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Inbound Faxing with Exchange 2010 Unified Messaging

Open Text Fax Server, RightFax Edition

Customer Enablement Team
January 2010

Abstract

Exchange 2010 Unified Messaging (UM) provides an option for referring fax traffic to a certified fax partner so that inbound faxes can be processed to UM-enabled users. This would allow for faxes to appear in users' Outlook® mailboxes. This document describes how to configure the Exchange 2010 UM server, the Open Text Fax Server, RightFax Edition, and a MP-114 media gateway to process inbound faxes through the Exchange 2010 UM subsystem.

Note: This whitepaper will show how to configure an MP-114 media gateway, but there are additional media gateways that could be used.

For more information about supported media gateways, see the **Telephony Advisor for Exchange 2010**.

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Contents

Introduction

Microsoft® Exchange started providing UM capabilities as of Exchange 2007. This allowed not only emails to be sent to user mailboxes but voicemail and faxes as well. With Exchange UM, you could set up an automated voice system that would be used to direct voice and fax calls that were received from a media gateway to a user's Outlook mailbox. This provides a central (unified) location for a user to check for the majority of office communications.

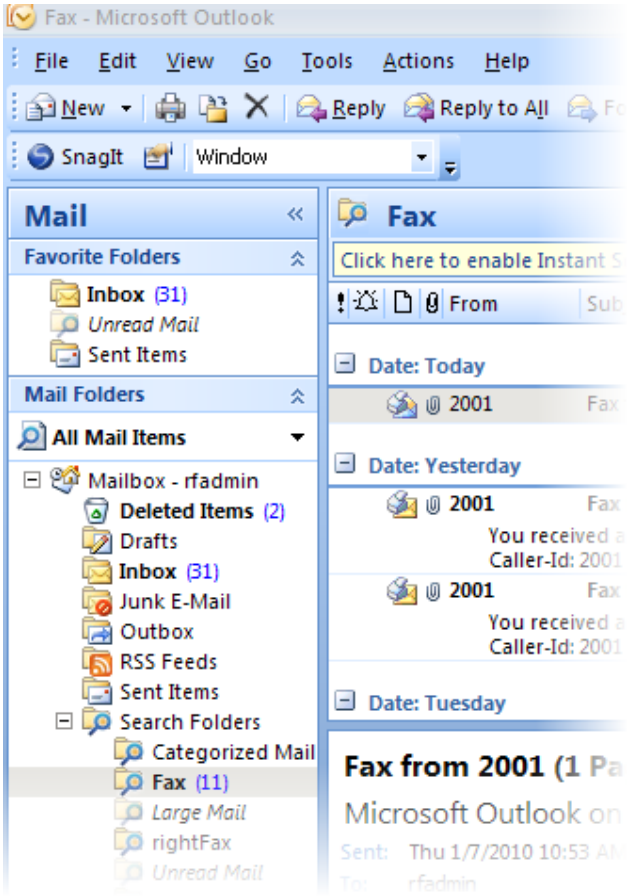

Figure 1: Fax Server creates centralization of office communications

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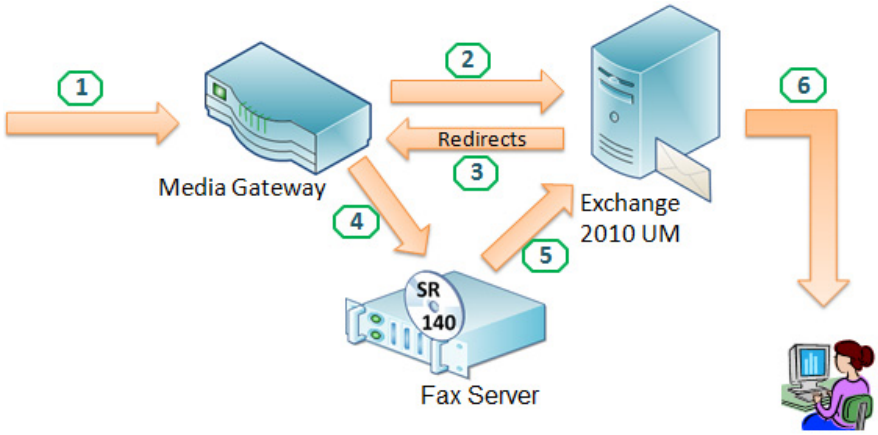
How Has Faxing Changed in Exchange 2010 UM?

With Exchange 2007 UM, there was a built-in option to process faxes that were received through UM so that the faxes could be sent to UM-enabled users. With Exchange 2010, this built-in option was discontinued, but an option to refer the fax traffic to a certified fax partner was enabled. Fax Server is able to process these inbound faxes so that there is no notable change for users who are used to receiving faxes in Exchange 2007.

Figure 2



1. Fax call comes into the media gateway.

2. The media gateway then directs the SIP traffic to the Exchange server. If the extension matches a user account that is UM-enabled, the call is forwarded to the Exchange server. The Exchange UM server then detects the CNG tone and determines it is a fax call.

3. Exchange looks up the UM mailbox policy to determine the fax server information to refer to the fax traffic and then issues a referral back to the media gateway with the information needed to find and connect with the fax server.

4. The media gateway then sends the fax session INVITE (SIP) to Fax Server which in turn accepts the invitation and receives the fax.

5. Fax Server's DocTransport service saves the fax as a TIF and then sends the data via Simple Mail Transfer Protocol (SMTP) to Exchange so it can be sent

to the user. The Exchange server will need to have a receive connector set up so that the fax server is able to authenticate and send the SMTP messages.

6. Exchange then sends the fax to the Exchange user's Outlook mailbox. The user will then be able to quickly find their faxes.

Configuring Exchange 2010 UM for Inbound Faxing

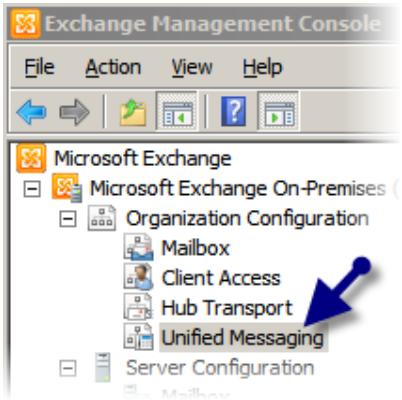
Creating a UM dial plan for inbound faxing

The UM dial plan is used to specify information like the number of digits in a user's extension. Users may have seven-digit fax numbers but the media gateways are likely to strip off digits from the incoming fax number. You would then need to specify how many digits Exchange should be expecting.

