STAR-S5610

ʒ ¨Ą V2.0

¨Ω Ν

1.2.1 0 0 10.0 Tc[(.....)-83.7(1-1)]TJT10 1 Tf10.5 0 0 10.5 507777777777777777777777777777777777

1.2.1

1

1.1

1.1.1

STAR-S5610

1.1.2 Telnet

Telnet

1.1.3

Telnet

1.1.4

Telnet Telnet 10

1.2

1.2.1 EXEC User EXEC Mode

1.2.2 EXEC Privileged EXEC Mode

Ю enable

Ю disable

Ю

Ю

1.2.3 Global Configuration Mode

Ю config

config

Ю<Ctrl-z> exit

Ю

1.2.4 (Subconfiguration Modes)

a

exit 1-1

1-1

1	VLAN		

5	gigabitethernet	interface gigabitethernet x ˘ à gigabitethernet ˆ ˜ Â	switch(config-if-giga 1/2)#
6	VLAN	vlan database ˘ … à vlan super-vlan Â	switch(vlan)# ò Ô
7	QoS	QoS ˘ à QoS Â	switch(config-qos)#
8	Route map	route- map x à route map Â	switch(config-route-map)#
9	OSPF	route-map Â à ospf Â	target(config-ospf)#

'

VLAN

¢

1.3

(1) ᢃ ᾰ

ᢃ ˘ ἐ Â ' ᆟ ᢃ ╟ ˝l à ╗ à ᜈ Â

ᢃ ᆟ ᾰ ധ˘ ᢃ Â ᆟ ᾰ ധ ᆟ ᜈ ˘ ӥ 10 Â ᆟ ᜈ ᢃ N ˚ ˘ ᆟ Â ᢃ˘ ᢃ ᆟ 256 Â

(2) ᢃ ῼ a

a ᵉ Ю˘ ᢃ ᢃ ῼ ᆟ ᜈ a Â ' ÿ ˘ ധᶠ ἐ ᢃ ῼ ᆟ Â

(3) Tab

(5)

1	<Ctrl-B> <LEFT>	
2	<RIGHT>	
3	<Esc><B>	
4	<Esc><F>	
5	<Ctrl-A>	
6	<Ctrl-E>	
7	<Ctrl–P> <UP>	
8	<Ctrl-N> <DOWN>	10
9	<BACKSPACE> <Ctrl-H>	
10	<Ctrl-D> <Delete>	
11	<Ctrl-w>	
12	<Esc><D>	
13	<Ctrl-U> <Ctrl-X>	
14	<Ctrl-K>	
15	<Ctrl-Y>	
16	<Esc><Y>	
17	<Ctrl-R> <Ctrl-L>	
18	<Ctrl-T>	
19	<Esc><U>	
20	<Esc><L>	
21	<Esc><C>	
22	<Ctrl-Z>	
23	!!	
24	!	

10

1.4

	INTEGER<min-max>	Âmin ˘ max Â	mtu INTEGER<0~1500>	
ч ˚ Ώ	XX.XX.XX.XX.XX.XX	MAC Â	mac-address XX.XX.XX.XX.XX.XX	
HEX	HEX	Ώ ,Л0x ˘ 9Æ Â	0xB4	
	WORD<min~max>	Âmin ˘ max ˘ a 256˝ a 1Â	hostname WORD<1~16>	
LINE	LINE0	˘ з ҂ Л Â	enable password LINE0	
	LINE1	ÿ ˆ ~ ˘ ˘ ╠ Â ≠ ҂ Л Â	interface LINE1	
IP (Version4)	A.B.C.D	IP ˘ IPv4Â	ip_address A.B.C.D	IPV4
˚ ˆ й40 ~	OID	й ulong ˘ *	OID 11.2.*.8.458	
	SLOT/PORT	SLOT: 1~10 PORT 1~32	interface SLOT/PORT	

2 ৡ

2.1

2.1.1 user add

user add *username password level*

EXEC

username	WORD	1~15	˩
password	WORD	1~15	˩
level	INTEGER	0~15	

╗ ˘ ৡ **user delete**˘ STAR-S5610
и 10 Â

user delete

: manager zy01 15
switch# **user add** manager zy01 15

2.1.2 user delete

user delete *username*

EXEC

username	WORD	1~15	˩

˘ ╗ ʅ **user add**ʼ ʅ
Â

user add

ş manager

```
switch# user delete manager
```

2.1.3 user password

user password

EXEC

ş admin 1 ¢
switch#user privilege admin 1
User admin default access level changed OK!

2.1.5 configure

configure

EXEC

configure ¾ ÿ Â
15 Â

ş
switch#configure
switch(config)#

2.1.6 enable

enable [*level*]

no enable

EXEC

level	INTEGER	0~15	

ᅡ 15 ˘ ╯ ˘ ╯ ⁄ ˘
Â ʅ **level password**Â**no enable**
0 Â

user privilege

user add

level password

ş 10 ¢

```
switch>enable 10
Password:******
switch#
```

2.1.7 exectime-out

exectime-out [*time*]

no exectime-out

EXEC

time	INTEGER	1~65535	╟ Â(Æ' ᛏ)

╟ ˘ Console ˘ a ' Telnet ˘ ˘ ท 10ᛏ Â ɺɲ **no exec-timeout** ʇΏ ╖ ˘ a Â a ‡ Â

show exec-timeout

2.1.8 level password

level password *level password*

level	INTEGER	0~15	
password	WORD	1~15	?

```
  ş                  ¢
switch>show client
admin             Console
user              192.168.0.124
```

2.1.10 show exec-timeout

show exec~timeout

Â

exectime-out

```
  Ş                    ¢
switch> show exec-timeout
telnet client timeout value is 10 minutes
```

2.1.11 show manager

show manager

EXEC

Â

user add

user delete

```
  Ş                ¢
switch#show manager
Name           Level
admin          15
user            0
```

2.2

2.2.1 clock set

ϧ STAR-S5610 Â

clock set *hour:minute:second year-month-day*

EXEC

hour	INTEGER	0~24	
minut	INTEGER	0~60	
second	INTEGER	0~60	
year	INTEGER	2000~2099	
month	INTEGER	1~12	
day	INTEGER	1~31	

EXEC

show clock

ʅ

ˁ Ռ ʅ Ю̆ ʅ˘ Ռ Â

˩ Л　　ЮЎ　　ʢ˘　　Æ　　Â

ş　　STAR-S5610　　¢

```
switch#reboot
Confirm to reboot(y/n)y
rebooting ... ...
```

2.2.4 show version

,　　˘ ‡　　,　‡　　Æ
Â

show version

ʢ

˩ Л　　Ю　　ʢ˘　　Â
̈　　Ν　ɛ̀　　à　　̈　　Ν à BootRom　　Ν Л　　Â

ş　　¢

```
switch#show version
   STAR-S5610 Software Version : V1.0R01.06.0101
    STAR-S5610  CM Hardware Version: 1
  SoftWare Version : V1.0R01.06.0101
  Compiled Jan  7 2003, 17:04:33
    BootRom Version : SRTBtromR01.1202
  STAR-S5610  04SX Hardware Version: 1
  STAR-S5610  16fmts Hardware Version : 1
  STAR-S5610  32T Hardware Version : 1
switch#
```

2.2.5 show system uptime

╟ՁՄ ˘ ӥ ddʹ hhʹ mmʹ ss Â

show system uptime

ʅ

˧ՁՄ ʅ Ю ʅ˘ ՁՄ ╟ՁՄ ˘
ӥ dd:hh:mm:ss Â

ş STAR-S5610 ¢

```
switch#show system uptime
0:0:13:20
switch#
```

2.3

2.3.1 erase startup-config

erase startup-config

EXEC

˚ ˘ ˚ ϟ write running-configÂ

write running-config

ş

```
switch# erase startup-config
Delete config file <Y/N>Y
Delete config file OK!
switch#
```

2.3.2 write running-config

write running-config

EXEC

ᙶ ̆ ̆ ˘ show running-config
ʅ ˧ ᙶ ̆ Â

show running-config

erase startup-config

ş ¢

```
switch# write running-config
Build config file <Y/N>Y
Build config file OK!
switch#
```

2.3.3 show startup-config

show startup-config

ʅ

write running-config

switch# show startup-config

2.4

2.4.1 ping address

ping *address* [*number*] [**size** *bytes*] [**timeout** *seconds*]

address	A.B.C.D	IP	IP
number	INTEGER	1~10000	ping 1 10000
size	KEYWORD	size	ping
bytes	INTEGER	40~2000	ping 40 2000
timeout	KEYWORD	timeout	AOS ping

2.5 SNMP

2.5.1 snmp-server community

ڼ ۷ ʒ Â

snmp-server community *string* [**view** *view-name*] [**ro** | **rw**] [number]

no snmp-server community *string*

string	WORD	1~31	1~31 ڼ ɬ
view	KEYWORD	**view**	˝ا في
view-name	WORD	1~31	1~31 في ɬ
ro	KEYWORD	**ro**	ڼ
rw	KEYWORD	**rw**	ڼ
number	INTEGER	1~32	1~32 ɺ ў ʎ

ڼ Â

ʻ ɺ في ɬ à في à ɺ Ռ ڼ ў Â

في ɬ ʻ في ɬ ǹ internet Â

ʻ

ɺ ў ʎ ʻ 0

show snmp-server community

snmp-server access-list

snmp-server view

1ş public public ¢
switch#snmp-server community public view public ro

2ş private private ¢
switch#snmp-server community private view private rw

2.5.2 snmp-server access-list

à ˘ 32 IP

snmp-server access-list *number manager-address*

no snmp-server access-list *number* [*manager-address*]

number	INTEGER	1~32	ʌ
Manager -address	A.B.C.D	IP	ў ip

ĵ IP ˘ 32 IP
Â

˘ ÿ IP Â

Set up the manager-address to permit access to the specified access list.The **no** form of this command removes the specified manager-address.

show snmp-server access-list

```
  1ş            ip    192.168.0.224            1   ¢
switch(config)# snmp-server access-list 1 192.168.0.224
  2ş               4          ip       ¢
switch(config)#no snmp-server access-list 4
  3ş            ip    192.168.0.224         4      ¢
switch(config)#no snmp-server access-list 4 o snmp-server access-list 4
192.168.0.224
```

2.5.3 snmp-server view

ڤي

snmp-server view *view-name oid-tree* {**included | excluded**}

no snmp-server view *view-name*

view-name	WORD	1~31	ل ڤي
oid-tree	OID	1˙ 40	ڤي a ˜ oid Â oid *1.3.6.2.4*
included	KEYWORDS	included	oid ڤي
excluded	KEYWORDS	excluded	oid a ڤي

ڤيˆ 32 ˜ Â

show snmp-server view

```
  1ş    1.3.4    public     ¢
switch(config)# snmp-server view public 1.3.4 included
  2ş    public    ¢
switch(config)# no snmp-server view public
  3ş    mib1       1.3.6.7         1.3.6   ¢
switch(config)# snmp-server view  mib1 1.3.6 included
switch(config)# snmp-server view mib1 1.3.6.7 excluded
```

2.5.4 [no]snmp-server enable traps

traps

[no] snmp-server enable traps [snmp|entity|stp|radius]

snmp	KEYWORDS	snmp	ѝ snmp
entity	KEYWORDS	entity	entiry
stp	KEYWORDS	stp	
radius	KEYWORDS	radius	radius

trap ˘ no ҄ trap ˘ a trap ˘
‡ trap ҄ Â Ю trap Â

host-address	A.B.C.D	IP	ў IP
snmpv1|snmpv2	KEYWORDS	Snmpv1|snmpv2	snmp
community-string	WORD	1~31	trap ل ل
udp-port	INTEGER	1~65535	trap UDP Л Â
snmp	KEYWORDS	snmp	и snmp
entity	KEYWORDS	entity	entiry
stp	KEYWORDS	stp	
radius	KEYWORDS	radius	radius

trap ў ў ˘ 32 ў Â ў ip ˘
ل ў trap snmp Л˘ udp Л˘ Л∪

Sting1	WORD	1~31	Æ
Sting2	WORD>	1~31	ˆ ˩ ˜ Æ
…	KEYWORD	…	…
Sting15	WORD	1~31	ˆ ˩ ˜ Æ ч

˘ 15 ˘ 31 Â

ş sysAdmin
switch(config)# snmp-server contact sysAdmin

2.5.7 snmp-server location

ў Æ

snmp-server location *str1 [str2][str3][str4][str5]…[str15]*

no snmp-server location

str1	WORD<1-31>	1-31	Æ
str2	WORD<1-31>	1-31	ˆ ˩ ˜ Æ
…	KEYWORD	…	
str15	WORD<1-31>	1-31	ˆ ˩ ˜ Æ Ч

Æ ˘ 15 ˘ 31 Â

ş location fuzhou,fujian¢
switch(config)# snmp-server location fuzhou,fujian

2.5.8 show snmp-server statistics

snmp

show snmp-server statistics

EXEC à EXEC à

ş snmp ¢

```
switch# show snmp-server statistics
```

2.5.9 show snmp-server system

snmp

show snmp-server system

EXEC à EXEC à

ş snmp ¢

```
switch# show snmp-server system
```

2.5.10 show snmp-server community

snmp ↵

show snmp-server community [*string*]

EXEC à EXEC à

string	WORD	1~31	ل ل

' Â

snmp-server community

ş ¢
switch(config)# show snmp-server community

2.5.11 show snmp-server view

snmp في

show snmp-server view [*view-name*]

EXEC à EXEC à

host-address	A.B.C.D IP ~	0.0.0.0-255.255.255.255	ÿ ip

snmp trap ÿ snmp server Э Â ÿ ip ˘ ‡ ÿ Â

snmp-server host

ş 192.168.2.60 trap ¢
switch(config)# show snmp-server host 192.168.2.60

2.5.13 show snmp-server access-list

show snmp-server access-list *[number]*

EXEC à EXEC à

number	INTEGER	1~32	Л

snmp

snmp-server access-list

ş 1 ¢
switch(config)# show snmp-server access-list 1

2.5.14 [no]debug snmp-server packet

˜Ω snmp ˜Ω

[no]debug snmp-server packet

EXEC

˜Ω snmp ˜Ω

ş snmp ¢
switch# debug snmp-server packet
switch# no debug snmp-server packet

2.6

2.6.1 show memory

Â

show memory [**free**]

EXEC

free	KEYWORD	free	ˆ ˩ ˜

Â

Â

show process memory

```
  Ş           ¢
show memory free
FREE LIST:
     num    addr     size
     --- ---------- ----------
       1   0x3fee18        16
       2   0x3b1434        20
       3    0x4d188    2909400
   SUMMARY:
    status   bytes    blocks   avg block  max block
```

```
 ------ --------- -------- ---------- ----------
current
   free   2909436       3    969812   2909400
  alloc    969060   16102        60         -
cumulative
  alloc   1143340   16365        69         -
```

2.6.2 memory edit

˘ ˧Ռ Â

memory edit mem-address

EXEC

mem-address			

```
02000030  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
02000040  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
02000050  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
02000060  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
02000070  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................

-e 0x02000000 11 22 33 44 55 66 77 88 99 aa bb cc dd
-w
Save change<y/n>?
y
-d 0x02000000
02000000  11 22 33 44 55 66 77 88 99 AA BB CC DD 00 00 00   ."3DUfw.........
02000010  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
02000020  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
02000030  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
02000040  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
02000050  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
02000060  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
02000070  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................

-q
switch#
```

2.6.3 show processes

ϵ Â

show processes [*slot-number* [[*process-name* [**detailed**]] | [**cpu**[**5 | 60| 300**]]]]

EXEC

slot-number	INTEGER	1~10	( ) Æ/
process-name	WORD	1~32	( )
Detailed	KEYWORD	Detailed	( )
cpu	KEYWORD	cpu	( ) cpu .

