



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.

This chapter includes the following sections:

- [MGCP Commands, page 4-1](#)
- [Using Telnet to Connect to Your Cisco MGCP IP Phone, page 4-2](#)
- [Using Configuration Files, page 4-6](#)
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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's capabilities and vary by vendor.

MGCP Commands

The Cisco MGCP IP phone supports the MGCP commands shown in [Table 4-1](#):

Table 4-1 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

Table 4-1 MGCP Commands

Command	Description	Direction
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 Telnet to Connect to Your Cisco MGCP IP Phone

You can use Telnet to view information about your Cisco MGCP IP phone and enter some configuration commands. Only two Telnet sessions can be open at any time, and the Cisco MGCP IP phone cannot originate a Telnet session to another address.

[Table 4-1](#) shows the available commands:

Command	Purpose
<pre>MGCP Phone> debug {console-stall strlib malloc malloctable sk-platform flash dsp vcm dtmf task-socket mgcpio mgcp_parse dns config sntp sntp-packet}</pre>	<p>Shows detailed MGCP debug command output when used with the following keywords:</p> <ul style="list-style-type: none"> • console-stall: Shows debug command output for the console-stall driver output mode. • strlib: Shows debug command out put for the string library. • malloc: Shows debug command output for memory allocation. • malloc-table: Shows debug command output for the memory allocation table. • sk-platform: Shows debug command output for the platform. • flash: Shows debug command output for the Flash memory. • dsp: Shows debug command output for DSP accesses • vcm: Shows debug command output for the voice channel manager (VCM), including tones, ringing, and volume. • dtmf: Shows debug command output for dual-tone multifrequency (DTMF) relay. • task-socket: Shows socket task debug command output. • mgcpio: Shows debug command output for MGCP input/output. • mgcp_parse: Shows detailed MGCP debug command output; displays each MGCP message getting parsed or built. • dns: Shows the DNS command-line interface (CLI) configuration; allows you to clear the cache and set servers). • config: Shows output for the config system option. • sntp: Shows debug command output for Simple Network Time Protocol (SNTP) • sntp-packet: Displays full SNTP packet data. <p>Note Do not use the debug all command because it can cause the phone to become inoperable. This command is for use only by Cisco TAC personnel.</p>
<pre>MGCP Phone> dns</pre>	<p>Manipulates the DNS system. The following arguments are used:</p> <ul style="list-style-type: none"> • -p: Prints out the DNS cache table. • -c: Clears out the DNS cache table. • -s ipaddress: Sets the primary DNS server. • -b ip address: Sets the first backup server.
<pre>MGCP Phone> exit</pre>	<p>Exits the Telnet or console session.</p>
<pre>MGCP Phone> ping ipaddress number packetsize timeout</pre>	<p>Sends an Internet Control Message Protocol (ICMP) ping to a network address. You can use a dotted IP address or an alphanumeric address. The <i>number</i> value specifies how many pings to send; the default value is 5. The <i>packetsize</i> argument defines the size of the packet; you can send any size packet up to 1480 bytes and the default packet size is 100. The <i>timeout</i> value is measured in seconds and identifies how long to wait before the request times out; the default is 2.</p>
<pre>MGCP Phone> reset</pre>	<p>Resets the phone.</p>

Command	Purpose
<pre>MGCP Phone> show {debug strpool memorymap dump malloctable stacks status abort_vector flash timers dspstate rtp tcp lists network config mgcp_lists}</pre>	<p>Shows information about the Cisco MGCP IP phone. The following keywords are used:</p> <ul style="list-style-type: none"> • debug: Shows which debug command modes are activated. • strpool: Shows the string library pool of strings. • memorymap: Shows memory mapping table, including free, used, and wasted blocks. • dump: Displays a dump of the memory contents. • malloctable: Shows the memory allocation table. • stacks: Shows tasks and buffer lists. • status: Shows the current phone status, including errors. • abort_vector: Shows the address of the last recorded abort vector. • flash: Shows Flash memory information. • timers: Shows a list of timers, including the expiration time and other data about each. • dspstate: Shows the digital signal processor (DSP) status, including whether the DSP is ready, the audio mode, if keepalive pending is turned on, and the ringer state. • rtp: Shows packet statistics for the RTP streams. • tcp: Shows the status of TCP ports, including the state (listen or closed) and the port number. • network: Shows network information, such as phone platform, DHCP server, phone IP address and subnet mask, default gateway, address of the TFTP server, phone MAC address, domain name, and phone name. • config: Shows the current Flash memory configuration, including network information, phone label and password, SNTP server address, daylight saving time (DST) information, time and date format, CA address, and MGCP input and output port numbers. • mgcp_lists: Shows the filter list and duplicate message list lengths.

