RG-S2900G-E

RGOS 10.4(2b11)

V1.1

Ruijie(config)# enable secret level 1 0 test
Ruijie(config)# privilege exec level 1 reload
˘ 1 CLI ˘ /ЛЪ **reload** ३ʻ
Ruijie> reload ?
<cr>
reload ३ 1 ˘ ‡ /ЛЪ **all** ʻ
Ruijie(config)# privilege exec all level 1 reload
˘ 1 CLI ˘ /ЛЪ **reload** ३ʻ
Ruijie> reload ?
at reload at a specific time/date
cancel cancel pending reload scheme
in reload after a time interval
<cr>

३

३	
enable secret	CLI ३

/I

/I	

ɜ

ɜ б Â **no enable service** ɜ Â

Ю ɜ’ enable service ssh-sesrver, SSH Server ╖ ‘
Ruijie(Config ˜ # enable service ssh-sesrver

ɜ

ɜ	
show service	Â ,

Л

ɜ

Л	
-	-

2.1.6 execute

˚ ɜ˘ ɜ **execute** ɜ Â

execute {[**flash:**] filename}

flash:	˚ Э
filename	˚ ¨

ɜ

Â ɜ Â
˚ ˚ ¨ ˚ Л Љ ˘ PC Э
TFTP Flash Р

Telnet

```
configure terminal
line tty 1 16
transport input all
no exec
end
```

```
Ruijie# execute flash: line_rcms_script.text transport input all
```

login

no login

-	-

line

AAA VTY console

IO VTY

```
Ruijie(config)#  no  aaa new-model
Ruijie(config)#  line vty  0
Ruijie(config-line)#  password  0 normatest
Ruijie(config-line)#  login
```

password	line

-	-

2.1.13 login authentication

AAA AAA

login authentication {**default** | list-name}

no login authentication {**default** | list-name}

default	
list-name	

ৡ line

AAA Ꮅ ‡ ৡ 8 Â

Ю VTY Э radius Â

```
Ruijie(config)#  aaa new-model
Ruijie(config)#  aaa authentication login default radius
Ruijie(config)#  line vty  0
Ruijie(config-line)#  login authentication default
```

ৡ	
aaa new-model	AAA Ꮅ
aaa authentication login	

ৡ

ৡ	
-	-

2.1.14 login local

AAA Ю Э ˘ ৡ **login local** Â

ৡ **no** ৸ Â

login local

no login local

-	-

ৡ line

AAA Ꮅ ‡ ৡ Â

username ϡ Â

IO VTY Э Â

```
Ruijie(config)#  no aaa new-model
Ruijie(config)#  username  test  password  0 test
Ruijie(config)#  line vty  0
Ruijie(config-line)#  login local
```

ϡ

ϡ	
username	Â

/

ϡ

/	
-	-

2.1.15 privilege mode

ê CLI ϡ Ì Â

-	-

ê

service password-encryption

-	-

service password-encryption password service password-encryption

message	

Ю

Ruijie(config)

Ruijie(config)# banner login $ enter your password $

-	-

-	-

2.2.2 banner motd

Ю **banner motd** **no banner motd**

banner motd c message c

c	a
message	

ЛЬЮ ў ¨ a ˇ ˚ ˛ Â

Ruijie#show boot system
system boot file: flash:/rgos.bin

Ruijie#dir
Directory of flash:/

clock set Э

Ю

Ruijie# clock set 10:20:30 3 17 2003

Ruijie# show clock

clock: 2003-3-17 10:20:32

show clock	

-	-

2.2.5 clock update-calendar

clock update-calendar

-	-

calendar

˘ ⁄ ℼ 32

˘ ⁄

-

-

| day month] [text] | **cancel**]

ϡ

ϡ ʌ ЛЪ ╟˘ Â

Ю 10¦ ЛЪ ł ‘

Ruijie# reload in 10

Router will reload in 600 seconds.

ϡ	
-	-

ʌ

ʌ	
-	-

2.2.10 session-timeout

LINE Э ˘ **session-timeout** ϡ Â

no session-timeout ϡ˘ ϰ LINE Ю ˘ a Â

Ruijie(config-line)# exec-timeout 5 30

ϡ	
-	-

ʌ	
-	-

2.2.11 speed

ˇ ЮЎ ϡ **speed** speed Â

ˇ **no speed** ϡ Â

speed speed

Speed	ˇ Æ bps Â ˇ ʌ ѝ 9600 ä19200 ä38400 ä57600 à 115200 ˇ 9600 Â

9600

ϡ

ϡ Â

Ю ѝ 57600 bps˙

Ruijie(config)# line console 0

Ruijie(config-line)# speed 57600

ϡ	
-	-

ʌ	

	-	-

2.2.12 write

ˆ running-config˜ Æ Â

write [**memory** | **network** | **terminal**]

memory	NVRAM˜ ˚ **copy running-config startup-config** Â
network	TFTP

clock set	

-	-

2.3.2 show line

show line [**console** line-num **| aux** line-num **| vty** line-num **|** line-num]

console	
aux	aux
vty	vty
line-num	line

console

```
Ruijie# show line console 0
CON Type speed Overruns
* 0 CON 9600 45927
Line 0, Location: "", Type: "vt100"
Length: 24 lines, Width: 79 columns
Special Chars: Escape Disconnect Activation
^^x none ^M
Timeouts: Idle EXEC Idle Session
never never
History is enabled, history size is 10.
```

Total input: 53564 bytes

Total output: 395756 bytes

Data overflow: 27697 bytes

stop rx interrupt: 0 times

By Ruijie Network
System start time: 1970-6-14 11:49:53
System uptime: 3:17:1:17
System hardware version: 2.0
System software version: RGOS 10.3.00(4), Release(34679)
System boot version: 10.2.34077
System CTRL version: 10.2.24136
System serial number: 1234942570001

ꝛ

ꝛ	
-	-

ꝛ

ꝛ	
-	-

∧	

length	
times	
seconds	
data	ˈI
source	IPv6 Â è ˘ ˆ ::1˜ a ѝ Â

ˆ ѝ 2 ˜ ˘ 5 ѝ 100Byte IP ɔ Ę

-	-

ʌ ३ ipv6 Э Â

३	ʌ	
	-	-

4.1.3 traceroute

traceroute ३˘ ʌ Лъ ÿ .

traceroute [**vrf**] [vrf-name] [**ip** ip-address][ip-adress [**probe** number] [**source** source] [**timeout** seconds] [**ttl** minimum maximum]]

vrf-name	VRF¨
Ip-address	IPv4 Â
number	
source	IPv4 Â è ˘ ˆ 127.0.0.1˜ a ѝ Â
seconds	
minimum maximum	TTL

३

Traceroute ३ ў ˘ ˘ Æ
Æ Â ¨ ℸ ˘ ‡ ˝I ¨ Ь ˘ é DNS ¦ Â

ЛЬЮ ѝ traceroute ч ˘ ѝ ˘ ѝ
a Â
1˙ traceroute ˛
Ruijie# traceroute 61.154.22.36
< press Ctrl+C to break >
Tracing the route to 61.154.22.36
1 192.168.12.1 0 msec 0 msec 0 msec

2 192.168.9.2 4 msec 4 msec 4 msec

3 192.168.9.1 8 msec 8 msec 4 msec

4 192.168.0.10 4 msec 28 msec 12 msec

5 202.101.143.130 4 msec 16 msec 8 msec

6 202.101.143.154 12 msec 8 msec 24 msec

7 61.154.22.36 12 msec 8 msec 22 msec

ÿ Э ˘ Л Љ ˘ ÿ IP и 61.154.22.36 ў ˘

ˆ 1˙ 6˜ ˘ ˚ ˘

ł ˘ Â

2˙ a traceroute ˙

Ruijie# traceroute 202.108.37.42

< press Ctrl+C to break >

Tracing the route to 202.108.37.42

1 192.168.12.1 0 msec 0 msec 0 msec

2 192.168.9.2 0 msec 4 msec 4 msec

3 192.168.110.1 16 msec 12 msec 16 msec

4 * * *

5 61.154.8.129 12 msec 28 msec 12 msec

6 61.154.8.17 8 msec 12 msec 16 msec

7 61.154.8.250 12 msec 12 msec 12 msec

8 218.85.157.222 12 msec 12 msec 12 msec

9 218.85.157.130 16 msec 16 msec 16 msec

10 218.85.157.77 16 msec 48 msec 16 msec

11 202.97.40.65 76 msec 24 msec 24 msec

12 202.97.37.65 32 msec 24 msec 24 msec

13 202.97.38.162 52 msec 52 msec 224 msec

14 202.96.12.38 84 msec 52 msec 52 msec

15 202.106.192.226 88 msec 52 msec 52 msec

16 202.106.192.174 52 msec 52 msec 88 msec

17 210.74.176.158 100 msec 52 msec 84 msec

18 202.108.37.42 48 msec 48 msec 52 msec

ÿ Э ˘ Л Љ ˘ ÿ IP и 202.108.37.42 ў ˘

ˆ 1˙ 17˜ ˘ з 4 Â

Ruijie# traceroute www.ietf.org

Translating " www.ietf.org "...[OK]

< press Ctrl+C to break >

Tracing the route to 64.170.98.32

1 192.168.217.1 0 msec 0 msec 0 msec

2 10.10.25.1 0 msec 0 msec 0 msec

ҳ

Traceroute ipv6 ҳ ў ˘ ˘ Æ
Æ Â ¨ Ⅱ ˘ ‡ ″I ¨ Ь ˘ é DNS
ǀ Â

ЛЬЮ ѝ traceroute ipv6 ч ˘ ѝ ˘ ѝ
а Â

1. traceroute ipv6 ‘

```
Ruijie# traceroute ipv6 3004::1
 < press Ctrl+C to break >
Tracing the route to 3004::1 ˘
1 3000::1 0 msec 0 msec 0 msec
2 3001::1 4 msec 4 msec 4 msec
3 3002::1 8 msec 8 msec 4 msec
4 3004::1 4 msec 28 msec 12 msec
```

ÿ Э Л Лъ ˘ ÿ IP ѝ 3004::1 ў ˘
ˆ 1. 4

	Switch Port,L2 Aggregrate port ,Routed port,L3 Aggregate port **shutdown** **no shutdown**
	Ruijie# clear interface gigabitethernet 1/1

shutdown

Л

ҙ	Л	
	-	-

5.1.5 duplex

Ю ҙ √ Â ҙ **no**

ѝ Â

duplex {**auto** | **full** | **half**}

no duplex

auto	√ √ Â
full	√ Â
half	√ *Â*

ϡ ⁸ Â ϡ no ѝ Â

flowcontrol {**auto** | **off** | **on**}

no flowcontrol

auto	⁸ Â
off	⁸ Â
on	⁸ Â

⁸ Â

ϡ

show interfaces ⁸ ⁸ Â

ˮI Л Ъ 1/1 ⁸ ‘

Ruijie(config)# interface gigabitethernet 1/1

Ruijie(config-if)# flowcontrol on

ϡ	
show interfaces	Â

ʌ

ʌ	
-	-

5.1.7 interface aggregateport

ϡ ϡ˘ … ˘ Â ϡ no Â

interface aggregateport port-number

port-number	Aggregate port ʌ˘ ᾱ Â

fiber	˝I
copper	

Â

ˆ ˘ a Ap SVI˜

˘ Л Ъ ˝I ч ˘ Л è Â
ł˘ ˘ à ↓ à ⁸ ˘
Â Л ł˘ и̇ è ˘ Л Ъ
Â

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# medium-type copper

show interfaces	Â

24SFP/12GT . 12 SFP 12 10/100/1000M BASE-T ╟ ˛ Â
SFP 0

"bà.•(Aã.!A3DR@~ð.!G42!–.6042D@r—HS B!–.AŸRŸq3D4Bd0"A'B!–.Ð

mtuˆ ˜ Â /ı Â

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# mtu 9216

ʒ	
show interfaces	Â

/ı

/ı	
-	-

5.1.14 shutdown

ˇ ʒ Â ʒ **no** Â

shutdown

no shutdown

-	-

Ruijie(config-if)# **snmp trap link-status**	link trap ╗ Â
Ruijie(config-if)# **no snmp trap link-status**	link trap ╗ Â

ʌ

ʌ	
-	-

5.1.16 speed

Â ৡ **no**

10	ѝ 10Mbps Â
100	ѝ 100Mbps Â
1000	ѝ 1000Mbps Â
10G	ѝ 10Gbps Â
auto	ѝ Â

Â

ৡ

Ap ˘ ‡ Ap ᾱ ˘ ʌ Ɽ ˘
a Â Ap Â **show interfaces** ৡ Â
a˚ ˘ ≠ a˚ Â ˘ SFP a
ѝ 10M 100M Â

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# speed 100

ৡ	
show interfaces	Â

-	-

5.1.17 switchport access

switchport access vlan vlan-id

no switchport access vlan

vlan-id	VLAN ID

switch port access VLAN VLAN 1

VLAN ID VLAN ID VLAN VLAN ID VLAN trunkport

```
Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# switchport access vlan 2
```

switchport mode	switch port
switchport trunk	trunkport native VLAN Trunk VLAN

-	-

5.1.18 switchport mode

ꝛ

ꝛ ɣ ˆ switch port˜ ˘ Л Ћ ѝ access port ѝ
trunk port, ѝ 802.1Q Â ꝛ **no** ѝ Â

switchport mode {**access | trunk**}

no switchport mode

access	switch port ѝ access port Â
trunk	switch port ѝ trunk port Â

switch port ѝ access

ꝛ

switch port access˘ ‡ Л ѝ VLAN Â Л Ћ
switchport access vlan ꝛ VLAN Â
switch port trunk˘ ‡ Л Ћ VLAN Â Л Ћ
VLAN Л VLAN ᾱ ˘ trunk port Л VLAN
VLAN Â Л Ћ **switchport trunk** ꝛ Ꮒ Л VLAN Â

Ruijie(config-if)# switchport mode trunk

W_ 0 8 @ FF Ed e@ Rr ai @FO4g</%”OSdEe tBFCfV u”@ Rr ei WD g,BY@ ”.

Acsess vlan is 1,Native vlan is 1

Protected is disabled

Vlan lists is

1,3-4094

show interfaces	Â
switchport access	ѝ statics accessportť ѝ VLAN Â

-	-

5.2 —

5.2.1 show interfaces

˘ Л ˝I Â

show interfaces [interface-id] [**counters | description | status | switchport | trunk | transceiver [alarm | diagnosis]]**

interface-id	ˆ Л à aggregateport à SVI à loopback ˜ Â
counters	Â ˘ link Â

diagnosis	˝I Â

Â

ৡ

a ╗ ˘ ‡ Â

Ruijie# show interfacesgigabitEthernet 0/1 switchport

Interface Switchport ModeAccess Native Protected VLAN lists

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

GigabitEthernet 0/1 enabled Access 11 Disabled ALL

ৡ	

-	-

6.2

6.2.1 show aggregateport

7 VLAN

7.1

7.1.1 name

VLAN **no**

name vlan-name

no name

vlan-name	VLA

VLAN VLAN VLAN ID

VLAN

show vlan vlan

```
Ruijie(config)#        vlan  10
Ruijie(config-vlan)#          name  vla
```

show vlan	

switchport access vlan vlan-id

no switchport access vlan

vlan-id	╗ VLAN ID Â

switch port ѝ access˜ VLAN ѝ VLAN 1

ৡ

VLAN ID Â VLAN ID˜ ‡ … VLAN˜ ѝ VLAN Â VLAN ID˜ ‡ ╗ VLAN Â

trunk port˜ a

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# switchport access vlan 2

ৡ	
switchport mode	ϒ ˆ switch port˜ Â
switchport trunk	ѝ trunk port native VLAN Trunk ʌ VLAN Â

ʌ

ʌ	
-	-

7.1.3 switchport mode

ৡ ϒ ˆ switch port˜ ˘ ʌ Л ѝ access port ä trunk port ä hybrid port ä uplink port˜ ѝ 802.1Q Â ৡ no ѝ Â

switchport mode {**access** | **trunk | hybrid | uplink | dot1q-tunnel**}

no switchport mode

-	-

Ruijie(config-if)# protocol vlan ipv4

३	
no protocol vlan ipv4	-

RGOS10.1 Ћ Э

∧	
-	-

8.1.3 protocol-vlan profile num frame-type type ether-type type

Ћ profile

num	profile
type	Ћ

Ruijie(config)# protocol-vlan profile 1 frame-type ETHERII ether-type aarp

show protocol-vlan profile	-
show protocol-vlan profile num	-
no protocol-vlan profile	-
no protocol-vlan profile num	-

RGOS10.1

-	-

8.1.4 protocol-vlan profile num vlan id

profile

num	profile
id	VLAN ID 1- VLAN

Ruijie(config-if)# protocol-vlan profile 1 vlan 101

show protocol-vlan profile	-
show protocol-vlan profile num	-
no protocol-vlan profile	-
no protocol-vlan profile num	-

RGOS10.1

-	-

8.2 β—

8.2.1 show protocol-vlan

Protocol VLAN

show vlan protocol-vlan

-	-

३

Ruijie# show protocol-vlan

३	
-	-

RGOS10.1 Љ Э

४	
-	-

ৡ VLAN

Ruijie(config)# vlan 22
Ruijie(config-vlan)# private-vlan primary

ৡ	
show vlan private-vlan	-

ʌ ˚ RGOS10.1 Л Э

ʌ	
-	-

9.1.4

9.1.6 switchport private-vlan mapping

private VLAN secondary VLAN

switchport private-vlan mapping p_vid {svlist|**add** svist |**remove** svlist}

no switchport private-vlan mapping

p_vid	… primary VID
svlist	… secondary VLAN list
no	৸ secondaryVLAN

secondary VLAN

ৡ VLAN

Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if)# switchport mode private-vlan promiscuous
Ruijie(config-if)# switchport private-vlan mapping 22 add 23-25

ৡ	
show vlan private-vlan	-

৸ ˚ RGOS10.1 Л Э

৸	
-	-

9.2 ƒ—

9.2.1 show vlan private-vlan

private VLAN

show vlan private-vlan [**community** | **primary** | **isolated**]

primary	primary VLAN
community	community VLAN
isolated	isolated VLAN

private VLAN

ৡ

Ruijie# show vlan private-vlan

ৡ	
-	-

ʌ ˚ RGOS10.1 Лъ Э

ʌ	
-	-

ৡ

9.3 Hybrida—

9.3.1 switchport hybrid allowed vlan

switchport hybrid allowed vlan[[**add**][**tagged** | **untagged**] | **remove**] vlist

no switchport hybrid allowed vlan

hybrid ‡

no	hybrid ‡

ৡ

Ruijie(config-if)# switchport hybrid allowed vlan add untagged 3-5

३	
-	-

10 QinQ a—

10.1 ä—

10.1.1 dot1q outer-vid vid register inner-vid v_list

tunnel Ə˘ vid ╕

dot1q outer-vid vid **register inner-vid** v_list

no dot1q outer-vid vid **register inner-vid** v_list

v_list	vlan id

-	-

10.1.2 dot1q relay-vid vid translate local-vid v-list

access˘ trunk˘ hybrid˘ uplink Э˘ vid

dot1q relay-vid vid **translate local-vid** v-list

no dot1q relay-vid vid **translate local-vid** v-list

v_list	vid
vid	ł tag vid
no	٨

٣

Ю tag vid ѝ 10-20 ˘ vid ѝ 100

```
ruijie(config)#          interface gigabitEthernet          0/1
ruijie(config-if)#           switchport mode access
ruijie(config-if)#           dot1q relay-vid          100 translate local-vid          10-20
ruijie(config-if)#           end
```

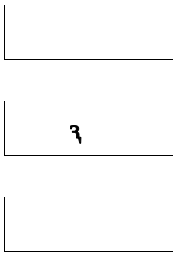
٣	
show translation-table [**interface** intf-id]	-

٨ ˚ RGOS10.3 Лъ Э

٨	
-	-

10.1.3 dot1q relay-vid vid translate inner-vid v-list

access˘ trunk˘ hybrid˘ uplink Э˘


३

no	٨ uplink

uplink

٣

Ю ù uplink
ruijie(config)# interface gigabitEthernet 0/1
ruijie(config-if)# switchport mode uplink
ruijie(config)# end

٣	
show vlan	-

٨ ˚ RGOS10.1 Лъ Э

٨	
-	-

10.1.10 switchport dot1q-tunnel allowed vlan

dot1q-tunnel ٨ vlan

switchport dot1q-tunnel allowed vlan [**add**] {**tagged|untagged**} v_list

switchport dot1q-tunnel allowed vlan remove v_list

no switchport dot1q-tunnel allowed vlan

tagged	tag
untagged	a tag
v_list	vlan id
no	٨

٨ vlan 1˘ untagged

ruijie(config)# end

٩	
show interface dot1q-tunnel	-

RGOS10.3 Љ Э

٨	
-	-

10.1.12 traffic-redirect access-group acl outer-vlan

access,trunk,hybrid, uplink vid

traffic-redirect access-group acl **outer-vlan** vid **in**

no traffic-redirect access-group acl **outer-vlan**

acl	acl
vd	vid
no	vid

Ю 1.1.1.1 vid 3

```
ruijie# configure
ruijie(config)#ip access-list standard 2
ruijie(config-acl-std)# permit host 1.1.1.1
ruijie(config-acl-std)# exit
ruijie(config)# interface gigabitEthernet 0/1
ruijie(config-if)# switchport mode trunk
ruijie(config-if)# traffic-redirect access-group 2 outer-vlan 3 in
ruijie(config-if)# end
```

l2protocol-tunnel { **stp|gvrp** } **tunnel-dmac** mac-address

no l2protocol-tunnel { **stp|gvrp** } **tunnel-dmac** mac-address

stp	stp
gvrp	gvrp
no	ѝ

३

Ю Э Y ๆ

ruijie# configure

ruijie(config-if)# l2protocol-tunnelgvrptunnel-dmac 011AA9000005

ruijie(config-if)# end

३	
show l2protocol-tunnel { **gvrp|stp** }	-

RGOS10.4 Лъ Э

∧	

intf-id	

ruijie# show dot1q-tunnel
Ports Do t1q-tunnel
----- ---------
Gi0/1 Enable

-	-

RGOS10.3

-	-

10.2.2 show frame-tag tpid

tpid

show frame-tag tpid [**interface** intf-id]

intf-id	

a tpid

ruijie# show frame-tag tpid
Ports tpi d

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

Gi0/1 0x9100

Gi0/1 5 1-3

ৡ	
-	-

RGOS10.1 Л Э

∧	
-	-

10.2.7 show registration-table

dot1q-tunnel vid ╗

show registration-table [**interface** intf-id]

intf-id	

intf-id	

ruijie# show translation-table
Ports Relay-VID Type VID-list
---------- ---------- ------- ------------------
Gi0/8 10 Local 8-9,15,20-30
Gi0/10 5 Inner 50-60

ৡ	
-	-

RGOS10.3 Л Э

ৡ	
-	-

10.2.10 show l2protocol-tunnel

Y

show l2protocol-tunnel{gvrp|stp}

gvrp	gvrp
stp	stp

11 Share VLAN a—

11.1 ¾a—

11.1.1 share

¾ share vlan Â

-	-

¾ vlan

ʌ share vlan **no share** ¾ Â
ˇ **end** ¾ˇ Ctrl+C Â
ˇ **exit** ¾ Â

Ruijie(config)# vlan 2
Ruijie(config-vlan)# share

12.2 ह—

12.2.1 clear gvrp statistics

GVRP ˘ è

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

interface-id	ID

३

show gvrp statistics ३

Ruijie# clear gvrp statistics all

३	
show gvrp statistics	GVRP

४

४	
-	-

12.2.2 show gvrp configuration

GVRP

show gvrp configuration

-	-

ৡ

show gvrp configuration ৡ

```
Ruijie#      show gvrp configuration
Global GVRP Configuration:
GVRP Feature:enabled
GVRP dynamic VLAN creation:enabled
Join Timers(ms):200
Join Timers(ms):600
Join Timers(ms):10000
Port based GVRP Configuration:
Port:GigabitEthernet 3/1 app mode:normal reg mode:normal
Port:GigabitEthernet 3/2 app mode:normal reg mode:normal
Port:GigabitEthernet 3/3 app mode:normal reg mode:normal
Port:GigabitEthernet 3/4 app mode:normal reg mode:normal
Port:GigabitEthernet 3/5 app mode:normal reg mode:normal
Port:GigabitEthernet 3/6 app mode:normal reg mode:normal
Port:GigabitEthernet 3/7 app mode:normal reg mode:normal
Port:GigabitEthernet 3/8 app mode:normal reg mode:normal
Port:GigabitEthernet 3/9 app mode:normal reg mode:normal
Port:GigabitEthernet 3/10 app mode:normal reg
mode:normal
Port:GigabitEthernet 3/11 app mode:normal reg
mode:normal
Port:GigabitEthernet 3/12 app mode:normal reg
mode:normal
```


13 MAC a—

13.1 ä—

13.1.1 address-bind

ip mac Â

address-bind ip-address mac-address

no address-bind ip-address

ip-address	IP Â

	Ipv4 ‡	
ш	/l IPV4+MAC ˚ Â	
	/l IPV4+MAC ˚ Â	
	/l IPV4+MAC ˚ Â	

	IPV6 ‡	
ш	a ipv6 ˆ ˜ Â	
	IPV6 Â	
	/l MAC ѝ MAC IPV6 Â	

˘ IP ѝ 192.168.5.2 ѝ 00d0.f822.33aa˘

IPV6 Â

Ruijie# configure t

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

Ruijie(config)# address-bind 00d0.f822.33aa ip 192.168.5.2

Ruijie(config)# address-bind ipv6-mode compatible

ʒ	
-	-

/l

/l	
-	-

13.1.5 address-bind uplink

ip mac .

address-bind uplink intf-id

no address-bind uplink intf-id

intf-id	ѝ

-	-

13.2.5 show mac-address-table count

Â

show mac-address-table count

-	-

३

Ruijie# show mac-address-table count
Dynamic Address Count : 51
Static Address Count : 0
Filter Address Count : 0
Total Mac Addresses : 51
Total Mac Address Space Available: 8139

३	
show mac-address-table static	Â
show mac-address-table filtering	Â
show mac-address-table dynamic	╟ Â
show mac-address-table address	
show mac-address-table interface	
show mac-address-table vlan	VLAN Â

४	
-	-

vlan-id	VLAN Â

Ruijie# show mac-address-table interface gigabitethernet 1/1

Vlan MAC Address Type Interface

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

1 00d0.f800.1001 STATIC gigabitethernet 1/1

1 00d0.f800.1002 STATIC gigabitethernet 1/1

1 00d0.f800.1003 STATIC gigabitethernet 1/1

1 00d0.f800.1004 STATIC gigabitethernet 1/1

३	
show mac-address-table static	Â
show mac-address-table filtering	Â
show mac-address-table dynamic	╟ Â
show mac-address-table address	
show mac-address-table vlan	VLAN Â
show mac-address-table count	Â

