# White Paper: Cross-Server Logon, Transfers, and Live Reply (Cisco Unity Version 4.0(4))

*Revised April 29, 2005*

This document describes the cross-server logon, transfer, and live reply features that were introduced in Cisco Unity 4.0(4) for Cisco Unity servers networked via Digital Networking. The underlying architecture for the cross-server features is described, and design and monitoring recommendations are provided. Also included in this document are the procedures for activating the cross-server features, and a list of limitations and caveats associated with the features.

The cross-server features are supported only in pure Cisco CallManager environments in which calls are not transferred through voice gateways or circuit-switched phone systems. Dual integrations are not supported.

**Note** This white paper describes the cross-server features as they work in Cisco Unity version 4.0(4). For information about the cross-server features in Cisco Unity versions 4.0(5) and later, refer to the "Cross-Server Logon, Transfers, and Live Reply" chapter of the *Networking in Cisco Unity Guide*, available at http://www.cisco.com/en/US/products/sw/voicesw/ps2237/products_feature_guides_list.html.

# Overview of Cross-Server Logon, Transfer, and Live Reply

The cross-server features introduced in Cisco Unity 4.0(4) are an extension of the existing Digital Networking feature. Digital Networking provides basic messaging functionality for subscribers homed on different Cisco Unity servers that access the same global directory. When the networked Cisco Unity servers are integrated with the same phone system, the servers can be grouped into a dialing domain so that calls can be transferred—via release to switch—from the automated attendant (for example, from the opening greeting) or from a directory handler on one Cisco Unity server to a subscriber on another. Even though Digital Networking and dialing domains provide basic messaging and call transfer functionality for subscribers homed on different Cisco Unity servers, each Cisco Unity installation in the network continues to serve only those subscribers whose accounts were created on the server. The purpose of the cross-server features is to make the subscriber experience in a Digitally-Networked environment almost the same as in a single Cisco Unity server environment, as described below:

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| | |
|---|---|
| **Cross-Server Logon** | Cross-server logon allows administrators to provide subscribers who are homed on different Cisco Unity servers in the same dialing domain with one phone number that they can call to log on to Cisco Unity. When calling from outside the organization to log on to Cisco Unity, subscribers—no matter which is their home Cisco Unity server—call the same number and are transferred to their home Cisco Unity server to log on. |
| **Cross-Server Transfer** | Cross-server transfer enables calls from the automated attendant or from a directory handler of one Cisco Unity server to be transferred to a subscriber on another Cisco Unity server in the dialing domain (according to the call transfer and screening settings of the called subscriber). |
| **Cross-Server Live Reply** | Cross-server live reply allows subscribers who listen to their messages by phone to reply to a message from a subscriber on another Cisco Unity server in the dialing domain by calling them. In versions of Cisco Unity prior to 4.0(4), the live reply option was offered only to subscribers homed on the same Cisco Unity server. |

Although the cross-server features are distinct features, they all use the same underlying functionality—an enhanced supervised call transfer:

1. The Cisco Unity server on which a logon, transfer, or live reply originates puts the caller on hold and calls the home Cisco Unity server.
2. When the destination Cisco Unity server answers, the originating Cisco Unity server sends a sequence of DTMF tones that identify the call as a cross-server logon, transfer, or live reply.
3. The destination Cisco Unity server responds with a sequence of DTMF tones, and the originating Cisco Unity server hands off the call to the destination server for processing.
4. At this point the functionality is the same as if the call had originated on the home Cisco Unity server.

In this document, an originating Cisco Unity server refers to a server that calls other Cisco Unity servers. A destination Cisco Unity server refers to a server that answers a cross-server call.

# Planning for Increased Port Usage

The cross-server features will require the use of ports on both the originating and destination Cisco Unity servers. Depending on how busy your Cisco Unity servers are, you may need to add more ports or an additional Cisco Unity server before enabling these features. You may also need to adjust how ports are configured. For example, you may need to enable more ports to accept incoming calls.

After enabling the cross-server features, we recommend that you monitor activity on the Cisco Unity servers closely until you are confident that the servers can handle the increased load. You can use the Port Usage Analyzer for this task. The Port Usage Analyzer is available in the Report Tools section of Tools Depot. Refer to the Port Usage Analyzer Help for detailed instructions. Be sure to monitor the Windows Event Viewer on both the originating and destination Cisco Unity servers for event log messages related to problems with ports.

# Phone Systems Qualified for Use with the Cross-Server Features

With Cisco Unity 4.0(4), the cross-server features are supported only in pure Cisco CallManager environments in which calls are not transferred through voice gateways or circuit-switched phone systems; this is due to performance issues. Testing has shown that the call handoff from one Cisco Unity server to another takes several seconds when the servers are integrated with Cisco CallManager. Testing and qualification of additional phone systems for use with the cross-server features is ongoing. This document will be updated when additional phone systems are qualified.

