



## INDEX

---

### Symbols

- \$ matches the end of a string [1-7](#)
- () in commands [1-11](#)
- \* matches 0 or more sequences of a pattern [1-7](#)
- + matches 1 or more sequences of a pattern [1-7](#)
- . matches any single character [1-7](#)
- ? command [1-1](#)
- ? matches 0 or 1 occurrence of a pattern [1-7](#)
- ^ matches the beginning of a string [1-7](#)
- \_ matches a comma (,), left brace ({}), left parenthesis [1-7](#)
- “ [1-10](#)

---

### Numerics

- 10-Gigabit Ethernet uplink
    - selecting [2-199](#)
    - showing the mode [2-531, 2-532](#)
  - 802.1Q trunk ports and native VLANs [2-864](#)
  - 802.1Q tunnel ports
    - configuring [2-806](#)
  - 802.1S Multiple Spanning Tree
    - see MST
  - 802.1X
    - configuring for multiple hosts [2-156](#)
    - configuring for single host [2-156](#)
    - configuring multiple domains [2-156](#)
    - disabling port control [2-149](#)
    - enabling port control [2-149](#)
  - 802.1X Critical Authentication
    - disabling on a port [2-150](#)
    - disabling on a VLAN [2-153](#)
  - EAPOL
    - disabling send success packets [2-151](#)
    - enabling send success packets [2-151](#)
  - enabling on a port [2-150](#)
  - enabling on a VLAN [2-153](#)
  - returning delay time to default setting [2-152](#)
  - setting delay time on a port [2-152](#)
- 802.1X critical authentication
- configure parameters [2-23](#)
- 802.1X critical recovery delay, configuring [2-23](#)
- 802.1X Port Based Authentication
- debugging 802.1X Port Based Authentication [2-108](#)
  - displaying port based authentication [2-511](#)
  - enabling accounting for authentication sessions [2-4](#)
  - enabling authentication on the system [2-167](#)
  - enabling guest VLAN [2-154](#)
  - enabling guest VLAN supplicant [2-147, 2-155](#)
  - enabling manual control of auth state [2-163](#)
  - enabling periodic re-authentication of the client [2-166](#)
  - initializing re-authentication of dot1x ports [2-165](#)
  - initializing state machines [2-158](#)
  - receive session termination message upon reboot [2-5](#)
  - setting maximum number for EAP requests [2-161](#)
  - setting the reauthentication timer [2-168](#)

---

### A

- abbreviating commands
  - context-sensitive help [1-1](#)
- Access Gateway Module
  - connecting to a module [2-20](#)
  - connecting to a remote module [2-442](#)
  - connecting to a specific remote module [2-454](#)
- access-group

- displaying mac interface [2-638](#)
- show mode interface [2-391, 2-473, 2-696](#)
- access groups
  - IP [2-6](#)
- access lists
  - clearing an access template [2-71](#)
  - defining ARP [2-19](#)
  - displaying ARP information [2-477](#)
  - See also ACLs, MAC ACLs, and VACLs
- access maps
  - applying with VLAN filter [2-866](#)
- access-node-identifier, setting for the switch [2-389](#)
- access-policies, applying using host-mode [2-27](#)
- ACLs
  - access-group mode [2-6](#)
  - balancing hardware regions [2-12](#)
  - capturing control packets [2-8](#)
  - determining ACL hardware programming [2-10](#)
  - disabling hardware statistics [2-194](#)
  - displaying mac access-group interface [2-638](#)
  - enabling hardware statistics [2-194](#)
  - using ACL naming conventions for MAC ACLs [2-306](#)
- action clause
  - specifying drop or forward action in a VACL [2-13](#)
- addresses, configuring a maximum [2-385](#)
- adjacency
  - debugging the adjacency table [2-101](#)
  - disabling the debug facility [2-101](#)
  - displaying information about the adjacency table [2-474](#)
  - displaying IPC table entries [2-101](#)
- aggregate policer
  - displaying information [2-697](#)
- aging time
  - displaying MAC address aging time [2-641](#)
  - MAC address table [2-309](#)
- alarms
  - displaying operational status [2-519](#)
- alternation
  - description [1-10](#)
- anchoring
  - description [1-10](#)
- anycp, show multicast [2-476](#)
- ANCP client
  - port identifier [2-14](#)
  - remote server [2-15](#)
  - set router to become [2-16](#)
- ARP
  - access list, displaying detailed information [2-477](#)
  - defining access-lists [2-19](#)
- ARP inspection
  - enforce certain types of checking [2-216](#)
- ARP packet
  - deny based on DHCP bindings [2-143](#)
  - permit based on DHCP bindings [2-358](#)
- authentication [2-23, 2-29](#)
  - changing the control-direction [2-21](#)
  - configure actions for events
    - configuring the actions [2-24](#)
  - configuring port-control [2-33](#)
  - enabling reauthentication [2-32](#)
  - enabling Webauth fallback [2-26](#)
  - host-mode configuration [2-27](#)
  - setting priority of methods [2-35](#)
  - setting the timer [2-37](#)
  - setting username [2-851](#)
  - specifying the order of methods [2-30](#)
  - using an MD5-type encryption method [2-851](#)
  - verifying MD5 signature [2-853](#)
  - verifying the checksum for Flash memory [2-853](#)
- authentication control-direction command [2-21](#)
- authentication critical recovery delay command [2-23](#)
- authentication event command [2-24](#)
- authentication fallback command [2-26](#)
- authentication host-mode [2-27](#)
- authentication methods, setting priority [2-35](#)

authentication methods, specifying the order of attempts [2-30](#)

authentication open command [2-29](#)

authentication order command [2-30](#)

authentication periodic command [2-32](#)

authentication port-control command [2-33](#)

authentication priority command [2-35](#)

authentication timer, setting [2-37](#)

authentication timer command [2-37](#)

auth fail VLAN

enable on a port [2-148](#)

set max number of attempts [2-147](#)

Auth Manager

configuring

authentication timer [2-37](#)

authorization state

enabling manual control [2-163](#)

authorization state of a controlled port [2-163](#)

automatic installation

displaying status [2-482](#)

automatic medium-dependent interface crossover

See Auto-MDIX

Auto-MDIX

disabling [2-338](#)

enabling [2-338](#)

auto-negotiate interface speed

example [2-795](#)

auto-QoS

configuring for VoIP [2-39](#)

displaying configuration [2-483](#)

## B

baby giants

displaying the system MTU setting [2-728](#)

setting the maximum Layer 2 payload size [2-831](#)

BackboneFast

displaying debugging messages [2-130](#)

displaying spanning tree status [2-718](#)

enabling debugging [2-130](#)

bandwidth command [2-43](#)

bindings

store for DHCP snooping [2-228](#)

