

Cisco CME Basic Automatic Call Distribution and Cisco Unity Express Auto Attendant Interoperation Configuration Example

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Introduction

This document provides configuration examples for using the Cisco CallManager Express (CME) basic automatic call distribution (ACD) and Cisco Unity Express Auto Attendant (AA) features.

Prerequisites

Requirements

General familiarity with Cisco CME and Cisco Unity Express configurations is required. This document focuses specifically on the Cisco CME Basic ACD and Cisco Unity Express AA interoperation configurations.

The following are the minimum releases for the functionality described in this configuration example:

- Cisco CME 3.3
- Cisco IOS® Software Release 12.4.3
- Cisco Unity Express 2.1.3

Components Used

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

- A Cisco 2821 router running Cisco CME and Cisco Unity Express
- Cisco IOS Software Release 12.4.3
- Cisco CME 3.3
- Basic ACD script version 2.1.0.0
- Cisco Unity Express 2.1.3
- IP Voice Cisco IOS feature set

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.

Related Products

This configuration can also be used with Cisco 2600XM, Cisco 3700, Cisco 2800, or Cisco 3800 series routers with Cisco IOS Software Release 12.4.1 or later.

Conventions

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

Background Information

These three scenarios are addressed in this document:

- Scenario 1—Using the Cisco CME AA and ACD groups with Cisco Unity Express only as a voice mail destination
- Scenario 2—Using the Cisco Unity Express as the main AA entry point and Cisco CME AA as a sub-menu within that AA
- Scenario 3—Using the Cisco CME AA as the main AA entry point and the Cisco Unity Express AA to provide flexible announcements as part of the AA

Scenario 1 is most applicable when your Cisco CME AA is limited to providing a menu to direct calls into ACD groups. In this scenario, Cisco CME is used as the AA destination for incoming calls, and Cisco Unity Express is used exclusively as a voice mail server when the ACD agents are not available or do not answer the

calls in a certain amount of time. The Cisco Unity Express AA is not used in this scenario.

Scenario 2 is the most flexible overall configuration for integrating Cisco CME basic ACD and Cisco Unity Express AA. The design used in Scenario 2 features Cisco Unity Express AA for general call-handling automation and for handing off calls to ACD agents. In this scenario, Cisco Unity Express is used as the AA destination for incoming calls; Cisco Unity Express also provides a variety of menu choices to the caller (such as dial-by-name, dial-by-extension, and recorded information segments). One of these choices directs some calls to the Cisco CME ACD groups. Cisco Unity Express voice mail is used in a similar manner as Scenario 1.

Scenario 3 is a variation of Scenario 1 in which the Cisco CME AA is used as the AA destination for incoming calls and the ACD is the main function required of the AA. However, Cisco Unity Express AA is used as an announcement server with the Cisco CME AA. This provides the ability to add some announcements (such as office hours or location) that are not available using only the Cisco CME AA.

Note: The GUI-based configuration procedures provided in this publication are used to illustrate the implementation processes associated with this configuration example and to summarize the steps needed to implement features described throughout the document. However, complete step-by-step procedures are not provided. This publication assumes that you have a working familiarity with the Cisco CME and Cisco Unity Express GUIs, as well as a working knowledge of the Cisco IOS CLI. Please refer to the appropriate Cisco CME and Cisco Unity Express administrator's guide, configuration guide, and command reference for explicit details for procedures and command usage.

Configure

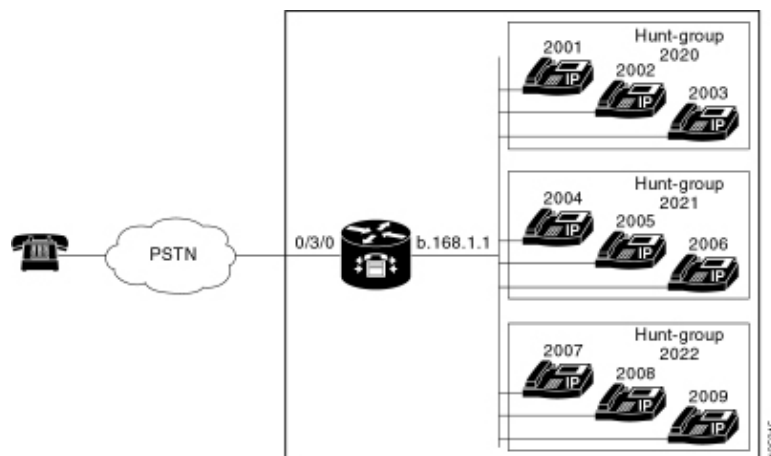
In this section, you are presented with the information to configure the features described in this document.

Note: Use the Command Lookup Tool (registered customers only) to obtain more information on the commands used in this section.

Network Diagram

This document uses this network setup:

Figure 1 Network Diagram for Cisco CME Basic ACD and Cisco Unity Express AA



Configurations

All three configuration scenarios have these general characteristics:

- Single-site Cisco CME system
- PSTN trunks integrated on the Cisco CME router
- The configuration defines a 4-digit dialing plan with IP phone extensions in the 2000 to 2010 range, non-phone extensions (such as hunt groups) in the 2020 to 2099 range, and Cisco Unity Express entry points in the 21 **xx** range.
- Nine IP phones are defined, extensions 2000 to 2009.
- The ACD setup uses three hunt groups with three IP phones in each group.
- Two receptionists are defined, which are also part of the nine IP phones in the ACD groups.

The network configuration uses a Cisco 2821 router with these characteristics:

- IP network access via IP address **b** .168.1.1
- Cisco CME configuration with nine IP phones—each with a 4-digit extension (2001 to 2010)
- NM-CUE
- Cisco Unity Express IP address **a** .1.11.2

This document uses these configurations:

- Scenario 1—Using Cisco CME Basic ACD with Cisco Unity Express Voice Mail
- Scenario 2—Using Cisco Unity Express AA as the First-Tier Menu and Basic ACD as the Second Tier Menu
- Scenario 3—Using Basic ACD as the First-Tier Menu and Cisco Unity Express AA as the Second Tier Menu

General Implementation Configuration Notes

The PSTN connectivity used in this configuration is via a foreign exchange office (FXO) trunk. If you have a PRI trunk, the configurations look exactly the same as those given in the configuration examples presented in this publication, with the addition of these configuration entries:

```
controller T1 2/1
  framing esf
  linecode b8zs
  pri-group timeslots 1-24
!
interface Serial2/1:23
  no ip address
  isdn switch-type primary-ni
  isdn incoming-voice voice
  no cdp enable
!
voice-port 2/1:23
!
dial-peer voice 777 pots
  incoming called-number .
  direct-inward-dial
  port 2/1:23
```

The Cisco Unity Express AA scripts that are used in the examples presented in this publication are very simple and for clarity contain the minimum number of features to achieve the functionality illustrated by this document. Cisco Unity Express AA scripts deployed in a live network should have significantly more incoming-call handling capability compared to lab test networks. Additional call-handling steps can include the following:

- Improved error handling (such as when the caller presses digits that are not on the menu)
- Timeout handling (such as repeating menus a fixed number of times)
- Ability to block the external transfer of calls to external PSTN destinations (to circumvent toll fraud).

Scenario 1 – Using Cisco CME Basic ACD with Cisco Unity Express Voice Mail

In Scenario 1, incoming calls are directed to the Cisco CME AA (extension 2040), which provides a welcome greeting and a menu with three options to the caller. Based on the caller's choice, the call is directed to one of three ACD hunt groups. If the calls are not answered in the ACD group, calls are forwarded to a General Delivery Mailbox (GDM) to leave a message.

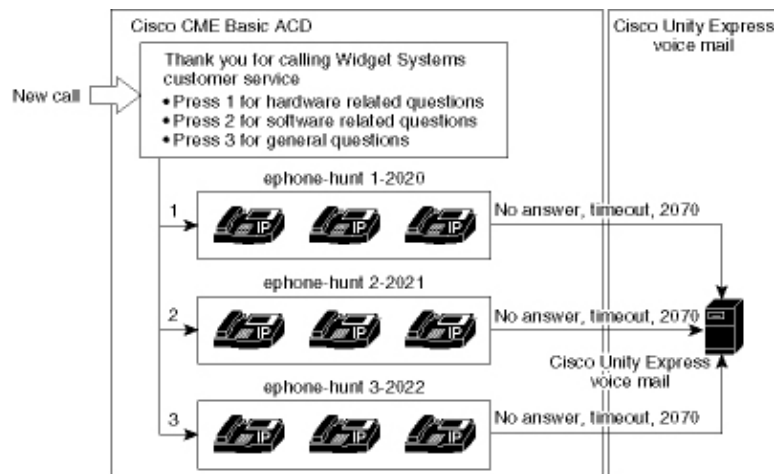
Note: You cannot set up a GDM to be copied to each user's mailbox (similar to a distribution list).

In this scenario described in this section, a single GDM is used so that all nine ACD agents in the ACD groups can log in to and retrieve messages. In other variations described as part of Scenario 2, the ability to have an individual GDM per ACD group is explored.

Call Flow

The call flow of the configuration in this section is illustrated in Figure 2.

Figure 2 Cisco Unity Express AA with Cisco CME Basic ACD Scenario 1 Call Flow



Scenario 1 Configuration Notes

PSTN calls from the FXO port (0/3/0) are autoterminated (via the **connection plar-opx 2040** command) to the Cisco CME AA pilot number (2040). The Cisco CME AA presents a welcome greeting and a welcome menu with three options—the spoken contents of the prompts are given in the call-flow picture in Figure 2. The recorded welcome phrase resides in the flash file `en_bacd_welcome.au`, while the recorded menu phrases reside in the file `en_bacd_options_menu.au`.

The GDM greeting for extension 2070 is as follows: Thank you for calling customer service; no one is available right now. Please leave a message and we will return your call as soon as we can.

A Message Waiting Indication (MWI) for messages in the GDM is achieved by forwarding the Cisco CME AA (the **param voice-mail 2070** command) to an intermediate extension (2070) which is CFA (call forward all) to the voice mail pilot (2105). This forwarding is done instead of pointing the Cisco CME AA directly to

the voice mail pilot—which would be done with the **param voice-mail 2105** command. Extension 2070 is button 2 on the agent phones, and this button indicates MWI for the GDM, which is associated with extension 2070—rather than with the ACD hunt-group numbers (2020, 2021 or 2022). Final numbers are not configured on the hunt-groups because the ACD logic bypasses final numbers in favor of the AA forwarding number (**param voice-mail** command).

Note: Any time that you make any change to the script, you need to load the application.

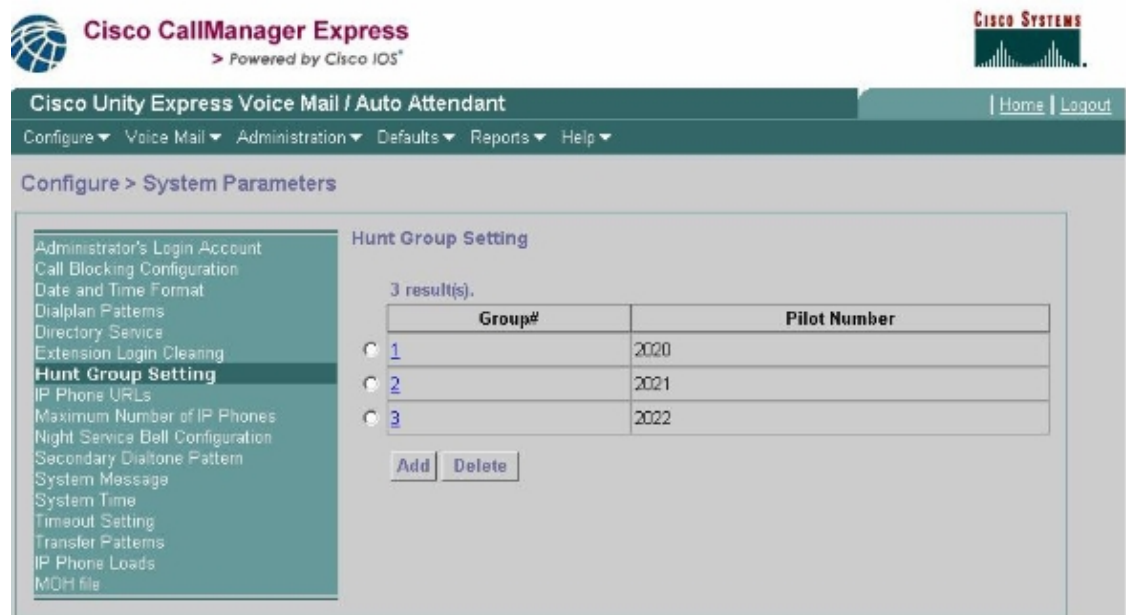
The Cisco CME AA script is associated with a loopback IP address (**a .1.1.1**) to ensure the Tool Command Language (TCL) script is always up—regardless of the state of the LAN interfaces (**dial-peer voice 2040 voip** command). A back-to-back dial peer is used to direct calls to the Cisco CME AA entry point (2040) to ensure that PSTN callers (as well as local IP phones) can call the AA (**dial-peer voice 2041 voip** command).

Configure Cisco CME for Scenario 1

These steps summarize the configuration for Cisco CME for Scenario 1:

1. Choose **Configure > System Parameters** to configure three ACD hunt-groups 2020, 2021, and 2022 that are associated with three menu options of the Cisco CME AA. See Figure 3 .

Figure 3 Specify Cisco Unity Express ACD Hunt Groups



2. Choose **Configure > System Parameters** to configure the details for hunt-group 2020 with agents 2001, 2002, and 2003. See Figure 4 .

Figure 4 Configure Details for Hunt Group 2020

Cisco Unity Express Voice Mail / Auto Attendant

Configure > Voice Mail > Administration > Defaults > Reports > Help

Configure > System Parameters

Administrators Login Account
 Call Blocking Configuration
 Date and Time Format
 Dialplan Patterns
 Directory Service
 Extension Login Clearing
Hunt Group Setting
 IP Phone URLs
 Maximum Number of IP Phones
 Night Service Bell Configuration
 Secondary Dialtone Pattern
 System Message
 System Time
 Timeout Setting
 Transfer Patterns
 IP Phone Loads
 MOH file

Change Hunt Group 1

Type: Sequential
 Pilot Number: 2020
 Secondary Number:
 Member List: [Delete List](#)

1	2001
2	2002
3	2003

Final:
 Timeout: 5
 Preference: 0
 Preference (Secondary): 9
 E.164 Registration: Both Reg

[Change](#)

3. Choose **Configure > Phones** and click the MAC address of the phone that you want to change. The Change Phone window appears (see Figure 5).
4. Enter extension **2070** on the ACD agent's phone to get MWI for messages in the GDM.

