

SMTP/X.400 Message Conversion

Using M-Switch MIXER to exchange and convert messages between SMTP and X.400

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Introduction

This guide details the process for setting up a MIXER email gateway, for conversion of messages between SMTP and X.400 based email systems, using Isode's M-Switch MIXER product. M-Switch MIXER is one of a family of email messaging products which comprises:

- M-Switch SMTP (SMTP Message Transfer Agent)
- M-Box (POP/IMAP Message Store)
- M-Switch X.400 (X.400 Message Transfer Agent)
- M-Store (X.400 Message Store)
- M-Switch MIXER (message gateway providing conversion between X.400 and Internet email according to the MIXER specifications)
- M-Switch Constrained Networks (Email Messaging for low-bandwidth and/or high-latency networks)
- Harrier Web (web based email client)

M-Switch products are widely deployed in the Government, Military, Intelligence, Civil Aviation and EDI markets.

Use of TLS: Due to UK Export Controls we are unable to provide Evaluation Licenses to certain Geographic regions that would allow the use of TLS so this guide will not configure any TLS. Should you wish to use TLS please contact your Account Manager and if you are located in an approved region we can provide a license (MAC Address of Server required) and additional instructions for configuring TLS.

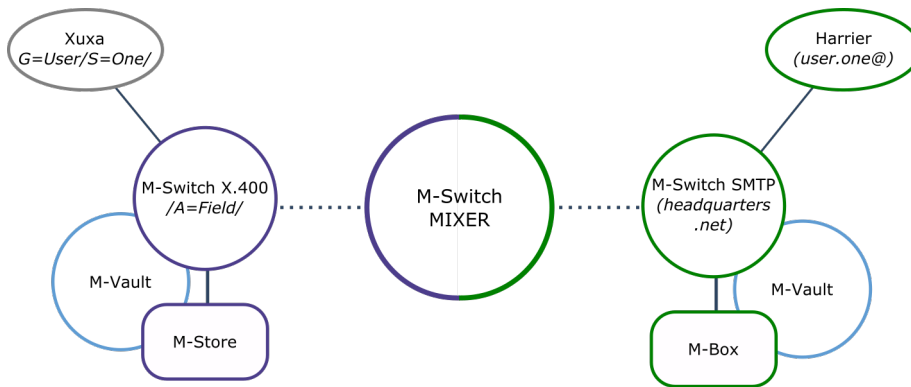
Objectives

By the end of this guide you will have:

1. Created an M-Switch MIXER gateway
2. Configured MIXER mappings between external SMTP and X.400 systems
3. Connected to an External SMTP Server
4. Connected to an External X.400 Server
5. Sent messages between the external servers, via the MIXER gateway

For objectives 3, 4 & 5 this guide assumes that the external SMTP server is the "headquarters.net" server set up as part of the separate "Setting up an SMTP Email System" evaluation guide and that the external X.400 server is the "PRMD=Local/ADMD=FIELD/C=GB/" server set up as part of the separate "Setting up an X.400 Email System" evaluation guide.

The diagram that follows show the complete system that results from completing all 5 objectives of this guide:



For the purposes of this evaluation we have assumed this is a "clean" installation of M-Switch MIXER on to a physical or virtual machine. If you have previously installed an M-Switch product on the hardware or VM you are using for this evaluation, please make sure you have completely uninstalled that version before proceeding.

Using Isode Support

You will be given access to Isode support resources when carrying out your evaluation. Any queries you have during your evaluation should be sent to support@isode.com. Please note that web-based ticket submission and tracking is not available to evaluators.

Preparation

You should visit www.isode.com/products/supported-platforms.html to discover which operating systems are supported for Isode evaluations. Please note that in addition to the server platforms listed, we support the use of Isode servers on Windows 8, Windows 8.1 and Windows 10 for simple evaluations and demonstrations.

Isode Products

Product downloads are held in a password-protected section of the Isode website. If you have not already done so you should apply for a username/password by filling in the form located at www.isode.com/evaluate/evalrequest.html.

Products can be obtained by clicking on the links in the “Download Links” section of the Directory evaluation page (www.isode.com/evaluate/evaluate-email.html). The downloads page will give installation instructions specific to your platform.

Product Activation Key

Isode server products require a valid Product Activation Key from Isode before they will run correctly. Keys are issued by Isode Customer Services. If you haven't already been sent a Key when requesting access to the evaluation files, please send a message to request one to support@isode.com remembering to specify which Isode server products you need a Key for.

By default, the file you receive needs to be placed in `\Isode\etc\` (Windows) or `/etc/isode/` (Linux), renamed as 'license.dat'. You may have chosen an alternative installation directory when installing the software, in which case you will have to place the license file there.

External SMTP and X.400 Servers

You will need to have access to external SMTP and X.400 servers in order to complete this evaluation.

This guide assumes that the external SMTP server is the “*headquarters.net*” server set up as part of the separate “Setting up an SMTP Email System” evaluation guide and that the external X.400 server is the “*PRMD=Local/ADMD=FIELD/C=GB/*” server set up as part of the separate “Setting up an X.400 Email System” evaluation guide.

If you are, instead, using different external systems you should substitute their details for the defaults in this guide as appropriate.

The M-Switch MIXER Server also requires an Internet Domain and an X.400 Address Space. In this guide we will use the same Internet Domain “*headquarters.net*” as the External SMTP system and the X.400 Address Space of “*/P=Local/A=Headquarters/C=GB/*”.

Create a Messaging Configuration using MConsole

In this section you'll use MConsole to create a Directory Server to hold the messaging system configuration.

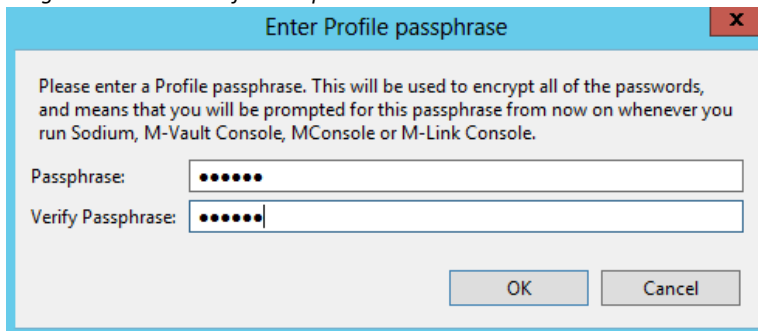
Starting MConsole

In Windows locate the MConsole program icon and select it. On Linux execute the following command:

```
% /opt/isode/bin/mconsole
```

When MConsole starts, click on [Yes] when asked to confirm the encryption of your bind profile. Enter a Profile Passphrase when prompted (making a note of this), click on [OK] to submit and [OK] again when the encryption confirmation is displayed.

Image 1: Enter Bind Profile Passphrase



Creating a new Directory Server

In the **Welcome to Message Console** screen (Image 2) select the “Create a new DSA and Messaging Configuration” option, click [OK] and then provide an Initial Directory User Name (Image 3). This can be any name, this guide uses “Messaging Admin”.

Image 2: MConsole Welcome Screen

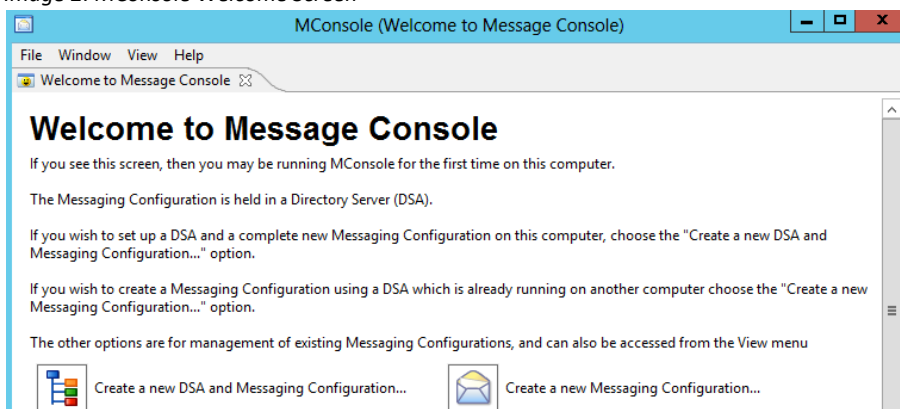
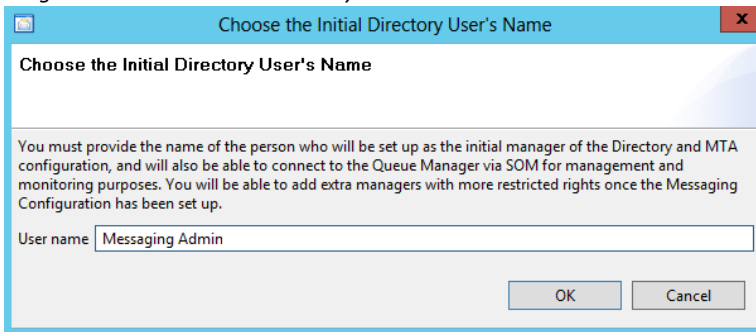
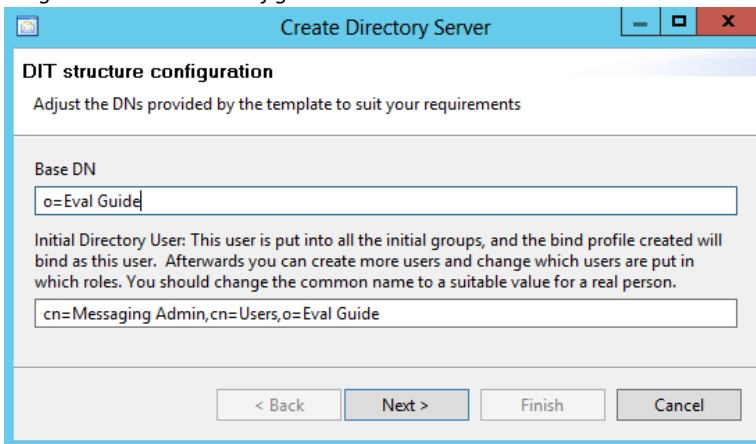


Image 3: Choose the Initial Directory User's Name



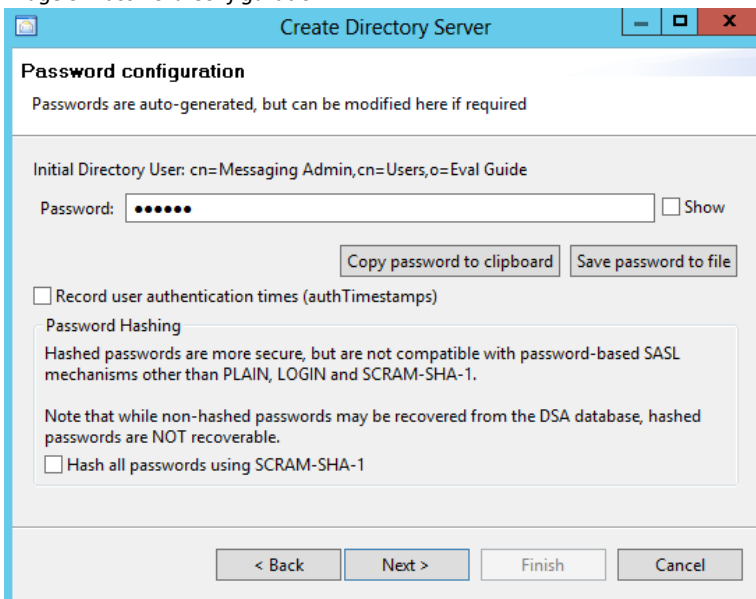
You now need to choose a top level Directory Server DN for your installation, this can be any "o="any name", it defaults to "o=messaging". This guide uses "o=Eval Guide". Click [Next].

