



Avaya Solution & Interoperability Test Lab

Application Notes for Telcomp Software Applications and Avaya IP Office - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Telcomp software applications to successfully interoperate with the Avaya IP Office. The Telcomp **PickUpIp** application provides Caller ID capabilities to a single computer, or to a network of computers via the Telcomp **PickUp** application. The Telcomp **PickUpEm** application provides 911 emergency alert messages to be directed at a central console. All three of these applications work in conjunction with the Telcomp **TcIpOff** connection server application. Each of the Telcomp applications requires the functionality of run-time telephony event data streams provided by the Avaya IP Office DevLink PRO SDK interface.

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 compliance-tested configuration utilizing Telcomp software applications and Avaya IP Office. The Telcomp software application solution for Avaya IP Office consists of the following applications:

PickUpIp – CallerID IP Server for IP Office

TcIpOff – IP Office / Partner Translator for IP Office

PickUp – CallerID client

PickUpEm - 911 Alert Indicator

Telcomp PickUpIp is a client/server middleware application that provides CallerID number information via a single-line screen pop and/or a multi-line menu capability from Avaya IP Office to a single computer, or a network of computers.

The Telcomp TcIpOff application interfaces with the Avaya IP Office through the Avaya IP Office User Suite DevLink interface. Telcomp TcIpOff translates the DevLink stream it receives into a format supported by Telcomp PickUpIp. The Telcomp PickUpIp server receives CallerID number information for incoming calls from the DevLink stream translated by Telcomp TcIpOff and then broadcasts the information over the network to its clients (called PickUp). The Telcomp PickUpIp server and Telcomp PickUp clients can display incoming CallerID number information on-screen using a single-line screen pop and/or a multi-line menu window. If CallerID number information is not available, Telcomp PickUpIp identifies the incoming call number as *Unknown*. The Telcomp PickUpIp server and Telcomp PickUp clients can also be configured to simulate keystrokes in order to deliver incoming CallerID number information to other applications running on the PC.

The Telcomp PickUpEm application monitors for any instance of an emergency 911 (or 9911) call being made from an extension on the Avaya IP Office system. The calling extension information is immediately displayed on a console monitor by displaying the calling extension's relevant information.

The tested configuration is shown in **Figure 1**.