४	
-	-

interface interface-id	ﾉ Â Э MAC ╖ Â
history	MAC Â

MAC ╖ Â

ৡ

Ruijie# show mac-address-table notification interface
Interface MAC Added Trap MAC Removed Trap
--- --- ---
GigabitEthernet1/14 Disabled Disabled
Ruijie# show mac-address-table notification
MAC Notification Feature : Disabled
Interval between Notification Traps : 1 secs
Maximum Number of entries configured in History Table :1
Current History Table Length : 0
Ruijie# show mac-address-table notification history
History Index : 0
MAC Changed Message :
Operation:ADDVlan:1MACAddr:00f8.d012.3456GigabitEthernet3/1

ৡ	
mac-address-table notification	MAC ╖ Â
snmp trap mac-notification	MAC ╖ Â

ﾉ

ﾉ	
-	-

13.2.10 show mac-address-table static

Â

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

mac-addr	MAC Â
vlan-id	VLAN Â
interface-id	(ʌ ɹЪ AggregatePort)

३

Ruijie# show mac-address-table static
Vlan MAC Address Type Interface
----- ----------- -------- ------------------
1 00d0.f800.1001 STATIC gigabitethernet 1/1
1 00d0.f800.1002 STATIC gigabitethernet 1/1
1 00d0.f800.1003 STATIC gigabitethernet 1/1

३	
mac-address-table static	Â
clear mac-address-table static	Â

ʌ

ʌ	
-	-

13.2.11 show mac-address-table vlan

VLAN Â

show mac-address-table vlan [vlan-id]

vlan-id	VLAN ID Â

Ruijie# show mac-address-table vlan 1
Vlan MA C Address Type Interface
----- ------------- ------- ------------------
1 00d0.f800.1001 STATIC gigabitethernet 1/1
1 00d0.f800.1002 STATIC gigabitethernet 1/1
1 00d0.f800.1003 STATIC gigabitethernet 1/1

३	
show mac-address-table static	Â
show mac-address-table filtering	Â
show mac-address-table dynamic	╟ Â
show mac-address-table address	Â
show mac-address-table interface	Â
show mac-address-table count	Â

1

Ruijie# show mac-address-learning

	show ip dhcp snooping	DHCP snooping Â

٨		
k6Ñ "E & P ½ìAnÃE & Vf9 qhtqäí	٨ -	-

14.1.2 ip dhcp snooping bootp-bind

DHCP Snooping Bootp ╖ ˘ Ю ٣ Â
٣ no ˘ DHCP snooping Bootp ╖ Â

[**no**] **ip dhcp snooping bootp-bind**

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

३	

-	-

14.1.5 ip dhcp snooping information option

DHCP ╗ option82 ╗ ˘ ЮO ¾ Â
¾ no ˘ ╗ Â

[**no**] **ip dhcp snooping information option**

-	-

╗ Â

¾

¾˘ DHCP ╗ option82 ˘ DHCP Ł option82
ˇ Â

ЮO DHCP ╗ option82 ╗ ‘
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping information option
Ruijie(config)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ‘ ENABLE
Verification of hwaddr field status ‘ DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface Trusted Rate limit (pps)
------------------------ ------- ------------

¾	
show ip dhcp snooping	DHCP snooping Â

/

¾	/

	-	-

14.1.6 Ip dhcp snooping vlan

VLAN DHCP Snooping ╖ ˘ ЮО ३ Â
३ no ˘ VLAN DHCP Snooping ╖ Â

[**no**] **ip dhcp snooping vlan** {vlan-rng **|** {vlan-min [vlan-max]}}

vlan-rng	dhcp snooping ╖	vlan Â
vlan-min	dhcp snooping ╖	vlan ЮО Â
vlan-max	dhcp snooping ╖	vlan Э Â

ЮЎ DHCP Snooping ╖ ɨ˘ VLAN Â

३

[**no**] **ip dhcp snooping verify mac-address**

-	-

ℸ Â

३ Â

MAC ℸ ˘ DHCP CLIENT ˘ MAC
DHCP CLIENT MAC ˚ Â MAC ˘
Â

IO DHCP MAC ‘

```
Ruijie# configure terminal
Ruijie(config)# ip dhcp snooping verify mac-address
Ruijie(config)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ‘ ENABLE
Verification of hwaddr field status ‘ ENABLE
```

٦	٨	
	-	-

14.2.2 ip dhcp snooping suppression

ù suppression ˘ Ю ٦ Â ٦ no ˘
ù no suppression Â

[**no**] **ip dhcp snooping suppression**

	-	-

٦	Â
٦	Â
	٦˘ ٨ Ю DHCP ˘ Ю DHCP Â
	Ю fastethernet 0/2 ù suppression Ruijie# configure terminal Ruijie(config)# interface fastethernet 0/2 Ruijie(config-if)# ip dhcp snooping suppression Ruijie(config-if)# end

DHCP snooping ù TRUST ˘ Ю ٩ Â
٩ no ˘ ù UNTRUST Â

[**no**] **ip dhcp snooping trust**

-	-

Ю ù UNTRUST Â

٩ Â

٩˘ DHCP Ł ù TRUST ÂTRUST
DHCP ˘ UNTRUST DHCP Â

Ю **fastethernet** 0/1 ù TRUST ‘

```
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip dhcp snooping trust
Ruijie(config-if)# end
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ‘ ENABLE
Verification of hwaddr field status ‘ DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface Trusted Rate limit (pps)
------------------------ ------- ------------
FastEthernet0/1 YES unlimited
```

٩	
show ip dhcp snooping	DHCP snooping Â

/

/	
-	-

14.3 DHCP snooping¤—

14.3.1 show ip dhcp snooping

DHCP Snooping ˘ Ю ¾ Â

show ip dhcp snooping

-	-

¾

¾˘ Л Љ DHCP Snooping Â

Ю DHCP Snooping ‘
Ruijie# show ip dhcp snooping
Switch DHCP snooping status ‘ ENABLE
Verification of hwaddr field status ‘ DISABLE
DHCP snooping database write-delay time: 0 seconds
DHCP snooping option 82 status: ENABLE
DHCP snooping Support Bootp bind status: ENABLE
Interface Trusted Rate limit (pps)
------------------------ ------- ------------

¾

¾	
ip dhcp snooping	DHCP snooping Â
ip dhcp snooping verify mac-address	DHCP snooping mac Â
ip dhcp snooping write-delay	flash Â
Ip dhcp snooping information option	DHCP ╗ option82 Â
ip dhcp snooping bootp-bind	DHCP Snooping Bootp ╗ Â
ip dhcp snooping trust	и DHCP snooping trust Â

14.4 DHCP snoopingcQ৯—

14.4.1 clear ip dhcp snooping binding

DHCP Snooping ╟ ˘ Ю ৡ Â

clear ip dhcp snooping binding

-	-

ৡ

ৡ˘ Л Л৳ DHCP snooping ╟ Â

Ю DHCP snooping ╟ ˙

```
Ruijie#  clear ip dhcp snooping binding
Ruijie#  show ip dhcp snooping binding
Total number of bindings: 0
MacAddress IpAddress Lease(sec) Type VLAN Interface
------- --- ---------- --------- ---- ---------
```


15 IGMP Snooping a—

15.1 ä—

15.1.1 deny

profile ˘ profile Ю ৡ deny Â

deny

deny	profile

profile deny Â

ৡ profile Â

″I profile Ю range ৡ Â↲ ˘ ѝ profile ˘ profile Э Â

Ю … 224.2.2.2 profile
Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)# range 224.2.2.2
Ruijie(config-profile)# deny

ৡ	
ip igmp profile	… profile
range	

ʌ

ʌ	
-	-

ৡ

15.1.2 permit

profile ˘ profile Ю ҳ permit profile
/I Â

permit

permit	profile Â

profile deny Â

ҳ profile Â

″I profile Ю range ҳ Â↓ ˘ ѝ profile ˘
profile ҳ Э Â

Ю … /I 224.2.2.2 profile
Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)# range 224.2.2.2
Ruijie(config-profile)# permit

ҳ	
ip igmp profile	… profile
range	

/I

/I	
-	-

15.1.3 range

profile ˘ profile Ю ҳ range˘ /I Л
˘ ≠ /I Л Â ҳ no Â

range low-ip-address [high-ip-address]

no range low-ip-address [high-ip-address]

low-ip-address	

high-ip-address	

Â

٣ profile Â

ł˘ ù˘ profile ù deny Â ˘
ù profile ˘ profile Э Â

Ю … ù 224.2.2.2~224.2.2.244 profile
Ruijie(config)# ip igmp profile 1
Ruijie(config-profile)# range 224.2.2.2 224.2.2.244

٣

٣	
ip igmp profile	… profile
deny	profile ù ù deny
permit	profile ù ù permit

٨

٣

٨	
-	-

15.1.4 ip igmp profile

IGMP profile ⁸ Â profile ˘ ˝I Ю
profile Â ٣ ٣˘ profile-number˘ igmp profile Â

ip igmp profile profile-number

no ip igmp profile profile-number

profile-number	profile ٨˘ 1-65535

Â

٣ Â

no ip igmp snooping dyn-mr-aging-time

Ю ╠ ˗ ѝ 100s˙
Ruijie(config)# ip igmp snooping query-max-response-time 100

٪	

/ı

/ı	
-	-

15.1.12 ip igmp snooping suppression enable

igmp snooping Report ⁸ ╖ ˘ ٪ **ip igmp snooping suppression enable** Â ٪ no igmp snooping suppression Â

ip igmp snooping suppression enable

no ip igmp snooping suppression enable

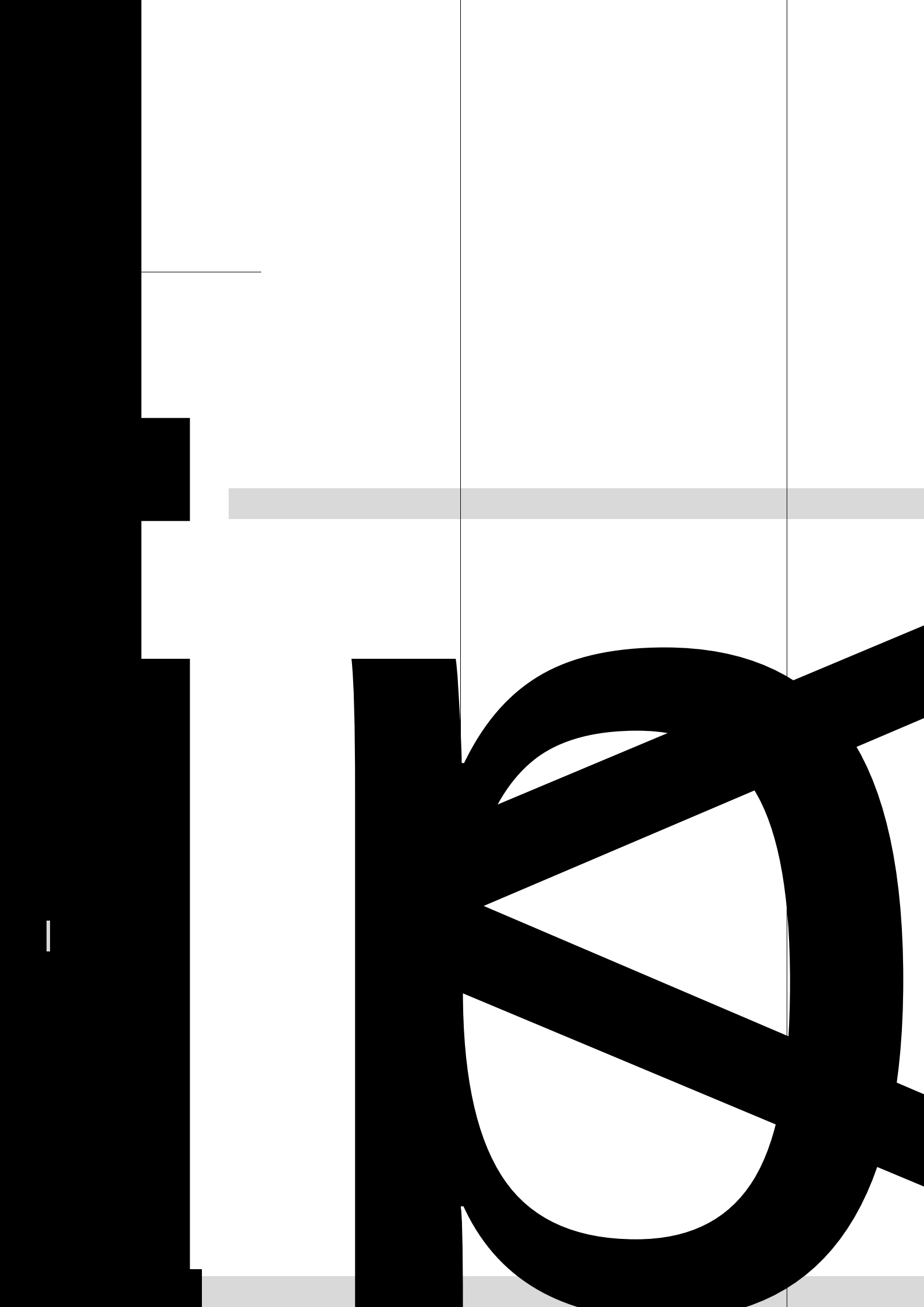
-	-

disable Â

٪ Â

IGMP ⁸ ╖ ł˘ /ı
vlan IGMP Report ˘ ł
IGMP Report a ˘ /ı Л Â
٪ ł˘ suppression ╖ ╠˘ IGMPv1/v2 report
⁸˘ a IGMPv3 report ⁸ Â

Ю Э **igmp snooping suppression**˙
Ruijie(config)# ip igmp snooping suppression



15.1.15 ip igmp snooping vlan mrouter learn pim-dvmrp

╠ IGMP Query/Dvmrp/PIM Hellp ˘ Л╥ ╠ ˘
ֳ **ip igmp snooping vlan mrouter learn** Â ֳ no ∧ ╠
˗ Â

ip igmp snooping vlan vid **mrouter learn pim-dvmrp**

no ip igmp snooping vlan vid **mrouter learn pim-dvmrp**

vid	vlan id Â

╥ Â

ֳ Â

б è Â Ю
VLAN ╠ ˗ ˘ ∧Л╥ VLAN ╠
˗ ╥ ˘ no ֳ ╠ ˗ ˘ ╠ ˗ Â
˘ ∧ ÿ ˘
Ѧ ' ÿ ѝ ˘ Â
╥ Ю ╠ ˗ ˘ ∧Л╥ igmp snooping
Â

,V/!G5—T%‰e

igmp snooping Ю ˘ ‡ a ৸
IGMP Â ৡ **ip igmp snooping vlan static interface** Â
ৡ no Â

ip igmp snooping vlan vid **static** ip-addr **interface** interface-id

no ip igmp snooping vlan vid **static** ip-addr **interface** interface-id

profile-number	profile ٨ ٨ <1-65536>

Â

٪ Â

IGMP Profile ЮЎ IGMP Report ˘ ‡
╕ IGMP Profile Â ˘ ‡ ╕ ˘
ł ł Â ”I … profile˘ ł filter Â

ЮО ”I 0/1 Э profile 1˙
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip igmp snooping filter 1

٪	
ip igmp profile	… profile

٨

٨	
-	-

15.1.18 ip igmp snooping max-groups

╟ ╕ , ٪ **ip igmp snooping max-groups** ٪ Â ٪ no ٨ ⁸ Â

ip igmp snooping max-groups number

no ip igmp snooping max-groups

number	и <0 – 1024>

a ٨ ⁸ Â

٪ Â

˗ ˘ ‡ Э˘ ╟ ˗

˘ a ”Ą ˝ IGMP Report … Â

Ю ”I 0/1 Э /ł 100 ‘

```
Ruijie(config)#          interface fastEthernet          0/1
Ruijie(config-if)#
```

-	-

-	-

15.2.2 show ip igmp profile [profile-number]

	profile
profile-number	profile

debug igmp-snp event

debug igmp-snp packet

debug igmp-snp msf

debug igmp-snp warning

undebug igmp-snp

undebug igmp-snp event

undebug igmp-snp packet

undebug igmp-snp msf

undebug igmp-snp warning

	IGMP Snooping
event	IGMP Snooping Y˚
packet	IGMP Snooping
msf	IGMP Snooping б
warning	IGMP Snooping

३ EXEC

३	
-	-

⁄	
-	-

16 MSTP a—

16.1 ª—

16.1.1 bpdu src-mac-check

bpdu mac Â /ı Ъ ३ no bpdu mac

ℸ Â

bpdu src-mac-check H.H.H

no bpdu src-mac-check

H.H.H	/ı mac ѝ bpdu Â
no	bpdu Â

Â

३ Â

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# bpdu src-mac-check 00d0.f800.1e2f

३	
-	-

/ı

/ı	
-	-

16.1.2 clear spanning-tree detected-protocols

८ RSTP BPDU BPDU ८ Â

clear spanning-tree detected-protocols [**interface** interface-id]

interface-id	

Â

३

Ruijie# clear spanning-tree detected-protocols

३	
show spanning-tree interface	STP Â

/

/	
-	-

16.1.3 spanning-tree

MSTP / MSTP MSTP Â ३
no spanning-tree ˘ no ३ / ८ ˘
a spanning tree Â

spanning-tree [**forward-time** seconds | **hello-time** seconds | **max-age** seconds] **48 -383914 Td(d<hel**

३ Â

forward-time à hello-time à max-age Ь ˘ è

è ч Â Ь ϐ ˙

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

a ˚ ≠ a ╖ Â

1˙ spanning-tree ╖ ˙

Ruijie(config)# spanning-tree

2˙ BridgeForwardDelay˙

Ruijie(config)# spanning-tree forward-time 10

३

३	
show spanning-tree	STP Â
spanning-tree mst cost	STP PathCost Â
spanning-tree tx-hold-count STP	TxHoldCount Â

Л

३

Л	
-	-

16.1.4 spanning-tree autoedge

Autoedge Â Л Л ъ ३ disabled Autoedge Â

spanning-tree autoedge [**disabled**]

disabled	Autoedge Â

Â

३ Â

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree autoedge disabled

३	
show spanning-tree interface	STP Â

/I

/I	
-	-

16.1.5 spanning-tree bpdufilter

BPDU filter Â /I Ћ ३ enabled disabled
BPDU filter Â

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

enabled	BPDU filter Â
disabled	BPDU filter Â

Â

३ Â

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree bpdufilter enable

३	

	-	-

३

Ruijie(config-if)# spanning-tree compatible enable

३	
-	-

३	
-	-

16.1.9 spanning-tree guard none

Э guard Â ३ no ४ Э guard ╖ Â

spanning-tree guard none

no spanning-tree guard none

-	-

guard ╖ Â

३ Â

Ruijie(config-if)# spanning-tree guard none

३	
-	-

४	
-	-

16.1.10 spanning-tree guard root

root guard Â ३ no root guard Â root guard ╖
Æ ∕ Â

spanning-tree guard root

no spanning-tree guard root

-	-

root guard ╖ Â

३ Â

Ruijie(config-if)# spanning-tree guard root

३	
-	-

∕

∕	
-	-

३

३ Â

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree link-type point-to-point

३	
show spanning-tree interface	STP

⁄	
-	-

16.1.12 spanning-tree loopguard default

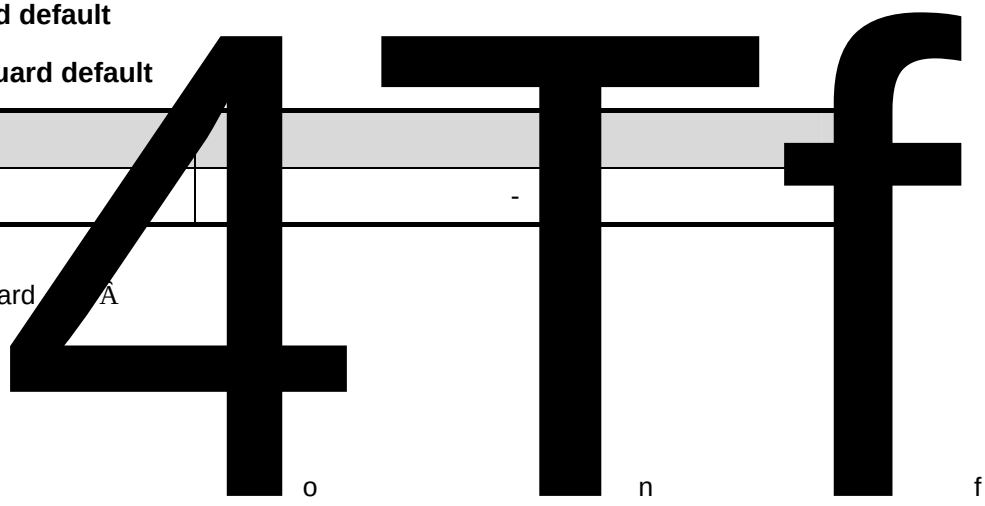
loop guard Â ३ no loop guard Â loop guard ╖
a bpdu ⁄ Â

spanning-tree loopguard default

no spanning-tree loopguard default

-	-

loop guard Â



Л

Л	
-	-

ʒ

16.1.13 spanning-tree max-hops

Ю ʒ Л Љ BPDU ^ Max-hops Count˜ ˘
BPDU Region Л ł ˘ Instance Â no
Л Љ ʒ Â

spanning-tree max-hops hop-count

no spanning-tree max-hops

hop-count	BPDU Л Љ ˘ ѝ 1 · 40

hop-count ѝ 20

ʒ

Region ˘ Root Bridge BPDU Hot Count ˘ ÿ Root Bridge ˘
˘ Hop Count 1˜ ѝ 0 ‡ BPDU ˘
Hops ѝ 0 BPDU Â
Л max-hops Instance Â

Ю MST Instance Max-hops ѝ 10˙
Ruijie(config)# spanning-tree max-hops 10
≠ Л Љ **show spanning-tree mst** ʒ Э

ʒ

ʒ	
show spanning-tree	MSTP

Л

Л	
-	-

ʒ

16.1.14 spanning-tree mode

Ю ৡ STP Â no ʌ Ɲ Â

spanning-tree mode [**stp** | **rstp** | **mst**p]

no spanning-tree mode

stp	Spanning tree protocol(IEEE 802.1d)
rstp	Rapid spanning tree protocol(IEEE 802.1w)
mstp	Multiple spanning tree protocol(IEEE 802.1s)

MSTP

ৡ .

Ruijie(config)# spanning-tree mode stp

ৡ	
show spanning-tree	

ʌ

ʌ	
-	-

16.1.15 spanning-tree mst configure

Ю ৡ ʌ Ɲ MST ˘ MSTP Region Â no ʌ Ɲ ৡ Ю ˆ name à revision à vlan map˜ Â

spanning-tree mst configuration

no spanning-tree mst configuration

-	-

VLAN 3 ÿ Instance 1 ˘ ж MST ł˘ Ю

Ruijie(config-mst)# no instance 1 vlan 3

Instance 1 ˘ Ю'

Ruijie(config-mst)# no instance 1

Л Љ MST ৡ show Э Â

ৡ	
show spanning-tree mst	MST region
instance instance-id vlan vlan-range	Vlan ╗ MST Instance

cost

Instance 3 ù 400 Ю

Ruijie(config)# interface gigabitethernet 1/1

Ruijie(config-if)# spanning-tree mst 3 cost 400

≠ Л Л **show spanning-tree mst interface interface-id** ৡ Э

ৡ	
	MSTP Â

	show spanning-tree interface	STP Â

/ı

३	/ı	
	-	-

16.1.20 spanning-tree portfast

Portfast Â /ı Ъ ३ disabled Portfast Â

spanning-tree portfast [**disabled**]

	disabled	Portfast Â

Â

३ Â

-

Ruijie(config)# interface gigabitethernet 1/1
Ruijie(config-if)# spanning-tree portfast

३	३	
	show spanning-tree interface	STP Â

/ı

३	/ı	
	-	-

16.1.21 spanning-tree portfast bpdufilter default

BPDU filter Â /ı Ъ ३ no BPDU filter Â

spanning-tree portfast bpdufilter default

no spanning-tree portfast bpdufilter default

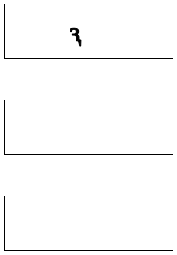
Ruijie(config)# spanning-tree portfast bpduguard default

३	
show spanning-tree interface	STP

⁄	
-	-

16.1.23 spanning-tree portfast default

Portfast Â ३ no Portfast


३

tx-hold-count	TxHoldCount Â ÿ 1 10 Â

3 Â

३ Â

Ruijie(config)# spanning-tree tx-hold-count 5

fB reW* nq0 841.98 595.257re641 reW n297.18g141.6257re64415.36 5525595.41.6 0.852 g5647.36 741.024415.6

link-type	linktype

Â

Ruijie# show spanning-tree interface gigabitethernet 1/5

३	
spanning-tree bpdufilter	BPDU filter Â
spanning-tree portfast	portfast Â
spanning-tree bpduguard	BPDU guard Â
spanning-tree link-type	a “ ”Â

⁄	
-	-

16.2.3 show spanning-tree mst

Ю ३ ⁄ Л Ъ MST ˘ Instance Â

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

configuration	mst
instance-id	Instance ⁄
interface-id	⁄

Instance Â

.

