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1.

Courier New

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3.







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RSR20-14 E/F
PC

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1.1.2 < >

RSR20-14 E/F
PC

1.1.3 < >

CPU

1.2

Aggrefate Port VLAN MAC IP

		NMX-24ESW	

show running-config			
show startup-config			
write			
reload			
interface fastEthernet			
medium-type			
descriptioin			
shutdown			
speed			
duplex			
flowcontrol			
mtu			
carrier-delay			
clear counters			
clear interface			
switchport			
switchport mode access			
switchport mode trunk			
switchport access			
switchport trunk			
show interfaces			
Aggrefate Port			
interface aggregateport			
port-group			
aggregateport load-balance			
show aggregateport			
VLAN			
interface vlan			
ip address			
vlan			
name			
show vlan	vlan		
MAC			
mac-address-table aging-time			
clear mac-address-table dynamic			
clear mac-address-table filtering			

clear mac-address-table static			
mac-address-table static			
mac-address-table filtering			
mac-address-table notification			
address-bind			
address-bind uplink			
show mac-address-table address			
show mac-address-table aging-time			
show mac-address-table count			
show mac-address-table dynamic			
show mac-address-table filtering			
show mac-address-table interface			
show mac-address-table notification			
show mac-address-table static			
show mac-address-table vlan			
show address-bind			
show mac-address-table mac-manage-learning			
IP			
arp			
arp retry			
arp unresolved			
clear arp-cache			
show arp			
show arp counter			
show arp timeout			
show ip arp			
show ip redirects			
storm-control			
switchport protected			
switchport port-security			
switchport port-security aging			
switchport port-security mac-address			
port-security arp-check			
show storm-control			
show port-security			
show port-security arp-check			
service-module FastEthernet			

slot/0 session			
service-module FastEthernet slot/0 reset			
service-module FastEthernet slot/0 session-timeout seconds			
show service-module { FastEthernet slot/0 }			
service-module FastEthernet slot/0 backup			
service-module FastEthernet slot/0 recovery			



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 - no default
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2.1

			exit	
			enable	
	enable		disable	
			configure	
	configure		end	
			exit	
			interface	
			interface	
			vlan	

end

interface

exit

2.2

?

Help	
abbreviated-command-entry?	di
abbreviated-command-entry<Tab>	show conf<Tab> show configuration
?	show ?
command keyword ?	snmp-server community ?

2.3

†•`

2.5

CLI

2.6

2.7

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2.7.1

2.7.2

```
$static 00d0.f800.0c0c vlan 1 interface fastEthernet
$static 00d0.f800.0c0c vlan 1 interface fastEthernet 0/1
```

```
-address-table static 00d0.f800.0c0c vlan 1 interface $
80
```

2.8 CLI

2.8.1 Show

show <i>any-command</i> begin <i>regular-expression</i>	show



show	
show <i>any-command</i> exclude <i>regular-expression</i>	show
show <i>any-command</i> include <i>regular-expression</i>	show



show

2.9

alias ?

Ruijie(config)#**alias ?**

aaa-gs	AAA server group mode
acl	acl configure mode
bgp	Configure bgp Protocol
config	globle configure mode
.....	

**command-alias=original-command*

Ruijie#**s?**

*s=show show start-chat start-terminal-service

Ruijie#**s?**

*s=show *sv="show version" show start-chat
start-terminal-service

Ruijie# **s?**

show start-chat start-terminal-service

Ruijie(config-if)#**ia ?**

A.B.C.D	IP address
dhcp	IP Address via DHCP

Ruijie(config-if)#**ip address**

ip address

show aliases

3.1

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3.2



3.2.1

3.2.4.1

configure terminal	
privilege mode all level <i>level reset command-string</i>	config exec interface level level level level enable/disable <i>command-string</i>

no privilege mode all
level level command

3.2.4.2

```

reload
"test"

Ruijie# configure terminal
Ruijie(config)# privilege exec all level 1 reload
Ruijie(config)# enable secret level 1 0 test
Ruijie(config)# end

Ruijie# disable 1
Ruijie> reload ?
    at                reload at a specific time/date
    cancel            cancel pending reload scheme
    in                reload after a time interval
    <cr>

Ruijie# configure terminal
Ruijie(config)# privilege exec all reset reload

```

```
Ruijie(config)# end
```

```
Ruijie# disable 1  
Ruijie> reload ?  
% Unrecognized command.
```

3.2.5

3.3.2

username <i>name</i> password <i>password password</i> <i>encryption-type encrypted password</i>	
username <i>name</i> privilege <i>level</i>	

3.3.3

login local	
login authentication default <i>list-name</i>	





3.5

3.5.1

3.5.2

reload at <i>hh:mm month day year</i> <i>reload-reason</i>	

Ruijie# **reload at** 12:00 1 11 2005 *midday//*

3.5.5

reload cancel	

3.6

3.6.1

“ ”

3.6.2

hostname <i>name</i>	

no hostname

```
Ruijie# configure terminal //
Ruijie(config)# hostname RGOS //
RGOS(config)# //
```

3.6.3

prompt





c

banner
login *c message c*

show version	

3.8.3

show slots	

3.9

3.9.1

3.9.2

speed <i>speed</i>	

```
Ruijie# configure terminal                //  
Ruijie(config)# line console 0           //  
Ruijie(config-line)# speed 57600         //
```

```
Ruijie(config-line)# end //
Ruijie# show line console 0 //
CON      Type      speed  Overruns
* 0      CON      57600   0
Line 0, Location: "", Type: "vt100"
Length: 25 lines, Width: 80 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: 22 bytes
Total output: 115 bytes
Data overflow: 0 bytes
stop rx interrupt: 0 times
Modem: READY
```

4.1

4.2

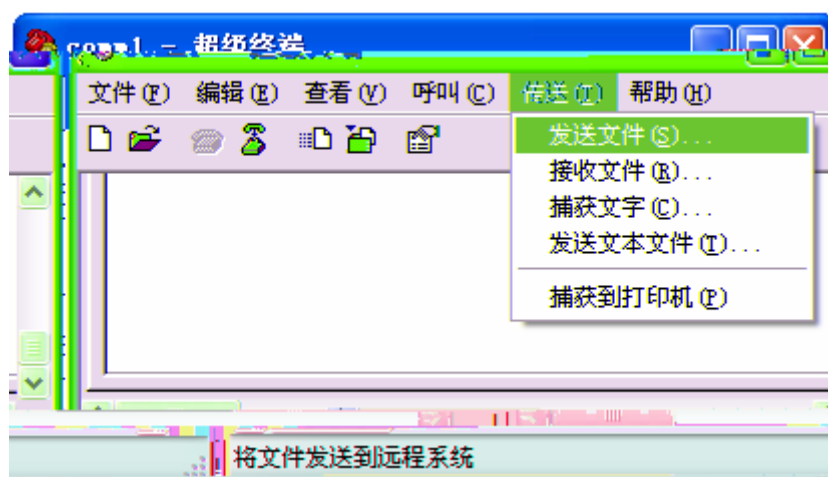
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4.2.1 TFTP

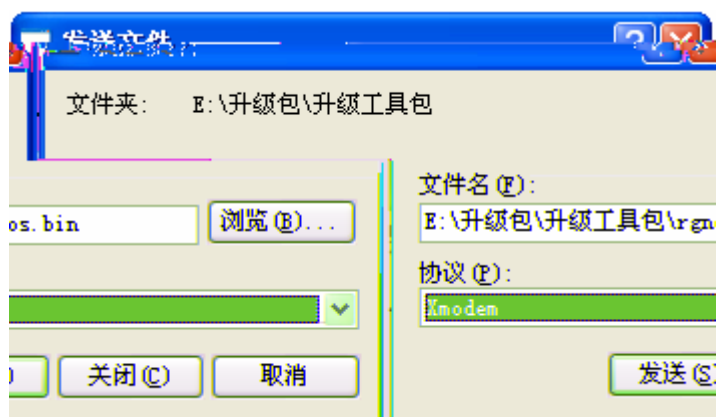
copy tftp: <i>//location/ filename</i> flash: <i>filename</i>	<i>filenam</i>

copy flash: <i>filename</i> tftp: <i>//loca tion/filename</i>	<i>filename</i>

4.2.2 XMODEM

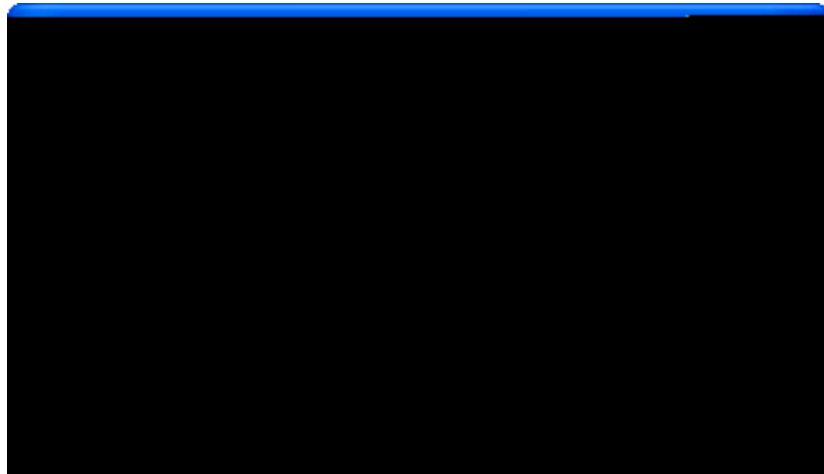


1

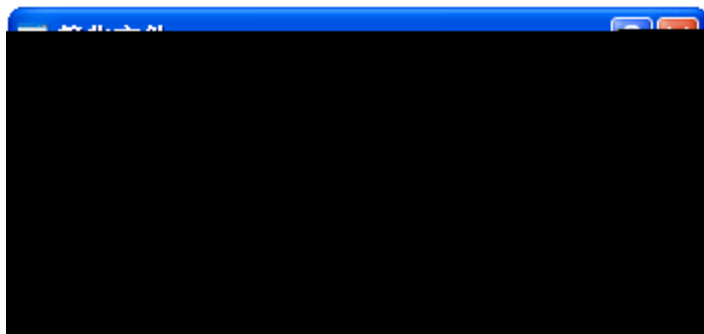


2

copy xmodem flash filename	<i>filename</i>



3



4

copy flash <i>filename</i> xmodem	<i>filename</i>

4.2.3

Current software version in slot [1] is synchronous.
System needn't to do version synchronization for this
card

System is doing version synchronization checking
Card in slot [3] need to do version synchronization

Version synchronization begain
Keep power on, don't draw out the card and don't restart
your machine before finished !!!!!