5	KEYWORD	5	(˧) 5 ﾉ cpu
60	KEYWORD	60	(˧) 1ｱ ﾉ cpu
300	KEYWORD	300	(˧) 5ｱ ﾉ cpu

˘ ɛ́ ╥ '

Æ'

˧ Ꮑ ˆ Æ˜ ˘ cpu '

≠ ˧ Ꮑ '

˧ Ꮑ Â

Æ'

˧ Ꮑ ˆ Æ˜ Â

show processes memory

1ş ¢

```
switch#show processes
NAME       ENTRY   TID         PRI STATUS    PC      SP     ERRNO  DELAY
tExcTask  excTask  3bff0b8  0  PEND   30d318  3bfefc8    0   0
value = 0 = 0x0
```

2ş tExcTask ¢

```
switch#show processes 1 tExcTask
NAME         ENTRY    TID    PRI   STATUS   PC      SP  ERRNO  DELAY
tExcTask  excTask  3bff0b8   0    PEND 30d318  3bfefc8   0   0
value = 0 = 0x0
```

3ş tExcTask ¢

```
switch#show processes 1 tExcTask  detailed
NAME       ENTRY     TID    PRI   STATUS     PC    SP  ERRNO  DELAY
---------- ------------ -------- --- --------- -------- -------- tExcTask
excTask  3bff0b8  0  PEND   30d318 3bfefc8  0   0
stack: base 0x3bff0b8  end 0x3bfd178  size 7984   high 304   margin 7680
options: 0x7
VX_SUPERVISOR_MODE VX_UNBREAKABLE VX_DEALLOC_STACK
```

```
r0    =       0   r1/sp  =  3bfefc8   r2    =       0   r3    =       0
r4    =       0   r5    =       0   r6    =       0   r7    =       0
r8    =       0   r9    =       0   r10   =       0   r11   =       0
value = 0 = 0x0
```

4ş 5 cpu

```
------------ ------------ -------- ----- ----- ----- ------
          a           1          1      1000   234   900   100
```

2.6.5 trace processes

Â

trace processes [*slot-number* [**cpu** [*frequence*]]]

EXEC

slot-number	INTEGER	1~10	(⅃) Æ /|
cpu	KEYWORD	cpu	cpu .
frequence	INTEGER	1~300	(⅃) cpu ˆ ɲ ˜

frequence: Â ɲ Â
' 1˙ 300 Â

Ю̆ 3 Â

show processes

1ş 3 ¢
switch trace processes

2ş 5 3 ¢
switch trace processes 5

3ş 5 5 ¢

```
switch  trace processes 5 cpu 5
```

3 ঽ

3.1

3.1.1 negotiate

speed à duplex flowcontrol ╠ ˘ ἐ
FastEthernet (M5610-32T M5610-16FMT/-S) ╠
Â

negotiate {*speed* | *duplex* | *flowcontrol*}

[no] negotiate {*speed* | *duplex* | *flowcontrol*}

ˠ ꘿8× Èô P ˜ G

speed {10 | 100}

duplex {full | half}

[no] flowcontrol

ş STAR-S5610 8 2 ¢
switch(config-if-fast 8/2)# negotiate speed

3.1.2 speed

ʒ Â

speed {10 | 100}

10	KEYWORD	10	и10Mbps
100	KEYWORD	100	и100Mbps

Ю ⅃Л ʒ Â à ¨I Л 10Mbit/s
100Mbit/s ч ˘ ⅃Л Â ' NAT94 241.2203 Tm0.04140c15.d5d40W536b

ş STAR-S5610 8 2 100Mbps¢

```
switch(config-if-fast 8/2)# speed 100
```

3.1.3 duplex

ٸ ٸ Â

04

Ю ɺ Ꮑ ʇ Â ῼ ʎ˘ ɺ Ꮑ
no shutdown ʇ ╟ ' ˘ ɺ Ꮑ ˝l ῼ ˘ ʎ Ạ̈ ╟˘
ɺ Â

ş STAR-S5610 8 2 ¢

```
switch(config-if-fast 8/2)# shutdown
```

3.1.6 priority

ʇ ˝l ˘ ʇ no ˝l ѝ Â

priority {priority-*value*}

value	INTEGER	0~3	˝l

Ю˧ՂՆ ʅÂ

˝l , ˝l Â

ş STAR-S5610 8 2 2¢

```
switch(config-if-fast 8/2)# priority 2
```

3.1.7 broadcast suppression

Â

broadcast suppression {*threshold*}

threshold	INTEGER	1~100	˧ՂՆ ˘ ՂՆ1488 й æ Â

Ю˧ՂՆ ʅÂ

ʅ Э ˘ Л˘ ˘ ÿ Ŀ˘ æ Â ʅ no Э Â

[no] broadcast suppression

ş STAR-S5610 8 2 50ŏ1488 ¢

```
switch(config-if-fast 8/2)# broadcast suppression 50
```

3.1.8 no broadcast suppression

῀Ω ╖ Â

no broadcast suppression

Ю ᚁ ᔐ ঽ Â

broadcast suppression *threshold*

ş STAR-S5610 8 2 ¢

```
switch(config-if-fast 8/2)# no broadcast suppression
```

3.1.9 lock

/ ╟ ˷ ╖ Â

[no] lock

ЮⅎՈ ﻯ Â

a ˘ a ' no ﻯ ‡ a
a ˘ a Â

[no] lock

ş STAR-S5610 8 Ạ̓ m 28 #

FastEthernet	KEYWORD	FastEthernet	10/100Mbps
GigabitEthernet	KEYWORD	GigabitEthernet	1000Mbps
slot	Slot/ port	1~4 7~10	Æ Ñ
port	Slot/ port	1~32	Ñ

address	KEYWORD	address	╟ MAC Â
Mac_addr	XX.XX.XX.XX.XX.XX	00:00:00:00:00:00 – FF:FF:FF:FF:FF:FF	MAC ˘ ' a1:bc:00:12:34:4d
Interface	KEYWORD	Interface	Æ ╟ MAC
FastEthernet | **GigabitEthernet**	KEYWORD	FastEthernet | GigabitEthernet	˘ 10/100Mbps˘ 1000Mbps
Slot	INTEGER	1~4 ,7~10	Æ /\
Port	INTEGER	1~32	/\
Vlan	KEYWORD	Vlan	vlan ╟ MAC
vlan_id	INTEGER	1~4094	Vlan /\

Ю ┘Л ч Â

† ˘ ^ ⌐ ~ Ю MAC ˘ ù ╟ **mac-address-table** ˘ ù ù MAC Â

ч ╟ MAC ˘ ╟ MAC ˘ VLAN ╟ MAC Â

ş STAR-S5610 VLAN28 MAC ¢

```
switch(config)# clear mac-address-table dynamic vlan 28
```

3.2.2 mac-address-table aging-time

MAC ˘ Л ù Æ˘ ù 150 Â

ЮᆟЛᆸ ʅ Â

mac-address-table aging-time *seconds*

ş STAR-S5610 MAC ¢

```
switch(config)# no mac-address-table aging-time
```

3.2.4 mac-address-table static

╗ MAC Â

mac-address-table static *mac_addr vlan_id1 [- vlan_id2] slot/port* **tagged | untagged**

mac_addr	XX.XX.XX.XX.XX.XX	00:00:00:00:00:00 ~ FF:FF:FF:FF:FF:FF	MAC ˘ ˈ 00:09:a0:cd:01:dd
vlan_id1	INTEGER	1~4094	VLAN ᆟ, VALN VLAN ᆟ
vlan_id2	INTEGER	1~4094	VALN VLAN ᆟ
Slot	Slot/ Port	1~4 7~10	Æ ᆟ
Port	Slot/ Port	1~32	ᆟ

tagged	KEYWORD	tagged	802.1q tag
untagged	KEYWORD	untagged	a 802.1q tag

Ю ⅃ ᒍᒐ ʅ Â

й ˘ a ˘ Æ ˘
mac address table Â ʅ MAC ᒍᒐ ╟ ╗
VLAN Â

no mac-address-table static *mac_addr vlan_id*

: STAR-S5610 MAC MAC 00:06:bf:8d:64:00
3 4 VLAN 258 ¢

```
switch(config)# mac-address-table static 00:06:bf:8d:64:00 258 3/4 tagged
```

3.2.5 no mac-address-table static

MAC Â

no mac-address-table static *mac_addr vlan_id*

mac_addr	XX.XX.XX.XX .XX.XX	00:00:00:00:00:00 ~ FF:FF:FF:FF:FF:FF	MAC
vlan_id	INTEGER	1~4094	VLAN ⁄l

Ю ⅃ Ꮑ ʅ Â

ÿ mac-address-table MAC Â

mac-address-table static

ş STAR-S5610 MAC 00:06:bf:8d:64:00 MAC ¢

```
switch(config)# no mac-address-table static 00:06:bf:8d:64:00 25
```

3.2.6 show mac-address-table aging-time

MAC Â

show mac-address-table aging-time

EXEC

EXEC Ю ⅃ Ꮑ ʅ Â

mac-address-table aging-time

ş STAR-S5610MAC ¢

```
switch# show mac-address-table aging-time
```

3.2.7 show mac-address-table address

MAC MAC

show mac-address-table address *mac_addr* **[detail]**

EXEC

mac_addr	XX.XX.XX.XX .XX.XX	00:00:00:00:00:00 ~ FF:FF:FF:FF:FF:FF	MAC
Detail	KEYWORD	Ditail	ˆ ˩ ˜

EXEC Ю˧Ꮭ ʡÂ

MAC mac˙ address˙ table ˘ ‡ MAC VLAN˝ ˘ ╟ ' MAC cpu MAC ˘ ‡ MAC cpu Â detail ˘ ‡ MAC mac-address-table Â

ş STAR-S5610 MAC 00-06-bf-8d-64-00 MAC ¢

```
switch# show mac-address-table address 00-06-bf-8d-64-00 detail
```

3.2.8 show mac-address-table count

MAC Â

show mac-address-table count [{**vlan** *vlan_id*} | {**interface FastEthernet** | **GigabitEthernet** *slot*/port}]

EXEC

vlan *vlan_id*	INTEGER	1~4095	MAC VLAN MAC Â*vlan_id* ↓ и 1-4094Â
FastEthernet	KEYWORD	**FastEthernet**	˘ 10/100Mbps˘ 1000Mbps
GigabitEthernet	KEYWORD	**GigabitEthernet**	˘ 10/100Mbps˘ 1000Mbps
Slot	INTEGER	1~4 7~10	Æ /\
Port	INTEGER	1~32	/\

EXEC Ю ↓ Л∪ ҂˘ a ҂ MAC Â

҂ MAC VLAN MAC MAC Â

ş STAR-S5610 vlan 100 MAC ¢

```
switch# show mac-address-table count vlan 100
```

3.2.9 show mac-address-table dynamic

MAC ╠ ˗ Â

show mac-address-table dynamic [**detail**]

EXEC

Detail	KEYWORD	Datial	ˆ ˩ ˜

EXEC Ю˩Ѫ ʅ Â

mac 2 ˘ ╠ ˘ MAC
ᵻ MAC ˘ ˗ ˘ aging time MAC
˘ ‡ MAC ˘ ' ˧ MAC ˘ MAC
a ˘ MAC Â

ʅ MAC ╠ MAC Â detail ˘ ‡ ╠
MAC Â

show mac-address-table count

ş STAR-S5610MAC ¢

```
switch# show mac-address-table dynamic
```

3.2.10 show mac-address-table static

MAC

show mac-address-table static [**detail**]

EXEC

Detail	KEYWORD	Detail	ˆ ɺ ˜

EXEC ЮɺЛ ʅ Â

ʅ MAC MAC Â detail ˘ ‡
MAC Â

show mac-address-table dynamic

ş STAR-S5610 MAC ¢

```
switch# show mac-address-table static
```

3.2.11 show mac-address-table interface

MAC Â

show mac-address-table interface FastEthernet | GigabitEthernet *slot/port* [**detail**]

EXEC

FastEthernet	KEYWORD	FastEthernet	˘ 10/100MbpsstEthernet

mac-group-address	XX.XX.XX.XX.XX.XX	01:00:5e:00:00:00 ~ 01:00:5e:FF:FF:FF	MAC ˘ è ù xx:xx:xx:xx:xx:xx˘ ↓ ù 3 ù01-00-5eÂ

Detail ˚Ω Detail é Ç 2

EXEC ЮɁՌ ʅÂ

MAC MAC ˆ ╟ MAC ˜Â

ş STAR-S5610 MAC ¢

```
switch# show mac-address-table all
```

3.3 VLAN

3.3.1 VLAN

VLAN̂ Virtual Local Area Network˜ ˘
a ᶦ ÿ ὰ Â

VLAN LAN ᶦ a ɺ ˆ LAN̂ VLAN˜˜
VLAN ɺ ˘ б Э LAN ɺ
Â a ᶦ ˘ Ռɺ VLAN
ɺ ˘ a ɺ LAN Â VLAN
a ἐ VLAN ˘ ÿ ╠ ȁ ȁ
ȁ Â

VLAN ӥ ᾱՌ ˘ Ռ Э
╗ VLAN ˘ VLAN ID ᶦ ӥ ˘ a ɺ
˘ Â ɁՌ ˘
˘ ╟ Â VLAN Â

STAR-S5610 AMS IEEE 802.1q ᶦ VLAN ᶦ VLAN:

1. IEEE 802.1q VLAN

IEEE 1999 802.1Q ˘ Virtual Bridged Local Area Network
˘ VLAN ڣ ˘ ÿ a ɺ VLAN ӥ Ɂ Â
802.1Q ش

ч ˆ TCI--Tag Control Information˜˜ TPID IEEE 㓧
˘ ╗ 802.1Q Â

˘ 802.1Q VLAN˝
˘ VLAN ȅ Â ˘ 㓧 1
VLAN 2˝ 1 ⁄˘ 802.1Q ˘
ѫ˘ 1 VLAN 2˝ ╟ ╗ VLAN 2 ˘
⁄ ῎Ą ˘
VLAN ˘ ⁄ ˘ ˘
ᾱ Â Tag ˘ ‡
˘ ‡ ‡ Â Ю˘ ч Tag ˘
Â

2. VLAN

ᛘ VLAN Ꮭ ᛘ ˘ ⅃ VLAN ⅃Ꮭ a
˘ ˘ ˘ ⅃Ꮭ 1 1 – 5 2 1
ӣ ⅃ VLAN˝ ⅃ VLAN ⅃Ꮭ Ꮭ ˘ ᛘ 㓧VLAN
˘ IEEE 802.1Q Ꮭ ᛘ VLAN ڧ
Â

ᛘ 㓧VLAN ˘ 㓧 Ю
⅃Ꮭ Â VLAN A ˘
˘ ѫ 㓧Â

Æ a ⅃ Э Э ᛘ ˘ ╗
Э б LAN ⅃˘ ⅃Ꮭ ÂVLAN б LAN
˘ έ ᏝЮ '

(1) ╟ ⅃ ʒ˚ ˘ ╟ ˘ ≠ ÿ Æ
╟ ⅃ Æ ˘ a ˘ ╟ ˘ ╟
˘ ˘ ˘

a ˘ Â ˘ a VLAN
㓧 Â

(2) ˘ VLAN ˘ ˘ ˘
⅃ ⅃ LAN Э ˘ ˘ ˘ ⅃ ˘
≠ LAN

˘ ˘ ˘ VLAN˝ ѫ˘
˘ VLAN ἐ
˘ a ˘ ˘ VLAN Â
Э Ꮧ Ꮑ Â

(4) ˘ VLAN ᏗᏳ˘ VLAN a Ꮧ VLAN˝ ˘
ἐ VLAN Э a VLAN ˘ VLAN
a ἐ VLAN ˘ ÿ Â

3.3.2 vlan default

PVID Â

vlan default *vlan-id*

vlan-id	INTEGER	1~4094	VLAN Ꮑ

Ю Ꮧ Ꮑ ϡ Â

ϡ *vlan-id* STAR-S5610 802.1q Tag=0
a Tag ˘ ‡ ӥ MAC VLAN-ID ӥ *vlan-id* VLAN Â

no vlan default

ş STAR-S5610 4 3 PVID 36 ¢

```
switch(config-if-fast 4/3)# vlan default 36
```

3.3.3 vlan allowed

vlan Â

vlan allowed *vlan_id1* [- *vlan_id1*]

vlan_id1	INTEGER	VLAN up 1~4094	VLAN /1, VLAN

vlan allowed *vlan-id-range*

ş STAR-S5610 VLAN 100 4 3 ¢

```
switch(config-if-fast 4/3)# no vlan allowed 100
```

3.3.7 no vlan tagged

a 802.1q Tag Â

no vlan tagged *vlan_id*

vlan_id	INTEGER	1~4094	VLAN ﾊ

Ю ˩ Ꮑ ʔ Â

no vlan tagged

ʔ *vlan_id* ˘ a Tag Â

ş STAR-S5610 4 3 802.1q Tag ¢

```
switch(config-if-fast 4/3)# no vlan tagged
```

3.3.8 vlan

VLAN Â

vlan *vlan-id1* [- *vlan-id2*]

VLAN

VLAN

vlan-id1	INTEGER	1~4094	Vlan id 〃 VLAN vlan id
vlan-id2	INTEGER	1~4094	VLAN VLAN ID
All	KEYWORD	All	VLAN

VLAN Ю˩Ռ ʅ Â

vlan

ş STAR-S5610 vlan 128¢
switch(vlan)# no vlan 128
vlan tag vlan id ¢

3.3.10 show

VLAN Â

show *vlan-id*

EXEC

vlan-id	INTEGER	1~4094	Vlan〃

EXEC ЮɅЉ ʢÂ

ʢ VLAN ˘ ЉTagged UnTagged Â

ş STAR-S5610 vlan 36 ¢

```
switch(vlan)# show vlan 36
```

3.4

3.4.1 trap igmp

IGMP [a] cpuÂ

[no] trap igmp *slot/port*

slot	INTEGER	1~4 7~10	Æ ʹ
port	INTEGER	1~32	ʹ

ЮɅЉ ʢÂ

ʢ IGMP ˘ cpu˘ cpu Â

ş STAR-S5610 1 8 igmp CPU ¢

```
switch(config)# trap igmp 1/8
```

3.4.2 trap arp

ARP [a] cpu Â

[no] trap arp

Ю ˧ Ꮑ ʅ Â

ʅ ARP ˘ cpu˘ cpu Â

ş STAR-S5610 1 8 ARP CPU ¢

```
switch(config-if-fast 1/8)# trap arp
```

3.4.3 trap bpdu

BPDU [a] cpu Â

[no] trap bpdu *slot/port*

ᛘ Ň ȍ α

Ï4确分

---

mac_addr	XX.XX.XX.XX .XX.XX	00:00:00:00:00:00 ~ FF:FF:FF:FF:FF:FF	MAC ˘ :00:6d:88:12:e3:09
vlan-id	INTEGER	1~4094	VLAN Ϻ

Ю˧Ꭶ ჳ Â

ჳ MAC VLAN ID ˘ cpu˘ cpu Â

ş STAR-S5610 MAC 00:06:bf:8d:64:00 VLAN 28 CPU ¢

```
switch(config)# trap addr 00:06:bf:8d:64:00 28
```

3.5

3.5.1 spanning-tree enable

[no] spanning-tree enable

˘ ╖ no ʅ Â Ю˝ Â

1 ş ¢

```
switch(config)#spanning-tree enable
```

2 ş

1ş 2/3 100¢

```
witchōconfig-if-fast 2/3Ǒ#spanning-tree port-priority 100
```

2ş 2/3 ¢

```
witchōconfig-if-fast 2/3Ǒ#no spanning-tree port-priority
```

3.5.3 spanning-tree cost

panning-tree cost

2 ş 2/3 ¢
switch ō config-if-fast 2/3 Ŏ #no spanning-tree cost

3.5.4 spanning-tree priority

spanning-tree priority *bridge_priority*

no spanning-tree priority

bridge_priority	INTEGER	1-65535	й 32768

˝ l Â no ʒ ˘ 32768 Â
˝ l ˘ ‡ ˝ l й ˝ l Â

1 ş 8000 ¢
switch(config)#spanning-tree priority 8000

2 ş ¢
switch(config)#no spanning-tree priority

3.5.5 spanning-tree hello-time

spanning-tree hello-time *hello_time*

no spanning-tree hello-time

hello_time	INTEGER	1~10	Â ù2

hello Âno ¾ ˘ 2 Â hello ˘ ‡ hello Â

1ş hello 7 ¢
switch(config)# spanning-tree hello-time 7

2ş hello ¢
switch(config)# no spanning-tree hello-time

3.5.6 spanning-tree forward-time

spanning-tree forward-time *forward_time*

no spanning-tree forward-time

forward_time	INTEGER	4~30	Â и15

forward delay Âno ʇ ˘ 15 Â
forward delay ˘ ‡ forward delay Â

1ş STAR-S5610 forward delay 20 ¢

```
switch(config)#spanning-tree forward-time 20
```

2: STAR-S5610 forward delay ¢

```
switch(config)#no spanning-tree forward-time
```

3.5.7 spanning-tree max-age

spanning-tree max-age *max_age*

no spanning-tree max-age

Ω ˘ Æ /\ /\ ˘ ‡ Æ ˘
‡ Æ Â detail Ω ˘ ˘ ‡
Â

1ş 2/3 ¢
switch(config)# show spanning-tree 2/3

2ş 2/3 ¢
switch(config)# show spanning-tree 2/3 detail

3ş ¢
switch(config)# show spanning-tree

3.5.9 spanning-tree root

spanning-tree root [hello-time *seconds*] **[secondary]**

no spanning-tree root

hello-time *seconds*	INTEGER	1~10	^ ˩ ~
secondary	KEYWORD	secondary	^ ˩ Ω ~ Ω STAR-S5610 и

STAR-S5610 ӥ ˘ ⅃Ꮑ⅃ hello Â
secondary ῶ ˘ STAR-S5610 ӥ ˘ ‡ ӥ Â no ʇ
˝l ӥ ˘ 32768 Â

1 ş STAR-S5610 ¢
switch(config)# spanning-tree root

2 ş STAR-S5610 hello 3 ¢
switch(config)# spanning-tree root hello-time 3 secondary

3 ş STAR-S5610 ¢
switch(config)# no spanning-tree root

3.5.10 default spanning-tree

default spanning-tree

STAR-S5610 б ῶ ӥ Â ˝l ˘ hello
˘ max age ˘ forward delay ˘ ˝l ˘
Â

```
switch(config)# default spanning-tree
```

4

4.1 IP

4.1.1 ip address

ip address *ip_address* [*netmask* | *netmask-length*] [**secondary**]

no ip address *ip_address*

ip_address	A.B.C.D	IP	IP Â
Netmask:	A.B.C.D		Â
netmask-length'	INTEGER	0~32	Â
Secondary:	KEYWORD	Secondary	й Ю Â

IP ˘ Â

ş vlan 3 192.168.0.12 255.255.255.0 ¢

```
switch(config-if-vlan 3)#ip addr 192.168.0.12 255.255.255.0
```

4.1.2 hostname

hostname *hostname*

hostname	WORD	1~16	ў ʅ Â

ў ʅ˘ ╖ ʌ ѝ ʇ Â

show hostname

ş STAR¢

```
switch(config)#hostname STAR
STAR (config)#
```

4.1.3 show hostname

show hostname

EXEC

ў ɻ

hostname

```
Flags: (0x8863) UP BROADCAST MULTICAST ARP RUNNING
Type: NewUnkownType
Internet address: 192.168.3.1
Broadcast address: 192.168.3.255
Netmask 0xffffff00 Subnetmask 0xffffff00
Net 0xc0a80300 Subnet 0xc0a80300
ARP Proxy On
ARP Open
Ethernet address is 00:06:bf:00:00:31
Metric is 0
Maximum Transfer Unit size is 1500
It's a SW(inbands) interface, and MibII2233 info is:
6151588 octets received
1137306 octets sent
8927 packets received
42949680095 packets sent
1144 broadcast packets received
91 broadcast packets sent
24 multicast packets received
0 multicast packets sent
0 input discards
0 input unknown protocols
0 input errors
0 output errors
```

4.2 ARP

4.2.1 ip arp

ip arp *internet-address hardware-address*

no ip arp *internet-address* [*hardware-address*]

internet-address	A.B.C.D	IP	ARP IP Â

hardware-address	xx:xx:xx:xx:xx:xx	MAC	ARP MAC Â

╗ ARP Â

show ip arp

clear arp-cache

ş IP 192.168.0.106¢

```
switch(config)# ip arp 192.168.0.106 00:d0:f3:44:23:05
OK to add this ARP entry!
```

4.2.2 ip arp arpa

[no] **ip arp arpa**

ˇΩ ARPˇ ARP ˇΩ ˘ ‡ a ˉ ˘ a ARP Â

ş vlan 3 ARP ¢

```
switch(config-if-vlan 3)# ip arp arpa
VLAN 3 enable ARP OK
```

4.2.3 clear arp-cache

clear arp-cache [*host-address*]

EXEC

host-address	A.B.C.D	IP	ARP IP Â

ARP ˘ ў ˘ ‡ ARP ˘ ‡ ARP Â

ip arp

show ip arp

ş ARP ¢

```
switch# clear arp-cache
Dynamic arp table entrie(s) deleted!
```

4.2.4 show ip arp

show ip arp [*address*]

EXEC

address	A.B.C.D	IP	ÿ IP Â

ARP ˘ ÿ ˘ Â

ip arp

clear arp-cache

ş ARP ¢
switch#clear arp-cache

4.3 ARP

4.3.1 ip proxy-arp

[no] **ip proxy-arp**

ˆ interface vlan interface super-vlan˜

ῼ ARP ʅ ῼ Â Super-vlan ʅ ARP ῼ ՚ ˩ Ⴖ
sub-vlan ˘ vlan Э ARP ʅ Â

ş ARP ¢

```
switch(config-if-super-vlan)#ip proxy-arp
```

4.4

4.4.1 [no] ip localhost

[no] ip localhost *{hostname ip-address}*

hostname	WORD	1~31	ў ˩ Â
ip-address	A.B.C.D	IP	IP Â

ў ˩ IP Â

show ip localhosts

ş IP 192.168.0.1 ZY01¢
switch(config)#ip localhost ZY01 192.168.0.1

4.4.2 show ip localhosts

show ip localhosts [*hostname*]

EXEC

hostname	WORD	1~31	ŷ ŷ ɹ Â
ip-address	A.B.C.D	IP	IP Â

ŷ ɹ IP Ϋ Ω ˘ a ŷ ɹ˘ ‡ Â

ip localhost

ş IP ¢
switch#show ip localhosts

4.5 NAT

4.5.1 nat enable

[no] nat enable

(interface vlan)

VLAN NAT ж Â

ş vlan 3 NAT ¢

```
switch(config-vlan 3)# nat enable
```

4.6 VLAN

4.6.1 Super-vlan

[no] super-vlan *sup-vid1 [– supvid2]*

vlan

sup-vid1	INTEGER	1~32	… ( ) super-vlanÂ
-	KEYWORD	-	super-vlan Â
sup-vid2	INTEGER	1~32	sup-vid1 super-vlan Â

… ˆ ˜ super-vlan

show super-vlan

ş super-vlan 1 2 3¢
switch(vlan)# super-vlan 1 – 3

4.6.2 allow vlan

allow vlan *vid1* [– *vid2*]

no allow vlan {{*vid1* [– *vid2*]} | **all**}

Ǫ

vid1	INTEGER	1~4094	╕ ( )

