Avaya Solution & Interoperability Test Lab

Application Notes for MultiTech MultiVOIP FX with Avaya IP Office using SIP Fax Endpoints – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for MultiTech MultiVOIP FX to interoperate with Avaya IP Office. The MultiTech MultiVOIP FX is a gateway that provides connectivity between legacy analog voice/fax endpoints and a VoIP infrastructure. In the compliance testing, MultiTech MultiVOIP FX connected analog fax endpoints at the Branch site to Avaya IP Office at the Main site, and registered the analog fax endpoints to Avaya IP Office as SIP endpoints with T.38 fax capabilities.

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 for MultiTech MultiVOIP FX to interoperate with Avaya IP Office. The MultiTech MultiVOIP FX is a gateway that provides connectivity between legacy analog voice/fax endpoints and a VoIP infrastructure. In the compliance testing, MultiTech MultiVOIP FX connected analog fax endpoints at the Branch site to Avaya IP Office at the Main site, and registered the analog fax endpoints to Avaya IP Office as SIP endpoints with T.38 fax capabilities.

1.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on MultiTech MultiVOIP FX:

- Proper registration, send/receive fax, internal fax with Main, external fax with PSTN, and miscellaneous failure fax scenarios.
- Proper handling of faxes with different pages, complexity, format, and data rates.
- No adverse impact on the internal and external calls during faxes.

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

1.2. Support

Technical support on MultiTech MultiVOIP FX can be obtained through the following:

- **Phone:** (763) 717-5863
- **Web:** https://support.multitech.com

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2. Reference Configuration

Figure 1 below shows the configuration used for the compliance testing. The MultiTech MultiVOIP FX consists of 2, 4, and 8 port models. In the compliance testing, the 2-port MVP210-FX model was used.

In the test configuration, MultiTech MultiVOIP FX connected physically to two analog fax machines at the Branch site, and registered both fax machines as SIP endpoints with Avaya IP Office at the Main site. The SIP endpoints were configured on Avaya IP Office with T.38 fax capabilities.

MultiTech MultiVOIP FX can be configured via a web interface, or via the MultiVOIP application running on a PC. In the compliance testing, the MultiVOIP application was used to configure MultiTech MultiVOIP FX. The PC running the MultiVOIP application has a serial connection to MultiTech MultiVOIP FX.

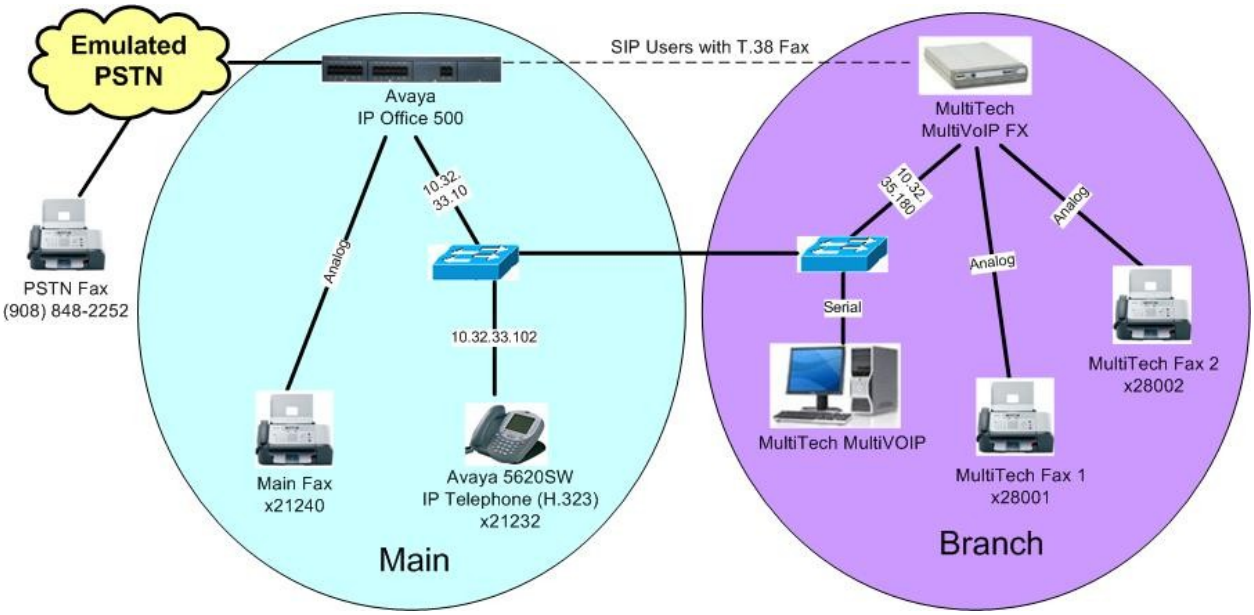

Figure 1: MultiTech MultiVOIP FX with Avaya IP Office

3. Equipment and Software Validated

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

Equipment	Software
Avaya IP Office 500	5.0 (15)
Avaya 5620SW IP Telephone (H.323)	2.9
MultiTech MultiVOIP FX on MVP210-FX	6.11.27
MultiTech MultiVOIP	6.11.27

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4. Configure Avaya IP Office

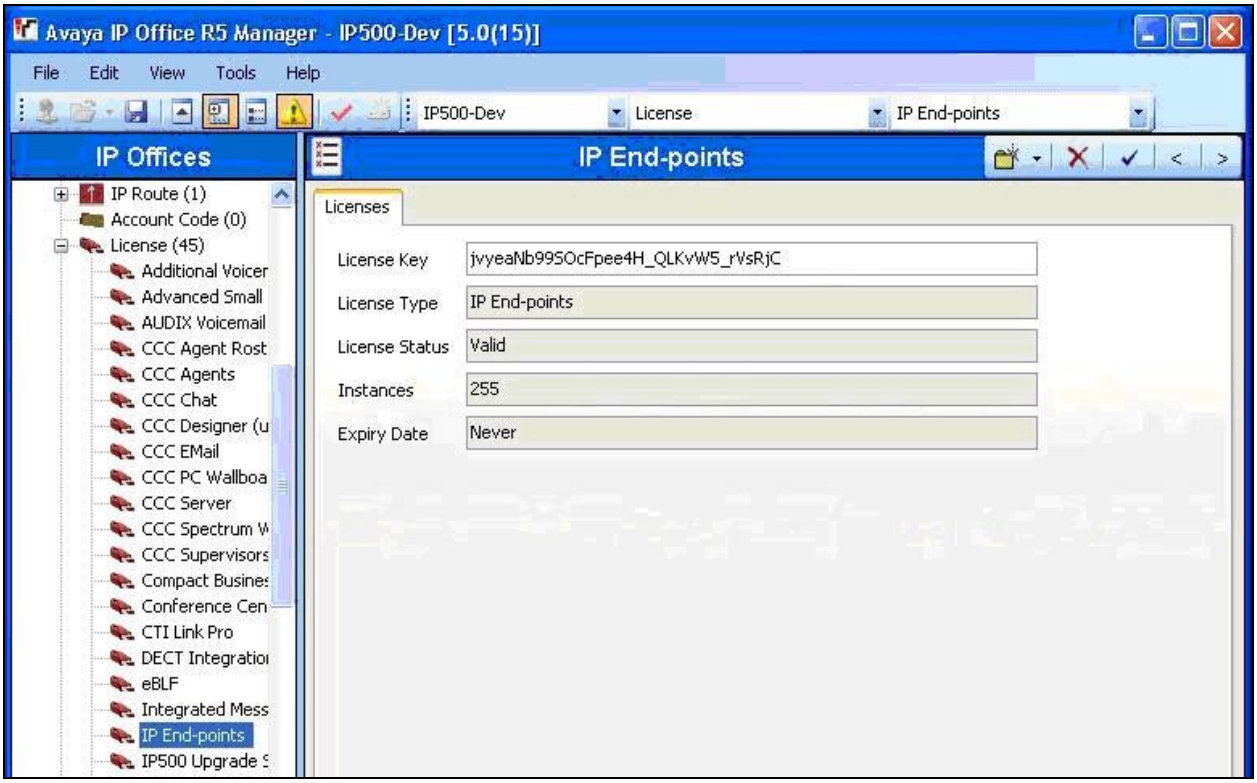
This section provides the procedures for configuring Avaya IP Office. The procedures include the following areas:

- Verify IP Office license
- Obtain LAN IP address
- Administer SIP registrar
- Administer SIP extensions
- Administer SIP users

4.1. Verify 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 proper IP Office system, and log in with the appropriate credentials.