Transmission is OK, now, card in slot [3] need restart ...
Software installation of card in slot [3] is in
process

!!
!!
!!

Software installation of card in slot [3] has finished
successfully

The version synchronization of card in slot [3] get
finished successfully.



5.1

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5.1.1 (L2 interface)

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5.1.1.1 Switch Port

5.1.1.1.1 Access Port

VLAN
Port

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Tagged

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5.1.1.1.2 Trunk Port

VLAN



Trunk port

Untagged

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Tagged

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-
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5.1.1.1.3 Hybrid



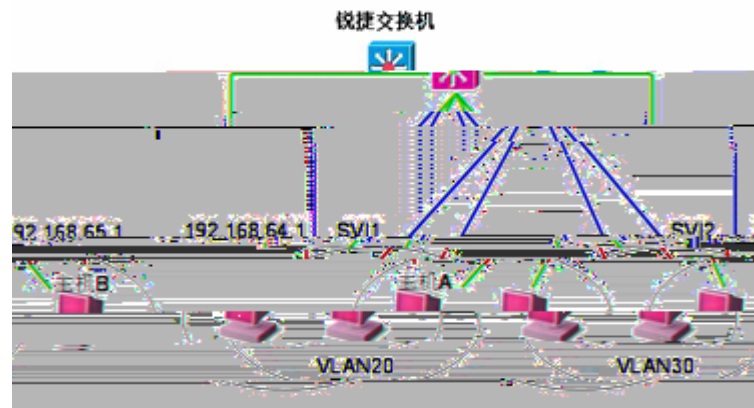
5.1.1.2 L2 Aggregate Port



5.1.2 (L3 interface)

5.1.2.1 SVI(Switch virtual interface)

interface vlan



1

5.2

5.2.1

show



Aggregate Port Aggregate port - *Aggregate port*

define interface-range

```
Ruijie# configure terminal  
Ruijie(config)# define interface-range resource  
fastethernet 1/1-4  
Ruijie(config)# end
```

```
Ruijie# configure terminal  
Ruijie(config)# define interface-range ports1to2N5to7  
fastethernet 1/1-2, 1/5-7  
Ruijie(config)# end
```

```
Ruijie# configure terminal  
Ruijie(config)# interface range macro ports1to2N5to7  
Ruijie(config-if-range)#
```

5.2.5

“ ”

description <i>string</i>	

```
Ruijie# config terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Ruijie(config)# interface gigabitethernet 1/1  
Ruijie(config-if)# description PortForUser A  
Ruijie(config-if)# end
```

shutdown	

		duplex		auto
full	half			



NMX MTU 1532 (UNTAG FCS
TAG 1536)

5.2.8



“

”

“

”

5.2.8.1 Switch Port

5.2.8.1.1 access/trunk port

switchport

switchport mode access trunk	

```
Ruijie# configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Ruijie(config)# interface gigabitethernet 1/2  
Ruijie(config-if)# switchport mode access  
Ruijie(config-if)# end
```

--	--

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie (config)# interface gigabitethernet 2/1
Ruijie (config-if)# switchport access vlan 100
Ruijie (config-if)# speed auto
Ruijie (config-if)# duplex auto
Ruijie (config-if)# flowcontrol auto
Ruijie (config-if)# switchport port-security
Ruijie (config-if)# end
```

5.2.8.1.2 Hybrid

configure terminal	
interface <i>interface</i>	

switchport mode hybrid

5.2.8.3

clear





```

Ruijie# show interfaces gigabitethernet 1/1
GigabitEthernet : Gi 1/1
Description      : user A
AdminStatus      : up
OperStatus       : down
Hardware         : 1000BASE-TX
Mtu              : 1500
PhysAddress      :
LastChange       : 0:0h:0m:0s
AdminDuplex      : Auto
OperDuplex       : Unknown
AdminSpeed       : 1000M
OperSpeed        : Unknown
FlowControlAdminStatus : Enabled
FlowControlOperStatus : Disabled
Priority         : 1

```

```

SVI 5
Ruijie# show interfaces vlan 5
VLAN : V5
Description : SVI 5
AdminStatus : up
OperStatus  : down
Primary Internet address : 192.168.65.230/24
Broadcast address : 192.168.65.255
PhysAddress : 00d0.f800.0001
LastChange : 0:0h:0m:5s

```

```

Ruijie# show interfaces aggregateport 3
Interface : AggregatePort 3
Description :
AdminStatus : up
OperStatus : down
Hardware : -
Mtu : 1500
LastChange : 0d:0h:0m:0s
AdminDuplex : Auto
OperDuplex : Unknown
AdminSpeed : Auto
OperSpeed : Unknown
FlowControlAdminStatus : Autonego
FlowControlOperStatus : Disabled
Priority : 0

```

```

Ruijie# show interfaces gigabitEthernet 1/1 switchport
Interface Switchport Mode Access Native Protected
VLAN lists
-----
-----
gigabitethernet 1/1 Enabled Access 1 1
Enabled All

```

```

Ruijie# show interfaces gigabitethernet 1/2 description
Interface Status Administrative Description

```

```

-----
gigabitethernet 2/1      down      down      Gi 2/1

```

```

Ruijie# show interfaces gigabitethernet 1/2 counters
Interface : gigabitethernet 1/2
5 minute input rate   9144 bits/sec, 9 packets/sec
5 minute output rate  1280 bits/sec, 1 packets/sec
InOctets               : 17310045
InUcastPkts            : 37488
InMulticastPkts        : 28139
InBroadcastPkts        : 32472
OutOctets               : 1282535
OutUcastPkts           : 17284
OutMulticastPkts       : 249
OutBroadcastPkts       : 336
Undersize packets      : 0
Oversize packets       : 0
collisions              : 0
Fragments              : 0
Jabbers                 : 0
CRC alignment errors   : 0
AlignmentErrors         : 0
FCSErrors               : 0
dropped packet events (due to lack of resources): 0
packets received of length (in octets):
64:46264, 65-127: 47427, 128-255: 3478,
256-511: 658, 512-1023: 18016, 1024-1518: 125

```

5.4 LinkTrap

5.4.1

no snmp trap link-status	

5.4.2

```

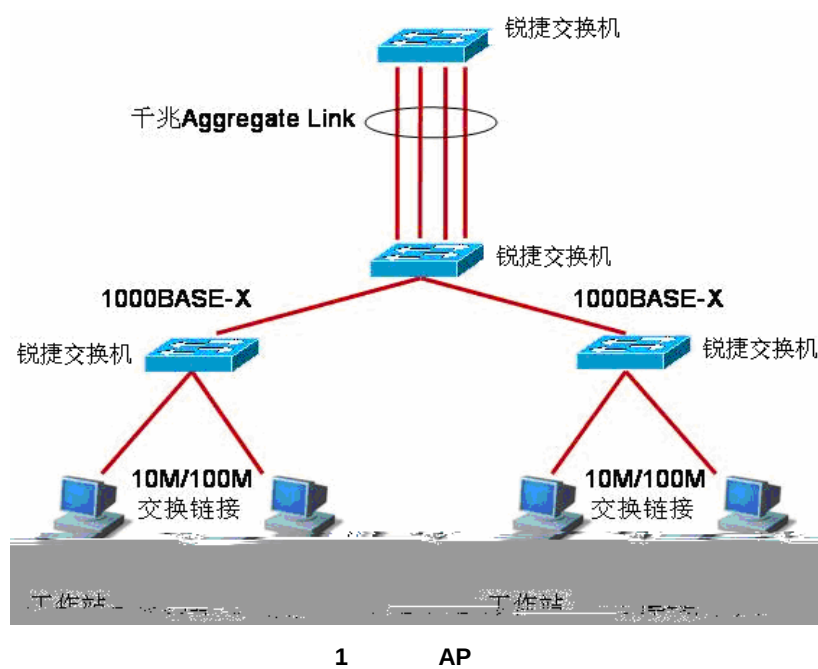
Ruijie(config)# interface gigabitEthernet 1/1
Ruijie(config-if)# no snmp trap link-status

```

Aggregate Port

6.1

6.1.1 Aggregate Port



6.1.2

aggregateport load-balance



2 AP



6.2 Aggregate Port

6.2.1 Aggregate Port

6.2.2 Aggregate Port

6.2.3 Aggregate Port

port-group <i>port-group-number</i>	

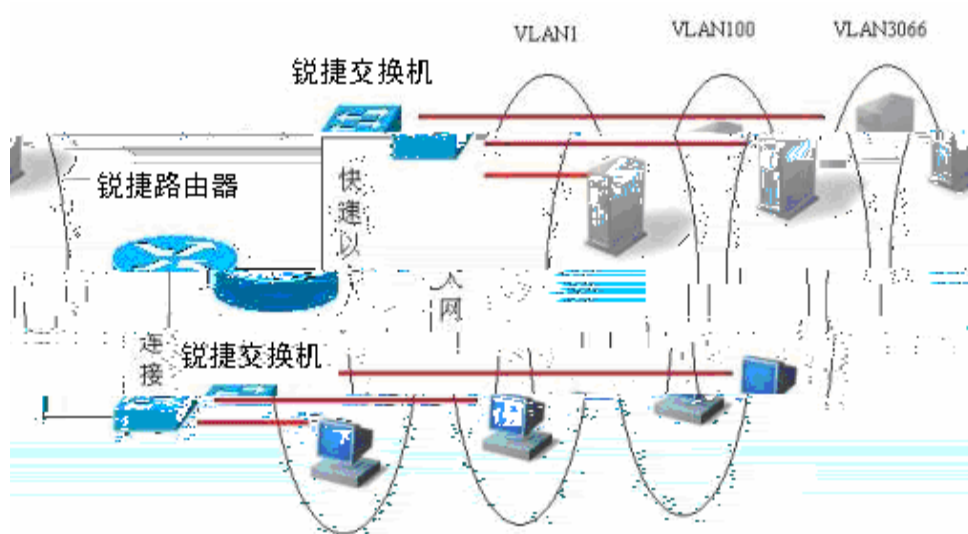
no port-group

```
Ruijie# configure terminal
Ruijie(config)# interface range gigabitEthernet 0/1
Ruijie(config-if-range)# port-group 5
Ruijie(config-if-range)# end
```

interface aggregateport *n*

VLAN

7.1



7.1.1 VLAN

7.1.2 VLAN

VLAN	VLAN
------	------

ti2a


```
Ruijie# configure terminal
Ruijie(config)# vlan range 2-10
Ruijie(config-vlan)# end
```

7.2.6 VLAN

<i>vlan-list</i>	<i>vlan-list</i>
no vlan range	



VLAN 256 VLAN 256 vlan range

7.2.7 VLAN Access

switchport	
mode access	
switchport	
access vlan <i>vlan-id</i>	

