

Configuration Files for Phones

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Information About Configuration Files

Configuration Files for Phones

When a phone requests service from Cisco Unified CME, the registrar confirms the username, i.e. the phone number for the phone. The phone accesses its configuration profile on the TFTP server, typically the Cisco Unified CME router, and processes the information contained in the file, registers itself, and puts the phone number on the phone console display.

Minimally, a configuration profile contains the MAC address, the type, and the phone number that is permitted by the registrar to handle the Register message for a particular Cisco Unified IP phone.

Any time you create or modify parameters for either an individual phone or a directory number, generate a new phone configuration to properly propagate the parameters.

By default, there is one shared XML configuration file located in system:/its/ for all Cisco Unified IP phones that are running SCCP. For SIP phones directly connected to Cisco Unified CME, an individual configuration profile is created for each phone and stored in system:/cme/sipphone/.

When an IP phone comes online or is rebooted, it automatically gets information about itself from the appropriate configuration file.

The Cisco universal application loader for phone firmware files allows you to add additional phone features across all protocols. To do this, a hunt algorithm searches for multiple configuration files. After a phone is reset or restarted, the phone automatically selects protocol depending on which *matching* configuration file is found first. To ensure that Cisco Unified IP phones download the appropriate configuration for the desired protocol, SCCP or SIP, you must properly configure the IP phones *before* connecting or rebooting the phones. The hunt algorithm searches for files in the following order:

1. CTLSEP <mac> file for a SCCP phone—For example, CTLSEP003094C25D2E.tlv
2. SEP <mac> file for a SCCP phone—For example, SEP003094C25D2E.cnf.xml
3. SIP <mac> file for a SIP phone—For example, SIP003094C25D2E.cnf or gk003069C25D2E

4. XML default file for SCCP phones—For example, SEPDefault.cnf.xmls
5. XML default file for SIP phones—For example, SIPDefault.cnf

In Cisco Unified CME 4.0 and later for SCCP and in Cisco CME 3.4 and later for SIP, you can designate one of the following locations in which to store configuration files:

- System (Default)—For SCCP phones, one configuration file is created, stored, and used for all phones in the system. For SIP phones, an individual configuration profile is created for each phone.
- Flash or slot 0—When flash or slot 0 memory on the router is the storage location, you can create additional configuration files to be applied per phone type or per individual phone, such as user or network locales.
- TFTP—When an external TFTP server is the storage location, you can create additional configuration files to be applied per phone type or per individual phone, which are required for multiple user and network locales.

Per-Phone Configuration Files

If configurations files for SCCP phones are to be stored somewhere other than in the default location, the following individual configuration files can be created for SCCP phones:

- Per phone type—Creates separate configuration files for each phone type and all phones of the same type use the same configuration file. This method is not supported if the configuration files are to be stored in the system location.
- Per phone—Creates a separate configuration file for each phone, by MAC address. This method is not supported if the configuration files are to be stored in the system location.

For configuration information, see Define Per-Phone Configuration Files and Alternate Location for SCCP Phones.

Generate Configuration Files for Phones

Generate Configuration Files for SCCP Phones

To generate the configuration profile files that are required by the SCCP phones in Cisco Unified CME and write them to either system memory or to the location specified by the **cnf-file location** command, follow the steps in this section.

Restriction

- Externally stored and per-phone configuration files are not supported on the Cisco Unified IP Phone 7902G, 7910, 7910G, or 7920, or the Cisco Unified IP Conference Station 7935 and 7936.
- TFTP does not support file deletion. When configuration files are updated, they overwrite any existing configuration files with the same name. If you change the configuration file location, files are not deleted from the TFTP server.
- Generating configuration files on flash or slot 0 can take up to a minute, depending on the number of files being generated.
- F or smaller routers such as Cisco 2600 series routers, you must manually enter the **squeeze** command to erase files after changing the configuration file location or entering any commands that trigger the deletion of configuration files. Unless you use the **squeeze** command, the space used by the moved or deleted configuration files is not usable by other files.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **telephony-service**
4. **create cnf-files**
5. **end**

DETAILED STEPS

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**telephony-service** **Example:** `Router(config)# telephony-service`	Enters telephony-service configuration mode.
Step 4	**create cnf-files** **Example:** `Router(config-telephony)# create cnf-files`	Builds the XML configuration files required for IP phones.

	Command or Action	Purpose
Step 5	**end** **Example:** `Router(config-telephony)# end`	Returns to privileged EXEC mode.

Verify Configuration Files for SCCP Phones

To verify the Cisco Unified CME phone configuration, perform the following steps.

Procedure

Step 1 **show telephony-service all**

Use this command to verify the configuration for phones, directory numbers, voice ports, and dial peers in Cisco Unified CME.

