Sharing a Cisco Unity Voice Mail Box between Two or More IP Phones

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Contents

Introduction

This document provides the configuration steps required to allow two or more IP phones to share a single Cisco Unity voice mail box.

This can be useful for companies that have attendants in multiple locations that take calls for customers and the company they work for wants each attendant to be able to manage voice mail for these locations from a single voice mail box.

It can also be useful for an employee that travels to two or more locations and would like to be able to use the same voice mail box for their extension at each location.

This configuration can be accomplished in one of two ways:

- Configuring Cisco Unity
- Configuring Cisco CallManager

If you elect to make changes to the Cisco Unity system, there are two options available:

- Call Routing Rules (available in all Cisco Unity versions)
- Using the Alternate Extension feature (available in Cisco Unity 3.0 and later).

See the introduction at the start of each of the two sections to determine the most appropriate method for your situation.

Note: If you need to have Message Waiting Indicators (MWI) available on the phones, you must use the Unity Alternate Extension feature available in Cisco Unity 3.0 or later. The procedure for setting up this feature is provided below.

Before You Begin

Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

Prerequisites

This document assumes that you have a functional Cisco Unity server running 2.4.6 or later and a Cisco CallManager server running either 3.1, 3.2, or 3.3. In addition, you must have at least two IP phones that are registered to the Cisco CallManager server in order to complete the steps in this document. It is also assumed that one of the phones already has the ability to access voice mail services on the Cisco Unity server. Finally, the secondary phone must already be able to initiate a call to the DN of the first Unity voice mail port. The goal of this document is to explain how to have a second phone access the same voice mail box. In order to do so, it is important that these prerequisites are met before you begin.

This document does not cover using Calling Search Spaces or Partitions. If your system uses Calling Search Spaces or Partitions, you will need to make adjustments to the steps to match your environment. Alternatively, you can move the IP phones out of their Calling Search Spaces or Partitions temporarily, while you complete the tasks in this document.

Components Used

This configuration was developed and tested using the software versions listed below.

- Cisco Call Manager version 3.1.(4b)
- Cisco Call Manager version 3.2(2c)
- Cisco Unity version 3.1(5)

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you are working in a live network, ensure that you understand the potential impact of any command before using it.

Network Diagram

This document uses the network setup shown in the diagram below.
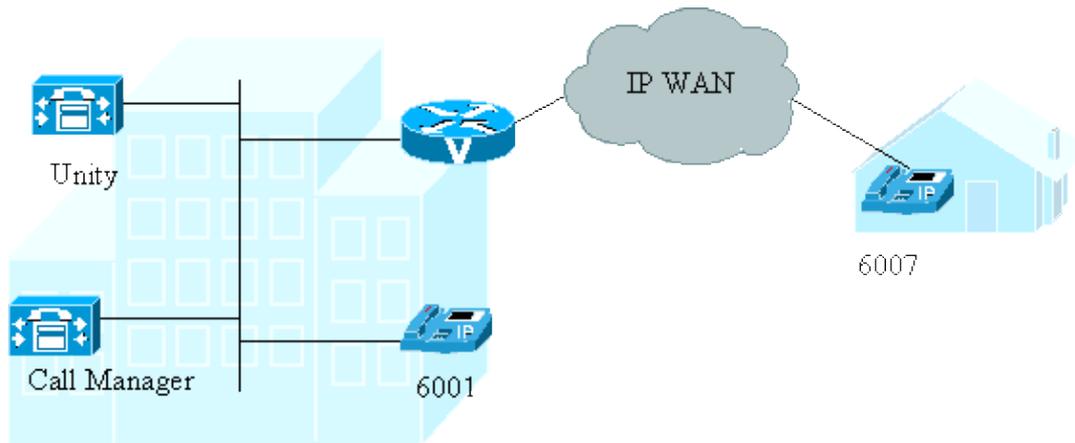
In this scenario the same person uses both phones. The phones share a common voice mail box. The phone with extension 6007 is the secondary phone.