```
Ruijie# configure terminal
Ruijie(config)# interface fastethernet 1/10
Ruijie(config-if)# switchport mode access
Ruijie(config-if)# switchport access vlan 20
Ruijie(config-if)# end
```

```
Ruijie(config)# show interfaces gigabitEthernet 3/1 switchport
Switchport is enabled
Mode is access port
Access vlan is 1,Native vlan is 1
Protected is disabled
Vlan lists is ALL
```

7.3

7.3.2 Trunk

7.3.2.1 Trunk

switchport mode trunk	
switchport trunk native vlan <i>vlan-id</i>	

È

7.3.3

Trunk

VLAN

switchport trunk allowed vlan all add remove except <i>vlan-list</i>	<i>vlan-list</i> all add remove except

no

MAC

8.1 MAC

8.1.1

8.1.1.1



8.1.1.2

8.1.1.3

8.1.1.4 MAC VLAN

8.1.2 MAC

8.1.2.1 MAC



8.1.2.2

mac-address-table aging-time <i>0</i> <i> 10-1000000</i>	

no mac-address-table aging-time

8.1.2.3

clear mac-address-table dynamic
clear mac-address-table dynamic address
mac-address **clear**
mac-address-table dynamic interface *interface-id*



8.1.2.4

mac-address-table static <i>mac-add</i> vlan <i>vlan-id</i> interface <i>interface-id</i>	

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

```

no mac-address-table filtering mac-addr
vlan vlan-id

```

```

Ruijie(config)# mac-address-table filtering 00d0.f800.073c
vlan 1

```

⚡

...

8.1.3 MAC

show mac-address-table	
show mac-address-table aging-time	
show mac-address-table dynamic	
show mac-address-table static	
show mac-address-table filtering	
show mac-address-table interface	
show mac-address-table vlan	
show mac-address-table count	

```

Ruijie# show mac-address-table dynamic
Vlan      MAC Address      Type      Interface
-----
1         0001.960c.a740    DYNAMIC   gigabitethernet 1/1
1         0009.b715.d40c    DYNAMIC   gigabitethernet 1/1
1         0080.ad00.0000    DYNAMIC   gigabitethernet 1/1

```

```

Ruijie# show mac-address-table count

```

8.2.2 MAC

Ruijie(config-if)# snmp trap mac-notification removed

8.2.3 gsBT/TT0 1 Tf0 /TT0 1 Tf0 9.80667 0 Td<0D040D09AC08EA45EE2<1

IGMP Snooping

9.1

9.1.1 IGMP

点对多的传播方式



“ 1 ”

“ ”

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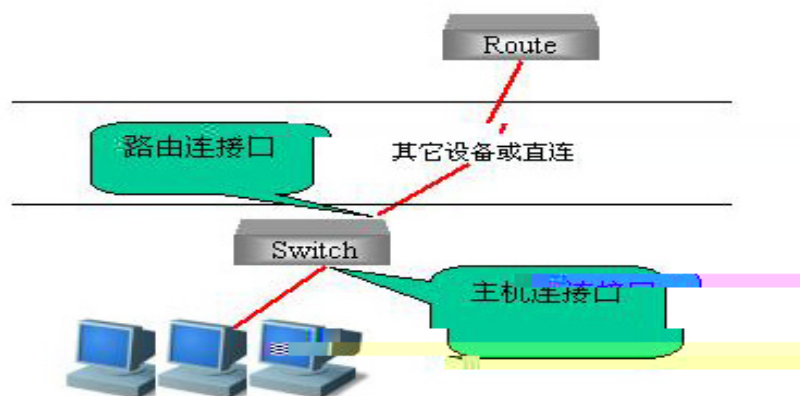
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9.1.2 IGMP Snooping

“ ” “ ” “ ” “ ”

9.1.3

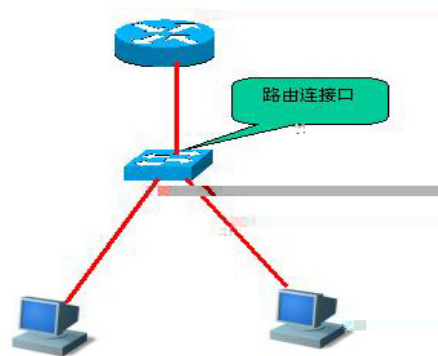


9.1.5



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9.2 IGMP Snooping

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9.2.1 IGMP Snooping

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Vlan	Interface	State	IGMP profile
----	-----	-----	-----
1	GigabitEthernet 0/7	static	0
1	GigabitEthernet 0/12	dynamic	0

Ruijie# **show ip igmp snooping mrouter learn**

Vlan	learn method
----	-----
1	pim-dvmrp

9.2.4

ip igmp snooping dyn-mr-aging-time <i>time</i>	<i>time</i>
end	

no ip igmp snooping dyn-mr-aging-time

```
Ruijie# configure terminal  
Ruijie(config)# ip igmp snooping dyn-mr-aging-time 100  
Ruijie(config)# end
```

9.2.6

end	
------------	--

ivgl	ip igmp snooping	IVGL
	ip igmp snooping vlan <i>vlan-id</i> static <i>ip-addr</i> interface <i>interface-id</i>	<i>vlan-id</i> <i>ip-addr</i> <i>interface-id</i>
	end	

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

```
Ruijie# configure Terminal
Ruijie(config)# ip igmp snooping vlan 1 static 224.1.1.1
interface GigabitEthernet 0/7
Ruijie(config)# end
Ruijie(config)# show ip igmp snooping gda
Abbr: M - mrouter
```

9.3 IGMP Snooping

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9.3.1

show ip igmp snooping	

show ip igmp snooping

```
Ruijie# show ip igmp snooping
Igmp-snooping mode    : IVGL
SVGL vlan-id          : 1
SVGL profile number    : 0
Source check port      : Disabled
Query max response time : 10(Seconds)
```

9.3.2 IGMP snooping

show ip igmp snooping statistics <i>vlan vlan-id</i>	
clear ip igmp snooping statistics	

show ip igmp snooping statistics

```
Ruijie# show ip igmp snooping statistics
GROUP      Interface      Last report      Last leave      Last
           time          time            reporter
-----
224.1.1.2  VL1:Gi4/2      0d:0h:0m:7s     ----          192.168.9.250
                                Report pkts: 1      Leave pkts: 0
```

9.3.3

show ip igmp snooping mrouter	

show ip igmp snooping

```
Ruijie# show ip igmp snooping mrouter
Vlan    Interface      State      IGMP profile number
-----
1  GigabitEthernet 0/7    static      1
1  GigabitEthernet 0/12   dynamic      0
```

9.3.4

show ip igmp snooping gda-table	

```
Ruijie# show ip igmp snooping gda-table
Abbr: M - mrouter
      D - dynamic
      S - static
VLAN  Address      Member ports
-----
1     224.1.1.1     GigabitEthernet 0/7(S)
```

9.3.5

show ip igmp snooping	

9.3.6 IGMP Profile

show ip igmp profile <i>profile-number</i>	

9.3.7 IGMP Filtering

show ip igmp snooping interface <i>interface-id</i>	

