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Avaya Solution & Interoperability Test Lab

Application Notes for MultiTech FaxFinder® IP with Avaya IP Office – Issue 1.0

Abstract

These Application Notes describe the configuration steps required to integrate the MultiTech FaxFinder® IP with Avaya IP Office. The MultiTech FaxFinder IP is a fax server that uses a SIP trunk interface with T.38 fax from Avaya IP Office to send and receive fax.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in Section 2.1 as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

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1. Introduction

These Application Notes describe the configuration steps required to integrate the MultiTech FaxFinder® IP with Avaya IP Office. The MultiTech FaxFinder IP is a fax server that uses a SIP trunk interface with T.38 fax from Avaya IP Office to send and receive fax. FaxFinder IP Model FF240-IP was used in the compliance test.

For each user on Avaya IP Office that desires to use fax, a fax extension is assigned and configured on MultiTech FaxFinder IP. Incoming fax calls to these fax extensions are routed to MultiTech FaxFinder IP via an available SIP channel. The received incoming fax can be sent to the fax recipient's email address, printed automatically, or stored in a shared folder, depending on the provisioning in MultiTech FaxFinder IP. In the compliance testing, the shared folder method was used to store incoming faxes.

Outgoing faxes can be sent from the MultiTech FaxFinder client application, from any PC application that supports print, from any email client using the T.37 interface, or from the MultiTech FaxFinder web interface. In the compliance testing, the web interface method was used to send outgoing faxes.

2. General Test Approach and Test Results

The feature test cases were performed manually. Internal and external fax calls to and from MultiTech FaxFinder IP were made. The fax calls were sent and received using the MultiTech FaxFinder IP web interface and the analog fax destination at the PSTN.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet cable to MultiTech FaxFinder IP, and by rebooting the MultiTech FaxFinder IP server.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing. The feature testing focused on verifying the following with MultiTech FaxFinder IP:

- Proper handling of faxes via the SIP trunk including send/receive, internal fax, external fax over ISDN (PRI), simultaneous bi-directional faxes, and miscellaneous failure scenarios.
- Proper handling of faxes with different pages, complexity, format and data rates.
- No adverse impact on any internal or external calls during faxes.

The serviceability testing focused on verifying the ability of MultiTech FaxFinder IP to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet cable to MultiTech FaxFinder IP.

2.2. Test Results

All test cases passed.

2.3. Support

Technical support on MultiTech FaxFinder IP can be obtained through the following:

- **Phone:** 763-717-5863 or 800-972-2439
- **Web:** https://support.multitech.com

3. Reference Configuration

In the compliance testing, the Avaya IP Office Server Edition system consists of Avaya IP Office Primary Linux running on Virtualized Environment and a 500V2 Expansion. The IPO Primary was configured to connect to PSTN via a SIP trunk while the 500V2 Expansion connected to PSTN via a PRI trunk, IPO Primary and 500V2 Expansion is communicated by Small Community Network (SCN) IP Office Line. The following are typical scenarios verified during the compliance test:

- Bi-directional faxes between FaxFinder FF240-IP ports.
- Bi-directional faxed between FaxFinder FF240-IP server and the fax endpoint that connected to an analog port in the IPO 500V2 Expansion.
- Bi-directional faxes between FaxFinder FF240-IP server and PSTN fax endpoint via SIP trunk.
- Bi-directional faxes between FaxFinder FF240-IP server and PSTN fax endpoint via PRI trunk.

Figure 1: MultiTech FaxFinder FF240-IP with Avaya IP Office using SIP

4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment/Software	Release/Version
Avaya IP Office Primary Linux running on Virtualized Environment	10.0.0.1 Build 53
Avaya IP Office 500V2 Expansion	10.0.0.1 Build 53
Avaya 9600 Series IP Telephones (H.323)	6.6229
Avaya 1140E SIP Deskphones	4.04.23
HP Super G3 Fax Machine	-
MultiTech FaxFinder IP FF240-IP	4.0.0

5. Configure Avaya IP Office

This section provides the procedures for configuring Avaya IP Office. The procedures include the following areas:

- Verify Avaya IP Office License
- Obtain LAN IP address
- Enable SIP trunks
- Administer SIP line
- Administer Incoming Call Route
- Administer Short Code

5.1. Verify Avaya IP Office License

From a PC running the Avaya IP Office Manager application, select **Start → Programs → IP Office → Manager** to launch the Manager application. Select the correct IP Office system and log in with the appropriate credentials.

