CUCME Configuration Best Practices

Contents

Introduction

This document describes the best practice rules for Cisco Unified Communication Manager Express (CUCME).

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Cisco Unified Communication Manager Express (CUCME)

Components Used

The information in this document is based on these software versions:

- CUCME 7.X and later

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Best Practices for Specific Scenarios

Transfer Pattern Configuration Check

Symptom:

Unable to transfer calls to external numbers from IP phones registered to CUCME.

Configuration Check:

Check for the presence of **transfer-pattern** command under the **telephony-service** command mode.

```
telephony-service
transfer-pattern [\.0-9T]+
```

Recommended Action:

Review documentation:

Modify Configuration:

Add or modify the **transfer-pattern** command so that calls can be transferred.

Example 1: Allows transfer to any number.

```
telephony-service
transfer-pattern .T
```
Example 2: Allows transfers only to local numbers, where local numbers are 10 digits with the 919 area code.

```
telephony-service
transfer-pattern 919.......
```

Multicast Paging

Symptom:

Some members of the paging group may not receive the paging call if the total number of members in an unicast paging group is greater than 10.

Configuration Check:

Check to see if the **paging-dn** command is configured under any of the ephone's defined.

```
 ephone [0-9]+
   mac-address[0-9ABCDEF\.]*
   type.*
   button.*
   paging-dn [0-9]*
```
For any **paging-dn** found in the above step, look for the **paging ip[.\.]+** command. This denotes whether it's defined for multicast or unicast paging. If not found, it's unicast.

Recommended Action:

If the paging dn is not defined for multicast, then the group can only contain 10 members. For groups with more than 10, re-configure the paging dn for multicast by adding the **paging ip** command.

Example #1

```
ephone-dn 1
number 3001
paging ip 239.1.1.1 port 2000
```
Review documentation for additional information:

CUCME Multicast Music on Hold (MoH)

Symptom:

Internal calls (i.e. calls between IP phones registered to the same CUCME) when kept on hold do not receive MOH instead they hear a periodic tone.

Configuration Check:

Check for the **multicast moh** command under telephony-service.

```
telephony-service
multicast moh [.\.]+
```

Recommended Action:

Multicast MoH must be enabled in order for internal to internal IP phone calls to receive MoH. If not configured, enable it using the **multicast moh** command. Also make sure CUCME is running on the router.

Refer to documentation for additional information:

http://www.cisco.com/en/US/partner/docs/voice_ip_comm/cucme/admin/configuration/guide/cmemoh.html

CUCME Hardware Conferencing

Symptom:

IP Phone registered to CUCME cannot create a conference call with more than 3 parties.

Configuration Check:

Check to see if the **conference hardware** command is configured under **telephony-service**.

```
telephony-service
conference hardware
```

Verify **dsp service dspfarm** is configured under the **voice-card** sub-command mode.

```
voice-card $tag1
dsp service dspfarm
```

Verify that the dspfarm conference profile is in a **no shutdown** state and **associate application SCCP** is configured.

```
dspfarm profile $tag2 conference
associate application SCCP
no shutdown
```

Ensure the $tag for the dspfarm profile is associated with the **sccp ccm group** defined for the CME.

```
sccp ccm group $tag3
associate profile $tag2 register $name
```

Ensure that the correct sccp ccm group $tag3 is defined under **telephony-service**.

```
telephony-service
sdspfarm tag $tag4 $name
```

Ensure there are **ephone-dn's** configured with the **conference ad-hoc** or **conference meetme** options and that they have valid a **number**.

```
ephone-dn $tag
number [0-9ABCDEF]*
 conference ad-hoc  ephone-dn $tag
number [0-9ABCDEF]*
 conference meetme
```

Recommended Action:

Verify configuration is correct. Ensure that the conference resource is up and in a registered state. Issue the **show sccp** command to determine the status.

Refer to the documentation for additional information:

http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/admin/configuration/guide/cmeconf.html

Olson Timezone File Check

Symptom:

The Olson Timezone feature allows for the user to update the timezones available to IP phones by uploading new tzupdater.jar and TzDataCSV.csv files. The files need to be accessible via TFTP for the phones to download and use. This allows for timezone changes to be incorporated into CUCME much faster as it only requires the files to be updated and not a new CUCME release.

Configuration Check:

Determine if the Olsen Timezone feature is being used in either CUCME Session Initiation Protocol (SIP) or Skinny Client Control Protocol (SCCP). Look for the **olsontimezone** command.

```
telephony-service
 olsontimezone $timezone version $version voice register global
 olsontimezone $timezone version $version
```

Check for the **tftp-server** commands for the two files used by the feature.

```
  tftp-server flash:tzupdater.jar
 tftp-server flash:TzDataCSV.csv
```

Recommended Action:

If the **olsontimezone** command is not configured then the files are not needed. If the feature is in use or needs to be configured, due to recent changes to the timezone or DST changes, then configure the feature and ensure the files are available for the phones to download.

Refer to the documentation for additional information:

http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/admin/configuration/guide/cmenetwk.html#wpmkr1070767

End User License Agreement (EULA) Check

Symptom:

If CUCME or CUCME-as-SRST (Survivable Remote Site Telephony) is configured on an Integrated Services Routers Generation 2 (ISR-G2) router but the EULA (End-User License Agreement) has not been accepted, the router will not allow any IP phones to register.

