Using the Command-Line Interface

The command-line interface (CLI) is a line-oriented user interface that provides commands for configuring, managing, and monitoring the GSS. To help you use these commands, this chapter provides you with information on:

- Using Command-Line Processing
- Command Modes
- Checking Command Syntax
- Using System Help
- Saving Configuration Changes
- Checking Command Syntax
- Controlling Command Output
- Using System Help
- Saving Configuration Changes

For details about accessing the GSS directly through the console port or remotely by using Telnet or Secure Shell (SSH), refer to the *Cisco Global Site Selector Getting Started Guide*, Chapter 2, Accessing the GSS CLI.
Using Command-Line Processing

GSS software commands are not case sensitive. You can abbreviate commands and parameters as long as they contain enough letters to be different from any other currently available commands or parameters. You can scroll through the last 20 commands stored in the history buffer and enter or edit the command at the prompt. Refer to Table 1-1 for a summary of keystroke combinations supported on the GSS CLI.

Table 1-1 Command-Line Processing Keystroke Combinations

<table>
<thead>
<tr>
<th>Keystroke Combination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ctrl-A</td>
<td>Jumps to the first character of the command line.</td>
</tr>
<tr>
<td>Ctrl-B or the Left Arrow key</td>
<td>Moves the cursor back one character.</td>
</tr>
<tr>
<td>Ctrl-C</td>
<td>Escapes and terminates prompts and tasks.</td>
</tr>
<tr>
<td>Ctrl-D</td>
<td>Deletes the character at the cursor.</td>
</tr>
<tr>
<td>Ctrl-E</td>
<td>Jumps to the end of the current command line.</td>
</tr>
<tr>
<td>Ctrl-F or the Right Arrow key(^1)</td>
<td>Moves the cursor forward one character.</td>
</tr>
<tr>
<td>Ctrl-K</td>
<td>Deletes from the cursor to the end of the command line.</td>
</tr>
<tr>
<td>Ctrl-L</td>
<td>Repeats the current command line on a new line.</td>
</tr>
<tr>
<td>Ctrl-N or the Down Arrow key(^1)</td>
<td>Enters the next command line in the history buffer.</td>
</tr>
<tr>
<td>Ctrl-P or the Up Arrow key(^1)</td>
<td>Enters the previous command line in the history buffer.</td>
</tr>
<tr>
<td>Ctrl-T</td>
<td>Transposes the character at the cursor with the character to the left of the cursor.</td>
</tr>
<tr>
<td>Ctrl-U; Ctrl-X</td>
<td>Deletes from the cursor to the beginning of the command line.</td>
</tr>
</tbody>
</table>
Table 1-1 Command-Line Processing Keystroke Combinations (continued)

<table>
<thead>
<tr>
<th>Keystroke Combination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ctrl-W</td>
<td>Deletes the last word typed.</td>
</tr>
<tr>
<td>Esc-B</td>
<td>Moves the cursor back one word.</td>
</tr>
<tr>
<td>Esc-D</td>
<td>Deletes from the cursor to the end of the word.</td>
</tr>
<tr>
<td>Esc-F</td>
<td>Moves the cursor forward one word.</td>
</tr>
<tr>
<td>Delete key or Backspace key</td>
<td>Erases a mistake when entering a command; reenter the command after using this key.</td>
</tr>
</tbody>
</table>

1. The arrow keys function only on ANSI-compatible terminals such as VT100s.

Command Modes

The GSS CLI supports the following major command modes:

- EXEC Mode
- Global Configuration Mode
- Interface Configuration Mode
- Global Server Load-Balancing Configuration Mode

In addition to these four major command modes, there are several subordinate command modes accessible from the global server load-balancing configuration mode. See the Command Mode Structure diagram that follows for more details.
Command Mode Structure

The following diagram shows the GSS command mode structure.

