Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Telcomp Pickup and Avaya IP Office using DevLink - Issue 1.0

Abstract

These Application Notes describe the procedure for configuring Telcomp Pickup to interoperate with Avaya IP Office using the IP Office DevLink interface.

Telcomp Pickup provides CallerID number information via a single-line screen pop and/or a multi-line menu capability from the Avaya IP Office to a single computer, or to a network of computers. Pickup is offered in two configurations, a Server based version as described in these Application Notes, and a TAPI based solution described separately in *Application Notes for Configuring Telcomp Pickup and Avaya IP Office using TAPI.*

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.

1. Introduction

These Application Notes describe the procedure for configuring Telcomp Pickup to interoperate with Avaya IP Office using the IP Office third party DevLink interface.

Telcomp Pickup provides CallerID number information via a single-line screen pop and/or a multi-line menu capability from the Avaya IP Office to a single computer, or to a network of computers. Pickup is offered in two configurations, a Server based version as described in these Application Notes, and a TAPI based solution described separately in *Application Notes for Configuring Telcomp Pickup and Avaya IP Office using TAPI.*

The DevLink version of Pickup described in these Application Notes uses a Client/Server link for delivery of Caller ID/ANI and DNIS/DID to applications running on a PC. With this information, a variety of tasks can be automated by inserting the information into application APIs. For example, Caller ID/ANI can be used in script to launch a web browser to a specific URL with the ANI being the key to a database lookup for a browser based CRM application for instance.

The TAPI interface is generally referred to as a First Party CTI interface while the DevLink approach is generally considered a Third Party CTI interface. The difference is the TAPI approach exposes information pertaining to the specific call and phone associated with the PC the application is installed on, including caller name (if provided by the trunk service provider) while the DevLink approach exposes system wide views of activity on multiple trunk lines for example. Which approach is better suited to a given site will depend on a number of factors which a Telcomp engineer will review with a prospective customer.

Telcomp offers additional applications which are often installed together at a site. Among these includes a TAPI based Dialer application which is capable of interfacing with virtually any desktop software allowing phone numbers to be highlighted and a call initiated using a Hot-Key to invoke the TAPI interface to initiate a call. This solution is also separately described in *Application Notes for Configuring Telcomp TAPI Dialer and Avaya IP Office.*

2. General Test Approach and Test Results

This interoperability compliance test included feature and functionality testing. Testing examined the ability of Telcomp Pickup to report incoming CallerID number information for inbound SIP trunk calls to Avaya IP Office as well as for Telcomp Pickup clients to generate screen pops for calls answered at monitored extensions.

2.1. Interoperability Compliance Testing

The testing included a mix of endpoints supported in IP Office, including Digital, H.323 and SIP deskphones. Testing was performed manually on the Avaya IP Office configured with inbound trunk calls ringing at all extensions. SIP trunks from a PSTN Gateway were connected to the Avaya IP Office. The Telcomp Pickup application was configured to establish a connection to a Telcomp Server which in turn had a DevLink connection to Avaya IP Office. The Pickup application was set

up to monitor an extension and generate a screen pop when its assigned extension was ringing and/or answered.

When an inbound trunk call was answered at a particular extension, the Pickup client generated a screen pop with the incoming CallerID number, as well as information from a locally shared database associating the Caller ID with previously known information about the caller. Each Pickup client was configured through its macro-programming interface to send keystrokes to the PC operating system to launch a web page with a database lookup of the incoming caller ID. This was done to simulate interactions with a web based CRM type application. When the screen pop was acknowledged (by clicking OK), the Pickup client programming macro executed the web database lookup.

2.2. Test Results

The Telcomp Pickups functionality was successfully verified through the course of the compliance test.

2.3. Support

For technical support, contact Telcomp, Inc. at http://telcomp.com or (407) 889-7377.

3. Reference Configuration

The test environment used for the solution testing is shown in **Figure 1.**

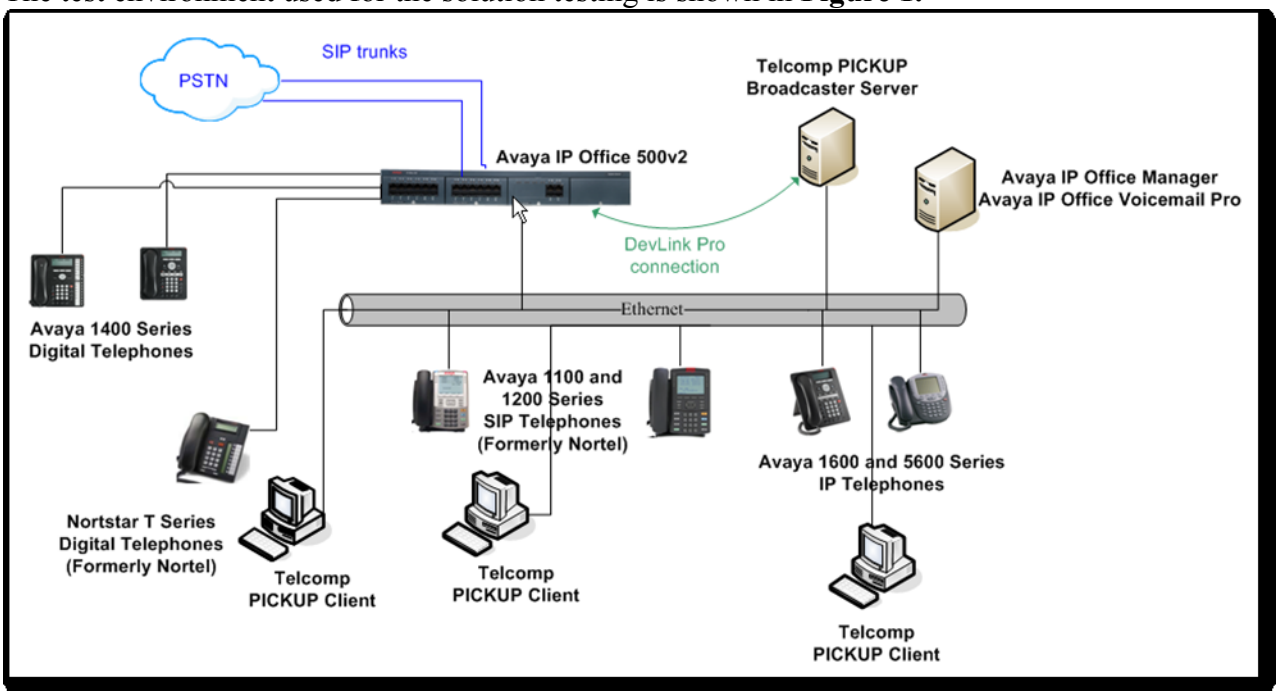


Figure 1: Telcomp IP Office DevLink Pickup Test Configuration

4. Equipment and Software Validated

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

Equipment	Software/Firmware
IP Office 500 V2 Control Unit	7.0 (12)
IP Office Manager on Windows XP PC	9.0 (12)
Avaya 1408/1416 Digital Phones	-
Avaya 1616 IP Phone	ha1616ua1_300B.bin
Avaya 5610 IP Phone	x10d01a2_9_1.bin
Avaya T7208 Norstar Digital Phone	-
Avaya 1140E IP Phone	4.01.13 SIP
Avaya 1230 IP Phone	4.01.13 SIP
Windows XP PC with : Telcomp Pickup	9.12z
Windows 7 PC with : Telcomp Pickup	9.12z