# A Brief Look at Cisco Unity Data Architecture

To understand why the cross-server features are needed, it is helpful to have a basic understanding of Cisco Unity data architecture. Cisco Unity stores information about subscribers (and other Cisco Unity objects such as call handlers) in a SQL database on the Cisco Unity server. A small subset of information about subscribers, distribution lists, and location objects is also stored in the global directory (either Active Directory, the Exchange 5.5 directory, or the Domino directory, depending on the message store configuration). Because all of the Cisco Unity servers access the same global directory, each Cisco Unity server has access to the information stored in the directory by other Cisco Unity servers. When subscriber, distribution list, and location data from other Cisco Unity servers replicates in the directory, each Cisco Unity server detects the data and updates its local SQL database.

The data that is stored in the directory is limited to just what is needed to provide basic Digital Networking functionality:

- Messaging between subscribers homed on different Cisco Unity servers.
- Release to switch call transfers from the automated attendant or directory handler to subscribers on different Cisco Unity servers in the dialing domain.

## Why Cross-Server Logon Is Needed

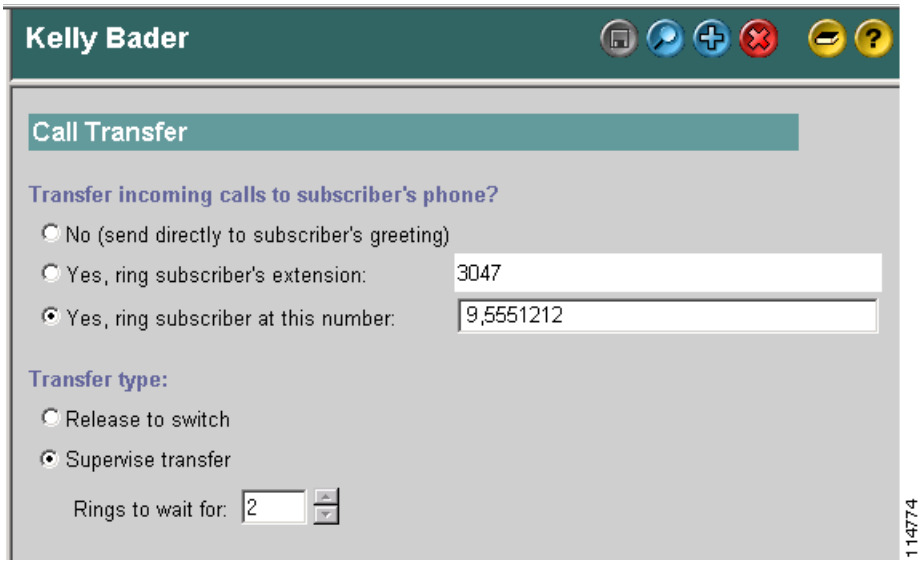
Without cross-server logon, subscribers have to call the specific Cisco Unity server they are homed on to log on to their mailboxes over the phone. There are several reasons for this restriction:

- The subscriber conversation requires access to subscriber greetings and subscriber call handler, call transfer, and call screening information. However, subscriber greetings and most of the other subscriber information is stored only on the Cisco Unity server on which the subscriber account was created. This data is not replicated across the directory because of size considerations.
- The message store services on each Cisco Unity server log on with a domain account that has the permissions needed to access local subscriber mailboxes. If different domain accounts are assigned to the message store facing services on other Cisco Unity servers, the message store services on one Cisco Unity server may be unable to log on to the mailboxes of subscribers on other Cisco Unity servers.

## Why Cross-Server Transfer Is Needed

In installations with multiple Cisco Unity servers networked via Digital Networking, the number that Cisco Unity uses for call transfers to a subscriber is the only number replicated among the Cisco Unity servers; none of the other call transfer and screening settings are replicated. For example, in Figure 1, call transfers are set to ring the subscriber at the number 9,5551212. The only call transfer setting that is replicated to other Cisco Unity servers is the call transfer number 9,5551212. If the setting was instead “Yes, Ring Subscriber’s Extension,” the number 3047 would be replicated.

*Figure 1 Only the Call Transfer Number Is Replicated*




When the call transfer setting is set to "No (Send Directly to Subscriber's Greeting)," the call transfer number is automatically set to the subscriber extension (3047 in the example in Figure 1), which is replicated to the other networked Cisco Unity servers.

Without cross-server transfer, call transfers to subscribers created on other Cisco Unity servers are always handled by the phone system (release to switch)—rather than by Cisco Unity (supervised transfer)—even if the subscribers are set up for supervised transfers (as in the example in Figure 1). On a release to switch transfer, Cisco Unity dials the call transfer number configured for the subscriber and hangs up, leaving the phone system to handle the call. Note the following limitations with release to switch transfers:

- The subscriber call screening, call holding, and announce features are ignored.
- The call transfer setting "No (Send Directly to Subscriber's Greeting)" is ignored. Cisco Unity dials the subscriber extension and hangs up. If the subscriber extension is a valid extension on the phone system that Cisco Unity is integrated with, the subscriber phone rings. If the subscriber extension is not a valid phone extension, what happens to the call after that depends on the phone system and how it is configured. If you do not configure the phone system to handle calls to the subscriber extensions, the caller may be disconnected.

## Why Cross-Server Live Reply Is Needed

Cross-server live reply is needed for the same reasons detailed in the "Why Cross-Server Transfer Is Needed" section on page 3:

- Only the subscriber call transfer number is replicated to the networked Cisco Unity servers.
- The subscriber call transfer, call screening, call holding, and announce features are ignored.