Cisco Unity Configuration Options

When Cisco CallManager forwards a call to Cisco Unity the Unity system must be able to determine which extension the call is coming from in order to route the call to the subscriber associated with the extension, or to route the call directly to the subscriber's voice mail box, depending on how the Cisco Unity system is configured. If the Cisco Unity system does not recognize the extension number the call is coming from, Cisco Unity routes the call to the Opening Greeting unless it has been configured to do something other than the default behavior.

There are two ways to configure Cisco Unity so that two or more phones can share the same voice mail box.

- The first alternative is to set up an Alternate Extension in Cisco Unity for the subscriber that owns the voice mail box. The Alternate Extension method allows MWIs to work for both phones. This is available with Cisco Unity versions 3.x and later. This is the only option in this document that will result in the MWIs working for both phones.
- The second is to set up a Call Routing Rule. A Call Routing Rule can be defined that looks at the extension number of the forwarded call and routes it to a specific destination. In this case, Cisco Unity is configured to route any calls forwarded to voice mail from extension 6007 to the voice mail box for extension 6001. This can be done with any version of Cisco Unity.

Configure Alternate Extensions

Starting with Cisco Unity version 3.x, there is a feature that allows multiple extension numbers on a voice mail box. This is referred to as the Alternate Extension feature.

**Note:** This option will allow both phones to use their MWIs.

1. Open the **Unity System Administrator** web page.
2. Navigate to the subscriber s profile. Select **Subscribers** > **Find and Select a Subscriber** > **Enter Subscriber Information** then click **Find** and click the **Subscriber's name** for the subscriber that owns the primary phone.
3. When the subscriber page comes up, select the **Alternate Extensions** option and click **Add**. You should see the following input area.
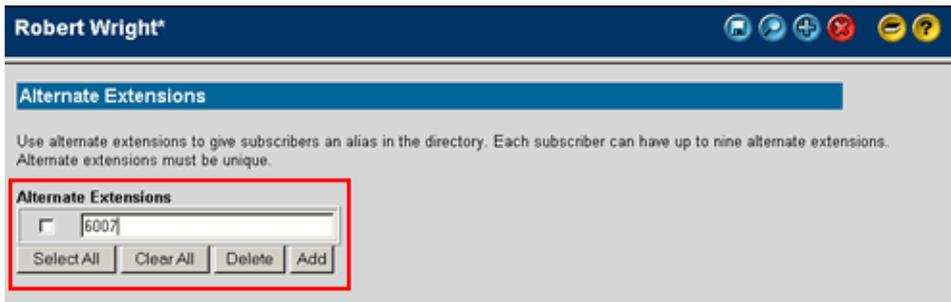
4. Enter the alternate extension number (in this case **6007**) and click the **Save** icon.
5. Add the MWI extension to be turned from this menu selection by selecting **Subscribers** > **Messages** > **Add** and click **Save**.

Any call forwarded from Cisco CallManager from either extension 6001 or 6007 will be routed to this subscriber's voice mail box.

When a message is left, the MWI comes on for both extensions and goes off when the voice mail is retrieved from either phone.
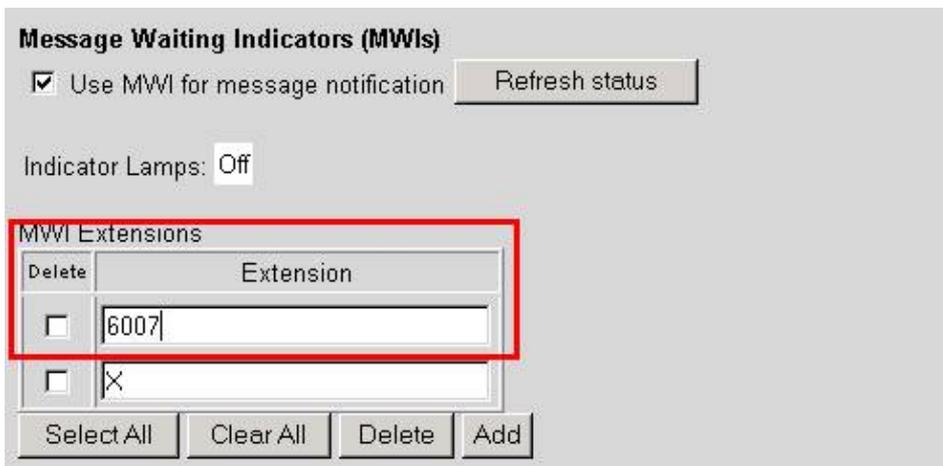
Configure the Call Routing Rule

This method re−routes any calls that are forwarded to the Cisco Unity system from the secondary phone (extension 6007) to the extension number of the primary phone (6001).