5. Configure Avaya IP Office

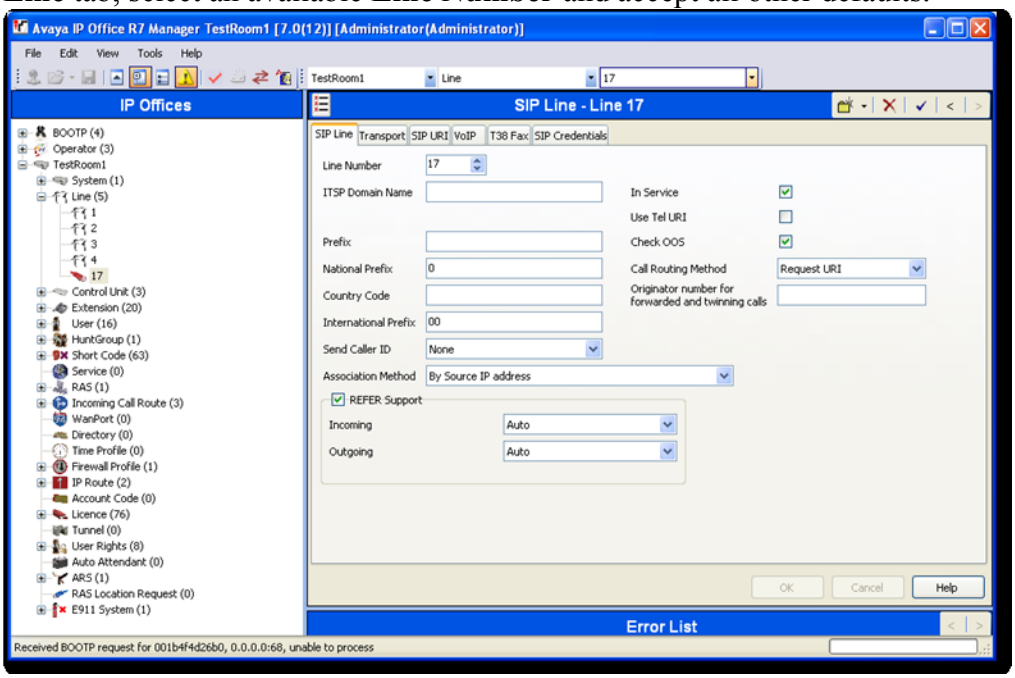
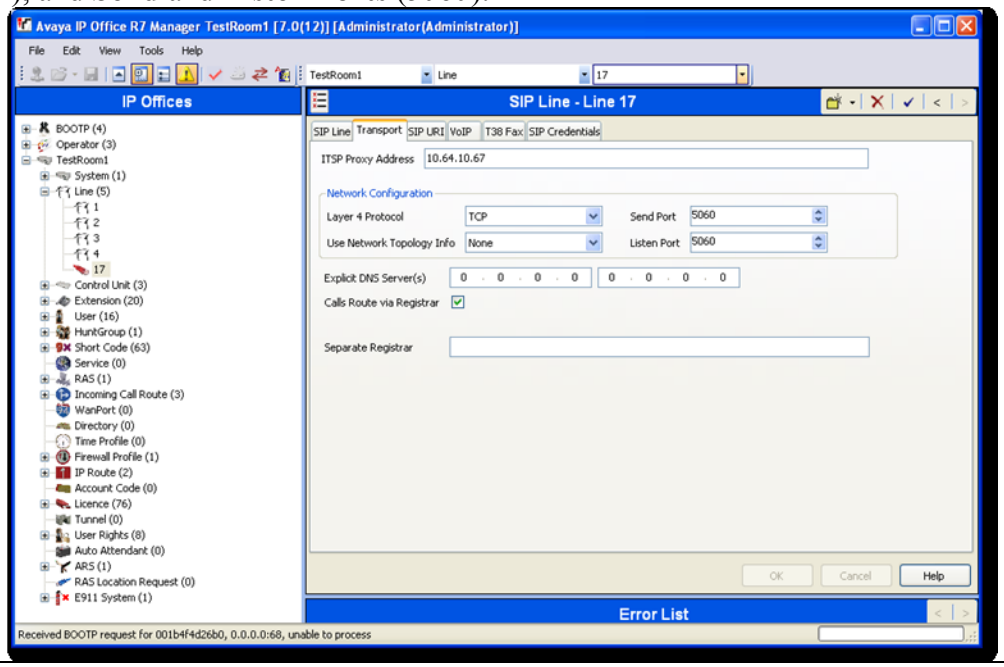
The configuration of Avaya IP Office involved establishing Trunks (Lines) and routing to connect to the external PSTN, and to confirm proper CTI licenses were in place on the IP Office system.

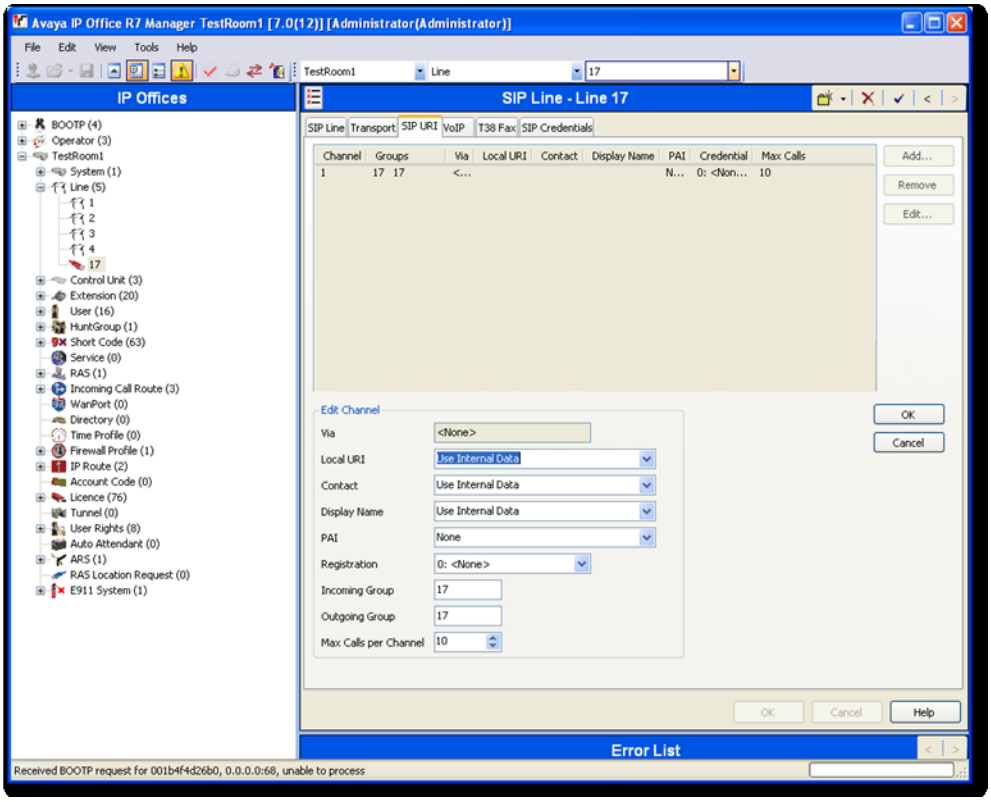
5.1. Configuration Details for IP Office

