

## **FSOS**

### **Basic Command Line Reference**

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# 1 System Configuration Commands

---

## 1.1 hostname

To specify or modify the host name for the network server, use the `hostname` command in global configuration mode. To restore the configuration to the default, use no form of this command.

### Command Syntax

**hostname** *name*

**no hostname**

name	New host name for the network server
------	--------------------------------------

### Command Mode

Global Configuration

### Default

The default host name is `Switch`.

### Usage

The host name is used in prompts and default configuration filenames.

The name must also follow the rules for ARPANET host names. They must start with a letter, and have as interior characters only letters, digits, hyphens, and underline. Names must be 63 characters or fewer.

## Examples

The following example changes the host name to “sandbox”:

```
Switch(config)# hostname sandbox
```

```
sandbox(config)#
```

## Related Commands

None

## 1.2 management ip address

Use this command to set the management IP address on the Switch.

To remove the management IP address, use the no form of this command.

### Command Syntax

**management ip address** (*A.B.C.D/M | A.B.C.D mask*) (**gateway** *A.B.C.D*)

**no management ip address**

**management ipv6 address** (*X:X::X:X/M | X:X::X:X mask*) (**gateway** *X:X::X:X*)

**no management ipv6 address**

A.B.C.D/M	The management IPv4 address with mask length configured
A.B.C.D mask	The management IPv4 address and mask configured
X:X::X:X/M	The management IPv6 address with mask length configured

X::X::X:X mask	The management IPv6 address and mask configured
gateway	Add gateway

## Command Mode

Global Configuration

## Default

None

## Usage

None

## Examples

The following example sets the management ipv4 address.

```
Switch(config)# management ip address 192.168.100.100/24
```

The following example unsets the management ipv4 address.

```
Switch(config)# no management ip address
```

The following example sets the management ipv6 address.

```
Switch(config)# management ipv6 address 2001:1000::1000/96
```

The following example unsets the management ipv6 address.

```
Switch(config)# no management ipv6 address
```

## Related Commands

None



## 1.3 management route

Use this command to set the gateway on the Switch for management ip.

### Command Syntax

**management route (add | del ) gateway A.B.C.D**

**management ipv6 route (add | del )gateway X:X::X:X**

add	Add the route
del	Del the route
ipv6	Configure IPv6 gateway
gateway	Add gateway
A.B.C.D	The IPv4 address of the gateway
X:X::X:X	The IPv6 address of the gateway

### Command Mode

Global Configuration

### Default

None

### Usage

None

### Examples

The following example sets the gateway of 192.168.100.254 for the switch.

```
Switch(config)# management route add gateway 192.168.100.254
```

The following example sets the gateway of 2001:1000::1 for the switch.

```
Switch(config)# management ipv6 route add gateway 2001:1000::1
```

## Related Commands

None

## 1.4 show management ip address

### Command Syntax

```
show management ip address
```

```
show management ipv6 address
```

### Command Mode

Privileged EXEC

### Default

None

### Usage

None

### Examples

```
Switch# show management ip address
```

```
Management IP address is: 192.168.100.100/24
```

```
Gateway: 192.168.100.254
```

```
Switch# show management ipv6 address
```

Management IPv6 address is: 2001:1000::1000/96

Gateway: 2001:1000::1

## Related Commands

None

## 1.5 enable password

Use this command to set the password which is needed when user enter Privileged EXEC mode.

### Command Syntax

**enable password ( privilege *LEVEL* ) ( **8** ) *LINE***

**no enable password**

Privilege <i>LEVEL</i>	User privilege level, Level value <1-4>
8	Specifies a hidden password will follow
<i>LINE</i>	The 'enable' password string

### Command Mode

Global Configuration

### Default

None

### Usage

If this command is set, user need to provide the password when enter Privileged EXEC mode.

## Examples

The following example shows how to set the password.

```
Switch(config)# enable password 123
```

```
Switch(config)# exit
```

```
Switch# disable
```

```
Switch> enable
```

```
Password:
```

```
Switch#
```

## Related Commands

None

## 1.6 terminal length

To set the number of lines on the current terminal screen for the current session, use the terminal length command in EXEC mode. To restore the configuration to the default, use the no form of this command.

### Command Syntax

**terminal length** *screen-length*

**terminal no length**

screen-length	Number of lines on the screen. The value is a number from 0 to 512. A value of zero disables pausing between screens of output
---------------	--

## Command Mode

Privileged EXEC

## Default

Automatically detected by terminal screen length

## Usage

The system uses the length value to determine when to pause during multiple-screen output. A value of zero prevents the switch from pausing between screens of output.

Some types of terminal sessions do not require you to specify the screen length because the screen length specified can be learned by some remote hosts. For example, the rlogin protocol uses the screen length to set up terminal parameters on a remote UNIX host.

## Examples

In the following example, the system is configured to prevent output from pausing if it exceeds the length of the screen:

```
Switch# terminal length 0
```

## Related Commands

**service terminal-length**

## 1.7 service terminal-length

To set the number of lines on the current terminal screen for all sessions, use the service terminal-length command in global configuration mode. To restore the configuration to the default, use the no form of this command.

## Command Syntax

**service terminal-length** *screen-length*

**no service terminal-length**

screen-length	Number of lines on the screen. The value is a number from 0 to 512. A value of zero disables pausing between screens of output
---------------	--

## Command Mode

Global Configuration

## Default

None

## Usage

The system uses the length value to determine when to pause during multiple-screen output. A value of zero prevents the switch from pausing between screens of output.

Some types of terminal sessions do not require you to specify the screen length because the screen length specified can be learned by some remote hosts. For example, the rlogin protocol uses the screen length to set up terminal parameters on a remote UNIX host.

## Examples

In the following example, the system is configured to prevent output from pausing if it exceeds the length of the screen:

```
Switch(config)# service terminal-length 0
```

## Related Commands

**terminal length**

## 1.8 banner motd

To set a single or multiline message banner that appears on the screen when someone logs in to the switch, use the banner motd command in global configuration mode. To restore the configuration to the default, use the no form of this command.

### Command Syntax

**banner motd** *line*

**no banner motd**

line	C banner-text c, where 'c' is a delimiting character
------	--

### Command Mode

Global Configuration

### Default

None

### Usage

None

### Examples

This example shows how to set a single message banner.

```
Switch(config)# banner motd #
```

```
Enter TEXT message. End with the character '#'.  
this is a example message#
```

## Related Commands

**banner exec**

**banner login**

## 1.9 banner exec

To set an exec banner to be displayed on all connected terminals and this banner appears when terminal in Privileged EXEC mode, use the `banner motd` command in global configuration mode. To restore the configuration to the default, use the `no` form of this command.

### Command Syntax

**banner exec** *line*

**no banner exec**

line	C banner-text c, where 'c' is a delimiting character
------	--

### Command Mode

Global Configuration

### Default

None

### Usage

None



## Examples

This example shows how to set a single message banner.

```
Switch(config)# banner exec #
```

```
Enter TEXT message. End with the character '#'.  
this is a example message#
```

## Related Commands

**banner motd**

**banner login**

## 1.10 banner login

To set a login banner to be displayed on all connected terminals, and this banner appears after the MOTD banner and before the login prompt, use the `banner motd` command in global configuration mode. To restore the configuration to the default, use the `no` form of this command.

## Command Syntax

**banner login** *line*

**no banner login**

line	C banner-text c, where 'c' is a delimiting character
------	--

## Command Mode

Global Configuration

## Default

None

## Usage

None

## Examples

This example shows how to set a single message banner.

```
Switch(config)# banner login #
```

```
Enter TEXT message. End with the character '#'.  
this is a example message#
```

## Related Commands

**banner exec**

**banner motd**

## 1.11 show version

To display the version information of the hardware and firmware, use the show version command in EXEC mode.

### Command Syntax

**show version**

### Command Mode

Privileged EXEC

## Default

None

## Usage

None

## Examples

This example shows how to display version information of the hardware and firmware.

```
Switch# show version
```

## Related Commands

None

## 1.12 line vty maximum

To set the max login VTY, use this command in global configuration mode. To restore the configuration to the default, use the no form of this command.

### Command Syntax

```
line vty maximum vtty_value
```

```
no line vty maximum
```

vtty_value	Max login VTY. The default value is 8.range <0-8>
------------	---

### Command Mode

Global Configuration

### Default

8

**Usage**

None

**Examples**

This example shows how to set the max VTY to 5.

```
Switch(config)# line vty maximum 5
```

**Related Commands**

None

## 1.13 reboot

To reload the operating system, use the reload command in Privileged EXEC mode.

**Command Syntax**

**reboot**

**Command Mode**

Privileged EXEC

**Default**

None

**Usage**

The reboot command halts the system. Use the reboot command after configuration information is entered into a file and saved to the startup configuration.

## Examples

The following example is sample dialog from the reboot command.

```
Switch# reboot
```

## Related Commands

**reload**

## 1.14 schedule reboot at

To schedule a reload of the software to take place at the specified time, use the `schedule reboot at` command in global configuration mode. To cancel the scheduled reboot task, use the `no` form of this command.

