



# CableONE: Connecting Cisco Unified Communication Manager Express (CME 12.1) using SIP

March 2018



## Table of Contents

<b>Introduction</b> .....	3
<b>Network Topology</b> .....	4
Hardware Components.....	4
Software Requirements.....	4
<b>Features</b> .....	5
Features - Supported.....	5
Features Not Supported.....	5
<b>Caveats</b> .....	5
<b>Configuration Considerations</b> .....	6
<b>Configuration</b> .....	7
Cisco IOS Version.....	7
Cisco Unified CME.....	9
<b>Cisco Unity Connection</b> .....	18
Version Details.....	18
Cisco Unity Connection User Configuration.....	18
Cisco Unity Connection Telephony Integration.....	21
Port Group.....	22
Port.....	23
<b>Acronyms</b> .....	25
<b>Important Information</b> .....	26



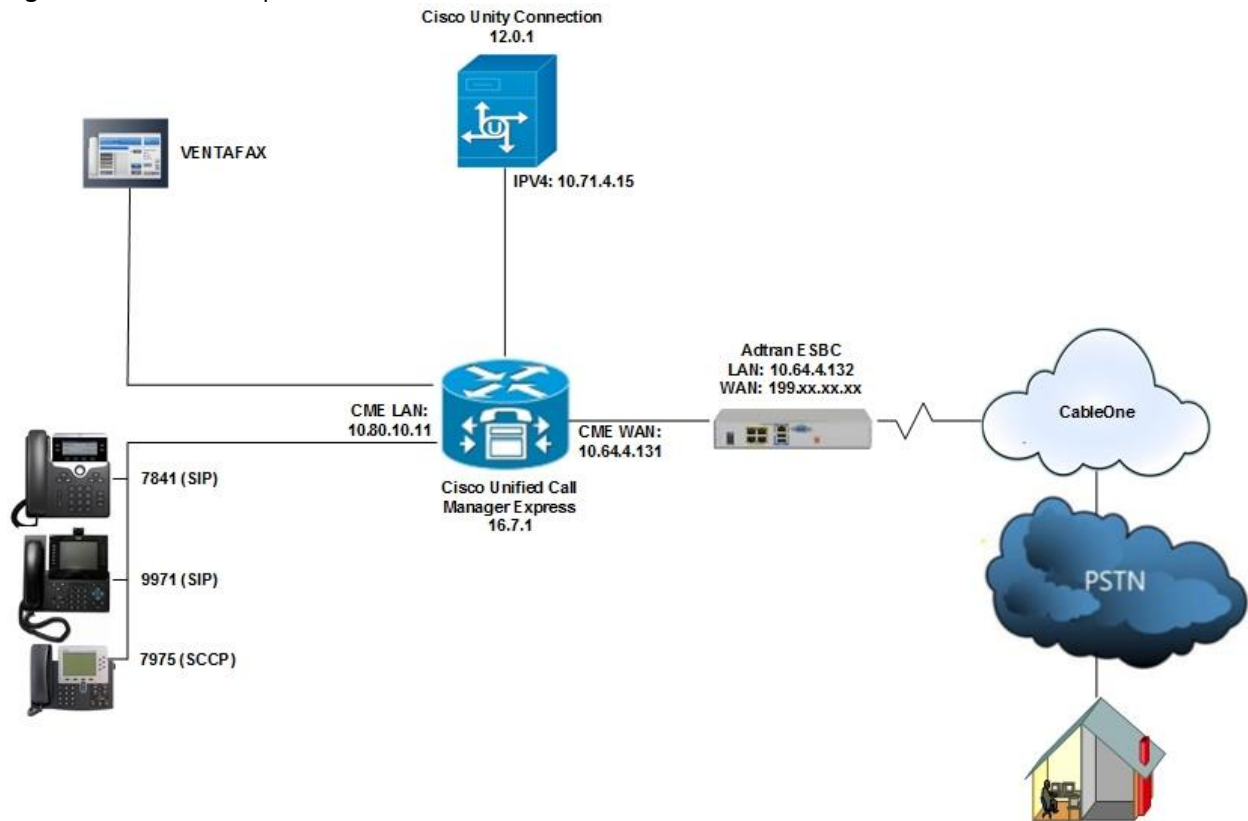
## Introduction

Cable ONE Business SIP (Session Initiation Protocol) trunk service gives your business a direct physical connection from your PBX to our nationwide, fiber-optic network — for an affordable cost. Our SIP Trunk service can power your phone system allowing you to take advantage of the latest technologies without compromising network reliability, security and continuity.

