



Troubleshooting

This chapter provides information on the following:

- [Using the Command-Line Interface \(CLI\), page 4-1](#)
- [Accessing Status Information, page 4-7](#)

Using the Command-Line Interface (CLI)

You can use Telnet or a console to connect to your Cisco SIP IP phone and use the command-line interface (CLI) to debug or troubleshoot the phone. [Table 4-1](#) shows the available CLI commands.

You will need the phone IP address to use the CLI in a Telnet session. To get the IP address of the phone, press **Settings** and select **Network Configuration**. You can then scroll down to IP Address and the address displays. The default Telnet password is “cisco.”

Table 4-1 CLI Commands

Command	Purpose
<pre>SIP Phone> clear {arp ethernet ip malloc tcp-stats}</pre>	<p>Clears the following, depending on keywords used:</p> <ul style="list-style-type: none"> • arp—Clears the Address Resolution Protocol (ARP) cache. • ethernet—Clears the network statistics. • ip—Clears the IP statistics. • malloc—Clears the memory allocation table. • tcp-stats—Clears the TCP statistics.
<pre>SIP Phone> debug {arp console-stall strlib malloc malloc-table sk-platform flash dsp vcm dtmf task-socket lsm fsm auth fim gsm cc cc-msg error sip-task sip-state sip-messages sip-reg-state dns config sntp sntp-packet http arp-broadcast xml-events xml-deck xml-vars xml-post}</pre>	<p>Shows detailed debug output when used with the following keywords:</p> <ul style="list-style-type: none"> • arp—Shows debug output for the ARP cache. • console-stall—Shows debug output for the console-stall driver output mode. • strlib—Shows debug output for the string library. • malloc—Shows debug output for memory allocation. • malloc-table—Enables the population of the memory allocation table. The table can be viewed with the show malloc-table command. • sk-platform—Shows debug output for the platform. • flash—Shows debug output for the Flash memory. • dsp—Shows debug output for DSP accesses. • vcm—Shows debug output for the voice channel manager (VCM), including tones, ringing, and volume. • dtmf—Shows debug output for DTMF relay. • task-socket—Shows socket task debug output. • lsm—Shows debug output for the Line State Manager. • fsm—Shows debug output for the Feature State Manager. • auth—Shows debug output for the SIP authorization state machine. • fim—Shows debug output for the Feature Interaction Manager. • gsm—Shows debug output for the Global State Manager. • cc—Shows debug output for call control. • cc-msg—Shows debug output for the call control messages.

Table 4-1 CLI Commands (continued)

Command	Purpose
debug command keywords (continued)	<ul style="list-style-type: none"> • error—Shows general error debug output. • sip-task—Shows debug output for the SIP task. • sip-state—Shows debug output for the SIP state machine. • sip-messages—Shows debug output for SIP messaging. • sip-reg-state—Shows debug output for the SIP registration state machine. • dns—Shows the DNS command-line interface (CLI) configuration; allows you to clear the cache and set servers. • config—Shows output for the config system command. • sntp—Shows debug output for Simple Network Time Protocol (SNTP). • sntp-packet—Displays full SNTP packet data. • http—Shows HTTP requests and responses. • arp-broadcast—Shows ARP broadcast messages. • xml-events—Shows XML events that are posted to the XML application chain. • xml-deck—Shows XML requests for XML cards and decks. • xml-vars—Shows XML content variables. • xml-post—Shows XML post strings. <p>Note Do not use the debug all command because it can cause the phone to become inoperable. This command is for use only by Cisco TAC personnel.</p>
SIP Phone> dns	<p>Manipulates the DNS system. The following arguments are used:</p> <ul style="list-style-type: none"> • -p—Prints out the DNS cache table. • -c—Clears out the DNS cache table. • -s ip-address—Sets the primary DNS server. • -b ip-address—Sets the first backup server.
SIP Phone> erase protflash	<p>Erases the protocol area of Flash memory. Forces the phone to reset its IP stack and request its configuration files again. This command can be used only if the <code>telnet_level</code> parameter is set to allow privileged commands to be executed.</p>
SIP Phone> exit	<p>Exits the Telnet or console session.</p>

Table 4-1 CLI Commands (continued)