### Command Syntax

**schedule reboot at** *HH:MM (MM/DD | MM/DD/YYYY | YYYY/MM/DD)*

**no schedule reboot**

HH:MM	The hour and minutes. The time range is 00:00 – 23:59
MM/DD	Specify the date for current year (MM/DD format)
MM/DD/YYYY	Specify the date (MM/DD/YYYY format, year range is [2000, 2037])
YYYY/MM/DD	Specify the date (YYYY/MM/DD format, year range is [2000, 2037])

### Command Mode

Global Configuration

## Default

No scheduled reboot task is defined.

## Usage

If you specify the month and day, the reload is scheduled to take place at the specified time and date. If you do not specify the month and day, the reload takes place at the specified time on the current day.

## Examples

The following example is sample dialog from the schedule reboot at command.

```
Switch(config)# schedule reboot at 12:12 2008/12/25
```

## Related Commands

**schedule reboot delay**

## 1.15 schedule reboot delay

To schedule a reload of the software to take place after the specified time, use the schedule reboot delay command in global configuration mode. To cancel the scheduled reboot task, use the no form of this command.

## Command Syntax

**schedule reboot delay** {*HH:MM* | *minutes*}

**no schedule reboot**

HH:MM	The hour and minutes. The time range is 00:00 – 23:59
minutes	The minutes. The range is 1 – 720

## Command Mode

Global Configuration

## Default

No scheduled reboot task is defined.

## Usage

None

## Examples

The following example is sample dialog from the schedule reboot delay command.

```
Switch(config)# schedule reboot delay 300
```

## Related Commands

**schedule reboot at**

## 1.16 boot system

To specify the system image that the switch loads at startup, use the following boot system commands in Privileged EXEC mode.

### Command Syntax

**boot system (tftp: mgmt-if *SERVERIP* | flash:/) *file-name***

flash	System image file for next booting
tftp	System image file for next booting

mgmt-if	Management port
<i>SERVERIP</i>	The tftp server ip
file-name	The file name that will be used to load at startup

## Command Mode

Privileged EXEC

## Default

None

## Usage

Management IP address in startup-config file will be used as source address when system boot via TFTP.

## Examples

The following example is sample dialog from the boot system command.

```
Switch# boot system flash:/boot/Internal-1.0.0.25.bin
```

## Related Commands

**show boot**

## 1.17 show boot

To display the current image and the image the next startup will load, use the show boot command in Privileged EXEC mode.



## Command Syntax

**show boot**

## Command Mode

Privileged EXEC

## Default

None

## Usage

None

## Examples

The following is sample output from the show boot command.

```
Switch# show boot
```

```
The current boot image version is: E330-3.0.0.23.it
```

```
The current running image is: tftp://10.10.29.160/humberOS-e330-ma-v3.0.0.23.it.r.bin
```

```
The next running image is: tftp://10.10.29.160/humberOS-e330-ma-v3.0.0.23.it.r.bin
```

## Related Commands

**show boot images**

# 1.18 show boot images

To display all booting images available in the flash system, use the show boot images command in Privileged EXEC mode.

## Command Syntax

**show boot images**

## Command Mode

Privileged EXEC

## Default

None

## Usage

None

## Examples

The following is sample output from the show boot images command.

```
Switch# show boot images
```

```
System image files list:
Current boot image version: 1.0.0.25
  Create Time      Version      File name
=====
* 2011-07-25 10:58:29  v3.0.0.22.it  Internal-3.0.0.22.bin
```

## Related Commands

**show boot**

## 1.19 show memory

To display memory utilization information about the active processes, use the show memory command in Privileged EXEC mode.

## Command Syntax

```
show memory (all | bgp | bhm | chsm | dhclient | dhcpd | dhcprelay | decprelay6 |
dot1x | imi | ipv6 | lacp | ldp | lib | mstp | nsm | oamd | onmd | ospf | pim | ptp | rip |
rsvp | shal | summary)
```

all	All memory information
bgp	Border Gateway Protocol (BGP)
bhm	Health monitoring
chsm	Chassis management
dhclient	DHCP client module
dhcpd	DHCP server module
dhcprelay	DHCP relay module
dhcprelay6	DHCPV6 relay module
dot1x	IEEE 802.1X Port-Based Access Control
imi	Integrated Management Interface (IMI)
ipv6	Internet Protocol version 6 (IPv6)
lACP	Link Aggregation Control Protocol (LACP)
ldp	Label Distribution Protocol (LDP)
lib	Library information
mstp	Spanning Tree Protocols (STP/RSTP/MSTP)
nsm	Network Service Module (NSM)
oamd	Bidirectional Forwarding Detection (BFD)
onmd	LLDP and EFM_OAM
ospf	Open Shortest Path First (OSPF)
pim	Protocol Independent Multicast (PIM)
ptp	Precision Time Protocol (PTP)
rip	Routing Information Protocol (RIP)
rsvp	Resource Reservation Protocol (RSVP)
shal	Hal server monitoring
summary	Summary memory information

## Command Mode

Privileged EXEC

## Default

None

## Usage

None

## Examples

The following is sample output from the show memory command with keyword bgp:

```
Switch# show memory bgp
```

```
Library memories for BGP
```

Memory type	Alloc cells	Alloc bytes
Temporary memory	6596	322216
Hash	10	320
Hash index	10	40960
Hash bucket	55	880
Link list	13	400
Link list node	115	1840
Show	1	512
Show page	1	8192
Show server	1	64
Prefix IPv4	6	48
Route table	6	48
Route node	309	19776
Vector	3383	324768
Vector index	3383	48824
SNMP subtree	8	6144
Host config	1	16
Message of The Day	1	128
IMI Client	2	1056
VTY master	1	16
VTY if	52	39936
VTY connected	3	192
Message handler	2	128
Host	1	96
Log information	2	128
Context	1	512

```
Memories for BGP
```

Memory type	Alloc cells	Alloc bytes
=====	=====	=====
BGP structure	: 1	768
BGP VR structure	: 1	384
BGP global structure	: 1	64
BGP peer	: 1	2048
Ext community	: 1	16
BGP as list master	: 1	32
Community list handler	: 1	32
BGP Damp Reuse List Array	: 1	2048
BGP table	: 31	248
BGP VRF list	: 1	64

## Related Commands

**show processes memory sorted**

## 1.20 show cpu traffic-limit

Use this command to show the CPU traffic-limit configurations.

### Command Syntax

**show cpu traffic-limit**

### Command Mode

Privileged EXEC

### Default

None

### Usage

None

### Examples

This example shows cpu traffic-limit configurations.

### Switch # show cpu traffic-limit

reason	rate (pps)	class
bpdu	64	3
cfm	512	2
slow-protocol	128	1
eapol	128	0
erps	128	2
smart-link	128	2
udld	128	3
arp	640	1
dhcp	128	0
rip	64	1
ldp	512	1
ospf	256	1
pim	128	1
vrrp	512	1
rsvp	512	1
ipda	1024	0
icmp-redirect	128	0
mcast-rpf-fail	128	1
macsa-mismatch	128	0
port-security-discard	128	0
vlan-security-discard	128	0
mtu-dontfrag	64	0
mtu-frag	64	0
ptp	512	2
ip-option	512	0
ucast-ttl-fail	64	0
mpls-ttl-fail	64	0
igmp	128	2
sflow-ingress	128	0
sflow-egress	128	0
fwd-to-cpu	64	0
mpls-tp-pwoam	128	2
Total rate:	2048 (pps)	

### Related Commands

None

## 1.21 show processes cpu sorted

To display CPU utilization information about the active processes sorted by percentage in a device, use the `show processes cpu sorted` command in Privileged EXEC mode.

## Command Syntax

**show process cpu sorted**

## Command Mode

Privileged EXEC

## Default

None

## Usage

None

## Examples

The following is sample output from the show processes cpu sorted command:

Switch# show processes cpu sorted

CPU usage for five seconds: 4.17%; one minute: 3.70%; five minutes: 3.68%

PID	TIME	%CPU	TTY	COMMAND
924	00:20:03	2.0	?	hsrsvd
956	00:07:17	0.7	?	nsm
1007	00:02:44	0.2	?	imi
959	00:01:24	0.1	?	snmpd
1317	00:00:01	0.1	pts/0	imish
5	00:00:45	0.0	?	events/0
983	00:00:23	0.0	?	mstpd
985	00:00:15	0.0	?	onmd
966	00:00:15	0.0	?	lacpd
963	00:00:12	0.0	?	bhm
929	00:00:12	0.0	?	chsm
964	00:00:11	0.0	?	oamd
919	00:00:10	0.0	?	ntpd
1003	00:00:08	0.0	?	pimd
942	00:00:08	0.0	?	sshd
957	00:00:08	0.0	?	dhcrelay
973	00:00:07	0.0	?	authd
1005	00:00:07	0.0	?	ldpd
977	00:00:07	0.0	?	rmond
1021	00:00:07	0.0	?	ripd
1027	00:00:07	0.0	?	ospfd
1032	00:00:07	0.0	?	bgpd
1	00:00:05	0.0	?	init

779 00:00:04	0.0 ?	jffs2_gcd_mtd1
1106 00:00:01	0.0 ?	imish
3 00:00:00	0.0 ?	ksoftirqd/0
916 00:00:00	0.0 ?	syslog-ng
65 00:00:00	0.0 ?	bdi-default
965 00:00:00	0.0 ?	ptpd
917 00:00:00	0.0 ?	crond
63 00:00:00	0.0 ?	sync_supers
1096 00:00:00	0.0 ?	telnetd
6 00:00:00	0.0 ?	khelper
105 00:00:00	0.0 ?	khungtaskd
2 00:00:00	0.0 ?	kthreadd
4 00:00:00	0.0 ?	watchdog/0
9 00:00:00	0.0 ?	netns
10 00:00:00	0.0 ?	async/mgr
66 00:00:00	0.0 ?	kblockd/0
73 00:00:00	0.0 ?	kseriod
88 00:00:00	0.0 ?	rpciod/0
106 00:00:00	0.0 ?	kswapd0
157 00:00:00	0.0 ?	aio/0
164 00:00:00	0.0 ?	nfsiod
171 00:00:00	0.0 ?	crypto/0
712 00:00:00	0.0 ?	mtdblockd
741 00:00:00	0.0 ?	kpsmoused
789 00:00:00	0.0 ?	PETH/Tx
912 00:00:00	0.0 ?	angel
1098 00:00:00	0.0 ?	telnetd
1414 00:00:00	0.0 pts/0	imish
1415 00:00:00	0.0 pts/0	more
1416 00:00:00	0.0 ?	ps

## Related Commands

None

## 1.22 show processes cpu history

To display CPU utilization information for a period of time, use the show processes cpu history command in Privileged EXEC mode, the period of 1s, 1min, 5min could be shown.