Image 4: DIT Structure Configuration



In the Password Configuration screen, set a password and then click [Next].

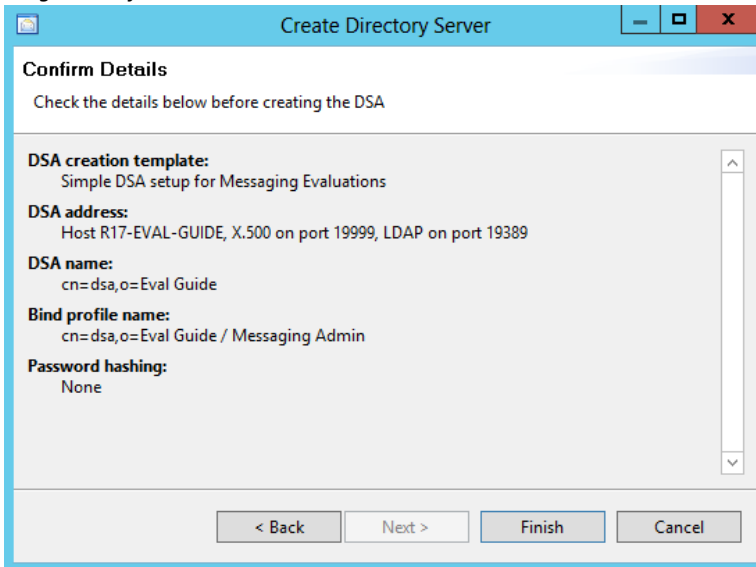
Image 5: Password Configuration



In the next two screens **Bind Profile Names and Filesystem Location and Address Configuration**, use the suggested values and click [Next] through both screens before reaching the **Confirm Details** screen.

Click on [**Finish**] here (Image 6) and the DSA will be created and started.

Image 6: Confirm Details



Create a New Messaging Configuration

After the creation of the DSA, MConsole will prompt you to create a new messaging configuration.

Highlight the "o=Field" entry, click [**Next**] and then select "X.400 and SMTP (M-Switch MIXER)" when prompted for a messaging configuration type.

Image 7: Create a new MHS Configuration

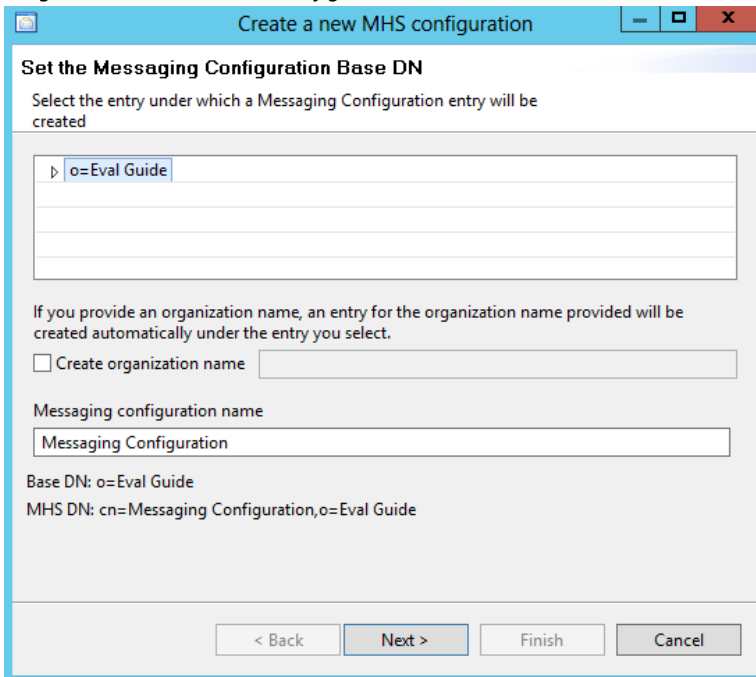
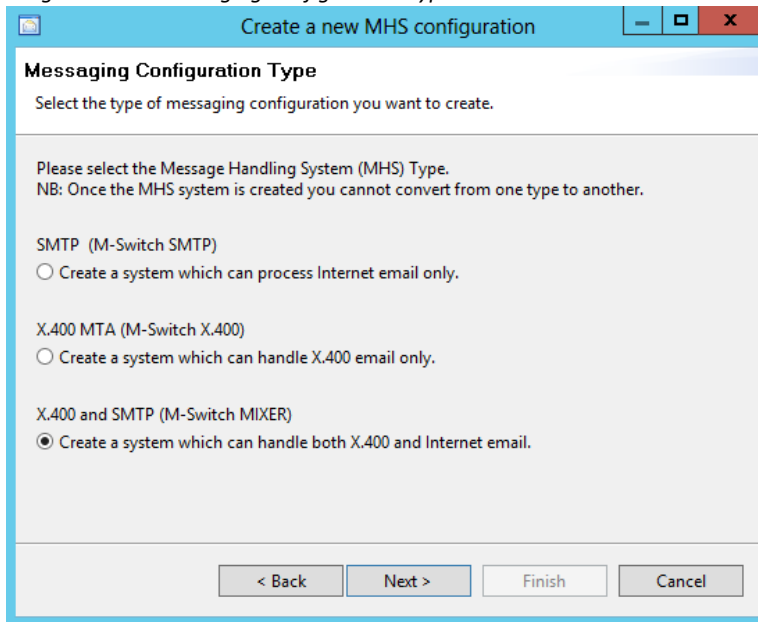


Image 8: Select Messaging Configuration Type



Click [Next] and MConsole will prompt for a Market Segment choice (Image 9). If you are creating a Military messaging system choose “Military (STANAG 4406)” and check both ACP127 and ACP142 options, otherwise choose “General Purpose” and click [Next]. Fill in the Hostname screen (Image 10) and click [Next] again.

Image 9: Market Segment Choice

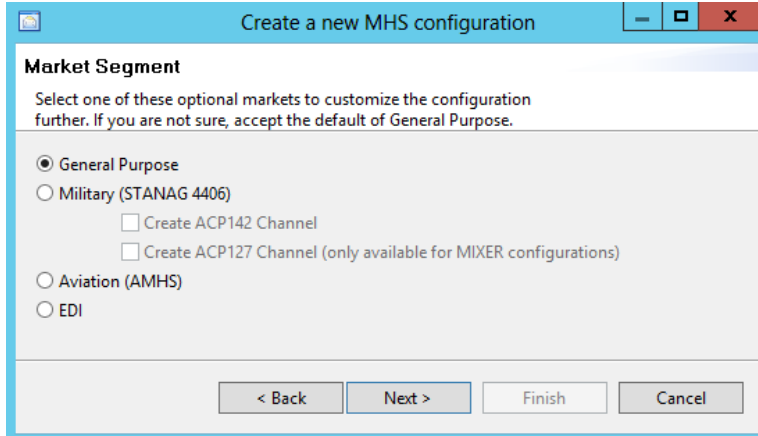
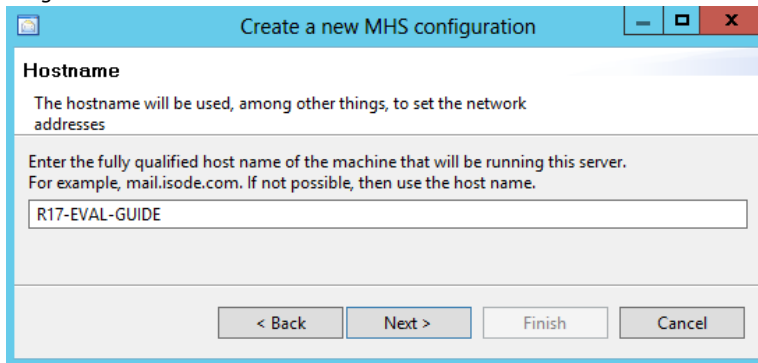
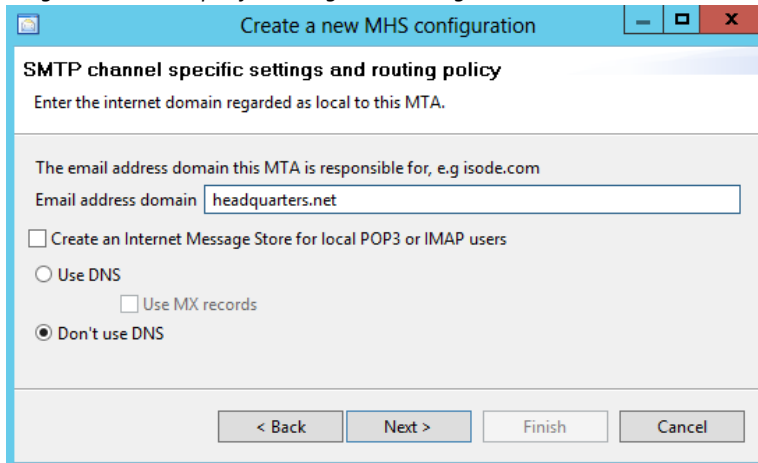


Image 10: Hostname



You'll now be asked (Image 11) to enter an email address domain, in this guide we'll use "headquarters.net". Unless you have DNS set up for this domain, select "Don't use DNS". As this MIXER gateway does not itself host local users, leave the "Create an Internet Message Store..." option unticked.

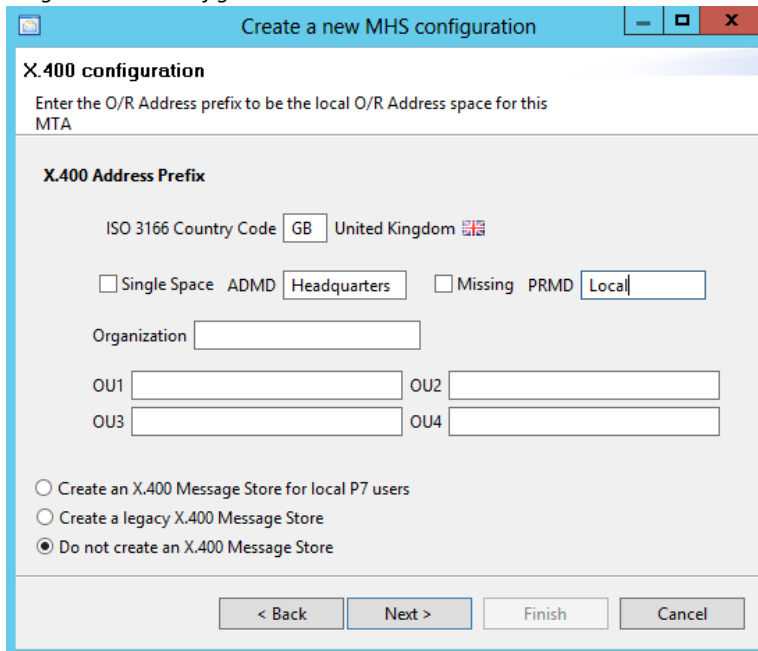
Image 11: Channel Specific Settings and routing



Click [Next], accept the defaults values in the **Administrator Authentication Details** screen and click [Next] again.