The **Avaya IP Office R5 Manager** screen is displayed. From the configuration tree in the left pane, select **License > IP End-points** to display the **IP End-points** screen in the right pane. Verify that the **License Status** is "Valid".



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4.2. Obtain LAN IP Address

From the configuration tree in the left pane, select **System** to display the **IP500-Dev** screen 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 MultiTech MultiVOIP FX. Note that IP Office can support SIP extensions on the LAN1 and/or LAN2 interfaces, and the compliance testing used the LAN1 interface.

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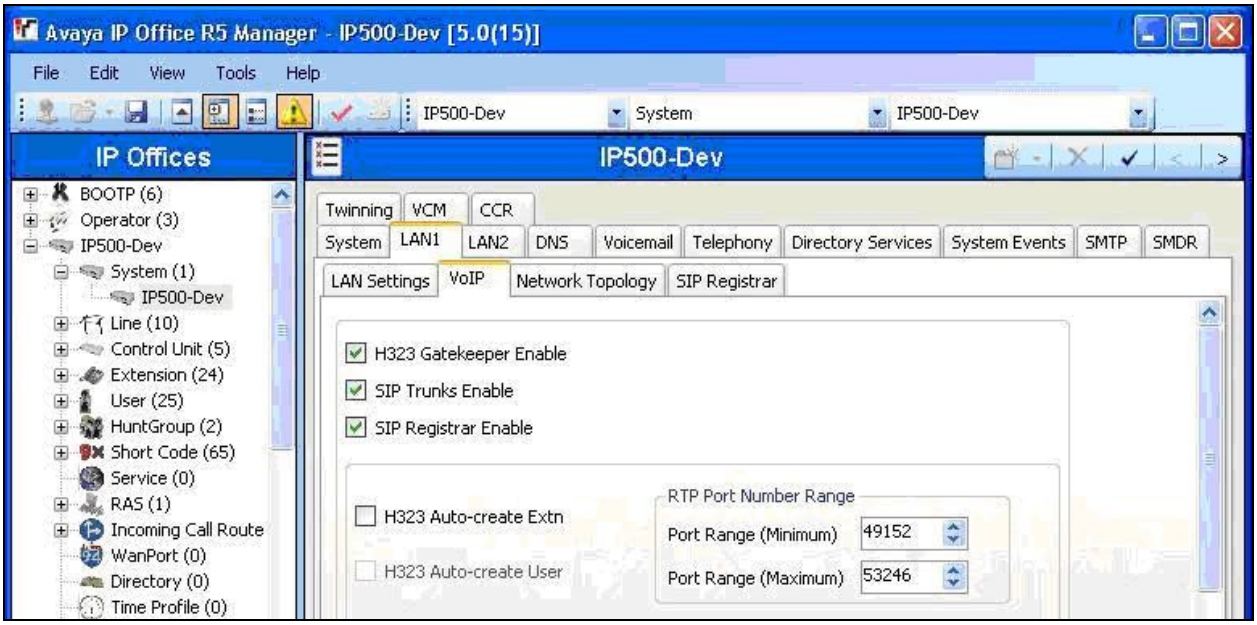
4.3. Administer SIP Registrar

Select the **VoIP** sub-tab. Make certain that **SIP Registrar Enable** is checked, as shown below.



Select the **SIP Registrar** sub-tab, and enter a valid **Domain Name** for SIP endpoints to use for registration with IP Office. In the compliance testing, the **Domain Name** was left blank, so the SIP endpoints used the LAN IP address for registration.

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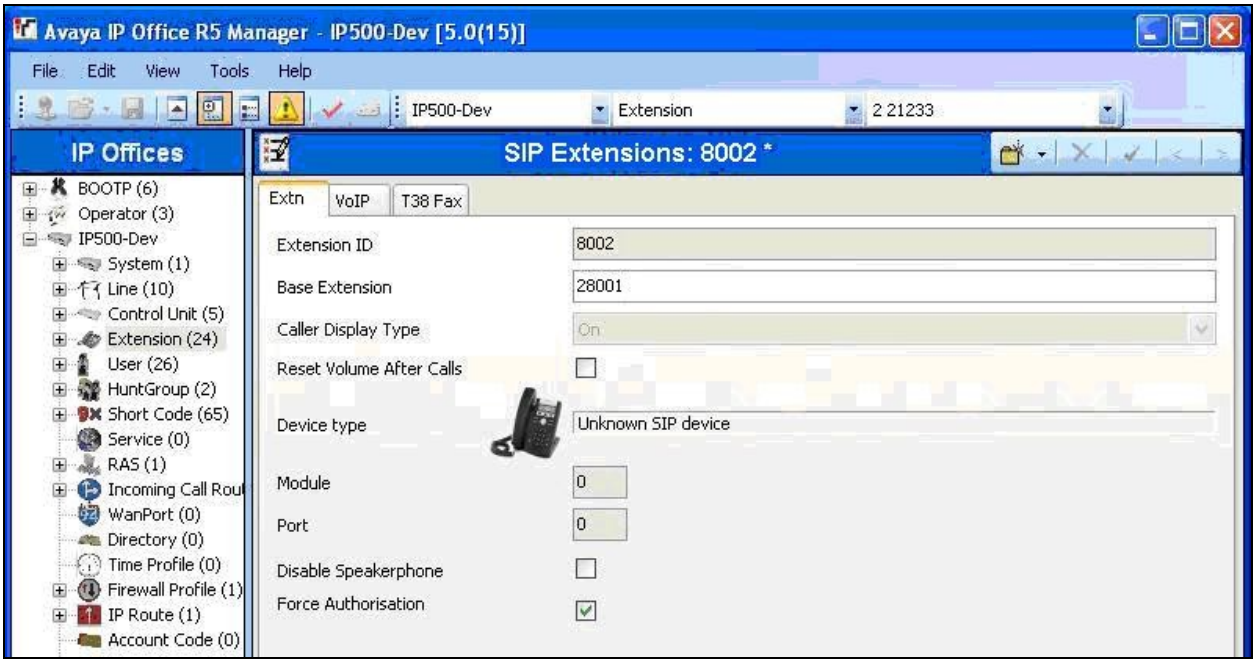
4.4. Administer SIP Extensions

From the configuration tree in the left pane, right-click on **Extension**, and select **New > SIP Extension** from the pop-up list to add a new SIP extension. Enter the desired digits for **Base Extension**, and retain the default check in the **Force Authorisation** field shown below.



Select the **VoIP** tab. Check **Fax Transport Support** to enable T.38 fax capabilities for the SIP extension. Retain the default values for the remaining fields.