Ruijie# show spanning-tree mst configuration

17 SPAN a—

17.1 ª—

17.1.1 monitor session

… SPAN ˆ ˜ ˆ ˜ . ३ no
Â

monitor session session_number {**source interface** interface-id [**both** | **rx** | **tx**] | **destination interface** interface-id **switch** | [**acl** name]

no monitor session session_number [**source interface** interface-id [**both** | **rx** | **tx**] | **destination interface** interface-id **switch**] | [**acl** name]

no monitor session all

session_number	SPAN ˊ Â
source interface interface-id	Â interface-idˇ ˊˇ ˊ ˙ ˇ a ˊ Л‰ ˙ SVI Â
destination interface interface-id	Â interface-idˇ ˊˇ ˊ ˙ ˇ a ˊ Л‰ ˙ SVI Â
mac source mac-addr	MAC
mac destination mac-addr	MAC
both **acl** name	˚ Â **acl** name/id
rx	ˊ Â
tx	ˊ Â
all	
switch	╖ ˇ ˙ a

३

switch port à routed port AP ˊ Л‰ ˙ ÂSPAN a

Â ʌ ЛЪ SPAN disabled port Э˘ ˘ SPAN a
Э Â
a ˚ Â
˘ a ˘ ‡ Â
show monitor ৡ ʌ ЛЪ SPAN Â

a	session 1 . ˘ . SPAN ʌ session 1 Â

Ю … SPAN ‘ 1 Â ″I ˘
″I 1 ˘ ł gigabitEthernet 1/1 8
gigabitEthernet 1/8 Â

```
Ruijie(config)# no monitor session 1
Ruijie(config)# monitor session 1 source interface gigabitEthernet 1/1 both
Ruijie(config)# monitor session 1 destination interface gigabitEthernet 1/8
```

ৡ

ৡ	
show monitor	SPAN Â

ʌ ä

³

IO **show monitor** ³ SPAN 1

Ruijie# show monitor session 1

sess-num: 1

src-intf:

GigabitEthernet 3/1 frame-type Both

dest-intf:

GigabitEthernet 3/8

³

³	
monitor session	… SPAN ˆ ~ ˆ ~ Â

/

³

/	
-	-

1/2 // a ⁄]

Ruijie(config)# monitor session 2 destination remote vlan 7 interface gigabitEthernet 1/3 switch // ⁄]

Ruijie(config)# monitor session 2 destination remote vlan 7 reflector-port interface gigabitEthernet 1/1 switch

2ʹ

Ruijie(config)# monitor session 2 remote-destination

Ruijie(config)# monitor session 2 destination remote vlan 7 interface gigabitEthernet 1/1 switch

३

३	
show monitor	Â

⁄] a ⁄] reflector-port Â

ÆÄ·, Y Þ d˜YRÅž)R"5— " , ï R serx '!–$v€

19 ERSPAN a—

19.1 ¾a—

19.1.1 monitor session

… ERSPAN Â ¾ no Â

monitor session session_num {**erpsan-source** }

-	-

no shutdown

ERSPAN

˘ **end** ३˘ Ctrl+C Â

˘ **exit** ३ Â

1˙

Ruijie(config)# monitor session 2 erspan-source

Ruijie(config-mon-erspan-src)#shutdown

३	
show monitor	Â

-	-

19.1.3 source

ERSPAN Â

source interface single-interface

1'

Ruijie(config)# monitor session 2 erspan-source

Ruijie(config-mon-erspan- src)#source interface gigabitethernet 0/1 both

¾	
show monitor	Â

/

/	
-	-

19.1.4 destination ip address

GRE IP Â

destination ip address ip_address

ip_address	GRE IP

ERSPAN

˘ **end** ¾˘ Ctrl+C Â

˘ **exit** ¾ Â

1'

Ruijie(config)# monitor session 2 erspan-source

Ruijie(config-mon-erspan-src)destination ip address 10.1.1.2

¾	

¾	⁄	
	-	-

19.1.5 origin ip address

GRE IP Â

origin ip address ip_address

–AŸRĮRApÑ.å E5⁄₰ÜÄ

64

¾ ERSPAN

˘ **end** ¾˘ Ctrl+C Â
˘ **exit** ¾ Â

1˙
Ruijie(config)# monitor session 2 erspan-source
Ruijie(config-mon-erspan-src)#ip ttl 65

¾

¾	
show monitor	Â

/

¾

/	
-	-

19.1.7 ip dscp

IP dscp

ip dscp dscp-value

dscp-value	IP dscp

0

¾

Ruijie(config-mon-erspan-src)#ip dscp 56

३	
show monitor	Â

⁄	
-	-

20 IP a—

20.1 ¢—

20.1.1 ip address

¾ IP ˘ Л Ћ no IP Â ¾ Ю

ip address ip-address network-mask [**secondary**]

no ip address ip-address network-mask [**secondary**]

ip-address	32 Æ IP ˘ 8 Æ ˘ Ћ 8 ˘ Â

IP

1' ЛЬЮ ˘ SVI 1 ARP Â

```
Ruijie(config)#  interface vlan  1
Ruijie(config-if)#  arp gratuitous-send interval  1
```

2' ЛЬЮ ˘ SVI 1 ARP

```
Ruijie(config)#  interface vlan  1
Ruijie(config-if)#  no arp gratuitous-send
```

ʒ

ʒ	
-	-

Л

ʒ

Л	
-	-

20.2.3 arp retry interval

ʒ˘ Л Лъ arp ˘ ˚ IP ˘ 2 ARP Â ʒ no Л Лъ 1 ARP Â

arp retry interval seconds

no arp retry interval

seconds	<1-3600>,ARP Л Лъ ѝ 1 —— 3600 ˘ ѝ 1

ARP ѝ 1 Â

ʒ Â

ARP ˘ ѐ ˘ Л Лъ ARP ˘ a ╟ ARP Â

ЛЬЮ ˘ ARP ѝ 30s

arp retry interval 30

ʒ

ʒ	

Arp retry times number	ARP

л

л	
-	-

ҳ

20.2.4 arp retry times

ҳ˘ Л Љ arp ˘ ˚ IP ˘ ARP
Â ҳ no Л Љ 5 ARP Â

arp retry times number

no arp retry times

number	˚ ARP ˘ <1-100> Â ѝ 1 ˘ a ARP ˘ Л 1 ARP Â

ARP ˘ ARP 5 ˘ ѣ Â

Â

ARP ˘ ѐ ˘ Л Љ ARP
˘ a Â

1˙ ЉЮ ˘ ARP a Â
arp retry times 1
2˙ ЉЮ ˘ ARP 1 Â
arp retry times 2

ҳ	
arp retry interval seconds	arp

л

ҳ	л	

	-	-

20.2.5 arp timeout

ARP ă ARP ˘ Л Ъ ३ Â ३

vrf vrf_name	VRF ˘ VRF ARP Â
trusted	/ı ARP ˘ /ı VRF /ı ARP Â
ip	IP ˘ IP ARP ’ trusted ˘ ‡ /ı /ı ARP ˘ ‡ /ı ARP Â
mask	IP ARP ; trusted ˘ ‡ /ı /ı ARP ˘ ‡ /ı ARP Â
static	arp Â
mac-address	mac ARP Â
complete	╟ arp Â
incomplete	╟ arp Â
oob	(interface of mgmt) ARP Â

३ Â

1˙ ЛЬЮ ѝ show arp ‘

Ruijie# show arp

Total Numbers of Arp: 7

Protocol Address Age(min) Hardware

Type Interface

Internet 192.168.195.68 0 0013.20a5.7a5f arpa VLAN 1

Internet 192.168.195.67 0 001a.a0b5.378d arpa VLAN 1

Internet 192.168.195.65 0 0018.8b7b.713e arpa VLAN 1

Ȯ

Age (min)	ARP ă ˘ Лѓ Â ˘ “-” Â
Hardware	б IP ˚ Â
Type	˚ ˘ Лъ ѝ ARPA Â
Interface	б IP Â

2˙ ЛъЮ show arp 192.168.195.68

```
Ruijie# show arp 192.168.195.68
Protocol Address Age(min) Hardware Type Interface
Internet 192.168.195.68 1 0013.20a5.7a5f arpa VLAN 1
```

3˙ ЛъЮ **show arp** 192.168.195.0 255.255.255.0

```
Ruijie# show arp 192.168.195.0 255.255.255.0
Protocol Address Age(min) Hardware Type Interface
Internet 192.168.195.64 0 0018.8b7b.9106 arpa VLAN 1
Internet 192.168.195.2 1 00d0.f8ff.f00e arpa VLAN 1
Internet 192.168.195.5 -- 00d0.f822.33b1 arpa VLAN 1
Internet 192.168.195.1 0 00d0.f8a6.5af7 arpa VLAN 1
Internet 192.168.195.51 1 0018.8b82.8691 arpa VLAN 1
```

4˙ ЛъЮ **show arp** 001a.a0b5.378d

```
Ruijie# show arp 001a.a0b5.378d
Protocol Address Age(min) Hardware Type Interface
Internet 192.168.195.67 4 001a.a0b5.378d arpa VLAN 1
```

ʒ

ʒ	
-	-

ʌ

ʒ

ʌ	
-	-

20.3.3 show arp counter

ARP arp Â

show arp counter

IP 3

ARP ARP

show arp detail

Ruijie# show arp detail
IP Address MAC Address Type Age(min) Interface Port f616161 Ag

20.3.6 show ip arp

ˆ ARP˜ ă ˘ ҃ Â

show ip arp

-	-

҃

ЛЬЮ й **show ip arp**

Ruijie# show ip arp

Protocol Address Age(min)Hardware Type

Interface

Internet 192.168.7.233 23 0007.e9d9.0488 ARPA FastEthernet 0/0

Internet 192.168.7.112 10 0050.eb08.6617 ARPA FastEthernet 0/0

Internet 192.168.7.79 12 00d0.f808.3d5c ARPA FastEthernet 0/0

Internet 192.168.7.1 50 00d0.f84e.1c7f ARPA FastEthernet 0/0

Internet 192.168.7.215 36 00d0.f80d.1090 ARPA FastEthernet 0/0

Internet 192.168.7.127 0 0060.97bd.ebee ARPA FastEthernet 0/0

Internet 192.168.7.195 57 0060.97bd.ef2d ARPA FastEthernet 0/0

Internet 192.168.7.183 -- 00d0.f8fb.108b ARPA FastEthernet 0/0

ARP ă Ћ Ю

Protocol	˘ й Internet Â
Address	б ˚ IP Â
Age (min)	ARP ă ˘ Лђ Â ˘ “-” Â
Hardware	б IP ˚ Â
Type	˚ ˘ Лђ й ARPA Â
Interface	б IP Â

Forward direct-boardcast is: ON

ICMP mask reply is: ON

Send ICMP redirect is: ON

Send ICMP unreachabled is: ON

DHCP relay is: OFF

Fast switch is: ON

Route horizontal-split is: ON

Help address is: 0.0.0.0

Proxy ARP is: ON

Outgoing access list is not set.

Inbound access list is not set.

Ю

IP interface state is:	Л ˘ è ˚ и “UP” Â
IP interface type is:	˘ ˘ Â
IP interface MTU is:	MTU Â
IP address is:	IP Â
IP address negotiate is:	IP Â
Forward direct-boardcast is:	Â
ICMP mask reply is:	ICMP Â
Send ICMP redirect is:	ICMP Â

Send ICMP unreachabled is:

-	-

21 DHCP a—

21.1 DHCPä—

DHCP ЛЬЮ ৡ˙

ip address dhcp

21.1.1 ip address dhcp

Лъ PPP ä HDLC ä FR DHCP IP ˘
ৡ **ip address dhcp** Â ৡ **no** Л Лъ Н Â

ip address dhcp

no ip address dhcp

ʌ	
-	-

21.2 pâ—

Âdebug ip dhcp client

Âshow dhcp lease

21.2.1 debug ip dhcp client

DHCP Client ˘ **debug ip dhcp client** ৡ Â

debug ip dhcp client

no debug ip dhcp client

-	-

ৡ Â

ৡ dhcp client Ł ў ˘ Лъ Â

ЛъЮ ˘ Э dhcp Â
debug ip dhcp client

ৡ	
-	-

22 DHCP Relay a—

22.1 ৮a—

22.1.1 ip dhcp relay check server-id

DHCP Relay check server-id ╖ ˘ ⁄ Л৳ ৡ Â ৡ no
DHCP Relay check server-id ╖ Â

[**no**] **ip dhcp relay check server-id**

-	-

ৡ

ৡ˘ DHCP Relay DHCP option server-id
DHCP ┗ Â ৡ˘ ‡ DHCP ┗ DHCP
Â

ЛЬЮ ˘ DHCP relay check server-id ╖ Â
Ruijie# configure terminal
Ruijie(config)# ip dhcp relay check server-id

ৡ	
Service dhcp	DHCP ৡ

⁄

⁄	
-	-

22.1.2

DHCP Relay option dot1x ╖ ˘ ∧ Л७ ३ Â ३ no ╖ Â

ҳ

ҳ ACL б Э ACL ACE а л ă Â

ЛЬЮ ˘ dhcp option dot1x acl Â

```
Ruijie# configure terminal
Ruijie(config)# ip access-list extended DenyAccessEachOtherOfUnauthrize
Ruijie(config-ext-nacl)# permit ip any host 192.168.3.1
//
Ruijie(config-ext-nacl)# permit ip any host 192.168.4.1
Ruijie(config-ext-nacl)# permit ip any host 192.168.5.1
Ruijie(config-ext-nacl)# permit ip host 192.168.3.1 any
// IP й
Ruijie(config-ext-nacl)# permit ip host 192.168.4.1 any
Ruijie(config-ext-nacl)# permit ip host 192.168.5.1 any
Ruijie(config-ext-nacl)# denyip 192.168.3.00.0.0.255192.168.3.0 0.0.0.255
//
Ruijie(config-ext-nacl)# deny ip 192.168.3.0 0.0.0.255 192.168.4.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.3.0 0.0.0.255 192.168.5.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.4.0 0.0.0.255 192.168.4.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.4.0 0.0.0.255 192.168.5.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.5.0 0.0.0.255 192.168.5.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.5.0 0.0.0.255 192.168.3.0 0.0.0.255
Ruijie(config-ext-nacl)# deny ip 192.168.5.0 0.0.0.255 192.168.4.0 0.0.0.255
Ruijie(config-ext-nacl)# exit
Ruijie(config)# ipdhcprelayinformationoptiondot1xaccess-group DenyAccessEachOtherOfUnauthrize
```

ҳ

ҳ	
service dhcp	DHCP

DHCP Relay DHCP Relay Aware VRF ¶ ˘ Л Љ ¾ Â
¾ no ¶ Â

-	-

¾

¶ option82 option dot1x a ă Â

ЉЮ ˘ DHCP Э DHCP Relay Aware VRF ¶ '
Ruijie# configure terminal
Ruijie(config)# Ip dhcp relay information option vpn

¾	
ip dhcp relay information option82	DHCP option82 ¶
ip dhcp relay information option dot1x	DHCP option dot1x ¶

Л

Л	
-	-

22.1.6 ip dhcp relay suppression

Э DHCP Relay ⁸ ¶ ˘ Л Љ ¾ Â ¾ no
DHCP relay ⁸ ¶ Â

[**no**] **ip dhcp relay suppression**

-	-

¾ Â

ҳ ł˘ Э DHCP Â

ЛЬЮ ˘ 1 Э DHCP relay ⁸ ╗ Â
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip dhcp relay suppression
Ruijie(config-if)# exit
Ruijie(config)#

ҳ

ҳ	
service dhcp	DHCP ҳ

Л

ҳ

Л	
-	-

22.1.7 ip helper-address

╗ DHCP ┗ ˘ Л Лъ ҳ Â ҳ no ˘
┗ Â DHCP ┗ Л Лъ Ю Â

[**no**] **ip helper-address** [**vrf** vrf-name]A.B.C.D

-	-

┗ Â

ҳ /Â

Ь Э Л Лъ 20 DHCP ┗ Â
DHCP ┗ Ю DHCP Relay DHCP ┗ ,
DHCP ┗ ˘ DHCP Relay Э ┗ ˘
a ┗ Â
vrf Ą˘ a˚ Â
a vrf ˘ a vrf a vrf ˘
┗ ˚ vrf Â

ЛЬЮ ˘ ч Ь ·

1¨ Ь 192.168.1.1˙

2· vrf ѝ dep1 Ь 192.168.2.1˙

```
Ruijie# configure terminal
Ruijie(config)# ip helper-address 192.168.1.1
Ruijie(config)# ip helper-address vrf dep1 192.168.2.1
```

service dhcp	DHCP Â

-	-

22.1.8 service dhcp

Э DHCP ╖ ˘ Л Лъ Â no

-	-

ip name-server {ip-address | ipv6-address}

no ip name-server [ip-address | ipv6-address]

ip-address	IP
ipv6-address	IPV6

DNS Server IP/IPv6 DNS Server DNS Server DNS 6 DNS Server ip-address ipv6-address DNS

```
Ruijie(config)#  ip name-server  192.168.5.134
Ruijie(config)#  ip name-server
2001:0DB8::250:8bff:fee8:f800 2001:0DB8:0:f004::1
```

show hosts	DNS

-	-

23.1.3 ip host

IP no

ip host

ip-address	IP

¾

ў ˘ Л Ъ **no ip host host-name ip-address** ¾ Â

Ruijie(config)# ip host switch 192.168.5.243

¾	
show hosts	DNS Â

Л

Л	
-	-

23.1.4 ipv6 host

¾ ў ¨ IPV6 Â ¾ no ў Â

Ipv6 host host-name ipv6-address

no ipv6 host host-name ipv6-address

host-name	ў ¨
Ipv6-address	IPV6

¾

ў ˘ Л Ъ **no ipv6 host host-name ipv6-address** ¾ Â

Ruijie(config)# ipv6 host ruijie 2001:0DB8:700:20:1::12

24 SNTP a—

24.1 ª—

24.1.1 sntp enable

३ SNTP ╖ ˘ ३ **no** ѝ —Disable Â

[**no**] **sntp enable**

no sntp interval

seconds	˚ ˘ æ ѝ ľ Ł ѝ 60 --65535 Â

ѝ 1800s

٪

show sntp ٪ SNTP Â

a ˘ ˘

a ł sntp enable ٪ Â

Ruijie(config)# sntp interval 3600

٪	
sntp enable	SNTP
show sntp	SNTP
clock update-calendar	˚ ˚ ˚

/ ˚ RGOS10.0 Л Э

/	
-	-

24.1.3 sntp server

٪ SNTP Server SNTP NTP ˘ Л Server / Л internet Э Ω NTP Server Â

sntp server ip-addr

no sntp server

ip-addr	NTP/SNTP Ł IP

show sntp SNTP

Ruijie(config)# sntp server 192.168.4.12

show sntp	SNTP
sntp enable	SNTP

RGOS10.0

-	-

24.2

24.2.1 show sntp

SNTP

-	-

show sntp SNTP

```
Ruijie# show sntp
SNTP state       : Enable
SNTP server      : 192.168.4.12
SNTP sync interval  : 60
Time zone        : +8
```

३	
sntp enable	SNTP
show sntp	SNTP

RGOS10.0 Л Э

∧	
-	-

25 NTP a—

25.1 NTPª—

25.1.1 no ntp

ntp˚ Ł˘ б Ł ˚ ˘ ntp Â

no ntp

-	-

Ю NTP Ł Â

३ Â

Ю NTP ╖ ˘ Л NTP Ł Ò Т Ł

ntp access-group { **peer** | **serve** | **serve-only** | **query-only** }access-list-number | access-list-name

no ntp access-group{**peer** | **serve** | **serve-only** | **query-only**}access-list-number | access-list-name

peer	NTP Ь ⁸ ˘ ≠ б ˚ ^ ~ Â
serve	NTP Ь ⁸ ˘ а б ˚ Â
serve-only	NTP Ь Â
query-only	NTP Ь ⁸ Â
access-list-number	IP ⁸ ﾉ’ ѝ 1 99 1300 1999
access-list-name	IP ⁸ ¨ Â

Ю NTP ⁸ ‡ Â

ৡ Â

NTP Ь ⁸ Â ˘
NTP ⁸ Â
˘ NTP Ь ÿ ⁸ ⁸ ѣ
‡˘ Лъ ѣ ‡ ѝ Â ѣ ѝ peer à serve à serve-only à query-only Â

a	⁸ ╖ Â Э ‡ ѣ ˘ б ⁸ Â

⁸ ‡˘ ‡ Â ⁸ ‡˘
‡ ‡ Â

ЛъЮ 1 ﾉ à ⁸
˚ , ⁸ 2 ﾉ Â

Ruijie(config)# ntp access-group peer 1

Ruijie(config)# ntp access-group serve-only 2

ৡ	
ip access-list	… IP ⁸ Â

ﾉ

NTP

ѝ NTP ┗ NTP Â

ntp authentication-key key-id **md5** key-string [enc-type]

no ntp authentication-key key-id **md5** key-string [enc-type]

key-id	ID’
key-string	’
enc-type	ˆ Л ˜ ╗ ˇ 0 ╗ ˇ 7 ╗ ’

Â

ৡ Â

ˇ md5 ╗ ˇ key-id ˇ Л

Љ **ntp trusted-key** key-id ѝ Â

Э ѝ 1024 ˇ ┗ Â

ЉЮ ID ѝ 6

ntp authentication-key 6 md5 wooooop

ৡ	
ntp authenticate	8
ntp trusted-key	
ntp server	NTP ┗

Л

Л	
-	-

25.1.5 ntp disable

NTP ╗ Â

ntp disable

	zÊcpSFIβ@

NTP "1@#!YQQ¸¸Q¸

३ Â

Ł ˘ ˚ Ł Э ѝ 20 Â

б Ł ╗ ˘ ″I ╗ Љ ˘ ł

ѝ Ł ˘ Л Љ Ł ╗ ˘ б Ł ╗

Ł ˚ ╗ б

˚ ˆ ~ Ю ″I prefer ˚

NTP Ą Ю ѝ IP Л

Љ NTP Ł Â

ЉЮ ˘ Э ѝ NTP server

╟˚ ˘ ˚ ˘ ‡ ʌ ʌъ ʒ Â

ЛЬЮ ˘ NTP ˚ Â
Ntp synchronize

ʒ	
ntp server	NTP Ь ˚

ʌ

ʌ	
-	-

25.1.9 ntp trusted-key

ID ѝ

ntp trusted-key key-id

no ntp trusted-key key-id

key-id	ID Â

Ю Â

Â

NTP ɲ ˚ ˘ ID ˘ a
˘ Лъ ,

ЛЬЮ ˘ ѝ Ь Â
ntp authentication-key 6 md5 wooooop
ntp trusted-key 6

ntp authenticate	¸ Â
ntp authentication-key	NTP Â
ntp server	NTP ¼ Â

¼

¾	¼	
	-	-

25.1.10 ntp update-calendar

NTP ÿ ¸ ¸ Â ¾
no ¼ ¸ ¶ Â

ntp update-calendar

no ntp update-calendar

-	-

¸ ¶ Â

¾	Â

¶ ¼ Л NTP ÿ ¸ ¸
Â ¸ Æ Ю Ÿ ╟ Â
Ю NTP ¸ Â ł NTP б
¸ ¶ ≠ ¸ ¸ Â

ЛЬЮ NTP ¸ ‹
Ruijie(config)# ntp update-calendar

¾	
-	-

¼

ৡ	⁄	
	-	-

25.2 ρåΑ—

25.2.1 debug ntp

NTP Â

debug ntp

no debug ntp

	-	-

Â

ৡ Â

NTP ╖ ˘ ⁄ Л Ъ ৡ ˘ Â

ЛЪЮ ˘ NTP Â

debug ntp

ৡ	ৡ	
	-	-

⁄

ৡ	⁄	
	-	-

25.2.2 show ntp status

NTP Â

show ntp status

-	-

ѝ Â

26 FTP Server a—

26.1 ä—

26.1.1 debug ftpserver

FTP

-	-

26.1.2 ftp-server enable

FTP Ь ˘ ҳ no FTP Ь Â

ftp-server enable

no ftp-server enable

-	-

ѝ Â

ҳ Â

FTP Ь ˘ FTP Л Љ б ˘ ˚ Э Ю Â

a ˚ ҳ **ftp-server topdir** ҳ FTP FTP Ь Э ˚ Â

1˙ ЉЮ ╟ FTP Ь 8 syslog ‘

Ruijie(config)# ftp-server topdir /syslog

Ruijie(config)# ftp-server enable

2˙ ЉЮ FTP Ь ‘

Ruijie(config)# no ftp-server enable

ҳ	
-	-

Л

Л	
-	-

26.1.3 ftp-server password

FTP Ь ˘ ҳ no Л Â

ftp-server password [type] password

no ftp-server password

type	ЬЖ ╕ ‘ 0 7Â0 ȝ ╕ ˆ ~ ’ 7 ȝ й ╕ Â
password	Ь

Â

ȝ Â

FTP Ь ¨ ЛЪ ˘ Л Â ˘ ł Л ЛЪ ˘ ’ й ǐ Â й 1 ä й 25 ’ й 4 ä й 52 Â

a	FTP Ь a ˘ Ь Â

1‘ ЛЪЮ й pass‘

Ruijie(config)# ftp-server password pass

‘

Ruijie(config)# ftp-server password 0 pass

2‘ ЛЪЮ й 8001‘

Ruijie(config)# ftp-server password 7 8001

3‘ ЛЪЮ Л ‘

Ruijie(config)# no ftp-server password

ȝ	
-	-

Л

26.1.4 ftp-server topdir

⁸ FTP ˚ Â ҃ no
FTP ┺ Э ˚ Â

ftp-server topdir directory

no ftp-server topdir

directory	FTP

ˆ a ˜ Â

҃ Â

FTP ┺ ɨ Л Ль ˚ Â
FTP FTP ┺ Э ˚ Â
҃˘ FTP ┺ Э ˚ Â

1ʻ ЛЬЮ ╟ FTP ┺ ⁸ syslog ʻ
Ruijie(config)# ftp-server topdir /syslog
Ruijie(config)# ftp-server enable
2ʻ ЛЬЮ Л ʻ
Ruijie(config)# no ftp-server topdir

҃	
-	-

Л

Л	
-	-

26.1.5 ftp-server timeout

FTP ˆ Session idle timeout˜ ˘ ҃ no ѝ
ˆ 30ʾ ˜ Â

ftp-server timeout time

no ftp-server timeout

time	^ Æ' ǂ ' ' 1-3600˜

ѝ 30ǂ Â

҃ Â

FTP Â ^ ~~
FTP Ł Л ѝ ˘ б Â

FTP ÿ Э FTP ł Ю
FTP Â Ł FTP ҃ Ł ł^
a ˚ ł ˜ ÿ 0 ' Ю ҃
Ą Â a
˚ Â

1' ЛЬЮ ѝ 5ǂ '
Ruijie(config)# ftp-server timeout 5
2' ЛЬЮ ѝ ^ 30ǂ ~ '
Ruijie(config)# no ftp-server timeout

҃	
-	-

Л

Л	
-	-

26.1.6 ftp-server username

FTP Ł ¨ ˘ ҃ no Л ¨ Â

ftp-server username username

no ftp-server username

username	¨

Â

Â

FTP Â Â
Â
Â ÿ 64 a Â Â Л Ъ à
л Â FTP Л Л Â Â

FTP a Â
a
Л Â

1 ЛЪЮ Â ÿ user
Ruijie(config)# ftp-server username user
2 ЛЪЮ л Â
Ruijie(config)# no ftp-server username

Â

FTP

IP à Port˜

ŭ ╟ ╟ IP à Port˜

à

ЛЬЮ FTP

```
Ruijie#  show ftp-server
ftp-server information
=====================================
enable : Y
topdir : /
timeout: 20min
username config : Y
password config : Y
type: BINARY
control connect : Y
ftp-server: ip=192.167.201.245 port=21
ftp-client: ip=192.167.201.82 port=4978
port data connect : Y
ftp-server: ip=192.167.201.245 port=22
ftp-client: ip=192.167.201.82 port=4982
passive data connect : N
```