In the **X.400 Configuration** screen (Image 12), enter your Local X.400 Address Space (in this guide we are using /P=Local/A=Headquarters/C=GB/). Ensure that the "Do not create an X.400 Message Store" radio button is checked before clicking [Next].

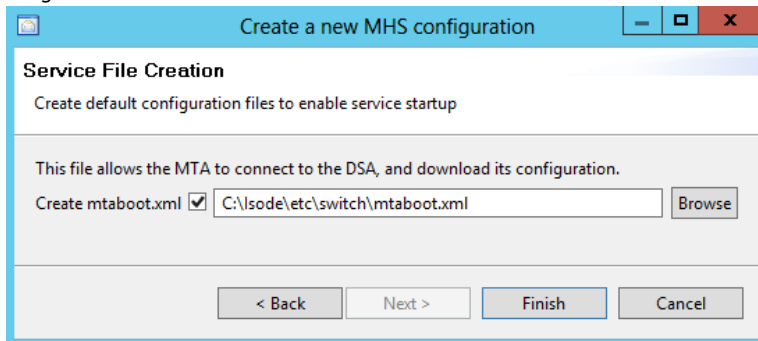
Image 12: X.400 Configuration



In the **Anti-Virus Configuration** screen, select the “None” radio button. We recommend not enabling this feature for evaluations, it can be added at a later stage if required.

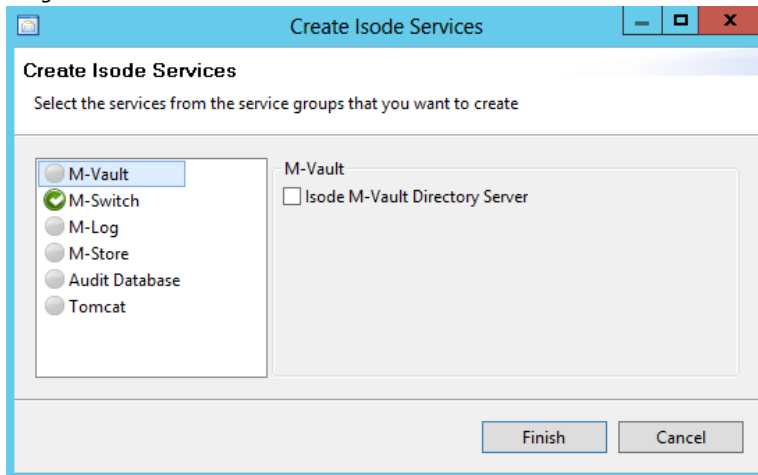
Click [Next] and accept the defaults on the **Service File Creation** screen (Image 13) before clicking [Finish].

Image 13: Service File Creation



In the Create Isode Services screen, ensure that the M-Switch services is selected (Image 14) and then click [Finish] to be dropped back into the main MConsole screen.

Image 14: Create Isode Services

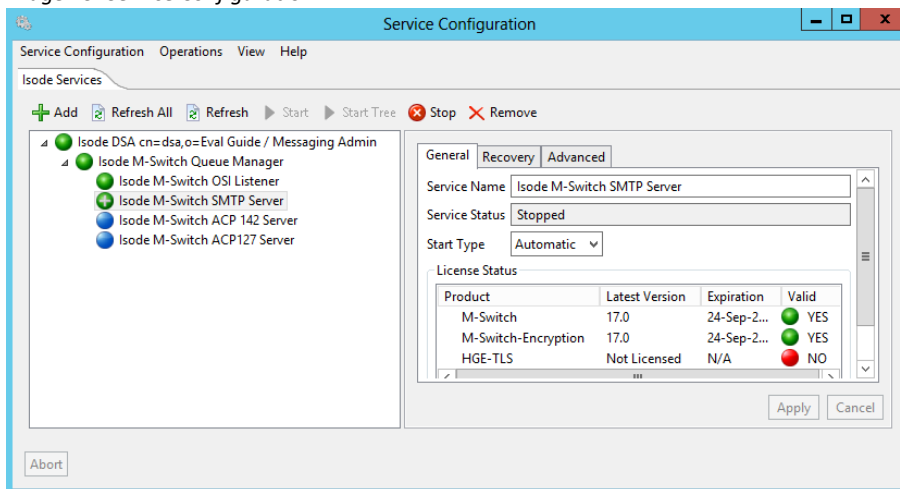


Start Services

You should now start the services for the installed products. On Windows select the “Isode Service Configuration Tool”.

In the Service Configuration GUI, ensure that all services are set to a Start Type of “Automatic”. Then select “Start All” from the Operations menu. Once your service configuration matches that in Image 15, you can close the service configuration GUI.

Image 15: Service Configuration

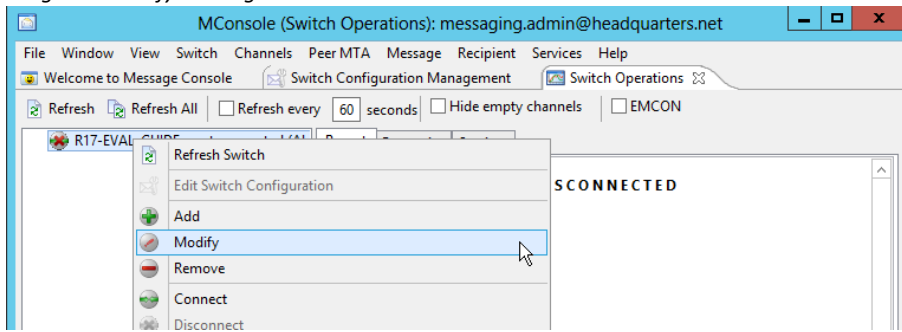


On Linux execute the following commands:

```
# /etc/init.d/pp start
```

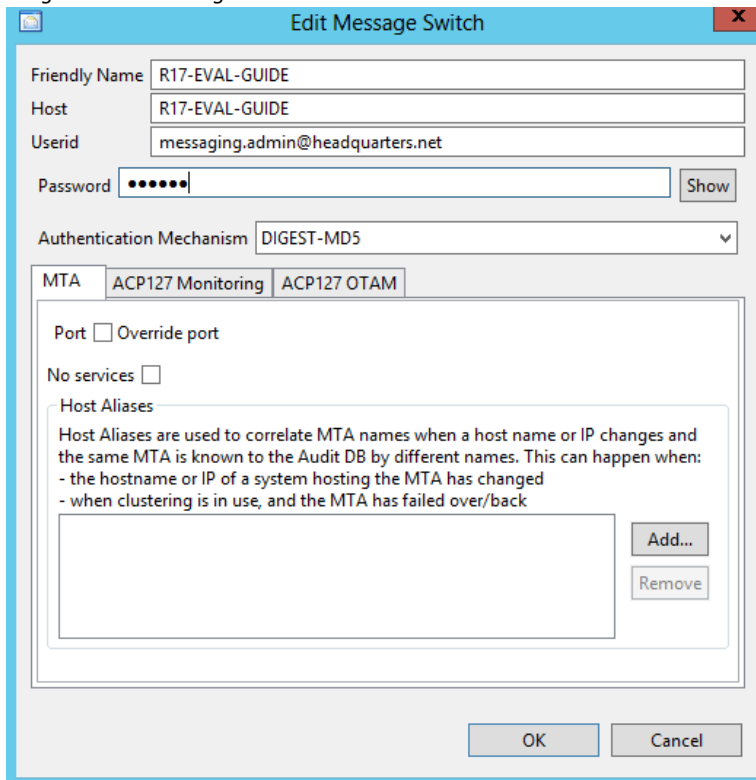
Now return to MConsole and select “View > Live Operations > Switch Operations”. Dismiss the Error dialog box and right-click on the MTA with the Red “X” next to it (R17-EVAL-GUIDE in this example) and select “Modify”.

Image 16: Modify Message Switch



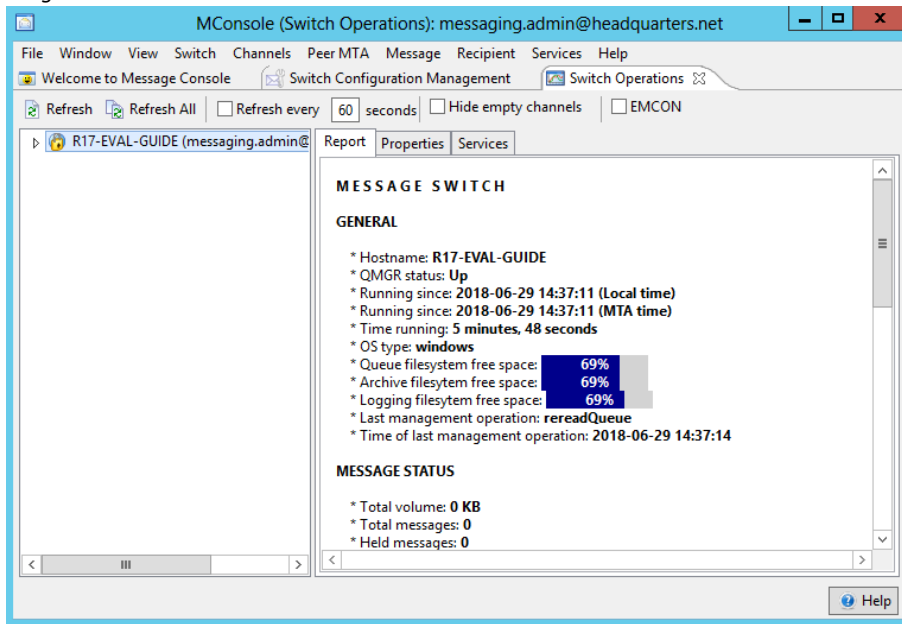
In the **Edit Message Switch** screen, change the password to the one you created for the Initial Directory User “Messaging Admin” and click [OK].

Image 17: Edit Message Switch



Back in the main MConsole screen, right-click on the MTA again and select “Connect”.

Image 18: MTA Connected



You have now completed the core configuration of your M-Switch MIXER Server. Follow the relevant sections below for any further configuration required.