Repeat this section to add a new SIP extension for each MultiTech MultiVOIP FX port. In the compliance testing, two SIP extensions with base extensions of "28001" and "28002" were created.

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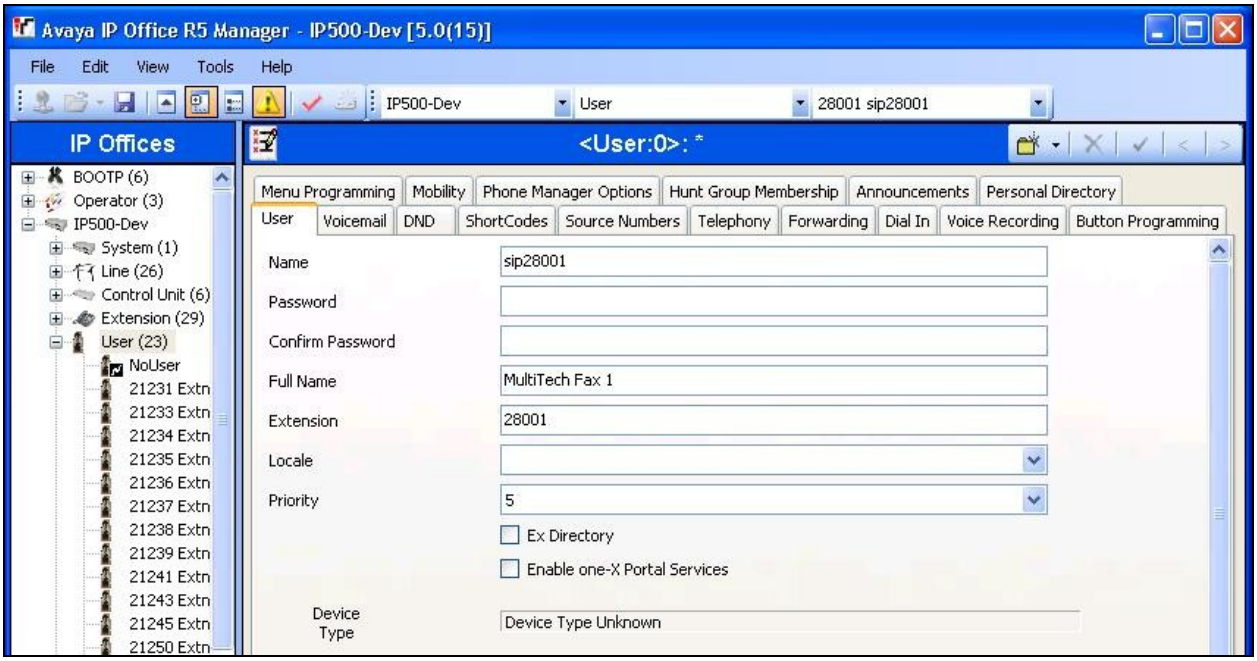
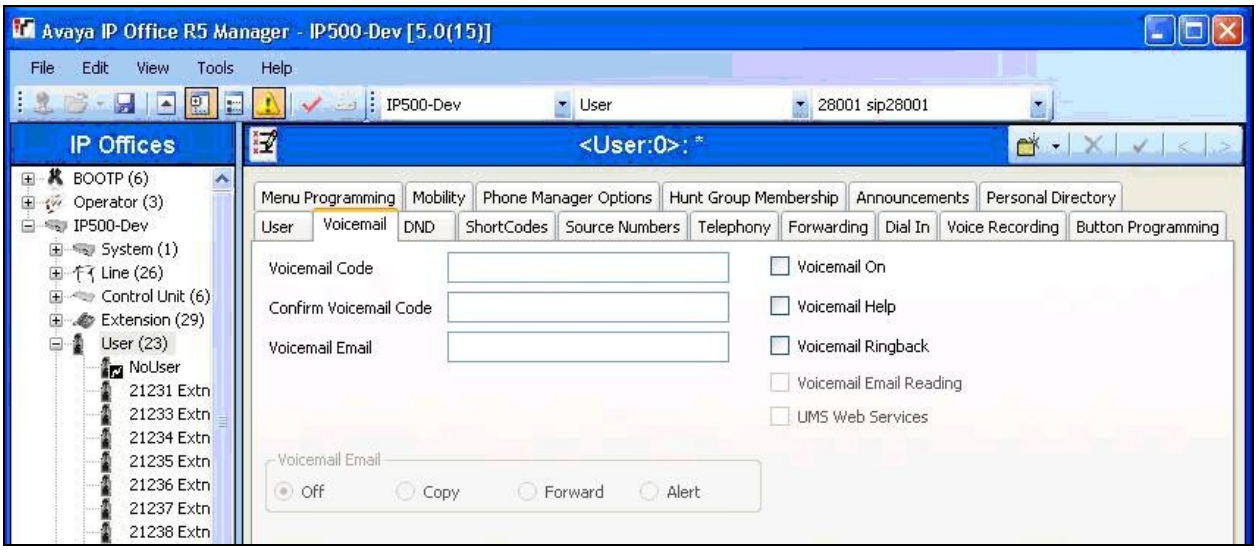
4.5. Administer SIP Users

From the configuration tree in the left pane, right-click on **User**, and select **New** from the pop-up list. Enter desired values for **Name** and **Full Name**. For **Extension**, enter the first SIP base extension from **Section 4.4**.



Select the **Voicemail** tab, and uncheck **Voicemail On**, as shown below.



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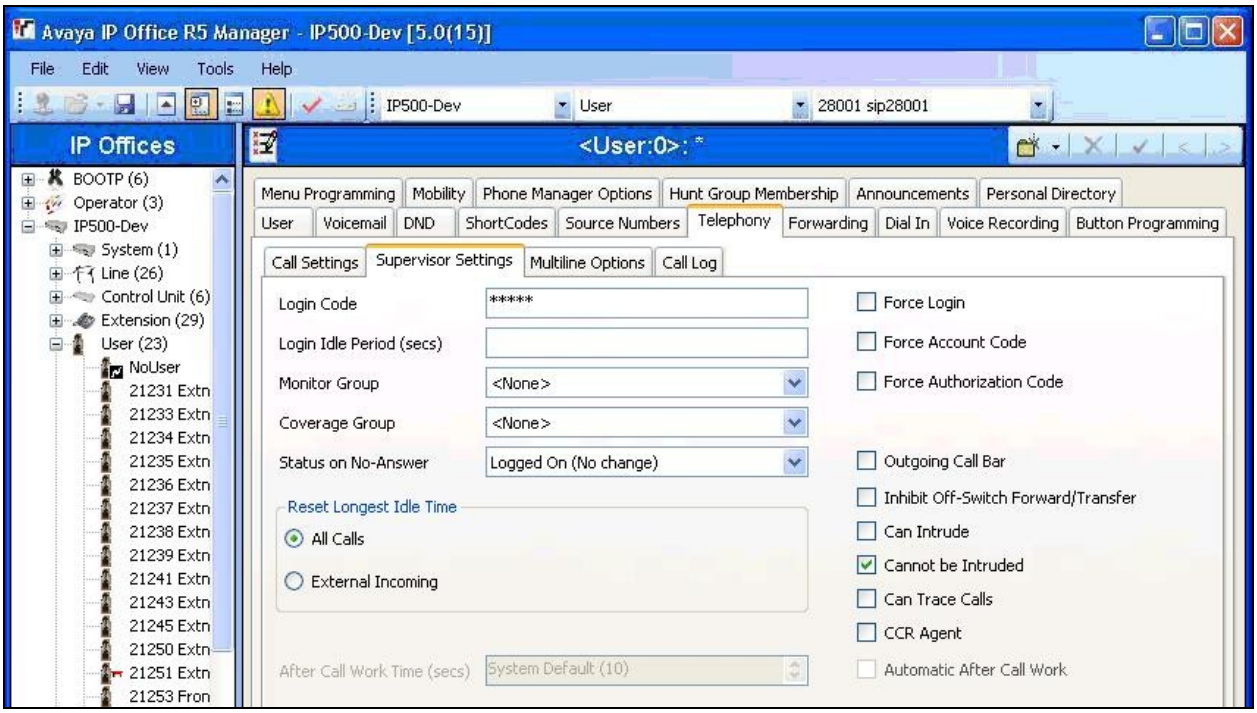
Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab. Enter a desired **Login Code**.