The **Avaya IP Office R10 Manager** screen is displayed. From the configuration tree in the left pane, select **License**. Verify that the **SIP Trunk Channels** license is "Valid", and that the **Instances** value is sufficient for the desired maximum number of simultaneous faxes.

5.2. Obtain LAN IP Address

From the configuration tree in the left pane, select **System** to display the **System** screen for the **IPOSE VM1** in the right pane. Select the **LAN1** tab, followed by the **LAN Settings** sub-tab in the right pane. Make a note of the **IP Address**, which will be used later to configure FaxFinder IP. Note that IP Office can support SIP trunks on the LAN1 and/or LAN2 interfaces. The compliance testing used the LAN1 interface.
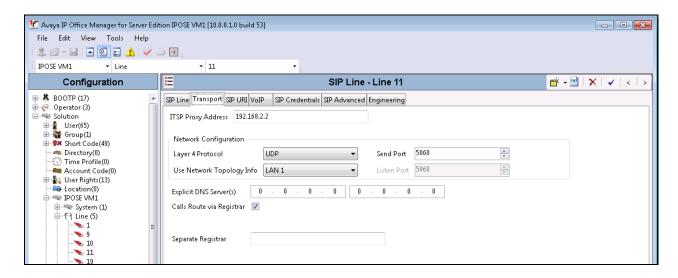

5.3. Enable SIP Trunks

Select the **VoIP** sub-tab. Ensure that **SIP Trunks Enable** is checked as shown below.

5.4. Administer SIP Line

From the configuration tree in the left pane, right-click on **Line** and select **New → SIP Line** from the pop-up list to add a new SIP line. Select the **Transport** tab in the right pane. For **ITSP Proxy Address**, enter the IP address of FaxFinder IP. Retain the default values for the remaining fields.

Select the **SIP URI** tab, and click **Add** to display the **New Channel** section. Select "Auto" for **Local URI**. Enter the SIP line number for **Incoming Group** and **Outgoing Group**. Set **Max Calls per Channel** to the desired maximum number of simultaneous faxes allowed by the FaxFinder IP license, in this case "2". Retain the default values in the remaining fields.

The screen is updated as shown below.

Select the **VoIP** tab. For **Codec Selection**, select "Custom" and select the applicable G.711 codec variant in the expanded list. Note that FaxFinder IP only supports the G.711 variants.

For **Fax Transport Support**, select "T38" from the drop-down list. Check **Re-invite Supported**, and retain the default values in the remaining fields.
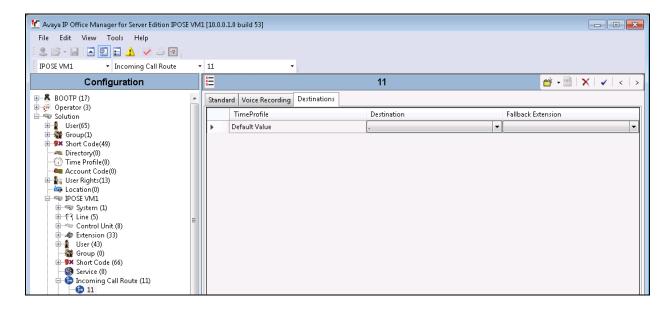
5.5. Administer Incoming Call Route

From the configuration tree in the left pane, right-click on **Incoming Call Route**, and select **New** from the pop-up list to add a new route. For **Line Group Id** in the **Standard** tab, select the incoming group number from **Section 5.4**, which corresponds to the SIP line, in this case "11".

Select the **Destinations** tab. For **Destination**, enter "." to match any dialed number from FaxFinder IP.

5.6. Administer Short Code

From the configuration tree in the left pane, right-click on **Short Code** and select **New** from the pop-up list to add a new short code for fax calls to FaxFinder IP. In the compliance testing, users on IP Office are designated with fax numbers 5xxx, and the fax calls are routed over the SIP trunk to FaxFinder IP.

For **Code**, enter "5N;". For **Feature**, select "Dial" from the drop-down list. For **Telephone Number**, enter the value shown below where "5N" is the short code and "192.168.2.2" is the IP address of FaxFinder IP. For **Line Group Id**, enter the outgoing group number from **Section 5.4**, which corresponds to the SIP line.

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6. Configure MultiTech FaxFinder IP

This section provides the procedures for configuring MultiTech FaxFinder IP. The procedures include the following areas:

- Launch FaxFinder Web Management
- Administer Network
- Administer Shares
- Administer Fax Provider
- Administer Inbound Routing
- Administer Users

6.1. Launch FaxFinder Web Management

Launch the FaxFinder Web Management interface by using the URL "http://ip-address" in an Internet browser window, where "ip-address" is the IP address of FaxFinder IP. The **Login** screen below is displayed. Log in using the appropriate credentials.