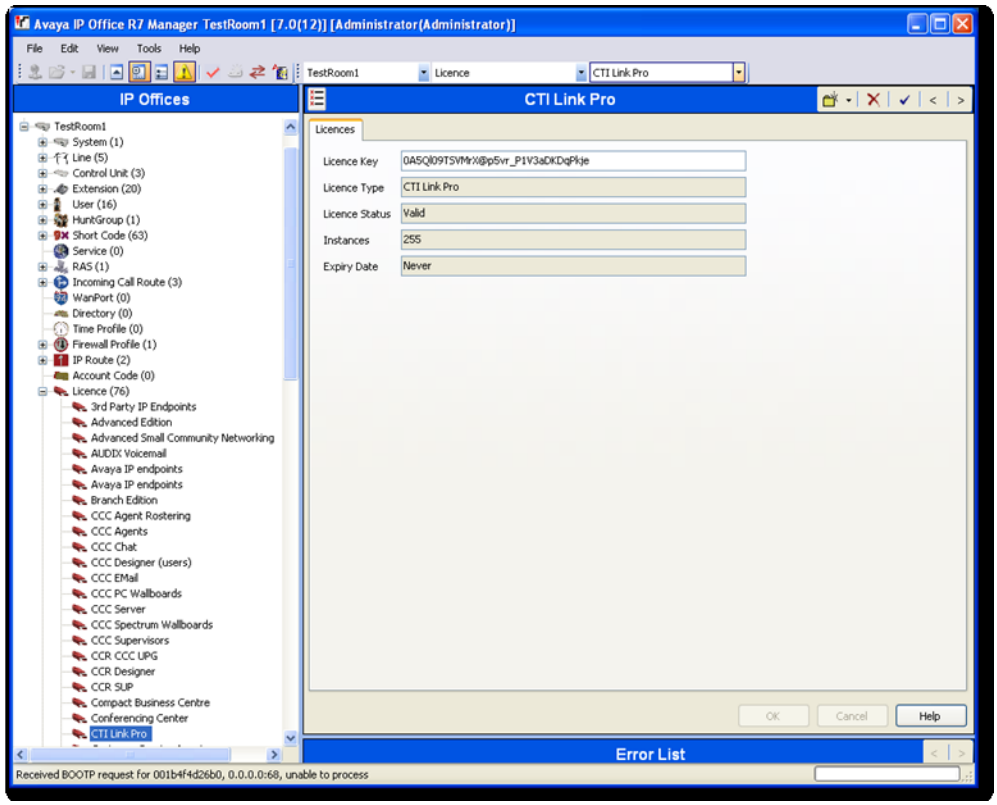
The following configuration of IP Office was performed using the IP Office Manager application.

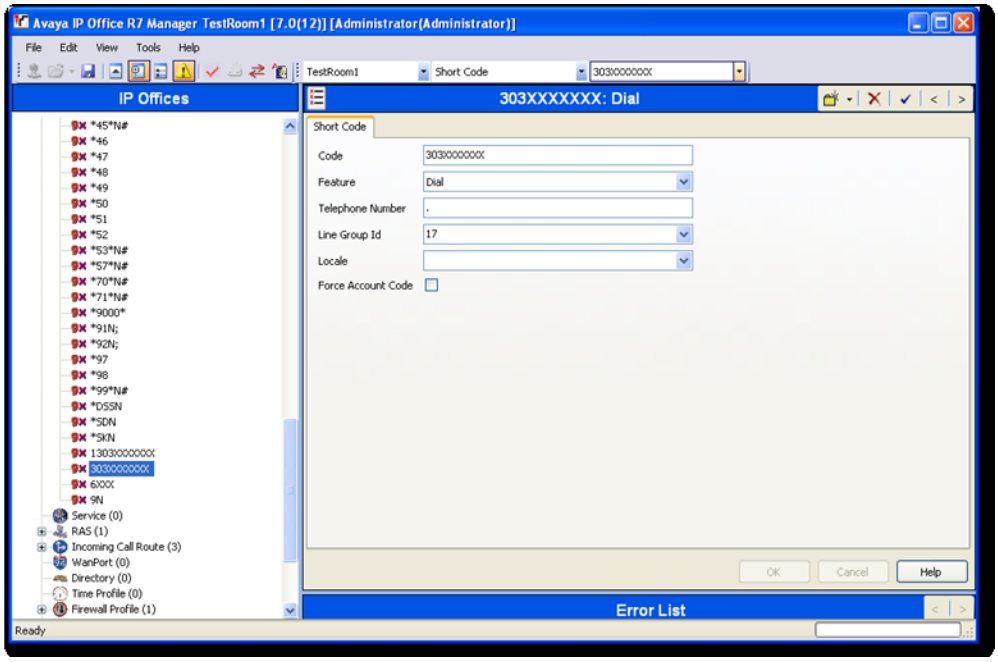
The changes made were:

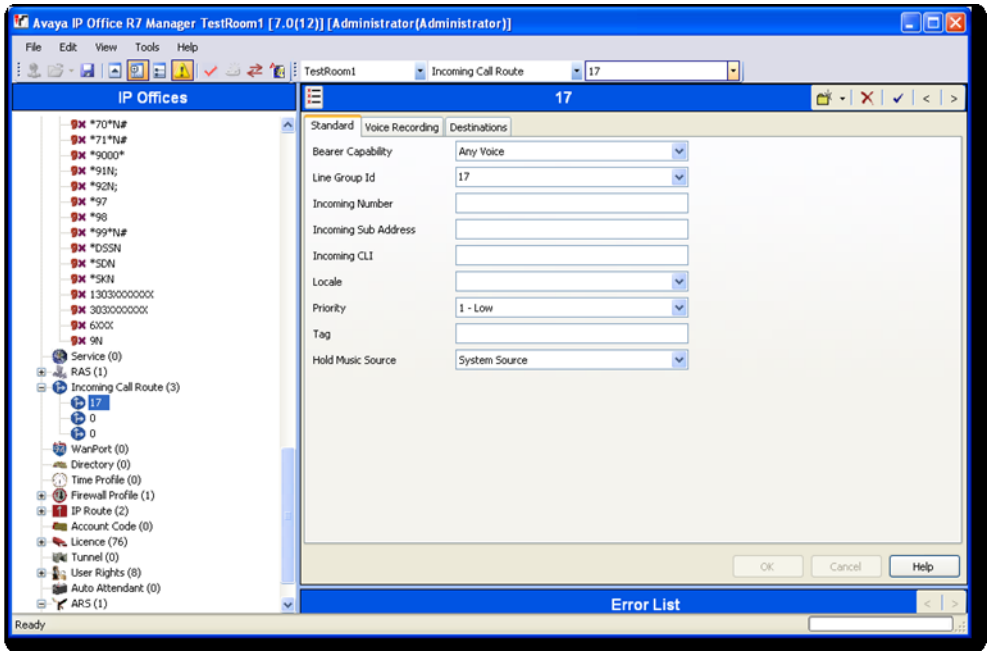
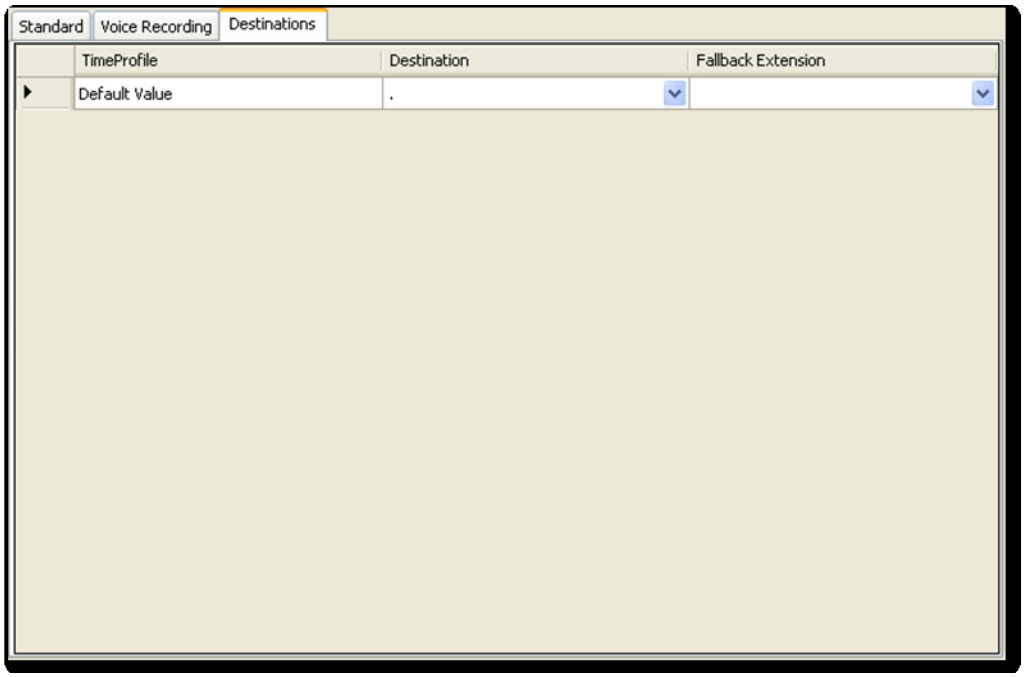
- Configure SIP Trunks (Lines) to the PSTN
- Confirm Licenses
- Configure Short Codes for Routing
- Configure Inbound Routing

