stack

Use the **stack** command to dump a stack trace of frames.

stack [**-d** | -**m**] [*num*]

Syntax Description

-d	(Optional) Keyword to dump the ROM monitor stack.
-**m**	(Optional) Keyword to specify addresses to dump.
num	(Optional) Number of frames.

Defaults

The default for *num* is five frames.

Command Types

ROM monitor command.

Command Modes

Normal.

Usage Guidelines

The minus sign (-) is required with the **-d** and -**m** options.

Examples

This example shows how to use the **stack** command to dump a stack trace of eight frames:

```
rommon 5 > stack 8
Kernel Level Stack Trace:
Initial SP = 0x60276a98, Initial PC = 0x60033054, RA = 0x6006d380
Frame 0 : FP= 0x60276a98, PC= 0x60033054,   0 bytes
Frame 1 : FP= 0x60276a98, PC= 0x6006d380,  24 bytes
Frame 2 : FP= 0x60276ab0, PC= 0x600e5218,  40 bytes
Frame 3 : FP= 0x60276ad8, PC= 0x600dcd48,  32 bytes
Frame 4 : FP= 0x60276af8, PC= 0x60033fdc,   0 bytes

Process Level Stack Trace:
Initial SP = 0x80007ce8, Initial PC = 0x600dfd38, RA = 0x600dfd20
Frame 0 : FP= 0x80007ce8, PC= 0x600dfd38,  24 bytes
Frame 1 : FP= 0x80007d00, PC= 0x6005b260,  32 bytes
Frame 2 : FP= 0x80007d20, PC= 0x6005c05c, 192 bytes
Frame 3 : FP= 0x80007de0, PC= 0x6005b54c,  24 bytes
Frame 4 : FP= 0x80007df8, PC= 0x600e82e0,  56 bytes
Frame 5 : FP= 0x80007e30, PC= 0x600e9484,  40 bytes
Frame 6 : FP= 0x80007e58, PC= 0x600e8b28,  24 bytes
Frame 7 : FP= 0x80007e70, PC= 0x600de224,  72 bytes
```

switch

Use the **switch** command to switch the clock from the supervisor clock to the internal clock or from the active supervisor engine to the standby supervisor engine.

switch {**clock** | **supervisor**}

Syntax Description

clock	Keyword to switch the clock from the supervisor clock to the internal clock.
supervisor	Keyword to switch from the active supervisor engine to the standby supervisor engine.

Defaults

This command has no default setting.

Command Types

Switch command.

Command Modes

Privileged.

Examples

This example shows how to switch the clock:

```
Console> (enable) switch clock
This command will reset system and force a clock switch-over.
Do you want to continue (y/n) [n]?
Console> (enable)
```

This example shows how to switch to the standby supervisor engine:

```
Console> (enable) switch supervisor
This command will force a switch-over to the standby Supervisor module.
Do you want to continue (y/n) [n]?
Console> (enable)
```

switch console

Use the **switch console** command to switch the console connection physically to the MSFC on the active supervisor engine.

switch console [*mNo*]

Syntax Description

mNo	(Optional) Module number.

Defaults

The default is supervisor engine console.

Command Types

Switch command.

Command Modes

Privileged.

Usage Guidelines

The **switch console** command allows you to change to the MSFC that shares the slot with the active supervisor engine. To use this command, it is necessary to have active and standby supervisor engine consoles. Otherwise, you cannot use the **switch console** command to switch to the console of the MSFC placed in the standby supervisor engine slot.

If you place the MSFC on a supervisor engine installed in slot 1, the MSFC is recognized as module 15. If you install the supervisor engine in slot 2, the MSFC is recognized as module 16. If the optional argument *mNo* is excluded, the console will switch to MSFC on the active supervisor engine.

To exit from the router CLI back to the switch CLI, enter the **exit** command at the Router> prompt.

Examples

This example shows how to switch the console connection to the MSFC on the active supervisor engine:

```
Console> (enable) switch console 15
Trying Router-15...
Connected to Router-15.
Type 'exit' to switch back...ÿ
```

sync

Use the **sync** command to write the working in-core copy of environment variables and the aliases out to NVRAM so they are read on the next reset.

sync

Syntax Description

This command has no arguments or keywords.