How to set up a basic UM dial plan

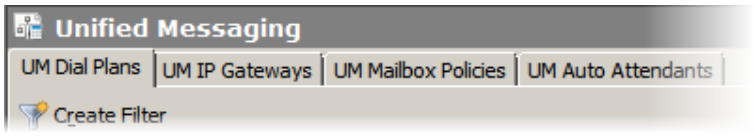
1. Open the **Exchange Management Console**, expand **Organization Configuration,** and select **Unified Messaging**.

Figure 3



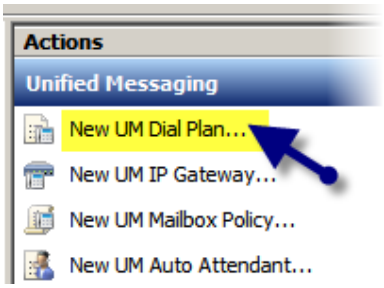
When you select this, you should see the **Unified Messaging** tabs.

Figure 4



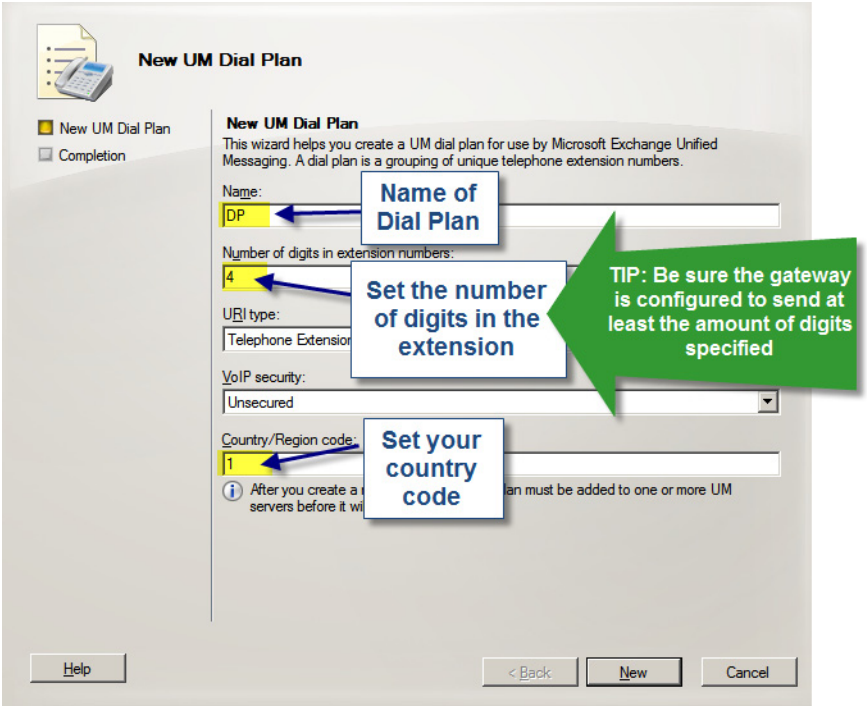
2. In upper right corner of the **Exchange Management Console**, click **New UM Dial Plan** to start the wizard.

Figure 5



3. When the **New UM Dial Plan** wizard launches, you will need to specify the **Name**, **Number of digits in the extension numbers,** and the **Country/Region code**. Select **New** and then **Finish**.

Figure 6



Note: The number of digits specified was four (you can specify as many as appropriate). It is important to make sure that the gateway is configured to send the correct amount of digits to the Exchange UM server so that the digits received can match a user's extension.

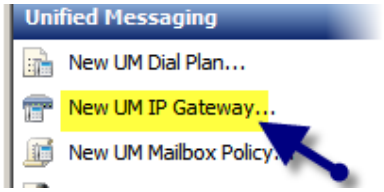
Specifying a UM IP gateway for inbound faxing

This next step in the process would be to add a UM IP gateway. This would be used by Exchange to confirm that the media gateway is a trusted source for unified communications.

How to specify a UM IP gateway

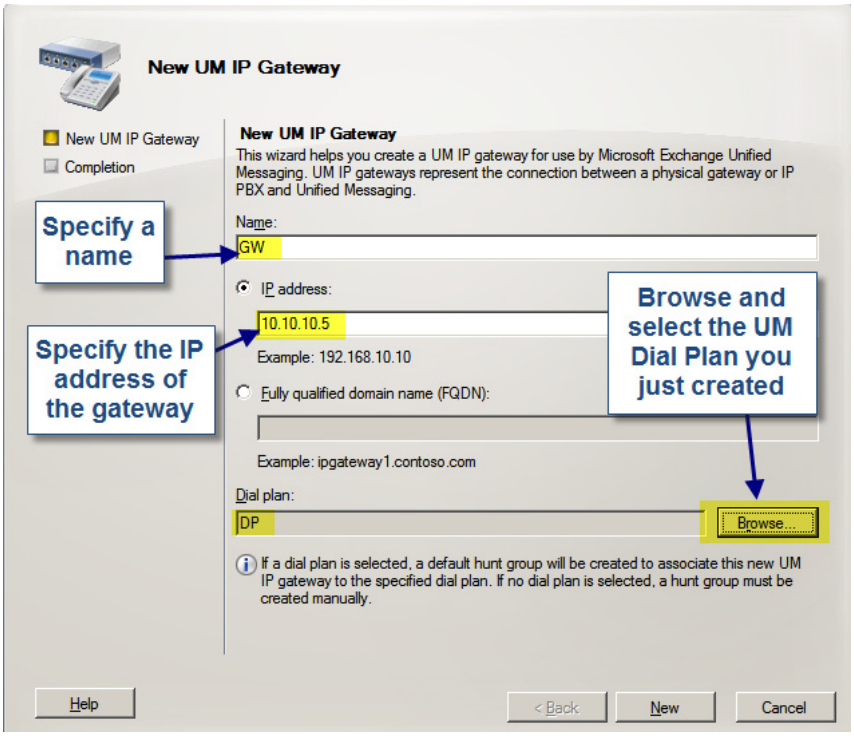
1. In upper right corner of the **Exchange Management Console**, click **New UM IP Gateway** to start the wizard.

Figure 7



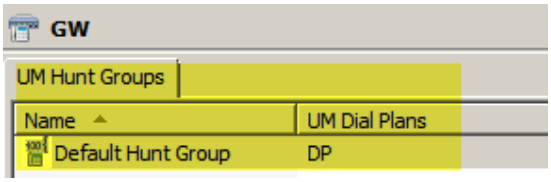
2. When the **New UM IP Gateway** wizard launches, you will need to specify the **Name**, the **IP address** of the media gateway, and **Dial Plan**. Browse for the **Dial Plan** you created. Select **New** and then **Finish**.

