

Case Communications

Layer 3 Ethernet Switch

Command Line Interface

Manual

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Draft 1

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Chapter 1 System Status Command

1.1 System Information

1.1.1. show version

Command Description

For version Information(Device Name, Version of hardware and software, MAC & Compilation Time etc. - N/A

Default - N/A

Command Mode - Privilege Mode

Example - N/A

1.1.2. show clock

Command Description

For current time setting of the system

Default- N/A

Command Mode - Privilege Mode

Example - N/A

1.2 System Log

1.2.1. show logging

Command Description

For current system Log information of the switch

Parameter - N/A

Default - N/A

Command Mode - Privilege Mode

Example

Switch#show logging

1.3 Port Statistics

1.3.1. show interface

Command Description

For Port statistics reports

Parameter - show interface [Port type PORT_LIST] statistics Port type: GigabitEthernet //gigabit Port XGigabitEthernet //10 gigabit port

PORT_LIST: Port list, supporting different mode, such as 1/1-48、1/1、1/1-2,3,5-8 etc;

Default - N/A

Command Mode - Privilege Mode

Example

Switch#show interface GigabitEthernet 1/1 statistics

Switch#show interface GigabitEthernet 1/1-3,28-32statistics

//For No.1 and 28 port statistics report

1.4 LACP Status

1.4.1 show lacp neighbor

Command Description

For LACP Status

Parameter - N/A

Default - N/A

Command Mode - Privilege Mode

Example

Switch#show lacp neighbor

1.5 STP Status

1.5.1 show spanning-tree

Command Description - Spanning Tree Bridge Status

Parameter - N/A

Default - N/A

Command Mode - Privilege Mode Uses the Command Mode

Example

Switch#show spanning-tree active

1.5.2 show spanning-tree interface

Command Description

Showing the Spanning Tree port status

Parameter - N/A

Default - N/A

Command Mode - Privilege Mode

Example

Switch#show spanning-tree interface GigabitEthernet 1/45

1.6 LLDP Status

1.6.1 show lldp neighbors

Command Description

For LLDP neighbors information

Parameter - N/A

Default - N/A

Command Mode - Privilege Mode

Example

Switch#show lldp neighbors

1.7 Layer 2 Forwarding List

1.7.1 show mac address-table

For Layer 2 Forwarding List

Parameter - N/A

Default - N/A

Command Mode - Privilege Mode

Example

Switch#show mac address-table

Switch#show mac address-table static

Switch#show mac address-table count

Switch#show mac address-table learning

Switch#show mac address-table interface GigabitEthernet 1/45

Switch#show mac address-table vlan 1

1.8 Loop-Protect Status

1.8.1 show loop-protect

Command Description

For Loop-Protect Status

Default - N/A

Command Mode - Privilege Mode **Example**

Switch#show loop-protect status

Chapter 2 System Settings

2.1. IP Configuration

IP Configuration Command:

ip address ip address dhcp

show ip interface brief

2.1.1. Ip address

Command Description

Ip address, [Switch Port Configuration for managing IP]

no ip address A.B.C.D [indicates deleting Port ip A.B.C.D]

Parameter- N/A

Default- Enable

Command Mode - VlanPort Configuration Mode

Example

Switch(config)# interface vlan 1

Switch(config-if-vlan)# ip address 192.168.255.200 255.255.255.0

2.1.2. ip address dhcp

Command Description

ip address dhcp [Switch Configuration to manage ip (vlan1) automatic access (DHCP Sever will allot a dynamic IP for vlan 1 of the switch)]

no ip address dhcp [indicating that disable management for IP DHCP allocation. (Static Manual Configuration Mode)]

Parameter - N/A

Default - Enable

Command Mode – vlan Configuration Mode

Example

Switch(config) interface vlan 1

Switch(config-if-vlan)#ip address dhcp

S5300(config-if-vlan)#no ip address dhcp

2.1.3. show ip interface

Command Description

For IP configuration of the port

Parameter - N/A

Default - Enable

Command Mode Privilege Mode

Example

Switch#show interface brief

Switch#show interface vlanif1

2.2 System log Configuration

Log Configuration Command:

logging on logging host 2.2.2.2

logging level warning

2.2.1 logging on

Command Description

logging on [enable log server mode]
No logging on [disable logging Server mode]

Parameter - N/A

Default- N/A

Command Mode - Global Mode

Example

Switch(config)#logging on
Switch(config)#no logging on

2.2.2 logging host

Command Description - Log Server IP Address Configuration

Parameter - Hostname //Log Server Realm Name or IP address

Default - N/A

Command Mode - Global Mode

Example

Switch(config)#logging host 192.168.16.1

2.2.3 logging level

Command Description

Configuration of Log Level for the uploading server;

Parameter - Error | warning | info

Default - N/A

Command Mode - Global Mode

Example

Switch(config)#logging level error

2.3 User Configuration

User Configuration Command:

username name – [show user]

Note: name indicating the account name the switch supports a max of 18 characters;

Password - the switch supports a max of 18 characters;

2.3.1 username name

Command Description

username name privilege level password none|encrypted|unencrypted
password

For add user / modify the password of an existed user / modify the administration authority of an existed user / modify the password and administration authority of an existed user

Level, the user account authority level, valid level(1 is the lowest administration authority, 15 is the highest administration authority); no username name, deleting a existed account

Parameter - N/A

Default - N/A

Command Mode - Global mode

Example

Switch(config)# username test privilege 15 password encrypted test
//New account: test, Password: test, Authority: the highest administration authority;
Password Type: ciphertext
Switch(config)#no username test

2.3.2 show users

Command Description - For all users configuration information of the switch

Parameter - N/A

Default - N/A

Command Mode - Privilege Mode

Example

Switch#show users

Switch#show running-config // - [This command could also be used for checking all user Accounts]

2.4 NTP Configuration

Ntp – [Configuration Command].

ntp ntp server – [show ntp status]

2.4.1 ntp

Command Description

ntp , [Enable the NTP]

No ntp, [Disable the NTP]

Parameter - N/A

Default - N/A

Command Mode - Global Mode

Example

Switch(config)# ntp

Switch(config)# no ntp

2.4.2 ntp server

Command Description

ntp server <index_var> ip-address { <ipv4_var> | <ipv6_var> | <name_var> }

NTP Server address or realm name configuration

index_var 1-5 [Support 5 NTP servers]

no ntp server index_var [Delete a NTP address]

Parameter - N/A

Default - N/A

Command Mode - Global Mode

Example

Switch(config)# ntp server 1 ip-address 200.194.203.55 Switch(config)# no ntp server 1 ipaddress

2.4.3 show ntp status

Command Description

For NTP Server Configuration Information

Parameter - N/A

Default - N/A

Command Mode - Privilege Mode

Example

Switch(config)#show ntp status

Chapter 3 Port Configuration Command

3.1. Port Configuration

Port configuration command:

- duplex speed
- flowcontrol
- shutdown

3.1.1. duplex

Command Description

duplex {auto | full | half } –

no duplex - [Sets the duplex mode for the port.]

Notes: If there isn't any special requirement, please do not change the rate mode of the port. Or it will influence the port proper working.

Parameters

Command	Configures
auto	Automatic
full	Full Duplex
half	Half Duplex

Default

All port are set to auto. The mode of optical port is fixed full duplex

Command Mode - Port configuration Mode

Example

```
Switch(config)# interface GigabitEthernet 1/1
Switch(config-if)# duplex full
Switch(config-if)# no duplex full
```

3.1.2. speed

Command Description

speed {10 | 100 | 1000 | 10000 | auto }, Setting port rate no speed

Parameter	Configures
10 100 1000 10000	Port rate: 10M、100M、1000M、10000Mbps
Auto	Automatically Set

Default

Electrical port is automatic as default, gigabit optical port is adaptive, 10 gigabit port is forced to 10000M;

Command Mode - Port Configuration Mode

Note: Optical port rate is forced to 1000M and 10000M. Electrical port could be set to Auto, 10M, 100, and 1000M.

