



Configuring the Cisco MGCP IP Phone

This chapter describes supported features on the Cisco MGCP phone and information about how to configure some features. Consult your call agent (CA) documentation for additional configuration information.

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The Cisco MGCP IP phone can be configured using the following methods:

- The CA configures the phone through MGCP commands.
- The MGCP phone communicates with a Dynamic Host Configuration Protocol (DHCP) server to obtain configuration information at startup.
- You configure some settings by using telnet to connect to your Cisco MGCP IP phone and enter commands in a terminal window. You can also connect an ASCII terminal to your phone's console port to enter the same commands.
- Configuration files on the TFTP server that specify settings are downloaded by your phone at startup.
- You configure some features using the settings button on your MGCP phone.



Note

This document does not describe configuration of the Cisco MGCP IP phone using the CA because configuration procedures depend on the CA capabilities and vary by vendor.

MGCP Commands

The Cisco MGCP IP phone supports the MGCP commands shown in [Table 3-1](#):

Table 3-1 MGCP Commands

Command	Description	Direction
Notification Request	Specifies events that generate notifications to the CA.	CA to phone
Create Connection	Creates an RTP connection.	CA to phone
Modify Connection	Modifies an existing RTP connection.	CA to phone
Delete Connection	Deletes an endpoint RTP connection.	CA to phone
Audit Endpoint	Queries endpoint status.	CA to phone
Audit Connection	Queries connection status.	CA to phone
Restart in Progress	Notifies the CA of the endpoint's service state change.	Phone to CA
Endpoint Configuration	Specifies encoding for audio signals.	CA to phone
Notification	Indicates event occurrences.	Phone to CA

Using Configuration Files

You can use the following two configuration files to specify settings for your Cisco MGCP IP phone:

- **MGCDefault.cnf**—The default configuration file. Use this file to configure the call agent address, time, and other global parameters.
- **MGCmacaddress.cnf**—The user configuration file. The MAC address specifies the hardware address of the Cisco MGCP IP phone and is not configurable. Use this file to specify the phone prompt, phone password, and time zone (for example, if a CA covers an area with multiple time zones). You can also specify a different set of eXtensible Markup Language (XML) cards for the phone. For example, you may want to control which XML services are available on each phone; managers may have different features on their phones than employees do. You can also specify whether you want a specific phone to use a different image version.



Note The values in the user configuration file take precedence because that file is processed last. Values in this file override what is in the default configuration file.

If you use configuration files, the OS79XX.TXT file no longer controls the image used by the phone. The OS79XX.TXT file controls the image only if you change protocols (SIP to MGCP, or MGCP to SIP). Image version and upgrading is done through the **image_version** configuration parameter in the configuration files.

Upon startup, the phone attempts to download both files. If neither file exists, a TFTP timeout occurs after approximately 9 seconds per file. If the files exist, they are parsed and processed.



Note Both files can use the same values or contain empty values. If the files have empty values, the Cisco MGCP IP phone boots using the default values for some of the parameters.

These configuration files are not required; however, it takes longer (approximately 20 seconds) for the Cisco MGCP IP phone to boot because it is waiting for the timeout on the TFTP server.

Table 3-2 shows the default MGCP IP Phone configuration file parameters in alphabetical order. All parameters are optional; the phone boots with the default or existing flash configuration. Only `image_version` is required to upgrade to a new image.

Table 3-2 Default MGCP Configuration File Parameters

Parameter	Description
<code>date_format</code>	<p>The format to use for dates. Valid values are:</p> <ul style="list-style-type: none"> • M/D/Y—Month/day/year • D/M/Y—Day/ month/year • Y/M/D—Year/month/day • Y/D/M—Year/day/month • Y-M-D—Year-month-day • YY-M-D—4-digit year-month-day <p>The default is M/D/Y.</p>
<code>directory_url</code>	<p>URL of the external directory server . This URL is accessed when the Directory key is pressed and the External Directory option is selected. For example, use <code>directory_url: "http://10.10.10.10/CiscoServices/Directory.asp"</code>.</p>
<code>dst_auto_adjust</code>	<p>Whether or not daylight saving time (DST) is automatically adjusted on the phones. Valid values are 0 (disable automatic DST adjustment) or 1 (enable automatic DST adjustment). The default is 1.</p>
<code>dst_offset</code>	<p>Offset from the phone's time when DST is in effect. When DST is over, the specified offset is no longer applied to the phone's time. Valid values are hour/minute, -hour/minute, +hour/minute, hour, -hour, and +hour.</p>
<code>dst_start_day</code>	<p>Day of the month on which DST begins.</p> <p>Valid values are 1 through 31 for the days of the month or 0 when specifying relative DST to specify that this field be ignored and that the value in the <code>dst_start_day_of_week</code> parameter be used instead.</p>
<code>dst_start_day_of_week</code>	<p>Day of the week on which DST begins.</p> <p>Valid values are Sunday or Sun, Monday or Mon, Tuesday or Tue, Wednesday or Wed, Thursday or Thu, Friday or Fri, Saturday or Sat, or Sunday or Sun or 1 through 7 with 1 being Sunday and 7 being Saturday. When specifying the name of the day, the value is not case-sensitive. In the United States, the default value is Sunday.</p>
<code>dst_start_month</code>	<p>Month in which DST starts. Valid values are January, February, March, April, May, June, July, August, September, October, November, and December or 1 through 12 with January being 1 and December being 12. When specifying the name of a month, the value is not case-sensitive. In the United States, the default value is April.</p>
<code>dst_start_time</code>	<p>Time of day on which DST begins. Valid values are hour/minute (02/00) or hour (02:00). In the United States, the default value is 02:00.</p>

