Avaya Solution & Interoperability Test Lab

Application Notes for MultiTech CallFinder CF220 with Avaya IP Office - Issue 0.1

Abstract

These Application Notes describe the configuration steps required for the MultiTech CallFinder (CF220) DID-to-Analog Adapter to successfully interoperate with the Avaya IP Office for Analog DID support. MultiTech CallFinder is a DID-to-analog adapter that allows PBX systems to support analog DID services through standard analog station or analog trunk port connections. Features and functionality were validated. Information in these Application Notes has been obtained through interoperability compliance testing and additional technical discussions. Testing was conducted via the Developer*Connection* Program at the Avaya Solution and Interoperability Test Lab.

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1. Introduction

These Application Notes describe the compliance-tested configurations utilizing Avaya IP Office 3.0(40) and MultiTech CallFinder (CF220) DID-to-Analog Adapter 1.03 for routing incoming analog DID calls utilizing IP Office trunks or stations. DID services from the central office do not support CallerID. If the use of CallerID is required for incoming calls, DID services and this solution should not be used.

MultiTech CallFinder is a DID-to-analog adapter that allows PBX systems to support analog DID services through standard analog station or analog trunk port connections. It enables the phone system to directly route incoming calls to end-user extensions. The CallFinder DID-to-analog adapter has two DID ports and two programmable FXS/FXO ports and offers a web interface for system configuration and management.

These Application Notes address the two configuration scenarios that are possible between the Avaya IP Office and MultiTech CallFinder for analog DID support. The first configuration involves connecting the MultiTech CallFinder to analog trunk ports on the Avaya IP Office and is henceforth referred to as Trunk Configuration. The second configuration involves connecting the MultiTech CallFinder to analog station ports on the Avaya IP Office and is henceforth referred to as Station Configuration.

1.1. Trunk Configuration

The tested trunk configuration scenario is shown in **Figure 1**[1]. Two DID trunks from the central office are connected to the two DID ports on the CallFinder. Each DID port has a corresponding FXS/FXO port in the CallFinder. In the trunk configuration, these ports are configured as FXS ports and are connected to analog trunk ports on the IP Office that are configured as Loop Start in the IP Office. In the trunk configuration scenario, an incoming call route is defined in the IP Office to route all calls from the CallFinder to a locally defined automated attendant module in Voicemail Pro.

[1] In the absence of Analog DID facilities at Avaya Labs, Empirix Hammer IT was used to simulate inbound analog DID trunk calls from the central office. MultiTech verified the solution in-house using analog DID facilities to the central office.

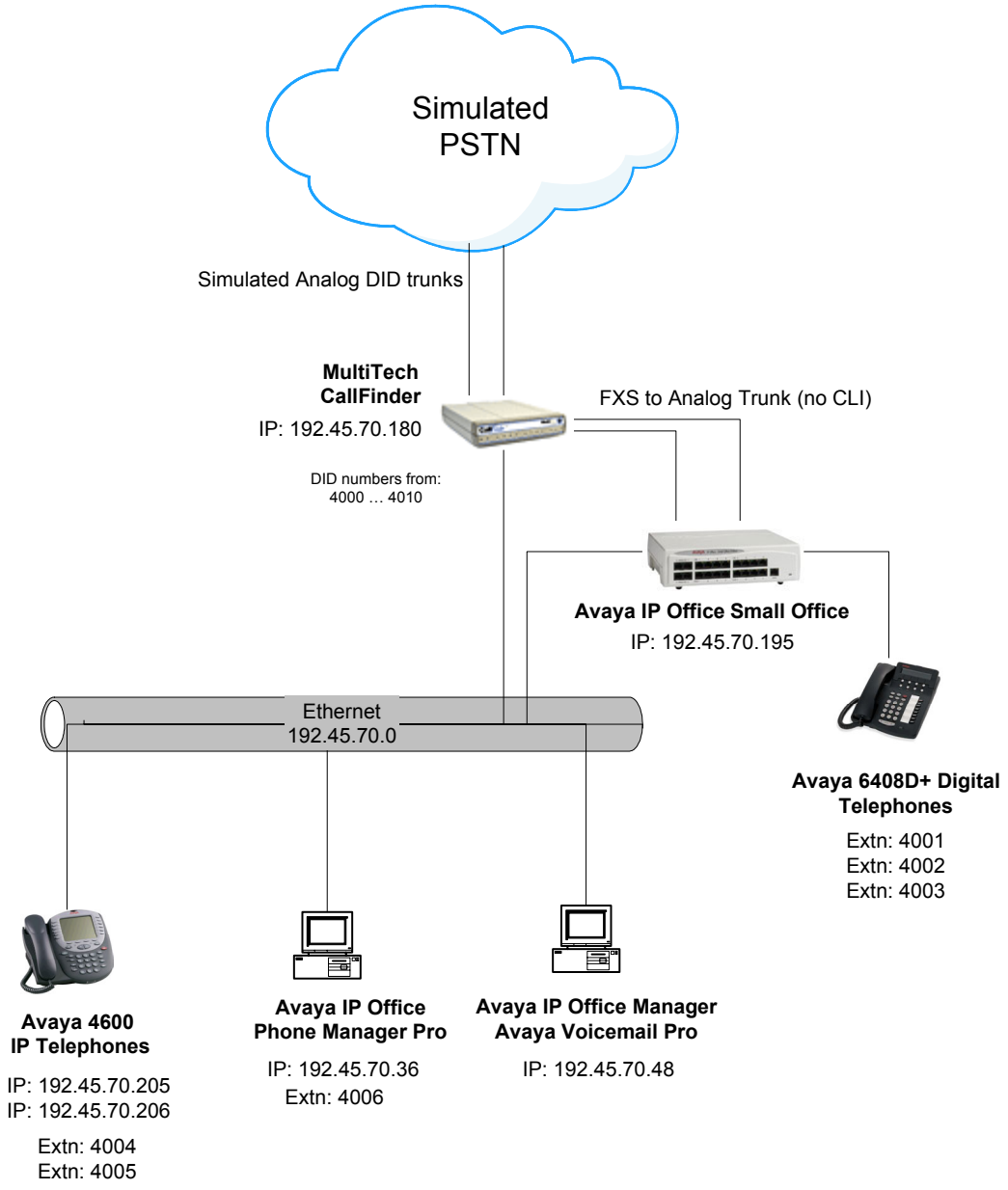


Figure 1: MultiTech CallFinder CF220 and Avaya IP Office Trunk Configuration

When the CallFinder receives an incoming DID call from the central office, e.g., "4000", its status changes from *'Waiting for Ring'* to *'Waiting for Connect'* as depicted in **Figure 1-1**. The CallFinder rings the IP Office and waits for the call to be answered. When the automated attendant in Voicemail Pro answers the call, the CallFinder pauses for a predefined interval, default is 2 seconds, then transmits the DTMF of the DID digits it received from the central office, e.g., "4000". At this point, the CallFinder status changes from *'Waiting for Connect'* to *'Connected'* and it connects its DID port to its FXS port. In the meantime, the Voicemail Pro automated attendant blind transfers the call to the extension corresponding to the DTMF

sequence it received. The Outside Caller is connected and hears ring back from the IP Office as it rings "4000".

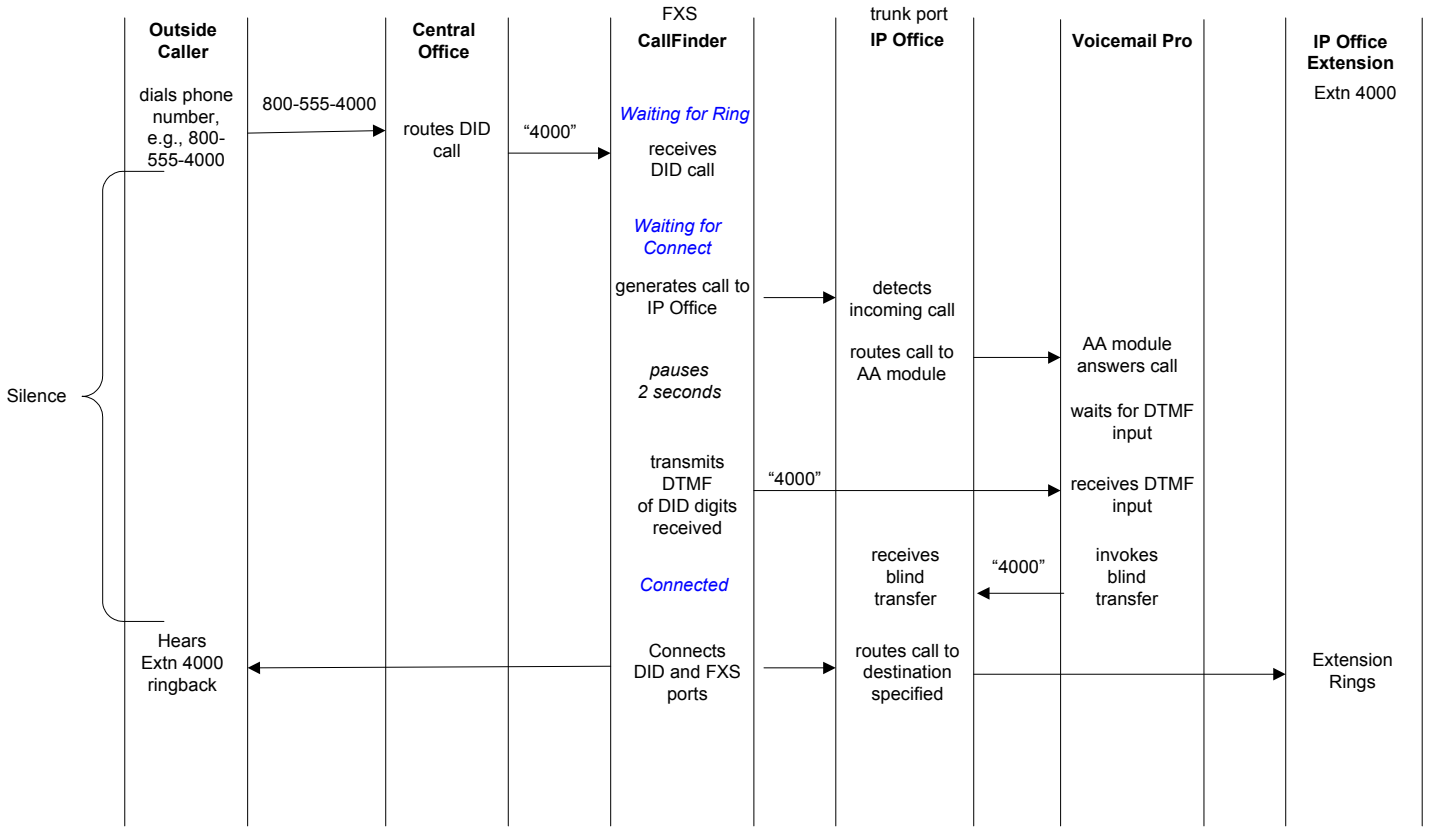


Figure 1-1: Trunk Configuration Call Flow

1.2. Station Configuration

The tested trunk configuration scenario is shown in **Figure 2**[1]. Two DID trunks from the central office are connected to the two DID ports on the CallFinder. Each DID port has a corresponding FXS/FXO port in the CallFinder. In the station configuration, these ports are configured as FXO ports and are connected to analog station ports on the IP Office.