Repeat this section to add a new user for each SIP extension from **Section 4.4**. In the compliance testing, two users with names of "sip28001" and "sip28002" were created.



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5. Configure MultiTech MultiVOIP FX

This section provides the procedures for configuring MultiTech MultiVOIP FX. The procedures include the following areas:

- Launch MultiVOIP
- Administer IP address
- Administer fax
- Administer interface
- Administer SIP
- Administer outbound phone book
- Administer inbound phone book
- Save and reboot

5.1. Launch MultiVOIP

From a PC running the MultiVOIP application, create a shortcut for **Start > Programs > MultiVOIP 6.11 > Configuration**. Double click on the newly created shortcut, to display the **MultiVoIP** screen below.

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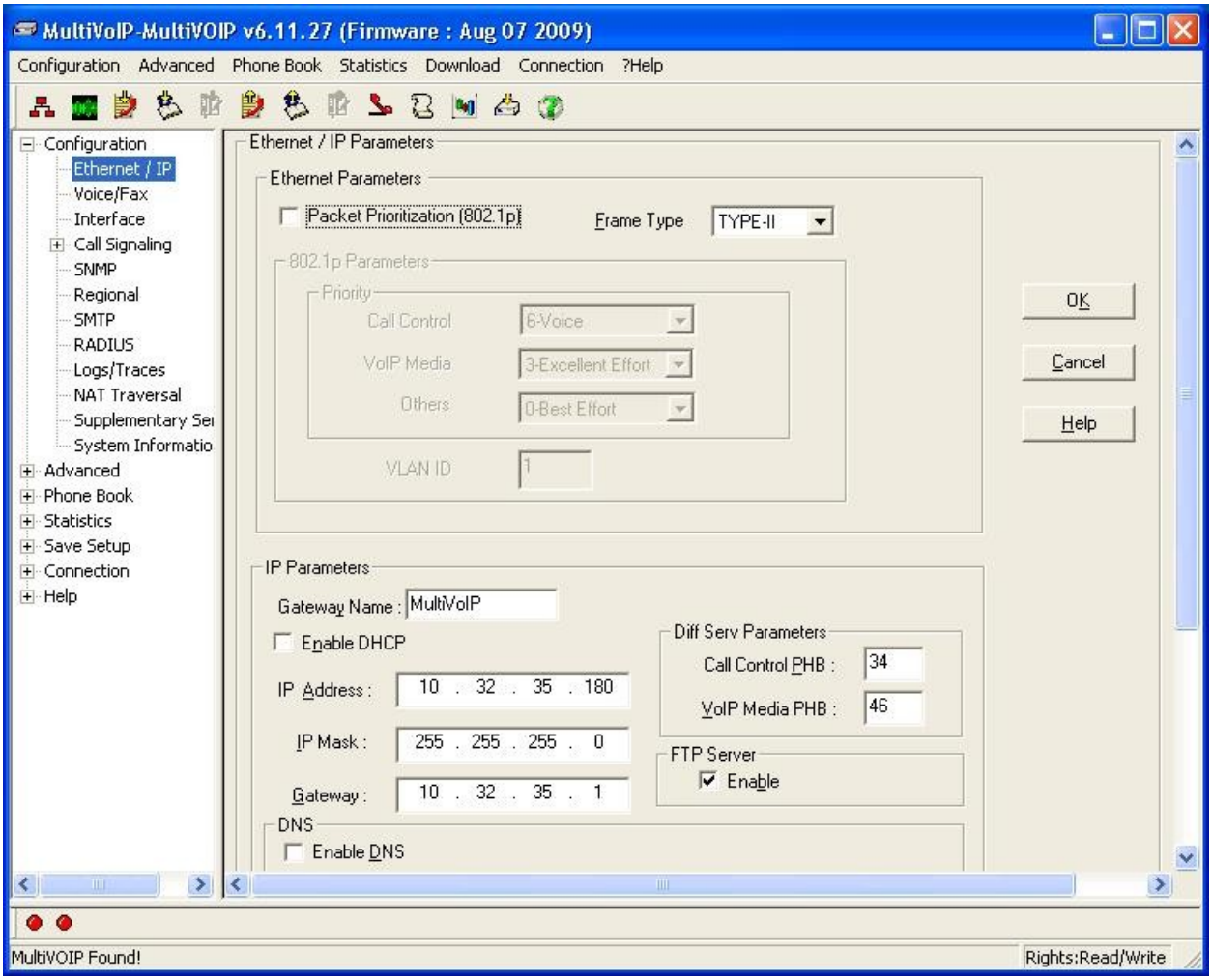
5.2. Administer IP Address

Select **Configuration > Ethernet / IP** from the left pane, to display the **Ethernet / IP Parameters** screen. Modify the **IP Address**, **IP Mask**, and **Gateway** fields to match the network configuration.