Figure 8



Note: When you create the UM IP gateway, it will automatically create a default "Hunt Group" to allow for incoming calls to be received. If you need to lock it down so only recognized number ranges are permitted, you can create a new UM "Hunt Group" that would specify a pilot number.

Figure 9



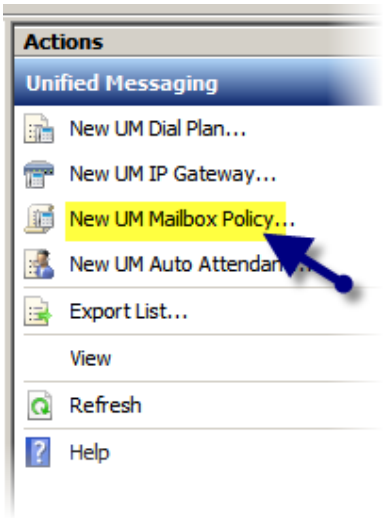
Creating a UM mailbox policy for inbound faxing

The UM mailbox policy will be used to determine rules for the user receiving a UM message. This is where you would enable inbound faxing and specify the fax server Uniform Resource Indicator (URI). The URI contains the server's information as well as how to connect.

How to set up the UM mailbox policy for inbound faxing

1. In upper right corner of the **Exchange Management Console**, click **New UM Mailbox Policy** to start the wizard.

Figure 10



2. When the **New UM Mailbox Policy** wizard launches, you will need to specify the **Name** and browse for **Dial Plan** you created. Select **New** and then **Finish**.

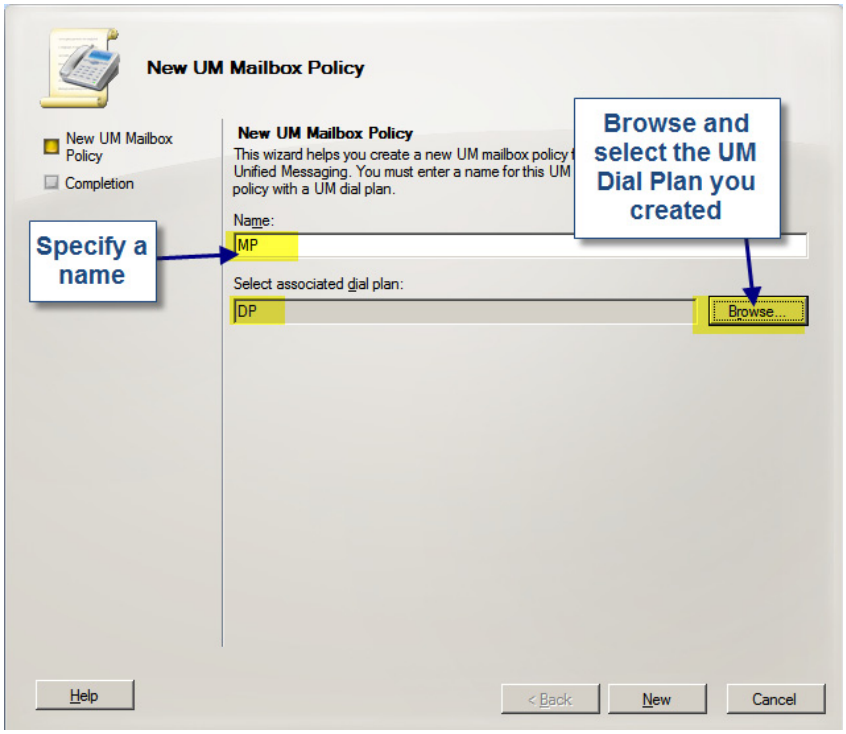
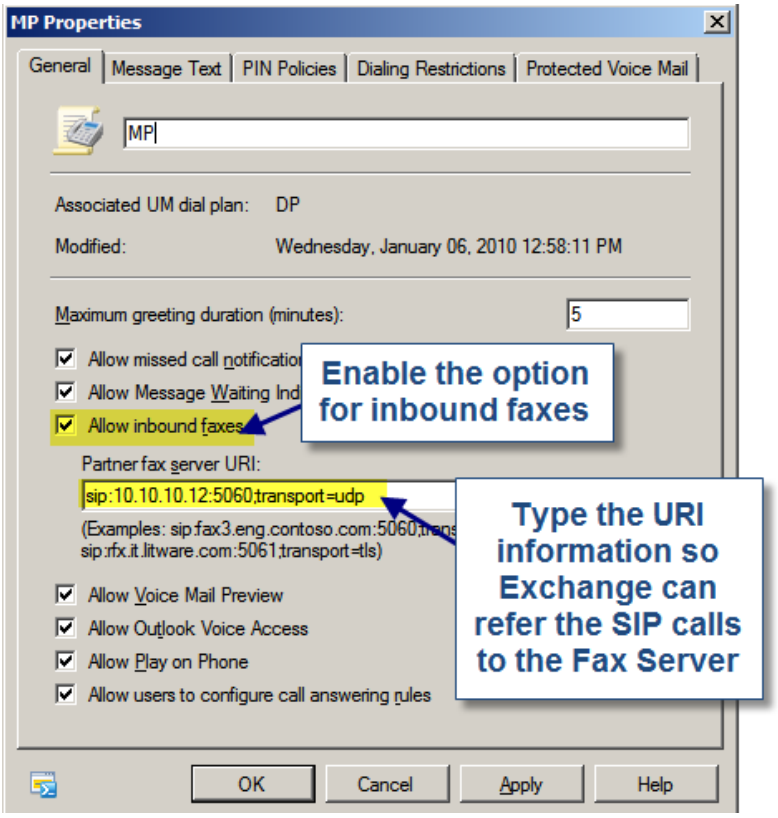


Figure 11

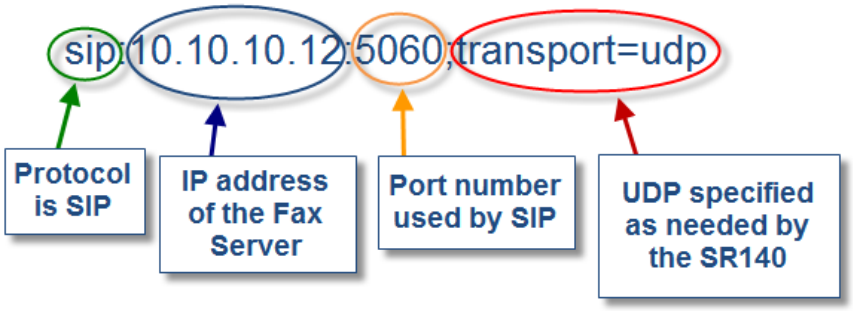
3. To configure the fax referral settings, double-click **New UM Mailbox Policy**, and select the box for **Allow inbound faxes**.