## Command Syntax

**show process cpu history**



## Command Mode

Privileged EXEC

## Default

None

## Usage

None

## Examples

The following is sample output from the show processes cpu history command:

```
Switch# show processes cpu history
```

```
CPU usage for five seconds: 4.17%; one minute: 3.70%; five minutes: 3.68%
```

## Related Commands

None

## 1.23 show processes memory sorted

To display memory utilization information about the active processes sorted by percentage in a device, use the show processes memory sorted command in Privileged EXEC mode.

Here, CPU usage for each process means the CPU timeslice used by this process from the process was started to this command has been operated.

## Command Syntax

**show processes memory sorted (core | physical | virtual)**

core	Size in physical pages of the core image of the process
physical	Non-swapped physical memory that a task has used

virtual	Virtual memory usage of entire process
---------	--

## Command Mode

Privileged EXEC

## Default

None

## Usage

None

## Examples

The following is sample output from the show processes memory sorted command without keywords:

Switch# show processes memory sorted

Total: 256108; Used: 89644; Free: 166464; Buffers: 0

PID	TTY	RSS	VSZ	SZ	COMMAND
1317	pts/0	9516	13104	3276	imish
1106	?	9428	13104	3276	imish
1463	pts/0	7436	13104	3276	imish
956	?	6836	14644	3661	nsm
1007	?	5948	9624	2406	imi
924	?	5912	17652	4413	hsrzd
959	?	3336	8076	2019	snmpd
1032	?	2724	8204	2051	bgpd
1027	?	2488	7140	1785	ospfd
1003	?	2472	7152	1788	pimd
957	?	2340	6572	1643	dhcrelay
983	?	2336	6592	1648	mstpd
1021	?	2324	6600	1650	ripd
1005	?	2320	6732	1683	ldpd
942	?	2284	6772	1693	sshd
985	?	2208	6592	1648	onmd
929	?	2132	7168	1792	chsm
966	?	2028	6140	1535	lacpd
973	?	2028	6284	1571	authd
965	?	2024	6408	1602	ptpd
964	?	1952	6364	1591	oamd

977 ?	1948	6200	1550	rmond
963 ?	1708	5980	1495	bhm
919 ?	1120	3792	948	ntpd
916 ?	1060	2300	575	syslog-ng
1465 pts/0	764	2516	629	ps
917 ?	668	3040	760	crond
1 ?	656	2928	732	init
1464 pts/0	472	1668	417	more
1096 ?	416	2928	732	telnetd
1098 ?	272	2928	732	telnetd
912 ?	172	1496	374	angel
2 ?	0	0	0	kthreadd
3 ?	0	0	0	ksoftirqd/0
4 ?	0	0	0	watchdog/0
5 ?	0	0	0	events/0
6 ?	0	0	0	khelper
9 ?	0	0	0	netns
10 ?	0	0	0	async/mgr
63 ?	0	0	0	sync_supers
65 ?	0	0	0	bdi-default
66 ?	0	0	0	kblockd/0
73 ?	0	0	0	kseriod
88 ?	0	0	0	rpciod/0
105 ?	0	0	0	khungtaskd
106 ?	0	0	0	kswapd0
157 ?	0	0	0	aio/0
164 ?	0	0	0	nfsiod
171 ?	0	0	0	crypto/0
712 ?	0	0	0	mtdblockd
741 ?	0	0	0	kpsmoused
779 ?	0	0	0	jffs2_gcd_mtd1
789 ?	0	0	0	PETH/Tx

## Related Commands

None

## 1.24 terminal monitor

To copy debug output to the current terminal line, use the terminal monitor command in Privileged EXEC mode.

### Command Syntax

**terminal monitor**

**terminal no monitor**

**Command Mode**

Privileged EXEC

**Default**

None

**Usage**

None

**Examples**

The following is sample output from the terminal monitor command

```
Switch# terminal monitor
```

```
Jan  1 16:09:30 DUT1 IMISH-6: ready to service
```

**Related Commands**

None

## 1.25 configure terminal

To enter global configuration mode, use configure terminal command in Privileged EXEC mode.

**Command Syntax**

```
configure terminal
```

**Command Mode**

Privileged EXEC

## Default

None

## Usage

Use this command to enter global configuration mode. Note that commands in this mode are written to the running configuration file as soon as you enter them (using the Enter key/Carriage Return).

After you enter the configure command, the system prompt changes from <switch-name># to <switch-name>(config)#, indicating that the switch is in global configuration mode. To leave global configuration mode and return to Privileged EXEC mode, type end or press Ctrl-Z.

## Examples

In the following example, the user enters global configuration mode:

```
Switch# configure terminal
```

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

```
Switch(config)#
```

## Related Commands

**enable**

**disable**

## 1.26 disable

To exit Privileged EXEC mode and return to user EXEC mode, enter the disable command in EXEC mode.

## Command Syntax

**disable**

## Command Mode

Privileged EXEC

## Default

None

## Usage

None

## Examples

In the following example, the user enters Privileged EXEC mode using the enable command, then exits back to user EXEC mode using the disable command. Note that the prompt for user EXEC mode is >, and the prompt for Privileged EXEC mode is #.

```
Switch> enable
```

```
Password: <password>
```

```
Switch# disable
```

```
Switch>
```

## Related Commands

**enable**

## 1.27 enable

To enter Privileged EXEC mode, use the enable command in user EXEC or Privileged EXEC mode.

## Command Syntax

**enable**

## Command Mode

User EXEC

Privileged EXEC

## Default

None

## Usage

None

## Examples

In the following example, the user enters Privileged EXEC mode using the enable command. The system prompts the user for a password before allowing access to the Privileged EXEC mode. The password is not printed to the screen. The user then exits back to user EXEC mode using the disable command. Note that the prompt for user EXEC mode is the greater than symbol (>), and the prompt for Privileged EXEC mode is the number sign (#).

```
Switch> enable
```

```
Password: <password>
```

```
Switch# disable
```

```
Switch>
```

## Related Commands

**disable**

## 1.28 end

To end the current configuration session and return to Privileged EXEC mode, use the end command in global configuration mode.

### Command Syntax

**end**

### Command Mode

Global Configuration

### Default

None

### Usage

This command will bring you back to Privileged EXEC mode regardless of what configuration mode or configuration sub-mode you are in.

This global configuration command can be used in any configuration mode.

Use this command when you are done configuring the system and you want to return to EXEC mode to perform verification steps.

### Examples

In the following example, the end command is used to exit from interface configuration mode and return to Privileged EXEC mode. A show command is used in Privileged EXEC mode to verify the configuration.

```
Switch# configure terminal
```

```
Switch(config)# interface eth-0-1
```

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



```
Switch# show interface eth-0-1
```

## Related Commands

`exit`

## 1.29 `exit` (global)

To exit any configuration mode to the lower mode in the CLI mode hierarchy, use the `exit` command in any configuration mode.

### Command Syntax

`exit`

### Command Mode

All Configuration Modes

### Default

None

### Usage

The `exit` command is used in the CLI to exit from the current command mode to the lower mode in the CLI mode hierarchy.

For example, use the `exit` command in global configuration mode to return to Privileged EXEC mode. Use the `exit` command in interface, line, or router configuration mode to return to global configuration mode.

### Examples

The following example displays an exit from the interface configuration mode to return to the global configuration mode.

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

```
Switch(config)#
```

## Related Commands

**end**

**exit (EXEC)**

## 1.30 exit (EXEC)

To close an active terminal session by logging off the switch, use the exit command in EXEC mode.

### Command Syntax

**exit**

### Command Mode

Privileged EXEC

### Default

None

### Usage

Use the exit command in EXEC mode to exit the active session (log off the device). This command can be used in any EXEC mode (such as User EXEC mode or Privileged EXEC mode) to exit from the EXEC process.