Example

```
Switch(config)# interface GigabitEthernet 1/1
Switch(config-if)# speed 1000
```

3.1.3. flowcontrol

Command Description

flowcontrol on/off, [Enable and disable flow control function]

Parameter - N/A

Default - Disable, [The gigabit optical port does not support flow control]

Command Mode - Port Configuration Mode

Example

```
Switch(config-if)# flowcontrol on
Switch(config-if)# flowcontrol off
```

3.1.4. shutdown

Command Description

shutdown, [disable the port]

no shutdown, [enable the port]

Parameter - N/A

Default - Enable

Command Mode - Port Configuration Mode

Example

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

3.1.5. POE

Command Description

poe mode plus,enable 30w

poe mode standard,enable 15.4w

no poe mode,disable the power

show poe,display poe status

Example

```
Switch(config-if)# poe mode plus
Switch(config-if)# poe mode standard
Switch(config-if)# no poe mode
Switch#show poe
```

3.2. Port Isolation

3.2.1 pvlan isolation

Command Description

Port Isolation Configuration. Forbid the connection between ports under same vlan

Parameter -N/A

Default -N/A

Command Mode - Port Configuration Mode

Example

```
Switch(config)# interface GigabitEthernet 1/1-5
Switch(config-if)# pvlan isolation //Isolate port 1~5
Switch(config-if)# no pvlan isolation //cancel the isolation for the port 1~5
```

3.3 Port Monitoring

3.3.1. Monitor destination

Command Description

monitor destination [Enable the monitor destination port]

no monitor destination [Disable the monitor destination port]

Parameter - N/A

Default - N/A

Command Mode - Global Mode

Example

```
Switch(config)# monitor destination interface GigabitEthernet 1/1
Switch(config)# no monitor destination
```

3.3.2. Monitor source

Command Description

monitor source [Enable the monitor source port]

no monitor source interface GigabitEthernet 1/2. [Disable the monitor source port]

Parameter - monitor source { { interface (<port_type> [<v_port_type_list>]) } | { { both | rx | tx } port_type: GigabitEthernet or XGigabitEthernet;

Both/rx/tx: Mirror direction, indicating ingress and Egress/ ingress/ egress data of mirror monitor port.

Default - N/A

Command Mode - Global Mode

Example

```
Switch(config)# monitor source interface GigabitEthernet 1/2 both
Switch(config)# no monitor source interface GigabitEthernet 1/2
```

3.4 Port Security

3.4.1 access-list ace

Command Description

access-list ace [Port Security Policy Entry Configuration]

Parameter - N/A

Default - N/A

Command Mode - Global Mode

Example

```
Switch(config)# access-list ace 2 action deny frame-type ipv4 ip-protocol any logging shutdown
```

3.5 Port Policy

3.5.1 access-list rate-limiter

Command Description

access-list rate-limiter, [ACL Band width Limit Policy Configuration]

Parameter <RateLimiterList : 1~16> pps <PpsRate : 0-131071>

Default - N/A

Command Mode Global Mode

Example

```
Switch(config)# access-list rate-limiter 4 pps 100000
//Limit for ACL Policy ID4 configuration: 1000000 pps
```

Chapter 4 Advanced Configuration Command

4.1 Link Aggregation

Static Aggregation Configuration Command:

aggregation mode aggregation group

Dynamic Aggregation Configuration Command: lacp lacp key lacp port-priority lacp role lacp timeout

4.1.1. aggregation mode

Command Description

aggregation mode {ip | smac | dmac | smac dmac | port }, aggregation load-balancing algorithm configuration no aggregation mode, aggregation load-balancing algorithm configuration to default Parameter

Command	Configures
IP	load-balancing based on ip address
smac	load-balancing based on source mac address
dmac	load-balancing based on destination mac address
smac dmac	load-balancing based on source & destination mac address
port	load-balancing based on tcp / udp port number

Default - load-balancing based on ip address

Command Mode - Global Mode

Example - Switch(config)# aggregation mode smac dmac

4.1.2. aggregation group

Command Description

aggregation group group-id, Configuration for port to an aggregation group

no aggregation group, Configuration for deleting static aggregation for a group

Parameter - group-id, Aggregation group id

Default - N/A

Command Mode - Port Configuration Mode

Example

Switch(config)# interface GigabitEthernet 1/1-8

Switch(config-if)# aggregation group 2

Switch(config-if)# no aggregation group

4.1.3. lacp

Command Description

lacp, Configuration for enable dynamic Aggregation of port

no lacp, Configuration for disable dynamic Aggregation of port

Parameter - N/A

Default - N/A

Command Mode - Port Configuration Mode

Example

Switch(config)# interface GigabitEthernet 1/1-4

Switch(config)# lacp

Switch(config)# no lacp

4.1.4. lacp key

Command Description

Lacp key [Configuration for the key value of dynamic aggregation port]

Parameter <1-65535> key value, ranges for the setting value 1-65535; auto, key value at automatic settings;

Default - auto

Command Mode - Port Configuration Mode

Example

```
Switch(config-if)# lacp key 100
```

4.1.5. lacp port-priority

Command Description

lacp port-priority <1-65535> , [Configuration for the Lacp Port-priority]

Parameter -<1-65535> , Ranges for priority, The value is less, the priority level is higher

Default - N/A

Command Mode - Port Configuration Mode

Example

```
Switch(config-if)# lacp port-priority 100
```

4.1.6. lacp role

Command Description

lacp role active | passive [Configuration for dynamic aggregation port role]

Parameter - active | passive, Indicating the port role is active and passive respectively

Default - active

Command Mode - Port Configuration Mode

Example

```
Switch(config-if)#lacp role active
```

```
Switch(config-if)#lacp role passive
```

4.1.7. lacp timeout

Command Description

Lacp timeout fast | slow, [Configuration for Lacp timeout selections]

Parameter - fast | slow, indicating fast and slow respectively

Default - fast

Command Mode - Port Configuration Mode

Example

```
Switch(config-if)# lacp timeout fast
```

```
Switch(config-if)# lacp timeout slow
```

4.2 VLAN Management

vlan Configuration Command:

vlan name switchport mode switchport access vlan

switchport forbidden vlan

Switchport hybrid acceptable-frame-type

Switchport hybrid ingress-filtering

Switchport hybrid native Switchport hybrid egress-tag show vlan

4.2.1. Vlan

Command Description

vlan { vlan_list}, add vlan no vlan , delete vlan

Parameter - <vlan_list> VLAN ID, valid ranges 1-4095,4095 should be kept, the real using ranges is 1- 4094

Default - vlan 1, [All port is vlan 1]

Command Mode - Global Configuration Mode

Example

```
Switch(config)#vlan 2-3,6,9 //Add vlan 2,3,6,9 , 4 vlan ports
Switch(config)#no vlan 6,9 //Delete vlan 6,9
```

4.2.2. Name

Command Description

Name <vword32>, [Setting vlan name]

Parameter - <vword32> , [vlan name]

Default - default

Command Mode - vlan configuration mode

Example

```
Switch(config)# vlan 2
Switch(config-vlan)# name test123
```

4.2.3. switchport mode

Command Description

switchport mode {access | trunk | hybrid }

Parameter

Command	Configures
access	Access mode
trunk	Trunk mode
Hybrid	Hybrid mode

Switch ports could support several modes as below:

Access Mode: The port is only under one vlan, and can only send and receive the data marked with N/A.

Trunk Mode: The port can connect with other switches, and can send and receive marked data.