BOOT environment variable

displaying information [2-486](#)

bootflash

displaying information [2-484](#)

BPDUs

debugging spanning tree activities [2-128](#)

bridge protocol data units

See BPDUs

broadcast

counters [2-98](#)

broadcast suppression level

configuring [2-796, 2-798](#)

enabling [2-796, 2-798](#)

## C

cable diagnostics

TDR

displaying test results [2-487](#)

testing conditions of copper cables [2-833](#)

call home

displaying information [2-489](#)

e-mailing output [2-51](#)

entering configuration submode [2-46](#)

executing [2-51](#)

manually send test message [2-54](#)

receiving information [2-49](#)

sending alert group message [2-52](#)

submitting information [2-49](#)

call home destination profiles

displaying [2-491](#)

Catalyst 4507R [2-381](#)

CDP

configuring tunneling encapsulation rate [2-296](#)

displaying

- neighbor information [2-494](#)
- enabling protocol tunneling for [2-291](#)
- set drop threshold for [2-294](#)
- CEF
  - displaying next-hop information [2-568](#)
  - displaying VLAN configuration information [2-568](#)
- chassis
  - displaying
    - chassis MAC address ranges [2-635](#)
    - current and peak traffic meter readings [2-635](#)
    - percentage of backplane utilization [2-635](#)
    - switching clock failure recovery mode [2-635](#)
- circuit-id
  - setting for an interface [2-396](#)
- circuit-id, setting for an interface VLAN range [2-398](#)
- cisco-desktop
  - macro apply [2-316](#)
- Cisco Express Forwarding
  - See CEF
- cisco-phone
  - macro apply [2-318](#)
- cisco-router
  - macro apply [2-320](#)
- cisco-switch
  - macro apply [2-322](#)
- class maps
  - creating [2-62](#)
  - defining the match criteria [2-331](#)
- clear commands
  - clearing Gigabit Ethernet interfaces [2-69](#)
  - clearing IGMP group cache entries [2-78](#)
  - clearing interface counters [2-64](#)
  - clearing IP access lists [2-71, 2-72](#)
  - clearing IP ARP inspection statistics VLAN [2-73](#)
  - clearing IP DHCP snooping database statistics [2-77](#)
  - clearing MFIB counters and routes [2-81](#)
  - clearing MFIB fastdrop entries [2-82](#)
  - clearing PAgP channel information [2-88](#)
  - clearing QoS aggregate counters [2-92](#)
  - clearing VLAN interfaces [2-70](#)
- clear energywise neighbors command [2-66](#)
- clear nmsp statistics command [2-87](#)
- CLI string search
  - anchoring [1-10](#)
  - expressions [1-7](#)
  - filtering [1-6](#)
  - multiple-character patterns [1-8](#)
  - multipliers [1-9](#)
  - parentheses for recall [1-11](#)
  - searching outputs [1-6](#)
  - single-character patterns [1-7](#)
  - using [1-6](#)
- command modes
  - accessing privileged EXEC mode [1-5](#)
  - exiting [1-5](#)
  - understanding user EXEC and configuration modes [1-5](#)
- condition interface
  - debugging interface-related activities [2-103](#)
- condition vlan
  - debugging VLAN output [2-106](#)
- configuration, saving [1-11](#)
- configuring
  - root as secondary [2-779](#)
- configuring a SPAN session to monitor
  - limit SPAN source traffic [2-343](#)
- configuring critical recovery [2-23](#)
- configuring forward delay [2-775](#)
- configuring root as primary [2-779](#)
- CoPP
  - attaching
    - policy map to control plane [2-452](#)
  - displaying
    - policy-map class information [2-670](#)
  - entering configuration mode [2-96](#)
  - removing
    - service policy from control plane [2-452](#)
- CoS

- assigning to Layer 2 protocol packets [2-293](#)
- CoS QoS default
  - defining value on an interface [2-418](#)
- Cost of Service
  - See QoS CoS
- counters
  - clearing interface counters [2-64](#)
- critical authentication, configure 802.1X parameters [2-23](#)
- critical recovery, configuring 802.1X parameter [2-23](#)

## D

- DAI
  - clear statistics [2-73](#)
- DBL
  - displaying qos dbl [2-698](#)
  - enabling DBL globally on the switch [2-419](#)
- debug commands
  - debugging backup events [2-102](#)
  - debugging DHCP snooping events [2-113](#)
  - debugging DHCP snooping messages [2-114](#)
  - debugging EtherChannel/PAgP/shim [2-109](#)
  - debugging IPC activity [2-112](#)
  - debugging IP DHCP snooping security messages [2-115](#)
  - debugging NVRAM activities [2-119](#)
  - debugging PAgP activities [2-120](#)
  - debugging port manager activities [2-123](#)
  - debugging spanning tree activities [2-128](#)
  - debugging spanning tree backbonefast [2-130](#)
  - debugging spanning tree UplinkFast [2-133](#)
  - debugging supervisor redundancy [2-127](#)
  - debugging VLAN manager activities [2-134](#)
  - displaying monitor activity [2-117](#)
  - displaying the adjacency table [2-101](#)
  - enabling debug dot1x [2-108](#)
  - enabling debugging messages for ISL VLAN IDs [2-137](#)
  - enabling debugging messages for VTP [2-138](#)
  - enabling debugging of UDLD activity [2-139](#)
  - enabling switch shim debugging [2-131](#)
  - enabling VLAN manager file system error tests [2-135](#)
  - limiting debugging output for VLANs [2-106](#)
  - limiting interface debugging output [2-103](#)
  - limiting output for debugging standby state changes [2-104](#)
  - shortcut to the debug condition interface [2-111](#)
- debugging
  - activity monitoring [2-117](#)
  - DHCP snooping events [2-113](#)
  - DHCP snooping packets [2-114](#)
  - IPC activities [2-112](#)
  - IP DHCP snooping security packets [2-115](#)
  - NVRAM activities [2-119](#)
  - PAgP activities [2-120](#)
  - PAgP shim [2-109](#)
  - PM activities [2-123](#)
  - PPPoE Intermediate Agent [2-125](#)
  - spanning tree BackboneFast events [2-130](#)
  - spanning tree switch shim [2-131](#)
  - spanning tree UplinkFast events [2-133](#)
  - VLAN manager activities [2-134](#)
  - VLAN manager IOS file system error tests [2-135](#)
  - VTP protocol debug messages [2-138](#)
- debug nmsp command [2-118](#)
- debug spanning tree switch [2-131](#)
- debug sw-vlan vtp [2-138](#)
- default CoS value [2-418](#)
- default form of a command, using [1-6](#)
- defining egress DSCP-to-CoS mapping [2-425](#)
- DHCP
  - clearing database statistics [2-77](#)
- DHCP bindings
  - configuring bindings [2-226](#)
  - deny ARP packet based on matches [2-143](#)
  - permit ARP packet based on matches [2-358](#)
- DHCP snooping
  - clearing binding entries [2-74](#)