Users of the station configuration solution are advised of the following regarding use of this solution:

- Lose ability for call accounting of incoming DID calls in the station configuration.
- Lose ability to use distinctive ringing for incoming DID calls in the station configuration

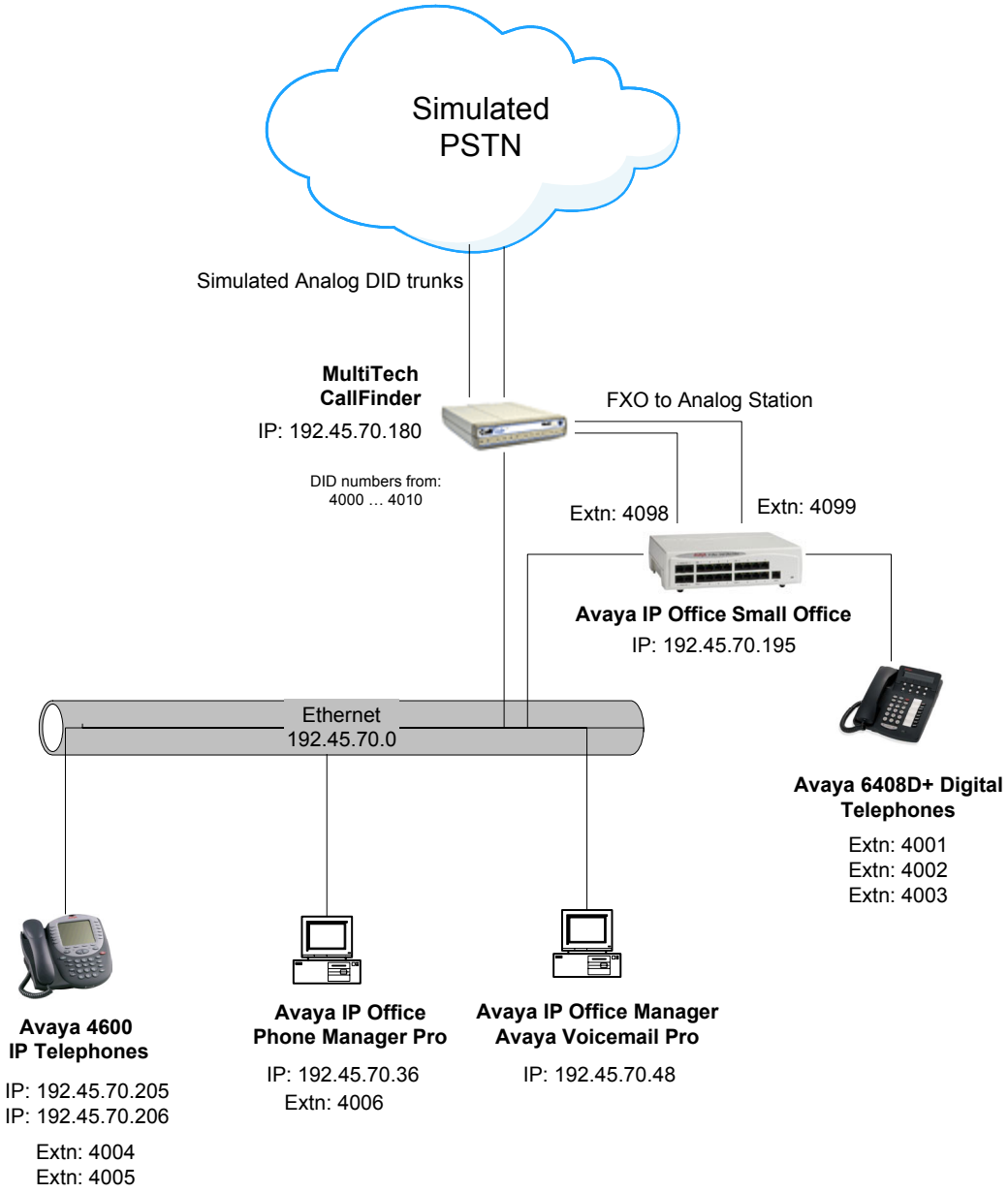


Figure 2: MultiTech CallFinder CF220 and Avaya IP Office Station Configuration

When the CallFinder receives an incoming DID call from the central office, e.g., "4000", its status changes from *'Waiting for Ring'* to *'Waiting for Connect'* as depicted in **Figure 2-1**. The CallFinder goes off-hook on its FXO port and waits for dial tone. Upon detecting dial tone, the CallFinder pauses for a predefined interval, default is 2 seconds, then transmits the DTMF of the DID digits it received from the central office, e.g., "4000". At this point, the CallFinder status changes from *'Waiting for Connect'* to *'Connected'* and it connects its DID port to its FXO port. In the meantime, the IP Office rings the extension corresponding to the DTMF sequence it received. The Outside Caller hears ring back from the IP Office as it rings "4000".

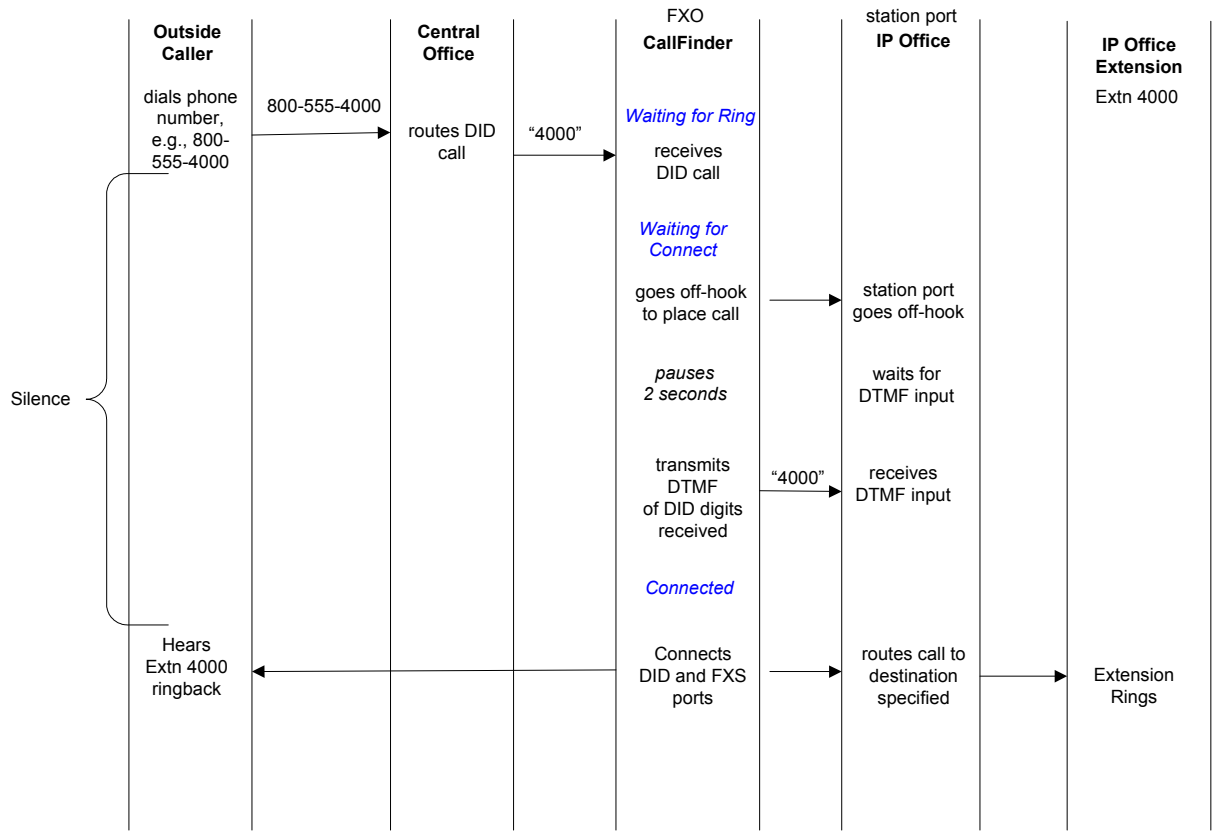


Figure 2-1: Station Configuration Call Flow

2. Equipment and Software Validated

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

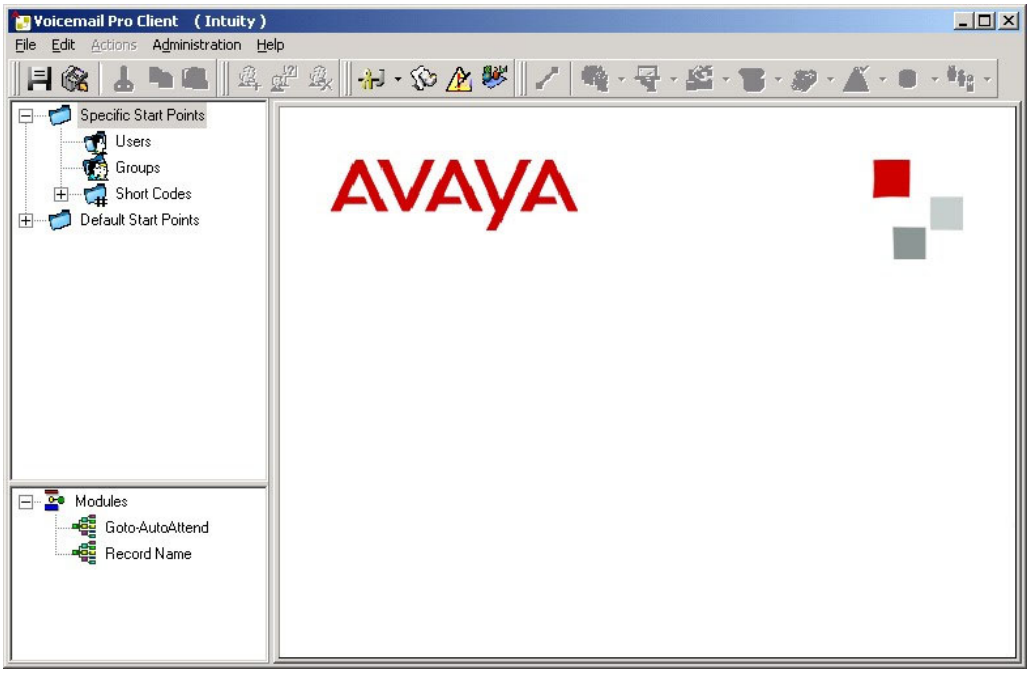
Equipment	Software
Avaya IP Office Small Office System	3.0(40)
Avaya IP Office Manager	5.0(40)
Avaya IP Office Phone Manager Pro	3.0(12)
Avaya IP Office Voicemail Pro	3.0(13)
Avaya 4602SW IP Telephones	4602sape1_82.bin
Avaya 6408D+ Telephones	-
MultiTech CallFinder CF220	1.03
MultiTech FaxFinder/CallFinder Manager	1.04
Empirix HammerIT	2.8.18.1
PC for Avaya IP Office Manager and Avaya Voicemail Pro and MultiTech FaxFinder/CallFinder Manager	Windows 2000 professional w/Service Pack 4
PC for Avaya IP Office Phone Manager Pro	Windows 2000 professional w/Service Pack 4

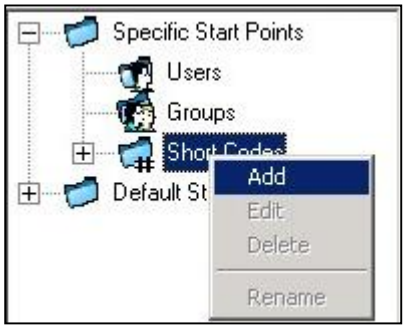
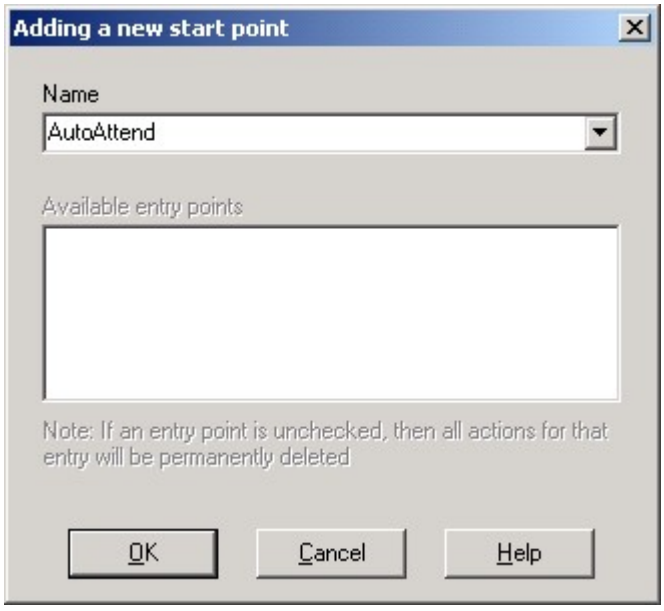
3. Trunk Configuration

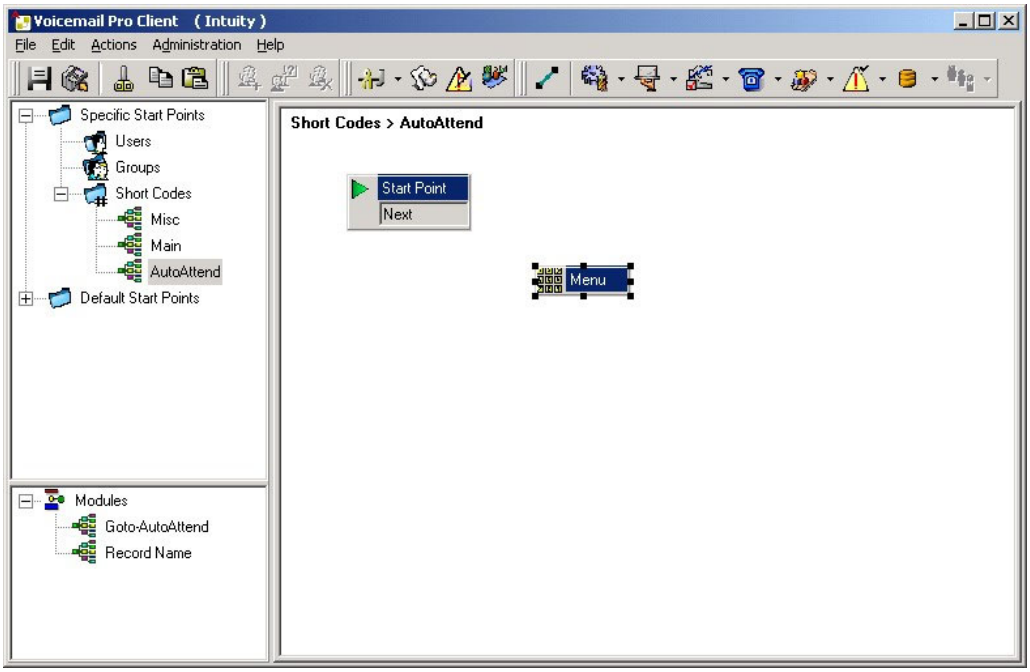
This section addresses provisioning of the IP Office, Voicemail Pro and CallFinder for the Trunk configuration depicted in **Figure 1**. For all other provisioning information, such as initial installation and configuration of the IP Office, Voicemail Pro and CallFinder, please refer to the product documentation.