Hybrid Mode: The port could be connect with PC, switches, and routers(It is the combination of Trunk mode and Access Mode)

Default - Hybrid Mode

Command Mode - Port Configuration Mode

Example

```
Switch(config)# interface GigabitEthernet 1/2-4
Switch(config-if)#switchport mode access
Switch(config)# interface GigabitEthernet 1/1
Switch(config-if)#switchport mode trunk
```

4.2.4. switchport access vlan

Command Description - switchport access vlan { vlan-id}

Parameter

Command	Parameter Command Mode
Vlan-id	Vlan ID ranges 1-4094

Default - Vlan 1

Command Mode - Port Configuration Mode

Example

```
Switch(config)#vlan 2
Switch(config)# interface GigabitEthernet 1/5-8
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 2
```

4.2.5. Switchport forbidden vlan

Command Description - switchport forbidden vlan { add | remove } {vlan-id}

Parameter

Command	Configures
add	enable vlan list
Remove	disable vlan list
Vlan-id	Vlan ID ranges1- 4094

Default - Enable Vlan 1

Command Mode - Port Configuration Mode

Example

```
Switch(config)# interface GigabitEthernet 1/1
Switch(config-if)# switchport mode hybrid
Switch(config-if)# switchport forbidden vlan add 2
Switch(config-if)# switchport forbidden vlan remove 3-4
```

4.2.6. Switchport hybrid acceptable-frame-type

Command Description

Switchport hybrid acceptable-frame-type <all | tagged | untagged>

Parameter - all | tagged | untagged enable/ disable hybrid port receiving data of all tag

Default - all

Command Mode - Port Configuration Mode

Example

```
Switch(config)# interface GigabitEthernet 1/1
Switch(config-if)# switchport hybrid acceptable-frame-type all
```

4.2.7. Switchport hybrid ingress-filtering

Command Description

Switchport hybrid ingress-filtering [Enable Port hybrid ingress-filtering]

no switchport hybrid ingress-filtering [Disable Port hybrid ingress-filtering]

Parameter - N/A

Default - Disable

Command Mode - Port Configuration Mode

Example

```
Switch(config)# switchport hybrid ingress-filtering
Switch(config-if)# no switchport hybrid ingress-filtering
```

4.2.8. Switchport hybrid egress-tag

Command Description

Switchport hybrid egress-tag <all | none>, port hybrid egress-tag configuration

No switchport hybrid egress-tag

Parameter

<all | none>, indicating egress port tag and untag attribute

Default - Untag Port vlan

Command Mode - Port Configuration Mode

Example

```
Switch(config)# switchport hybrid egress-tag all
```

```
Switch(config-if)# no switchport hybrid egress-tag
```

4.2.9. Switchport hybrid native

Command Description

Switchport hybrid native vlan <vlan-id> ,Configuration for hybrid port local vlan

Parameter

Vlan-id	ranges 1-4094
---------	---------------

Default - all

Command Mode - Port Configuration Mode

Example

```
Switch(config)# Switchport hybrid native vlan 2
```

4.2.10. show vlan

Command Description

show vlan brief [id vlan-list] ip-subnet | mac |name | protocol | status

Parameter

For checking current vlan configuration according to vlan id & vlan name etc.

Default - N/A

Command Mode - Privilege Mode

Example

```
Switch# show vlan brief
```

```
Switch# show vlan status
```

```
Switch# show vlan 2
```

```
Switch# show vlan ip-subnet id 2
```

4.3. VCL Configuration

VCL Configuration Command:

switchport vlan mac switchport vlan ip-subnet switchport vlan mapping switchport vlan protocol

4.3.1. switchport vlan mac

Command Description –

Vlan-id [switchport vlan mac]

according to the vlan of MAC [no switchport vlan mac]

Parameter - N/A

Default - N/A

Command Mode - Port Configuration Mode

Example

```
Switch(config-if)# switchport vlan mac 00-00-00-00-00-01 vlan 2
```

```
Switch(config-if)# no switchport vlan mac 00-00-00-00-00-01 vlan 2
```

4.3.2. switchport vlan ip-subnet

Command Description

switchport vlan ip-subnet [according to the vlan of sub network mask]

no switchport vlan ip-subnet [Delete the configuration according to the vlan of ip-subnet]

Parameter - N/A

Default - N/A

Command Mode - Port Configuration Mode

Example

Switch(config-if)# switchport vlan ip-subnet id 1 10.0.0.1/255.255.255.0 vlan 1

Switch(config-if)# no switchport vlan ip-subnet id 1

4.3.3. switchport vlan protocol

Command Description

switchport vlan protocol [Configure the mapping of group name to vlan no switchport vlan mac]

Parameter - switchport vlan protocol group <group_name> vlan <vlan_id>

Default - N/A

Command Mode - Port Configuration Mode

Example

Switch(config-if)# switchport vlan protocol group test vlan 2

Switch(config-if)# no switchport vlan protocol group test vlan 2

4.3.4. vlan protocol

Command Description

vlan protocol eth2| llc | snap [Configure the mapping of protocol to group no vlan protocol]

Parameter - eth2 Ethernet-based VLAN commands llc LLC-based VLAN group snap SNAPbased VLAN group

Default - N/A

Command Mode - Global Configuration Mode

Example

Switch(config)# vlan protocol snap 0xE02B 0x1 group test

Switch(config)# no vlan protocol snap 0xE02B 0x1 group test

4.4. DHCP Snooping Configuration

DHCP Snooping Configuration Command: ip dhcp snooping ip dhcp snooping trust show ip dhcp snooping table

4.4.1. ip dhcp snooping

Command Description

ip dhcp snooping, [Enable DHCP Snooping]

no ip dhcp snooping [Disable DHCP Snooping]

Parameter - N/A

Default - Disable

Command Mode - Global Configuration Mode

Example

Switch(config)# ip dhcp snooping

Switch(config)# no ip dhcp snooping

4.4.2. ip dhcp snooping trust

Command Description

ip dhcp snooping trust, [Enable DHCP snooping trust]
no ip dhcp snooping trust, [Disable DHCP snooping]

Parameter - N/A

Default - Enable

Command Mode - Port Configuration Mode

Example

```
Switch(config-if)# ip dhcp snooping trust
Switch(config-if)# no ip dhcp snooping trust
```

4.4.3. show ip dhcp snooping table

Command Description

show ip dhcp snooping table, [For checking DDHCP Snooping table]

Parameter - N/A

Default - N/A

Command Mode - Global Configuration Mode

Example

```
Switch(config)# ip dhcp snooping
Switch(config)# no ip dhcp snooping
```

4.4.4. show ip dhcp snooping interface

Command Description

show ip dhcp snooping interface [For checking DHCP Snooping trust mode]

Parameter - N/A

Default - N/A

Command Mode - Privilege Mode

Example

```
Switch# show ip dhcp snooping interface GigabitEthernet 1/1
```

4.5 DHCP Server Configuration

DHCP Server Configuration Command:

ip dhcp server ip dhcp pool host/network lease time default-router
dns show ip dhcp

4.5.1. ip dhcp server

Command Description

ip dhcp server [Enable DHCP]
no ip dhcp server [Disable DHCP]

Parameter - N/A

Default - Disable

Command Mode - Global Configuration Mode/vlan Port Configuration Mode

Example

```
Switch(config)# ip dhcp server
Switch(config)# no ip dhcp server
Switch(config)# interface vlan 2
Switch(config-if-vlan)# ip dhcp server //Enable DHCP server allocating IP under vlan 2
Switch(config-if-vlan)# no ip dhcp server // disable DHCP server allocating IP under vlan 2
```

4.5.2. ip dhcp pool

Command Description

ip dhcp pool <word> [Add dhcp address pool name ip dhcp pool <word>]

Deletes specified name DHCP address pool

Parameter - N/A

Default - N/A

Command Mode - Global Configuration Mode

Example

```
Switch(config)# ip dhcp pool vlan2_test1
Switch(config)# no ip dhcp pool vlan2_test1
```

4.5.3. ip dhcp excluded-address

Command Description

ip dhcp excluded-address, [Setting DHCP excluded IP address

noip dhcp excluded-address, [Deletes DHCP specified excluded IP address, excluding the DHCP Client, whose IP is not under the port.]

Parameter - N/A

Default - N/A

Command Mode - Global Configuration Mode

Example

```
Switch(config)# ip dhcp excluded-address 1.0.0.1 1.0.0.2
Switch(config)#no ip dhcp excluded-address 1.0.0.1 1.0.0.2
```

4.5.4. host/network

Command Description

Host <ip><subnet_mask> , [Configure IP DHCP pool.]

Network <ip><subnet_mask> [Configure DHCP pool IP network segment(Max support 1K, could be extending to 4K)]

No host/network <ip><subnet_mask>, Delete DHCP Pool IP or network segment.