Connect to External SMTP and X.400 MTAs

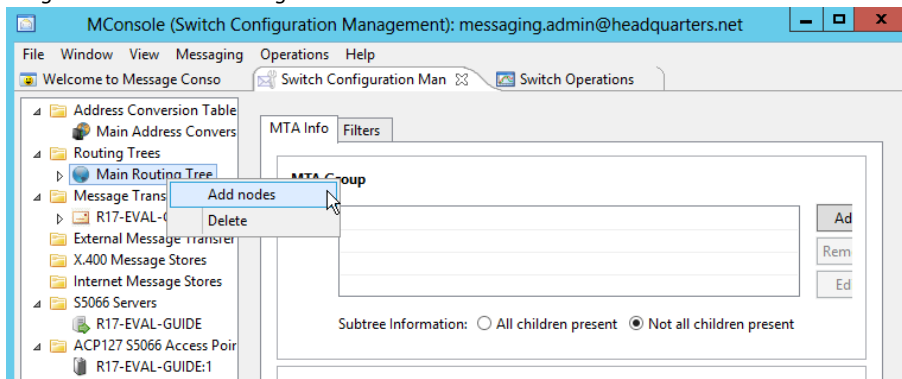
You have now completed the core configuration of the M-Switch MIXER Gateway. In this next section you are going to connect this gateway to external SMTP and X.400 MTAs.

For the purposes of this guide, we have assumed that the external MTAs are those created as part of the “Setting up an SMTP Email System” and “Setting up an X.400 Email System” guides. If you are connecting to different systems, please substitute connection details as appropriate.

Connect to an External SMTP System

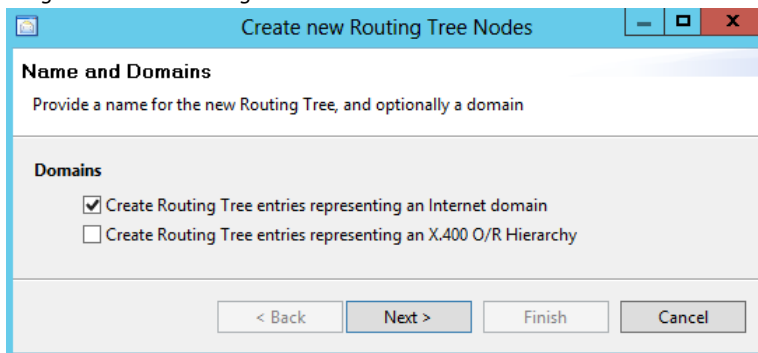
Within MConsole, select the **Switch Configuration Management** view, and right-click on the Main Routing Tree and select “Add Nodes”.

Image 19: Add SMTP Routing Tree Node



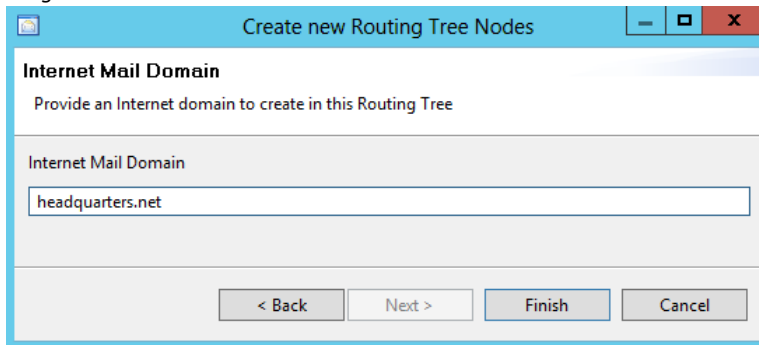
In the Names and Domains screen (Image 20) ensure that only the “Create Routing Tree entries representing an Internet domain” option is checked before clicking [**Next**].

Image 20: Create Routing Tree Nodes – Names & Domains



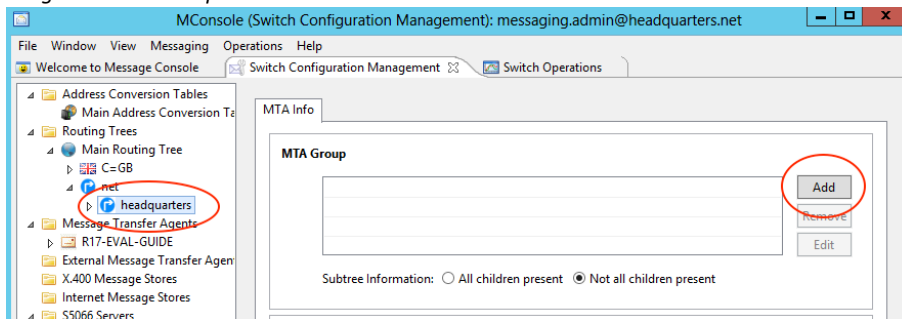
In the Internet Mail Domain screen (Image 21), enter the value of “headquarters.net” and click [**Finish**].

Image 21: Internet Mail Domain



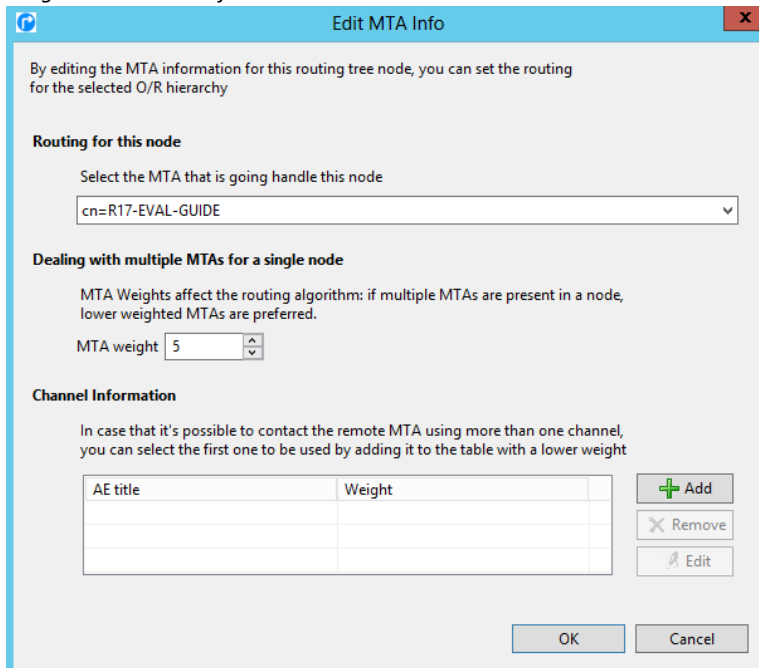
Now, back in the main MConsole screen, select the newly created “headquarters” node and, on the MTA Group pane click [Add].

Image 22: MTA Group



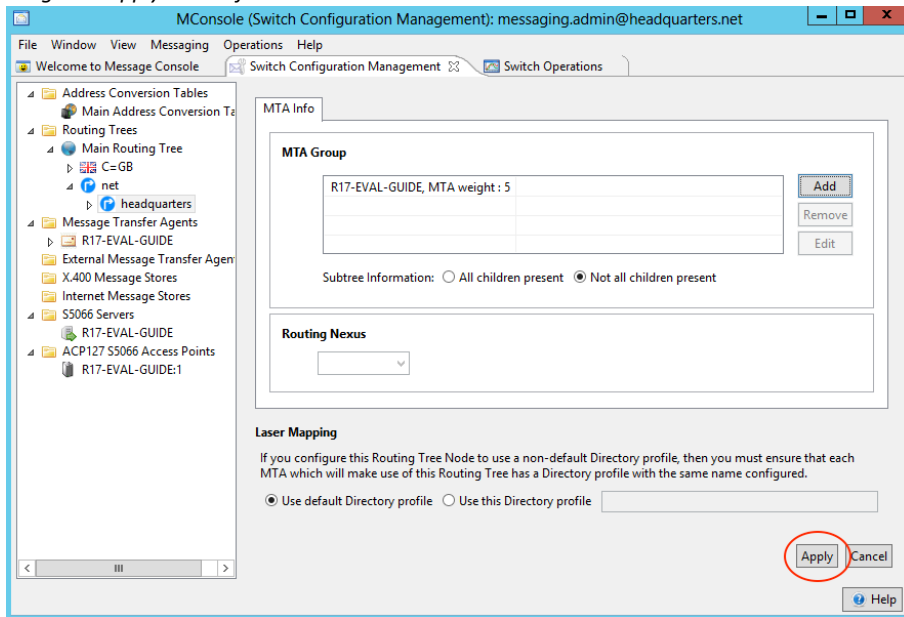
In the Edit MTA Info screen (Image 23), select the local MIXER gateway you’ve created “cn=R17-EVAL-GUIDE” from the dropdown list and click [OK].

Image 23: Edit MTA Info



Back in the main MConsole screen, click on [Apply].

Image 24: Apply MTA Info



Now right-click on “External Message Transfer Agents” and select “New External MTA” (Image 25) and then select the “Internet” radio button (Image 26) before clicking [Next].

Image 25: New External MTA

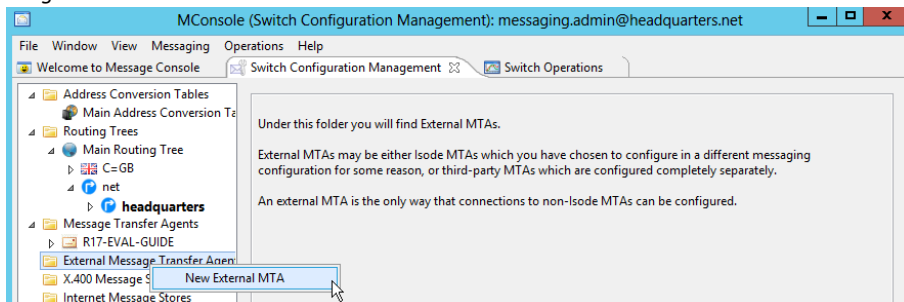
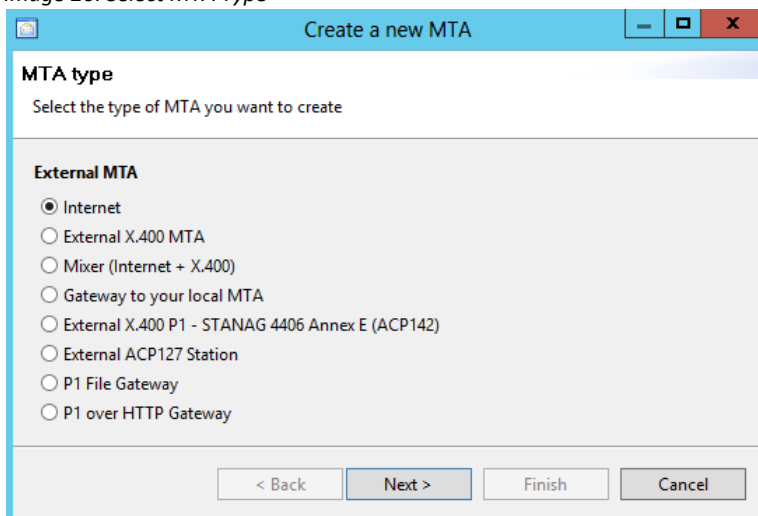
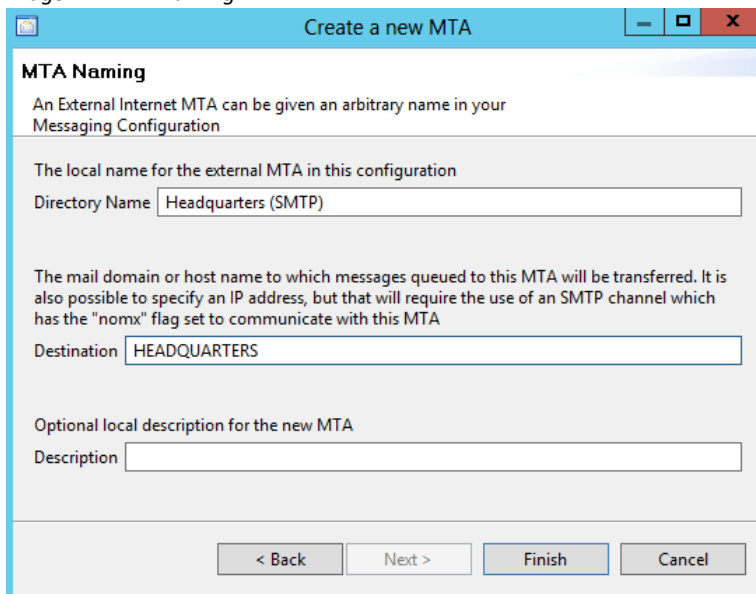


