



# S35

2.4

2004 10

618 20 -22

350002

0591-83057001 0591-83057002

0591-83057315

E-mail: [service@I-net.com.cn](mailto:service@I-net.com.cn)

<http://www.i-net.com.cn>

<http://www.red-giant.com.cn>







duplex .....	73
enable.....	74
enable secret .....	75
enable services.....	76
enable traps.....	76
end .....	78
errdisable recovery .....	78
exec-timeout (console,vty) .....	79
exit.....	80
expert access-group .....	80
expert access-list.....	81
flowcontrol .....	81
gvrp applicant state.....	82
gvrp base-vlan-id.....	83
gvrp dynamic-vlan-creation.....	83
gvrp enable .....	84
gvrp registration mode.....	84
gvrp timer .....	85
help .....	86
hostname.....	86
instance .....	87
interface aggregateport .....	88
interface fastEthernet.....	88
interface gigabitEthernet.....	89
interface loopback .....	90

ip igmp querier-timeout .....	104
ip igmp snooping .....	105
ip igmp snooping limit-ipmc .....	106
ip igmp snooping mrouter.....	107
ip igmp snooping source-check .....	107
ip igmp static-group.....	108
ip multicast-routing .....	109
ip multicast boundary .....	109
ip multicast ttl-threshold.....	110
ip multicast vlan .....	111
ip ospf authentication.....	111
ip ospf authentication-key .....	112
ip ospf cost.....	112
ip ospf database-filter all out .....	113
ip ospf dead-interval .....	114
ip ospf hello-interval.....	114
ip ospf message-digest-key.....	115
ip ospf network .....	116
ip ospf priority .....	116
ip ospf retransmit-interval .....	117
ip ospf transmit-delay .....	117
ip pim.....	118
ip pim bsr-border .....	119
ip pim bsr-candidate .....	119
ip pim dr-support-address-bound.....	120
ip pim lan-delay .....	121
ip pim neighbor-filter.....	121
ip pim override-interval .....	122
ip pim query-interval .....	123
ip pim rp-address .....	123
ip pim rp-candidate.....	124
ip prefix-list .....	125
ip rip authentication mode .....	126
ip rip authentication key-chain .....	126
ip rip receive version .....	127
ip rip send version .....	128
ip rip v2-broadcast.....	128
ip route.....	129
ip routing .....	130
ip ttl.....	130
key .....	132
key chain.....	132
_Ym ghf ] b[ .....	133
line.....	133
lldp enable .....	134
lldp holdtime.....	135
lldp run .....	135
lldp timer .....	136





permit (ip access-list extended) .....	169
permit (ip access-list standard) .....	170
permit (mac access-list extended).....	171
ping .....	172
police .....	173
policy-map .....	174
port-group .....	174
priority-queue .....	175
privilege level .....	175
prompt .....	176
redistribute(RIP) .....	177
redistribute(OSPF).....	178
radius-server .....	179
radius-server key .....	179
rcommand .....	180
reload .....	180
rename .....	181
revision .....	181
route-map.....	182
router .....	183
router-id .....	184
rmon alarm.....	184
rmon collection history.....	185
rmon collection stats.....	186
rmon event .....	187
send-lifetime .....	187
service-policy .....	188
service dhcp.....	189
services telnet host.....	181
services web host.....	182
set ip dscp .....	190
set next-hop .....	191
set level.....	192
set metric .....	192
set metric-type .....	193
setup.....	194
show.....	195
show access-group.....	195
show access-lists.....	196
show accounting .....	197
show address-bind .....	198
show aggregateport.....	198
show arp .....	199
show class-map.....	199
show clock.....	200
show cluster .....	200
show cluster candidates .....	201
show cluster members .....	202



show configuration .....	203
show cpu .....	203
show dot1x .....	204
show dot1x auth-address-table .....	205
show dot1x statistics .....	206
show dot1x summary .....	206
show file systems .....	207
show gvrp configuration .....	207
show gvrp statistics .....	208
show gvrp status .....	209
show interfaces .....	210
show ip access-lists .....	211
show ip arp .....	212
show ip dvmrp route .....	212
show ip interface .....	213
show ip management .....	214
show ip igmp groups .....	214
show ip igmp interface .....	215
show ip igmp snooping .....	216
show ip igmp snooping gda-table .....	217
show ip mroute .....	217
show ip multicast-routing .....	218
show ip ospf .....	219
show ip ospf border-routers .....	221
show ip ospf database .....	221
show ip ospf interface .....	229
show ip ospf neighbor .....	230
show ip ospf summary-address .....	231
show ip ospf traps status .....	232
show ip ospf virtual-links .....	233
show ip pim bsr-router .....	233
show ip pim interface .....	234
show ip pim neighbor .....	235
show ip pim rp .....	235
show ip prefix-list .....	236
show ip protocols .....	237
show ip redirects .....	240
show ip rip .....	241
show ip rip interface .....	241
show ip rip neighbor .....	242
show ip rip offset-list .....	242
show ip route .....	243
show ip rpf .....	244
show ip ttl .....	245
show ip-auth-mode .....	245
show key chain .....	246
show line .....	247
show lldp .....	247

show lldp entry .....	248
show lldp interface .....	249
show lldp neighbors.....	249
show lldp traffic.....	250
show logging .....	251
show mac access-lists .....	252
show mac-address-table address.....	252
show mac-address-table aging-time .....	253
show mac-address-table count.....	253
show mac-address-table dynamic .....	254
show mac-address-table filtering.....	255
show mac-address-table interface.....	256
show mac-address-table notification .....	show mac-
	.....05 0 T6(25
shradius-s5TJ5(erverst71-69.5(.....0..)TJ35.0799 0 TD0.	
shrout-.5TJ5(a)-026(pio178291.....0..)TJ35.0799 0	

spanning-tree .....	286
spanning-tree bpdufilter.....	287
spanning-tree bpduguard .....	288
spanning-tree link-type.....	288
spanning-tree max-hops.....	289
spanning-tree mode .....	290
spanning-tree mst configure .....	290
spanning-tree mst cost .....	292
spanning-tree mst port-priority.....	t port-prior

CLI

**keyword**

[] [keyword] | {keyword1  
| keyword2 | keyword3}  
{ }  
[ { | } ]  
[{keyword1 | keyword2}]

CLI

CLI ×

# CLI

CLI

CLI

interface gigabitEthernet

User EXEC

Privileged EXEC

Global configuration

Interface configuration

Config-vlan

VLAN

1-1

1-1

User EXEC		Switch>	<b>exit</b>	<b>enable</b>
Privileged EXEC	<b>enable</b>	Switch#		<b>disable</b>
Global configuration	<b>configure</b>	Switch(config)#	<b>configure</b> <b>end</b>	<b>exit</b> <b>Ctrl+C</b>
Interface configuration	<b>interface</b>	Switch(config-if)#	<b>interface</b> VLAN	<b>vlan</b> <b>end</b> <b>Ctrl+C</b> <b>exit</b>
Config-vlan VLAN	<b>vlan</b>	Switch(config-vlan)#	<b>interface</b>	<b>end</b> <b>Ctrl+C</b> <b>exit</b>

Exec

Exec

Exec

?

Switch> ?

?

Switch(config-if)# ?

end

Ctrl+C

exit

## VLAN

---

---

```
aaa accounting server
```

```
show accounting AAA
```

---

## aaa accounting server

no

```
aaa accounting server [backup]
```

```
no aaa accounting server [backup]
```

---

```
server IP
```

```
server backup IP
```

---

---

---

```
1.0
```

---

```
show accounting
```

```
Switch(config)# aaa accounting server 192.1.1.1
```

---

```
aaa accounting AAA
```

```
show accounting AAA
```

---

## aaa accounting acc-port

UDP no

```
aaa accounting acc-port
```

```
no aaa accounting acc-port
```

---

```
acc-port UDP
```

---

---

```
UDP 1813
```

---



---

---

802.1x

---

---

---

1.0

---

802.1x 802.1x  
**show dot1x** 802.1x

---

802.1x  
Switch(config)# **aaa authentication dot1x**

---

---

---

**radius-server** RADIUS

---

**show dot1x** 802.1x

---

## aaa authorization ip-auth-mode

IP no

**aaa authorization ip-auth-mode {disabled | dhcp-server | radius-server | supplicant }**

**no aaa authorization ip-auth-mode**

**disabled** DISABLE

---

---

1.0

---

DISABLE IP

DHCP SERVER PC DHCP IP  
DHCP RELAY DHCP SERVER  
DHCP SERVER IP  
RADIUS SERVER PC IP RADIUS SERVER  
—IP IP  
**show ip-auth-mode** IP

---

IP DHCP-SERVER

Switch#**configure terminal**  
Switch(config)# **aaa authorization ip-auth-mode dhcp-v eVer**  
Switch(config)#**end**

---

---

---

**show ip-auth-mode** IP

---

absolute

# accept-lifetime

```
accept-lifetime {infinite | no | duration }
no accept-lifetime
```

```
_____
_____ hh:mm:ss-mm/dd/yy
_____
infinite
_____
_____ hh:mm:ss-mm/dd/yy
_____
duration
_____
```

```
_____
_____ end-time duration infinite.
_____
```

```
_____
_____
_____
_____ 1.0
_____
```

```
_____
_____ show key chain
```

```
_____
Switch(config-keychain-key)# accept-lifetime 00:00:00 08 26 2002 duration
100000
```

```

IP MAC IP
MAC
ip 3.3.3.3 mac 00d0.f811.1112
Switch(config)#address-bind 3.3.3.3 00d0.f811.1112

```

[show address-bind](#)

## aggregateport load-balance

```

AP no
aggregateport load-balance { dst-mac | src-mac | ip }
no aggregateport load-balance

```

```

dst-mac MAC
AP MAC
MAC

```

```

src-mac MAC
AP

```

```

ip IP IP
IP— IP
IP— IP
IP— IP

```

MAC

1.0

**show aggregateport**

```
Switch(config)# aggregateport load-balance dst-mac
```

```
show aggregateport aggregateport
```

# area authentication

no

area authentication [message-digest]

no area authentication

IP

message-digest

MD5

OSPF

1.0

router

no area

(

)

Switch(config-router)# area 0 authentication

area nssa

nssa

area stub

stub

ip ospf authentication-key

key

ip ospf message-digest-key

MD5

key

area default-cost

stub

nssa

metric

show ip ospf area

# area default-cost

ghi V

bggU

aYhf]W

bc

area default-cost

no area default-cost

IP

ghi V bggU

aYhf]W

. %\* +++&%{

1

OSPF



```
Switch(config-router)# area 2 nssa
```

```
area stub stub
```

```
area authentication
```

```
area default-cost stub nssa metric
```

```
show ip ospf area
```

## area range

```
area range [advertise | not-advertise] no  
no area range
```

```
IP
```

```
ip
```

```
advertise 3 LSA
```

```
no-advertise 3 LSA
```

```
OSPF
```

```
Av
```

```
1.0
```

```
no area ( )  
ABRA B R
```

area stub [no-summary]  
no area stub [no-summary]

---

---

IP

no-summary LSA stub

---

stub

---

OSPF

---

1.0

---

no area ( )  
no area stub

---

Switch(config-router)# area 1 stub

---

area nssa nssa  
area authentication

hello-interval

10

seconds

0

retransmit-interval

5

transmit-delay

0

dead-interval

40

hello-interval

times

authentication-key

1

message-digest-key

md5

1

1234567890

1234567890

1234567890

1234567890

1234567890

OSPF

1.0

arp

ARP

no

arp

[

]

no arp[

][

][

][

]

600

1.0

arp timeout

**show interfaces**

Switch(config)#**interface vlan 1**  
Switch(config-if)#**arp timeout 400**

**show interfaces**

auto-cost

no

bps02 3688.44033bTc238c< 212.4 1.506



class

policy map

no

class  
no class

---

---

class map

---

---

---

---

policy-map

---

---

---

---

1.0

---

---

---

show policy-map

policy map

class1

\$

---

```
Switch(config-ext-ipacl)# end
Switch(config)# class-map class1
Switch(config-cmap)# match access-group acl_1
Switch(config-cmap)# end
```

---

---

---

---

1.0

---

**show interfaces**

**clear counters**

---

Switch#**clear counters gigabitethernet 0/1**  
Clear "show interface" counters on this interface [confirm] y  
Switch#

---

---

---

**show interfaces**

---

clear gvrp statistics

GVRP

**clear gvrp statistics** {interface-id | **all**}

---

ID





1.0

**show running-config**

230.0.0.0

Switch# **clear ip mroute 230.0.0.0**

**show ip mroute**

## clear ip route

**clear ip route { [ ] | \*}**

\*

1.0

**show ip route**

Switch# **clear ip route**

**show ip route**

## clear lldp counters

LLDP

**clear lldp counters [ ]**

1.0

fa0/1 LLDP

Switch#clear lldp counters fa0/1

[show lldp traffic](#)

LLDP

clear lldp table

LLDP

clear lldp table

1.0

LLDP

LLDP

Switch#clear lldp table

[show lldp entry](#)

LLDP

[show lldp neighbors](#)

LLDP

clear logging

clear logging

1.0

show logging

Switch# clear logging configure

logging file

show logging

## clear mac-address-table dynamic

clear mac-address-table dynamic[address            ] [interface            ] [ vlan            ]

dynamic

address

interface

vlan

VLAN

1.0

show mac-address-table dynamic

Switch# clear mac-address-table dynamic

---

```
show
mac-address-table
dynamic
```

---

## clear mac-address-table filtering

```
clear mac-address-table filtering [address          ][ vlan          ]
```

---

```
filtering
address
vlan          VLAN
```

---

---

```
1.0
```

---

```
show mac-address-table filtering
```

---

```
00d0.f800.0c0c
Switch# clear mac-address-table filtering address 00d0.f800.0c0c
```

---

---

```
mac-address-table
filtering
show
mac-address-table
filtering
```

---

## clear mac-address-table static

```
clear mac-address-table static [address          ][ interface          ][vlan          ]
```

---

```
static
address
interface
vlan          VLAN
```

---

1.0

MAC 00d0.f800.073c

Switch#clear mac-address-table static address 00d0.f800.073c

mac-address-table

static

show

mac-address-table

static

ocols

erface ]

# clock set

clock set : :

```
_____
: : 24
_____
1 31
_____
1 12
_____
_____
_____
_____
1.0
_____
_____
show clock
_____
Switch# clock set 10:45:30 22 2 2002
_____
_____
show clock
_____
```

# cluster commander-address

```
_____
MAC no MAC
cluster commander-address [member name ]
no cluster commander-address
_____
MAC 16
_____
0-19
_____
_____
_____
1.0
_____
_____
no
down
```

---

no

no cluster member

**show cluster**



120

1.0

**show cluster**

holdtime 25

Switch(config)#**cluster holdtime 25**

[show cluster](#)

## cluster member

**no**  
**cluster member [ ] mac-address [ password [ ] ]**  
**no cluster member n**

0-19

MAC 16

15

1.0

15

**show cluster members**

MAC 00d0.f8fe.1007 start

1

Switch(config)#**cluster member 1 mac-address 00d0.f8fe.1007 password start**

Switch(config)#**cluster member mac-address** 00d0.f8fe.1007

[show cluster](#)

[show cluster candidates](#)

[show cluster members](#)

cluster run

**no**

**cluster run**

**no cluster run**

1.0

**show cluster**

```
no timer 12
cluster timer
no cluster timer
```

```
timer 1-300
```

```
12
```

```
1.0
```

```
show cluster
```

```
timer 5
```

```
Switch(config)#cluster timer 5
```

```
show cluster
```

```
compatible
```

```
AS
```

```
RFC1583
```

```
RFC2328
```

```
compatible rfc1583
```

```
[no | default] compatible rfc1583
```

```
RFC1583
```

```
OSPF
```

```
1.0
```

```
no
```

```
RFC2328
```

```
,
```

```
default
```

```
RFC1583
```

```
Switch(config-router)#compatible rfc1583
```

show ip ospf

ospf

configure

configure [terminal]

terminal

1.0

exit end

Ctrl+C

Switch# configure

end

exit

copy

copy

copy

URL

URL

1 URL

running-config

xmodem

xmodem

tftp:

tftp

flash:

startup-config

config.text

1.0

copy

dir

copy flash:

flash:

TFTP Xmodem  
xmodem:}

copy flash: {tftp: |

TFTP Xmodem  
flash:

copy {tftp: | xmodem:}

TFTP Xmodem  
{tftp: | xmodem:}

copy running-config

TFTP Xmodem  
running-config

copy {tftp: | xmodem}

copy running-config startup-config

more

TFTP

Switch# copy startup-config tftp:

Address or name of remote host []? 192.168.65.155

Destination filename [config.text]?

!!