Note: This method will not activate the MWI light on the secondary phone. In addition the Messages soft key on the secondary phone will not send you to the voice mail box for your account directly. You will have to press the ***** key to login to your voice mail box.

Calls are routed from the secondary phone (6007) to Cisco Unity for any of the following reasons:

- The call is not answered by a user at extension 6007.
- Extension (6007) is busy.
- Extension (6007) is temporarily configured to forward all calls to the Cisco Unity voice mail system.

1. Start the **Unity System Administrator** web page.
2. Select **Call Management** > **Call Routing** > **Forwarded Calls**.

Note: The Forwarded Calls option is required here because the call is being forwarded to the Cisco Unity system from Cisco CallManager on behalf of the secondary phone (6007). If you would also like to create a rule for calls that are made to the Cisco Unity system directly from the secondary

phone, follow the instructions below after selecting the Direct Calls option.
3. Create a new Call Routing rule by selecting the + icon.

Change the settings as shown below:

- ♦ **Rule Name:** 6007–6001
- ♦ **Status:** Enabled
- ♦ **Call Type:** Internal Calls (in this case both phones are part of the company's internal phone system)
- ♦ **Forwarding Station:** 6007
- ♦ **Send call to:** Subscriber

◊ **Send to greeting for:** Use your subscriber name here

Note: In this case, **Send to greeting for** is used in the **Send call to** field. If you select the **Attempt Transfer for**, Cisco Unity attempts to transfer the call to the subscriber's extension based on the behavior configured on the Call Transfer option in the user's profile. A complete explanation of the options available for transferring calls with Cisco Unity is beyond the scope of this document. Refer to the Administration Guide for the version of Cisco Unity that you are using.

Forwarded calls

Rule name: 6007-6001
Status: ⦿ Enabled ◯ Disabled
Call type: Internal calls ▾
Forwarding station: 6007
Dialed number (DNIS):
Calling number (ANI):
Schedule: Always ▾
Language: Inherited ▾
Send call to: Subscriber ▾ [Select Subscriber]
Send to greeting for Robert Wright

Routing Table: Forwarded Calls [Change rule order]

Rule	Status	Call Type	Forwarding Station	Dialed Number	Calling Number	Schedule	Send call to	Language
6007-6001	On	Internal calls	6007	Any	Any	Always	Send to greeting for Robert Wright	Inherited
Attempt Forward to Greeting	On	Both	Any	Any	Any	Always	Attempt Forward	Inherited
Default Call Handler	On	Both	Any	Any	Any	Always	Attempt transfer for Opening Greeting	Inherited

4. Click the **Save** icon to save your changes.

Any calls forwarded to Cisco Unity from extension 6007 should now be routed to the greeting for the subscriber that owns extension 6001. The MWI light on the phone that owns extension 6001 should turn on when a message is left. The MWI light on extension 6007 will not be lit. If the user wants to retrieve messages from extension 6007, the user must dial into the Cisco Unity system as a remote user.

You can see that this rule was specifically designed for calls coming from extension 6007 to be sent to the greeting for extension 6001. A more general rule can be created if you have multiple numbers that you may want to send to extension 6001. For example, if all the extensions from 6002–6009 were to be forwarded to the voice mail box for extension 6001, the forwarding station could be defined as 600*. However, if you have extensions with different prefixes such as 6007, 7142, and 8006 that you want to share the same the voice mail box for the extension 6001 voice mail box, you have to configure three separate routing rules, one each for each extension. Therefore, this method may not be practical for a particular setup if you have many subscribers that have multiple extensions.