- clearing database [2-76](#)
- displaying binding table [2-571](#)
- displaying configuration information [2-569](#)
- displaying status of DHCP database [2-574](#)
- displaying status of error detection [2-522](#)
- enabling DHCP globally [2-225](#)
- enabling IP source guard [2-265](#)
- enabling on a VLAN [2-235](#)
- enabling option 82 [2-230, 2-232](#)
- enabling option-82 [2-237](#)
- enabling rate limiting on an interface [2-233](#)
- enabling trust on an interface [2-234](#)
- establishing binding configuration [2-226](#)
- renew binding database [2-444](#)
- store generated bindings [2-228](#)

diagnostic test

- bootup packet memory [2-505](#)
- displaying attributes [2-499](#)
- display module-based results [2-501](#)
- running [2-146](#)
- show results for TDR [2-487](#)
- testing conditions of copper cables [2-833](#)

displaying error disable recovery [2-523](#)

displaying inline power status [2-685](#)

displaying monitoring activity [2-117](#)

displaying PoE policing and monitoring status [2-693](#)

displaying SEEPROM information

- GBIC [2-533](#)

displaying SPAN session information [2-727, 2-797](#)

document conventions [1-xx](#)

document organization [1-xix](#)

DoS

- CoPP
  - attaching policy map to control plane [2-452](#)
  - displaying policy-map class information [2-670](#)
  - entering configuration mode [2-96](#)
  - removing service policy from control plane [2-452](#)
- entering
  - CoPP configuration mode [2-96](#)

DOS attack

- protecting system's resources [2-211](#)

drop threshold, Layer 2 protocol tunneling [2-294](#)

DSCP rewrite for IP packets

- enable [2-429](#)

dual-capable port

- selecting a connector [2-340](#)

duplex mode

- configuring autonegotiation on an interface [2-170](#)
- configuring full duplex on an interface [2-170](#)
- configuring half duplex on an interface [2-170](#)

dynamic ARP inspection

- preventing [2-211](#)

Dynamic Buffer Limiting

- See DBL

Dynamic Host Configuration Protocol

- See DHCP

---

## E

EAP

- restarting authentication process [2-161](#)

EDCS-587028 [2-478, 2-635](#)

EIGRP (Enhanced IGRP)

- filters
  - routing updates, preventing [2-355](#)

enabling

- debugging for UDLD [2-139](#)
- voice VLANs [2-799](#)

enabling open access [2-29](#)

EnergyWise

- display power information through queries [2-179](#)
- display setting, status of entity and PoE ports [2-515](#)
- on an entity
  - enable, assign to domain, and set password [2-177](#)
- on an entity, enable and configure [2-172](#)
- on a PoE port
  - configuring on PoE port [2-174](#)

energywise (global configuration) command [2-172, 2-174](#)

energywise domain command [2-177](#)

EnergyWise neighbor table, deleting [2-66](#)

energywise query command [2-179](#)

environmental

- alarms [2-519](#)
- displaying information [2-519](#)
- status [2-519](#)
- temperature [2-519](#)

erase a file [2-183](#)

error disable detection

- clearing error disable on an interface [2-67](#)
- enabling error disable detection [2-67, 2-186](#)
- enabling per-VLAN on BPDU guard [2-186](#)

error-disabled state

- displaying [2-552](#)

error disable recovery

- configuring recovery mechanism variables [2-188](#)
- displaying recovery timer information [2-523](#)
- enabling ARP inspection timeout [2-188](#)
- specifying recovery cause [2-188](#)

EtherChannel

- assigning interfaces to EtherChannel groups [2-55](#)
- debugging EtherChannel [2-109](#)
- debugging PAgP shim [2-109](#)
- debugging spanning tree activities [2-128](#)
- displaying information for a channel [2-525](#)
- removing interfaces from EtherChannel groups [2-55](#)

EtherChannel guard

- detecting STP misconfiguration [2-765](#)

Explicit Host Tracking

- clearing the database [2-80](#)
- enabling per-VLAN [2-249](#)

expressions

- matching multiple expression occurrences [1-9](#)
- multiple-character patterns [1-8](#)
- multiplying pattern occurrence [1-11](#)
- single-character patterns [1-7](#)

Extensible Authentication Protocol

- See EAP

---

## F

fallback profile, specifying [2-26](#)

field replaceable unit (FRU)

- displaying status information [2-519](#)

filters

- EIGRP
  - routing updates, preventing [2-355](#)

Flash memory file system

- displaying file system information [2-484](#)
- verifying checksum [2-853](#)

flow control

- configuring a gigabit interface for pause frames [2-191](#)
- displaying per-interface statistics for flow control [2-529](#)

---

## G

GBIC

- displaying SEEPROM information [2-533](#)

generic-error-message, setting for the switch [2-389](#)

Gigabit Ethernet interface

- clearing the hardware logic [2-69](#)

Gigabit Ethernet uplink

- selecting [2-199](#)
- showing the mode [2-531, 2-532](#)

global configuration mode

- using [1-5](#)

---

## H

hardware module

- resetting a module by toggling the power [2-196](#)

hardware statistics

- disabling [2-194](#)
- enabling [2-194](#)

hardware uplink

- changing the mode [2-197](#)
- selecting the mode [2-199](#)