Super-VLAN ˘ a Super-VLAN˘ Sup-VID1
Super-VLAN ˘ sup-VID1 sup-VID2 ˘ ‡ Super-VLAN
Â

super-vlan

allow vlan

ş Super-VLAN ¢
switch#show super-vlan

4.7 IP

4.7.1 [no] ip tos-field

ip tos-field [**max-reliability** | **max-throughput** | **min-delay** | **min-cost** | **normal**]

no ip tos-field

```
Set TOS of TCP socket-- tos:normal, (PCB:0x7a77478 , so-fd:16).
Set TOS of UDP socket-- tos:normal, (PCB:0x7a774fc , so-fd:17).
Set TOS of UDP socket-- tos:normal, (PCB:0x7a773f4 , so-fd:15).
Set TOS of UDP socket-- tos:normal, (PCB:0x7a77370 , so-fd:14).
Set TOS of UDP socket-- tos:normal, (PCB:0x7a772ec , so-fd:13).
Set TOS of UDP socket-- tos:normal, (PCB:0x7a77268 , so-fd:12).
Set TOS of UDP socket-- tos:normal, (PCB:0x7a771e4 , so-fd:11).
Set TOS of UDP socket-- tos:normal, (PCB:0x7a4cce0 , so-fd:9).
Set TOS of UDP socket-- tos:normal, (PCB:0x7a4cc5c , so-fd:8).
Set TOS of UDP socket-- tos:normal, (PCB:0x7a4cbd8 , so-fd:7).
Set TOS of UDP socket-- tos:normal, (PCB:0x7a4cb54 , so-fd:6).
Set TOS of UDP socket-- tos:normal, (PCB:0x7a4cad0 , so-fd:5).
Set TOS of UDP socket-- tos:normal, (PCB:0x7a4c9c8 , so-fd:4).
switch(config)#
```

4.7.2 show ip tos-field

show ip tos-field

Â

ToS Â

Ь ^ Ь socket˜ ' raw ip socket à TCP socket à UDP socket Â

[no] ip tos-field

ş ToS ¢ raw ip ¡ tcp ¡ udp ¢

```
switch(config)# show ip tos-field
```

```
No RAW type socket!
Get TOS of TCP socket-- tos:normal, (PCB:0x7a77580 , so-fd:18).
Get TOS of TCP socket-- tos:normal, (PCB:0x7a77478 , so-fd:16).
Get TOS of UDP socket-- tos:normal, (PCB:0x7a774fc , so-fd:17).
Get TOS of UDP socket-- tos:normal, (PCB:0x7a773f4 , so-fd:15).
Get TOS of UDP socket-- tos:normal, (PCB:0x7a77370 , so-fd:14).
Get TOS of UDP socket-- tos:normal, (PCB:0x7a772ec , so-fd:13).
Get TOS of UDP socket-- tos:normal, (PCB:0x7a77268 , so-fd:12).
Get TOS of UDP socket-- tos:normal, (PCB:0x7a771e4 , so-fd:11).
Get TOS of UDP socket-- tos:normal, (PCB:0x7a4cce0 , so-fd:9).
Get TOS of UDP socket-- tos:normal, (PCB:0x7a4cc5c , so-fd:8).
Get TOS of UDP socket-- tos:normal, (PCB:0x7a4cbd8 , so-fd:7).
Get TOS of UDP socket-- tos:normal, (PCB:0x7a4cb54 , so-fd:6).
Get TOS of UDP socket-- tos:normal, (PCB:0x7a4cad0 , so-fd:5).
Get TOS of UDP socket-- tos:normal, (PCB:0x7a4c9c8 , so-fd:4).
switch(config)#
```

4.7.3 show ip netbuf-pool

show ip netbuf-pool [data_trasfer| sys_structure| mbuf| driver_mblk

6.5308.5j78.5j10 0 20

ж ᾰ ש Â

ᾰ ש Ю' ầ
ầ mbuf ầ й mblk'

a Ὣ ˘ ầ
ầ mbuf Ь ᾰ ש '

```
IFADDR  :     0
CONTROL :     0
OOBDATA :     0
IPMOPTS :     0
IPMADDR :     0
IFMADDR :     0
MRTABLE :     0
TOTAL   :   400
number of mbufs: 400
number of times failed to find space: 0
number of times waited for space: 0
number of times drained protocols for space: 0
```

CLUSTER POOL TABLE

size	clusters	free	usage
64	4741	3427	45249
128	100	100	194097
256	40	39	1697
512	40	40	256
1024	25	25	103
2048	25	25	1735

NETWORK STACK SYSTEM POOL(mBlk&clusters Used Only For Sys Struct) STATISTICS:

type	number
FREE	8297
DATA	0
HEADER	0
SOCKET	14
PCB	16
RTABLE	140
HTABLE	0
ATABLE	0
SONAME	0
ZOMBIE	0
SOOPTS	0
FTABLE	0
RIGHTS	0
IFADDR	1321
CONTROL	0
OOBDATA	0
IPMOPTS	0

```
number of times waited for space: 0
number of times drained protocols for space: 0
```

```
CLUSTER POOL TABLE
```

```
size    clusters  free     usage
-----------------------------------------------------------------------
64      4741      3427     45249
128     100       100      194110
256     40        39       1697
512     40        40       256
1024    25        25       103
2048    25        25       1735
```

```
  3:                                                ¢
switch(config)# show ip netbuf-pool data-transfer
```

```
NETWORK STACK DATA POOL( mBlk&clusters Used Only For Data Trasfer) STATISTICS:
-----------------------------------------------------------------------
type       number
---------   ------
FREE    :    399
DATA    :      1
HEADER  :      0
SOCKET  :      0
PCB     :      0
RTABLE  :      0
HTABLE  :      0
ATABLE  :      0
SONAME  :      0
ZOMBIE  :      0
SOOPTS  :      0
FTABLE  :      0
RIGHTS  :      0
IFADDR  :      0
CONTROL :      0
OOBDATA :      0
IPMOPTS :      0
IPMADDR :      0
IFMADDR :      0
MRTABLE :      0
TOTAL   :    400
number of mbufs: 400
number of times failed to find space: 0
number of times waited for space: 0
number of times drained protocols for space: 0
```

```
CLUSTER POOL TABLE
```

size	clusters	free	usage
64	4741	3427	45249
128	100	100	194086
256	40	39	1697
512	40	40	256
1024	25	25	103
2048	25	25	1735

4ş ¢

```
show ip net buf-pool sys
NETWORK STACK SYSTEM POOL( mBlk&clusters Used Only For Sys Struct) STATISTICS:
type       number
---------   ------
FREE    :    8297
DATA    :      0
HEADER  :      0
SOCKET  :     14
PCB     :     16
RTABLE  :    140
HTABLE  :      0
ATABLE  :      0
SONAME  :      0
ZOMBIE  :      0
SOOPTS  :      0
FTABLE  :      0
RIGHTS  :      0
IFADDR  :    1321
CONTROL :      0
OOBDATA :      0
IPMOPTS :      0
IPMADDR :      6
IFMADDR :      0
MRTABLE :      0
TOTAL   :    9794
number of mbufs: 9794
number of times failed to find space: 0
number of times waited for space: 0
number of times drained protocols for space: 0
CLUSTER POOL TABLE
```

```
size    clusters  free     usage
-------------------------------------------------------------------
64      64       0        644
128     4705     3334     2872
256     64       20       1105
512     64       46       1430

  5:         mbuf                        ¢
switch(config)# show ip netbuf-pool mbuf
```

```
NETWORK STACK DATA POOL( Distribution of mbuf) STATISTICS:
-------------------------------------------------------------------
type       number
---------   ------
FREE    :    399
DATA    :      1
HEADER  :      0
SOCKET  :      0
PCB     :      0
RTABLE  :      0
HTABLE  :      0
ATABLE  :      0
SONAME  :      0
ZOMBIE  :      0
SOOPTS  :      0
FTABLE  :      0
RIGHTS  :      0
IFADDR  :      0
CONTROL :      0
OOBDATA :      0
IPMOPTS :      0
IPMADDR :      0
IFMADDR :      0
MRTABLE :      0
TOTAL   :    400
number of mbufs: 400
number of times failed to find space: 0
number of times waited for space: 0
number of times drained protocols for space: 0
```

```
CLUSTER POOL TABLE
-------------------------------------------------------------------
size    clusters  free     usage
-------------------------------------------------------------------
64      4741     3427     45249
128     100      100      194002
```

```
256      40       39       1697
512      40       40       256
1024     25       25       103
2048     25       25       1735
```

  6:             250   mblk   ¢

```
switch(config)# show ip netbuf-pool driver-mblk 250
DRIVER MBLK POOL( Distribution of mbuf) STATISTICS:
-----------------------------------------------------------------------
type       number
---------   ------
FREE    :    20
DATA    :     0
HEADER  :     0
SOCKET  :     0
PCB     :     0
RTABLE  :     0
HTABLE  :     0
ATABLE  :     0
SONAME  :     0
ZOMBIE  :     0
SOOPTS  :     0
FTABLE  :     0
RIGHTS  :     0
IFADDR  :     0
CONTROL :     0
OOBDATA :     0
IPMOPTS :     0
IPMADDR :     0
IFMADDR :     0
MRTABLE :     0
TOTAL   :    20
number of mbufs: 20
number of times failed to find space: 0
number of times waited for space: 0
number of times drained protocols for space: 0
__________________________________________________
CLUSTER POOL TABLE
_______________________________________________________________________
size     clusters  free     usage
-----------------------------------------------------------------------
0PM0P5T3h-------------------------- -1.1  0
```

4.7.4 show ip statistics

show ip statistics { **ip** | **tcp** | **icmp** | **igmp** | **udp** | **socket** | **route** }

ip	KEYWORD	ip	IP Ω Â
tcp	KEYWORD	tcp	TCP Ω Â
icmp	KEYWORD	icmp	ICMP Ω Â
igmp	KEYWORD	igmp	IGMP Ω Â
udp	KEYWORD	udp	UDP Ω Â
socket	KEYWORD	socket	SOCKET Ω Â
route	KEYWORD	route	ROUTE Ω Â

IP/ICMP/IGMP/UDP/TCP/SOCKET/ROUTE Ω Â

Â

1: ¢

```
switch(config)# show ip statistics ?
 ip                - ip statistics
 tcp               - tcp statistics
 icmp              - icmp statistics
 igmp              - igmp statistics
 udp               - udp statistics
 socket             - socket statistics
 route             - route statistics
```

2: IP ¢

```
switch(config)# show ip statistics ip
IP STATISTICS:
            total 47944
           badsum   0
         tooshort   0
         toosmall   0
          badhlen   0
           badlen   0
       infragments   0
       fragdropped   0
       fragtimeout   0
          forward 3339
       cantforward   0
      redirectsent   0
    unknownprotocol  267
         nobuffers   0
       reassembled   0
      outfragments   0
          noroute   0
```

3ş ICMP ¢

```
switch(config)# show ip statistics icmp
ICMP STATISTICS:
  1809 calls to icmp_error
  0 error not generated because old message was icmp
  Output histogram:
      echo reply: 17902
      destination unreachable: 1809
  0 message with bad code fields
  0 message < minimum length
  0 message with bad length
  Input histogram:
      echo reply: 15
      destination unreachable: 265
      echo: 17902
      address mask request: 2
  17902 message responses generated
```

4ş IGMP ¢

```
switch(config)# show ip statistics igmp
IGMP STATISTICS:
  0 invalid queries received
  0 invalid reports received
  0 bad checksums received
  0 reports for local groups received
  0 membership queries received
```

```
  0 membership reports received
  0 short packets received
  0 total messages received
  0 membership reports sentr
```

5ş UDP ¢

```
switch(config)# show ip statistics udp
UDP STATISTICS:
  96068 total packets
  15370 input packets
  80698 output packets
  0 incomplete header
  0 bad data length field
  0 bad checksum
  0 broadcasts received with no ports
  0 full socket
  15361 pcb cache lookups failed
  1809 pcb hash lookups failed
```

6ş TCP ¢

```
switch(config)# show ip statistics tcp
TCP STATISTICS:
      14432 packets sent
          10521 data packets (3282963 bytes)
            683 data packets (30498 bytes) retransmitted
           2984 ack-only packets (37 delayed)
              0 URG only packet
              0 window probe packet
            185 window update packets
             59 control packets
      11057 packets received
           5760 acks (for 2330694 bytes)
             88 duplicate acks
              0 ack for unsent data
           2807 packets (328144 bytes) received in-sequence
             25 completely duplicate packets (470 bytes)
              0 packet with some dup. data (0 byte duped)
             66 out-of-order packets (0 byte)
              0 packet (0 byte) of data after window
              0 window probe
             16 window update packets
              0 packet received after close
              0 discarded for bad checksum
              0 discarded for bad header offset field
              0 discarded because packet too short
         0 connection request
       947 connection accepts
```

```
        939 connections established (including accepts)
        947 connections closed (including 861 drops)
          0 embryonic connection dropped
       4349 segments updated rtt (of 4891 attempts)
         87 retransmit timeouts
             2 connections dropped by rexmit timeout
          0 persist timeout
          0 keepalive timeout
              0 keepalive probe sent
              0 connection dropped by keepalive
          0 pcb cache lookup failed
```

7ş SOCKET ¢

```
switch(config)# show ip statistics sock
ACTIVE INTERNET CONNECTIONS (including servers)
```

PCB	Proto	Recv-Q	Send-Q	Local Address	Foreign Address	(state)
7a77580	TCP	0	0	0.0.0.0.23	0.0.0.0	
7a77478	TCP	0	0	0.0.0.0.80	0.0.0.0	
7a774fc	UDP	0	0	0.0.0.0.7000	0.0.0.0	
7a773f4	UDP	0	0	0.0.0.0.1025	0.0.0.0	
7a77370	UDP	0	0	0.0.0.0.0	0.0.0.0	
7a772ec	UDP	0	0	0.0.0.0.1813	0.0.0.0	
7a77268	UDP	0	0	0.0.0.0.1812	0.0.0.0	
7a771e4	UDP	0	0	192.168.9.5.2000	0.0.0.0	
7a4cce0	UDP	0	0	192.168.9.5.3000	0.0.0.0	
7a4cc5c	UDP	0	0	192.168.9.5.3005	0.0.0.0	
7a4cbd8	UDP	0	0	127.0.0.1.1024	127.0.0.1.17185	
7a4cb54	UDP	0	0	0.0.0.0.17185	0.0.0.0	
7a4cad0	UDP	0	0	0.0.0.0.161	0.0.0.0	
7a4c9c8	UDP	0	0	0.0.0.0.69	0.0.0.0	