2787 bytes copied in 1.320 secs (2787 bytes/sec)

delete

dir

more

## default-information-originate(OSPF)

bc

default-information originate [always] [metric ] [metric-type ]

[route-map ]

no default-information originate [always] [metric ] [metric-type ] [route-map ]

---

---

**always**

**metric**

fP% " %\* +++&%@ %\$

**metric-type**

&

**route-map**

f ci hY! aUd

f ci hY! aUd

---

---

OSPF

---

---

1.0

ASBR

ASBR

OSPF

---

---

Switch(config-router)# **default-information originate metric 100**

---

---

**show ip ospf**

ospf

## default-information originate(RIP)

F]d

bc

f ci hY! aUd

**default-information originate [ route-map**

**]**

**no default-information originate [route-map]**

---

---

f ci hY! aUd

---

---

F=D

---

---

1.0

```
Switch(config-router)#default-information originate route-map uuu
Switch(config-router)# no default-information originate route-map
Switch(config-router)# no default-information originate
```

```
show ip protocols
```

## default-metric(RIP)

```
      RIP      metric      no
default-metric
no default-metric
```

```

1
RIP
Q.
1.0
```

```
show ip protocols      RIP
```

```
Switch(config)# ip routing
Switch(config)# router rip
Switch(config-router)# default-metric 2
```

```
ip routing      IP      IB
```



# delete

delete

**delete flash:**

```
flash: flash
```

```
1.0
```

**dir**

```
Switch# delete flash: config.text
```

[ Uf'd pUdd` YhU \_ pXYWØYh! ]j p =D  
 X] U[ bcgh] W  
 pYhndY! \*\$\$\$pYhndY! , \$(&p `Uh p  
 `Uj WgWØ p  
 acd! Vøbgc` Ypacd! Xi ad p ai adg  
 pbYhV] cgpj ] bYg! YWØc p l bg! ] XdØ

j ] X j ` Ub hfi b\_ dcfh  
 hU[ [ YX j ] X  
 i bhU[ [ YX bUh] j Y j ` Ub UWWgg  
 dcfh UWWg dcfh j ` Ub  
 IP  
 IP IP

host

any



```

$$$X$ Z, $$" $$(( H7D
hVd % &' %*, "$ $ $" $" &)" &)" \cgh %+&" %*, "%&'
Gk] hVd fMz] [L# Yl dYfh UWWgg! `] gh Yl hYbXYX Yl dYfh
Gk] hVd fMz] [! Yl hl aUWk# XYbm hVd \cgh % &' %*, "%&' aUW
$$$X$ Z, $$" $$(( Ubm Ubm
Gk] hVd fMz] [! Yl hl aUWk# dYfa] h Ubm Ubm Ubm Ubm
Gk] hVd fMz] [! Yl hl aUWk# YbX
Gk] hVd # g\ck UWWgg! `] ghg Yl dYfh
9 hYbXYX Yl dYfh UWWgg `] gh Yl dYfh
XYbm hVd \cgh % &' %*, "%&' aUW $$$X$ Z, $$" $$(( Ubm Ubm
permit any any any any

```

<a href="#">permit(expert access-list extended)</a>	ACL	deny
<a href="#">show access-list</a>	ACL	

## deny (ip access-list extended)

	(deny)		ACL
ACL		no	IP ACL
deny {	host	any}[	{   host
any } [	] [h] aY! fUb[Y h] aY! fUb[Y] bLaYQ		
no deny {	host	any}[	{   host
any } [	] [h] aY! fUb[Y h] aY! fUb[Y] bLaYQ		

	ip	tcp	udp	igmp	icmp
	IP				
	IP		IP		
host	host				source-wildcard
	0.0.0.0				
host	host				
	destination-wildcard	0.0.0.0			
any	any		source	0.0.0.0	
	source-wild	255.255.255.255	any		
	destination	0.0.0.0	destination-wild		
	255.255.255.255				
	IP				
	IP		IP		

```

TCP  UDP
  eq
TCP  UDP
  TCP  UDP
    0  65535

```

```

h]aY! fUb[Y! bLaY      h] aY! fUb[Y      "

```

ACL

ACL

1.0

```

Extended IP access lists      IP
                                IP

```

show ip access-lists

```

IP  192.1.1.1      TCP  100

```

1

```

Switch(config)# ip access-list extended 123
Switch(config-ext-nacl)# deny tcp host 192.1.1.1 eq 100 any
Switch(config-ext-nacl)# exit
Switch(config)# interface gigabitethernet 0/1
Switch(config-if)# ip access-group 133 in

```

```

permit (ip access-list      IP ACL      permit
extended)

```

```

show ip access-lists      IP ACL

```

### deny (ip access-list standard)

(deny)

ACL

ACL

no IP ACL

```

deny {      | host      | any } [ h] aY! fUb[Y h]aY! fUb[Y! bLaYQ
no deny {      | host      | any } [ h] aY! fUb[Y h]aY! fUb[Y! bLaYQ

```

IP

IP

IP

```

host      host
source-wildcard  0.0.0.0

```

```

any          any          source  0.0.0.0
            source-wild  255.255.255.255
h]aY! fUb[Y! bLàY          h] aY! fUb[Y          "

```

ACL

ACL

1.0

```

Standard IP access lists      IP          IP
                               IP          IP

```

**show ip access-lists**

```

IP  192.1.1.1          1

```

```

Switch(config)# ip access-list standard 123
Switch(config-ext-nacl)# deny host 192.1.1.1
Switch(config-ext-nacl)# exit
Switch(config)# interface gigabitethernet 0/1
Switch(config-if)# ip access-group 133 in

```

```

permit (ip access-list      IP ACL  permit
standard)

```

```

show ip access-lists      IP ACL

```

deny (mac access-list extended)

```

MAC          MAC          MAC          MAC
MAC ACL

```

host

```
Uuf d pUdd` YhU _ pXYVWYh! ]j p X] U[ bcgh] W  
pYhndY! *$$$pYhndY! , $( &p ` Uh p ` Uj WgVW p  
acd! Vtbgc` Ypacd! Xi ad p ai adg  
pbYhV] cgpj ] bYg! YWxc p l bg! ] XdQ
```

h] aY! fUb[ Y! bLaY

h] aY! fUb[ Y

"

ACL

MAC ACL

1.0

show mac access-lists

MAC 00d0f8000c0c

100

1

Switch(config)# mac access-list extended mac1

Switch(config-ext-macl)# deny host 00d0f8000c0c any Uuf d

Switch(config-ext-macl)# exit

Switch(config)# interface gigabitethernet 0/1

Switch(config-if)# mac access-group mac1 in

permit (mac access-list MAC ACL permit  
externed )

show mac access-lists MAC ACL

description(interface)

no

description

no description

1.0



1.0

show privilege

Switch# **disable**

**enable**

**show privilege**

distance

**no**

**distance**  
**no distance**

1 255

RIP 120

OSPF 110

1.0

show ip protocols

RIP

OSPF

Switch(config)# **ip routing**

RIP

Switch(config)# **router rip**

Switch(config-router)# **distance** 100

Switch(config-router)# **exit**

OSPF

Switch(config)# **router ospf**

Switch(config-router)# **distance** 100

Switch(config-router)# **exit**

**ip routing**

IP

<b>router rip</b>	RIP	RIP
<b>router ospf</b>	OSPF	OSPF
<b>show ip protocols</b>		IP

## distance ospf

```

distance ospf { [intra-area <value> ] [inter-area <value> ] [external <value> ] }
no distance ospf

```

<b>intra-area</b>	fP% " & ) ) 1
<b>inter-area</b>	fP% " & ) ) 1
<b>external</b>	fP% " & ) ) 1

```

: 110
: 110
: 110

```

```

OSPF
1.0
0~255 OSPF

```

```

Switch(config-router)# timers spf 15 20

```

```

show ip ospf
ospf

```

## distribute-list

```

distribute-list { <acl> | gateway <acl> | prefix <acl> [gateway <acl> ] } { in | out }
no distribute-list { in | out } [ <acl> | <acl> ]

```



## dot1x accout-update-interval

802.1X no

**dot1x accout-update-interval**

**no dot1x accout-update-interval**

1800S

1.0

<60-65535>

Switch(config)# **dot1x accout-update-interval 100**

show dot1x 802.1X

## dot1x auth-address-table

802.1X no

**dot1x auth-address-table address**

**interface**

**no dot1x auth-address-table address**

**interface**

**address**

**interface**

1.0

802.1X

show dot1x

**auth-address table**

Switch(config)#**dot1x auth-address-table address 00d0f8000000 interface gigabitehternet 0/1**

---

---

```
show dot1x 802.1X
auth-address-table
```

---

## dot1x auth-mode

, \$&" %

```
dot1x auth-mode {eap-md5|chap}
```

```
no dot1x auth-mode
```

---

eap-md5	, \$&" %	95D! A8)
chap	, \$&" %	7<5D

---

---

---

```
Switch(config)# dot1x client-probe enable
```

---

```
Show dot1x dot1x
```

---

```
dot1x default
```

```
)
```

## dot1x eapol-tag

eapol-tag  
**dot1x eapol-tag**  
**no dot1x eapol-tag**

**no**

---

---

**Eapol-tag**

eapol-tag

---

---

1.0

---

---

eapol-tag

---

---

Switch(config)# **dot1x eapol-tag**

---

---

**Show dot1x**

## dot1x max-req

**dot1x max-req**  
**no dot1x max-req**

**no**

---

---

60

---

---

1.0

---

---

**show dot1x** 802.1x

---

---

Switch(config)# **dot1x max-req 30**





1.0

show dot1x 802.1x

Switch(config)# dot1x re-authentication

dot1x default 802.1x

dot1x max-req

dot1x port-control auto

dot1x reauth-max

dot1x timeout

quiet-period

dot1x timeout

re-authperiod

dot1x timeout

server-timeout

dot1x timeout

supp-timeout

dot1x timeout

tx-period

show dot1x 802.1x

## dot1x reauth-max

no

dot1x reauth-max [ ]

no dot1x reauth-max

---

---

1.0

---

**show dot1x**                    802.1x

---

Switch(config)# **dot1x reauth-max 5**

---

**dot1x default**                    802.1x

```
show dot1x 802.1x
```

```
Switch(config)# dot1x timeout quiet-period 1000
```

```
dot1x default 802.1x
```

```
dot1x max-req
```

```
dot1x port-control auto
```

```
dot1x reauth-max
```

```
dot1x re-authentication
```

```
dot1x timeout
```

```
re-authperiod
```

```
dot1x timeout
```

```
server-timeout
```

```
dot1x timeout
```

```
supp-timeout
```

```
dot1x timeout
```

```
tx-period
```

```
show dot1x 802.1x
```

## dot1x timeout re-authperiod

```
no
```

```
dot1x timeout re-authperiod
```

```
no dot1x timeout re-authperiod
```

```
0 65535
```

```
3600
```

```
1.0
```

```
show dot1x 802.1x
```

```
Switch(config)# dot1x timeout re-authperiod 1000
```

```
dot1x default 802.1x
```

---

**dot1x max-req**

---

**dot1x port-control auto**

---

**dot1x reauth-max**

---

**dot1x re-authentication**

---

**dot1x            timeout**

---

**quiet-period**

---

**dot1x            timeout**

---

**server-timeout**

---

**dot1x            timeout**

---

**supp-timeout**

---

**dot1x            timeout**

**tx-period**

**show dot1x**

---

**dot1x**            **timeout**  
**re-authperiod**

---

**dot1x**            **timeout**  
**supp-timeout**  
**dot1x**            **timeout**

## dot1x timeout tx-period

no

**dot1x timeout tx-period**

**no dot1x timeout tx-period**

0 65535

30

1.0

**show dot1x** 802.1x

Switch(config)# **dot1x timeout tx-period 10**

**dot1x default** 802.1x

**dot1x max-req**

**dot1x port-control auto**

**dot1x reauth-max**

**dot1x re-authentication**

**dot1x timeout**

**quiet-period**

**dot1x timeout**

**re-authperiod**

**dot1x timeout**

**server-timeout**

**dot1x timeout**

**supp-timeout**

802.1x

## duplex

no

**duplex { auto | full | half**

no duplex

auto

full

half

1.0

show interfaces

Switch(config-if)# duplex full

show interfaces

enable

enable [ ]

15

1.0

enable secret  
privilege

disable

show

10

Switch>enable 10

Switch#

**enable secret**

**disable**

**show privilege**

## enable secret

```
enable secret [level ] { } no  
no enable secret [level ]
```

level 0

15 16

15

0

5

0

5

15

1.0

15

Switch(config)#**enable secret level 10 0** 123456

Switch(config)#**enable secret level 10 5** \${djf~k!Ja}s!had\_98%sjfl=k`)j

**enable**

**disable**

---

## show privilege

---

```

trap :
VirtIfStateChange
NbrStateChange
VirtNbrStateChange
IfConfigError
VirtIfConfigError
IfAuthFailure
VirtIfAuthFailure
IfRxBadPacket
VirtIfRxBadPacket
TxRetransmit
VirtIfTxRetransmit
OriginateLsa LSA
MaxAgeLsa LSA
LsdbOverflow LSA
LsdbApproachOverflow LSA

IfStateChange.

```

```

trap

```

```

OSPF

```

```

1.0

```

```

trap trap << IP >>
:
trap, trap
trap trap

```

```

trap
Switch(config-router)#enable traps
trap
Switch(config-router)#enable traps IfAuthFailure
trap
Switch(config-router)# no enable traps

```

```

router ospf ospf
show ip ospf traps status ospf trap

```



Switch #**show interfaces status**

Interface	Status	vlan	duplex	speed	type
Fa0/1	down	1		Unknown	Unknown
10/100BaseTX					
Fa0/2	down	1		Unknown	Unknown
10/100BaseTX					
Fa0/3	down	1		Unknown	Unknown
10/100BaseTX					
Fa0/4	down	1		Unknown	Unknown
10/100BaseTX					

Switch(config-if)# **errdisable recovery**

**show interfaces**

**exec-timeout (console,vty)**

**default**

exec-timeout

**no** exec-timeout

**default** exec-timeout

0-3600

,0

CONSOLE 10 ,TELNET 5 .

1.0

0. **show line console 0**

, **show line vty** telnet .

telnet 0

Switch(config)#**line vty**

Switch(config-line)#**timeout login response 0**

**line**

exit

exit

```
1.0
```

```
end
```

```
Switch(config-if)#exit  
Switch(config)#
```

```
end
```

expert access-group

```
EXPERT ACL
```

```
no
```

```
Yl dYfh UWWgg! [ fci d blaY o] bpci hq  
no Yl dYfh access-group o] bpci hq
```

```
IP ACL
```

```
]b
```

```
ci h
```

```
1.0
```

57@

ci h GJ= show access-group

access-list accept\_00d0f8xxxxxx\_only Gigabit 1

Switch(config)# interface GigaEthernet 0/1

Switch (config-if)# expert access-group accept\_00d0f8xxxxxx\_only in

show access-group MAC ACL

expert access-list

ACL, no

Yl dYfh UWWgg! `]gh Yl hYbXYX bLaY

no Yl dYfh UWWgg! `]gh Yl hYbXYX bLaY

IP ACL

1.0

on

1.0

show interfaces

0/1

Switch(config)#interface gigabitethernet 0/1

Switch(config-if)# flowcontrol on

show interfaces

gvrp applicant state

GVRP

no

gvrp applicant state {normal | non-applicant}

no gvrp applicant state

GVRP

1.0

show gvrp configuration

Switch(config-if)#gvrp applicant state normal

show gvrp configuration

## gvrp base-vlan-id

```
GVRP          VLAN          no
gvrp base-vlan-id [      ]
no gvrp base-vlan-id
```

```
GVRP          VLAN 1
```

```
1.0
```

```
show gvrp configuration
```

```
Switch(config-if)#gvrp base-vlan-id
```

```
show          gvrp          GVRP
configuration
```

## gvrp dynamic-vlan-creation

```
          vlan          no
gvrp dynamic-vlan-creation enable
no gvrp dynamic-vlan-creation enable
```

```
vlan
```

```
1.0
```

```
show gvrp configuration
```

```
Switch(config)# gvrp dynamic-vlan-creation enable
```





---

---

Switch(config)# gvrp timer join 200

---

---

**show**                    **gvrp**                    GVRP  
**configuration**

---

---

help

help

---

---

---

---

---

---

1.0

---

---

help

---

Switch# help

---

---

---

hostname

no

hostname  
no hostname

---

---

---

Switch

---

---

---

1.0

---

---

---

---

```
Spanning-tree mst mst
configure
```

---

```
Show mst mst
```

---

```
Show spanning-tree mst
mst configuration
```

---

interface aggregateport

no

```
interface aggregateport
no interface aggregateport
```

---

---

Aggregate port

---

---

---

aggregate port

---

---

---

1.0

---

---

---

aggregate port aggregate port  
aggregate port

```
show interfaces show interfaces aggregateport
```