Step	Description
1.	**Configure SIP Trunks (Lines) to the PSTN** In the tested configuration, a SIP Trunk was used for routing PSTN traffic to and from the IP Office system. In order to create a SIP Line, select the **Line** object in the IP Office Manager and click the **New** icon and select **SIP Line** (not shown). On the **SIP Line** tab, select an available **Line Number** and accept all other defaults.  On the **Transport** tab, enter the **ITSP Proxy Address** of the other end of the SIP Line, in this case an Avaya Aura® Communication Manager, enter the **Layer 4 Protocol** (***TCP***), and **Send** and **Listen Ports** (***5060***). 

Step	Description
	Configure SIP Trunks (Lines) to the PSTN (Continued) On the **SIP URI** tab, Click **Add** to create a new record containing the URI specifications, accept all defaults and enter the **Incoming** and **Outgoing Group** (Line ***17*** configured above), and the **Max Calls per Channel** which relates to the number of trunk group members in Communication Manager in this test, or number of concurrent sessions from a SIP Service Provider. Click **OK** to save the entries in the **Edit Channel** section, then click **OK** at the bottom of the screen to save all changes to the Line configuration. 

Step	Description
2.	**Confirm Licenses** Navigate to **License>CTI Link Pro** to confirm that an adequate quantity of **Instances** are enabled for the Pickups server to be able to connect. 

Step	Description
3.	**Configure Short Codes for Routing** Select the **Short Code** bbject in the IP Office Manager, and click the **New** icon to create routing instructions for calls to the PSTN via Line 17. In the example below, calls to the 303 area code with 10 digits used the **Dial** feature and **Line Group Id *17*** to reach the PSTN. The **Telephone Number** '**.**' was used to instruct IP Office to send the dialed digits from the phone without modification. Repeat this for all permitted dial patterns, or use a broader pattern to encompass all area codes as required. In this system, the 9N pattern (not shown) which is a default pattern was also configured to use Line Group Id 17 enabling calling to 11 digit numbers starting with 9. Click **OK** to save any changes.  At this point, click the **System Save** icon in the toolbar and save all of the changes and allow the system to reboot to read and apply the new settings (not shown).

Step	Description
4.	**Configure Inbound Routing** Create a new **Incoming Call Route** by clicking the **New** icon when the **Incoming Call Route** object is selected in IP Office Manager. Set the **Line Group ID** to 17 for this routing rule on the **Standard** tab.  On the **Destinations** tab, enter **'.'** in the **Destination** field to route calls to the dialed number. If a specific destination is required such as an auto attendant number, enter that here instead. 

6. Configure Telcomp Pickup on PCs

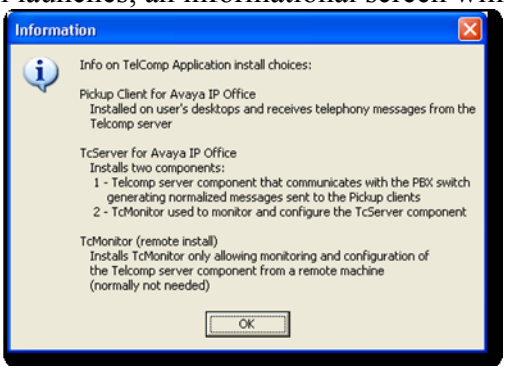
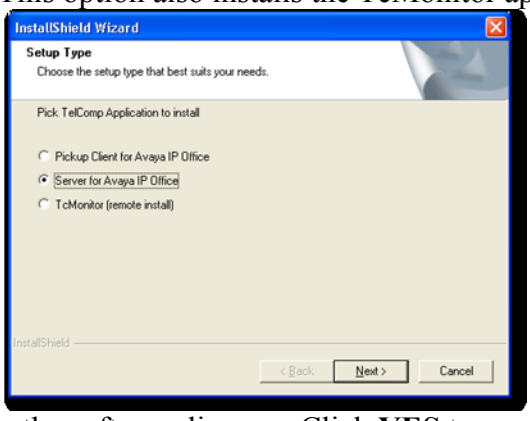
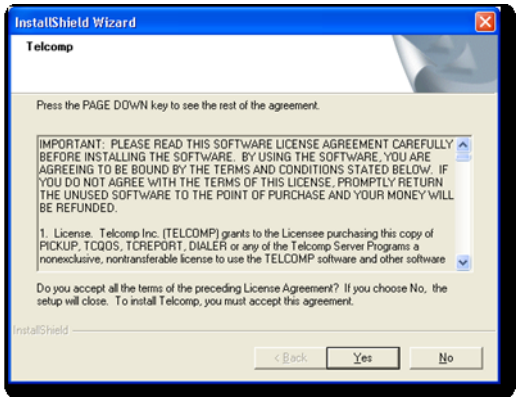
This section covers the configuration of Telcomp Pickup on PCs and is illustrated on a Windows XP machine. The steps are similar on Windows 7 or any other supported Windows OS, though the screens might look a bit different.