```
Ruijie# show ip igmp snooping interface GigabitEthernet 0/7
Interface          Filter Profile number    max-groups
-----
GigabitEthernet 0/7          1                4294967294
```



MSTP

10.1 MSTP

10.1.1 STP RSTP

10.1.1.1STP RSTP

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10.1.1.2Bridge Protocol Data Units(BPDU)

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10.1.1.3 Bridge ID

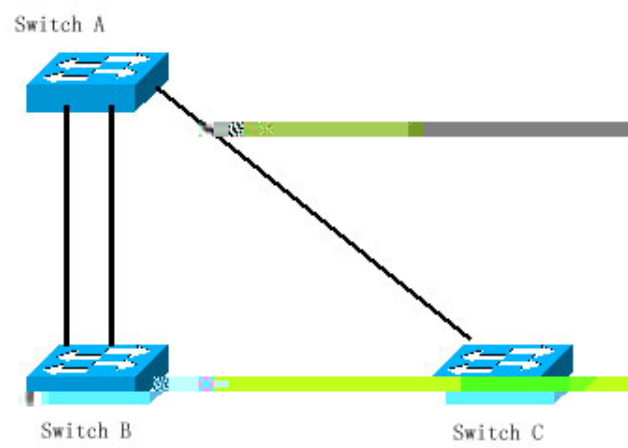
	Priority value				System ID											

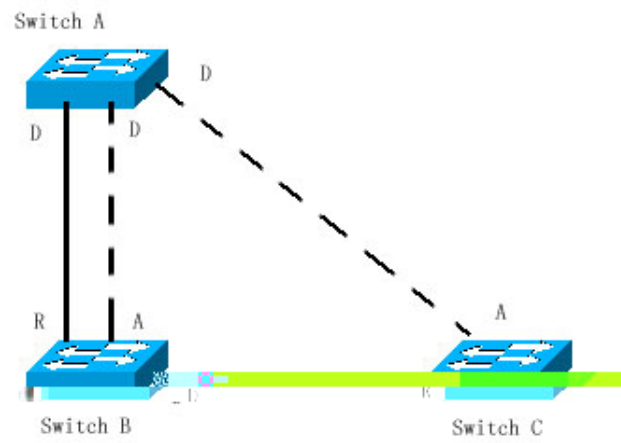
10.1.1.4 Spanning-Tree Timers

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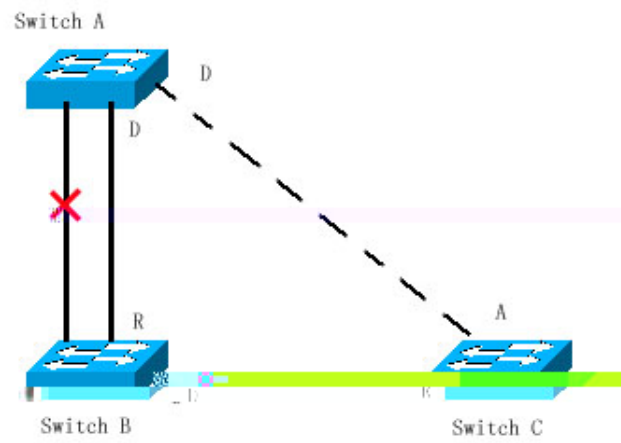
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10.1.1.6



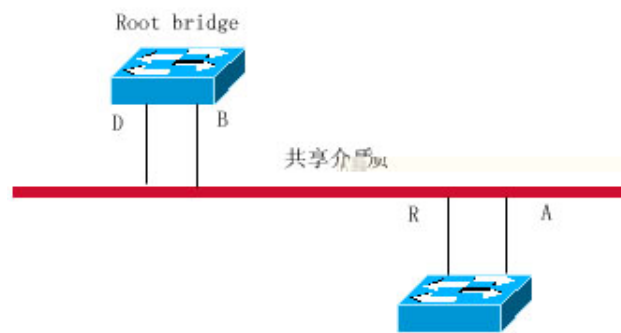


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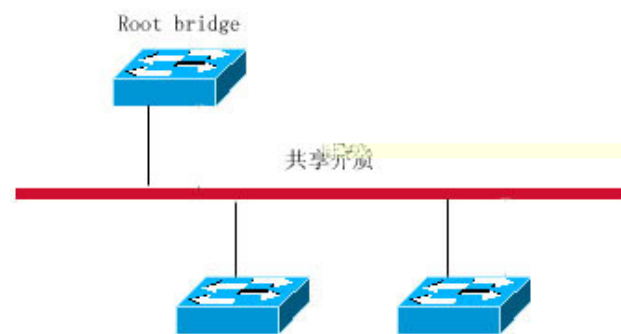


10.1.1.7RSTP

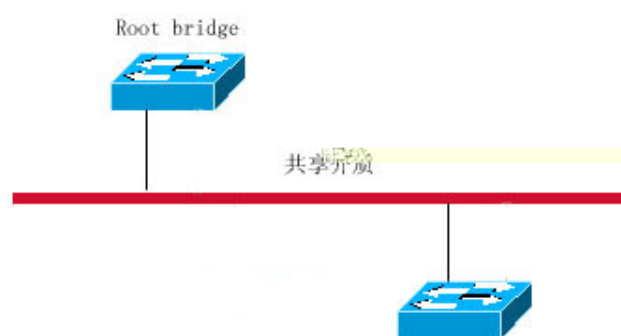
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9



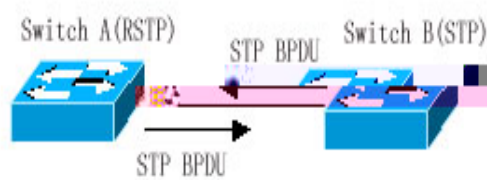
“ ”



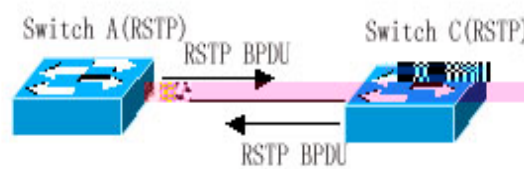
11

10.1.1.8RSTP STP

Protocol Migration

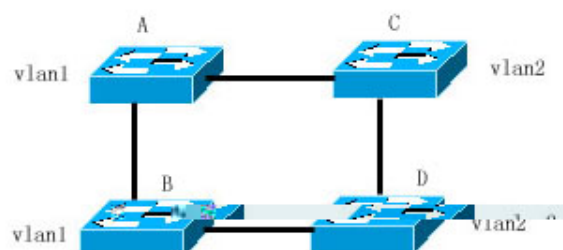


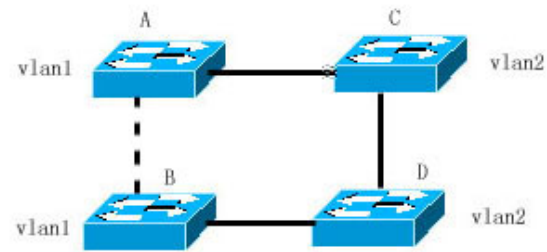
12



13

10.1.2 MSTP



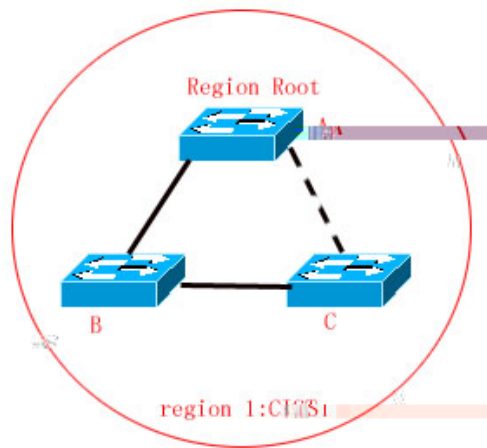


10.1.2.1 MSTP Region

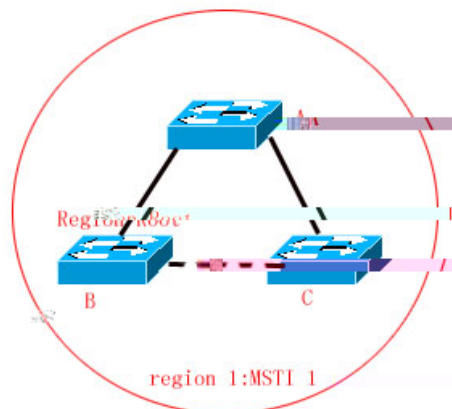
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-

spanning-tree mst configuration

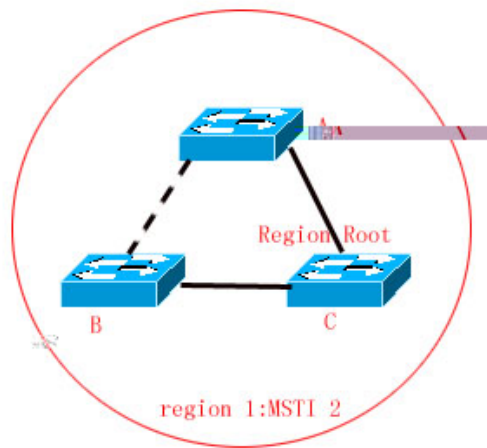
10.1.2.2MSTP region IST



17



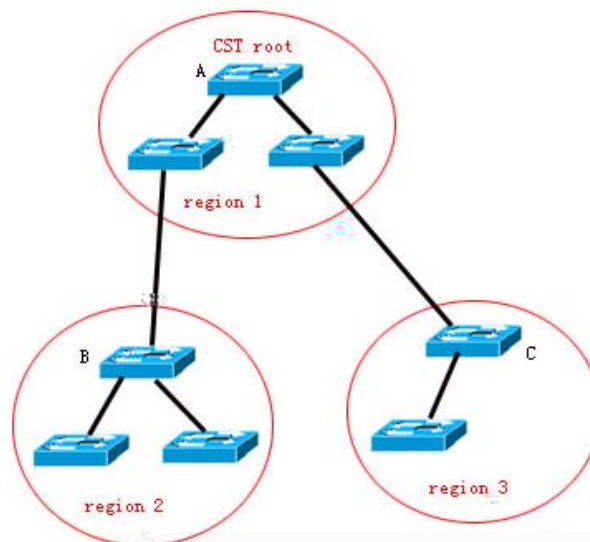
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10.1.2.3 MSTP region

CST



20

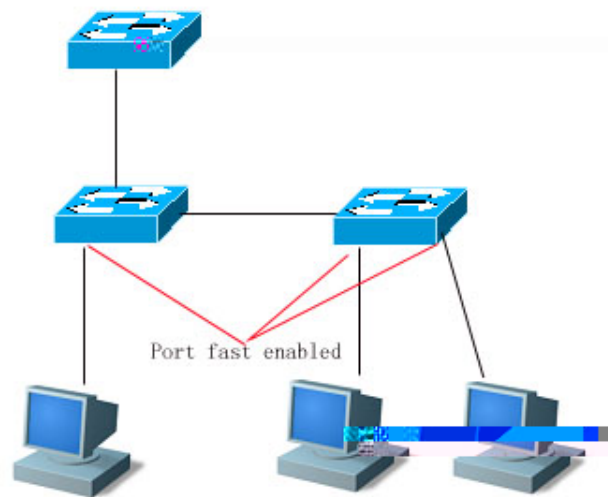
10.1.2.4 Hop Count

spanning-tree max-hops

10.1.2.5 MSTP RSTP STP

10.2 MSTP

10.2.1 Port Fast



21

10.2.2 BPDU Guard

spanning-tree portfast bpduguard default

10.2.4 Tc-protection

10.2.5 TC Guard

10.2.6 BPDU MAC

10.2.7 BPDU

10.2.8f-0.0152 Tc 0 Tr 2.197 0 Td(BPDU)TjC2_0 1 Tf-048047.7[11e5607709B8



10.3 MSTP

10.3.1 Spanning Tree

10.3.2

Spanning Tree

configure terminal	
spanning-tree	
end	
show spanning-tree	
copy running-config startup-config	

no spanning-tree

10.3.3

Spanning Tree

configure terminal	
spanning-tree mode mstp rstp stp	
end	
show spanning-tree	
copy running-config startup-config	

no spanning-tree mode

10.3.4

Switch Priority

LP

configure terminal	
interface <i>interface-id</i>	
spanning-tree mst <i>instance-id</i> port-priority <i>priority</i>	<i>instance-id</i> <i>priority</i>
end	
show spanning-tree mst <i>instance-id</i> interface <i>interface-id</i>	
copy running-config startup-config	

no spanning-tree mst *instance-id* **port-priority**

10.3.6

Path Cost

configure terminal	
interface <i>interface-id</i>	
spanning-tree mst <i>instance-id</i> cost <i>cost</i>	<i>instance-id</i> <i>cost</i>
end	

show spanning-tree mst <i>instance-id</i> interface <i>interface-id</i>	
copy running-config startup-config	

no spanning-tree mst cost

10.3.7

Path Cost

path cost method

	Interface	IEEE 802.1d short	IEEE 802.1t long

configure terminal	
spanning-tree pathcost method long short	
end	
show running-config	
copy running-config startup-config	

no spanning-tree pathcost method

10.3.8 Hello Time

configure terminal	
spanning-tree hello-time <i>seconds</i>	
end	
show running-config	
copy running-config startup-config	



configure terminal

“

”

“

”

“

”

configure terminal	
interface <i>interface-id</i>	
spanning-tree link-type point-to-point shared	
end	
show running-config	
copy running-config startup-config	

no spanning-tree link-type

10.3.13 Protocol Migration

clear spanning-tree detected-protocols	
clear spanning-tree detected-protocols interface <i>interface-id</i>	

10.3.14 MSTP Region

|--|--|

configure terminal	
spanning-tree mst configuration	
instance <i>instance-id</i> vlan <i>vlan-range</i>	<i>instance-id</i> <i>vlan-range</i> no
name <i>name</i>	
revision <i>version</i>	
show	
end	
copy running-config startup-config	

configuration **no spanning-tree mst**
no instance *instance-id*
no name no revision