-	-

-	-

27 SNMP a—

27.1 ä—

27.1.1 no snmp-server

SNMP ¾ ¶ ˘ ¾ **no snmp-server** Â

no snmp-server

-	-

SNMP ¾ ¶

¾

¾ SNMP ¾ Ł Â

IO SNMP ¾ Ł·

Ruijie(config)# no snmp-server

¾	
-	-

/

/	

no snmp-server chassis-id

text	¼ ˘ ¼Ц Â

¼ 60FF60

¾

SNMP ¼ ¼˘ Ц Â ¼ ¼Ц
show snmp ¾ Â

Ю SNMP ¼ ù 123456:
Ruijie(config)# snmp-server chassis-id 123456

¾	
show snmp	SNMP

¼

¼	
-	-

27.1.3 snmp-server community

SNMP ˘ ¾ **snmp-server community** Â ¾
no ¼ SNMP Â

snmp-server community string [**view** view-name] [[**ro** | **rw**] [**host** ipaddr]] [number ipv6 ipv6-aclname][aclnum | aclname]

no snmp-server community string

string	˘ NMS SNMP ¾ Â
view-name	¨ ˘ Â
ro	NMS MIB ¼ ¼ ˘ a Â
rw	NMS MIB ¼ ¼ ¼ Â

aclnumber	ʌ^ 1-99˜ ˘ ˘ MIB ipv4 NMS Â
aclname	¨ ˘ ˘ MIB ipv4 NMS Â
ipv6_aclname	ipv6 ¨ ˘ ˘ MIB ipv6 NMS Â
ipaddr	NMS ˘ MIB NMS Â

ѝ ʌ

ʒ

ʒ ѝ SNMP ʒ ╖ ʒ˘ à
MIB NMS Â
SNMP ʒ ╖ ˘ **no snmp-server** ʒ ʌ Â

Ю ⁸ MIB ˘ ʌ ѝ 192.168.12.1 NMS
MIB ‘
Ruijie(config)# access-list 2 permit 192.168.12.1
Ruijie(config)# access-list 2 deny any
Ruijie(config)# snmp-server community public ro 2

ʒ

ʒ	
access-list	Ьѫ

ʌ

ʒ

ʌ	
-	-

27.1.4 snmp-server contact

SNMP

ipv6 ˜ ˜

MIB

port-num	snmp ў
notification-type	ў ╟ ˘ snmp Â

Ю SNMP ў Â
˘ ‡ Â

ҁ

ҁ б ҁ **snmp-server enable traps** ˘ ў ╟ NMS
Â
Л Љ a˚ SNMP ў ˘ ў Л Љ a˚
˘ a˚ ˘ a˚ vrf ˘ ˚ ў [˚ à ˚ vrf] ł
˘ ˚ ў a˚ ˘ Л Љ‡ a
˚ ˘ Â

Ю SNMP ў ˘ SNMP Y˚ ‘
Ruijie(config)#

SNMP

SNMP ٦ ˘ ٣ **snmp-server system-shutdown** Â
٣ no ٧ SNMP ٦ Â

snmp-server system-shutdown

no snmp-server system-shutdown

-	-

SNMP ٦

٣

٣ SNMP ٦ ˘ RGOS reload/reboot Љ NMS
Â

Ю SNMP ٦ ‘
Ruijie(config)# snmp-server system-shutdown

٣	
-	-

٧

٧	
-	-

27.1.12 snmp-server trap-source

SNMP ˘ ٣ **snmp-server trap-source** Â ٣ no
Â

snmp-server trap-source interface

no snmp-server trap-source

interface	ѝ SNMP

SNMP ÿ ˘ IP ѝ Â

३	

snmp-server queue-length

aclnum	ˇ ˇ MIB ipv4 NMS Â
aclname	¨ ˇ ˇ MIB ipv4 NMS Â
Ipv6_aclname	ipv6 ¨ ˇ ˇ MIB ipv6 NMS Â

Â

¾

IO snmpV3 ˇ md5 ˇ DES ╗ ‘
Ruijie(config)# snmp-server user user-2 mib2user v3 auth md5 authpassstr priv des56 despassstr

¾	
show snmp user	SNMP

ˇ

ˇ	
-	-

27.1.15 snmp-server view

SNMP ˇ ¾ **snmp-server view** Â ¾ no Â

snmp-server view view-name oid-tree {**include** | **exclude**}

no snmp-server view view-name [oid-tree]

view-name	¨ Â
oid-tree	MIB ˇ MIB Â
include	MIB Â MIB

default ˘ MIB Â

३

Ю ˘ MIB-2 ˆ oid ѝ 1.3.6.1˜ ‘

Ruijie(config)# snmp-server view mib2 1.3.6.1 include

३	
show snmp view	SNMP

/

/	

28 RMON a—

28.1 ⁋a—

28.1.1 rmon alarm

MIB ٨ ٪ Â no ٨ Â

rmon alarm number variable interval {**absolute** | **delta** } **rising-threshold** value [event-number] **falling-threshold** value [event-number] [**owner** ownername]

no rmon alarm number

-	-

٪

RGOS ˚ ˘ ЛЪ ˘ variable ä absolute/delta ä owner ä interval ä rising-threadhold/falling-threadhold è event ˘ a ˘ ЮО Y˚ Ą˘ ’

ЛЪЮО ˘ MIB ٨ ifInNUcastPkts.6 Â

Ruijie(config)# rmon alarm 10 1.3.6.1.2.1.2.2.1.12.6 30 delta rising-threshold 20 1 falling-threshold 10 1 owner zhangsan

٪	
rmon event number [**log**] [**trap** community] [description-string]	╕ Y˚ ЬЖ

٨

٨	
-	-

-	-

३

ЛЬЮ ˘ Л Лъ Лъ 1 Â

Ruijie(config)# interface fast-Ethernet 0/1

Ruijie(config-if)# rmon collection stats 1 zhansan

३	
rmon collection history index [**owner** owner-name]**buckets** bucket-number **interval** seconds	╗ 8

Л

Л	

३

ЛЬЮ ˘ ЊЖY ˚ ╟ ˙ Y ˚ à trap Â
Ruijie(config)# rmon event 1

Event type : log-and-trap
Community : public
Last time sent : 0d:0h:0m:0s
Owner : zhangsan
Log : 1
Log time : 0d:0h:37m:47s
Log description : ipttl
Log : 2
Log time : 0d:0h:38m:56s
Log description : ipttl

३	
rmon alarm number variable interval {**absolute** | **delta** } **rising-threshold** value [event-number] **falling-threshold** value [event-number] [**owner** ownername]	╕

/

/	
-	-

28.2.2 show rmon event

Â

show rmon event

-	-

ЛЬЮ

Ruijie# show rmon history

Entry : 1

Data source : Gi1/1

Buckets requested : 65535

Buckets granted : 10

Interval : 1

Owner : zhangsan

Sample : 198

Interval start : 0d:0h:15m:0s

DropEvents : 0

Octets : 67988

Pkts : 726

BroadcastPkts : 502

MulticastPkts : 189

CRCAlignErrors : 0

UndersizePkts : 0

OversizePkts : 0

Fragments : 0

Jabbers : 0

Collisions : 0

Utilization : 0

३	
rmon collection history index [**owner** ownername] [**buckets** bucket-number] [**interval** seconds]	╕ 8

/।

३	⁄	
	-	-

TCP

Foreign Address	б ㄴ Â ł “.” ł ㄴ Â “2002::2.23” б “192.168.195.212.23” “23” ㄴ Â
PMTU	PMTU

ৡ

ৡ	
Ip tcp path-mtu-discovery	TCP PMTU ╖

ㄴ ㄴ Â

ৡ

ㄴ	
10.4	ৡ

a˘ ˘ Лъ è WCMP ⁸ б л ’
⁸ ˘ ⁸ a Â
⁸ ˘ ‡ a Â
˘ ˘ ‡ Â
Лъ ˘ Ю ѝ ˆ ip route 0.0.0.0 0.0.0.0 Fastethernet 0/0˜ Â ˘
Fastethernet 0/0 ˘ ў ARP ˘ . CPU Â Лъ a Лъ Â

ЛъЮ ˘ ╗ 172.16.100.0/24 ˘ Ю ѝ 192.168.12.1˘ ѝ 115 Â
ip route 172.16.100.0 255.255.255.0 192.168.12.1 115
˘ ˘ л ў è Â ˘ ÂЛъЮ ˘ 172.16.100.0/24 л ў fastethernet 0/0 Â
Ruijie(config)# ip route 172.16.100.0 255.255.255.0 fastethernet 0/0 192.168.12.1

ҳ

ҳ	
show ip route	IP Â

л ҳ у Э a Â

ҳ

л	
-	-

30.1.2 ip routing

RGOS ˚ IP ╗ ˘ Ю ҳ Â ҳ no л Лъ IP ╗ Â

ip routing

no ip routing

-	-

IP Â

ৡ	
-	-

ﾉ ৡ ɣ Э a

ৡ	ﾉ	
	-	-

30.1.4 ipv6 route

ipv6 ˘ ৡ ipv6 route Â ৡ no

no Â 2 2

ЛЬЮ ˘ ╗ 2001::/64 ˘ Ю ѝ 2002::2

ѝ 115 Â

ipv6 route 2001::/64 2002::2 115

˘ ˘ /ǀ ÿ è

Â ˘ Â ЛЬЮ ˘ 1::/64

/ǀ ÿ fastethernet 0/0

ৡ à à à à Â

ৡ Л Лъ ˘ Â

1ˈ ЛъЮ ѝ **show ip rout**e ৡ ˈ

Ruijie# show ip rout e

Codes: C - connected, S - static, R - RIP, B - BGP

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

i - IS-IS,su - IS-IS summary,L1 - IS-IS level-1,L2 - IS-IS level-2

ia - IS-IS inter area, * - candidate default

Gateway of last resort is no set

S 20.0.0.0/8 is directly connected, VLAN 1

S 22.0.0.0/8 [1/0] via 20.0.0.1

O E2 30.0.0.0/8 [110/20] via 192.1.1.1, 00:00:06, VLAN 1

R 40.0.0.0/8 [120/20] via 192.1.1.2, 00:00:23, VLAN 1

B 50.0.0.0/8 [120/0] via 192.1.1.3, 00:00:41

C 192.1.1.0/24 is directly connected, VLAN 1

C 192.1.1.254/32 is local host.

show ip route ৡ Юˈ

	Â Л Ч ѝˈ
Cˈ	ˈ
Sˈ	ˈ

E2	Â Л Ч ѝ' E1' OSPF ˝ , E2' OSPF ˇ , N1' OSPF NSSA 1' N2' OSPF NSSA 2' IA' OSPF ' su' IS-IS ' L1' IS-IS 1 ' L2' IS-IS 2 ' ia' IS-IS Â
20.0.0.0/8	
[1/0]	˚
Via 20.0.0.1	Ю IP
00:00:06	

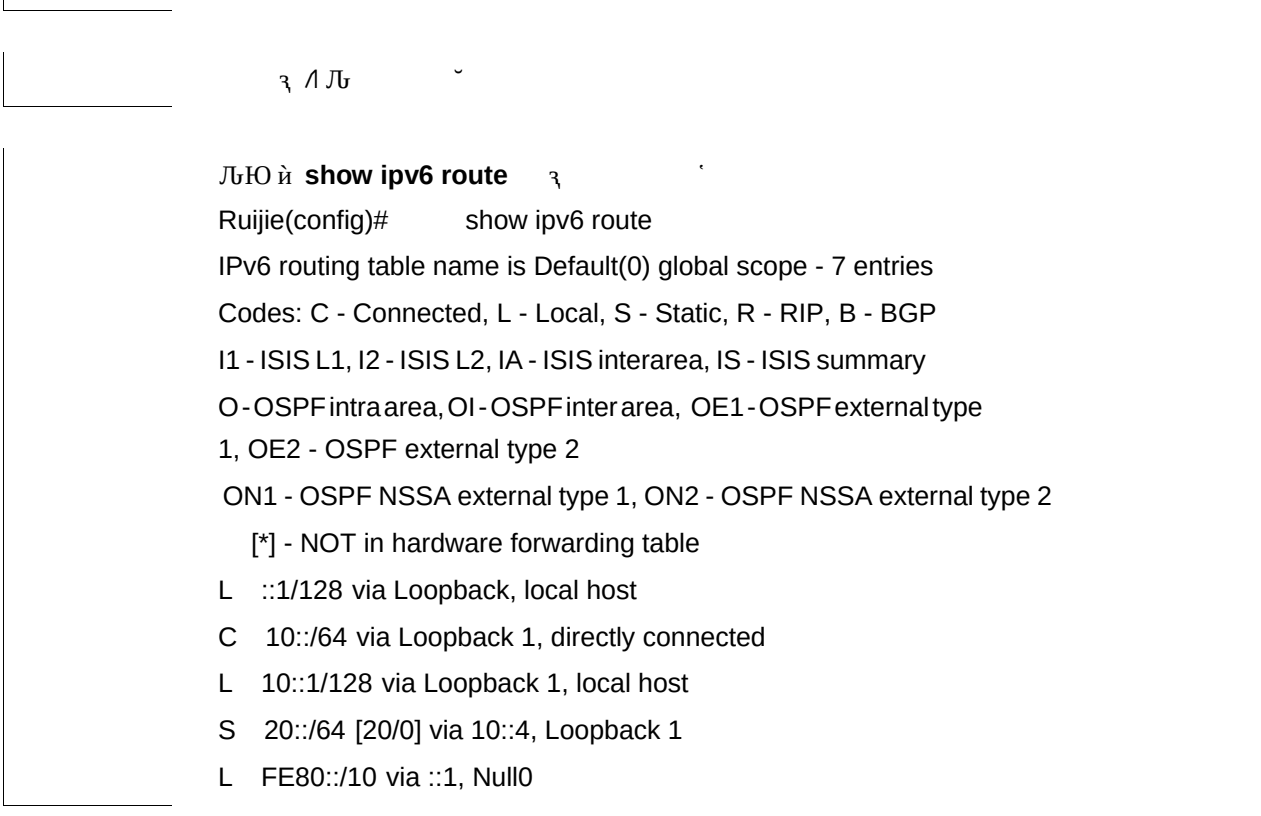
-	-

30.2.2 show ipv6 route

IPv6 **show ipv6 route**

show ipv6 route [[network/prefix-length | **summary** | **protocol**]]

network/prefix-length	
summary	ipv6
protocol	**connected**, **static** **bgp**, **isis**, **ospf**, **rip**



31 IPv6 a—

31.1 ₫a—

31.1.1 ping ipv6

३ IPV6 Â

ping ipv6 [ipv6-address]

ipv6-addres	s

३

३ a ‡ ˘ Л Лъ é Â

Ruijie# ping ipv6 fec0 ::1

ping л Нж Ю

!	
.	
U	ў
R	
F	
A	
D	Down IPV6 ╖ (ά)
?	

३	
-	-

ʎ

ʒ

ʎ	
-	-

31.1.2 ipv6 address

ѝ IPV6 , ʒ no Â

ipv6 address ipv6-address/prefix-length

ipv6 address ipv6-prefix/prefix-length **eui-64**

ipv6 address prefix-name sub-bits/prefix-length [**eui-64**]

no ipv6 address

no ipv6 address ipv6-address/prefix-length

no ipv6 address ipv6-prefix/prefix-length **eui-64**

no ipv6 address prefix-name sub-bits/prefix-length [**eui-64**]

ipv6-address	IPV6 ˘ RFC4291 ЬЖ ˘ ʎ ˘ . 16 ˘ Ώ ⁸ .
ipv6-prefix	IPV6 ˘ RFC4291 ЬЖ ˘ ʎ ˘ . 16 ˘ Ώ ⁸ .
prefix-length	IPV6 IPV6 ʒ ˦ Â
prefix-name	¨ Â Â
sub-bits	б ў Â б Â RFC4291 ʎ Â
eui-64	IPV6 64 ID Â

ʒ

IPV6 … з ѝ UP ж ѝ ╟
Â

IPv6 ≠ Л Љ ⁸ Â ѐ ⁸ IPv6 = ľ Ł + ľ Ł + ľ ў Ł Â Л Љ **ipv6 general-prefix** ҙ ˘ ≠ Л DHCPv6 PD˜ ˜ ╖ ˝ ˆ ľ DHCPv6 Ł ˜ Â ľ Ł + ľ ў Ł ҙ sub-bits/prefix-length Â

no ipv6 address a έ ˘ ж Â

no ipv6 address ipv6-prefix/prefix-length **eui-64** Л Љ ҙ **ipv6 address** ipv6-prefix/prefix-length **eui-64** Â

1˙ Ю IPv6 Â

Ruijie(config-if)#

ʌ ʅ ˘ ʌ Ю ʌ Â

ʌ Л Â

IPv6 Э Â

Ю ʌ my-prefix Â

Ruijie(config)# ipv6 general-prefix my-prefix 2001:1111:2222::/48

३	

ipv6 address prefix-name

sub-bits/prefix-length

Ru58 W* n ET 66.<09B1 66.85.36 625.5203 Tm ( )Tj EMC ET73 Tm [<0

-	-

ʌ

३	ʌ	
	-	-

31.1.7 ipv6 nd dad attempts

३ Э ѝ IPV6 ă (NS)
Â ३ no Â

ipv6 nd dad attempts value

no ipv6 nd dad attempts

value	(NS) Â ѝ 0 ѝ Э Ipv6 ╟ ă Â : 0-600 Â

1

३

Э IPV6 ˘ ѝ ╟ ă
˘ ”tentative”( ) Â ă ˘

३	ʌ	
	-	-

31.1.8 ipv6 nd reachable-time

३ Э NDP ╟ ʌ ɨ˘ ѝ ʌ
˘ ३ no Â

ipv6 nd reachable-time milliseconds

no ipv6 nd reachable-time

milliseconds	ѝ ʌ ˘ Л℧ ѝ æ˘ ˙ 0-3600000

Ѽ (RA) ѝ 0( )˘ ѝ
ѝ ʌ ѝ 30000ms(30)

३

a ʌ ˘ ʌЛ℧
˘ à Â a
Â
Ѽ (RA) ˘ ˚ ≠ Â
ѝ 0 ˘ Â

Ruijie(conifg-if)# ipv6 nd reachable-time 1000000

३ ˘ ३ no ∧ Л Ъ Â

ipv6 neighbor ipv6-address interface-id hardware-address

no ipv6 neighbor ipv6-address interface-id

ipv6-address	RFC4291
interface-id	

a

Ruijie(config)# ipv6 route 2001::/64 vlan 1 2005 ::1

show ipv6 route	IPV6

-	-

31.1.12 ipv6 source-route

IPv6 no IPv6

ipv6 source-route

no ipv6 source-route

Ruijie# clear ipv6 neighbors

३	
ipv6 neighbor	
show ipv6 neighbors	

⁄	
-	-

31.2.2 show ipv6 general-prefix

˘ **show ipv6 general-prefix** ३ Â ३ Ю

show ipv6 general-prefix

-	-

show ipv6 general-prefix ३ Â ˘ б DHCPv6 ˘ Â

˘ Ю

Ruijie# show ipv6 general-prefix

There is 1 general prefix.

IPv6 general prefix my-prefix, acquired via Manual configuration

ʌ ʌ Â

ʌ	
RGOS10.4	ৡ ÿ RGOS10.4 Â

31.2.3 show ipv6 interface

IPV6 Â

show ipv6 interface [interface-id] [**ra-info**]

interface-id	ˆ Л ä aggregateport ä SVI ˜
ra-info	Э RA Â

ৡ

ৡ ʌ Л IPV6 Э ä ND Л Â

```
Ruijie#  show ipv6 interface vlan  1
Interface vlan 1 is Up, ifindex: 2001
address(es):
jC  ETTj Ep0>]T:]T:]T:]T:]T:]1
INET6: fe80::200:ff:fe00:1 , subnet is fe80::/64
INET6: 2001::1 , subnet is 2001::/64 [TENTATIVE]
Joined group address(es):
ff01:1::1
ff02:1::1
ff02:1::2
ff02:1::1:ff00:1
MTU is 1500 bytes
ICMP error messages limited to one every 10 milliseconds
ICMP redirects are enabled
ND DAD is enabled, number of DAD attemptp0>1
ND reachable time is 30000 milliseconds
ND advertised reachable time is 0 milliseconds
```

ND retransmit interval is 1000 milliseconds

ND advertised retransmit interval is 0 milliseconds

ND router advertisements are sent every 200 seconds<240--160>

ND router advertisements live for 1800 seconds

Э Л Љ INET6: 2001::1 , subnet is 2001::/64

[TENTATIVE] ˘ ‘ INET6 ł [ ] Æ Ђ Ю

ANYCAST	ѝ Â
TENTATIVE	ѝ ў (DAD)˘ Â
DUPLICATED	Â
DEPRECATED	˘ Л ѝ a Â
NODAD	a ў Â
AUTOIFID	╟ ˘ EUI-64 Â
PRE	╟ Â
GEN	Â

Ruijie# show ipv6 interfaci3wian 1 ra-info

wian 1: DOWN

RA timer is stopped

waits: 0, initcount: 3

statistics: RA(out/in/inconsistent): 4/0/0, RS(input): 0

Link-layer address: 00:00:00:00:00:01

Physical MTU: 1500

ND router advertisements live for 1800 seconds

ND router advertisements are sent every 200 seconds<240--160>

Flags: !M!O, Adv MTU: 1500

ND advertised reachable time is 0 milliseconds

ND advertised retransmit time is 0 milliseconds

ND advertised CurHopLimit is 64

Prefixes: (total: 1)

fec0:1:1:1::/64(Def,Auto,vltime:2592000,pltime:604800,flags:LA)

ra-info Ђ

RA timer is stopped (on)	Ѽ Â

waits	ѝ è Â
initcount	RA ╟ Ѽ Â
RA(out/in/inconsistent)	Out Ѽ Â in Ѽ Â inconsistent Ѽ Ѽ a Â
RS(input)	Â
Link-layer address	Â
Physical MTU	MTU Â
!M | M	!M Ѽ Â managed-config-flag Æ Э Â M: б Э Л Â
!O | O	!O Ѽ Â other-config-flag Æ Э Â O б Э Л Â

ra-info (Prefix)

total	Â
fec0:1:1:1::/64	é Â
Def	Â
Auto | CFG	Auto IPV6 ╟ , CFG Â
!Adv	a Ѽ Â
vltime	( )Â
pltime	( )Â
L | !L	L on-link Æ Э Â !L б Э Л Â
A | !A	A auto-config Æ Э, !A б Э Л Â

३	
-	-

Á

¾

Á	
-	-

31.2.4 show ipv6 neighbors

IPV6 Â

show ipv6 neighbors { [**verbose**] [interface-id] [ipv6-address] | [**static**] }

verbose	
interface-id	Э
ipv6-addres	
static	

¾

1' SVI 1 Э

```
Ruijie# show ipv6 neighbors vlan 1
IPv6 Address Linklayer Addr Interface
fa::1 00d0.0000.0002 vlan 1
fe80::200:ff:fe00:2 00d0.0000.0002 vlan 1
```

2'

```
Ruijie# show ipv6 neighbors verbose
IPv6 Address Linklayer Addr Interface
2001::1 00d0.f800.0001 vlan 1
    State: Reach/H Age: - asked: 0
fe80::200:ff:fe00:1 00d0.f800.0001 vlan 1
    State: Reach/H Age: - asked: 0
```

IPv6 Address	IPV6

Linklayer Addr	Mac ˘ ‡ incomplete
Interface	

˙ state/H(R)

STATE Ю˙

INCMP(Incomplete)—

˘ (NS)

(NA) Â

REACH(Reachable) — ÿ

˘ a ╟

Â STALE — ѝ Л

˘ a ╟

Э˘ ╟ NUD

(Neighbor Unreachability Detection) Â

DELAY— STALE

˘ STALE ѝ DELAY ˘

IPv6 Address	IPV6

Ruijie# show ipv6 route
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
I1 - ISIS L1, I2 - ISIS L2, IA - IIS interarea
L ::1/128
via ::1, loopback 0
C fa::/64
via ::, vlan 1
L fa::1/128
via ::, loopback 0
C 2001::/64
via ::, vlan 2
L 2001::1/128
via ::, loopback 0
L fe80::/10
via ::1, Null0
C fe80::/64
via ::, vlan 1
L fe80::200:ff:fe00:1/128
via ::, loopback 0
C fe80::/64
via ::, vlan 2

ৡ	
ipv6 route	

ʎ

ʎ	
-	-

31.2.6 show ipv6 router

IPv6 ˘ ‘Ω Â ‘Ω
˘ show ipv6 router ৡ Â è Ю‘

show ipv6 router [interface-type interface-number]

interface-type interface-number	/ Â Ω Â

¾

show ipv6 router Ω Â ˘ ‡
Ω Â

IPv6 ˘ Ю

```
Ruijie#  show ipv6 router
Router FE80::2D0:F8FF:FEC1:C6E1 on VLAN 2, last update 62 sec
 Hops 64, Lifetime 1800 sec, ManagedFlag=0, OtherFlag=0, MTU=1500
 Preference=MEDIUM
 Reachable time 0 msec, Retransmit time 0 msec
 Prefix 6001:3::/64 onlink autoconfig
  Valid lifetime 2592000 sec, preferred lifetime 604800 sec
 Prefix 6001:2::/64 onlink autoconfig
  Valid lifetime 2592000 sec, preferred lifetime 604800 sec
```

¾

¾	
-	-

/ / Â

¾

/	
RGOS10.4	¾ ÿ RGOS10.4 Â

32 IGMP a—

32.1 ā—

32.1.1 ip igmp access-group

३ Э 8 Â ३ no

-

32.1.3 ip igmp immediate-leave group-list

IGMPversion2 IGMPversion3 no

ip igmp immediate-leave group-list access-list

no ip igmp immediate-leave group-list

access-list	

-

IGMP IGMP IGMP IGMP

```
Ruijie# configure terminal
Ruijie(config)# access-list 1 permit 225.192.20.0 0.0.0.255
Ruijie(config)# interface ethernet 0/1
Ruijie(config-if)# ip igmp immediate-leave group-list 1
Ruijie(config-if)# exit
```

ip igmp last-member-query-interval	-

३	८	
	-	-

32.1.4 ip igmp last-member-query-count

last-member-query-count leave ɨ˘ Â
३ **last-member-query-count** Â no ३ Â

ip igmp last-member-query-count number

no ip igmp last-member-query-count

	îEâ -co 0 07re1 Tw0618791B5CD4C

ip igmp last-member-query-interval interval

no ip igmp last-member-query-interval

interval	ѝ <1-255>˘ æ ѝ 0.1s

1s

ৡ

IGMPv2 ˘ **ip igmp last-member-query-count**

╗ Э ˘ ˘

Â

ЛЬЮ 20 ˙

Ruijie# configure terminal

Ruijie(config)# interface eth 0

Ruijie(config-if)# ip igmp last-member-query-interval 200

except	ˆ Л ˜ access-list а б ˘ а Н limit ⁸ Â
access-list	ˆ Л ˜ ¨ Â

й 1024 Â

३ Â

३ IGMP ⁸˘ ⁸ ĭ а
IGMP ˘ а Â

й 65536

ҳ

ҳ IGMP 8˘ 8 ʃ
a IGMP ˘ a Â
ҳ Л Љ ˘ Л Љ ˘
Â

ЉЮ 8 й 300̈
Ruijie ˆ config ˜ # ip igmp limit 300

ҳ

ҳ	
-	-

Л

ҳ

Л	
-	-

32.1.8 ip igmp mroute-proxy

ҳ ˘ Л Љ è Э Â

ip igmp mroute-proxy interfname

no ip igmp mroute-proxy

interfname	Э ¨

Ћ Â

ҳ Â

Э й proxy-service ѣ˘ Л Љ è
gmp Â

mroute-proxy

Ruijie(config-if)# ip igmp mroute-proxy fa 0/1

٦	
-	-

٨	
-	-

32.1.9 ip igmp proxy-service

٦ ╟ Ю mroute-proxy ┺╖ Â Э ٦˘
й mroute-proxy Э ˘ Ю ˘ Ю Э Â

ip igmp proxy-service

no ip igmp proxy-service

-	-

a й proxy-service Â

Â

٦ ٨ ⁸˘ ٨ 32 Â IGMP Proxy
╖ ٨ Â ł˘
proxy-service ˘ Âproxy-service
ÿ mroute-proxy Â ˘
proxy-service˘ ٨ ÿ й˘ a й .
switchport ˘ Ю **ip igmp**
mroute-proxy interface ٦ ╟ Â