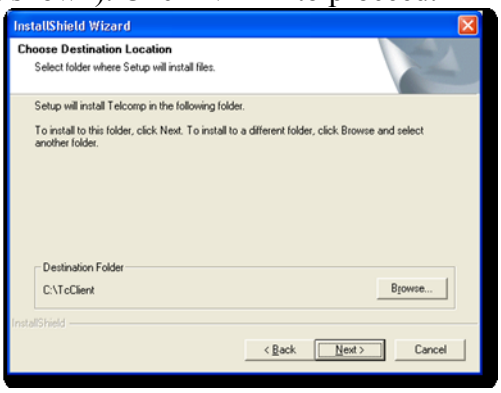
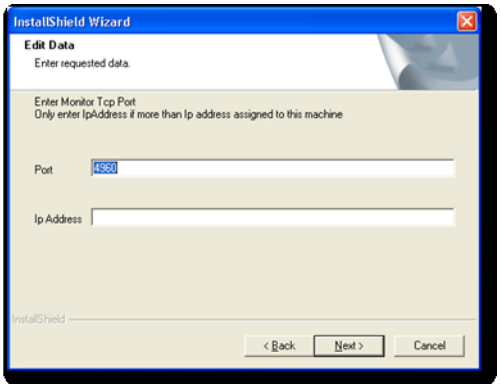
6.1. Configuration Details for Telcomp Pickup

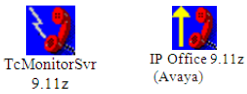
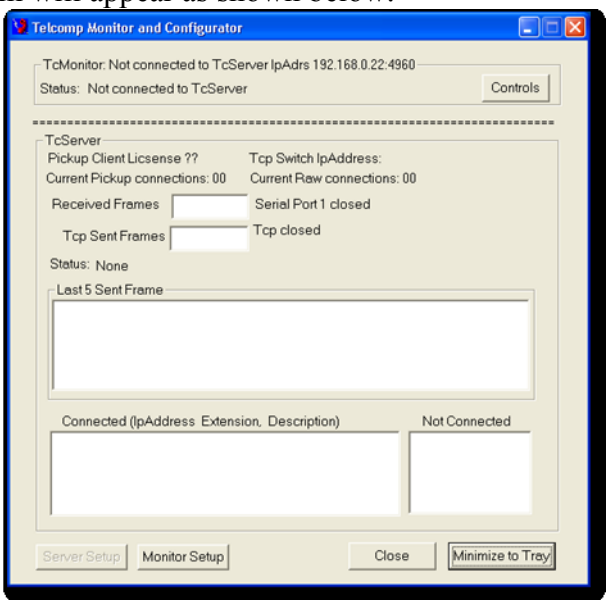
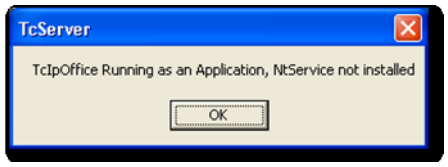
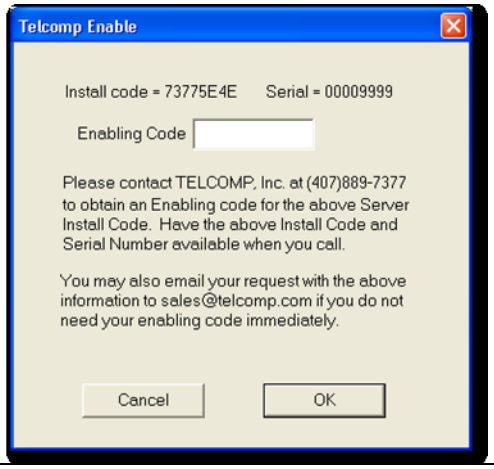
The Telcomp Pickups application can be installed and configured on each workstation that is associated with an IP Office extension. The server component (TcServer and TcMonitor) are installed on a single PC in the environment, this can be one of the PCs that the client will be installed on, or a separate PC. Supported OS include Windows XP/XP Pro, Vista. 7, Server 2003 or Server 2008.

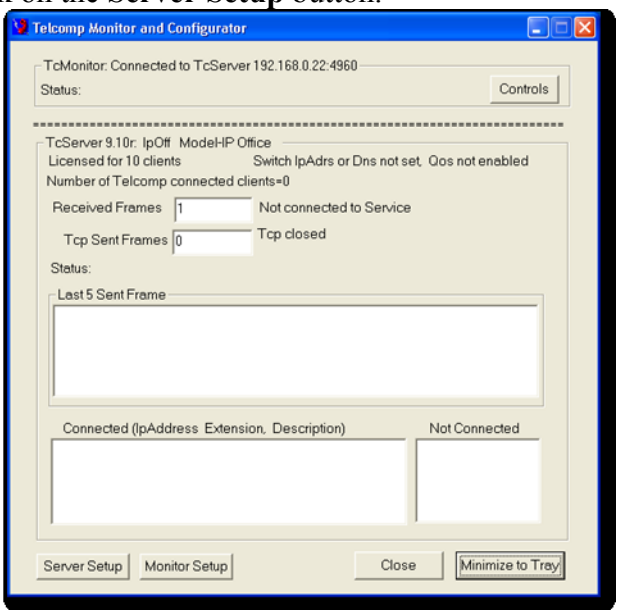
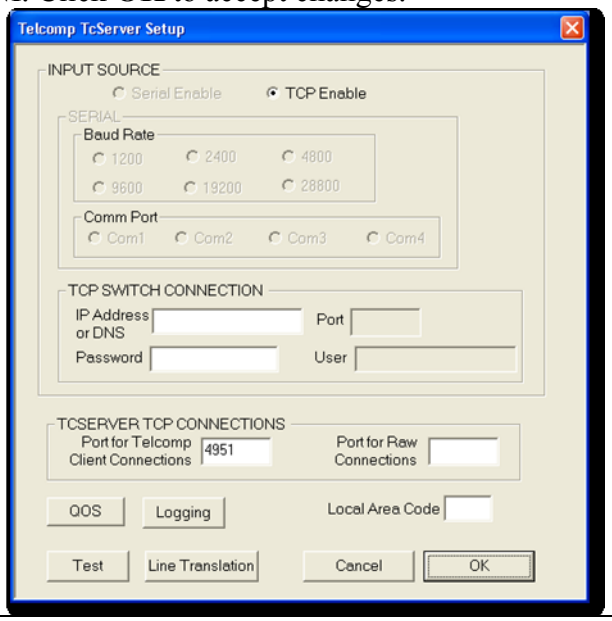
The steps are as follows:

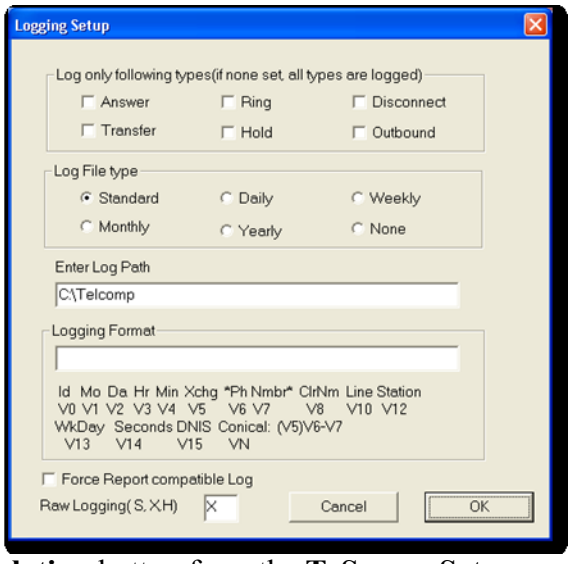
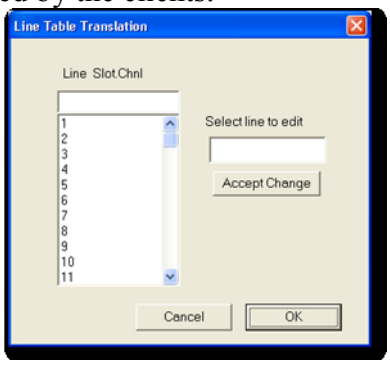
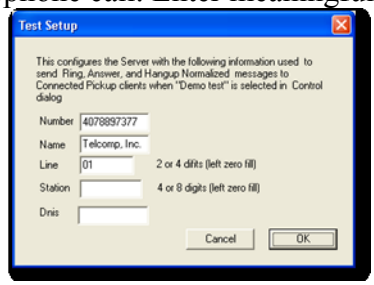
- Install TcServer
- Configure TcMonitor and TcServer
- Install the Telcomp Pickup Client
- Configure the Telcomp Pickup Client