The screen below is displayed next.

6.2. Administer Network

Under **System Configuration** in the left pane, select **Network**. The **Network Configuration** screen is displayed. Modify the **Hostname, IP Address**, **Subnet Mask** and **Default Gateway** to the appropriate network values.
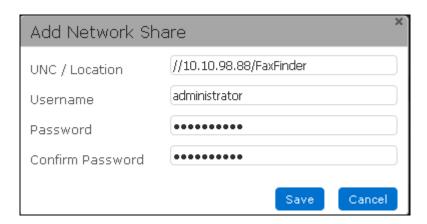
6.3. Administer Shares

Under **System Configuration** in the left pane, select **Shares**. The screen below is displayed. Click **Add** to add a network share. Note that the configuration in this section is only necessary for the shared folder method of storing incoming faxes.

The **Add Network Share** screen is displayed. For **UNC / Location**, enter the path to the shared location. Enter the appropriate credentials for **Username**, **Password** and **Confirm Password**. Note that this location must allow network sharing so that other users can write to it.

6.4. Administer Fax Provider

Under **Fax Configuration** in the left pane, select **Fax Provider**. The **Fax Provider Configuration** screen is displayed. In the **SIP** section, enter the IP address of IP Office in **SIP Proxy/Gateway** field. Retain the default values in the remaining fields. In the **T.38** section, select "T.38 Re-Invite" for **Fax Method**. Retain the default values in the remaining fields.

Note that: Fax Method should be not set as "T.38 Direct" otherwise the fax calls from and to the FaxFinder sever will fail.
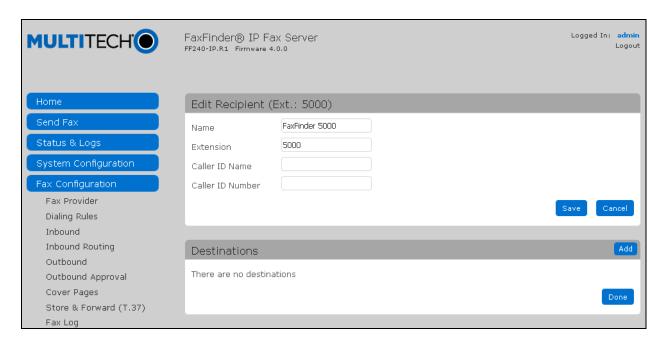
6.5. Administer Inbound Routing

Under **Fax Configuration**, select **Inbound Routing**. The screen below is displayed. In the **Recipients** section, click **Add** to add a new recipient.
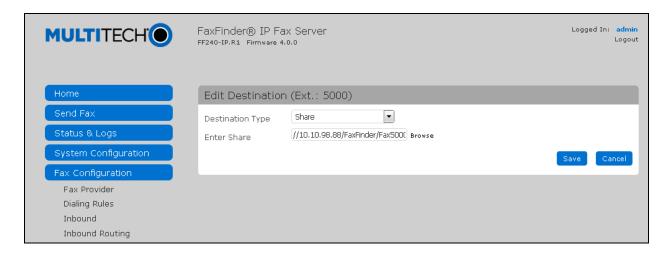

The **Add Recipient** screen is displayed next. In the **Name** field enter a descriptive Name. For **Extension**, enter the first fax extension.
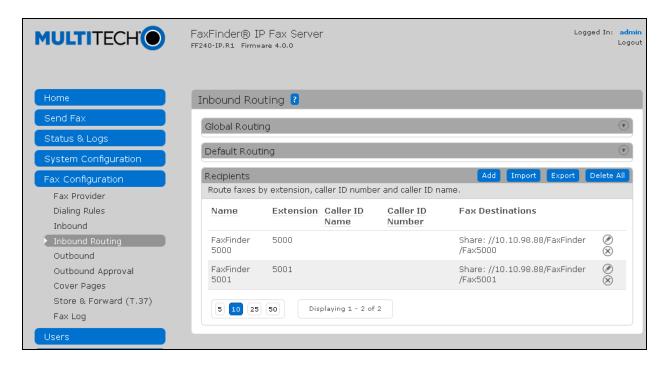
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The screen is updated as shown below. Click **Add** to add a destination for incoming faxes. Note that the Caller ID Name and Caller ID Number should be left blank.