Cisco CallManager Configuration Options

If you have decided that you would rather configure Cisco CallManager to enable multiple phones to share the same voice mail box, there are two options depending on the version of Cisco CallManager that you are using.

When Cisco CallManager forwards a call to Cisco Unity, the Cisco Unity system must be able to determine which extension the call is coming from in order to route the call to the subscriber associated with the extension, or to route the call directly to the subscriber's voice mail box, depending on how the Cisco Unity system is configured. When the Cisco Unity system is unable to determine the extension a call is being forwarded from, or a call arrives from an extension number that is not associated with a subscriber, Cisco Unity routes the call to the Opening Greeting unless it has been configured to do something other than the default behavior. This section describes how to configure Cisco CallManager to tell the Cisco Unity system which number is being used to access a subscriber's voice mail box.

- Cisco CallManager 3.1 Configuration
- Cisco CallManager 3.2 and 3.3 Configuration

Cisco CallManager 3.1 Configuration

In this configuration the secondary phone is assigned to the voice mail box of the primary phone. This configuration does not activate the MWI lamp on the secondary phone.

1. Setup the voice mail configuration for the primary phone by selecting **Device** > **Phone** > **Find Phone**, click on your primary phone, and then click on the directory number. In this case **6001**.

   At this point you should see a setting called Voice Mail Box. This is where you enter the extension you want to tell Cisco Unity the call is being forwarded from. In the example below, you will see that the Directory Number is 6001 and the Voice Mail Box has been set for the same Directory Number. When the call is forwarded to Cisco Unity, it is sent to the voice mail box for extension 6001.
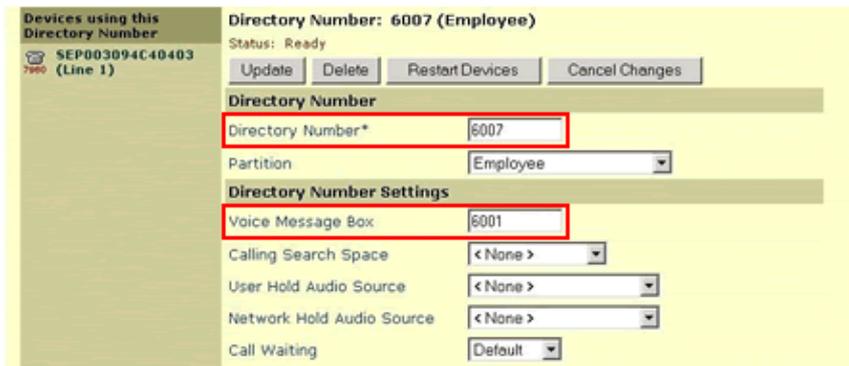

   Note: You must also configure the **Forward No Answer** and **Forward Busy** entries to point to the Directory Number assigned to the first Cisco Unity voice mail port. This is not shown in the image above.

   When a call arrives on the phone and it is not answered, Cisco CallManager forwards the call to Cisco Unity because the Directory Number for the Unity system was entered in the **Forward No Answer** and **Forward Busy** fields. Cisco CallManager will indicate that the call is for voice mail box 6001 based on the value entered in the Voice Message Box field.
2. Click **Update**.
3. Setup the voice mail configuration for the primary phone by selecting **Device** > **Phone** > **Find Phone**, click on your secondary phone, and then click on the Directory Number. In this case **6007**.

At this point you should see a field called Voice Mail Box. This is where you enter the extension you want to tell Cisco Unity the call is being forwarded from. In the example below, the Directory Number is 6001 and the Voice Mail Box is set to 6001. When the call is forwarded to Cisco Unity, it is sent to the voice mail box for extension 6001.

Note: You must also configure the **Forward No Answer** and **Forward Busy** entries to point to the Directory Number assigned to the first Cisco Unity voice mail port. This is not shown in the image above.

When a call arrives on the phone and it is not answered, Cisco CallManager forwards the call to Cisco Unity because the Directory Number for the Unity system was entered in the Forward No Answer and Forward Busy fields. Cisco CallManager indicates that the call is for voice mail box 6001 based on the value entered in the Voice Message Box field.