### Examples

In the following example, the exit (global) command is used to move from global configuration mode to Privileged EXEC mode, the disable command is used to move from

Privileged EXEC mode to user EXEC mode, and the exit (EXEC) command is used to log off (exit the active session):

```
Switch(config)# exit
```

```
Switch# disable
```

```
Switch> exit
```

## Related Commands

**quit**

## 1.31 quit

To close an active terminal session by logging off the switch, use the quit command in EXEC mode.

## Command Syntax

**quit**

## Command Mode

All Configuration Modes

## Default

None

## Usage

Use the quit command in EXEC mode to exit the active session (log off the device). This command can be used in any EXEC mode (such as User EXEC mode or Privileged EXEC mode) to exit from the EXEC process.

## Examples

In the following example, the quit command is used to move from global configuration mode to Privileged EXEC mode, the disable command is used to move from Privileged EXEC mode to user EXEC mode, and the quit command is used to log off (exit the active session):

```
Switch(config)# quit
```

```
Switch# disable
```

```
Switch> quit
```

## Related Commands

**exit**

## 1.32 cd

Change the current directory to dir, use the cd command in EXEC mode.

## Command Syntax

**cd** (*dir* | )

dir	(Optional) The directory or file systems followed by a colon. If flash: argument is specified, change the current directory to flash: . If udisk: argument is specified, change the current directory to udisk:. If you don't use USB device, failed to cd udisk
-----	--

## Command Mode

Privileged EXEC

## Default

The initial default file system is **flash:**. If you do not specify a directory on a file system, the default is the root directory on that file system.

## Usage

For all EXEC commands that have an optional file system argument, the system uses the file system specified by the `cd` command when you omit the optional file system argument. For example, the `dir` EXEC command, which displays a list of files on a file system, contain an optional file system argument. When you omit this argument, the system lists the files on the file system specified by the `cd` command.

## Examples

- In the following example, the `cd` command is used to set the default file system to the Flash memory.

```
Switch # cd
```

```
Switch# pwd
```

```
flash:/
```

- In the following example, the `cd` command is used to set the file system without plug in the USB mass storage device

```
Switch # cd udisk:
```

```
% Failed to cd udisk:: No such file or directory
```

- In the following example, the `cd` command is used to set the file system with plug in the USB mass storage device

```
Switch # cd udisk:
```

```
Switch # pwd
```

```
udisk:/
```

## Related Commands

**dir**

ls

pwd

## 1.33 copy

To copy file system, use the copy command in Privileged EXEC mode.

### Command Syntax

**copy** *source-name destination-name*

source-name	The location URL of the source file to be copied. The source can be either local or remote
destination-name	The destination URL of the copied file. The destination can be either local or remote

### Command Mode

Privileged EXEC

### Default

None

### Usage

The exact format of the source and destination URLs varies according to the file or directory location. You may enter a particular file or a filename that follows the standard file system syntax (filesystem:[/filepath][/filename]).

## Examples

The following example shows how to get image from TFTP server through in band management interface.

```
Switch# copy tftp://192.168.0.1/image flash:/boot/image
```

```
Download from URL to temporary file.  
Get file from tftp://192.168.0.1/image  
.....  
Received 15591515 bytes in 16.6 seconds  
Copy the temporary file to its destination.  
.....  
15591515 bytes in 69.8 seconds, 218 kbytes/second
```

The following CLI example shows how to get image from TFTP server throughout band management interface.

```
Switch# copy mgmt-if tftp://192.168.0.1/image flash:/boot/image
```

## Related Commands

**delete**

## 1.34 delete

To delete a file on the flash, use the delete command in Privileged EXEC mode.

### Command Syntax

**delete** *file-name*

file-name	The file name that is supposed to be deleted
-----------	--

### Command Mode

Privileged EXEC

## Default

None

## Usage

If you attempt to delete the configuration file or image, the system prompts you to confirm the deletion. Also, if you attempt to delete the system specified file such as DHCP snooping bindings, the system prompts you to confirm the deletion.

## Examples

The following example deletes the file named test from the flash:

```
Switch# delete flash:/test
```

```
Are you sure to delete flash:/test? [confirm]:y
```

## Related Commands

**copy**

## 1.35 dir

To display a list of files on a file system, use the dir command in EXEC mode.

## Command Syntax

```
dir (flash: | udisk: | ) (directory-name | ) (file-name | )
```

flash	The flash system
udisk	The USB mass storage device. If you don't use USB mass storage device, failed to dir udisk
directory-name	The directory in flash or udisk
file-name	The file name



## Command Mode

Privileged EXEC

## Default

None

## Usage

Use the dir (Flash file system) command to display flash or udisk information.

## Examples

The following is sample output from the dir command.

Switch# dir

```
Directory of flash:/  
  
total 42  
drwxr-xr-x  2   0 Jul 30 15:42 boot  
drwxr-xr-x  3   0 Jan  1  1970 conf  
drwxr-xr-x  2   0 Jan  1  1970 log  
-rw-r----- 1 1020 Jul 29 19:18 startup-config.conf  
-rw-r--r--  1 10270 Jul 30 10:10 syslog  
-rw-r--r--  1  6886 Jul 29 23:59 syslog.1.gz  
  
63.0M bytes total (30.4M bytes free)  
Switch#
```

The following is sample output from udisk if plug in the USB mass storage device.

Switch # cd udisk:

Switch # dir

```
Directory of udisk:/  
  
total 12  
drwxrwxrwx 2 4096 Jun  2  2011 test  
drwxrwxrwx 2 4096 Jun  8  2011 test1
```

```
drwxrwxrwx 2 4096 Jun  7 2011 test2
```

```
3.7G bytes total (3.7G bytes free)
```

## Related Commands

ls

## 1.36 ls

To display a list of files on a file system, use the ls command in EXEC mode.

### Command Syntax

```
ls (flash: | udisk: | ) (directory-name | )(file-name | )
```

flash	The flash system
udisk	The USB mass storage device. If you don't use USB mass storage device, failed to dir udisk
directory-name	The directory in flash or udisk
file-name	The file name

### Command Mode

Privileged EXEC

### Default

None

### Usage

Use the ls (Flash file system) command to display flash or udisk information.

## Examples

The following is sample output from the ls command.

Switch# ls

```

Directory of flash:/
|
total 42
drwxr-xr-x  2   0 Jul 30 15:42 boot
drwxr-xr-x  3   0 Jan  1  1970 conf
drwxr-xr-x  2   0 Jan  1  1970 log
-rw-r-----  1 1020 Jul 29 19:18 startup-config.conf
-rw-r--r--   1 10270 Jul 30 10:10 syslog
-rw-r--r--   1  6886 Jul 29 23:59 syslog.1.gz

63.0M bytes total (30.4M bytes free)
  
```

## Related Commands

**dir**

## 1.37 more

To display the contents of a file, use the more command in EXEC mode.

## Command Syntax

**more (flash: | udisk:) (directory-name |)file-name**

flash	The flash system
udisk	The USB mass storage device. If you don't use USB mass storage device, failed to dir udisk
directory-name	The directory in flash or udisk
file-name	The file name

**Command Mode**

Privileged EXEC

**Default**

None

**Usage**

The system can only display a file in ASCII format.

**Examples**

The following partial sample output displays the configuration file named startup-config in flash.

```
Switch# more flash:/startup-config.conf
```

**Related Commands**

**dir**

**ls**

## 1.38 mkdir

To create a new directory in a Flash file system or udisk device, use the mkdir command in EXEC mode.

**Command Syntax**

**mkdir** *directory-name*

directory-name	The directory in flash or udisk
----------------	---------------------------------

**Command Mode**

Privileged EXEC

**Default**

None

**Usage**

This command is valid only for local file systems.

**Examples**

The following example creates a directory named newdir in Flash.

```
Switch# mkdir flash:/newdir
```

The following example creates a directory named newdir in USB mass storage device if plug in it.

```
Switch# mkdir udisk:/newdir
```

**Related Commands**

**rmdir**

**dir**

## 1.39 rename

To rename a file in a Class C Flash file system or udisk device, use the rename command in EXEC mode.

## Command Syntax

**rename** *old-filename new-filename*

old-filename	The original file name in flash
new-filename	The new file name in flash

## Command Mode

Privileged EXEC

## Default

None

## Usage

This command is valid only for local file systems.

## Examples

In the following example, the file named startup-config.conf-bak is renamed startup-config.conf-bak2.

```
Switch1# rename udisk:/wus udisk:/wu
```

```
Are you sure to rename udisk:/wus? [confirm]
```

## Related Commands

None

## 1.40 rmdir

To remove an existing directory in a Flash file system or udisk device, use the `rmdir` command in Privileged EXEC mode.

### Command Syntax

`rmdir` *directory-name*

directory-name	The directory in flash
----------------	------------------------

### Command Mode

Privileged EXEC

### Default

None

### Usage

This command is valid only for local file systems.

### Examples

The following example creates a directory named `newdir`.

```
Switch# rmdir flash:/newdir
```

```
Are you sure to delete newdir? [yes/no]: y
```

### Related Commands

`mkdir`

`dir`

## 1.41 tar create

To create an new tar file in a Flash file system or udisk device, use the tar create command in Privileged EXEC mode.

### Command Syntax

**tar create** *tar-file-name source-directory*

tar-file-name	The file name of the new tar file
source-directory	The source directory in flash

### Command Mode

Privileged EXEC

### Default

None

### Usage

The source-directory must be a directory.