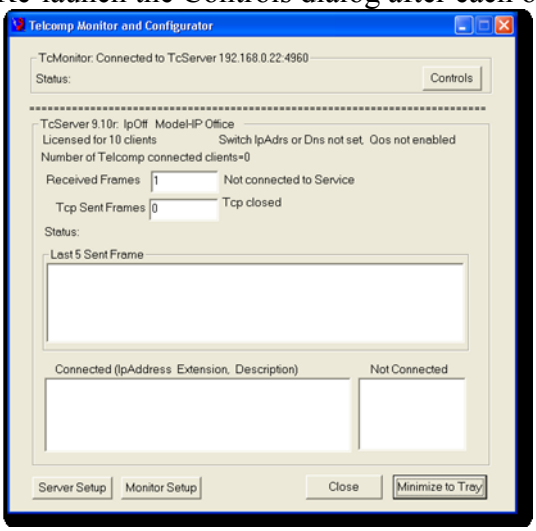
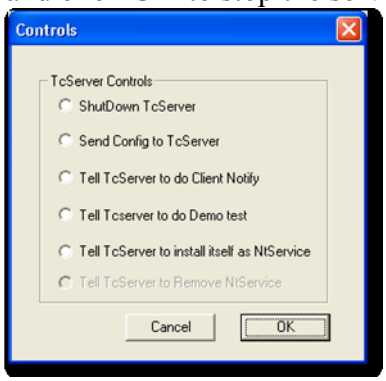
Step	Description
1.	**Install TcServer** Use an account with administrative privileges to install the software. Run the **SETUP** program from the Tinstall file location (if installed online), CD or USB Stick (if purchased with media). When the setup program launches, an informational screen will appear first.  Click **OK** to continue. Select the radio button for the **Server for Avaya IP Office**, then click **Next**. Note: This option also installs the TcMonitor application.  Please read and agree to the software license. Click **YES** to continue. 

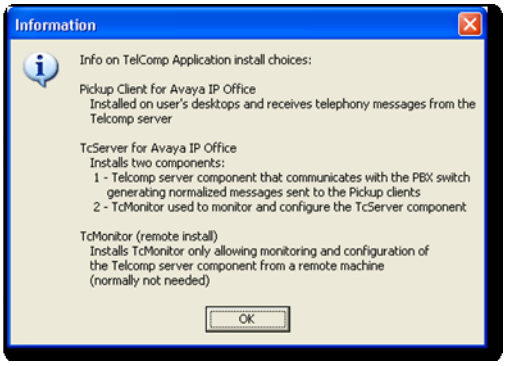
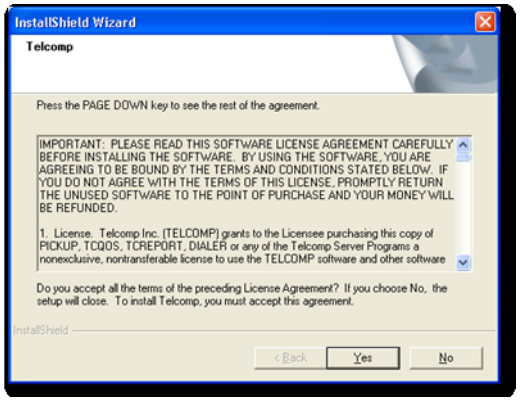
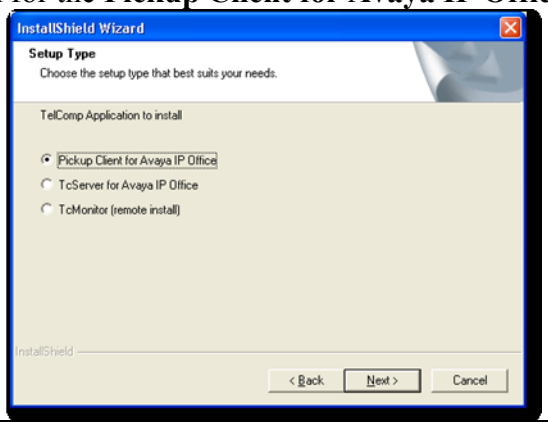
Step	Description
	Install TcServer (Continued) The install will then display the Drive and Folder Installation Destination. The default installation folder for the PICKUP program is **C:\TcCLIENT**. If this is not the intended installation directory, click on the **Browse** button and select an alternate installation location (not shown). Click **NEXT** to proceed.  The **Monitor Tcp Port** dialog will be displayed. The default port is 4960. This is the port that the TcServer and TcMonitor programs will use to communicate with each other. Make sure this port does not conflict with any other software running on the network. Only enter an IP Address if this machine has multiple IP Addresses assigned (multiple adapters).  The Installer will eventually confirm that installation is complete. Click **Finish** to close the installer. 

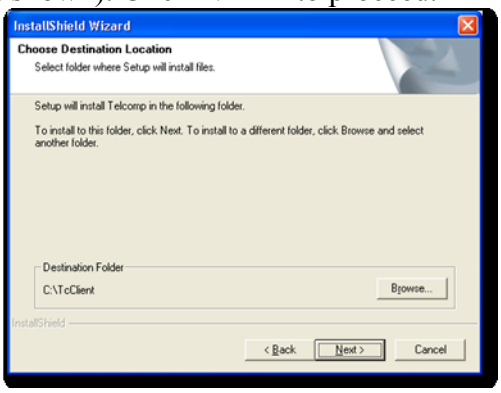
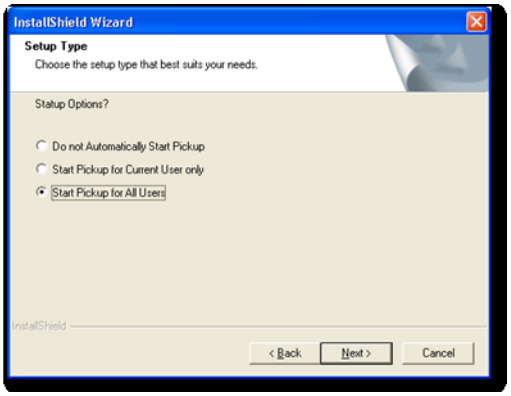
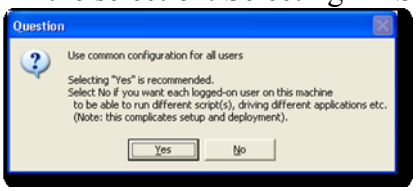
Step	Description
2.	**Configure TcMonitor and TcServer** Start the TcMonitor and TcServer programs by double clicking on the following Icons from the desktop.  The Monitor program will appear as shown below.  The first launch of the Server Program will alert that it is running as an Application – it can be set to run as a service later in the installation process. It will also prompt for a license which Telcomp must provide:  