Image 26: Select MTA Type



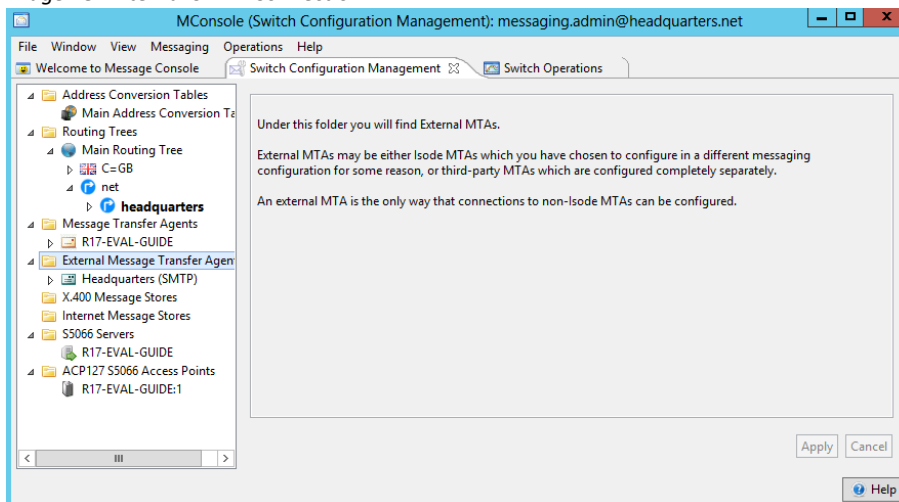
In the **MTA Naming** screen, you can choose any free text description for the Directory Name field. In Image 27, “Headquarters (SMTP)” is used. The Destination field needs to contain the hostname or IP Address of the External SMTP server, in this example the hostname of “HEADQUARTERS” has been used.

Image 27: MTA Naming



Click on **[Finish]** to be dropped back into the main MConsole interface. The connection to an External SMTP system is now complete.

Image 28: External SMTP Connection



Connect to an External X.400 System

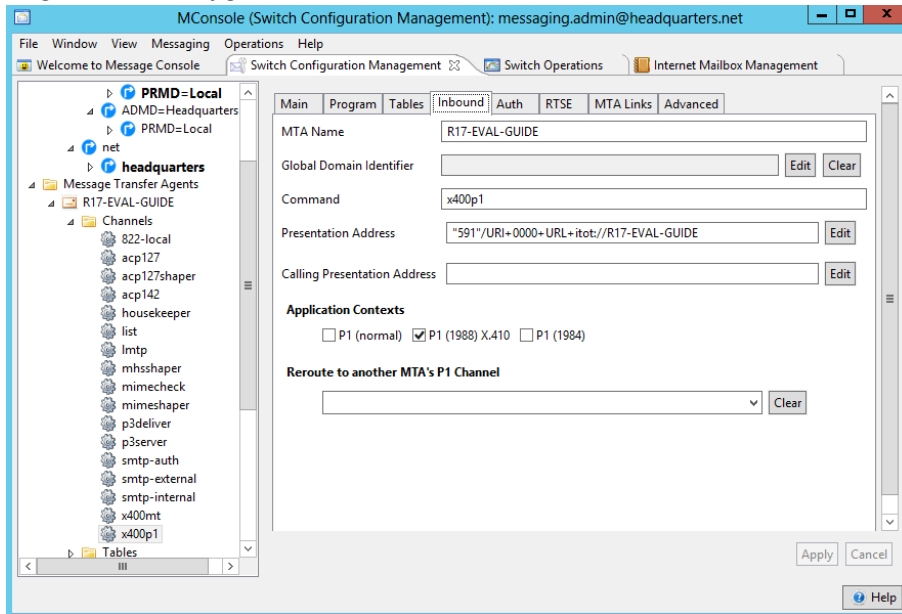
Before beginning this section, please ensure you have the following information to hand about the external X.400 MTA you wish to connect to (the values being used in this guide are in brackets):

- MTA Name (R17-EVAL-GUIDE)
- MTA Password (secret)
- IP Address or Fully Qualified Hostname of the X.400 MTA (R17-EVAL-GUIDE or 172.20.1.172)
- The port that X.400 P1 listens on (102)
- Details of the Presentation (Not used), Session (Not used) and Transport Selectors (IA5 “591”) used

The MTA Name will default to the hostname of the Server (R17-EVAL-GUIDE) but you will need to change the MTA passwords.

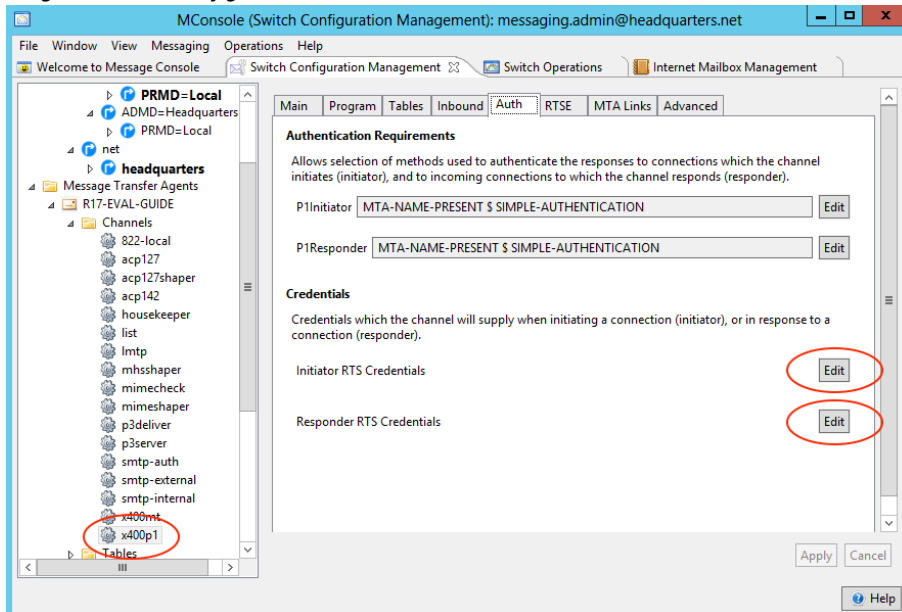
From the **Switch Configuration Management** view expand your local MTA, and then expand the "channels" and select the "x400p1 channel" and the "Inbound" tab. Here you'll see the MTA Name and Presentation Address (Image 29).

Image 29: Switch Configuration – Inbound



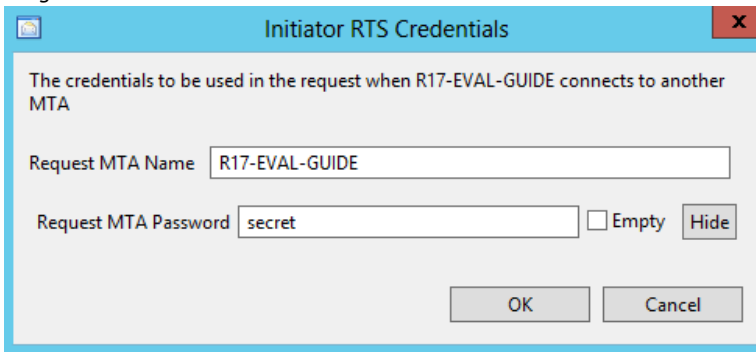
Now select the Auth Tab and click on [Edit] next to "Initiator RTS Credentials".

Image 30: Switch Configuration – Auth



Change the Request MTA Password field to "secret" (Image 31), click [OK] and then repeat this process for the "Responder RTS Credentials".

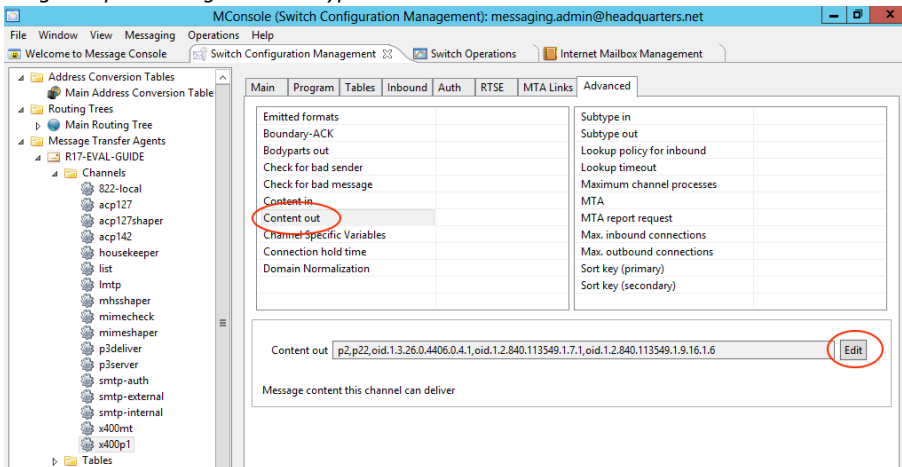
Image 31: Initiator RTS Credentials



By default, the x400p1 channel also supports the "pct" signed message content type. A MIXER Gateway will try and convert this content type and will fail so, at this point, we should remove that content type.

On the "x400p1" Channel select the "Advanced" Tab and "Content out". Now click on the [Edit] button.

Image 32: pct Message Content Type



In the **Content Editor** (Image 33), uncheck the "pct" message type and click [OK] and then click [Apply] in the main MConsole screen (Image 34).