Parameter - <ip><subnet_mask> , Indicating IP address and subnet mask respectively

Default - N/A

Command Mode - DHCP Pool Configuration Mode

Example

```
Switch(config)# ip dhcp pool test_pool
Switch(config-dhcp-pool)# host 3.0.0.1 255.0.0.0
Switch(config-dhcp-pool)# network 1.0.0.1 255.0.0.0
```

4.5.5. lease time

Command Description

lease { <day> [<hour> [<min>]] | infinite } [Configure address DHCP pool IP lease]

Parameter - { <day> [<hour> [<min>]] | infinite }

Default - infinite

Command Mode - DHCP Pool Configuration Mode

Example

```
Switch(config-dhcp-pool)# lease infinite
Switch(config-dhcp-pool)# lease 1 0 0
```

4.5.6. dns

Command Description

Dns <A.B.C.D>, Configure DNS

Parameter - <A.B.C.D> [dns address]

Default- N/A

Command Mode -,DHCP Pool Configuration Mode

Example - Switch(config-dhcp-pool)# dns 8.8.8.8

4.5.7. Default-router

Command Description

Default-router <A.B.C.D> [Configure DHCP Pool default gateway]

Parameter <A.B.C.D> [IP address of the gateway]

Default - N/A

Command Mode - DHCP Pool Configuration Mode

Example - Switch(config-dhcp-pool)# default-router 1.0.0.100

4.5.8. Show ip dhcp

Command Description

Show ip dhcp pool|server [For checking IP DHCP pool and server configuration]

Parameter - N/A

Default - N/A

Command Mode - Privilege Mode

Example

Switch# Show ip dhcp pool

Switch# Show ip dhcp server

4.6 DHCP relay Configuration

DHCP relay Configuration Command:

ip dhcp relay ip helper-address ip dhcp relay information option

ip dhcp relay information policy show ip dhcp relay

4.6.1 ip dhcp relay

Command Description

ip dhcp relay [Enable the DHCP relay]

no ip dhcp relay [Disable the DHCP replay]

Parameter -N/A

Default - Disables

Command Mode - Global Configuration Mode

Example

Switch(config)# ip dhcp relay

Switch(config)# no ip dhcp relay

4.6.2 Ip helper-address

Command Description ip helper-address ip_addr, Configure IP of relay server

Parameter- N/A

Default - N/A

Command Mode - Global Configuration Mode

Example

Switch(config)# ip helper-address 1.0.0.1

4.6.3 ip dhcp relay information option

Command Description

ip dhcp relay information option [Enable DHCP relay option mode]

no ip dhcp relay information option [Disable DHCP relay option mode]

Parameter - N/A

Default - Disable

Command Mode - Global Configuration Mode

Example

```
Switch(config)# ip dhcp relay information option
Switch(config)# no ip dhcp relay information option
```

4.6.4 ip dhcp relay information policy

Command Description

ip dhcp relay information policy {Replace|Keep|Drop}, [Configure DHCP relay information policy]

Parameter - N/A

Default - N/A

Command Mode - Global Configuration Mode

Example - Switch(config)# ip dhcp relay information policy drop

4.6.5 Show ip dhcp relay

Command Description

Show ip dhcp relay [Shows DHCP Relay Configuration]

Parameter - N/A

Default - N/A

Command Mode - Privilege Mode

Example - switch# show ip dhcp relay

4.7. IGMP Snooping Configuration

igmp-snooping Configuration Command: ip igmp-snooping ip igmp-snooping vlan ip igmpsnooping immediate-leave ip igmp-snooping max-groups ip igmp-snooping mrouter ip igmpsnooping querier election ip igmp-snooping querier address ip igmp-snooping compatibility ip igmp-snooping priority ip igmp snooping robustness-variable ip igmp-snooping query-interval ip igmp-snooping query-max-response-time ip igmp-snooping last-member-query-interval ip igmp-snooping unsolicited-report-interval show ip igmp-snooping

4.7.1 ip igmp-snooping

Command Description

ip igmp-snooping [Enable the igmp-snooping]
no ip igmp-snooping [Disable ip igmp-snooping]

Parameter -N/A

Default - Disable

Command Mode - Global Configuration Mode、VLAN Configuration Mode or Port Configuration Mode

Example

```
Enable igmp-snooping
Switch (config)# ip igmp snooping
```

4.7.2 ip igmp-snooping vlan

Command Description

ip igmp-snooping vlan <vlan_list> [add IGMP Vlan]
no ip igmp-snooping vlan <vlan_list> [Delete IGMP Vlan]

Command	Meaning / Option
vlan_list	VLAN ID

Default - N/A

Command Mode - Global Configuration Mode

Example - add IGMP VLAN

```
Switch (config)# ip igmp snooping vlan 1
```

4.7.3 ip igmp-snooping immediate-leave

Command Description

ip igmp-snooping immediate-leave [Enables the function]
no ip igmp-snooping immediate-leave [Disables the function]

Parameter - N/A

Default - Disable

Command Mode - Port Configuration Mode

Example to Enable the function

Switch (config-if)# ip igmp snooping immediate-leave

4.7.4 ip igmp-snooping max-groups

Command Description - ip igmp-snooping max-groups <Throttling : 1-10>

For setting throttling numbers of port no ip igmp-snooping max-groups

For setting to default

Parameter

Command	Meaning / Options
Throttling	Ranges 1-10

Default - unlimited

Command Mode - Port Configuration Mode

Example for Setting Throttling of port at 10

Switch (config-if)# ip igmp snooping max-groups 10

4.7.5 ip igmp-snooping mrouter

Command Description

ip igmp-snooping mrouter , [Enables the function]
no ip igmp-snooping mrouter [Disables the function]

Parameter -N/A

Default -Disable

Command Mode - Port Configuration Mode

Example for Enabling the function - Switch (config-if)# ip igmp snooping mrouter

4.7.6 ip igmp-snooping querier election

Command Description

ip igmp-snooping querier election – [EnableS the function]
no ip igmp-snooping querier election [Disable the function]

Parameter -N/A

Default -Disable

Command Mode [VLAN Configuration Mode]

Example to enable the function - Switch (config-if-vlan)# ip igmp snooping querier election

4.7.7 ip igmp-snooping querier address

Command Description

ip igmp-snooping querier address<ipv4_ucast> [For setting ip igmp-snooping querier address]
no ip igmp-snooping querier address – [For setting to default]

Command	Meaning / Options
ipv4_ucast	querier address

Default - 0.0.0.0

Command Mode - Vlan configuration mode

Example to set the ip igmp-snooping querier address

Switch (config-if-vlan)# ip igmp snooping querier address 192.168.2.1

4.7.8 ip igmp-snooping compatibility

Command Description - ip igmp-snooping compatibility auto/v1/v2/v3

For Setting IGMP compatibility in IGMP VLAN

no ip igmp-snooping compatibility - [Setting IGMP compatibility in IGMP VLAN to default]

Parameter - N/A

Default - IGMP-auto

Command Mode - VLAN configuration Mode

Example to set the IGMP in VLAN Forced to IGMP V1

Switch (config-if-vlan)# ip igmp snooping compatibility v1

4.7.9 ip igmp-snooping priority

Command Description

ip igmp-snooping priority <CosPriority : 0-7> For setting the priority

no ip igmp-snooping priority

For setting the priority to default

Parameter

Parameter	Parameter Command Mode
CosPriority	Priority Level Ranges 0- 7

Default - 0

Command Mode- VLAN configuration mode

Example for setting priority level

Switch (config-if-vlan)# ip igmp snooping priority 7

4.7.10 ip igmp snooping robustness-variable

Command Description

ip igmp-snooping robustness-variable <IpmcRv : 1-255> [For setting RV]

no ip igmp-snooping robustness-variable – [Setting RV to default]

Parameter

Command	Options
IpmcRv	RV ranges 1-255

Default - 2

Command Mode - VLAN configuration mode

Example to set RV

Switch (config-if-vlan)# ip igmp snooping robustness-variable 7

4.7.11 ip igmp-snooping query-interval

Command Description

ip igmp-snooping query-interval <IpmcQi : 1-31744>For setting QI

no ip igmp-snooping query-interval

For setting QI to default

Parameter

Command	Configured
ipv4_ucast	QI ranges 1-31744

Default - 125

Command Mode - VLAN configuration mode

Example for setting QI

Switch (config-if-vlan)# ip igmp snooping query-interval 70

4.7.12 ip igmp-snooping query-max-response-time

Command Description

ip igmp-snooping query-max-response-time <IpmcQri : 0-31744> [Sets QRI]
no ip igmp-snooping query-max-response-time [For setting QRI to default]

Command	Parameter Command Mode
pmcQri	QRI Ranges 0-31744

Default - 100

Command Mode - VLAN configuration mode

Example for setting ORI - Switch (config-if-vlan)# ip igmp snooping query-interval 110

4.7.13 ip igmp-snooping last-member-query-interval

Command Description

ip igmp-snooping last-member-query-interval <Ipmlmqi : 0-31744> [Sets LLQI]
no ip igmp-snooping last-member-query-interval [Sets LLQI to default]