---

---

```
Switch(config)#interface aggregateport 3
Switch(config-if)#
```

---

---

---

```
show interfaces
```

---

interface fastEthernet

```
interface fastEthernet
```

---

---

/

---

---

---

---

---

1.0

---

no show interfaces show interfaces  
fastEthernet

---

Switch(config)#interface fastEthernet1/2  
Switch(config-if)#

---

---

show interfaces

---

## interface gigabitEthernet

### interface gigabitEthernet

---

/

---

---

---

---

1.0

---

no show interfaces show  
interfaces gigabitEthernet

# interface loopback

bc

**interface loopback**  
**no interface loopback**

loopback (0-255)

loopback

1.0

OSPF	ROUTER ID	IP	ROUTER ID	Loopback	OSPF
	IP	ROUTER ID		IP	Loopback
		Loopback	Loopback	OSPF	
		IP	loopback ip	IP	
		Loopback	ospf		
		ROUTER ID.			

loopback  
 Switch(config)# **interface loopback 1**  
 Switch(config-if)#

**router-id** f ci hYf =8

**show ip ospf interface** ospf

# interface range

**interface range { | macro }**

**macro**

---

---

---

1.0

---

interface range

**define interface-range**

---

Switch(config)#**interface range gigabitethernet 0/1-5,0/7,0/9-10**  
Switch(config-if-range)#

---

**define interface-range**

---

interface vlan

switch virtual interface SVI

no SVI

interface vlan

no interface vlan

---

VLAN ID

---

---

---

1.0

---

show interfaces    show interfaces vlan

# ip access-group

```
ACL                                     no
ip access-group o] bpci hq
no ip access-group o] bpci hq

-----
IP ACL
] b .
ci h .

-----
1.0

-----
57@
GJ=          ci h          show access-group
```

```
access-list deny_unknow_device 10/100M 1
Switch(config)# interface gigabitethernet 0/1
```



---

---

```
show_ip_interface
```

---

ip broadcast-address

SVI

Routed port

no

```
ip broadcast-address
```

```
no ip broadcast-address
```

---

---

```
IP
```

---

---

---

```
255.255.255.255
```

---

---

---

```
1.0
```

---

SVI Routed port

show interfaces show

```
interfaces vlan
```

---

---

```
Switch(config)#interface vlan 3
```

```
Switch(config-if)#ip broadcast-address 255.255.255.0
```

---

---

---

```
show_ip_interface
```

---

ip default-gateway

no

```
ip default-gateway
```

```
no ip default-gateway
```

---

---

---



---

---

---

---

```
1.0
```

```
show running-config
```

```
Switch(config)# ip dhcp relay information option dot1x
```

---

---

```
show running-config
```

## ip dhcp relay information option dot1x access group

DHCP Relay Information **no**

**ip dhcp relay information option dot1x access-group word**

**no ip dhcp relay information option dot1x access-group word**

---

---

```
word DHCP Relay Information
ACL
```

---

---

---

---

```
1.0
```

```
show running-config
```

```
Switch(config)# ip dhcp relay information option dot1x access-group aclname
```

---

---

```
show running-config
```



Switch(config-if)# ip dvmrp default-information

ip dvmrp metric DVMRP

## ip dvmrp metric-offset

no

ip dvmrp metric-offset [in | out]

no ip dvmrp metric-offset {in | out} }

in DVMRP

out DVMRP

1-31

in in 1 out 0

1.0

show running-config

DVMRP 1 1

DVMRP

DVMRP 10

Switch(config-if)# ip dvmrp metric-offset 10

## ip dvmrp reject-non- pruners

DVMRP no

ip dvmrp reject-non-pruners

no ip dvmrp reject-non-pruners

reject-non-pruners

---

---

1.0

---

---

**show running-config**  
DVMRP

---

DVMRP

---

Switch(config-if)# **ip dvmrp reject-non-pruners**

---

---

## ip dvmrp routehog-notification

DVMRP

no

**ip dvmrp routehog-notification**

**no ip dvmrp routehog-notification**

---

**routehog-notification**

---

1~2147483647.

---

---

10000

---

---

---

1.0

---

---

**show running-config**

---

10000

DVMRP

DVMRP

---

Switch(config)# **ip dvmrp routehog-notification 20000**

---

---

## ip dvmrp route-limit

no

**ip dvmrp route-limit**

**no ip dvmrp route-limit**

**route-limit**

0~2147483647

7000

1.0

**show running-config**

DVMRP

7000

Switch(config)# **ip dvmrp route-limit 8000**

**ip dvmrp unicast-routing**

DVMRP

ip dvmrp unicast-routing

DVMRP

no

DVMRP

ip dvmrp unicast-routing

no ip dvmrp unicast-routing

**unicast-routing**

DVMRP

1.0

**show running-config**

PIM

DVMRP

PIM

DVMRP

Switch(config-if)# **ip dvmrp unicast-routing**

**ip dvmrp route-limit**

## ip helper-address

DHCP relay server                    **no**

1.0

**show ip igmp interface**

IP

**gigabitethernet0/1**

240.1.1.1:

```
Switch(config)#ip access-list standard acc-group  
Switch(Vt6Z) [! ghX! bUW)# permit 240.1.1.1 0.0.0.0  
Switch(Vt6Z) [! ghX! bUW)#exit  
Switch(config)# interface gigabitethernet0/1  
Switch(config-if)# ip igmp access-group acc-group
```

**ip igmp join-group**

ip igmp join-group

no

ip igmp join-group

no ip igmp join-group

**join-group**

1.0

**show ip igmp interface**

ICMP ECHO

```
Switch(config)#interface vlan 1  
Switch(config-if)# ip igmp join-group 230.0.0.0
```

**ip igmp access-group**

ip igmp last-member-query-interval

---

```
Switch(config)#interface vlan 1  
Switch(config-if)# ip igmp query-interval 150
```

---

```
show ip igmp groups          IGMP          sponse-time0(oups )Tj/TT31323f2.2
```



1.0

**show ip igmp interface**  
IGMPv2

Switch(config)#**interface vlan 1**  
Switch(config-if)#**ip igmp querier-timeout 300**

**ip igmp query-interval**

## ip igmp snooping

IGMP-Snooping                      IGMP-Snooping                      **no**                      igmp  
snooping  
**ip igmp snooping {ivgl | svgl [vlan                      ]}**  
**no ip igmp snooping**

**ivgl**

VLAN

IGMP

igmA'5B"R0Y2.995 Tf3.4757 0 TV789

**ip igmp snooping**  
**limit-ipmc**

IPMC

## ip igmp snooping mrouter

no

ip igmp snooping mrouter interface

no ip igmp snooping mrouter interface

```
interface Trunk
```

```
1.0
```

IGMP

IGMP

show ip igmp snooping mrouter

```
Switch(config)#ip igmp snooping mrouter interface gigabitethernet 0/1
```

```
ip igmp snooping IGMP-Snooping
```

```
ip igmp snooping / IP  
source-check
```

```
ip igmp snooping IPMC IP  
limit-ipmc
```

```
show ip igmp snooping igmp snooping
```

## ip igmp snooping source-check

```
igmp snooping / IP no igmp snooping  
/ IP
```

```
ip igmp snooping source-check [port][ default-server ]
```

```
no ip igmp snooping source-check [port] [default-server]
```

```
port
```

```
default-server IP
```

1.0

IP

IPMC

( )

IP  
Server

IPMC

IP

IPMC

IP

Server IP

Server

**ip igmp snooping limit**

IPMC

IP

**show ip igmp snooping**

IP

Switch(config)# **ip igmp snooping source-check port**

**ip igmp snooping** IGMP-Snooping

**ip igmp snooping** IPMC IP  
**limit-ipmc**

**ip igmp snooping vlan**  
**mrouter**

**show ip igmp snooping** igmp snooping

**ip igmp static-group**

no

**ip igmp static-group**

**no ip igmp static-group**

**static-group**

1.0

**show ip igmp interface**

IGMP

```
Switch(config)#interface vlan 1
Switch(config-if)# ip igmp static-group 230.0.0.0
```

```
ip igmp join-group
```

## ip multicast-routing

no

ip multicast-routing

no ip multicast-routing

```
multicast-routing
```

```
1.0
```

```
show running-config
```

PIM

```
Switch(config)# ip multicast-routing
```

## ip multicast boundary

no

ip multicast boundary

no ip multicast boundary

```
boundary
```

---

---

1.0

---

**show running-config**

239.0.0.0 239.255.255.255

IP

**fastethernet0/1**

224.0.0.0

Switch(config)# **ip access-list standard mul-boun**

Switch(V&bZ) [! ghX! bUW)# **permit 224.0.0.0 0.0.0.0**

Switch(V&bZ) [! ghX! bUW)#**exit**

Switch(config)# **interface fastethernet0/1**

Switch(config-if)# **ip multicast boundary mul-boun**

---

---

---

## ip multicast ttl-threshold

TTL time-to-live

no

**ip multicast ttl-threshold -**

**no ip multicast ttl-threshold**

---

---

**ttl-threshold -**

TTL

,

0~255

---

0

---

---

---

1.0

---

---

**show running-config**

TTL

0

TTL

Switch(config-if)# **ip multicast ttl-threshold 5**

---

---

---

## ip multicast vlan

```

                vlan id                no
ip multicast vlan    interface
no ip multicast vlan interface

vlan                vlan id                0~4094

native vlan

1.0

show running-config

Switch(config)# ip multicast vlan 5 interface fastEthernet0/1

```

## ip ospf authentication

```

                bc
ip ospf authentication [message-digest | null]
no ip ospf authentication

aYggU[ Y! X] [ Ygh                A8)
bi ``

% $

                ž                ] bhYfZUW fUb[Y                "
                bc
                bi ``

```

Gk] hVWfMčbZ] [! ] Zł#] d cgdZ Ui h\Ybh] WWh] cb

**show ip ospf interface** ospf

## ip ospf authentication-key

bc

**ip ospf authentication-key**  
**no ip ospf authentication-key**

ž

% \$

ž

] bhYfZUW fUb[Y

Gk] hVWfMčbZ] [! ] Zł#] d cgdZ Ui h\Ybh] WWh] cb! \_Ym ZZZ

**show ip ospf interface** ospf

## ip ospf cost

bc

**ip ospf cost**  
**no ip ospf cost**

. %\*)' )

10

---

---

1.0

---

---

a17.05c24176>Tj/q26.507502 0 0 3.06 8023d4192354202c86 e837be087c4f6704cb087336d1182D0d402c867ed1



1.0

<Y` `c

ž

]bhYfZUW fUb[Y

Switch(config-if)# ip ospf hello-interval 20

**show ip ospf interface** ospf

### ip ospf message-digest-key

aX)

bc

**ip ospf message-digest-key md5**

**no ip ospf message-digest-key**

A8)

fP% " &) ) Ł

A8)

\_Ym

%\*

A8)

% \$

ž

]bhYfZUW fUb[Y

Gk] hVWfMčbZ] [! ] ZŁ# ] d cgdZ aYggU[ Y! X] [ Ygh! \_Ym & aX) UUU

Gk] hVWfMčbZ] [! ] ZŁ# ] d cgdZ aYggU[ Y! X] [ Ygh! \_Ym &% aX) VVV

\_Ym

Gk] hVWfMčbZ] [! ] ZŁ#bc ] d cgdZ aYggU[ Y! X] [ Ygh! \_Ym &

Gk] hVWfMčbZ] [! ] ZŁ#bc ] d cgdZ aYggU[ Y! X] [ Ygh! \_Ym &%

**show ip ospf interface** ospf

## ip ospf network

bc

**ip ospf network {broadcast | point-to-point}**

**no ip ospf network**

---

**broadcast**

---

**point-to-point**

---

---

1.0

---

---

]bhYfZUW fUb[Y

---

Switch(config-router)# **ip ospf network point-to-point**

Switch(config-router)#**no ip ospf network**

---

**show ip ospf interface**                      ospf

---

## ip ospf priority

bc

**ip ospf priority**

**no ip ospf priority**

---

. \$" " &))

---

---

1

---







```

0~255      BSR      BSR
            IP      BSR      0
-----
1.0
-----
show running-config      PIM      BSR      BSR
-----
                        30      10      bsr
Switch(config)# ip pim bsr-candidate gigabitethernet0/2 30 10
-----
ip pim rp-candidate      RP
show ip pim bsr          BSR
show ip pim rp           RP
    
```

### ip pim dr-support-address-bound

```

DR      no      DR
ip pim dr-support-address-bound
no ip pim dr-support-address-bound
-----
dr-support-address-bound      DR
-----
1.0
-----
show running-config      PIM SM      PIM SM-DM      DR
-----
                        DR
-----
vlan2      DR      192.168.10.1/24
    
```

```
Switch(config)#ip access-list standard dr-supp
Switch(config-std-nacl)# permit 192.168.10.1 0.0.0.255
Switch(config-std-nacl)#exit
Switch(config)#interface vlan 2
Switch(config-if)# ip pim dr-support-address-bound dr-supp
```

## ip pim lan-delay

```
LAN Delay          no          LAN Delay
ip pim lan-delay
no ip pim lan-delay
```

```
lan-delay          LAN Delay  PIM          hello
```

```
1.0
```

```
show running-config          LAN Delay  PIM          hello
```

```
vlan 2  LAN Delay
```

```
Switch(config)#interface vlan 2
Switch(config-if)# ip pim lan-delay
```

```
ip pim override-interval
```

## ip pim neighbor-filter

```
no
ip pim neighbor-filter
no ip pim neighbor-filter
```

```
neighbor-filter
```

1.0

show running-config

PIM

vlan2 192.168.10.1/24

Switch(config)#ip access-list standard neigh-fil

Switch(config-std-nacl)# permit 192.168.10.1 0.0.0.255

Switch(config-std-nacl)#exit

Switch(config)#interface vlan 2

Switch(config-if)# ip pim neighbor-filter neigh-fil

### ip pim override-interval

no

ip pim override-interval

no ip pim override-interval

override-interval

0~65535

2500

1.0

show running-config

PIM

override interval

Switch(config-if)# ip pim override-interval 1000

**ip pim lan-delay**

LAN Delay

## ip pim query-interval

PIM Hello

no

**ip pim query-interval**

**no ip pim query-interval**

**query-interval**

0~65535

30

1.0

**show running-config**

PIM Hello

designated router DR

Switch(config-if)# **ip pim query-interval 1000**

## ip pim rp-address

RP

no

RP

**ip pim rp-address**

[group-list

] [override]

**no ip pim rp-address**

RP

**group-list**

IP

RP

RP

**override**

RP

RP





## ip rip authentication mode

```

RIP
no
ip rip authentication mode {md5 | text }
no ip rip authentication mode
```

```

md5
md5
text
```

```

1.0
```

```

show ip protocols SVI RIP
```

```

Switch(config)#interface vlan 2
Switch(config-if)# ip rip authentication mode text
```

```

ip rip authentication RIP
key-chain
show ip protocols IP
```

## ip rip authentication key-chain

```

RIP
no
ip rip authentication key-chain
no ip rip authentication key-chain
```

```

1.0
```

```

RIP
chain show ip protocols SVI show key RIP
Switch(config)#interface vlan 2
Switch(config-if)# ip rip authentication key-chain key1

ip rip authentication SVI RIP
mode
show key chain
show ip protocols IP

```

### ip rip receive version

```

RIP no
ip rip receive version [1] [2]
no ip rip receive version

```

```

1 1 RIP
2 2 RIP
1 2 RIP

```

RIP

1.0

```

RIP show ip protocols
RIP

```

```

2 RIP
Switch(config)#interface vlan 2
Switch(config-if)# ip rip receive version 2
1 2
Switch(config)#interface vlan 2
Switch(config-if)# ip rip receive version 1 2

```

```

ip rip send version RIP
ip rip v2-broadcast V2

```

```
version RIP
show ip protocols IP
```

## ip rip send version

```
RIP no
ip rip send version [1] [2]
no ip rip send version
```

```
1 1 RIP
2 2 RIP
1 2 1 2 RIP
```

```
1 RIP
```

```
1.0
```

```
RIP RIP show ip protocols
```

```
2 RIP
Switch(config)#interface vlan 2
Switch(config-if)# ip rip send version 2
```

```
ip rip receive version RIP
ip rip v2-broadcast V2
version RIP
showS-10.0rols
```



1.0

**show ip route** IP

IP 192.168.65.1 255.255.255.0 IP

192.168.13.1 1

Switch(config)# **ip route** 192.168.65.1 255.255.255.0 192.168.13.1 1

**show ip route** IP

ip routing

IP no

**ip routing**

**no ip routing**

IP

1.0

IP 3 **show ip protocols**

IP

Switch(config)# **ip routing**

**router** RIP RIP

**show ip protocols** IP

ip ssh version

ssh server

no



---

---

**show ip ttl**

---

ip ttl

---

key

**no**

key

no key

---

---

0 2147483647.