Image 33: Content Editor

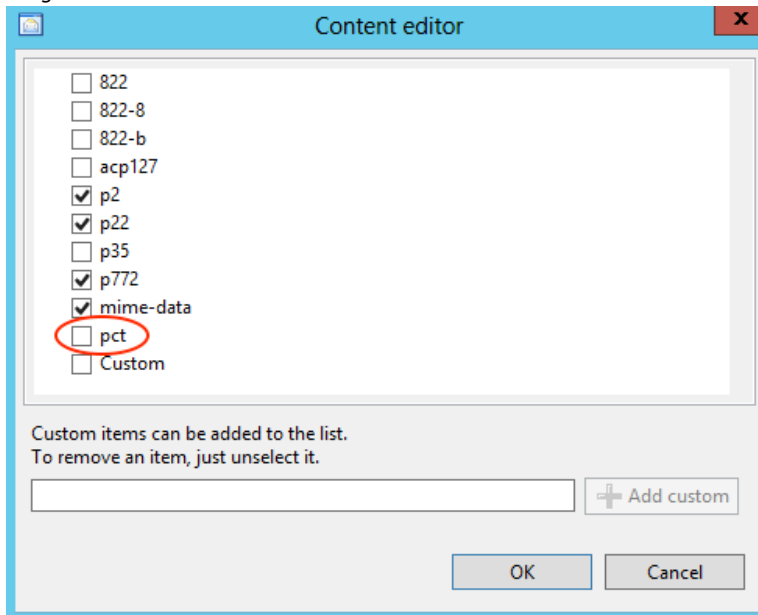
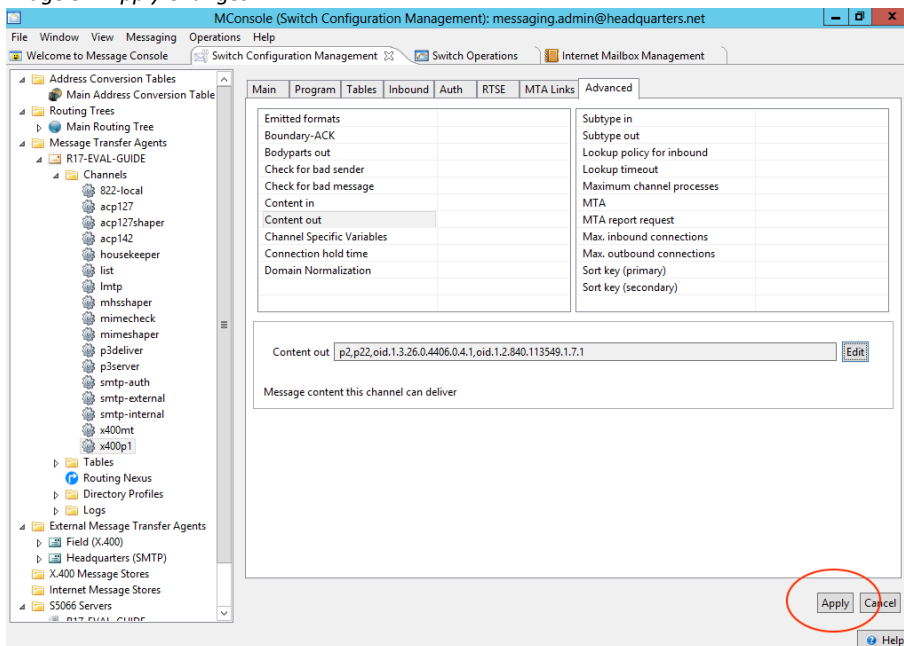


Image 34: Apply Changes

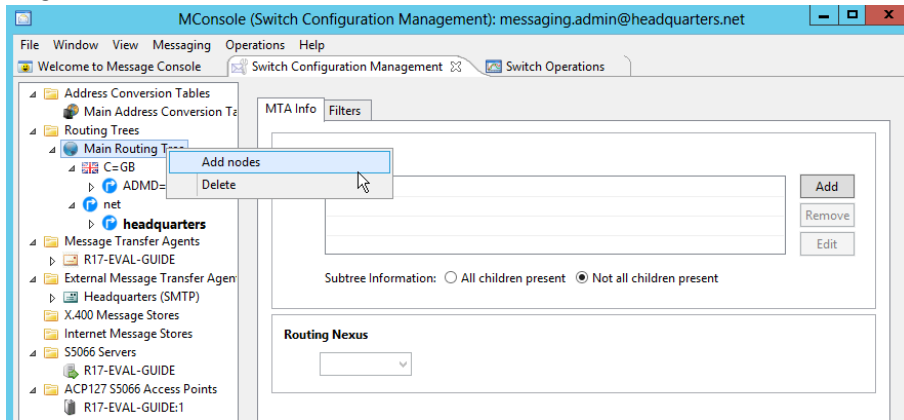


The External MTA now needs to be given information about the MIXER server it is connecting to. For our External MTA we will use the settings in the “Setting up an X.400 Email System” guide, as follows:

- MTA Name (FIELD)
- MTA Password (secret)
- IP Address of Fully Qualified Hostname of the X.400 Server (172.20.1.140)
- The Port that X.400 P1 listens on (102)
- Details of the Presentation (Not used), Session (Not used) and Transport Selectors (IA5 “591”) used

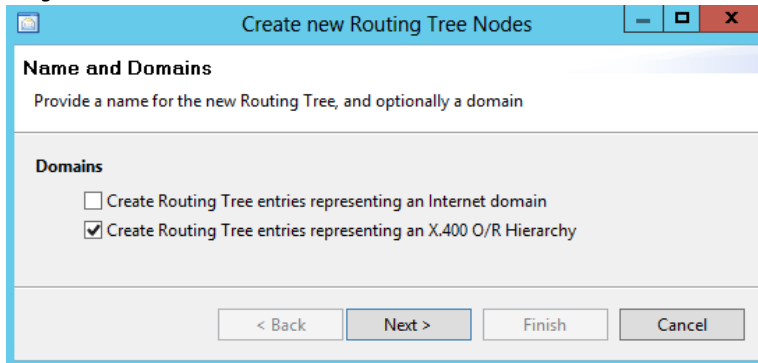
In the **Switch Configuration Management** view, right-click on the Main Routing Tree and select **[Add Nodes]** (Image 35).

Image 35: Add Nodes



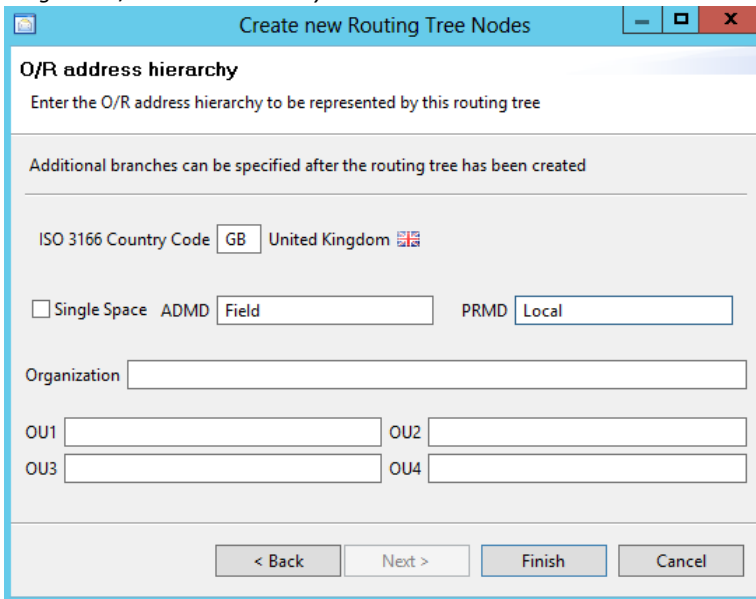
In the **Names and Domains** screen (Image 36) ensure that only the “Create Routing Tree entries representing an X.400 O/R Hierarchy” is checked and click **[Next]**.

Image 36: Names and Domains



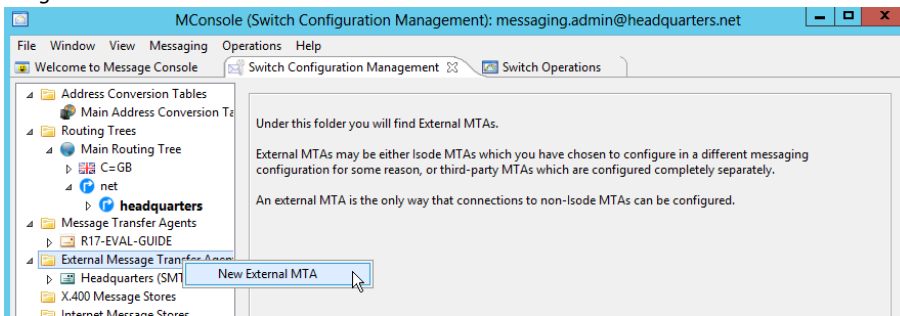
In the **O/R address hierarchy** screen (Image 37) enter the X.400 Address Space for your External MTA, in this example `/PRMD=Local/ADMD=Field/C=GB/` and click on **[Finish]**.

Image 37: O/R Address Hierarchy



Back in the main MConsole screen, right-click on “External Message Transfer Agents” (Image 38) and select “New External MTA”.

Image 38: New External MTA



In the **MTA Type** screen select the External X.400 MTA radio button and click [**Next**]. In the **MTA Naming** screen (Image 39) enter the values you have for “MTA name in protocol”, “Fully Qualified Hostname” (or IP address). The Directory Name is free text and should be something that will help you easily identify the MTA.

Image 39: MTA Naming

The screenshot shows a window titled "Create a new MTA" with a tab labeled "MTA Naming". The window contains the following fields and instructions:

- MTA Naming**: MTAs can be named in a number of different ways, depending on the context.
- The MTA Name, to be used in protocols (like X.400 P1 binds)**: MTA name in protocol
- The host name or IP address of the system on which the MTA will run**: Fully Qualified Hostname
- The local Directory Name in this configuration (defaults to MTA Name)**: Directory Name
- Optional local description for the new MTA**: Description

At the bottom of the window are four buttons: "< Back", "Next >", "Finish", and "Cancel".

Now select that part of the routing tree you created earlier for this MTA (Image 40) and click on [Next].

Image 40: Create a new MTA

The screenshot shows a window titled "Create a new MTA" with a tab labeled "Default O/R address prefix for the MTA". The window contains the following fields and instructions:

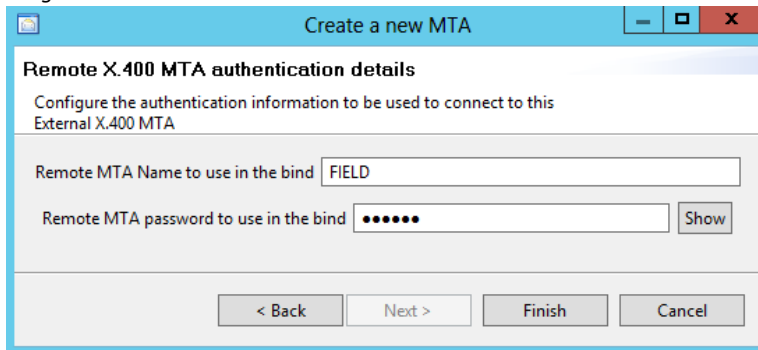
- Default O/R address prefix for the MTA**: Routing is setup for this address prefix. Components are used for the MTA's Global Domain Identifier.
- Choose a Routing or Address Conversion Table. Use the tree navigation tool to select a partial or complete O/R address, and then modify this value if necessary via the Edit button.**: A dropdown menu shows "cn=Main Routing Tree,cn=Messaging Configuration,o=Eval Guide".
- Tree Navigation**: A tree view shows the following structure:
 - Main Routing Tree
 - C=GB
 - ADMD=Field
 - PRMD=Local (highlighted)
 - ADMD=Headquarters
 - net

- Selected O/R Address**: O/R Address

At the bottom of the window are four buttons: "< Back", "Next >", "Finish", and "Cancel".