Table 3-2 Default MGCP Configuration File Parameters (continued)

Parameter	Description
dst_start_week_of_month	<p>Week of month in which DST begins.</p> <p>Valid values are 1 through 6 and 8 with 1 being the first week and each number thereafter being subsequent weeks and 8 specifying the last week in the month regardless of which week the last week is. In the United States, the default value is 1.</p>
dst_stop_day	<p>Day of the month on which DST ends.</p> <p>Valid values are 1 through 31 for the days of the month or 0 when specifying relative DST to specify that this field be ignored and that the value in the dst_stop_day_of_week parameter be used instead.</p>
dst_stop_day_of_week	<p>Day of the week on which DST ends.</p> <p>Valid values are Sunday or Sun, Monday or Mon, Tuesday or Tue, Wednesday or Wed, Thursday or Thu, Friday or Fri, Saturday or Sat, or Sunday or Sun or 1 through 7, with 1 being Sunday and 7 being Saturday. When specifying the name of the day, the value is not case-sensitive. In the United States, the default value is Sunday.</p>
dst_stop_month	<p>Month in which DST ends. Valid values are January, February, March, April, May, June, July, August, September, October, November, and December or 1 through 12 with January being 1 and December being 12. When specifying the name of a month, the value is not case-sensitive. In the United States, the default value is October.</p>
dst_stop_time	<p>Time of day on which DST ends. Valid values are hour/minute (02/00) or hour (02:00). In the United States, the default value is 02:00.</p>
dst_stop_week_of_month	<p>Week of month in which DST ends.</p> <p>Valid values are 1 through 6 and 8 with 1 being the first week and each number thereafter being subsequent weeks and 8 specifying the last week in the month regardless of which week the last week is. In the United States, the default value is 8.</p>
dtmf_avt_payload	<p>Payload type for AVT packets. Possible range is 96 to 127. If the value specified exceeds 127, the phone will default to 101.</p>
dtmf_outofband	<p>Whether to generate the out-of-band signaling (for tone detection on the IP side of a gateway) and if so, when. The Cisco MGCP IP phone supports out-of-band signaling via the AVT tone method. Valid values are:</p> <ul style="list-style-type: none"> • none—Do not generate DTMF digits out-of-band. • avt—If requested by the remote side, generate DTMF digits out-of-band (and disable in-band DTMF signaling); otherwise, do not generate DTMF digits out-of-band. • avt_always—Always generate DTMF digits out-of-band. This option disables in-band DTMF signaling. <p>The default is avt.</p>

Table 3-2 Default MGCP Configuration File Parameters (continued)

