# Release Notes for Cisco SIP IP Phone 7940/7960 Release 6.0

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# Contents

This document lists the known problems in Cisco Session Initiation Protocol (SIP) IP Phone 7940/7960 Release 6.0 and contains information about the Cisco SIP IP Phone 7940/7960 (hereafter referred to as the Cisco SIP IP phone) that is not included in the most recent release of the phone documentation.

This document includes the following sections:

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# New and Changed Information

## New Software Features in Release 6.0

The following new software features are supported in Cisco IP Phone 7940/7960 Release 6.0.

### Alert-Info

The phone now has the ability to play all internal ring tones based on the presence of the Alert-Info header. The initial support for this was added in Release 4.4, but this additional support allows the Alert-Info header to use the new tones/ringing patterns.

### Auto Answer (Intercom)

Auto answer has been added as another user feature located in the Caller Preferences Menu (Menu 6 under Settings). The user can setup all or no lines for auto answer. The default is that all lines are off.

When the user specifies a line or lines to be on, the phone automatically connects the call and presents the call to the user.

If a Call comes in on a line with auto-answer configured and there is already an active call, Call-Waiting is invoked.

### DHCP Option 60

The DHCP DISCOVER and REQUEST messages from the phone now contain Option-60 Vendor Specific information for the Cisco IP Phone 7960 and Cisco IP Phone 7940 phones.

### Directory Enhancements

The Personal Directory that existed in the phone has been changed. Previously, the phone determined what entries to add or delete from the Personal Directory and the user does not have the ability to add to this list.

With Release 6.0, the phone no longer adds or deletes entries to the Personal Directory, and the user determines how to populate their Personal Directory.

This allows provisioning Speed Dials that remain in the specified provisioned entry and they do not get moved or deleted unless the user desires to do so.

All existing entries will remain in the Personal Directory until the user deletes them.

If the user desires to add any of the unique numbers from the Missed Calls, Received Calls, or Placed Calls directory into the Personal Directory, there is a Keep softkey available to do so.

Also, the up/down rocker switch will pull up the Personal Directory on a down arrow press. This was added as a quick way to access your Personal Directory.

## DSP

The phone has undergone a complete new digital signal processor (DSP) upgrade. This addresses some of the limitations that currently exist in the DSP today.

The following tones/ringing patterns have been added:

- Bellcore-BusyVerify
- Bellcore-Stutter
- Bellcore-MsgWaiting
- Bellcore-dr1
- Bellcore-dr2
- Bellcore-dr3
- Bellcore-dr4
- Bellcore-dr5

## Digital Signal Processor Alarms

The DSP Alarm functionality has been implemented along with the SignalWorks DSP firmware. Alarm data can be seen and collected by logging in to the console port. Alarms allow the DSP to indicate back to the ARM as to what and where the DSP was processing when the error occurred. With this level of detail, you can trace the problem back to a scenario and a place within a function inside the DSP. The DSP alarm information automatically appears on any active Telnet or console sessions.

## DSP Debugging Aids

In previous releases when problems occurred, the digital signal processor (DSP) could reset itself to recover but there was no external indication as to why the problems had occurred. Debugging these types of problems was a trial and error exercise. The SignalWorks DSP features DSP alarms that provide visibility into its status and error reporting. On the ATM Router Module (ARM) side, this release expands the existing DSP Message Logging feature.

## DSP Message Logging

You can log messages exchanged between the ARM and the DSP. This provides a message tracing capability that can help debug problems between the two. In Skinny Client Control Protocol (SCCP), the host has memory that is set aside for the messages that have been logged. Because SIP has a console interface, you can print these messages.

In addition to expanding the existing **debug dsp** command, the new command **debug dsp-keepalive** has been added.

## Enhanced Tone and Ring Support

Unlike the Encore DSP firmware, the SignalWorks DSP provides support for four simultaneous frequencies and on/off durations. The phone can provide support for the more complex Bellcore tones and ringing patterns requested by the Cisco Call Agent.