```
Ruijie(config)# spanning-tree mst configuration
Ruijie(config-mst)# instance 1 vlan 10-20
Ruijie(config-mst)# name region1
Ruijie(config-mst)# revision 1
Ruijie(config-mst)# show
Multi spanning tree protocol : Enable Name [region1]
Revision 1
Instance Vlans Mapped
-----
0 1-9,21-4094
1 10-20
-----
Ruijie(config-mst)# exit
Ruijie(config)#
```



10.3.15 Maximum-Hop Count

configure terminal	
spanning-tree max-hops <i>hop-count</i>	
end	
show running-config	
copy running-config startup-config	

no spanning-tree max-hops

10.4 MSTP

10.4.1

10.4.2 Port Fast

portfast	spanning-tree	
	end	
show spanning-tree		
interface <i>interface-id</i> portfast		
copy running-config		
startup-config		

spanning-tree portfast

disable

spanning-tree portfast default

10.4.3 BPDU Guard

ž

10.4.4 BPDU Filter

configure terminal	
spanning-tree portfast bpdupfilter default	
interface <i>Interface-id</i>	
spanning-tree portfast	
end	
show running-config	
copy running-config startup-config	

no spanning-tree portfast
bpdupfilter default

spanning-tree bpdupfilter enable
disable

spanning-tree bpdupfilter

10.4.5 Tc_Protection

configure terminal	
spanning-tree tc-protection	
end	
show running-config	
copy running-config startup-config	

no spanning-tree
tc-protection

end	
show running-config	
copy running-config startup-config	

src-mac-check **no bpdu**

10.4.8

configure terminal	
interface <i>interface-id</i>	
spanning-tree autoedge	
end	
show spanning-tree interface <i>interface-id</i>	
copy running-config startup-config	

disabled **spanning-tree autoedge**

10.5 MSTP

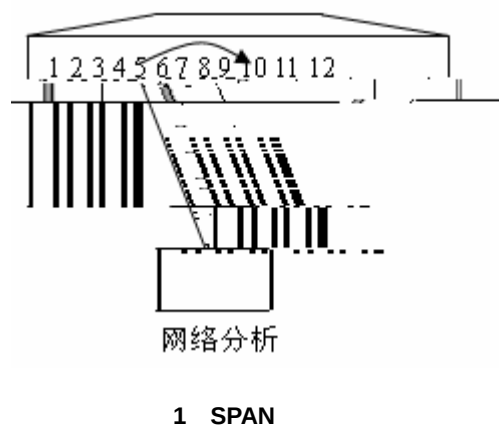
show spanning-tree	
show spanning-tree summary	

show spanning-tree

SPAN

11.1

11.1.1 SPAN



11.1.2



11.2.3

11.2.4

11.2.5 SPAN Traffic

11.2.6 SPAN

—

11.3 SPAN

11.3.1 SPAN

11.3.2 SPAN

no monitor session *session_number*

—
—
—
—

11.3.3 SPAN

monitor session <i>session_number</i> source interface <i>interface-id</i> both rx tx	<i>session_number</i> <i>interface-id</i>
monitor session <i>session_number</i> destination interface <i>interface-id</i> encapsulation switch	<i>session_number</i> <i>interface-id</i> encapsulation switch

no monitor session *session_number*
no monitor session all

no monitor session *session_number* **source interface** *interface-id*
no monitor session *session_number* **destination interface**
interface-id

Show monitor session

Ruijie(config)# **no monitor session 1**

```

Ruijie(config)# monitor session 1 source interface
gigabitEthernet 3/1 both
Ruijie(config)# monitor session 1 destination interface
gigabitEthernet 3/8
Ruijie(config)# end
Ruijie# show monitor session 1
sess-num: 1
src-intf:
GigabitEthernet 3/1 frame-type Both
dest-intf:
GigabitEthernet 3/8

```

11.3.4 SPAN

no monitor session <i>session_number</i> source interface <i>interface-id</i> both rx tx	<i>session_number</i> <i>interface-id</i>

no monitor session *session_number* **source interface** *interface-id*

```

Ruijie(config)# no monitor session 1 source interface
gigabitEthernet 1/1 both
Ruijie(config)# end
Ruijie# show monitor session 1
sess-num: 1
dest-intf:
GigabitEthernet 3/8

```

11.4 SPAN

show monitor
show monitor

```

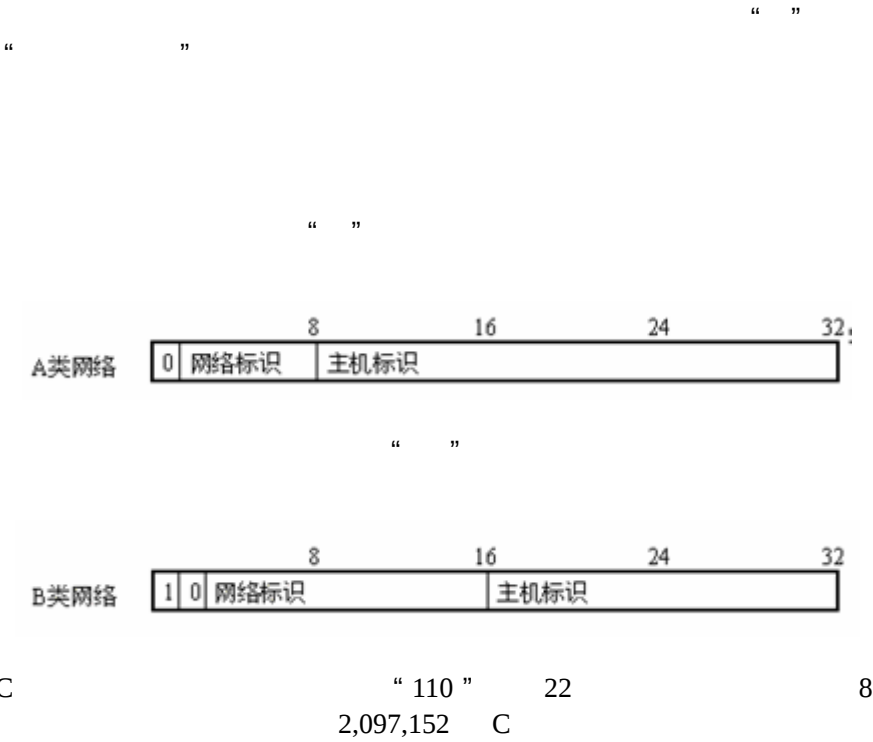
Ruijie# show monitor session 1
sess-num: 1
src-intf:
GigabitEthernet 3/1 frame-type Both
dest-intf:
GigabitEthernet 3/8

```

IP

12.1 IP

12.1.1 IP





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44

33

	IP	

12.1.2 IP

12.1.2.1

ARP

MAC07140C21 146f 0

12.1.2.1.2 ARP

12.1.3 IP

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12.1.3.1

	che	

RMON

13.1

13.1C2_c 0 Tw

13.2.4 RMON

show rmon alarms	
show rmon events	

13.3.4 rmon

13.3.4.1 show rmon alarms

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

13.3.4.2 show rmon events

```
Ruijie# show rmon events
Event : 1
Description : firstevent
Event type : log-and-trap
Community : public
Last time sent : 0d:0h:0m:0s
Owner : zhangsan
Log : 1
Log time : 0d:0h:37m:47s
Log description : ipttl
Log : 2
Log time : 0d:0h:38m:56s
Log description : ipttl
```

13.3.4.3 show rmon history

```
Ruijie# show rmon history
Owner : zhanke903 -1.16 Td(ntryg : 1 )Tj0 -1.131 TDData sourcme :0

Interval : 1
Owner : zhangsan
Sample : .98
IntervalsStare : 0d:0h150m:0s

ctents :679898

versizePknts : 0
```

Fragments : 0
Jabbers : 0
Collisions : 0
Utilization : 0

13.3.4.4show rmon statistics

```
Ruijie# show rmon statistics
Statistics : 1
Data source : Gi1/1
DropEvents : 0
Octets : 1884085
Pkts : 3096
BroadcastPkts : 161
MulticastPkts : 97
CRCAlignErrors : 0
UndersizePkts : 0
OversizePkts : 1200
Fragments : 0
Jabbers : 0
Collisions : 0
Pkts64Octets : 128
Pkts65to127Octets : 336
Pkts128to255Octets : 229
Pkts256to511Octets : 3
Pkts512to1023Octets : 0
Pkts1024to1518Octets : 1200
Owner : zhangsan
```

14.1

14.1.1

14.1.2



```

Ruijie# configure terminal
Ruijie(config)# interface GigabitEthernet 0/1
Ruijie(config-if)# storm-control multicast 4096
Ruijie(config-if)# end

```



14.1.3

show storm-control <i>interface-id</i>	

```

Ruijie# show storm-control gigabitEthernet 0/3
Interface  Broadcast Control  Multicast Control  Unicast
Control action
GigabitEthernet 0/3 Disabled  Disabled  Disabled  none

```

```

Ruijie# show storm-control
Interface  Broadcast Control  Multicast Control  Unicast
Control Action
-----
-----
-----
GigabitEthernet 0/1  Disabled  Disabled  Disabled  none
GigabitEthernet 0/2  Disabled  Disabled  Disabled  none
GigabitEthernet 0/3  Disabled  Disabled  Disabled  none
GigabitEthernet 0/4  Disabled  Disabled  Disabled  none
GigabitEthernet 0/5  Disabled  Disabled  Disabled  none
GigabitEthernet 0/6  Disabled  Disabled  Disabled  none
GigabitEthernet 0/7  Disabled  Disabled  Disabled  none
GigabitEthernet 0/8  Disabled  Disabled  Disabled  none
GigabitEthernet 0/9  Disabled  Disabled  Disabled  none
GigabitEthernet 0/10 Disabled  Disabled  Disabled  none
GigabitEthernet 0/11 Disabled  Disabled  Disabled  none
GigabitEthernet 0/12 Disabled  Disabled  Disabled  none
GigabitEthernet 0/13 Disabled  Disabled  Disabled  none
GigabitEthernet 0/14 Disabled  Disabled  Disabled  none
GigabitEthernet 0/15 Disabled  Disabled  Disabled  none
GigabitEthernet 0/16 Disabled  Disabled  Disabled  none
GigabitEthernet 0/17 Disabled  Disabled  Disabled  none
GigabitEthernet 0/18 Disabled  Disabled  Disabled  none

```

GigabitEthernet 0/19	Disabled	Disabled	Disabled	none
GigabitEthernet 0/20	Disabled	Disabled	Disabled	none
GigabitEthernet 0/21	Disabled	Disabled	Disabled	none
GigabitEthernet 0/22	Disabled	Disabled	Disabled	none
GigabitEthernet 0/23	Disabled	Disabled	Disabled	none
GigabitEthernet 0/24	Disabled	Disabled	Disabled	none

14.2 Protected Port

14.2.1

14.2.2 Protected Port

switchport protected	

no switchport protected

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface gigabitethernet 0/3
Ruijie(config-if)# switchport protected
Ruijie(config-if)# end
```