Parameter	Description
dyn_dns_addr_1	<p>You can specify the IP address of a new dynamic DNS. If a new DNS is specified, it is used for any further DNS requests after the phone uses the initial DNS address when it boots. The DNS addresses are used in the following order:</p> <ol style="list-style-type: none"> 1. dyn_dns_addr_1 (if present) 2. dyn_dns_addr_2 (if present) 3. DNS Server 1 4. DNS Server 2 5. DNS Server 3 6. DNS Server 4 7. DNS Server 5 <p>The dynamic DNS address is not stored in Flash memory. Only dotted IP addresses are accepted. This value can be cleared by removing it from the config file or changing its value to a null value “ ” or “UNPROVISIONED”.</p>
dyn_dns_addr_2	You can specify a second dynamic DNS server to be used for DNS requests.
dyn_tftp_addr	You can specify the IP address of a new dynamic TFTP server. After initially querying the default TFTP server, the phone will re-request the default and MAC-specific configuration files from the new TFTP server. The dynamic TFTP server is not stored in Flash memory. Only dotted IP addresses are accepted. This value can be cleared by removing it from the config file or changing its value to a null value “ ” or “UNPROVISIONED”.
http_proxy_addr	The IP address of the HTTP proxy server. You can use either a dotted IP address or a DNS name (a record only).
http_proxy_port	The port number of the HTTP proxy port. The default is 80.
image_version	Firmware version that the Cisco MGCP IP phone should run. Enter the name of the image version (as it is released by Cisco). Do not enter the extension. You cannot change the image version by changing the file name because the version is also built into the file header. Trying to change the image version by changing the file name will cause the firmware to fail when it compares the version in the header against the file name.
language	This is an optional parameter for future use. English is the only value that is currently supported.
logo_url	<p>Location of the company logo file. This logo appears on the phone display. The background space allocated for the image is 90 x 56 pixels. Images that are larger than this will automatically be scaled down to 90 x 56 pixels. The recommended file size for the image is 5 to 15k. For example, use logo_url: “http://10.10.10.10/companylogo.bmp”.</p> <p>Note This parameter supports Windows 256 color bitmap format only. CMXML PhoneImage objects are not supported for this parameter. Using anything other than a Windows bitmap (.bmp) file can cause unpredictable results.</p>
mgcp_gw_controller	IP address of CA.
mgcp_input_port	Port on which the phone listens. The default is 2427.

Table 3-2 Default MGCP Configuration File Parameters (continued)

Parameter	Description
mgcp_output_port	Port on which the the phone transmits. The default is 2427.
nat_enable	Use 0 to disable NAT and 1 to enable NAT. Default is 0. If NAT is enabled, the Session Description Protocol (SDP) message uses the nat_address and an RTP port between the start_media_port and the end_media_port range in the C and M fields. All RTP traffic is sourced from the port advertised in the SDP.
nat_address	The WAN IP address of the NAT or firewall server. You can use either a dotted IP address or a DNS name (a record only).
phone_password	Password to be used for console or telnet access. The default password is cisco.
phone_prompt	Prompt to be displayed when using telnet or console access. The default phone prompt is “MGCP Phone.”
services_url	URL of the services BTXML files. This URL is accessed when the Services button is pressed. For example, use services_url: “http://10.10.10.10/CiscoServices/Services.asp”
sntp_mode	Mode in which the phone will listen for the SNTP server. Valid values are unicast, multicast, anycast, or directedbroadcast. See
sntp_server	IP address of the SNTP server from which the phone will obtain time data. If the SNTP server is set to 0 or not set, the MGCP software defaults the SNTP server address to the address of the CA. See Table 3-3 for more information.
telnet_level	Enables Telnet for the phone. Valid values are: <ul style="list-style-type: none"> • 0 — Telnet is disabled • 1 — Telnet is enabled, no privileged commands • 2 — Telnet is enabled and privileged commands can be executed The default value is 0.
tftp_cfg_dir	Path to the TFTP subdirectory in which phone-specific configuration files are stored. Note Exists only in the MGCDefault.cnf file.
time_format_24hr	Whether a 12 or 24-hour time format is displayed by default on the phones’ user interface. Valid values are: <ul style="list-style-type: none"> • 0—The 12-hour format is displayed by default but can be changed to a 24-hour format via the phone’s user interface. • 1—The 24-hour format is displayed by default but can be changed to a 12-hour format via the phone’s user interface. • 2—The 12-hour format is displayed and cannot be changed to a 24-hour format via the phone's user interface. • 3—The 24-hour format is displayed and cannot be changed to a 12-hour format via the phone’s user interface. The default value is 1.

Table 3-2 Default MGCP Configuration File Parameters (continued)

Parameter	Description
time_zone	Time zone in which the phone is located. Valid values are the time zone abbreviations shown in Table 3-4. These abbreviations are case sensitive and must be in all capital letters.
tos_media	Type of Service (ToS) level for the media stream being used. Valid values are: <ul style="list-style-type: none"> • 0 (IP_ROUTINE) • 1 (IP_PRIORITY) • 2 (IP_IMMEDIATE) • 3 (IP_FLASH) • 4 (IP_OVERRIDE) • 5 (IP_CRITIC) The default is 5.
use_mac_name	Specifies whether to use the IP address or MAC address in the endpoint name. By default, the IP address is used. Valid values are: <ul style="list-style-type: none"> • 0—IP address • 1—MAC address
xml_card_dir	Specifies the directory to use for retrieving the XML cards file. The base for the directory is the base TFTP server directory. This field is limited to 64 characters.
xml_card_file	The file name of the XML cards. This field is limited to 20 characters.

