Monitoring Cisco SIP IP Phones

This chapter provides information on the following:

- How to Use the Command-Line Interface to Monitor Phones, page 5-1
- How to Use the Phone Menus to Access Status Information, page 5-18

How to Use the Command-Line Interface to Monitor Phones

You can use Telnet or a console to connect to your Cisco IP Phone 7960G/7940G, and you can and use the command-line interface (CLI) to debug or troubleshoot the phone. Table 5-1 shows the available CLI commands and their syntax.

<table>
<thead>
<tr>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>You need the phone IP address to use the CLI in a Telnet session. To get the IP address, select Settings &gt; Network Configuration &gt; IP Address. The default Telnet password is “cisco.”</td>
</tr>
<tr>
<td>You can conduct only two Telnet sessions at any time.</td>
</tr>
<tr>
<td>The phone cannot originate a Telnet session to another address.</td>
</tr>
</tbody>
</table>

Table 5-1 describes the available commands.
### Table 5-1 CLI Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **SIP Phone> clear {arp | ethernet | ip-stats | malloc | mwi | reset-log | tcp-stats}** | Clears the following, depending on the keywords used:  
- `arp`—Address Resolution Protocol (ARP) cache.  
- `ethernet`—Network statistics.  
- `ip-stats`—IP statistics.  
- `malloc`—Memory allocation.  
- `mwi`—Message-waiting indicator.  
- `reset-log`—Cumulative log that has been collected by the phone.  
- `tcp-stats`—TCP statistics. |
| **SIP Phone> debug {arp | console-stall | cpr-error | cdp | dsp-keepalive | strlib | malloc | malloctable | sk-platform | flash | dsp | vcm | dtmf | task-socket | sip-task | sip-state | sip-messages | sip-reg-state | sip-trx | dns | config | sntp | sntp-packet | http | arp-broadcast | xml-events | xml-deck | xml-vars | xml-post}** | Shows detailed debug output for the following, depending on the keywords used:  
- `arp`—ARP cache.  
- `console-stall`—Console-stall driver output mode.  
- `cpr-error`—Cisco Portable Runtime error conditions  
- `cdp`—Cisco Discovery Protocol.  
- `dsp-keepalive`—Messaging between the DSP and the main phone control.  
- `strlib`—String library.  
- `malloc`—Memory allocation.  
- `malloctable`—Memory allocation table. The table can be viewed with the `show malloctable` command.  
- `sk-platform`—Platform.  
- `flash`—Flash memory information.  
- `dsp`—Digital signal processor (DSP) accesses.  
- `vcm`—Voice Channel Manager (VCM), including tones, ringing, and volume.  
- `dtmf`—Dual-tone multifrequency (DTMF) relay.  
- `task-socket`—Socket task.  
- `lsm`—Line State Manager.  
- `fsm`—Feature State Manager.  
- `auth`—SIP authorization state machine.  
- `fim`—Feature Interaction Manager.  
- `gsm`—Global State Manager.  
- `cc`—Call control.  
- `cc-msg`—Call-control messages.  
- `error`—General error debug output. |
How to Use the Command-Line Interface to Monitor Phones

Table 5-1 CLI Commands (continued)

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>debug</td>
<td>command keywords (continued)</td>
</tr>
<tr>
<td></td>
<td>• sip-task—SIP task.</td>
</tr>
<tr>
<td></td>
<td>• sip-state—SIP state machine.</td>
</tr>
<tr>
<td></td>
<td>• sip-trx—SIP transaction manager.</td>
</tr>
<tr>
<td></td>
<td>• sip-messages—SIP messaging.</td>
</tr>
<tr>
<td></td>
<td>• sip-reg-state—SIP registration state machine.</td>
</tr>
<tr>
<td></td>
<td>• dns—DNS command-line interface (CLI) configuration; allows you to clear the cache and set servers.</td>
</tr>
<tr>
<td></td>
<td>• config—Output for the config system command.</td>
</tr>
<tr>
<td></td>
<td>• sntp—Simple Network Time Protocol (SNTP).</td>
</tr>
<tr>
<td></td>
<td>• sntp-packet—Full SNTP packet data.</td>
</tr>
<tr>
<td></td>
<td>• http—HTTP requests and responses.</td>
</tr>
<tr>
<td></td>
<td>• arp-broadcast—ARP broadcast messages.</td>
</tr>
<tr>
<td></td>
<td>• xml-events—XML events that are posted to the XML application chain.</td>
</tr>
<tr>
<td></td>
<td>• xml-deck—XML requests for XML cards and decks.</td>
</tr>
<tr>
<td></td>
<td>• xml-vars—XML content variables.</td>
</tr>
<tr>
<td></td>
<td>• xml-post—XML post strings.</td>
</tr>
</tbody>
</table>

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.

Note To turn the debugging off, use the undebug command (works just as does the no debug command).

SIP Phone> **dns** (-p | -c | -s ip-address | -b ip-address | hostname) Manipulates the DNS. Keywords and arguments are as follows:
- **-p**—Prints the DNS cache table.
- **-c**—Clears the DNS cache table.
- **-s ip-address**—Sets the primary DNS server.
- **-b ip-address**—Sets the first backup server.
- **hostname**—perform a DNS lookup for server indicated.

SIP Phone> **erase protflash** 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.