Defaults

This command has no default setting.

Command Types

ROM monitor command.

Command Modes

Normal.

Examples

This example shows how to use the **sync** command:

```
rommon 10 > sync
rommon 11 >
```

sysret

Use the **sysret** command to display the return information from the last booted system image.

sysret

Syntax Description

This command has no arguments or keywords.

Defaults

This command has no default setting.

Command Types

ROM monitor command.

Command Modes

Normal.

Usage Guidelines

The stack dump information displayed has a maximum of eight frames.

Examples

This example shows how to use the **sysret** command to display the return information from the last booted system image:

```
rommon 8 > sysret
System Return Info:
count: 19,  reason: user break
pc:0x60043754,  error address: 0x0
Stack Trace:
FP: 0x80007e78, PC: 0x60043754
FP: 0x80007ed8, PC: 0x6001540c
FP: 0x80007ef8, PC: 0x600087f0
FP: 0x80007f18, PC: 0x80008734
```

telnet

Use the **telnet** command to start a Telnet connection to a remote host.

telnet *host* [*port*]

Syntax Description

host	Name or IP address of the remote host to which you want to connect.
port	(Optional) Specific port connection on the remote host.

Defaults

This command has no default setting.

Command Types

Switch command.

Command Modes

Privileged.

Examples

This example shows how to open and close a Telnet session with the host elvis:

```
Console> (enable) telnet elvis
Trying 192.122.174.11...
Connected to elvis.
Escape character is '^]'.

UNIX(r) System V Release 4.0 (elvis)

login: fred
Password:
Last login: Thu Oct 15 09:25:01 from forster.cisc.rum
Sun Microsystems Inc.   SunOS 5.4       Generic July 1994
You have new mail.
% logout

Console> (enable)
```

Related Commands

disconnect

test snmp trap

Use the **test snmp trap** command to send an SNMP trap message to the trap receivers.

test snmp trap *trap_num* [*specific_num*]

Syntax Description

trap_num	Number of the trap.
specific_num	(Optional) Number of a predefined trap.

Defaults

This command has no default setting.

Command Types

Switch command.

Command Modes

Privileged.

Examples

This example shows how to run trap 0:

```
Console> (enable) test snmp trap 0
SNMP trap message sent. (4)
Console> (enable)
```

Related Commands

set snmp trap
show snmp

traceroute

Use the **traceroute** command to display a hop-by-hop path through an IP network from the Catalyst 6000 family switch to a specific destination host.

traceroute [**-n**] [**-w** *wait_time*] [**-i** *initial_ttl*] [**-m** *max_ttl*] [**-p** *dest_port*] [**-q** *nqueries*] [**-t** *tos*] *host* [*data_size*]

Syntax Description

-n	(Optional) Option that prevents **traceroute** from performing a DNS lookup for each hop on the path. Only numerical IP addresses are printed.
-w *wait_time*	(Optional) Option used to specify the amount of time (in seconds) that **traceroute** will wait for an ICMP response message. The allowed range for *wait_time* is from 1 to 300 seconds; the default is 5 seconds.
-i *initial_ttl*	(Optional) Option that causes **traceroute** to send ICMP datagrams with a TTL value equal to *initial_ttl* instead of the default TTL of 1. This causes **traceroute** to skip processing for hosts that are less than *initial_ttl* hops away.
-m *max_ttl*	(Optional) Option used to specify the maximum TTL value for outgoing ICMP datagrams. The allowed range for *max_ttl* is from 1 to 255; the default value is 30.
-p *dest_port*	(Optional) Option used to specify the base UDP destination port number used in **traceroute** datagrams. This value is incremented each time a datagram is sent. The allowed range for *dest_port* is from 1 to 65535; the default base port is 33434. Use this option in the unlikely event that the destination host is listening to a port in the default traceroute port range.
-q *nqueries*	(Optional) Option used to specify the number of datagrams to send for each TTL value. The allowed range for *nqueries* is from 1 to 1000; the default is 3.
-t *tos*	(Optional) Option used to specify the ToS to be set in the IP header of the outgoing datagrams. The allowed range for *tos* is from 0 to 255; the default is 0. Use this option to see if different types of service cause routes to change.
host	IP alias or IP address in dot notation (*a.b.c.d*) of the destination host.
data_size	(Optional) Number of bytes, in addition to the default of 40 bytes, of the outgoing datagrams. The allowed range is from 0 to 1420; the default is 0.