8: ROUTE ¢

```
switch(config)# show ip statistics route
ROUTING STATISTICS:
0     bad routing redirect
0     dynamically created route
0     new gateway due to redirects
4     destinations found unreachable
0     use of a wildcard route
```

5

5.1

5.1.1 [no] ip route

ip route *ip-address* { *mask* | *mask-length* } { *interface-type interface-number* | *gateway-address* } [**cost** *value*] [**reject** | **blackhole**]

no ip route *ip-address* { *mask* | *mask-length* } [*interface-type interface-number* | *gateway-address*] [**cost** *value*]

ip-address	A.B.C.D	IP	IP Â
mask	A.B.C.D		Â
mask-length	INTEGER	0~32	Â
interface-type	WORD	1~8	Â
interface-number	INTEGER	1~4094	Â
gateway-address	A.B.C.D	IP	Â
cost	KEYWORD	cost	( ) Â
value	INTEGER	0~15	( ) Â
Reject	KEYWORD	Reject	( ) RTF_REJECTÂ
blackhole	KEYWORD	blackhole	( ) RTF_BLCKHOLEÂ

˚ Â

show ip route

1ş 192.168.1.1 32 192.168.0.57 ¢

switch(config)#ip route 192.168.1.1 32 192.168.0.57

5.2.2 [no] hw route

hw route slot/port dest-ip-address dest-mac-address vlan-id [dest-tag| [**srcmac** src-mac-address] | [**mask** net-mask] | **static** | [**dev** src-dev-num]| [**cmd** cmd-num]]

no hw route *dest-ip-address* [**mask** net-mask] [**dev** *src-dev-num*]

Slot	SLOT/PORT	1~10	Æ /ı
port	SLOT/PORT	1~32	/ı
dest-ip-address	A.B.C.D	IP	IP Â
Dest-mac-address	xx:xx:xx:xx:xx:xx	MAC	MAC Â
vlan-id	INTEGER	1~4094	Vlan /ı Â
dest-tag	INTEGER	0~1	(˩) tagˇ ѝ a tag Â
srcmac	KEYWORD	srcmac	(˩) MAC ˝Ω Â
src-mac-address	xx:xx:xx:xx:xx:xx	MAC	(˩) MAC ˇ ѝ MAC Â
mask	KEYWORD	mask	(˩) ˝Ω Â
net-mask	A.B.C.D	MAC	(˩) ˇ ѝ ў Â
static	KEYWORD	static	(˩) ˝Ω ˇ ѝ ╟ ˩ Â
dev	KEYWORD	dev	(˩) ˝Ω Â
src-dev-num	INTEGER	0~31	(˩) /ı˘ ‡ Â
cmd	KEYWORD	cmd	(˩) ҂˝Ω Â

cmd-num	INTEGER	0~7	( )0- 1- 2- 3- 4- 5- CPU 6, 7 0Â

NO Â

show hw route

1 192.168.0.5 MAC 00:00:00:00:00:01 8/1 VID 4

switch (config)#hw route 8/1 192.168.0.5 00:00:00:00:00:01 4

2 192.168.0.0 MAC 00:00:00:00:00:01 8/1 VID 4 255.255.255.0.0

switch (config)#hw route 8/1 192.168.0.0 00:00:00:00:00:01 4 mask 255.255.0.0

20

3 192.168.0.5 MAC 00:00:00:00:00:01 8/1 VID 4 CPU

switch (config)#hw route 8/1 192.168.0.0 00:00:00:00:00:01 4 cmd 5

4 192.168.0.5 MAC 00:00:00:00:00:01 8/1 VID 4

switch (config)#hw route 8/1 192.168.0.0 00:00:00:00:00:01 4 static

5 192.168.0.5 MAC 00:00:00:00:00:01 8/1 VID 4 20

switch (config)#hw route 8/1 192.168.0.0 00:00:00:00:00:01 dev 20

6

5.2.3 show hw route

show hw route [[**host** [*dest-ip-address*]]|[**network** [*dest-ip-address*] [*net-mask*]]]

ȝ

host	KEYWORD	host	(˩) ў Ȣ Â
dest-ip-address	A.B.C.D	IP	(˩) IP Â
network	KEYWORD	network	(˩) Ȣ Â
net-mask	A.B.C.D		(˩) Â

˚ ˘ ˩ Ȣ ˚ Â

hw route

1ş ¢
switch# show hw route

2ş ¢
switch# show hw route host

3ş 192.168.1.1 ¢
switch# show hw route host 192.168.1.1

4ş ¢
switch# show hw route network

ş natpool1 natpool2 NAT natpool1 ¢
172.16.10.1 172.16.10.2 napoll2 172.16.20.1 172.16.20.3
24 ¢

```
switch(config)# ip nat pool aaa 172.16.10.1 172.16.10.2 255.255.255.0
switch(config)# ip nat pool ccc 172.16.20.1 172.16.20.3 24
```

5.3.2 [no] ip nat static

[no] ip nat static *local-ip global-ip*

local-ip	A.B.C.D	IP	NAT
global-ip	A.B.C.D	IP	NAT Ώ

ʽ / NAT ῍Ω ˘ STAR-S5610 Ꮧ⅃Ⴑ 128
NAT Â

show ip nat static

ş 192.168.0.2 202.112.1.10 ¢

```
switch(config)# ip nat static 192.168.0.2 202.112.1.10
```

5.3.3 ip nat translation

ip nat translation {**udp-timeout**|**tcp-timeout**|**icmp-timeout**} *seconds*

seconds	INTEGER	1~0xffffffff	NAT ˘ Æ

STAR-S5610 NAT Ь ˈ TCP à UDP ICMP Â ར Ь a ˩
NAT ˘ NAT ˘
ЖNAT Â

show ip nat statistics

1ş UDP NAT 300 ¢

```
switch(config)# ip nat translation udp-timeout 300
```

2ş ICMP NAT 30 ¢

```
switch(config)# ip nat translation icmp-timeout 30
```

5.3.4 [no] original-list

original-list *orig-list-number* **permit** { **local-pool** *local-pool-name*} | {**range** *start-ip end-ip* }

no original-list *orig-list-number*

orig-list-number	INTEGER	1~65535	IP ID᛫
local-pool-name	WORD	1~15	RADIUS ⅃
start-ip	A.B.C.D	IP	DHCP
end-ip	A.B.C.D	IP	DHCP

ӥ ╟ NAT ˘ ˘
╟ NAT Â ʅ IP
Â

ʅʽ ⅃ ӥ orig-list-number ὲ ˘ ╗
ӥ permit local-pool local-pool-name˘ ╗
DHCP ӥ permit range start-ip end-ip Â ʅ ⅃
Ꮑ⅃ orig-list ╗ Â

ʅʽ ⅃Ꮑ no original-list orig-list-number˘
Â

show original-list

1ş DHCP SERVER DHCP 192.168.1.0 192.168.1.100 list
1 ¢

```
switch(config)#original-list 1 permit range 192.168.1.0  192.168.1.100
```

5.3.5 [no] ip nat original-list

[no] ip nat original-list *orig-list-number* **pool** *name*

orig-list-number	INTEGER	1~65535	IP ID
name	WORD	1~15	NAT

NAT IP
NAT Ω NAT
NAT NAT

original-list

show ip nat pool

NAT natpool1 original-list 1
```
switch(config)#ip nat original-list 1 pool natpool1
```

5.3.6 [no] ip nat free-to

ip nat free-to *ip-address*

ip-address	A.B.C.D	IP	a NAT IP

ʢ IP a NAT˝ STAR-S5610 ɹЛ
8 a NAT ˘ й 192.168.0.59Â

show ip nat free-to

ş 192.168.0.59 IP NAT¢

```
switch(config)#ip nat free-to 192.168.0.59
```

5.3.7 [no] ip nat bind

[no] ip nat bind *ip-address mac-addr vlan-id*

ip-address	A.B.C.D	IP	NAT IP
mac-addr	xx' xx' xx' xx' xx' xx	MAC	NAT MAC
vlan-id	INTEGER	1~4095	NAT VLAN ID

NAT Ю ў Ј IP ў ˘ и
˘ STAR-S5610 è MAC VLAN ID, Л ҷ

slot	SLOT/PORT	1~10	NAT Æ /\

ʒ Æ Э NAT NAT ˘ a
Æ /\˘ ѫ NAT Э Â

ʅ ╠ NAT ˘ ˀ ╠ NAT
ɹ ˘ ˘ ˟ ˘ NAT NAT Æ /| Â

ip nat pool

ş NAT ¢

```
switch#show ip nat pool
Total NAT IP pools number is :2.

NAT pool 0's name is :taigu-nat.
NAT pool 0's size is :1.
NAT pool 0's startip is :61.152.154.34.
Dynamic ip 61.152.154.34 is allocated to STAR-NAT on slot: 2.

NAT pool 1's name is :natpool.
NAT pool 1's size is :5.
NAT pool 1's startip is :61.152.154.1.
Dynamic ip 61.152.154.1 is NOT allocated.
Dynamic ip 61.152.154.2 is NOT allocated.
Dynamic ip 61.152.154.3 is NOT allocated.
Dynamic ip 61.152.154.4 is NOT allocated.
Dynamic ip 61.152.154.5 is NOT allocated.
```

5.3.10 show ip nat static

show ip nat static

ʅ Â

ʒ NAT Â

[no] ip nat static

ş NAT ¢

```
switch#show ip nat static
NAT static pairs number:1.
static pair 0's global ip address:202.112.1.1.
static pair 0's private ip address:192.168.0.1.
this static pair is allocated to STAR-NAT on slot: 2.
```

5.3.11 show ip nat statistics

show ip nat statistics

ʒ

ʒ Þ NAT Â

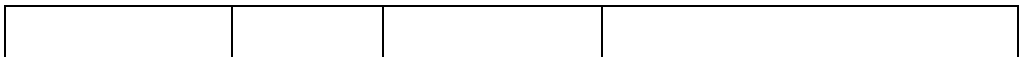
ip nat translation

ş NAT ¢

```
switch#show ip nat statistics
Current TCP link timeout value:1000 seconds.
Current UDP link timeout value:10 seconds.
Current ICMP link timeout value:1 seconds.
```

5.3.12 show original-list

show original-list [*orig-list-number***]**



5.3.13 show ip nat free-to

show ip nat free-to

ʒ

ʒ a NATÂ

[no] ip nat free-to

ş NAT IP ¢

```
switch#show ip nat free-to
Ip nat free-to address : 192.168.8.8 .
```

5.4 OSPF

5.4.1 [no] router ospf enable

1.

[**no**] **router ospf enable**

Â

ʒ ╟ OSPF ˘ ʒ no OSPF Â

2.

show ip ospf

3.

1ş OSPF ¢
switch (config)# router ospf enable

5.4.2 [no] network area

1.

[**no**] **network area** *area-id ip-address wildcard-mask*

OSPF

area-id	A.B.C.D INTEGER	IP ʁ ʌ 0-65535	ʁ IDÂ
ip-address	A.B.C.D	IP	OSPF IP Â
wildcard-mask	A.B.C.D	ˬ ˬ	б*ip-address* Â

OSPF ʒ˘ ʒ Э OSPF ˘
ʁ ˘ no ʒ ˬ Э OSPF Â

2.

show ip ospf interface

3.

1ş OSPF ¢

```
switch (config-ospf)# network area 0.0.0.0 192.168.0.1 0.0.255.255
```

5.4.3 router-id

1.

router-id *ip-address*

no router-id

OSPF

ip-address	A.B.C.D	IP ʁ ʌ	IDÂ

ID ʔˇ ʔ STAR-S5610 ╟ OSPF ʌˇ
- IDˇ ʔ no ˬ IDÂ

2.

show ip ospf

3.

1ş ID 1.1.1.1¢

```
switch (config-ospf)# router-id 1.1.1.1
```

2ş IDȼ

```
switch (config-ospf)# no router-id
```

5.4.4 area stub

1.

area stub *area-id* [**no-summary**]

no area stub *area-id*

OSPF

area-id	A.B.C.D INTEGER	IP ש ⁄l 0~65535	stubש IDÂ
no-summary	keyword	**no-summary**	ש ˘ ABR ⅃ ש summary LSAsÂ

stub ש ʅ˘ ʅ ש ì stub ש ˘ ʅ no ⅃ ש ì stub ש Â

2.

3.

```
  1ş      0.0.0.1        ¢
switch (config-ospf)# area stub 0.0.0.1
  2ş      10             ¢
switch (config-ospf)# area stub 10 no-summary
  3ş      10             ¢
switch (config-ospf)# no area stub 10
```

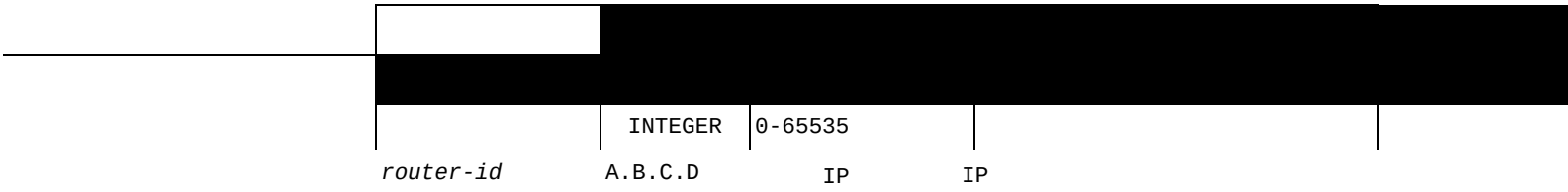
5.4.5 area virtual-link

1.

area virtual-link *area-id router-id* [**hello-interval** *seconds*] [**retransmit-interval** *seconds*] [**transmit-delay** *seconds*] [**dead-interval** *seconds*] [[**authendication-key** *password*]| [**message-digest-key** *keyid* **md5** *key*]]

no area virtual-link *area-id router-id*

OSPF



2.

show ip ospf virtual-link

3.

```
  1ş          0.0.0.1   Router ID   10.1.1.1                ¢
switch (config-ospf)# area virtual-link 0.0.0.1 10.1.1.1
  2ş             Hello Interval   Dead Interval¢
switch (config-ospf)# area virtual-link 0.0.0.1 10.1.1.1 hello-interval
10 dead-interval 40
  3ş                    ¢
switch    (config-ospf)#    area    virtual-link    0.0.0.1    10.1.1.1
authentication-key hello
  4ş                    ¢
switch    (config-ospf)#    area    virtual-link    0.0.0.1    10.1.1.1
message-digest-key 2 md5 welcome
  5ş             ¢
switch (config-ospf)# no area virtual-link 0.0.0.1 10.1.1.1
```

5.4.6 area default-cost

1.

area default-cost *area-id cost*

no area default-cost *area-id*

OSPF

area-id	A.B.C.D INTEGER	IP ш Л 0~65535	ш IDÂ
cost	INTEGER	1~4294967295	ш Â

stub ш ʒˇ ʒ OSPF stub ш
ˇ ʒ no ʒ ˇ ʒ stub ш
Â

2.