SIP Phone> **exit** Exits the Telnet or console session.
## Table 5-1 CLI Commands (continued)

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **SIP Phone> ping ip-address number packet-size timeout** | Sends an Internet Control Message Protocol (ICMP) ping to a network address. The arguments are as follows:  
  - `ip-address`—Dotted IP address or alphanumeric address host name to ping.  
  - `number`—How many pings to send. Default is 5.  
  - `packet size`—Size of the packet, in bytes. Range is 1 to 1480. Default is 100.  
  - `timeout`—How long, in seconds, to wait before a request times out. Default is 2. |
| **SIP Phone> register {option value | line value}** | Instructs the Cisco IP 7960G/7940G to register with the proxy server. The keywords and argument are as follows:  
  - `option value`—Whether each line is registered. Valid values are 0 (unregistered) and 1 (registered).  
  - `line value`—Registers the number of lines or specifies a backup proxy. Valid values are 1 to 6 and backup (0). For example, if you enter 0, the phone registers to the backup proxy. |
| **SIP Phone> reset** | Resets the phone line. This command can be used only if the telnet_level parameter is set to allow privileged commands to be executed. |
| **SIP Phone> show {arp | cdp | debug | ethernet | ip | strpool | memorymap | malloc-table | stacks | status | abort_vector | flash | dspstate | rtp | tcp | lem | fsm | fsmdef | fsmcnf | fsmfr | fim | gsm | register | reset-log | network | config | personaldir | dialplan | timers} [running | all]** | Shows information about the SIP IP phone, depending on the keywords used:  
  - `arp`—Contents of the ARP cache.  
  - `cdp`—Shows VLAN and Voice-VLAN information gathered from the network by the phone using Cisco Discovery Protocol.  
  - `debug`—Which debug modes are activated.  
  - `ethernet`—Network statistics.  
  - `ip`—IP packet statistics.  
  - `strpool`—String library pool of strings. This command can be used only if the telnet_level parameter is set to allow privileged commands to be executed.  
  - `memorymap`—Memory mapping table, including free, used, and wasted blocks.  
  - `malloc-table`—Memory allocation table.  
  - `stacks`—Tasks and buffer lists.  
  - `status`—Current phone status, including errors.  
  - `abort_vector`—Address of the last recorded abort vector. |
Table 5-1 CLI Commands (continued)

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>show command keywords (continued)</td>
<td>• <strong>flash</strong>—Flash memory information.</td>
</tr>
<tr>
<td></td>
<td>• <strong>dpstate</strong>—DSP status, including whether the DSP is ready, the audio mode, whether keepalive pending is turned on, and the ringer state.</td>
</tr>
<tr>
<td></td>
<td>• <strong>rtp</strong>—Packet statistics for the RTP streams.</td>
</tr>
<tr>
<td></td>
<td>• <strong>tcp</strong>—Status of TCP ports, including the state (listen or closed) and the port number.</td>
</tr>
<tr>
<td></td>
<td>• <strong>lsm</strong>—Current status of the Line State Manager control blocks.</td>
</tr>
<tr>
<td></td>
<td>• <strong>fsm</strong>—Current status of the Feature State Manager function control blocks.</td>
</tr>
<tr>
<td></td>
<td>• <strong>fsmdef</strong>—Current status of the Default Feature State Manager data control blocks.</td>
</tr>
<tr>
<td></td>
<td>• <strong>fsmcnf</strong>—Current status of the Conference Feature State Manager call control blocks.</td>
</tr>
<tr>
<td></td>
<td>• <strong>fsmxfr</strong>—Current status of the Transfer Feature State Manager transfer control blocks.</td>
</tr>
<tr>
<td></td>
<td>• <strong>fim</strong>—Current status of the Feature Interaction Manager control blocks (interface control blocks and state control blocks).</td>
</tr>
<tr>
<td></td>
<td>• <strong>gsm</strong>—Global State Manager status that includes these parameters: vcm, lsm, fim, fsm, and gsm.</td>
</tr>
<tr>
<td></td>
<td>• <strong>register</strong>—Current registration status of SIP lines.</td>
</tr>
<tr>
<td></td>
<td>• <strong>reset-log</strong>—Debugging information about the internal state of the phone at the time that it was last restarted.</td>
</tr>
<tr>
<td></td>
<td>• <strong>network</strong>—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.</td>
</tr>
<tr>
<td></td>
<td>• <strong>config</strong>—Current flash memory configuration, including network information, phone label and password, SNTP server address, DST information, time and date format, and input and output port numbers.</td>
</tr>
<tr>
<td></td>
<td>• <strong>personaldir</strong>—Current contents of the personal directory.</td>
</tr>
<tr>
<td></td>
<td>This command can be used only if the telnet_level parameter is set to allow privileged commands to be executed.</td>
</tr>
<tr>
<td></td>
<td>• <strong>dialplan</strong>—Phone dial plan.</td>
</tr>
<tr>
<td></td>
<td>• <strong>timers</strong>—Current status of the platform timers.</td>
</tr>
<tr>
<td></td>
<td>• (Optional) <strong>running</strong>—Shows the running configuration.</td>
</tr>
<tr>
<td></td>
<td>• <strong>all</strong>—Shows all.</td>
</tr>
</tbody>
</table>
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Table 5-1  CLI Commands (continued)

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| SIP Phone> test {open | close | key {k1 ... k12} | onhook | offhook | show | hide) | Accesses the remote call test interface, allowing you to control the phone from a remote site. This command can be used only if the telnet_level parameter is set to allow privileged commands to be executed. Keywords are as follows:
  - open—Enables the use of the test functionality.
  - close—Disables the use of the test functionality.

  **test command keywords (continued)**

  - **key**—Simulates key presses. The arguments k1 through k12 are as follows:
    - k1—voldn—Volume down
    - k2—volup—Volume up
    - k3—headset—Headset
    - k4—spkr—Speaker
    - k5—mute—Mute
    - k6—info—Info
    - k7—msgs—Messages
    - k8—serv—Services
    - k9—dir—Directories
    - k10—set—Settings
    - k11—navup—Navigate up
    - k12—navdn—Navigate down

  **Note** You can enter 0 through 9, #, and * in continuous strings to better express typical dialing strings. A typical command is **test key 23234**.