The **Add Destination** screen is displayed. The default setting is to send incoming faxes to the recipient's email. In the compliance testing, the destination was configured to use the shared folder method to store incoming faxes. Select "Share" from the drop-down box, and enter the path to a shared folder in the next field. The Enter Share field was set to *//10.10.98.88/FaxFinder/Fax5000*. Repeat this section to add an inbound routing recipient for each fax user.
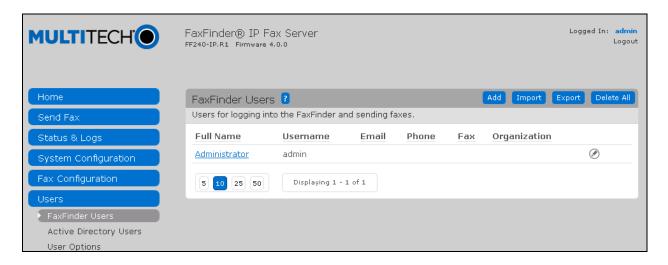
In the compliance testing, two inbound routing recipients were created to correspond to the two fax users as shown below.
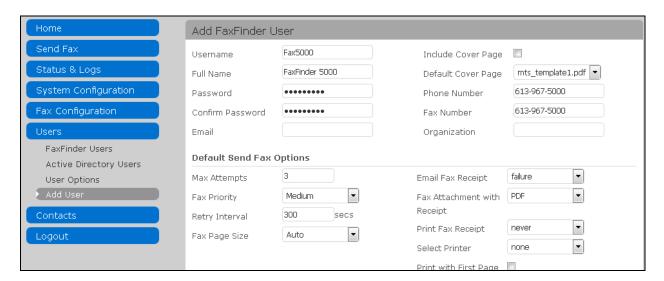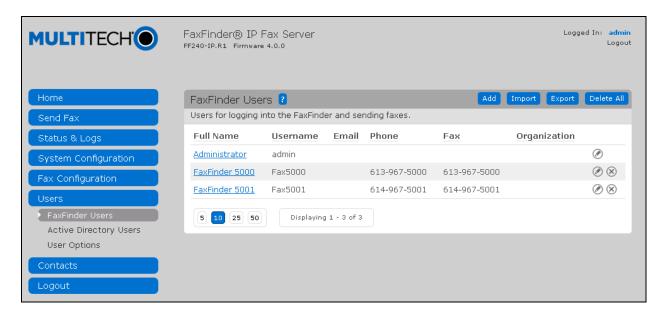
6.6. Administer Users

Under **Users**, select **FaxFinder Users** to display the **FaxFinder Users** screen. Click **Add** to add a new user.

The **Add FaxFinder User** screen is displayed next (shown below is the **Edit** screen since the user was previously configured). Enter descriptive values for **Username** and **Full Name**. Enter the desired value for **Password** and **Confirm Password**. Enter the full telephone and fax numbers for the user in the **Phone Number** and **Fax Number** fields, respectively. Other fields leave at default.

Repeat this section to create all desired users. In the compliance testing, two fax users were created as shown below.
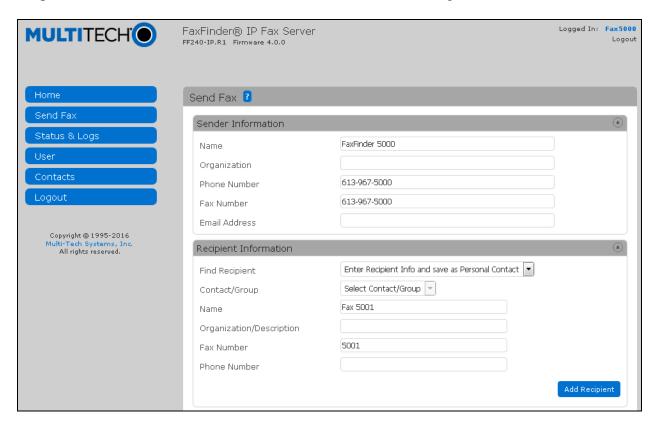
7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of MultiTech FaxFinder IP and Avaya IP Office.
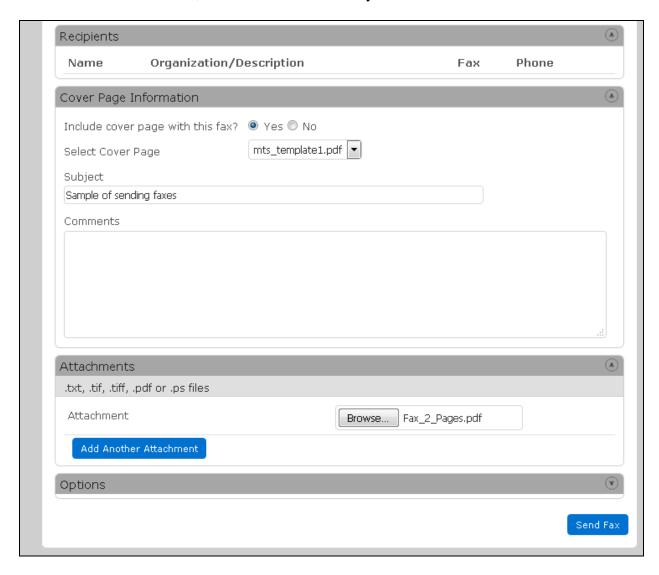
7.1. Verify MultiTech FaxFinder IP