Table 3-3 lists the actions that take place when a valid IP address is specified in the `sntp_server` parameter.

Table 3-3 Actions Based on `sntp_mode` When the `sntp_server` Parameter is Set to an IP Address

<code>sntp_server</code> = 192.168.1.9	<code>sntp_mode=unicast</code>	<code>sntp_mode=multicast</code>	<code>sntp_mode=anycast</code>	<code>sntp_mode=directedbroadcast</code>
Sends	SNTP request to the SNTP server.	Nothing. When in multicast mode, SNTP requests are not sent.	SNTP request to the SNTP server.	SNTP packet to the SNTP server. After the first SNTP response is received, the phone switches to multicast mode.
Receives	SNTP response from the SNTP server and ignores responses from other SNTP servers.	SNTP data via the SNTP/NTP multicast address from the local network broadcast address.	SNTP response from the SNTP server and ignores responses from other SNTP servers.	SNTP data from the SNTP/NTP multicast address and the local network broadcast address and ignores responses from other SNTP servers.

Table 3-4 shows the abbreviations for the `time_zone` parameter.

Table 3-4 Time Zone Abbreviations

Abbreviation	GMT Offset	Cities	Time Zone Names
IDL	GMT-12:00	Eniwetok	IDL (International Date Line), IDLW (International Date Line West)
NT	GMT-11:00	Midway	BT (Bering Time), NT (Nome Time)
AHST	GMT-10:00	Hawaii	AHST (Alaska-Hawaii Standard Time), HST (Hawaiian Standard Time), CAT (Central Alaska Time)
IMT	GMT-09:30	Isle Marquises	Isle Marquises
YST	GMT-09:00	Yukon	YST (Yukon Standard Time)
PST	GMT-08:00	Los Angeles	PST (Pacific Standard Time),
MST	GMT-07:00	Phoenix	MST (Mountain Standard Time), PDT (Pacific Daylight Time)
CST	GMT-06:00	Dallas, Mexico City	CST (Central Standard Time), MDT (Mountain Daylight Time), Chicago
EST	GMT-05:00	New York	EST (Eastern Standard Time), CDT (Central Daylight Time), NYC
AST	GMT-04:00	La Paz	AST (Atlantic Standard Time), EDT (Eastern Daylight Time)
NST	GMT-03:30	Newfoundland	NST (Newfoundland Standard Time)
BST	GMT-03:00	Buenos Aires	BST (Brazil Standard Time), ADT (Atlantic Daylight Time), GST (Greenland Standard Time)
AT	GMT-02:00	Mid-Atlantic	AT (Azores Time)
WAT	GMT-01:00	Azores	WAT (West Africa Time)
GMT	GMT 00:00	London	GMT (Greenwich Mean Time), WET (Western European Time), UT (Universal Time)
CET	GMT+01:00	Paris	CET (Central European Time), MET (Middle European Time), BST (British Summer Time), MEWT(Middle European Winter Time), SWT (Swedish Winter Time), FWT (French Winter Time)
EET	GMT+02:00	Athens, Rome	EET (Eastern European Time), USSR-zone1, MEST (Middle European Summer Time), FST (French Summer Time)
BT	GMT+03:00	Baghdad, Moscow	BT (Baghdad Time), USSR-zone2
IT	GMT+03:30	Tehran	IT (Iran Time)
ZP4	GMT+04:00	Abu Dhabi	USSR-zone3, ZP4 (GMT Plus 4 Hours)
AFG	GMT+04:30	Kabul	Afghanistan
ZP5	GMT+05:00	Islamabad	USSR-zone4, ZP5 (GMT Plus 5 Hours)