  - **onhook**—Simulates a handset on-hook event.
  - **offhook**—Simulates a handset off-hook event.
  - **show**—Shows test feedback.
  - **hide**—Hides test feedback.
How to Use the Command-Line Interface to Monitor Phones

Output Examples

Phone Status
The following sample output shows that the proxy servers are not configured:

```
Phone1> show status
Current Phone Status
-----------------------------
W351 unprovisioned proxy_emergency
W350 unprovisioned proxy_backup
```

Telnet Session
The following sample output shows the initial Telnet session using a UNIX server:

```
UNIX% telnet 10.18.10.10
Trying 10.18.10.10...
Connected to 10.18.10.10.
Escape character is '^]'.
Password :******
```
TTY Status

The following sample output shows TTY status:

Phone1> tty echo on
Current States:
  echo is 1
  mon is 1
  timeout is 3600 seconds
  prompt is anyone>
  level is 2 - Privileged

String Pool Configuration

The following sample output shows a string for each node:

Phone1> show strpool

<table>
<thead>
<tr>
<th>node_id</th>
<th>refcount</th>
<th>string</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>sip:48@10.18.192.230</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>sip:48@10.18.192.230</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>sip:47@10.18.192.230</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>sip:47@10.18.192.230</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>sip:46@10.18.192.230</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>sip:46@10.18.192.230</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>sip:duval@10.18.192.230</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>sip:duval@10.18.192.230</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>sip:44@10.18.192.230</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>sip:44@10.18.192.230</td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>sip:43@10.18.192.230</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>sip:43@10.18.192.230</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
<td>1234</td>
</tr>
<tr>
<td>14</td>
<td>1</td>
<td>25640</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
<td>26295@10.18.192.230</td>
</tr>
<tr>
<td>16</td>
<td>1</td>
<td>3333</td>
</tr>
<tr>
<td>17</td>
<td>1</td>
<td>user33</td>
</tr>
<tr>
<td>18</td>
<td>1</td>
<td>3434</td>
</tr>
<tr>
<td>19</td>
<td>1</td>
<td>user34</td>
</tr>
<tr>
<td>20</td>
<td>1</td>
<td>3636</td>
</tr>
<tr>
<td>21</td>
<td>1</td>
<td>user36</td>
</tr>
<tr>
<td>22</td>
<td>1</td>
<td>3737</td>
</tr>
<tr>
<td>23</td>
<td>1</td>
<td>user37</td>
</tr>
<tr>
<td>24</td>
<td>1</td>
<td>3838</td>
</tr>
<tr>
<td>25</td>
<td>1</td>
<td>user38</td>
</tr>
<tr>
<td>26</td>
<td>1</td>
<td>53010.18.192.230</td>
</tr>
<tr>
<td>27</td>
<td>1</td>
<td>user53</td>
</tr>
<tr>
<td>28</td>
<td>1</td>
<td>54</td>
</tr>
<tr>
<td>29</td>
<td>1</td>
<td>user54</td>
</tr>
<tr>
<td>30</td>
<td>1</td>
<td>5550100</td>
</tr>
<tr>
<td>31</td>
<td>1</td>
<td>user1</td>
</tr>
<tr>
<td>32</td>
<td>1</td>
<td>5550101</td>
</tr>
<tr>
<td>33</td>
<td>1</td>
<td>5550102</td>
</tr>
<tr>
<td>34</td>
<td>1</td>
<td>Fid Mantel</td>
</tr>
<tr>
<td>35</td>
<td>1</td>
<td>91955550103</td>
</tr>
<tr>
<td>36</td>
<td>1</td>
<td>ciscotest@abccompany</td>
</tr>
<tr>
<td>37</td>
<td>1</td>
<td>Fid Mantel</td>
</tr>
<tr>
<td>38</td>
<td>1</td>
<td><a href="mailto:croquet@abc.sip.com">croquet@abc.sip.com</a></td>
</tr>
<tr>
<td>39</td>
<td>1</td>
<td><a href="mailto:handball@abc.sip.com">handball@abc.sip.com</a></td>
</tr>
<tr>
<td>40</td>
<td>1</td>
<td>PGA</td>
</tr>
<tr>
<td>41</td>
<td>1</td>
<td>91955550104</td>
</tr>
<tr>
<td>42</td>
<td>1</td>
<td>5550105</td>
</tr>
</tbody>
</table>
Memory Map

The following sample output shows the memory usage:

```
Phone1> show memorymap

===== MEMORY MAP START =====
free blocks : 11, free block space: 83500, largest free block: 73908
used blocks : 302, used block space: 34944, largest used block: 4016
wasted block: 1252, str_lib space : 4864
used space excluding str_lib space : 30080

===== MEMORY MAP END =====
```
Abort Vector
The following sample output shows the last recorded abort:

```
Phone1> show abort_vector

The Last Abort Vector Recorded [0x0]
```

Flash Memory
The following sample output shows the image version that is loaded in flash memory:

```
Phone1> show flash

APP1:  loadid:POS3-05-8-10  apid:PAS3ARM1  flags:80000001  Comp Chksum: OK
       chksum:00003371  applen:00078518  cmpchksum:00005e27  cmplen:0005ce54
APP2:  loadid:POS3-05-8-10  apid:PAS3ARM1  flags:80000001  Comp Chksum: OK
       chksum:00003371  applen:00078518  cmpchksum:00005e27  cmplen:0005ce54
DSP:   id:PS03AT36  flags:00000000  Chksum: OK
       chksum:00001c7a  applen:00016d90  cmpchksum:00000000  cmplen:00000000
```