Command	Purpose
MGCP Phone> test { open close key onhook offhook show hide }	<p>Accesses the remote call test interface, allowing you to control the phone from a remote site. To use this feature, enter the test open command. To prevent use of this feature, enter the test close command.</p> <p>The following commands are available:</p> <ul style="list-style-type: none"> • test key: When a test session is open, you can simulate key presses using the test key k1 k2 k3...k13 command, where k1 through k13 represent the following key names: <ul style="list-style-type: none"> - voldn—Volume down - volup—Volume up - headset—Headset - spkr—Speaker - mute—Mute - info—Info - msgs—Messages - serv—Services - dir—Directories - set—Settings - navup—Navigate up - navdn—Navigate down <p>The keys 0 through 9, #, and * may be entered in continuous strings to better express typical dialing strings. A typical command would be test ky 23234.</p> <ul style="list-style-type: none"> • test onhook: Simulates a handset onhook event. • test offhook: Simulates a handset offhook event. • test show: Show test feedback. • test hide: Hide test feedback.
MGCP Phone> timers	<p>Shows current outstanding MGCP timers in the system. Used in debugging the system.</p>
MGCP Phone> traceroute <i>ip-address</i> [<i>tvl</i>]	<p>Initiates a traceroute session from the console or from a Telnet session. Traceroute shows the route that IP datagrams follow from the MGCP IP phone to the specified IP address. Use the following two arguments:</p> <ul style="list-style-type: none"> • <i>ip-address</i>: The dotted IP address or alphanumeric address (host name) of the host to which you are sending the traceroute. • <i>tvl</i>: The time-to-live value, or the number of routers (hops) through which the datagram can pass. The default value is 30.

Command	Purpose
MGCP Phone> tty { echo { on off } mon timeout <i>value</i> kill <i>session</i> msg }	Controls the Telnet system. The echo keyword controls local echo. The mon keyword sends all debug command output to both the console and Telnet sessions. The timeout <i>value</i> keyword sets the telnet session timeout period based on the value. The <i>value</i> range is 0 through 65535. The kill <i>session</i> keyword tears down the Telnet session specified by the <i>session</i> argument. The msg keyword allows you to send a message to another terminal logged into the phone; for example, you can send a message telling everyone else that is logged in to log off.
MGCP Phone> undebug { console-stall strlib malloc malloctable sk-platform flash dsp vcm dtmf task-socket mgcpio mgcp_parse dns config sntp sntp-packet }	Turns off debugging.

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 4-2 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 4-2 Default MGCP Configuration File Parameters

Parameter	Description
date_format	<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 <p>The default is M/D/Y.</p>
dst_auto_adjust	<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>
dst_offset	<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 the same as for the time_zone parameter.</p>
dst_start_day	<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 dst_start_day_of_week parameter be used instead.</p>
dst_start_day_of_week	<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>
dst_start_month	<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>
dst_start_time	<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>
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>

Table 4-2 Default MGCP Configuration File Parameters

Parameter	Description
dst_stop_day_of_week	Day of the week on which DST ends. 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.
dst_stop_month	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.
dst_stop_time	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.
dst_stop_week_of_month	Week of month in which DST ends. 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.
dtmf_avt_payload	Payload type for AVT packets. Possible range is 96 to 127. If the value specified exceeds 127, the phone will default to 101.
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.
mgcp_gw_controller	IP address of CA.
mgcp_input_port	Port on which the phone listens. The default is 2427.
mgcp_output_port	Port on which the CA listens. The default is 2427.
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."
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 4-3 for more information.
tftp_cfg_dir	Path to the TFTP subdirectory in which phone-specific configuration files are stored. Note Exists only in the MGCDefault.cnf file.

Table 4-2 Default MGCP Configuration File Parameters

Parameter	Description
time_format_24hr	<p>Whether a 12 or 24-hour time format is displayed by default on the phones' user interface. Valid values are:</p> <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. <p>The default value is 1.</p>
time_zone	<p>Time zone in which the phone is located. Valid values are hour/minute, -hour/minute, +hour/minute, hour, -hour, +hour, PST, MST, CST, or EST. (Time zone abbreviations are case sensitive and must be in all capital letters.)</p>
tos_media	<p>Type of Service (ToS) level for the media stream being used. Valid values are:</p> <ul style="list-style-type: none"> • 0 (IP_ROUTINE) • 1 (IP_PRIORITY) • 2 (IP_IMMEDIATE) • 3 (IP_FLASH) • 4 (IP_OVERRIDE) • 5 (IP_CRITIC) <p>The default is 5.</p>
use_mac_name	<p>Specifies whether to use the IP address or MAC address in the endpoint name. By default, the IP address is used. Valid values are:</p> <ul style="list-style-type: none"> • 0—IP address • 1—MAC address
xml_card_dir	<p>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.</p>
xml_card_file	<p>The file name of the XML cards. This field is limited to 20 characters.</p>

[Table 4-3](#) lists the actions that take place when a valid IP address is specified in the `sntp_server` parameter.

Table 4-3 Actions Based on *sntp_mode* When the *sntp_server* Parameter is Set to an IP Address

sntp_server = 192.168.1.9	sntp_mode=unicast	sntp_mode=multicast	sntp_mode=anycast	sntp_mode=directedbroadcast
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.

Example 4-1 Sample MGCP Default Configuration File

```

Basic MGCP Default Config File Options
#
# 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: P0M3-03-0-00

# 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 : "cisco"
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 : "172.18.198.13"

# 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

# 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_gw_controller : 172.18.198.13
mgcp_input_port : 2427
mgcp_output_port : 2727

# 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: 0

# End of Basic MGCP Default Config File.

```

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 configure MGCP features, perform the following tasks:

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- 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.