Figure 5 Associate Extension to Specific Button

Change Phone

Phone Physical ID : 0003.6BAA.D1F8
 Phone Sequence Number : 1
 Phone Type : 7960
 Call Blocking : Exempt Non Exempt
 Auto-Line Selection : In/Out Incoming Disable
 Login PIN :
 Receive Night Service Bell : No Yes

Phone Line Buttons

6 result(s)

Button	Extension(s)	Ring Type/Mode
1	1, 2001 [User21]	Normal Ring
2	11, 2070 [Cust Svc GDM]	Normal Ring
3		
4		
5		
6		

The following is the complete (and annotated) Cisco CME router CLI configuration for Scenario 1 that results from the specific changes to the base configuration.

```
CME-2821#show running-config
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname CME-2821
!
boot-start-marker
boot system flash:
boot-end-marker
!
no aaa new-model
!
resource policy
!
ip subnet-zero
!
!
ip cef
no ip dhcp use vrf connected
ip dhcp excluded-address b.168.1.1 b.168.1.10
!
ip dhcp pool ITS
    network b.168.1.0 255.255.255.0
    option 150 ip a.1.11.1
    default-router b.168.1.1
!
no ip domain lookup
!
voice-card 0
    no dspfarm
!
voice service voip
    allow-connections h323 to h323
    allow-connections h323 to sip
    supplementary-service h450.12 advertise-only
!

!--- Define the parameters for the Cisco CME ACD TCL script.
!--- The hunt groups for the
!--- ACD are 2020, 2021, and 2022.

!
application
    service acd flash:app-b-acd-2.1.0.0.tcl
    param queue-cme-debugs 1
    param aa-hunt1 2020
    param aa-hunt2 2021
    param number-of-hunt-grps 3
    param aa-hunt3 2022
    param queue-len 30
!

!--- Define the parameters for the Cisco CME AA TCL script.
!--- The pilot number is 2040.
!--- The voice-mail destination is extension 2070, which is call forward all
!--- (CFA) routed to voice mail (2105).

!
service cme-aa flash:app-b-acd-aa-2.1.0.0.tcl
    param max-time-call-retry 60
    param voice-mail 2070
```



```
paramspace english index 0
param service-name acd
param number-of-hunt-grps 3
param handoff-string cme-aa
paramspace english language en
param max-time-vm-retry 1
paramspace english location flash:
param aa-pilot 2040
param second-greeting-time 30
paramspace english prefix en
param call-retry-timer 20
!

!--- Define the loopback address to which the TCL script is attached.

!
interface Loopback0
 ip address a.1.11.1 255.255.255.252
!
interface GigabitEthernet0/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface GigabitEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet0/1/0
 switchport access vlan 10
!
interface FastEthernet0/1/1
 switchport access vlan 10
!
interface FastEthernet0/1/2
 switchport access vlan 10
!
interface FastEthernet0/1/3
 switchport access vlan 10
!
interface FastEthernet0/1/4
 switchport access vlan 10
!
interface FastEthernet0/1/5
 switchport access vlan 10
!
interface FastEthernet0/1/6
 switchport access vlan 10
!
interface FastEthernet0/1/7
 switchport access vlan 10
!
interface FastEthernet0/1/8
 switchport access vlan 10
!
interface Service-Engine1/0
 ip unnumbered Loopback0
 service-module ip address a.1.11.2 255.255.255.252
 service-module ip default-gateway a.1.11.1
!
interface Vlan1
 no ip address
!
```

```

interface Vlan10
 ip address b.168.1.1 255.255.255.0
 !
 ip classless
 ip route a.1.11.2 255.255.255.255 Service-Engine1/0
 !
 ip http server
 ip http path flash:
 !
 tftp-server flash:P00305000600.bin
 tftp-server flash:P00305000600.sbn
 !
 control-plane
 !

!--- PSTN calls are auto-terminated on the Cisco CME AA pilot number 2040.

!
voice-port 0/3/0
 connection plar opx 2040
!
voice-port 0/3/1
 connection plar opx 2040
!
voice-port 0/3/2
!
voice-port 0/3/3
!

!--- Calls to Cisco CME AA pilot number 2040 are associated with a loopback address
!--- a.1.11.1 to ensure that the TCL script is always up.

!
dial-peer voice 2040 voip
 destination-pattern 2040
 session target ipv4:a.1.11.1
 dtmf-relay h245-alphanumeric
 codec g711ulaw
 no vad
!

!--- The back-to-back dial-peer for Cisco CME AA
!--- pilot number 2040 points to the
!--- AA TCL script and ensures that all PSTN and
!--- internal callers can reach the AA.

!
dial-peer voice 2041 voip
 service cme-aa
 incoming called-number 2040
 dtmf-relay h245-alphanumeric
 codec g711ulaw
 no vad
!

!--- All calls in the 21xx range are directed to Cisco Unity Express.

!
dial-peer voice 2105 voip
 destination-pattern 21..
 session protocol sipv2
 session target ipv4:a.1.11.2
 dtmf-relay sip-notify
 codec g711ulaw
 no vad
!

```

```
telephony-service
load 7960-7940 P00305000300
max-ephones 48
max-dn 192
ip source-address a.1.11.1 port 2000
max-redirect 20
auto assign 1 to 10
system message CISCO SYSTEMS
create cnf-files version-stamp 7960 Aug 05 2005 00:00:32
voicemail 2105
max-conferences 8 gain -6
moh music-on-hold.au
dn-webedit
time-webedit
transfer-system full-consult
transfer-pattern 210. blind
transfer-pattern 2040 blind
!

!--- The following section shows nine ACD agents' extensions.

!
ephone-dn 1 dual-line
number 2001
name User21
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 2 dual-line
number 2002
name User22
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 3 dual-line
number 2003
name User23
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 4 dual-line
number 2004
name User24
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 5 dual-line
number 2005
name User25
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 6 dual-line
number 2006
name User26
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 7 dual-line
number 2007
name User27
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 8 dual-line
number 2008
```

```
name User28
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 9 dual-line
number 2009
name User29
call-forward busy 2105
call-forward noan 2105 timeout 10
!

!--- Extension 2070 is associated with the GDM.
!--- This extension is used to get MWI
!--- on the ACD agents' phone.

!
ephone-dn 11
number 2070
description GDM
name Cust Svc GDM
call-forward all 2105
!
ephone-dn 100
number 8000....
mwi on
!
ephone-dn 101
number 8001....
mwi off
!

!--- The following section shows phone definitions for the nine ACD agents.
!--- Ephone-dn 11 (2070) is defined as button 2 on each phone, so that all
!--- agents can get MWI for the GDM.

!
ephone 1
username "user21" password null
mac-address 0012.0034.81B7
type 7960
button 1:1 2:11
!
ephone 2
username "user22" password null
mac-address 0011.2032.C876
type 7960
button 1:2 2:11
!
ephone 3
username "user23" password null
mac-address 0012.01E8.875F
type 7960
button 1:3 2:11
!
ephone 4
username "user24"
mac-address 0003.AAAA.0004
type 7960
button 1:4 2:11
!
ephone 5
username "user25"
mac-address 0003.AAAA.0005
type 7960
no auto-line
button 1:5 2:11
```

```
!
ephone 6
  username "user26"
  mac-address 0003.AAAA.0006
  type 7960
  button 1:6 2:11
!
ephone 7
  username "user27"
  mac-address 0003.AAAA.0007
  type 7960
  button 1:7 2:11
!
ephone 8
  username "user28"
  mac-address 0003.AAAA.0008
  type 7960
  button 1:8 2:11
!
ephone 9
  username "user29"
  mac-address 0003.AAAA.0009
  type 7960
  button 1:9 2:11
!

!--- Three hunt-groups are used by the ACD scripts.
!--- There are three agents in each group.

!
ephone-hunt 1 longest-idle
  pilot 2020
  list 2001, 2002, 2003
  timeout 5
!
ephone-hunt 2 longest-idle
  pilot 2021
  list 2004, 2005, 2006
  timeout 5
!
ephone-hunt 3 longest-idle
  pilot 2022
  list 2007, 2008, 2009
  timeout 5
!
line con 0
  logging synchronous
line aux 0
line 66
  no activation-character
  no exec
  transport preferred none
  transport input all
  transport output all
line vty 0 4
  login
!
scheduler allocate 20000 1000
ntp master
!
end
```

Configure Cisco Unity Express for Scenario 1

These steps summarize the configuration for Cisco Unity Express for Scenario 1:

1. Choose **Configure > Groups**. Then click the group (custservice) that you want to edit. The Group Profile window appears (see Figure 6).
2. The Profile tab is the default display. Configure the custservice group associated with extension 2070.

Figure 6 Configure Group Profile

Add a New Group

Add Cancel Help

Group ID *: custservice

Full name *: custservice

Description: custservice group

Primary Extension: 2070

Primary E.164 Number:

Create Mailbox:

Capabilities

Super Users:

Administration via Telephone:

Voice Mail Broadcaster:

Public List Manager:

Private List Viewer:

* indicates a mandatory field

142424

3. Click the Owners/Members tab (see Figure 7).
4. Configure the members (all nine ACD agent users) of the custservice group.

Figure 7 Configure Group Members

Group Profile - custservice

Subscribe owner
 Subscribe member
 Unsubscribe
 Cancel
 Help

1 - 9 of 9 result(s)

<input type="checkbox"/>	<input type="checkbox"/> <u>△</u> <u>User/Group ID</u>	<u>Type</u>	<u>Rights</u>	<u>Description / Display Name</u>	<u>Primary Extension</u>
<input type="checkbox"/>	user21	User	member	User TwoOne	2001
<input type="checkbox"/>	user22	User	member	User TwoTwo	2002
<input type="checkbox"/>	user23	User	member	User TwoThree	2003
<input type="checkbox"/>	user24	User	member	User TwoFour	2004
<input type="checkbox"/>	user25	User	member	User TwoFive	2005
<input type="checkbox"/>	user26	User	member	User TwoSix	2006
<input type="checkbox"/>	user27	User	member	User TwoSeven	2007
<input type="checkbox"/>	user28	User	member	User TwoEight	2008
<input type="checkbox"/>	user29	User	member	User TwoNine	2009

Rows per page: 10

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The following is the complete (and annotated) Cisco Unity Express CLI configuration for Scenario 1 that results from the specific changes to the base configuration:

```

cue#show running-config
Generating configuration:
clock timezone America/Los_Angeles
hostname cue
ip domain-name cisco.com
ntp server a.1.11.1
groupname Administrators create
groupname Broadcasters create
!

!--- The custservice group is defined as all the
!---users that have access to the GDM.

!
groupname custservice create
!

!--- Nine ACD agents are defined as users.

!
username admin create
username user21 create
username user22 create
username user23 create
username user24 create
username user25 create
username user26 create
username user27 create
username user28 create
username user29 create
!

!--- The custservice group (and therefore GDM)

```

!--- is associated with extension 2070.

```
!  
groupname custservice phonenumber "2070"  
username user21 phonenumber "2001"  
username user22 phonenumber "2002"  
username user23 phonenumber "2003"  
username user24 phonenumber "2004"  
username user25 phonenumber "2005"  
username user26 phonenumber "2006"  
username user27 phonenumber "2007"  
username user28 phonenumber "2008"  
username user29 phonenumber "2009"  
groupname Administrators member admin  
!
```

*!--- Nine ACD agents users are members of the
!--- custservice group, so they can have
!--- access to the GDM to retrieve messages.*

```
!  
groupname custservice member user21  
groupname custservice member user22  
groupname custservice member user23  
groupname custservice member user24  
groupname custservice member user25  
groupname custservice member user26  
groupname custservice member user27  
groupname custservice member user28  
groupname custservice member user29  
groupname Administrators privilege superuser  
groupname Administrators privilege ManagePrompts  
groupname Administrators privilege ManagePublicList  
groupname Administrators privilege ViewPrivateList  
groupname Broadcasters privilege broadcast  
calendar biz-schedule systemschedule  
closed day 1 from 00:00 to 24:00  
open day 2 from 09:00 to 17:00  
open day 3 from 09:00 to 17:00  
open day 4 from 09:00 to 17:00  
open day 5 from 09:00 to 17:00  
open day 6 from 09:00 to 17:00  
closed day 7 from 00:00 to 24:00  
end schedule  
!
```

*!--- The Cisco Unity Express system AA is defined
!--- in the system by default, but
!--- is not used in this scenario.*

```
!  
ccn application autoattendant  
description "autoattendant"  
enabled  
maxsessions 8  
script "aa.aef"  
parameter "busOpenPrompt" "AABusinessOpen.wav"  
parameter "holidayPrompt" "AAHolidayPrompt.wav"  
parameter "busClosedPrompt" "AABusinessClosed.wav"  
parameter "allowExternalTransfers" "false"  
parameter "MaxRetry" "3"  
parameter "operExtn" "2001"  
parameter "welcomePrompt" "AAWelcome.wav"  
parameter "businessSchedule" "systemschedule"  
end application  
ccn application ciscoawiapplication
```



```

description "ciscomwiapplication"
enabled
maxsessions 8
script "setmwi.aef"
parameter "strMWI_OFF_DN" "8001"
parameter "strMWI_ON_DN" "8000"
parameter "CallControlGroupID" "0"
end application
ccn application promptmgmt
description "promptmgmt"
enabled
maxsessions 1
script "promptmgmt.aef"
end application
ccn application voicemail
description "voicemail"
enabled
maxsessions 8
script "voicebrowser.aef"
parameter "logoutUri" "http://localhost/voicemail/vxmlscripts/mbxLogout.jsp"
parameter "uri" "http://localhost/voicemail/vxmlscripts/login.vxml"
end application
ccn engine
end engine
ccn subsystem jtapi
ccm-manager address 0.0.0.0
end subsystem
ccn subsystem sip
gateway address "a.1.11.1"
end subsystem
ccn trigger sip phonenumber 2102
application "autoattendant"
enabled
maxsessions 8
end trigger
ccn trigger sip phonenumber 2105
application "voicemail"
enabled
maxsessions 8
end trigger
ccn trigger sip phonenumber 2106
application "promptmgmt"
enabled
maxsessions 1
end trigger
voicemail default language en_US
voicemail default mailboxsize 3000
voicemail broadcast recording time 300
voicemail operator telephone 2001
!

!--- Define the GDM associated with 2070,
!--- associated with the custservice group.

!
voicemail mailbox owner "custservice" size 3000
description "custservice mailbox"
end mailbox
!

!--- Define personal mailboxes for nine ACD agents.

!
voicemail mailbox owner "user21" size 3000
end mailbox
voicemail mailbox owner "user22" size 3000