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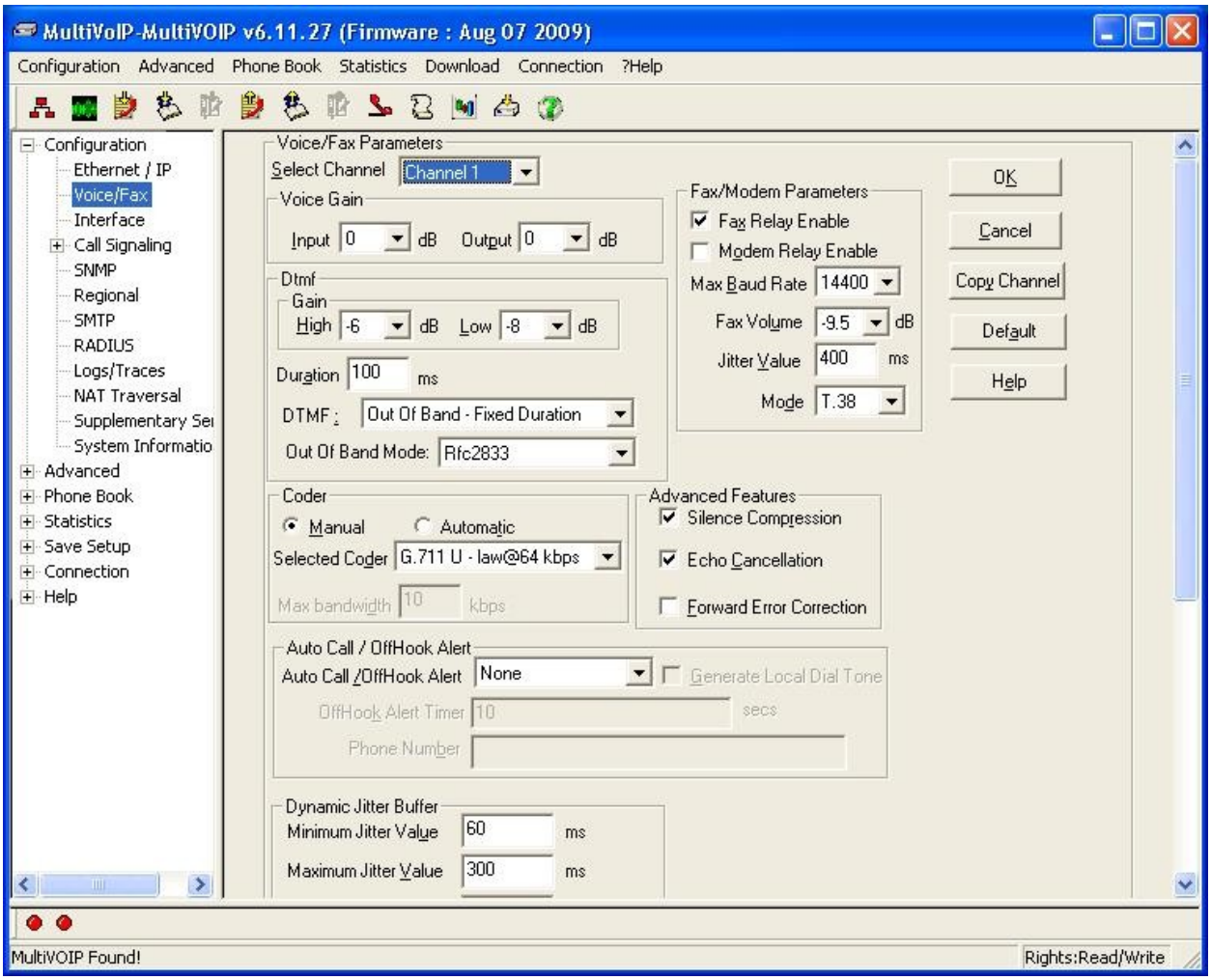
5.3. Administer Fax

Select **Configuration > Voice/Fax** from the left pane, to display the **Voice/Fax Parameters** screen. For the **Select Channel** field, select a channel to configure, in this case "Channel 1".

In the **Coder** section, select an appropriate codec from the **Selected Coder** drop-down list. In the **Fax/Modem Parameters** section, check **Fax Relay Enable** and uncheck **Modem Relay Enable**, as shown below. Retain the default values for the remaining fields.

Repeat this section to configure all channels.



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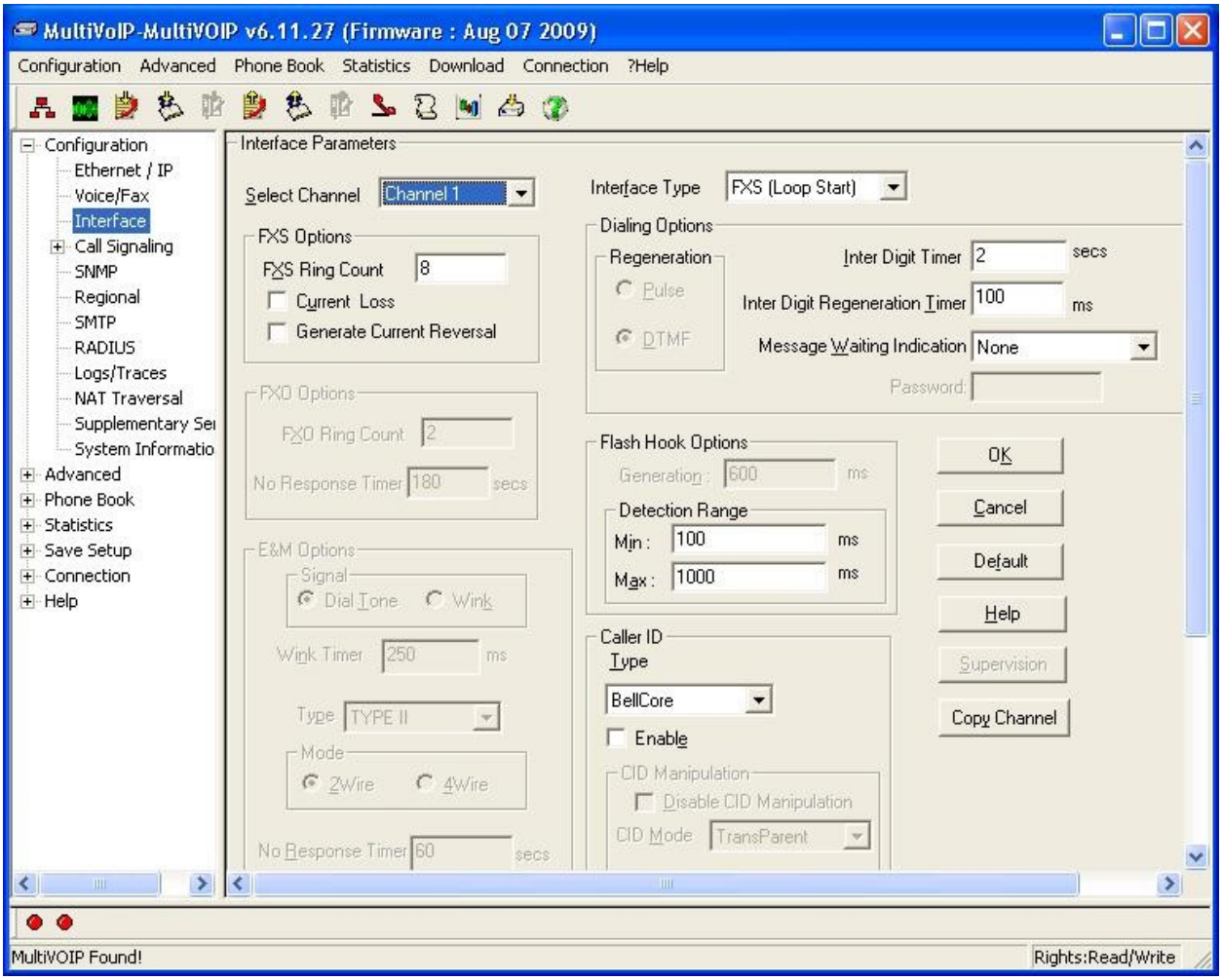
5.4. Administer Interface

Select **Configuration > Interface** from the left pane, to display the **Interface Parameters** screen. For the **Select Channel** field, select a channel to configure, in this case "Channel 1".

For **Interface Type**, select "FXS (Loop Start)". Retain the default values for the remaining fields.

Repeat this section to configure all channels.