DSP Status
The following sample output shows the status of the DSPs:

```
Phone1> show dspstate

DSP State                             : READY
DSP Audio mode                        : None
DSP IsStreaming flag                  : False
Keep Alive Pending                    : False
Ringer state                          : Off
   number : 2
   volume (dB) : -17
Progress tone state                   : Off
Number of DSP resets since boot       : 0
Times DSP was not able to get a buffer: 0
Volumes.. (Range 0 -> 248)
   Speaker - 128
   Headset - 144
   Handset - 144
   Ringer - 56
```

RTP Status
The following sample output shows the status of RTP:

```
Phone1> show rtp

RTP Packets Rx: 0
RTP Packets Tx: 0
anyone> show ethernet ?
Ethernet Mib:
```
```plaintext
ResErr 00000007, RcvCnt 00001831, RcvErr 00000000, DrpCnt 00000007
BrdCst 00001205, TooLng 00000002, TxCnt 00000398, TxQCnt 00000000
TxQue 00000000, TxQMax 00000000, TxxCol 00000000, TxFram 00000398

Overflow Counters...
   UDP 00000000, ICMP 00000000, NonIP 00000000, TCP 00000000
   CDP 00000000, Unknown 00000000, Arp 00000000

Use 'clear ethernet' to clear data
```
TCP Status

The following sample output shows the status of TCP:

```
Phone1> show tcp

Current TCP status...
TCP MIB
Listeners
Slot   State    Port
  1 LISTEN   5888
  2 CLOSED   0000
  3 CLOSED   0000
  4 CLOSED   0000
  5 CLOSED   0000
  6 CLOSED   0000
  7 CLOSED   0000
  8 CLOSED   0000

Connections
Conn   State       Rem Address    RPort  LPort
  1 ESTABLISHED 10.70.67.166  56455  00023
  2 LISTEN       10.70.67.166  56451  00023
  3 CLOSED       0.0.0.0        00000  00000
  4 CLOSED       0.0.0.0        00000  00000
  5 CLOSED       0.0.0.0        00000  00000
  6 CLOSED       0.0.0.0        00000  00000
  7 CLOSED       0.0.0.0        00000  00000
  8 CLOSED       0.0.0.0        00000  00000

Statistics
ActOpens:00000001  PsvOpen:00000001  AttFail:00000000  EstRsts:00000000
CurrEstab:00000001  InSegs:0000530   OutSegs:0000330  RetransSegs:00000000
OutPeer:0000011    InErrs:00000000  OutRsts:0000001  PktBufErrs:00000000

Telnet Stats
Conn#1 Throttles:00000000
Conn#2 Throttles:00000000
```

Dial-Plan Configuration

The following sample output shows the dial plan:

```
Phone1> show dialplan

Dialplan is....
01. Pattern: 0  Rewrite:
    Timeout: 0001  UserMode: Phone  RouteMode: Default
02. Pattern: 9.011* Rewrite:
    Timeout: 0006  UserMode: Phone  RouteMode: Default
03. Pattern: 9.0   Rewrite:
    Timeout: 0008  UserMode: Phone  RouteMode: Default
04. Pattern: 9.11 Rewrite:
    Timeout: 0000  UserMode: Phone  RouteMode: Emergency
05. Pattern: w! Rewrite:
    Timeout: 0001  UserMode: Phone  RouteMode: Emergency
06. Pattern: 9..11 Rewrite:
    Timeout: 0000  UserMode: Phone  RouteMode: Default
07. Pattern: 9.101............ Rewrite:
    Timeout: 0000  UserMode: Phone  RouteMode: Default
08. Pattern: 9.10......... Rewrite:
    Timeout: 0000  UserMode: Phone  RouteMode: Default
09. Pattern: 9.10* Rewrite:
    Timeout: 0006  UserMode: Phone  RouteMode: Default
10. Pattern: 9,1......... Rewrite:
   Timeout: 0000 UserMode: Phone RouteMode: Default
11. Pattern: 9000 Rewrite:
    Timeout: 0000 UserMode: Phone RouteMode: Default
12. Pattern: 9,........ Rewrite:
    Timeout: 0000 UserMode: Phone RouteMode: Default
13. Pattern: ........ Rewrite: 91%s
    Timeout: 0015 UserMode: Unspecified RouteMode: Default

**Personal Directory Configuration**

The following sample output shows the entries in the personal directory of the phone:

**Phone1** > `show personaldir`

```
0:  28  (L1/T45) 2003/2/27 17:04:29 "1234"
1: 1667 (L1/T45) 2003/7/8 15:10:15 "3333"
2:  42  (L2/T45) 2003/7/8 15:10:23 "3434"
3:  20  (L4/T45) 2003/7/8 15:08:42 "3636"
4:  8   (L5/T45) 2003/7/8 15:08:49 "3737"
5:  35  (L6/T45) 2003/7/8 15:09:02 "3838"
6: 326  (L1/T45) 2003/7/8 11:08:53 "53@10.10.10.0"
7:  65  (L1/T45) 2003/6/26 14:42:49 "54"
8:  53  (L1/T45) 2003/3/31 17:04:17 "5550100"
9:  6   (L1/T45) 2002/12/20 13:42:50 "5550110"
Kazoo-9 Phone
10: 13 (L1/T45) 2002/8/29 16:38:14 "9195550111"
11:  6  (L1/T45) 2002/3/1 12:37:29 "9195550111@abc.com"
Fid Mantel
12:  6  (L1/T45) 2002/1/7 17:42:10 "9195550111"
13:  6  (L1/T45) 2003/7/9 17:07:54 "5550111"
14:  5  (L1/T45) 2002/3/8 17:19:59 "ciscotest@abc.com"
Fid Mantel
15: 41  (L3/T45) 2000/1/5 15:56:17 "croquet@abc.sip.com"
16: 77  (L3/T45) 2000/1/5 15:55:48 "handball@abc.sip.com"
PGA
17:  4  (L1/T45) 2002/5/13 13:16:57 "5550111"
18: 25  (L1/T45) 2002/7/25 10:57:02 "5550111"
5550100
19: 153 (L1/T45) 2002/7/24 15:06:23 "53@10.10.10.10"
20:  8  (L1/T45) 2002/7/23 15:02:52 "3434"
21: 15  (L1/T45) 2002/7/16 10:09:15 "3333@10.10.10.10"
22: 601 (L1/T45) 2002/7/25 18:08:47 "3333"
23:  5  (L3/T45) 2003/7/8 15:10:44 "mickelson"
PGA
```

**LSM Parameters**

The following sample output shows the LSM parameters:

**Phone1** > `show lsm`

