C-47](#)
- show platform vlan command [C-50](#)
- show policy-map command [2-647](#)
- show port security command [2-648](#)
- show psp config [2-650](#)
- show psp config command [2-650](#)
- show psp statistics [2-651](#)
- show psp statistics command [2-651](#)
- show sdm prefer command [2-652](#)
- show setup express command [2-655](#)
- show spanning-tree command [2-656](#)
- show storm-control command [2-662](#)
- show switch command [2-664](#)
- show system mtu command [2-669](#)
- show trust command [2-817](#)
- show uddl command [2-670](#)
- show version command [2-673](#)
- show vlan access-map command [2-679](#)
- show vlan command [2-675](#)
- show vlan filter command [2-680](#)
- show vmps command [2-681](#)

- show vtp command [2-683](#)
- shutdown command [2-689](#)
- shutdown threshold, Layer 2 protocol tunneling [2-295](#)
- shutdown vlan command [2-690](#)
- small violation-rate command [2-691](#)
- Smartports macros
 - See macros
- SNMP host, specifying [2-697](#)
- SNMP informs, enabling the sending of [2-693](#)
- snmp-server enable traps command [2-693](#)
- snmp-server host command [2-697](#)
- snmp trap mac-notification command [2-701](#)
- SNMP traps
 - enabling MAC address notification trap [2-701](#)
 - enabling the MAC address notification feature [2-323](#)
 - enabling the sending of [2-693](#)
- SoftPhone
 - See Cisco SoftPhone
- software images
 - copying [2-8](#)
 - deleting [2-119](#)
 - downloading [2-11](#)
 - upgrading [2-8, 2-11](#)
 - uploading [2-18](#)
- source ports, MVR [2-389](#)
- SPAN
 - configuring [2-382](#)
 - debug messages, display [B-24](#)
 - filter SPAN traffic [2-382](#)
 - sessions
 - add interfaces to [2-382](#)
 - start new [2-382](#)
- spanning-tree backbonefast command [2-703](#)
- spanning-tree bpdupfilter command [2-704](#)
- spanning-tree bpduguard command [2-706](#)
- spanning-tree cost command [2-708](#)
- spanning-tree etherchannel command [2-710](#)
- spanning-tree extend system-id command [2-712](#)
- spanning-tree guard command [2-714](#)
- spanning-tree link-type command [2-716](#)
- spanning-tree loopguard default command [2-718](#)
- spanning-tree mode command [2-720](#)
- spanning-tree mst configuration command [2-722](#)
- spanning-tree mst cost command [2-724](#)
- spanning-tree mst forward-time command [2-726](#)
- spanning-tree mst hello-time command [2-727](#)
- spanning-tree mst max-age command [2-728](#)
- spanning-tree mst max-hops command [2-729](#)
- spanning-tree mst port-priority command [2-730](#)
- spanning-tree mst pre-standard command [2-732](#)
- spanning-tree mst priority command [2-733](#)
- spanning-tree mst root command [2-734](#)
- spanning-tree portfast (global configuration) command [2-738](#)
- spanning-tree portfast (interface configuration) command [2-741](#)
- spanning-tree port-priority command [2-736](#)
- Spanning Tree Protocol
 - See STP
- spanning-tree transmit hold-count command [2-743](#)
- spanning-tree uplinkfast command [2-744](#)
- spanning-tree vlan command [2-746](#)
- speed command [2-749](#)
- srr-queue bandwidth limit command [2-751](#)
- srr-queue bandwidth shape command [2-753](#)
- srr-queue bandwidth share command [2-755](#)
- SSH, configuring version [2-261](#)
- stack-mac persistent timer command [2-757](#)
- stack member
 - number [2-767](#)
 - priority value [2-764](#)
 - provisioning [2-765](#)
 - reloading [2-439](#)
- stacks, switch
 - disabling a member [2-762](#)
 - enabling a member [2-762](#)
 - MAC address [2-757](#)
 - provisioning a new member [2-765](#)

- stacks, switch (continued)
 - reloading [2-439](#)
 - stack member number [2-767](#)
 - stack member priority value [2-764](#)
- static-access ports, configuring [2-771](#)
- sticky learning, enabling [2-788](#)
- storm-control command [2-759](#)
- STP
 - BackboneFast [2-703](#)
 - counters, clearing [2-111](#)
 - debug messages, display
 - BackboneFast events [B-81](#)
 - MSTP [B-84](#)
 - optimized BPDUs handling [B-83](#)
 - spanning-tree activity [B-79](#)
 - switch shim [B-86](#)
 - transmitted and received BPDUs [B-82](#)
 - UplinkFast [B-88](#)
 - detection of indirect link failures [2-703](#)
 - enabling protocol tunneling for [2-295](#)
 - EtherChannel misconfiguration [2-710](#)
 - extended system ID [2-712](#)
 - path cost [2-708](#)
 - protocol modes [2-720](#)
 - root port
 - accelerating choice of new [2-744](#)
 - loop guard [2-714](#)
 - preventing from becoming designated [2-714](#)
 - restricting which can be root [2-714](#)
 - root guard [2-714](#)
 - UplinkFast [2-744](#)
 - root switch
 - affects of extended system ID [2-712, 2-747](#)
 - hello-time [2-746](#)
 - interval between BDPUs messages [2-746](#)
 - interval between hello BDPUs messages [2-746](#)
 - max-age [2-746](#)
 - port priority for selection of [2-736](#)
 - primary or secondary [2-746](#)
 - switch priority [2-746](#)
 - state changes
 - blocking to forwarding state [2-741](#)
 - enabling BPDU filtering [2-704, 2-738](#)
 - enabling BPDU guard [2-706, 2-738](#)
 - enabling Port Fast [2-738, 2-741](#)
 - enabling timer to recover from error state [2-179](#)
 - forward-delay time [2-746](#)
 - length of listening and learning states [2-746](#)
 - shutting down Port Fast-enabled ports [2-738](#)
 - VLAN options [2-733, 2-746](#)
- SVIs, creating [2-193](#)
- SVI status calculation [2-773](#)
- Switched Port Analyzer
 - See SPAN
- switching characteristics
 - modifying [2-769](#)
 - returning to interfaces [2-769](#)
- switchport access command [2-771](#)
- switchport autostate exclude command [2-773](#)
- switchport backup interface command [2-775](#)
- switchport block command [2-778](#)
- switchport command [2-769](#)
- switchport host command [2-780](#)
- switchport mode command [2-781](#)
- switchport mode private-vlan command [2-784](#)
- switchport nonegotiate command [2-786](#)
- switchport port-security aging command [2-793](#)
- switchport port-security command [2-788](#)
- switchport priority extend command [2-795](#)
- switchport private-vlan command [2-797](#)
- switchport protected command [2-799](#)
- switchport trunk command [2-801](#)
- switchport voice detect [2-804](#)
- switchport voice vlan command [2-805](#)
- switch priority command [2-762, 2-764](#)
- switch provision command [2-765](#)