```

```
    end mailbox
voicemail mailbox owner "user23" size 3000
    end mailbox
voicemail mailbox owner "user24" size 3000
description "user24 mailbox"
    end mailbox
voicemail mailbox owner "user25" size 3000
description "user25 mailbox"
    end mailbox
voicemail mailbox owner "user26" size 3000
description "user26 mailbox"
    end mailbox
voicemail mailbox owner "user27" size 3000
description "user27 mailbox"
    end mailbox
voicemail mailbox owner "user28" size 3000
description "user28 mailbox"
    end mailbox
voicemail mailbox owner "user29" size 3000
description "user29 mailbox"
    end mailbox
end
```

Scenario 2 – Use Cisco Unity Express AA as the First-Tier Menu and Basic ACD as the Second Tier Menu

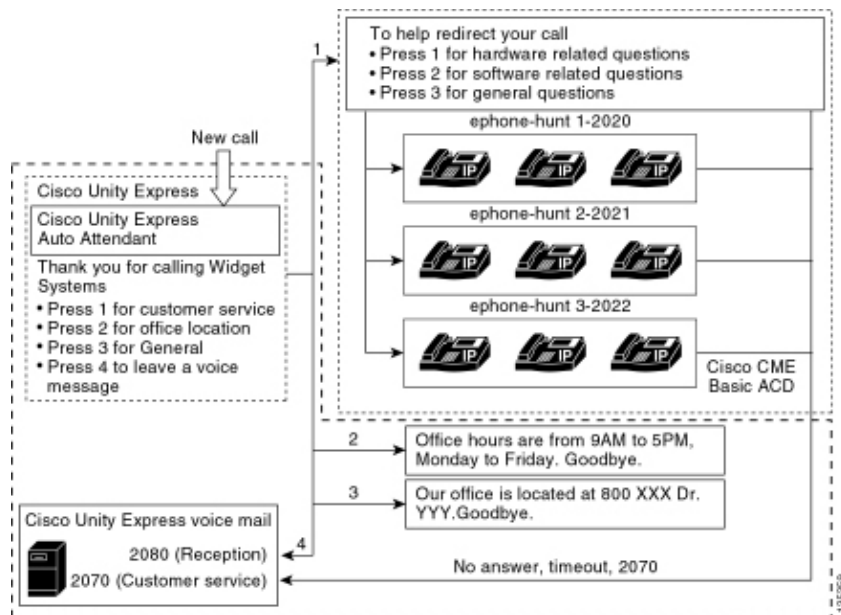
In Scenario 2, incoming calls are directed to the Cisco Unity Express custom AA (pilot number 2100), which provides a welcome greeting and a menu with four options to the caller. Based on the caller's choice, the call is directed to the Cisco CME ACD (option 1), one of two announcements (options 2 and 3), or to a general business mailbox (GDM for extension 2080) associated with the receptionists (option 4).

If the caller chooses option 1, the call is handed off to the Cisco CME ACD where the Cisco CME AA provides a second tier menu, which is similar to Scenario 1.

Scenario 2 Call Flow

The call flow of the configuration in this section is illustrated in Figure 8.

Figure 8 Call Flow for Scenario 2



Scenario 2 Configuration Notes

PSTN calls from the FXO port (0/3/0) are autoterminated to the Cisco Unity Express AA (2100).

The first-tier menu (Thank you for calling Widget Systems; press 1 for customer service; press 2 for office location; press 3 for office hours; press 4 to leave a voice message.) is provided by the Cisco Unity Express custom AA (file S10_Main_Menu.wav).

The second-tier menu (To help redirect your call: Press 1 for hardware-related questions; press 2 for software-related questions; press 3 for general questions.) is provided by the Cisco CME AA prompt files. The first phrase (To help redirect your call) is contained in flash file en_bacd_welcome.au, while the remainder of the instructions are unchanged from the Scenario 1 configuration and contained in flash file en_bacd_options_menu.au.

You can bypass the Cisco CME welcome greeting altogether by recording a small empty file or by deleting the file from your router's flash (which causes the Cisco CME software to bypass the greeting). In the Scenario 2 example depicted in this section, the menu phrases associated with the Cisco Unity Express and Cisco CME prompt files have been structured to flow as a single AA to the caller. You can also bypass the Cisco CME AA altogether (the welcome greeting and option choices) by using the **param drop-through-option number** command to transfer a call directly into the Cisco CME ACD while bypassing the Cisco CME AA.

Extension 2080 and the associated GDM are added to the configuration to provide a general mailbox for the receptionists. This mailbox is entered by choosing option 4 from the first-tier menu and is handled entirely within Cisco Unity Express. Extension 2080 has been added to IP phones 2001 and 2004—the phones associated with two employees who are receptionists (as well as ACD agents).

If a caller chooses 1 from the first-tier menu and is directed to the ACD groups, but the call remains unanswered, the call is forwarded to extension 2070—which is the GDM for the ACD agents.

Configure Cisco CME for Scenario 2

These steps summarize the configuration for Cisco CME for Scenario 2:

1. Choose **Configure > Phones**. Then click the MAC address of the phone that you want to change. The

Change Phone window appears (see Figure 9).

2. Enter extension 2080 to button 3 of the receptionist s phone, while the ACD GDM remains on button 2. With this setup, the employee gets MWI for both the receptionist and the ACD GDM mailboxes.

Figure 9 Add Extension Button to Receptionist s Phone

Change Phone

Phone Physical ID : 0003.6BAA.D1F8
Phone Sequence Number : 1
Phone Type : 7960
Call Blocking : Exempt Non Exempt
Auto-Line Selection : In/Out Incoming Disable
Login PIN :
Receive Night Service Bell : No Yes

Phone Line Buttons

6 result(s)

Button	Extension(s)	Ring Type/Mode
1	1, 2001 [User21]	Normal Ring
2	11, 2070 [Cust Svc GDM]	Normal Ring
3	10, 2080 [Reception GDM]	Normal Ring
4		
5		
6		

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The following is the complete (and annotated) Cisco CME router s CLI configuration for Scenario 2 that results from the specific changes to the base configuration.

```
CME-2821#show running-config
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname CME-2821
!
boot-start-marker
boot system flash:
boot-end-marker
!
no aaa new-model
!
resource policy
!
ip subnet-zero
!
ip cef
no ip dhcp use vrf connected
ip dhcp excluded-address b.168.1.1 b.168.1.10
```

```
!  
ip dhcp pool ITS  
    network b.168.1.0 255.255.255.0  
    option 150 ip a.1.11.1  
    default-router b.168.1.1  
!  
no ip domain lookup  
!  
voice-card 0  
    no dspfarm  
!  
voice service voip  
    allow-connections h323 to h323  
    allow-connections h323 to sip  
    supplementary-service h450.12 advertise-only  
!  
application  
    service acd flash:app-b-acd-2.1.0.0.tcl  
        param queue-cme-debug 1  
        param aa-hunt1 2020  
        param aa-hunt2 2021  
        param number-of-hunt-grps 3  
        param aa-hunt3 2022  
        param queue-len 30  
    !  
    service cme-aa flash:app-b-acd-aa-2.1.0.0.tcl  
        param max-time-call-retry 60  
        param voice-mail 2070  
        paramspace english index 0  
        param service-name acd  
        param number-of-hunt-grps 3  
        param handoff-string cme-aa  
        paramspace english language en  
        param max-time-vm-retry 1  
        paramspace english location flash:  
        param aa-pilot 2040  
        param second-greeting-time 30  
        paramspace english prefix en  
        param call-retry-timer 20  
    !  
interface Loopback0  
    ip address a.1.11.1 255.255.255.252  
    !  
interface GigabitEthernet0/0  
    no ip address  
    shutdown  
    duplex auto  
    speed auto  
    !  
interface GigabitEthernet0/1  
    no ip address  
    shutdown  
    duplex auto  
    speed auto  
    !  
interface FastEthernet0/1/0  
    switchport access vlan 10  
    !  
interface FastEthernet0/1/1  
    switchport access vlan 10  
    !  
interface FastEthernet0/1/2  
    switchport access vlan 10  
    !  
interface FastEthernet0/1/3  
    switchport access vlan 10
```

```

!
interface FastEthernet0/1/4
  switchport access vlan 10
!
interface FastEthernet0/1/5
  switchport access vlan 10
!
interface FastEthernet0/1/6
  switchport access vlan 10
!
interface FastEthernet0/1/7
  switchport access vlan 10
!
interface FastEthernet0/1/8
  switchport access vlan 10
!
interface Service-Engine1/0
  ip unnumbered Loopback0
  service-module ip address a.1.11.2 255.255.255.252
  service-module ip default-gateway a.1.11.1
!
interface Vlan1
  no ip address
!
interface Vlan10
  ip address b.168.1.1 255.255.255.0
!
ip classless
ip route a.1.11.2 255.255.255.255 Service-Engine1/0
!
ip http server
ip http path flash:
!
tftp-server flash:P00305000600.bin
tftp-server flash:P00305000600.sbn
!
control-plane
!

!--- PSTN calls are auto-terminated on the Cisco CUE AA pilot number 2100.

!
voice-port 0/3/0
  connection plar opx 2100
!
voice-port 0/3/1
  connection plar opx 2100
!
voice-port 0/3/2
!
voice-port 0/3/3
!
dial-peer voice 2040 voip
  destination-pattern 2040
  session target ipv4:a.1.11.1
  dtmf-relay h245-alphanumeric
  codec g711ulaw
  no vad
!
dial-peer voice 2041 voip
  service cme-aa
  incoming called-number 2040
  dtmf-relay h245-alphanumeric
  codec g711ulaw
  no vad
!

```

```
dial-peer voice 2105 voip
 destination-pattern 21..
 session protocol sipv2
 session target ipv4:a.1.11.2
 dtmf-relay sip-notify
 codec g711ulaw
 no vad
!
telephony-service
 load 7960-7940 P00305000300
 max-ephones 48
 max-dn 192
 ip source-address a.1.11.1 port 2000
 max-redirect 20
 auto assign 1 to 10
 system message CISCO SYSTEMS
 create cnf-files version-stamp 7960 Aug 05 2005 00:00:32
 voicemail 2105
 max-conferences 8 gain -6
 moh music-on-hold.au
 dn-webedit
 time-webedit
 transfer-system full-consult
 transfer-pattern 210. blind
 transfer-pattern 2040 blind
!
ephone-dn 1 dual-line
 number 2001
 name User21
 call-forward busy 2105
 call-forward noan 2105 timeout 10
!
ephone-dn 2 dual-line
 number 2002
 name User22
 call-forward busy 2105
 call-forward noan 2105 timeout 10
!
ephone-dn 3 dual-line
 number 2003
 name User23
 call-forward busy 2105
 call-forward noan 2105 timeout 10
!
ephone-dn 4 dual-line
 number 2004
 name User24
 call-forward busy 2105
 call-forward noan 2105 timeout 10
!
ephone-dn 5 dual-line
 number 2005
 name User25
 call-forward busy 2105
 call-forward noan 2105 timeout 10
!
ephone-dn 6 dual-line
 number 2006
 name User26
 call-forward busy 2105
 call-forward noan 2105 timeout 10
!
ephone-dn 7 dual-line
 number 2007
 name User27
 call-forward busy 2105
```

```
call-forward noan 2105 timeout 10
!
ephone-dn 8 dual-line
number 2008
name User28
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 9 dual-line
number 2009
name User29
call-forward busy 2105
call-forward noan 2105 timeout 10
!
```

```
!--- Extension 2080 is associated with the receptionists' GDM.
!--- This extension is used to get MWI on the receptionists' phones.
```

```
!
ephone-dn 10
number 2080
description Reception GDM
name Reception GDM
call-forward all 2105
!
ephone-dn 11
number 2070
description GDM
name Cust Svc GDM
call-forward all 2105
!
ephone-dn 100
number 8000....
mwi on
!
ephone-dn 101
number 8001....
mwi off
!
```

```
!--- Ephone-dn 10 (2080) is defined as button 3 on
!--- phones 2001 and 2004 so that all
!--- receptionists (ephones 1 and 4) get MWI for the GDM.
```

```
!
ephone 1
username "user21" password null
mac-address 0012.0034.81B7
type 7960
button 1:1 2:11 3:10
!
ephone 2
username "user22" password null
mac-address 0011.2032.C876
type 7960
button 1:2 2:11
!
ephone 3
username "user23" password null
mac-address 0012.01E8.875F
type 7960
button 1:3 2:11
!
ephone 4
username "user24"
mac-address 0003.AAAA.0004
```