3.

```
  1ş            11               10¢
switch (config-ospf)# area default-cost 11 10
  2ş            0.0.1.1                    ¢
switch (config-ospf)# no area default-cost 0.0.1.1
```

5.4.7 area range

1.

area range *area-id ip-address mask* **[advertise|nonadvertise]**

no area range *area-id ip-address mask*

OSPF

area-id	A.B.C.D INTEGER	IP ש ᐱ 0~65535	ש IDÂ
ip-address	A.B.C.D	IP	IP Â
mask	A.B.C.D		
advertise	keyword	**advertise**	ᐱ ˆ ˜
nonadvertise	keyword	**nonadvertise**	ᐱ a

ʢ˘ ʢ ש Э ˘ ʢ no ᐯ
╥ Â

2.

show ip ospf routing

3.

```
  1ş      100          192.168.0.0/24¡192.168.1.0/24¡192.168.2.0/24¡
192.168.3.0/24           1                    ¢
switch (config-ospf)# area range 100 192.168.0.0 22
   2ş       173.6.1.1            ¢
switch (config-ospf)# no area range 173.6.1.1 192.168.0.0 22
```

5.4.8 area authentication

1.

area authentication *area-id* [**message-digest**]

no area authentication *area-id*

OSPF

area-id	A.B.C.D INTEGER	IP 0~65535	ID
message-digest	keyword	**message-digest**	

OSPF no

2.

show ip ospf

3.

```
  1ş       10.0.0.0            ¢
switch (config-ospf)# area authentication 10.0.0.0
  2ş       100.0.0.0            ¢
switch (config-ospf)# area authentication 100.0.0.0 message-digest
  3ş       100      ¢
```

```
switch (config-ospf)# no area authentication 100
```

5.4.9 ip ospf cost

1.

ip ospf cost *cost*

no ip ospf cost

cost	INTEGER	1~65535	Â

ʒˇ ʒ Э ˇ no ʒ
ˇ ╟ ˇ 100000000/ Â

2.

show ip ospf interface

3.

```
 1ş            100¢
switch (config-if-vlan 1)# ip ospf cost 100
```

5.4.10 ip ospf hello-interval

1.

ip ospf hello-interval *seconds*

no ip ospf hello-interval

seconds	INTEGER	1~65535	hello Â

hello ʒˇ ʒ Э hello
ˇ no ʒ Â

2.

show ip ospf interface

3.

1ş hello 100 ¢
switch (config-if-vlan 1)# ip ospf hello-interval 100

5.4.11 ip ospf dead-interval

1.

ip ospf dead-interval *seconds*

no ip ospf dead-interval

seconds	INTEGER	1~65535	Э hello ʌ hello ˇ ‡ ѝ Â

ʒ˘ ʒ ˘
hello ‡ ѝ ˘ no ʒ Â ⅃
Â

2.

show ip ospf interface

3.

ş dead-interval 400 ¢
switch (config-if-vlan 1)# ip ospf dead-interval 400

5.4.12 ip ospf priority

1.

ip ospf priority *number*

no ip ospf priority

MTU ╖ ϡ˘ ϡ MTU ╖ Â

2.

3.

1ş MTU ¢

```
switch (config-if-vlan 1)# ip ospf mtu-enable
```

2: MTU ¢

```
switch (config-if-vlan 1)# no ip ospf mtu-enable
```

5.4.18 show ip ospf

1.

show ip ospf

EXEC ϡ

OSPF ў ϡ˘ ϡ OSPF ў Â

2.

3.

```
  ş    OSPF         ¢
switch# show ip ospf
```

5.4.19 show ip ospf cumulative

1.

show ip ospf cumulative

EXEC ʒ

OSPF ʒˇ ʒ OSPF Â

2.

3.

```
  ş    OSPF            ¢
switch# show ip ospf cumulative
```

5.4.20 show ip ospf database

1.

show ip ospf database [[[external| network |router | summary| asbr-summary][*link-state-id*]|]|[database-summary]]

EXEC ¾

external	KEYWORD	**external**	external-LSA
network	KEYWORD	**network**	network-LSA
router	KEYWORD	**router**	router-LSA
summary	KEYWORD	**summary**	summary-LSA
asbr-summary	KEYWORD	**asbr-summary**	asbr-summary-LSA
link-state-id	A.B.C.D	IP	é link-state-id LSA
database -summary	KEYWORD	**database -summary**	

¾˘ ¾ LSA ˜Ω Â

2.

3.

1ş network-LSA¢

```
switch# show ip ospf database network
```

2ş link-state-id 192.168.1.1 router-LSA¢

```
switch# show ip ospf database router 192.168.1.1
```

3ş ¢

```
switch# show ip ospf database database-summary
```

5.4.21 show ip ospf error

1.

show ip ospf error

2.

3.

```
  1ş    STAR-S5610            OSPF            ¢
switch# show ip ospf interface

  2ş    VLAN2   OSPF          ¢
switch# show ip ospf interface vlan 2
```

5.4.23 show ip ospf neighbor

1.

show ip ospf neighbor [**vlan|super-vlan** *number*][*neighbor-id*] [**detail**]

EXEC ϧ

vlan	KEYWORD	vlan	ˆ ˩ ˜ VLAN Â

number

3.

1ş STAR-S5610 OSPF ¢
switch# show ip ospf neighbor

2ş VLAN2 OSPF ¢
switch# show ip ospf neighbor vlan 2

5.4.24 show ip ospf border-routers

1.

show ip ospf border-routers

EXEC ¾

¾ OSPF Â

2.

3.

ş OSPF η ¢
switch# show ip ospf border-routers

EXEC ¾

vlan	KEYWORD	vlan	^ ˩ ˜ VLAN

vlan	KEYWORD	vlan	ˆ ˩ ˜ VLAN Â
number	INTEGER	1~4094	ˆ ˩ ˜ VLAN ˥ Â
supper-vlan	KEYWORD	supper-vlan	ˆ ˩ ˜ Supper-VLAN Â
number	INTEGER	1~32	ˆ ˩ ˜ Supper-VLAN ˥
nbr-id	A.B.C.D	IP	ˆ ˩ ˜ router-ID

ϧ OSPF Â

2.

3.

1ş STAR-S5610 OSPF ¢

```
switch# show ip ospf retransmission-list
```

2ş 10.0.0.1 ¢

```
switch# show ip ospf retransmission-list 10.0.0.1
```

5.4.27 show ip ospf virtual-link

1.

show ip ospf virtual-link

EXEC ϧ

ৡ OSPF Â

2.

3.

ş OSPF ¢

```
switch# show ip ospf virtual-link
```

5.4.28 show ip ospf routing

1.

show ip ospf routing

EXEC ৡ

ৡ OSPF Â

2.

3.

ş OSPF ¢

```
switch# show ip ospf routing
```

5.5 ACL

5.5.1 access-list

ৡ , Â

access-list *listnumber* {**permit|deny**} [**external**]{{*source-address wildcard-mask*} | {**host** *source-address*} | **any**} [**log**] [**time-range** *time-range-name*]

ʌ˘ ÿ1~99
t ৭
৭
mal ‡

˘ ℸ ǂ Â

, ˘ IP
ˆ source-address˜ Æˆ wildcard-mask˜ Â

/ listnumber 1~99 ˘ Â

ℸ б
√ Â ˘ 0 ǁ ┐ Ŀ ˚ ˘ 1 ǁ a˜Ω
Ŀ ˚ Â ˘ Ю IP ∤ ┐ 198.78.46.0/24
Â

listnumber	INTEGER	100-200	ʎˇ ÿ100 200
permit	KEYWORD	permit	KEYWORDpermit ˥
deny	KEYWORD	deny	KEYWORDdeny ˥
protocol	WORD	1~4	WORD
protocol-key	INTEGER	0~255	
external	KEYWORD	external	KEYWORDextermal ‡ ÿ
source-address	A.B.C.D	IP	
wildcard-mask	A.B.C.D		' ╥ б ˧ Â ˘ 0 ˡ ˥ ĿL ˇ ˘ 1 ˡ a ˜Ω ĿL ˇ Â
host	KEYWORD	host	host ˥ ˘ ἐ ӥ 0.0.0.0Â
any	KEYWORD	any	KEYWORDany IP ˘ 0.0.0.0 255.255.255.255
port	KEYWORD	port	KEYWORDport ἐ ʎ ʎ
source-port_string	WORD	1~6	WORD ʎ
source-port	INTEGER	0~65535	ʎ

destination-port_string	WORD	1~8	WORD Л
destination-port	INTEGER	0~65535	Л
log	KEYWORD	log	KEYWORDlog ┐
time-range	KEYWORD	time-range	KEYWORD
time-range-name	WORD	1~16	┘

IP ˘ IP Ю
' à à Â

Л list number 100 200 ˘
Â

Л ˘ ┘ и ˘
WORD ˘ ЛЬЮ ACL WORD б
ЎΩ '

WORD	
IP	0
ICMP	1
IGMP	2
TCP	6
UDP	17

WORDЋ Л б WORD ЎΩ '

WORD	
FTP	21
Telnet	23

show access-list

ş 101 SMTP TCP
198.78.46.8¢ 202.192.19.* IP
198.78.46.3¢ www http 80 smtp
25¢

```
switch (config)# access-list 101 permit tcp any host 198.78.46.8 port smtp
switch (config)# access-list 101 permit ip 202.192.19.0 0.0.0.255 host
198.78.46.3 port www
```

5.5.3 access-list

ʒ ɻ ˇ ACL ‡ Â

access-list *listnumber* **remark** [*remark_string*]

listnumber	INTEGER	1~200	ʌ Â
remark	KEYWORD	**remark**	╖ Â
remark_string	WORD	1~256	WORD Â

remark ɻ ʌ ɹˇ ɛ̀ ɹ Â
remark ɻ ɺʃʅ **permit** **deny** ɻ ɹ ' ӣ ˇ
remark Æ Â

ˇ 60 ˇ ɛ̀ ≠
ˇ б a 60 Â

show access-list

```
  ş    101                       ¢
switch (config)# access-list 101 remark allow traffic to 198.78.46.8 by
smtp
switch (config)# access-list 101 permit tcp any host 198.78.46.8 port smtp
switch (config)# access-list 101 remark allow traffic to 198.78.46.3 by
www
switch (config)# access-list 101 permit tcp any host 198.78.46.3 port www
switch (config)# access-list 101 remark allow traffic to 198.78.46.9 by
pop3
switch (config)# access-list 101 permit tcp any host 198.78.46.9 port 110
```

5.5.4 show access-list

ʒ list number Â

show access-list [*listnumber*]

EXEC ,XAK,X

1ş ¢

```
switch > show access-list
      1
      101
      105
```

2ş 101 ¢

```
switch > show access-list 101
switch > access-list 101 remark allow traffic to 198.78.46.8 by smtp
switch > access-list 101 permit tcp any host 198.78.46.8 port smtp
switch > access-list 101 remark allow traffic to 198.78.46.3 by www
switch > access-list 101 permit tcp any host 198.78.46.3 port www
switch> access-list 101 remark allow traffic to 198.78.46.9 by pop3
switch > access-list 101 permit tcp any host 198.78.46.9 port 110
```

5.5.5 access-list default

ACL Â

access-list default {**permit**|**deny**}

╗ ˘ ˩ ˜Ω SIP˝ a˜Ω ἐ ˘
ἰ ˥ Э˘ ÿ ˧Ꮑ ˨ QoS Â

show access-list default

ş ACL ¢

```
switch(config)# access-list default permit
```

5.5.6 show access-list default

ʅ ACL Â

show access-list default

EXEC

ACL Â

access-list default

ş ACL ¢

```
switch> show access-list default
      permit
```

5.5.7 no access-list

ï¼Â

no access-list *listnumber*

no access-list insert

ş

ō1Ǒ show 1

```
switch(config)# show access-list 1
 1   permit host 198.78.46.20
 2   permit host 198.78.46.21
```

ō2Ǒ

```
switch(config)# access-list insert 1 permit host 198.78.46.10 2
```

ō3Ǒ show 1

```
switch(config)# show access-list 1
 1   permit host 198.78.46.20
 2   permit permit host 198.78.46.10
 3   permit host 198.78.46.21
```

Ӽ Ø - ґ

protocol	WORD	1~4	ˆ WORD
protocol-keyWORD	INTEGER	0~255	
external	KEYWORD	external	KEYWORDexternal ‡ ў
source-address	A.B.C.D	IP	
wildcard-mask	A.B.C.D		′ ╖ б ┤ Â ˘ 0 Г┐ Ŀ ˇ˘ 1 Гa῁Ω Ŀ ˇ Â
host	KEYWORD	host	host ┐ ˘ ἐ ӣ 0.0.0.0Â
any	KEYWORD	any	KEYWORDany IP ˘ 0.0.0.0 255.255.255.255
port	EYWORD	port2d6b50e7d2c	KEYWORDport ε ŋ Л Tftime-range4 442.280 Tm<02b3e3c2f0e2
source-port_string	ORD	1~8	ORD Л
source-port	INTEGER	~65535	Л
destination -address	.B.C.D	IP	
wildcard-mask	.B.C.D		′ ╖

INSERT

no access-list insert ACL

listnumber 100~200

no access-list insert

```
ō1Ŏ          show         101
   switch(config)# show access-list 101
      1   permit tcp any host 198.78.46.20 port smtp
      2   permit tcp any host 198.78.46.20 port www
ō2Ŏ
   switch(config)# access-list insert 101 permit tcp any host 198.78.46.10
2
ō3Ŏ          show          101
   switch(config)# show access-list 101
      1   permit tcp any host 198.78.46.20 port smtp
      2   permit tcp any host 198.78.46.20 port www
      3   permit tcp any host 198.78.46.10
```