- This application note describes how to configure a Cisco Unified Communications Manager Express (Cisco Unified CME) 16.07.01, Cisco Unity Connection 12.0.1 with connectivity to CableONE SIP trunk service. The application note also covers support and configuration example Cisco Unity Connection (CUC) messaging integrated into the Cisco Unified Communications Manager Express. The deployment model covered in this application note is Customer Premises Equipment (Cisco Unified CME/CUC) to PSTN (CableONE). CableONE provides inbound and outbound call service.
- Testing was performed in accordance to CableONE test plan and all features were verified. Key features verified are: inbound and outbound basic call (including international calls), calling name delivery, calling number and name restriction, CODEC negotiation, intra-site transfers, intra-site conferencing, call hold and resume, call forward (forward all, busy and no answer), leaving and retrieving voicemail (Cisco Unity Connection), Cisco auto-attendant (BACD), fax using G.711 (G3 and SG3 speeds).
- Consult your Cisco representative for the correct IOS/IOS-XE image and for the specific application and Device Unit License and Feature License requirements for all your Cisco Unified CME.

## Network Topology

Figure 1. Basic Call Setup



The Cisco Unified CME in Figure 1

### Hardware Components

- This solution was tested with Cisco ISR4331.
- Cisco IP Phones. This solution was tested with 7841, 7975 and 9971 phones, but any Cisco IP Phone model supporting RFC2833 can be used.
- Cisco ISR4331/K9 (1RU) processor with 3841357K/6147K bytes of memory. Processor board ID FLM2141V250.
- 3 Gigabit Ethernet interfaces and 2 Voice FXS interfaces.
- Cisco Unity Connection - VMware - 1 vCPU: Intel(R) Xeon(R) CPU X5675 @ 3.07GHz.
- HDD 160 GB, Memory 4096 Mbytes RAM.

### Software Requirements

- Cisco IOS-XE gateway running IOS-XE Version 16.07.01 [CME version 12.1]. This solution was tested with Cisco IOS image: "bootflash:isr4300-universalk9.16.07.01.SPA.bin" .
- This solution was tested with Cisco Unity Connection version (Version 12.0.1.21900-10) .



## Features

### Features - Supported

- Basic Call using G711ulaw.
- Calling Party Number Presentation and Restriction.
- Calling Name.
- Call Transfer.
- Conference.
- Call Hold and Resume (See Caveat section for details).
- Call Forward All, Busy and No Answer.
- Fax over G.711 (See Caveat section for details).
- Incoming DID Translation and Routing.
- Outbound calls and Inbound calls.
- Voicemail.
- Auto-attendant (See Caveat section for details).

### Features Not Supported

- Cisco IP phones used in this test do not support Blind Transfer, only Semi-attendant and Attendant transfers were tested.
- CableONE does not support G729 codec at the moment.
- Dual codecs (G711 & G729) are not supported by CableONE at the moment.

## Caveats

### Fax:

- T.38 (G3 or SG3) is not supported by CableONE at the moment.
- The maximum fax rate achieved using G711 Pass-through (G3 or SG3) fax protocol is only 14400 kbps.
- For G711Passthrough test achieved using “fax protocol pass-through g711ulaw”.

### Auto-Attendant:

- The Cisco Unified CME Basic Automatic Call Distribution (BACD) was employed to enable the auto-attendant feature. The test was performed using the default codec G711u for auto attendant prompts.

### Hold & Resume:

- When Cisco CME sends hold INVITE with a=sendonly, CableONE is sending a=inactive in the 200 OK and thus MOH was not played. SCCP phones does not send hold notification in INVITE. SCCP phones were used for hold-resume test cases and MOH worked fine.

### DTMF



- Transcoder is configured in CME to convert inband voice DTMF coming from CableONE to RFC2833. DTMF is send from CME to Unity Connection as RFC2833. Unity Connection does not recognize inband voice DTMF.