й proxy-service
Ruijie(config-if)# ip igmp proxy-service

⁄

३	⁄	
	-	-

32.1.10 ip igmp query-interval

३ ˘ ⁄ Л ъ no ѝ Â

ip igmp query-interval seconds

no ip igmp query-interval

seconds	Â æ s˘ 1 18000

125 Â

३

¾ ˘ Л Ъ no ѝ Â

ip igmp query-max-response-time seconds

no ip igmp query-max-response-time

seconds	˘ Æ š˜ 1 25

10s

¾ Â

¾ Л IGMPv2 Â ¾ 8 Â

1˙ Ethernet 0 ˘ ѝ 20s Â
Ruijie(config-if)# ip igmp query-max-response-time 20
2˙ Ethernet 0 ˘ ѝ Â
Ruijie(config-if)# no ip igmp query-max-response-time

¾	
-	-

Л

Л	
-	-

255s

ҳ

ҳ IGMPv2 Â Ю ч **ip igmp**
query-interval ˘ Ruijie Ю ѝ 255s Â ˘
˘ ѝ Â

1

ЛЬЮ ٨ ѝ 3ʹ

```
Ruijie#  configure terminal
Ruijie(config)#  interface ethernet  0
Ruijie(config-if)#  ip igmp robustness-variable  3
```

٩

٩	
-	-

٨

٩

٨	
-	-

32.1.14 ip igmp ssm-map enable

٩ Ю ╟ **igmp ssm-map** ╖ ˘ ٩ ѝ'

ip igmp ssm-map enable

no ip igmp ssm-map enable

-	-

╖ a ╟ Â

٩

x

४	
-	-

32.1.15 ip igmp ssm-map static

३ Ю ssm-map ˘ ३ ѝ'

ip igmp ssm-map static access-list a.b.c.d

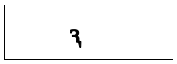
no ip igmp ssm-map static access-list a.b.c.d

access-list	Acl ४ ѝ <1-99> |<1300-1999> |WORD
a.b.c.d	

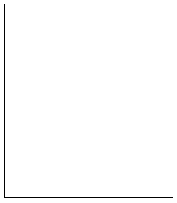
३

३ б **ip igmp ssm-map enable**

no ip igmp static-group group-address



igmp ∧˘ ɨ˘ igmp ╟ Â



ЛЬЮ

≠ ╗ ˘ ≠ Â ÿ IGMP ˘ Л

Лъ a **clear ip igmp group** ৡ Â

Ruijie# clear ip igmp group

ৡ	⁄	
	-	-

32.2.3 show ip igmp groups

ৡ б ÿ IGMP ¯ Â

show ip igmp groups [group-address | interface-type interface-number] [detail]

group-address	32 Æ IP D ˘ 8 Æ ˘ Л৩ ⁸ ˘ Â
interface-type	Â
interface-number	⁄ Â
detail	Â
	Â

ৡ Â

ৡ a à Э Â
Â

1¯ Ю ‘
Ruijie# show ip igmp groups
IGMP Connected Group Membership
Group Address Interface Uptime Expires Last Reporter
224.0.1.1 eth2 00:00:09 00:04:17 10.10.0.82
224.0.1.24 eth2 00:00:06 00:04:14 10.10.0.84
224.0.1.40 eth2 00:00:09 00:04:15 10.10.0.91
224.0.1.60 eth2 00:00:05 00:04:15 10.10.0.7
239.255.255.250 eth2 00:00:12 00:04:15 10.10.0.228
239.255.255.254 eth2 00:00:08 00:04:13 10.10.0.84
2¯ Ю ‘
Ruijie# show ip igmp groups 224.1.1.1 detail
Interface: eth1
Group: 224.1.1.1

Uptime: 00:00:42
Group mode: Include
Last reporter: 192.168.50.111
TIB-A Count: 2
TIB-B Count: 0
Group source list: (R - Remote, M - SSM Mapping)
Source Address Uptime v3 Exp Fwd Flags
192.168.55.55 00:00:42 00:03:38 Yes R
192.168.55.66 00:00:42 00:03:38 Yes R

३	
-	-

⁄	
-	-

32.2.4 show ip igmp interface

३ Â

show ip igmp interface [interface-type interface-number]

interface-type	
interface-number	⁄

३

Ю й
Ruijie# show ip igmp interface
Interface vlan 1(Index 4294967295)

SSM Mapping : Enabled

Database : Static mappings configured

2' 233.3.3.3

Ruijie# show ip igmp ssm-mapping 233.3.3.3

Group address: 233.3.3.3

Database : Static

Source list : 192.3.3.3

: 3.3.3.3

३

३	
-	-

/

३

/	
-	-

-	-

33.1.2 clear ipv6 mld interface

ipv6 mld access-group word

no ipv6 mld access-group

Word	IPv6 ACL

Э ACL deny report MLDv2

a	ACL MLD report S1,S2,S3…Sn,G (0,G) ACL ACL (0, G) S1,S2,S3…Sn,G

Eth0/1 report acl

```
Ruijie(config)#          ipv6 access-list          acl
Ruijie(config-ipv6-acl)#          permit ipv6       ::/64 ff66::100/64
Ruijie(config-ipv6-acl)#          permit ipv6       2222::3333/64 ff66::100/64
Ruijie(config)#
```

Э ∕ı ў Ю ╖ Â ३ **no** ∧ ╖ Â

ipv6 mld immediate-leave group-list word

no ipv6 mld immediate-leave group-list

३ é ў ѝ ╕ ˘ ў ╠
Л Љ ˉ ˘ ╕ Â ३ no
Ч ╕ Â

Ipv6 mld join-group group-address

no ipv6 mld join-group group-address

group-address	ipv6

Ю ╠ ╕ Â

३

३ ╠ MLD ў ѝ ╕ Â Л Љ ў ╠ ˘ ≠ Л Љ
Â

Э ╕ ३ Â
╕ Љ 0xFF*1 à 0xFF3* ˘ a Â Љ 0xFF*2
˘ a Â

ЉЮ ╕ ў
Ruijie# configure terminal
Ruijie(config)# interface fast 0/1
Ruijie(config-if)# ipv6 mld join-group ff55::100

३	
-	-

Л

Л	
-	-

33.1.6 ipv6 mld last-member-query-count

last-member-query-count ╠ MLD done ѣ˘
Â ३ **last-member-query-count** Â **no** ३ Â

no ipv6 mld last-member-query-count

number	ł , ѝ <2-7>

last member query count ѝ 2Â

३ Â

MLD ˘ Ÿ ˘ Э

MLD Â ѝ **mld last-member-query-count**

╗ Э Â

ł

MLD

MLD

mld last-member-query-count

2

Ruijie# configure terminal

Ruijie(config)# interface fa 0/1

Ruijie(config-if)# ipv6 mld last-member-query-interval 200

ipv6 mld immediate-leave	-

-	-

33.1.8 ipv6 mld limit (

MLD

no

ipv6 mld limit number [**except** access-list]

no ipv6 mld limit

number	MLD
except access-list	

MLD

report

≠ except ˘ ‡ access-list ˘ a ∧
8˘ 8 Ю Л Љ ¯ .
३ ≠ Л Љ ˘ Л Љ ˘
8 ˘ Љ ¨I Â

ЉЮ 8 ѝ 300
Ruijie(config-if)# ipv6 mld limit 300
ЉЮ 8 ѝ 300 acl Ÿ Л Љ ¯ ˘ a ∧ 8 ‘
Ruijie(config-if)# ipv6 mld limit 300 except acl

३

३	
-	-

Л

३

Л	
-	-

33.1.9 ipv6 mld limit (æ')

३ MLD ¯ Â ∧ ˘ no Â

ipv6 mld limit number [**except** word]

no ipv6 mld limit number [**except** word]

number	MLD ¯ ˘ 1-65536 Â
except	^ Л ~
word	^ Л ~ ipv6

a ˘ a Â

३

३ ¯ 8˘ 8 ‡
a MLD ˘ a Â except ˘ a ∧ 8 Â

ЛЬЮ ⁸ ѝ 300ˇ

Ruijie ˆ config ˜ # ipv6 mld limit 300

ЛЬЮ ⁸ ѝ 300ˇ acl Ÿ Л Лъ ˜ ˘ a ∧ ⁸ ‘

Ruijie(config)# ipv6 mld limit 300

ʌ	
-	-

6 mld proxy-service

╟ Ю mroute-proxy ┗╖ Â Э ҳ˘
route-proxy Э ˘ Ю ˘ Ю Э Â

proxy-service

nld proxy-service

-	-

а ѝ proxy-service

ҳ ʌ ⁸˘ ʌ 32 Â MLD Proxy
╖ ϰ Â ł˘
proxy-service ˘ Âproxy-service
ÿ mroute-proxy Â proxy-service˘
ʌ ѐ ў ѝ˘ а ѐ ѝ.
switchport ˘ Ю **ipv6 mld mroute-proxy**
interface ҳ ╟ Â

ѝ proxy-service
Ruijie(config-if)# ipv6 mld proxy-service

-	-

ʒ

ʒ 8 ł˘ ў Â ł˘
ӱ ў ˘ MLD ӱ Â ʒ˘ Л Л Ъ
8 ў Â

gigabitEthernet 0/1 ˘ ł ѝ 20s Â
Ruijie(config-if)# ipv6 mld query-max-response-time 20
gigabitEthernet 0/1 ˘ ł ѝ Â
Ruijie(config-if)# no ipv6 mld query-max-response-time

ʒ

ʒ	
-	-

Л

ʒ

Л	
-	-

33.1.14 ipv6 mld querier-timeout

ʒ ˘ Л Л Ъ no è
ѝ .

ipv6 mld querier-timeout seconds

no ipv6 mld querier-timeout

seconds	Â æ ѝ ˘ 60 300 Â

Ю ˘ è 200s Â

Ruijie(config-if)# ipv6 mld querier-timeout 200

Ethernet 0 ˘ ѝ Â

Ruijie(config-if)# no ipv6 mld querier-timeout

३

३	
-	-

ʌ

३

ʌ	
-	-

33.1.15 - ḿ

-	-

33.1.16 ipv6 mld ssm-map enable

Ipv6 mld ssm-map enable

no ipv6 mld ssm-map enable

-	-

no ipv6 mld ssm-map static access-list X:X:X:X::X

access-list	ipv6 ¨ ACL
X:X:X:X::X	

ৡ б **ipv6 mld ssm-map enable** ˘ ৡ ł˘ mldv2 ЛЬЮ Э Â

ACL¨ ù te Э 4444::1234 Â ৡ ù' Ruijie(config)# ipv6 mld ssm-map static te 4444::1234

ৡ	
-	-

ʌ	
-	-

33.1.18 ipv6 mld static-group

ৡ ╕ ˘ ╕ Â ৡ no ʌ ╕ Â

ipv6 mld static-group group-address

no ipv6 mld static-group group-address

group-address	ipv6

Ю ╟ ╕ Â

३ Э ╗ Â б join-group ↖ a
╗ ˘ ╗ Â
Э ╗ ३ Â a clear ३ , Л
no ipv6 mld static-group Â

ЛЬЮ ╗ ў
Ruijie# configure terminal
Ruijie(config)# interface fast 0/1
Ruijie(config-if)# ipv6 mld static-group ff55::3

३

३	
-	-

Л

३

Л	
-	-

33.1.19 ipv6 mld version

३ MLD Л Â ˘ no Â

ipv6 mld version {**1** | **2** }

no ipv6 mld version

{**1**	**2**}	MLD Л , й <1-2>

Ю Л й 2.

३

३ MLD Л ⁸ Â

ЛЬЮ Л й 1˙
Ruijie# configure terminal
Ruijie(config)# interface ethernet 0/1

Ruijie(config-if)# ipv6 mld version 1

३	
-	-

⁄	
-	-

33.2 ¡—

33.2.1 show ipv6 mld groups

३ б ÿ MLD ¯ Â

show ipv6 mld groups [group-address | interface-type interface-number] [**detail**]

group-address	128 Æ IPv6
interface-type	
interface-number	⁄
detail	

३ Â

३ a ã Э

2' Ю ‘

Ruijie# show ipv6 mld groups detail

Interface: VLAN 1

Group: ff66::1

Uptime: 00:10:26

Group mode: Exclude (Expires: 00:02:47)

Last reporter: fe80::2d0:f8ff:fe22:3378

Source list is empty

३	
-	-

⁄	
-	-

33.2.2 show ipv6 mld interface

३ Â

show ipv6 mld interface [interface-type interface-number]

interface-type	
interface-number	⁄

३

Ю ѝ ‘

Ruijie# show ipv6 mld interface

Interface VLAN 2 (Index 4098)

MLD Enabled, Inactive, Version 2 (default)

Ruijie# show ipv6 mld ssm-mapping ff66::1234
Group address: ff66::1234
Database : Static
Source list : 5555::1234
Ruijie# show ipv6 mld ssm-mapping
SSM Mapping : Enabled
Database : Static mappings configured

-	-

-	-

34 MLD Snooping a—

34.1 ª—

34.1.1 ipv6 mld profile

MLD profile ⁸ Â profile ˘ ″I
Ю profile Â ٪ ٪˘ profile-number˘ mld
profile Â

ipv6 mld profile profile-number

no ipv6 mld profile profile-number

profile-number	profile ˄˘ 1-1024

Â

٪ Â

MLD Profiles Э ˘ ľ SVGL Ł à ľ
Ł à ľ MLD Filtering Ł ℸ Â ˘ ѝ profile
˘ profile ℸ Â

Ю … ˄ ѝ 1 profile profile Â
Ruijie(config)# ipv6 mld profile 1
Ruijie(config-profile)#

٪	
range	profile
deny	profile ѝ ѝ deny
permit	profile ѝ ѝ permit

˄

ৡ	ʌ	
	10.4	

34.1.2 range

profile ˘ profile ˘ profile ЮO
ৡ range˘ ʌ Л ъ ˘ ≠ ʌ Л ъ Â
ৡ no Â

range low-ipv6-address [high-ipv6-address]

no range low-ipv6-address [high-ipv6-address]

low-ipv6-address	æ
high-ipv6-address]	

34.1.3 deny

profile ˘ profile Ю ٩ deny Â

deny

profile deny Â

٩ profile Â

″I profile Ю range ٩ Â

Ю … FF77::100 profile :

```
Ruijie(config)# ipv6 mld profile 1
Ruijie(config-profile)# range FF77::100
Ruijie(config-profile)# deny
```

٩	
ipv6 mld profile	… profile
range	
permit	profile ѝ ѝ permit

٨

٨	
10.4	

34.1.4 permit

profile ˘ profile Ю ٩ permit Â

permit

profile deny Â	
profile Â ৡ	
″I profile Ю range ৡ Â	
Ю …	

٩

Ю VLAN Â ў л б VLAN
VLAN ў л
VLAN Â

Ю Э mld snooping ivgl

Ruijie(config)# ipv6 mld snooping ivgl

٩	
ipv6 mld snooping svgl	mld snooping svgl
ipv6 mld snooping ivgl-svgl	mld snooping

л

л	
10.4	

Ю SVGL ѝ porfile 1

Ruijie(config)# ipv6 mld snooping svgl profile 1

ipv6 mld snooping ivgl	mld snooping ivgl
ipv6 mld snooping ivgl-svgl	mld snooping

10.4

34.1.7 ipv6 mld snooping dyn-mr-aging-time

ipv6 mld snooping dyn-mr-aging-time time
no ipv6 mld snooping dyn-mr-aging-time

ipv6 mld snooping dyn-mr-aging-time time

no ipv6 mld snooping dyn-mr-aging-time

time	ѝ 1-3600

300s

MLD IPv6 PIM Hello

Ю ѝ 500s

Ruijie(config)# **ipv6 mld snooping dyn-mr-aging-time** 500

ʌ

ৡ

ʌ	
10.4	

34.1.8 ipv6 mld snooping query-max-response-time

ipv6 mld snooping query-max-response-time time MLD

˘ **no ipv6 mld snooping query-max-response-time**

Â

ipv6 mld snooping query-max-response-time time

no ipv6 mld snooping query-max-response-time

time	MLD ˘ ʌ ѝ 1-65535˜ Æ ѝ

10s Â

ৡ

MLD ѣ˘ Ɣ ˘

ѝ ˘ ѝ 0 ˘ ‡ ѝ a Ѧ

˘ Ɣ ÿ mld snooping Â

MLD ѣ˘ Ɣ ╟

˘ ѝ ˘ ѝ 0 ˘ ‡ ѝ a Ѧ

˘ Ɣ ÿ mld snooping Â

MLD ˘ a Â

Ю MLD ѝ 15s˙

Ruijie(config)# **ipv6 mld snooping query-max-response-time** 15

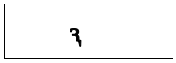
ৡ

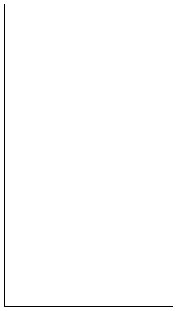
ৡ	

ʌ

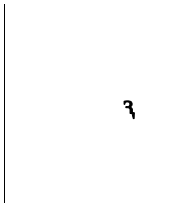
ৡ **QÐ̨X(M(>ÐĈ**

vid	vlan id 1-4094

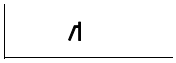


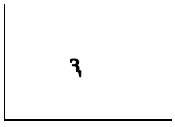


Ruijie(config)# ipv6 mld snooping vlan 1 mrouter learn



ipv6 mld snooping vlan mrouter interface	





10.4	

34.1.11 ipv6 mld snooping vlan mrouter interface

ipv6 mld snooping vlan mrouter interface no

ipv6 mld snooping vlan vid **mrouter interface** interface-id

no ipv6 mld snooping vlan vid **mrouter interface** interface-id

vid	vlan id 1-4094

interface-id	⁄

ҳ

Л Л Ъ й ѝ Â

Ю Э ѝ й FF88::1

Ruijie(config)# ipv6 mld snooping vlan 1 static FF88::1 interface fastEthernet 0/1

ҳ	
ipv6 mld snooping vlan mrouter interface	

Л

Л	
10.4	

34.1.13 ipv6 mld snooping fast-leave enable

mld snooping fast-leave ҳ **ipv6 mld snooping fast-leave enable** Â ҳ no mld snooping fast-leave Â

ipv6 mld snooping fast-leave enable

no ipv6 mld snooping fast-leave enable

10.4	

34.1.15 ipv6 mld source-check port

ipv6 mld snooping source-check port

no ipv6 mld snooping source-check port

mld snooping MLD mld snooping mld snooping

Ruijie(config)# ipv6 mld snooping source-check port

⁄	
10.4	

34.1.16 ipv6 mld snooping filter

⁄ ˘ Ю ३
profile Â ३ no profile Â

ipv6 mld snooping filter profile-number

no ipv6 mld snooping filter profile-number

profile-num	profile ⁄

३

⁄ Л MLD Profile Ю MLD Report ˘ ‡
Y ╗ MLD Profile Â
˘ ‡ ╗ ˘ ł ł Â ″I … profile ł filter
Â

Ю ″I 0/1 Э profile 1

Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ipv6 mld snooping filter 1

३	
ipv6 mld profile	… profile

⁄

⁄	

╠ ╗ , ٪ **ipv6 mld snooping max-groups** ٪ Â ٪ no ٨ ⁸ Â

ipv6 mld snooping max-groups number

no ipv6 mld snooping max-groups

Number	ѝ 0 – 1024

1024

٪

˘ ‡ Э˘ ˘ a Ѧ

ѣ MLD Report Â

Ю ”I 0/1 Э /ı 100 ˙

Ruijie(config)# interface fastEthernet 0/1

Ruijie(config-if)# ipv6 mld snooping max-group 100

٪	
ipv6 mld snooping filter	

/ı

३

Â

Ruijie# clear ipv6 mld snooping gda-table

३

/।

/।
10.4

34.1.19 debug mld-snp

mld , ३ **debug mld-snp** ३ Â

debug mld-snp

undebug mld-snp

∧	

३

show ipv6 mld profile [profile-number]

	profile
profile-number	profile

ৡ Â

mld profile

1' show ipv6 mld profile ৡ MLD profile '

Ruijie# show ipv6 mld profile 1

MLD Profile 1

permit

range FF77::1 FF77::100

range FF88::123

ৡ	

ৡ

৸	
10.4	

35 nj—

35.1 —

35.1.1 strom-control

no Â

storm-control {**broadcast** | **multicast** | **unicast**} [{**level** percent | **pps** packets | rate-bps}]

no storm-control {**broadcast** | **multicast** | **unicast**} [{**level** percent | **pps** packets | rate-bps}]

broadcast	Â

Ю GigabitEthernet 1/1 Э 8 ҷ ˇ з

ѝ 4M Â

```
Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 1/1
Ruijie(config-if)# storm-control multicast 4096
Ruijie(config-if)# end
```

ҳ

ҳ	
show storm-control	8 Â

л -

ҳ

л	
-	-

35.1.2 switchport protected

ҳ ѝ Â ҳ **no** Â

switchport protected

no switchport protected

-	-

ҳ

ã

/ा	-

३	/ा	
	-	-

35.1.3 switchport port-security

ᄀ ˘ Â ३ no ˘
Â

switchport port-security [**violation** {**protect** |

	show port-security	Â

/I

switchport port-security	
switchport port-security binding interface	Ю
Switchport port-security mac-address	
switchport port-security aging	
show port-security	

-	-

35.1.6 switchport port-security binding interface

Ю ˇ Л Ъ IP+ MAC IP ˇ
ł ˇ Л Ъ ˇ a
Â no Л ‘

[**no**] **switchport port-security binding interface** interface-id mac-address **vlan** vlan_id ipv4-address | ipv6-address

[**no**] **switchport port-security binding interface** interface-id ipv4-address | ipv6-address

interface-id	ID
mac-address	MAC
Vlan_id	MAC VID
Ipv4-address	Ipv4 Ip
Ipv6-address	Ipv6 Ip

Ip

1' 192.168.1.100 10'

Ruijie(config)# switchport port-security binding interface g0/10 192.168.1.100

2' 192.168.1.100 MAC 00d0.f800.5555, VID= 1 10'

Ruijie(config)# **switchport port-security binding interface** g0/10 00d0.f800.5555 **vlan** 1 192.168.1.100

३	
switchport port-security	
switchport port-security binding	IO

[redacted]

1' TRUNK 10 00d0.f800.5555 VID=2'
Ruijie(config)# inter g0/10
Ruijie(config-if)# switchport port-security mac-address 00d0.f800.5555 vlan 2

३	
switchport port-security	
switchport port-security binding	
switchport port-security mac-address interface	IO
switchport port-security aging	
show port-security	

/I

/I	
-	-

35.1.9 switchport port-security mac-address interface

IO ˘ no ‘

[**no**] **switchport port-security interface** interface-id **mac-address** mac-address [vlan

1' TRUNK 10 00d0.f800.5555 VID=2'

Ruijie(config)# switchport port-security interface g0/10 mac-address 00d0.f800.5555 vlan 2

ৡ	
switchport port-security	
switchport port-security binding	
Switchport port-security mac-address	IO
switchport port-security aging	
show port-security	

/

/	
-	-

35.2

36 802.1X a—

36.1 dot1xVNa—

36.1.1 dot1x auto-req

802.1X ў ╠ ╖ ˘ ৡ **dot1x auto-req** Â ৡ **no** ʌ ў ╠ ╖ Â

[**no**] **dot1x auto-req**

-	-

a ў ╠

ৡ Â

ў ╠ 802.1x ˘ ʌ Л **show dot1x auto-req** ৡ ╖ Â

Ю ў ╠ 802.1x

```
Ruijie# configure terminal
Ruijie(config)# dot1x auto-req
Ruijie(config)# end
Ruijie# show dot1x auto-req
Ruijie(config)# dot1x auto-req
Auto-Req: Enabled
User-Detect : Enabled
Packet-Num : 0
Req-Interval: 30 Second
```

ৡ	
show dot1x auto-req	ў ╠ Â

ʌ

҄	⁄
-	-

36.1.3 dot1x auto-req req-interval

ў ╟ ˘ **no** и

dot1x auto-req req-interval interval

no dot1x auto-req req-interval

interval	ў ╟ ˘ Æ s

30

Â

ў ╟ ˘ ⁄ Л **show dot1x auto-req** ҄ ╖ Â

Ю 802.1x и 60s ‘

```
Ruijie# configure terminal
Ruijie(config)# dot1x auto-req req-interval 60
Ruijie(config)# end
Ruijie# show dot1x auto-req
Auto-Req: Enabled
User-Detect : Enabled
Packet-Num : 0
Req-Interval: 60 Second
```

҄	
show dot1x auto-req	ў ╟ Â

⁄

⁄	
-	-

36.1.4 dot1x auto-req user-detect

ў ╟ ˘ no й Â

dot1x auto-req user-detect

no dot1x auto-req user-detect

-	-

҃ Â

ў ╟ ˘ Л Љ **show dot1x auto-req** ҃ ╗ Â

Ю ў Э ѣ ‘

Ruijie# configure terminal

Ruijie(config)# dot1x auto-req user-detect

Ruijie(config)# end

Ruijie# show dot1x auto-req

Auto-Req: Enabled

User-Detect : Enabled

Packet-Num : 0

Req-Interval: 60 Second

҃	
show dot1x auto-req	ў ╟ Â

Л

Л	
-	-

36.2 dot1x1ѳ—

ৡ	
show dot1x	802.1x Â

⁄	
ৡ ~	

Supplicant Timeout: 3 sec
Server Timeout: 5 sec
Re-authen Max: 3 times
Maximum 2Request: 3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Disabled
Eapol Tag Enable: Disabled
Authorization Mode: Group Server