Figure 12



4. Type the information in the **Partner fax server URI** field that the Exchange server will use when referring the fax traffic to Fax Server. Click **OK** when completed.

Figure 13



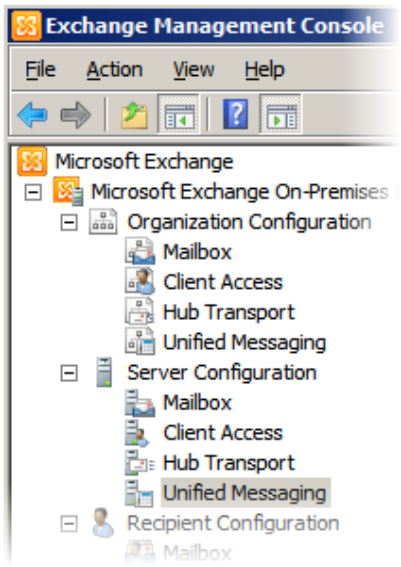
Associating the UM dial plan to the Exchange UM server

There could be several Exchange servers that have the UM role enabled, so you will need to configure the server to use the new UM dial plan.

How to associate a UM dial plan to the Exchange server

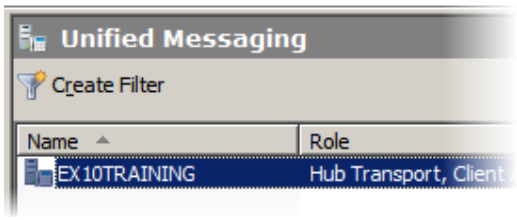
1. Open the **Exchange Management Console**, expand **Server Configuration**, and select **Unified Messaging**.

Figure 14



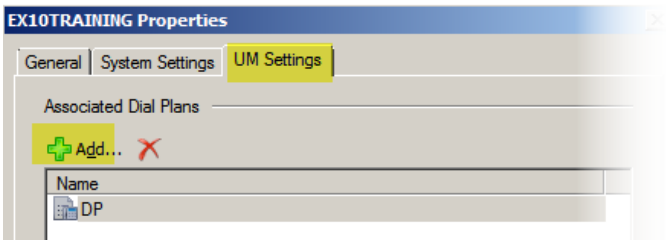
2. Find the Exchange server in the list and double-click it to open its properties dialog box.

Figure 15



3. Select the **UM Settings** tab and click the **Add** button. Select the **UM Dial Plan** and click **OK** and **OK** again.

Figure 16



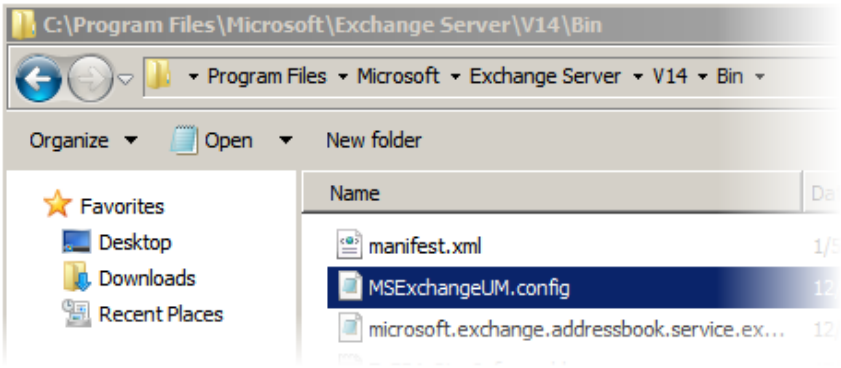
Configuring the Exchange 2010 UM server to listen for fax CNG tones

By default, the Exchange 2010 UM server is configured to rely on the IP gateway to listen for inband fax detection. You will need to edit the MSExchangeUM.config file so the Exchange 2010 UM server is enabled for inband fax detection.

Edit the MSExchangeUM.config to enable inband fax detection

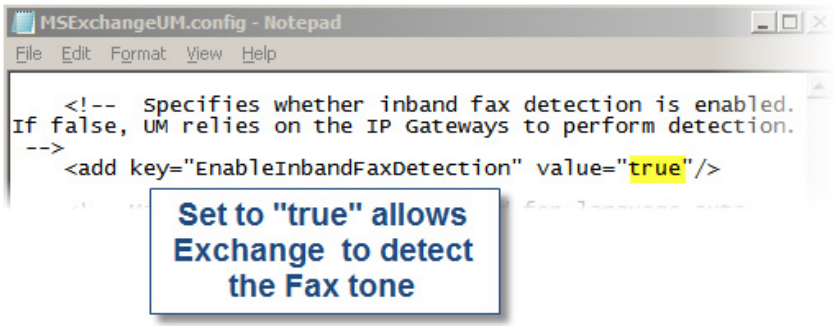
1. Browse to the **Program Files > Microsoft > Exchange Server > V14 > Bin** directory.

Figure 17



2. Open the **MSExchangeUM.config** file with Notepad.exe and edit the value for **EnableInbandFaxDetection** to reflect **value="true"**.

Figure 18



3. Save the changes and restart the server called **Microsoft Exchange Unified Messaging** for the settings to take effect.

Note: Restarting the Microsoft Exchange UM service will cause a drop in UM service while it is off and should be avoided during production hours.

Enabling a user for UM

If the environment is already configured for UM, you probably already have users UM-enabled, but you may need to enable UM on a new user account for testing.

How to enable UM for an Exchange user

1. Open the **Exchange Management Console**, expand **Recipient Configuration,** and select **Mailbox**.

2. Find the user you want to enable for UM, right-click, and select **Enable Unified Messaging**.

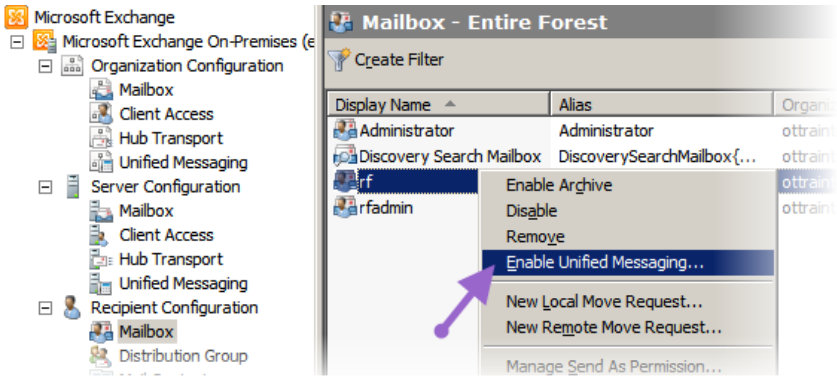


Figure 19

3. Click the **Browse** button and select the UM mailbox policy that you configured to enable inbound faxing and the fax server URI. Click **Next** to continue.