Table 3-4 Time Zone Abbreviations

Abbreviation	GMT Offset	Cities	Time Zone Names
IST	GMT+05:30	Bombay, Delhi	IST (Indian Standard Time)
ZP6	GMT+06:00	Colombo	USSR-zone5, ZP6 (GMT Plus 6 Hours)
SUM	GMT+06:30	North Sumatra	NST (North Sumatra Time)
WAST	GMT+07:00	Bangkok, Hanoi	SST (South Sumatra Time), USSR-zone6, WAST (West Australian Standard Time)
HST	GMT+08:00	Beijing, Hong Kong	CCT (China Coast Time), HST (HongKong Standard Time), USSR-zone7, WADT (West Australian Daylight Time)
JST	GMT+09:00	Tokyo, Seoul	JST (Japan Standard Time/Tokyo), KST (Korean Standard Time), USSR-zone8
CAST	GMT+09:30	Darwin	SAST (South Australian Standard Time) , CAST (Central Australian Standard Time)
EAST	GMT+10:00	Brisbane, Guam	GST (Guam Standard Time),USSR-zone9, EAST (East Australian Standard Time)
EADT	GMT+11:00	Solomon Islands	USSR-zone10, EADT (East Australian Daylight Time)
NZST	GMT+12:00	Auckland	NZT (New Zealand Time/Auckland), NZST (New Zealand Standard Time), IDLE (International Date Line East)

Example 3-1 Sample MGCP Default Configuration File

```
# Any or All of these options can be configured
# in the user config file (MGC<MAC ADDR>.cnf).
# The user config file options override any options
# specified here in the Default Config File.
# :sample user config file name: MGC003E362FE92.cnf

# image_version - specifies which image version should
# be on the phone. This is used to upgrade from an
# MGCP image to a different MGCP image. The OS79XX.TXT
# file is only used to switch protocols (ie. SIP to MGCP).
image_version: POM3-04-2-00

# tftp_cfg_dir - specifies the directory to use for the
# retrieving the MGC<MAC ADDR>.cnf file. The base
# for the directory is the base TFTP Server directory.
# tftp_cfg_dir is limited to 64 characters.
tftp_cfg_dir : ""

# phone_password - specifies the password used to telnet
# to the phone. phone_password is limited to 32 characters.
# phone_prompt - specifies the prompt the phone will display
# when logged in from the console or telnet session.
# phone_prompt is limited to 16 characters.
phone_password : "password"
phone_prompt : "MGCP Phone"

# sntp_mode - specifies the mode the SNTP server uses
# (unicast, multicast, anycast, directedbroadcast)
```

```

# sntp_server - specifies the address of the SNTP server
sntp_mode : Unicast
sntp_server : "1.2.3.4"

# The following parameters setup time zone and
# daylight savings settings.
# Supported time zones are :
# EST, AST, NST, BST, AT, WAT, GMT, HST, YST
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 : 2
dst_stop_month : "Oct"
dst_stop_day   : 0
dst_stop_day_of_week : "Sun"
dst_stop_week_of_month : 8
dst_stop_time  : 2
dst_auto_adjust : 1

# Date and Time format displays
# time_format_24hr (1 - yes, 0 - 12 hours format)
# date_format (M/D/Y, D/M/Y, Y/M/D, Y/D/M)
time_format_24hr : 1
date_format : M/D/Y

# Language - specifies which language to use for
# internal strings [english (default), swedish]
language: "english"

# MGCP Call Agent Information
# mgcp_gw_controller - address of call agent
# mgcp_input_port - port the phone listens on
# mgcp_output_port - port the call agent listens on
# mgcp_keepalive - specifies if the RSIP keepalive should
# be used to keep NAT bindings open to the Call Agent.
# values are [0 - off (default), 1 - on]
# mgcp_keepalive_timer - specifies the time interval to
# use for the mgcp keepalive timer if turned on.
# values are in seconds [10 to 600, 30 is default].
mgcp_gw_controller : 1.2.3.4
mgcp_input_port : 2427
mgcp_output_port : 2727
mgcp_keepalive: 1
mgcp_keepalive_timer: 30

# xml_card_dir - specifies the directory to use for the
# retrieving the xml cards file. The base
# for the directory is the base TFTP Server directory.
# xml_card_dir is limited to 64 characters.
# xml_card_file - specifies the file name of the XML Cards
# file. xml_card_file is limited to 20 characters.
xml_card_dir : ""
xml_card_file : "CARD.XML"

# tos_media - specifies the value to be used for the tos bits.
# valid range is 0-7.
tos_media: 7

#use_mac_name - specifies whether to use the IP address
# or MAC Address in the endpoint name. The default is
# to use the IP address. Valid values are :

```

```
# [ 0 - IP Address (default) 1 - Mac Address ]
use_mac_name: 1

services_url: "http://www.company.com/phone/services.asp"
directory_url: "http://www.company.com/phone/companydirectory.asp"
logo_url: "http://www.company.com/phone/logo.bmp"
```

Using the MGCP Phone Settings Button

You can configure several features using the settings button on your MGCP phone. Some of these features may differ depending on the vendor CA you are using. To begin you have to unlock the configuration mode.