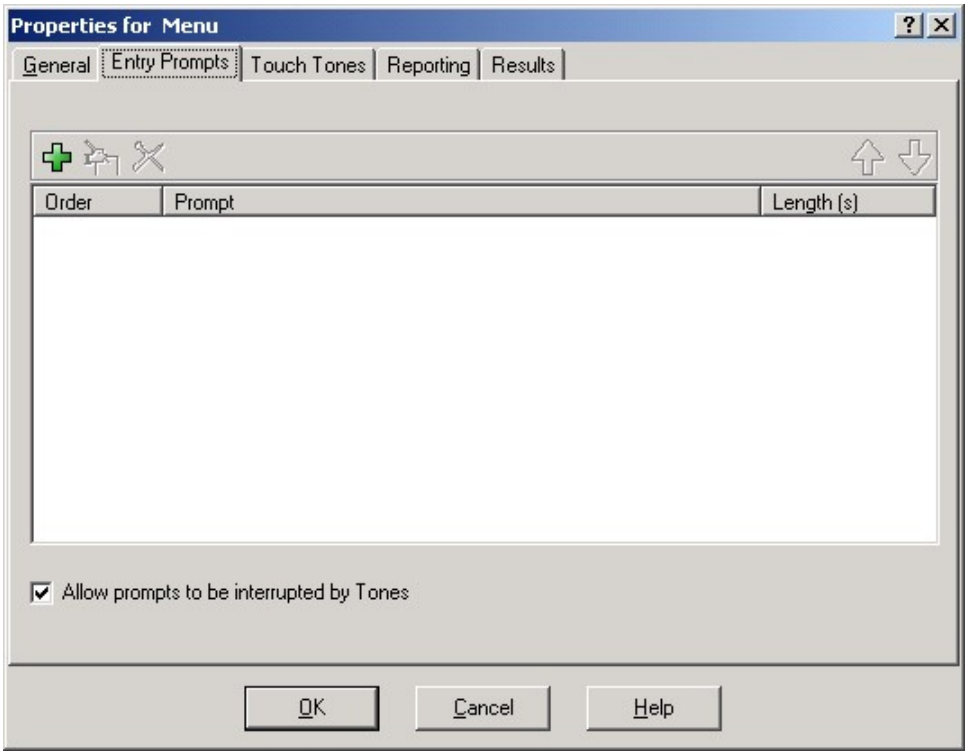
3.1. Configure Avaya IP Office Voicemail Pro

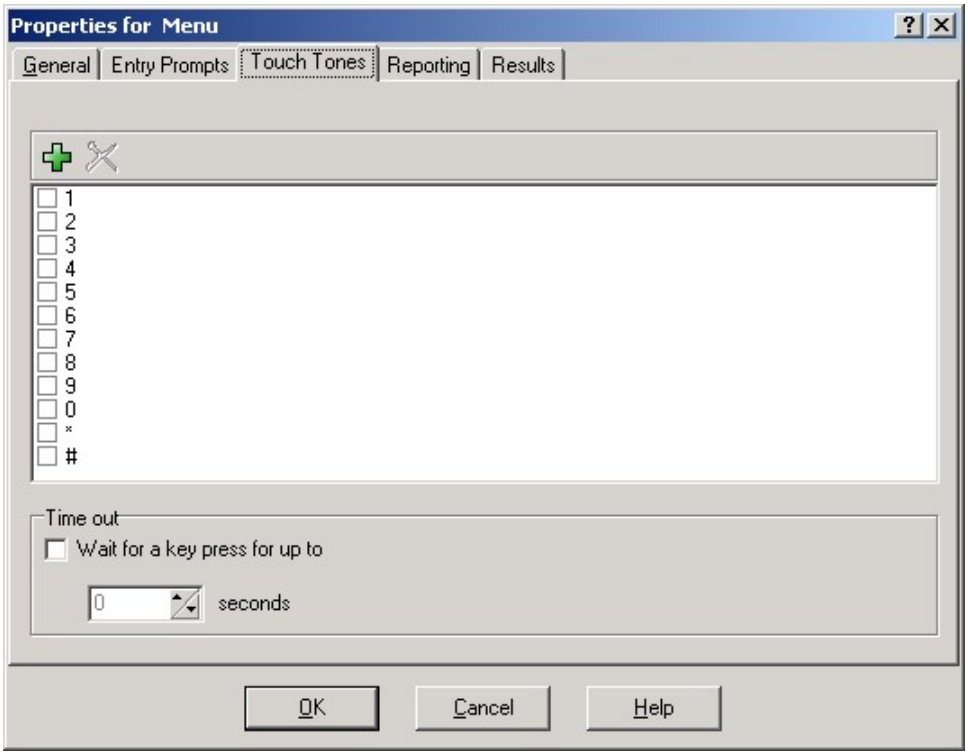
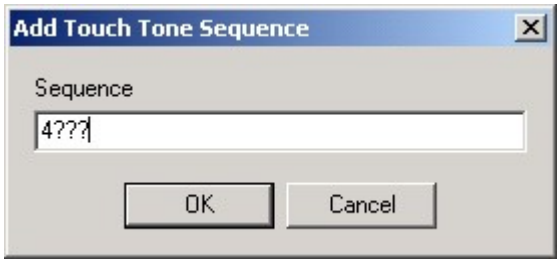
For the purpose of these Application Notes, a single Automated Attendant module was defined for transferring calls received from the CallFinder as well as for internal and other inbound trunk calls. Only the configuration relevant to the CallFinder is discussed in the steps that follow.

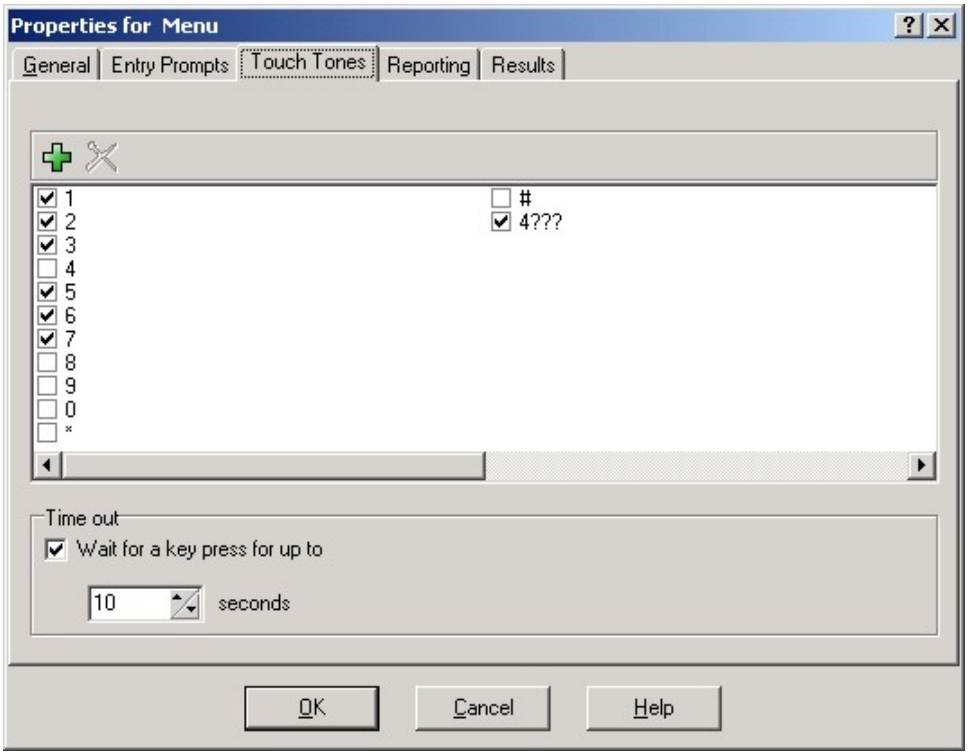
Step	Description
	Launch Voicemail Pro client
1.	Log in to the IP Office Manager PC and go to **Start → Programs → IP Office → Voicemail Pro** to launch the Voicemail Pro Client application. 

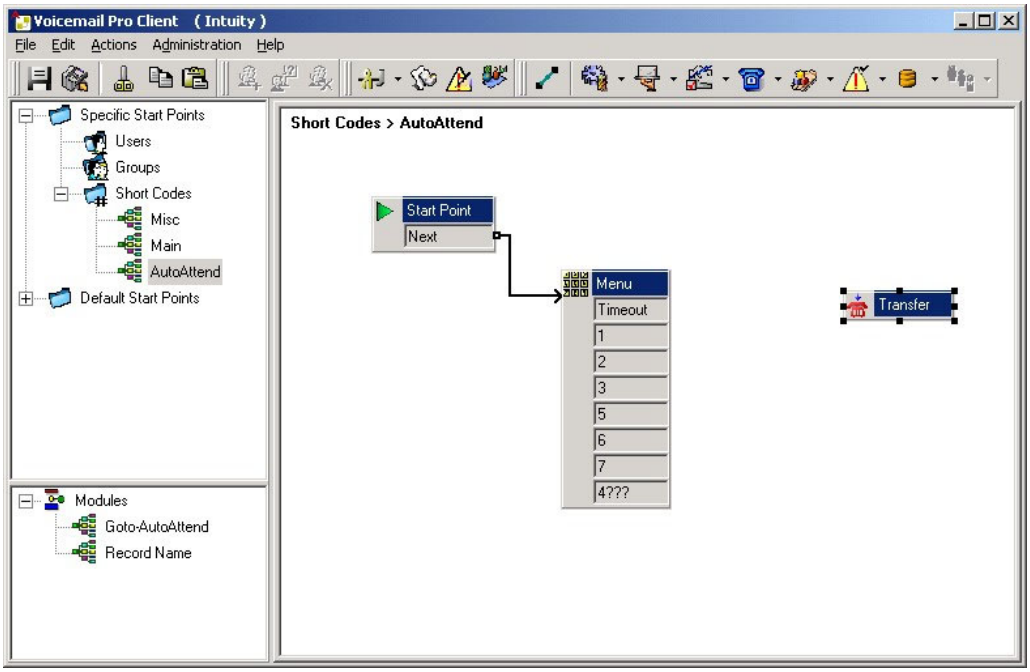
Step	Description
	Create the Auto Attendant Module
2.	Create the module that incoming calls will be routed to. In the Voicemail Pro Client window, right click the Short Codes Start Point and select **Add**. 
3.	In the Adding a new start point popup that appears, type **AutoAttend** in the Name field and click **OK**. 