Enter the "MTA Name" and "Password" (Image 41) and click on [Finish].

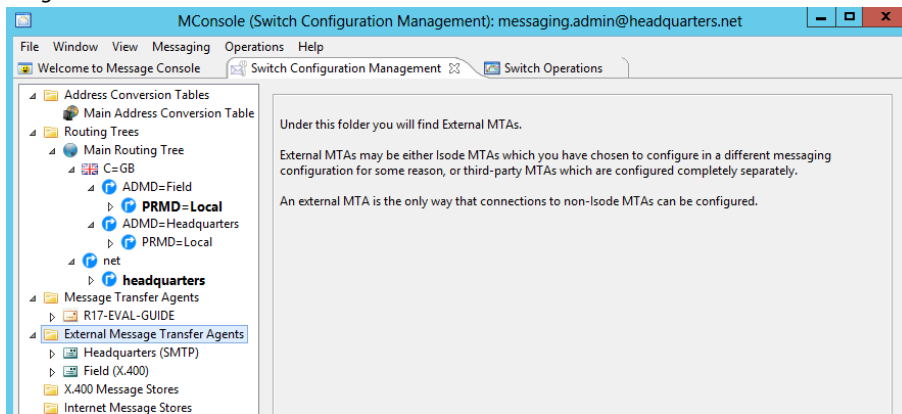
Image 41: Create a new MTA



You'll now be dropped back into the main MConsole interface where you'll be able to see (Image 42) the three MTAs all displayed:

1. The local MIXER MTA ("R17-EVAL-GUIDE")
2. The Remote SMTP MTA ("Headquarters")
3. The Remote X.400 MTA ("Field")

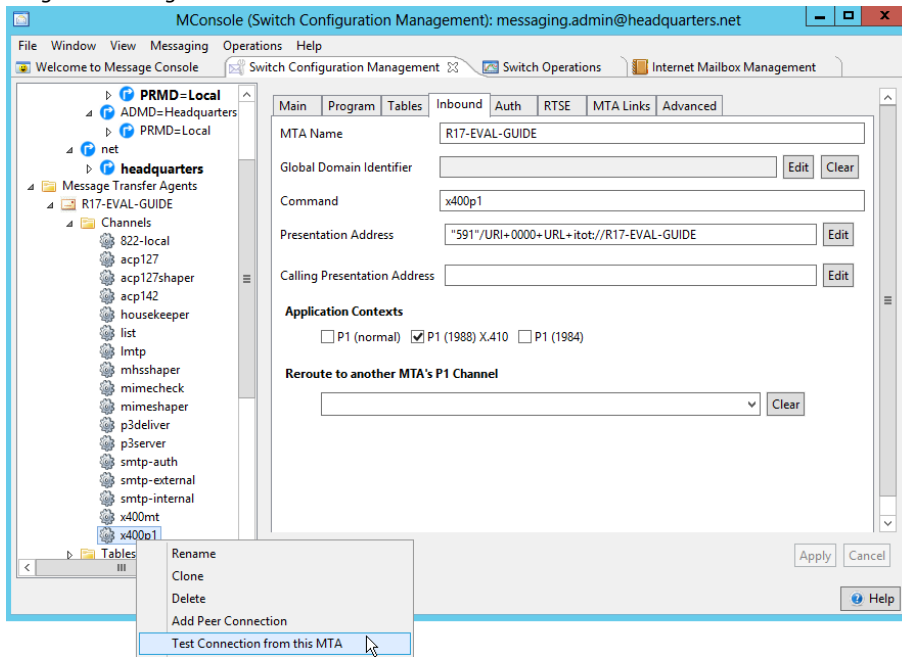
Image 42: Local and External MTAs



Testing the Connection

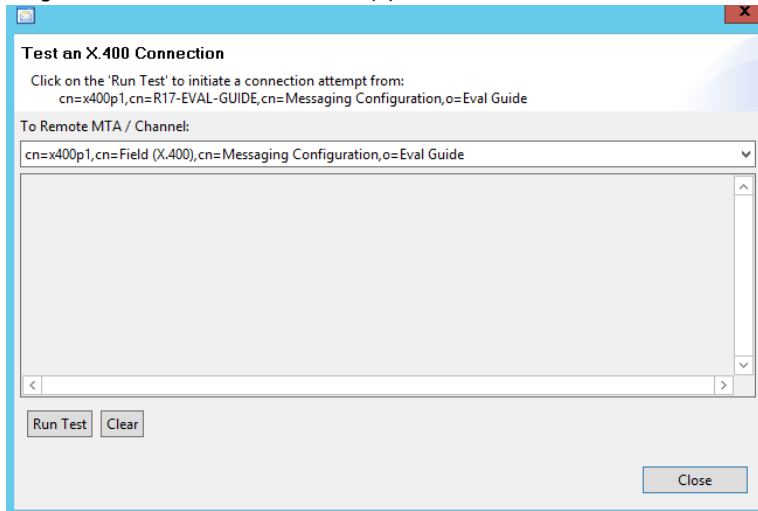
To test the connection, expand your Local MTA (R17-EVAL-GUIDE), right-click on the "x400p1" channel and select "Test Connection from this MTA" (Image 43).

Image 43: Testing the Connection



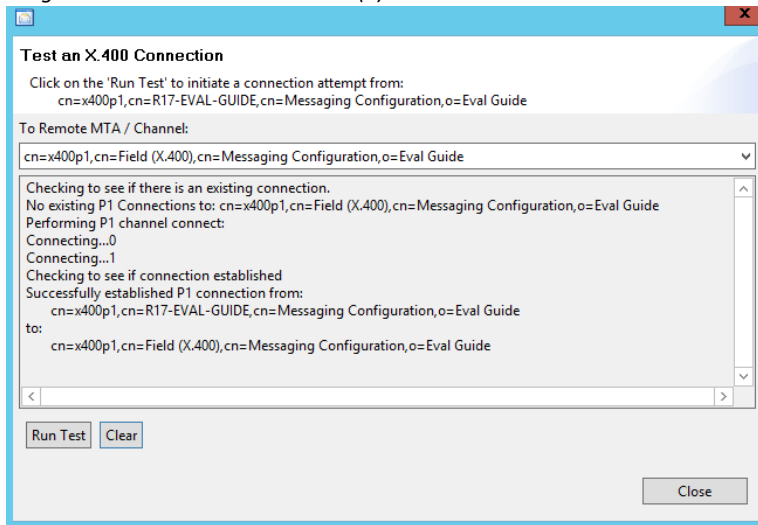
Select the External MTA you have just created a connection to and select [**Run Test**].

Image 44: Test and X.400 Connection (1)



You should see the Connection "Successfully established" (Image 45). You have now created a connection to your External X.400 MTA and tested that connection.

Image 45: Test an X.400 Connection (2)



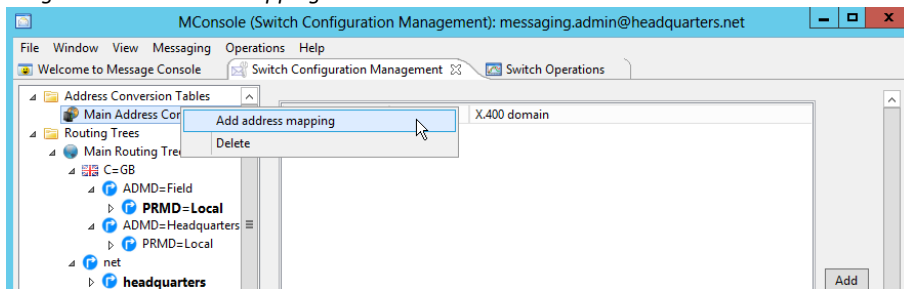
Configure MIXER Mappings

MIXER Converts between Internet Messages & Addresses and X.400 Messages & Addresses in both directions.

The mapping between Internet and X.400 can be done on a per domain or per user basis. For the purposes of this Evaluation Guide we will use per user mapping.

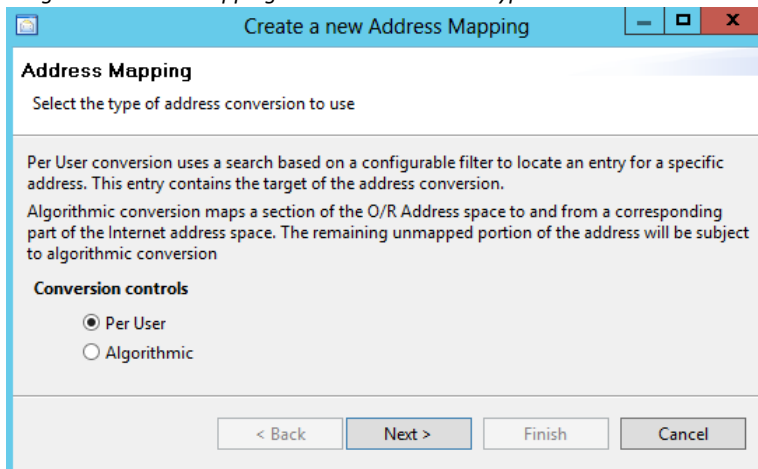
In **Switch Configuration Management** view right-click on "Main Address Conversion Table" and select "Add address mapping" (Image 46).