14.2.3 Protected Port

show interfaces	
switchport	

show interfaces switchport

```
Ruijie# show interfaces gigabitethernet 0/3 switchport
Interface  Switchport  Mode   Access Native Protected  VLAN
lists
-----
GigabitEthernet 0/3  enabled   Trunk   1    1    Enabled    ALL
```

14.3

14.3.1

protect

restrict

shutdown

14.3.2

14.3.2.1

14.3.2.3

switchport port-security	
switchport port-security maximum <i>value</i>	

protect

switchport restrict
port-security violation protect
restrict shutdown

```

Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface gigabitethernet 0/3
Ruijie(config-if)#switchport mode access
Ruijie(config-if)#switchport port-security
Ruijie(config-if)#switchport port-security mac-address 00d0.f800.073c
Ruijie(config-if)# end

```

14.3.2.5

switchport port-security aging static time time	static Time Time

no switchport port-security aging time

no switchport port-security aging

static

```

Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# interface gigabitthernet 0/3
Ruijie(config-if)# switchport port-security aging time 8
Ruijie(config-if)# switchport port-security aging static
Ruijie(config-if)# end

```

14.3.3

show port-security interface <i>interface-id</i>	
show port-security address	
show port-security address <i>interface-id</i>	
show port-security	

```
Ruijie# show port-security interface gigabitethernet 0/3
Interface : Gi0/3
Port Security: Enabled
Port status : down
Violation mode:Shutdown
Maximum MAC Addresses:8
Total MAC Addresses:0
Configured MAC Addresses:0
Aging time : 8 mins
SecureStatic address aging : Enabled
```

```
Ruijie# show port-security address
Vlan Mac Address IP Address Type Port Remaining Age(mins)
-----
1 00d0.f800.073c 192.168.12.202 Configured Gi0/3 8
1 00d0.f800.3cc9 192.168.12.5 Configured Gi0/1 7
```

```
Ruijie# show port-security address interface gigabitethernet
0/3
Vlan Mac Address IP Address Type Port Remaining Age(mins)
-----
1 00d0.f800.073c 192.168.12.202 Configured Gi0/3 8
```

```
Ruijie# show port-security
Secure Port MaxSecureAddr(count) CurrentAddr(count) Security
Action
-----
Gi0/1 128 1 Restrict
Gi0/2 128 0 Restrict
Gi0/3 8 1 Protect
```

802.1X

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15.1



“ _____ ”

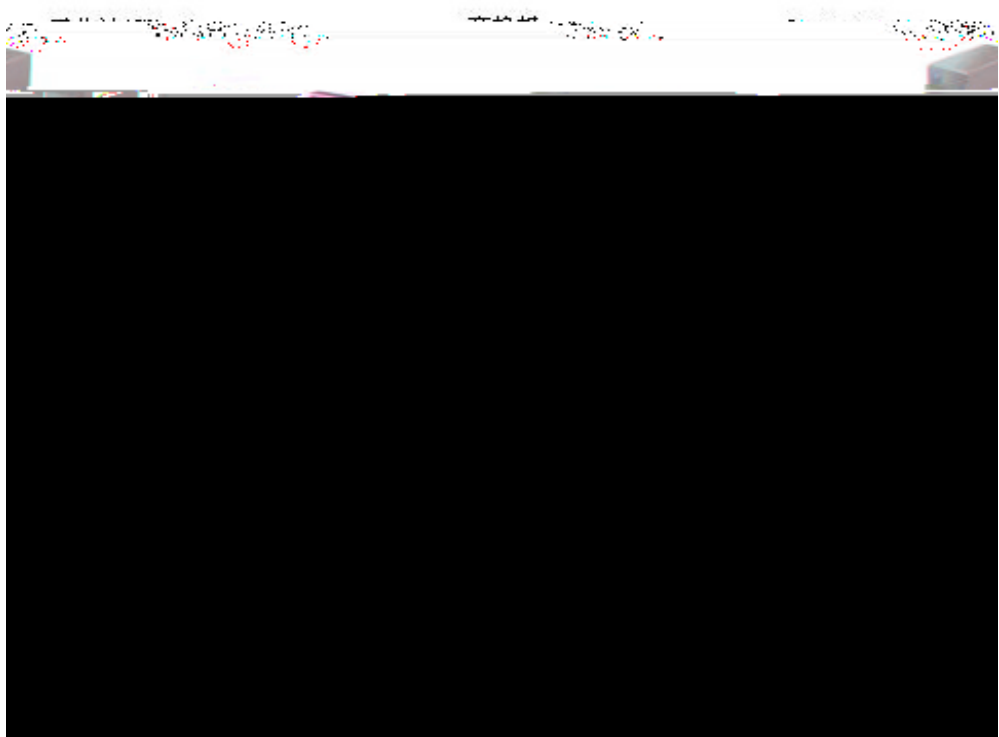
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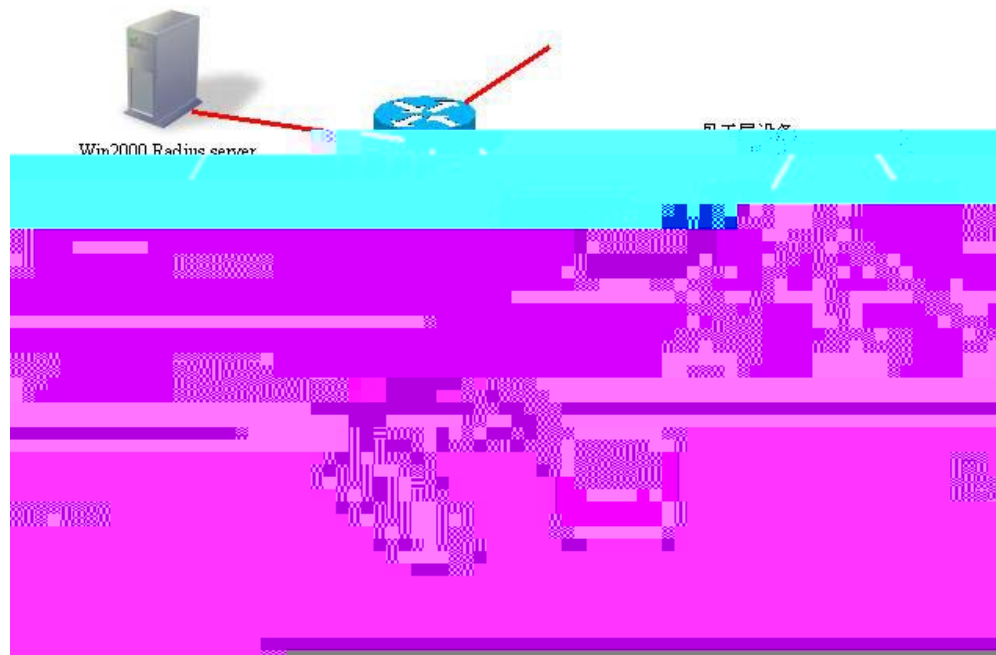
15.1.1

15.1.2



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15.1.3



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802.1X

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15.2.2 802.1X

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15.2.3 RADIUS SERVER

configure terminal	
aaa new-model	
radius-server host <i>ip-address</i> auth-port <i>port</i> acct-port <i>port</i>	
Radius-server key <i>string</i>	
end	
write	
show radius server	

no radius-server host *ip-address* **auth-port**
no radius-server key

```
Ruijie# configure terminal
Ruijie(config)# radius-server host 192.168.4.12
Ruijie(config)# radius-server host 192.168.4.12 auth-port 600
Ruijie(config)# radius-server key MsdadShaAdasdj878dajL6g6g
a
Ruijie(config)# end
```

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-
-
-

15.2.4 802.1X



w

```
line vty 0 4
!  
end
```

15.2.5 /

configure terminal	
interface <i>interface</i>	
dot1x port-control auto	
end	
write	
show dot1x port-control	

no dot1x port-control

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

EAP CPU

15.2.6

configure terminal	
dot1x re-authentication	
dot1x timeout re-authperiod <i>seconds</i>	
End	
Write	
show dot1x	

no dot1x re-authentication
timeout re-authperiod

no dot1x

```
Ruijie# configure terminal
Ruijie(config)# dot1x re-authentication
Ruijie(config)# dot1x timeout re-authperiod 1000
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:          Disabled
Authentication Mode:    EAP-MD5
Authenticated User Number: 0
Re-authen Enabled:      Enabled
Re-authen Period:       1000 sec
Quiet Timer Period:     10 sec
Tx Timer Period:        3 sec
Supplicant Timeout:     3 sec
Server Timeout:         5 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:      Disabled
```

15.2.7 / supplicant

configure terminal	
dot1x private-supplicant-only	
end	
write	
show dot1x	

```
Ruijie# configure terminal
Ruijie(config)# dot1x filter-nonRG-su
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:      Disabled
Authentication Mode: EAP-MD5
Authenticated User Number: 0
Re-authen Enabled:  Enabled
Re-authen Period:   1000 sec
Quiet Timer Period:  10 sec
Tx Timer Period:     3 sec
Supplicant Timeout:  3 sec
Server Timeout:      5 sec
Re-authen Max:        3 times
Maximum Request:      3 times
Private supplicant only: Enabled
Client Oline Probe:   Disabled
Eapol Tag Enable:     Disabled
Authorization Mode:    Disabled
```

no dot1x filter-nonRG-su

15.2.8 QUIET

configure terminal	
dot1x timeout quiet-period <i>seconds</i>	
end	
write	
show dot1x	

no dot1x timeout quiet-period

Ruijie#

no dot1x max-req

```
Ruijie# configure terminal  
Ruijie(config)# dot1x max-req 5  
Ruijie(config)# end
```

15.2.11

configure terminal	
no dot1x reauth-max	
end	
write	
show dot1x	

no dot1x reauth-max

```
Ruijie# configure terminal  
Ruijie(config)# dot1x reauth-max 3  
Ruijie(config)# end  
Ruijie#
```

15.2.12 Server-timeout

configure terminal	
dot1x timeout server-timeout <i>seconds</i>	
end	
write	

show dot1x	
------------	--

15.2.13

802.1x

“

”

configure terminal	
dot1x auto-req	
end	
write	
show dot1x	

no

configure terminal	
dot1x auto-req packet-num <i>num</i>	

end	
write	
show dot1x auto-req	

		dot1x auto-req dot1x auto-req packet-num <i>num</i> dot1x auto-req req-interval <i>interval</i> dot1x auto-req user-detect	dot1x auto-req dot1x auto-req packet-num <i>0</i> dot1x auto-req req-interval <i>interval</i> no dot1x auto-req user-detect