## Configuration Considerations

- 10 Digit BTN (Billing Telephone Number) is used to register Cisco Unified CME to CableONE SIP trunk (See configuration section for details).
- CableONE require that the SIP Diversion header contain the full 10-digit DID number of the forwarding party. In this application note the assumption was made that a typical customer will utilize extension numbers (4-digit assignments in this example) and map 10-digit DID number using Cisco Unified CME translation patterns. Because 4-digit extensions configured on Cisco Unified CME IP phones, it is necessary to expand the 4-digit extension included in the Diversion header of a forwarding INVITE message, to its full 10-digit DID number when the IP phone is set to call-forward. The requirement to expand the Diversion-Header has been achieved by the use of a SIP profile in Cisco Unified CME (See configuration section for details).



## Configuration

### Cisco IOS Version

CableONEcme#show version

Cisco IOS XE Software, Version 16.07.01

Cisco IOS Software [Fuji], ISR Software (X86\_64\_LINUX\_IOSD-UNIVERSALK9-M), Version 16.7.1, RELEASE SOFTWARE (fc6)

Technical Support: <http://www.cisco.com/techsupport>

Copyright (c) 1986-2017 by Cisco Systems, Inc.

Compiled Mon 20-Nov-17 19:01 by mcpre

Cisco IOS-XE software, Copyright (c) 2005-2017 by cisco Systems, Inc. All rights reserved. Certain components of Cisco IOS-XE software are licensed under the GNU General Public License ("GPL") Version 2.0. The software code licensed under GPL Version 2.0 is free software that comes with ABSOLUTELY NO WARRANTY. You can redistribute and/or modify such GPL code under the terms of GPL Version 2.0. For more details, see the documentation or "License Notice" file accompanying the IOS-XE software, or the applicable URL provided on the flyer accompanying the IOS-XE software.

ROM: IOS-XE ROMMON

CableONEcme uptime is 1 week, 5 days, 16 hours, 1 minute

Uptime for this control processor is 1 week, 5 days, 16 hours, 3 minutes

System returned to ROM by PowerOn

System image file is "bootflash:isr4300-universalk9.16.07.01.SPA.bin"

Last reload reason: PowerOn

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at: <http://www.cisco.com/wwl/export/crypto/tool/stqrg.html>

If you require further assistance please contact us by sending email to



export@cisco.com.

Suite License Information for Module:'esg'

Suite	Suite Current	Type	Suite Next reboot
FoundationSuiteK9 securityk9 appxk9	None	None	None
AdvUCSuiteK9 uck9 cme-srst cube	None	None	None

Technology Package License Information:

Technology	Technology-package Current	Technology-package Type	Technology-package Next reboot
appxk9	None	None	None
uck9	uck9	Permanent	uck9
securityk9	None	None	None
ipbase	ipbasek9	Permanent	ipbasek9

cisco ISR4331/K9 (1RU) processor with 3841357K/6147K bytes of memory.  
 Processor board ID FLM2141V250  
 3 Gigabit Ethernet interfaces  
 2 Voice FXS interfaces  
 32768K bytes of non-volatile configuration memory.  
 8388608K bytes of physical memory.  
 7057407K bytes of flash memory at bootflash:.  
 0K bytes of WebUI ODM Files at webui:.