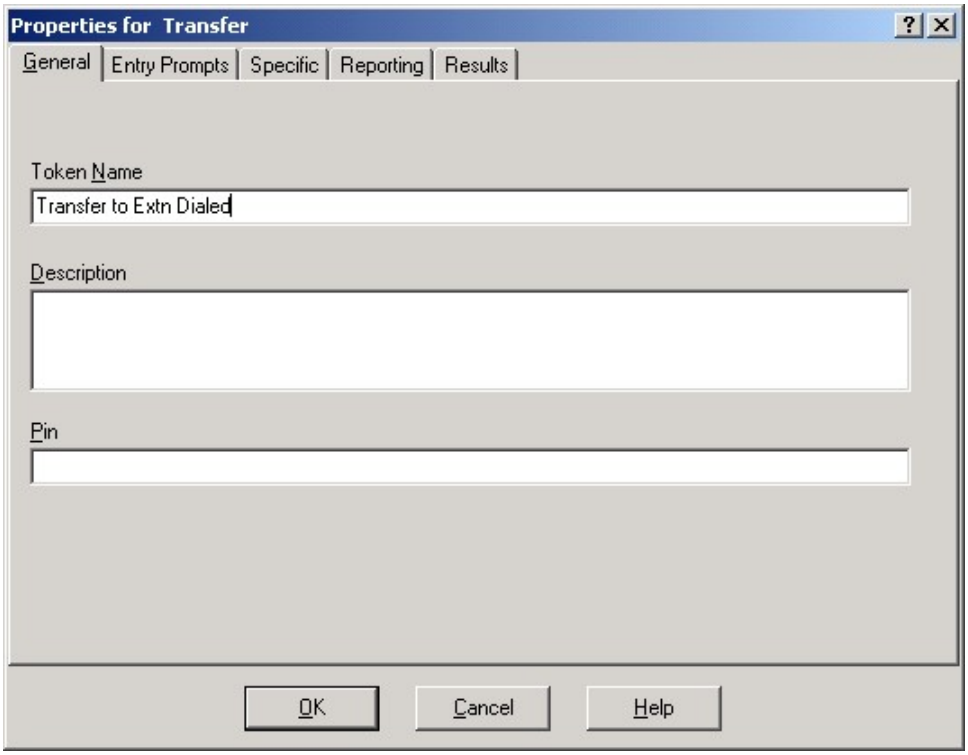
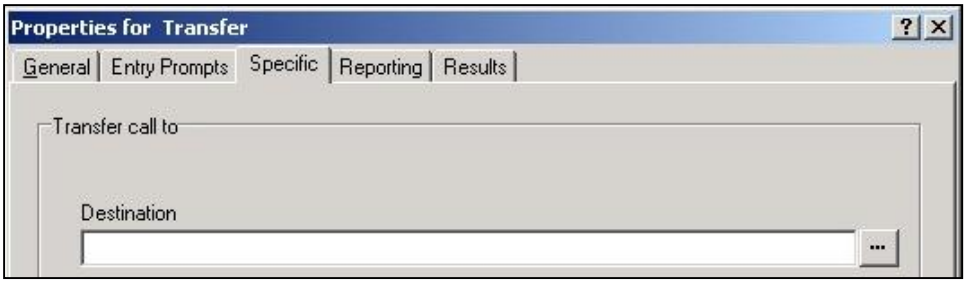
Step	Description
4.	In the Voicemail Pro Client window, select **Actions → Basic Actions → Menu** to add a Menu object. 

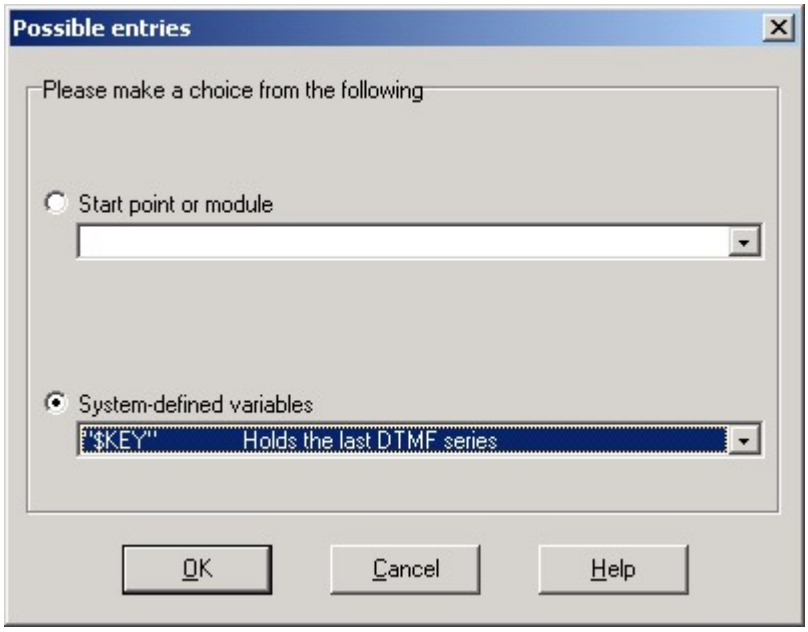
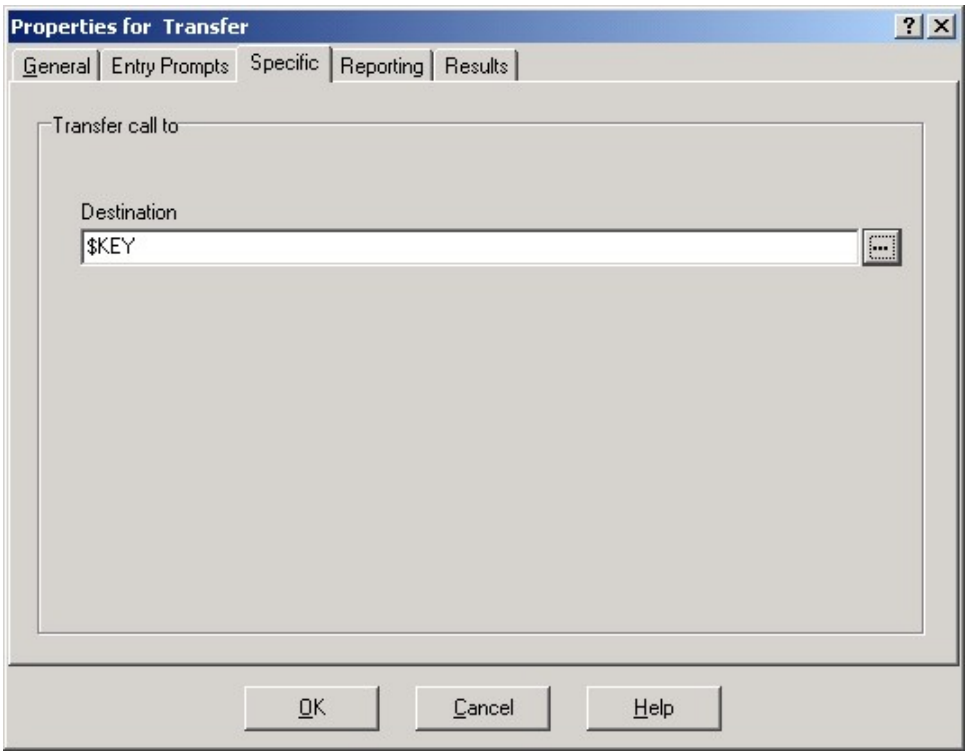
Step	Description
5.	Double click the Menu object. In the Properties for Menu popup that appears, select the Entry Prompts tab, check **Allow prompts to be interrupted by Tones** and click the Green plus sign to add a menu prompt. While adding and recording the menu prompt is unnecessary for calls from the CallFinder since DID callers will not hear the prompt, it would still be useful to have a menu recording in the event that some troubleshooting is necessary or if this module is used for internal and inbound trunk calls as well. 

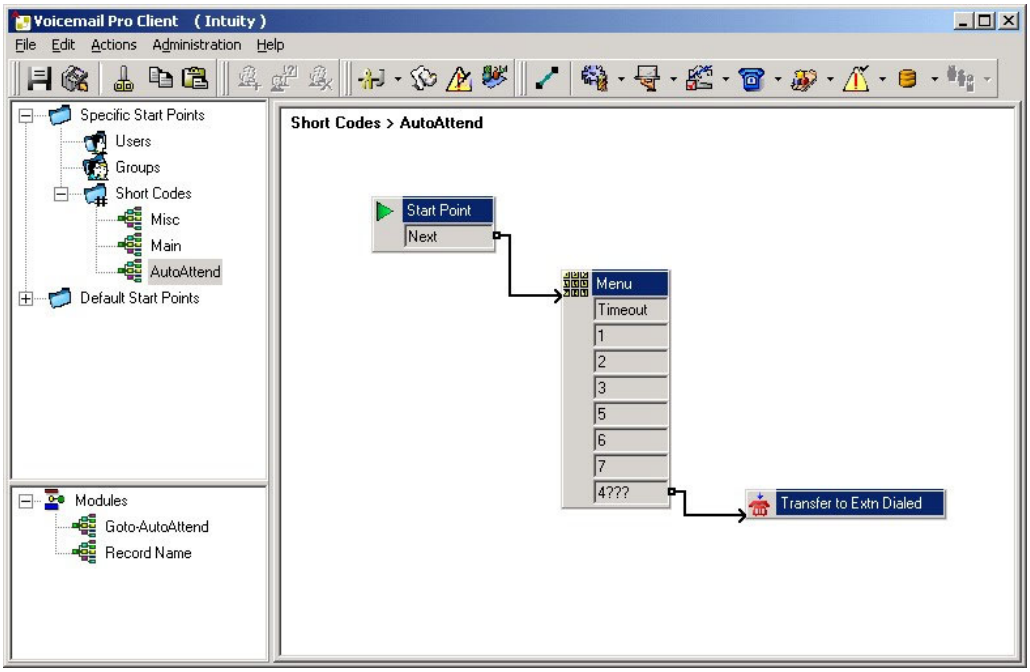
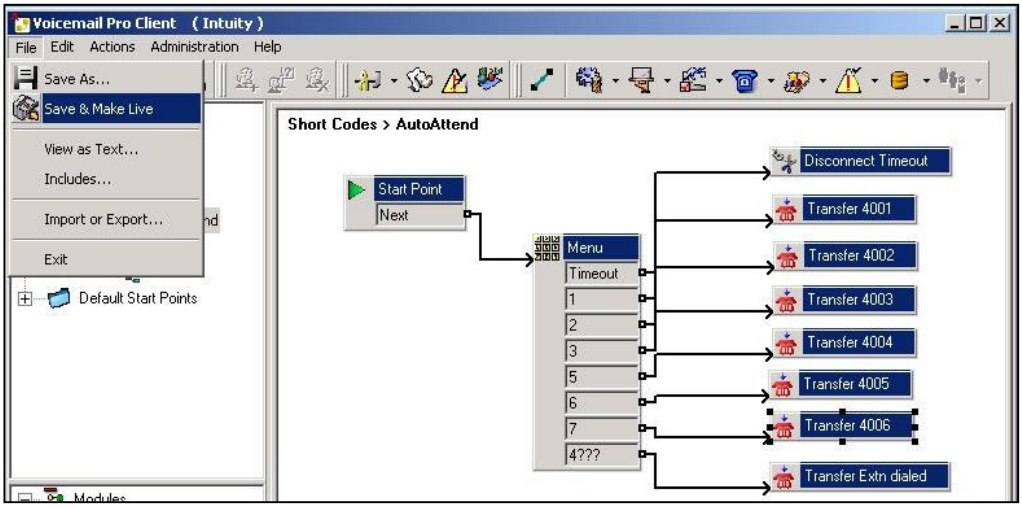
Step	Description
6.	In the Touch Tones tab of the Properties for Menu popup, click the Green plus sign to add a touch-tone sequence. 
7.	In the Add Touch Tone Sequence popup that appears, enter the touch-tone sequence that will be received from the CallFinder in the Sequence field, e.g., 4**????** and click **OK**. 

Step	Description
8.	In the Touch Tones tab of the Properties for Menu popup, check **Wait for a key press for up to** and set the time out field to the desired time out, e.g., **10** seconds. Click **OK**. 

Step	Description
9.	In the Voicemail Pro Client window, connect the Start Point object to the Menu object. Then select **Actions → Telephony Actions → Transfer** to add a Transfer object. 

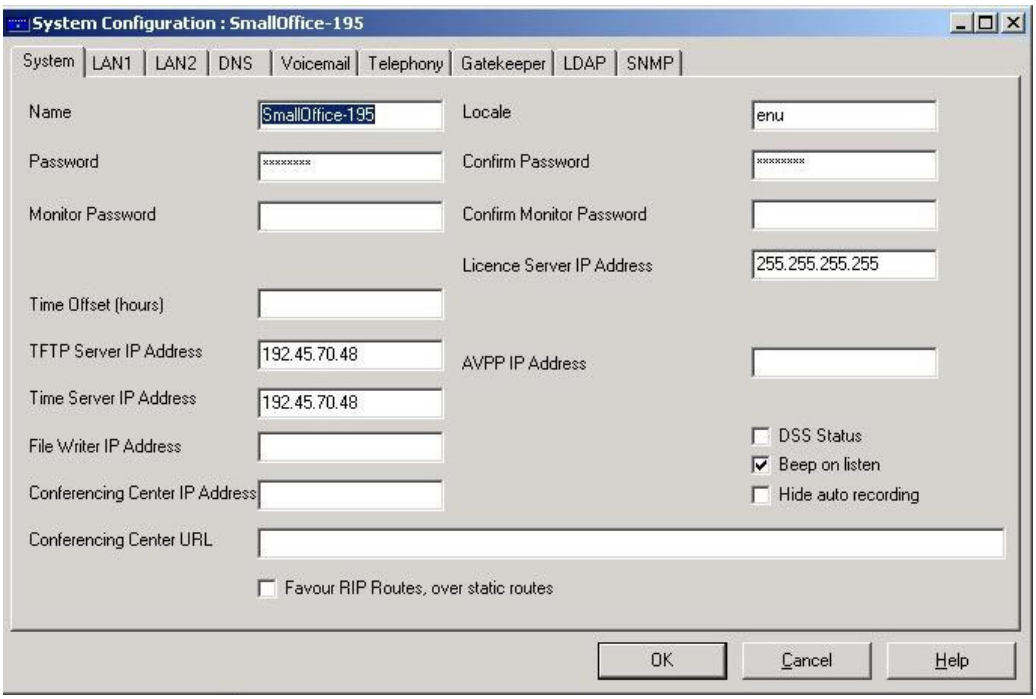
Step	Description
10.	Double click the Transfer object. In the General tab of the Properties for Transfer popup that appears, set *Token Name* to **Transfer to Extn Dialed**. 
11.	In the Specific tab of the Properties for Transfer popup, click the '**…**' button. 