---

---

---

1.0

---

**show key chain**

---

---

Switch(config-keychain)# **key 11**

Switch(config-keychain-key)#

---

---

**show key chain**

---

key chain

---

key chain

**no**

key chain

no key chain

---

---

1.0

---

**show key chain**

```
Switch(config)# key chain key-chain-list1
Switch(config-keychain)#
```

```
show key chain key chain
```

```
_Ym! ghf ] b[
```

```
no
```

```
key-string
no key-string
```

```
80
```

```
1.0
```

```
show key chain
```

```
Switch(config-keychain-key)# key-string
```

```
show key chain key chain
```

```
line
```

```
line {console vty}
```

```
console
```

```
vty TELNET
```

---

---

1.0

---

---

telnet

S35



LLDP

Switch(config)# no lldp run

[show lldp](#)

LLDP timer

holdtime

## lldp timer

LLDP timer

no

timer

60

lldp timer

no lldp timer

timer

5-299

60

1.0

show lldp



---

---

1.0

---

---

---

---

---

7

---

---

---

---

---

1.0

**show logging**

8RFAV...hVÄVHW\_U3`E&KQ0#e†T16SfYQZÆ





!



---

---

**Show logging**

---

**show running-config**

---

## logging facility

SYSLOG

no

---

**show run**

---

Switch(config)# **logging source address 1.1.1.1**

---

**Show logging**

---

**show running-config**

---

## logging source interface

SYSLOG

no

**logging source interface**

---

---

---

1.0

---

---

Telnet

RADIUS

HY` bYh

Gk] hVX#VtbZ] [i fY hYfa] bU

Gk] hVXfMtbZ] [t# fUX] i g! gYfj Yf \cgh %&"%\*, "\*"("%\$

Gk] hVXfMtbZ] [t# fUX] i g! gYfj Yf \_Ym hYgh

Gk] hVXfMtbZ] [t# ` ] bY j hm

Gk] hVXfMtbZ] [! ` ] bYt# `c[] b Uf h\Ybh] WWh] cb fUX] i g

Gk] hVXfMtbZ] [! ` ] bYt#YbX

---

---

**line**

---

---

[show running-config](#)

---

---

loopback

no

loopback

interface

# mac access-group

```
MAC ACL                               no  
mac access-group o] bpci hq  
no mac access-group o] bpci hq
```

---

## IP ACL

---

] b

.

ci h

.

---

1.0

---

57@

5 Ɖ

---

---

1.0

---

---

mac ACL show mac access-lists  
ACL

---

---

MAC extended ACL macext  
Switch(config)# mac access-list extended macext

---

---

---

show mac access-lists MAC ACL

---

## mac-address-table aging-time

no

mac-address-table aging-time  
no mac-address-table aging-time

---

---

300

---

---

---

1.0

---

---

show mac-address-table aging-time  
show mac-address-table dynamic

---

---

Switch(config)# mac-address-table aging-time 150

---

---

---

show  
mac-address-table  
aging-time  
show  
mac-address-table  
dynamic

---

## mac-address-table filtering

```

no
mac-address-table filtering      vlan
no mac-address-table filtering  vlan

```

vlan	VLAN ID
1.0	

```
show mac-address-table filtering
```

```
Switch(config)#mac-address-table filtering 00d0f8000000 vlan 1
```

```

clear
mac-address-table
filtering
show
mac-address-table
filtering

```

## mac-address-table notification

```

MAC                               no
mac-address-table notification [interval | history-size ]
no mac-address-table notification [interval | history-size]

```

interval	MAC	Trap
1		
history-size	MAC	
	1	
1		1



---

**mac-address-table static**

00d0.f800.073c VLAN 4

gigabitethernet 0/1

Switch(config)#**mac-address-table static** 00d0.f800.073c **vlan** 4 **interface**  
**gigabitethernet** 0/1

---

**show**  
**mac-address-table**  
**static**

---

**clear**  
**mac-address-table**  
**static**

---

## match access-group

class map **no** class map  
**match access-group** e  
**no match access-group** e

---

e ACL

---

## match interface

bc

match interface

no match interface [ ]

aggregateport SVI

fci hY! aUd

1.0

Switch(config-route-map)# match interface vlan 4

bc

Switch(config-route-map)# no match interface

show route-map

route-map

## match ip address

bc

match ip address

no match ip address [ ]

ACL

fci hY! aUd

1.0

57@

57@

57@

```
Switch(config-route-map)# match ip address acl_for_route_map
bc
Switch(config-route-map)# no match ip address
```

```
show route-map route-map
```

## match ip next-hop

bc

```
match ip next-hop
no match ip next-hop [ ]
```

```
ACL
```

```
fci hY! aUd
```

```
1.0
```

```
57@
```

```
57@
```

```
57@
```

```
Switch(config-route-map)# match ip next-hop acl_for_route_map
bc
Switch(config-route-map)# no match ip next-hop
```

```
show route-map route-map
```

## match ip route-source

bc

```
match ip route-source
no match ip route-source [ ]
```

ACL

fci hY! aUd

1.0

57@

57@

57@

Switch(config-route-map)# **match ip route-source** acl\_for\_route\_map  
bc

Switch(config-route-map)# **no match ip route-source**

**show route-map**

route-map

match metric

bc

**match metric**

**no match metric** [ ]

fP% &% +(, '\* (+L

fci hY! aUd

1.0

aYhf]W

aYhf]W

Switch(config-route-map)# **match metric** 4  
bc

Switch(config-route-map)# **no match metric**

```
show route-map
```

```
route-map
```

match route-type

```
bc
```

```
match route-type { internal | external [type-1 | type-2] }
```

```
no match route-type
```

```
internal
```

```
CGD:
```

```
CGD:
```

```
"
```

```
external[type-1 | type-2]
```

```
6; D
```

```
CGD:
```

```
6; D
```

```
CGD:
```

```
ž
```

```
CGD:
```

```
hndY! %
```

```
hnd! &
```

```
ž
```

```
YI hYf b! hndY%
```

```
YI hYf b! hndY&
```

```
"
```

```
fci hY! aUd
```

```
1.0
```

```
Switch(config-route-map)# match route-type external type-1
```

```
bc
```

```
Switch(config-route-map)# no match route-type
```

```
show route-map
```

```
route-map
```

match tag

```
hU[
```

```
bc
```

```
match tag
```

```
no match tag [ ]
```

```
hU[ f!$! &%( + ( ' * ( +L
```

```
f ci hY! aUd
```

```
1.0
```

```
hU[
```

```
hU[
```

```
Switch(config-route-map)# match tag 4
```

```
bc
```

```
Switch(config-route-map)# no match tag
```

```
show route-map
```

```
route-map
```

## medium-type

```
no
```

```
medium-type { fiber | copper }
```

```
no medium-type
```

```
fiber
```

```
copper
```

```
Ap SVI
```

```
1.0
```

```
S3550-12SFP/GT
```

```
Switch(config)#interface gigabitethernet 0/1
```

```
Switch(config-if)#medium-type copper
```



**show mls qos interface**

```

DSCP 7cG (
Switch(config)# interface gigabitEthernet 0/1
Switch(config-if)# mls qos trust cos
Switch(config-if)# mls qos cos 4
    
```

**show mls qos interface** QoS

**mls qos map**

```

CoS-to-DSCP Map DSCP-to-CoS Map no
mls qos map {cos-dscp / dscp-cos to }
no mls qos map {cos-dscp | dscp-cos}
    
```

```

7cG $ + 8G7D 8G7D
$ž , ž %ž %*ž % ž &(ž &*ž ' &ž ' (ž ($ž (*ž
( , ))*
dscp-cos to DSCP DSCP
8G7D 0, 8, 10, 16, 18, 24,
26, 32, 34, 40, 46, 48,56
DSCP COS COS
0 7
    
```

CoS-to-DSCP Map 1-2 DSCP-to-CoS Map 1-3

1-2 CoS-to-DSCP Map

CoS	DSCP
0	0
1	8
2	16
3	24
4	32
5	40
6	48
7	56

1-3 DSCP-to-CoS Map

DSCP	CoS
0	0
8,10	1
16,18	2
24,26	3
32,34	4
40,46	5
48	6
56	7

---

---

1.0

---

---

CoS-to-DSCP Map	CoS	DSCP	DSCP-to-CoS
-----------------	-----	------	-------------

DSCP

CoS

**show mls qos maps**

switch# **configure terminal**

switch(config)#**mls qos map cos-dscp 56 48 46 40 34 32 26 24**

switch(config)# **end**

switch# **show mls qos maps cos-dscp**

cos-dscp map:

cos: 0 1 2 3 4 5 6 7

dscp: 56 48eW n0 58eW n0 5805.2(eW n0 54)-52( )-5.8( 3-52( 2-0.6( ))-5.8(2)2.2(6)-0.6( )254.8(2)2

**show mls qos interface**

DSCP

Switch(config)# **interface fastEthernet 0/1**  
Switch(config-if)# **mls qos trust dscp**

**show mls qos interface**

QoS

monitor session

SPAN

no

**monitor session** {source interface [ , | - ] [both | rx | tx] | destination interface }  
**no monitor session** [source interface [ , | - ] [both | rx | tx] | destination interface ]

SPAN

1

**source**

**interface**

AP

SVI

**destination**

**interface**

AP

SVI

,

1,2,5,8,10

-

1-10

**both**

**rx**

**tx**

SPAN

1.0

SPAN Switched port routed port

SPAN

SPAN

disabled port

SPAN

**show monitor**

SPAN



---

---

---

1.0

---

---

Switch#mriinfo

Interface	Neighbor	Metric		Querier	Status	Type
Address	Address	Ttl	Offset			
-----	-----	---	-----	-----	-----	----
0.0.0.0	0.0.0.0	0	1	Yes	Down	Leaf
192.168.2.5	0.0.0.0	0	1	Yes	Down	Leaf
2.2.2.2	0.0.0.0	0	1	Yes	Down	Leaf
192.168.65.124	192.168.65.109	2	1	Yes	Up	None
192.168.66.66	0.0.0.0	0	1	Yes	Down	Leaf

---

---

---

name

VLAN

no

name

no name

---

---

VLAN

---

---

VLAN

VLAN

---

---

1.0

---

---

show vlan

IP

Switch(config)# vlan 10

name(mst)

MST

no

name

no name

---

---

Mst

32

---

Mst

---

1.0

---

**spanning-tree mst configuration**

---

**show spanning-tree mst mst configuration**

---

**spanning-tree mst mst configuration**

---

**show Mst mst**

neighbor

f]d

bc

neighbor

no neighbor

---

---

]d

f

```
Switch(config-router)# network 102.18.66.61
Switch(config-router)# no network 102.18.65.11
```

```
show ip protocols
```

### network(OSPF)

network	area	no
no network	area	

```
ospf
```

```
IP
```

```
OSPF
```

```
1.0
```

```

:
: network 0.0.0.0 0.0.0.0 area 2 2
  network 192.168.65.123 255.255.255.255 area 3
192.168.65.123 3

```

```

Switch(config-router)#network 192.168.65.0 0.0.0.255 area 192.168.65.0
Switch(config-router)#network 192.168.1.0 0.0.0.255 area 1
Switch(config-router)#network 0.0.0.0 0.0.0.0 area 2

```

```
router ospf ospf
```

```
show ip protocols network
```

### network(RIP)

```
F]d
```

```
bc
```

network  
no network

]d

F=D

1.0

Switch(config-router)#**network** 192.168.65.0  
Switch(config-router)# **network** 192.168.66.0  
Switch(config-router)# **no network** 192.168.65.0

**show ip protocols**

offset-list

f]d

ž

bc

offset-list

{in | out} [ ]

no offset-list

{in | out} [ ]

57@

**in** 57@

**out** 57@

aggregateport SVI





---

h] aY! fUb[Y

h] aY! fUb[Y

"

g\ck

h] aY! fUb[Y

"

---

Switch(config)# **time-range** bc! \hhd

Gk] hVWfMtbZ] [! h] aY! fUb[YL# dYf] cX] WkYY\_XUhg , . \$\$ hc % . \$\$

---

[show time-range](#)

time-range

[absolute](#)

---

host

any

IP IP IP

host

host

destination-wildcard 0.0.0.0

any

any destination 0.0.0.0

destination-wild 255.255.255.255

host

any

TCP UDP TCP UDP IP IP TCP UDP TCP UDP 0 65535

h] aY! fUb[ Y! bUaY

h] aY! fUb[ Y "

ACL

EXPERT ACL

1.0

show access-lists

9l dYfh 9l hYbXYX 57@ Yl dYfh 57@ =D % &" %, "%&"' A57 \$\$X\$" Z, \$\$" \$\$(( H7D hVd % &" %, "\$" \$ "\$" &)" &)" \cgh %&" %, "%&"' Gk] hVxfMzbZ] [L# Yl dYfh UWWgg! `] gh Yl hYbXYX Yl dYfh Gk] hVxfMzbZ] [! Yl hl aUWt# XYbm hVd \cgh % &" %, "%&"' aUW \$\$X\$" Z, \$\$" \$\$(( Ubm Ubm Gk] hVxfMzbZ] [! Yl hl aUWt# dYfa] h Ubm Ubm Ubm Ubm Gk] hVxfMzbZ] [! Yl hl aUWt# YbX Gk] hV # g\ck UWWgg! `] ghg Yl dYfh 9l hYbXYX Yl dYfh UWWgg `] gh Yl dYfh XYbm hVd \cgh % &" %, "%&"' aUW \$\$X\$" Z, \$\$" \$\$(( Ubm Ubm permit any any any any

deny(expertaccess-list extended ) ACL deny

## permit (ip access-list extended)

	(permit)				ACL	
ACL			<b>no</b>	IP ACL		
<b>permit</b>	{	<b>host</b>	<b>any</b> }	{		<b>host</b>
	<b>any</b> }					

---

```
Switch(config)# ip access-list extended 123
Switch(config-ext-nacl)# permit tcp host 192.1.1.1 eq 100 any
Switch(config-ext-nacl)#exit
Switch(config)# interface gigabitEthernet 0/1
Switch(config-if)# ip access-group 123 in
```

```
Switch(config-ext-nacl)#exit
Switch(config)# interface gigabitethernet 0/1
Switch(config-if)# ip access-group 133 in
```

```
deny (ip access-list IP ACL deny
standard)
```

```
show ip access-lists IP ACL
```

## permit (mac access-list extended)

	MAC	MAC	MAC	MAC
	MAC ACL		ACL	
<b>no</b>	MAC ACL			
<b>permit</b> {any   host	}	{any   host	}	[Uf d pUdd` YhU _ pXYWbYh! ]j p X] U[bcgh] W pYhndY! *\$\$\$pYhndY! , \$(&p `Uh p `Uj WgWU p acd! Vbgc` Ypacd! Xi ad p ai adg pbYhV] cgpj ] bYg! YWc p l bg! ]XdQ [h] aY! fUb[Y h] aY! fUb[Y! bUaYQ
<b>no permit</b> {any   host	}	{any   host	}	Uf d pUdd` YhU _ pXYWbYh! ]j p X] U[bcgh] W pYhndY! *\$\$\$pYhndY! , \$(&p `Uh p `Uj WgWU p acd! Vbgc` Ypacd! Xi ad p ai adg pbYhV] cgpj ] bYg! YWc p l bg! ]XdQ [h] aY! fUb[Y h] aY! fUb[Y! bUaYQ

```
any
```

```
host
```

```
any
```

```
host
```

```
Uf d pUdd` YhU _ pXYWbYh! ]j p X] U[bcgh] W  
pYhndY! *$$$pYhndY! , $(&p `Uh p `Uj WgWU p  
acd! Vbgc` Ypacd! Xi ad p ai adg  
pbYhV] cgpj ] bYg! YWc p l bg! ]XdQ
```

```
h] aY! fUb[Y! bUaY
```

```
h] aY! fUb[Y
```

```
"
```

```
ACL
```

```
MAC ACL
```

```
1.0
```

```
show mac access-lists
```

```
MAC 00d0f8000c0c
```

```
100
```

```
1
```

```
Switch(config)#mac access-list extended mac1
```

```
Switch(config-ext-macl)# permit host 00d0f8000c0c any type Uf d
```

```
Switch(config-ext-macl)#exit
Switch(config)# interface gigabitethernet 0/1
Switch(config-if)# mac access-group mac1 in
```

```
deny (mac access-list MAC ACL deny
externed )
show mac access-lists MAC ACL
```

ping

```
ping
ping [ ]
```

IP

ping

# police

class

policer

policer

**police**

**[exceed-action {drop | dscp }]**

1M 1000Mbsp

byte 16384,

20480 , 28672, 40960 , 77824, 143360, 274432,  
536576

**exceed-action drop**

**exceed-action dscp**

DSCP

0, 8, 10, 16, 18, 24, 26, 32, 34, 40, 46, 48, 56.

policer

class

1.0

dc: ]Wf

fUnY! Vdg

VmY

1M 1000Mbsp 16384, 20480 , 28672, 40960 ,

77(96)-5.1(0 d.))TJ/T.23394 Tw[. .