4. Click **Update**.

Calls that are placed to the secondary phone (6007) which are not answered should now be forwarded to the subscriber's voice mail box for the primary phone.

The Messages button on the secondary phone should take the user directly to the Cisco Unity login prompt for the voice mail box for extension 6001.

Cisco CallManager 3.2 and 3.3 Configuration

In Cisco CallManager 3.1 the Voice Mail setting for the Messages button was a global parameter. This meant that all phones registered to a Cisco CallManager 3.1 server or cluster had to use the same Voice Mail system. The MWI Directory Numbers were global parameters as well. The Voice Message box (mail box) extensions were assigned on the Directory Numbers for every phone as shown in the section above.

Cisco CallManager versions 3.2 and 3.3 do not have a Voice Message Box setting as found in Cisco CallManager 3.1 . Instead, Cisco CallManager 3.2 and 3.3 use a Voice Mail Profile in conjunction with a Voice Mail Pilot to route calls to voice mail systems. This allows the CallManager server to support connectivity to more than one voice mail system at a time. These settings, as well as the MWI settings, can now be placed in a combination of Partitions and Calling Search Spaces to support more complex configurations.

Configuring two phones to share a common voice mail box using Cisco CallManager 3.1 was very easy. Configuring two phones to share a common voice mail box using Cisco CallManager 3.2 or 3.3 on the hand is much more complex. It takes much more planning to get it working. CallManager environments that utilize Partitions and Calling Search Spaces add even more complexity. In the interest of keeping this example as simple as possible, no Calling Search Spaces or Partitions will be configured. In addition, the default settings for accessing the Cisco Unity voice mail system will be used wherever possible.

This document is not intended to be a resource for explaining how to configure all of the new voice mail settings in Cisco CallManager 3.2 and 3.3. However, in order to help you complete this task successfully, a brief introduction to these new features is provided. Refer to the Cisco CallManager Administration Guides for the version that you are using and for more information on this subject.

- IP Phone Directory Number
- Voice Mail Profile
- Voice Mail Pilot
- Voice Mail Port Directory Number

IP Phone DN → Voice Mail Profile → Voice Mail Pilot → Voice Mail Port DN

IP Phone Directory Number

Notice the new fields in the **Directory Number Settings** and **Call Forward and Pickup Settings** areas.

Voice Mail Profile

The Voice Mail Profile setting is associated with a Voice Mail Pilot number. In the example for the Voice Mail Pilot shown below, the option for making it the Default Voice Mail Pilot for this system is selected. Therefore it is not necessary to select the specific Voice Mail Pilot Number that is configured (8500 in this case) to establish this relationship. As you can see below, the option **<None>** is selected as instructed by the text that follows this parameter.

Voice Mail Pilot

In Cisco CallManager 3.2 and 3.3, the Voice Mail Pilot Directory Numbers can be placed into a Calling Search Space. In the example below, the Pilot Directory Number (8500) has not been placed in a Calling Search Space. This Voice Mail pilot has been setup as the Default Pilot Directory Number for this system.

Voice Mail Port Directory Number

This has not changed since Cisco CallManager 3.1. This screen is shown here in order to show the complete relationship between these settings.

Note: The Directory Number (8500) is the same number that was entered above as the Voice Mail Pilot Number.

Cisco Voice Mail Port Configuration   Cisco Voice Mail Port Wizard

Cisco Voice Mail Ports
<Add a New Port>
Unity-PRI-VI1
Unity-PRI-VI2
Unity-PRI-VI3
Unity-PRI-VI4
Unity-Sec-VI1
Unity-Sec-VI2
Unity-Sec-VI3
Unity-Sec-VI4

Cisco Voice Mail Port: Unity-PRI-VI1 (Unity Primary Ports)
Registration: Unknown
IP Address:
Status: Ready

Copy   Update   Delete   Cancel Changes

Device Information
Port Name*   Unity-PRI-VI1
Description   Unity Primary Ports
Device Pool*   Default   (View details)
Calling Search Space < None >
Location   < None >

Directory Number Information
Directory Number*   8500
Partition   < None >
Calling Search Space < None >
Display   Voicemail

Call Forwarding Information
                    Destination   Calling Search Space
Forward All   < None >
Forward Busy   8501   < None >
Forward No Answer   8501   < None >

The method for configuring MWIs in Cisco CallManager 3.2 and 3.3 has changed as well. The MWI On and Off Directory Numbers can now be placed Partitions and Calling Search Spaces.