Defaults

Entering the **traceroute** *host* command without options sends three 40-byte ICMP datagrams with an initial TTL of 1, a maximum TTL of 30, a timeout period of 5 seconds, and a ToS specification of 0 to destination UDP port number 33434. For each host in the processed path, the initial TTL for each host and the destination UDP port number for each packet sent are incremented by one.

Command Types

Switch command.

Command Modes

Privileged.

Usage Guidelines

To interrupt **traceroute** after the command has been issued, press **Ctrl-C**.

The **traceroute** command uses the TTL field in the IP header to cause routers and servers to generate specific return messages. Traceroute starts by sending a UDP datagram to the destination host with the TTL field set to 1. If a router finds a TTL value of 1 or 0, it drops the datagram and sends back an ICMP "time-exceeded" message to the sender. The traceroute facility determines the address of the first hop by examining the source address field of the ICMP time-exceeded message.

To identify the next hop, traceroute again sends a UDP packet but this time with a TTL value of 2. The first router decrements the TTL field by 1 and sends the datagram to the next router. The second router sees a TTL value of 1, discards the datagram, and returns the time-exceeded message to the source. This process continues until the TTL is incremented to a value large enough for the datagram to reach the destination host (or until the maximum TTL is reached).

To determine when a datagram has reached its destination, traceroute sets the UDP destination port in the datagram to a very large value that the destination host is unlikely to be using. When a host receives a datagram with an unrecognized port number, it sends an ICMP "port unreachable" error to the source. This message indicates to the traceroute facility that it has reached the destination.

Catalyst 6000 family switches can participate as the source or destination of the **traceroute** command. However, because they are Layer 2 devices, Catalyst 6000 family switches do not examine the TTL field in the IP header and do not decrement the TTL field or send ICMP time-exceeded messages. Thus, a Catalyst 6000 family switch does not appear as a hop in the **traceroute** command output.

Examples

This example shows how to use the **traceroute** command to determine the path from the source to the destination host server10:

```
Console> (enable) traceroute server10
traceroute to server10.company.com (172.16.22.7), 30 hops max, 40 byte packets
 1  engineering-1.company.com (172.31.192.206)  2 ms  1 ms  1 ms
 2  engineering-2.company.com (172.31.196.204)  2 ms  3 ms  2 ms
 3  gateway_a.company.com (172.16.1.201)  6 ms  3 ms  3 ms
 4  server10.company.com (172.16.22.7)  3 ms  *  2 ms
Console> (enable)
```

Table 2-72 describes the fields in the **traceroute** command output.

Table 2-72 traceroute Command Output Fields

Field	Description
30 hops max, 40 byte packets	Maximum TTL value and the size of the ICMP datagrams being sent.
2 ms 1 ms 1 ms	Total time (in milliseconds) for each ICMP datagram to reach the router or host plus the time it took for the ICMP time-exceeded message to return to the host. An exclamation point following any of these values (for example, 20 ms !) indicates that the port-unreachable message returned by the destination had a TTL of 0 or 1. Typically, this occurs when the destination uses the TTL value from the arriving datagram as the TTL in its ICMP reply. The reply does not arrive at the source until the destination receives a traceroute datagram with a TTL equal to the number of hops between the source and destination.
3 ms * 2 ms	"*" indicates that the timeout period (default of 5 seconds) expired before an ICMP time-exceeded message was received for the datagram.

If **traceroute** receives an ICMP error message other than a time-exceeded or port-unreachable message, it prints one of the error codes shown in Table 2-73 instead of the round-trip time or an asterisk (*).

Table 2-73 traceroute Error Messages

ICMP Error Code	Meaning
!N	No route to host. The network is unreachable.
!H	No route to host. The host is unreachable.
!P	Connection refused. The protocol is unreachable.
!F	Fragmentation needed but do not fragment (DF) bit was set.
!S	Source route failed.
!A	Communication administratively prohibited.
?	Unknown error occurred.