- showing the mode [2-531, 2-532](#)
  - helper addresses, IP [2-589](#)
  - hot standby protocol
    - debugging [2-104](#)
    - disabling debugging [2-104](#)
    - limiting output [2-104](#)
- 
- identifier-string, setting for the switch [2-389](#)
  - ID mapping, creating an ANCP client [2-14](#)
  - IDPROMs
    - displaying SEEPROM information
      - chassis [2-533](#)
      - clock module [2-533](#)
      - fan trays [2-533](#)
      - module [2-533](#)
      - mux buffer [2-533](#)
      - power supplies [2-533](#)
      - supervisor engine [2-533](#)
  - ifIndex persistence
    - clearing SNMP ifIndex commands [2-751](#)
    - compress SNMP ifIndex table format [2-758](#)
    - disabling globally [2-757](#)
    - disabling on an interface [2-753](#)
    - enabling globally [2-757](#)
    - enabling on an interface [2-753](#)
  - IGMP
    - applying filters for host joining on Layer 2 interfaces [2-239](#)
    - clearing IGMP group cache entries [2-78](#)
    - configuring frequency for IGMP host-query messages [2-242](#)
    - creating an IGMP profile [2-241](#)
    - displaying IGMP interface configuration information [2-576](#)
    - displaying profiles [2-578](#)
    - setting maximum group numbers [2-240](#)
  - IGMP profiles
    - displaying
      - displaying [2-578](#)
    - IGMP snooping
      - clearing the EHT database [2-80](#)
      - configuring a Layer 2 interface as a group member [2-255](#)
      - configuring a Layer 2 interface as a multicast router [2-253](#)
      - configuring a static VLAN interface [2-255](#)
      - displaying multicast information [2-585](#)
      - displaying VLAN information [2-579, 2-583, 2-586](#)
      - enabling [2-244](#)
      - enabling immediate-leave processing [2-251](#)
      - enabling on a VLAN [2-248](#)
      - enabling per-VLAN Explicit Host Tracking [2-249](#)
    - informs
      - enabling [2-755](#)
    - inline power
      - displaying inline power status [2-685](#)
    - In Service Software Upgrade
      - See ISSU
    - inspection log
      - clearing log buffer [2-72](#)
    - interface
      - displaying suppressed multicast bytes [2-546](#)
    - interface capabilities
      - displaying [2-542](#)
    - interface configuration mode
      - summary [1-5](#)
    - interface link
      - display cable disconnect time [2-549](#)
    - interfaces
      - configuring dot1q tunnel ports [2-806](#)
      - creating an interface-range macro [2-142](#)
      - debugging output of interface related activities [2-103](#)
      - displaying description [2-548](#)
      - displaying error-disabled state [2-552](#)
      - displaying information when tunneling is enabled [2-629](#)
      - displaying status [2-548](#)
      - displaying traffic for a specific interface [2-539](#)



- entering interface configuration mode [2-203](#)
- executing a command on multiple ports in a range [2-206](#)
- selecting an interface to configure [2-203](#)
- setting a CoS value for Layer 2 packets [2-293](#)
- setting drop threshold for Layer 2 packets [2-294](#)
- setting the interface type [2-806](#)
- interface speed
  - configuring interface speed [2-793](#)
- interface transceiver
  - displaying diagnostic data [2-556](#)
- internal VLAN allocation
  - configuring [2-867](#)
  - default setting [2-867](#)
  - displaying allocation information [2-740](#)
- Internet Group Management Protocol
  - See IGMP
- IP address of remote ANCP server, setting [2-15](#)
- IP ARP
  - applying ARP ACL to VLAN [2-209](#)
  - clearing inspection statistics [2-73](#)
  - clearing status of log buffer [2-72](#)
  - controlling packet logging [2-220](#)
  - enabling dynamic inspection [2-218](#)
  - limit rate of incoming requests [2-211](#)
  - set per-port config trust state [2-215](#)
  - showing status of dynamic ARP inspection [2-563](#)
  - showing status of log buffer [2-566](#)
- IPC
  - debugging IPC activities [2-112](#)
- IP DHCP Snooping
  - See DHCP snooping
- IP header validation
  - disabling [2-264](#)
  - enabling [2-264](#)
- IP interfaces
  - displaying usability status [2-588](#)
- IP multicast
  - displaying multicast routing table information [2-594](#)
- IP packets
  - enable DSCP rewrite [2-429](#)
- IP phone and standard desktop
  - enabling Cisco-recommended features [2-318](#)
- IP Port Security
  - enabling [2-265](#)
- IP source binding
  - adding or deleting [2-261](#)
  - displaying bindingstaggering [2-599](#)
- IP source guard
  - debugging messages [2-115](#)
  - displaying configuration and filters [2-600](#)
  - enabling on DHCP snooping [2-265](#)
- IPv6 MLD
  - configuring queries [2-271, 2-273](#)
  - configuring snooping
    - last-listener-query-intervals [2-273](#)
  - configuring snooping
    - listener-message-suppression [2-275](#)
  - configuring snooping robustness-variables [2-276](#)
  - configuring tcn topology change notifications [2-278](#)
  - counting snooping last-listener-queries [2-271](#)
  - displaying information [2-605](#)
  - displaying ports for a switch or VLAN [2-607](#)
  - displaying querier information [2-608](#)
  - enabling snooping [2-269](#)
  - enabling snooping on a VLAN [2-279](#)
- ISSU
  - canceling process [2-281](#)
  - configuring rollback timer [2-290](#)
  - displaying capability [2-610](#)
  - displaying client information [2-612](#)
  - displaying compatibility matrix [2-614](#)
  - displaying endpoint information [2-619](#)
  - displaying entities [2-620](#)
  - displaying FSM session [2-621](#)
  - displaying messages [2-622](#)
  - displaying negotiated [2-624](#)
  - displaying rollback-timer [2-625](#)

displaying session information [2-626](#)  
 displaying software version [2-627](#)  
 displaying state [2-627](#)  
 forcing switchover to standby supervisor engine [2-289](#)  
 loading new image [2-285](#)  
 starting process [2-287](#)  
 stopping rollback timer [2-283](#)

---

## J

### Jumbo frames

enabling jumbo frames [2-349](#)

---

## L

### LACP

deselecting channeling protocol [2-57](#)  
 enabling LACP on an interface [2-57](#)  
 setting channeling protocol [2-57](#)

### Layer 2

displaying ACL configuration [2-638](#)

### Layer 2 interface type

specifying a nontrunking, nontagged single VLAN interface [2-806](#)  
 specifying a trunking VLAN interface [2-806](#)

### Layer 2 protocol ports

displaying [2-629](#)

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

### Layer 2 switching

enabling voice VLANs [2-799](#)  
 modifying switching characteristics [2-799](#)

### Layer 2 traceroute

IP addresses [2-838](#)

### Layer 3 switching

displaying information about an adjacency table [2-474](#)  
 displaying port status [2-554](#)  
 displaying status of native VLAN tagging [2-554](#)

### link-status event messages

disabling  
     globally [2-300, 2-303](#)  
     on an interface [2-301, 2-304](#)  
 enabling  
     globally [2-300, 2-303](#)  
     on an interface [2-301, 2-304](#)

### log buffer

show status [2-566](#)

### logging

controlling IP ARP packets [2-220](#)

---

## M

MAB, display information [2-635](#)

MAB, enable and configure [2-328](#)

mab command [2-328](#)

### MAC Access Control Lists

See MAC ACLs

### MAC ACLs

defining extended MAC access list [2-306](#)  
 displaying MAC ACL information [2-737](#)  
 naming an ACL [2-306](#)