Command	Range
Ipmlmqi	LLQI ranges 0-31744

Default - 10

Command Mode - VLAN configuration mode

Example for setting LLOI

Switch (config-if-vlan)# ip igmp snooping last-member-query-interval 20

4.7.14. ip igmp-snooping unsolicited-report-interval

Command Description

ip igmp-snooping unsolicited-report-interval <IpmcUri : 0-31744>
For setting URI no ip igmp-snooping unsolicited-report-interval
For setting URI to default

Command	Parameter Command Mode
IpmcUri	URII ranges 0-31744

Default - 10

Command Mode - VLAN configuration mode

Example for setting URI

Switch (config-if-vlan)# ip igmp snooping last-member-query-interval 200

4.7.15 show ip igmp snooping

Command Description

show ip igmp snooping [/detail/group-database/mrouter/vlan]
For checking IGMP configuration
Parameter -N/A

Default N/A Command Mode

Configure the command under Privilege mode

Example for checking IGMP configuration

Switch #show ip igmp snooping

4.8 MVR configuration

MVR configuration commands:

Mvr - ipmc range
mvr vlan - show mvr
mvr name - show ipmc profile
mvr immediate-leave show ipmc range

4.8.1 Mvr

Command Description Mvr,

Enable global MVR mode

no mvr, Disable global MVR mode

Parameter - N/A

Default - Disable

Command Mode - Global Configuration Mode

Example - Switch(config)# mvr

Switch(config)# no mvr

4.8.2 Mvr vlan

Command Description

mvr vlan, Setting MVR vlan port

no mvr vlan, Delete mvr vlan port settings

Parameter

mvr vlan <v_vlan_list> [name <mvr_name>] mvr vlan <v_vlan_list> channel
<profile_name> mvr vlan <v_vlan_list> frame priority <cos_priority> mvr vlan
<v_vlan_list> frame tagged mvr vlan <v_vlan_list> igmp-address <v_ipv4_ucast>
mvr vlan <v_vlan_list> last-member-query-interval <ipmc_lmqi> mvr vlan <v_vlan_list>
mode { dynamic | compatible }

Default- N/A

Command ModeGlobal Configuration Mode

Example

Switch(config)# mvr vlan 2 name test

Switch(config)# mvr vlan 2 mode compatible

4.8.3 Mvr name

Command Description

mvr name, [Sets MVR name]

no mvr name, [Deletes MVR name]

Parameter

mvr name <mvr_name> channel <profile_name> mvr name <mvr_name> frame
priority <cos_priority> mvr name <mvr_name> frame tagged mvr name <mvr_name>
igmp-address <v_ipv4_ucast> mvr name <mvr_name> last-member-query-interval
<ipmc_lmqi> mvr name <mvr_name> mode { dynamic | compatible } DefaultN/A
Command ModeGlobal Configuration Mode

Example

Switch(config)# mvr name test igmp-address 222.0.0.1

Switch(config)# no mvr name test igmp-address 222.0.0.1

4.8.4 mvr immediate-leave

Command Description

mvr immediate-leave, [Enable mvr immediate-leave]

no mvr immediate-leave, [Disable mvr immediate-leave]

Parameter -N/A

Default -Disable

Command Mode - Port Configuration Mode

Example

Switch(config)# mvr immediate-leave

Switch(config)# no mvr immediate-leave

4.8.5 ipmc range

Command Description

ipmc range, [Setting IPMC range]
no ipmc range, [Delete IPMC range]

Parameter - ipmc range <entry_name><v_ipv4_mcast_start> [<v_ipv4_mcast_end>]

Default -Disable

Command Mode - Global Configuration Mode

Example

```
Switch(config)# ipmc range test 224.0.0.1 224.0.0.20
Switch(config)# no ipmc range test
```

4.8.6 ipmc profile

ipmc profile, [Enable global ipmc profile mode]
ipmc profile, [Disable global ipmc profile mode]
ipmc profile <name>, Configure ipmc profile name

Parameter - N/A

Default- Disable Command Mode
Global Configuration Mode

Example

```
Switch(config)# ipmc profile
Switch(config)# no ipmc profile
Switch(config)# ipmc profile test
```

4.8.7 show mvr

Command Description

Show mvr, For checking MVR configuration

Parameter -N/A

Default -N/A

Command Mode - Privilege Mode

Example – N/A

4.8.8 show ipmc profile

Command Description

Show ipmc profile, For checking ipmc profile configuration

Parameter -N/A

Default -N/A

Command Mode - Privilege Mode

Example -N/A

4.8.9 show ipmc range

Command Description

Show ipmc range, For checking ipmc range configuration

Parameter -N/A

Default -N/A

Command Mode - Privilege Mode

Example -N/A

4.9 Router Configuration

Router Configuration Command:

ip routing interface vlan ip address ip route show ip interface brief
show ip route

4.9.1. ip routing

Command Description

ip routing , Enable the function
no ip routing, Disable the function

Parameter -N/A

Default - Host-only mode

Command Mode - Global Configuration Mode

Example to enable ip routing

Switch (config)#ip routing

4.9.2. interface vlan

Command Description

interface vlan<vlan_id>

Parameter

Command	Configures
vlan_id	Vlan port ID ranges: vlan1-vlan4094

Default -N/A

Command Mode

Under Global Configuration Mode, use command mode and this command, can access to
vlan Port Configuration Mode

Example

Below command to VLAN1 Port Configuration Mode: switch(config)# interface vlan1
switch(config-if-vlan)#

4.9.3. ip address

Command Description

ip address <address><netmask> - [Adding an IP address on a port]
no ip address - [Deleting an IP address of a port]

Parameter

Command	Parameter Command Mode
vlan_idaddress	Vlan IP address
Netmask	subnet mask

Default - VLAN 1

Command Mode - VLAN Port Configuration Mode

Example for setting VLAN 2 IP

switch(config)# interface vlan 2
switch(config-if-vlan)# ip address 192.168.1.1 255.255.255.0

4.9.4. ip route

Command Description

ip route <v_ipv4_addr><v_ipv4_netmask><v_ipv4_gw><v_nhop_vlanid> [To add a static route]
no ip route – [To Delete a static route]

Command	Parameter Command Mode
v_ipv4_addr	IP address
v_ipv4_netmask	subnet mask
v_ipv4_gw	Gateway
v_nhop_vlanid	Next VLAN

Default- N/A

Command Mode - Global Configuration Mode

Example for setting a static route

switch(config)# ip route 192.168.3.0 255.255.255.0 192.168.100.100 2

4.9.5. show ip interface brief

Command Description

show ip interface brief - For checking IP of port

Parameter -N/A

Default -N/A

Command Mode - Configure the command under Privilege mode

Example for checking the IP of a port

Switch#show ip interface brief

4.9.6. show ip route

Command Description

show ip route- [For checking static route]

Parameter- N/A

Default - N/A

Command Mode - Privilege mode

Example for checking static route

Switch#show ip route

Chapter 5 Network Security Command

5.1 MAC address table

MAC address table configuration command:

mac address-table static mac address-table aging-time

show mac address-table

5.1.1. mac address-table static

Command Description

mac address-table static mac-addr vlan vlan-id interface interface-id

For adding a static MAC address

no mac address-table static mac-addr vlan vlan-id interface interface-id

For deleting a static MAC address

Command	Meaning
mac-addr	MAC address
vlan-id	VLAN ID ranges for the MAC: 1 – 4094
interface-id	Gateway
v_nhop_vlanid	All ports ID for the MAC

Default- N/A

Command Mode - Global Configuration Mode

Example for setting MAC < 00-00-00-00-00-01 > bond to Port 10 under VLAN2

Switch(config)# mac address-table static 00-00-00-00-00-01 vlan 2 interface 1/10

5.1.2. mac address-table aging-time

Command Description

mac address-table aging-time time – [Set the aging time of the MAC address

no mac address-table aging time]

Sets the MAC address aging time to default

Note: If the value is 0, it indicates disable the automatic aging function

Parameter

Command	Meaning
Time	Aging time ranges: <0,10-1000000>

Default- N/A

Command Mode - Global Configuration Mode

Example to set the MAC address table aging time at 200s

Switch(config)# mac address-table aging-time 200

5.1.3. show mac address-table

Command Description

show mac address-table {address | aging-time | conf | count | learning | [interface

interface-id | vlan vlan-id] | static} – [Shows the MAC address table content of switch]