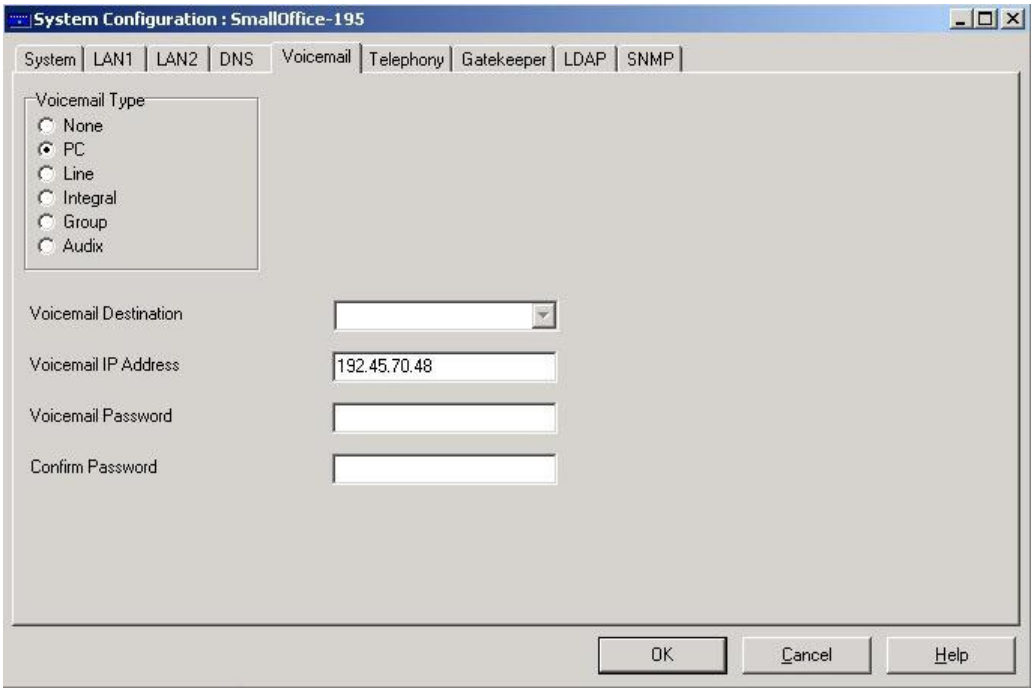
Step	Description
12.	In the Possible entries popup that appears, select radio button **System-defined variables** then select **"$KEY"** from the pull-down menu. Click **OK**. 
13.	In the Properties for Transfer popup, click **OK**. 

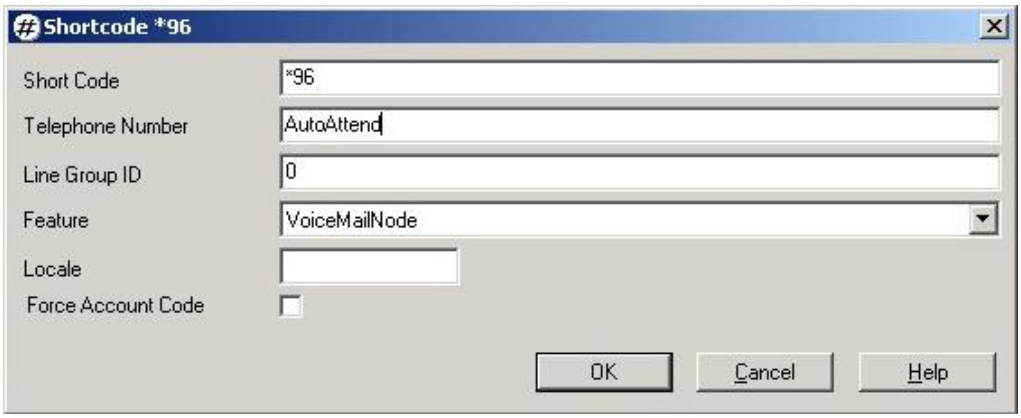
Step	Description
14.	In the Voicemail Pro Client window, connect the Menu object to the Transfer to Extn Dialed object. 
	Save and Make Live
15.	In the Voicemail Pro Client window, select **File → Save & Make Live** to save the configuration and have it used by the Voicemail Server for calls received from the IP Office. 

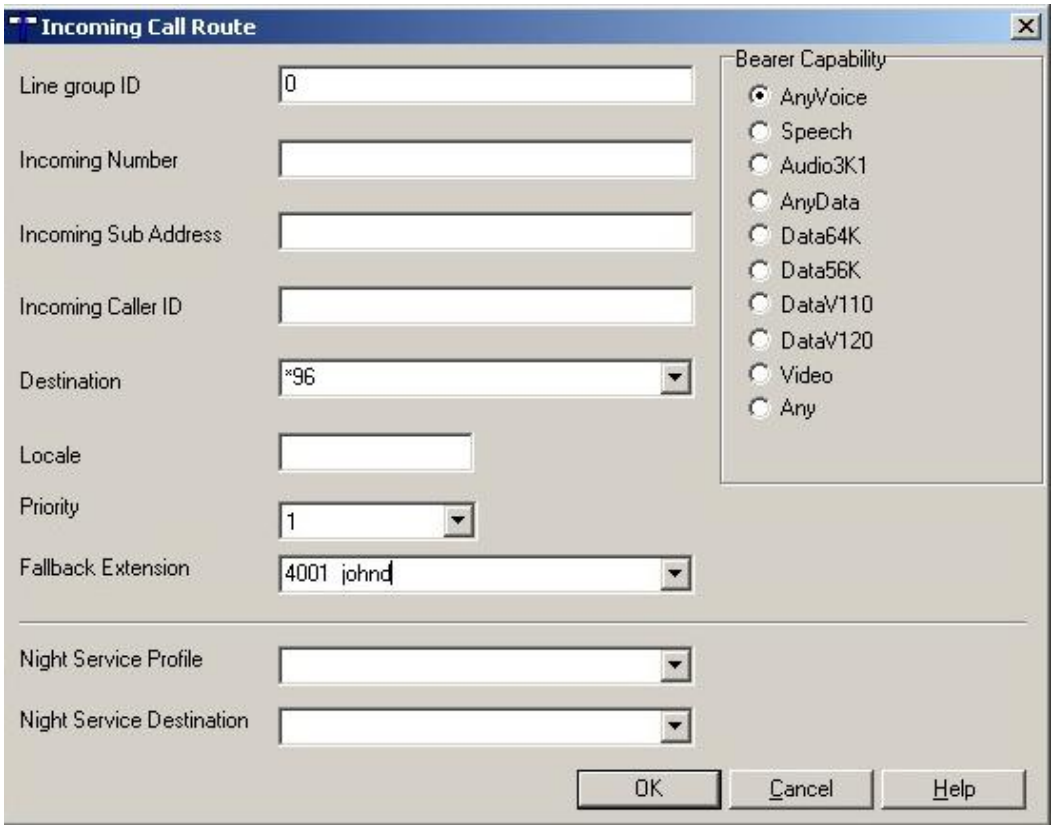
3.2. Configure Avaya IP Office

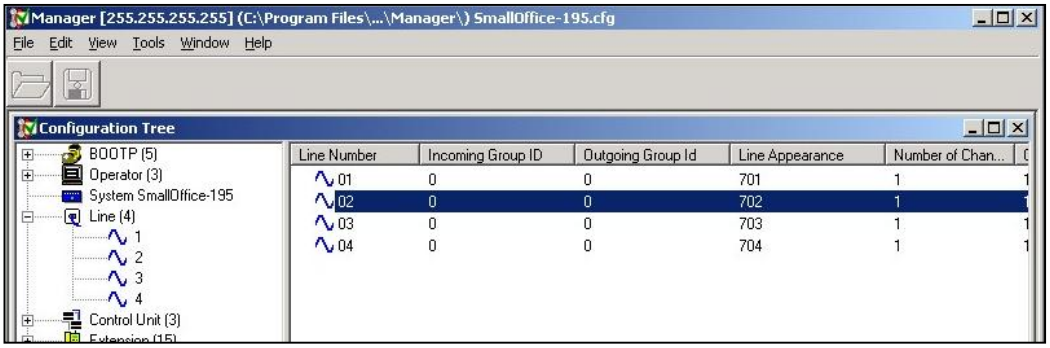
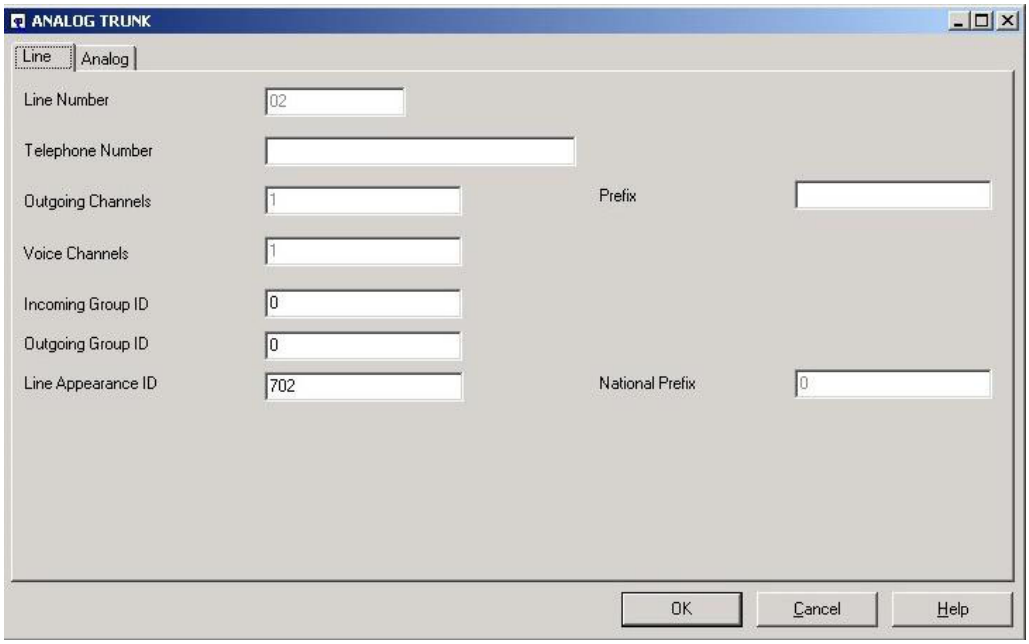
This section addresses provisioning of the IP Office as it relates to integration of the CallFinder. For all other provisioning information, such as provisioning of the trunks for regular inbound and outbound dialing, call coverage, extensions, etc., please refer to the IP Office documentation.