### MAC address filtering

configuring [2-315](#)  
 disabling [2-315](#)  
 enabling [2-315](#)

### MAC address table

adding static entries [2-327](#)  
 clearing dynamic entries [2-84, 2-86](#)  
 configuring aging time [2-309](#)  
 displaying dynamic table entry information [2-645](#)  
 displaying entry count [2-643](#)  
 displaying information [2-639](#)  
 displaying interface-based information [2-647](#)  
 displaying multicast information [2-649](#)  
 displaying notification information [2-651](#)  
 displaying protocol-based information [2-653](#)  
 displaying static table entry information [2-655](#)

- displaying the MAC address aging time [2-641](#)
- displaying VLAN-based information [2-658](#)
- enabling authentication bypass [2-159](#)
- enabling notifications [2-313](#)
- learning in the protocol buckets [2-310](#)
- removing static entries [2-327](#)
- MAC address tables
  - adding static entries [2-315](#)
  - deleting secure or specific addresses [2-89](#)
  - disabling IGMP snooping on static MAC addresses [2-315](#)
  - removing static entries [2-315](#)
- mac-address-table static [2-315](#)
- MAC address unicast filtering
  - dropping unicast traffic [2-315](#)
- MAC authentication bypass (MAB), display information [2-635](#)
- MAC authorization bypass(MAB), enable and configure [2-328](#)
- macro
  - displaying descriptions [2-326](#)
- macro keywords
  - help strings [2-2](#)
- macros
  - adding a global description [2-326](#)
  - cisco global [2-324](#)
  - system-cpp [2-325](#)
- mapping secondary VLANs to MST instance [2-408](#)
- mapping VLAN(s) to an MST instance [2-201](#)
- match (class-map configuration) command [2-331](#)
- maximum transmission unit (MTU)
  - displaying the system MTU setting [2-728](#)
  - setting the maximum Layer 2 payload size [2-831](#)
- MD5
  - verifying MD5 signature [2-853](#)
- message digest 5
  - See MD5
- MFIB
  - clearing ip mfib counters [2-81](#)
  - clearing ip mfib fastdrop [2-82](#)
  - displaying all active MFIB routes [2-591](#)
  - displaying MFIB fastdrop table entries [2-593](#)
  - enabling IP MFIB fastdrops [2-258](#)
- MLD
  - configuring snooping
    - last-listener-query-intervals [2-273](#)
  - configuring snooping
    - listener-message-suppression [2-275](#)
  - configuring snooping robustness-variables [2-276](#)
  - configuring topology change notifications [2-278](#)
  - counting snooping last-listener-queries [2-271](#)
  - enabling snooping [2-269](#)
  - enabling snooping on a VLAN [2-279](#)
- MLD snooping
  - displaying [2-608](#)
- modes
  - access-group [2-6](#)
  - show access-group interface [2-391, 2-473, 2-696](#)
  - switching between PVST+, MST, and Rapid PVST [2-770](#)
  - See also command modes
- module password clearing [2-68](#)
- module reset
  - resetting a module by toggling the power [2-196](#)
- More-- prompt
  - filter [1-6](#)
  - search [1-7](#)
- MST
  - designating the primary and secondary root [2-779](#)
  - displaying MST protocol information [2-723](#)
  - displaying region configuration information [2-723](#)
  - displaying spanning tree information [2-723](#)
  - entering MST configuration submode [2-773](#)
  - setting configuration revision number [2-446](#)
  - setting path cost and port priority for instances [2-771](#)
  - setting the forward delay timer for all instances [2-775](#)
  - setting the hello-time delay timer for all instances [2-776](#)
  - setting the max-age timer for all instances [2-777](#)
  - setting the MST region name [2-350](#)

- specifying the maximum number of hops [2-778](#)
- switching between PVST+ and Rapid PVST [2-770](#)
- using the MST configuration submode revision command [2-446](#)
- using the submode name command [2-350](#)

## MTU

- displaying global MTU settings [2-728](#)

multi-auth, setting [2-27](#)

## Multicast Listener Discovery

See MLD

## multicast

- counters [2-98](#)
- enabling storm control [2-798](#)
- show ancp [2-476](#)

## multicast/unicast packets

- prevent forwarding [2-805](#)

## Multicast Forwarding Information Base

See MFIB

multi-domain, setting [2-27](#)

multiple-character patterns [1-8](#)

## Multiple Spanning Tree

See MST

## N

### native VLAN

- controlling tagging of traffic [2-826](#)
- displaying ports eligible for native tagging [2-739](#)
- displaying ports eligible for tagging [2-739](#)
- enabling tagging on 802.1Q trunk ports [2-864](#)
- specifying the tagging of traffic [2-827](#)

### NetFlow

- enabling NetFlow statistics [2-259](#)
- including infer fields in routing statistics [2-259](#)

### next-hop

- displaying CEF VLAN information [2-568](#)

nmsp attachment suppress command [2-352](#)

nmsp command [2-351](#)

no form of a command, using [1-6](#)

## NVRAM

- debugging NVRAM activities [2-119](#)

## O

open access on a port, enabling [2-29](#)

### output

- pattern searches [1-7](#)

## P

### packet counters (statistics)

- clear for PPPoE Intermediate Agent [2-91](#)

packet counters, display for PPPoE Intermediate Agent [2-694](#)

### packet forwarding

- prevent unknown packets [2-805](#)

### packet memory failure

- direct switch action upon detection [2-145](#)

### packet memory test

- bootup, displaying results [2-505](#), [2-507](#)
- ongoing, displaying results [2-509](#)

### PACL

- access-group mode [2-6](#)

### paging prompt

- see --More-- prompt

### PAGP

- clearing port channel information [2-88](#)
- debugging PAGP activity [2-120](#)
- deselecting channeling protocol [2-57](#)
- displaying port channel information [2-667](#)
- hot standby mode
  - returning to defaults [2-354](#)
  - selecting ports [2-354](#)
- input interface of incoming packets
  - learning [2-353](#)
  - returning to defaults [2-353](#)
  - setting channeling protocol [2-57](#)

parentheses [1-11](#)