ৡ

ৡ	
show dot1x	802.1x

ʌ

ৡ

ʌ	
-	-

36.2.3 dot1x timeout server-timeout

ৡ Ŀ Â ৡ **no** ѝ Â

dot1x timeout server-timeout seconds

no dot1x timeout server-timeout

seconds	Ŀ ˘ 0 65535 Â

5 Â

ৡ Â

ʌ Ћъ **show dot1x** ৡ 802.1x Â

Ю Ŀ ѝ 10s˙
Ruijie# configure terminal

```
Ruijie(config)#          dot1x timeout server-timeout          10
Ruijie(config)#          end
Ruijie#      show dot1x
802.1X   Status:     Enabled
Authentication Mode: EAP-MD5
Authed User Number:  0
Re-authen Enabled:   Disabled
Re-authen Period:    1000 sec
Quiet Timer Period:  1000 sec
Tx Timer Period:     3 sec
Supplicant Timeout:  3 sec
Server Timeout:      10 sec
Re-authen Max:       3 times
Maximum Request:     3 times
Filter Non-RG Supp:  Disabled
Client Oline Probe:  Disabled
Eapol Tag Enable:    Disabled
Authorization Mode:  Group Server
```

3 Â

ৡ Â

Л Л **show dot1x** ৡ 802.1x Â

Ю

36.2.5 dot1x timeout tx-period

ђ˘ ৡ ˘ Â

ৡ no ѝ Â

dot1x timeout tx-period seconds

no dot1x timeout tx-period

seconds	Â 0 65535 Â

3 Â

ৡ Â

Л Љ **show dot1x** ৡ 802.1x Â

Ю ѝ 10s˙

```
Ruijie# configure terminal
Ruijie(config)# dot1x timeout tx-period 10
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status: Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled: Disabled
Re-authen Period: 1000 sec
Quiet Timer Period: 1000 sec
Tx Timer Period: 10 sec
Supplicant Timeout: 10 sec
Server Timeout: 10 sec
Re-authen Max: 3 times
Maximum Request: 3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Disabled
```

ৡ	
show dot1x	802.1x Â

ʌ

ʌ	
-	-

36.3 dot1x7a—

36.3.1 dot1x re-authentication

ৡ Â ৡ no Â

[**no**] **dot1x re-authentication**

-	-

a Â

ৡ Â

ৡˇ ‡ ɬˇ ɬ Â ʌ ЛЪ
show dot1x ৡ 802.1x Â

IO ╗ ‘
Ruijie# configure terminal
Ruijie(config)# dot1x re-authentication
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status: Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled: Enabled
Re-authen Period: 1000 sec
Quiet Timer Period: 1000 sec

Tx Timer Period: 10 sec
Supplicant Timeout: 10 sec
Server Timeout: 10 sec
Re-authen Max: 3 times
Maximum Request: 3 times

Ruijie(config)# end
Ruijie# show dot1x
802.1X Status: Enabled
Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled: Enabled
Re-authen Period: 1000 sec
Quiet Timer Period: 1000 sec
Tx Timer Period: 10 sec
Supplicant Timeout: 10 sec
Server Timeout: 10 sec
Re-authen Max: 5 times
Maximum Request: 3 times
Filter Non-RG Supp: Disabled
Client Oline Probe: Disabled
Eapol Tag Enable: Disabled
Authorization Mode: Group Server

¾	
show dot1x	802.1x Â

/I

/I	
-	-

36.4 dot1xp_ÿ—

36.4.1 dot1x probe-timer

.

dot1x probe-timer{**interval** | **alive**}interval

no dot1x probe-timer

no	

interval	hello
alive	
interval	

Hello ѝ 20 ’
ѝ 250 Â

٪ Â

˘ Л Л Ъ **show dot1x** ٪ 802.1x Â

hello ѝ 30 , ѝ 120 ‘

```
Ruijie# configure terminal
Ruijie(config)# dot1x probe-timer interval 30
Ruijie(config)# dot1x probe-timer alive 120
Ruijie(config)# end
Ruijie# show dot1x probe-timer
Hello Interval: 30 Seconds
Hello Alive: 120 Seconds
```

ৡ Â

Ⅱ Â

Ⅱ ‘

```
Ruijie#  configure termina  l
Ruijie(config)#  dot1x client-probe enable
Ruijie(config)#  end
Ruijie#  show dot1x
802.1X Status:  Enabled
Authentication Mode: EAP-MD5
Authed User Number:  0
Re-authen Enabled:  Enabled
Re-authen Period:  1000 sec
Quiet Timer Period:  1000 sec
Tx Timer Period:  10 sec
Supplicant Timeout:  10 sec
Server Timeout:  10 sec
Re-authen Max:  5 times
Maximum Request:  3 times
Filter Non-RG Supp:  Disabled
Client Oline Probe:  Enabled
Eapol Tag Enable:  Disabled
Authorization Mode:  Group Server
```

ৡ

ৡ	
show dot1x	dot1x Â

ʌ

ৡ

ʌ	
-	-

36.5 dot1xcQ¨—

36.5.1 dot1x authentication

AAA ЮЎ AAA Ь ˘ ৡ
Â ৡ **no** Â

dot1x authentication {**default** | list-name}

no dot1x authentication {**default** | list-name}

default	¨ Â
list-name	Л ¨ Â

AAA ˘ ‡ AAA Ь Â

ৡ Â

AAA Ь˘ ‡ ৡ dot1x 8 Â

Ю Э group radius Â

```
Ruijie# configure terminal
Ruijie(config)# aaa new-model
Ruijie(config)# aaa authentication dot1x default group radius
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# dot1x authentication default
Ruijie(config-if)# end
```

Л Л Ъ **show dot1x interface** ¾ Â

Ю 802.1x vlan '

```
Ruijie# configure terminal
Ruijie(config)# interface fa 0/1
Ruijie(config-if)# dot1x auth-fail vlan 2
Ruijie(config-if)# end
Ruijie#write
```

¾	
show dot1x interface	802.1x Â

Л

Л	
10.3(5)	¾

36.5.5 dot1x auth-mode

802.1x Â

dot1x auth-mode {**eap-md5** | **chap** | **pap**}

no dot1x auth-mode

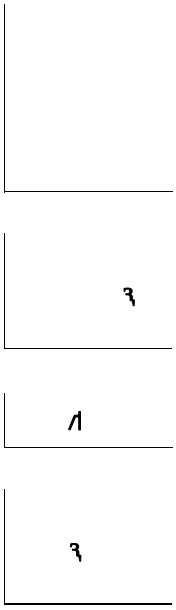
eap-md5	802.1x EAP-MD5 Â
chap	802.1x CHAP Â
pap	802.1x PAP Â

EAP-MD5

¾ Â

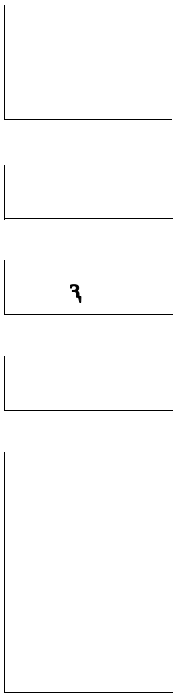
Л Л Ъ **show dot1x** ¾ 802.1x Â

Ю 802.1x '



36.5.6 dot1x

dot1x d



-	-

36.5.7 dot1x dynamic-vlan enable

dot1x dynamic-vlan <1 - 4094>

no dot1x guest-vlan

vid	<1 - 4094>

ѝ

ҙ Ю

‘ guest vlan ╖ ˘ ˝I **dot1x dynamic-vlan enable** ҙ˘
‡ guest vlan a Â
Y ‘ guest vlan ╖ ˘ a Y ˘ è ╟
╖ vlan Â
Ь ‘ Л Л **show running-config** ҙ 802.1x Â

Ю 802.1x guest vlan ‘

```
Ruijie# configure terminal
Ruijie(config)# dot1x guest-vlan 10
Ruijie(config)# end
Ruijie#
```

ৡ

ৡ	
show dot1x port-control interface	802.1x Â

ʌ

ৡ

ʌ	
10.3(5)	ৡ

36.5.12 dot1x mac-auth-bypass violation

802.1x MAC Â

dot1x mac-auth-bypass violation

no dot1x mac-auth-bypass violation

ৡ Â

ʌЛъ **show run** ৡ 802.1x Â

Ю 802.1x MAC

Ruijie# configure terminal

Ruijie(config)# interface fa 0/1

Ruijie(config-if)# dot1x mac-auth-bypass violation

ৡ	ʌ	
	10.3(5)	ৡ

36.5.13 dot1x max-req

DOT1X Ł ˘ DOT1X Ł ˘ ‡
DOT1X Ą Ł Â ৡ Ł Â
ৡ **no** Â

dot1x max-req count

no dot1x max-req

count	Â

й 3 Â

ৡ Â

ʌ Л **show dot1x** ৡ 802.1x Â

Ю 802.1x 7 ‘
Ruijie# configure terminal
Ruijie(config)# dot1x max-req 7 7

ˇ ʌ ˇ **no** Â

dot1x private-supplicant-only

no dot1x private-supplicant-only

-	-

a Â

ৡ Â

ʌ Ɓ **show dot1x private-supplicant-only** ৡ 802.1x Â

Ю ʌ

```
Ruijie# configure t
Ruijie(config)# dot1x private-supplicant-only
Ruijie(config)# end
Ruijie#
```

ৡ	
show dot1x private-supplicant-only	Â

ʌ

ʌ	
-	-

36.5.15 dot1x port-control auto

ˇ ╕ Â ৡ **no**

Â

dot1x port-control auto

no dot1x port-control

-	-

a ╗ 802.1x Â

ч

Л Љ **show dot1x** ч 802.1x Â

Ю 802.1x б

```
Ruijie# configure terminal
Ruijie(config)# interface g 0/1
Ruijie(config-if)# dot1x port-control auto
Ruijie(config-if)# end
Ruijie#
```

ч

ч	
show dot1x	802.1x Â

Л

ч

Л	
-	-

36.5.16 dot1x port-control-mode

802.1x 8 Ю MAC 8 ˘ Л
˘ è ˘ ˘ 8
˘ Л ˘ Ю
Â 8 ˘ Ю Л ˘
Л ˘ Â 8 Ю Л й
˘ è ˘ ‡ Ю ˘ Â
ч Ю

dot1x port-control-mode {**mac-based** | {**port-based** [**single-host**]} }

no dot1x port-control-mode

802.1X ३

36.5.17 dot1x stationarity enable

802.1x ¤ Ю Ю ╠ Л Љ ˘
Ю й a ÿ 802.1X è ˘ Л Љ ЉЮ ҳ
Â

dot1x stationarity enable

no dot1x stationarity enable

-	-

й ╠ Л Љ Â

ҳ Â

ҳ˘ ‡ Â

Ю 802.1x б ‘
Ruijie# configure terminal
Ruijie(config)# dot1x stationarity enable
Ruijie(config)# end
Ruijie#

ҳ

ҳ	
-	-

Л

ҳ

Л	
-	-

36.5.18 dot1x redirect url

˘ 802.1x ╥ ^ ~ ˘
˘ URL URL˘ Љ http:// ˘ ‘
http://ruijie.net/web˘ ˘ Л http:// ˘ a https:// Â Л

˘ ˘ ł url urlÂ no Л Ъ ৡ

urlˈ

dot1x redirect url [url-string]

[**no**] **dot1x redirect url**

url-string	URL

ৡ

1ˈ ˋ ruijie.net/webˈ

Ruijie(config)# dot1x redirect url http://ruijie.net/web

ৡ	
dot1x redirect for special tcp-destination port	и ˘ ip и ip web
dot1x redirect time-out	
dot1x redirect num for special source-ip	˛
show dot1x	dot1x

Л

Л	
-	-

36.5.19 dot1x redirect for special tcp-destination port

и ˘ ip и ip web ˘ 80 à 8080

˘ Ą 16 TCP Л˘ no dot1x redirect for special tcp-destination port Л˘ ł ╗ port_mum ‡ Л˙

[**no**] **dot1x redirect for special tcp-destination port** port num

port num	TCP л

tcp й 80 8080 з а л no

ч

TCP й 1-65535

1 TCP й 8443
Ruijie(config)# dot1x redirect for special tcp-destination port 8443

ч	
dot1x redirect url	
dot1x redirect time-out	
dot1x redirect num for special source-ip	
show dot1x	dot1x

л

л	
-	-

ч

36.5.20 dot1x redirect time-out

(æ), й 3 ' л й 1-10 Â no л Лъ ч

dot1x redirect time-out port time-out-interval

no dot1x redirect time-out port

time-out-interval	

3

1 5

Ruijie(config)# dot1x redirect time-out 5

dot1x redirect url	ip ip web
dot1x redirect for special tcp-destination port	
dot1x redirect num for special source-ip	
show dot1x	dot1x

-	-

36.5.21 dot1x redirect num for special source-ip

1

1' ѝ 3'

Ruijie(config)# dot1x redirect num for special source-ip 3

ৡ	
dot1x redirect url	
dot1x redirect for special tcp-destination port	ѝ ˘ ip ѝ ip web
dot1x redirect time-out	
show dot1x	dot1x

ৡ

ৡ	
-	-

36.6 dot1x

36.6.1 show dot1x

802.1x Â

show dot1x

-	-

ৡ Â

Ю

-	-

36.6.2 show dot1x auth-address-table

ৡ 802.1X Â

show dot1x auth-address-table[addressmac-addr][interface interface]

mac-addr	ሶ
interface	ሶ

ৡ Â

IO

Ruijie# show dot1x auth-address-table

interface:g3/1

---

mac addr: 00D0.F800.0001

Ruijie#

ৡ	
dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	╗ Â
dot1x reauth-max	
dot1x re-authentication	Â
dot1x timeout quiet-period	ł Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	Ł Â

dot1x timeout supp-timeout	Â
dot1x timeout tx-period	Â

ศ

ศ	
-	-

36.6.3 show dot1x auto-req

ў ╠ 802.1x Â

show dot1x auto-req

-	-

ৡ Â

IO

Ruijie# show dot1x auto-req

Auto-Req: Disabled

User-Detect : Enabled

Packet-Num : 0

Req-Interval: 30 Seconds

ৡ

ৡ	
dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	╗ Â
dot1x reauth-max	

dot1x auth-mode	802.1x	Â

max-req: 2 times

Ruijie#

¾	
dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	╗ Â
dot1x reauth-max	
dot1x re-authentication	Â
dot1x timeout quiet-period	ł Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	Ł Â
dot1x timeout supp-timeout	Â
dot1x timeout tx-period	˘ Â

/

/	
-	-

36.6.6 show dot1x port-control

б Â

show dot1x port-control [**interface** interface]

interface	

¾ Â

36.6.8 show dot1x re-authentication

show dot1x re-authentication

-	-

-	-

36.6.9 show dot1x reauth-max

show dot1x reauth-max

-	-

Â

Â

IO

Ruijie# show dot1x reauth-max

reauth-max: 2 times

Ruijie#

dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	Â

dot1x timeout supp-timeout	Â
dot1x timeout tx-period	Â

-	-

36.6.10 show dot1x summary

802.1X

show dot1x summary

-	-

Â

IO

```
Ruijie#      show dot1x summary
ID   MAC     Interface VLAN Auth-State
Backend-State Port-Status Type
---------------- --------------- ---------------
1 00d0f8000000 Gi0/1     1 Authenticated Idle
Authed    Static
Ruijie#
```


dot1x port-control auto	╗ Â
dot1x reauth-max	
dot1x re-authentication	Â
dot1x timeout quiet-period	ɬ Â
dot1x timeout re-authperiod	Â
dot1x timeout server-timeout	Ŀ Â
dot1x timeout supp-timeout	Â
dot1x timeout tx-period	˘ Â

ʌ

ৡ	ʌ	
	-	-

36.6.11 show dot1x user id

ৡ 802.1X

show dot1x user id <id>

id	show summary id

ৡ Â

IO ‘

Ruijie# show dot1x user id 1

User name: caikov

id: 1

Type: static

Mac address is 0013.2049.8272
Vlan id is 217
Access from port Gi0/13
User ip address is 192.168.217.64
Max user number on this port is 6000
COS on this port is 5
Up-bandwidth is 1024 kbps
Down-bandwidth is 1024 kbps
Authorization vlan is dep7
Authorization seesion time is 1000000 seconds
Authorization ip address is 192.168.217.64
Start accounting
Permit proxy user
Permit dial user
IP privilige is 2

ৡ	
dot1x auth-mode	802.1x Â
dot1x max-req	Â
dot1x port-control auto	╗ Â

36.6.12 show dot1x timeout

३ 802.1X

dot1x timeout tx-period	Â

ৡ	ʌ	
	10.2(5)	ৡ

36.7.2 http redirect

HTTP IP ╖ ˘ ৡ **http redirect** Â ৡ
no HTTP IP Â

http redirect ip-address

no http redirect

	ip-address	HTTP IP

HTTP IP

ৡ

╖ ╟ ʌ ╖ ˘ HTTP IP Â
HTTP ˘
Ю ˘ Ю ˘ Ю ˘ Â

Ю Ю ╖ ˙
Ruijie# configure terminal
Ruijie(config)# http redirect 172.16.0.1
Ruijie(config)# end

ৡ	ৡ	
	show http redirect	HTTP
	http redirect homepage	ў Â

ʌ

ৡ	ʌ	
	10.2(5)	ৡ

36.7.3 http redirect direct-site

Â ʌ ɲ ৡ **no**

Â

http redirect direct-site ip-address [ip-mask] [**arp**]

no http redirect direct-site ip-address [ip-mask] [**arp**]

ip-address	IP
ip-mask	IP Â
arp	ARP CHECK ˇ ৸ ARP ˇ **arp** Â

Â

ৡ

http redirect homepage url-string

no http redirect homepage

url-string	

ৡ

Â ѝ Ь ╖ ł ˘ HTTP
GET/HEAD ˘ ł HTTP ł Â ⁸ Л Л Ъ
a GET/HEAD ˘ . TCP Â

Ю ѝ 4'
Ruijie# configure terminal
Ruijie(config)# http redirect timeout 4

ৡ

ৡ	
show http redirect	HTTP

Л

ৡ

Л	
10.2(5)	ৡ

36.7.8 show http redirect

HTTP Â

show http redirect

-	-

ৡ

Ю HTTP '
Ruijie# show http redirect
HTTP redirection settings:
server: 192.168.32.123
port: 80 8000
homepage: http://192.168.32.123:8888/ePortal/index.jsp

session-limit: 10
timeout: 5

Direct sites:

Address	MASK	ARP Binding
61.233.3.215	255.255.255.255	On
61.233.3.220	255.255.255.255	Off
192.168.5.140	255.255.255.255	Off
218.30.66.101	255.255.0.0	Off
218.30.66.101	255.255.255.255	Off

http redirect	HTTP IP
http redirect direct-site	
http redirect homepage	IO ǔ
http redirect port	HTTP
http redirect session-limit	HTTP
http redirect timeout	

10.2(5)	

url-string	ў ˘ Лъ“http://” “https://” ˘ ‡ a ╖˘ ѝ 255 Â

ў Â

ৡ Â

╖ Web ╖ ˘ ў Â

1˙ ў ѝ http://www.web-auth.net/login Â
Ruijie(config)#
http redirect homepage http://www.web-auth.net/login

ৡ	
show http redirect	HTTP Â
http redirect	┺ IP Â

ѧ

ѧ	
10.2(5)	ৡ

37.1.4 http redirect port

ѧ HTTP WEB ˘ **http redirect port** ৡ Â ѧ Лъ ৡ **no** ѧ HTTP WEB Â

http redirect port port-num

no http redirect port port-num

port-num	HTTP WEB ѧ Â

80 HTTP Â

ৡ Â

˘ HTTP ˘
HTTP ˘ ,
˘ ˘ Â
Ю˝ ⁄ ù 80 HTTP ˘
Â
⁄ HTTP ˘ ৡ Â
10 a˚ ⁄˘ ⁄ 80 ≠ Â

1' ⁄ ù 8080 HTTP WEB Â
Ruijie(config)# http redirect port 8080
1' a ⁄ ù 80 HTTP WEB Â
Ruijie(config)# no http redirect port 80

ৡ

ৡ	
show http redirect	HTTP Â

⁄

ৡ

⁄	
10.2(5)	ৡ

37.1.5 http redirect session-limit

˚ HTTP ˘ Ю HTTP
Â ⁄ Л৮ ৡ **no** HTTP Â

http redirect session-limit session-num [**port** port-session-num]

no http redirect session-limit

session-num	˚ HTTP ˘ ৸ 1-255 Â
port-session-num	ˆ ⁄ ˜ Ю HTTP ˘ ৸ 1-300 Â

ҳ

ҳ	
show web-auth allow-vlan	VLAN Web VLAN Â

Л -

ҳ

Л	
10.4(2b2)	ҳ

37.1.8 web-auth direct-host

IP Â Л Љ ҳ **no** Н Â

web-auth direct-host ip-address [ip-mask] [**port** interface-name] [**arp**]

no web-auth direct-host ip-address

ip-address	IP Â
ip-mask	IP Â
port interface-name	IP б Â
arp	ARP CHECK ╗ ˘ ж IP ARP ˘ **arp** Â

˘ ″I Web ˘ Н Â

ҳ Â

й ˘ ж a Web ˘ ≠ Л Љ Л Â
50 Â

1ˈ IP й 172.16.0.1 й Â
Ruijie(config)# web-auth direct-host 172.16.0.1

ҳ

ҳ	
show web-auth direct-host	web Â

Л

ҳ

Л	
10.2(5)	ҳ

37.1.9 web-auth offline-detect-mode flow

Ю Â Л Љ ҳ **no**

Ю Â

web-auth offline-detect-mode flow

no web-auth offline-detect-mode flow

Ю Â

ҳ Â

Ю ЉЮ Ь ‘

1) Э ”Ю ” à ⁸ ’

2) ˘ LinkDown ѣ˘ 60s ˘

Ѫ LinkUp˘ ‡ ѝ Ю ’

3) ˘ 15ѓ ˘ ╗˘ ‡ ѝ Ю ’

Ь ˘ 1˜ 2˜ ⁸ ˘ 3˜ Л Â ЮЎ 1˜

2˜ Ю Â

╟ Ю ˘ ҳ Â

1‘ ╟ Ю Â

Ruijie(config)# web-auth offline-detect-mode flow

३	८	
	10.2(5)	३

37.1.10

ҳ	
10.2(5)	ҳ
10.4(2b2)	╗ **ip-only-mode**

37.1.11 web-auth portal key

б ┺ Â Л Љ ҳ **no**
HTTP WEB ł WEB б ┺ Â

web-auth portal key key-string

no web-auth portal key

key-string	б ┺ ˘ ѝ 255 Â

Â

ҳ Â

╗ Web ╗ ˘ б ┺ Â

1՝ б ┺ ѝ web-auth Â
Ruijie(config)# web-auth portal key web-auth

ҳ	
http redirect	┺ IP Â
http redirect homepage	ў Â
web-auth port-control	Э ╠ Web Â

Л

Л	
10.2(5)	ҳ

37.1.12 web-auth update-interval

Â Л Ъ ৡ **no**

и 60 Â

web-auth update-interval seconds

no web-auth update-interval

seconds	˘ Æ ˘ Ч 30-3600 Â

и 60 Â

ৡ Â

˘ ˘ ˘

Ъ ˘ ‘ Â

˘ ৡ Â

1‘ и 30 Â

Ruijie(config)# web-auth update-interval 30

ৡ	
-	-

Л

Л	
10.2(5)	ৡ

37.2 ƒ—

37.2.1 show http redirect

HTTP Â

show http redirect

session-limit	HTTP Â
timeout	Â
Address	IP Â
Mask	IP Â
ARP Binding	ARP Â
Address	IP Â
Mask	IP Â
Port	IP Â
ARP Binding	ARP Â

http redirect	IP Â
http redirect direct-site	Â
http redirect homepage	Â

HTTP IP

1՝ Э Â

```
Ruijie#  show  web-auth port-control
 Port          Control
 ----------------- ---------
 FastEthernet 0/1   On
 FastEthernet 0/2   On
 FastEthernet 0/3   Off
 ......
```

```
Ruijie#      show  web-auth user
 Current       user num : 4

Address       Online  Time Limit   Time Used   Status
--------------- ------- ------------- ------------- --------
192.168.0.11    On    0d 01:00:00   0d 00:15:10    Active
192.168.0.13    On    0          0d 00:00:59    Active
192.168.0.25    Off   0          0           Create
192.168.0.46    Off   0d 01:00:00   0d 01:00:00    Destroy

Ruijie#      show  web-auth user       192.168.0.11
  Address    : 192.168.0.11
 Mac        : 00d0.f800.2233
 Port       : Fa0/2
 Online     : On
 Time Limit : 0d 01:00:00
 Time Used  : 0d 00:15:10
 Time Start : 2009-02-22 20:05:10
 Status     : Active
```

Address	IP Â
Mac	MAC Â
Port	Â
Online	Â
Time Limit	/ı 8˘ 0 8 Â
Time Used	Â
Time Start	à Э Â
Status	˘ Active ˘ Create • … à ˘ Destroy • à Â

ৡ

ৡ	
-	-

/ı

ৡ

/ı	

38 AAA a—

38.1 a—

38.1.1 aaa authentication dot1x

AAA a—

Ю Н AAA Enable Â ˝I RADIUS
Ł ˘ RADIUS Ł ˘ ‡
Â

Ruijie(config)# aaaauthenticationenabledefaultgroupradiuslocal

¾

¾	
aaa new-model	AAA Ł
enable	˛
username	Н

/

¾

/	
-	-

38.1.3 aaa authentication login

AAA Login˜ ˘ ¾ **aaa authentication login**
Login Â ¾ no Â

aaa authentication login {**default** | list-name} method1 [method2...]

no aaa authentication login {**default** | list-name}

default	˘ ‡ ł Н ù Login Â

list-name Н Login

ৡ Â

AAA ⊾˘ AAA Login Â
aaa authentication login ৡ ʌ Login Â
ʌ ˘ ɨ Â
Login ɨ˘ è Login Э˘ ‡ a
Â

Ю ⊬Ж ¨ ѝ list-1 AAA Login Â ˝I
RADIUS ⊾ ˘ RADIUS ⊾ ˘
‡ Â
Ruijie(config)# aaa authentication login list-1 group radius local

ৡ

ৡ	
aaa new-model	AAA ⊾
username	⊬Ж
login authentication	Э Login

ʌ

ৡ

ʌ	
-	-

38.1.4 aaa authentication ppp

AAA PPP ˘ ৡ **aaa authentication ppp** PPP
Â ৡ no Â

aaa authentication ppp {**default** | list-name} method1 [method2...]