switch renumber command [2-767](#)
 system env temperature threshold yellow command [2-807](#)
 system message logging, save message to flash [2-310](#)
 system mtu command [2-809](#)
 system resource templates [2-450](#)

T

tar files, creating, listing, and extracting [2-15](#)
 TDR, running [2-811](#)
 temperature information, displaying [2-518](#)
 templates, system resources [2-450](#)
 test cable-diagnostics tdr command [2-811](#)
 traceroute mac command [2-812](#)
 traceroute mac ip command [2-815](#)
 trunking, VLAN mode [2-781](#)
 trunk mode [2-781](#)
 trunk ports [2-781](#)
 trunks, to non-DTP device [2-782](#)
 trusted boundary for QoS [2-379](#)
 trusted port states for QoS [2-379](#)
 type (boot loader) command [A-27](#)

U

UDLD

aggressive mode [2-819, 2-821](#)
 debug messages, display [B-96](#)
 enable globally [2-819](#)
 enable per interface [2-821](#)
 error recovery timer [2-179](#)
 message timer [2-819](#)
 normal mode [2-819, 2-821](#)
 reset a shutdown interface [2-823](#)

udld command [2-819](#)
 udld port command [2-821](#)
 udld reset command [2-823](#)

unicast storm control [2-759](#)

UniDirectional Link Detection

See UDLD

unknown multicast traffic, preventing [2-778](#)
 unknown unicast traffic, preventing [2-778](#)
 unset (boot loader) command [A-28](#)
 upgrading
 copying software images [2-8](#)
 downloading software images [2-11](#)
 UplinkFast, for STP [2-744](#)
 user EXEC mode [1-2, 1-3](#)

V

version (boot loader) command [A-30](#)
 version mismatch mode [C-41](#)
 vlan (global configuration) command [2-824](#)
 vlan access-map command [2-829](#)
 VLAN access map configuration mode [2-829](#)
 VLAN access maps
 actions [2-6](#)
 VLAN-based QoS [2-381](#)
 VLAN configuration
 rules [2-827](#)
 saving [2-824](#)
 VLAN configuration mode
 description [1-4](#)
 summary [1-3](#)
 vlan dot1q tag native command [2-831](#)
 vlan filter command [2-833](#)
 VLAN ID range [2-824](#)
 VLAN maps
 applying [2-833](#)
 creating [2-829](#)
 defining [2-338](#)
 VLAN Query Protocol
 See VQP

VLANs

- adding [2-824](#)
- configuring [2-824](#)
- debug messages, display
 - ISL [B-92](#)
 - VLAN IOS file system error tests [B-91](#)
 - VLAN manager activity [B-89](#)
 - VTP [B-94](#)
- extended-range [2-824](#)
- media types [2-827](#)
- normal-range [2-824](#)
- private [2-784](#)
 - configuring [2-428](#)
 - See also private VLANs
- restarting [2-690](#)
- saving the configuration [2-824](#)
- shutting down [2-690](#)
- SNMP traps for VTP [2-695, 2-698](#)
- suspending [2-690](#)

VLAN Trunking Protocol

See VTP

VM mode [C-41](#)

VMPS

- configuring servers [2-838](#)
- error recovery timer [2-179](#)
- reconfirming dynamic VLAN assignments [2-835](#)
- vmmps reconfirm (global configuration) command [2-836](#)
- vmmps reconfirm (privileged EXEC) command [2-835](#)
- vmmps retry command [2-837](#)
- vmmps server command [2-838](#)
- voice VLAN
 - configuring [2-804, 2-805](#)
 - setting port priority [2-795](#)

VQP

- and dynamic-access ports [2-772](#)
- clearing client statistics [2-113](#)
- per-server retry count [2-837](#)
- reconfirmation interval [2-836](#)
- reconfirming dynamic VLAN assignments [2-835](#)

VTP

- changing characteristics [2-840](#)
- clearing pruning counters [2-114](#)
- configuring
 - domain name [2-840](#)
 - file name [2-840](#)
 - mode [2-840](#)
 - password [2-841](#)
- enabling
 - pruning [2-841](#)
 - tunneling for [2-295](#)
 - Version 2 [2-841](#)
- enabling per port [2-845](#)
- mode [2-840](#)
- pruning [2-841](#)
- saving the configuration [2-824](#)
- vtp (global configuration) command [2-840](#)
- vtp interface configuration) command [2-845](#)
- vtp primary command [2-846](#)