Example:

```
Router# show telephony-service all

    CONFIG (Version=4.0(0))
    ====================
    Version 4.0(0)
    Cisco Unified CallManager Express
    For on-line documentation please see:
    www.cisco.com/en/US/products/sw/voicesw/ps4625/tsd_products_support_series_home.html

    ip source-address 10.0.0.1 port 2000
    max-ephones 24
    max-dn 24
    dialplan-pattern 1 408734....
    voicemail 11111
    transfer-pattern 510734....
    keepalive 30

    ephone-dn 1
    number 5001
    huntstop

    ephone-dn 2
    number 5002
    huntstop
    call-forward noan 5001 timeout 8
```

Step 2 **show telephony-service tftp-bindings**

Use this command to display the current configuration files accessible to IP phones.

Example:

```
Router# show telephony-service tftp-bindings

   tftp-server system:/its/SEPDEFAULT.cnf
   tftp-server system:/its/SEPDEFAULT.cnf alias SEPDefault.cnf
   tftp-server system:/its/XMLDefault.cnf.xml alias XMLDefault.cnf.xml
```

```
tftp-server system:/its/ATADefault.cnf.xml
tftp-server system:/its/XMLDefault7960.cnf.xml alias SEP00036B54BB15.cnf.xml
tftp-server system:/its/germany/7960-font.xml alias German_Germany/7960-font.xml
tftp-server system:/its/germany/7960-dictionary.xml alias German_Germany/7960-dictionary.xml
tftp-server system:/its/germany/7960-kate.xml alias German_Germany/7960-kate.xml
tftp-server system:/its/germany/SCCP-dictionary.xml alias German_Germany/SCCP-dictionary.xml
tftp-server system:/its/germany/7960-tones.xml alias Germany/7960-tones.xml
```

Generate Configuration Profiles for SIP Phones

To generate the configuration profile files that are required by the SIP phones in Cisco Unified CME and write them to the location specified by the **tftp-path (voice register global)** command, follow the steps in this section.

Any time you create or modify parameters under the voice register dn or voice register pool configuration modes, generate a new configuration profile and properly propagate the parameters.

Caution If your Cisco Unified CME system supports SCCP and also SIP phones, do not connect your SIP phones to the network until after you have verified the phone configuration profiles.

Before you begin

- Cisco Unified CME 3.4 or a later version.
- The **mode** cme command must be enabled in Cisco Unified CME.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **voice register global**
4. **file text**
5. **create profile**
6. **end**

DETAILED STEPS

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:** `Router> enable`	Enables privileged EXEC mode. • Enter your password if prompted.

	Command or Action	Purpose
Step 2	**configure terminal** **Example:** `Router# configure terminal`	Enters global configuration mode.
Step 3	**voice register global** **Example:** `Router(config)# voice register global`	Enters voice register global configuration mode to set parameters for all supported SIP phones in Cisco Unified CME.
Step 4	**file text** **Example:** `Router(config-register-global)# file text`	(Optional) Generates ASCII text files of the configuration profiles generated for Cisco Unified IP Phone 7905s and 7905Gs, Cisco Unified IP Phone 7912s and 7912Gs, Cisco ATA-186, or Cisco ATA-188. • Default—System generates binary files to save disk space.
Step 5	**create profile** **Example:** `Router(config-register-global;)# create profile`	Generates configuration profile files required for SIP phones and writes the files to the location specified with **tftp-path** command.
Step 6	**end** **Example:** `Router(config-register-global)# end`	Exits configuration mode and enters privileged EXEC mode.

Verify Configuration Profiles for SIP Phones

To verify the configuration profiles, perform the following steps. SIP phones to be connected to Cisco Unified CME can register and minimally, have an assigned phone number, only if the configuration is correct.

Procedure

Step 1 **show voice register tftp-bind**

Use this command to display a list of configuration profiles that are accessible to SIP phones using TFTP. The file name includes the MAC address for each SIP phone, such as SIP <mac-address>.cnf. Verify that a configuration profile is available for each SIP phone in Cisco Unified CME.

The following is sample output from this command:

Example:

```
Router(config)# show voice register tftp-bind

tftp-server SIPDefault.cnf url system:/cme/sipphone/SIPDefault.cnf>
tftp-server syncinfo.xml url system:/cme/sipphone/syncinfo.xml
tftp-server SIP0009B7F7532E.cnf url system:/cme/sipphone/SIP0009B7F7532E.cnf
tftp-server SIP000ED7DF7932.cnf url system:/cme/sipphone/SIP000ED7DF7932.cnf
```

```
tftp-server SIP0012D9EDE0AA.cnf url system:/cme/sipphone/SIP0012D9EDE0AA.cnf
tftp-server gk123456789012 url system:/cme/sipphone/gk123456789012
tftp-server gk123456789012.txt url system:/cme/sipphone/gk123456789012.txt
```

Step 2 **show voice register profile**

Use this command to display the contents of the ASCII format configuration profile for a particular voice register pool.