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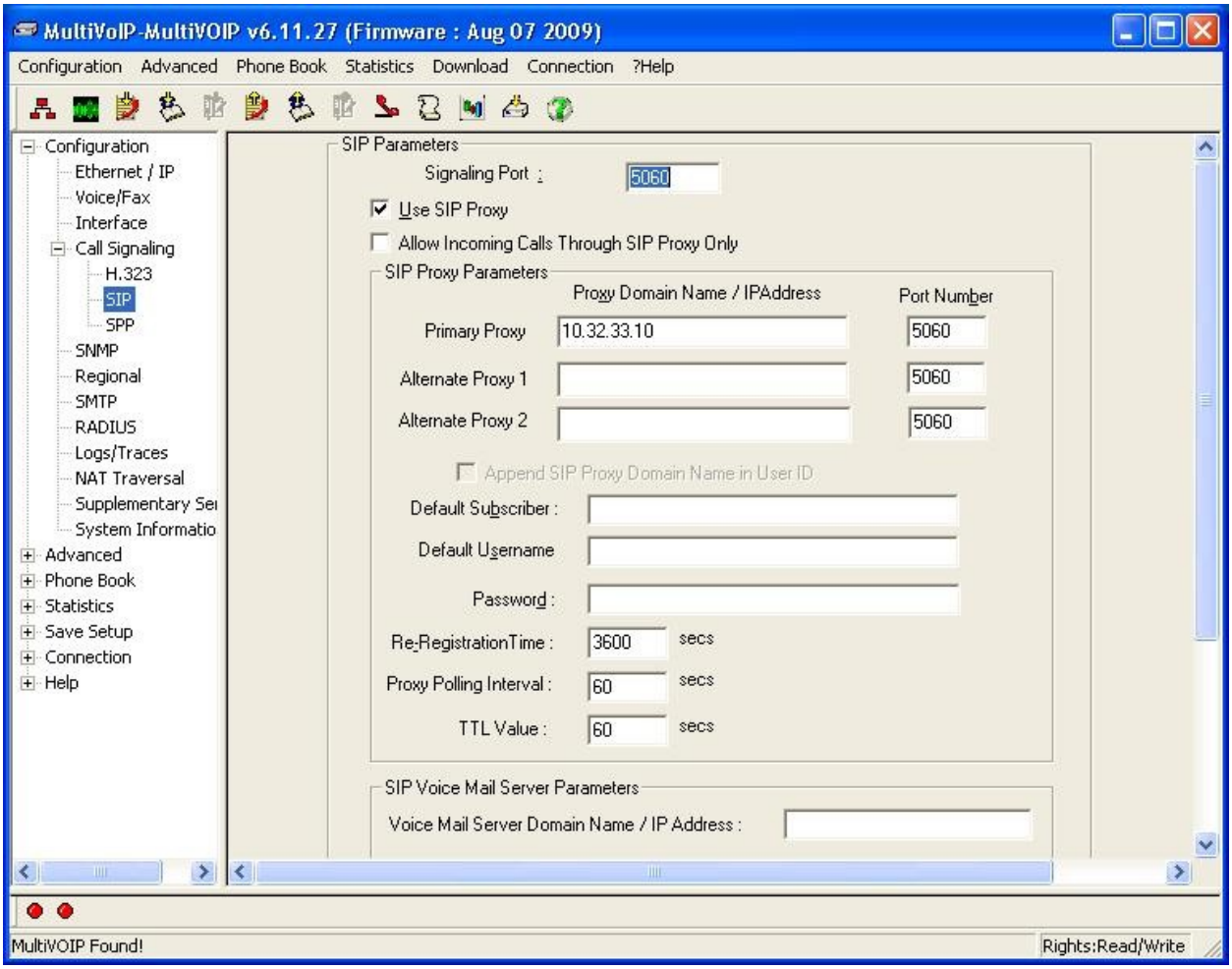
5.5. Administer SIP

Select **Configuration > Call Signaling > SIP** from the left pane, to display the **SIP Parameters** screen. Check the **Use SIP Proxy** field. For **Primary Proxy**, enter the LAN IP address of Avaya IP Office from **Section 4.2**. Retain the default values for the remaining fields.



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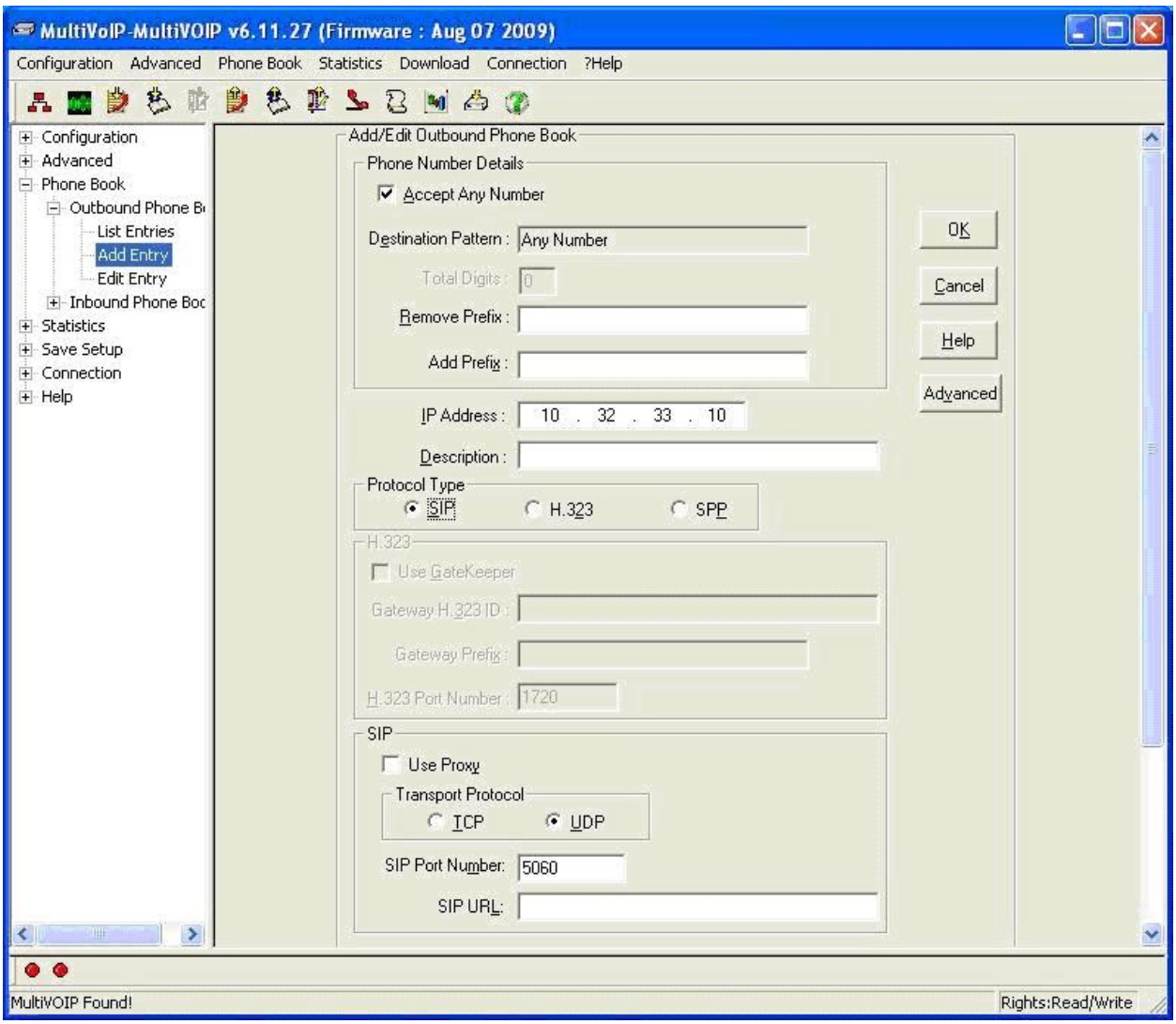
5.6. Administer Outbound Phone Book

Select **Phone Book > Outbound Phone Book > Add Entry** from the left pane, to display the **Add/Edit Outbound Phone Book** screen. Check the **Accept Any Number** field. For **IP Address**, enter the LAN IP address of Avaya IP Office from **Section 4.2**.

For **Protocol Type**, check **SIP**. Retain the default values for the remaining fields.