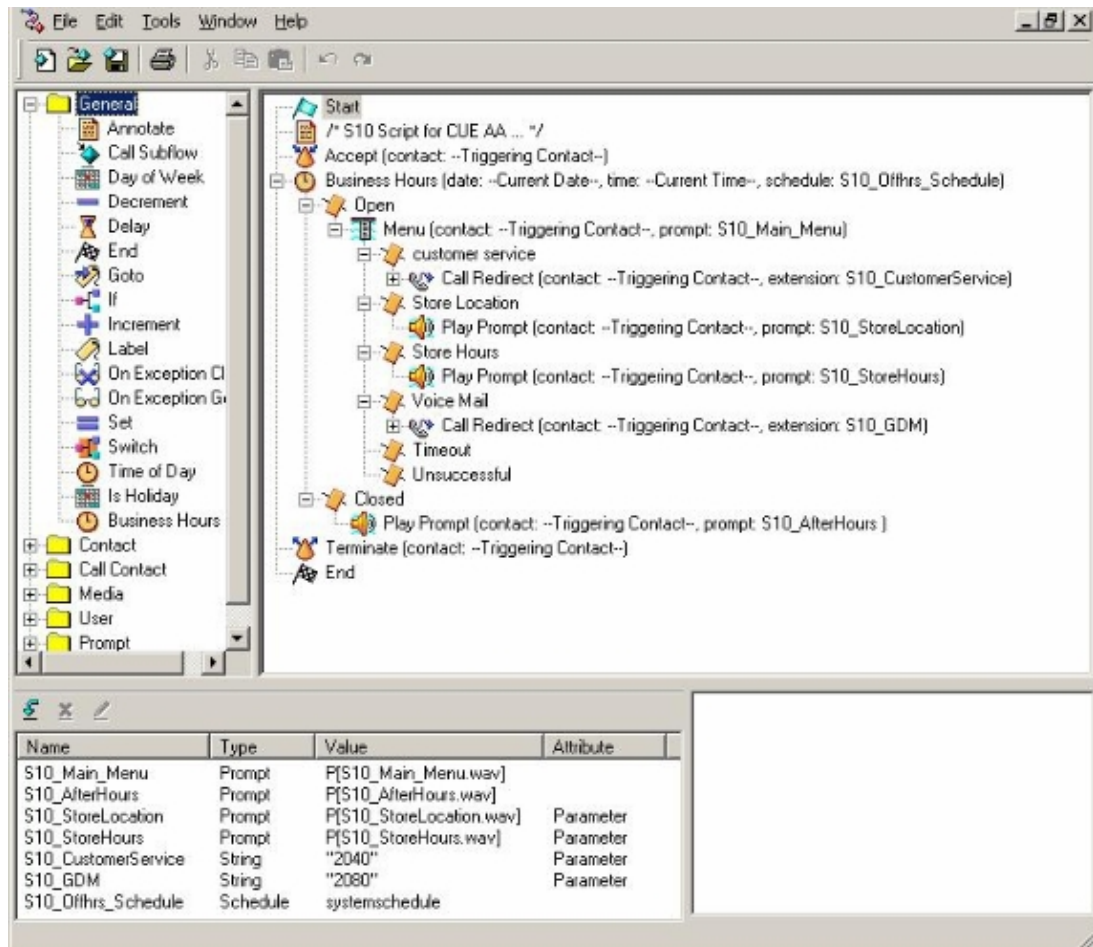
```
type 7960
button 1:4 2:11 3:10
!
ephone 5
username "user25"
mac-address 0003.AAAA.0005
type 7960
no auto-line
button 1:5 2:11
!
ephone 6
username "user26"
mac-address 0003.AAAA.0006
type 7960
button 1:6 2:11
!
ephone 7
username "user27"
mac-address 0003.AAAA.0007
type 7960
button 1:7 2:11
!
ephone 8
username "user28"
mac-address 0003.AAAA.0008
type 7960
button 1:8 2:11
!
ephone 9
username "user29"
mac-address 0003.AAAA.0009
type 7960
button 1:9 2:11
!
ephone-hunt 1 longest-idle
pilot 2020
list 2001, 2002, 2003
timeout 5
!
ephone-hunt 2 longest-idle
pilot 2021
list 2004, 2005, 2006
timeout 5
!
ephone-hunt 3 longest-idle
pilot 2022
list 2007, 2008, 2009
timeout 5
!
line con 0
logging synchronous
line aux 0
line 66
no activation-character
no exec
transport preferred none
transport input all
transport output all
line vty 0 4
login
!
scheduler allocate 20000 1000
ntp master
!
end
```

Configure Cisco Unity Express for Scenario 2

These steps summarize the configuration for Cisco Unity Express for Scenario 2:

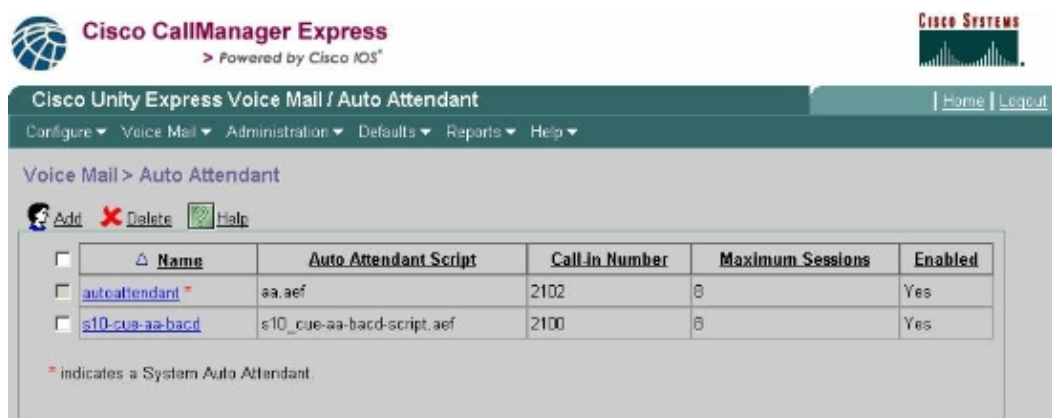
1. Open the Cisco Unity Express Script Editor utility and create the custom Cisco Unity Express script. See Figure 10.

Figure 10 Configure the Cisco Unity Express AA Script for the Top Tier Menu



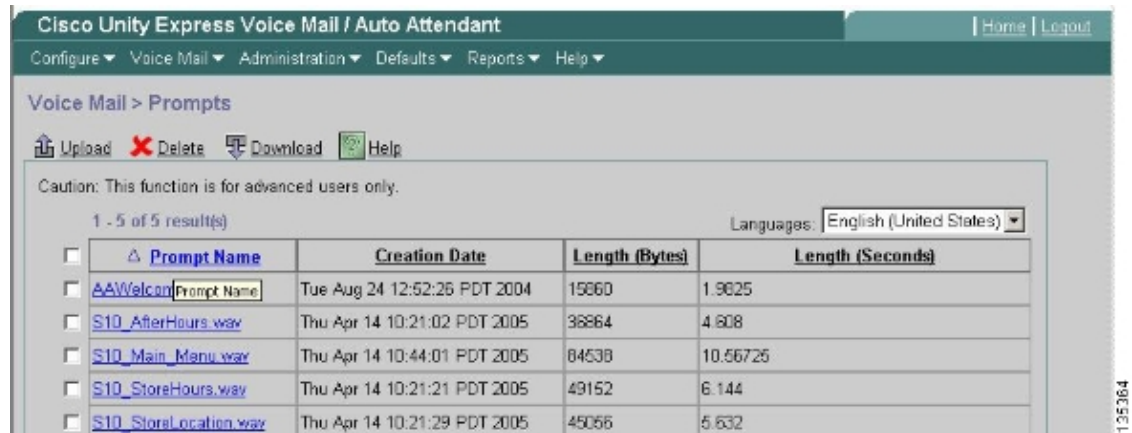
2. Choose **Voice Mail > Auto Attendant** and associate the script (S10_CUE-AA-BACD-script.aef) with pilot number 2100. See Figure 11.

Figure 11 Associate the Script with a Pilot Number



3. Record all the prompts for the AA script. You can either record this offline and upload the .wav files to Cisco Unity Express with the correct file name, or you can record it through the Administration via Telephony (AVT).
4. (Optional) If you use the AVT, Cisco Unity Express assigns a generic file name that you can subsequently change to the desired file name. Choose **Voice Mail > Prompts** and click the system file name.
5. (Optional) Edit the file name(s) as needed in the dialog box and click **Ok**. The Voice Mail > Prompts window now shows the corrected file name(s) in the list (see Figure 12).

Figure 12 List of AA Script Prompts



6. Choose **Voice Mail > Auto Attendant** and open the AA built in Step 1. Choose **Script Parameters** and associate the prompt file names with the correct parameter in the script.
7. Choose **Configure > Groups** and click the group (reception) that you want to edit. The Group Profile window appears (see partial window at top of Figure 13). The Profile tab is the default display.
8. Click the Owners/Members tab to configure members.

Figure 13 Define the Reception Group

Group Profile - reception

Apply Cancel Help

Profile Owners/Members Owner/Member of Groups Mailboxes

Group ID: reception

Full name *: Receptionists

Description: Receptionists

Primary Extension: 2080

Primary E.164 Number:

Capabilities

Super Users:

Administration via Telephone:

Voice Mail Broadcaster:

Public List Manager:

Private List Viewer:

* indicates a mandatory field

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The following is the complete (and annotated) Cisco Unity Express CLI configuration for Scenario 2 that results from the specific changes to the base configuration.

```

cue#show running-config
Generating configuration:
clock timezone America/Los_Angeles
hostname cue
ip domain-name cisco.com
ntp server a.1.11.1

!--- Add the reception group.

!
groupname Administrators create
groupname Broadcasters create
groupname custservice create
groupname reception create
username admin create

username user21 create
username user22 create
username user23 create
username user24 create
username user25 create
username user26 create
username user27 create
username user28 create
username user29 create
!

!--- The reception group (and therefore GDM) is associated with extension 2080.

!
groupname custservice phonenumber "2070"
groupname reception phonenumber "2080"
username user21 phonenumber "2001"

```

```
username user22 phonenumber "2002"
username user23 phonenumber "2003"
username user24 phonenumber "2004"
username user25 phonenumber "2005"
username user26 phonenumber "2006"
username user27 phonenumber "2007"
username user28 phonenumber "2008"
username user29 phonenumber "2009"
!
```

```
!-- Add membership to group "reception".
```

```
!
groupname Administrators member admin
groupname custservice member user21
groupname custservice member user22
groupname custservice member user23
groupname custservice member user24
groupname custservice member user25
groupname custservice member user26
groupname custservice member user27
groupname custservice member user28
groupname custservice member user29
groupname reception member user21
groupname reception member user24
groupname Administrators privilege superuser
groupname Administrators privilege ManagePrompts
groupname Administrators privilege ManagePublicList
groupname Administrators privilege ViewPrivateList
groupname Broadcasters privilege broadcast
```

```
!-- Define a 09:00-17:00 Monday-Friday business schedule for the AA.
```

```
!
calendar biz-schedule systemschedule
  closed day 1 from 00:00 to 24:00
  open day 2 from 09:00 to 17:00
  open day 3 from 09:00 to 17:00
  open day 4 from 09:00 to 17:00
  open day 5 from 09:00 to 17:00
  open day 6 from 09:00 to 17:00
  closed day 7 from 00:00 to 24:00
end schedule
ccn application autoattendant
  description "autoattendant"
  enabled
  maxsessions 8
  script "aa.aef"
  parameter "busOpenPrompt" "AABusinessOpen.wav"
  parameter "holidayPrompt" "AAHolidayPrompt.wav"
  parameter "busClosedPrompt" "AABusinessClosed.wav"
  parameter "allowExternalTransfers" "true"
  parameter "MaxRetry" "3"
  parameter "operExtn" "2001"
  parameter "welcomePrompt" "AAWelcome.wav"
  parameter "businessSchedule" "systemschedule"
end application
ccn application ciscomwiapplication
  description "ciscomwiapplication"
  enabled
  maxsessions 8
  script "setmwi.aef"
  parameter "strMWI_OFF_DN" "8001"
  parameter "strMWI_ON_DN" "8000"
  parameter "CallControlGroupID" "0"
end application
```

```

ccn application promptmgmt
  description "promptmgmt"
  enabled
  maxsessions 1
  script "promptmgmt.aef"
end application
!

!--- Add the custom AA script for the first-tier menu.

!
ccn application s10-cue-aa-bacd
  description "s10-cue-aa-bacd"
  enabled
  maxsessions 8
  script "s10-cue-aa-bacd-script.aef"
  parameter "S10_StoreHours" "S10_StoreHours.wav"
  parameter "S10_CustomerService" "2040"
  parameter "S10_GDM" "2080"
  parameter "S10_StoreLocation" "S10_StoreLocation.wav"
end application
ccn application voicemail
  description "voicemail"
  enabled
  maxsessions 8
  script "voicebrowser.aef"
  parameter "logoutUri" "http://localhost/voicemail/vxmlscripts/mbxLogout.jsp"
  parameter "uri" "http://localhost/voicemail/vxmlscripts/login.vxml"
end application
ccn engine
  end engine
ccn subsystem jtapi
  ccm-manager address 0.0.0.0
  end subsystem
ccn subsystem sip
  gateway address "a.1.11.1"
  end subsystem
!

!--- Associate the custom AA script with the pilot number 2100.

!
ccn trigger sip phonenumber 2100
  application "s10-cue-aa-bacd"
  enabled
  maxsessions 8
  end trigger
ccn trigger sip phonenumber 2102
  application "autoattendant"
  enabled
  maxsessions 8
  end trigger
ccn trigger sip phonenumber 2105
  application "voicemail"
  enabled
  maxsessions 8
  end trigger
ccn trigger sip phonenumber 2106
  application "promptmgmt"
  enabled
  maxsessions 1
  end trigger
voicemail default language en_US
voicemail default mailboxsize 3000
voicemail broadcast recording time 300
voicemail operator telephone 2001

```

```

!
!--- Add the GDM for "reception"

!
voicemail mailbox owner "reception" size 3000
description "Receptionists mailbox"
end mailbox
voicemail mailbox owner "custservice" size 3000
description "custservice mailbox"
end mailbox
voicemail mailbox owner "user21" size 3000
end mailbox
voicemail mailbox owner "user22" size 3000
end mailbox
voicemail mailbox owner "user23" size 3000
end mailbox
voicemail mailbox owner "user24" size 3000
description "user24 mailbox"
end mailbox
voicemail mailbox owner "user25" size 3000
description "user25 mailbox"
end mailbox
voicemail mailbox owner "user26" size 3000
description "user26 mailbox"
end mailbox
voicemail mailbox owner "user27" size 3000
description "user27 mailbox"
end mailbox
voicemail mailbox owner "user28" size 3000
description "user28 mailbox"
end mailbox
voicemail mailbox owner "user29" size 3000
description "user29 mailbox"
end mailbox
end

```

Scenario 2 Configuration Variation 1 – Individual GDMs per Hunt Group

The configuration for the main scenario described in the previous sections defines a single GDM for all messages left by callers into the three ACD groups (hardware support, software support and general questions). This granularity might not be sufficient for some situations because the agents for one group (such as software support) might not want to wade through the messages left for the hardware and general support groups before finding messages regarding software support. If the volume of messages is high, you can have a separate mailbox for each ACD group.

With normal Cisco CME hunt-groups (when not using the ACD), you can define a separate mailbox for each hunt group by associating individual GDMs with the hunt-group numbers (2020, 2021, 2022) and pointing the final destination of the hunt-group to voice mail—as illustrated in the following configuration examples.