Note
To generate ASCII text files of the configuration profiles for Cisco Unified IP Phone 7905s and 7905Gs, Cisco Unified IP Phone 7912s and 7912Gs, Cisco ATA-186s, and Cisco ATA-188s, use the **file text** command.

Example:

The following is sample output from this command displaying information in the configuration profile for voice register pool 4.

```
Router# show voice register profile text 4

Pool Tag: 4
# txt
AutoLookUp:0
DirectoriesUrl:0
…
CallWaiting:1
CallForwardNumber:0
Conference:1
AttendedTransfer:1
BlindTransfer:1
…
SIPRegOn:1
UseTftp:1
UseLoginID:0
UIPassword:0
NTPIP:0.0.0.0
UID:2468
```

Step 3 **more system**

Use this command to display the contents of the configuration profile for a particular Cisco Unified IP Phone 7940, Cisco Unified IP Phone 7905G, Cisco Unified IP Phone 7960, or Cisco Unified IP Phone 7960G.

The following is sample output from this command displaying information in two SIP configuration profile files. The SIPDefault.cnf configuration profile is a shared file and SIP < MAC address > .cnf is the SIP configuration profile for the SIP phone with the designated MAC address.

```
Router# more system:/cme/sipphone/SIPDefault.cnf

image_version: "P0S3-07-4-00";
proxy1_address: "10.1.18.100";
proxy2_address: "";
proxy3_address: "";
proxy4_address: "";
proxy5_address: "";
proxy6_address: "";
proxy1_port: "5060";
proxy2_port: "";
proxy3_port: "";
proxy4_port: "";
proxy5_port: "";
proxy6_port: "";
proxy_register: "1";
time_zone: "EST";
```

```
dst_auto_adjust: "1";
dst_start_month: "April";
dst_start_day: "";
dst_start_day_of_week: "Sun";
dst_start_week_of_month: "1";
dst_start_time: "02:00";
dst_stop_month: "October";
dst_stop_day: "";
dst_stop_day_of_week: "Sun";
dst_stop_week_of_month: "8";
dst_stop_time: "02:00";
date_format: "M/D/Y";
time_format_24hr: "0";
local_cfwd_enable: "1";
directory_url: "";
messages_uri: "2000";
services_url: "";
logo_url: "";
stutter_msg_waiting: "0";
sync: "0000200155330856";
telnet_level: "1";
autocomplete: "1";
call_stats: "0";
Domain_Name: "";
dtmf_avt_payload: "101";
dtmf_db_level: "3";
dtmf_inband: "1";
dtmf_outofband: "avt";
dyn_dns_addr_1: "";
dyn_dns_addr_2: "";
dyn_tftp_addr: "";
end_media_port: "32766";
http_proxy_addr: "";
http_proxy_port: "80";
nat_address: "";
nat_enable: "0";
nat_received_processing: "0";
network_media_type: "Auto";
network_port2_type: "Hub/Switch";
outbound_proxy: "";
outbound_proxy_port: "5060";
proxy_backup: "";
proxy_backup_port: "5060";
proxy_emergency: "";
proxy_emergency_port: "5060";
remote_party_id: "0";
sip_invite_retx: "6";
sip_retx: "10";
sntp_mode: "directedbroadcast";
sntp_server: "0.0.0.0";
start_media_port: "16384";
tftp_cfg_dir: "";
timer_invite_expires: "180";
timer_register_delta: "5";
timer_register_expires: "3600";
timer_t1: "500";
timer_t2: "4000";
tos_media: "5";
voip_control_port: "5060";

Router# more system:/cme/sipphone/SIP000CCE62BCED.cnf

image_version: "P0S3-07-4-00";
user_info: "phone";
```

```
line1_name: "1051";
line1_displayname: "";
line1_shortname: "";
line1_authname: "1051";
line1_password: "ww";
line2_name: "";
line2_displayname: "";
line2_shortname: "";
line2_authname: "";
line2_password: "";
auto_answer: "0";
speed_line1: "";
speed_label1: "";
speed_line2: "";
speed_label2: "";
speed_line3: "";
speed_label3: "";
speed_line4: "";
speed_label4: "";
speed_line5: "";
speed_label5: "";
call_hold_ringback: "0";
dnd_control: "0";
anonymous_call_block: "0";
callerid_blocking: "0";
enable_vad: "0";
semi_attended_transfer: "1";
call_waiting: "1";
cfwd_url: "";
cnf_join_enable: "1";
phone_label: "";
preferred_codec: "g711ulaw";
```

Where To Go Next

After you generate a configuration file for a Cisco Unified IP phone connected to the Cisco Unified CME router, you are ready to download the file to the phone. See Reset and Restart Phones.