### Examples

The following example creates a tar file named tar1.

```
Switch# tar create udisk:/tar1 udisk:/wu
```

### Related Commands

**tar table**

**tar xtract**



## 1.42 tar table

To display files in the tar file, use the tar table command in Privileged EXEC mode.

### Command Syntax

**tar table** *tar-file-name*

tar-file-name	The file name of the new tar file
---------------	-----------------------------------

### Command Mode

Privileged EXEC

### Default

None

### Usage

The tar-file-name must be a in the flash.

### Examples

The following example shows files in a tar file named tar1.

```
Switch# tar table udisk:/tar1
```

### Related Commands

**tar create**

**tar xtract**

## 1.43 tar xtract

To untar files in the tar file, use the tar xtract command in Privileged EXEC mode.

### Command Syntax

**tar xtract** *tar-file destination-directory*

tar-file	The file name of the tar file
destination-directory	The destination directory

### Command Mode

Privileged EXEC

### Default

None

### Usage

The destination-directory must exist in the flash. You can use mkdir to create a new directory.

### Examples

The following shows an example to extract a tar file named tar1 into a directory name dir1:

```
Switch# tar xtract flash:/tar1 flash:/mydir
```

### Related Commands

**tar create**

**tar table**

## 1.44 tar diagnostic-information

To put diagnostic-information to a Flash file system ,udisk device, ftp server or tftp server, use the tar diagnostic-information command in Privileged EXEC mode. Syslog files, core dump files, tcam entries ,running-config, startup-config, version, clock, memory and logging buffer are included in this tarfile.

### Command Syntax

**tar diagnostic-information (mgmt-if | ) destination-directory/ tar-file**

destination-directory	The destination directory, such as flash, udisk, tftp or ftp server
tar-file	The file name of the tar file

### Command Mode

Privileged EXEC

### Default

None

### Usage

The destination-directory must reachable and disk is enough.

### Examples

The following shows an example to put a diagnostic-information tar file to flash:

```
Switch# tar diagnostic-information flash:/diag.tar.gz
```

## Related Commands

None

## 1.45 format

To format udisk, all data on udisk: will be lost.

## Command Syntax

**format udisk:**

udisk:	The USB mass storage device. If you don't use USB mass storage device, failed to format udisk
--------	---

## Command Mode

Application Configure mode

## Default

None

## Usage

The destination-directory must exist.

## Examples

The following shows an example to format USB mass storage device:

```
Switch(config)# format udisk:
```

```
WARNING: All data on udisk: will be lost!!!
```

```
And format operation may take a while.
```

Are you sure to process with format? [yes/no]: yes

## Related Commands

None

## 1.46 umount

To uninstall the USB mass storage device before plug out it from the switch.

## Command Syntax

**umount udisk:**

udisk:	The USB mass storage device. If you don't use USB mass storage device, failed to format udisk
--------	---

## Command Mode

Application Configure mode

## Default

None

## Usage

USB mass storage device must exist in the system. You can use umount command to uninstall the USB mass storage device.

## Examples

The following shows an example to umount USB mass storage device:

Switch(config)# umount udisk:

```
After this operation, you can not use USB disk.  
Are you sure to continue? [yes/no]: yes
```

## Related Commands

None

# 2 User Management Commands

---

## 2.1 username

Use this command to create or delete a local user account on the switch.

### Command Syntax

`username WORD`

`no username WORD`

username	Establish User Name Authentication
WORD	User name

### Command Mode

Global Configuration

### Default

None

### Usage

None

## Examples

This is a sample output from this command displaying how to add a user named testName.

```
Switch (config)#username testName
```

## Related Commands

None

## 2.2 username password

Use this command to add username and password.

### Command Syntax

```
username WORD password (8|) LINE
```

<i>WORD</i>	User name
Password	Password for username
(8 )	Specifies a hidden password will follow
<i>LINE</i>	User password string

### Command Mode

Global Configuration mode

### Default

None

### Usage

None



## Examples

This is a sample output from this command displaying how to add a user named testName and with the password of 123456.

```
Switch(config)# username testName password 123456
```

## Related Commands

None

## 2.3 username secret

Use this command to add username and password and the password will be encrypted by the switch.

## Command Syntax

```
username WORD secret LINE
```

<i>WORD</i>	User name
secret	Specify the secret for the user
<i>LINE</i>	User privilege level

## Command Mode

Global Configuration

## Default

None

**Usage**

None

**Examples**

This is a sample output from this command displaying how to add a user named testName and with the password of 123456.

```
Switch (config)#username testName secret 123456
```

**Related Commands**

None

## 2.4 username privilege

Use this command to set a local user account with privilege level on the switch.

**Command Syntax**

```
username WORD privilege <1-4>
```

<i>WORD</i>	User name
privilege <1-4>	ser privilege level

**Command Mode**

Global Configuration

**Default**

None

## Usage

None

## Examples

This is a sample output from this command displaying how to add a user with privilege level of 2.

```
Switch(config)#username testName privilege 2
```

## Related Commands

None

## 2.5 username privilege password

Use this command to set a local user account with privilege level and password on the switch.

### Command Syntax

```
username WORD privilege <1-4> password (8|) LINE
```

<i>WORD</i>	User name
privilege <1-4>	User privilege level
8	Specifies a HIDDEN password will follow
<i>LINE</i>	User privilege level

### Command Mode

Global Configuration

**Default**

None

**Usage**

None

**Examples**

This is a sample output from this command displaying how to add a user with privilege level of 2 and password of 123456.

```
Switch(config)# username testName privilege 2 password 123456
```

**Related Commands**

None

## 2.6 re-username newname

Use this command to reset username.

**Command Syntax**

```
re-username WORD newname WORD
```

re-username <i>WORD</i>	Old user name
newname <i>WORD</i>	New user name

**Command Mode**

Global Configuration

**Default**

None

**Usage**

None

**Examples**

This is a sample output from this command displaying how to reset username.

```
Switch(config)# re-username testName newname newname
```

**Related Commands**

None

## 2.7 cipher detect

Use this command to set high level of cipher detect.

**Command Syntax**

**cipher detect (strong| normal | none)**

strong	Cipher must contain digital, normal char and special char
normal	Cipher must contain digital and normal char
none	Disable security check

**Command Mode**

Global Configuration

**Default**

None

**Usage**

None

**Examples**

This is a sample output from this command displaying how to set high level of cipher detect.

```
Switch(config)# cipher detect strong
```



This cmd will make all un-strong clear text passwords lost!

**Related Commands**

None

# 3

## FTP Commands

---

### 3.1 ftp

To exchange files between local and remote ftp server, use the ftp command in Privileged EXEC mode.

#### Command Syntax

**ftp** (*mgmt-if* | ) *host*

mgmt-if	Management port
host	IPv4, IPv6 address or name of the remote host

#### Command Mode

Privileged EXEC

#### Default

None

#### Usage

Use the ftp command to upload and download files from remote ftp server.

## Examples

The following is sample output from the ftp command:

```
Switch# ftp mgmt-if 10.10.29.160
```

```
Connected to 10.10.29.160.
220----- Welcome to Pure-FTPd -----
220-You are user number 1 of 50 allowed.
220-Local time is now 09:00. Server port: 21.
220-IPv6 connections are also welcome on this server.
220 You will be disconnected after 15 minutes of inactivity.
Name (10.10.29.160:root): root
331 User root OK. Password required
Password:
230-User root has group access to: wheel disk adm sys daemon
230- bin root
230 OK. Current directory is /root
Remote system type is UNIX.
Using binary mode to transfer files.
ftp>
```

```
Switch # ftp mgmt-if 2001:1000::2
```

```
Connected to 2001:1000::2 (2001:1000::2).
220 Serv-U FTP Server v10.2 ready...
Name (2001:1000::2:root): FS
331 User name okay, need password.
Password:
230 User logged in, proceed.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp>
```

## Related Commands

None

## 3.2 ftp vrf

To exchange files between local and remote ftp server in VPN, use the ftp vrf command in Privileged EXEC mode.



## Command Syntax

**ftp vrf** *WORD*

WORD	VPN Routing/Forwarding instance name
------	--------------------------------------

## Command Mode

Privileged EXEC

## Default

None

## Usage

None

## Examples

The following is sample output from the ftp vrf command:

```
Switch# ftp vrf testvrf
```

## Related Commands

None

## 3.3 ftp username

To create an FTP username, use the ftp username command in global configuration mode.

To remove an FTP username, use the no form of this command.

## Command Syntax

**ftp username** *username*

**no ftp username**

username	The user name of the remote FTP server
----------	--

## Command Mode

Global Configuration

## Default

No ftp username is defined.

## Usage

The username must also follow the rules. They must start with a letter, and have as interior characters only letters, digits, and underline. Names must be 31 characters or fewer.

## Examples

The following example creates an FTP username "abc":

```
Switch(config)# ftp username abc
```

## Related Commands

**ftp password**

**ftp passive**

## 3.4 ftp password

To create the password of an FTP username, use the `ftp password` command in global configuration mode. To remove the password of an FTP username, use the `no` form of this command.

### Command Syntax

`ftp password`(*password* | **8** *password*)

`no ftp password`

password	The password of the user name of the remote FTP server
8	Specifies a hidden password will follow

### Command Mode

Global Configuration

### Default

No ftp password is defined.