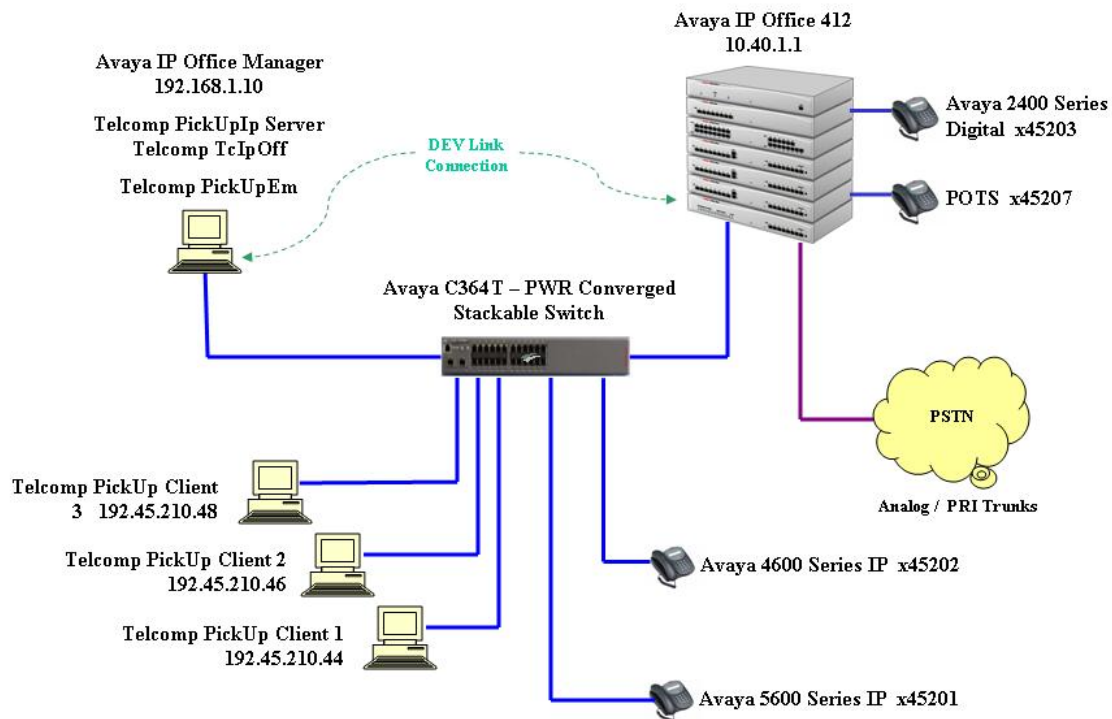


Figure 1: Telcomp Applications and Avaya IP Office Configuration

2. Equipment and Software Validated

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

Product	Version
Avaya IP412 Office	4.0(7)
Avaya IP Office Manager	6.0(07)
Avaya IP Office User Suite	4.0(18)
Avaya DevLink DLL	1.0.0.4
Avaya Voicemail Pro	4.0(15)
Telcomp PickUpIp	8.12
Telcomp TcIpOff	8.07
Telcomp PickUp	8.12
Telcomp PickUpEm	8.12
PCs used for Avaya IP Office Manager, Avaya Voicemail Pro and Telcomp's PickUpIp, TcIpOff, UpEm and PickUp	Windows XP Professional Service Pack 2

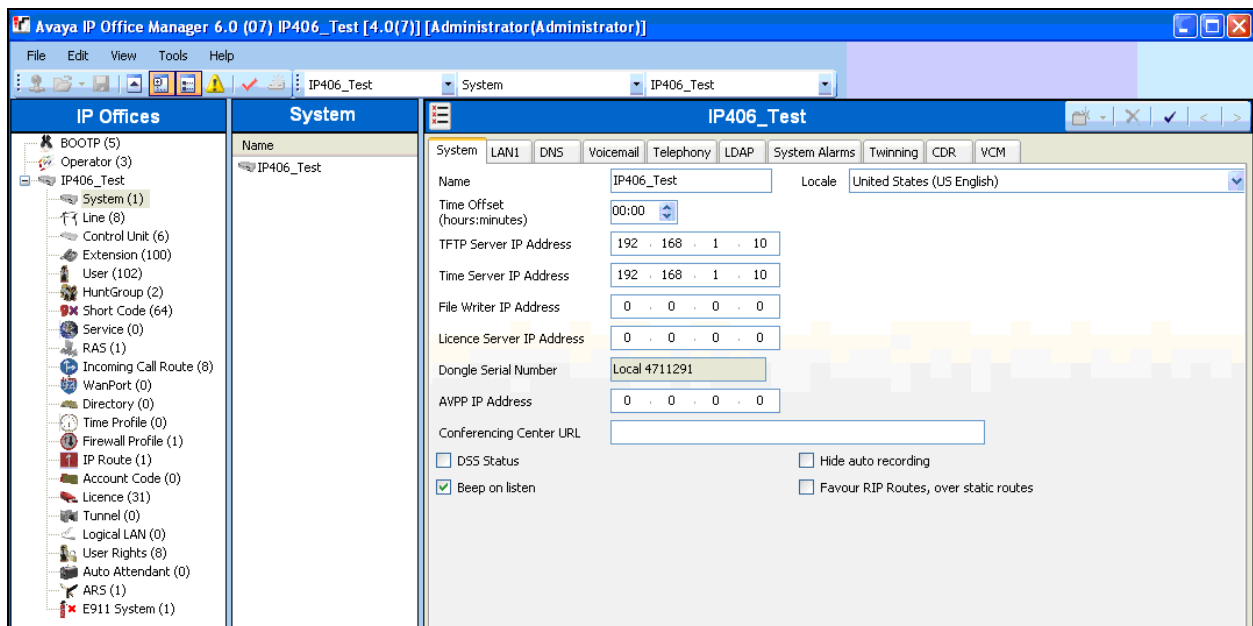
3. Configure Avaya IP Office

These Application Notes address provisioning of the Avaya IP Office as it relates to integration of the Telcomp software. For all other provisioning information such as provisioning of the trunks, call coverage, extensions, etc.; please refer to the Avaya IP Office product documentation.