When cross-server live reply is not enabled, live reply to a networked Cisco Unity subscriber is not available.

# Cross-Server Logon

Without cross-server logon, subscribers need to call the Cisco Unity server on which their accounts were created to log on and access their messages. This is particularly problematic for sites that move subscribers between different Cisco Unity servers for load balancing, because each time a subscriber account is moved to another Cisco Unity server, the subscriber must be notified to access a different Cisco Unity server when calling in from outside the organization.

Cross-server logon solves the problem when the networked Cisco Unity servers are integrated with the same phone system and grouped in a dialing domain. When enabled, cross-server logon allows you to provide subscribers with one phone number that they can call to log on to Cisco Unity from outside your organization. After cross-server logon is configured, subscribers call the pilot number for one Cisco Unity server and are transferred correctly to their home Cisco Unity server to log on. The call is handled as follows:

1. A subscriber calls the Cisco Unity server configured for cross-server logon.
2. If the calling number does not match any primary or alternate extensions, the conversation prompts for the subscriber ID.

   If the calling number matches a primary or alternate extension, the calling number is used as the ID, and the subscriber is not prompted.
3. The conversation looks up the ID in SQL to determine whether the subscriber account is homed on another Cisco Unity server. If the subscriber account is homed on the local server, the logon proceeds as usual.

   If the subscriber account is homed on another server, Cisco Unity plays a “Please wait” prompt (if configured to do so), puts the subscriber on hold, and calls the subscriber home Cisco Unity server. Note that if the subscriber is calling from a number that matches a primary or alternate extension, the “Please wait” prompt is the first prompt that the subscriber hears.
4. When the destination Cisco Unity server answers, the originating Cisco Unity server sends a sequence of DTMF tones that identifies the call as a cross-server logon.
5. The destination Cisco Unity server responds with a sequence of DTMF tones.
6. The origination server hands off the call to the destination Cisco Unity server for processing. The conversation on the destination Cisco Unity server prompts for the subscriber password. At this point, the behavior is as if the subscriber had called the destination Cisco Unity server directly.

The intended use of this feature is limited to subscribers calling in from outside your organization. Also note that:

- Subscriber phones must still forward calls to the subscriber home Cisco Unity server.
- On subscriber phones, the “Messages” or speed-dial button that dials the number to access Cisco Unity must still be configured to call the home Cisco Unity server of the subscriber.

Although cross-server logon will transfer the calls to the home server in the above cases, doing so for a large number of subscribers will increase the load on the Cisco Unity servers. Therefore, when a subscriber account is moved to another Cisco Unity server, the subscriber phone still must be configured to call the home server.

## Prerequisites: Enabling Cross-Server Logon

- For cross-server log on to work, all of the Cisco Unity servers in the dialing domain must be running Cisco Unity 4.0(4) or later.

- All of the Cisco Unity servers must be configured for Digital Networking as described in the "Digital Networking" chapter of the *Networking in Cisco Unity Guide, Release 4.0(4)*.
- All of the networked Cisco Unity servers must be integrated with Cisco CallManager. Dual integrations are not supported at this time.
- All of the networked Cisco Unity servers must be configured to be in the same dialing domain, as described in the "Customizing the Primary Location" section of the "Digital Networking" chapter of the *Networking in Cisco Unity Guide, Release 4.0(4)*.

**Note** The Exchange version of the *Networking in Cisco Unity Guide, Release 4.0(4)* is available at http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/net/net404/ex/index.htm. The Domino version of the guide is available at http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/net/net404/dom/index.htm.

# Task List: Enabling Cross-Server Logon

Use the following task list to enable cross-server logon. The cross references take you to detailed procedures.

1. On the destination Cisco Unity servers, verify that the Cisco Unity call routing rules are set to route calls to the Opening Greeting call handler. (This is the default when Cisco Unity is initially installed.) See the "Verifying That Call Routing Rules Are Set to Route Calls to the Opening Greeting" section on page 6.
2. On the Cisco Unity server that you have designated to handle cross-server logons (the server that subscribers will be calling), enable cross-server logon and enter the pilot numbers of the destination Cisco Unity servers. See the "Enabling Cross-Server Logon and Entering the Pilot Numbers of Destination Cisco Unity Servers" section on page 7.
3. Test the cross-server logon functionality. See the "Testing Cross-Server Logon" section on page 7.

**Note** Subsequently, if a new Cisco Unity server is added to the dialing domain, you will have to add the pilot number to the Network > Dialing Domain Options page.

# Procedures: Enabling Cross-Server Logon

## Verifying That Call Routing Rules Are Set to Route Calls to the Opening Greeting

Do the following procedure on each of the destination servers. For failover systems, do the procedure on both the primary and secondary servers.

### To Verify That Call Routing Rules Are Set to Route Calls to the Opening Greeting

**Step 1** In the Cisco Unity Administrator, go to the **Call Routing** > **Direct Calls** page.

**Step 2** Verify that calls to the pilot number for the server get routed to the Opening Greeting.

The Default Call Handler routing rule (which cannot be deleted or modified) sends calls to the Opening Greeting. Therefore, if you have not added any routing rules, the server is already set to correctly process cross-server calls.