# policy-map

policy map                      policy map                      no                      policy map

**policy-map**  
**no policy-map**

---

---

policy map

---

---

policy map

---

---

1.0

---

---

**show policy-map**

---

---

policy1    policy-map    policy-map

Switch(config)# **policy-map** policy1

Switch(config-pmap)#

---

---

**show policy-map**                      QoS policy map

# port-group

Aggregate Port                      no                      Aggregate Port

**port-group**  
**no port-group**

---

---

Aggregate Port

Aggregate Port

---

---

Aggregate Port

---

---

1.0

---

---

AP                      VLAN                      trunk port

native VLAN                      AP

---

---

0/3    0/4    AP 3

Switch(config)#**interface range gigabitethernet 0/3-4**

---

Switch(config-if-range)#**port-group 3**

---

---

---

priority-queue

<b>priority-queue [out]</b>	SP	<b>no</b>	SP	WRR
<b>no priority-queue [out]</b>				
<b>out</b>			W	

---

---

reset

---

15

1

---

---

1.0

---

0

disable, enable, exit, help, logout

guest

AAA

enable secret

---

configure 14

Switch(config)#**privilege exec level 14** configure

configure

Switch(config)# **privilege exec reset** configure

2-2

---

configure	
exec	
interface	gigabitEthernet aggregateport SVI

---

---

enable secret

---

---

---

1.0

---

22 ) ( 22  
Switch

---

Switch(config)#**prompt** myswitch  
myswitch(config)#

---

---

---

redistribute(RIP)

bc

**redistribute** [metric ] [route-map ]  
**no redistribute**



## radius-server

```
RADIUS                                no                IP                UDP
radius-server [host [backup]][auth-port ]
no radius-server [host][auth-port]
```

```
-----
RADIUS                                IP
backup                                RADIUS                IP
auth-port                            UDP                0 65535
-----
```

```
-----
RADIUS                                UDP                1812
-----
```

```
-----
1.0
-----
```

```
show radius-server
```

```
Switch(config)#radius-server host 192.1.1.1 acct-port 15
```

```
-----
radius-server key                    RADIUS
-----
```

```
show radius-server                    RADIUS
-----
```

## radius-server key

```
RADIUS                                no
radius-server key
no radius-server key
```

```
-----
1.0
-----
```



1.0

Switch# **reload**

rename

rename flash:            flash:

1.0

**dir**

Switch# **rename flash:aaa.txt flash:bbb.txt**

**dir**

revision

no

revision  
no revision

MST

0 65535

0

Mst

1.0

**Spanning-tree mst configure**

**Spanning-tree mst mst configure**

**Show mst mst**

**Show spanning-tree mst mst configuration**

**route-map**

f ci hY! aUd f ci hY! aUd f ci hY! aUd aUhW  
gYh f ci hY! aUd bc f ci hY! aUd

**route-map [permit | deny]**  
**no route-map [ ]**

f ci hY aUd ' &

**permit | deny route map dYfa] h gYh**

XYbm " dYfa] h

f ci hY! aUd

f(\$" " \*)')' ) Ł

route-map

1.0

```

route-map , 100 route-map
100 route-map route-map 100

```

```
Switch(config)# route-map abc permit 10
```

```
Switch(config-route-map)#match tag 7
```

```
Switch(config-route-map)#set metric 7
XYbm fci hY! aUd
```

```
Switch(config)# route-map abc deny 11
dYf a] h fci hY! aUd
```

```
Switch(config)# no route-map abc permit 10
fci hY! aUd
```

```
Switch(config)# no route-map abc
```

```
show route-map route-map
```

router

no

router  
no router

rip

ospf.

RIP OSPF

1.0

show ip protocols RIP OSPF

```
Switch(config)# ip routing
```

```
Switch(config)# router rip
```

```
Switch(config-router)#
```

```
Switch(config-router)#exit
```

```
Switch(config)# router ospf
```

```
Switch(config-router)#
```

```
ip routing IP
show ip protocols IP
```

## router-id

```
router-id ID no Router ID Router ID
no router-id
```

```
ID ip
```

```
OSPF
```

```
1.0
```

```
ip router ROUTER ID router ROUTER ID
```

```
ROUTER ID ROUTER ID ROUTER ID
ospf ROUTER ID LSA
```

```
Switch(config-router)#router-id 192.168.65.123
```

```
router ospf ospf
interface loopback loopback
show ip ospf ospf
```

## rmon alarm

```
RMON no
rmon alarm {delta | absolute} rising-threshold [ ] falling-threshold
[ ] [owner ]
no rmon alarm
```

```
alarm 1
```

```
65535
```

---

MIB

---

1 4294967295 .

---

**delta**

MIB

---

**absoulte**

MIB

---

|

1

---

1800

10.

---

---

1.0

# rmon event

```
RMON
rmon event [log] [trap] [no] [description] [owner]
no rmon event
```

---

alarm 1

65535

---

log

---

trap

SNMP Trap

Trap

---

description

---

owner

---

1.0

---

show rmon

end-time duration infinite.

1.0

**show key chain**

Switch(config-keychain-key)# **send-lifetime** 00:00:00-08 26 2002 **duration**  
100000

**show key chain** key chain

## service-policy

policy map  
**service-policy input**

policy map

policy map

1.0

**show mls qos interface**

policy1 policy-map policy-map

gigabitethernet 1/1  
Switch(config)# **policy-map** policy1  
Switch(config-pmap)# **class** class1  
Switch(config-pmap-c)# **set ip dscp** 48  
Switch(config-pmap-c)# **exit**  
Switch(config-pmap)# **exit**  
Switch(config)#**interface** gigabitethernet 1/1  
Switch(config-if)#**switchport mode** trunk  
Switch(config-if)#**mls qos trust** cos  
Switch(config-if)#**service-policy** input policy1

**policy-map** policy map policy map

**class** policy map

**set ip dscp** =D ip dscp

**show mls qos interface** QoS

## service dhcp

```
DHCP relay agent                DHCP relay agent                no
service dhcp
no service dhcp
```

```
_____
_____
DHCP relay agent
_____
_____
_____
```

```
1.0
_____
_____
```

```
DHCP relay agent
DHCP relay agent
DHCP relay agent
```

```
DCHP
show running-config
```

```
Switch(config)# service dhcp
_____
_____
```

```
ip helper-address                DHCP relay server
show running-config
_____
_____
```

## services telnet host

```
telnet                            no
```

services telnet host *host-ip*

no services telnet host *host-ip*

```
_____
host-ip                            telnet                            IP
_____
_____
_____
```

1.0

**show running-config**

Switch(config)# services telnet host 192.168.12.54

**show running-config**

services web host

telnet

**no**

services web host *host-ip*

**no services web host *host-ip***

*host-ip*

web

IP

**onfig**

es web host 192.168.12.54

ip dscp

IP

---

---

---

dscp

class

---

---

---

1.0

---

---

IP

**show policy-map**

```
Switch(config)# policy-map policy1    policy1    policy-map,    ip dscp    48
Switch(config-pmap)# class class1
Switch(config-pmap-c)# set ip dscp 48
Switch(config-pmap-c)#
```

```
show route-map
```

```
route-map
```

set level

```
bc
```

```
set level {stub-area | backbone }
```

```
no set level
```

```
stub-area
```

```
bggU
```

```
backbone
```

```
fci hY! aUd
```

```
1.0
```

```
Switch(config-route-map)# set level stub-area
```

```
bc
```

```
Switch(config-route-map)# no set level
```

```
show route-map
```

```
route-map
```

set metric

```
bc
```

```
set metric [+ | -]
```

```
no set metric
```

```
Žp!
```

```
Ž.
```

```
!.
```

```
fP% &P% (+, ' *( +L
```

```
Ž !
```





end

Use this configuration? [yes/no]: y

Building configuration...

Use the enabled mode 'configure' command to modify this configuration.

Press RETURN to get started.

**show running-config**

**show configuration**

show

mst

show

Mst

1.0

### Spanning-tree mst configure

show	spanning-tree	MST region	
<b>mst</b>			
instance	vlan	Vlan	MST instance
<b>name</b>			mst
<b>revision</b>			mst
<b>show</b>		mst	MST

show access-group

ACL

show [ip | mac] access-group [interface ]

---

**interface**

---

```
Switch# show access-lists
Standard IP access list: ipstd1
Standard IP access list: ipstd2
Standard IP access list: ipstd3
Extended IP access list: ipext001
Extended IP access list: ipext1
Extended IP access list: ipext2
Extended MAC access list: macext1
Extended MAC access list: macext2
Extended MAC access list: macext3
```

<b>ip access-list</b>	IP ACL	IP ACL
<b>mac access-list extended</b>	MAC ACL	

## show accounting

AAA

```
show accounting
```

```
1.0
```

```
Switch# show accounting
```

```
Accounting status      : Disabled
Accounting server      : 192.168.12.1
Accounting backup server : 192.168.12.2
Accounting UDP port    : 1813
```

```
aaa accounting server
```

```
aaa accounting          AAA
```



Switch(config)#show aggregateport summary

5[ [fY[UhYDcfh AU Dcfhg Gk] hV\X Dcfh AcXY Dcfhg

!!!!!!!!!!!!!! !!!!!!!!! !!!!!!!!! !!!!!!! !!!!!!!!!!!!!!!!!!!!!!!!!!!!!

5[% , 9bUV`YX 5VVVgg ;] \$#% ž ;] \$#& ž ;] \$#  
;] \$#( ž ;] \$#) ž ;] \$#\*  
;] \$#+ ž ;] \$#,

Switch(config)#show aggregateport load-balance

load-balance : Source MAC address

---

---

QoS class map

---

class map

---

---

1.0

---

---

---

Switch# **show class-map**

---

---

---

**class-map**

class map

class map

---

show clock

**show clock**

---

---

1.0

---

---

---

Switch# **show clock**

System clock : 2002-10-15 20:12:26 Tuesday

---

---

---

**clock set**

---

show cluster

**show cluster**



1.0

MAC

**Switch#show cluster**

```
Cluster:                clus0 <Command switch>
Total number of members: 3
Status:                 1 members are unreachable
Time of last status change: 0 days, 1 hours, 5 minutes
Cluster timer:          12
Cluster holdtime:       120
Cluster discovery hop count: 3
```

**Switch(config)#show cluster**

```
Cluster:                clus0 <Member switch>
Member number:          3
Command switch mac address: 00d0.f8fe.1007
```

[cluster enable](#)

[show cluster candidates](#)

[show cluster members](#)

## show cluster candidates

**show cluster candidates [detail | mac-address H.H.H]**

**detail**

MAC

16

1.0

Switch#show cluster candidates

MAC	Name	Hop	LcPor	UpSN	UpMAC	UpPort
00d0.f8fe.43d2	switch-2	1	Fa0/2	0	00d0.f8fe.1007	Fa0/3
00d0.f8fe.a861	switch-3	2	Fa0/5		00d0.f8fe.43d2	Fa0/12

[cluster enable](#)

[show cluster members](#)

show cluster members

show cluster members [ | detail]

detail

1.0

Switch#show cluster members

SN	MAC	Name	Hop	State	LcPor	UpSN	UpMAC	UpPort
0	00d0.f8fe.1007	Switch	0	up<Cmndr>				
1	00d0.f8fe.43d2	switch-2	1	up	Fa0/2	0	00d0.f8fe.1007	Fa0/3
2	00d0.f8fe.a861	switch-3	2	up	Fa0/5	1	00d0.f8fe.43d2	Fa0/12

[cluster enable](#)

[show cluster candidates](#)

## show configuration

**show configuration**

1.0

**more** config.text

Switch# **show configuration**

.....

enable secret level 1 5 %3R:>H.YW4\_ ;C,tZ5U0<D+S(Uj9=G1X)

enable secret level 15 5 !:>H.Y\*T7;C,tZ[V0<D+S(\W9=G1X)sv

hostname Switch

dot1x re-authentication

interface gigabitEthernet 0/1

rmon collection stats 1 owner monitor

!

.....

**more**

**setup**

**show running-config**

**write memory**

## show cpu

cpu

**show cpu**



```
Switch# show dot1x
IEEE 802.1X Status      : Disabled
Authentication mode : CHAP
Authentication user number : 0
Current user number      : 0
```

```
reauth-enabled      : Enabled
reauth-period       : 3600
quiet-period        : 5
tx-period           : 30
supp-timeout        : 30
server-timeout      : 30
reauth-max          : 2
max-req             : 2
```

---

```
dot1x default 802.1x
```

---

```
dot1x auth-mode 802.1x
```

---

```
dot1x max-req
```

---

```
dot1x port-control auto
```

---

```
dot1x reauth-max
```

---

```
dot1x re-authentication
```

---

```
dot1x timeout quiet-period
```

---

```
dot1x timeout re-authperiod
```

---

```
dot1x timeout server-timeout
```

---

```
dot1x timeout supp-timeout
```

---

```
dot1x timeout tx-period
```

---

## show dot1x auth-address-table

802.1X

```
show dot1x auth-address-table [address      ][interface      ]
```

---

```
address
```

---

```
interface
```

---

---

---

---

---

1.0

Switch(config)#**show dot1x auth-address-table**

Interface	Address
-----	
Gi0/5	00d0.f800.000c
Gi0/2	00d0.f800.1201
Gi0/2	00d0.f800.1a01
Gi0/1	00d0.f800.8899
Gi0/2	00d0.f800.fa0c

<b>dot1x auth-address table</b>	802.1X
---------------------------------	--------

show dot1x statistics

802.1X

show dot1x statistics

1.0

Switch(config)#**show dot1x statistics**

<b>show dot1x summary</b>	802.1X
---------------------------	--------

show dot1x summary

802.1X

show dot1x summary

```
1.0
```

```
Switch(config)#show dot1x summary
```

```
show dot1x statistics 802.1X
```

show file systems

```
show file systems
```

```
1.0
```

```
Switch#show file systems
```

Size(b)	Free(b)	Type	Flags	State
33472512	23022157	flash	rw	-

show gvrp configuration

GVRP

```
show gvrp configuration
```



---

---

---

---

---

---

---

---

1.0

---

---

Switch# **show gvrp configuration**

Global GVRP Configuration:

GVRP Feature : enabled

GVRP dynamic VLAN creation : enabled

GVRP base vlan id is 1.

Join Timers(ms) : 200

Leave Timers(ms) : 600

LeaveAll Timers(ms) : 1000

Port based GVRP Configuration:

Port	Applicant Status	Registration Status
------	------------------	---------------------

-----	-----	-----
-------	-------	-------

Gi0/1-2	Disable	Normal
---------	---------	--------

Gi0/3-4	Disable	Disable
---------	---------	---------

---

---

---

show gvrp statistics

GVRP

show gvrp statistics {interface-id | all}

---

---

---

---

---

---

---

---

ID

---

---

---

---

---

---

---

---

1.0

---

---

Switch# **show gvrp statistics gigabitethernet 0/1**

Join Empty Received: 0  
Join In Received: 0  
Empty Received: 0  
LeaveIn Received: 0  
Leave Empty Received: 0  
Leave All Received: 40  
Join Empty Transmitted: 156  
Join In Transmitted: 0  
Empty Transmitted: 0  
Leave In Transmitted: 0  
Leave Empty Transmitted: 0  
Leave All Transmitted: 41  
Valid Pdu Received: 1  
Invalid Pdu Received: 1  
Pdu Transmitted: 1  
Join Indicated: 1  
Leave Indicated: 1  
Join Propagated: 1  
Leave Propagated: 1

---

---

**clear gvrp statistics**

GVRP

show gvrp status

GVRP	VLAN	VLAN
------	------	------

---

---

---

---

---

---

1.0

---

---





---

---

**ip access-list**

---

IP ACL

IP ACL

---

show ip arp

ARP

show ip arp

---

---

---

---

---

---

---

---

1.0

---

Switch#	show ip arp	Address	Age (min)	Hardware Addr	Type	Interface
192.168.65.1	0	00d0.f8f9.801e	arpa	VL1		
192.168.65.237	0	0009.b71 2d400	arpa	VL1		

---

---

1.0

---

---



Switch# **show ip igmp groups**

Group Address	Interface	Uptime	Expires	Last Reporter
224.1.1.1	FastEthernet 0/12	00:27:41	-	192.168.2.5
230.0.0.0	FastEthernet 0/12	00:27:41	-	192.168.2.5
230.0.0.0	AggreatePort 1	00:27:41	-	2.2.2.2
230.0.0.0	Vlan 1	00:24:46 1d12h		192.168.65.124

**ip igmp query-interval**

show ip igmp interface

IGMP

show ip igmp interface [ ]

1.0

igmp

IGMP

Switch# **show ip igmp interfaces vlan 1**

Vlan 1 State : up  
Internet address : 192.168.65.124/24  
IGMP Status : Enabled  
Current IGMP host version : 2  
Current IGMP router version : 2  
IGMP query interval : 65535 (seconds)  
IGMP querier timeout : 300 (seconds)  
IGMP max query response time: 25 (seconds)  
Last member query response interval : 65500(ms)  
Inbound IGMP access group :  
IGMP activity joins : 2  
IGMP activity leaves : 0  
Multicast routing Status : Enabled  
Multicast TTL threshold : 2  
Multicast designated router (DR) : 192.168.65.124