3.1. Login and Check Dongle

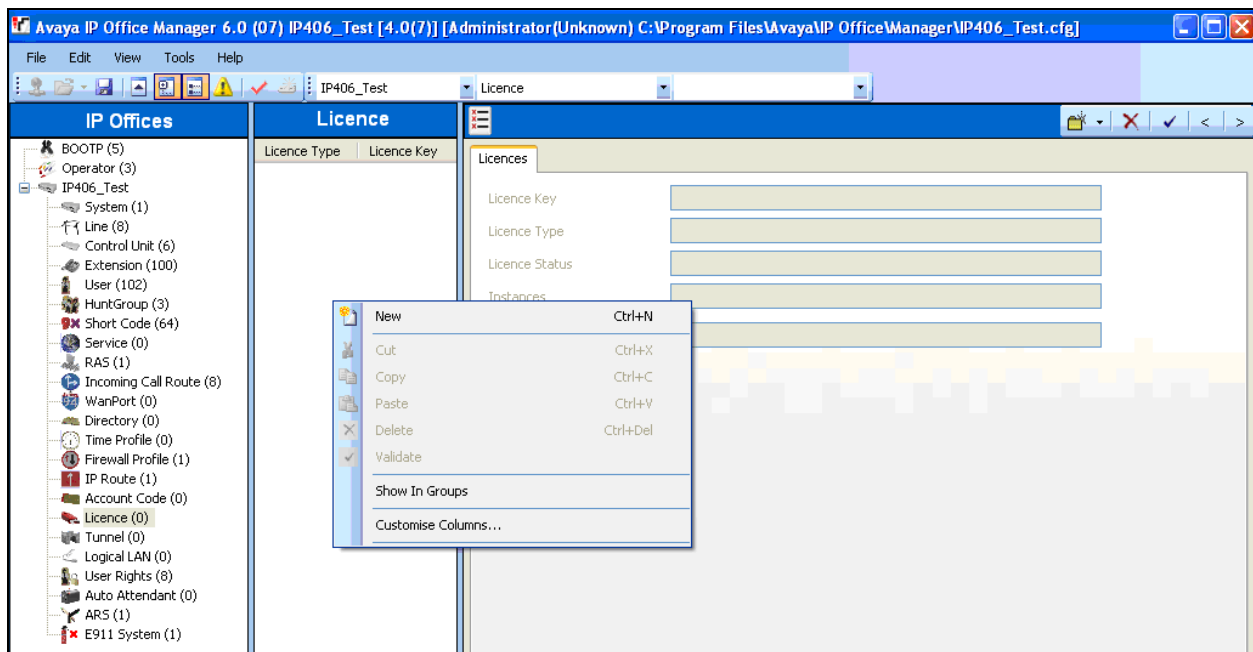
Ensure that a serial dongle is installed in the serial port located on the rear of the Avaya IP Office 412.

1. Log into the Avaya IP Office Manager PC and go to **Start → Programs → IP Office → Manager** to launch the Avaya IP Office Manager application.
2. In the **Avaya IP Office Manager** window that is displayed, select **File → Open Configuration**. When the **Select IP Office** dialog box is displayed, select the appropriate Avaya IP Office system and click **OK**.
3. Log into the Avaya IP Office system using the appropriate login and password credentials. The system logon process retrieves the system configuration from the PBX and is displayed by the Avaya IP Office Manager.
4. In the Avaya IP Office Manager, go to the configuration tree and click on **System**. In the **System** tab that is displayed, verify the **Dongle Serial Number** field is populated and the **License Server IP Address** is set to 0. See below.