Parameter

Parameter	Parameter Command Mode
address	Mac address checking
aging-time	Mac address table aging time.
Conf	For added static MAC address by user
Count	Total numbers of MAC address
Learning	Mac learning status
interface-id	Port Name
vlan-id	VLAN ID valid ranges: 1 – 4094.
Static	Static MAC address table

Default - N/A

Command Mode - Use the command to show the MAC address table under Privilege Mode

Example for showing all MAC address tables

Switch# show mac address-table

5.2 Storm Broadcast control

Command Description

qos storm broadcast /unicast /unknown - [Enable the function]

no qos storm broadcast /unicast /unknown - [Disable the function]

Parameter

Parameter	Parameter Command Mode
Broadcast	Broadcast data
Unicast	Single broadcast data
Unknown	Undefined Single broadcast data

Default -Disable

Command Mode - Port Configuration Mode

Example for enable Storm Broadcast control at Port 10

Switch(config)# interface GigabitEthernet 1/10

Switch (config-if)# qos storm broadcast

5.3 IP VerifySource

IP Verify Source Command

ip verify source

ip verify source translate

ip verify source limit

ip source binding interface

show ip verify source

5.3.1 ip verify source

Command Description

ip verify source - [Enable IP verify source]

no ip verify source - [Disable IP verify source]

Parameter - N/A

Default- Disable

Command Mode - Global Configuration Mode

Example to enable IP verify source

Switch (config)# ip verify source

5.3.2 ip verify source translate

Command Description

ip verify source translate - [For translating dynamic entry to static entry]

no ip verify source translate - [To cancel the translations]

Parameter- N/A

Default - Disable

Command Mode - Global Configuration Mode

Example

Switch (config)# ip verify source translate

5.3.3. ip verify source limit

Command Description

ip verify source limit <0-2> - [To limit the numbers of the dynamic client]

no ip verify source limit – [To set the limit to default]

Parameter

Command	Configures
<0-2>	Number ranges of dynamic client<0-2>

Default- Unlimited

Command Mode - Port Configuration Mode

Example

Switch (config)# interface GigabitEthernet 1/1

Switch (config-if)# ip verify source limit 2

5.3.4. ip source binding interface

Command Description

ip source binding interface <port_type><in_port_type_id><vlan_var> <ipv4_var><mask_var>

For adding numbers of the static entry

no ip source binding interface<port_type><in_port_type_id><vlan_var><ipv4_var><mask_var>

For deleting numbers of the static entry

Command	Setting
port_type	Port type
in_port_type_id	Port ID
vlan_var	vlan ID
ipv4_var	ip address
mask_var	Subnet mask

Default- N/A

Command Mode - Global Mode

Example for adding a static item, whose Port ID is 1, Vlan ID is 1, IP address is 192.168.2.66, and the subnet mask is 255.255.255.0

Switch(config)#ip source binding interface GigabitEthernet 1/1 1 192.168.2.66
255.255.255.0

5.3.5. show ip verify source

Command Description

show ip verify source

For checking IP verify source configuration status

Parameter - N/A

Default - Disable

Command Mode - Privilege mode

Example for checking enable IP verify source configuration status

Switch# show ip verify source

5.4 ARP Inspection Configuration

ARP Testing Configuration Command:

ip arp inspection ip arp inspection trust ip arp inspection checking-vlan ip arp inspection

logging ip arp inspection entry interface ip arp inspection translate ip arp inspection vlan show

ip arp inspection

5.4.1. ip arp inspection

Command Description

ip arp inspection - [Enable the IP ARP inspection]
no ip arp inspection - [Disable IP ARP inspection]

Parameter - N/A

Default - Disable

Command Mode

Configure the command under Global Configuration Mode

Example to enable ARP inspection

Switch(config)# ip arp inspection

5.4.2. ip arp inspection trust

Command Description

ip arp inspection trust - [Enable ARP inspection for port]
no ip arp inspection trust - [Disable the ARP inspection for port]

Parameter - N/A

Default - Disable the function

Command Mode - Port Configuration Mode

Example to enable IP ARP inspection of port 10

Switch (config-if)# no ip arp inspection trust

5.4.3. ip arp inspection checking-vlan

Command Description

ip arp inspection checking-vlan - [Enable ARP inspection checking-VLAN]
no ip arp inspection checking-vlan - [Disable ARP inspection checking-VLAN]

Parameter - N/A

Default - Disable

Command Mode - Port Configuration Mode

Example to enable ARP inspection checking-VLAN of port 10

Switch (config-if)# ip arp inspection checking-vlan

5.4.4. ip arp inspection logging

Command Description

ip arp inspection logging all/deny/permit - [To set set Port logging type]
no ip arp inspection logging - [To set port logging type to default]
Parameter

Parameter	Parameter Command Mode
All	All
Deny	Deny
Permit	Permit

Default - N/A

Command Mode

Configure the command under Port Configuration Mode

Example setting logging type to “Permit” of port 10

Switch (config-if)# ip arp inspection logging permit

5.4.5. ip arp inspection entry interface

Command Description

ip arp inspection entry interface <port_type><in_port_type_id><vlan_var>
<mac_var><ipv4_var> [For adding static entry]

no ip arp inspection entry interface <port_type><in_port_type_id><vlan_var>
<mac_var><ipv4_var> [For deleting static entry]

Command	Setting
port_type	Port Type
port_type_id	Port ID
vlan_var	VLAN ID
mac_var	MAC
ipv4_var	IP Address

Default- N/A

Command Mode - Global Configuration Mode

Example for adding a static entry

Switch(config)# ip arp inspection entry interface GigabitEthernet 1/1 1
00:00:00:00:00:08 192.168.2.3

5.4.6. ip arp inspection translate

Command Description

ip arp inspection translate [interface <port_type><in_port_type_id>
<vlan_var><mac_var><ipv4_var>] [For translating dynamic entry to static entry].

no ip arp inspection translate [interface <port_type><in_port_type_id>
<vlan_var><mac_var><ipv4_var>] [For canceling translated entry]

Command	Meaning
port_type	Port Type
port_type_id	Port ID
vlan_var	VLAN ID
mac_var	MAC
ipv4_var	IP Address

Default -N/A

Command Mode - Global Configuration Mode

Example for translating all dynamic entry to static entry

Switch (config)# ip arp inspection translate

5.4.7. ip arp inspection vlan

Command Description

ip arp inspection vlan <in_vlan_list> logging { deny | permit | all } [For setting VLAN logging type]

no ip arp inspection vlan <in_vlan_list> logging { deny | permit | all } – [For setting VLAN logging type to default]

Command	Meaning
All	All
Deny	Deny
Permit	Permit

Default- N/A

Command Mode

Configure the command under Global Configuration Mode

Example for setting vlan 1 logging type at deny

Switch (config)# ip arp inspection vlan 1 logging deny

5.4.8. show ip arp inspection

Command Description

show ip arp inspection entry/interface/vlan – [Checks ARP inspection related information configuration]

Parameter- N/A

Default- N/A

Command Mode - Privilege mod

Example for checking ARP inspection configuration

Switch (config)# show ip arp inspection

5.5 ACL Configuration

ACL configuration command: – access-list ace show access-list

5.5.1 access-list ace

Command Description

access-list ace , [configuration for acl ace entry]

no access-list ace, [Delete acl ace entry]

Parameter Ace id ace entry id, ranges 1-512

- action
- permit/deny
- dmac-type
- frame-type
- ingress interface

logging logging frame information next Add a new ACE entry at current ACE entry policy Policy configuration selection, rate-limiter rate limit, this will occupy the rate limiter in bandwidth policy redirect Port redirection configuration selection shutdown Shut down port configuration selection tag-priority vlanTag priority level configuration selection vid VID filter domain configuration selection

Default- Shutdown

Command Mode - Global Configuration Mode

Example

Switch(config)# access-list ace 1 ingress interface GigabitEthernet 1/1
frame-type ipv4 action deny rate-limiter 1 redirect interface GigabitEthernet 1/2 logging
Switch(config)# no access-list ace 1

5.5.2. Show access-list

Command Description

Show access-list [For checking ace configuration information]