### Usage

The password will be encrypted in running-config if service password-encryption is enabled.

### Examples

The following example creates the ftp password:

```
Switch(config)# ftp password abc
```

## Related Commands

**ftp username**

**ftp passive**

## 3.5 ftp passive

To set the FTP mode in passive mode, use the `ftp passive` command in global configuration mode. To restore the configuration to the default, use no form of this command.

### Command Syntax

**ftp passive**

**no ftp passive**

### Command Mode

Global Configuration

### Default

FTP works in Active mode.

### Usage

None

### Examples

The following example sets the ftp mode to passive:

```
Switch(config)# ftp passive
```

### Related Commands

**ftp username**

**ftp password**

## 3.6 show ftp

To display the ftp configurations, use show ftp command in Privileged EXEC mode.

### Command Syntax

**show ftp**

### Command Mode

Privileged EXEC

### Default

None

### Usage

None

### Examples

The following example displays the ftp configurations:

```
Switch# show ftp
```

```
ftp passive mode: on
```

```
ftp username: root
```

```
ftp password: unencrypted, abc
```

### Related Commands

**ftp username**

**ftp password**

**ftp passive**

# 4 TFTP Commands

---

## 4.1 copy GFILENAME GURLNAME

Use this command to copy local file to tftp server.

### Command Syntax

**copy** *GFILENAME* (**mgmt-if** | ) *GURLNAME*

mgmt-if	Management port
GFILENAME	Copy to URL
GURLNAME	Copy to local file

### Command Mode

Privileged EXEC

### Default

None

### Usage

None

## Examples

This is a sample output from the command displaying how to copy local file to tftp server.

```
Switch# copy flash:/test.c tftp://1.1.1.1/running-config
```

## Related Commands

None

## 4.2 copy GURLNAME GFILENAME

Use this command to copy file from tftp server to local.

### Command Syntax

```
copy (mgmt-if | ) GURLNAME GFILENAME
```

mgmt-if	Management port
GURLNAME	Copy from URL
GFILENAME	Copy to local file

### Command Mode

Privileged EXEC

### Default

None

### Usage

None

## Examples

This is a sample output from the command displaying how to copy file from tftp server to local.

```
Switch# copy tftp://1.1.1.1/test.c flash:test1.c
```

```
get file from tftp://1.1.1.1/test.c
.  
Received 225 bytes in 0.3 seconds
```

## Related Commands

None

## 4.3 copy running-config mgmt-if

Use this command to copy running-config to tftp server.

### Command Syntax

```
copy running-config (mgmt-if| ) GURLNAME
```

startup-config	Copy from current system configuration
mgmt-if	Management port
GFILENAME	Copy to URL

### Command Mode

Privileged EXEC

### Default

None



## Usage

None

## Examples

This is a sample output from the command displaying how to copy running-config to tftp server.

```
Switch#copy running-config tftp://1.1.1.1/running-config
```

```
Building configuration...  
send file to tftp://1.1.1.1/running-config  
..
```

```
Sent 40198 bytes in 8.3 seconds
```

## Related Commands

None

## 4.4 copy startup-config mgmt-if

Use this command to copy startup-config to tftp server.

### Command Syntax

```
copy startup-config (mgmt-if| ) GURLNAME
```

startup-config	Copy from current system configuration
mgmt-if	Management port
GFILENAME	Copy to URL

### Command Mode

Privileged EXEC

## Default

None

## Usage

None

## Examples

This is a sample output from the command displaying how to copy startup-config to tftp server.

```
Switch# copy startup-config tftp://1.1.1.1/startup-config
```

```
send file to tftp://1.1.1.1/startup-config
..
Sent 32252 bytes in 6.4 seconds
```

## Related Commands

None

## 4.5 copy mgmt-if startup-config

Use this command to copy startup-config from tftp server.

### Command Syntax

```
copy (mgmt-if| ) GURLNAME startup-config
```

mgmt-if	Management port
GURLNAME	Copy from URL
startup-config	Copy to startup system configuration

## Command Mode

Privileged EXEC

## Default

None

## Usage

None

## Examples

This is a sample output from the command displaying how to copy startup-config from tftp server.

```
Switch #copy tftp://1.1.1.1/startup-config startup-config
```

```
get file from tftp://1.1.1.1/startup-config
..
Sent 32252 bytes in 6.4 seconds
```

## Related Commands

None

# 5

## Telnet Commands

---

### 5.1 telnet

Use this command from the switch to access the other devices in the network.

#### Command Syntax

```
telnet ( vrf WORD | mgmt-if ) WORD (PORT |)
```

vrf <i>WORD</i>	VPN Routing/Forwarding instance
mgmt-if	Management port
<i>WORD</i>	IPv4, IPv6 address or hostname of a remote system
<i>PORT</i>	TCP Port number

#### Command Mode

Privileged EXEC

#### Default

None

#### Usage

None

## Examples

This example shows how to Telnet from the switch to a remote host.

```
Switch# telnet mgmt-if 10.10.29.247
```

```
Entering character mode  
Escape character is '^['.
```

```
TestOS, Version 2.3(62), fcs
```

```
Switch# telnet 2001:1000::1
```

```
Entering character mode  
Escape character is '^['.
```

```
DUT1#
```

## Related Commands

None

# 6 SSH Commands

---

## 6.1 ip ssh server

To enable SSH service, use `ip ssh server enable` command in global configuration mode. To disable SSH service, use `ip ssh server disable` command.

### Command Syntax

`ip ssh server (enable | disable)`

enable	Turn on the SSH service
disable	Turn off the SSH service

### Command Mode

Global Configuration

### Default

SSH service is enabled.

### Usage

None

## Examples

The following example enables the SSH service on your switch:

```
Switch(config)# ip ssh server enable
```

## Related Commands

```
show ip ssh server status
```

## 6.2 ip ssh server authentication-retries

To configure Secure Shell (SSH) authentication retry times on your switch, use the `ip ssh server authentication-retries` command in global configuration mode. To restore the default value, use the `no` form of this command.

### Command Syntax

```
ip ssh server authentication-retries integer
```

```
no ip ssh server authentication-retries
```

integer	The number of retries, with a maximum of 6 authentication retries
---------	---

### Command Mode

Global Configuration

### Default

The default is 6.

## Usage

None

## Examples

The following examples configure SSH authentication retry times on your switch.

```
Switch(config)# ip ssh server authentication-retries 3
```

## Related Commands

**show ip ssh server status**

## 6.3 ip ssh server authentication-timeout

To configure Secure Shell (SSH) authentication timeout on your switch, use the `ip ssh server authentication-timeout` command in global configuration mode. To restore the default value, use the `no` form of this command.

### Command Syntax

**ip ssh server authentication-timeout** *seconds*

**no ip ssh server authentication-timeout**

seconds	The number of seconds until timeout disconnects, with a maximum of 120 seconds
---------	--

### Command Mode

Global Configuration



## Default

The default is 120 seconds.

## Usage

None

## Examples

The following examples configure SSH authentication timeout on your switch:

```
Switch(config)# ip ssh server authentication-timeout 100
```

## Related Commands

**show ip ssh server status**

## 6.4 ip ssh server authentication-type

To configure Secure Shell (SSH) authentication type on your switch, use the `ip ssh server authentication-type` command in global configuration mode. To restore the default value, use the `no` form of this command.

### Command Syntax

**ip ssh server authentication-type (all | {password | public-key | rsa})**

**no ip ssh server authentication-type**

all	Enable all authentication type
password	Enable password authentication
public-key	Enable SSHv2 public key authentication
rsa	Enable SSHv1 rsa authentication

## Command Mode

Global Configuration

## Default

The default authentication type is all.

## Usage

None

## Examples

The following examples configure SSH authentication type on your switch.

```
Switch(config)# ip ssh server authentication-type password
```

## Related Commands

```
show ip ssh server status
```

## 6.5 ip ssh server host-key rsa key

To configure Secure Shell (SSH) host-key on your switch, use the `ip ssh server host-key rsa key` command in global configuration mode. To restore the default value, use the `no` form of this command.

## Command Syntax

```
ip ssh server host-key rsa key key
```

```
no ip ssh server host-key rsa
```

key	The key value for host key
-----	----------------------------

## Command Mode

Global Configuration

## Default

There is no host-key defined.

## Usage

None

## Examples

The following examples configure SSH host key on your switch:

```
Switch(config)# ip ssh server host-key rsa key KEY1
```

## Related Commands

```
show ip ssh server status
```

## 6.6 ip ssh server rekey-interval

To configure Secure Shell (SSH) rekey interval on your switch, use the `ip ssh server rekey-interval` command in global configuration mode. To restore the default value, use the `no` form of this command.

## Command Syntax

```
ip ssh server rekey-interval minute
```

```
no ip ssh server rekey-interval
```

minute	The rekey interval, with a maximum of 1440 minutes
--------	--

## Command Mode

Global Configuration

## Default

The default interval is 60 minutes.

## Usage

None

## Examples

The following examples configure SSH rekey interval on your switch:

```
Switch(config)# ip ssh server rekey-interval 30
```

## Related Commands

```
show ip ssh server status
```

## 6.7 ip ssh server version

To configure Secure Shell (SSH) version on your switch, use the `ip ssh server version` command in global configuration mode. To restore the default value, use the `no` form of this command.