15.2.14 802.1x

configure terminal	
aaa new-model	
aaa group server radius gs	

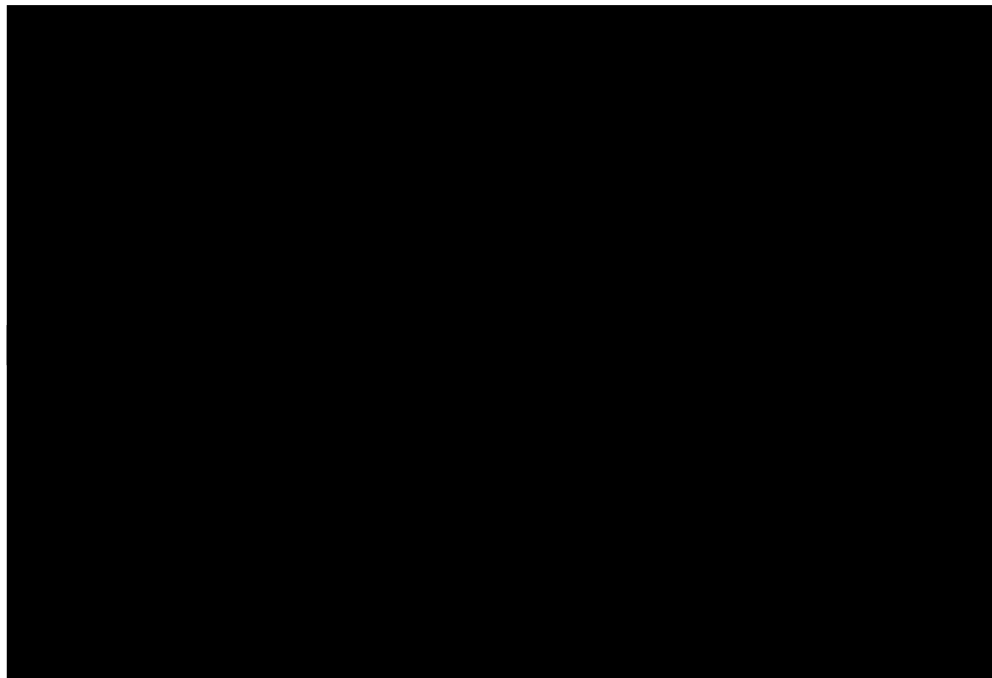
server 192.168.4.12 acct-port 11	
exit	
aaa accounting network acct start-stop group gs	

dot1x accounting acct

end	
write	
show running-config	

**no aaa accounting network
accounting**

no dot1x



configure terminal	
aaa new-model	
aaa accounting update	
end	
write	
show running-config	

no aaa accounting update

```
Ruijie# configure terminal
Ruijie(config)# aaa accounting update
Ruijie(config)# end
Ruijie# write memory
Ruijie# show running-config
```

15.2.15

15.2.16

configure terminal	
dot1x auth-address-table address <i>mac-addr</i> interface <i>interface</i>	
end	
write	
show running-config	

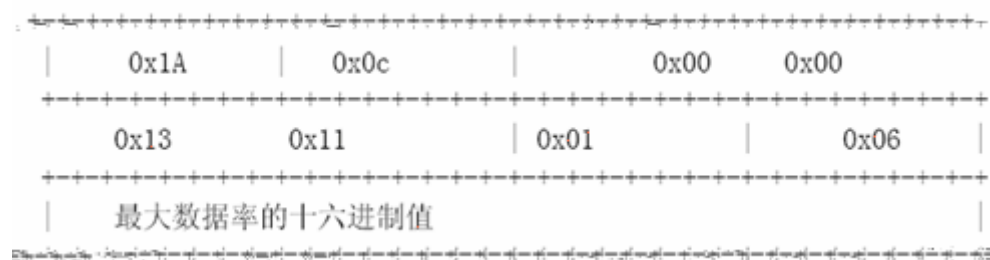


15.2.17

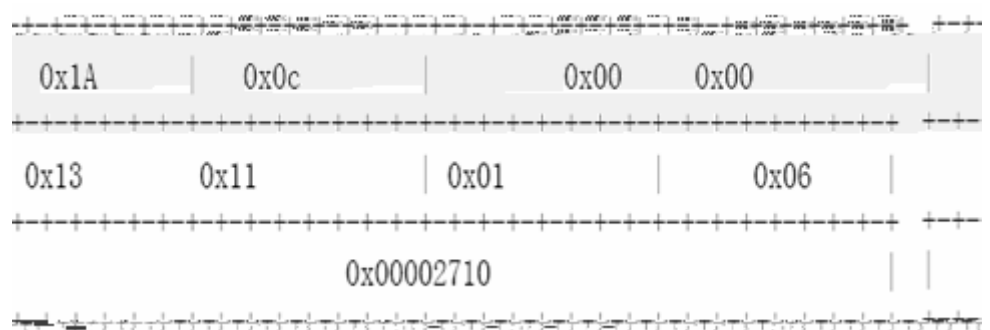
```

0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-----+-----+-----+-----+-----+-----+-----+-----+
|  Type      |  Length     |  Length     |  Vendor      |
+-----+-----+-----+-----+
|  Vendor     |  Length     |  Vendor Id   |  Vendor type |  Ver
+-----+-----+-----+-----+
|
+-----+-----+-----+-----+
|  Attribute-Specific...
+-----+-----+-----+-----+

```



7



8

15.2.18

write	
show dot1x	

```
Ruijie# configure terminal
Ruijie (config)# dot1x auth-mode CHAP
Ruijie(config)# end
Ruijie# show dot1x
802.1X Status:      Disabled
Authentication Mode: CHAP
Authed User Number: 0
Re-authen Enabled:  Disabled
Re-authen Period:   3600 sec
Quiet Timer Period: 10 sec
Tx Timer Period:    3 sec
Supplicant Timeout: 3 sec
Server Timeout:     5 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
```

15.2.19

configure terminal	
aaa new-model	
aaa group server radius gs-name	
server sever	
server server-backup	
end	
write	
show dot1x	

```
Ruijie# configure terminal
Ruijie# aaa new-model
```

```
Ruijie(config)# aaa group server radius auth-11
Ruijie(config-gs-radius)# server 192.168.4.1
Ruijie(config-gs-radius)# server 192.168.4.12
Ruijie(config-gs-radius)# end
Ruijie#
```

15.2.20

15.2.21 IP

15.2.22

15.2.23 VLAN

“ ”

show dot1x summary

configure terminal	
interface <i>interface</i>	
[no] dot1x dynamic-vlan enable	

end	
write	
show dot1x	

15.2.24

0x1A	0x0c	0x00	0x00
0x13	0x11	0x20	0x06
0x0001			

0x1A	0x0c	0x00	0x00
0x13	0x11	0x20	0x06
0x0001			

15.2.25

configure terminal	
dot1x eapol-tag	
end	
write	
show dot1x	

no dot1x eapol-tag

15.2.27

configure terminal	
dot1x stationarity enable	
end	
Write	

15.3

Authentication Mode: EAP-MD5
Authed User Number: 0
Re-authen Enabled: Disabled
Re-authen Period: 3600 sec
Quiet Timer Period: 10 sec
Tx Timer Period: 3 sec
Supplicant Timeout: 3 sec
Server Timeout: 5 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: Disabled

15.3.3

configure terminal	

```

Ruijie# show dot1x summary
  ID   MAC           Interface  VLAN  Auth-State  Backend-State
Port-Status
-----
1     00d0f8000001  Gi3/1      1     Authenticated  IDLE
Authed

```

15.3.5 1x

show dot1x probe-timer	

```

Ruijie# show dot1x probe-timer
Hello Interval: 20 Seconds
Hello Alive: 250 Seconds
Ruijie#

```

15.3.6 802.1x

AAA

16.1 AAA

-

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■ ■

■ ■

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16.2 AAA

16.2.1 AAA

16.2.2 AAA

aaa new-model	

16.2.3 AAA

no aaa new-model	

16.2.4

16.3

16.3.1 AAA



aaa authentication login test group radius local	
line vty 2	
login authentication <i>test</i>	



16.3.3 AAA

- aaa new-model
-
- aaa authentication
-

16.3.4 AAA



aaa new-model

aaa authentication login

configure	
aaa new-model	
aaa authentication login default <i>list-name method1 method2</i>	
line vty <i>line-num</i>	
login authentication default <i>list-name</i>	

list-name

16.3.4.1

configure terminal	
username <i>name</i> password <i>password</i> username <i>name</i> access-class <i>number</i>	
username <i>name</i> privilege <i>level</i>	
username <i>name</i> autocommand <i>command</i>	
end	
show running-config	

configure terminal	
aaa new-model	
aaa authentication login default <i>list-name</i> local	
end	
show aaa method-list	
configure terminal	
line vty <i>line-num</i>	
login authentication default <i>list-name</i>	
end	
show running-config	

16.3.4.2 RADIUS

configure terminal	
aaa new-model	
radius-server host <i>ip-address</i> auth-port <i>port</i> acct-port <i>port</i>	
end	
show radius server	

```
username Ruijie password 0 starnet
!
radius-server host 192.168.217.64
!
line con 0
line vty 0
login authentication test
line vty 1 4
!
```

16.4

- _____
- _____ username



16.4.1

-
-
-
- username

16.4.2

configure terminal	
aaa new-model	
aaa authorization network default <i>list-name</i> <i>method1 method2</i>	

16.4.3 RADIUS

authorization aaa

configure terminal	
aaa new-model	
radius-server host <i>ip-address</i> auth-port <i>port</i> acct-port <i>port</i>	
end	
show radius server	
configure terminal	
aaa authorization network default <i>list-name</i> group radius	

16.4.4

local aaa authorization

username

aaa authorization network default <i>list-name</i> local	
--	--

16.4.5 none

	none	aaa authorization
configure terminal		
aaa new-model		
aaa authorization network default <i>list-name</i>		

16.4.6

```
Ruijie# configure terminal
Ruijie(config)# aaa new-model
Ruijie(config)# radius-server host 192.168.217.64
Ruijie(config)# username Ruijie privilege 6
Ruijie(config)# aaa authorization network test group radius
local none
Ruijie(config)# end
Ruijie# show running-config
aaa new-model
!
aaa authorization network test group radius local none
!
username Ruijie password 0 starnet
username Ruijie privilege 6
!
radius-server host 192.168.217.64
```

16.5

16.5.2



16.5.3



-
-

16.5.4

RADIUS

17.1 RADIUS

17.2 RADIUS

-
- aaa authentication
aaa authentication
-
-
-

17.2.1 RADIUS

configure terminal	
radius-server host <i>ip-address</i> auth-port <i>port</i> acct-port <i>port</i>	
radius-server key <i>string</i>	