Related Commands **ping**

unalias

Use the **unalias** command to remove the alias name and associated value from the alias list.

unalias *name*

Syntax Description

name	Name of the alias.

Defaults

This command has no default setting.

Command Types

ROM monitor command.

Command Modes

Normal.

Usage Guidelines

You must issue a **sync** command to save your change. Otherwise, the change is not saved and a **reset** removes your change.

Examples

This example shows how to use the **unalias** command to remove the **s** alias and then check to ensure it was removed:

```
rommon 5 > alias
r=repeat
h=history
?=help
b=boot
ls=dir
i=reset
k=stack
s=set
rommon 6 > unalias s
rommon 7 > alias
r=repeat
h=history
?=help
b=boot
ls=dir
i=reset
k=stack
rmmon 8 > s
monitor: command "s" not found
================================================================================
```

Related Commands

alias

undelete

Use the **undelete** command to recover a deleted file on a Flash memory device. The deleted file can be recovered using its index (because there could be multiple deleted files with the same name).

undelete *index* [[*m/*]*device***:**]

Syntax Description

index	Index number of the deleted file.
m/	(Optional) Module number of the supervisor engine containing the Flash device.
*device***:**	(Optional) Device where the Flash resides.

Defaults

This command has no default setting.

Command Types

Switch command.

Command Modes

Privileged.

Usage Guidelines

A colon (:) is required after the specified device. See the **dir—switch** command to learn the index number of the file to be undeleted. A file cannot be undeleted if a valid file with the same name exists. You must delete the existing file before you can undelete the target file. A file can be deleted and undeleted up to 15 times. To delete all deleted files permanently on a device, use the **squeeze** command.

Examples

This example shows how to recover the deleted file with index 1 and use the **show flash** command to confirm:

```
Console> (enable) undelete 1 bootflash:
Console> (enable)
Console> (enable) show flash
-#- ED --type-- --crc--- -seek-- nlen -length- -----date/time------ name
  1 .. ffffffff f3a3e7c1  607f80   24  6061822 Mar 03 2000 15:42:49 cat6000-sup.
5-5-1.bin
  2 .. ffffffff aa825ac6  be9234   24  6165044 Mar 21 2000 14:40:15 cat6000-sup.
5-5-1.bin

1428272 bytes available (6173904 bytes used)
Console> (enable)
```

Related Commands

delete
show flash
squeeze

unset=

Use the **unset=** command to remove a variable name from the variable list.

unset=*varname*

Syntax Description

varname	Name of the variable.

Defaults

This command has no default setting.

Command Types

ROM monitor command.

Command Modes

Normal.

Usage Guidelines

You must enter the **sync** command to save your change to NVRAM. Otherwise, the change is not saved and a **reset** removes your change.

Examples

This example shows how to use the **set** command to display the variable list, remove a variable name from the variable list, and then display the variable list to verify:

```
rommon 2 > set
PS1=rommon ! >
BOOT=
?=0
rommon 3 > unset=0
rommon 4 > set
PS1=rommon ! >
BOOT=
```

Related Commands

varname=

upload

Use the **upload** command to upload a software image to a network host.

upload *host file* [*mod*]

Syntax Description

host	IP address or IP alias of the host.
file	Name of the image file.
mod	(Optional) Number of the module from which to upload the image file.

Defaults

This command has no default setting.

Command Types

Switch command.

Command Modes

Privileged.

Usage Guidelines

This command is not supported by the Gigabit Ethernet switching module.

If you do not specify a number, the image is uploaded to module 1.

Examples

This example shows how to upload the supervisor image to the cat6000-sup.5-5-1.bin file on the mercury host:

```
Console> (enable) upload mercury cat6000-sup.5-5-1.bin 3
Upload Module 1 image to cat6000-sup.5-5-1.bin on mercury (y/n) [n]? y
/
Done.  Finished Network Upload.  (153908 bytes)
Console> (enable)
```

Related Commands

download

varname=

Use the *varname=* command to set the variable *VARNAME* to *varvalue*. Note that the syntax *varname=* sets the variable to a NULL string.

varname=value

Syntax Description

varname=	Name of the variable.
value	Any ROM monitor command.

Defaults

This command has no default setting.

Command Types

ROM monitor command.