Configuration register is 0x2102

CableONEcme#





## Cisco Unified CME

CableONEcme#show running-config  
Building configuration...

```
Current configuration : 6970 bytes
!
version 16.7
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
platform qfp utilization monitor load 80
no platform punt-keepalive disable-kernel-core
!
hostname CableONEcme
!
boot-start-marker
boot-end-marker
!
!
vrf definition Mgmt-intf
!
 address-family ipv4
 exit-address-family
!
 address-family ipv6
 exit-address-family
!
enable secret 5 $1$!Y0j$81cjoxxxxxx
!
no aaa new-model
subscriber templating
!
!
multilink bundle-name authenticated
!
crypto pki trustpoint TP-self-signed-2194658987
 enrollment selfsigned
 subject-name cn=IOS-Self-Signed-Certificate-2194658987
 revocation-check none
 rsakeypair TP-self-signed-2194658987
!
!
crypto pki certificate chain TP-self-signed-2194658987
!
```



```
voice service voip
ip address trusted list
no ip address trusted authenticate
allow-connections h323 to h323
allow-connections h323 to sip
allow-connections sip to h323
allow-connections sip to sip1
no supplementary-service sip moved-temporarily
no supplementary-service sip refer
redirect ip2ip
fax protocol pass-through g711ulaw2
sip
session refresh3
registrar server4 expires max 600 min 60
asserted-id pai
!
voice class codec 15
codec preference 1 g711ulaw
codec preference 2 g729r8
!
!
voice class sip-profiles 16
request INVITE sip-header Privacy add "Privacy: id"7
request INVITE sip-header Diversion add "Diversion:
<sip:4806538483@voip.CableONE.net>;privacy=off;reason=unconditional;screen=no"8
!
voice register global
mode cme9
source-address 10.80.10.11 port 200010
max-dn 2011
```

---

<sup>1</sup> This command enables Cisco Unified CME to perform basic SIP to SIP voice communication

<sup>2</sup> This command enables G711 fax at global level, meaning all VoIP dial-peers not configured for specific fax protocol will use this setting. G711 fax protocol may be configured under appropriate dial-peers

<sup>3</sup> Use the SIP session refresh command to send the session refresh request

<sup>4</sup> Enable Local SIP Registrar which is required for SIP phones in Cisco Unified CME

<sup>5</sup> This command enables multiple codec support and performs codec filtering required for correct interoperability between CableOne SIP network and Cisco Unified CME

<sup>6</sup> SIP Profiles can be used to manipulate SIP header attributes

<sup>7</sup> "request INVITE sip-header Privacy add "privacy id" is added to make call From a CPE Phone to some PSTN phone; Pass Calling Party Number (CPN), marked private and Verify display at called party phone

<sup>8</sup> "request INVITE sip-header Diversion add "Diversion:

<sip:4806538483@voip.cableone.net>;privacy=off;reason=unconditional;screen=no" is added to make call from CPE phone to some PSTN phone while calling number marked as anonymous.

<sup>9</sup> Enables the mode for configuring SIP IP phones in Cisco Unified CME

<sup>10</sup> This is the source address for SIP phone registration

<sup>11</sup> Configuration for maximum extensions



```
max-pool 1012
load 9971 sip9971.9-3-1-3313
load 7841 sip78xx.12-0-1-11
mwi stutter
tftp-path flash:14
file text
create profile sync 004087393132940515
auto-register
!
!
voice register dn 1
number 8483
name CableONE Phone1
mwi
!
voice register dn 2
number 8484
name CableONE Phone2
mwi
!
voice register pool 1
busy-trigger-per-button 2
id mac B838.6116.382D
type 7841
number 1 dn 1
voice-class codec 1
username 8483 password 1234
!
voice register pool 2
id mac C07B.BCA1.B811
type 9971
number 1 dn 2
voice-class codec 1
username 8484 password 1234
!
voice moh-group 1
moh enable-g711 "flash:music-on-hold.au"
!
voice translation-rule 116
rule 1 /(^8...)/ /480653\1/
!
```

---

<sup>12</sup> Configuration for maximum phones

<sup>13</sup> Specify phone loads for each phone type

<sup>14</sup> Setup path for tftp files

<sup>15</sup> Create configuration files for all phones

<sup>16</sup> This translation rule/profile is used to modify the calling number



```
voice translation-rule 217
rule 1 /480653\(...\)/ /\1/
!
!
voice translation-profile To-10Dig
translate calling 1
translate redirect-called 1
!
voice translation-profile to_ext
translate called 2
!
voice-card 0/1
no watchdog
!
voice-card 0/4
dsp services dspfarm
no watchdog
!
license udi pid ISR4331/K9 sn FOD21381GMV
no license smart enable
diagnostic bootup level minimal
!
spanning-tree extend system-id
!
username cisco privilege 15 password 7 111D1C0E3243115D5424
!
redundancy
mode none
!
interface GigabitEthernet0/0/0
ip address 10.64.4.131 255.255.0.0
negotiation auto
!
interface GigabitEthernet0/0/1
ip address 10.80.10.11 255.255.255.0
negotiation auto
!
interface GigabitEthernet0/0/2
no ip address
negotiation auto
!
interface Service-Engine0/1/0
no ip address
!
interface Service-Engine0/4/0
```