17.2.2 RADIUS

aaa authentication

17.2.3 RADIUS

ID		TYPE

id	vendor-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

Ruijie# **configure**

Ruijie(config)# **radius attribute 24 vendor-type 67**

Ruijie(config)# **show radius vendor-specific**

id	vendor-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

Ruijie(config)#

Ruijie(config)#

17.3 RADIUS

debug radius event	

17.4 RADIUS

QOS

18.1 QOS

18.1.1 QoS

18.1.2 QOS

18.1.2.1Classifying

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18.1.2.2Policing



18.1.2.3 Marking

Cos

CoS								

CoS to DSCP

CoS								
DSCP								

IP-Precedence to DSCP

IP-Precedence								
DSCP								

DSCP to CoS

DSCP								
CoS								

18.2.2

CoS

configure terminal	
interface <i>interface</i>	
mls qos cos <i>default-cos</i>	
no mls qos cos	

```
Ruijie# configure terminal
Ruijie(config)# interface g 0/4
Ruijie(config-if)# mls qos cos 6
Ruijie(config-if)# end
Ruijie# show mls qos interface g 0/4
Interface: GigabitEthernet 0/4
Attached input policy-map:
Default COS: trust dscp
Default COS: 6
Ruijie#
```

18.2.3

```
3 2
4 3
5 3
6 4
7 4
wrr bandwidth weights:
qid weights
---
1 1
2 2
3 3
4 4
```

18.2.5 Cos-Map

18.2.6 CoS-to-DSCP Map

configure terminal	
mls qos map cos-dscp <i>dscp1...dscp8</i> no mls qos map cos-dscp	

```
Ruijie# configure terminal
Ruijie(config)# mls qos map cos-dscp 56 48 46 40 34 32 26 24
Ruijie(config)# end
Ruijie# show mls qos maps cos-dscp
cos dscp
--- ----
0    56
1    48
2    46
3    40
4    34
5    32
6    26
7    24
```

18.2.7 DSCP-to-CoS Map

configure terminal	
mls qos map dscp-cos <i>dscp-list to cos</i>	
no mls qos map dscp-cos	

```
Ruijie# configure terminal
Ruijie(config)# mls qos map dscp-cos 0 32 56 to 6
Ruijie(config)# show mls qos maps dscp-cos
```

dscp	cos	dscp	cos	dscp	cos	dscp	cos
----	----	----	----	----	----	----	----
0	6	1	0	2	0	3	0
4	0	5	0	6	0	7	0
8	1	9	1	10	1	11	1
12	1	13	1	14	1	15	1

18.3.3 mls qos scheduler

show mls qos scheduler	

```
Ruijie# show mls qos scheduler
Global Multi-Layer Switching scheduling
Strict Priority
Ruijie#
```

18.3.4 mls qos maps

show mls qos maps cos-dscp dscp-cos	dscp-cos maps dscp-cos maps

```
Ruijie# show mls qos maps cos-dscp
cos dscp
--- ---
```

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

```
Ruijie# show mls qos maps dscp-cos
```

dscp	cos	dscp	cos	dscp	cos	dscp	cos
---	---	---	---	---	---	---	---
0	6	1	0	2	0	3	0
4	0	5	0	6	0	7	0
8	1	9	1	10	1	11	1
12	1	13	1	14	1	15	1
16	2	17	2	18	2	19	2
20	2	21	2	22	2	23	2
24	3	25	3	26	3	27	3
28	3	29	3	30	3	31	3
32	6	33	4	34	4	35	4
36	4	37	4	38	4	39	4
40	5	41	5	42	5	43	5
44	5	45	5	46	5	47	5
48	6	49	6	50	6	51	6

52	6	53	6	54	6	55	6
56	6	57	7	58	7	59	7
60	7	61	7	62	7	63	7

18.3.5 mls qos rate-limit

show mls qos rate-limit interface <i>interface</i>	

```
Ruijie# show mls qos rate-limit
Interface: GigabitEthernet 0/4
rate limit input bps = 100 burst = 100
```

19.1

19.2

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-
-
-
-
-
-
-

19.2.1

19.2.2

--	--

makefs <i>dev devname fs fs_name</i>	<i>fs_name</i> dev

Ruijie# **makefs** *dev/dev/mtd/mtdblock/1 fs jffs2*

19.2.6

--	--	--

mkdir *dirname*

old_filename
new_filename Ruijie# **mkdir** *bak*

19.2.7

		Ruijie#
<i>new_filename</i>		

19.2.8

--	--

Ruijie# **del** *mnt/large.c*

19.2.10



rmdir *directoryname*

20.1

logging on	
no logging on	



20.2.2

logging buffered <i>buffer-size level</i>	
terminal monitor	
logging host	
logging file <i>flash:filename max-file-size level</i>	

show logging
clear logging



20.2.5

no logging count	
logging count	

20.2.6

no service sequence-numbers	
service sequence-numbers	

20.2.7

logging console level	
logging monitor level	
logging buffered <i>buffer-size level</i>	
logging file <i>flash:filename max-file-size level</i>	
logging trap level	

Emergencies		
Alerts		
Critical		
Errors		
warnings		
Notifications		
informational		
Debugging		

20.2.9

f

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20.3

show logging	
show logging count	
clear logging	
more <i>flash:filename</i>	



show logging count

20.3.1

```
Ruijie(config)# interface gigabitEthernet 0/1
Ruijie(config-if)# ip address 192.168.200.42 255.255.255.0
Ruijie(config-if)# exit
Ruijie(config)# service sequence-numbers //
Ruijie(config)# service timestamps debug datetime //

Ruijie(config)# service timestamps log datetime //

Ruijie(config)# logging
```

-
- -
 -
 -
 -
 -

21.1



```
#      slot 5
Ruijie#service-module FastEthernet 5/0 session
Ruijie#
```

21.1.1

```
#      slot 5
Ruijie#service-module FastEthernet 5/0 reset
Are your sure to reload the this service module? [no]:Yes
Would you like to enter session mode? [no]:no

Ruijie#
```

21.1.2


```
#      slot 5                                60
Ruijie# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Ruijie(config)#service-module                FastEthernet        5/0
slot1 0\n
```

21.1.4

☺

```
# slot 5
Ruijie#serviceB9bJule FastEthernet 5/0 config backup
Ruijie#
```

21.1.5

☺

```
# slot 5
Ruijie#serviceB9bJule FastEthernet 5/0 config recovery
Ruijie#
```

21.1.6

/

```
Ruijie#serviceB9bJule FastEthernet 5/0 config backup
Ruijie#
Ruijie#esw 5/0 config file backup succeed, file name is
esw-config-5.txt.
Ruijie#
Ruijie#serviceB9bJule FastEthernet 5/0 config recovery
Ruijie#esw 5/0 config file recovery succeed.
Ruijie#
```

21.1.7 MAC/IP/Port

	MAC	MAC + IP + Port	IP	FastEthernet
1/1	00d0.f800.34aa		172.18.59.2	

```
Ruijie# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Ruijie(config)# ip access-list extended OA_PC // OA_PC ACL
Ruijie(config-ext-nacl)# 10 permit ip host 172.18.59.2 any // IP 172.18.59.2
IP ACL
Ruijie(config-ext-nacl)# exit
Ruijie(config)# vlan 20 // ID 20 VLAN
Ruijie(config-vlan)# exit
Ruijie(config)# interface vlan 20 // VLAN ID 20 SVI
Ruijie(config-if-VLAN 20)# ip access-group OA_PC in //SVI OA_PC
ACL
Ruijie(config-if-VLAN 20)# exit
Ruijie(config)# interface fastethernet 1/1
Ruijie(config-if-FastEthernet 1/1) # switchport mode access // access
Ruijie(config-if-FastEthernet 1/1) # switchport access vlan 20 # fastethernet 1/1 //
VLAN 20
Ruijie(config-if-FastEthernet 1/1)# switchport port-security //
Ruijie(config-if-FastEthernet 1/1)# no switchport port-security aging time //

Ruijie(config-if-FastEthernet 1/1)# switchport port-security mac-address 00d0.f800.34aa //
MAC 00d0.f800.34aa
Ruijie(config-if-FastEthernet 1/1)# switchport port-security maximum 1 //
MAC/IP
Ruijie(config-if-FastEthernet 1/1)# end
```

21.2

21.2.1

```
RGNOS 10.2(3b30) RGNOS 10.2(3)
10.2(3b30)
```



21.2.2

```
# enable slot 9
Ruijie#service-module fastEthernet 9/0 session

Ruijie#show version
System description      : Ruijie Switch Service Module(NM2-24ESW) by
Ruijie Network Co., Ltd..
System start time       : 1970-1-1 8:0:0
System hardware version : 1.21
System software version : RGNOS 10.2.00(3b30), Release(113908)

System boot version     : 10.2.21580
System CTRL version     : 10.2.27666
System serial number    : 1234942570076
Device information:
Device-1
Hardware version : 1.21
Software version : RGNOS 10.2.00(3b30), Release(113908)
BOOT version     : 10.2.21580
CTRL version     : 10.2.27666
Serial Number    : 1234942570076
Ruijie#
```

```
RGNOS 10.2.00(3b30)
```

```
1 ip
ip 174.20.20.100/24
interface FastEthernet 0/0
ip ref
ip address 174.20.20.200 255.255.255.0

2
9 9/0
interface FastEthernet 9/0.100
encapsulation dot1Q 100 ( 100 vlan )
ip address 175.10.10.25 255.255.255.0

3 ( enable service-module
```

```

        fastEthernet x/0 session      )          vlan      svi
        ip
interface GigabitEthernet 0/25 (      10.2.00(3b30)
    )
    switchport mode trunk
interface VLAN 100 (                  vlan      )
    ip address 175.10.10.20 255.255.255.0
    no shutdown
!
ip default-gateway 175.10.10.25 (      ip
    2          ip      )

175.10.10.25      ping 174.20.20.200      ping      ping

4      copy tftp://174.20.20.100/      flash:rgos.bin

                        reload      ctrl+x
                        service-module fastEthernet 9/0 reset

```

21.2.3

```

1      10.2.00(3b30)      10.2.00(3b30)

2  RSR20-24
    reload

3      SVI      SVI
VLAN ID      SVI      VLAN ID

```

21.3

```
RSR20-14F(config-if-VLAN 66)#ip add 192.168.45.45  
255.255.255.0
```

```
RSR20-14F#service-module fastEthernet 2/0 session  
    fastEthernet 0/24      vlan 66  
Ruijie(config)#interface fastEthernet 0/24  
Ruijie(config-if)#switchport mode access  
Ruijie(config-if)#switchport access vlan 66  
Ctrl + x
```

```
SVI  
fastEthernet 0/24      RSR20-14F  
SVI
```