no aaa authentication ppp {**default** | list-name}

default	˘ ‡ ɨ ⊬Ж ѝ PPP Â
list-name	⊬Ж PPP ˘ ʌ Л Â
method	ľ local à none à group Ł ˘ 4

Login

Login

no aaa authorization commands level {**default** | list-name}

level	ৡ ˘ 0~15˝ ᾱ ৡ ł Â

˘ ‡ ł Ⅱ Ⅹ и ৡ

default 5f78 04.98 Tf1 0 0 1 -0.02 ref296.7 683.18 0.48 35.1C EMC BT/ <</MCID 9 >>BDC /C2_096>Tj1033.38

38.2.2 aaa authorization config-commands

AAA ˆ è ˜ Ю ৡ ˘
ৡ **aaa authorization config-commands** Â ৡ no AAA Ю
ৡ ╖ Â

aaa authorization config-commands

no aaa authorization config-commands

-	-

a Ю ৡ Â

ৡ Â

Л ˆ ˜ Ю ৡ ˘ Л Љ ৡ no
╖ ˘ ‡ è Ю ৡ a ৡ Л Љ Â

Ю Ю ৡ ╖ ‘
Ruijie(config)# aaa authorization config-commands

ৡ	
aaa new-model	AAA Ł

-	-

a ⁸ ⁄ ৡ Â

ৡ Â

RGOS ৡ ⁸ ⁄ è ˘ ⁄ Л ⁸ ⁄ ˘
ৡ Â ⁸ ⁄ ৡ ╖ ˘ ‡ ⁸ ⁄
ৡ a Â

Ю ⁸ ⁄ ৡ ╖ ‘
Ruijie(config)# aaa authorization console

ৡ	
aaa new-model	AAA ┗

method	l’ local à none à group Ŀ ˘ 4
local	¨
none	a
group	Ł ˘ RADIUS TACACS+ Ł

AAA Exec ╗ Â

ৡ Â

RGOS NAS CLI ˘ è CLI ^ 0~15 ˜ Â Login ˘ Exec Â Exec ˘ ‡ CLI Â

Exec ł˘ è Exec Э˘ ‡ a Â

Ю RADIUS Ł Exec ‘

Ruijie(config)# aaa authorization exec default group radius

ৡ	
aaa new-model	AAA Ł
authorization exec	Э
username	Ⱨ

ʌ

ʌ	
-	-

38.2.5

default	‘ ˘ ‡ ł ЊЖ ѝ Network Â
method	Ľ none à group Ŀ ˘ 4
none	a
group	Ŀ ˘ RADIUS TACACS+ Ŀ

AAA Network ╖ Â

३ Â

RGOS Ŀ PPP ӕSLIP Â ˘ ‡ ╟ Â Л Лъ Ь a˚ ˘ б ˘ Л ˘ ł ˘ ˘ ‡ a Ѧ è ł Â RADIUS TACACS+ Ŀ Â Лъ Э ˘ Л Л Ч Â

Ю RADIUS Ŀ Ŀ ‘

Ruijie(config)# aaa authorization network default group radius

ৡ Э˘ ৡ **authorization commands** Â ৡ no ৸ Э ৡ ╖ Â

authorization commands level {**default** | list-name}

no authorization commands level

level	ৡ ˘ 0~15˜ ᾱ ৡ ɬ Â
default	˘ ৡ Â
list-name	Ⱨ ৡ Â

AAA ৡ ╖ Â

ৡ Â

ৡ ˘ ╟ Э Â Э ৡ ˘ ৸ ৡ Â Ⱨ ˘ ‡ ˘ Э ৡ a ˘ Ⱨ ৡ Â

Ю ¨ ѝ cmd ৡ ˘ 15 ৡ ˘ TACACS+ ѝ Ŀ ˘ Ŀ none Â ɬ VTY 0 – 4 Э˙

Ruijie(config)# aaaauthorizationcommands 15 cmd grouptacacs+none

Ruijie(config)# line vty 0 4

Ruijie(config-line)# authorization commands 15 cmd

ৡ	
aaa new-model	AAA Ŀ
aaa authorization commands	Ⱨ AAA ৡ

৸

৸	
-	-

38.2.7

Exec Э˘ ৡ **authorization exec** Â
ৡ no ৸ Э Exec ╖ Â

authorization exec {**default** | list-name}

no authorization exec

default	˘ Exec Â
list-name	ЬЖ Exec Â

AAA Exec ╖ Â

ৡ Â

Exec ˘ ╟ Э Â Э
Exec ˘ ৸ ৡ Â ЬЖ ˘ ‡
˘ Э Exec a ˘ ЬЖ Exec
Â

Ю ¨ ѝ exec-1 Exec ˘ RADIUS ѝ Ł ˘
Ł none Â ł VTY 0 – 4 Э˙
Ruijie(config)# aaa authorization exec exec-1 group radius none
Ruijie(config)# line vty 0 4
Ruijie(config-line)# authorization exec exec-1

ৡ	
aaa new-model	AAA Ł
aaa authorization commands	ЬЖ AAA Exec

৸

৸	
-	-

38.3 ёЁ—

38.3.1 aaa accounting commands

AAA

aaa new-model	AAA ╘
aaa authentication	ЊЖ AAA
accounting commands	Э Exec

⁄	
-	-

38.3.3 aaa accounting network

╟˘ ╟ ˘

҃ **aaa accounting network** Â ҃ no ⁄ ╖ Â

aaa accounting network {**default** | list-name} **start-stop** method1 [method2...]

no aaa accounting network {**default** | list-name}

default	˘ ‡ ғ ЊЖ ѝ Network Â
list-name	¨ Â
start-stop	╟ ˘ ╖ ˘ Â
method	Ю ˘ 4
none	a
group	╘ ˘ RADIUS TACACS+ ╘

╖

Â

RGOS ╘ ╟ Â **start-stop**˘

⁸ Ŏ Ƭ > ŋ

Ruijie(config)# aaa accounting network default start-stop group radius

३	
aaa new-model	AAA
aaa authorization network	AAA
aaa authentication	AAA

-	-

38.3.6 accounting commands

ৡ Э˘ **accounting commands** Â

ৡ no ৲ Э ৡ ╖ Â

accounting commands level {**default** | list-name}

no accounting commands level

level	ৡ ˘ 0~15˘ ᾱ ৡ
default	≈
list-name	⊮ ৡ

¾	∕	
	-	-

38.3.7 accounting exec

Exec Э˘ ¾ **accounting exec** Â
¾ no ∕ Э Exec ╖ Â

accounting exec {**default** | list-name}

no accounting exec

default	˘ Exec Â
list-name	ЬЖ Exec Â

╖

¾ Â

Exec ˘ ╟ Э Â Э
Exec ˘ ∧ ¾ Â ЬЖ ˘ ‡
˘ Э Exec a ˘ ЬЖ Exec
Â

Ю ¨ ѝ exec-1 Exec ˘ RADIUS ѝ Ł ˘
Ł none Â ł VTY 0 – 4 Э'

```
Ruijie(config)#  aaa accounting exec  exec-1  group radius none
Ruijie(config)#  line vty  0 4
Ruijie(config-line)#  accounting exec  exec-1
```

¾	

-	-

38.4 n7ÀAA ê—

38.4.1 aaa domain

˘ Â ¾ no ¼ ¾ Â

aaa domain {**default** | domain-name}

no aaa domain {**default** | domain-name}

default	

Â

¾ Â

Ruijie(config-aaa-domain)#

IO

Ruijie(config)# aaa domain ruijie.com

¾	

38.4.2 aaa domain enable

¨ AAA ┺ ˘ Ю й Â Ą˘ ˝I
¨ AAA ┺ Â ৡ no Â

aaa domain enable

no aaa domain enable

-	-

¨ AAA ┺ Â

ৡ Â

¨ AAA ┺ ˘ Â

¨ AAA ┺ ·
Ruijie(config)# aaa domain enable

ৡ	
aaa new-model	AAA ┺
show aaa domain	

ৡ

ৡ	
-	-

38.4.3 access-limit

⁸˘ ৡ IEEE802.1x ’ ৡ no ৡ ৡ Â

access-limit num

ѝ IEEE802.1x Â

Ю IEEE802.1x

Ruijie(config)# aaa domain ruijie.com

Ruijie(config-aaa-domain)# authentication dot1x default

३	
aaa new-model	AAA Ł
aaa domain enable	AAA Ł

Ruijie(config-aaa-domain)# authorization network default

३	

aaa new-model	AAA ┺
aaa domain enable	¨ AAA ┺
show aaa domain	

/

¾	/|
-	-

38.4.8 show aaa domain

Â

show aaa domain [**default** | domain-name]

default	˘
domain-name	¨

¾ Â

a ¨ ˘ ‡ Â

Ю ¨ й domain.com Â

```
Ruijie#  show aaa domain  domain.com

==============Domain domain.com=============
State: Active
Username format: Without-domain
Access limit: No limit
802.1X Access statistic: 0

Selected method list:
 authentication dot1x default
```

¾	¾	

aaa new-model	AAA
aaa domain enable	AAA

-

38.4.9 username-format

IO NAS

¾	⁄	
	-	-

38.5 AAAÙì¡—

38.5.1 aaa group server

AAA Ł Â ¾ no Ł Â

aaa group server {**radius** | **tacacs+**} name

no aaa group server {**radius** | **tacacs+**} name

name	Ł ⁄¨ ˘ a ù ľ radius Ľˇ ľ tacacs+ Ľˇ ù RADIUS TACACS+ Ł ¨ Â

¾ Â

¾ AAA Ł ˘ RADIUS TACACS+ Ł Â

Ю Â
Ruijie(config)# aaa group server radius ss
Ruijie(config-gs-radius)# end
Ruijie# show aaa group
Group Name: ss
Group Type: radius
Referred: 1
Server List:

¾	
show aaa group	aaa Ł

⁄

३	⁄	
	-	-

38.5.2 ip vrf forwarding

ù AAA ┗ vrf no Â

ip vrf forwarding vrf_name

no ip vrf forwarding

vrf_name	vrf¨

३	┗ Â
	ù ┗ vrf Â

Ю Â

```
Ruijie(config)#          aaa group server radius ss
Ruijie(config-gs-radius)#          server     192.168.4.12
Ruijie(config-gs-radius)#          server     192.168.4.13
Ruijie(config-gs-radius)#          ip vrf forwarding          vrf_name
Ruijie(config-gs-radius)#          end
```

३		
३	**aaa group server**	aaa ┗
	show aaa group	aaa ┗

⁄

३	⁄	
	-	-

38.5.3 server

-	-

38.5.4 show aaa group

AAA Ł Â

show aaa group

-	-

¾ Â

¾ AAA 8 Ł Â

Ю Â

```
Ruijie#  show aaa group
Group Name: ss
Group Type: radius
Referred:  2
Server List:
IP Address: 192.168.217.64
Authentication Port: 1812
Accounting Port: 1813
Referred: 1
```

¾	
aaa group server	AAA Ł

/I

/I	
-	-

38.6 AAAcPa—

ৡ Â

login ˘

IO ‘
Ruijie# configure terminal
Ruijie(config)# a aa local authentication lockout-time 5

ৡ	
Show running-config	
Show aaa lockout	login

ʌ

ʌ	
-	-

38.6.3 aaa new-model

RGOS AAA ┗╖ ˘ ৡ **aaa new-model** AAA Â
ৡ **no** AAA ┗ Â

aaa new-model

no aaa new-model

-	-

AAA ┗

ৡ Â

ৡ AAA ৡ˘ AAA ┗˘ **aaa new-model**
AAA ┗ Â AAA˘ ‡ AAA ৡ a ʌ Â

IO AAA ┗ Â
Ruijie(config)# aaa new-model

¾	
aaa authentication	Ħ
aaa authorization	Ħ
aaa accounting	Ħ

/
-

38.6.4 clear aaa local user lockout

clear aaa local user lockout {**all** | **user-name** <word>}

<word>	ID

¾ Â

˘ /ЛЦ ≠ /ЛЦ

Ю ‘

Ruijie# clear aaa local user lockout all

¾	
show running-config	
show aaa lockout	login

/
-

38.6.5 debug aaa

AAA ┗ Â ३ **no** Â

debug aaa event

no debug aaa event

-	-

३ EXEC Â

-> -1 MC ET406 T4ID 13 >>BDC /TT0 1 Tf 06 T4I0.98 39

¾ AAA Â

IO AAA Â

Ruijie# show aaa method-list

Authentication method-list

aaa authentication login default group radius

aaa authentication ppp default group radius

aaa authentication dot1x default group radius

aaa authentication dot1x san-f local group angel group rain n one

aaa authentication enable default group radius

Accounting method-list

aaa accounting network default start-stop group radius

Authorization method-list

aaa authorizating network default group radius

¾	
aaa authentication	HX
aaa authorization	HX
aaa accounting	HX

¾

/I

/I	
-	-

38.6.7 show aaa user lockout

Â

show aaa user lockout {**all** | **user-name** <word>}

<word>	ID

¾ Â

˘ Л Â

Ю

Ruijie# show aaa user lockout all

३	
show running-config	
show aaa lockout	login

/

/	
-	-

39 RADIUS a—

39.1 RADIUSä—

39.1.1 ip radius source-interface

radius ˘ ¯ **ip radius source-interface** Â ¯

no RADIUS Â

ip radius source-interface interface

no radius source-interface

Interface	radius

radius Â

¯ Â

ù radius Ł Э nas ˘ Л Љ ¯ radius Â ¯ ip ù radius ˘ ¯ Ь Â

Ю radius ÿ fastEthernet 0/0 Л ip ù radius

Ruijie(config)# ip radius source-interface fastEthernet 0/0

radius-server host	Њ RADIUS Ł
ip address	ip

Л

39.1.2 radius attribute

radius ttribute{<id> | **down-rate-limit** | **dscp** | **mac-limit** | **up-rate-limit**} **vendor-type** <type>

no radius attribute {<id>|**down-rate-limit** | **dscp** | **mac-limit** | **up-rate-limit**} **vendor-type**

id	╖ id <1-255>
type	type

23	login privilige	42

id		type
1	max down-rate	76
2	qos	77
3	user ip	3
4	vlan id	4

ʌ

ʌ	
10.3(5)	ৡ

39.1.4 radius-server deadtime

ɬ˘ t ˘ ‡ ѝ Ł ˘ t ѝ
ˆ deadtime˜ ˘ RGOS RADIUS ˘ ৡ
radius-server deadtime Â ৡ **no** ˘ Â

radius-server deadtime minnutes

no radius-server deadtime

minnutes	ˆ æ ѝ† ˜ Â ʌ ѝ 1-1000 Â

5†

ৡ Â

ৡ Â

Ю Ћ ѝ 10† ˙
Ruijie(config)# radius-server deadtime 10

ৡ	
radius-server host	Ћ RADIUS Ł ў
radius-server retransmit	Ћ RADIUS
radius-server key	Ћ RADIUS ৡ
radius-server timeout	Ћ RADIUS

ʌ

ʌ	
-	-

39.1.5 radius-server host

RADIUS ┗ ў ˘ ৡ **radius-server** Â ৡ **no** RADIUS ┗ ў Â

radius-server host { ipv4-address | ipv6-address} [**auth-port** port-number] [**acct-port** port-number]

no radius-server host { ipv4-address | ipv6-address}

ipv4-address	RADIUS ┗ ў IPv4 Â
ipv6-address	RADIUS ┗ ў IPv6 Â
auth-port	RADIUS UDP Â

ҳ	ʌ	
	-	-

39.1.6 radius-server key

Ю ˆ ˜ б RADIUS ҳ˘
ҳ **radius-server key** ҳ no ʌ ҳ

radius-server key text-string

no radius-server key

text-string	ҳ

ҳ

ҳ

ҳ RADIUS ˘ й RADIUS
˘ ˇ RADIUS Э Ю ˚ ҳ

Ю Ю RADIUS ҳ й aaa
Ruijie(config)# radius-server key aaa

ҳ	
radius-server host	Ю RADIUS ў
radius-server retransmit	Ю RADIUS
radius-server timeout	Ю RADIUS

ʌ

	seconds	ˆ æ ѝ ˜ Â ⁄ ѝ 1-1000 Â
	5	
३	Â	

Ю

Ruijie(config)# radius set qos cos

٦	
radius vendor-specific extend	Radius ѝ a ٧ id

٨

٨	
-	-

39.1.10 radius vendor-specific extend

ѝ a ٧ id Â

radius vendor-specific extend

no radius vendor-specific extend

-	-

٨ ٨ id

٦ Â

٦ ٨ id Â

Ю

Ruijie(config)# radius vendor-specific extend

٦	
radius attribute	٨

-	-

39.2 RADIUSã—

39.2.1 debug radius

RADIUS no RADIUS

debug radius [**event | detail**]

no debug radius [**event | detail**]

-	-

EXEC

	-	-
ৡ	Â	
	ৡ radius ㄴ Â	

Ruijie# show radius parameter
Server Timout: 5 Seconds
Server Deadtime: 5 Minutes
Server Retries: 3
Server Key: ******

	ৡ	
		ㅾ RADIUS ㄴ ў
	smit	ㅾ RADIUS
		ㅾ RADIUS ৡ
	radius-server timeout	ㅾ RADIUS

Ruijie# show radius vendor-specific
id vend or-specific type-value
----- -------------------- ----------
1 max down-rate 76
2 qos 77
3 user ip 3
4 vlan id 4
5 version to client 5
6 net ip 6
7 user name 7
8 password 8
9 file-diractory 9
10 file-count 10
11 file-name-0 11
12 file-name-1 12
13 file-name-2 13
14 file-name-3 14
15 file-name-4 15
16 max up-rate 75
17 version to server 17
18 flux-max-high32 18
19 flux-max-low32 19
20 proxy-avoid 20
21 dailup-avoid 21
22 ip privilige 22
23 login privilige 42
24 limit to user number 50

ৡ

ৡ	
radius-server host	ᵻᵼ RADIUS ᵾ ў
radius-server retransmit	ᵻᵼ RADIUS
radius-server key	ᵻᵼ RADIUS ৡ
radius-server timeout	ᵻᵼ RADIUS

ৡ

ৡ

ৡ	

	-	-

40 TACACS+a—

40.1 TACACS+ä—

40.1.1 aaa group server tacacs+

३ TACACS+ ┺ ˘ a˚ TACACS+ ┺ ˚ a˚ Â

aaa group server tacacs+ group-name

no aaa group server tacacs+ group-name

group-name	TACACS+ ┺ ¨

TACACS+ ┺ Â

३ Â

ACACS+

vrf-name	vrf¨

¾ TACACS+ ¦ Â

ì TACACS+ ¦ vrf¨ Â

Ю ì TACACS+ ¦ VRF¨ ì vpn1'

```
Ruijie(config)#          aaa group server tacacs+          tac1
Ruijie(config-gs-radius)#          server     1.1.1.1
Ruijie(config-gs-radius)#          ip vrf forwarding          vpn1
```

¾	
aaa group server tacacs+	TACACS+ ¦
server	TACACS+ ¦ server

/

/	
-	-

40.1.4 server(TACACS+)

¾ TACACS+ ¦ ¦ Â

server {ip-address | ipv6-address}

no server {ip-address | ipv6-address}

ip-address	TACACS+ ¦ ¦ IP
ipv6-address	TACACS+ ¦ ¦ IPV6

¾ TACACS+ ¦ Â

TACACS+

¾ Â

ù TACACS+ AAA Ł˘ HЖ TACACS+ Ł Â Л Л Ъ
tacacs-server ¾ HЖ TACACS+ Ł Â

Ю HЖ TACACS+ Ł ў ‘
Ruijie(config)# tacacs-server host 192.168.12.1
Ruijie(config)# tacacs-server host 2001::1

¾	
aaa authentication	HЖ AAA
tacacs-server key	HЖ TACACS+ Ł ¾
tacacs-server timeout	HЖ TACACS+ Ł

¾ Л

Л	
-	-

40.1.6 tacacs-server key

¾ TACACS+ Â

tacacs-server key [0 | 7] string

no tacacs-server key

string	¾
0 | 7	¾ ¶ ˘ 0 ¶ ˘ 7 ¶ Â

¾ Â

¾ Â

¾ TACACS+ Ł Âù TACACS+ Ł ˘ TACACS+ Ł Э HЖ ˚ ¾ Â

й Ь a˚ ˘ host ҳ key ˘
Л Лъ key Ь key Â

Ю ЊЖ TACACS+ Ь ҳ й aaa˙
Ruijie(config)# tacacs-server key aaa

ҳ	
tacacs-server host	ЊЖ TACACS+ Ь ў
tacacs-server timeout	ЊЖ TACACS+

Л

Л	
-	-

40.1.7 tacacs-server timeout

ҳ б TACACS+ Ь ˘ Ь Â

tacacs-server timeout seconds

no tacacs-server timeout

seconds	ˆ æ й ˜ Â Л й 1-1000 Â

5

ҳ Â

ҳ Â й Ь a˚
˘ host ҳ timeout ˘ Л Лъ
timeout Ь timeout Â

Ю ЊЖ й 10 ˙

Ruijie(config)# tacacs-server timeout 10

ҳ	

tacacs-server host	ÐÝ TACACS+ ¸ ÿ
tacacs-server key	ÐÝ TACACS+ ¾

¼

¾	¼	
	-	-

40.2 TACACS+ãé—

40.2.1 debug tacacs+

TACACS+ Â ¾ no TACACS+ Â

debug tacacs+

no debug tacacs+

-	-

¾ EXEC Â

¾	¼	
	-	-

¼

¾	¼	
	-	-

41 SSH a—

41.1 SSHa—

41.1.1 crypto key generate

ㄴ ٠Ω ˘ ЮЎ ३٠

crypto key generate {**rsa | dsa**}

-	-

41.1.2 crypto key zeroize

SSH Ь Ώ ˘ Ю ҳ˙

crypto key zeroize {**rsa** | **dsa**}

rsa	RSA
dsa	DSA

ҳ

ҳ Ь Ώ Â ѣ˘ SSH Server ѝ ѝ DISABLE Â
SSH Server˘ **no enable service ssh-server** ҳ Â

Ruijie# configure terminal
Ruijie(config)# crypto key zeroize rsa

ҳ	
show ip ssh	SSH Server Â
crypto key generate {**rsa|dsa**}	DSA б RSA Â

Л ˚ RGOS10.1 Љ Э

Л	
-	-

ҳ

41.1.3 ip ssh authentication-retries

SSH Server Â ҳ no
ѝ Â

ip ssh authentication-retries retry times

no ip ssh authentication-retries

retry times	Â

Ю ѝ 3 Â ѣ˘ **no ip ssh authentication-retries** ৡ ≠ Л Љ ѝ Â

ৡ

ৡ SSH Server Â SSH Server ˘ Ў ╖˘ ‡ ѝ Â **show ip ssh** ৡ SSH Server Â

ѝ 2ʹ

Ruijie# configure terminal

Ruijie(config)# ip ssh ssh authentication-retries 2

ৡ

ৡ	
show ip ssh	SSH Server Â

Л ˚ RGOS10.1 Љ Э

ৡ

Л	
-	-

41.1.4 ip ssh time-out

SSH Server Â ৡ **no** ѝ Â

ip ssh time-out time

no ip ssh time-out

time	Â

Юʹ ѝ 120s Â ѣ˘ **no ip ssh time-out** ৡ˘ ѝ Â

३

ई

ɗ

show ip ssh

-	-

ৡ

SSH Server Â ‘ à SSH Server à à
Â

a	SSH ˘ Ł ˘ Ÿ SSH ù a Ⲗ Â

Ruijie# show ip ssh

42 CPU la—

42.1 ä—

42.1.1 cpu-protect type packet-type pps pps_value

CPU Â

cpu-protect type { **arp** | **bpdu** | **dhcp** | **ipv6mc** | **igmp** | **rip** | **ospf** | **vrrp** | **pim** | **ttl1** | **unknown-ipmc** | **dvmrp** | …} **pps** pps_value

¾ Â

¾ CPU Â

IO S9610 CPU Â

```
Ruijie#  show cpu-protect mboard
ype   Pps   Total  Drop
---------- --------- --------- ---------
arp   500   19   0
bpdu   200   24   0
dhcp   0   0   0
gvrp   0   0   0
ipv6-mc  0   0   0
dvmrp   0   0   0
igmp   0   0   0
ospf   0   0   0
pim   0   0   0
rip   0   0   0
vrrp   0   0   0
unknow-ipmc 0   0   0
ttl1   0   0   0
...
```

¾	
show cpu-protect slot slot-num	. CPU Â

/

/	
-	-

42.2.2 show cpu-protect type

¾ ·

show cpu-protect type { **arp** | **bpdu** | **dhcp** | **ipv6mc** | **igmp** | **rip** | **ospf** | **vrrp** | **pim** | **ttl1** | **unknown-ipmc** | **dvmrp | …**} dvmrp

slot_num	৸ ѝ 1-16 Â

ৡ Â

ৡ Â

ЛЬЮ **show cpu-protect type bpdu** ৡ BPDU

```
Ruijie(config)#          show cpu-protect type arp
Slot    Type     Pps     Total    Drop
--------- ------------ --------- --------- ---------
MainBoard bpdu      100      30      0
Slot-2   bpdu      100      30      0
```

ৡ	
show cpu-protect type packet-type	CPU Â

-

৸

৸	
-	-

a CPP ৡ ”…” CPP Â

43 DoS la—

43.1 ¤a—

43.1.1 ip deny invalid-l4port

¶ Â ¶ **no** ¶ Â

ip deny invalid-l4port

no ip deny invalid-l4port

-	-

Ю ¶ Â

¶ Â

1' Э ¶ '
Ruijie(config)# ip deny invalid-l4port
2' Э ¶ '
Ruijie(config)# no ip deny invalid-l4port

¶	

1' Э Land ¶ '
Ruijie(config)# ip deny land
2' Э Land ¶ '
Ruijie(config)# no ip deny land

¾	
show ip deny land	Land

¾	/ı	
-	-	

43.2 ¡ª

43.2.1 show ip deny invalid-l4port

Â

show ip deny invalid-l4port

-	-

¾ Â

Ruijie# show ip deny invalid-l4port
DoS Protection Mode State
---------- -----
protect against invalid l4port attack Off

¾	
-	-

/ı

३	⁄	
	-	-

43.2.2 show ip deny invalid-tcp

TCP Â

show ip deny invalid-tcp

	-	-

Â

३

Ruijie# show ip deny invalid-tcp
DoS Protection Mode State
---------- -----
protect against invalid tcp attack On

-	-

Â

Ruijie# show ip deny land
DoS Protection Mode State
------------------------------ -----
protect against land attack On