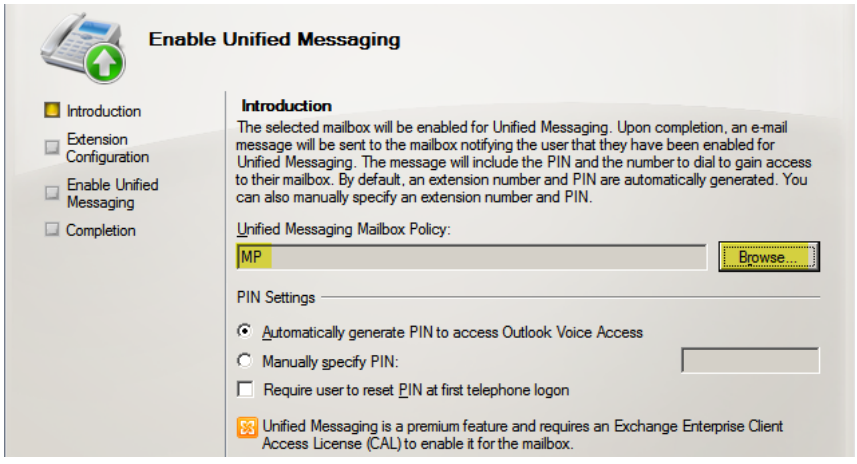


Figure 20

4. Specify the extension for the user. You will need to make sure the number of digits specified matches what you specified in the UM dial plan. Click **Next** and **Enable** to complete the process.

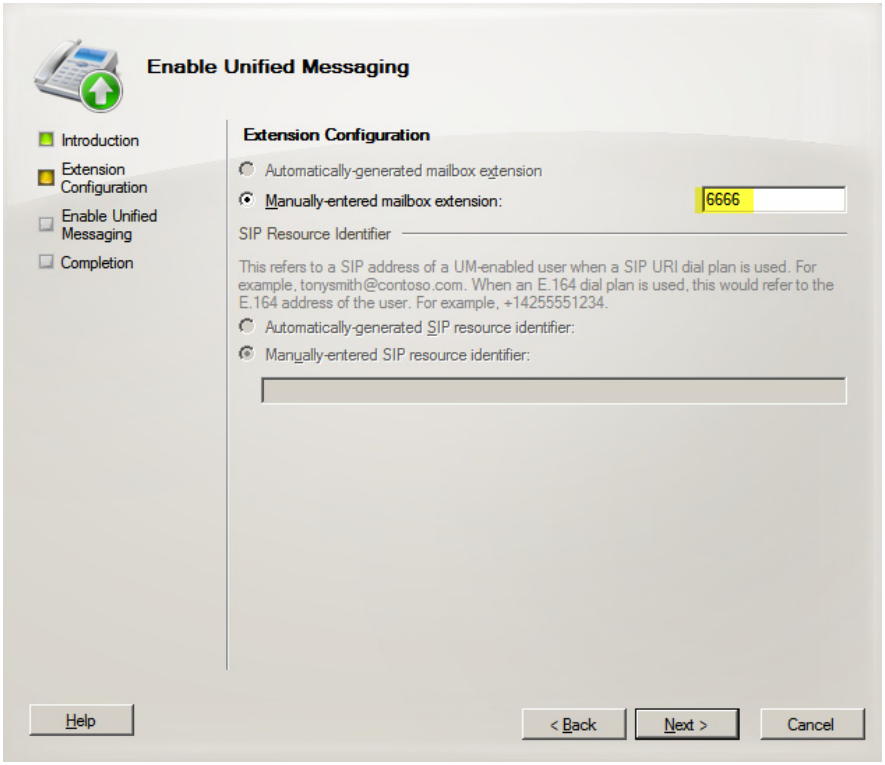


Figure 21

Securing the Connection from Fax Server to Exchange

When Fax Server receives the fax, it will need to send the fax to the Exchange 2010 server as an SMTP message. In order for this to happen, the fax server will need to authenticate it as a trusted source to send the SMTP messages to the Exchange server.

Configuring a receive connector for Fax Server authentication

The method of secure connection employed by Fax Server is to use a dedicated receive connector that will specify the IP address of the fax server as well as permissions.

How to configure a receive connector

1. Open the **Exchange Management Console**, expand **Server Configuration**, and select **Hub Transport**.

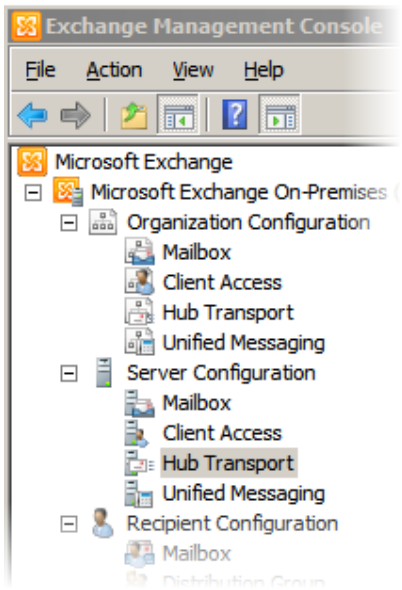
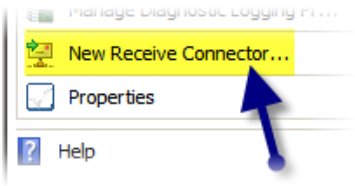


Figure 22

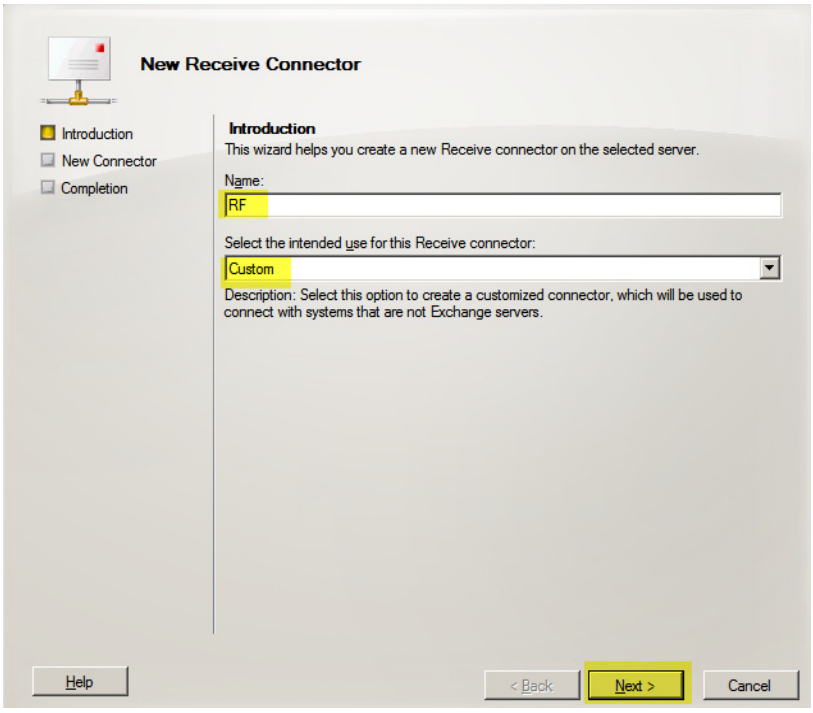
2. In the right section of the **Exchange Management Console**, click **New Receive Connector** to start the wizard.