Command	Purpose
SIP Phone> ping <i>ip-address number packet-size timeout</i>	Sends an Internet Control Message Protocol (ICMP) ping to a network address. You can use a dotted IP address or an alphanumeric address. The <i>number</i> argument specifies how many pings to send; the default value is 5. The <i>packetsize</i> argument defines the size of the packet; you can send any size packet up to 1480 bytes and the default packet size is 100. The <i>timeout</i> argument is measured in seconds and identifies how long to wait before the request times out; the default is 2.
SIP Phone> register { <i>option value</i> <i>line value</i> }	Instructs the Cisco SIP IP phone to register with the proxy server. The keywords and argument are as follows: option value —Specifies each line as registered or not. Valid entries are 0 (unregistered) and 1 (registered). line value —Registers the number of lines or specifies a backup proxy. The valid values are from 1 to 6 and backup. For example, if you input register 0 backup , the phone will register to the backup proxy.
SIP Phone> reset	Resets the phone line. This command can be used only if the <code>telnet_level</code> parameter is set to allow privileged commands to be executed.
SIP Phone> show { <i>arp</i> <i>debug</i> <i>ethernet</i> <i>ip</i> <i>strpool</i> <i>memorymap</i> <i>dump</i> <i>malloctable</i> <i>stacks</i> <i>status</i> <i>abort_vector</i> <i>flash</i> <i>dspstate</i> <i>rtp</i> <i>tcp</i> <i>lsm</i> <i>fsm</i> <i>fsmdef</i> <i>fsmcnf</i> <i>fsmxfr</i> <i>fim</i> <i>gsm</i> <i>register</i> <i>network</i> <i>config</i> <i>personaldir</i> <i>dialplan</i> <i>timers</i> }	Shows information about the SIP IP phone. The following keywords are used: <ul style="list-style-type: none"> • arp—Displays contents of the ARP cache. • debug—Shows which debug modes are activated. • ethernet—Shows the network statistics. • ip—Displays the IP packet statistics. • strpool—Shows the string library pool of strings. This command can be used only if the <code>telnet_level</code> parameter is set to allow privileged commands to be executed. • memorymap—Shows the memory mapping table, including free, used, and wasted blocks. • dump—Displays a dump of the memory contents. This command can be used only if the <code>telnet_level</code> parameter is set to allow privileged commands to be executed. • malloctable—Shows the memory allocation table. • stacks—Shows tasks and buffer lists. • status—Shows the current phone status, including errors. • abort_vector—Shows the address of the last recorded abort vector.

Table 4-1 CLI Commands (continued)

Command	Purpose
show command keywords continued	<ul style="list-style-type: none"> • flash—Shows Flash memory information. • dspstate—Shows the DSP status, including whether the DSP is ready, the audio mode, whether keepalive pending is turned on, and the ringer state. • rtp—Shows packet statistics for the RTP streams. • tcp—Shows the status of TCP ports, including the state (listen or closed) and the port number. • lsm—Shows the current status of the Line Manager control blocks. • fsm—Shows the current status of the Feature State function control blocks. • fsmdef—Shows the current status of the default Feature State Manager data control blocks. • fsmcnf—Shows the current status of the Conference Feature State Manager call control blocks. • fsmxfr—Shows the current status of the Transfer Feature State Manager transfer control blocks. • fim—Shows the current status of the Feature Interaction Manager control blocks (interface control blocks and state control blocks). • gsm—Turns on debugging for vcm, lsm, fim, fsm, and gsm. • register—Shows the current registration status of SIP lines. • network—Shows network information, such as phone platform, DHCP server, phone IP address and subnet mask, default gateway, address of the TFTP server, phone MAC address, domain name, and phone name. • config—Shows the current Flash configuration, including network information, phone label and password, SNTP server address, DST information, time and date format, and input and output port numbers. • personaldir—Displays the current contents of the personal directory. This command can be used only if the telnet_level parameter is set to allow privileged commands to be executed. • dialplan—Shows the phone dial plan. • timers—Shows the current status of the platform timers.

Table 4-1 CLI Commands (continued)

Command	Purpose
SIP Phone> test { open close key onhook offhook show hide }	<p>Accesses the remote call test interface, allowing you to control the phone from a remote site. To use this feature, enter the test open command. To prevent use of this feature, enter the test close command. This command can be used only if the <code>telnet_level</code> parameter is set to allow privileged commands to be executed.</p> <p>The following commands are available:</p> <ul style="list-style-type: none"> • test key—When a test session is open, you can simulate key presses using the test key k1 k2 k3...k12 command, where k1 through k13 represent the following key names: <ul style="list-style-type: none"> - voldn—Volume down - volup—Volume up - headset—Headset - spkr—Speaker - mute—Mute - info—Info - msgs—Messages - serv—Services - dir—Directories - set—Settings - navup—Navigate up - navdn—Navigate down <p>The keys 0 through 9, #, and * may be entered in continuous strings to better express typical dialing strings. A typical command would be test ky 23234.</p> <ul style="list-style-type: none"> • test onhook—Simulates a handset onhook event. • test offhook—Simulates a handset offhook event. • test show—Shows test feedback. • test hide—Hides test feedback.