There are two methods for unlocking the configuration mode: one method for phones that have Release 4.2 and later and one method for phones that have Release 4.1 and earlier.

In Release 4.2 or Later

In Cisco Release 4.2, there is an “Unlock Config” item in the phone settings menu. When you select Unlock Config, the user is prompted to enter a phone password using the alphanumeric entry function of the keypad. The phone password is set using the phone_password configuration parameter. When the correct password is entered, the configuration is unlocked and the settings can be changed.

The Unlock Config item in the menu changes to Lock Config and the configuration remains locked until it is unlocked. When the Settings menu is exited, the phone will automatically relock the configuration.

In Release 4.1 or Earlier

To configure the MGCP features on phones with earlier releases, perform the following tasks:

-
- Step 1** Unlock the phone by pressing ****#**. The lock icon changes to show that the phone is unlocked. If you do not unlock the phone, you cannot change the phone settings.
- Step 2** Press the **settings** button and use the arrow keys to scroll down to Network Configuration. Choose **Select**.
- Step 3** You can use this menu to configure the following items:
- IP address
 - Subnet mask
 - Default router
 - DNS
 - TFTP server address



Note You must disable DHCP before you can configure these items. If you do not, the phone does not allow you to override the values. To disable DHCP, in the Network Configuration screen, scroll down to DHCP Enabled and select **No**.

- Step 4** To configure additional items, return to the main **settings** menu, then scroll to MGCP configuration and choose **select**. This allows you to configure the following items:

- CA IP address
- Phone input port
- Phone output port

**Note**

Your call agent or service provider might offer additional phone features and capabilities not described in this chapter. Refer to the documentation from your call agent or service provider for instructions on using those features.

Customizing the Cisco MGCP IP Phone Ring Types

The Cisco MGCP IP phone ships with two ring types: Chirp1 and Chirp2. By default, your ring type options will be those two choices. However, using the RINGLIST.DAT file, you can customize the ring types that are available to the Cisco MGCP IP phone users.

-
- Step 1** Create a pulse code modulation (PCM) file of the desired ring types and store the PCM files in the root directory of your TFTP server. PCM files must contain no header information and must comply with the following format guidelines:
- 8000 Hz sampling rate
 - 8 bits per sample
 - u-law compression
- Step 2** Using an ASCII editor, open the RINGLIST.DAT file and for each of the ring types you are adding, specify the name as you want it to appear on the Ring Type menu; press **Tab**; and then specify the filename of the ring type. For example, the format of a pointer in your RINGLIST.DAT file should appear similar to the following:
- ```
Ring Type 1ringer1.pcm
```
- Step 3** After defining pointers for each of the ring types you are adding, save your modifications and close the RINGLIST.DAT file.
- 

## Viewing the Firmware Version

To view the firmware version, complete 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 **Firmware Versions**.

**Step 5** Press the **Select** soft key. The Firmware Versions panel appears.

The following information is displayed on this panel:

- Application Load ID—Current software image on the phone.
- Boot Load ID—Bootstrap loader image version that is manufactured on the phone. This image name does not change.

**Step 6** To exit the Firmware Versions panel, press the **Exit** soft key.

## Upgrading the Cisco MGCP IP Phone Firmware

You can use one of two methods to upgrade the firmware on your Cisco MGCP IP phones. You can upgrade the firmware on one phone at a time using the phone-specific configuration, or you can upgrade the firmware on a system of phones using the default configuration file.

### Before You Begin

- To upgrade the firmware on just one phone at a time, you upgrade the `image_version` in the phone-specific configuration file. To upgrade the firmware on a system of phones, specify the `image_version` in the default configuration file and do not define the `image_version` in the phone-specific configuration files.
- Ensure that the latest version of the Cisco MGCP IP phone firmware has been copied from Cisco.com to the root directory of your TFTP server.

See the upgrade scenarios in [Table 3-5](#) to determine how to upgrade.

**Table 3-5 Upgrade Scenarios**

| Image Name                                                                                                                                  | Use Section                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| P0M3-05-0-00 and P0M3-05-1-00                                                                                                               | <a href="#">Upgrading to Release 5.0 and Release 5.1, page 3-13</a>             |
| P0M3-03-03-0-00, P0M3-03-1-00, and P0M3-03-2-00, P0M30100, P0M30200, P0M30201, P0M3Zxxx, P0M30202, P0M30203, P0M3-03-y-xx, and P0M3-04-4-00 | <a href="#">Upgrading from Older Releases to the Current Release, page 3-15</a> |
| P0M3-xx-y-zz                                                                                                                                | <a href="#">Dual Booting from SCCP or MGCP to Release 4.0, page 3-16</a>        |

## Upgrading to Release 5.0 and Release 5.1

When you upgrade to Release 5.0 or Release 5.1, you will download a ZIP archive instead of a file as in earlier releases. Contained in the archive are the unsigned (.bin) and signed (.sbn) binary images. Specific information for each release is as follows:

**Release 5.0**

Cisco has added image authentication to IP phone protocols, which means that tampering with the binary image before the image is downloaded to the phone is not allowed. Any tampering with the image will cause the phone to fail the authentication process and reject the image. Once you download the Release 5.0 image, you cannot downgrade to any earlier releases.