---

<sup>17</sup> This translation rule/profile is used to modify the called number



```
!  
interface GigabitEthernet0  
  vrf forwarding Mgmt-intf  
  no ip address  
  negotiation auto  
!  
ip forward-protocol nd  
ip http server  
ip http authentication local  
ip http secure-server  
ip http client source-interface GigabitEthernet0/0/0  
ip tftp source-interface GigabitEthernet0/0/1  
ip route 0.0.0.0 0.0.0.0 10.64.1.1  
ip route 10.71.4.0 255.255.255.0 10.80.10.1  
ip route 172.16.24.0 255.255.248.0 10.80.10.1  
!  
tftp-server flash:P0xxxxxxxxx.bin  
tftp-server flash:SampleAudioSource.wav  
tftp-server flash:ToneOnHold.ulaw.wav  
tftp-server flash:moh_g711u_music.wav  
tftp-server flash:music-on-hold.au  
tftp-server flash:dkern9971.100609R2-9-3-1-33.sebn  
tftp-server flash:kern9971.9-3-1-33.sebn  
tftp-server flash:rootfs9971.9-3-1-33.sebn  
tftp-server flash:sboot9971.031610R1-9-3-1-33.sebn  
tftp-server flash:sip9971.9-3-1-33.loads  
tftp-server flash:skern9971.022809R2-9-3-1-33.sebn  
tftp-server flash:kern2.78xx.12-0-1-11.sbn  
tftp-server flash:kern78xx.12-0-1-11.sbn  
tftp-server flash:rootfs2.78xx.12-0-1-11.sbn  
tftp-server flash:rootfs78xx.12-0-1-11.sbn  
tftp-server flash:sboot2.78xx.12-0-1-11.sbn  
tftp-server flash:sboot78xx.12-0-1-11.sbn  
tftp-server flash:sip78xx.12-0-1-11.loads  
tftp-server flash:apps75.9-4-2ES26.sbn  
tftp-server flash:cnu75.9-4-2ES26.sbn  
tftp-server flash:cvm75sccp.9-4-2ES26.sbn  
tftp-server flash:dsp75.9-4-2ES26.sbn  
tftp-server flash:jar75sccp.9-4-2ES26.sbn  
tftp-server flash:SCCP75.9-4-2SR3-1S.loads  
tftp-server flash:term75.default.loads  
tftp-server flash:RedHotChiliPeppers.wav  
tftp-server flash:groove.wav  
!  
!  
control-plane  
!
```



```
!  
voice-port 0/1/0  
  cptone IN  
  station-id number 4806539365  
  caller-id enable  
!  
voice-port 0/1/1  
!  
mgcp behavior rsip-range tgcp-only  
mgcp behavior comedia-role none  
mgcp behavior comedia-check-media-src disable  
mgcp behavior comedia-sdp-force disable  
!  
mgcp profile default  
!  
telephony-service  
  conference transfer-pattern  
  max-ephones 20  
  max-dn 20  
  ip source-address 10.80.10.11 port 2000  
  load 7975 SCCP75.9-4-2SR3-1S  
  time-zone 8  
  voicemail 777718  
  max-conferences 8 gain -6  
  call-forward pattern .T  
  moh enable-g711 "music-on-hold.au"19  
  transfer-system full-consult  
  transfer-pattern .T  
  create cnf-files version-stamp Jan 01 2002 00:00:00  
!  
dspfarm profile 1 transcode universal20  
  codec g711ulaw  
  maximum sessions 12  
  associate application CUBE  
!  
dial-peer voice 101 voip  
  description inbound from CableONE  
  translation-profile incoming to_ext  
  session protocol sipv2  
  session transport udp  
  incoming called-number 480653....  
  voice-class codec 1  
  no vad
```