Figure 23



3. When the **New Receive Connector** launches, you will need to specify the **Name** and the intended use for the connector. Select **Custom** from the list and then click **Next** to continue.

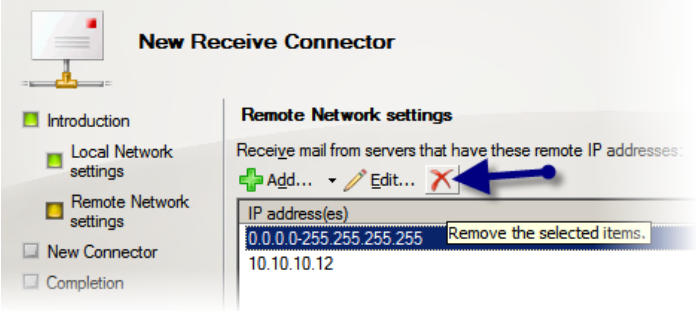
Figure 24



4. The next dialog window will ask if you want to specify any local network settings. You do not need to specify anything here and can click **Next** to continue.

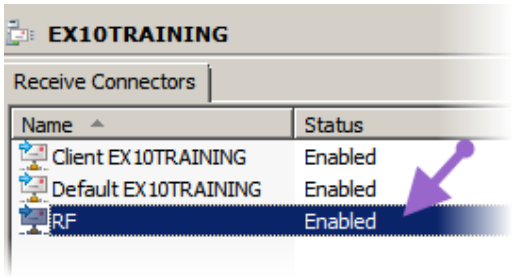
5. In the **Remote Network Settings** dialog, you will need to specify the fax server's IP address and remove settings for all IPs that exist by default. Click the **Add** button and type the **IP address** of the Fax Server and then click **OK**. Select the default IP range and click the **X** to delete the entry. Click **Next** and the **New** to create the connector.

Figure 25



6. Double-click the new connector to access the properties.

Figure 26



7. Select the **Authentication** tab and check only the option for **Externally Secured (for example, with IPsec)**.

Figure 27

8. Select the **Permission Groups** tab, check on the **Exchange servers** option, and click **OK** when completed (**Partners** does not refer to fax partners but rather partner domains, so this is for edge transport servers).

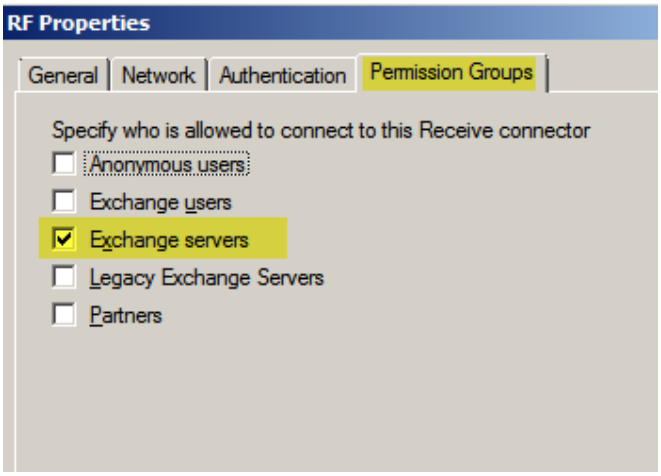

RF Properties
General
Network
Authentication
Permission Groups
Specify who is allowed to connect to this Receive connector
Anonymous users
Exchange users
Exchange servers
Legacy Exchange Servers
Partners

Figure 28

Configuring Fax Server to Connect to the Exchange Server

Once the Exchange 2010 UM server has been configured, you will need to configure Fax Server to pass the faxes to the Exchange server once they are received. This is done through the SR140 settings.

SR140 settings for UM

Feature pack 1 for version 9.4 of Fax Server adds new parameters to the SR140 configuration that can be set to work with Exchange 2010 UM.

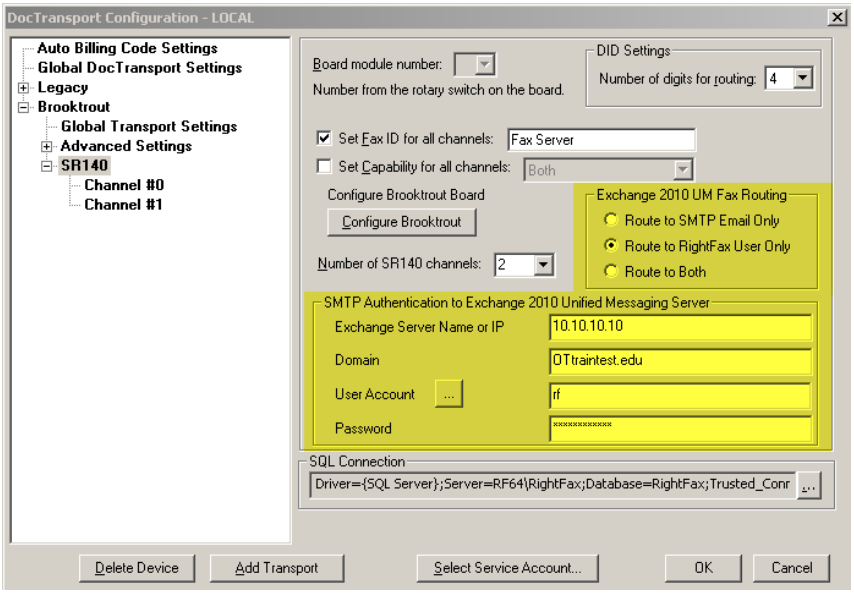


Figure 29

Exchange 2010 UM fax routing options

There are three options for dealing with traffic that was referred from the Exchange 2010 UM environment:

Route to SMTP email only	Sends to Exchange via SMTP and requires authentication
Route to user only	Sends to users and not to SMTP
Route to both	Sends to both SMTP and the fax user

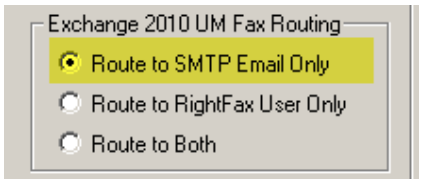
Configure the SR140 for routing to SMTP

This configuration assumes that you already have the SR140 licensed and configured for standard Fax over Internet Protocol (FoIP) usage.