EXEC Mode (user)
  |
EXEC Mode (privileged)
  |
  Global Configuration Mode
  |
  Interface Configuration Mode
  |
  Global Server Load-Balancing Configuration Mode
  |
  Source Address List Configuration Mode
  |
  Domain List Configuration Mode
  |
  Answer VIP Configuration Mode
  |
  Answer Group Configuration Mode
  |
  Rule Configuration Mode
  |
  Sticky Properties Configuration Mode
  |
  Proximity Properties Configuration Mode

EXEC Mode

The two EXEC access levels are privileged and user. The enable and disable commands switch between the two levels. The user-level EXEC command line is available to users if they enter a valid password. The user-level EXEC commands are a subset of the privileged-level EXEC commands. The user-level EXEC prompt is the host name followed by a right angle bracket (>). The prompt for the privileged-level EXEC command line is the pound sign (#). To execute an EXEC command, enter the command at the EXEC system prompt and press the Return key.
In the following example, a user accesses the privileged-level EXEC command line from the user level:

gssm1.example.com> enable
gssm1.example.com#

Use the Delete or Backspace key sequences to edit commands when you type commands at the EXEC prompt.

As a shortcut, you can abbreviate commands to the fewest letters that make them unique. For example, the letters sho can be entered for the show command.

Certain EXEC commands display multiple screens with the following prompt at the bottom of the screen:

--More--

Press the Spacebar to continue the output, or press Return to display the next line. Press any other key to return to the prompt. Also, at the --More-- prompt, you can enter a ? to display the help message.

To leave EXEC mode, use the exit command at the system prompt:

gssm1.example.com# exit

See the “General Commands” section for detailed information on the EXEC-level commands.

Global Configuration Mode

To enter the global configuration mode, use the configure privileged EXEC command. You must be in global configuration mode to enter global configuration commands.

gssm1.example.com# configure
gssm1.example.com(config)#

To exit global configuration mode, use the end global configuration command:

gssm1.example.com(config)# end

You can also exit global configuration mode by entering the exit command or by pressing Ctrl-Z.

See the “Global Configuration Mode Commands” section for detailed information on the global configuration-level commands.
Interface Configuration Mode

To enter interface configuration mode, use the `interface` global configuration command. The following example demonstrates how to enter interface configuration mode:

```
gssml.example.com# config
gssml.example.com(config)# interface ethernet 0
```

To exit the interface configuration mode, enter `exit` to return to global configuration mode:

```
gssml.example.com(config-eth0)# exit
```

See the “Interface Configuration Mode Commands” section for detailed information on the interface configuration-level commands.

Global Server Load-Balancing Configuration Mode

To enter the global server load-balancing configuration mode, use the `gslb` configuration command. The following example demonstrates how to enter global server load-balancing configuration mode:

```
gssml.example.com# config
gssml.example.com(config)# gslb
gssml.example.com(config-gslb)# proximity group ProxyGroup1 ip 192.168.9.0 255.255.255.0
```

To exit the global server load-balancing configuration mode, enter `exit` to return to global configuration mode.

```
gssml.example.com(config-gslb)# exit
```

See the “Global Server Load-Balancing Configuration Mode Commands” section for detailed information on the global sever load-balancing configuration-level commands.
Checking Command Syntax

The user interface provides error isolation in the form of an error indicator, a caret symbol (^). The ^ symbol appears at the point in the command string where you have entered an incorrect command, keyword, or argument.

In the following example, a syntax error occurs in the process of setting the device clock. Context-sensitive help is then used to check the syntax for setting the clock and correct the mistake.

```
gssm1.example.com#clock 20:06:00 26 july 2003
^%
% Invalid input detected at '^' marker.
```

```
gssm1.example.com#clock ?
  set       Set the time and date
  timezone  Set timezone
```

The help output shows that the set keyword is required. Press the Up Arrow to automatically repeat the previous command. Add a space and question mark (?) to display the following additional arguments:

```
gssm1.example.com#clock set ?
  <0-23>:  Current Time (hh:mm:ss)
```

```
gssm1.example.com#clock set 20:00:00
% Incomplete command.
gssm1.example.com#clock set 20:00:00?
  <0-59>
```

```
gssm1.example.com#clock set 20:00:00 ?
  <1-31>     Day of Month
    april
    august
    december
    february
    january    Month of the Year
    july
    june
    march
    may
    november
    october
    september
```

```
gssm1.example.com#clock set 20:00:00 july ?
  <1-31>  Day of Month
```

```
gssm1.example.com#clock set 20:00:00 july 26 ?
  <1993-2035>  Year
```

```
gssm1.example.com#clock set 20:00:00 july 26 2004
```
Controlling Command Output

You can control the output of your GSS CLI commands (filtering it, or saving it to a file) using special operators that are added to your command syntax. The following table presents information on the various command options that allow you to control the output generated by GSS commands.