---

<sup>18</sup> 7777 - Voice mail pilot number used in this example

<sup>19</sup> This is Music on Hold file configured in this example

<sup>20</sup> Transcoding profile used in this example



```
!  
dial-peer voice 100 voip  
description Outbound Call to CableONE  
translation-profile outgoing To-10Dig  
destination-pattern .T  
session protocol sipv2  
session target ipv4:10.64.4.132:506021  
session transport udp  
voice-class codec 122  
dtmf-relay rtp-nte  
no vad  
!  
dial-peer voice 102 voip23  
description towards CUC  
destination-pattern 7777  
session protocol sipv2  
session target ipv4:10.71.4.15:506024  
session transport udp  
voice-class codec 1  
dtmf-relay rtp-nte  
no vad  
!  
dial-peer voice 104 pots  
preference 2  
service session  
destination-pattern 9365  
no digit-strip  
port 0/1/0  
!  
!  
sip-ua  
mwi-server ipv4:10.71.4.15 expires 3600 port 5060 transport udp unsolicited  
!  
ephone-dn 1 dual-line  
number 8485  
label 8485 for CableONE  
name CableONE Phone  
call-forward busy 12142425962  
call-forward noan 7777 timeout 20  
mwi sip  
moh-group 1  
!
```

---

<sup>21</sup> This command sets the SIP server target for outgoing SIP calls

<sup>22</sup> This command assigns the voice class codec setting to this dial-peer

<sup>23</sup> Dial peer used to route the calls to Cisco unity connection server for Voicemail access

<sup>24</sup> This command sets the Cisco unity connection server target for voicemail calls



```
!  
ephone-dn 2 dual-line  
number 8487  
label 8487 for CableONE  
name CableONE Phone  
mwi sip  
moh-group 1  
!  
!  
ephone 1  
mac-address 0008.3031.EB46  
username "8485" password 1234  
type 7975  
mwi-line 1  
button 1:1  
!  
ephone 2  
mac-address 0008.3031.F49B  
type 7975  
mwi-line 1  
button 1:2  
!  
line con 0  
exec-timeout 0 0  
password 7 06120A2A7A1F13485519  
login  
transport input none  
stopbits 1  
line aux 0  
stopbits 1  
line vty 0 4  
password 7 105A0C123346085A5C0A  
login local  
transport input telnet  
!  
wsma agent exec  
!  
wsma agent config  
!  
wsma agent filesys  
!  
wsma agent notify  
!  
!  
end
```

CableONEcme#







## Cisco Unity Connection

### Version Details



Copyright © 1999 - 2017 Cisco Systems, Inc.  
All rights reserved.

This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at our [Export Compliance Product Report](#) web site.

For information about Cisco Unified Communications Manager please visit our [Unified Communications System Documentation](#) web site.

For Cisco Technical Support please visit our [Technical Support](#) web site.

## Cisco Unity Connection User Configuration

**Navigation:** Cisco Unity Connection → Users → Users

Set Alias\*= 8485. This is used for this example.

Set First Name = 8485 is used to identify this User.

Set Last Name\* = 8485. This is used for this example

Set Display Name= 8485. This is used in this example.

Set SMTP Address =8485. This is used in this example.

Set Extension = 8485. This is used in this example.

Set Phone System= CME. This is used in this example.

All other values are default.

**Cisco Unity Connection**

- Users
  - Users
  - Import Users
  - Synch Users
- Class of Service
- Templates
- Contacts
- Distribution Lists
- Call Management
- Message Storage
- Networking
- Unified Messaging
- Video
- Dial Plan
- System Settings
- Telephony Integrations
- Tools

**Edit User Basics (8485)**
Search Users Edit User Basics (8485)

Related Links Bulk Edit By CSV Go

User Edit Refresh Help

Save Delete Previous Next

**Name**

Alias*	8485
First Name	8485
Last Name	8485
Display Name	8485
SMTP Address	8485 @unity-unity2.lab.tekvizion.com

Initials

Title

Employee ID

**LDAP Integration Status**

Integrate with LDAP Directory

Do Not Integrate with LDAP Directory

**Phone**

Extension*	8485
Cross-Server Transfer Extension or URI	
Outgoing Fax Number	
Outgoing Fax Server	--- Not Selected ---
Partition	unity-unity2 Partition
Search Scope	unity-unity2 Search Space
Phone System	CME
Class of Service	Voice Mail User COS
Active Schedule	Weekdays

## Cisco Unity Connection User Configuration (Continued)

All values are default.