1. Launch the **Enterprise Fax Manager** and select the fax server's name in the upper right corner to show the services. Double-click **DocTransport** to access the configuration. Select the **SR140** on the left pane.

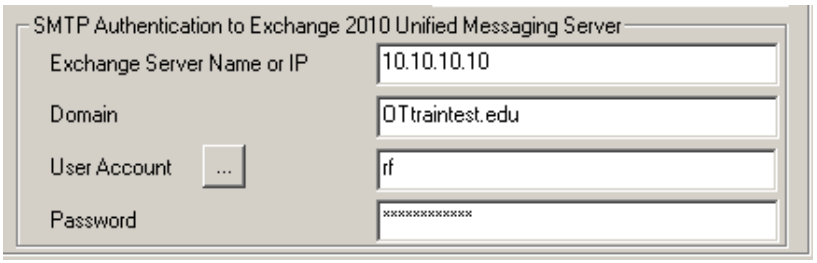
2. Select the radio button for **Route to SMTP Email Only**.

Figure 30



3. You will need to specify the **Exchange Server's Name or IP** address and a basic Exchange user account (**Domain**, **User Account,** and **Password**). Click **OK** once completed.

Figure 31



Note: This only requires the user to be a regular Exchange user as the authentication is validated through the receive connector. The format of the fax received in Outlook will be a TIF.

Configuring the SR140 for routing to Fax Server users

1. Launch the **Enterprise Fax Manager** and select the fax server's name in the upper right corner to show the services. Double-click **DocTransport** to access the configuration. Select the **SR140** on the left pane.

2. Select the radio button for **Route to Fax Server User Only** and click **OK**.

Note: Selecting this option will not send the SMTP message back to Exchange, so the user will not receive the fax in Outlook like they may be used to if they

were using inbound faxing in Exchange 2007 UM. You can still configure the fax; however, go to Outlook by use of the Exchange gateway.

Appendix: Quick Exchange 2010 UM Setup with Exchange Management Shell

You can use the Exchange management shell to quickly create the settings needed to enable inbound faxing for Exchange 2010 UM. Use the following steps as an alternative to the manual steps described in this document.

Set up a basic UM dial plan

```
new-UMDialPlan -Name 'DP' -NumberOfDigitsInExtension
'4' -URIType 'TelExtn' -VoIPSecurity 'Unsecured'
-CountryOrRegionCode '1'
```

Note: Modify the script to reflect the appropriate Name, NumberOfDigitsInExtension, and CountryOrRegionCode.

Specify a UM IP gateway

```
new-UMIPGateway -Name 'GW' -Address '10.10.10.5' -
UMDialPlan 'DP'

New-UMHuntGroup -Name HG -UMIPGateway GW -UMDialPlan
DP -PilotIdentifier 2001
```

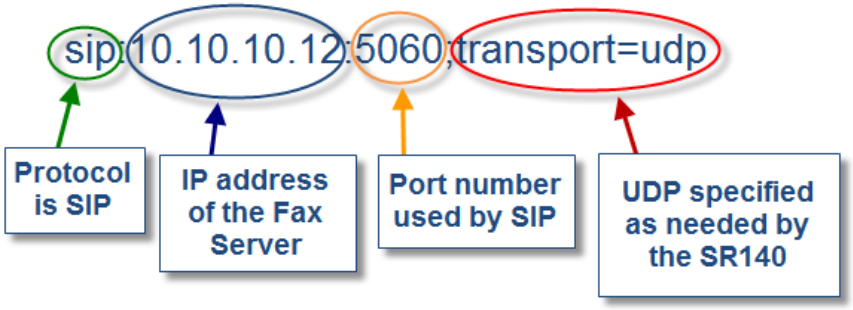
Note: Modify the script to reflect the appropriate Name and Address of your media gateway and PilotIndentifier to match a number in your hunt group.

Set up the UM mailbox policy for inbound faxing

```
New-UMMailboxPolicy -Name MP -UMDIalPlan DP
Set-UMMailboxPolicy MP -AllowFax $true -FaxServerURI
"sip:10.10.10.12:5060;transport=UDP"
```

Note: Modify the script to reflect the appropriate FaxServerURL.

Figure 32



Associate a UM dial plan to the Exchange server

```
Set-UMServer <ExchangeServer'sName> -Dialplans DP
```

Configuring a receive connector for Fax Server authentication

```
New-ReceiveConnector -Name RFconn -Custom -
RemoteIPRanges 10.10.10.12 -Bindings 0.0.0.0:25

Set-ReceiveConnector -Identity RFconn -AuthMechanism
ExternalAuthoritative -PermissionGroups
ExchangeServers -RequireTLS $False -EnableAuthGSSAPI
$False
```

Note: Modify the script to reflect the RemoteIPRanges as the IP address of the fax server.

Appendix: Setting AudioCodes MP-114 Configuration Settings to Work with Exchange 2010 UM

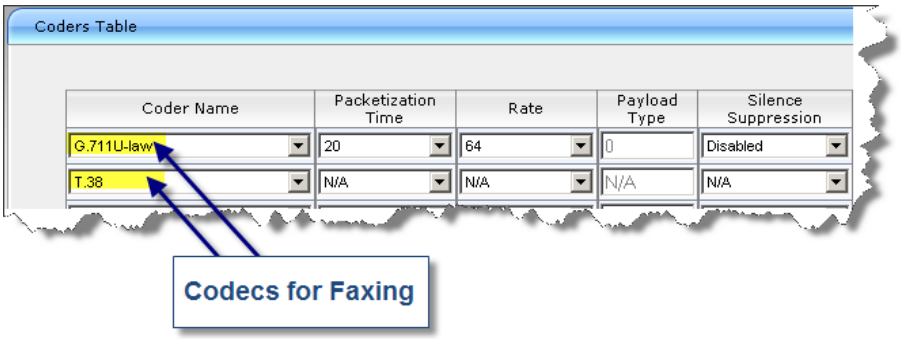
The following configuration reflects the settings that were configured to get AudioCodes MP-114 to work with Exchange 2010 UM. This section assumes that you are familiar with the MP-114 settings and is intended only as a guide in case you are having trouble getting the integration to work. The firmware used for these settings was 5.60A. 030.001.