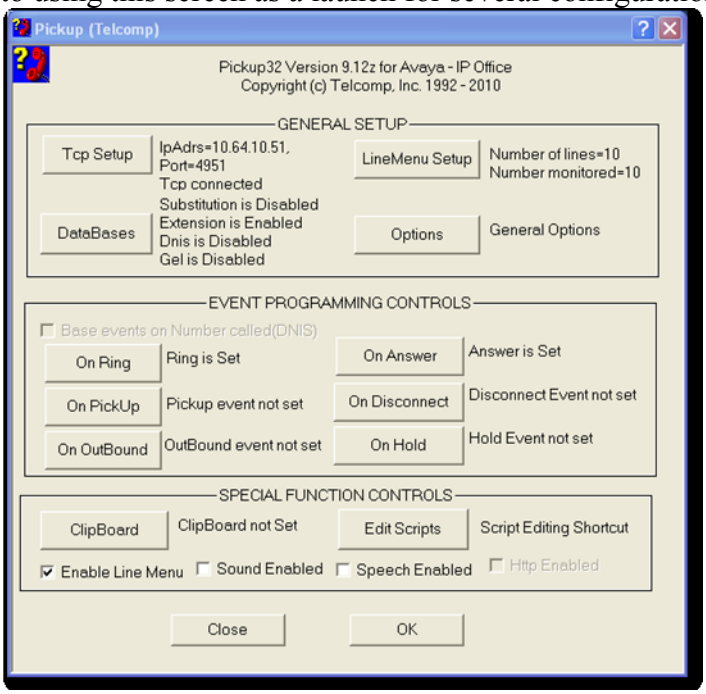
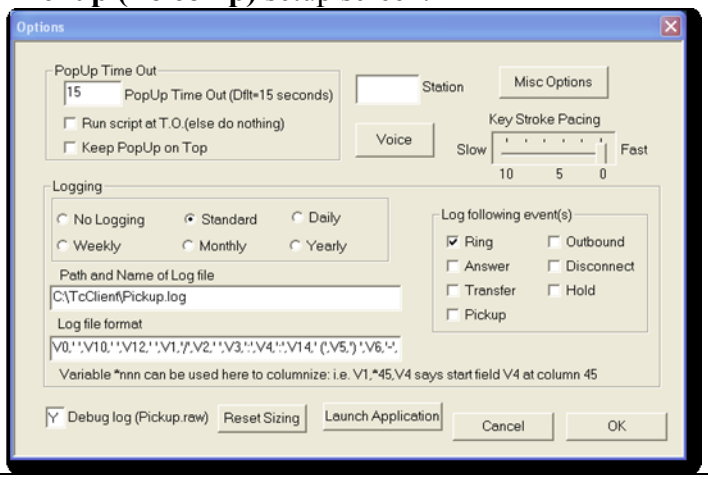
Step	Description
	Configure TcMonitor and TcServer (Continued) After the TcServer program is started, the **Telcomp Monitor and Configurator** screen will indicate that the two programs are communicating with each other as shown below. Click on the **Server Setup** button.  This will launch the **Telcomp TcServer Setup** screen. Enter the IP Address of the IP Office Control Unit in the **TCP SWITCH CONNECTION > IP Address or DNS** field. Enter the IP Office Monitor password in the **Password** field (default is ***password***). Note the **Port for Telcomp Client Connections** (***4951*** by default). This will be used when configuring the client configurations later. Enter the **Local Area Code** (blank shown) which the server will add should the public network lines provide 7 digit Caller ID/ANI. Click **OK** to accept changes. 

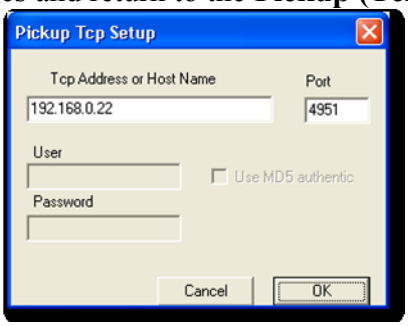
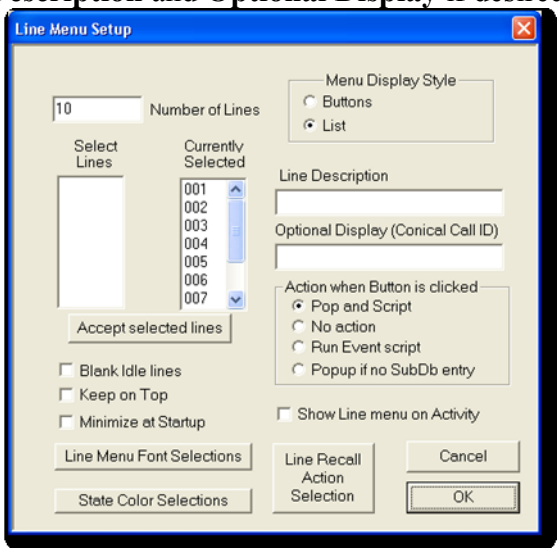
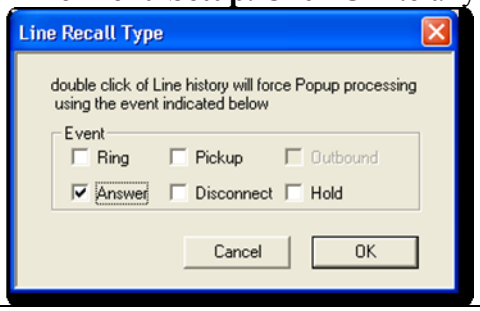
Step	Description
	Configure TcMonitor and TcServer (Continued) Select the **Logging** button from the **TcServer Setup** screen (shown above) if logging of call activity is desired. Click **OK** to accept the changes which will return to the **TcServer Setup** screen.  Select the **Line Translation** button from the **TcServer Setup** screen (shown above). The **Line Table Translation** maps the IP Office trunk lines to correspond to line numbers that will be displayed by the clients.  Click **OK** to accept and return to the **TcServer Setup** screen. The **Test** button enables setup of data used to test server to client operation without having to make an actual telephone call. Enter meaningful data as shown below.  Click **OK** to accept and return to the **TcServer Setup** screen.