## Enabling Cross-Server Logon and Entering the Pilot Numbers of Destination Cisco Unity Servers

If the system is using failover, do the following procedure on both the primary and secondary server, because most of the settings on the Network > Dialing Domain Options page are stored in the registry. (Registry settings are not replicated to the secondary server.)

### To Enable Cross-Server Logon and to Enter the Pilot Numbers of Destination Cisco Unity Servers

**Step 1** In the Cisco Unity Administrator, go to the **Network > Dialing Domain Options** page.

**Step 2** In the Cross Server Logon section, check the **Subscribers Dial the Same Number to Log On to Cisco Unity** check box.

**Step 3** In the Pilot Numbers for Cross-Server Logon, Transfer, and Live Reply section, enter the pilot number in the Dial String field for each Cisco Unity server displayed in the table. (Note that the pilot numbers that you enter are stored in the UnityDb database in SQL on the Cisco Unity server. Therefore, if the system is using failover, the pilot numbers will be replicated to the secondary server.)

**Step 4** Check the **Play Prompt During Cross-Server Logon, Transfer, and Live Reply so That Callers Know Something Is Happening** check box. Although this is an optional setting, we recommend that you check the check box because the cross-server process can take up to 5 seconds before the destination Cisco Unity prompts subscribers to enter their passwords.

**Note** It is particularly important for the "Please wait" prompt to be played when a subscriber calls from a phone number configured as a primary or alternate extension, because the originating Cisco Unity server will not prompt for the subscriber ID. If the "Please wait" prompt is not played, the first prompt that the subscriber hears will be when the destination server prompts for a password, which could take several seconds.

**Step 5** Click the **Save** icon.

## Testing Cross-Server Logon

If the destination servers are properly configured for failover, the secondary server should answer cross-server calls when the primary server is unavailable. However, you may want to test this scenario to verify that the secondary server answers cross-server calls as expected.

### To Test Cross-Server Logon

**Step 1** For each number listed in the Pilot Numbers section on the Network > Dialing Domain Options page, use a phone to call the number and verify that the call is routed to the Opening Greeting of the destination Cisco Unity server.

**Step 2** Create a new subscriber account (or use an existing account) on each of the destination servers for testing purposes.

**Step 3** For each subscriber account, call the pilot number for the server configured for cross-server logon, and enter the subscriber ID when prompted to do so. Verify that:

- The "Please wait" prompt is played.
- Cisco Unity prompts for the password and that you successfully log on.

# Cross-Server Transfer from the Automated Attendant and Directory Handlers

A cross-server transfer is a special kind of supervised transfer that passes control of a call from the automated attendant or a directory handler to the home Cisco Unity server of the called subscriber.

1. A caller calls a Cisco Unity server on which an audio text application has been configured.
2. The caller does one of the following:

   In a call handler (such as the opening greeting), enters the extension of a subscriber on another Cisco Unity server in the dialing domain,

   or

   In a directory handler, spells the name of a subscriber on another Cisco Unity server in the dialing domain.
3. The Cisco Unity server handling the call puts the caller on hold, and calls the subscriber home Cisco Unity server.
4. When the destination Cisco Unity server answers, the originating Cisco Unity server sends a sequence of DTMF tones that identify the call as a cross-server transfer.
5. The destination server responds with a sequence of DTMF tones.
6. The originating server hands off the call to the destination Cisco Unity server for processing. At this point, the behavior is as if the caller had directly called the automated attendant or directory handler on the destination Cisco Unity server.

When cross-server transfers have been configured, subscriber call transfer, call screening, call holding, and announce features are available.

**Note** Transfers from the automated attendant and directory handlers to AMIS, Bridge, and VPIM subscribers are always done as release to switch transfers even when the accounts are homed on the same Cisco Unity server.

## Prerequisites: Enabling Cross-Server Transfer

- For cross-server transfers to work, all of the Cisco Unity servers in the dialing domain must be running Cisco Unity 4.0(4) or later.
- All of the Cisco Unity servers must be configured for Digital Networking as described in the "Digital Networking" chapter of the *Networking in Cisco Unity Guide, Release 4.0(4)*.
- All of the networked Cisco Unity servers must be integrated with Cisco CallManager. Dual integrations are not supported at this time.

- All of the networked Cisco Unity servers must be configured to be in the same dialing domain, as described in the "Customizing the Primary Location" section of the "Digital Networking" chapter of the *Networking in Cisco Unity Guide, Release 4.0(4)*.
- The directory handler and automated attendant search scopes have been set to the dialing domain, as described in the "Setting the Addressing, Directory Handler, and Automated Attendant Search Scopes" section of the "Digital Networking" chapter of the *Networking in Cisco Unity Guide, Release 4.0(4)*.

**Note** The Exchange version of the *Networking in Cisco Unity Guide, Release 4.0(4)* is available at http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/net/net404/ex/index.htm. The Domino version of the guide is available at http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/net/net404/dom/index.htm.

# Task List: Enabling Cross-Server Transfer

Use the following task list to enable cross-server transfer. The cross references take you to detailed procedures.