- password
  - clearing on an intelligent line module [2-68](#)
  - establishing enhanced password security [2-851](#)
  - setting username [2-851](#)
- PBR
  - displaying route maps [1-xx](#)
  - redistributing route maps [1-xx](#)
- PM activities
  - debugging [2-123](#)
  - disabling debugging [2-123](#)
- PoE policing
  - configure on an interface [2-387](#)
- PoE policing and monitoring
  - displaying status [2-693](#)
- police (percent) command [2-365](#)
- police (two rates) command [2-367](#), [2-369](#)
- police command [2-360](#)
- policing, configure PoE [2-387](#)
- policing and monitoring status
  - displaying PoE [2-693](#)
- Policy Based Routing
  - See PBR
- policy maps
  - creating [2-373](#)
  - marking [2-456](#)
  - See also QoS, hierarchical policies
  - traffic classification
    - defining the class
    - defining trust states [2-841](#)
- port, dual-capable
  - selecting the connector [2-340](#)
- Port Aggregation Protocol
  - See PAgP
- port-based authentication
  - displaying debug messages [2-108](#)
  - displaying statistics and status [2-511](#)
  - enabling 802.1X [2-163](#)
  - host modes [2-156](#)
  - manual control of authorization state [2-163](#)
  - periodic re-authentication
    - enabling [2-166](#)
  - re-authenticating 802.1X-enabled ports [2-165](#)
  - switch-to-client frame-retransmission number [2-161](#)
- port channel
  - accessing [2-205](#)
  - creating [2-205](#)
  - displaying information [2-667](#)
  - load distribution method
    - resetting to defaults [2-375](#)
    - setting [2-375](#)
- port control, changing from unidirectional or bidirectional [2-21](#)
- port-control value, configuring [2-33](#)
- port range
  - executing [2-206](#)
- port security
  - debugging ports security [2-124](#)
  - deleting secure or specific addresses [2-89](#)
  - displaying settings for an interface or switch [2-678](#)
  - enabling [2-811](#)
  - filter source IP and MAC addresses [2-265](#)
  - setting action upon security violation [2-811](#)
  - setting the rate limit for bad packets [2-811](#)
  - sticky port [2-811](#)
- Port Trust Device
  - displaying [2-699](#)
- power status
  - displaying inline power [2-685](#)
  - displaying power status [2-685](#)
- power supply
  - configuring combined and redundant power on the Catalyst 4507R [2-381](#)
  - configuring inline power [2-378](#)
  - configuring power consumption [2-380](#)
  - displaying the SEEPROM [2-533](#)
  - setting inline power state [2-377](#)
- PPPoE Discovery
  - enable vendor-tag stripping on packetsPPPoE Server

- enable vendor-tag stripping on Discovery packets [2-395](#)
  - PPPoE Discovery packets, limit rate arriving on an interface [2-393](#)
  - PPPoE Intermediate Agent
    - clear statistics (packet counters) [2-91](#)
    - debugging [2-125](#)
  - pppoe intermediate-agent
    - enable intermediate agent on a switch [2-391](#)
    - enable on an interface VLAN range [2-397](#)
    - enable PPPoE Intermediate Agent on an interface [2-392](#)
    - enable vendor-tag stripping of Discovery packets [2-395](#)
    - format-type (global) [2-389](#)
    - limit rate of PPPoE Discovery packets [2-393](#)
    - set circuit-id or remote-id for an interface [2-396](#)
    - set circuit-id or remote-id for an interface VLAN range [2-398](#)
    - set trust configuration on an interface [2-393, 2-394](#)
  - PPPoE Intermediate Agent, display configuration and statistics (packet counters) [2-694](#)
  - priority command [2-399](#)
  - priority-queue command [2-99](#)
  - Private VLAN
    - See PVLANS
  - privileged EXEC mode, summary [1-5](#)
  - prompts
    - system [1-5](#)
  - protocol tunneling
    - configuring encapsulation rate [2-296](#)
    - disabling [2-291](#)
    - displaying port information [2-629](#)
    - enabling [2-291](#)
    - setting a CoS value for Layer 2 packets [2-293](#)
    - setting a drop threshold for Layer 2 packets [2-294](#)
  - PVLANS
    - configuring isolated, primary, and community PVLANS [2-401](#)
    - controlling tagging of native VLAN traffic [2-826](#)
    - disabling sticky-ARP [2-262](#)
    - displaying map information for VLAN SVIs [2-551](#)
    - displaying PVLAN information [2-742](#)
    - enabling interface configuration mode [2-806](#)
    - enabling sticky-ARP [2-262](#)
    - mapping VLANs to the same SVI [2-405](#)
    - specifying host ports [2-806](#)
    - specifying promiscuous ports [2-806](#)
  - PVST+
    - switching between PVST and MST [2-770](#)
- 
- ## Q
- QoS
    - account Layer 2 encapsulation [2-411](#)
    - attaching a policy-map to an interface [2-447](#)
    - automatic configuration [2-39](#)
    - class maps
      - creating [2-62](#)
      - defining the match criteria [2-331](#)
    - clearing aggregate counters [2-92](#)
    - configuring auto [2-39](#)
    - defining a named aggregate policer [2-413](#)
    - defining default CoS value [2-418](#)
    - defining ingress CoS-to-DSCP mapping [2-423](#)
    - displaying aggregate policer information [2-697](#)
    - displaying auto configuration [2-483](#)
    - displaying class maps information [2-497](#)
    - displaying configuration information [2-483](#)
    - displaying configurations of policies [2-673](#)
    - displaying policy map information [2-669, 2-676](#)
    - displaying QoS information [2-696](#)
    - displaying QoS map information [2-701](#)
    - egress queue-sets
      - enabling the priority queue [2-99](#)
    - enabling global configuration mode [2-409](#)
    - enabling on control packets [2-416](#)
    - enabling per-VLAN QoS for a Layer 2 interface [2-432](#)
    - enabling QoS on an interface [2-410](#)