---

DVMRP unicast routing Status: Enabled  
DVMRP routes received : 0  
DVMRP poison-reverse routes received : 0  
Unicast routes last advertised by DVMRP : 0  
DVMRP routes last advertised by DVMRP : 0  
DVMRP default route on interface : None  
Multicast groups joined :  
230.0.0.0

---

---

**ip igmp access-group**

---

**ip igmp query-interval**

---

**ip multicast ttl-threshold** TTL time-to-live

---

```
ip igmp snooping
mrouter
```

show ip igmp snooping gda-table

```
igmp snooping GDA
show ip igmp snooping gda-table
```

```
GDA
```

```
1.0
```

```
GDA                vlan-id ip
```

```
Switch# show ip igmp snooping gda-table
```

```
ip igmp snooping          IGMP-Snooping
ip igmp snooping          IPMC          IP
limit-ipmc
ip igmp snooping
mrouter
show ip igmp snooping    igmp snooping
```

show ip mroute

```
IP
show ip mroute[          [          ]
[          summary]| summary]
```

```
summary
```

---

**show ip mroute**

---

---

1.0061 Tc<0a5104b8rT3 13 0 0 9 20004 Tc<284d141b94b8095a0940e4f6a20f509b803d7Tj/TT2 1 Tf5.002

---



---

```
Switch#Show ip multicast-routing
The Status of Multicast-routing: Enable
```

---



---

ip multicast-routing	IP
----------------------	----

---

```
show ip ospf
```

```
cgdZ
```

```

LsaGroupPacing          : 240
Administrative distance  : 110
Inter-area Distance     : 110
Intra-area Distance     : 110
External Distance      : 110
RFC1583Compatibility flag : Enabled
Default-information originate : Disabled
Neighbor Changes Log    : Enabled
Auto-Cost Status        : Enabled
Auto-Cost reference-bandwidth : 100 Mbps
Redistribute Default Metric : 20

```

Area information:

```

Area : 0.0.0.0
  Area type                : BackBone Area
  Number of interfaces in this area : 2
  Area authentication      : none
  SPF algorithm executed times : 11
  Number of LSA            : 12
  Checksum Sum             : 0x60071
  Number os Area Border Routers : 0
  Number of AS Border Routers : 0

```

Area Range information:

Area	Range	Advertising
-----		

Switch#**show ip ospf area**

```

Area : 0.0.0.0
  Area type                : BackBone Area
  Number of interfaces in this area : 2
  Area authentication      : none
  SPF algorithm executed times : 11
  Number of LSA            : 12
  Checksum Sum             : 0x60071
  Number os Area Border Routers : 0
  Number of AS Border Routers : 0

```

Switch#**show ip ospf area-range**

Area	Range	Advertising
-----		
0.0.0.1	192.168.65.0/24	advertise
0.0.0.1	192.168.165.0/24	advertise

show ip ospf border-routers

56F 5G6F

show ip ospf border-routes

	1.0

Switch#show ip ospf border-routes

Type : (Type of Router)

ABR - Area border router , ASBR - Autonomous System boundary router ,

BOTH - ABR and ASBR

RteType : (Type of route)

INTRA - Intra-area pe TD0.03 9pshow2Tj--rea-T ----- INTRAIntra----- -----

```

show ip ospf [ ] database [network][ ]
show ip ospf [ ] database [network] [ ] [adv-router ]
show ip ospf [ ] database [network] [ ] [self-originate]

show ip ospf [ ] database [summary] [ ]
show ip ospf [ ] database [summary] [ ] [adv-router ]
show ip ospf [ ] database [summary] [ ] [self-originate]

show ip ospf [ ] database [asbr-summary] [ ]
show ip ospf [ ] database [asbr-summary] [ ] [adv-router ]
show ip ospf [ ] database [asbr-summary] [ ] [self-originate]

show ip ospf [ ] database [external] [ ]
show ip ospf [ ] database [external] [ ] [adv-router ]
show ip ospf [ ] database [external] [ ] [self-originate]

show ip ospf [ ] database [nssa-external] [ ]
show ip ospf [ ] database [nssa-external] [ ] [adv-router ]
show ip ospf [ ] database [nssa-external] [ ] [self-originate]

```

```

UFYU UFYU ]X @G5 ž @G5

UFYU ]X ]d
external @G5g ž

adv-router @G5

=8 @G5
=8 =D

self-originate fl ł @G5

database-summary @G5

router Fci hYf @G5g
network BYhkcf_ @G5g
summary Gi aaUfm @G5g
asbr-summary 5G6F Gi aaUfm @G5g
external 9l hYf bU @G5g
nssa-external BggU 9l hYf bU @G5g

```

1.0

LSA

Switch#show ip ospf database

Router Link States (Area 0.0.0.0)

Link ID	ADV Router	Age	Seq#	Checksum	Link-Count
---------	------------	-----	------	----------	------------

LS age : 1478  
Options : 0x2  
LS Type : Router Links  
Link State ID : 1.1.1.1  
Advertising Router : 1.1.1.1  
LS Seq Number : 80000010  
Checksum : 0x4CB9  
Length : 36  
Number of Links : 1

Link connected to : transit network  
(Link ID) Network/subnet number: 192.168.65.110  
(Link Data) Network Mask : 192.168.65.114  
Number of TOS metrics : 0  
TOS 0 Metrics : 1

LS age : 1698  
Options : 0x2  
LS Type : Router Links  
Link State ID : 1.1.1.5  
Advertising Router : 1.1.1.5  
LS Seq Number : 8000000E  
Checksum : 0xEA79  
Length : 36  
Number of Links : 1

Link connected to : transit network  
(Link ID) Network/subnet number: 192.168.122.2  
(Link Data) Network Mask : 192.168.122.1  
Number of TOS metrics : 0  
TOS 0 Metrics : 6

LS age : 3317  
Options : 0x22  
LS Type : Router Links  
Link State ID : 1.1.1.6  
Advertising Router : 1.1.1.6  
LS Seq Number : 80000015  
Checksum : 0xC07B  
Length : 48  
Number of Links : 2

Link connected to : stub network  
(Link ID) Network/subnet number: 192.168.120.0  
(Link Data) Network Mask : 255.255.255.0  
Number of TOS metrics : 0

TOS 0 Metrics : 6

Link connected to : transit network  
(Link ID) Network/subnet number: 192.168.125.2  
(Link Data) Network Mask : 192.168.125.1  
Number of TOS metrics : 0  
TOS 0 Metrics : 7

LS age : 1687  
Options : 0x2  
LS Type : Router Links  
Link State ID : 1.1.1.7  
Advertising Router : 1.1.1.7  
LS Seq Number : 80000018  
Checksum : 0x17E8  
Length : 36  
Number of Links : 1

Link connected to : transit network  
(Link ID) Network/subnet number: 192.168.65.110  
(Link Data) Network Mask : 192.168.65.100  
Number of TOS metrics : 0  
TOS 0 Metrics : 1

LS age : 1473  
Options : 0x2  
LS Type : Router Links  
Link State ID : 1.1.1.8  
Advertising Router : 1.1.1.8  
LS Seq Number : 8000000B  
Checksum : 0x648F  
Length : 36  
Number of Links : 1

Link connected to : transit network  
(Link ID) Network/subnet number: 192.168.65.110  
(Link Data) Network Mask : 192.168.65.123  
Number of TOS metrics : 0  
TOS 0 Metrics : 1

LS age : 1421  
Options : 0x2  
LS Type : Router Links  
Link State ID : 1.1.1.10  
Advertising Router : 1.1.1.10

LS Seq Number : 80000173  
Checksum : 0x3A7A  
Length : 60  
Number of Links : 3

Link connected to : stub network  
(Link ID) Network/subnet number: 1.1.1.10  
(Link Data) Network Mask : 255.255.255.255  
Number of TOS metrics : 0  
TOS 0 Metrics : 1

Link connected to : transit network  
(Link ID) Network/subnet number: 192.168.65.110  
(Link Data) Network Mask : 192.168.65.110  
Number of TOS metrics : 0  
TOS 0 Metrics : 1

Link connected to : transit network  
(Link ID) Network/subnet number: 192.168.108.2  
(Link Data) Network Mask : 192.168.108.1  
Number of TOS metrics : 0  
TOS 0 Metrics : 3

LS age : 337  
Options : 0x2  
LS Type : Router Links  
Link State ID : 1.1.1.11  
Advertising Router : 1.1.1.11  
LS Seq Number : 80000006  
Checksum : 0xE180  
Length : 48  
Number of Links : 2

Link connected to : stub network  
(Link ID) Network/subnet number: 1.1.1.11  
(Link Data) Network Mask : 255.255.255.255  
Number of TOS metrics : 0  
TOS 0 Metrics : 1

Link connected to : transit network  
(Link ID) Network/subnet number: 192.168.108.2  
(Link Data) Network Mask : 192.168.108.2  
Number of TOS metrics : 0  
TOS 0 Metrics : 2

Switch#**show ip ospf database network**

Network Link States(Area 0.0.0.0)

LS age : 1457  
Options : 0x2  
LS Type : Network Links  
Link State ID : 192.168.65.110(address of Designated Router)  
Advertising Router : 1.1.1.10  
LS Seq Number : 80000004  
Checksum : 0xA55D  
Length : 40  
Network Mask : 255.255.255.0  
attached router : 1.1.1.1  
attached router : 1.1.1.7  
attached router : 1.1.1.8  
attached router : 1.1.1.10

LS age : 374  
Options : 0x2  
LS Type : Network Links  
Link State ID : 192.168.108.2(address of Designated Router)  
Advertising Router : 1.1.1.11  
LS Seq Number : 80000004  
Checksum : 0xEa t 2 8 e sum r a 8 k 0xE 5 ( ) - 1 . 9 ( ) - 1 . . 1 ( 8 k ) h A Q 3 6 4 7

Advertising Routf : 10

Link State ID: 155.187.245.1 (AS Boundary Router address)

Advertising Router: 155.187.241.5

LS Seq Number: 0x80000072

Checksum: 0x3548

Length: 28

```

Summary Net    0          0          0
Summary ASBR  0          0          0
Type-7 Ext    0          0          0
Subtotal      9          0          0

```

Total :

LSA Type	Count	Delete	Maxage
Router	7	0	0
Network	2	0	0
Summary Net	0	0	0
Summary ASBR	0	0	0
type-5 Ext	1	0	0
Type-7 Ext	0	0	0
Total	10	0	0

```
show ip ospf                                ospf
```

```
show ip protocols
```

## show ip ospf interface

cgdZ

```
show ip ospf interface [          ]
```

```
aggregateport      SVI
```

```
1.0
```

```
Switch#show ip ospf interface vlan 1
```

```
FastEthernet 0/48 State : Up
```

```
Internet address      : 192.168.65.123/24
```

```
Area                  : 0.0.0.0
```

```
Router ID             : 1.1.1.8
```



1.1.1.1 1 2Way/DROTHER 00:00:35 192.168.65.114 Fa0/48

Switch#**show ip ospf neighbor detail 1.1.1.7 fa 0/48**

Neighbor RouterId : 1.1.1.7  
interface address : 192.168.65.100  
In the area : 0.0.0.0  
via interface : FastEthernet 0/48  
Neighbor priority : 1  
State : full  
State changes times : 5  
DR : 192.168.65.100  
BDR : 192.168.65.123  
Options : 0x2  
Dead timer due in : 00:00:35  
Neighbor up time : 00:03:46  
retransmission queue length : 0  
number of retransmission : 0

---

---

**show ip protocols**

---

---

show ip ospf summary-address

show ip ospf summary-address

---

---

---

---

---

---

---

---

---

---

1.0

---

---

Switch#**show ip ospf summary-address**

Summary Address	Summary Mask	Advertise
-----	-----	-----
192.168.2.0	255.255.255.0	advertise
192.168.5.0	255.255.255.0	not-advertise

---

---

**show ip protocols**

---

show ip ospf traps status

cgdZ hfUd

show ip ospf traps status

---

---

---

---

---

---

---

---

1.0

---

Switch#**show ip ospf traps status**

ospf trap type	status
-----	
IfStateChange	Disabled
VirtIfStateChange	Disabled
NbrStateChange	Disabled
VirtNbrStateChange	Disabled
IfConfigError	Disabled
VirtIfConfigError	Disabled
IfAuthFailure	Disabled
VirtIfAuthFailure	Disabled
IfRxBadPacket	Disabled
VirtIfRxBadPacket	Disabled
TxRetransmit	Disabled
VirtIfTxRetransmit	Disabled
OriginateLsa	Disabled
MaxAgeLsa	Disabled
LsdbOverflow	Enabled
LsdbApproachOverflow	Enabled

---

---

---

**show ip protocols**

---

# show ip ospf virtual-links

## show ip ospf virtual-links

1.0

### Switch#show ip ospf virtual-links

Virtual Link to router : 192.168.100.2

Virtual Link state : up  
Transit area : 0.0.0.1  
Via interface : vlan 1  
Interface State : POINT\_TO\_POINT  
Cost of using : 10  
Transmit Delay : 1  
Hello : 10  
Dead : 40  
Wait : 40  
Retransmit : 5  
Authentication : none  
Hello due in : 0:00:10

## show ip protocols

# show ip pim bsr-router

Bootstrap Router (BSR)

## show ip pim bsr-router

Bsr-router

Bootstrap Router



Switch#show ip pim interface

Address	Interface	Mode	Nbrs	QueryIntval	DR Address
192.168.2.5	FastEthernet 0/12	Spa-Den	0	30	192.168.2.5
2.2.2.2	AggregatePort 1	Dense	0	30	2.2.2.2
192.168.65.124	Vlan 1	Sparse	1	65535	192.168.65.124

**ip pim** PIM

**show ip pim neighbor** PIM

show ip pim neighbor

PIM

show ip pim neighbor [ ]

1.0

PIM

Switch#show ip pim neighbor

mapping

RP

BSR

1.0

PIM RP

Switch#sh ip pim rp mapping

Group(s) Or Acl	RP Address	Uptime	Expires	Status
224.0.0.0/4	192.168.65.109	00:06:19	00:03:14	-
230.0.0.0/24	192.168.65.124	01:03:12	00:02:18	-
abc	1 1.1.1.1	-	-	Static
224.0.0.0/4	2.2.2.2	-	-	IsOverride
224.0.0.0/4	4.4.4.4	-	-	Static
224.0.0.0/4	8.3.3.3	-	-	Static

### show ip prefix-list

show ip prefix-list [seq | ]

```

                                ' &
seq                               ž fP% &% +(, ' *( +Ł
                                ] d
                                ] d! df YZ] l
                                <bYhkcf_>#<` Yb[ h\>ž
                                . ' )" $" $" $#,

```

1.0

---

```
Switch(config-router)#show ip prefix-list
```

```
ip prefix-list name : pre3
```

```
ip prefix-list name : pre4
```

```
ip prefix-list a1:
```

```
seq 5 permit 1.0.0.0/11
```

```
seq 10 deny 1.0.0.0/11
```

```
seq 15 deny 192.0.0.0/11
```

```
seq 20 permit 192.0.0.0/11
```

```
seq 25 permit 0.0.0.0/4
```

```
Switch(config-router)#show ip prefix-list a1
```

```
ip prefix-list a1:
```

```
seq 5 permit 1.0.0.0/11
```

```
seq 10 deny 1.0.0.0/11
```

```
seq 15 deny 192.0.0.0/11
```

```
seq 20 permit 192.0.0.0/11
```

```
seq 25 permit 0.0.0.0/4
```

---

---

### ip prefix-list

---

## show ip protocols

IP

```
show ip protocols [ rip | ospf | status ] [ routing-network | redistribute-info |  
| routing-information-source ]
```

---

```
f]d          f]d  cgdZ          ž  
cgdZ          ghUhi g          ]d  
ghUhi g      f ci h] b[      "  
routing-network  
redistribute-info  
routing-information-source
```

---

---

---

---

1.0

---

---

Gk] hVW#g\ck ]d dfchcW`g

Routing Protocol : ospf

Distribute-list Configuration

Interface : all interface

Filter Direct : out

Filter Type : access-list

Redistribute Default Metric : 20

Routing for networks

Network Number	Inverse Mask	Area
-----		
192.168.65.0	0.0.0.255	0.0.0.0

Routing Information Sources

Gateway	Distance	Last Update
192.168.65.1	120	00:00:24
192.168.65.110	120	00:00:25

<b>ip rip authentication mode</b>	SVI	RIP
<b>ip rip authentication key-chain</b>	RIP	
<b>ip rip receive version</b>	RIP	
<b>ip rip send version</b>	RIP	
<b>ip routing</b>	IP	
<b>router</b>		
<b>timer basic</b>	RIP	
<b>version</b>	RIP	
<b>show ip ospf</b>	ospf	
<b>show ip rip</b>	rip	

show ip redirects

show ip redirects

1.0

Switch(config)# show ip redirects

ip default-gateway







Type: C - connected, S - static, R - RIP, O - OSPF, IA - OSPF inter area  
 N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2  
 E1 - OSPF external type 1, E2 - OSPF external type 2

Type	Destination IP	Next hop	Interface	Distance	Metric	Status
C	20.10.2.0/24	192.168.65.8	VL1	1	0	Active
S	20.10.3.0/24	192.168.65.8	VL1	1	0	Active
R	20.10.4.0/24	192.168.65.8	VL1	1	0	Active
O	192.168.65.0/24	0.0.0.0	VL1	0	0	Active
O N1	192.168.4.0/24	192.168.65.40	VL1	200	21	Active
O N2	192.168.5.0/24	192.168.65.50	VL1	200	21	Active
O IA	192.168.6.0/24	192.168.65.60	VL1	200	21	Active
O E1	192.168.7.0/24	192.168.65.70	VL1	200	21	Active
O E2	192.168.66.0/24	0.0.0.0	VL1	0	0	Active

```
ip route IP
```

show ip rpf

RPF

show ip rpf

rpf

1.0

RPF

---

Switch#**show ip rpf 100.0.0.30**

RPF interface : FastEthernet 0/14  
RPF neighbor : 0.0.0.0  
RPF route/mask : 100.0.0.0/24  
RPF type : Unicast

---

---

---

## show ip ttl

ip ttl

**show ip ttl**

---

---

---

---

---

---

---

---

1.0

---

---

Switch# **show ip ttl**

---

---

<b>ip ttl</b>	<b>time-to-live</b>	<b>TTL</b>	<b>IP</b>
---------------	---------------------	------------	-----------

---

## show ip-auth-mode

IP

**show ip-auth-mode**

---

---

---

---

---

1.0

---

---

DISABLE

IP

DHCP SERVER

IP

DHCP SERVER

DHCP SERVER

IP

IP

RADIUS SERVER

IP

RADIUS SERVER

RADIUS SERVER

IP

---

Switch#**show ip-auth-mode**

ip authorization mode : radius-server

i

---

---

**key chain**

---

---

show line

show line {console  
vty}

telnet  
vty}

---

---

**console** S35

---

**vty** telnet

---

---

---

1.0

---

---

---

---

S35 0 vty telnet .