1. On the destination Cisco Unity servers, verify that the Cisco Unity call routing rules are set to route calls to the Opening Greeting call handler. (This is the default setting when Cisco Unity is initially installed.) See the "Verifying That Call Routing Rules Are Set to Route Calls to the Opening Greeting" section on page 9.
2. On the Cisco Unity server that has the audio-text application that handles calls from outside callers, enable cross-server transfer and enter the pilot numbers of the destination Cisco Unity servers. See the "Enabling Cross-Server Transfer and Entering the Pilot Numbers of Destination Cisco Unity Servers" section on page 10.
3. Test the cross-server logon functionality. See the "Testing Cross-Server Transfer" section on page 10.

**Note** Subsequently, if a new Cisco Unity server is added to the dialing domain, you will need to add the pilot number to the Network > Dialing Domain Options page.

# Procedures: Enabling Cross-Server Transfer

## Verifying That Call Routing Rules Are Set to Route Calls to the Opening Greeting

Do the following procedure on each of the destination servers. For failover systems, do the procedure on both the primary and secondary servers.

### To Verify That Call Routing Rules Are Set to Route Calls to the Opening Greeting

**Step 1** In the Cisco Unity Administrator, go to the **Call Routing > Direct Calls** page.

**Step 2** Verify that calls to the pilot number for the server are routed to the Opening Greeting.

The Default Call Handler routing rule (which cannot be deleted or modified) sends calls to the Opening Greeting. Therefore, if you have not added any routing rules, the server is already set to correctly process cross-server calls.

## Enabling Cross-Server Transfer and Entering the Pilot Numbers of Destination Cisco Unity Servers

If the system is using failover, do the following procedure on both the primary and secondary server, because most of the settings on the Network > Dialing Domain Options page are stored in the registry. (Registry settings are not replicated to the secondary server.)

### To Enable Cross-Server Transfer and to Enter the Pilot Numbers of Destination Cisco Unity Servers

**Step 1** In the Cisco Unity Administrator, go to the **Network > Dialing Domain Options** page.

**Step 2** Click **Pass Control to the Called Subscriber's Cisco Unity Server**.

**Step 3** In the Pilot Numbers for Cross-Server Logon, Transfer, and Live Reply section, enter the pilot number in the Dial String field for each Cisco Unity server displayed in the table. (Note that the pilot numbers that you enter are stored in the UnityDb database in SQL on the Cisco Unity server. Therefore, if the system is using failover, the pilot numbers will be replicated to the secondary server.)

**Step 4** Check the **Play Prompt During Cross-Server Logon, Transfer, and Live Reply so That Callers Know Something Is Happening** check box. Although this is an optional setting, we recommend that you check the box because the cross-server process can take several seconds before the caller is transferred.

**Step 5** Click the **Save** icon.

## Testing Cross-Server Transfer

If the destination servers are properly configured for failover, the secondary server should answer cross-server calls when the primary server is unavailable. However, you may want to test this scenario to verify that the secondary server answers cross-server calls as expected.

### To Test Cross-Server Transfer

**Step 1** For each number listed in the Pilot Numbers section on the Network > Dialing Domain Options page, use a phone to call the number and verify that the call is routed to the Opening Greeting of the destination Cisco Unity server.

**Step 2** Create a new subscriber account (or use an existing account) on each of the destination servers for testing purposes.

**Step 3** For each subscriber account, call the pilot number for the server configured for cross-server transfer, and enter the subscriber extension at the opening greeting. Verify that:

- The “Please wait” prompt is played.
- The call is transferred to the subscriber phone or the greeting, according to the call transfer settings of the called subscriber.

# Cross-Server Live Reply

Live reply, when enabled, allows a subscriber who is listening to messages by phone to reply to another subscriber message by pressing 4-4 to have Cisco Unity call the subscriber directly. (Subscribers who use Optional Conversation 1 press 8-8 for live reply.) Note that whether subscribers have access to the live reply feature is controlled by the class of service settings.

In order for the live reply option to be offered when a subscriber listens to a message that was left by a subscriber on another networked Cisco Unity server in the dialing domain, cross-server live reply must be enabled. By default, live reply between networked Cisco Unity subscribers is not enabled.

When live reply and cross-server live reply are enabled:

1. After listening to a message from a subscriber on another Cisco Unity server in the dialing domain, a subscriber presses 4-4 to call the sender (or presses 8-8 if the subscriber uses Optional Conversation 1).
2. Cisco Unity puts the subscriber on hold and looks up the extension in SQL to determine whether the subscriber who is being replied to is on the same server or is on another Cisco Unity server in the dialing domain. If the subscriber is on the same server, processing proceeds as usual.

   However, if the subscriber who is being replied to is on another Cisco Unity server, the local Cisco Unity server calls the applicable home Cisco Unity server.
3. When the destination Cisco Unity server answers, the originating Cisco Unity server sends a sequence of DTMF tones that identify the call as a cross-server live reply.
4. The destination server responds with a sequence of DTMF tones.
5. The originating server hands off the call to the destination Cisco Unity server for processing. Note, however, that if the subscriber account on the destination server is set to disable call transfers (that is, the call transfer option is set to send calls to the subscriber greeting), the live reply call fails. In this case, the subscriber conversation on the originating Cisco Unity plays a prompt to the caller saying that live reply is unavailable and suggesting that the caller reply to the message instead of calling the subscriber directly.