Parameter - show access-list [interface [(<port_type> [<v_port_type_list>])]]
[rate-limiter [<rate_limiter_list>]] [ace statistics [<ace_list>]] show access-list ace-status
[static] [link-oam] [loop-protect] [dhcp] [ptp] [upnp] [arp-inspection] [evc] [mep]
[ipmc] [ip-source-guard] [ip-mgmt] [conflicts] [switch <switch_list>]

Default- Shutdown

Command Mode - Privilege Configuration Mode

Example

Switch# show access-list ace statistics
Switch# show access-list ace

5.6 STP Configuration

STP Configuration Command:

spanning-tree spanning-tree mode spanning-tree aggregation spanning-tree auto-edge
spanning-tree bpdu-guard spanning-tree edge spanning-tree link-type spanning-tree mst
spanning-tree restricted-role
spanning-tree restricted-tcn

5.6.1. spanning-tree

Command Description

spanning-tree - [Enable STP]
no spanning-tree - [Disable STP]

Parameter -N/A

Default -Enable

Command Mode - Port Configuration Mode or aggregate port configuration mode

Example to enable STP of port 10 and STP of aggregate port

```
Switch (config-if) #spanning-tree
Switch (config-stp-aggr)# spanning-tree
```

5.6.2. spanning-tree mode

Command Description

spanning-tree mode stp/mstp/rstp - [To set STP Technology]
no spanning-tree mode - [To set the STP version to default]

Parameter - N/A

Default - mstp

Command Mode - Global Configuration Mode

Example for modifying the STP version to RSTP

```
Switch (config) #spanning-tree mode rstp
```

5.6.3. spanning-tree aggregation

Command Description

spanning-tree aggregation [For accessing to aggregate port STP configuration mode]

Parameter -N/A

Default -N/A

Command Mode - Global Configuration Mode

Example for accessing aggregate port STP configuration mode

```
Switch (config) #spanning-tree aggregation
```

5.6.4. spanning-tree auto-edge

Command Description

spanning-tree auto-edge – [To enable auto-edge]
no spanning-tree auto-edge – [To disable auto-edge]

Parameter -N/A

Default - Enable

Command Mode - Port Configuration Mode or aggregate port configuration mode

Example to enable the auto-edge function of port 10 and aggregate port

```
Switch (config-if) #spanning-tree auto-edge
Switch (config-stp-aggr)# spanning-tree auto-edge
```

5.6.5. spanning-tree bpduguard

Command Description

spanning-tree bpduguard – [Enable BPDU Guard]
no spanning-tree bpduguard – [Disable BPDU Guard]

Parameter- N/A

Default- Disable

Command Mode - Port Configuration Mode or Aggregate Port Configuration mode

Example to enable BPDU Guard of port 10 and aggregate port

Switch (config-if) #spanning-tree bpduguard
Switch (config-stp-aggr)# spanning-tree bpduguard

5.6.6. spanning-tree edge

Command Description

spanning-tree edge - [Enable management of edge function]
no spanning-tree edge – [Disable management of edge function]

Parameter - N/A

Default - Non-Edge

Command Mode - Port Configuration Mode or Aggregate Port configuration Mode

Example to enable management of edge function of port 10 and aggregate port

Switch (config-if) #spanning-tree edge
Switch (config-stp-aggr)# spanning-tree edge

5.6.7. spanning-tree link-type

Command Description

spanning-tree link-type auto/ point-to-point/ shared – To configure point-to-point type
no spanning-tree link-type - To set point-to-point type to default

Parameter

Command	Configures
Auto	auto for corresponding web interface
point-to-point	forced true for corresponding webinterface
Shared	forced false for corresponding web interface

Default - auto

Command Mode - Port Configuration Mode or Aggregate port configuration mode

Example to configure point-to-point type to forced true of port 10 and aggregate port

Switch (config-if) spanning-tree link-type point-to-point
Switch (config-stp-aggr)# spanning-tree link-type point-to-point

5.6.8. spanning-tree mst

Command Description

spanning-tree mst <instance> cost { <cost> | auto } – [To set path cost]
no spanning-tree mst <instance> cost { <cost> | auto } – [To Set path cost to default]
spanning-tree mst <instance> port-priority <prio> - [To set port priority]
no spanning-tree mst <instance> port-priority <prio> [To set port priority back to default]

Parameter

Parameter	Parameter Command Mode
Instances	Ranges 0-7
Cost	Integer of the ranges 1- 200000000
Prio	Ranges 0-240

Default -N/A

Command Mode - Port Configuration Mode or aggregate port configuration

Example for setting path cost of port 10 and aggregate port

Switch (config-if) # spanning-tree mst 1 cost 144

Switch (config-stp-aggr)# spanning-tree mst 1 cost 144

5.6.9. spanning-tree restricted-role

Command Description

spanning-tree restricted-role [Enable restricted role]

no spanning-tree restricted-role – [Disable restricted role]

Parameter - N/A

Default - Disable

Command Mode - Port Configuration Mode or aggregate port configuration mode

Example for enable restricted role of port 10 and aggregate port

Switch (config-if) # spanning-tree restricted-role

Switch (config-stp-aggr)# spanning-tree restricted-role

5.6.10. spanning-tree restricted-tcn

Command Description

spanning-tree restricted- tcn [Enable restricted tcn]

no spanning-tree restricted- tcn- [Disable restricted tcn]

Parameter - N/A

Default - Disable

Command Mode - Port Configuration Mode or Aggregate port configuration mode

Example for enabling restricted tcn of port 10 and aggregate port

Switch (config-if) # spanning-tree restricted- tcn

Switch (config-stp-aggr)# spanning-tree restricted- tcn

5.6.11. show spanning-tree

Command Description

show spanning-tree [/active/ detailed/ interface / mst / summary [For checking STP related configuration]

Parameter -N/A

Default - N/A

Command Mode

Configure the command under Privilege Configuration Mode

Example for checking STP configuration status

Switch # show spanning-tree

5.7 Loop-protect configuration

Loop-protect configuration command

loop-protect

loop-protect tx-mode

5.7.1. loop-protect

Command Description

loop-protect [Enable loop-protect]

no loop-protect – [Disable loop-protect]

Parameter- N/A

Default – Disable

Command Mode - Global Configuration Mode

Example to enable loop-protect

Switch (config) # loop-protect

5.7.2. loop-protect tx-mode

Command Description

loop-protect tx-mode – [Enable loop-protect tx-mode]
no loop-protect tx-mode – [Disable loop-protect tx-mode]

Parameter - N/A

Default - Disable

Command Mode - Port Configuration Mode

Example to enable loop-protect tx-mode

Switch (config-if) #loop-protect tx-mode

5.8 ERPS configuration

ERPS configuration command :

Mep Erps

Note: The command to configure ERPS via the CLI is quite complex, its easier to configure via the web interface on the switch.

5.8.1 mep

Command Description

Reference to Example

Parameter Reference to Example

Default Reference to Example

Command Mode - Global Mode

Example

Configure Port 1, 2 into ERPS group 1, protocol vlan3001, without any configuration on the major port

Switch(config)# mep 1 down domain port flow 1 level 0 interface GigabitEthernet 1/1

Switch(config)# mep 1 vid 3001 Switch(config)# mep 1 aps 0

laps

Switch(config)# mep 2 down domain port flow 2 level 0 interface GigabitEthernet 1/2

Switch(config)# mep 2 vid 3001

Switch(config)# mep 2 aps 0 raps

Switch(config)# erps 1 major port0 interface GigabitEthernet 1/1 port1 interface

GigabitEthernet 1/2

Switch(config)# erps 1 mep port0 sf 1 aps 1 port1 sf 2 aps 2

Switch(config)# erps 1 vlan 1

5.8.2 erps

Command Description

Reference to Example, Parameter Reference to Example, Default Reference to Example

Command Mode Global Mode

Example// Configure port 51, 52 into ERPS group 2, protocol vlan3002, Major port- port 0

Switch(config)# mep 51 down domain port flow 51 level 0 interface XGigabitEthernet 1/3

Switch(config)# mep 51 vid 3002

Switch(config)# mep 51 aps 0 raps

Switch(config)# mep 52 down domain port flow 52 level 0 interface XGigabitEthernet 1/4

Switch(config)# mep 52 vid 3002

Switch(config)# mep 52 aps 0 raps

Switch(config)# erps 2 major port0 interface XGigabitEthernet 1/3 port1 interface