**Cisco Unity Connection Administration**  
For Cisco Unified Communications Solutions

Navigation Cisco Unity Connection Administration Go  
administrator Search Documentation About Sign Out

**Cisco Unity Connection**

- Users
  - Users
  - Import Users
  - Synch Users
- Class of Service
- Templates
- Contacts
- Distribution Lists
- Call Management
- Message Storage
- Networking
- Unified Messaging
- Video
- Dial Plan
- System Settings
- Telephony Integrations
- Tools

Class of Service: Voice Mail User COS  
Active Schedule: Weekdays View

Set for Self-enrollment at Next Sign-In  
 List in Directory  
 Send Non-Delivery Receipts on Failed Message Delivery  
 Skip PIN When Calling From a Known Extension  
 Use Short Calendar Caching Poll Interval

**Recorded Name**

8485 Number or URI  
30  
Volume  
1x Speed

**Location**

Address  
Building  
City  
State  
Postal Code  
Country: United States  
 Use System Default Time Zone  
Time Zone: (GMT-06:00) America/Chicago  
Language:  Use System Default Language  
 English(United States)  
Department  
Manager  
Billing ID  
Corporate Email Address



## Cisco Unity Connection Telephony Integration

**Navigation:** Telephony Integrations → Phone system

Set System Name\* = CME. This Name used for this example.

The screenshot displays the Cisco Unity Connection Administration web interface. The left sidebar shows a navigation tree with 'Telephony Integrations' and 'Phone System' highlighted. The main content area is titled 'Phone System Basics (CME)'. The 'Phone System Name\*' field is set to 'CME' and is highlighted with a red box. Below this, there are several sections of configuration options:

- Phone System:** Includes a checkbox for 'Default TRAP Phone System'.
- Message Waiting Indicators:** Includes checkboxes for 'Send Message Counts', 'Use Same Port for Enabling and Disabling MWIs', and 'Force All MWIs Off for this Phone System'. A 'Run' button is provided for 'Synchronize All MWIs on This Phone System'.
- Call Loop Detection by Using DTMF:** Includes checkboxes for 'Enable for Supervised Transfers' and 'Enable for Forwarded Message Notification Calls (by Using DTMF)'. A dropdown menu for 'DTMF Tone To Use' is set to 'A', and a 'Guard Time' of '2500 milliseconds' is specified.
- Call Loop Detection by Using Extension:** Includes a checked checkbox for 'Enable for Forwarded Message Notification Calls (by Using Extension)'.
- Phone View Settings:** Includes a checkbox for 'Enable Phone View' and two input fields for 'CTI Phone Access Username' and 'CTI Phone Access Password'.
- Outgoing Call Restrictions:** Includes radio buttons for 'Enable outgoing calls', 'Disable all outgoing calls immediately', and 'Disable all outgoing calls between'.



## Port Group

**Navigation:** Telephony Integration → Port Group.

Set Display Name\* = CME-1. This Name used for this example.

Check Register with SIP server.

The screenshot displays the Cisco Unity Connection Administration web interface. The left sidebar shows the navigation tree with 'Port Group' selected under 'Telephony Integrations'. The main content area is titled 'Port Group Basics (CME-1)'. The 'Display Name\*' field is set to 'CME-1'. The 'Integration Method' is 'SIP'. The 'Register with SIP Server' checkbox is checked. The 'SIP Security Profile' is '5060' and the 'SIP Transport Protocol' is 'UDP'. Below this, there is a table for 'Advertised Codec Settings' with two rows: 'G.711 mu-law' and 'G.729', both with a 'Packet Size' of '20'. At the bottom, there are 'Message Waiting Indicator Settings' with 'Enable Message Waiting Indicators' checked and various delay and retry values set to 0 or 5 milliseconds.