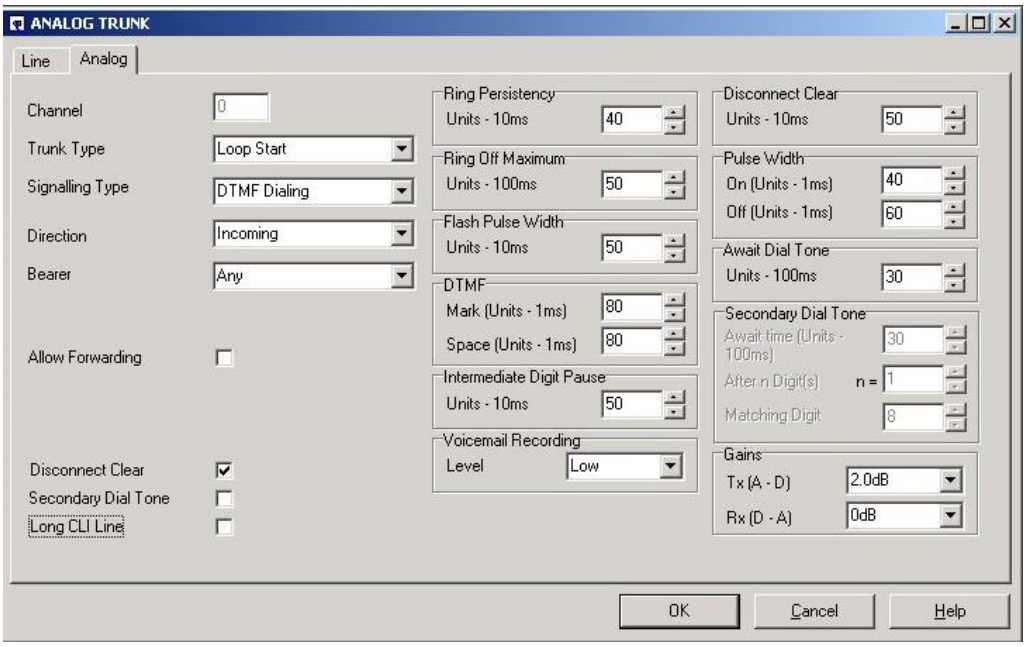
Step	Description
	Physical connection
1.	Physically connect CallFinder *FXS/FXO port 1* to the desired analog trunk port on the IP Office, e.g., **Line 2**. Physically connect CallFinder *FXS/FXO port 2* to the desired analog trunk port on the IP Office, e.g., **Line 3**.
	Login
2.	Log in to the IP Office Manager PC and go to **Start → Programs → IP Office → Manager** to launch the Manager application. Log in to the Manager application using the appropriate credentials.
3.	In the Manager window that appears, select **File → Open** to search for the IP Office system in the network.
4.	Log in to the IP Office system using the appropriate login credentials to receive its configuration.
	Configure License Server IP Address
5.	In the Manager window, go to the Configuration Tree and double-click **System**. In the System tab of the System Configuration window that appears, verify the *License Server IP Address* field is set to properly, e.g., if Small Office Feature Key is connected to a PC, the License Server IP Address should be set to the IP address of the PC. However, in this instance, the Feature Key is directly connected to the Small Office so the License server IP Address should be set to **255.255.255.255**. 

Step	Description
	Configure Voicemail IP Address
6.	In the Voicemail tab of the System Configuration window, select **PC** for Voicemail Type and set *Voicemail IP Address* to the IP address of the Voicemail Server, e.g., **192.45.70.48**. Click **OK**. 
	Install licenses
7.	In the Manager window, go to the Configuration Tree and double-click License to open the list of licenses installed in the IP Office system.
8.	Right click in the license list window and select **New**. In the License window that appears, enter the Voicemail Pro License Key and click **OK**. 
9.	In the Manager window, select **File → Save** to save the licenses to the IP Office system and wait for the system to update. The system reload validates the new license.
	Configure Short code to Voicemail Pro AutoAttend Module
10.	In the Manager window, select **File → Open** to search for the IP Office system in the network.
11.	Log in to the IP Office system using the appropriate login credentials to receive its configuration.

Step	Description
12.	In the Manager window, go to the Configuration Tree and double-click **Shortcode** to open the list of short codes on the IP Office.
13.	Right click in the short code list window and select **New**. In the Shortcode window that appears, set *Short Code* to the desired short code, e.g. ***96**, *Telephone Number* to the name of the Automated Attendant module defined in the previous section, e.g., **AutoAttend**, *Line Group ID* to the line group number used for the trunks connected to the CallFinder, e.g. **0**, *Feature* to **VoicemailNode** and click **OK**. 
	Configure Incoming Call Route for trunks connected to CallFinder
14.	In the Manager window, go to the Configuration Tree and double-click **Incoming Call Route** to open the list of incoming call routes on the IP Office.
15.	Right click in the incoming call route window and select **New**.

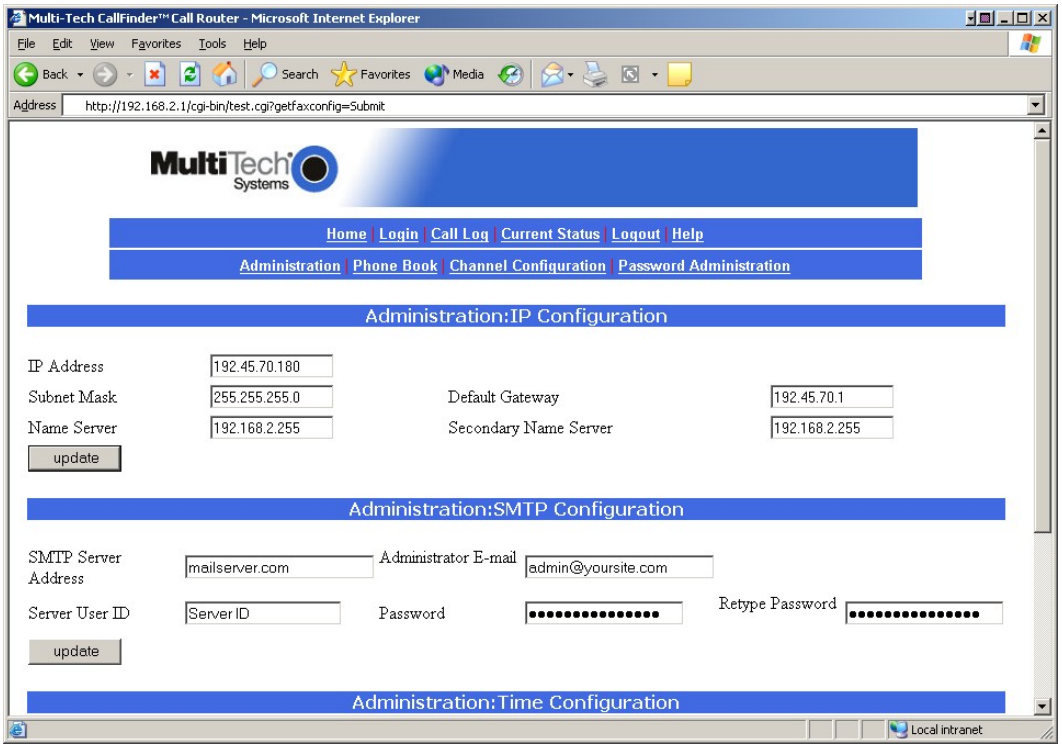
Step	Description
16.	In the Incoming Call Route window that appears, set the *Line Group ID* to the line group number used for the trunks connected to the CallFinder, e.g., **0** (should be same as that used in Step 12), *Destination* to ***96**, *Fallback Extension* to the extension designated to answer incoming calls should the defined destination fail to the answer the call, e.g., extension **4001**, and click **OK**.  **NOTE**: It is always good practice to designate a Fallback extension in the event that the Voicemail Pro system becomes unavailable.
	Configure Analog Trunks connected to CallFinder
17.	In the Manager window, go to the Configuration Tree and double-click **Line** to open the list of lines (trunks) available on the IP Office.

Step	Description
18.	Double-click the Line connected to CallFinder Channel 1, e.g., **Line 02**. 
19.	In the Line tab of the ANALOG TRUNK window that appears, set *Incoming Group ID* to the incoming call route to be used for the CallFinder trunks, e.g., **0** (should be the same as the line group number used in Steps 12 and 15). 

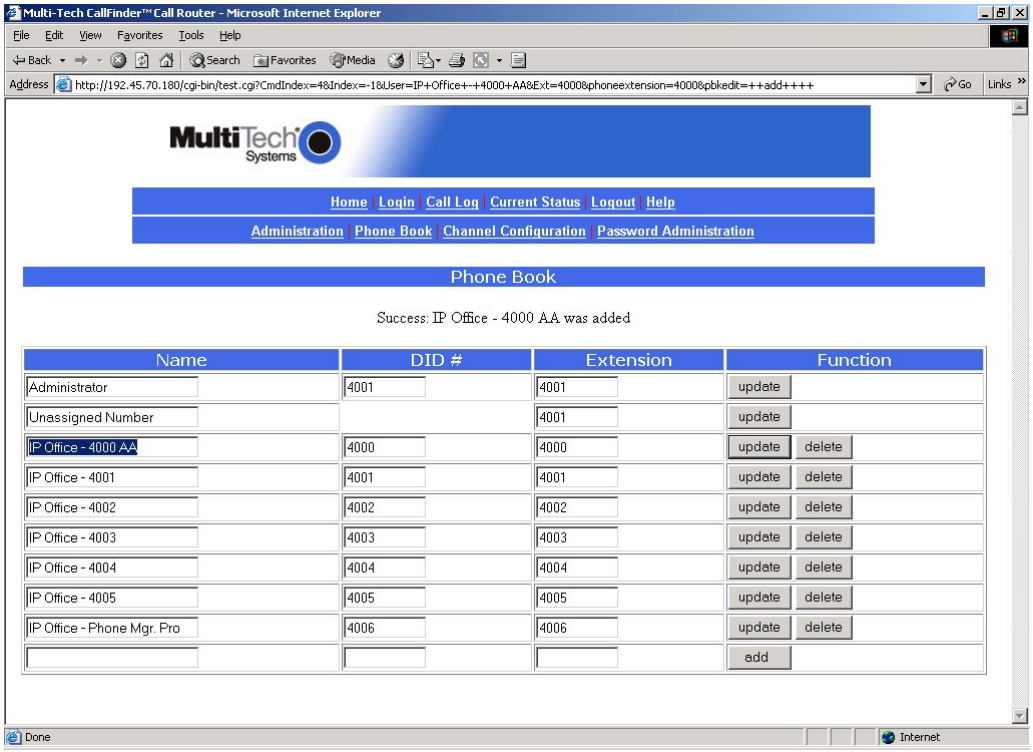
Step	Description
20.	In the Analog tab of the ANALOG TRUNK window, set *Trunk Type* to **Loop Start**, *Direction* to **Incoming**, and click **OK**.  **Note**: During testing, audio on the IP Office side of the call was perceived as too low. Increasing the Tx Gain showed improvement. Modifying the Tx Gain should only be done if appropriate to the configuration being used.
21.	Repeat Steps 17 – 19 for the line connected to CallFinder Channel 2, e.g., **Line 03**. For the purposes of these Application Notes, two IP Office trunk lines were connected to the 2-port CallFinder.

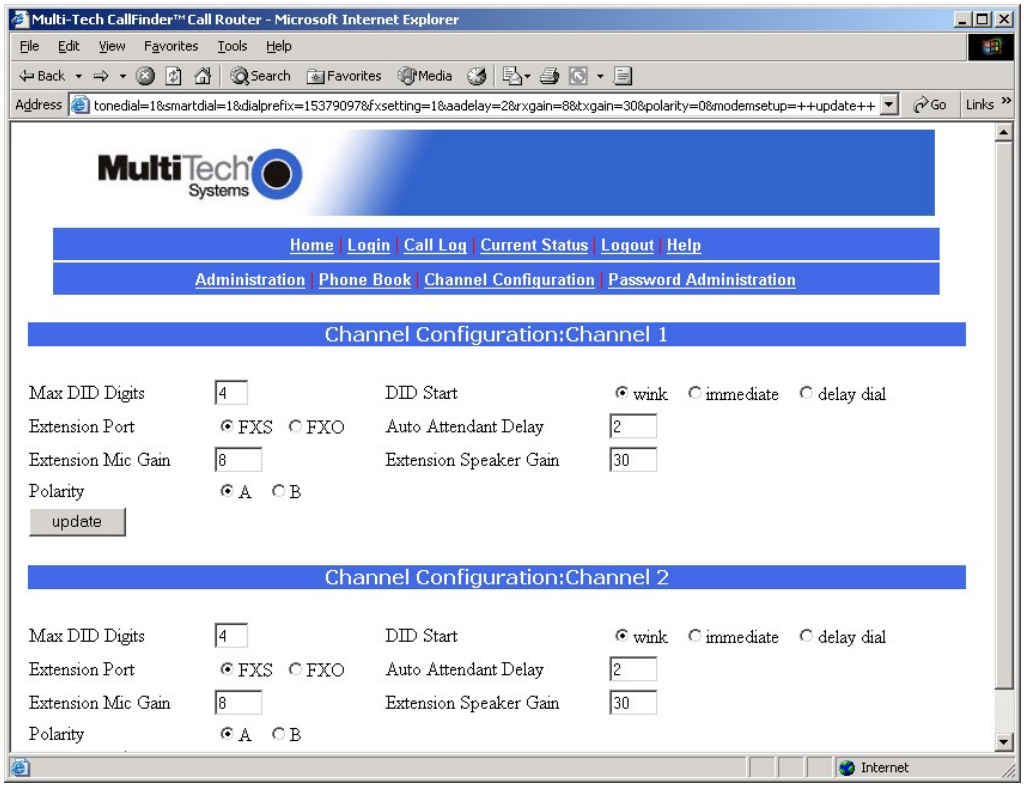
3.3. Configure MultiTech CallFinder CF220

This section addresses provisioning of the CallFinder for the Trunk Configuration Scenario with the Avaya IP Office. For all other provisioning information, such as initial installation and configuration of MultiTech CallFinder, please refer to the product documentation.