5.5.10 no access-list insert

no access-list

listnumber	INTEGER	1~200	ʎ
exiting-subitem	INTEGER	1~55	ʎ

ʎ˘ ˨ ˘ INSERT
ʅ ˘ ʎ ˘ ˘
ӥ ╖ Â

ʅ Â ʅ б access-list insert ˨ ӥ ACL ʅ ╖ Â

ʅ ˨ ʃʋ ˨ ˘ ʃʋ listnumber ˨ ʃʋ 1~200 Â

ʎ˘ ἑ ʎ ʎ ╟ ʎ Â

access-list insert

ş

ō1ǒ show 101

```
switch(config)# show access-list 101
   1   permit tcp any host 198.78.46.20 port smtp
   2   permit tcp any host 198.78.46.20 port www
```

ō2ǒ

```
switch(config)# no access-list 101 2
```

ō3ǒ show 101

```
switch(config)# show access-list 101
   1   permit tcp any host 198.78.46.20 port smtp
```

5.5.11 access-group

ᛏ ACL ʎ VLAN Â

access-group *acl-id*

acl-id	INTEGER	100~200	/l

Э˘ VLAN Super-VLAN Â
STAR-S5610 й Ь ˘ Э ACL ‡
Â

ACL ˘ ÿ Э
Â

no access-group

ş ACL 1 VLAN 2 ¢

```
6610(config-if-vlan 2)# access-group 101
```

5.5.12 no access-group

ɹ ţ VID б ACL ID ˜Ω ˜Ω Â

no access-group

access-group

ş ACL

```
switch> show access-group vlan 5
      101
switch> show access-group super-vlan 2
      102
```

5.5.14 access-list enable

╠ ACL ╗ Â

access-list enable

╠ ACL ╗ ˘ ʅ Â ʅ ỳ ᾱ ACL ╗
˩ Â

no access-list enable

ş ACL ¢

switch ō config Ŏ access-list enable

5.5.15 no access-list enable

̃Ω ACL ╖ Â

no access-list enable

̃Ω ACL ╖ ˘ ʢ Â ʢ ӥ ᾱ ACL ╖
˩ Â

access-list enable

ş ACL ¢

switchō configǑ no access-list enable

6

6.1

6.1.1 flow aging-time

IP, IP

flow aging-time *time*

QoS

time	INTEGER	1~3600	

QoS

IP 192.168.0.1 21 100

150

```
switch#qos
switch(config-qos )# flow aging-time 300
```

6.1.2 ip-session-threshold

ʅ ʅ Э Â

ip-session-threshold *threshold*

QoS

threshold	INTEGER	1~65536	˘ ˘ Â

QoS ʅ ʅ Â ʅ ʅ Э Â ' ʅ Э й 5˝ й 10˝ ≠ 5 Â

ş ¢

```
switch#qos
switch(config-qos )# ip-session-threshold 500
```

6.1.3 monitor-time

ʅ ʅ Â

monitor-time *time*

QoS

time	INTEGER	1~3600	Â Æ' Â

QoS ˩ЛЈ ʅ Â ɅЉ ˘
ʅ ɅЉ˘ Â

ş ¢
```
switch#qos
switch(config-qos)# monitor-time 300
```

6.1.4 flow monitor

ʅ ╟ ʅ ╘ Â

flow monitor {**ip** *usernum* **|** **vlan** *vid1* [– *vid2*]} [**bulk-num** *bulk-num*]

QoS

usernum	INTEGER	1~100	Â
Vid1	INTEGER	1~4095	ꮓVLAN ˘ VLAN IDÂ
Vid2	INTEGER	1~4095	VLAN ˘ VLAN ID˘ VLAN ID2 >= VLAN ID1Â Â
bulk-num	INTEGER	1~10	˩ Â ˩ Â

QoS ˧ꮓ ˀÂ ἐ ῼ IP
ÂVLAN ˧ꮓ VLAN( ) Â
100 Â

no flow monitor

show monitor-log

1ş 20 5 ¢

```
switch(config-qos)# flow monitor ip 20 bulk-num 5
```

2ş vlan 2 – 5 5 ¢

```
switch(config-qos)# flow monitor vlan 2 – 5 bulk-num 5
```

6.1.5 no flow monitor

ˀ ˀ ⊑Â

no Flow monitor

QoS

QoS Â Â Â Â Â

flow monitor

show monitor-log Â Â

flow monitor

no flow monitor

ş ¢

```
switch#qos
switch(config-qos)# show monitor-log
```

6.2 DHCP

6.2.1 debug dhcpr

˜Ω DHCP debug ˜Ω

[no] debug dhcpr

EXEC

ɜ ˜Ω DHCP ˜Ω.

' dhcp debug ˜Ω˜Ω

1ş DHCP
switch# debug dhcp

2ş DHCP
switch# no debug dhcp

6.2.2 dhcp relay enable

˜Ω DHCP relay agent

[no] dhcp relay enable

ˆ VLAN/SUPER VLAN˜

ʒи DHCP relay agent ЮЎ VLAN/super VLAN ЮО ˜Ω DHCP relay agent Â DHCP relay agentў ↓Л∪ ʒ no trap dhcp Â Лў ʒ ˇ ″I trap dhcp ʒ DHCP ╖ .

: no dhcp relay enable

trap dhcp

1ş VLAN 2 DHCP
target(config-if-vlan 2)# dhcp relay enable
Enable DHCP relay agent in vlan 2!

2ş super VLAN 3 DHCP

```
target(config-if-super-vlan 3)# dhcp relay enable
Enable DHCP relay agent in super vlan 3!
```

3ş VLAN 3 DHCP relay agent

```
target(config-if-super-vlan 2)# no dhcp relay enable
Disable DHCP relay agent in super vlan 2!
```

6.2.3 dhcp relay hops

DHCP relay agent

dhcp relay hos { *hops* | **default** }

hops	INTEGER	1~16	DHCP relay relay
Default	KEYWORD	Default	DHCP relay й

ҙ DHCP relay agent Â DHCP relay agent
DHCP HOPS a ˘ Â HOPS й 4Â

' dhcp relay hops default

1ş DHCP relay hops 6

```
switch (config)# dhcp relay hops 6
```

```
Set DHCP hops to 6

  2ş    DHCP relay hops
switch (config)# dhcp relay hops default
Set DHCP hops to 4
```

6.2.4 dhcp relay size

DHCP ў

dhcp relay size {address *address number* **| default}**

^ VLAN/Super VLAN~

address number	INTEGER	0~255	┘Л DHCP relay
default	KEYWORD	default	┘Л DHCP

ʒ VLAN/Super VLAN Ю DHCP ў
ˇ Л VLAN/Super VLAN Ю DHCP Â
VLAN/super VLAN Ю ˇ ‡ ┘ VLAN/Super VLAN Ю è DHCP ў Â

б DHCP server ˇ a VLAN/Super VLAN DHCP server ^ ~˜ ‡ ┘ a Â

' VLAN/Super VLAN Ю й 100

dhcp relay enable

attach dhcp server

1ş VLAN 3 20

```
switch (config-if-vlan 3)# dhcp relay size address 20
Set relay-size to 20 in vlan 3!
```

2ş VLAN 3

```
switch (config-if-vlan 3)# dhcp relay size default
Set relay-size to 100 in vlan 3!
```

6.2.5 dhcp server

DHCP

dhcp server {*ip address*}

ip address	A.B.C.D	IP	й DHCP server ip
index	INTEGER	1~65535	DHCP server
all	KEYWORD	all	й DHCP server

IP й DHCP relay agent DHCP Server DHCP Ю ÿ DHCP Server ÿ a ÿ DHCP server Э ÿ Â attach dhcp server VLAN/Super VLAN Ю DHCP server show dhcp server DHCP server Â

' ┗ ѝ DHCP Server

dhcp relay enable

attach dhcp server

show dhcp server

1ş IP 20.12.192.133 DHCP Server

```
switch (config)# dhcp server 20.12.192.133
Assign the server[20.12.192.133] for DHCP successful!
```

2ş IP 20.12.192.133 DHCP server

```
switch (config)# no dhcp server 20.12.192.133
The specified server[20.12.192.133] has been removed!
```

3ş DHCP Server

```
switch (config)# no dhcp server 1
DHCP servers[200.2.12.13] have been removed!
```

6.2.6 attach dhcp server

VLAN/super VLAN б DHCP Server ˜Ω

[no] attach dhcp server {*ip address* | *index*}

ˆ VLAN/SUPER VLAN˜

ip address	A.B.C.D	IP	й DHCP Server ㅌ ip
index	INTEGER	1~255	DHCP Server Лˇ Љ ˝I Л й ˇ ╟

ʅ VLAN/Super VLAN DHCP Serverˇ VLAN/Super VLAN Ю ÿ DHPC Server ў Â DHCP Serverˇ ‡ Client ў б DHCP Server ᛏ client Ώ̃ DHCP server ˇ ‡ client ˝I Ⅎ DHCP server ÂⅎЉ show dhcp server ʅ VLAN/Super VLAN б DHCP server Ω̃ Â

ˈ VLAN/Super VLAN DHCP Server Â

dhcp server

show dhcp server

1: VLAN 3 DHCP server 100.2.133.2

```
switch (config-if-vlan 3)# attach dhcp server 100.2.133.2
Vlan 3 has attached on server[100.2.133.2]!
```

2ş VLAN 3 DHCP server 100.2.133.2

```
switch (config-if-vlan 3)# no attach dhcp server 100.2.133.2
Vlan 3 has detached on server[100.2.133.2]!
```

3ş VLAN 3 DHCP server

```
switch (config-if-vlan 3)#  no attach dhcp server 2
Detaching from server [200.2.2.2] successful!
```

DHCP server

[no] dhcp temp server {*ip address*}

ip address	A.B.C.D	IP	й DHCP server ╘ IP

ʇ IP й ╘ й DHCP relay agent DHCP Server Â DHCP Server ˇ Ɲ DHCP ĭ ˆ ɹ ˜ Â

ʻ Â

dhcp server

show dhcp server

1ş IP 100.1.2.3 DHCP server

```
switch (config)# dhcp temp server 100.3.3.3
Assigning the server[100.3.3.3] for DHCP successful!
```

2ş IP 100.3.3.3 DHCP server

```
switch (config)# no dhcp temp server 100.3.3.3
The specified server[100.3.3.3] has been removed!
```

6.2.7 show dhcp server

DHCP server

show dhcp server {*ip address* | *index* [- *index*]}

ip address	A.B.C.D	IP	DHCP server ip
index	INTEGER	1~ 255	DHCP server

ʒ DHCP server IP ˘ server (ѝ server)˘ server VLAN/Super VLAN Â

' Â

dhcp server

dhcp temp server

attach dhcp server

1ş DHCP server 100.1.2.3

```
switch (config)# show dhcp server 100.1.2.3
  DHCP Server:  100.1.2.3
  Temporary server: No
  Attaching gateway : NONE

  Send Packets:
     .......offer    : 0
     .......ack      : 0
     .......nak      : 0
     .......forcerenew: 0
  Receive Packets:
     .......discovery : 0
     .......request   : 0
     .......decline   : 0
```

```
   .......inform    : 0
   .......release   : 0
Configurate ip addresses : 0
```

2ş

ʒ

ʒ DHCP ˘ DHCP VLAN/Super VLAN
˘ VLAN/Super VLAN DHCP relay agent
˘ DHCP server˘ Client Server UDP /ˆ˘
ˆ HOPS˜˜ DHCP Â

' Â

dhcp relay hops

trap dhcp

ş DHCP relay agent

```
switch (config)# show dhcp relay config
 trap  dhcp  ş Yes
 enable relaying in super vlans  : none
 enable relaying in vlans(1):
   2(0/100);
 assigned DHCP serveres(2) :
 1   100.1.2.3
 2   200.2.2.2
 server port     : 67
 client port     : 68
 hops           : 4
```

7 QoS

7.1 Cos

7.1.1 queue-alg sp

queue-alg sp

STAR-S5610 4

1,2,3,4 4 1

(1)

(2)

queue-alg wrr

queue-alg hybrid

weight-unit

show queue-alg

§ ¢

```
switch(config)# queue-alg sp
```

7.1.2 queue-alg wrr

ʅ ˝| ˘ ѝ ╗ Â ˝| ѝ ˝|
ỉ ˘ a ⅃ ˝| ỉ ʅ Â ˘ ѝ
Â

queue-alg wrr *weight1 weight2 weight3 weight4*

weight1	INTEGER	10~50	˝| ˘ ˝| 1Â Æ Ⅎ ᾶ Weght Unit ˘ ⅃ЛЛpacket ѝ Æ˘ ≠ ⅃Лѝbyte Æ Â
weight2	INTEGER	10~50	˝| ˘ ˝| 2
weight3	INTEGER	10~50	˝| ˘ ˝| 3
weight4	INTEGER	10~50	˝| ˘ ˝| 4

⅃Л ʅ ÂWRR ╗ ÂWRR ⅃Л æ ˝|
ľ Ŀ ˘ έ Ώ Â

queue-alg sp

queue-alg hybrid

weight-unit

show queue-alg

ş 4 10 10 20 50¢

```
switch(config)# queue-alg wrr 10 10 20 50
```

ş1ş1ş2ş5¢

7.1.3 queue-alg hybrid

ʒ ˝l ˘ ˝l (˝lш ˝l ɹ
)Â ˝l ꝉ ˘ ȅ ˝l ꝉ WRR Â

queue-alg hybrid *weight1 weight2 [weight3]*

weight1	INTEGER	10~50	˝l ˘ ˝l 1 Æɋᾰ WeightUnit ,ɋɅɅpacket ǹ Æ,ǂɋɅǹ byte Æ
weight2	INTEGER	10~50	˝l ˘ ˝l 2
weight3	INTEGER	10~50	˝l ˘ ˝l 3

ɋɅ ʒÂ *weight1*˘ *weight2* ‡

1 ὶ *weight1˘* 2 ὶ *weight2Â* 3 4 ш ″I Â

queue-alg sp

queue-alg wrr

weight-unit

show queue-alg

1ş 4 sp 1/2/3 wrr 3 ¢
switch (config)# queue-alg hybrird 10 20 30
4 1¡2¡3 1ş2ş3 ¢

2ş 3/4 sp 1/2 wrr 2 .
switch (config)# queue-alg hybrid 30 40
3¡4 1¡2 3ş4 ¢

7.1.4 weight-unit

ʒ WRR hybrid ˘ ″I Æ Â
˘ Â

weight-unit {packet|byte}

packet	KEYWORD	packet	ЛU
byte	kEYWORD	byte	ЛUbyte

ɺ ՙ ʋ Â ˝l ӥ WRR hybrid
˘ ʋ˘ ᾱ ˘
Â

queue-alg sp

queue-alg wrr

queue-alg hybrid

show queue-alg

ş ¢

switch (config)# weight-unit packet

7.1.5 show queue-alg

ʋ ˝l Æ Â

show queue-alg

ɺ ՙ ʋ Â

queue-alg sp

queue-alg wrr

queue-alg hybrid

weight-unit

ş ¢

```
switch (config)# show queue-alg

****************              *************
          WRR
    1:  50       packets
    2:  100      packets
    3:  150      packets
    4:  200      packets
********************************************
```