Display Name	Packet Size
G.711 mu-law	20
G.729	20

**Navigation Path:** Telephony Integration → Port Group → Edit → Servers.



Cisco Unity Connection Administration  
For Cisco Unified Communications Solutions

Navigation Cisco Unity Connection Administration Go  
administrator | Search Documentation | About | Sign Out

Search Port Groups Port Group Basics (CME-1) Edit Servers  
Related Links Check Telephony Configuration Go

Port Group Edit Refresh Help

Save

SIP Servers

Delete Selected Add

<input type="checkbox"/>	Order	IPv4 Address or Host Name	IPv6 Address or Host Name	Port	TLS Port
<input type="checkbox"/>	0	10.80.10.11		5060	5061

Delete Selected Add

TFTP Servers

Delete Selected Add

<input type="checkbox"/>	Order	IPv4 Address or Host Name	IPv6 Address or Host Name
--------------------------	-------	---------------------------	---------------------------

Delete Selected Add

IPv6 Addressing Mode

Preference for Signaling IPv4 ▼  
Preference for Media IPv4 ▼

Save

Cisco Unity Connection

- Users
- Class of Service
- Templates
- Contacts
- Distribution Lists
- Call Management
- Message Storage
- Networking
- Unified Messaging
- Video
- Dial Plan
- System Settings
- Telephony Integrations
  - Phone System
  - Port Group
  - Port
  - Speech Connect Port
  - Trunk
- Security
- Tools

## Port

Set Port Name = CME-1-001. This Name used for this example.

Phone System = CME.

Port Group = CME-1.

Server = unity-unity2.lab.tekvizion.com. This Name used for this example.

- Cisco Unity Connection
  - Users
  - Class of Service
  - Templates
  - Contacts
  - Distribution Lists
  - Call Management
  - Message Storage
  - Networking
  - Unified Messaging
  - Video
  - Dial Plan
  - System Settings
  - Telephony Integrations
    - Phone System
    - Port Group
    - Port
    - Speech Connect Port
    - Trunk
  - Security
  - Tools

### Port Basics (CME-1-001)

Search Ports Port Basics (CME-1-001)

Related Links Check Telephony Configuration Go

Port Refresh Help

Save Delete Previous Next

#### Phone System Port

Enabled

Port Name  Restart

Phone System

Port Group

Server

#### Port Behavior

- Answer Calls
- Perform Message Notification
- Send MWI Requests (may also be disabled by the port group)
- Allow TRAP Connections

Save Delete Previous Next





## Acronyms

SIP	Session Initiation Protocol
MGCP	Media Gateway Control Protocol
SCCP	Skinny Client Control Protocol
Cisco Unified CME	Cisco Unified Communications Manager Express
SP	Service Provider
PSTN	Public switched telephone network
DTMF	Dual Tone Multi-Frequency
CUC	Cisco Unity Connection
VOIP	Voice Over Internet Protocol
IP	Internet Protocol
TDM	Time-division multiplexing
BTN	Billed (or Billing) Telephone Number
CODEC	Coder-Decoder (in this document a device used to digitize and un digitize voice signals)



## **Important Information**

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS. IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

**Corporate Headquarters**

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
www.cisco.com  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 526-4100

**European Headquarters**

Cisco Systems International  
BV  
Haarlerbergpark  
Haarlerbergweg 13-19  
1101 CH Amsterdam  
The Netherlands  
www-europe.cisco.com  
Tel: 31 0 20 357 1000  
Fax: 31 0 20 357 1100

**Americas Headquarters**

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
www.cisco.com  
Tel: 408 526-7660  
Fax: 408 527-0883

**Asia Pacific Headquarters**

Cisco Systems, Inc.  
Capital Tower  
168 Robinson Road  
#22-01 to #29-01  
Singapore 068912  
www.cisco.com  
Tel: +65 317 7777  
Fax: +65 317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the Cisco Web site at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia • Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland • Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

© 2014 Cisco Systems, Inc. All rights reserved.

CCENT, Cisco Lumin, Cisco Nexus, the Cisco logo and the Cisco Square Bridge logo are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn is a service mark of Cisco Systems, Inc.; and Access Registrar, Aironet, BPX, Catalyst, CCDA, CCDP, CCVP, CCIE, CCIP, CCNA, CCNP, CCSP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, EtherFast, EtherSwitch, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, iQuick Study, LightStream, Linksys, MeetingPlace, MGX, Networking Academy, Network Registrar, Packet, PIX, ProConnect, ScriptShare, SMARTnet, StackWise, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0705R)

Printed in the USA