## Command Syntax

```
ip ssh server version (1 | 2 | all)
```

**no ip ssh server version**

1	Switch runs only SSH Version 1
2	Switch runs only SSH Version 2
all	Version 1 and Version 2 are both supported

**Command Mode**

Global Configuration

**Default**

The default SSH version is 2.

**Usage**

You can use this command with the 2 keyword to ensure that your switch will not inadvertently establish a weaker SSH Version 1 connection.

**Examples**

The following example shows that only SSH Version 1 support is configured:

```
Switch(config)# ip ssh server version 1
```

The following example shows that only SSH Version 2 is configured:

```
Switch(config)# ip ssh server version 2
```

The following example shows that SSH Versions 1 and 2 are configured:

```
Switch(config)# no ip ssh server version
```

**Related Commands****show ip ssh server status**

## 6.8 show ip ssh server session

To display the session information for Secure Shell (SSH), use the `show ip ssh server session` command in Privileged EXEC mode.

### Command Syntax

```
show ip ssh server session
```

### Command Mode

Privileged EXEC

### Default

None

### Usage

Use the `show ip ssh server session` command to view the session information.

### Examples

The following example shows the current SSH sessions:

```
Switch# show ip ssh server session
```

Version	Encryption	Hmac	User	IP	State
2.0	aes128-cbc	hmac-md5	abc	10.10.29.22	Session started

### Related Commands

```
show ip ssh server status
```

## 6.9 show ip ssh server status

To display the version and configuration data for Secure Shell (SSH), use the `show ip ssh server status` command in Privileged EXEC mode.

### Command Syntax

```
show ip ssh server status
```

### Command Mode

Privileged EXEC

### Default

None

### Usage

Use the `show ip ssh server status` command to view the version and configuration data.

### Examples

The following example shows the current SSH configurations:

```
Switch# show ip ssh server status
```

```
SSH server enabled
Version: 1.99
Authentication timeout: 33 second(s)
Authentication retries: 6 time(s)
Server key lifetime: 60 minute(s)
Authentication type: password, public-key
```

### Related Commands

```
show ip ssh server session
```

## 6.10 rsa key generate

To create a key by system, use the `rsa key generate` command in global configuration mode.

### Command Syntax

```
rsa key keyname generate
```

keyname	The name of the key
---------	---------------------

### Command Mode

Global Configuration

### Default

None

### Usage

Use the `rsa key` command to create a key by system.

### Examples

The following example creates a key named KEY1:

```
Switch(config)# rsa key KEY1 generate
```

```
Generating RSA private key, 1024 bit long modulus
```

```
Please waiting for a moment: done!
```

```
Public exponent is 65537 (0x10001)
```

```
Generate RSA key successfully
```

```
Switch(config)#
```



## Related Commands

`show rsa keys`

## 6.11 rsa key

To create a key, use the `rsa key` command in global configuration mode.

### Command Syntax

`rsa key keyname`

keyname	The name of the key
---------	---------------------

### Command Mode

Global Configuration

### Default

None

### Usage

Use the `rsa key` command to create a key.

### Examples

The following example creates a key named KEY1:

```
Switch(config)# rsa key KEY1
```

```
Switch(config-rsa-key)#
```

## Related Commands

`show rsa keys`

## 6.12 key format

To specify the key format, use the `key format` command in RSA key configuration mode.

### Command Syntax

`key format (der | pem)`

der	The format is der
pem	The format is pem

### Command Mode

Rsa Key Configuration

### Default

The default key format is DER.

### Usage

Use the `key format` command to specify the key format.

### Examples

The following example specify the key format of KEY1 as der :

```
Switch(config)# rsa key KEY1
```

```
Switch(config-rsa-key)# key format der
```

## Related Commands

`rsa key`

## 6.13 key string end

To exit the rsa key configuration mode to global configuration mode and apply all rsa key configurations, use the key string end command in RSA key configuration mode.

### Command Syntax

`key string end`

### Command Mode

Rsa Key Configuration

### Default

None

### Usage

Use the key string end command to exit the rsa key configuration mode.

### Examples

The following example shows exit the rsa key configuration mode :

```
Switch(config)# rsa key KEY1
```

```
Switch(config-rsa-key)# key string end
```

```
Switch(config)#
```

### Related Commands

`rsa key`

## 6.14 key type

To specify the key type, use the key type command in RSA key configuration mode.

### Command Syntax

**key type (public | private)**

public	Specify the key as a public key
private	Specify the key as a private key

### Command Mode

Rsa Key Configuration

### Default

None

### Usage

Use the key type command to specify the type of the key.

### Examples

The following example specifies the key type of KEY1 as public key:

```
Switch(config)# rsa key KEY1
```

```
Switch(config-rsa-key)# key type public
```

### Related Commands

**rsa key**

## 6.15 reset

To clear all key configurations, use the reset command in RSA key configuration mode.

### Command Syntax

**reset**

### Command Mode

Rsa Key Configuration

### Default

None

### Usage

Use the reset command to clear all key configurations.

### Examples

The following example shows to clear all configurations for the key KEY1:

```
Switch(config)# rsa key KEY1
```

```
Switch(config-rsa-key)# reset
```

### Related Commands

**rsa key**

## 6.16 validate

To check the validation of the key strings, use the validate command in RSA key configuration mode.

## Command Syntax

**validate**

## Command Mode

Rsa Key Configuration

## Default

None

## Usage

Use the validate command to clear all key configurations.

## Examples

The following example shows to validate key strings of the key KEY1:

```
Switch(config)# rsa key KEY1
```

```
Switch(config-rsa-key)# validate
```

## Related Commands

**rsa key**

## 6.17 KEYLINE

To add key strings from the screen directly, type any strings in RSA key configuration mode except the keywords in this mode.

## Command Syntax

KEYLINE

## Command Mode

Rsa Key Configuration

## Default

None

## Usage

Type any key string.

## Examples

The following example shows to type a key string of the key KEY1:

```
Switch(config)# rsa key KEY1
```

```
Switch(config-rsa-key)# 00302017 4A7D385B 1234EF29 335FC973
```

```
Switch(config-rsa-key)# 2DD50A37 C4F4B0FD 9DADE748 429618D5
```

## Related Commands

**validate**

## 6.18 rsa key export

To export the key file to a specified destination, use the `rsa key export` command in global configuration mode.

## Command Syntax

```
rsa key keyname export url destination-file (public | private) (der | der-hex | pem | ssh1 | ssh2)
```

keyname	Specify the key name to display
destination-file	The destination file path and name
public	Specify the key as a public key
private	Specify the key as a private key
der	DER format
der-hex	DER HEX format
pem	PEM format
ssh1	SSHv1 format
ssh2	Specify the key format
der	DER format

## Command Mode

Global Configuration

## Default

None

## Usage

Use the `rsa key generate` command to generate a key.

## Examples

The following example shows to export the key KEY1 to flash as a public key:

```
Switch(config)# rsa key KEY1 export url flash:/key1.pub public ssh2
```

The following example shows to export the key KEY2 to flash as a private key:

```
Switch(config)# rsa key KEY2 export url flash:/key1 private ssh1
```



## Related Commands

`rsa key generate`

`rsa key import`

## 6.19 rsa key import

To import the key file from a specified source, use the `rsa key import` command in global configuration mode.

### Command Syntax

```
rsa key keyname import url source-file (public | private) (der | der-hex | pem | ssh1 | ssh2)
```

keyname	Specify the key name to display
source-file	The destination file path and name
public	Specify the key as a public key
private	Specify the key as a private key
der	DER format
der-hex	DER HEX format
pem	PEM format
ssh1	SSHv1 format
ssh2	Specify the key format

### Command Mode

Global Configuration

**Default**

None

**Usage**

Use the `rsa key` to generate command to generate a key.

**Examples**

The following example shows to import the key KEY1 to flash as a public key:

```
Switch(config)# rsa key KEY1 import url flash:/key1.pub public ssh2
```

The following example shows to import the key KEY2 to flash as a private key:

```
Switch(config)# rsa key KEY2 import url flash:/key1 private ssh1
```

**Related Commands**

`rsa key generate`

`rsa key export`

## 6.20 show rsa key

To display the details of the keys, use the `show rsa key` command in Privileged EXEC mode.

**Command Syntax**

```
show rsa key keyname
```

keyname	Specify the key name to display
---------	---------------------------------

## Command Mode

Privileged EXEC

## Default

None

## Usage

Use the `rsa key generate` command to generate a key.

## Examples

The following example displays the detailed information of the key named “KEY1”:

```
Switch# show rsa key KEY1
```

```
RSA key information:
=====
Name: KEY1
Type: private
Modulus: 1024 bit
Usage count: 0
Private key DER code:
 30820258
 0201
 00
 028180
 9B3E9726 6405BD54 692F172A 901F3879 C947366E 5703D282 AA31707F 214D38C9
```

## Related Commands

`show rsa keys`

## 6.21 show rsa keys

To display the brief information of all the keys, use the `show rsa keys` command in Privileged EXEC mode.

## Command Syntax

```
show rsa keys
```

## Command Mode

Privileged EXEC

## Default

None

## Usage

Use the rsa key generate command to generate a key.