---

---

---

---

Switch# **show line console 0**  
Baud rate : 57600  
Timeouts: 00:10:00

---

---

---

---

**line**

---

**speed(console)**

---

**exec-timeout(console,vty)**

---

---

show lldp

LLDP timer holdtime  
show lldp

---

---

ó&Dx6h#dyH6E0Ä



show lldp interface

LLDP

show lldp interface [ ]

1.0

LLDP fa0/3 LLDP

Switch# show lldp interface fa0/3

Interface	Status
-----	-----
Fa0/3	enabled

[lldp enable](#)

LLDP

hborsefB1.0192-0.0014.86 384.4 164.34 1.5 .3017 0 TD0.0004 Tc<0cf15 Tc( )Tj0 -16

fa0/3

Switch# show lldp neighbors fa0/3 detail

```

Local Port:          Fa0/3
Host Name:           switch-2
Mac Address:         00d0.f8fe.43d2
Cluster Name:        clus0
Cluster Mode:        Member Switch
Cluster Status:      enabled
Remote Port:         Fa0/2

```

```

show lldp LLDP timer holdtime
show lldp entry LLDP

```

show lldp traffic

LLDP

show lldp traffic [ ]

1.0

fa0/3 LLDP

Switch# show lldp traffic fa0/3

Interface	InGoodPkts	InErrors	OutPkts
-----	-----	-----	-----
Fa0/3	22	0	16

```

lldp enable LLDP
clear lldp counters LLDP

```

# show logging

## show logging

1.0

### Switch#show logging

Syslog logging: enabled (0 message flushes)

Console logging: level debugging

Monitor logging: disabled

Buffer logging: level debugging

File logging: enabled

File name: flash:log.text

File max size: 4096

level : warnings(4)

0001:\*Mar 1 09:07:26: 5-CONFIG\_I: Configured from console by console

0002:\*Mar 1 09:08:15: 5-CONFIG\_I: Configured from console by console

( log.text )

### Switch#more flash:log.text

0001: \*Mar 1 10:18:42: %SYS-5-CONFIG\_I: Configured from console by console

0002: \*Mar 1 10:22:52: %LINK-3-UPDOWN: Interface GigabitEthernet0/9, changed state to down

### clear logging

### logging console

### logging file

### logging monitor

### logging on

# show mac access-lists

MAC ACL

```
show mac access-lists [ ]
```

Vlan	MAC Address	Type	Interface
1	00d0.f800.1001	STATIC	Gi0/1

**show mac-address-table static**

**show mac-address-table filtering**

**show mac-address-table dynamic**

**show mac-address-table interface**

**show mac-address-table vlan VLAN**

**show mac-address-table count**

show mac-address-table aging-time

show mac-address-table aging-time

1.0

Switch# **show mac-address-table aging-time**

Aging time : 300

**mac-address-table aging-time**

show mac-address-table count

show mac-address-table count

1.0

Switch# show mac-address-table dynamic

Vlan	MAC Address	Type	Interface
1	0000.0000.0001	DYNAMIC	Gi0/2
1	0001.960c.a740	DYNAMIC	Gi0/2
1	0007.95c7.dff9	DYNAMIC	Gi0/2
1	0007.95cf.eee0	DYNAMIC	Gi0/2
1	0007.95cf.f41f	DYNAMIC	Gi0/2
1	0009.b715.d400	DYNAMIC	Gi0/2
1	0050.bade.63c4	DYNAMIC	Gi0/2

Q, Tf -3.28

```

1          00d0.f801.1001    FILTER -
1          00d0.f801.1002    FILTER -
1          00d0.f801.1003    FILTER -
1          00d0.f801.1004    FILTER -
1          00d0.f801.1005    FILTER -
1          00d0.f801.1006    FILTER -
1          00d0.f801.1007    FILTER -
1          00d0.f801.1008    FILTER -
1          00d0.f801.1009    FILTER -
1          00d0.f801.1010    FILTER -
1          00d0.f801.1011    FILTER -
1          00d0.f801.1012    FILTER -
1          00d0.f801.1013    FILTER -
1          00d0.f801.1014    FILTER -
1          00d0.f801.1015    FILTER -
1          00d0.f801.1016    FILTER -
1          00d0.f801.1017    FILTER -
1          00d0.f801.1018    FILTER -
1          00d0.f801.1019    FILTER -

```

--More--

```

clear      mac-address-table
filtering
mac-address-table filtering

```

### show mac-address-table interface

```
show mac-address-table interface [ ] [vlan ]
```

( AggregatePort)

VLAN

1.0

Switch#show mac-address-table interface gigabitethernet 0/1

Vlan	MAC Address	Type	Interface
1	00d0.f800.1001	STATIC	Gi0/1
1	00d0.f800.1002	STATIC	Gi0/1
1	00d0.f800.1003	STATIC	Gi0/1
1	00d0.f800.1004	STATIC	Gi0/1

**show mac-address-table static**

**show mac-address-table filtering**

**show mac-address-table dynamic**

**show mac-address-table address**

**show mac-address-table vlan** VLAN

**show mac-address-table count**

## show mac-address-table notification

MAC

**show mac-address-table notification [interface[ ] | history ]**

interface	MAC
history	MAC

MAC

1.0

Switch#**show mac-address-table notification interface**

Interface	MAC Added Trap	MAC Removed Trap
-----------	----------------	------------------

Maximum Number of entries configured in History Table : 1  
Current History Table Length : 0  
MAC Notification Traps : Enabled

Switch# **show mac-address-table notification history**

History Index : 0  
Entry Timestamp : 16715794  
MAC Changed Message :  
Operation: Added Vlan: 1 MAC Addr: 0007.95cf.f41f Interface: Gi 0/1  
Operation: Added Vlan: 1 MAC Addr: 00d0.f800.3c88 Interface: Gi 0/1  
Operation: Added Vlan: 1 MAC Addr: 00d0.f808.3d5e Interface: Gi 0/1

History Index : 1  
Entry Timestamp : 16718095  
MAC Changed Message :  
Operation: Deleted Vlan: 1 MAC Addr: 00d0.f808.3d5e Interface: Gi 0/1

---

<b>mac-address-table</b>	MAC
<b>notification</b>	
<b>snmp trap mac-notification</b>	MAC

---

show mac-address-table static

show mac-address-table static [addr ] [ interface ] [vlan ]

---

	MAC
	VLAN
(	AggregatePort)

---

1.0

---

Switch#**show mac-address-table static**

Vlan	MAC Address	Type	Interface
------	-------------	------	-----------

-----

```

1          00d0.f800.1001    STATIC   Gi0/1
1          00d0.f800.1002    STATIC   Gi0/1
1          00d0.f800.1003    STATIC   Gi0/1

```

```

mac-address-table static

```

```

clear mac-address-table static

```

show mac-address-table vlan

VLAN

```

show mac-address-table vlan [  ]

```

```

VLAN ID

```

```

1.0

```

```

Switch#show mac-address-table vlan 1

```

Vlan	MAC Address	Type	Interface
1	00d0.f800.1001	STATIC	Gi0/1
1	00d0.f800.1002	STATIC	Gi0/1
1	00d0.f800.1003	STATIC	Gi0/1
1	00d0.f800.1004	STATIC	Gi0/1

```

show mac-address-table static

```

```

show mac-address-table
filtering

```

```

show mac-address-table
dynamic

```

```

show mac-address-table
address

```

```

show mac-address-table
interface

```

```
show mac-address-table
count
```

```
show memroy
```

```
show memory
```

```
1.0
```

```
Switch# show memory
```

```

AYacfndcc` BUaY      7i ffYbhl h]` ]nUh] cb @ckYghl h]` ]nUh] cb @Uf[Yghl h]` ]nUh] cb
!!!!!!!!!!!!!!!!!!!! !!!!!!!!!!!!!!!!!!!!! !!!!!!!!!!!!!!!!!!!!! !!!!!!!!!!!!!!!!!!!!!
GYGA9A                &% %                &% %                &% %
` Uf[Y dU              $%                  $%                  $%
8A5 AYac              &% %                &% %                &% %
:]` YAYa              $%                  $%                  $%
UfdDcc`              $%                  $%                  $%
BI : fU[ DU           $%                  $%                  $%
`]b_SDUF              $%                  $%                  $%
i XdSaYa              ' &%                (%                ' &%
hVdSaYa              &%                  $%                  +%

```

```
show mls qos queueing
```

```
QoS
show mls qos queueing
```

```
Qos
```

1.0

Switch# show mls qos queueing

wrr-queue bandwidth

wrr-queue cos-map cos-map

## show mls qos interface

show mls qos interface [ **QoS** ] [policers|queueing]

policers	policer
queueing	queueing

Qos

1.0

Switch# show mls qos interface policer

mls qos cos	7cG
mls qos trust	Qos

## show mls qos maps

show mls qos maps [cos-dscp | dscp-cos] [cos-to-dscp map | dscp-to-cos map]

cos-dscp	cos-to-dscp map
dscp-cos	dscp-to-cos map

Qos map



show policy-map [

[class ]]

QoS policy map

class policy map class

policy map

1.0

Switch# show policy-map

policy-map policy map policy map

show port-security

show port-security [address] [interface ]

address

interface

1.0

Switch# show port-security address

Secure Port MaxSecureAddr(count) CurrentAddr(count) Security Action

-----  
Gi0/9 128 0 Protect

switchport port-security

switchport port-security

aging

---

```
switchport      port-security  
mac-address
```

---

```
enable
enable secret
disable
```

```
show radius-server
```

```
RADIUS
```

```
show radius-server
```

```
RADIUS
```

```
1.0
```

```
Switch(config)#show radius-server
Radius server      : 192.168.23.33
Radius backup server : 192.168.23.45
Authentication UDP port   : 1812
```

```
radius-server
```

---

---

1.0

---

---

Switch#**show rmon alarms**

Alarm : 1  
Interval : 1  
Variable : 1.3.6.1.2.1.4.2.0  
Sample type : absolute  
Last value : 64  
Startup alarm : 3  
Rising threshold : 10  
Falling threshold : 22  
Rising event : 0  
Falling event : 0  
Owner : zhangsan

Switch#**show rmon events**

Event : 1  
Description : firstevent  
Event type : log-and-trap  
Community : public  
Last time sent : 0d:0h:0m:0s  
Owner : zhangsan

Log : 1

Log time : 0d:0h:37m:0dr : : 8( :0)-5.0.1(n6(zhangsan5TJ0 -11016i85TJpd)52et( :0)l.25

Faim Interv( )4.8( )4.8()4-t0

```
Pkts : 726
BroadcastPkts : 502
MulticastPkts : 189
CRCAAlignErrors : 0
UndersizePkts : 0
OversizePkts : 0
Fragments : 0
Jabbers : 0
Collisions : 0
Utilization : 0
```

.....

Switch#**show rmon statistics**

```
Statistics : 1
Data source : Gi0/1
DropEvents : 0
Octets : 1884085
Pkts : 3096
BroadcastPkts : 161
MulticastPkts : 97
CRCAAlignErrors : 0
UndersizePkts : 0
OversizePkts : 1200
Fragments : 0
Jabbers : 0
Collisions : 0
Pkts64Octets : 128
Pkts65to127Octets : 336
Pkts128to255Octets : 229
Pkts256to511Octets : 3
Pkts512to1023Octets : 0
Pkts1024to1518Octets : 1200
Owner : zhangsan
```

---

<b>rmon alarm</b>	RMON
<b>rmon collection history</b>	RMON
<b>rmon collection stats</b>	RMON
<b>rmon event</b>	RMON

---

show route-map

fci hY! aUd

show route-map [ ]

---

---

fci hY! aUd

---

---

---



show services

1.0

Switch# **show services**  
Snmp-agent : Enabled  
Telnet-server : Enabled  
Web-server : Enabled

**enable services** snmp agent telnet server web server

show snmp

snmp server

show snmp

1.0

Switch# **show snmp**  
Switch#sh snmp  
Hostname : Switch  
Contact : 353000.star  
Location : switch.i-net.com.cn

SNMP packets input: 0

Switch#**show snmp-server traps**

Traps	Status
coldStart	Disabled
warmStart	Disabled
linkDown	Disabled
linkUp	Disabled
authenFailure	Disabled
newRoot	Disabled
topoChange	Disabled
hardChangeDetected	Disabled
portSecurityViolate	Disabled
stormViolationAlarm	Disabled
mac-notification	Disabled
vrrp-newmaster	Disabled
vrrp-authfailure	Disabled
power-state-trans	Disabled
fans-state-trans	Disabled
ospf	Disabled
pim	Disabled
igmp	Disabled
dvmrp	Disabled

<b>snmp-server community</b>	community
<b>snmp-server enable traps</b>	trap
<b>snmp-server host</b>	trap

show spanning-tree

show spanning-tree [forward-time | hello-time | max-age | tx-hold-count | pathcost method | max\_hops]

<b>forward-time</b>	BridgeForwardDelay
<b>hello-time</b>	BridgeHelloTime
<b>max-age</b>	BridgeMaxAge
<b>Max-hops</b>	instance
<b>tx-hold-count</b>	TxHoldCount
<b>pathcost method</b>	

---

---

1.0

---

MST

Switch# **show spanning-tree hello-time**

instance

Switch# **show spanning-tree**

SysStpStatus : Enabled

BaseNumPorts : 24

MaxAge : 20

HelloTime : 2

ForwardDelay : 15

BridgeMaxAge : 20

BridgeHelloTime : 2

BridgeForwardDelay : 15

MaxHops : 20

TxHoldCount : 3

PathCostMethod : long

BPDUGuard : Disabled

BPDUFilter :Disabled

##### MST00 vlans mapped: 1-9, 21-4094

BridgeAddr : 0002.4b29.7a00

Priority : 32768



PortDesignatedRoot : 800000D0F8DDDD08  
 PortDesignatedCost : 0  
 PortDesignatedBridge : 800000D0F8DDDD08  
 PortDesignatedPort : 0000  
 PortAdminPathCost : 0  
 PortOperPathCost : 0  
 PortRole : disabledPort  
 PortForwardTransitions : 0

##### MST01 vlans mapped: 10-20

PortPriority : 128  
 PortDesignatedRoot : 800000D0F8DDDD08  
 PortDesignatedCost : 0  
 PortDesignatedBridge : 800000D0F8DDDD08  
 PortDesignatedPort : 0000  
 PortAdminPathCost : 0  
 PortOperPathCost : 0  
 PortRole : disabledPort  
 PortForwardTransitions : 0

<b>spanning-tree bpdupfilter</b>	BPDU filter
<b>spanning-tree portfast</b>	portfast
<b>spanning-tree bpduguard</b>	BPDU guard
<b>spanning-tree link-type</b>	“ ”

## show spanning-tree mst

```

show spanning-tree mst { configuration | instance
                        [ interface ] }
  