Configure Cisco CME for Scenario 2 Variation 1

The following are Cisco CME configuration variations for individual GDMs:

```

ephone-hunt 1 sequential
pilot 2020
list 2001, 2002, 2003
final 2105
timeout 10
!
!

```

```

ephone-hunt 2 sequential
  pilot 2021
  list 2004, 2005, 2006
  final 2105
  timeout 10
!
!
ephone-hunt 3 sequential
  pilot 2022
  list 2007, 2008, 2009
  final 2105
  timeout 10

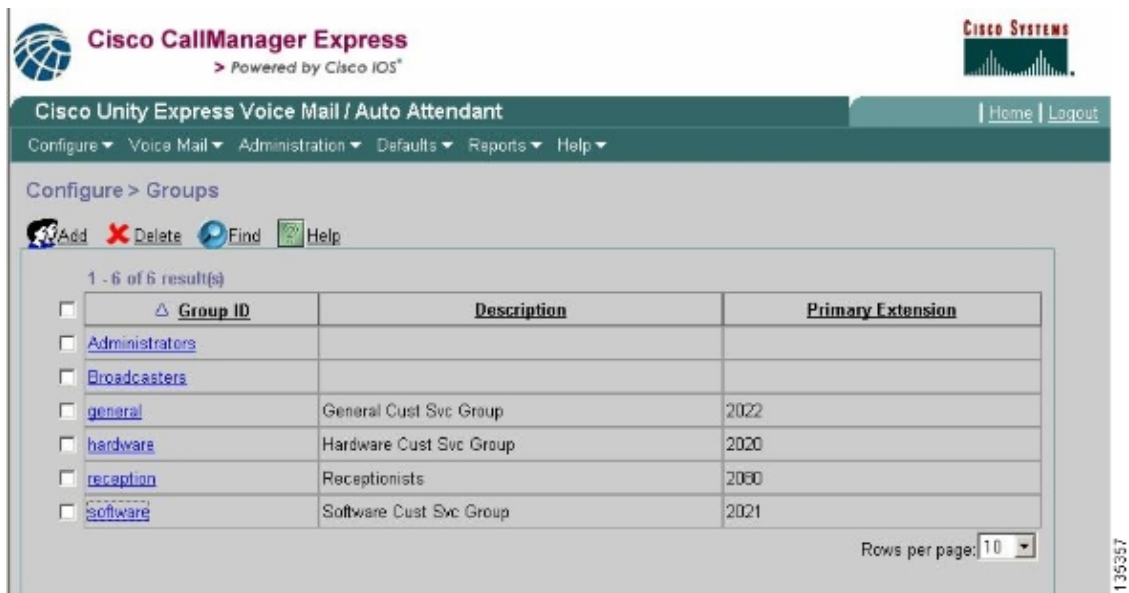
```

Configure Cisco Unity Express for Scenario 2 Variation 1

These steps summarize the configuration of the groups and GDMs on Cisco Unity Express for Scenario 2 Variation 1:

1. Individual groups are defined in Cisco Unity Express for each of the three hunt-groups. Choose **Configure > Groups** to define groups. See Figure 14.

Figure 14 Define Individual Groups



2. From **Configure > Groups**, click the group (hardware) you want to edit. The default Profile tab window appears (see top of Figure 15).

Figure 15 Configure Specific Groups

Group Profile - hardware

Apply Cancel Help

Profile Owners/Members Owner/Member of Groups Mailboxes

Group ID: hardware

Full name *: HardwareCustSvc

Description: Hardware Cust Svc Group

Primary Extension: 2020

Primary E.164 Number:

Group Profile - hardware

+ Subscribe owner + Subscribe member - Unsubscribe Cancel Help

Profile Owners/Members Owner/Member of Groups Mailboxes

1 - 3 of 3 result(s)

<input type="checkbox"/>	<u>△ User/Group ID</u>	<u>Type</u>	<u>Rights</u>	<u>Description / Display Name</u>	<u>Primary Extension</u>
<input type="checkbox"/>	user21	User	member	User TwoOne	2001
<input type="checkbox"/>	user22	User	member	User TwoTwo	2002
<input type="checkbox"/>	user23	User	member	User TwoThree	2003

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3. Choose the Owners/Members tab (see bottom of Figure 15) and click the check box at left to select owners and members.

The following are Cisco Unity Express configuration variations for individual GDMs:

```

groupname hardware create
groupname software create
groupname general create
groupname hardware phonenumber "2020"
groupname software phonenumber "2021"
groupname general phonenumber "2022"
groupname hardware member user21
groupname hardware member user22
groupname hardware member user23
groupname software member user24
groupname software member user25
groupname software member user26
groupname general member user27
groupname general member user28
groupname general member user29
voicemail mailbox owner "general" size 5520
description "general mailbox"
end mailbox
voicemail mailbox owner "hardware" size 5520
description "Hardware mailbox"
end mailbox
voicemail mailbox owner "software" size 5520
description "software mailbox"
end mailbox

```

Scenario 2 Configuration Variation 2 – Individual GDMs per ACD Group

There are two drawbacks to the configuration summarized in the Scenario 2 Configuration Variation 1—Individual GDMs per Hunt group section.

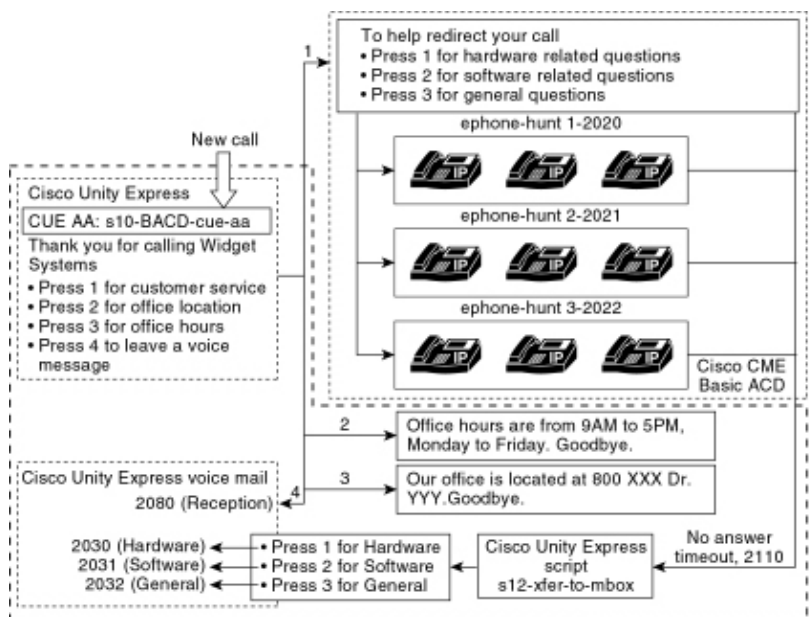
- It works only if the hunt-groups are called directly (extensions 200, 201 and 202), and does not work when the hunt-groups are used as an ACD when the ACD pilot number (2040) is called
- It does not provide any means of providing MWI for the agents because hunt-group numbers cannot be put on phones as buttons.

To provide a configuration that solves these two drawbacks, you can use the xfermailbox system script in Cisco Unity Express. Define three groups in Cisco Unity Express (one each for hardware, software, and general), and associate each group with an interim extension (such as 2030, 2031, and 2032) which can be placed as buttons appearing on an agent phone (and as a result provide MWI). This configuration of the groups, extensions, and phones is summarized in Table 2.

Agent	Extension	Hunt-Group Number	ACD Group	Group Mailbox
user21	2001	2020	Hardware	2030
user22	2002	2020	Hardware	2030
user23	2003	2020	Hardware	2030
user24	2004	2021	Software	2031
user25	2005	2021	Software	2031
user26	2006	2021	Software	2031
user27	2007	2022	General	2032
user28	2008	2022	General	2032
user29	2009	2022	General	2032

The adjusted call flow for this modified setup is illustrated in Figure 16.

Figure 16 Adjusted Call Flow for xfermailbox Script Variation



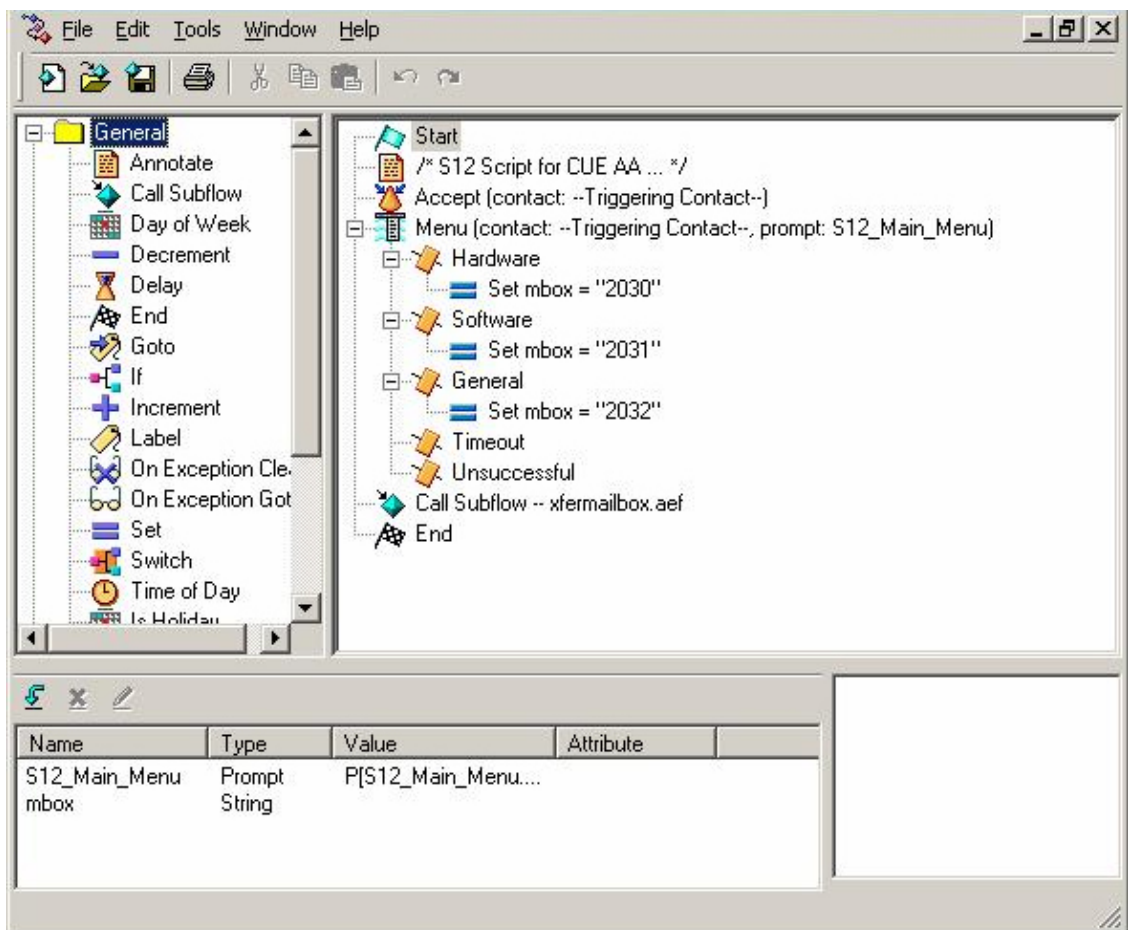
Directing calls into individual GDMs in Cisco Unity Express requires a custom script that calls the xfermailbox system script. Calls to the Cisco CME ACD can only be forwarded to Cisco Unity Express by using the single **param voice-mail number** command (the individual final destinations on the hunt-groups cannot be used for ACD call flows). This command delivers a single extension to Cisco Unity Express for entry into a mailbox (extension 2070 in preceding configurations). Cisco Unity Express has no way to distinguish which hunt-group is the intended recipient and cannot determine which of the three GDMs to enter.

Instead, direct the Cisco CME ACD voice-mail destination to a Cisco Unity Express pilot number (2110) that enters a custom script (s12-xfer-to-mbox.aef). This pilot number provides a menu to the user offering a choice of the groups for which a message can be left (hardware, software, or general). The content of this menu is shown at the bottom of the call flow in Figure 16 . Based on the caller s response, the mbox variable is set to the appropriate extension (2030, 2031, or 2032), and the call is handed off (via the xfermailbox system script) to one of the three GDMs.

The steps associated with modifying the Scenario 2 configuration to handle the configuration changes outlined in Table 2 and Figure 16 are described in the following steps:

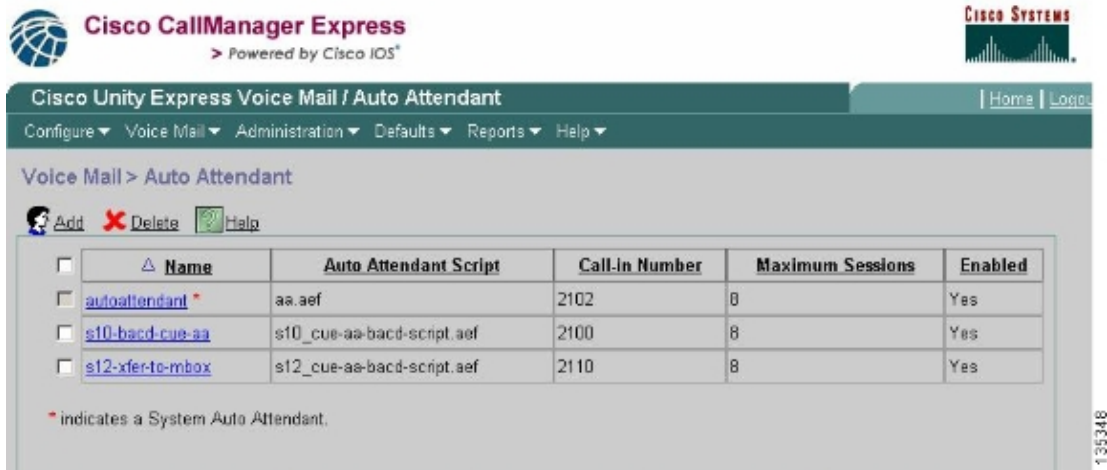
1. Open the Cisco Unity Express Script Editor utility and write a custom Cisco Unity Express script called s12-xfer-to-mbox.aef. See Figure 17.