- hierarchical policies
  - average-rate traffic shaping on a class [2-469](#)
  - bandwidth allocation for a class [2-43](#), [2-61](#)
  - creating a service policy [2-450](#)
  - marking [2-456](#)
  - strict priority queueing (LLQ) [2-399](#)
- mapping DSCP values to transmit queues [2-425](#)
- mapping egress DSCP-to-CoS [2-425](#)
- mapping the DSCP-to-CoS value [2-425](#)
- policy maps
  - creating [2-373](#)
  - marking [2-456](#)
  - traffic classifications
  - trust states [2-841](#)
- setting the mapping of policed DSCP values [2-427](#)
- setting the trust state [2-430](#)
- specifying flow-based match criteria [2-334](#)
- Supervisor Engine 6-E
  - setting CoS [2-458](#)
  - setting DSCP [2-461](#)
  - setting precedence values [2-464](#)
  - setting QoS group identifiers [2-467](#)
- QoS CoS
  - configuring for tunneled Layer 2 protocol packets [2-293](#)
  - defining default CoS value [2-418](#)
- qos dbl [2-419](#)
- quality of service
  - See QoS
- question command [1-1](#)
- queueing information
  - displaying [2-699](#)
- queue limiting
  - configuring packet limits [2-434](#)
- re-authenticating 802.1X-enabled ports [2-165](#)
- re-authentication
  - periodic [2-166](#)
  - set the time [2-168](#)
- reauthentication, enabling [2-32](#)
- reboots
  - restoring bindings across [2-226](#)
- redundancy
  - accessing the main CPU [2-436](#)
  - changing from active to standby supervisor engine [2-440](#)
  - displaying information [2-703](#)
  - displaying ISSU config-sync failure information [2-707](#)
  - displaying redundancy facility information [2-703](#)
  - displaying RF client list [2-703](#)
  - displaying RF operational counters [2-703](#)
  - displaying RF states [2-703](#)
  - enabling automatic synchronization [2-42](#)
  - forcing switchover to standby supervisor engine [2-440](#)
  - mismatched command listing [2-438](#)
  - set the mode [2-341](#)
  - synchronizing the route processor configurations [2-327](#)
- related documentation [1-xix](#)
- remote-id, setting for an interface [2-396](#)
- remote-id, setting for an interface VLAN range [2-398](#)
- remote SPAN
  - See RSPAN
- renew commands
  - ip dhcp snooping database [2-444](#)
- resetting PVLAN trunk
  - setting switchport to trunk [2-806](#)
- retry failed authentication, configuring [2-24](#)
- rj45 connector, selecting the connector [2-340](#)
- ROM monitor mode
  - summary [1-6](#)
- Route Processor Redundancy
  - See redundancy

---

**R**
**Rapid PVST**

- switching between PVST and MST [2-770](#)

router, set to become ANCP client [2-16](#)

## RPF

disabling IPv4 exists-only checks [2-267](#)

enabling IPv4 exists-only checks [2-267](#)

## RPR

set the redundancy mode [2-341](#)

## RSPAN

converting VLAN to RSPAN VLAN [2-443](#)

displaying list [2-744](#)

# S

saving configuration changes [1-11](#)

secure address, configuring [2-383](#)

secure ports, limitations [2-812](#)

server (AAA) alive actions, configuring [2-24](#)

server (AAA) dead actions, configuring [2-24](#)

service-policy command (policy-map class) [2-450](#)

session classification, defining [2-27](#)

set the redundancy mode [2-341](#)

sfp connector, selecting the connector [2-340](#)

shape command [2-469](#)

show ancp multicast [2-476](#)

show authentication interface command [2-478](#)

show authentication registration command [2-478](#)

show authentication sessions command [2-478](#)

show commands

filtering parameters [1-7](#)

searching and filtering [1-6](#)

show platform commands [1-11](#)

show energywise command [2-515](#)

show mab command [2-635](#)

show nmsp command [2-664](#)

Simple Network Management Protocol

See SNMP

single-character patterns

special characters [1-7](#)

single-host, setting [2-27](#)

slaveslot0

displaying information on the standby supervisor [2-714](#)

slot0

displaying information about the system [2-716](#)

SNMP

debugging spanning tree activities [2-128](#)

ifIndex persistence

clearing SNMP ifIndex commands [2-751](#)

compress SNMP ifIndex table format [2-758](#)

disabling globally [2-757](#)

disabling on an interface [2-753](#)

enabling globally [2-757](#)

enabling on an interface [2-753](#)

informs

disabling [2-755](#)

enabling [2-755](#)

traps

configuring to send when storm occurs [2-796](#)

disabling [2-755](#)

enabling [2-755](#)

mac-notification

adding [2-759](#)

removing [2-759](#)

SPAN commands

configuring a SPAN session to monitor [2-343](#)

displaying SPAN session information [2-727, 2-797](#)

SPAN enhancements

displaying status [2-662](#)

Spanning Tree Protocol

See STP

SPAN session

displaying session information [2-662](#)

filter ACLs [2-343](#)

specify encap type [2-343](#)

turn off host learning based on ingress packets [2-343](#)

special characters

anchoring, table [1-10](#)

SSO [2-341](#)

standard desktop



- enabling Cisco-recommended features [2-316](#)
- standard desktop and Cisco IP phone
  - enabling Cisco-recommended features [2-318](#)
- sticky address, configuring [2-384](#)
- sticky-ARP
  - disabling on PVLANS [2-262](#)
  - enabling on PVLANS [2-262](#)
- sticky port
  - deleting [2-89](#)
  - enabling security [2-811](#)
- storm control
  - configuring for action when storm occurs [2-796](#)
  - disabling suppression mode [2-522](#)
  - displaying settings [2-726](#)
  - enabling [2-796](#)
  - enabling broadcast [2-796, 2-798](#)
  - enabling multicast [2-796, 2-798](#)
  - enabling suppression mode [2-522](#)
  - enabling timer to recover from error disable [2-188](#)
  - enabling unicast [2-796, 2-798](#)
  - multicast, enabling [2-798](#)
  - setting high and low levels [2-796](#)
  - setting suppression level [2-522](#)
- STP
  - configuring link type for a port [2-768](#)
  - configuring tunneling encapsulation rate [2-296](#)
  - debugging all activities [2-128](#)
  - debugging spanning tree activities [2-128](#)
  - debugging spanning tree BackboneFast events [2-130](#)
  - debugging spanning tree UplinkFast [2-133](#)
  - detecting misconfiguration [2-765](#)
  - displaying active interfaces only [2-718](#)
  - displaying BackboneFast status [2-718](#)
  - displaying bridge status and configuration [2-718](#)
  - displaying spanning tree debug messages [2-128](#)
  - displaying summary of interface information [2-718](#)
  - enabling BPDU filtering by default on all PortFast ports [2-784](#)
  - enabling BPDU filtering on an interface [2-761](#)
  - enabling BPDU guard by default on all PortFast ports [2-786](#)
  - enabling BPDU guard on an interface [2-763](#)
  - enabling extended system ID [2-766](#)
  - enabling loop guard as a default on all ports [2-769](#)
  - enabling PortFast by default on all access ports [2-787](#)
  - enabling PortFast mode [2-782](#)
  - enabling protocol tunneling for [2-291](#)
  - enabling root guard [2-767](#)
  - enabling spanning tree BackboneFast [2-760](#)
  - enabling spanning tree on a per VLAN basis [2-791](#)
  - enabling spanning tree UplinkFast [2-789](#)
  - setting an interface priority [2-788](#)
  - setting drop threshold for [2-294](#)
  - setting pathcost [2-764](#)
  - setting the default pathcost calculation method [2-781](#)
- subinterface configuration mode, summary [1-6](#)
- SVI
  - creating a Layer 3 interface on a VLAN [2-208](#)
- switching characteristics
  - excluding from link-up calculation [2-803](#)
  - modifying [2-803](#)
  - returning to interfaces
    - capture function [2-803](#)
- switchport [2-827](#)
- switchport interfaces
  - displaying status of Layer 3 port [2-554](#)
  - displaying status of native VLAN tagging [2-554](#)
- switch shim
  - debugging [2-131](#)
  - disabling debugging [2-131](#)
- switch to router connection
  - enabling Cisco-recommended features [2-320](#)
- switch to switch connection
  - enabling Cisco-recommended features [2-322](#)
- switch virtual interface
  - See SVI
- sw-vlan [2-134](#)
- system prompts [1-5](#)