Configuring the coders

Protocol Configuration > **Protocol Definitions** > **Coders**

- Coder Name: **G.711 U-law**
- Coder Name: **T.38**

Figure 33

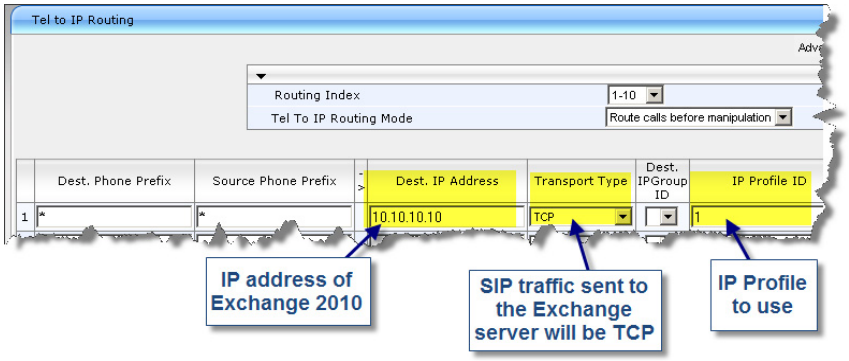


Configuring the routing table

Protocol Configuration > **Routing Tables** > **Tel to IP Routing**

- Dest. IP Address: **10.10.10.10** (IP address of the Exchange UM server)
- Transport Type: **TCP**
- IP Profile ID: **1** (Set to whatever profile you want)

Figure 34



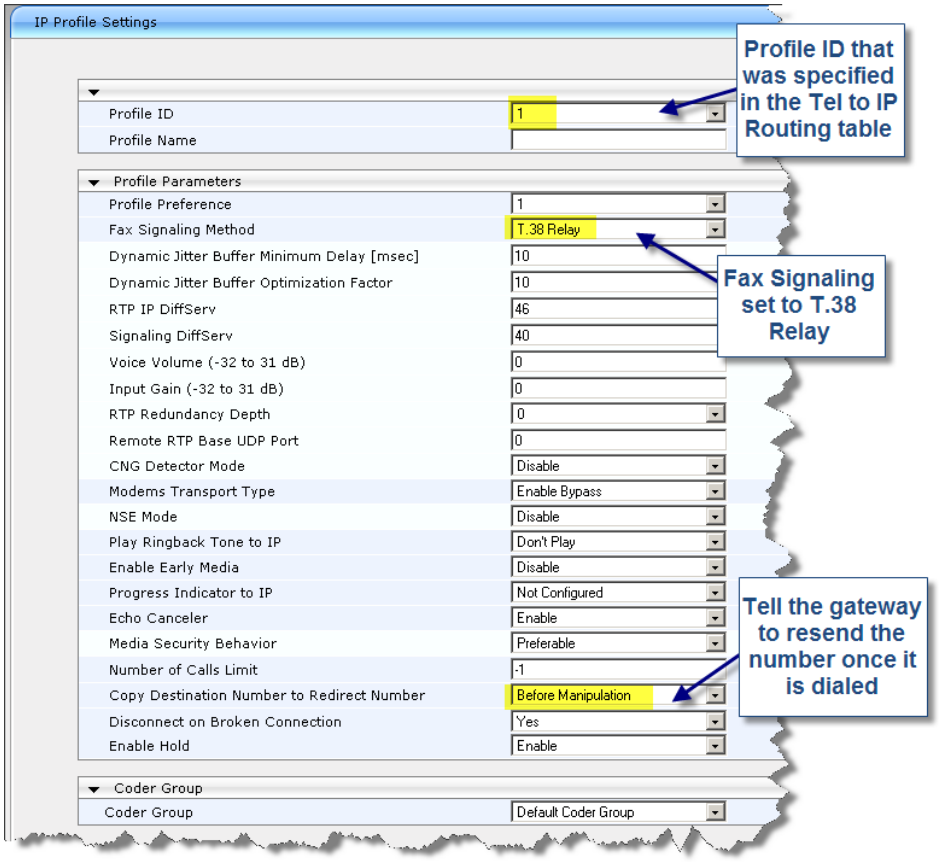
Configuring the IP profile

Protocol Configuration > **Profile Definitions** > **IP Profile Settings**

- Profile ID: **1**
- Fax Signaling Method: **T.38 Relay**
- Copy Destination Number to Redirect Number: **Before Manipulation**

Note: If this is not set, the media gateway will call the Exchange UM server and get stuck at the main menu. It will need to resend the number again to reach the user's UM mailbox.

Figure 35


IP Profile Settings
Profile ID
1
Profile Name
Profile Parameters
Profile Preference
1
Fax Signaling Method
T.38 Relay
Dynamic Jitter Buffer Minimum Delay [msec]
10
Dynamic Jitter Buffer Optimization Factor
10
RTP IP DiffServ
46
Signaling DiffServ
40
Voice Volume (-32 to 31 dB)
0
Input Gain (-32 to 31 dB)
0
RTP Redundancy Depth
0
Remote RTP Base UDP Port
0
CNG Detector Mode
Disable
Modems Transport Type
Enable Bypass
NSE Mode
Disable
Play Ringback Tone to IP
Don't Play
Enable Early Media
Disable
Progress Indicator to IP
Not Configured
Echo Canceler
Enable
Media Security Behavior
Preferable
Number of Calls Limit
-1
Copy Destination Number to Redirect Number
Before Manipulation
Disconnect on Broken Connection
Yes
Enable Hold
Enable
Coder Group
Coder Group
Default Coder Group
Profile ID that was specified in the Tel to IP Routing table
Fax Signaling set to T.38 Relay
Tell the gateway to resend the number once it is dialed

About Open Text

Open Text is a leader in Enterprise Content Management (ECM). With two decades of experience helping organizations overcome the challenges associated with managing and gaining the true value of their business content, Open Text stands unmatched in the market.

Together with our customers and partners, we are truly The Content Experts,™ supporting 46,000 organizations and millions of users in 114 countries around the globe. We know how organizations work. We have a keen understanding of how content flows throughout an enterprise, and of the business challenges that organizations face today.

It is this knowledge that gives us our unique ability to develop the richest array of tailored content management applications and solutions in the industry. Our unique and collaborative approach helps us provide guidance so that our customers can effectively address business challenges and leverage content to drive growth, mitigate risk, increase brand equity, automate processes, manage compliance, and generate competitive advantage. Organizations can trust the management of their vital business content to Open Text, The Content Experts.

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