Figure 17 Custom Cisco Unity Express Script Creation Window



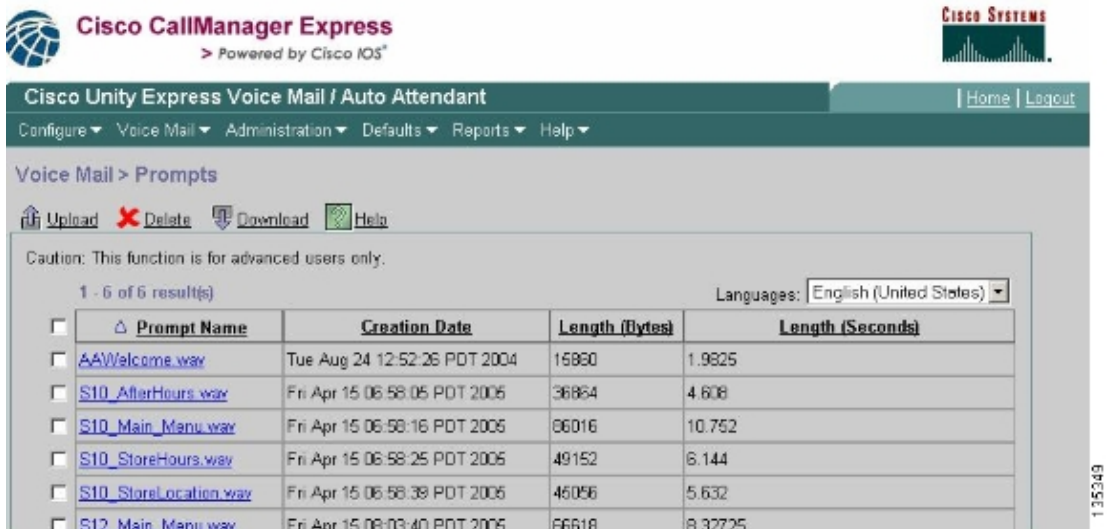
2. Choose **Voice Mail > Auto Attendant**. See Figure 18. Add a new Auto-Attendant and associate it with the script built in step 1.
3. Associate the custom **s12-xfer-to-mbox.aef** Cisco Unity Express script with pilot number **2110**. See Figure 18.

Figure 18 Associate the Custom Cisco Unity Express Script with a Pilot Number



4. Record the prompt (in this case named S12_Main_Menu.wav) for the new AA script. You can either record this offline and upload the .wav file to Cisco Unity Express with the correct file name, or you can record it through the Administration via Telephony (AVT).
5. (Optional) If you use the AVT, Cisco Unity Express assigns a generic file name that you can subsequently change to the desired file name. Choose **Voice Mail > Prompts** and click the system file name.
6. (Optional) Edit the file name in the dialog box as needed and click **OK**. The Voice Mail > Prompts window now shows the corrected file name in the list (see Figure 19).
7. Choose **Voice Mail > Auto Attendant** and open the AA built during step 2. Choose **Script Parameters** and associate the prompt file name with the correct parameter in the script.

Figure 19 List of Recorded Prompts



8. Choose **Configure > Extension** to define extensions 2030, 2031, and 2032 to associate the GDMs with each of these extensions. See Figure 20.

Figure 20 Define Extensions to Associate the GDMs with ACD Hunt–Groups

Cisco Unity Express Voice Mail / Auto Attendant

Configure > Voice Mail > Administration > Defaults > Reports > Help

Configure > Extensions

Add Delete Customize Table

1 - 16 of 16 result(s)

<input type="checkbox"/>	Telephone Number	Sequence Number	Caller ID/Name	Type
<input type="checkbox"/>	2001	1	User21	Normal
<input type="checkbox"/>	2002	2	User22	Normal
<input type="checkbox"/>	2003	3	User23	Normal
<input type="checkbox"/>	2004	4	User24	Normal
<input type="checkbox"/>	2005	5	User25	Normal
<input type="checkbox"/>	2006	6	User26	Normal
<input type="checkbox"/>	2007	7	User27	Normal
<input type="checkbox"/>	2008	8	User28	Normal
<input type="checkbox"/>	2009	9	User29	Normal
<input type="checkbox"/>	2030	12	HW Cust Svc Mbox	Normal
<input type="checkbox"/>	2031	13	SW Cust Svc Mbox	Normal
<input type="checkbox"/>	2032	14	Gen Cust Svc Mbox	Normal
<input type="checkbox"/>	2070	11	Cust Svc GDM	Normal
<input type="checkbox"/>	2080	10	Reception GDM	Normal

9. Choose **Configure > Phones** and click the MAC address of the phone that you want to change. The Change Phone window appears (see Figure 21).
10. Add buttons for 2030, 2031, or 2032 on the ACD agent phones to provide MWI.

Figure 21 Window Illustrating Adding Buttons

Change Phone

Phone Physical ID : 0003.6BAA.D1F8
 Phone Sequence Number : 1
 Phone Type : 7960
 Call Blocking : Exempt Non Exempt
 Auto-Line Selection : In/Out Incoming Disable
 Login PIN :
 Receive Night Service Bell : No Yes

Phone Line Buttons

6 result(s)

Button	Extension(s)	Ring Type/Mode
1	1, 2001 [User21]	Normal Ring
2	12, 2030 [HW Cust Svc Mbox]	Normal Ring
3	10, 2080 [Reception GDM]	Normal Ring
4		
5		
6		

The following is the annotated Cisco CME router CLI configuration for changes and additions in the Cisco CME configuration to the base scenario configuration associated with the Configuring Cisco CME for

Scenario 2 section.

```
!--- Set the Cisco CME AA voice mail destination
!--- to 2110, the Cisco Unity Express
!--- script entrypoint for the transfer-to-mailbox functionality.

!
service cme-aa flash:app-b-acd-aa-2.1.0.0.tcl
  param max-time-call-retry 60
  param voice-mail 2110
  param-space english index 0
  param service-name acd
  param number-of-hunt-grps 3
  param handoff-string cme-aa
  param-space english language en
  param max-time-vm-retry 1
  param-space english location flash:
  param aa-pilot 2040
  param second-greeting-time 30
  param-space english prefix en
  param call-retry-timer 20
!

!--- Define the group extensions (2030, 2031 and 2032) to
!--- be used as button appearances
!--- on the agent phones so they can get MWI for the GDMS.
!--- Put these extension in CFA
!--- so they never ring and do not disturb the agents.

!
ephone-dn 12
  number 2030
  description HW Cust Svc Mbox
  name HW Cust Svc Mbox
  call-forward all 2110
!
ephone-dn 13
  number 2031
  description SW Cust Svc Mbox
  name SW Cust Svc Mbox
  call-forward all 2110
!
ephone-dn 14
  number 2032
  description Gen Cust Svc Mbox
  name Gen Cust Svc Mbox
  call-forward all 2110
!

!--- Add a button appearance of the appropriate
!--- group extension to each of the
!--- ACD Agent phones.

!
ephone 1
  username "user21" password null
  mac-address 0012.0034.81B7
  type 7960
  button 1:1 2:12 3:10
!
ephone 2
  username "user22" password null
  mac-address 0011.2032.C876
  type 7960
  button 1:2 2:12
```

```

!
ephone 3
  username "user23" password null
  mac-address 0012.01E8.875F
  type 7960
  button 1:3 2:12
!
ephone 4
  username "user24"
  mac-address 0003.AAAA.0004
  type 7960
  button 1:4 2:13 3:10
!
ephone 5
  username "user25"
  mac-address 0003.AAAA.0005
  type 7960
  no auto-line
  button 1:5 2:13
!
ephone 6
  username "user26"
  mac-address 0003.AAAA.0006
  type 7960
  button 1:6 2:13
!
ephone 7
  username "user27"
  mac-address 0003.AAAA.0007
  type 7960
  button 1:7 2:14
!
ephone 8
  username "user28"
  mac-address 0003.AAAA.0008
  type 7960
  button 1:8 2:14
!
ephone 9
  username "user29"
  mac-address 0003.AAAA.0009
  type 7960
  button 1:9 2:14

```

The following is the annotated Cisco Unity Express CLI configuration for changes and additions in the configuration to the base scenario configuration associated with the [Configuring Cisco Unity Express for Scenario 2](#) section and the preceding GUI changes:

```

!--- Define the three new groups, Hardware, Software and General.

!
groupname hardware create
groupname software create
groupname general create
!

!--- Define the new groups (and therefore GDMs) are associated with
!--- extensions 2030, 2031 and 2032.

!
groupname hardware phonenumber "2030"
groupname software phonenumber "2031"
groupname general phonenumber "2032"
!

```

```

!--- Define the membership of the Hardware, Software and General groups.

!
groupname hardware member user21
groupname hardware member user22
groupname hardware member user23
groupname software member user24
groupname software member user25
groupname software member user26
groupname general member user27
groupname general member user28
groupname general member user29
!

!--- Define the custom AA script that will branch
!--- to the xfermailbox.aef system script
!--- when the caller selects the correct GDM from the menu.

!
ccn application s12-xfer-to-mbox
description "s12-xfer-to-mbox"
enabled
maxsessions 8
script "s12_cue-aa-bacd-script.aef"
end application
!

!--- Define the pilot number 2110 to the custom script.

!
ccn trigger sip phonenumber 2110
application "s12-xfer-to-mbox"
enabled
maxsessions 8
end trigger
!

!--- Define the GDMs for each of the groups.

!
voicemail mailbox owner "hardware" size 3000
description "hardware mailbox"
end mailbox
voicemail mailbox owner "software" size 3000
description "software mailbox"
end mailbox
voicemail mailbox owner "general" size 3000
description "general mailbox"
end mailbox

```

Scenario 2 Configuration Variation 3 – Use the Drop Through CD Functionality

The drop through feature of the Cisco CME ACD can be used to bypass the Cisco CME AA menu and transfer a call directly into the ACD. With this feature, the entire AA menu can be consolidated in the Cisco Unity Express AA script. While using this feature requires additional configuration on the Cisco CME router, it simplifies maintenance of the AA script (menus) compared to splitting the menus and announcement recordings between the Cisco Unity Express AA (tier 1 menu) and the Cisco CME AA (tier 2 menu).

In the Scenario 2 Variation 3 configuration, both tiers of the AA menu are contained in the Cisco Unity Express AA script as follows:

- Thank you for calling Widget Systems
 - ◆ Press 1 for Customer Service
 - ◇ Press 1 for Hardware related questions
 - ◇ Press 2 for Software related questions
 - ◇ Press 3 for General questions
 - ◆ Press 2 for Office location
 - ◆ Press 3 for Office hours
 - ◆ Press 4 to Leave a Voice Message

The tier 2 menu choices result in calls being handed off from Cisco Unity Express to an individual Cisco CME ACD pilot number for each of these groups:

- Hardware Cisco CME ACD pilot number 2040
- Software Cisco CME ACD pilot number 2041
- General Cisco CME ACD pilot number 2042

The configurations previously presented in this document defined a single ACD pilot number (2040). In this configuration variation, three different Cisco CME ACD pilot numbers are defined (2040, 2041, and 2042). This variation illustrates how you can enable the drop through functionality. Using the drop through feature bypasses the Cisco CME AA menu and specifies a particular option to follow (specified in the corresponding CLI command). The system acts as if the caller pressed the option specified statically in the CLI. In this scenario, Cisco CME AA configuration includes the following adaptations:

- Configuration for ACD pilot number 2040 includes the **param drop-through-option 1** command
- Configuration for ACD pilot number 2041 includes the **param drop-through-option 2** command
- Configuration for ACD pilot number 2042 includes the **param drop-through-option 3** command

Configure Cisco CME for Scenario 2 Variation 3

These steps summarize the configuration for Cisco CME for Scenario 2 Variation 3:

1. Add the additional Cisco CME AA and ACD TCL configuration for pilot numbers 2040, 2041 and 2042, using the "drop-through" CLI.
2. Add the dial-peers to enable dialing the new pilot numbers 2040, 204,1 and 2042.

The following is the annotated Cisco CME router CLI configuration for the changes and additions to the Cisco CME configuration of the base scenario associated with the `Configuring Cisco CME for Scenario 2` section.

```

application
service acd flash:app-b-acd-2.1.0.0.tcl
  param queue-cme-debugs 1
  param aa-hunt1 2020
  param aa-hunt2 2021
  param number-of-hunt-grps 3
  param aa-hunt3 2022
  param queue-len 30
!
!
!--- Define the TCL configuration for the Hardware group, using pilot number 2040
!--- and "drop-through-option 1". Extension 2030 is associated with the GDM for
!--- the Hardware group, so this is the voice mail destination.
!
service hardware-aa flash:app-b-acd-aa-2.1.0.0.tcl

```

```

param max-time-vm-retry 1
param space english index 0
param max-time-call-retry 60
param voice-mail 2030
param aa-pilot 2040
param number-of-hunt-grps 1
param space english language en
param handoff-string hardware-aa
param call-retry-timer 20
param space english location flash:
param service-name acd
param drop-through-option 1
param second-greeting-time 30
param space english prefix en
!

!--- Define the TCL configuration for the Software group,
!--- using pilot number 2041
!--- and "drop-through-option 2". Extension 2031 is associated with the GDM for
!--- the Software group, so this is the voice mail destination.

!
service software-aa flash:app-b-acd-aa-2.1.0.0.tcl
param number-of-hunt-grps 1
param space english index 0
param handoff-string software-aa
param space english language en
param call-retry-timer 20
param service-name acd
param space english location flash:
param drop-through-option 2
param second-greeting-time 30
param max-time-vm-retry 1
param voice-mail 2031
param space english prefix en
param max-time-call-retry 60
param aa-pilot 2041
!

!--- Define the TCL configuration for the General group, using pilot number 2042
!--- and "drop-through-option 3". Extension 2032 is associated with the GDM for
!--- the General group, so this is the voice mail destination.

!
service general-aa flash:app-b-acd-aa-2.1.0.0.tcl
param call-retry-timer 20
param space english index 0
param max-time-call-retry 60
param voice-mail 2032
param service-name acd
param number-of-hunt-grps 1
param drop-through-option 3
param space english language en
param handoff-string general-aa
param max-time-vm-retry 1
param space english location flash:
param aa-pilot 2042
param second-greeting-time 30
param space english prefix en
!

!--- Define the dial-peers for pilot number 2040 and attach the Hardware
!--- TCL script to this number.

!
dial-peer voice 2040 voip