```

	configuration	mst
		Instance

instance

	1.0	
		MST

Switch# **show spanning-tree mst configuration**

Multi spanning tree protocol : enabled

Name : region1

Revision : 1

Instance Vlans Mapped

-----  
0 1-2,4,11-4094

1 3,5-10  
-----

instance 1

Switch# **show spanning-tree mst 1**

MstpStatus : Enabled

BaseNumPorts : 24

MaxAge : 20

HelloTime : 2

ForwardDelay : 15

BridgeMaxAge : 20

BridgeHelloTime : 2

BridgeForwardDelay : 15

MaxHops : 20

TxHoldCount : 3

PathCostMethod : long

BPDUGuard : Disabled

BPDUFilter : Disabled

##### MST01 vlans mapped: 10-20

BridgeAddr : 0002.4b29.7a00

Priority : 32768

TimeSinceTopologyChange : 0d:0h:39m:30s

TopologyChanges : 0

DesignatedRoot : 800000D0F8DDDD08

RootCost : 200038

RootPort : Gi0/1

Remain Hops : 20

instance 0 **gigaethernet0/1**

Switch# **show spanning-tree mst 0 interface gigabitethernet 0/5**

PortAdminPortfast : Disabled

PortOperPortfast : Disabled

PortAdminLinkType : auto

PortOperLinkType : shared

PortBPDUGuard: Enabled

PortBPDUFilter: Disabled

##### MST00 vlans mapped: 1-9,21-4094

PortPriority : 128

PortState : discarding

PortDesignatedRoot : 800000D0F8DDDD08



show storm-control

show storm-control [ ]

1.0

Switch# show storm-control gigabitethernet 0/1

Interface Broadcast Control Multicast Control Unicast Control

-----  
Gi0/1 Disabled Disabled Disabled

storm-control

show time-range

time-range

show time-range [ ]

ACL

1.0

---

Gk] hW#g\ck h] aY! fUb[Y  
time-range name: no-http  
periodic Weekdays 8:00 to 18:00

time-range name: no-udp  
periodic Tuesday 15:30 to 16:30

---

---

[absolute](#)  
[periodic](#)

---

---

show version

show version [devices | slots]

---

**devices**  
**slots**

---

---

---

---

1.0

---

---

---

Switch# **show version**

System description : Gigabit Routing Switch(S3550-12G)  
System uptime : 0d:0h:30m:25s  
System hardware version : 1.0  
CPU: PVR-80811014, Vendor-1057, Device-0006, Revision-12  
Flash-1: Id-10f , Memory Room: fff00000-fff7fff  
Flash-2: Id-ec75 , Memory Room: f0000000-f1ff3fff  
Unit-0: DevId:S35XX-00, RevId:00000001  
System software version : 2.0 Build Apr 29 2003 Debug  
System BOOT version : STAR-S3550B-BOOT01-01-01  
System CTRL version : STAR-S3550B-CTRL01-01-01  
Running Switching Image : Layer3

Switch#**show version devices**

Device	Slots	Description
--------	-------	-------------

```
-----
1          1          S3550-12G
```

```
Switch#show version slots
```

Device	Slot	Ports	Max Ports	Module
1	0	12	12	S3550-12G_Static_Module

show vlan

```
VLAN
show vlan [id ]
```

id	VLAN ID
----	---------

```
1.0
```

```
Switch# show vlan id 1
```

VLAN Name	Status	Ports
1 default	active	Gi0/1 , Gi0/2 , Gi0/3 , Gi0/4 Gi0/5 , Gi0/6 , Gi0/7 , Gi0/8 Gi0/9 , Gi0/10, Gi0/11, Gi0/12

name	VLAN
switchport access	Vlan

show wrp-queue bandwidth

WRR

show wrr-queue bandwidth

1.0

Switch# show wrr-queue bandwidth

wrr-queue bandwidth

show wrr-queue cos-map

cos-to-queue map

show wrr-queue cos-map

1.0

Switch# show wrr-queue cos-map

wrr-queue cos-map cos-map

shutdown

no

shutdown

no shutdown

1.0

Ap SVI

**show interfaces**

Ap 1

Switch(config)#**interface aggregateport 1**

Switch(config-if)#**shutdown**

Ap 1

Switch(config)#**interface aggregateport 1**

Switch(config-if)#**no shutdown**

**clear interface**

**show interfaces**

## snmp-server community

community

Simple Network Management Protocol SNMP

no

IP

**snmp-server community** [ro | rw] [host ]

**no snmp-server community** [host]

**ro**

**rw**

**host** IP

public

1.0

IP IP SNMP  
host IP

```
Switch(config)# snmp-server community private ro
```

```
show snmp-server SNMP Server
```

## snmp-server contact

contact no

snmp-server contact

no snmp-server contact

```
1.0
```

```
show snmp-server
```

```
Switch(config)# snmp-server contact abcdefg
```

```
show snmp-server SNMP Server
```

## snmp-server enable traps

trap no trap

snmp-server enable traps [ ]

no snmp-server enable traps [ ]

trap

```
1 trap
```

```
1.0
```

```
trap show snmp-server host
```

```
Switch(config)# snmp-server host 64.1.1.1 traps version 1 public
```

```
show snmp-server SNMP Server
```

## snmp-server location

```
location no
```

```
snmp-server location
```

```
no snmp-server location
```

```
1.0
```

```
show version
```

```
Switch(config)# snmp-server location sssss123
```

```
show snmp-server SNMP Server
```



---

---

1.0

---

forward-time hello-time max-age

**2\*(Hello Time+1.0snd) <= Max-Age Time <= 2\*(Forward-Delay- 1.0snd)**

**show spanning-tree**

---

spanning-tree  
Switch(config)# **spanning-tree**  
BridgeForwardDelay  
Switch(config)# **spanning-tree forward-time 10**

---

---

<b>show spanning-tree</b>	STP	
<b>spanning-tree mst cost</b>	STP	PathCost
<b>spanning-tree</b>	STP	TxHoldCount
<b>tx-hold-count</b>		

---

## spanning-tree bpdudfilter

BPDU filter

enabled disabled

BPDU filter

**spanning-tree bpdudfilter [enabled | disabled]**

---

<b>enabled</b>	BPDU filter
<b>Disabled</b>	BPDU filter

---

---

---

1.0

---

**show spanning-tree interface**

---

Switch(config)# **interface gigabitethernet 0/1**  
Switch(config-if)# **spanning-tree bpdudfilter enable**

---

---

```
show spanning-tree STP
interface
```

## spanning-tree bpduguard

BPDU guard

enabled disabled

BPDU guard

**spanning-tree bpduguard [enabled | disabled]**

<b>enabled</b>	BPDU guard
<b>disabled</b>	BPDU guard

1.0

**show spanning-tree interface**

```
Switch(config)# interface gigabitethernet 0/1
Switch(config-if)# spanning-tree bpduguard enable
```

```
show spanning-tree STP
interface
```

## spanning-tree link-type

“ ” no

**spanning-tree link-type [point-to-point | shared]**  
**no spanning-tree link-type**

<b>point-to-point</b>	point-to-point.
<b>Shared</b>	shared

point-to-point

shared.



# spanning-tree mode

stp no

spanning-tree mode [ stp | rstp | mstp ]

no spanning-tree mode

	<b>stp</b>	Spanning tree protocol(IEEE 802.1d)
	<b>rstp</b>	Rapid spanning tree protocol(IEEE 802.1w)
	<b>mstp</b>	Multiple spanning tree protocol(IEEE 802.1s)
	MSTP	
	1.0	
	Switch(config)# <b>spanning-tree mode stp</b>	
	<b>show spanning-tree</b>	

# spanning-tree mst configure

mst mstp region

```
end                               Ctrl+C
exit
MST
instance                          vlan          Vlan          MST instance
0 64 vlan                          1 4095
vlan                                vlan
vlan
```

show

mst

MST

spanning-tree mst cost

instance

no

spanning-tree mst cost

no spanning-tree mst cost

Instance-id:

Instance

0 63

Cost:

1 200 000 000

spanning-tree mst  
no spanning-tree mst

port-priority  
port-priority

		Instance	0	63
			0	16 32 48 64 80 96
			112	128 144 160 176 192 208 224 240
			16	16
			128	
			1.0	
			region	
		instance 20	gigabitethernet 0/1	10
		Switch(config)# interface gigabitethernet 0/1		
		Switch(config-if)# spanning-tree mst 20 port-priority 0		
		show spanning-tree mst	interface	
		show sanning-tree mst	MSTP	
		spanning-tree mst cost		
		spanning-tree mst priority	instance	

### spanning-tree mst priority

spanning-tree mst instance no  
no spanning-tree mst priority priority

		Instance	0	63
				\$Z (\$- *Z, % &Z %&&, Z %', (Z &\$(\$Z &()) +*Z & *+&Z ' &+*, Z ' *, *(Z (\$- *\$Z () \$) *Z (-% &Z)' &(, Z )+' (( *%(\$
			16	4096

32768

1.0

instance 20 8192  
Switch(config-if)# **spanning-tree mst 20 priority 8192**  
**show spanning-tree mst instance interface**

<b>show spanning-tree mst</b>	MSTP
<b>spanning-tree mst cost</b>	
<b>spanning-tree mst port-priority</b>	instance

## spanning-tree reset

spanning-tree no  
**spanning-tree reset**

1.0

**show spanning-tree** STP

Switch(config)# **spanning-tree reset**

**show spanning-tree** STP  
**show spanning-tree** STP  
**interface**

# spanning-tree tx-hold-count

STP	TxHoldCount	BPDU	<b>no</b>
-----	-------------	------	-----------

**spanning-tree tx-hold-count**

**no spanning-tree tx-hold-count**

```
Switch(config-if)# spanning-tree pathcost method long
```

```
show spanning-tree STP  
interface
```

## spanning-tree portfast

```
portfast disabled portfast  
spanning-tree portfast [disabled]
```

```
disabled portfast
```

```
1.0
```

```
show spanning-tree interface
```

```
Switch(config)# interface gigabitethernet 0/1  
Switch(config-if)# spanning-tree portfast
```

```
show spanning-tree STP  
interface
```

## spanning-tree portfast bpduguard default

```
BPDU guard no BPDU guard  
spanning-tree portfast bpduguard default  
no spanning-tree portfast bpduguard default
```

```
BPDU guard.
```



---

---

---

portfast

---

---

---

1.0

---

---

**show spanning-tree interface**

---

---

Switch(config)# **spanning-tree portfast default**

---

---

**show spanning-tree STP**  
**interface**

---

speed

**no**

**speed {10 | 100 | 1000 | auto }**

**no speed**

---

<b>10</b>	10 /
<b>100</b>	100 /
<b>1000</b>	1000 /
<b>auto</b>	

---

---

Ap

---

---

1.0

---

---

---

**show interfaces**

---

---

speed(console)

**no** S35

**speed**  
**no speed**

---

---

57600 9600 19200 38400  
BPS

---

9600

---

---

1.0

---

---

**show line console**

57600BPS

Switch(config)#**line console 0**  
Switch(config-line)#**speed 57600**

---

---

**line**

**show line console**

---

---

standby authentication

VRRP **no**  
**standby [ ] authentication**  
**no standby [ ] authentication**

---

---

VRRP ID 1-255

8

---

---

1.0

Switch(config-if)# **show 1 authentication** start

**show standby** VRRP

standby ip

VRRP , no  
standby [ ] ip  
no standby [ ] ip

VRRP ID 1-255

VRRP IP

VRRP ID 0

[ ^Av

## standby preempt

```
standby [ <group> ] [ priority <priority> ] preempt
no standby [ <group> ] [ priority <priority> ] preempt
```

```
VRRP ID 1-255
```

```
1.0
```

```
show standby
```

```
Switch(config-if)# standby 1 preempt
```

```
show standby VRRP
```

## standby priority

```
standby [ <group> ] VRRP priority <priority> [ preempt ]
no standby [ <group> ] VRRP priority <priority> [ preempt ]
```

```
VRRP ID 1-255
```

```
1-255
```

```
100
```

```
1.0
```



1.0

**show storm-control**

gigabitethernet 0/1

Switch# **configure terminal**  
Switch(config)# **interface gigabitethernet 0/1**  
Switch(config-if)# **storm-control multicast**

**show storm-control**

summary-address

bc

**summary-address** [advertise | not-advertise]  
**no summary-address**

IP

**advertise**

**not-advertise**

OSPF

1.0

```
Switch(config-router)# summary-address 211.0.0.0 255.0.0.0
```

```
area nssa nssa  
redistribute  
show ip ospf summary-address  
area default-cost stub nssa  
metric
```

switchport

```
no switchport 3 switchport 2  
switchport  
no switchport
```

```
1.0
```

```
switchport
```

```
2 3 2
```

```
Switch(config-if)#switchport
```

switchport access

```
statics accessport
```

```
VLAN
```

```
no
```

```
VLAN
```

```
switchport access vlan
```



switch port

trunk

VLAN

```
Switch(config-if)# switchport port-security
Switch(config-if)# switchport port-security violation shutdown
```

```
show port-security
```

## switchport port-security aging

**no**

```
switchport port-security aging {static | time }
no switchport port-security aging {static | time }
```

```
static
```

```
time
```

```
0 1440
```

```
0
```

```
1.0
```

```
no switchport port-security aging time
no switchport port-security
```

```
aging static
```

```
show port-security
```

```
Switch(config)# interface gigabitethernet 0/1
Switch(config-if)# switchport port-security aging time 8
Switch(config-if)# switchport port-security aging static
```

```
show port-security
```

## switchport port-security mac-address

```
no
switchport port-security [mac-address [ip-address ] | [maximum ] ]
no switchport port-security [mac-address [ip-address ] | [maximum ] ]
```

---

mac-address

---

ip-address IP

---

maximum

---

---

1.0

---

24 IP MAC  
120 IP MAC  
IP MAC

ACL

ACL 802.1x IP  
IP

---

gigabitethernet 0/1

00d0.f800.073c IP 192.168.12.202

Switch# **configure terminal**

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)# **interface gigabitethernet 0/1**

Switch(config-if)# **switchport mode access**

Switch(config-if)# **switchport port-security**

Switch(config-if)# **switchport port-security mac-address 00d0.f800.073c**

**ip-address 192.168.12.202**

---

**show port-security**

---

## switchport priority

802.1q

no

**switchport priority default**

---

---

**default**

---

0 7

---

---

0

---

---

---

1.0

---

**show interfaces**

# switchport trunk

trunkport

native VLAN

Trunk

VLAN

**no**

VLAN 2 0/1

```
Switch(config)# interface gigabitethernet 0/1
Switch(config-if)# switchport trunk allowed vlan remove 2
Switch(config-if)# end
Switch# show interfaces gigabitethernet 0/1 switchport
Name: Gi0/1
Switchport          : Enabled
Administrative Mode : trunk
Access Mode VLAN    : 2
Trunking Native VLAN : 1
Trunking VLANs Enabled : 1,3-4094
```

---

---

**show interfaces**

---

switchport access	statics accessport
VLAN	

---

telnet

exit

telnet

---

IP

---

---

1.0

---

terminal monitor

exit

---

IP 192.168.65.1

---

Switch# telnet 192.168.65.1

---

---

Switch#terminal monitor

# terminal monitor

no

**terminal monitor**

**no terminal monitor**

1.0

**terminal monitor**

Switch#**terminal monitor**

**show logging**

# timers basic

RIP

no

**timers basic**

**no timers basic**

update

update      30   invalid      180   holddown      120

RIP

---

---

1.0

---

---

**show ip protocols**                      RIP

---

    update   20   invalid   80   flush   200

Switch(config)# **ip routing**

Switch(config)# **router rip**

Switch(config-router)# **timers basic 20 80 200**



1.0

HFUWfci hY  
=D

Gk]hVx>hfUWfci hY %&"%\*, "\*"("%\$  
HndY YgW#7HF@RW#7HF@Rn#e hc UVcfh"  
% %ag %ag %ag %&"%\*, "\*"("%\$  
% %ag %ag %ag %&"%\*, "\*"("%\$  
HFUWV Wtad`YhY gi WVVggZi ``m'

## validate-update-source

IP no IP

**validate-update-source**

**no validate-update-source**

IP

RIP

1.0

**show ip protocols** RIP

Switch(config)# **ip routing**  
Switch(config)# **router rip**  
Switch(config-router)# **validate-update-source**

<b>ip routing</b>	IP	
<b>router</b>	RIP	RIP
<b>show ip protocols</b>		IP

# version

RIP  
version  
no version

no

---

1	1	RIP
2	2	RIP

---

---

RIP	1	2	RIP	1
-----	---	---	-----	---

---

RIP

---

1.0

---

RIP  
RIP

**show ip protocols**

RIP

---

2 RIP

Switch(config)#router rip

Switch(config-router)# **version 2**

---

**ip rip receive version** RIP

---

**ip rip send version** RIP

---

**show ip protocols** IP

---

# vlan

vlan  
no vlan

VLAN

no

VLAN

1.0

end

Ctrl+C

exit

show

vlan

V

L

A

write memory

n

o

write [memory]

config.text

1.0

config.text

copy

delete

show configuration

wrr-queue bandwidth

n

o