Keep the following considerations in mind when using the CLI output commands:

- You cannot use certain symbols (such as ‘, ;, or <) when using the | (pipe) or > (redirect) commands
- You can only use a single | (pipe) or a single > (redirect) command. The GSS software does not support the simultaneous use of both output commands.

Using the Pipe (|) Character

You can use the pipe (|) character to direct the output of any GSS command to a short list of operators: grep, sort, wc, and monitor. For example, to see all logs related to the GSS keepalive function, enter:

```
show logs | grep -i KALE
```

The following sections discuss the use of the grep, sort, wc, and monitor operators with the pipe (|) character.

Using grep

The | grep operator filters CLI command output to display only the output containing the lines of text that match the specified text. The following example lists only files containing “log” in a directory:

```
gssml.example.com>ls
platform.cfg
props.cfg
props.cfg.startup
runmode-comment
running.cfg
squid
sysMessages.log
syslog-messages.log
sysmsg
```
Controlling Command Output

sysout
system.log
tmp
tomcat
trace.log

gssm1.example.com>ls | grep log
sysMessages.log
syslog-messages.log
system.log
trace.log

For a detailed list of the options supported by the `grep` operator, refer to the documentation provided with the Linux operating system.

Using sort

The `sort` operator performs a sort of all files associated with a CLI command. The following example performs a reverse sort of all files appearing in a directory:

gssm1.example.com>ls
platform.cfg
props.cfg
props.cfg.startup
runmode-comment
running.cfg
squid
sysMessages.log
syslog-messages.log
sysmsg
sysout
system.log
tmp
tomcat
trace.log

gssm1.example.com>ls | sort -r
trace.log
system.log
sysout
sysmsg
syslog-messages.log
sysMessages.log
squid
tmp
tomcat
running.cfg
runmode-comment
props.cfg.startup
props.cfg
platform.cfg

For a detailed list of the options supported by the `sort` operator, refer to the documentation provided with the Linux operating system.

Using `wc`

The `| wc` operator displays the total number of bytes, words, or lines in a file. The following example shows the number of log messages currently in the main log file (gss.log):

```
gssm1.example.com> show logs | wc -l
  2236
```

For a detailed list of the options supported by the `wc` operator, refer to the documentation provided with the Linux operating system.

Using `monitor`

The `| monitor` operator continuously displays the output of a show command. The `monitor` operator invokes the Linux `watch` command, which updates the screen every two seconds, allowing you to watch the show command output change over time. The following example displays the output of the `show statistics keepalive answer type` command, updating the screen every two seconds with the latest output:

```
gssm1.example.com> show statistics keepalive answer type vip 192.168.200.1 | monitor
EEvery 2s: cli-stat.kalestat ip-address answer vip 0x101010b
Wed Feb  8 10:01:43 2006
IP: 192.168.200.1
GID: 17728 LID: 1
Status: ONLINE
No of Keepalives Configured: 1
Keepalive => 10.1.1.1
Status: ONLINE
Keepalive Type: kalap, Shared, Standard
Primary Circuit:          10.1.1.1
```
Using the Redirect (>) Character

You can use the Redirect (>) operator to redirect the output of a command to a file. You may only redirect to a file in the current working directory, as determined using the `pwd` command.

For example:

```
gssm1.example.com# show running-config>running-config.txt
```

Using System Help

You can obtain help when you enter CLI commands by using the following methods:

- To display a brief description of the context-sensitive help system, enter `help`.
- To list all commands for a command mode, enter a question mark (?) at the system prompt.
- To obtain a list of commands that start with a particular character set, enter an abbreviated command immediately followed by a question mark (?).

```
gssm1.example.com# cl?
clear  Clear the current time from the battery-backed clock
save   Save the current time into the battery-backed clock
set    Set the local time and date
```
- To list the command keywords or arguments, enter a space and a question mark (?) after the command:

```
gssm1.example.com# clock ?
clear  Clear the current time from the battery-backed clock
save   Save the current time into the battery-backed clock
set    Set the local time and date
```
Saving Configuration Changes

To avoid losing new configurations, save them to NVRAM using the `copy` or `write` commands, as shown in the following example:

```
gssmi.example.com# copy running-config startup-config
```

or

```
gssmi.example.com# write memory
```

Refer to the `copy running-config startup-config` command description in Chapter 2, Cisco Global Site Selector CLI Commands for more information.