**Note** The live reply functionality has been enhanced in Cisco Unity 4.0(4) to allow Cisco Unity subscribers to live reply to messages left by users of other voice messaging systems who have corresponding AMIS, Bridge, or VPIM subscriber accounts in Cisco Unity (these subscribers are collectively referred to as external subscribers). However, live reply to external subscribers does not require use of the cross-server live reply functionality. Live reply is always done via release to switch, even when the external subscriber accounts were created on the same Cisco Unity server as the subscriber doing the live reply.

## Prerequisites: Enabling Cross-Server Live Reply

- For live reply between networked subscribers to work, all of the Cisco Unity servers in the dialing domain must be running Cisco Unity 4.0(4) or later.
- All of the Cisco Unity servers must be configured for Digital Networking as described in the "Digital Networking" chapter of the *Networking in Cisco Unity Guide, Release 4.0(4).*
- All of the networked Cisco Unity servers must be integrated with Cisco CallManager. Dual integrations are not supported at this time.

- All of the networked Cisco Unity servers must be configured to be in the same dialing domain, as described in the "Customizing the Primary Location" section of the "Digital Networking" chapter of the *Networking in Cisco Unity Guide, Release 4.0(4)*.
- The addressing search scope has been set to the dialing domain as described in the "Setting the Addressing, Directory Handler, and Automated Attendant Search Scopes" section of the "Digital Networking" chapter of the *Networking in Cisco Unity Guide, Release 4.0(4)*.
- Subscribers must belong to a class of service in which live reply is enabled. Live reply is enabled on the Subscribers > Class of Service > Messages page in the Cisco Unity Administrator, by checking the Subscribers Can Reply to Messages from Subscribers by Calling Them check box.
- Transfer numbers must be configured for each Cisco Unity subscriber.

**Note** The Exchange version of the *Networking in Cisco Unity Guide, Release 4.0(4)* is available at http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/net/net404/ex/index.htm. The Domino version of the guide is available at http://www.cisco.com/univercd/cc/td/doc/product/voice/c_unity/unity40/net/net404/dom/index.htm.

# Task List: Enabling Cross-Server Live Reply

Use the following task list to enable cross-server live reply. The cross references take you to detailed procedures.

1. On the destination Cisco Unity servers, verify that the Cisco Unity call routing rules are set to route calls to the Opening Greeting call handler. (This is the default when Cisco Unity is initially installed.) See the "Verifying That Call Routing Rules Are Set to Route Calls to the Opening Greeting" section on page 12.
2. On each Cisco Unity server in the dialing domain, enable cross-server live reply and enter the pilot numbers of the destination Cisco Unity servers. See the "Enabling Cross-Server Live Reply and Entering the Pilot Numbers of Destination Cisco Unity Servers" section on page 13.
3. Test the cross-server live reply functionality. See the "Testing Cross-Server Live Reply" section on page 13.

**Note** Subsequently, if a new Cisco Unity server is added to the dialing domain, you will need to add the pilot number to the Network > Dialing Domain Options page of each Cisco Unity server in the dialing domain.

# Procedures: Enabling Cross-Server Live Reply

## Verifying That Call Routing Rules Are Set to Route Calls to the Opening Greeting

Do the following procedure on each Cisco Unity server in the dialing domain. For failover systems, do the procedure on both the primary and secondary servers.

### To Verify That Call Routing Rules Are Set to Route Calls to the Opening Greeting

**Step 1** In the Cisco Unity Administrator, go to the **Call Routing > Direct Calls** page.

**Step 2** Verify that calls to the pilot number for the server are routed to the Opening Greeting.

The Default Call Handler routing rule (which cannot be deleted or modified) sends calls to the Opening Greeting. Therefore, if you have not added any routing rules, the server is already set to correctly process cross-server calls.

## Enabling Cross-Server Live Reply and Entering the Pilot Numbers of Destination Cisco Unity Servers

Do the following procedure on each Cisco Unity server in the dialing domain. If the system is using failover, do the following procedure on both the primary and secondary server, because most of the settings on the Network > Dialing Domain Options page are stored in the registry. (Registry settings are not replicated to the secondary server.)

### To Enable Cross-Server Live Reply and to Enter the Pilot Numbers of Destination Cisco Unity Servers

**Step 1** In the Cisco Unity Administrator, go to the **Network > Dialing Domain Options** page.

**Step 2** In the Cross-Server Live Reply section, check the **Subscribers Can Call Back a Cisco Unity Subscriber on a Different Cisco Unity Server** check box.

**Step 3** In the Pilot Numbers for Cross-Server Logon, Transfer, and Live Reply section, enter the pilot number in the Dial String field for each Cisco Unity server displayed in the table. (Note that the pilot numbers that you enter are stored in the UnityDb database in SQL on the Cisco Unity server. Therefore, if the system is using failover, the pilot numbers will be replicated to the secondary server.)