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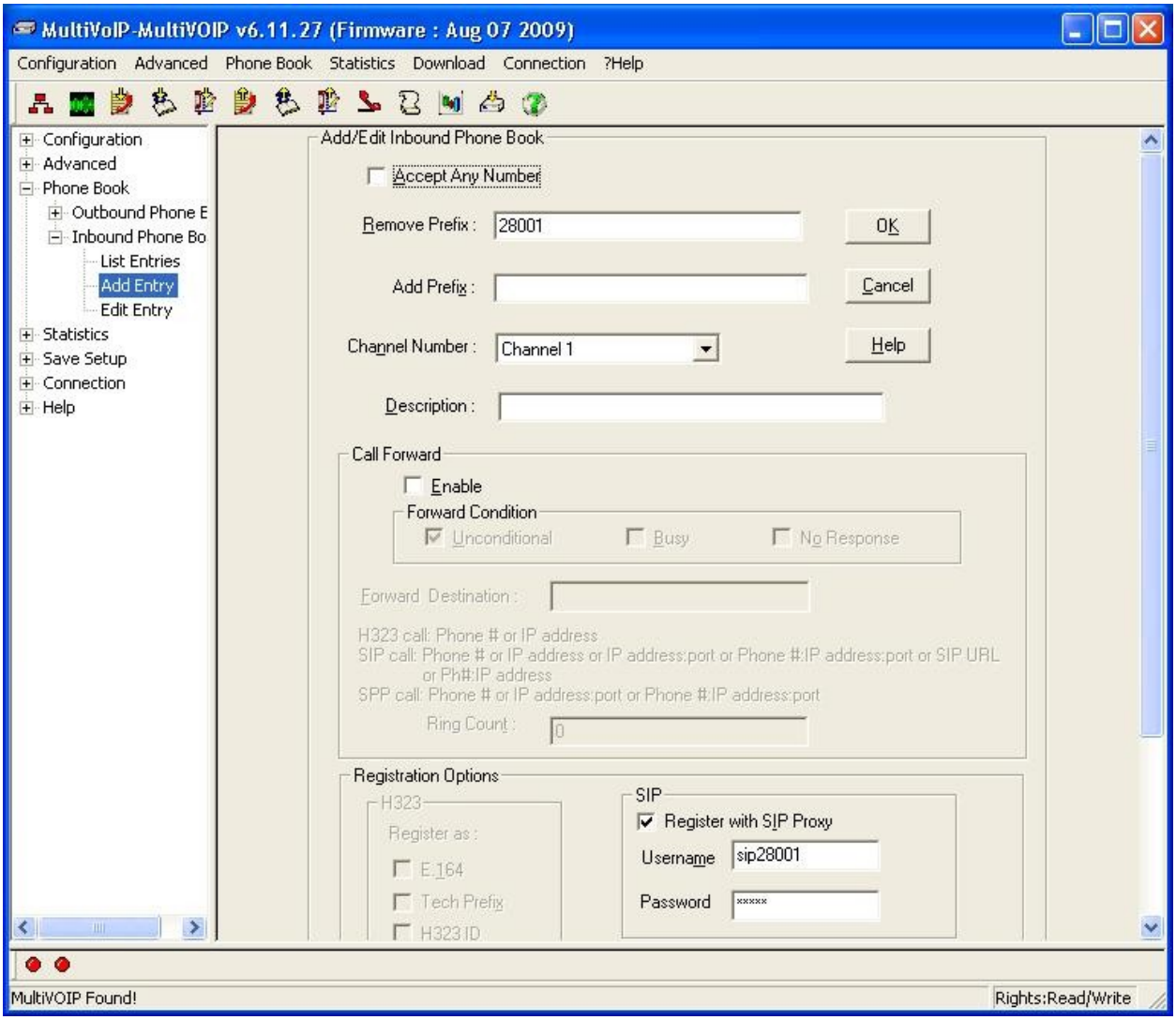
5.7. Administer Inbound Phone Book

Select **Phone Book > Inbound Phone Book > Add Entry** from the left pane, to display the **Add/Edit Inbound Phone Book** screen. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **Remove Prefix:** A SIP base extension from **Section 4.4**.
- **Channel Number:** Select a channel from the drop-down list.
- **Register with SIP Proxy:** Check this field.
- **Username:** The corresponding SIP user name from **Section 4.5**.
- **Password:** The corresponding SIP user login code from **Section 4.5**.

Repeat this section to add a phone book entry for each channel.



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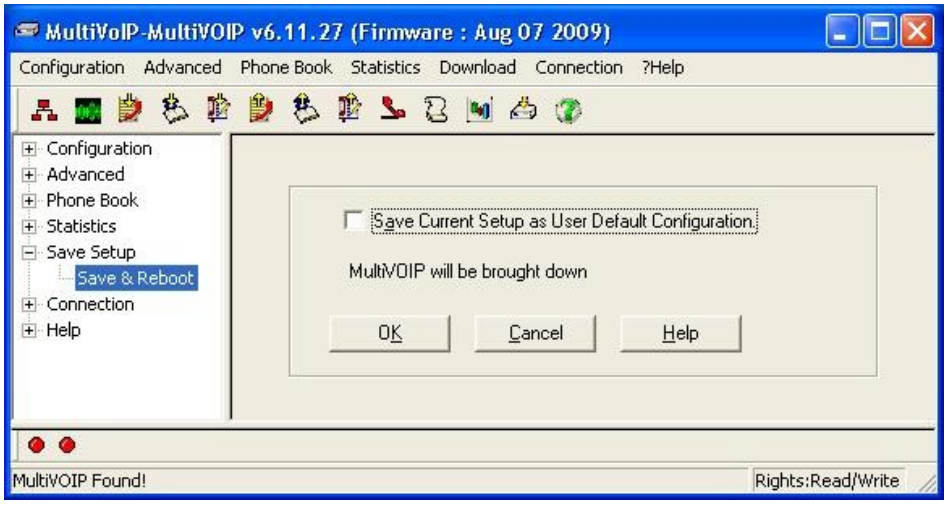
5.8. Save and Reboot

Select **Save Setup > Save & Reboot** from the left pane, followed by **OK** in the right pane.



6. General Test Approach and Test Results

The feature test cases were performed manually. Internal and external fax calls to and from the analog fax machines physically connected to MultiTech MultiVOIP FX were made. The fax calls were sent and received using the analog fax machine at the Branch, Main, and PSTN.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet cable to MultiTech MultiVOIP FX.

All test cases were executed.

The one observation from the compliance testing is that the shortcut for the MultiVOIP application needs a manual modification to append " y" to the target executable path. This is needed to bypass the hardware ID check on the MultiVOIP FX series, in order to enable the 6.11.27 firmware.