```
------------------- LSM lcbs -------------------
 i  call_id  line  state             lcb
-------------------------------
0  0        0     IDLE              0x004e1f00
1  0        0     IDLE              0x004e1f14
2  0        0     IDLE              0x004e1f28
3  0        0     IDLE              0x004e1f3c
4  0        0     IDLE              0x004e1f50
5  0        0     IDLE              0x004e1f64
```
### FSM Parameters
The following sample output shows the FSM parameters:

```
Phone1> show fsm

----------------------------- FSM fcbs ------------------------------
i   call_id  fcb         type       state      dcb         cb
---------------------------------------------------------------------
0   0        0x004e2628  UNDEFINED  IDLE       0x00000000  0x00000000
1   0        0x004e2644  UNDEFINED  IDLE       0x00000000  0x00000000
2   0        0x004e2660  UNDEFINED  IDLE       0x00000000  0x00000000
3   0        0x004e267c  UNDEFINED  IDLE       0x00000000  0x00000000
4   0        0x004e2698  UNDEFINED  IDLE       0x00000000  0x00000000
5   0        0x004e26b4  UNDEFINED  IDLE       0x00000000  0x00000000
6   0        0x004e26d0  UNDEFINED  IDLE       0x00000000  0x00000000
7   0        0x004e26f6c  UNDEFINED  IDLE       0x00000000  0x00000000
8   0        0x004e2708  UNDEFINED  IDLE       0x00000000  0x00000000
9   0        0x004e2724  UNDEFINED  IDLE       0x00000000  0x00000000
10  0        0x004e2740  UNDEFINED  IDLE       0x00000000  0x00000000
11  0        0x004e2756  UNDEFINED  IDLE       0x00000000  0x00000000
12  0        0x004e2778  UNDEFINED  IDLE       0x00000000  0x00000000
13  0        0x004e2794  UNDEFINED  IDLE       0x00000000  0x00000000
14  0        0x004e27b0  UNDEFINED  IDLE       0x00000000  0x00000000
15  0        0x004e27cc  UNDEFINED  IDLE       0x00000000  0x00000000
16  0        0x004e27e8  UNDEFINED  IDLE       0x00000000  0x00000000
17  0        0x004e2804  UNDEFINED  IDLE       0x00000000  0x00000000
```

### FSMDEF Parameters
The following sample output shows the FSMDEF parameters:

```
Phone1> show fsndef all

-------- FSMDEF dcbs --------
i   call_id  dcb         line
-----------------------------
0   0        0x004e1f84  0
1   0        0x004e2084  0
2   0        0x004e2184  0
3   0        0x004e2284  0
4   0        0x004e2384  0
5   0        0x004e2484  0
```

### FSMXFR Parameters
The following sample output shows the FSMXFR parameters:

```
Phone1> show fsmxfr

------------------------ FSMXFR xcbs -------------------------
i   xfr_id  xcb         type  method  xfr_call_id  cns_call_id
--------------------------------------------------------------
0   0       0x004e25c4  0     0       0            0
1   0       0x004e25f0  0     0       0            0
```
FIM Parameters

The following sample output shows the FIM parameters:

Phone1> show fim

<table>
<thead>
<tr>
<th>i</th>
<th>call_id</th>
<th>type</th>
<th>icb</th>
<th>next_chn</th>
<th>next_icb</th>
<th>cb</th>
<th>scb</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>HEAD</td>
<td>0x004e2878</td>
<td>0x004e28c8</td>
<td>0x004e288c</td>
<td>0x000000000</td>
<td>0x004e282c</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>CNF</td>
<td>0x004e288c</td>
<td>0x000000000</td>
<td>0x004e28a0</td>
<td>0x000000000</td>
<td>0x004e283c</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>XFR</td>
<td>0x004e28a0</td>
<td>0x000000000</td>
<td>0x004e28b4</td>
<td>0x000000000</td>
<td>0x004e284c</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>DEF</td>
<td>0x004e28b4</td>
<td>0x000000000</td>
<td>0x000000000</td>
<td>0x004e285c</td>
<td>0x004e282c</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>HEAD</td>
<td>0x004e28c8</td>
<td>0x004e2918</td>
<td>0x004e28dc</td>
<td>0x000000000</td>
<td>0x004e282c</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>CNF</td>
<td>0x004e28dc</td>
<td>0x000000000</td>
<td>0x004e28f0</td>
<td>0x000000000</td>
<td>0x004e283c</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>XFR</td>
<td>0x004e28f0</td>
<td>0x000000000</td>
<td>0x004e2904</td>
<td>0x000000000</td>
<td>0x004e284c</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>DEF</td>
<td>0x004e2904</td>
<td>0x000000000</td>
<td>0x000000000</td>
<td>0x000000000</td>
<td>0x004e285c</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>HEAD</td>
<td>0x004e2904</td>
<td>0x004e2918</td>
<td>0x004e292c</td>
<td>0x000000000</td>
<td>0x004e282c</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>CNF</td>
<td>0x004e292c</td>
<td>0x000000000</td>
<td>0x004e2940</td>
<td>0x000000000</td>
<td>0x004e283c</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>XFR</td>
<td>0x004e2940</td>
<td>0x000000000</td>
<td>0x004e2954</td>
<td>0x000000000</td>
<td>0x004e284c</td>
</tr>
<tr>
<td>11</td>
<td>0</td>
<td>DEF</td>
<td>0x004e2954</td>
<td>0x000000000</td>
<td>0x000000000</td>
<td>0x000000000</td>
<td>0x004e285c</td>
</tr>
<tr>
<td>12</td>
<td>0</td>
<td>HEAD</td>
<td>0x004e2954</td>
<td>0x004e297b</td>
<td>0x004e2997</td>
<td>0x000000000</td>
<td>0x004e282c</td>
</tr>
<tr>
<td>13</td>
<td>0</td>
<td>CNF</td>
<td>0x004e297b</td>
<td>0x000000000</td>
<td>0x004e2990</td>
<td>0x000000000</td>
<td>0x004e283c</td>
</tr>
<tr>
<td>14</td>
<td>0</td>
<td>XFR</td>
<td>0x004e2990</td>
<td>0x000000000</td>
<td>0x004e29a4</td>
<td>0x000000000</td>
<td>0x004e284c</td>
</tr>
<tr>
<td>15</td>
<td>0</td>
<td>DEF</td>
<td>0x004e29a4</td>
<td>0x000000000</td>
<td>0x000000000</td>
<td>0x000000000</td>
<td>0x004e285c</td>
</tr>
<tr>
<td>16</td>
<td>0</td>
<td>HEAD</td>
<td>0x004e29b8</td>
<td>0x004e2a08</td>
<td>0x004e29cc</td>
<td>0x000000000</td>
<td>0x004e282c</td>
</tr>
<tr>
<td>17</td>
<td>0</td>
<td>CNF</td>
<td>0x004e29cc</td>
<td>0x000000000</td>
<td>0x004e29e0</td>
<td>0x000000000</td>
<td>0x004e283c</td>
</tr>
<tr>
<td>18</td>
<td>0</td>
<td>XFR</td>
<td>0x004e29e0</td>
<td>0x000000000</td>
<td>0x004e29f4</td>
<td>0x000000000</td>
<td>0x004e284c</td>
</tr>
<tr>
<td>19</td>
<td>0</td>
<td>DEF</td>
<td>0x004e29f4</td>
<td>0x000000000</td>
<td>0x000000000</td>
<td>0x000000000</td>
<td>0x004e285c</td>
</tr>
<tr>
<td>20</td>
<td>0</td>
<td>HEAD</td>
<td>0x004e2a08</td>
<td>0x000000000</td>
<td>0x004e2a1c</td>
<td>0x000000000</td>
<td>0x004e282c</td>
</tr>
<tr>
<td>21</td>
<td>0</td>
<td>CNF</td>
<td>0x004e2a1c</td>
<td>0x000000000</td>
<td>0x004e2a30</td>
<td>0x000000000</td>
<td>0x004e283c</td>
</tr>
<tr>
<td>22</td>
<td>0</td>
<td>XFR</td>
<td>0x004e2a30</td>
<td>0x000000000</td>
<td>0x004e2a44</td>
<td>0x000000000</td>
<td>0x004e284c</td>
</tr>
<tr>
<td>23</td>
<td>0</td>
<td>DEF</td>
<td>0x004e2a44</td>
<td>0x000000000</td>
<td>0x000000000</td>
<td>0x000000000</td>
<td>0x004e285c</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>i</th>
<th>type</th>
<th>scb</th>
<th>sm</th>
<th>get_cb</th>
<th>free_cb</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>HEAD</td>
<td>0x004e282c</td>
<td>0x000000000</td>
<td>0x000000000</td>
<td>0x000000000</td>
</tr>
<tr>
<td>1</td>
<td>CNF</td>
<td>0x004e283c</td>
<td>0x004c0ca8</td>
<td>0x00457bcf</td>
<td>0x0044e291</td>
</tr>
<tr>
<td>2</td>
<td>XFR</td>
<td>0x004e284c</td>
<td>0x004c1414</td>
<td>0x00457bcf</td>
<td>0x0043f755</td>
</tr>
<tr>
<td>3</td>
<td>DEF</td>
<td>0x004e285c</td>
<td>0x004bf28c</td>
<td>0x00457bcf</td>
<td>0x0042896b</td>
</tr>
</tbody>
</table>

Registration Assignments

The following sample output shows the registration of the proxy ports:

Phone1> show register

<table>
<thead>
<tr>
<th>line</th>
<th>APR</th>
<th>state</th>
<th>timer</th>
<th>expires</th>
<th>proxy:port</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.11</td>
<td>REGISTERED</td>
<td>3595</td>
<td>2539</td>
<td>10.18.192.230:5060</td>
</tr>
<tr>
<td>2</td>
<td>.11</td>
<td>REGISTERED</td>
<td>3595</td>
<td>2539</td>
<td>10.18.192.230:5060</td>
</tr>
<tr>
<td>3</td>
<td>.11</td>
<td>REGISTERED</td>
<td>3595</td>
<td>2539</td>
<td>10.18.192.230:5060</td>
</tr>
<tr>
<td>4</td>
<td>.11</td>
<td>REGISTERED</td>
<td>3595</td>
<td>2540</td>
<td>10.18.192.230:5060</td>
</tr>
<tr>
<td>5</td>
<td>.11</td>
<td>REGISTERED</td>
<td>3595</td>
<td>2543</td>
<td>10.18.192.230:5060</td>
</tr>
<tr>
<td>6</td>
<td>.11</td>
<td>REGISTERED</td>
<td>3595</td>
<td>2543</td>
<td>10.18.192.230:5060</td>
</tr>
<tr>
<td>1-BU</td>
<td>.1x</td>
<td>NONE</td>
<td>0</td>
<td>0</td>
<td>undefined:0</td>
</tr>
</tbody>
</table>

Note: APR is Authenticated, Provisioned, Registered
**Network Flash Configuration**

The following sample output shows the network configuration that resides in flash memory:

```
Phone1> show network

------- Network *FLASH* Configuration ------

Platform : Cisco IP Phone 7960
Elasped Time: 00:17:57

dhcp_server : 10.18.192.230
my_ip_addr : 10.18.199.14
subnet_mask : 255.255.255.0
defaultgw : 10.18.199.1
dyn_dns_addr_1 : 0.0.0.0
dyn_dns_addr_2 : 0.0.0.0
dns_addr : 10.18.192.48
tftp_addr : 10.10.92.150
dyn_tftp_addr : 0.0.0.0
my_mac_addr : 0030:94c2:5d40
domain_name : sip.com
my_name : SIP003094C25D40
Status Flags : 12300000
```

**Running Network Configuration**

The following sample output shows the running configuration:

```
Phone1> show network running

------- Network *RUNNING* Configuration ------

Platform : Cisco IP Phone 7960
Elasped Time: 00:18:11

dhcp_server : 10.18.192.230
my_ip_addr : 10.18.199.14
subnet_mask : 255.255.255.0
defaultgw : 10.18.199.1
dyn_dns_addr_1 : 0.0.0.0
dyn_dns_addr_2 : 0.0.0.0
dns_addr : 10.18.192.48
tftp_addr : 10.102.92.150
dyn_tftp_addr : 0.0.0.0
my_mac_addr : 0030:94c2:5d40
domain_name : sip.com
my_name : SIP003094C25D40
Status Flags : 12300000
```

**ARP Table**

The following sample output shows the ARP table by IP address:

```
Phone1> show arp

Arp Table:
[00] IPAddr: 10.18.199.14  PortCnt: 0001  MacAddr: 0030:94c2:5d40
    Type: 00000001  GTick:00001287  LastTry: 00000000
    Mode: 00000001  Update: 00000000

[01] IPAddr: 10.18.199.1  PortCnt: 0001  MacAddr: 0000:0c07:ac08
    Type: 00000001  GTick:00001287  LastTry: 00001287
    Mode: 00000001  Update: 00000000
```
Flash Configuration

The following sample output shows the flash memory configuration:

Phone1> show config

------ Current *FLASH* Configuration ------

Platform : Cisco IP Phone 7960
Elapsed Time: 00:18:32

dhcp_server : 10.18.192.230
my_ip_addr : 10.18.199.14
subnet_mask : 255.255.255.0
defaultgw : 10.18.199.1

dyn_dns_addr_1 : 0.0.0.0
dyn_dns_addr_2 : 0.0.0.0
dns_addr : 10.18.192.48
tftp_addr : 10.10.92.150
dyn_tftp_addr : 0.0.0.0
my_mac_addr : 0030:94c2:5d40
domain_name : sip.com
my_name : SIP003094C25D40
Status Flags : 12300000
image_version : ”P0S3-05-8-10”
FirmLoadID : ”PC13K030”
DSPLoadID : ”PS03AT36”
network_media_type : Half10
network_port2_type : Hub/Switch
tos_media : 5
phone_label : ”user4X”
tftp_cfg_dir : ”./”
phone_password : ********
phone_prompt : ”Phone1”
language : english
snmp_mode : DirectedBroadcast
snmp_server : 10.10.10.150
time_zone : EST
dst_offset : 1
dst_start_month : April
dst_start_day : 0
dst_start_day_of_week : Sun
dst_start_week_of_month : 1
dst_start_time : 02
dst_stop_month : Oct
dst_stop_day : 0
dst_stop_day_of_week : Sunday
dst_stop_week_of_month : 8
dst_stop_time : 2
dst_auto_adjust : 1
time_format_24hr : 1
date_format : M/D/Y
nat_enable : 0
nat_address : UNPROVISIONED
voip_control_port : 5060
start_media_port : 16384
end_media_port : 32766
sync : ”1”
xml_card_dir : ””
xm_card_file : ”CARD.XML”
telnet_level : 2
services_url : ”http://10.10.149.2/ciscodir/directory.xml”
directory_url : ”http://10.10.93.194/CiscoServices/Directory.asp”
Chapter 5  Monitoring Cisco SIP IP Phones

How to Use the Command-Line Interface to Monitor Phones

logo_url : "http://10.10.207.20/projects/phone/company.bmp"
http_proxy_addr : UNPROVISIONED
http_proxy_port : 80
enable_vad : 1
dial_template : "dialplan"
callerid_blocking : 0
anonymous_call_block : 0
autocomplete : 1
messages_uri : "1234567"
dnd_control : 0
preferred_codec : g729a
dtmf_outofband : avt
dtmf_avt_payload : 101
dtmf_db_level : 3
line1_name : "43"
line2_name : "44"
line3_name : "duval"
line4_name : "46"
line5_name : "47"
line6_name : "48"
line1_authname : "UNPROVISIONED"
line2_authname : "UNPROVISIONED"
line3_authname : "UNPROVISIONED"
line4_authname : "UNPROVISIONED"
line5_authname : "UNPROVISIONED"
line6_authname : "UNPROVISIONED"
line1_password : **********
line2_password : **********
line3_password : **********
line4_password : **********
line5_password : **********
line6_password : **********
line1_shortname : "UNPROVISIONED"
line2_shortname : "UNPROVISIONED"
line3_shortname : "UNPROVISIONED"
line4_shortname : "UNPROVISIONED"
line5_shortname : "UNPROVISIONED"
line6_shortname : "UNPROVISIONED"
line1_displayname : "user43"
line2_displayname : "user44"
line3_displayname : "pgatour"
line4_displayname : "user46"
line5_displayname : "user47"
line6_displayname : "user48"
proxy1_address : "10.10.10.0"
proxy2_address : "10.10.10.0"
proxy3_address : "10.10.10.0"
proxy4_address : "10.10.10.0"
proxy5_address : "10.10.10.0"
proxy6_address : "10.10.10.0"
proxy1_port : 5060
proxy2_port : 5060
proxy3_port : 5060
proxy4_port : 5060
proxy5_port : 5060
proxy6_port : 5060
sip_retx : 10
sip_invite_retx : 6
timer_t1 : 2000
timer_t2 : 4000
timer_invite_expires : 180
timer_register_expires : 3600
proxy_register : 1
proxy_backup : ""
How to Use the Phone Menus to Access Status Information

You can access several types of status information using the Settings button. The information that you can obtain can aid in system management and diagnosis of network problems. This section contains the following:

- Viewing Status Messages, page 5-19
- Viewing Network Statistics, page 5-19