```

```

destination-pattern 2040
session target ipv4:a.1.11.1
dtmf-relay h245-alphanumeric
codec g711ulaw
no vad
!
dial-peer voice 20400 voip
service hardware-aa
incoming called-number 2040
dtmf-relay h245-alphanumeric
codec g711ulaw
no vad
!

!--- Define the dial-peers for pilot number 2041 and attach the Software
!--- TCL script to this number.

!
dial-peer voice 2041 voip
destination-pattern 2041
session target ipv4:a.1.11.1
dtmf-relay h245-alphanumeric
codec g711ulaw
no vad
!
dial-peer voice 20410 voip
service software-aa
incoming called-number 2041
dtmf-relay h245-alphanumeric
codec g711ulaw
no vad
i

!--- Define the dial-peers for pilot number 2042 and attach the General
!--- TCL script to this number.

!
dial-peer voice 2042 voip
destination-pattern 2042
session target ipv4:a.1.11.1
dtmf-relay h245-alphanumeric
codec g711ulaw
no vad
!
dial-peer voice 20420 voip
service general-aa
incoming called-number 2042
dtmf-relay h245-alphanumeric
codec g711ulaw
no vad

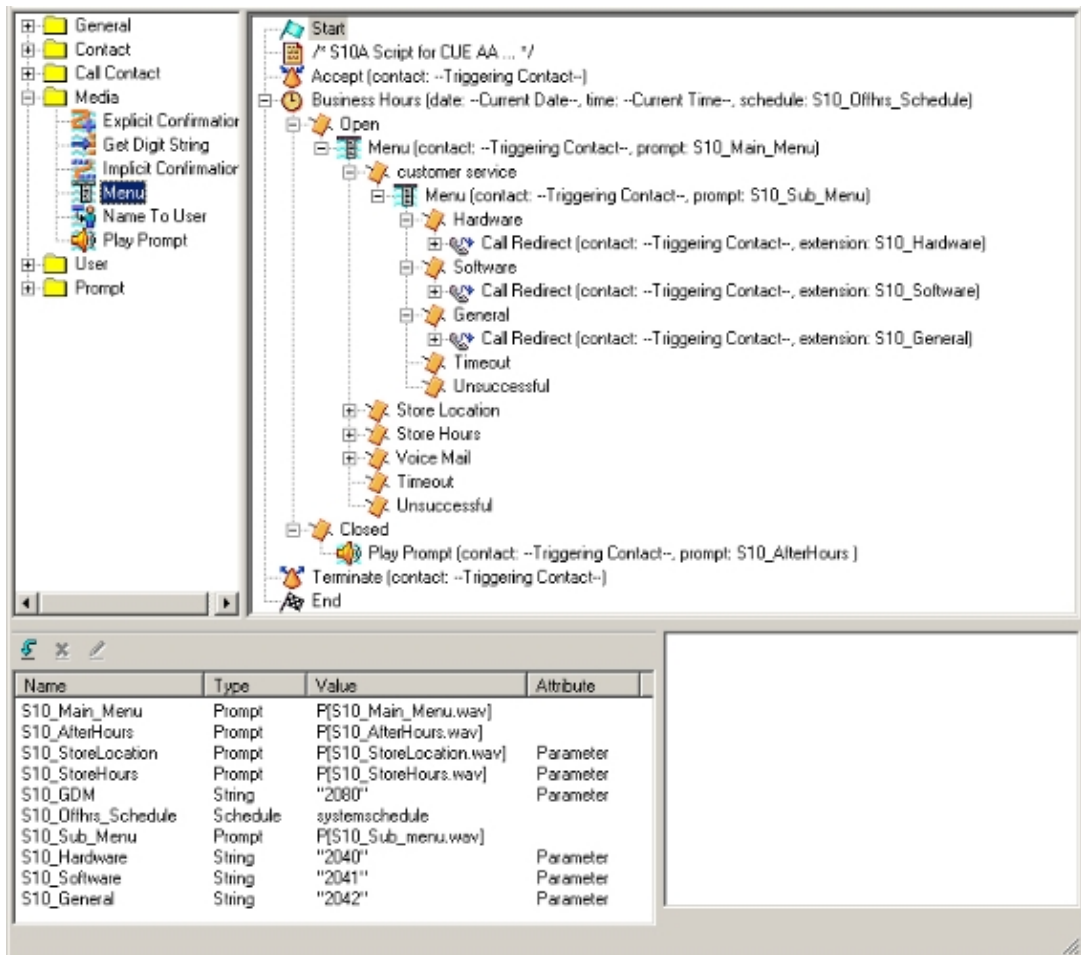
```

Configure Cisco Unity Express for Scenario 2 Variation 3

These steps summarize the configuration for Cisco Unity Express for Scenario 2 Variation 3:

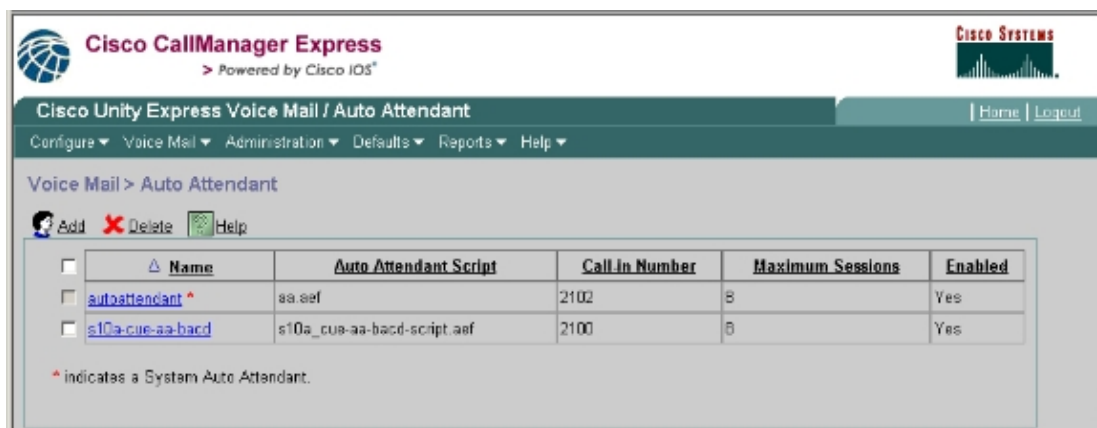
1. Open the Cisco Unity Express Script Editor utility and adjust script s10-cue-aa-bacd.aef to contain both tiers of the AA menu. See Figure 22.

Figure 22 Configure the Cisco Unity Express AA Script for both Menu Tiers



2. Choose **Voice Mail > Auto Attendant** and associate the new script (S10A_CUE-AA-BACD-script.aef) with pilot number 2100. See Figure 23.

Figure 23 Associate the Script with a Pilot Number



3. Record all the prompts required for the AA script. You can either record these offline and upload the .wav files to Cisco Unity Express with the correct file names, or you can record it through the Administration via Telephony (AVT).
4. (Optional) If you use the AVT, Cisco Unity Express assigns a generic file names that you can subsequently change to the desired file name. Choose **Voice Mail > Prompts** and click the system file name.
5. (Optional) Edit the file name(s) in the dialog box as needed and click **OK**. The Voice Mail > Prompts window now shows the corrected file name in the list.

The following is the annotated Cisco Unity Express CLI configuration for the changes and additions to the Cisco Unity Express configuration of the base scenario configuration associated with the Configuring Cisco Unity Express for Scenario 2 section.

```
!--- Define a new AA with script s10a-cue-aa-bacd.aef.

!
ccn application s10a-cue-aa-bacd
  description "s10a-cue-aa-bacd"
  enabled
  maxsessions 8
  script "s10a_cue-aa-bacd-script.aef"
  parameter "S10_Hardware" "2040"
  parameter "S10_StoreHours" "S10_StoreHours.wav"
  parameter "S10_Software" "2041"
  parameter "S10_General" "2042"
  parameter "S10_GDM" "2080"
  parameter "S10_StoreLocation" "S10_StoreLocation.wav"
end application
!

!--- Associate AA pilot number 2100 with the new script.

!
ccn trigger sip phonenumber 2100
  application "s10a-cue-aa-bacd"
  enabled
  maxsessions 8
end trigger
```

Scenario 3 – Use Basic ACD as the First-Tier Menu and Cisco Unity Express AA as the Second Tier Menu

In the third scenario presented in this document, incoming calls are directed to the Cisco CME AA (pilot number 2040) exactly as in Scenario 1. The only difference is that there are only two ACD groups (hardware and software), while the third option from the Main Menu is to access an announcement that describes the store's location and hours of operation.

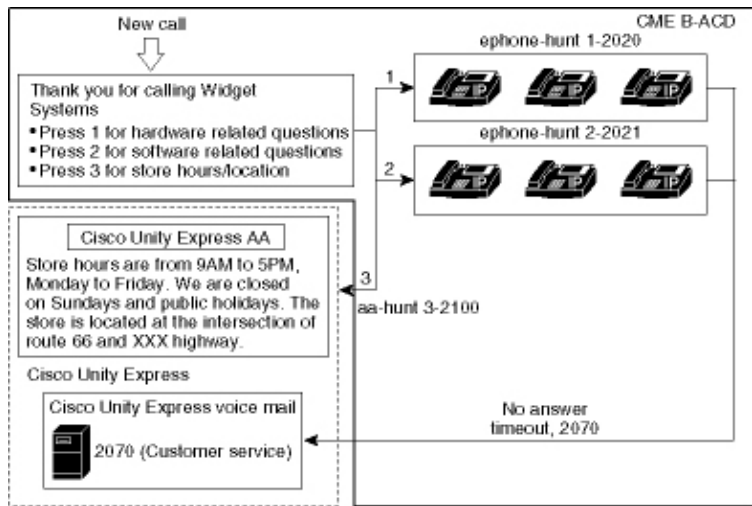
Note: It is not possible to include free-form announcements with the Cisco CME AA. A Cisco Unity Express custom script is required instead.

You can achieve this same result (from a caller's point of view) with a variation of Scenario 2. The Scenario 3 example is given to illustrate another way of structuring the application by handing off a call from the Cisco CME ACD processing to the Cisco Unity Express AA. Using a variation of Scenario 2 is probably the more typical way to build this application.

Scenario 3 Call Flow

The call flow of the configuration in this section is illustrated in Figure 24.

Figure 24 Scenario 3 Call Flow



Scenario 3 Configuration Notes

PSTN calls from the FXO port (0/3/0) are auto-terminated to the Cisco CME AA (2040).

The Cisco CME ACD has only two groups of agents (2020 and 2021). Option 3 of the menu is used to hand off the call to the Cisco Unity Express AA for the announcement. Instead of listing a hunt-group number, when callers choose option 3 the system directs the callers to the Cisco Unity Express AA pilot number (2100)—resulting from the use of the **param aa-hunt3 2100** command.

Configure Cisco CME for Scenario 3

The CLI configuration for the Cisco CME router is shown in the following example:

```
CME-2821#show running-config
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname CME-2821
!
boot-start-marker
boot system flash:
boot-end-marker
!
no aaa new-model
!
resource policy
!
ip subnet-zero
!
ip cef
no ip dhcp use vrf connected
ip dhcp excluded-address b.168.1.1 b.168.1.10
!
ip dhcp pool ITS
network b.168.1.0 255.255.255.0
option 150 ip a.1.11.1
default-router b.168.1.1
!
no ip domain lookup
!
voice-card 0
no dspfarm
```

```

!
voice service voip
  allow-connections h323 to h323
  allow-connections h323 to sip
  supplementary-service h450.12 advertise-only
!

!--- Point option 3 of the menu (aa-hunt3) to the
!--- Cisco Unity Express AA (2100).

!
application
  service acd flash:app-b-acd-2.1.0.0.tcl
    param queue-cme-debug 1
    param aa-hunt1 2020
    param aa-hunt2 2021
    param number-of-hunt-grps 3
    param aa-hunt3 2100
    param queue-len 30
  !
  service cme-aa flash:app-b-acd-aa-2.1.0.0.tcl
    param max-time-call-retry 60
    param voice-mail 2070
    paramspace english index 0
    param service-name acd
    param number-of-hunt-grps 3
    param handoff-string cme-aa
    paramspace english language en
    param max-time-vm-retry 1
    paramspace english location flash:
    param aa-pilot 2040
    param second-greeting-time 30
    paramspace english prefix en
    param call-retry-timer 20
  !
interface Loopback0
  ip address a.1.11.1 255.255.255.252
!
interface GigabitEthernet0/0
  no ip address
  shutdown
  duplex auto
  speed auto
!
interface GigabitEthernet0/1
  no ip address
  shutdown
  duplex auto
  speed auto
!
interface FastEthernet0/1/0
  switchport access vlan 10
!
interface FastEthernet0/1/1
  switchport access vlan 10
!
interface FastEthernet0/1/2
  switchport access vlan 10
!
interface FastEthernet0/1/3
  switchport access vlan 10
!
interface FastEthernet0/1/4
  switchport access vlan 10
!
interface FastEthernet0/1/5

```

```
switchport access vlan 10
!
interface FastEthernet0/1/6
switchport access vlan 10
!
interface FastEthernet0/1/7
switchport access vlan 10
!
interface FastEthernet0/1/8
switchport access vlan 10
!
interface Service-Engine1/0
ip unnumbered Loopback0
service-module ip address a.1.11.2 255.255.255.252
service-module ip default-gateway a.1.11.1
!
interface Vlan1
no ip address
!
interface Vlan10
ip address b.168.1.1 255.255.255.0
!
ip classless
ip route a.1.11.2 255.255.255.255 Service-Engine1/0
!
ip http server
ip http path flash:
!
tftp-server flash:P00305000600.bin
tftp-server flash:P00305000600.sbn
!
control-plane
!
voice-port 0/3/0
connection plar opx 2040
!
voice-port 0/3/1
connection plar opx 2040
!
voice-port 0/3/2
!
voice-port 0/3/3
!
dial-peer voice 2040 voip
destination-pattern 2040
session target ipv4:a.1.11.1
dtmf-relay h245-alphanumeric
codec g711ulaw
no vad
!
dial-peer voice 2041 voip
service cme-aa
incoming called-number 2040
dtmf-relay h245-alphanumeric
codec g711ulaw
no vad
!
dial-peer voice 2105 voip
destination-pattern 21..
session protocol sipv2
session target ipv4:a.1.11.2
dtmf-relay sip-notify
codec g711ulaw
no vad
!
telephony-service
```



```
load 7960-7940 P00305000300
max-ephones 48
max-dn 192
ip source-address a.1.11.1 port 2000
max-redirect 20
auto assign 1 to 10
system message CISCO SYSTEMS
create cnf-files version-stamp 7960 Aug 05 2005 00:00:32
voicemail 2105
max-conferences 8 gain -6
moh music-on-hold.au
dn-webedit
time-webedit
transfer-system full-consult
transfer-pattern 210. blind
transfer-pattern 2040 blind
!
ephone-dn 1 dual-line
number 2001
name User21
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 2 dual-line
number 2002
name User22
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 3 dual-line
number 2003
name User23
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 4 dual-line
number 2004
name User24
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 5 dual-line
number 2005
name User25
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 6 dual-line
number 2006
name User26
call-forward busy 2105
call-forward noan 2105 timeout 10
!
ephone-dn 11
number 2070
description GDM
name Cust Svc GDM
call-forward all 2105
!
ephone-dn 100
number 8000....
mwi on
!
ephone-dn 101
number 8001....
mwi off
```