**Release 5.1**

Release 5.1 is the second release of the signed Cisco IP phone image. Release 5.1 is compatible with Release 5.0 and later releases. Release 5.1 addresses the user interface responsiveness and voice clipping issues.

**Procedure**

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- Step 1** Unzip the ZIP archive to extract the binary images and any notes or readme text files. Read these text files for any special directions regarding the images.
- Step 2** Copy the new images P0M3-*xx-y-zz*.sbn (signed binary) and P0M3-*xx-y-zz*.bin (unsigned binary)—where *xx* is the release major version, *y* is the release minor version, and *zz* is the maintenance number—from Cisco.com to the root directory of the TFTP server.
- Step 3** Using a text editor, open the configuration file and update the image version specified in the `image_version` variable. The version name in the `image_version` variable should match the version name (without the .sbn extension) of the latest firmware that you downloaded (for example, P0M3-*xx-y-zz*).
- Step 4** Reset each phone.

The phone contacts the TFTP server and requests its configuration files. The phone compares the image defined in the file to the image that it has stored in Flash memory. If the phone determines that the image defined in the file differs from the image in Flash memory, it downloads the image defined in the configuration file (which is stored in the root directory on the TFTP server). Once the new image has been downloaded, the phone programs that image into Flash memory and then reboots.

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**Note**

If you do not define the `image_version` parameter in the default configuration file, only phones that have an updated phone-specific configuration file with the new image version and that have been restarted use the latest firmware image. All other phones use the older version until their configuration files have been updated with the new image version.

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## Upgrading from Release 2.2 or Later Releases to Release 4.0

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- Step 1** Copy the Release 4.0 image P0M3-*xx-y-zz*.bin, where *xx* is the release major version, *y* is the release minor version, and *zz* is the maintenance number, from Cisco.com to the root directory of the TFTP server.
- Step 2** Using a text editor, open the configuration file and update the image version specified in the `image_version` variable. The version name in the `image_version` variable should match the version name (without the .bin extension) of the latest firmware that you downloaded (for example, P0M3-*xx-y-zz*).
- Step 3** Reset each phone.

The phone contacts the TFTP server and requests its configuration files. The phone compares the image defined in the file to the image that it has stored in Flash memory. If the phone determines that the image defined in the file differs from the image in Flash memory, it downloads the image defined in the configuration file (which is stored in the root directory on the TFTP server). Once the new image has been downloaded, the phone programs that image into Flash memory and then reboots.

**Note**

If you do not define the `image_version` parameter in the default configuration file, only phones that have an updated phone-specific configuration file with the new image version and that have been restarted use the latest firmware image. All other phones use the older version until their configuration files have been updated with the new image version.

## Upgrading from Release 2.1 or Earlier Releases to Release 4.0

- Step 1** Copy the `P0M30202.bin` image from Cisco.com to the root directory of the TFTP server.
- Step 2** If you are dual booting from a Cisco IP phone running the Skinny Client Control Protocol (SCCP) or MGCP protocol, open the `OS79XX.TXT` file with a text editor and change the file to include `P0M30202`.
- Step 3** Open the phone configuration file with a text editor and edit the `image_version` variable to read `P0M30202`.
- Step 4** Reset each phone.  
  
The phone contacts the TFTP server and requests its configuration files. The phone compares the image defined in the file to the image that it has stored in Flash memory. If the phone determines that the image defined in the file differs from the image in Flash memory, it downloads the image defined in the configuration file (which is stored in the root directory on the TFTP server). Once the new image has been downloaded, the phone programs that image into Flash memory and then reboots.
- Step 5** Copy the Release 4.0 image `P0M3-xx-y-zz.bin`, where `xx` is the release major version, `y` is the release minor version, and `zz` is the maintenance number, from Cisco.com to the root directory of the TFTP server.
- Step 6** Using a text editor, open the configuration file and update the image version specified in the `image_version` variable. The version name in `image_version` variable should match the version name (without the `.bin` extension) of the latest firmware that you downloaded (for example, `P0M3-xx-y-zz`).
- Step 7** Reset each phone.