Step	Description
	Configure IP Address
1.	Physically connect the IP Office Manager PC to the CallFinder Ethernet port using a crossover cable.
2.	Log in to the IP Office Manager PC and modify its IP address to be 192.168.2.5 with subnet mask 255.255.255.0. Go to **Start → Programs → Internet Explorer** to launch the browser, browse to the default IP address of the CallFinder, e.g., **192.168.2.1**, and log in using the appropriate credentials, e.g., **admin/admin**.
3.	In the CallFinder Home page that appears, click **Password Administration**. In the Password Administration page that appears, set *Password* to the new desired password, *Confirm Password* to the new desired password. Click **update**.
4.	In the CallFinder page, click **Administration**. In the Administration page that appears, set *IP Address* to the desired IP address, e.g., **192.45.70.180**, *Subnet Mask* to the desired subnet mask, e.g., **255.255.255.0**, and *Default Gateway* to the desired gateway, e.g., **192.45.70.1**. Click **update**. 
5.	Disconnect the IP Office Manager from the CallFinder and connect it to the network. Physically connect the CallFinder to the network using a crossover cable.

Step	Description
6.	Modify the IP Office Manager PC's IP address to its original settings, e.g., **192.45.70.48/255.255.255.0**. Browse to the new IP address of the CallFinder, e.g., **192.45.70.180**, and log in using the appropriate credentials. 
	Configure Phone Book (DID to Extension mapping)
7.	In the CallFinder Home page that appears, click **Phone Book** to configure the DID number to Extension number mapping.

Step	Description
8.	In the Phone Book page that appears, enter **Name**, **DID #** and **Extension** in the appropriate fields and click **add** to enter the information into the Phone Book. Repeat the data entry for each DID number that will be arriving from the Central Office. Additionally, make sure to define an extension number that unknown DID numbers should be routed to by the CallFinder in the Unassigned Number field.  **NOTE**: DID does not support CallerID, the information listed in the Phone Book page is used to map the DID number arriving from the Central Office to an Extension number in the locally configured IP Office.
	Configure Channel Configuration
9.	In the CallFinder page, click **Channel Configuration** to configure the CallFinder ports connected to the IP Office as well as the DID ports connected to the Central Office.

Step	Description
10.	In the Channel Configuration page that appears, set *Max DID Digits* to the number of digits that will be arriving from the central office, e.g., **4**, *DID Start* to the type of DID connection setup with the central office, e.g., **wink**, *Extension Port* to **FXS** for Analog Loop Start trunk connection to the IP Office, *Auto Attendant Delay* to the desired delay in seconds that the CallFinder should pause for between the time the call goes off-hook at the FXS port and transmitting the DID to DTMF digits, e.g., **2**. Click **update**.  **NOTE 1**: MultiTech reports that at present CallFinder can support up to 7 DID digits. **NOTE 2**: Polarity enables one to switch Tip and Ring on the Loop Start side if necessary.
11.	Repeat Step 10 for Channel 2 of the CallFinder.

4. Station Configuration

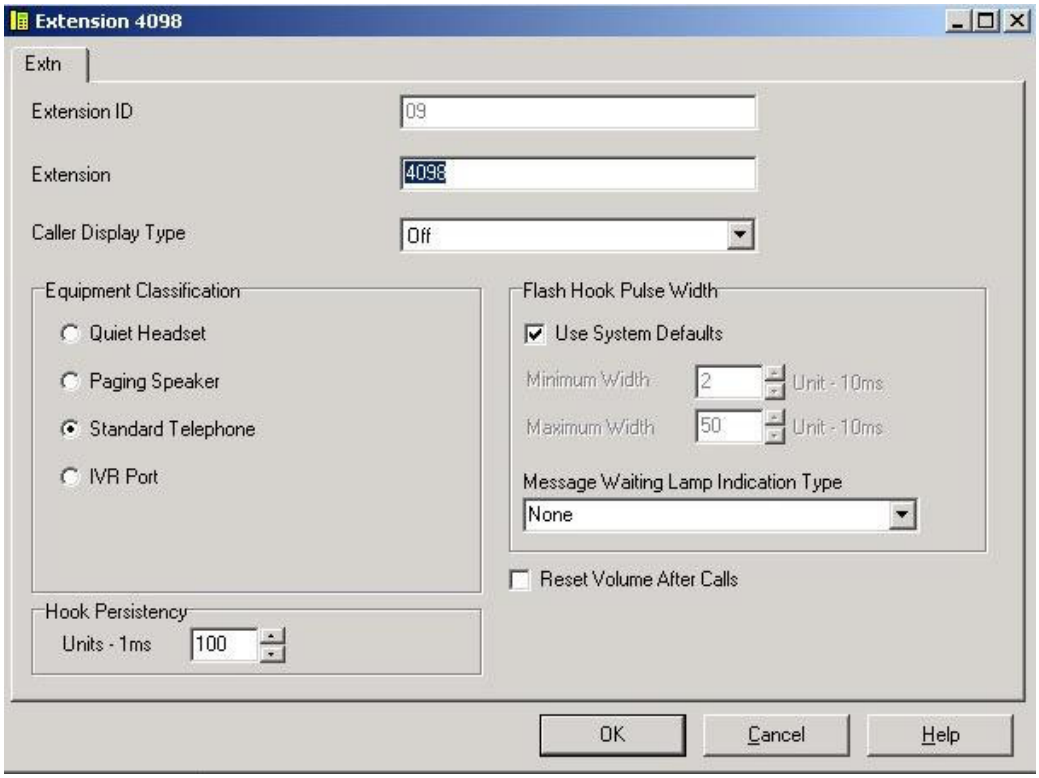
This section addresses provisioning of the IP Office, Voicemail Pro and CallFinder for the Station configuration depicted in **Figure 2**. For all other provisioning information, such as initial installation and configuration of the IP Office, Voicemail Pro and CallFinder, please refer to the product documentation.

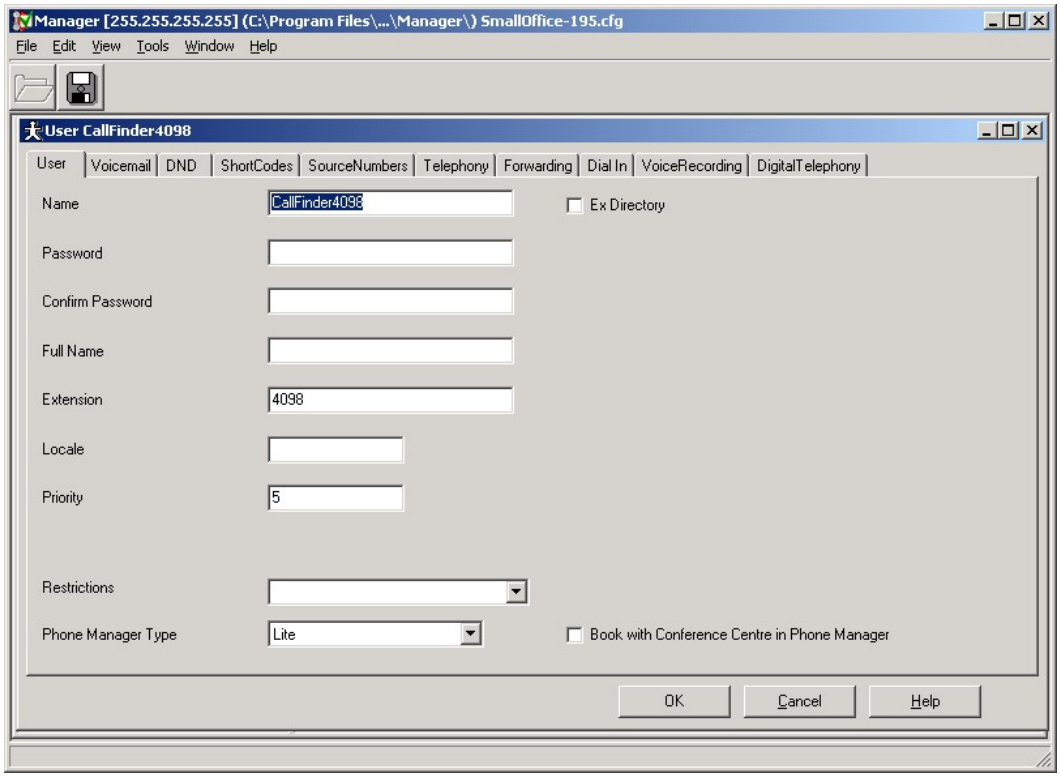
4.1. Configure Avaya IP Office Voicemail Pro

No special configuration is required for the Station Scenario.

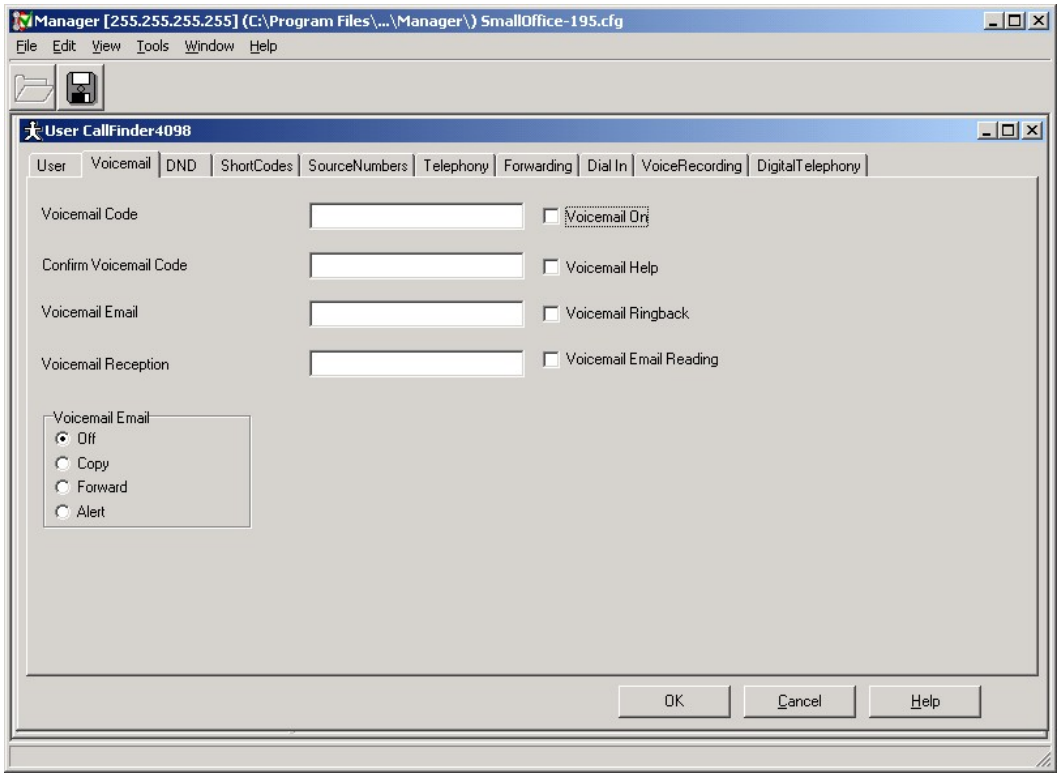
4.2. Configure Avaya IP Office

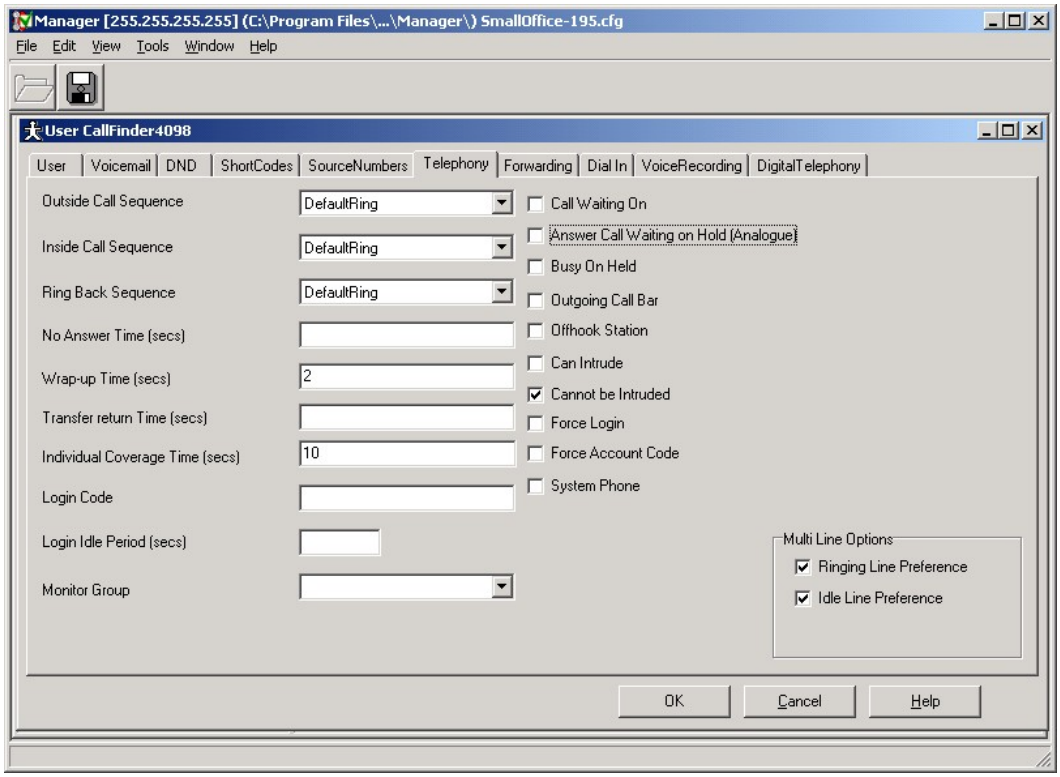
This section addresses provisioning of the IP Office for the Station Configuration Scenario with the CallFinder. For all other provisioning information, please refer to the product documentation.