**Step 4** Check the **Play Prompt During Cross-Server Logon, Transfer, and Live Reply so That Callers Know Something Is Happening** check box. Although this is an optional setting, we recommend that you check the box because the cross-server process can take several seconds before the caller is transferred.

**Step 5** Click the **Save** icon.

## Testing Cross-Server Live Reply

If the destination servers are properly configured for failover, the secondary server should answer cross-server calls when the primary is unavailable. However, you may want to test this scenario to verify that the secondary server answers cross-server calls as expected.

### To Test Cross-Server Live Reply

**Step 1** For each number listed in the Pilot Numbers section on the Network > Dialing Domain Options page, use a phone to call the number and verify that the call is routed to the Opening Greeting of the destination Cisco Unity server.

**Step 2** Create a new subscriber account (or use an existing account) on each Cisco Unity server in the dialing domain for testing purposes. Make sure that the test subscribers belong to a class of service in which live reply is enabled, and that call transfers are enabled in the subscriber accounts.

**Step 3** Log on as a subscriber on one Cisco Unity server and send a message to the test subscribers on the other Cisco Unity servers.

**Step 4** For each subscriber that receives the test message, log on, listen to the message, and then press 4-4 (or 8-8, as applicable) to live reply. Verify that:

- The “Please wait” prompt is played.
- The call is transferred to the subscriber phone of the subscriber who left the message.

# Troubleshooting

You can use the following tools to troubleshoot problems with cross-server logon, transfer, and live reply, on both the originating and destination Cisco Unity servers:

- The Windows application event logs
- The Port Status Monitor, available in Tools Depot
- The Unity Diagnostic Tool, available in Tools Depot. In the Unity Diagnostic Tool, enable the following micro traces:
  - Conv PhoneHandler: 10 Call Progress
  - ConvPH Greeting: 10 Call Progress
  - MiuCall: All traces
  - MiuGeneral: 13 Tone Generation/Detection and 14 Digit Generation/Detection
  - MiuMethods: All traces
  - Skinny TSP: All traces
  - Subscriber Conversation: 10 Call Progress

# Reference: The Dialing Domain Options Page

This section provides detailed information about the settings on the Dialing Domain Options page, shown in Figure 2.

See Table 1 for detailed descriptions of the settings on the Dialing Domain Options page.