## Upgrading from Older Releases to the Current Release

- Step 1** Copy the `P0M3-xx-y-zz` image from Cisco.com to the root directory of the TFTP server.
- Step 2** Using a text editor, open the configuration file and update the image version specified in the `image_version` variable. The version name in `image_version` variable should match the version name (without the `.bin` extension) of the latest firmware that you downloaded.
- Step 3** Open the phone configuration file with a text editor and edit the `image_version` variable to read `P0M3-xx-y-zz`.

**Step 4** Reset each phone.

The phone contacts the TFTP server and requests its configuration files. The phone compares the image defined in the file to the image that it has stored in Flash memory. If the phone determines that the image defined in the file differs from the image in Flash memory, it downloads the image defined in the configuration file (which is stored in the root directory on the TFTP server). Once the new image has been downloaded, the phone programs that image into Flash memory and then reboots.

## Dual Booting from SCCP or MGCP to Release 4.0

**Step 1** If you are dual booting from a Cisco IP phone running the SCCP protocol, open the OS79XX.TXT file with a text editor and change the file to include POS30202.

**Step 2** If you are dual booting from a Cisco IP phone running the SIP protocol, open the OS79XX.TXT file with a text editor and change the file to include POM3-04-2-00.

**Step 3** Copy the Release 4.2 image POM3-xx-y-zz.bin, where xx is the release major version, y is the release minor version, and zz is the maintenance number, from Cisco.com to the root directory of the TFTP server.

Using a text editor, open the configuration file and update the image version specified in the `image_version` variable. The version name in `image_version` variable should match the version name (without the .bin extension) of the latest firmware that you downloaded (for example, POM3-xx-y-zz).

**Step 4** Reset each phone.

## Performing an Image Upgrade and Remote Reboot

With Release 4.0 and later releases of the Cisco MGCP IP phone, you can perform an image upgrade and remote reboot using Notify messages and the `syncinfo.xml` file.

**Note**

To perform an image upgrade and remote reboot, an MGCP call agent and a TFTP server must exist in the phone network.

To upgrade the firmware image and perform a remote reboot, complete the following steps:

**Step 1** Using an ASCII editor, open the MGCPDefault.cnf file located in the root directory of your TFTP server and change the `image_version` parameter to the name of the latest image.

**Step 2** Using an ASCII editor, open the `syncinfo.xml` file located in the root directory of your TFTP server and specify values for the image version and sync parameter as follows:

```
<IMAGE VERSION="image_version" SYNC="sync_number" />
```

Where:

- `image_version` is the image version of the phone. The asterisk (\*) can be used as a wildcard character.
- `sync_number` is the synchronization level of the phone. The default synchronization level for the phone is 1. A valid value is a character string of up to 32 characters.

**Step 3** Send an RQNT message to the phone. In the RQNT message, ensure that the signal line is equal to X-check-sync.

The following is a sample RQNT message:

```
RQNT 9713 d001 @ 003094c25d40 MGCP 0.1
X: 100
S: X-check-sync
```

After the remote reboot process is initiated on the phone via the NOTIFY message, the following actions take place:

1. If the phone is currently in an idle state, the phone waits 20 seconds and then contacts the TFTP server for the syncinfo.xml file. If the phone is not in an idle state, the phone waits until it is in an idle state for 20 seconds and then contacts the TFTP server for the syncinfo.xml file.
2. The phone reads the syncinfo.xml file and performs the following as appropriate:
  - a. Determines whether the current image is specified. If so, the phone proceeds to Step c. If not, the phone proceeds to Step b.
  - b. Determines whether there is a wildcard entry (\*) in the image version parameter. If so, the phone proceeds to Step c. If not, the phone proceeds to Step d.
  - c. Determines if the synchronization value is different than what is stored on the phone. If so, the phone proceeds to Step e. If not, the phone proceeds to Step d.
  - d. The phone does nothing.
  - e. The phone reboots.

The phone then performs a normal reboot process, sees the new image, and upgrades to the new image with a synchronization value of what is specified in the syncinfo.xml file.

The phone contacts the TFTP server and requests its configuration files. The phone compares the image defined in the file to the image that it has stored in Flash memory. If the phone determines that the image defined in the file differs from the image in Flash memory, it downloads the image defined in the configuration file (which is stored in the root directory on the TFTP server). Once the new image has been downloaded, the phone programs that image into Flash memory and then reboots.