Table 4-1 CLI Commands (continued)

Command	Purpose
SIP Phone> <code>tty {echo {on off} mon timeout value kill session msg}</code>	<p>Controls the Telnet system. The arguments and keywords are as follows:</p> <ul style="list-style-type: none"> • echo—Controls local echo. • mon—Sends all debug output to both the console and Telnet sessions. • timeout value—Sets the Telnet session timeout period based on the value. The <i>value</i> range is from 0 to 65535. • kill session—Tears down the Telnet session specified by the <i>session</i> argument. • msg—Send a message to another terminal logged into the phone; for example, you can send a message telling everyone else that is logged in to log off.
SIP Phone> <code>traceroute ip-address [ttl]</code>	<p>Initiates a traceroute session from the console or from a Telnet session. Traceroute shows the route that IP datagrams follow from the SIP IP phone to the specified IP address. The arguments are as follows:</p> <ul style="list-style-type: none"> • <i>ip-address</i>—The dotted IP address or alphanumeric address (host name) of the host to which you are sending the traceroute. • <i>ttl</i>—The time-to-live value, or the number of routers (hops) through which the datagram can pass. The default value is 30.
SIP Phone> <code>undebg {arp console-stall strlib malloc malloc-table sk-platform flash vcm dtmf task-socket lsm fsm auth fim gsm cc cc-msg softkeys error sip-task sip-state sip-messages sip-reg-state dns config sntp sntp-packet}</code>	<p>Turns off debugging.</p>

Accessing Status Information

There are several types of status information that you can access via the **settings** key. The information that you can obtain via the **settings** key can aid in system management. To access status information, select **settings** and then select **Status** from the Settings menu. From the Status menu, the following three options are available:

- Status Messages—Displays diagnostic messages.
- Network Status—Displays performance messages.
- Firmware Version—Displays information about the current firmware version on the phone.

In addition to the status messages available via the Setting Status menu, you can also obtain status messages for a current call.

Viewing Status Messages

To view status messages that you can use to diagnose network problems, perform the following steps:

-
- Step 1** Press the **Settings** key. The Settings menu appears.
 - Step 2** Highlight **Status**.
 - Step 3** Press the **Select** soft key. The Setting Status menu appears.
 - Step 4** Highlight **Status Messages**.
 - Step 5** Press the **Select** soft key. The Status Messages panel appears.
 - Step 6** To exit the Status Messages panel, press the **Exit** soft key.
-

Viewing Network Statistics

To view statistical information about the phone and network performance, perform the following steps:

-
- Step 1** Press the **Settings** key. The Settings menu appears.
 - Step 2** Highlight **Status**.
 - Step 3** Press the **Select** soft key. The Setting Status menu appears.
 - Step 4** Highlight **Network Statistics**.
 - Step 5** Press the **Select** soft key. The Network Statistics panel appears.

The following information is displayed on this panel:

- Rcv—Number of packets received by the phone; not through the switch.
- Xmit—Number of packets sent by the phone; not through the switch.
- REr—Number of packets received by the phone that contained errors.
- BCast—Number of broadcast packets received by the phone.
- Phone State Message—TCP messages indicating the state of the phone. Possible messages are:
 - Phone Initialized—TCP connection has not gone down since the phone was powered on.
 - Phone Closed TCP—TCP connection was closed by the phone.
 - TCP Timeout—TCP connection was closed because of a retry timeout.
 - Error Code—Error messages indicating unusual reasons the TCP connection was closed.
- Elapsed Time—Length of time (in days, hours, minutes, and seconds) since the last power cycle.
- Port 0 Full, 100—Indicates that the network is in a linked state and has autonegotiated a full-duplex 100-Mbps connection.
- Port 0 Half, 100—Indicates that the network is in a linked state and has autonegotiated a half-duplex 100-Mbps connection.
- Port 0 Full, 10—Indicates that the network is in a linked state and has autonegotiated a full-duplex 10-Mbps connection.
- Port 0 Half, 10—Indicates that the network is in a linked state and has autonegotiated a half-duplex 10-Mbps connection.

- Port 1 Full, 100—Indicates that the network is in a linked state and has autonegotiated a full-duplex 100-Mbps connection.
- Port 1 Half, 100—Indicates that the network is in a linked state and has autonegotiated a half-duplex 100-Mbps connection.
- Port 1 Full, 10—Indicates that the network is in a linked state and has autonegotiated a full-duplex 10-Mbps connection.
- Port 1 Half, 10—Indicates that the network is in a linked state and has autonegotiated a half-duplex 10-Mbps connection.

Step 6 To exit the Network Statistics panel, press the **Exit** soft key.



Note

To reset the values displayed on the Network Statistics panel, power the phone off and on.