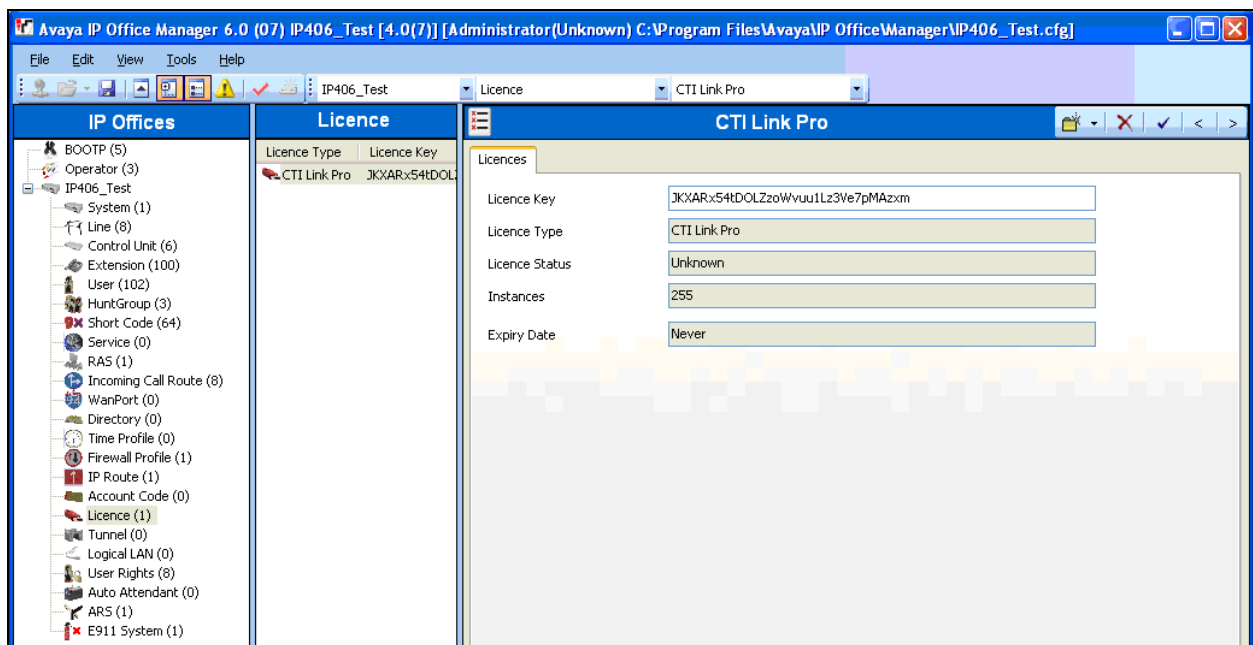


3.2. Add an Avaya IP Office License

1. In the **Avaya IP Office Manager** window, go to the Configuration Tree and double-click **License**. To add the CTI Link license, right-click the center panel and select **New**.



2. Manually enter the license code (or cut and paste from Notepad) into the **License Key** field and click **OK**.



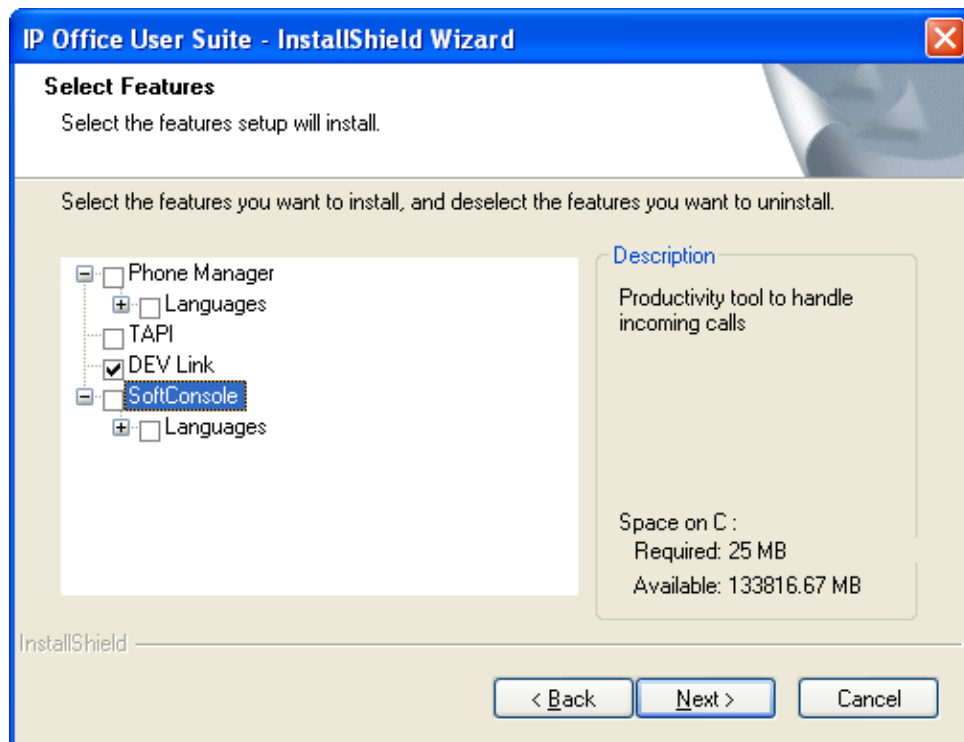
3. In the **Avaya IP Office Manager** window, select **File → Save Configuration**. The configuration to Avaya IP Office is saved at this point and will require a re-boot of Avaya IP Office. This completes the configuration of Avaya IP Office.

4. Configure Telcomp Software

This section addresses provisioning of the Telcomp software as it relates to Avaya IP Office. For all other provisioning and user information such as basic installation and configuration, license key registrations, and product use, please refer to the Telcomp Help file provided with the Telcomp software or contact Telcomp support.