## Examples

The following example displays the brief information of the keys:

```
Switch# show rsa keys
```

Name	Type	Usage	Modulus
key1	private	0	1024
key2	public	0	1024

## Related Commands

```
show rsa key
```

## 6.22 ssh

To connect to the remote SSH server, use the ssh command in Privileged EXEC mode.

## Command Syntax

```
ssh -l NAME ({-i KEYNAME | -p DPORT | -v (1|2) | -c  
{3des|des|3des-cbc|aes128-cbc|aes192-cbc|aes256-cbc} | -m
```

**{hmac-md5-128|hmac-md5-96|hmac-sha1-160|hmac-sha1-96} | -o  
 numberofpasswordprompts *NUM*}) (mgmt-if) (A.B.C.D|X:X::X:X|HOST)**

-l NAME	Log in using this user name
-i KEYNAME	Specify the name of RSA private key
-p DPORT	Specify the remote port
-v (1 2)	Specify SSH protocol version
-c	Select encryption algorithm
3des	Triple DES (SSHv1 only)
des	DES (SSHv1 only)
3des-cbc	Triple DES (SSHv2 only)
aes128-cbc	AES 128 bits (SSHv2 only)
aes192-cbc	AES 192 bits (SSHv2 only)
aes256-cbc	AES 256 bits (SSHv2 only)
-m	Select HMAC algorithm
hmac-md5-128	MD5 based HMAC (128 bits, SSHv2 only)
hmac-md5-96	MD5 based HMAC (96 bits, SSHv2 only)
hmac-sha1-160	SHA1 based HMAC (160 bits, SSHv2 only)
hmac-sha1-96	SHA1 based HMAC (96 bits, SSHv2 only)
-o numberof- passwordprompts <i>NUM</i>	Specify number of password prompts with the range in [1, 5]
mgmt-if	Use Management port
A.B.C.D	Specify IP address of remote system
X:X::X:X	Specify IPv6 address of remote system
HOST	Specify hostname of remote system

## Command Mode

Privileged EXEC

## Default

None

## Usage

None

## Examples

The following example displays the usage of this command:

```
Switch# ssh -l aaa -v 2 1.1.1.1
```

```
aaa@1.1.1.1's password:
```

```
Switch#
```

## Related Commands

**ip ssh server**

# 7 Time&Timezone

---

## 7.1 clock set datetime

Use this command to set system current date and time on the Switch.

### Command Syntax

**clock set datetime** *hh:mm:ss month day year*

hh:mm:ss	Specify the time in hours (24-hour format), minutes, and seconds. The time specified is relative to the configured time zone
month	Specify the month by name, should be in range 1 to 12
day	Specify the day by date in the month, should be in range 1 to 31
year	Specify the year, should be in range 2000 to 2037

### Command Mode

Global Configuration

### Default

The default time is based from UTC.

## Usage

If no other source of time is available, you can manually configure the time and date after the system is restarted. The time remains accurate until the next system restart. We recommend that you use manual configuration only as a last resort. If you have an outside source to which the switch can synchronize, you do not need to manually set the system clock.

## Examples

This example shows how to manually set the system clock to 1:32 p.m. on July 23, 2014:

```
Switch(config)# clock set 13:32:00 23 7 2014
```

## Related Commands

**show clock**

## 7.2 clock set timezone

Use this command to set the time zone on the Switch.

To restore to the default time of UTC, use the no form of this command.

## Command Syntax

**clock set timezone** *ZONE (add | minus) hours-offset [minutes-offset] [seconds-offset]*

**no clock set timezone**

ZONE	Specify the zone name, the length should be [3, 32), and only [a-zA-Z_] is supported, and the first and last character must be alphabet.
add	Specify the time offset is positive from UTC
minus	Specify the time offset is negative from UTC



hours-offset	Specify the time offset in hours, should be in range 0 to 23
minutes-offset	[optional]Specify the time offset in minutes, should be in range 0 to 59
seconds-offset	[optional]Specify the time offset in seconds, should be in range 0 to 59

## Command Mode

Global Configuration

## Default

The default time zone should be UTC.

## Usage

None

## Examples

The following example sets the Atlantic Canada time zone is 3.5 hours less than UTC.

```
Switch(config)# clock set timezone Canada minus 3 30
```

## Related Commands

**show clock (detail)**

## 7.3 clock set summer-time

Use this command to set summer time (daylight saving time) in areas where it starts and ends on a particular day each year(recurring) or on specified year(date).

To restore to the default time of UTC, use the no form of this command.

## Command Syntax

**clock set summer-time** ZONE **recurring** *start-time end-time offset*

**clock set summer-time** ZONE **date** *start-time end-time offset*

**no clock set summer-time**

ZONE	Specify the summer zone name, the length should be [3, 32), and only [a-zA-Z_] is supported, and the first and last character must be alphabet.
recurring	Specify that summer time starts and ends on a particular day of the week each year
date	Specify that summer time starts and ends on a particular day of the specified year
start-time	Specify the start time of summer time, for <b>recurring</b> summer time, the format should be <i>month, day, hh:mm:ss</i> , while for <b>date</b> summer time, the format should be <i>month, day, year, hh:mm:ss</i>
end-time	Specify the end time of summer time, for <b>recurring</b> summer time, the format should be <i>month, day, hh:mm:ss</i> , while for <b>date</b> summer time, the format should be <i>month, day, year, hh:mm:ss</i>
offset	For offset, specify the number of minutes to add during summer time. The default is 60.

## Command Mode

Global Configuration

### Default

Summer time should be disabled by default.

### Usage

The first part of the clock summer-time global configuration command specifies when summer time begins, and the second part specifies when it ends. All times are relative to

the local time zone. The start time is relative to standard time. The end time is relative to summer time. If the starting month is after the ending month, the system assumes that you are in the southern hemisphere.

### Examples

This example shows how to specify that summer time starts on June 1st at 02:00 and ends on the October 31 at 02:00:.

```
Switch(config)# clock set summer-time recurring 6 1 02:00:00 10 31 02:00:00 120
```

### Related Commands

**show clock (detail)**

## 7.4 show clock

Use this command to display the current time and date configuration.

### Command Syntax

**show clock (detail|)**

detail	Display the configured timezone and summer time information in addition to current date and time
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### Command Mode

Privileged EXEC mode

### Default

None

## Usage

None

## Examples

This example displays current time and date in detail:

```
Switch(config)#show clock detail
```

```
10:43:00 beijing Fri Oct 25 2013  
Time zone: (GMT + 08:00:00) beijing
```

## Related Commands

**show clock**

## 7.5 show timezones

Use this command to display all the timezones in world.

### Command Syntax

**show timezons**

### Command Mode

Privileged EXEC mode

### Default

None

### Usage

None

## Examples

This example displays all the current timezones:

```
Switch(config)#show timezones
```

```
(GMT+00:06:04) Europe/Andorra
(GMT+03:41:12) Asia/Dubai
(GMT+04:36:48) Asia/Kabul
(GMT-04:07:12) America/Antigua
(GMT-04:12:16) America/Anguilla
(GMT+01:19:20) Europe/Tirane
(GMT+02:58:00) Asia/Yerevan
(GMT-04:36:00) America/Curacao
(GMT+00:52:56) Africa/Luanda
(GMT+11:06:24) Antarctica/McMurdo   McMurdo Station, Ross Island
=====
(GMT+00:00:00) Antarctica/South_Pole Amundsen-Scott Station, South Pole
(GMT-04:32:32) Antarctica/Rothera   Rothera Station, Adelaide Island
(GMT-04:16:24) Antarctica/Palmer    Palmer Station, Anvers Island
```

## Related Commands

**show clock**

# 8 License Commands

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## 8.1 generate device identifier

To generate device identifier, use this command in Privileged EXEC mode.

### Command Syntax

**generate device identifier (mgmt-if | ) *GURLNAME***

**generate device identifier (*GFILENAME*|)**

mgmt-if	Management port
GURLNAME	URL name
GFILENAME	local file name

### Command Mode

Privileged EXEC

### Default

None

## Usage

This command will generate the unique device identifier(UDI) on the current device, customer can get license for the current device form FS with UDI.

## Examples

The following example shows how to generate UDI:

```
Switch# generate device identifier mgmt-if tftp://10.10.38.160/device.udi
```

## Related Commands

None

## 8.2 show license

To show license on the device, use the show license command in Privileged EXEC mode.

### Command Syntax

```
show license (GFILENAME)
```

GFILENAME	local file name
-----------	-----------------

### Command Mode

Privileged EXEC

### Default

None

## Usage

This command will show the license on the current device.

## Examples

The following example shows how to show license:

```
Switch# show lincese
```

```
License files:
=====
flash:/ma.lic:
  Created Time: Fri Dec  6 17:22:23 CST 2013
  Vendor:      FS
  Customer:    FS
  Device MAC:  00:1E:08:09:03:00
  Feature Set: QINQ MVR ERPS MEF ETHOAM
               VPWS VPLS HVPLS SMLK TPOAM
               OSPF PIM_SM IGMP VRF MPLS
               LDP BGP RSVP OSPF_TE EXTEND_ACL
               PTP BFD SSM IPV6 OSPF6
               PIM_SM6 MVR6 RIPNG TUNNEL_V6
```

## Related Commands

None