



Monitoring and Maintaining

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 monitor and maintain 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 telnet_level 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 { option value line value }	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 { arp debug ethernet ip strpool memorymap dump malloctable stacks status abort_vector flash dspstate rtp tcp lsm fsm fsmdef fsmcnf fsmxfr fim gsm register network config personaldir dialplan timers }	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> tty { echo { on off } mon timeout <i>value</i> kill session msg }	<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 <i>value</i>—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> traceroute <i>ip-address</i> [<i>tvl</i>]	<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>tvl</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> 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 }	Turns off debugging.

Accessing Status Information

There are several types of status information that you can access using the **settings** key. The information that you can obtain using 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.

In addition to the status messages available using 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:

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- 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.
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Viewing Network Statistics

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

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- 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.

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.
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Viewing Network Statistics

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

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- 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.