*Figure 2 Dialing Domain Options Page*

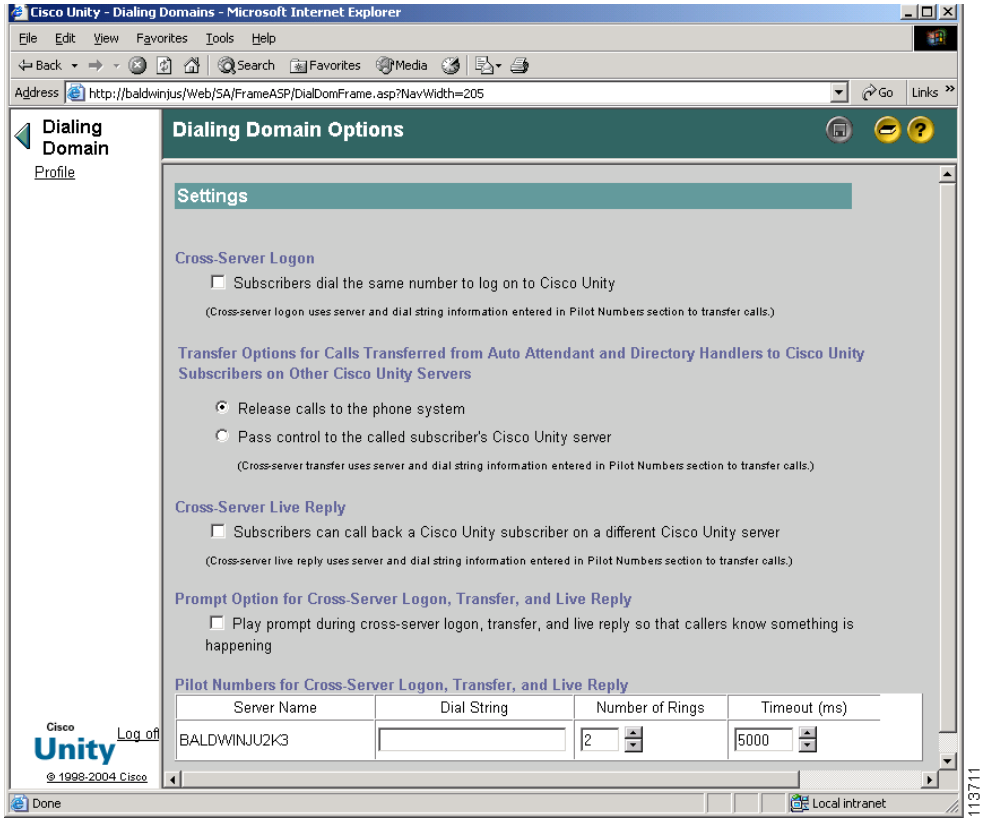


*Table 1 Network > Dialing Domains > Dialing Domain Options Page*

| Field | Considerations |
|---|---|
| Subscribers Dial the Same Number to Log On to Cisco Unity | Check this check box so that all subscribers in the dialing domain—no matter which server is their home Cisco Unity server—can use the pilot number of this Cisco Unity server to log on to Cisco Unity. You will also need to enter the pilot numbers of all of the other Cisco Unity servers in the dialing domain in the Pilot Numbers section. When a subscriber homed on another Cisco Unity server calls this server to log on, the home Cisco Unity server is called, and the call is handed off to the home Cisco Unity server so that the subscriber can log on.<br><br>By default the check box is unchecked.<br><br>Note that subscriber phones must still be configured to forward calls to the home Cisco Unity server. Also, voice mail speed-dial or "Messages" buttons on subscriber phones must be configured to call the home Cisco Unity server. |
| Transfer Options for Calls Transferred from Auto Attendant and Directory Handlers to Cisco Unity Subscribers on Other Cisco Unity Servers | Indicate how calls from the automated attendant or a directory handler on this Cisco Unity server will be transferred to subscribers on other Cisco Unity servers in the dialing domain. Choose one of the following:<br><br>• Release Calls to the Phone System—On a release to phone system transfer, Cisco Unity dials the subscriber call transfer number and hangs up. This is the default, and this is the behavior of Cisco Unity 4.0(3) and earlier. Note the following limitations:<br><br>– Call screening, call holding, and announce features are not available for the called subscriber.<br><br>– Only the call transfer number for a subscriber is replicated among the Cisco Unity servers, the other call transfer settings are not. If a subscriber call transfer setting is set to "No (send directly to subscriber's greeting)," Cisco Unity sets the call transfer number to the subscriber extension. If the subscriber extension is a valid extension on the phone system that Cisco Unity is integrated with, then the subscriber phone rings. If the subscriber extension is not a valid phone extension, what happens to the call after that depends on the phone system and how it is configured. If you do not configure the phone system to handle calls to the subscriber extensions, the caller may be disconnected.<br><br>• Pass Control to the Called Subscriber's Cisco Unity Server—With this option, a call is first transferred to the Cisco Unity server that is home to the called subscriber. The home Cisco Unity then checks the call transfer settings of the called subscriber before transferring the call to the subscriber. To use this option, you will also need to enter the pilot numbers of all the other Cisco Unity servers in the dialing domain in the Pilot Numbers section. |

*Table 1 Network > Dialing Domains > Dialing Domain Options Page (continued)*

| Field | Considerations |
|---|---|
| Subscribers Can Call Back a Cisco Unity Subscriber on a Different Cisco Unity Server | Check this check box to enable cross-server live reply. When cross-server live reply is enabled, subscribers homed on this Cisco Unity server who listen to their messages by phone are allowed to respond to a message from another Cisco Unity subscriber on a different Cisco Unity server in the dialing domain by calling them. The live reply call is first transferred to the home Cisco Unity server, which then checks the call transfer settings of the replied-to subscriber before transferring the call. To use this option, you will also need to enter the pilot numbers of all the other Cisco Unity servers in the dialing domain in the Pilot Numbers section.<br><br>With live reply, subscribers listening to messages by phone can reply to a subscriber message by pressing 4-4 to have Cisco Unity call the subscriber directly. (Subscribers using Optional Conversation 1 press 8-8 for live reply.) Note that whether subscribers have access to the live reply feature depends on their class of service settings. (Live reply is enabled on the Subscribers > Class of Service > Messages page.)<br><br>By default, the check box is not checked (that is, cross-server live reply is disabled), and subscribers cannot live reply to messages from Cisco Unity subscribers on other servers, which is consistent with the behavior of Cisco Unity 4.0(3) and earlier. Note that when subscribers use the live reply option to call back AMIS, Bridge, or VPIM subscribers with accounts on other Cisco Unity servers in the dialing domain, the live reply call is transferred via the phone system (release to switch) and does not use the cross-server transfer functionality. |
| Play Prompt During Cross-Server Logon, Transfer, and Live Reply so That Callers Know Something Is Happening | Check this check box so that callers hear a prompt during logons, transfers, and live replies to another Cisco Unity server. Depending on your phone system, it may take a few seconds for Cisco Unity to look up the home Cisco Unity server, dial the pilot number, and hand off control of the call to the home Cisco Unity server. You may want to have Cisco Unity play a "Please wait" prompt that lets callers know that something is happening. |
| Server Name | *Display only.* Displays the name of another Cisco Unity server in the dialing domain. |
| Dial String | Enter the phone number that the local Cisco Unity server dials when calling the Cisco Unity server named in the Server Name field in this row. Enter numbers only. |
| Number of Rings | Specify the number of rings that the local Cisco Unity server waits for the destination Cisco Unity server to answer. If the destination server does not answer after the specified number of rings, a prompt is played that says that the Cisco Unity server could not be reached, and the call is transferred to the opening greeting of the local Cisco Unity server.<br><br>The default is 2. |
| Timeout | Specify how long the local Cisco Unity server will wait for a response from the destination Cisco Unity server after the destination server has answered the call. If the destination server does not respond within the specified time period, a prompt is played that says that the Cisco Unity server could not be reached, and the call is transferred to the opening greeting of the local Cisco Unity server.<br><br>The default is 5000 milliseconds. |