MWI On

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Message Waiting Configuration

Message Waiting Directory Numbers
<Add a New Directory Number>
1234/< None >
4321/< None >

Directory Number : 1234
Status: Ready
Update   Delete   Cancel Changes
Directory Number*   1234
Message Waiting Indicator   ⊙ On ○ Off
Partition   < None >
Calling Search Space   < None >
* indicates required item

MWI Off

System Route Plan Service Feature Device User Application Help

Cisco CallManager Administration
For Cisco IP Telephony Solutions

CISCO SYSTEMS

Message Waiting Configuration

Message Waiting Directory Numbers
<Add a New Directory Number>
1234/< None >
4321/< None >

Directory Number : 4321
Status: Ready
Update   Delete   Cancel Changes
Directory Number*   4321
Message Waiting Indicator   ○ On ⊙ Off
Partition   < None >
Calling Search Space   < None >
* indicates required item

Configuring the Cisco CallManager Settings for a Shared Voice Mail Box

Cisco CallManager 3.2 and 3.3 sends the Directory Number for the extension that the user called the voice mail system from as the voice mail box extension. For example, if the primary phone (6001) is used to call the Cisco Unity system, Cisco CallManager indicates that the subscriber's extension is 6001.

If the system administrator wants to send a different number to the Cisco Unity system, such as when the secondary phone (6007) is forwarding a call to voice mail, they can configure a Mask on the Voice Mail Profile that the phone has assigned to in order to change the number to 6001. In the example below, the mask is 6001. The Voice Mail Pilot is still set to be the default, which in this case points to the Voice Mail Port with Directory Number 8500.

1. Add the new Voice Mail Profile for the secondary phone by selecting **Feature** > **Voice Mail** > **Voice Mail Profile** > **Add a New Voice Mail Profile**.
2. Change the settings as shown below:

    ♦ **Voice Mail Profile Name:** Enter a brief name for this profile.
    ♦ **Description:** Provide a descriptive name for this profile. In this case **6007−6001**.
    ♦ **Voice Mail Pilot:** Select the appropriate entry. In this case **<None>** as the Default is selected.
    ♦ **Voice Mail Box Mask:** Enter a mask that will translate the original Directory Number as required. In this case **6001**.

    ⚠ **Caution:** Do not set this profile to be the default voice mail profile for this system unless you

    want every phone that is configured to use the default Voice Mail Profile to share the same voice mail box.

3. Click **Insert**.

    For the purposes of this example, this rule is described as only being applicable to Directory Number 6007. This rule actually works for any four digit Directory Number. All four−digit Directory Numbers that have been configured with this Voice Mail Profile are sent to the voice mail box for extension 6001. For example, Directory Numbers 3452, 8764, and 6234 are all replaced by 6001 when this rule is applied before forwarding the call to the default voice mail pilot.
4. Setup the voice mail configuration for the primary phone by selecting **Device** > **Phone** > **Find Phone**, click on your primary phone, and then click on the Directory Number. In this case **6001**.
5. Change the settings as shown below:

    ♦ **Voice Mail Profile:** Select the correct Voice Mail Profile. In this case **<None>** as the Default is selected.
    ♦ **Forward Busy:** [x]
    ♦ **Forward No Answer:** [x]

Directory Number Configuration   Configure Device (SEP0002FD3BA4FD)

Devices using this Directory Number
☎ SEP0002FD3BA4FD
7940 (Line 1)

Directory Number: 6001
Status: Ready
[Update] [Delete] [Reset Devices] [Cancel Changes]