7.1.6 queue-hol configure

ʅ ˘ ˧Ռ Â ɛ̀ hard ˘ ˘ soft ˘ ˘ Ѫ ѝ ˘ ɛ̀ Â

queue	INTEGER	1~4	4 ˇ 4 ˇ 1 æ
holvalue	INTEGER	HOL Threshold : 0-4080	

[no] queue-hol enable

show queue-hol

1 2 256 ¢
switch (config)# queue-hol configure hard 1 256

2 2 256 ¢
switch (config# queue-hol configure soft 2 512

7.1.7 [no] queue-hol enable

/ HOL Â

[no] queue-hol enable

ꓲ ꓶ ꓲ ⅂ᒍ ꓫ ꓫ ɿ Â

queue-hol configure

show queue-hol

ş HOL ¢
switch (config)# queue-hol enable

7.1.8 show queue-hol

ɿ HOL Â

show queue-hol

⅂ᒍ ɿ Â

queue-hol configure

[no] queue-hol enable

ş HOL ¢

```
switch (config)# show queue-hol
****************    HOL        *************
       HOL
      1:
      Hard HOL :  200   packets
      Soft HOL :  100   packets
      2:
      Hard HOL :  200   packets
      Soft HOL :  100   packets
      3:
      Hard HOL :  200   packets
      Soft HOL :  100   packets
      4:
      Hard HOL :  200   packets
      Soft    HOL:    100   packets
*******************************************
```

7.1.9 vpt-to-prio configure

ว VLAN vlan priority tag ˝l (1/2/3/4) ῏Ω ,

˩Л ʅ Â

ἑ a˩vlan priority tag ˘ a˩ ῎I Â
ӥ vpt 0̃ 1˙ queue 1̕ vpt 2̃ 3˙ queue 2̕ vpt 4̃ 5˙ queue 3̕ vpt 6̃ 7˙ queue 4Â ˩ ῏Ω ˘ ‡ ʅ Â

no vpt-to-prio configure

show vpt-to-prio

1ş vlan priority 0 1¢

```
switch (config)# vpt-to-prio configure 0 1
```

2ş vlan priority 7 3¢

```
switch (config)# vpt-to-prio configure 7 3
```

7.1.10 no vpt-to-prio configure

ʅ VLAN vlan priority tag ῎I (1/2/3/4) ῏Ω
Â ӥ vpt 0̃ 1˙ queue 1̕ vpt 2̃ 3˙ queue 2̕ vpt 4̃ 5˙ queue 3̕ vpt 6̃ 7˙ queue 4Â

no vpt-to-prio configure

˩Л ʅ Â

vpt-to-prio configure

show vpt-to-prio

ş VLAN vlan priority tag (1/2/3/4)
¢

```
switch(config)# no vpt-to-prio configure
```

7.1.11 show vpt-to-prio

ʢ vlan priority tag ˝l (1/2/3/4) ˜Ω Â

show vpt-to-prio

˩ⶵ ʢÂ

vpt-to-prio configure

no vpt-to-prio configure

ş vlan priority tag (1/2/3/4) ¢

```
switch(config)# show vpt-to-prio
************vpt    priority          ***********
```

```
    vpt    priority
vpt : 0    priority queue:  1
vpt : 1    priority queue:  1
vpt : 2    priority queue:  2
vpt : 3    priority queue:  2
vpt : 4    priority queue:  3
vpt : 5    priority queue:  3
vpt : 6    priority queue:  4
vpt : 7    priority queue:  4
**********************************************
```

7.1.12 prio-to-vpt configure

ʇ ˝l (1/2/3/4) valn vlan priority tag ˜Ω ,
vlan priority tag ÿ ˝l Л˘ ˦Љ Э vlan

show prio-to-vpt

1ş 1 vlan priority tag 0¢
```
switch (config)# prio-to-vpt configure 1 0
```

2ş 3 vlan priority tag 7¢
```
switch (config)# prio-to-vpt configure 3 7
```

7.1.13 no prio-to-vpt configure

ʒ ˝I (1/2/3/4) VLAN vlan priority tag ˜Ω Â ˜Ω queue 1 – vpt 0,1; queue 2– vpt 2,3; queue 2 – vpt 4,5; queue 4 – vpt 6,7 Â

no prio-to-vpt configure

˩ Ռ ʒ Â

prio-to-vpt configure

show prio-to-vpt

ş (1/2/3/4) VLAN vlan priority tag ¢
```
switch (config)# no prio-to-vpt configure
```

7.1.14 show prio-to-vpt

ʒ ¨I VLAN VPT ˜Ω Â

show prio-to-vpt

ل Л∪ ʒ Â

prio-to-vpt configure

no prio-to-vpt configure

```
  ş              vlan   vpt         ¢
switch (config-if)#  show prio-to-vpt
***********priority queue    vpt        ******
    vpt    priority
priority queue:  1--- vpt : 0
priority queue:  1--- vpt : 1
priority queue:  2--- vpt : 2
priority queue:  2--- vpt : 3
priority queue:  3--- vpt : 4
priority queue:  3--- vpt : 5
priority queue:  4--- vpt : 6
priority queue:  4--- vpt : 7
*********************************************
```

7.1.15 tos-to-cos configure

ʡ IP ToS ˝l CoS ͂Ω Â

tos-to-cos configure *tos cos*

tos	INTEGER	0~255	ip tos
cos	INTEGER	0~7	cos ˝l ˘ ˝l ˘ ˝l ˘ vlan priority tag ь Â 7 ӣ ˘ 0 ӣ æ Â Cos 0-7 ㅒ' 0 à 1' ˝l ӣ 1' ˝l ӣ hard ˜ ' vlan priority tag ӣ cos Â 2 à 3' ˝l ӣ 2' ˝l ӣ hard ˜ ' vlan priority tag ӣ cos Â 4 à 5' ˝l ӣ 3' ˝l ӣ soft ˜' vlan priority tag ӣ cos Â 6 à 7' ˝l ӣ 4' ˝l ӣ soft ˜' vlan priority tag ӣ cos Â

ɹ Ꮑ ʡ Â

έ a ɹ IP ToS ˘ a ɹ ˝l Â
ӣ' ToS 0-255˜ 8 ᛐ ˘ ᛐ CoS 0-7 Â ToS 0-31

CoS 0 ToS 32-63 CoS 1 ToS 224-255 CoS 7

no

tos-to-cos configure

show tos-to-cos

ş ToS CoS ¢

```
switch (config)# no tos-to-cos configure
```

7.1.17 show tos-to-cos

QoS

enable flow Â

no enable flow ' ῏Ω Â

ş ¢
switch (config-qos)# enable flow

7.2.3 default

ʒ ˆ ˜ QoS Â

default *[slot/port]*

QoS

slot	SLOT/PORT	1~10	⁄ı˘ ˧ Ꮭ a
port	SLOT/PORT	1~32	Э ⁄ı˘ ˧ Ꮭ a

QoS , ˆ ˜ QoS Â

a SLOT/PORT Â

' QoS Â ˘ ‡
QoS Â

ş 3 2 QoS ¢

```
switch#qos
switch (config-qos)# default 3/2
```

7.2.4 [no] user

ʅ 㶴 Â

[no] user *userid*

QoS

userid	INTEGER	0~1999	ꟷ˘ ש Â

QoS , 㶴/ Â

1 ş ¢

```
switch (config-qos)# user 3
```

mode

QoS

QoS , ʅ QoS ˘ ╟ Â

ş qos

```
switch (config-qos)# mode
Current flow state is ş Enable.
```

7.2.7 service-policy user

ʅ ӥ Э Â

service-policy user *slot/port1 [- port2]*

QoS

slot	SLOT/ PORT	1~10	⁄I
port1	SLOT/ PORT	1~32	⁄I port1
port2	SLOT/PORT	1-32	˘ ⅃ Љ port2ˆ port2> port1˜

3 ' Э ( ),Ю ( )

QoS , й ῗ Â й
Љ Л˘ ̈Ą ̋I ầ ˘ Э
̋I Â

service-policy net

show service-policy

ş 1 M5610-16FMT 8 ¢

```
switch (config-qos)# service-policy user 1/1 - 8
```

7.2.8 service-policy net

ʒ йЮ Â

service-policy net *slot/port1 [– port2]*

QoS

slot	SLOT/ PORT	1~10	ハ˘ ɺ ɾ a
port1	SLOT/ PORT	1~32	ハ1
port2	SLOT/ PORT	1~32	˘ ɺ ɾ port2ˆ port2> port1˜

3 ' Э ( ), Ю ( ) Â

QoS , ӣ ᶵ Â ӣ ɾ ɺ˘ "Ạ "l ȁ ˘ Э "l Â

service-policy user

show service-policy

ş 1 M5610-16FMT 9 ¢

```
switch (config-qos)# service-policy net 1/9
```

7.2.9 priority

ʅ "l Â

priority { **user** *userid* | **vlan** *vlan1* [- *vlan2*]| **interface** *slot/port* [– *port2*] | **protocol** *protocolname* | **ip-protocol** *protocolno* | **tcpport** *tcpportno* | **udpport** *udpport* } [{ **low** | **normal**| **middle** | **high** }]

QoS

user	KEYWORD	user	˝Ω ˘ DHCP ˝l
userid	INTEGER	0~999	DHCP ˝l , idÂ
vlan	KEYWORD	vlan	˝Ω ˘ vlan ˝l
vlan1	INTEGER	1~4094	vlan ˝l ˘ vlan id
vlan2	INTEGER	1~4094	vlan ˝l ˘ vlan2˘ vlan2>=vlan1
interface	KEYWORD	interface	˝Ω ˘ ˝l
slot	INTEGER	1~10	Æ /I Â
port	INTEGER	1~32	/I Â
port2	INTEGER	1~32	˘ ˧ꟿ port2˘ port2> port1˜ Â
low | normal| middle | high	KEYWORD	low | normal| middle | high	4 ˝l ᛙ æ˘ ˘ ˘ 4 ˝l Â

QoS , ˧ꟿ ѝ ˘ ˝l Â VLAN˘

7.2.10 no priority

ʅ ˩ QoS ˝ǀ Â

no priority { **user** *userid* | **vlan** *vlan1* [- *vlan2*] | **interface** *slot/port* [– *port2*] | **protocol** *protocolname* | **ip-protocol** *protocolno* | **tcpport** *tcpportno* | **udpport** *udpport* }

QoS

user	KEYWORD	user	ῼ ˘ ˝ǀ
userid	INTEGER	0~1999	˝ǀ ˘ ID
vlan	KEYWORD	vlan	ῼ ˘ VLAN ˝ǀ
vlan1	INTEGER	1~4094	VLAN ˝ǀ ˘ VLAN ID
vlan2	INTEGER	1~4094	VLAN ˝ǀ ˘ vlan2˝ vlan2 >= vlan1
interface	KEYWORD	interface	ῼ ˘ ˝ǀ
slot	SLOT/PORT	1~10	Æ ⩘
port	SLOT/PORT	1~32	⩘
port2	SLOT/PORT	1~32	˘ ˧Ռ port2˜ port2> port1˜

QoS , ˧Ռ ʅ ˩ QoS ˝ǀ Â ʅ ˝ǀ ˘ ʅ ˘ apply ʅ Â

priority

apply

1ş 3 ¢

```
switch (config-qos)# priority user 3  high
```

2

		ЭЮ Â	
burst-max	INTEGER	1k byte – 128 M byte é Л ЭЮ Â	ă ˘ Æ Â , : 2M, 2K, 2G , Æ : 200. ‡ й K byte
drop	KEYWROD	drop	˜Ω ˘ ¦
late-drop	KEYWROD	late-drop	˜Ω ˘ ¦ a ˘ ă

QoS , Â ҂
˝I ˘ ҂ ˘ apply
҂ Â

apply

1ş 2 ° 2 ˚ Ҙ

```
switch (config-qos)#police interface 2/1 100K 2M drop

  7ş        2/1          ¢
switch (config-qos)#no police interface 2/1

  8ş        2/1          ¢
switch (config-qos)#police interface 2/1
```

7.2.13 Apply

ʒ ʺl Â

apply {**vlan** [*vlan1]* |**user** *[userid]* |**protocol** *[protocolname]*|**interface** *[slot/port]* |**ip-protocol** *[protocolno]* |**tcpport** *[tcpport]* |**udpport** *[udpport]*} [**force**]

QoS

vlan	KEYWORD	vlan	ʺΩ ˘ VLAN ʺl
vlan1	INTEGER	1~4094	VLAN ʺl ˘ VLAN IDʺ ˘ ‡ VLAN Â
user	KEYWORD	user	ʺΩ ˘ ʺl
userid	INTEGER	0~1999	ʺl , id
interface	KEYWORD	interface	ʺΩ ˘ ʺl
slot	SLOT/PORT	1~10	Æ /ʅ Â ˩ ˘ ‡
port	SLOT/PORT	1~32	/ʅ Â ˩ ˘ ‡
force	KEYWORD	force	ʺΩ , ˘ Л Э è QoSʺ ‡ Л , Л Э б a ˩ QoS ˘ з ʺΩ ˘ ‡ qos a ˘ Л QoS

QoS , ¾ ”I Â

police

priority

1ş user 6 ¢

```
switch (config-qos)# apply user  6 force
```

2ş VLAN 5 ¢

```
switch (config-qos)# apply vlan  5 force
```

3ş interface 6/2 ¢

```
switch (config-qos)# apply interface  6/2 force
```

7.2.14 show qos

¾ QoS Â

show qos {**user-dhcp** *[userid]* |**interface** *[slot/port]*| **vlan** *[vlanid]*| **protocol** }

QOS

user-dhcp	KEYWORD	user-dhcp	”Ω ˘ Â
userid	INTEGER	0~1999	QoS ˘

slot	SLOT/PORT	1~10	Æ Â ‡ Â
port	SLOT/PORT	1~32	Â ‡ Â
vlan	KEYWORD	vlan	vlan Â
vlanid	INTEGER	1~4094	VLAN ID ‡ VLAN Â

QoS , QoS Â

police

priority