Step	Description
	Physical connection
1.	Physically connect CallFinder *FXS/FXO port 1* to the desired analog station port on the IP Office, e.g., **Extension ID 09**. Physically connect CallFinder *FXS/FXO port 2* to the desired analog station port on the IP Office, e.g., **Extension ID 10**.
	Login
2.	Log in to the IP Office Manager PC and go to **Start → Programs → IP Office → Manager** to launch the Manager application. Log in to the Manager application using the appropriate credentials.
3.	In the Manager window that appears, select **File → Open** to search for the IP Office system in the network.
4.	Log in to the IP Office system using the appropriate login credentials to receive its configuration.
	Configure Analog Station ports connected to CallFinder
5.	In the Manager window, go to the Configuration Tree and double-click **Extension** to open the list of extensions available on the IP Office.
6.	Double-click the Extension ID connected to CallFinder Channel 1, e.g., **09**. Set *Extension* to the desired extension number, e.g., **4098** and click **OK**. 

Step	Description
7.	In the Manager window, go to the Configuration Tree and double-click **User** to open the list of Users on the IP Office.
8.	Right-click in the User list window to add a new user. In the User tab of the User window that appears, set *Name* to the desired name for the CallFinder extension, e.g., **CallFinder4098**, *Extension* to the extension number defined in the Extension list, e.g., **4098**. 

Step	Description
9.	In the Voicemail tab of the User window, uncheck **Voicemail On**.

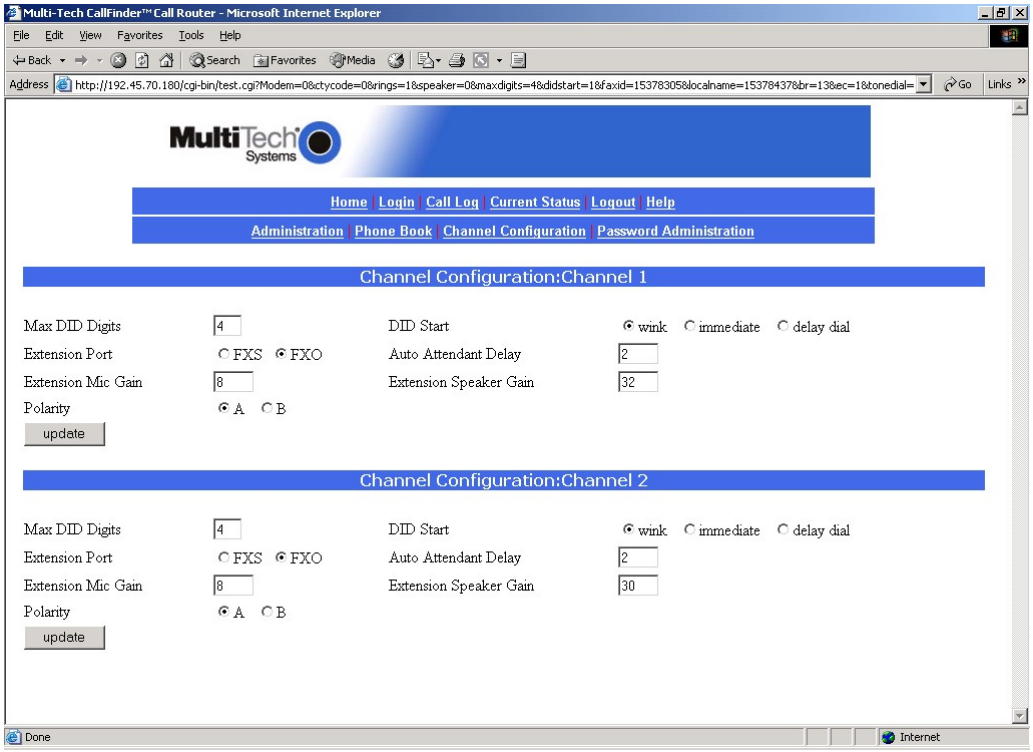


Step	Description
10.	In the Telephony tab of the User window, uncheck **Call Waiting On**, uncheck **Answer Call Waiting on Hold (Analogue)**, and click **OK**. 
11.	Repeat Steps 5 – 10 for the station port connected to CallFinder Channel 2, e.g., **Extension ID 10**. For the purposes of these Application Notes, two IP Office station ports were connected to the 2-port CallFinder.

4.3. Configure MultiTech CallFinder CF220

This section addresses provisioning of the CallFinder for the Station Configuration Scenario with the Avaya IP Office. For all other provisioning information, please refer to the product documentation.

Step	Description
	Configure IP Address
1.	Steps are the same as those described in Steps 1 – 6 of the CallFinder configuration in the Trunk Configuration Scenario.
	Configure Phone Book (DID to Extension mapping)
2.	Steps are the same as those described in Steps 7 – 8 of the CallFinder configuration in the Trunk Configuration Scenario.
	Configure Channel Configuration
3.	In the CallFinder page, click **Channel Configuration** to configure the CallFinder ports connected to the IP Office as well as the DID ports connected to the Central Office.

Step	Description
4.	In the Channel Configuration page that appears, set *Max DID Digits* to the number of digits that will be arriving from the central office, e.g., **4**, *DID Start* to the type of DID connection setup with the central office, e.g., **wink**, *Extension Port* to **FXO** for Analog Station connection to the IP Office, *Auto Attendant Delay* to the desired delay in seconds that the CallFinder should pause for between the time the call goes off-hook at the FXO port and transmitting the DID to DTMF digits, e.g., **2**. Click **update**.  **NOTE 1:** The audio on the IP Office side of the call was too low. The audio gain cannot be adjusted for stations on the IP Office. However, the Extension Speaker Gain field on the CallFinder can be modified to increase the audio. The Extension Speaker Gain was modified from 30 dB to 32 dB and there was a perceptible improvement. This parameter should only be modified if necessary. **NOTE 2**: MultiTech reports that at present CallFinder can support up to 7 DID digits. **NOTE 3**: Polarity enables one to switch Tip and Ring on the Loop Start side if necessary.
5.	Repeat Step 4 for Channel 2 of the CallFinder.

5. Interoperability Compliance Testing

This Interoperability Compliance Test included feature and functionality testing which examined MultiTech CallFinder CF220's ability to work with Avaya IP Office in the configuration described in these Application Notes. The following features were verified: inbound calls routed to Digital extensions, IP Telephone extensions, Phone Manager Pro VoIP extensions and Voicemail Pro modules. Additionally, inbound calls that were routed to an extension's voicemail or a forwarded extension were verified.

5.1. General Test Approach

Feature and functionality testing were performed manually. Individual calls were made to the IP Office from a call generator connected to the CallFinder. The call generator analog station ports were setup to simulate Analog DID trunks from the central office and were connected to the DID trunk side of the CallFinder. The FXS/FXO ports of the CallFinder were connected to either trunk or station ports on the IP Office. The IP Office and CallFinder configurations were modified to support either the trunk configuration solution scenario or the station configuration solution scenario.

5.2. Test Results

Feature and functionality test cases passed with the following solution configuration observations noted below.

- **CallFinder must provide ring back for incoming DID calls until answered by IP Office**: At present, the Outside caller will hear from 7 to 11 seconds of silence for trunk configuration and 6 to 7 seconds of silence for station configuration from the moment of dialing until the IP Office provides ring back following blind transfer to the desired extension. MultiTech has been asked to provide ring back during the interval when it receives the call from the central office till the IP Office provides ring back when it transfers the call to the destination extension.
- **CallFinder must provide Answer Supervision to central office when calls are connected**: MultiTech needs to confirm the CallFinder gives Answer Supervision to the central office when it knows its connected to the IP Office, e.g., when it's in its Connected state.
- **CallFinder must provide Forward Disconnect to IP Office trunk when it resets its FXS port upon *'Waiting for Connect'* timeout (trunk configuration only)**: In the event that IP Office does not answer the incoming call within this timeout interval, the CallFinder resets its FXS port; however, it doesn't send a Forward Disconnect to the connected IP Office trunk port, as it should in this scenario. Additionally, we have no indication that the CallFinder gives an indication to the central office that the call did not go through. If necessary, the CallFinder should give an audible indication to the Outside caller that the call did not complete.
- **CallFinder *'Waiting for Connect'* timeout needs to be adjusted or made configurable**: The current 'Waiting for Connect' timeout is fixed at between 60 – 70 seconds. The central office time-out for answer supervision is somewhere between 15 – 20 seconds. MultiTech should either modify this parameter to match the central office time-out or make this parameter user configurable.

6. Verification Steps

The following steps can be used to verify system operation after a field installation:

- Launch the IP Office System Monitor; make sure all boxes are checked in the ATM tab, Call tab, and the System tab. Connect to the IP Office system to verify the IP Office receives calls from the CallFinder.
- Log in to the CallFinder web interface and click **Current Status** to monitor the status of the CallFinder as it processes calls.
- Connect a Tip Ring telephone to the DID port on the CallFinder, go off hook, and dial a DID sequence defined in the CallFinder phonebook, e.g., 4000. Verify the CallFinder routes the call to the IP Office and transmits this DTMF sequence. Verify the corresponding IP Office extension rings and there is end-to-end connectivity.
- In the CallFinder web interface, click **Call Log**, verify the DID sequence dialed in the previous bullet, e.g., 4000, appears in the call log.

7. Support

MultiTech Systems Support Services provides free technical support, which can be reached at 800-972-2439 or 763-785-3500. Alternatively, they can be reached by sending email to support@multitech.com.

8. Conclusion

These Application Notes describe the required configuration steps for MultiTech CallFinder CF220 to successfully interoperate with Avaya IP Office in both trunk and station configuration scenarios. Features and functionality of this solution are considered passed provided the following conditions are agreed upon and met by MultiTech:

- CallFinder will provide ring back for incoming DID calls until answered by IP Office.
- CallFinder will provide audible indication to outside caller if call fails to go through on IP Office.
- CallFinder will provide forward disconnect to connected IP Office trunk when CallFinder resets its FXS port following 'Waiting for Connect' timeout.
- CallFinder will provide Answer Supervision to central office when it detects a call to IP Office is connected.

9. Additional References

- Avaya IP Office 3.0 Installation Manual, 40DHB0002UKCL, Issue 12e (24th March 2005)
- Avaya Voicemail Pro 3.0 Installation & Maintenance, 40DHB0002USAW, Issue 13l (14th March 2005)
- Avaya IP Office 3.0 Voicemail Pro Examples & Exercises, Issue 5b (15th February 2005)

- MultiTech CallFinder CF220 CF220 DID-to-Analog Telephony Adapter User Guide, Rev. A, Published 12/23/04 (PN: S000350A)

9.1. Glossary

DID	Direct Inward Dial
FXO	MultiTech port setting to use when connected to Analog Station port on PBX.
FXS	MultiTech port setting to use when connected to Analog Trunk port on PBX.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya Developer*Connection* Program at devconnect@avaya.com.