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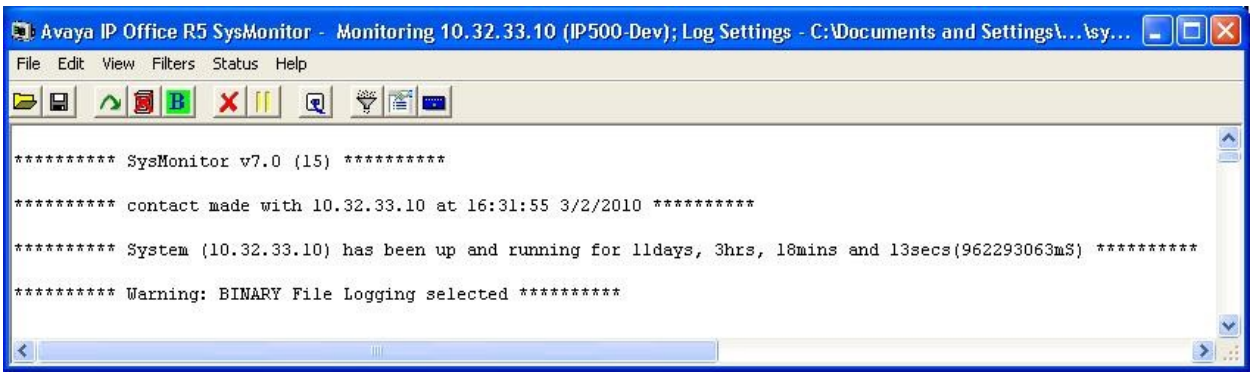
7. Verification Steps

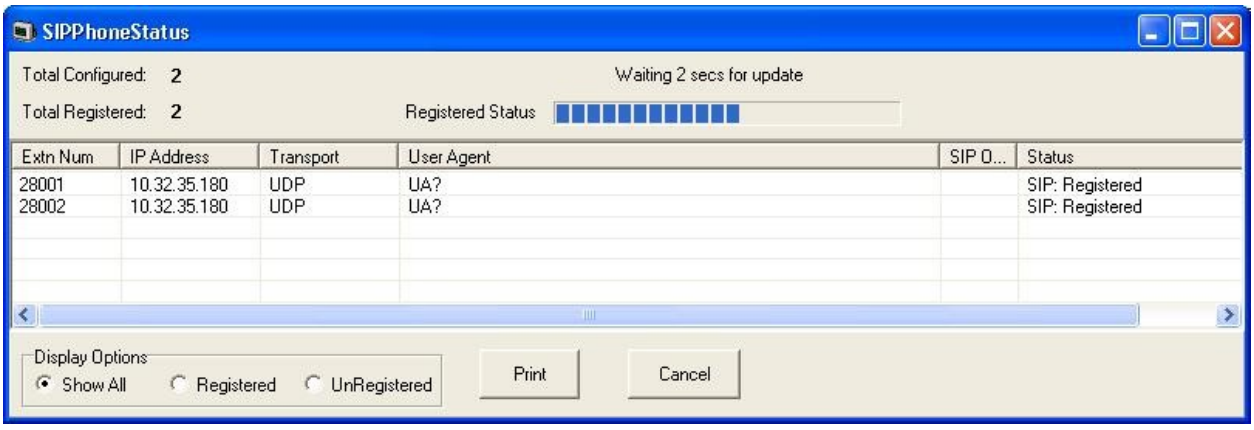
This section provides the tests that can be performed to verify proper configuration of Avaya IP Office and MultiTech MultiVOIP FX.

7.1. Verify Avaya IP Office

From a PC running the Avaya IP Office Monitor application, select **Start > Programs > IP Office > Monitor** to launch the application. The **Avaya IP Office R5 SysMonitor** screen is displayed, as shown below. Select **Status > SIP Phone Status** from the top menu.



The **SIPPhoneStatus** screen is displayed. Verify that there is an entry for each SIP extension from **Section 4.4**, and that the **Status** is "SIP: Registered", as shown below.



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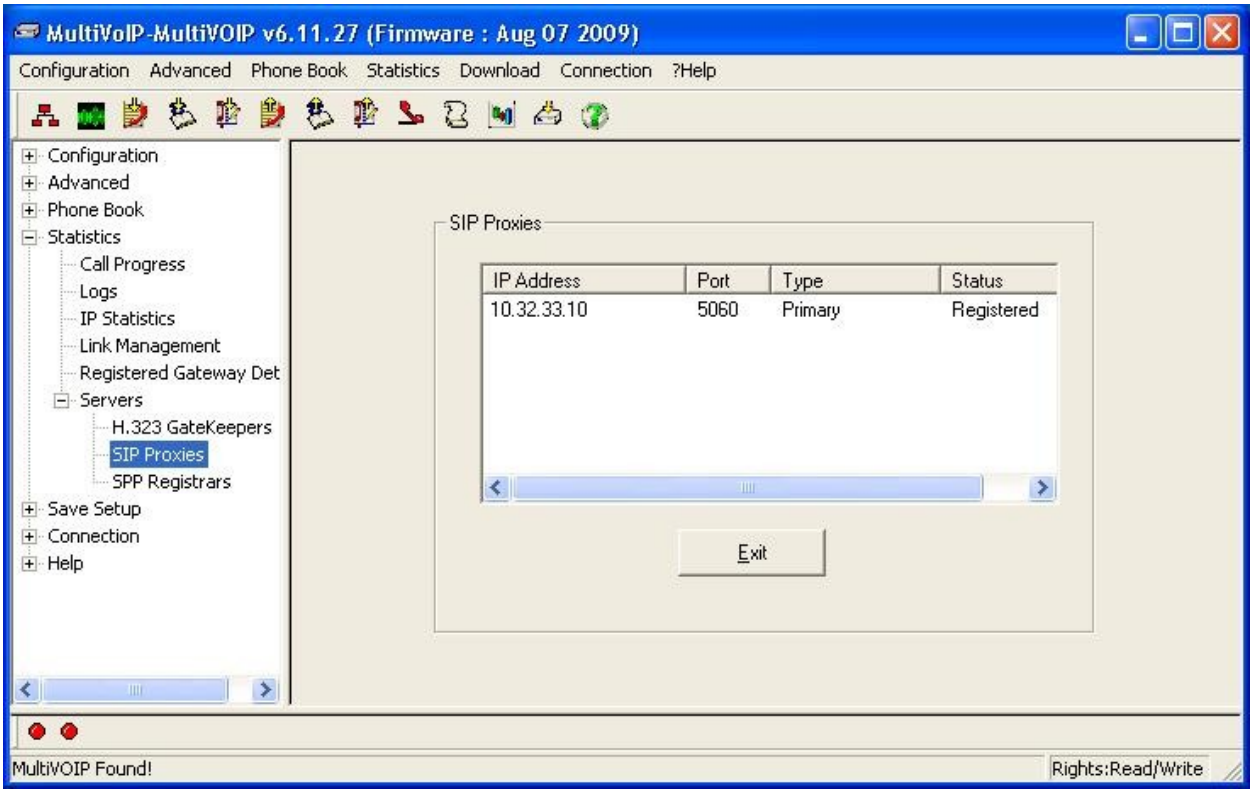
7.2. Verify MultiTech MultiVOIP FX

From a PC running the MultiVOIP application, follow the procedure in **Section 5.1** to launch the application. Select **Statistics > Servers > SIP Proxies** from the left pane, to display the **SIP Proxies** screen. Verify that an entry is shown for Avaya IP Office, with the LAN IP address from **Section 4.2** in the **IP Address** field, and a **Status** of "Registered".



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8. Conclusion

These Application Notes describe the configuration steps required for the MultiTech MultiVOIP FX to successfully interoperate with Avaya IP Office using SIP endpoints with T.38 fax capabilities. All feature and serviceability test cases were completed, with one observation listed in **Section 6**.

9. Additional References

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

1. *IP Office 5.0 Documentation CD*, August 2009, available at http://support.avaya.com.

2. *MultiVOIP Manager Quick Start Guide*, PN: 82099700 Rev. A, available at http://www.multitech.com/en_US/DOCUMENTS/Families/MultiVOIPFX/manuals.aspx.

3. *MultiVOIP Voice/Fax over IP Gateways User Guide*, PN: S000383D, available at http://www.multitech.com/en_US/DOCUMENTS/Families/MultiVOIPFX/manuals.aspx.

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