```plaintext
proxy_emergency : "UNPROVISIONED"
proxy_backup_port : 6060
proxy_emergency_port : 5060
outbound_proxy : UNPROVISIONED
outbound_proxy_port : 5060
nat_received_processing : 0
mwi_status : 0
call_waiting : 1
user_info : none
cnf_join_enable : 1
remote_party_id : 0
semi_attended_transfer : 1
call_hold_ringback : 0
cfwd_url : ""
call_stats : 0
auto_answer : 0
speed_line2 : ""
speed_label2 : ""
speed_line3 : ""
speed_label3 : ""
speed_line4 : ""
speed_label4 : ""
speed_line5 : ""
speed_label5 : ""
speed_line6 : ""
speed_label6 : ""

IP Statistics

The following sample output shows the IP statistics:

Phone1> show ip

IP Statistics:
---------------------------------------------------
Received  00002623, RxDrops  00000006
RxFrags   00000000, RxFragDrops 00000000, RxReassembled 00000000
Transmitted 00000869, TxDrops  00000000, TxFragments 00000000

Use 'clear ip' to clear data
```
Chapter 5      Monitoring Cisco SIP IP Phones

How to Use the Phone Menus to Access Status Information

Viewing Status Messages

You can view status messages that you can use to diagnose network problems.

Procedure

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Select <strong>Settings &gt; Status &gt; Status Messages</strong>. The Status Messages menu displays.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>View information as needed.</td>
</tr>
<tr>
<td>Step 3</td>
<td>Select <strong>Exit</strong>.</td>
</tr>
</tbody>
</table>

Viewing Network Statistics

You can view statistics about the phone and network performance.

Procedure

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Select <strong>Settings &gt; Status &gt; Network Statistics</strong>. The Network Statistics menu displays.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2</td>
<td>View the following information as needed:</td>
</tr>
<tr>
<td></td>
<td>• Rcv—Number of packets received by the phone, not through the switch.</td>
</tr>
<tr>
<td></td>
<td>• Xmit—Number of packets sent by the phone, not through the switch.</td>
</tr>
<tr>
<td></td>
<td>• REr—Number of packets received by the phone that contained errors.</td>
</tr>
<tr>
<td></td>
<td>• BCast—Number of broadcast packets received by the phone.</td>
</tr>
<tr>
<td></td>
<td>• Phone State Message—TCP messages that indicate the state of the phone. The following are</td>
</tr>
<tr>
<td></td>
<td>possible messages:</td>
</tr>
<tr>
<td></td>
<td>– Phone Initialized—TCP connection has not gone down since the phone was powered on.</td>
</tr>
<tr>
<td></td>
<td>– Phone Closed TCP—TCP connection was closed by the phone.</td>
</tr>
<tr>
<td></td>
<td>– TCP Timeout—TCP connection was closed because of a retry timeout.</td>
</tr>
<tr>
<td></td>
<td>– Error Code—Error messages that indicate unusual reasons for which the TCP connection was</td>
</tr>
<tr>
<td></td>
<td>closed.</td>
</tr>
<tr>
<td></td>
<td>• Elapsed Time—Length of time (in days, hours, minutes, and seconds) since the last power cycle.</td>
</tr>
<tr>
<td></td>
<td>• Port 0 Full, 100—Indication that the network is in a linked state and has autonegotiated a full-duplex 100-Mbps connection.</td>
</tr>
<tr>
<td></td>
<td>• Port 0 Half, 100—Indication that the network is in a linked state and has autonegotiated a half-duplex 100-Mbps connection.</td>
</tr>
<tr>
<td></td>
<td>• Port 0 Full, 10—Indicates that the network is in a linked state and has autonegotiated a full-duplex 10-Mbps connection.</td>
</tr>
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<td></td>
<td>• Port 0 Half, 10—Indication that the network is in a linked state and has autonegotiated a half-duplex 10-Mbps connection.</td>
</tr>
<tr>
<td></td>
<td>• Port 1 Full, 100—Indication that the network is in a linked state and has autonegotiated a full-duplex 100-Mbps connection.</td>
</tr>
</tbody>
</table>
How to Use the Phone Menus to Access Status Information

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

Step 3  Select Exit.

Note  To reset the values, power the phone off and on.