Image 46: Add Address Mapping



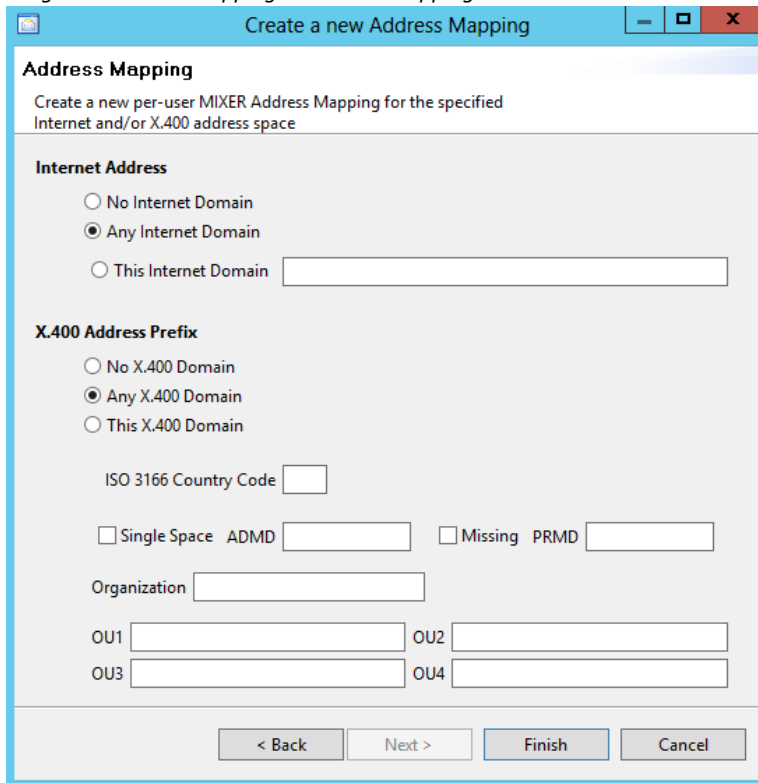
In the **Address Mapping** screen (Image 47) select "Per User" and click [Next].

Image 47: Address Mapping – address conversion type



In the the following screen (Image 48) leave the defaults as "Any Internet Domain" and "Any X.400 Domain" and click [Finish].

Image 48: Address Mapping – Per User Mapping



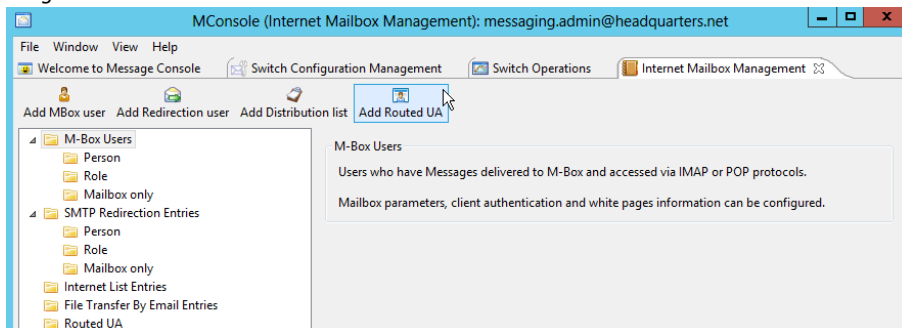
You now need to configure "Routed UA Users" for the Users that are local to your External Internet and External X.400 MTAs

We will map the following Addresses:

- *user.one@headquarters.net* to */G=User/S=One/PRMD=Local/ADMD=Headquarters/C=GB/*
- */G=User/S=One/PRMD=Local/ADMD=Field/C=GB/* to *user.one@field.net*

Select "View > Configuration > Internet Mailbox Management" from the main MConsole menu and click on the [Add Routed UA] button (Image 49).

Image 49: Add Routed UA



In the **Internet Address and domain** screen (Image 50) enter the Internet email address. For the External SMTP MTA user, the Mail Host is the hostname or IP address of that MTA.

Image 50: Internet Address and domain

Click [OK] when asked if you wish to create an entry in the DSA for this user.

Now you need to add the X.400 Address Mapping for this User. With the new user highlighted, select the "MIXER" tab and click the [Edit] next to the X.400 Address field (Image 51).

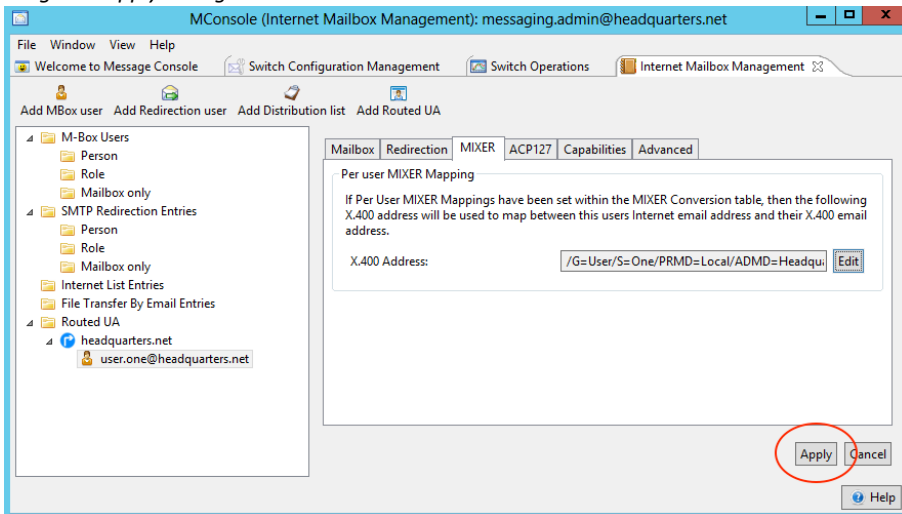
Image 51: MIXER Mapping

In the O/R Address Editor screen enter the X.400 Address you wish to map user.one@headquarters.net to (Image 52) and click [OK].

Image 52: O/R Address Editor

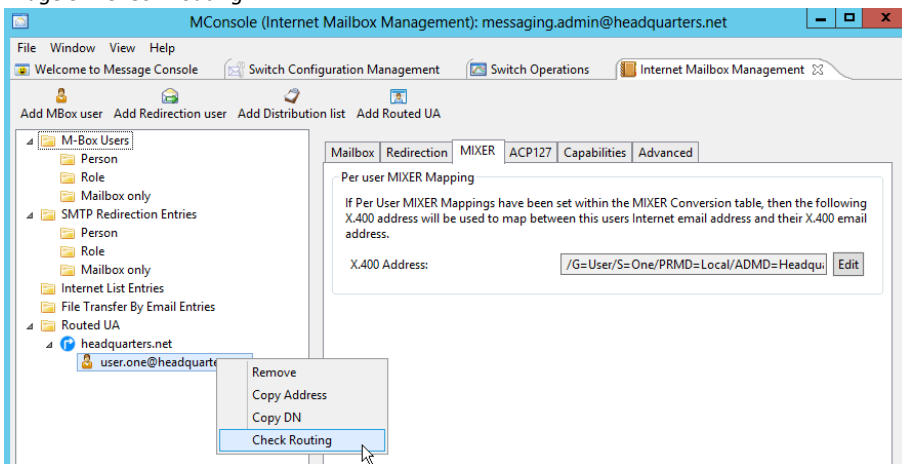
Back in the main MConsole screen (Image 53) click on [Apply] to activate this mapping.

Image 53: Apply Changes



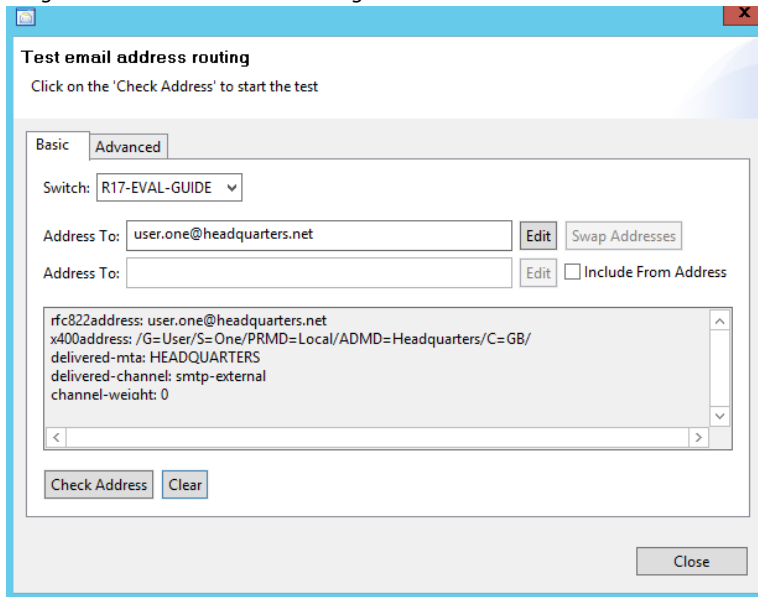
To check the routing is correct, right-click on user.one and select “Check Routing” (Image 54).

Image 54: Check Routing



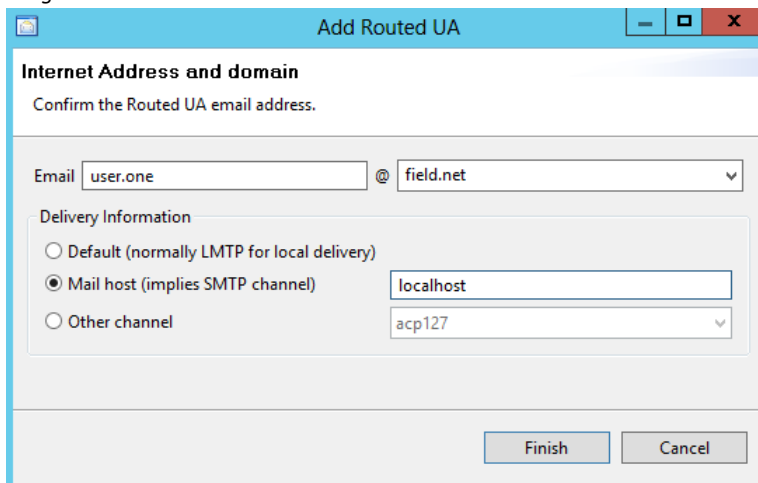
In the test email address routing screen, click on the [Check Address] button to start the test, is the routing has been set up correctly, the mapped X.400 address for this Internet user will be shown (Image 55).

Image 55: Test email address routing



You can repeat a similar process for the external X.400 user. In this case “localhost” for the Mail Host, which will get mapped within the MIXER Gateway to the external MTA (Image 56).

Image 56: Internet Address and domain



Click on **[Finish]** and then add the X.400 address (Image 57) and click **[OK]**.

Image 57: O/R Address Editor

Now check the routing (Image 58).

Image 58: Test email address routing

You have now completed setting up the MIXER mappings between your two external MTAs and can exchange messages between the X.400 and Internet users mapped in this section.

What Next?

More information on M-Switch MIXER can be found on the Isode website at www.isode.com/products/m-switch-mixer.html.

Detailed configuration and operational information on all variations of M-Switch can be found in the three Administration Guides available for this product.

1. M-Switch Admin Guide
2. M-Switch Advanced Admin Guide
3. M-Switch Operators Guide

All of these documents, together with Admin Guides for all other Isode products can be found on the Isode website at www.isode.com/support/help.html.

Other Evaluations

This guide is one of four relating to Isode's email messaging products:

- Setting up an SMTP Email System
- Setting up an X.400 Email System
- Setting up an SMTP/X.400 MIXER Gateway (this guide)
- Email for Constrained Network Environments

Information on all of these evaluations can be found at www.isode.com/evaluate/evaluate-email.html. For email evaluations outside of the scope of these guides, please contact us.

Whitepapers

Isode regularly publishes whitepapers on technical and market topics related to its products. A full list of these can be found at www.isode.com/whitepapers/.

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