(**no**) **ip deny land**	Land

-	-

5

show security event interval

Ruijie(config)# security event interval 10

show security event interval	

RGOS10.1

-	-

Ruijie# show security event interval
Event sending interval(Seconds):5

security event interval interval	Â

RGOS10.1

-	-

44.2.2 show smp-server

smp server IP

-	-

smp server IP Â

Ruijie# show smp-server

SMP-Server IP 192.168.20.30

smp-server host	smp server ip Â

RGOS10.1 Â

-	-

45 DAI a—

45.1 sй VLAN DAIq3¿ä—

45.1.1 ip arp inspection vlan

ч˘ Л Љ vlan-id VLAN DAI ╖ Â ч no Л Љ
vlan-id VLAN DAI ╖ ˘ vlan-id ‡ VLAN
Э DAI ╖ Â

ip arp inspection vlan vlan-id

no ip arp inspection vlan [vlan-id]

vlan-id	vlan л Â

VLAN Э DAI ╖ Â

Â

ч ˘ ”I DAI ╖ ˘ Э Â

ЉЊО ˘ и VLAN 1 Э ARP Â
Ruijie(config)# ip arp inspection
Ruijie(config)# ip arp inspection vlan 1

ч	
show ip arp inspection vlan	VLAN DAI ╖ Â

л Â

л	
-	-

45.2 j

45.2.1 ip arp inspection trust

Y Л ˘ ३ **ip arp inspection trust** Â ३ **no** Y ѝ a Â

ip arp inspection trust

no ip arp inspection trust

-	-

a Â

३ Â

ARP ˚ DAI ˘ Л Ц è Н ˘ a ARP ˘ Â

NFPP( ) ˘ 8 NFPP ˘ a DAI ˘ ३ **show ip arp inspection interface** Л Â

ЛЬЮ ˘ gigabitEthernet 0/19 Н Â

```
Ruijie(config)#  interface gigabitEthernet  0/19
Ruijie(config-if)#  ip arp inspection trust
```

३	
show ip arp inspection interface	DAI ˘ Â

Л -

Л	
-	-

45.3 DHCP Snooping

46 ½ Arp ¿Z—

46.1 ¾r p¿Z—

46.1.1 anti-arp-spoofing ip

arp Â ¾ no Â

anti-arp-spoofing ip ip-address

no anti-arp-spoofing ip ip-address

Ip-address	IP

Ti a

¾ Â

show anti-arp-spoofing ¾ Â

Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# anti-arp-spoofing ip 192.168.1.1

¾	
show anti-arp-spoofing	IO arp

/I

/I	
-	-

46.2 ¾r p¿Z—

46.2.1 show anti-arp-spoofing

47 IP Source Guard a—

47.1 IP Source Guardea—

47.1.1 ip source binding

IP ╗ ˘ **no** Â

[**no**] **ip source binding** mac-address **vlan** vlan-id ip-address **interface** interface-id

mac-address	╗ MAC ’
vlan-id	╗ vlan id’
ip-address	╗ IP ’
interface-id	╗ Â

╗ Â

¾ Â

¾ ⁄ Л Ъ ǂ ⁄ Л Ъ IP Source Guard ˘ a DHCP ⁸ Â

Ю 1 ‘

Ruijie# configure terminal

Ruijie(config)# ip source binding 0000.0000.0001 vlan 1 1.1.1.1 interface FastEthernet 0/1

Ruijie(config)# end

Ruijie# show ip source binding

MacAddress IpAddress Lease(sec) Type VLAN Interface

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

0000.0000.0001 1.1.1.1 infinite static 1 FastEthernet 0/1

Total number of bindings: 1

¾	¾	

show ip source binding	IP

Л

¾	Л	
	-	-

47.2 IP Source Guardfa—

47.2.1 ip verify source

Э IP Source Guard ╖ ˘ **no** ╖ Â

[**no**] **ip verify source** [**port-security**]

port-security	IP Source Guard ╖ IP+MAC Â

Â

¾ Â

¾ IP Source Guard ╖ ˘ Л Љ IP ˘ IP+MAC ’

IP Source Guard ╖ DHCP Snooping Э ˘ ≠ ˘ Trust Љ DHCP Snooping ⁸ Э IP Source Guard ╖ ˘ IP Source Guard ╖ a Â

Ю 1 Э IP Source Guard ╖ ‘

```
Ruijie# configure terminal
Ruijie(config)# interface fastEthernet 0/1
Ruijie(config-if)# ip verify source
Ruijie(config-if)# end
```

¾	
show ip source binding	IP Source Guard

Л

48 NFPP a—

48.1 $q3m—

48.1.1 cpu-protect sub-interface {manage|protocol|route} pps

¾ Â

cpu-protect sub-interface {manage **|**protocol **|**route **} pps** pps_vaule

pps_vaule	˘ ∧ 1-8192

(Manage) 3000˝
(Route) 3000˝
(Protocol) 3000 Â

¾

Ruijie(config)# cpu-protect sub-interface manage pps 200

¾	
cpu-protect sub-interface { manage | protocol | route } **percent**	

∧

∧	
-	-

48.2 $q3ÿÖÓ—

48.2.1 cpu-protect sub-interface {manage|protocol|route} percent

¾ . ¦ Â

cpu-protect sub-interface {manage|protocol|route} **percent** percent_vaule

I	

Æ ˘ ʌ	[1,9999] Â

8 ˘

eshold per-src-ip 2

eshold per-src-mac 3

eshold per-port 50

ʌ ў	
ў	

⁄

३	⁄	
	-	-

48.3.4 arp-guard monitor-period

३ Â

arp-guard monitor-period seconds

48.3.5 arp-guard monitored-host-limit

३ ५ ў Â

arp-guard monitored-host-limit number

number	५ ў ˘ ५ ѝ 1 4294967295

per-src-ip	IP
per-src-mac	MAC
per-port	
pps	˘ ∧ [1,9999] Â

IP MAC 4 ˘
100 Â

३ NFPP

३	NFPP
	10 15 ЛЪ Э ARP ˘ MAC IP ۱ ˘ MAC IP IP a ۱ ˘ ѝ Â
	Ruijie(config)# nfpp Ruijie(config-nfpp)# arp-guard scan-threshold 20

VLAN 1 g 0/1 ÿ Â

Ruijie# clear nfpp arp-guard hosts vlan 1 interface g0/1

¾	
arp-guard attack-threshold	
nfpp arp-guard policy	
show nfpp arp-guard hosts	ʌ ÿ

¾	⁄	
	-	-

48.3.10 nfpp arp-guard enable

¾ Э ARP ╖ Â

nfpp arp-guard enable

	-	-

	ARP ˘ Â
¾	
	ARP ″I ARP Â
	Ruijie(config)# interface G0/1 Ruijie(config-if)# nfpp arp-guard enable

¾	¾	
¾	**arp-guard enable**	ARP ╖
	show nfpp arp-guard summary	

⁄		
¾	10.4	¾

48.3.11 nfpp arp-guard isolate-period

¾ Э Â

nfpp arp-guard isolate-period {seconds | **permanent**}

NFPP ३ ग्रQN0

```
Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp arp-guard scan-threshold 20
```

-	-

48.4.3 dhcp-guard isolate-period

ৡ Â

dhcp-guard isolate-period {seconds | **permanent**}

seconds	˘ Æ ˘ ৸ 0 [30, 86400]ʗ 0 a Â
permanent	

0ʗ a Â

ৡ NFPP

ʃ ѝ ˆ ~ Â
˘ ˘ ж , ‡˘
Â

Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard isolate timeout 180

ৡ	
nfpp dhcp-guard isolate-period	Э
show nfpp dhcp-guard summary	

৸

৸	
-	-

48.4.4 dhcp-guard monitor-period

ৡ Â

dhcp-guard monitor- period seconds

seconds	˘ Æ ˘ ∧ [180, 86400] Â

600 Â

३ NFPP

Ą˘ ù σ ˚ ˘ ù
Â ˚ ˘ ù ˘ ╟ ˚
∧ ˚ ˘ з ù Â ù 0 Ю
Ђ Â
ÿ ˘ ˘ a
˚ Â

Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard monitor-period 180

३	
show nfpp dhcp-guard summary	
show nfpp dhcp-guard hosts	∧ ў
clear nfpp dhcp-guard hosts	ў

३ ∧

∧	
-	-

48.4.5 dhcp-guard monitored-host-limit

३ ∧ ў Â

dhcp-guard monitored-host-limit number

	∧ ў ˘ ∧ ù 1 4294967295

३	NFPP
	∧ ў 1000 ˘ ∧ ў 1000ˇ a ∧ ў ˘ ľ %ERROR: The value that you configured is smaller than current monitored hosts 1000ˇ ∧ ў ˜ ˘ please clear a part of monitored hosts. Ł ˘ ĭ ў Â ∧ ў ˘ ľ % NFPP_DHCP_GUARD-4-SESSION_LIMIT: Attempt to exceed limit of 1000ˇ ∧ ў ˜ monitored hosts. Ł Â
	Ruijie(config)# nfpp Ruijie(config-nfpp)# dhcp-guard monitored-host-limit 200
३	

Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcp-guard rate-limit per-src-mac 8
Ruijie(config-nfpp)# dhcp-guard rate-limit per-port 100

३	
nfpp dhcp-guard policy	
show nfpp dhcp-guard summary	

४	
-	-

48.4.7 clear nfpp dhcp-guard hosts

clear nfpp dhcp-guard hosts [vlan vid] [**interface** interface-id] [mac-address]

vid	४
interface-id	
mac-address	MAC

VLAN 1 g 0/1
Ruijie# clear nfpp dhcp-guard hosts vlan 1 interface g0/1

३	
dhcp-guard attack-threshold	
nfpp dhcp-guard policy	

	show nfpp dhcp-guard hosts	ў

nfpp dhcp-guard isolate-period {seconds | **permanent**}

seconds	˘ Æ ˘ ∧ 0 [30, 86400] 0 a Â
permanent	

˘ Â

३

Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcp-guard isolate-period 180

३	
dhcp-guard isolate-period	
show nfpp dhcp-guard summary	

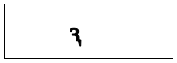
∧

∧	
10.4	३

48.4.10 nfpp dhcp-guard policy

Э Â

nfpp dhcp-guard policy { **per-src-mac** | **per-port**}



nffp dhcpv6-guard enable	Э DHCPv6 ╖
show nfpp dhcpv6-guard summary	

ﾊ

ﾊ	
10.4	३

48.5.3 dhcpv6-guard isolate-period

३ Â

dhcpv6-guard isolate-period {seconds | **permanent**}

seconds	˘ Æ ˘ ヘ 0 [30, 86400ﾌ 0 a Â
permanent	

0ד a Â

NFPP

ｷ ﾙ ˆ ˜ Â
˘ ˘ ﾒ ’ ‡˘
Â

Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard isolate timeout 180

३	
nfpp dhcpv6-guard isolate-period	Э
show nfpp dhcpv6-guard summary	

ﾊ

ﾊ	

MAC 5 ˘ 150 Â

३ NFPP

Ruijie(config)# nfpp
Ruijie(config-nfpp)# dhcpv6-guard rate-limit per-src-mac 8
Ruijie(config-nfpp)# dhcpv6-guard rate-limit per-port 100

३	
nfpp dhcpv6-guard policy	
show nfpp dhcpv6-guard summary	

/ı

/ı	
10.4	३

48.5.7 clear nfpp dhcpv6-guard hosts

˘ Â

clear nfpp dhcpv6-guard hosts [vlan vid] [**interface** interface-id] [mac-address]

vid	/ı
interface-id	¨
mac-address	MAC

VLAN 1 g 0/1 Â

Ruijie# clear nfpp dhcpv6-guard hosts vlan 1 interface g0/1

३	
dhcpv6-guard attack-threshold	
nfpp dhcpv6-guard policy	
show nfpp dhcpv6-guard hosts	ў

४	
10.4	३

48.5.8 nfpp dhcpv6-guard enable

३ Э DHCPv6 ╗ Â

nfpp dhcpv6-guard enable

-	-

DHCPv6 ˘ Â

DHCPv6 ″I DHCP Â

Ruijie(config)# interface G0/1

Ruijie(config-if)# nfpp dhcpv6-guard enable

३	
dhcpv6-guard enable	DHCPv6 ╗
show nfpp dhcpv6-guard summary	

¾	⁄
10.4	¾

48.5.9 nfpp dhcpv6-guard isolate-period

¾ Э Â

nfpp dhcpv6-guard isolate-period {seconds | **permanent**}

seconds	˘ Æ ˘ ∕ 0 [30, 86400]˙ 0 a Â
permanent	

˘ Â

¾

Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp dhcpv6-guard isolate-period 180

¾	
dhcpv6-guard isolate-period	
show nfpp dhcpv6-guard summary	

⁄

¾	⁄
10.4	¾

48.5.10 nfpp dhcpv6-guard policy

Э Â

nfpp dhcpv6-guard policy { **per-src-mac** | **per-port**} rate-limit-pps attack-threshold-pps

३ NFPP

Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard enable

३	
nffp icmp-guard enable	Э ICMP ╖
show nfpp icmp-guard summary	

ﾊ

ﾊ	
-	-

48.6.3 icmp-guard isolate-period

३ Â

icmp-guard isolate-period {seconds | **permanent**}

seconds	˘ Æ ˘ ﾍ 0 [30, 86400ﾝ 0 a Â
permanent	

0ˇ a Â

NFPP

ﾞ ﾙ ^ ~ Â
˘ ˘ ж , ‡˘
Â

Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard isolate-period 180

३	
nfpp icmp-guard isolate-period	Э
show nfpp icmp-guard summary	

ʌ

ʌ	
-	-

48.6.4 icmp-guard monitor-period

३ Â

icmp-guard monitor-period seconds

seconds	˘ Æ ˘ ʌ [180, 86400] Â

600 Â

NFPP

Ą˘ ѝ Ơ ˚ ˘ ѝ
Â ˚ ˘ ѝ ˘ ╟ ˚
ʌ ˚ ˘ з ѝ Â ѝ 0 Ю
Ⱨ Â
ÿ ˘ ˘ a
˚ Â

Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guard monitor-period 180

३	
show nfpp icmp-guard summary	
show nfpp icmp-guard hosts	ʌ ў

ip	IP
mask	IP
all	no ˘ ʌ ў

ʌ ў Â

३ NFPP

ʌ ў a ˘ ў ˘ ‡ ʌ Л Ъ ३ Â
ʌ ў CPU ICMP CPU a Â
ʌ Л Ъ ў a Â
500 ʌ ў Â

Ruijie(config)# nfpp
Ruijie(config-nfpp)# icmp-guardtrusted-host 1.1.1.0255.255.255.0

३	
show nfpp icmp-guard trusted-host	

ʌ

ʌ	
-	-

48.6.8 clear nfpp icmp-guard hosts

ʌ ў ˘ ў ˘ Â

clear nfpp icmp-guard hosts [vlan vid] [**interface** interface-id] [ip-address]

vid	ʌ
interface-id	¨
ip-address	IP

Э Â

nfpp icmp-guard policy { **per-src-ip** | **per-port**} rate-limit-pps attack-threshold-pps

per-src-ip	IP Â
per-port	Â
rate-limit-pps	˘ ∧ 1 9999 Â
attack-threshold-pps	˘ ∧ 1 9999 Â

˘ Â

३

ip-guard enable

ip-guard isolate-period

ip-guard monitor-period

ip-guard monitored-host-limit

ip-guard rate-limitt

ip-guard scan-threshold

ip-guard trusted-host

clear nfpp ip-guard hosts

nfpp ip-guard enable

nfpp ip-guard isolate-period

nfpp ip-guard policy

nfpp ip-guard scan-threshold

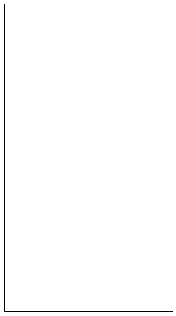
a

	˘ IP IP a IP IP Â IP IP IP ˘ ‡ CPP˘ CPU Protect Policy˘ Â ɣ a IP ˘ Ь IP Â

48.7.1 ip-guard attack-threshold

˘ Ą˘ ѝ ѝ Â

ip-guard attack-threshold {


ʌ
ў
1000

३	
nfpp ip-guard policy	
show nfpp ip-guard summary	

४	
10.4	३

48.7.7 ip-guard scan-threshold

Â

ip-guard scan-threshold pkt-cnt

pkt-cnt	˘ ४ [1,9999] Â

10 100 Â

NFPP

```
Ruijie(config)# nfpp
Ruijie(config-nfpp)# ip-guard scan-threshold 20
```

३	

48.7.8 ip-guard trusted-host

ʌ ў a ˘ ў ˘ ‡ ʌ Ћ ꝛ Â **ask**

10.4	३

48.7.13 nfpp ip-guard scan-threshold

Э Â

nfpp ip-guard scan-threshold pkt-cnt

pkt-cnt	˘ ∧ [1,9999] Â

IP ˘ ARP Â

३

Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp ip-guard scan-threshold 20

३	
ip-guard scan-threshold	
show nfpp ip-guard summary	

∧

∧	
10.4	३

48.8 ND[a—

48.8.1 nd-guard attack-threshold

˘ Ą˘ й й Â

nd-guard attack-threshold per-port {**ns-na** | **rs** | **ra-redirect**} pps

ns-na	Ω

ND ℸ

३ NFPP

Ruijie(config)# nfpp
Ruijie(config-nfpp)# nd-guard enable

३	
nffp nd-guard enable	Э ND ℸ
show nfpp nd-guard summary	

ሥ

ሥ	
10.4	३

48.8.3 nd-guard rate-limit

Â

nd-guard rate-limit per-port {**ns-na** | **rs** | **ra-redirect**} pps

ns-na	‘Ω
rs	
ra-redirect	‘Ω
pps	˘ ሥ [1,9999] Â

/‘Ω 15 ˘
15 ˘ ‘Ω / 15 Â

३ NFPP

४	
३	
10.4	३

48.8.5 nfpp nd-guard policy

Э Â

nfpp nd-guard policy per-port {**ns-na** | **rs** | **ra-redirect**} rate-limit-pps attack-thresh old-pps

ns-na	٬Ω
rs	
ra-redirect	٬Ω
rate-limit-pps	˘ ४ 1 9999 Â
attack-threshold-pps	˘ ४ 1 9999 Â

˘ Â

३

a Â

ND snooping ƚ ѝ ˘ ў ˘
Â ˘ Ль
˘ ND snooping ╖ ˘ ˘ ND snooping
ND guard Ь 800 ˘
900 Â
ND guard ˚ ND snooping ˘ ł
ʺI ˘ з ˚ Â ND snooping Â

Ruijie(config)# interface G 0/1
Ruijie(config-if)# nfpp nd-guard policy per-port ns-na 50 100
Ruijie(config-if)# nfpp nd-guard policy per-port rs 10 20
Ruijie(config-if)# nfpp nd-guard policy per-port ra-redirect 10 20

३	३	

nd-guard attack-threshold	
nd-guard rate-limit	
show nfpp nd-guard summary	

48.9.2 log-buffer entries

NFPP ă ٢ Â

log-buffer entries number

number	ă ٢ ˘ Æ ˘ ٧ [0,1024]

ă ٢ ѝ 256 Â

३ NFPP

NFPP ă ٢ ѝ 50 Â

Ruijie(config)# nfpp

Ruijie(config-nfpp)# log-buffer entries 50

३	

log-buffer logs number_of_message **interval**

length_in_seconds	ѝ 0-86400̂ 1 ˜ ˘ 0 a ă ѵ̆ Â number_of_message length_in_seconds ѝ 0 a ă ѵ̆ Â number_of_message /length_in_second ∧ Â

number_of_message ѝ 1̆ length_in_seconds

Â

३ NFPP

३ ʌ ЛЪ ˘ ʌ VLAN Â ч
˘ ʌ è ‡˘
ă ↖ Â

ʌ VLAN 1 à VLAN 2 à VLAN 3 VLAN 5 ˘ Ю
Ruijie(config)# **nfpp**
Ruijie(config-nfpp)# logging **vlan** 1-3,5

ʌ G 0/1 ˘ Ю
Ruijie(config)# **nfpp**
Ruijie(config-nfpp)# logging **interface** Ve

ă ٧ ˘ ł ˘ ˚ ă ٧
ѝ"-" Â ╗ ă ٧ Â
ÿ ă ٧ ٨ Y ˚ ˘ Ю ˙

%NFPP_ARP_GUARD-4-DOS_DETECTED: Host<IP=N/A,MAC=0000.0000.0004,port=Gi4/1,VLAN=1> was detected.(2009-07-01 13:00:00)

NFPP Â

```
Ruijie# show nfpp log summary
Total log buffer size : 10
Syslog rate : 1 entry per 2 seconds
Logging:
  VLAN 1-3, 5
  interface Gi 0/1
  interface Gi 0/2
```

NFPP ă ٧ Â

```
Ruijie# show nfpp log buffer statistics
There are 6 logs in buffer.
```

NFPP ă ٧ Â

```
Ruijie# show nfpp log buffer
Protocol VLAN Interface IP address MAC address Reason
 Timestamp
------- ---- -------- --------- ----------- ------
 ---------
ARP 1 Gi0/1 1.1.1.1 - DoS
2009-05-30 16:23:10
ARP 1 Gi0/1 1.1.1.1 - ISOLATED
2009-05-30 16:23:10
ARP 1 Gi0/1 1.1.1.2 - DoS
2009-05-30 16:23:15
ARP 1 Gi0/1 1.1.1.2 - ISOLATE_FAILED
2009-05-30 16:23:15
ARP 1 Gi0/1 - 0000.0000.0001 SCAN
2009-05-30 16:30:10
ARP - Gi0/2 - - PORT_ATTACKED
2009-05-30 16:30:10
```

interface-id	‥
ip-address	IP
mac-address	MAC

३

1' ५ ў Â

Ruijie# show nfpp arp-guard hosts statistics

success fail total

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

100 20 120

120 ५ ў ˘ è 100 ५ ў ˚ ℸ ˘ 20 ५ ў ˚

^ a ˘ ˚ a ~ Â

2' ५ ў ˘ l' remain-time(seconds) Ł Â

Ruijie# show nfpp arp-guard hosts

If column 1 shows '*', it means "hardware do not isolate user" .

VLAN interface IP address MAC address remain-time(s)

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

1 Gi0/1 1.1.1.1 - 110

2 Gi0/2 1.1.2.1 - 61

*3 Gi0/3 - 0000.0000.1111 110

4 Gi0/4 - 0000.0000.2222 61

Total' 4 hosts

३

३	
clear nfpp arp-guard hosts	५ ў

५

५	
-	-

48.10.2 show nfpp arp-guard scan

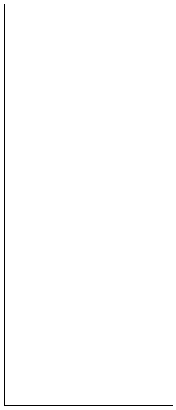
ARP Â

show nfpp arp-guard scan [**statistics** | [[**vlan**

estamp

23

6.84 64152 0.22 4.02 re e 141.6 641539441.92 4.02



statistics	ʌ ў
vid	ʌ
interface-id	˝
mac-address	MAC

ꝛ

ʌ ў Â

Ruijie# **show nfpp dhcp-guard hosts statistics**

success fail total

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

100 20 120

120 ʌ ў ˘ ὲ 100 ʌ ў ˚ ℸ ˘ 20 ʌ ў ˚

^ a ˘ ˚ a ~ Â

ʌ ў ˘ Ľ remain-time(seconds) Ł Â

Ruijie# **show nfpp dhcp-guard hosts**

If column 1 shows '*', it means "hardware failed to isolate host".

VLAN interface MAC address remain-time(seconds)

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

1 gi0/2 0000.0000.0001 10

*2 gi0/1 0000.0000.0002 20

Total 2 host(s)

ꝛ

ꝛ	
clear nfpp dhcp-guard hosts	ʌ ў

ʌ

ꝛ

ʌ	
10.4	ꝛ

dhcp-guard rate-limit	
nfpp dhcp-guard enable	Э DHCP ¶
nfpp dhcp-guard isolate-period	
nfpp dhcp-guard policy	

Á

Á	
10.4	¾

48.12 DHCPv6 ¦a—

48.12.1 show nfpp dhcpv6-guard hosts

Á ÿ Â

show nfpp dhcpv6-guard hosts [**statistics** | [[**vlan** vid] [**interface** interface-id] [mac -address]]]

statistics	Á ÿ
vid	Á
interface-id	¤
mac-address	MAC

Á ÿ Â

Ruijie# **show nfpp dhcpv6-guard hosts statistics**

success fail total

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

100 20 120

120 Á ÿ ˘ è 100 Á ÿ ¶ ˘ 20 Á ÿ

ˆ a ˘ ˚ a ˜ Â

ʌ ў ˘ Ľ remain-time(seconds) Ł Â

Ruijie# **show nfpp dhcpv6-guard hosts**

If column 1 shows '*', it means "hardware failed to isolate host".

VLAN	interface	MAC address	remain-time(seconds)
1	gi0/2	0000.0000.0001	10
*2	gi0/1	0000.0000.0002	20

Total 2 host(s)

statistics	ʌ ў
vid	ʌ
interface-id	¨
ip-address	IP

Â

show nfpp icmp-guard summary

nfpp icmp-guard isolate-period	
nfpp icmp-guard policy	

∧	
10.4	३

48.13.3 show nfpp icmp-guard trusted-host

a ∧ ў Â

show nfpp icmp-guard trusted-host

	Tf2 Tr 10.02 0 0 10.02 78.36 643.34

10.4	३

48.14 IP‰Mþ—

show nfpp ip-guard hosts

show nfpp ip-guard summary

show nfpp ip-guard trusted-hos

48.14.1 show nfpp ip-guard hosts

ʌ ў Â

show nfpp ip-guard hosts [**statistics** | [[**vlan** vid] [**interface** interface-id] [ip-addres s]]]

statistics	ʌ ў
vid	ʌ
interface-id	¨
ip-address	IP

३

Ruijie#**show nfpp ip-guard hosts statistics**

success fail total

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

100 20 120

‘ Ľ 120 ʌ ў ˘ è 100 ʌ ў ╖˘ 20 ʌ ў Ł Â

Ruijie#**show nfpp ip-guard hosts**

If column 1 shows '*', it means "hardware do not isolate host" .

VLAN interface IP address Reason remain-time(s)

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

[redacted]

[redacted]

[redacted]

३

Ʌ ў Â

```
Ruijie#      show nfpp ip-guard trusted-host
IP address    mask
---------     ------
1.1.1.0       255.255.255.0
1.1.2.0       255.255.255.0
Total  2 record(s)
```

३	
ip-guard trusted-host	a Ʌ ў

49 ACL a—

ЛЬЮ ҳ Л ЛЬЮ ҳ

ҳ		Н
	id	л Â л IP ACL 1-99 1300-1999 IP ACL 100-199 2000-2699 MAC ACL 700–799 ж ACL 2700–2899
	name	ACL
	sn	ACL л (I)