Follow the procedures in **Section 6.1** to launch the FaxFinder Web Management interface, and log in using a fax user's credentials from **Section 6.6**. Select **Send Fax** to display the **Send Fax** screen.

The **Sender Information** section is populated automatically.
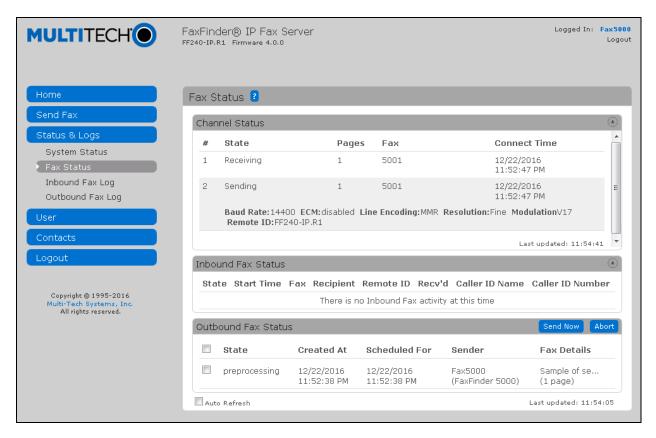
In the **Recipient Information** section, enter the appropriate **Name** and **Fax Number** for the fax recipient as shown below. Retain the default values in the remaining fields.

Scroll down the screen to the **Cover Page Information** section. Modify this section as desired. In the **Attachments** section, click **Browse** to select any desired attachment. Click **Send Fax**.

Under **Status & Logs**, select **Fax Status** to display the screen below. In the **Channel Status** section, verify that there is a channel with a **State** of "Sending". In the **Outbound Fax Status** section, verify that there is an entry showing the active fax with a **State** of "sending", and that the **Sender** and **Recipient** fields display proper information.
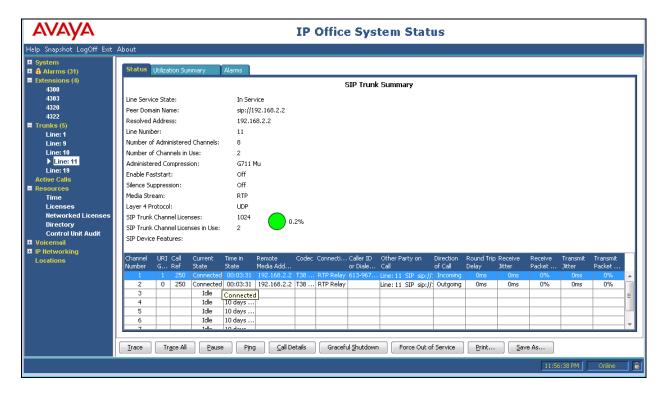
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7.2. Verify Avaya IP Office

From the **Avaya IP Office R9 Manager** screen shown in **Section 5.1**, select **File → Advanced → System Status** to launch the System Status application, and log in using the appropriate credentials.

The **IP Office System Status** screen is displayed. Expand **Trunks** in the left pane and select the SIP line from **Section 5.4**, in this case "11".

Verify that the **SIP Trunk Summary** screen shows an active channel with a **Current State** of "Connected", and that the sender fax number is displayed in the **Caller ID or Dialed Digits** field.

8. Conclusion

These Application Notes describe the configuration steps required to integrate the MultiTech FaxFinder IP with Avaya IP Office using SIP. All feature and serviceability test cases were completed and passed.

9. Additional References

This section references the product documentation relevant to these Application Notes.

[1] *Administering Avaya IP Office Platform with Manager*. Release 10, September 2016
[2] *FaxFinder IP Administrator User Guide*, available at http://www.multitech.com

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