## Hot Line/Speeddials

Hot Line/Speeddials have been added to make use of the spare line keys presented on the phone. The addition of this feature allows for the user to setup one-touch dialing keys and labels. The ability to set these up is also under the Caller Preferences Menu (Menu 6 under Settings).

Any lines that remain unused are available to use a speed_lines. By selecting the speed_line to configure the user sets up a label for the line to display and a number that is to be dialed. All speed_lines use proxy1_address to send requests.

## Local Call Forwarding

Local Call Forward has been added via a softkey on the main idle screen, CFwdAll. When this softkey is pressed the user is presented with an input screen to enter the number or URL to forward to. If a number is entered the phone will add the configured proxy1_address to complete the URL. If a URL is entered the phone will use the URL the user entered.

A status message will be presented to the user stating 'Forwarded to 1234567' when the feature is invoked. To disable Local Call Forwarding, simply press the CFwdAll softkey.

Once configured the phone will send a 302 Moved Temporarily redirect message with a Contact of the configured URL or number when a call is received.

Local Call Forward overrides other Caller Preferences such as Do Not Disturb. Both can be configured but the Local Call Forward will take precedence.

## Message Waiting Stutter Tone

The ability to play a stutter tone as a message waiting indicator (MWI) has been added through the configuration parameter:

```
stutter_msg_waiting: 0 (0-off (default), 1-on)
```

## Multiple Call Appearance

Multiple Call Appearance has been added to allow for the phone to act like a receptionist phone where multiple lines have the same extension and the calls are handled properly across all lines. Calls are dropped into the phone in the first available order (Line 1 through 6).

## Outbound Proxy Redesign

The outbound proxy design improves the handling of error cases. In the previous release, just before the message was sent out, the code checked to see if an outbound proxy was defined; if it was defined, the code created an IP address for the proxy.

In the previous release, problems existed such as the phone possibly using a different domain name system (DNS) entry for the outbound proxy if the DNS is challenged and if the outbound proxy is not reachable, no other DNS entries were attempted. In this release, these problems have been eliminated.

The basic change creates an entry in the call control block (CCB) to hold the IP address of the outbound proxy for the current call. The code only attempts to DNS an entry for the outbound proxy if the proxy is defined and the current call does not already have an address assigned. This forces the phone to use the same DNS entry for the outbound proxy for the duration of the call.

The second change modified the Internet Control Message Protocol (ICMP) unreachable handlers to pass back the IP address that bounced to the SIP handler. If the bounced IP address is that of the outbound proxy, the outbound proxy address in the CCB is zeroed. Thus when the message is sent out, the code attempts to use the next DNS entry for the outbound proxy.

## SIP Call Statistics

The ability to send Call Statistics for each call has been added to the BYE/200 OK exchange of every call. The following two headers will be added to the BYE or 200 OK, when enabled:

```
RTP-RxStat: Dur=6,Pkt=280,Oct=44800,LatePkt=0,TxLost=0,AvgJtr=0
RTP-TxStat: Dur=6,Pkt=272,Oct=43520
```

This is a configurable option:

```
call_stats: 0 (0-off (default), 1-on)
```

## Support for SIP Alert-Info Header

In previous releases, the SIP phone did not support the Alert-Info header. Limited support of the Alert-Info header is now provided by scanning the value in the header and playing any tones or ring patterns that are already stored in the phone.

You can send the Alert-Info header in an Invite request or in any 18x response. A 18x response with an alert-info could be followed up with another 18x response with a different Alert-Info header. This sequence of 18x responses is sent for features that need a tone to be played for a specific duration followed by a different tone. One example of such a feature is the Call Forward Unconditional Deactivation feature. When deactivation is successful, a confirmation tone is played for one second followed by a dial tone.