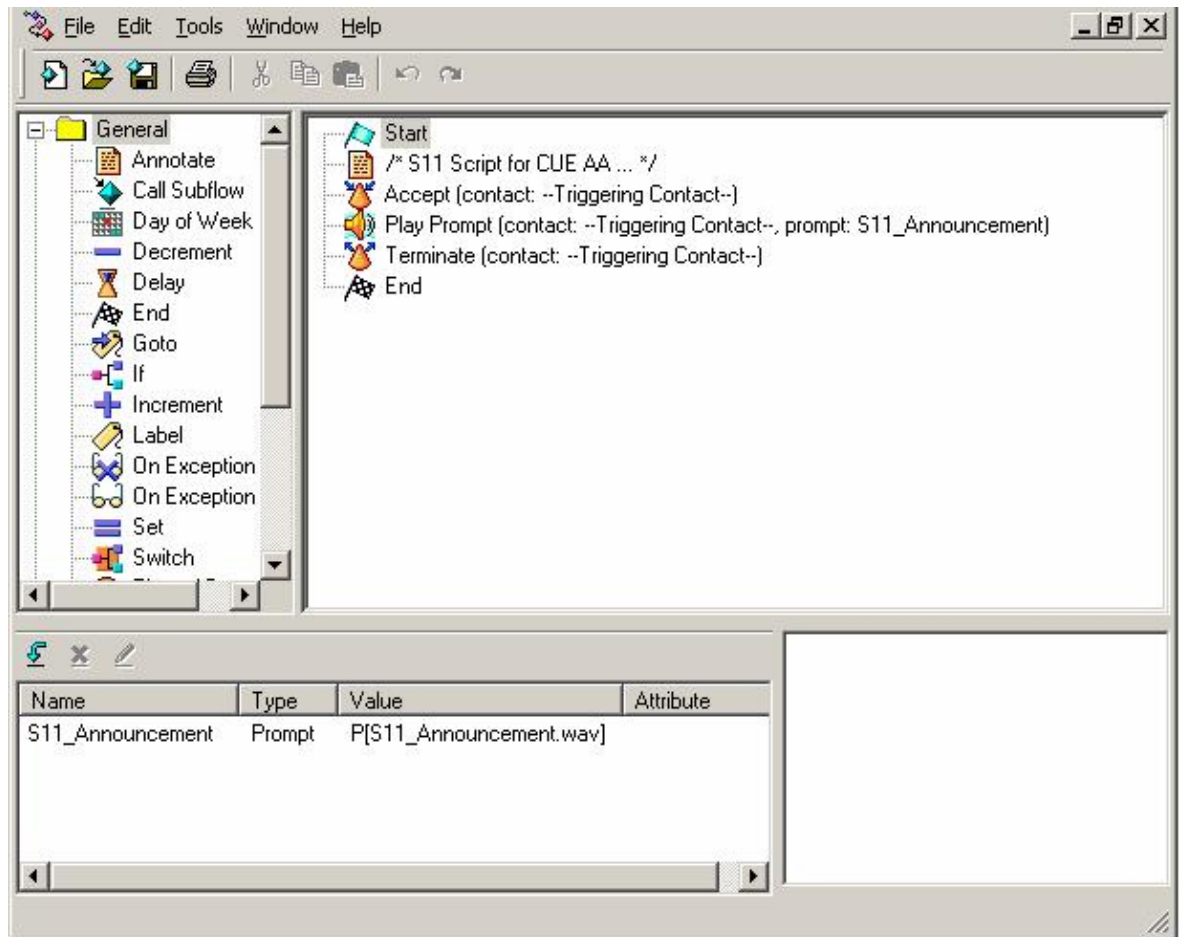
```
!  
ephone 1  
  username "user21" password null  
  mac-address 0012.0034.81B7  
  type 7960  
  button 1:1 2:11  
!  
ephone 2  
  username "user22" password null  
  mac-address 0011.2032.C876  
  type 7960  
  button 1:2 2:11  
!  
ephone 3  
  username "user23" password null  
  mac-address 0012.01E8.875F  
  type 7960  
  button 1:3 2:11  
!  
ephone 4  
  username "user24"  
  mac-address 0003.AAAA.0004  
  type 7960  
  button 1:4 2:11  
!  
ephone 5  
  username "user25"  
  mac-address 0003.AAAA.0005  
  type 7960  
  no auto-line  
  button 1:5 2:11  
!  
ephone 6  
  username "user26"  
  mac-address 0003.AAAA.0006  
  type 7960  
  button 1:6 2:11  
!  
ephone-hunt 1 longest-idle  
  pilot 2020  
  list 2001, 2002, 2003  
  timeout 5  
!  
ephone-hunt 2 longest-idle  
  pilot 2021  
  list 2004, 2005, 2006  
  timeout 5  
!  
line con 0  
  logging synchronous  
line aux 0  
line 66  
  no activation-character  
  no exec  
  transport preferred none  
  transport input all  
  transport output all  
line vty 0 4  
  login  
!  
scheduler allocate 20000 1000  
ntp master  
!  
end
```

Configure Cisco Unity Express for Scenario 3

These steps summarize the configuration for Cisco Unity Express for Scenario 3:

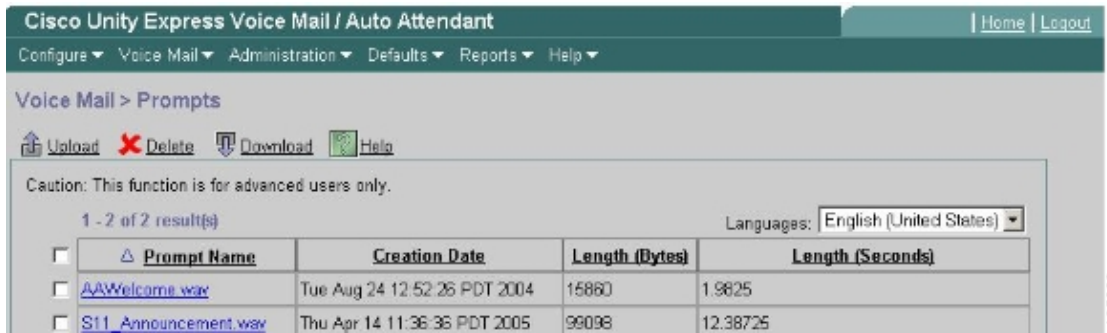
1. Open the Cisco Unity Express Script Editor utility and write the custom Cisco Unity Express script. See Figure 25.

Figure 25 Store Hours and Location Script



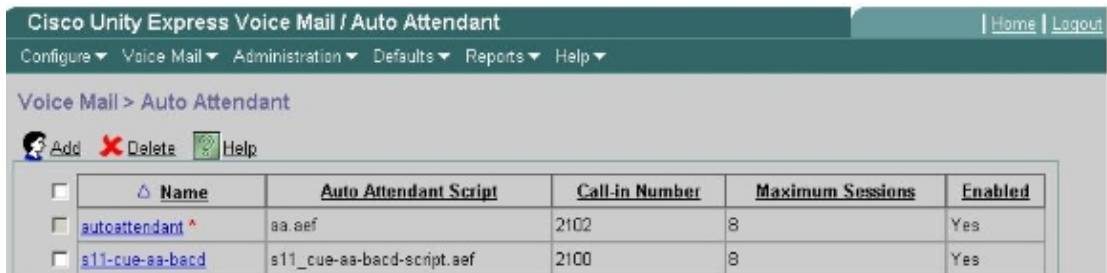
2. Record the prompt (in this case named S11_Announcement.wav) for the AA script (S11_CUE-AA-BACD-script.aef). You can either record this offline and upload the .wav file to Cisco Unity Express with the correct file name, or you can record it through the Administration via Telephony (AVT).
3. (Optional) If you use the AVT, Cisco Unity Express assigns a generic file name that you can subsequently change to the desired file name. Choose **Voice Mail > Prompts** and click the system file name.
4. (Optional) Edit the file name in the dialog box and click **OK**. The Voice Mail > Prompts window now shows the corrected file name in the list (see Figure 26).
5. Choose **Voice Mail > Auto Attendant** and open the AA built during Step 2. Choose **Script Parameters** and associate the prompt file name with the correct parameter in the script.

Figure 26 Window Showing Prompt Options



6. Choose **Voice Mail > Auto Attendant** and associate the script with the AA pilot number 2100. See Figure 27.

Figure 27 Window Showing Association of Script to AA Pilot Number



The CLI configuration for the Cisco Unity Express system is shown in the following example:

```
cue#
show running-config
Generating configuration:
clock timezone America/Los_Angeles
hostname cue
ip domain-name cisco.com
ntp server a.1.11.1
groupname Administrators create
groupname Broadcasters create
groupname custservice create
username admin create
username user21 create
username user22 create
username user23 create
username user24 create
username user25 create
username user26 create
groupname custservice phonenumber "2070"
username user21 phonenumber "2001"
username user22 phonenumber "2002"
username user23 phonenumber "2003"
username user24 phonenumber "2004"
username user25 phonenumber "2005"
username user26 phonenumber "2006"
groupname Administrators member admin
groupname custservice member user21
groupname custservice member user22
groupname custservice member user23
groupname custservice member user24
groupname custservice member user25
groupname custservice member user26
groupname Administrators privilege superuser
groupname Administrators privilege ManagePrompts
groupname Administrators privilege ManagePublicList
groupname Administrators privilege ViewPrivateList
groupname Broadcasters privilege broadcast
```

```

calendar biz-schedule systemschedule
  closed day 1 from 00:00 to 24:00
  open day 2 from 09:00 to 17:00
  open day 3 from 09:00 to 17:00
  open day 4 from 09:00 to 17:00
  open day 5 from 09:00 to 17:00
  open day 6 from 09:00 to 17:00
  closed day 7 from 00:00 to 24:00
end schedule
ccn application autoattendant
  description "autoattendant"
  enabled
  maxsessions 8
  script "aa.aef"
  parameter "busOpenPrompt" "AABusinessOpen.wav"
  parameter "holidayPrompt" "AAHolidayPrompt.wav"
  parameter "busClosedPrompt" "AABusinessClosed.wav"
  parameter "allowExternalTransfers" "true"
  parameter "MaxRetry" "3"
  parameter "operExtn" "2001"
  parameter "welcomePrompt" "AAWelcome.wav"
  parameter "businessSchedule" "systemschedule"
end application
ccn application ciscoMWIapplication
  description "ciscoMWIapplication"
  enabled
  maxsessions 8
  script "setmwi.aef"
  parameter "strMWI_OFF_DN" "8001"
  parameter "strMWI_ON_DN" "8000"
  parameter "CallControlGroupID" "0"
end application
ccn application promptmgmt
  description "promptmgmt"
  enabled
  maxsessions 1
  script "promptmgmt.aef"
end application
!

!--- Define the AA script that will provide the announcement.

!
ccn application s11-cue-aa-bacd
  description "s11-cue-aa-bacd"
  enabled
  maxsessions 8
  script "s11_cue-aa-bacd-script.aef"
end application
ccn application voicemail
  description "voicemail"
  enabled
  maxsessions 8
  script "voicebrowser.aef"
  parameter "logoutUri" "http://localhost/voicemail/vxmlscripts/mbxLogout.jsp"
  parameter "uri" "http://localhost/voicemail/vxmlscripts/login.vxml"
end application
ccn engine
  end engine
ccn subsystem jtapi
  ccm-manager address 0.0.0.0
  end subsystem
ccn subsystem sip
  gateway address "a.1.11.1"
  end subsystem
!

```

```
!-- Associate the script with the 2100 AA pilot number.
```

```
!  
ccn trigger sip phonenumber 2100  
  application "s11-cue-aa-bacd"  
  enabled  
  maxsessions 8  
end trigger  
ccn trigger sip phonenumber 2102  
  application "autoattendant"  
  enabled  
  maxsessions 8  
end trigger  
ccn trigger sip phonenumber 2105  
  application "voicemail"  
  enabled  
  maxsessions 8  
end trigger  
ccn trigger sip phonenumber 2106  
  application "promptmgmt"  
  enabled  
  maxsessions 1  
end trigger  
voicemail default language en_US  
voicemail default mailboxsize 3000  
voicemail broadcast recording time 300  
voicemail operator telephone 2001  
voicemail mailbox owner "custservice" size 3000  
  description "custservice mailbox"  
end mailbox  
voicemail mailbox owner "user21" size 3000  
end mailbox  
voicemail mailbox owner "user22" size 3000  
end mailbox  
voicemail mailbox owner "user23" size 3000  
end mailbox  
voicemail mailbox owner "user24" size 3000  
description "user24 mailbox"  
end mailbox  
voicemail mailbox owner "user25" size 3000  
description "user25 mailbox"  
end mailbox  
voicemail mailbox owner "user26" size 3000  
  
description "user26 mailbox"  
end mailbox  
end
```

Verify

There is currently no verification procedure available for this configuration.

Troubleshoot

This section provides information you can use to troubleshoot your configuration.

BACD Prompt for Single Auto Attendants not Playing

If the BACD file is in the **flash:/bacdprompt/** folder, issue the **paramspace english location flash:/bacdprompt/** command in the AA service.

Related Information

- **Cisco Unified Communications Manager Express Feature Guides**
 - **Voice Technology Support**
 - **Voice and Unified Communications Product Support**
 - **Troubleshooting Cisco IP Telephony** [↗](#)
 - **Technical Support & Documentation – Cisco Systems**
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