**T**

## Tab key

command completion [1-1](#)

## tables

characters with special meaning [1-7](#)

mac access-list extended subcommands [2-306](#)

multipliers [1-9](#)

relationship between duplex and speed  
commands [2-794](#)

show cable-diagnostics tdr command output  
fields [2-488](#)

show cdp neighbors detail field descriptions [2-496](#)

show cdp neighbors field descriptions [2-495](#)

show ip dhcp snooping command output [2-479, 2-635](#)

show ip interface field descriptions [2-589](#)

show policy-map control-plane field  
descriptions [2-672](#)

show vlan command output fields [2-743](#)

show vtp command output fields [2-748](#)

special characters [1-9](#)

special characters used for anchoring [1-10](#)

speed command options [2-334, 2-794](#)

valid interface types [2-203](#)

## TAC

displaying information useful to TAC [2-729](#)

## TCAM

debugging spanning tree activities [2-128](#)

## TDR

displaying cable diagnostic test results [2-487](#)

test condition of copper cables [2-833](#)

## temperature readings

displaying information [2-519](#)

## Ten-Gigabit Ethernet uplink

blocking ports on redundant Supervisor Engine  
6-E [2-197](#)

timer information [2-523](#)

## traffic monitor

display status [2-635](#)

## traffic shaping

enable on an interface [2-471](#)

traps, enabling [2-755](#)

## trunk encapsulation

setting format [2-827](#)

## trunk interfaces

displaying trunk interfaces information [2-561](#)

trust configuration, setting on an interface [2-393, 2-394](#)

## trust state

setting [2-215](#)

## tunnel ports

displaying information about Layer 2 protocol [2-629](#)

## TX queues

allocating bandwidth [2-843](#)

returning to default values [2-843](#)

setting priority to high [2-843](#)

specifying burst size [2-843](#)

specifying traffic rate [2-843](#)

**U**

## UDLD

displaying administrative and operational  
status [2-731](#)

enabling by default on all fiber interfaces [2-845](#)

enabling on an individual interface [2-847](#)

preventing a fiber interface from being enabled [2-847](#)

resetting all shutdown ports [2-849](#)

setting the message timer [2-845](#)

## unicast

counters [2-98](#)

## Unidirectional Link Detection

See UDLD

unidirection port control, changing from  
bidirectional [2-21](#)

unknown multicast traffic, preventing [2-805](#)

unknown unicast traffic, preventing [2-805](#)

user EXEC mode, summary [1-5](#)

## username

setting password and privilege level [2-851](#)

## V

### VACLs

- access-group mode [2-6](#)
- applying VLAN access maps [2-866](#)
- displaying VLAN access map information [2-737](#)
- specifying an action in a VLAN access map [2-13](#)
- specifying the match clause for a VLAN access-map sequence [2-329](#)
- using a VLAN filter [2-866](#)

### VLAN

- applying an ARP ACL [2-209](#)
- configuring [2-855](#)
- configuring service policies [2-860](#)
- converting to RSPAN VLAN [2-443](#)
- displaying CEF information [2-568](#)
- displaying CEF next-hop information [2-568](#)
- displaying information on switch interfaces [2-579, 2-583](#)
- displaying information on VLAN switch interfaces [2-586](#)
- displaying information sorted by group IP address [2-579, 2-583](#)
- displaying IP address and version information [2-579, 2-583](#)
- displaying Layer 2 VLAN information [2-733](#)
- displaying statistical information [2-660](#)
- displaying VLAN information [2-735](#)
- enabling dynamic ARP inspection [2-218](#)
- enabling Explicit Host Tracking [2-249](#)
- enabling guest per-port [2-154](#)
- enabling guest VLAN supplicant [2-147, 2-155](#)
- entering VLAN configuration mode [2-860, 2-862](#)
- native frames
  - enabling tagging on all 802.1Q trunk ports [2-864](#)
  - pruning the list for VTP [2-827](#)
  - setting the list of allowed [2-827](#)

### VLAN Access Control Lists

See VACLs

### VLAN access map

See VACLs

### VLAN database

resetting [2-445](#)

### VLAN debugging

limiting output [2-106](#)

### VLAN link-up calculation

excluding a switch port [2-803](#)

including a switch port [2-803](#)

### VLAN manager

debugging [2-134](#)

disabling debugging [2-134](#)

IOS file system error tests

debugging [2-135](#)

disabling debugging [2-135](#)

### VLAN Query Protocol

See VQP

### VLAN query protocol (VQPC)

debugging [2-141](#)

### VLANs

clearing

counters [2-94](#)

clearing hardware logic [2-70](#)

configuring

internal allocation scheme [2-867](#)

displaying

internal VLAN allocation information [2-740](#)

RSPAN VLANs [2-744](#)

entering VLAN configuration mode [2-862](#)

### VMPS

configuring servers [2-871](#)

reconfirming dynamic VLAN assignments [2-141, 2-869](#)

### voice VLANs

enabling [2-799](#)

### VoIP

configuring auto-QoS [2-39](#)

### VQP

per-server retry count [2-870](#)

reconfirming dynamic VLAN assignments [2-141](#),  
[2-869](#)

## VTP

configuring the administrative domain name [2-875](#)

configuring the device in VTP client mode [2-874](#)

configuring the device in VTP server mode [2-878](#)

configuring the device in VTP transparent  
mode [2-879](#)

configuring tunnel encapsulation rate [2-296](#)

creating a VTP domain password [2-876](#)

displaying domain information [2-747](#)

displaying statistics information [2-747](#)

enabling protocol tunneling for [2-291](#)

enabling pruning in the VLAN database [2-877](#)

enabling VTP version 2 mode [2-880](#)

modifying the VTP configuration storage file  
name [2-873](#)

set drop threshold for [2-294](#)

## VTP protocol code

activating debug messages [2-138](#)

deactivating debug messages [2-138](#)

---

## W

Webauth fallback, enabling [2-26](#)