Configuration Check:

Check the status of EULA for the cme-srst license. Look at the output of **show license detail cme-srst** and check for "EULA not accepted" under the License State: section

```
Router#sh license detail cme-srst
Feature: cme-srst Period left: 8 weeks 4 days
Index: 1 Feature: cme-srst Version: 1.0
License Type: EvalRightToUse
License State: Not in Use, EULA not accepted
Evaluation total period: 8 weeks 4 days
Evaluation period left: 8 weeks 4 days
Period used: 0 minute 0 second
License Count: 0/0 (In-use/Violation)
License Priority: None
Store Index: 7
Store Name: Built-In License Storage
```

Recommended Action:

Issue the **license accept end user agreement** command to accept the EULA.

Refer to the documentation for additional information:

http://www.cisco.com/en/US/docs/routers/access/sw_activation/SA_on_ISR.html#wp1155517

SIP Trunk - Forward and Transfer

Symptom:

When an inbound call from a SIP Trunk provider to CUCME is forwarded or transferred to another destination across SIP Trunk, call forward / transfer may not be successful.

Configuration Check:

 Determine whether REFER and Call Forward Supplementary services are disabled under **voice service voip** :

```
voice service voip
  no supplementary-service sip moved-temporarily
```

```
  no supplementary-service sip refer
```

Recommended Action:

Most service providers don't support either SIP REFER or 302 Moved Temporarily to transfer or forward calls. It's best to have the CUCME perform the supplementary service. Ensure both are disabled.

```
voice service voip
  no supplementary-service sip moved-temporarily
  no supplementary-service sip refer
```

Refer to the documentation for additional information:

http://www.cisco.com/en/US/products/sw/voicesw/ps4625/products_configuration_example09186a00808f9666.shtml

GUI Access

Symptom:

Users are unable to access the CUCME GUI or the pages don't fully load.

Configuration Check:

Ensure GUI access for System/Customer Administrators is enabled under **telephony-service** by checking for **show run | sec web admin system name** or **show run | sec web admin customer name**

```
telephony-service
web admin system name cmesystemadmin secret 0 P@55w0Rd
web admin customer name CMEuser password hussain123
```

Ensure HTTP server is enabled by checking for following commands in **show run**. The parameters in curly braces {...} below can be anything but the ones listed in the example are the most common ones and should not be accounted for in the check.

```
ip http server
ip http authentication {local}
ip http path {flash:}
```

Check if the GUI files are available in the flash memory of the router by checking for **show flash: | include .html** and ensuring the listed html files are present.

```
Router#sh flash: | i .html
45 3987  Aug 21 2012 11:32:54 admin_user.html
52 6146  Aug 21 2012 11:33:08 ephone_admin.html
54 3866  Aug 21 2012 11:33:08 normal_user.html
59 2431  Aug 21 2012 11:33:12 telephony_service.html
61 9968  Aug 21 2012 11:33:14 xml-test.html
```

Recommended Action:

Ensure all GUI related commands are configured and files available on flash.

Refer to the documentation for additional information:

http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/admin/configuration/guide/cmegui.html

CUCME Basic Automatic Call Distribution and Auto-Attendant Service (B-ACD) Music-on-Hold

Symptom:

If the CUCME Router's flash does not have the B-ACD Music on Hold file, en_bacd_music_on_hold.au, callers in the queue will hear silence while waiting for an agent to become available.

Configuration Check:

The BACD service will use the default moh file name, en_bacd_music_on_hold.au, for MOH. Check to make sure that the file is in the flash and has the correct filename.

```
show flash: | sec "en_bacd_music_on_hold.au"
```

Recommended Action:

If the file is not in flash, download it from cisco.com. It's available in the BACD zip file, http://tools.cisco.com/squish/E8220, but can be downloaded individually.

Check that the filename is correct. It should be **en_bacd_music_on_hold.au**.

If it's a custom MOH file, ensure it was created correctly. It should be "G.711 audio file (.au) format with 8-bit, mu-law, and 8-kHz encoding."

Refer to the documentation for additional information.

http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/bacd/configuration/guide/40bacd.html

SIP/SCCP Phone Timezone Configuration

Symptom:

When the 'timezone' and 'olsontimezone' commands are not configured under Cisco Unified Communications Manager Express (CUCME), SIP/SCCP IP phones registered may not display the correct time. They may also not react to daylight savings time changes.

Configuration Check:

For SIP phones, check for either the **timezone** or **olsontimezone** commands under **voice register global**.

```
voice register global
   olsontimezone $timezone version $version
```
 or

```
voice register global
timezone [1-56]
```
 For SCCP phones, check for either the **time-zone** or **olsontimezone** commands under

telephony-service.

```
telephony-service
   olsontimezone $timezone version $version
```
 or

```
telephony-service
time-zone [1-56]
```

Recommended Action:

Configure the necessary command under **voice register global** or **telephony-service** and assign the correct value. Refer to the CUCME system configuration guide.

http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/admin/configuration/guide/cmesystm.html

http://www.cisco.com/en/US/docs/voice_ip_comm/cucme/admin/configuration/guide/cmenetwk.html