Command Modes

Normal.

Usage Guidelines

Do not put a space before or after the equal (=) sign. If there are spaces, you must place the *value* in quotes. Spell out variable names in uppercase letters to make them conspicuous.

Examples

This example shows how to assign a variable name to a value:

```
rommon 1 > s=set
rommon 2 > s
PS1=rommon ! >
BOOT=
?=0
```

Related Commands

unset=

verify

Use the **verify** command to confirm the checksum of a file on a Flash device.

verify [[*m/*]*device***:**] *filename*

Syntax Description

m/	(Optional) Module number of the supervisor engine containing the Flash device.
device:	(Optional) Device where the Flash resides.
filename	Name of the configuration file.

Defaults

This command has no default setting.

Command Types

Switch command.

Command Modes

Privileged.

Usage Guidelines

A colon (:) is required after the specified device.

Examples

This example shows how to use the **verify** command:

```
Console> verify cat6k_r47_1.cbi
.....................................................
File cat6k_r47_1.cbi verified OK.
```

wait

Use the **wait** command to cause the CLI to pause for a specified number of seconds before executing the next command. This command might be included in a configuration file.

wait *seconds*

Syntax Description

seconds	Number of seconds for the CLI to wait before executing the next command.

Defaults

This command has no default setting.

Command Types

Switch command.

Command Modes

Normal.

Examples

This example shows how to pause the CLI for 5 seconds:

```
Console> wait 5



Console>
```

whichboot

Use the **whichboot** command to determine which file booted.

whichboot

Syntax Description

This command has no arguments or keywords.

Defaults

This command has no default setting.

Command Types

Switch command.

Command Modes

Privileged.

Examples

This example shows how to use the **whichboot** command:

```
Console> whichboot
Boot image name is 'slot0:cat6000-sup.5-5-1.bin'.
Console>
```

write

Use the **write** command set to upload the current configuration to the network or .

write network [**all**]

write terminal [**all**]

write {*host file*} [**all**] [**rcp**]

Syntax Description

network	Keyword to specify interactive prompting for the IP address or IP alias of the host and the filename to upload.
all	(Optional) Keyword to specify default and non-default configuration settings.
terminal	Keyword to display the non-default configuration file on the terminal.
host	IP address or IP alias of the host.
file	Name of the configuration file.
rcp	(Optional) Keyword to upload a software image to a host using rcp.

Defaults

This command has no default setting.

Command Types

Switch command.

Command Modes

Privileged.

Usage Guidelines

The **write terminal** command is exactly the same as the **show config** command. The **write** *host file* command is a shorthand version of the **write network** command.

You cannot use the **write network** command to upload software to the ATM module.

With the **write network** command, the file must already exist on the host (use the UNIX **touch** *filename* command to create it).

Examples

This example shows how to upload the system5.cfg file to the mercury host using the **write network** command:

```
Console> (enable) write network
IP address or name of host? mercury
Name of configuration file to write? system5.cfg
Upload configuration to system5.cfg on mercury (y/n) [y]? y
/
Done.  Finished Network Upload.  (9003 bytes)
Console> (enable)
```

This example shows how to upload the system5.cfg file to the mercury host using the **write** *host file* command as a shorthand method:

```
Console> (enable) write mercury system5.cfg
Upload configuration to system5.cfg on mercury (y/n) [y]? y
/
Done.  Finished Network Upload.  (9003 bytes)
Console> (enable)
```

This example shows how to use the **write terminal** command to display the configuration file on the terminal (partial display):

```
Console> (enable) write terminal
!
....
.............


.............

.............



begin
!
#version 4.2(0.24)VAI58 set password $1$FMFQ$HfZR5DUszVHIRhrz4h6V70
set enablepass $1$FMFQ$HfZR5DUszVHIRhrz4h6V70
set prompt Console>
set length 24 default
set logout 20
set banner motd ^C^C
!
#system
set system baud  9600
set system modem disable
set system name
set system location
set system contact
!
#power
set power redundancy enable
!
#snmp
set snmp community read-only      public
set snmp community read-write     private
set snmp community read-write-all secret
set snmp rmon disable
set snmp trap disable module

...
<<<< output truncated >>>>
```

Related Commands

show config
copy