In RFC-3261, the Alert-Info header is specified as a URL. When the Alert-Info header is received, the phone downloads the file from the URL and plays it as the alternate ring tone. This release does not support any external ringers. Only the tones and ring patterns that are already internal to the phone can be selected and played as an alternate ring tone.

In this release, the Alert-Info header consists of a name of an internal tone or ringing pattern that can be played, as shown in the following example:

```
Alert-Info: <Bellcore-Busy>
```

There is no need to add a file extension (.au, .wav) to these names because the names are internal to the phone. When an Alert-Info header is received, the software scans the list of known tones and ringing patterns to find a match. If the software finds a match, the phone plays that tone or ringing pattern. If the software does not find a match, the phone plays the alert ringing pattern as it does today.

**Note** The base support for this feature was added in Release 4.4. This release adds support for the tones that the Polycom DSP could not support.

### Removal of Polycom Firmware

The SignalWorks DSP replaces the Encore DSP which uses Polycom software in the DSP firmware. The Polycom icon no longer appears on the phone.

# Installation Notes

For Cisco SIP IP phones, follow the instructions in the "Upgrading the Cisco SIP IP Phone Firmware" section at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/voice/c_ipphon/english/ipp7960/addprot/sip/admin/ver6_0/sipins60.htm

For these instructions, use P0S3-06-0-00.bin as the image name for Release 6.0. You can find the current images at the following URL:

http://www.cisco.com/cgi-bin/tablebuild.pl/sip-ip-phone7960

# Caveats

## Open Caveats—Release 6.0

This section documents possible unexpected behavior by Cisco IP Phone 7940/7960 Release 6.0. This section lists only severity 1 and 2 caveats and select severity 3 caveats.

- **CSCec09326**: Need to add a clear mwi command to the telnet/console
- **CSCec45286**: ICMP Unreachable infinite loop

## Resolved Caveats—Release 6.0

All caveats listed in this section are resolved in Cisco IP Phone 7940/7960 Release 6.0. This section lists only severity 1 and 2 caveats and select severity 3 caveats.

- **CSCea04815**: BYE is not sent to next server in DNS SRV list
- **CSCea88169**: Headset is active when call is made from handset
- **CSCea88179**: Headset button does not end call
- **CSCeb41335**: SIP/MGCP - DSP mismatch with signed image upgrade failure
- **CSCeb58116**: Softkeys get wacky with multiple calls leaving hung states
- **CSCeb73808**: Crash after multiple X-fer during basic call
- **CSCeb86102**: Alternate TFTP gets overwritten from Yes to No
- **CSCec09326**: Need to add a clear mwi command to the telnet/console
- **CSCec45286**: ICMP Unreachable infinite loop

# Related Documentation

- *Cisco SIP IP Phone Administrator Guide, Release 6.0*
- *Cisco IP Phone 7960 and 7940 Series at a Glance*
- *Regulatory Compliance and Safety Information for the Cisco IP Phone 7960, 7940, and 7910 Series*
- *Installing the Wall Mount Kit for the Cisco IP Phone*

# Obtaining Documentation

These sections explain how to obtain documentation from Cisco Systems.

## World Wide Web

You can access the most current Cisco documentation on the World Wide Web at this URL:

http://www.cisco.com

Translated documentation is available at this URL:

http://www.cisco.com/public/countries_languages.shtml

## Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which is shipped with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

## Ordering Documentation

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

    http://www.cisco.com/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

    http://www.cisco.com/go/subscription

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

## Documentation Feedback

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You can e-mail your comments to bug-doc@cisco.com.

You can submit your comments by mail by using the response card behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

# Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

## Cisco.com

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http://www.cisco.com

# Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Cisco TAC inquiries are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.

- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.

- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.

- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

The Cisco TAC resource that you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

## Cisco TAC Web Site

You can use the Cisco TAC Web Site to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to this URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

http://www.cisco.com/register/

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC Web Site, you can open a case online by using the TAC Case Open tool at this URL:

http://www.cisco.com/tac/caseopen

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC Web Site.

# Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.