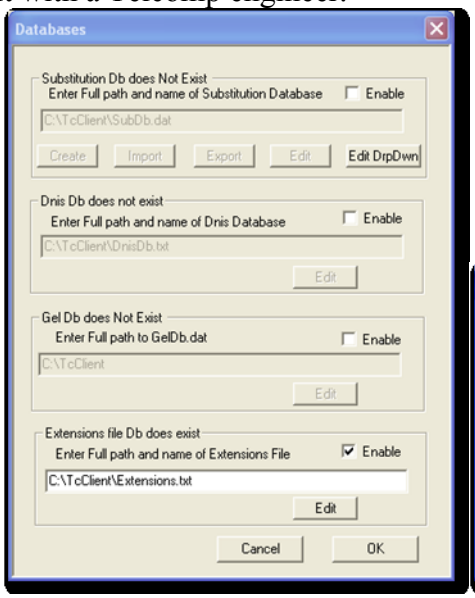
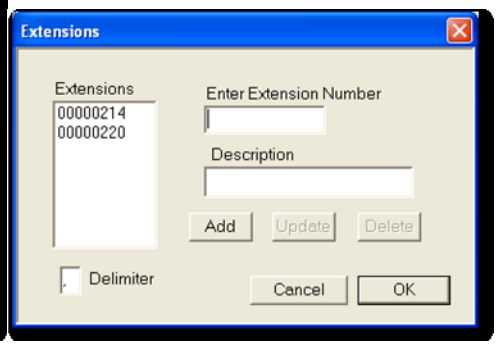
Step	Description
	Configure TcMonitor and TcServer (Continued) Now that the installation has been configured, the changes must be communicated to the server program. Click on the **Controls** button on the **Telcomp Monitor and Configurator** screen. Re-launch the Controls dialog after each of the following steps.  To commit the server configuration, select **Send Config to TcServer** and click **OK**. This writes the changes to an .ini file which is read when the server starts. Select **Tell TcServer to install itself as NtService** and click **OK** to set the server to auto start as a system service. If this option is used, remove the server icon from the desktop to prevent multiple instances from running. Select **ShutDown TcServer** and click **OK** to stop the server program.  Click on the desktop Icon or use the Windows services control panel to restart the service. This will read the above configuration changes into the program.

Step	Description
3.	**Install Pickup Client** Use an account with administrative privileges to install the software. Run the **SETUP** program from the Tinstall file location (if installed online), CD or USB Stick (if purchased with media). When the setup program launches, an informational screen will appear first.  Click **OK** to continue. Please read and agree to the software license. Click **YES** to continue.  Select the radio button for the **Pickup Client for Avaya IP Office**, then click **Next**. 

Step	Description
	Install Pickup Client (Continued) The install will then display the Drive and Folder Installation Destination. The default installation folder for the PICKUP program is **C:\TcCLIENT**. If this is not the intended installation directory, click on the **Browse** button and select an alternate installation location (not shown). Click **NEXT** to proceed.  Choose the startup option for the computer. Generally **Start PICKUP for All Users** is selected.  The installer will then confirm the selection. Selecting **YES** is used for most occasions.  The Installer will eventually confirm that installation is complete. Click **Finish** to close the installer. 

Step	Description
4.	**Configure the Pickup Client** Start the Pickup program by clicking on the desktop Icon as shown below.  Telcomp.ico The following **Pickup (Telcomp)** setup selection screen will appear. The next few pages will refer to using this screen as a launch for several configuration settings.  Click on the **Options** button. Enter the IP Office extension number that will be used by the operator of the computer into the **Station** box. Click **OK** to save the changes and return to the **Pickup (Telcomp)** setup screen. 

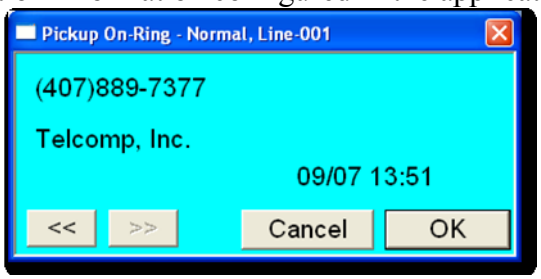
Step	Description
	Configure the Pickup Client (Continued) Click on the **Tcp Setup** button. Enter the **IP address or Host Name** of the computer where the Telcomp server program is running. The server program should already be started on the server machine. **Port *4951*** is the default that was configured in **Step 2** above. The User, Password and MD5 authentication are not required for the IP Office. Click **OK** to save the changes and return to the **Pickup (Telcomp)** setup screen.  Click on **LineMenu Setup**. Set the number of lines to the **Number of Lines** equal to the number of trunk lines on the IP Office System and move the lines to be monitored from the **Select Lines** to the **Currently Selected** column. Optionally, set the **Menu Display Style**, **Line Description** and **Optional Display** if desired.  Click on the **Line Recall Action Selection** button. Set the event to be triggered on Recall to the event desired. This will normally be **Answer**. Click **OK** to save the changes and return to the **Line Menu Setup**. Click **OK** to any open screens. 

Step	Description
	Configure the Pickup Client (Continued) The remainder of the configuration will vary for each customer. For example, from the **Launch Screen** (shown on the previous page), click the **DataBase**s button to configure substitution information that will appear on screen pops. In the illustration below, a name can be associated with internal extensions by clicking **Enable** and the **Edit** button and completing information for the extension(s). Other databases include **DNIS** (such as Sales if calls to a particular number are for Sales). For more details, consult with a Telcomp engineer.   In the **Event Programming Controls** and **Special Functions Controls** (on the **Launch Screen** shown on the previous page), rules and behaviors can be defined to control screen pop and scripts to execute when call activity like Ring or Answer occur. These Application Notes will not cover the details of configuring these options as each site will be configured by a Telcomp Engineer based on requirements.

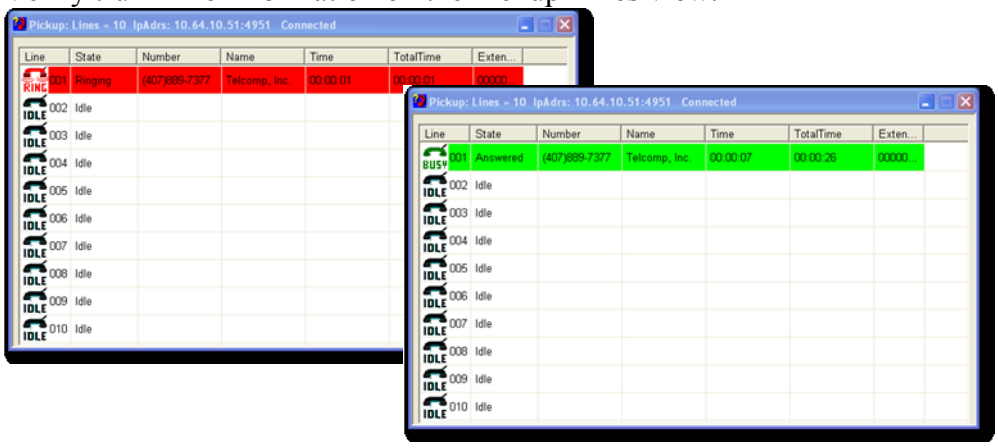
7. Verification Steps

The following steps may be used to verify the configuration:

- From a PC configured with the Telcomp Pickup application, launch the Pickup client and receive a call and confirm that the screen pop activates and populates with the Caller ID/ANI and any database substitution information configured in the application.



- Verify trunk line information on the Pickup Lines view:



8. Conclusion

These Application Notes describe the procedure for configuring Telcomp Pickup to interoperate with Avaya IP Office using a DevLink interface. All tests were successfully completed including custom scripts used to launch a browser based CRM application interface using Caller ID/ANI.

9. Additional References

Avaya

[1] *Avaya IP Office Release 7.0 Manager 9.0*, Doc # 15-601011, Issue 26h, May 2011
[2] *Avaya IP Office DevLink Guide*, Doc # 15-601034, Issue 12d, December, 2009
[3] *Avaya IP Office TAPILink*, Doc # 15-6010354, Issue 11f, December, 2009

Product documentation for Avaya products may be found at http://support.avaya.com.

Product documentation for Telcomp products may be found at http://telcomp.com/

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 DevConnect Program at devconnect@avaya.com.