Directory Number
Directory Number*   6001
Partition   < None >

Directory Number Settings
Voice Mail Profile   < None >
(Choose <None> to use default)
Calling Search Space   < None >
User Hold Audio Source   < None >
Network Hold Audio Source   < None >
Call Waiting   Default
Auto Answer   Auto Answer Off

Call Forward and Pickup Settings

	Voice Mail	Destination	Calling Search Space
Forward All	☐		< None >
Forward Busy	☑		< None >
Forward No Answer	☑		< None >

Call Pickup Group   < None >

6. Click **Update**.
7. Setup the voice mail configuration for the secondary phone by selecting **Device** > **Phone** > **Find Phone**, click on your secondary phone, and then click on the directory number. In this case **6007**.
8. Change the settings as shown below:

   ♦ **Voice Mail Profile:** Select the correct Voice Mail Profile. In this case **<6007−6001>** is selected because it was created for this purpose.
   ♦ **Forward Busy:** [x]
   ♦ **Forward No Answer:** [x]

Directory Number Configuration   Configure Device (SEP003094C25D4E)

Devices using this Directory Number
☎ SEP003094C25D4E
7960 (Line 1)

Directory Number: 6007
Status: Update completed
[Update] [Delete] [Reset Devices] [Cancel Changes]

Directory Number
Directory Number*   6007
Partition   < None >

Directory Number Settings
Voice Mail Profile   6007-6001
(Choose <None> to use default)
Calling Search Space   < None >
User Hold Audio Source   < None >
Network Hold Audio Source   < None >
Call Waiting   Default
Auto Answer   Auto Answer Off

Call Forward and Pickup Settings

	Voice Mail	Destination	Calling Search Space
Forward All	☐		< None >
Forward Busy	☑		< None >
Forward No Answer	☑		< None >

Call Pickup Group   < None >

9. Click **Update**.

Calls that are placed to the secondary phone (6007) which are not answered should now be forwarded to the subscriber's voice mail box for the primary phone.

The Messages button on the secondary phone should take the user directly to the Cisco Unity login

prompt for the voice mail box for extension 6001.

Verify

The verification procedure is the same for all of the options in this document. You should be able to place calls to the secondary phone and have them forwarded to the voice mail box of the primary phone if the call is not answered. The Unity Alternate Extensions option has an additional verification step in that the MWI lights on both phones should be lit if there is a message waiting.

Troubleshoot

Accessing the Voice Mail Box from the Secondary Phone

Your original configuration included one phone (primary phone) that already had access to voice mail services. In addition, your secondary phone should have been capable of initiating a call to the Cisco Unity server. Therefore, the only problem that you should encounter is the Cisco Unity server's ability to recognize that the call from the secondary phone should be routed to the voice mail box of the primary phone.

- Verify the configuration steps as provided.
- Use the Cisco CallManager trace facilities to determine the behavior the secondary phone is exhibiting when it attempts to forward a call to the Cisco Unity server. In particular, look for an event that might be altering the Calling Party number.
- Unconfigure the Cisco Unity option that you originally configured (Alternate Extension or Call Routing Rule). Then create a new subscriber, assign the extension of the secondary phone to the subscriber, and call the Cisco Unity server from the secondary phone. Your call should be routed to the voice mail box for the subscriber you created. If it is not, then you might have a CallManager Calling Party transformation issue. Another possibility is that you have a Unity Call Routing Rule that is controlling the incoming call. You will have to determine why Cisco Unity cannot route calls from the secondary phone to its voice mail box and fix the problem before you can setup the secondary phone to share the voice mail box with the primary phone.

MWI Lights Not Activating

See the documents listed in the Related Information section below for assistance in troubleshooting problems with MWIs.

Note: The Unity Alternate Extension option is the only option in this document that should allow both phones to use their MWIs while sharing a common voice mail box.

Related Information

- **Cisco Unity Troubleshooting Guides**
- **Cisco CallManager – Voice Mail Profile Configuration**
- **Cisco CallManager – Cisco Voice Mail Pilot Configuration**
- **Voice Technology Support**
- **Voice and IP Communications Product Support**
- **Troubleshooting Cisco IP Telephony**
- **Technical Support – Cisco Systems**