XGigabitEthernet 1/4

Switch(config)# erps 2 mep port0 sf 51 aps 51 port1 sf 52 aps 52

Switch(config)# erps 2 rpl owner port0

Switch(config)# erps 2 vlan 1

Chapter 6 Network Management Commands

6.1. SSH Configuration

SSH Configuration Command:

ip ssh
no ip ssh

6.1.1. ip ssh

Command Description

ip ssh – [To enable SSH]
no ip ssh – [To disable SSH, when set you, cannot manage the switch via SSH]

Parameter - N/A

Default - N/A

Command Mode - Global Configuration Mode

Example to enable SSH

Switch(config)# ip ssh

6.2 HTTP Configuration

HTTP Configuration Command:

ip http secure-server ip http-serve- redirect

6.2.1. ip http-server-server

Command Description

ip http secure-server – [Enable the HTTP service]
Disable the HTTP service, [with this set you, cannot manage switch via HTTPS]

Parameter -N/A

Default -Disable

Command Mode - Global Configuration Mode

Example for enable HTTPS service

Switch(config)# ip http-server-server

6.2.2. ip http-server-redirect

Command Description

ip http-server- redirect – [For setting the switch to redirect to https service automatically]
no ip http-server- redirect – [To delete the settings, for redirecting the HTTPS to manage the switch]
switch via HTTP

Parameter - N/A

Default - Disable

Command Mode - Global Configuration Mode

Example for enabling the HTTPS-server redirect

Switch(config)# ip http-server- redirect

6.3. LLDP Configuration

LLDP Configuration command:

Lldp lldp holdtime lldp transmission-delay lldp timer lldp reinit
show lldp neighbors

6.3.1. lldp

Command Description

lldp receive - [To set port LLDP receive]
 lldp transmit - [To set port LLDP receive and transmit]
 No lldp receive|transmit - [Shut down port LLDP receive/ transmit]

Parameter -N/A

Default - Shut down

Command Mode - Port configuration mode

Example

```
Switch(config)# lldp receive
Switch(config)# lldp transmit
Switch(config)# no lldp transmit
```

6.3.2. lldp holdtime

Command Description

lldp holdtime, [Setting LLDP transmit time for hold time]
 nollp holdtime, [Setting LLDP transmit time for hold time to default]

Parameter <time>, Valid ranges 2-10, second

Default - 4

Command Mode - Global Configuration Mode

Example

```
Switch(config)# lldp holdtime 3
Switch(config)# no lldp holdtime
```

6.3.3. lldp transmission-delay

Command Description

lldp transmission-delay <1-8192> [Sets the LLDP transmission delay]

Parameter <1-8192>, valid ranges 1-8192 seconds

Default -2

Command Mode - Global Configuration Mode

Example

```
Switch(config)# lldp transmission-delay 4
Switch(config)# nollp transmission-delay
```

6.3.4. lldp timer

Command Description

lldp timer <5-32768> [Configure the TTL of LLDP Transmit Message]
 No lldp timer, [Configure the TTL of LLDP Transmit Message to default]

Parameter <5-32768> 5-32768 Second

Default - 30

Command Mode - Global Configuration Mode

Example

```
Switch(config)# lldp timer 20
```

6.3.5. lldp reinit

Command Description

lldp reinit <1-10> [Configure LLDP Transmit Message delay time]
 no lldp reinit, [Configure LLDP Transmit Message delay time to default]

Parameter <1-10> seconds

Default = 2

Command Mode - Global Configuration Mode

Example

```
Switch(config)# lldp timer 2
```

6.3.6. show lldp neighbors

Command Description

show lldp neighbors, [To show lldp neighbors brief information]

Parameter - N/A

Default - N/A

Command Mode - Privilege Mode

Example

```
Switch# show lldp neighbors
```

6.4. 802.1X Configuration

802.1x Configuration Command:

```
dot1x system-auth-control dot1x port-control auto dot1x port-control
mac-based dot1x port-control single dot1x port-control force-unauthorized
dot1x re-authentication show dot1x statistics
```

Note: Its necessary to shutdown STP on the port if we need to enable 802.1x

6.4.1. dot1x system-auth-control

Command Description

dot1x system-auth-control, This command could global enable 802.1x NAS

No dot1x system-auth-control, This command could global disable 802.1x NAS

Parameter - N/A

Default - Shutdown

Command Mode - Global Configuration Mode

Example

```
Switch(config)# dot1x system-auth-control
Switch(config)# no dot1x system-auth-control
```

6.4.2. dot1x port-control auto

Command Description

dot1x port-control auto [For setting port identification to Port_Based 802.1x]

no dot1x port-control [For setting port identification to default]

Parameter -N/A

Default - force-authorized

Command Mode - Port Configuration Mode

Example

```
Switch(config-if)# dot1x port-control auto
```

6.4.3. dot1x port-control mac-based

Command Description

dot1x port-control mac-based [For setting port identification to mac_Based 802.1x]

no dot1x port-control [For setting port identification to default]

Parameter - N/A

Default - force-authorized

Command Mode Port Configuration Mode

Example

```
Switch(config-if)# dot1x port-control mac-based
```

6.4.4. dot1x port-control single

Command Description

dot1x port-control single [For setting port identification to single 802.1x]

no dot1x port-control [For setting port identification to default]

Parameter -N/A

Default - force-authorized

Command Mode - Port Configuration Mode

Example - Switch(config-if)# dot1x port-control single

6.4.5. dot1x port-control force-unauthorized

Command Description

dot1x port-control force-unauthorized [For setting port identification to force-unauthorized]

no dot1x port-control [For setting port identification to default]

Parameter - N/A

Default - force-authorized

Command Mode - Port Configuration Mode

Example - Switch(config-if)# dot1x port-control force-unauthorized

6.4.6. dot1x re-authentication

Command Description

dot1x re-authentication [Global enable port re-authentication]

no dot1x re-authentication [Global disable port re-authentication]

Parameter -N/A

Default - Shutdown

Command Mode - Global Configuration Mode

Example

Switch(config)# dot1x re-authentication

Switch(config)# no dot1x re-authentication

6.4.7. dot1x authentication timer re-authenticate

Command Description

dot1x authentication timer re-authenticate <1-3600> [Global configure port reauthentication time]

no dot1x authentication timer re-authenticate [Configure port re-authentication time to default]

Parameter <1-3600> 1-3600, seconds

Default 3600

Command Mode - Global Configuration Mode

Example

Switch(config)# dot1x authentication timer re-authenticate 1000

Switch(config)# no dot1x authentication timer re-authenticate

6.4.8. show dot1x statistics

Command Description

show dot1x statistics [For checking port identification statistics]

Parameter -N/A

Default - N/A

Command Mode - Privilege configuration Mode

Example

Switch# show dot1x statistics

6.5. SNMP Configuration

SNMP Configuration Command:

Snmp [snmp version]

6.5.1. snmp

Command Description

snmp [Enable SNMP]

no snmp [[Disable SNMP]

Parameter - N/A

Default - Enable

Command Mode - Configure under Global Configuration Mode

Example for enabling SNMP

Switch(config)# snmp

6.5.2. snmp version

Command Description

snmp version, Enable setting SNMP Version [no snmp version, Setting SNMP Version to default]

Parameter - N/A

Default - snmp v2c

Command Mode - Configure under Global Configuration Mode

Example for configuring SNMP Version

Switch(config)# snmp version v2c

Chapter 7 System Maintenance Command

7.1. Device Reboot Command:

reload cold – [Reloads the cold configuration]

7.1.1 reload cold

Command Description

reload cold [for rebooting device]

Parameter - N/A

Default - N/A

Command Mode - Configure using the Privilege Mode

Example for rebooting device after saving the configuration

switch# copy running-config startup-config

switch# reload cold

7.2 Restore to default

Restore to default command:

reload defaults

7.2.1 reload defaults

Command Description

reload defaults [For restoring to default, after it, the device will back to default after rebooting]

Parameter - N/A

Default - N/A

Command Mode – Configure using the command Privilege Mode

Example to restore to default

switch# reload defaults

7.3 ping testing

Ping testing command: – ping ip

7.3.1 ping ip

Command Description

ping ip ip_addr

Parameter

Parameter	Parameter Command Mode
Ip_addr	Ip address, valid ranges X.X.X.X

Default - N/A

Command Mode – Configure using Privilege Mode

Example for pinging a device on the network

switch# ping ip 192.168.255.3