4.1. Install Avaya DevLink DLL on Telcomp Server

1. Log into the Telcomp server with administrative privileges and launch the Avaya IP Office User Suite setup in the CDROM drive.
2. Click **Next** in the InstallShield Wizard until the **Select Features** window is displayed. Check **Dev Link** to install the IP Office devlink.dll on the Telcomp server.

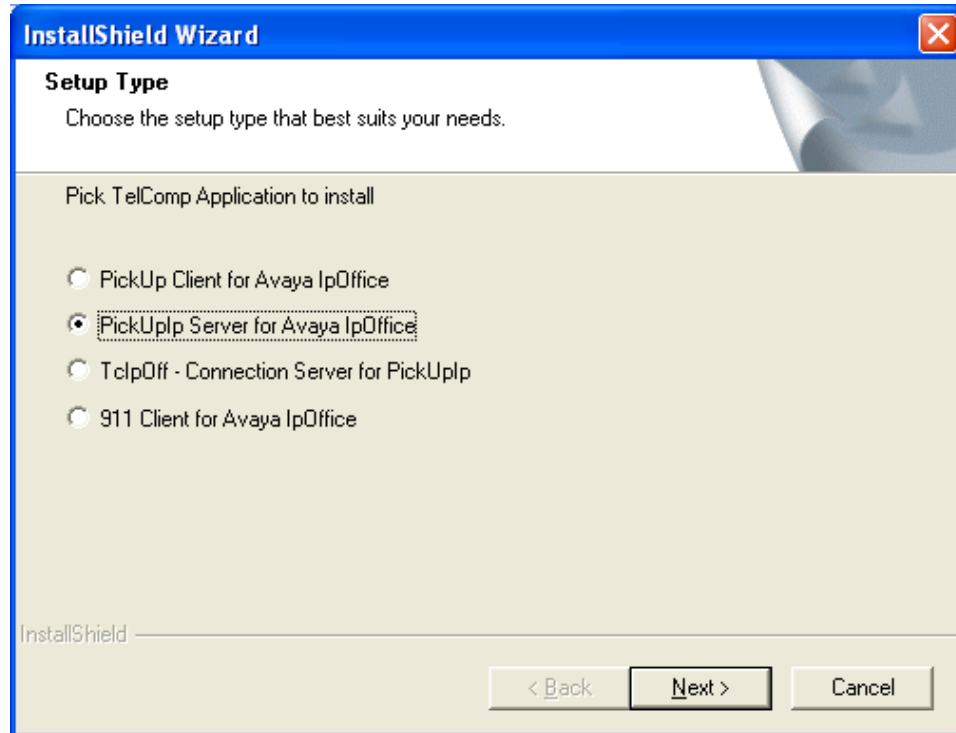


3. Click **Next** to complete the installation of the Avaya IP Office User Suite. At the **InstallShield Wizard Complete** window, click **Finish**.
4. To verify installation of the devlink.dll, initiate a search for the file devlink.dll on the Telcomp server. A copy of the file should have been created in a subfolder of the directory designated for the installation of the Avaya IP Office User Suite, e.g., **C:\Program Files\Avaya\IP Office\DEV Link**.

4.2. Load and Configure Telcomp PickUpIp and Telcomp TcIpOff

Log into the Telcomp server with administrative privileges and place the Telcomp CD in the CDROM drive.

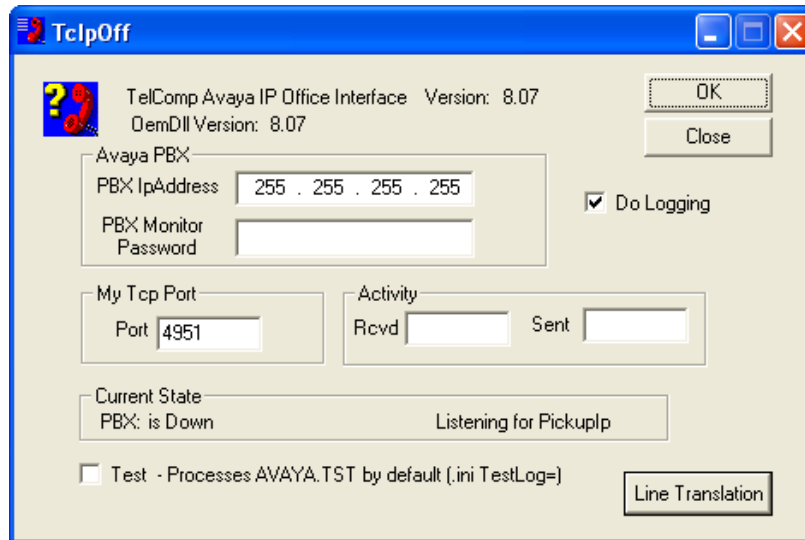
1. Allow the auto-boot sequence to take place. The following InstallShield Wizard screen is displayed. Select **PickUpIp Server for Avaya IpOffice** and click **Next**.



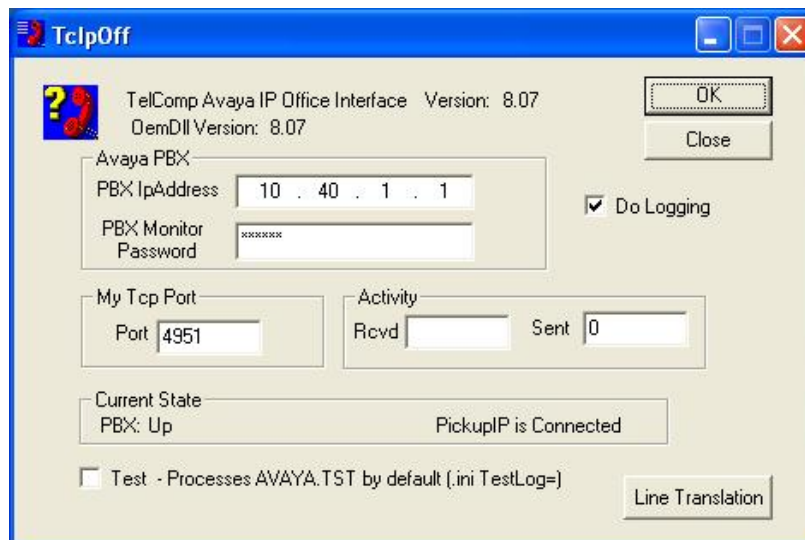
2. Allow installation of **PickUpIp Server for Avaya IpOffice** to complete. Repeat installation a second time and select **TcIpOff – Connection Service for PickUpIp** and click **Next**.
3. Allow installation of **TcIpOff – Connection Service for PickUpIp** to complete.

4.2.1. Configure Telcomp TcIpOff

1. Log into the Telcomp server with administrative privileges and go to **Start → Programs → Telcomp → TcIpOff** to launch the application.
2. In the initial **TcIpOff** window that is displayed, the **Current State** towards the bottom of the window is **PBX: is Down** which means TcIpOff has not established a connection to the Avaya IP Office, and **Listening for PickUpIp** which means the PickUpIp application has not yet established a connection.

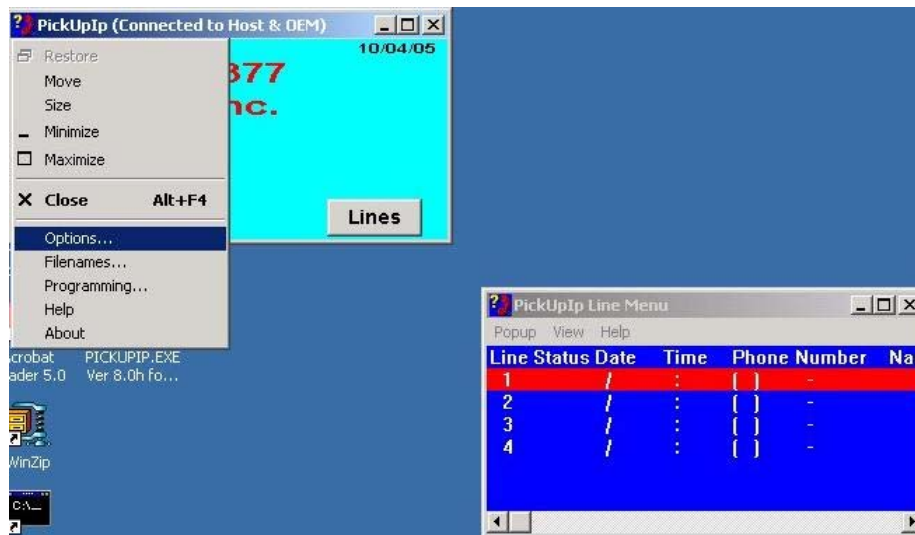


3. In the **TcIpOff** window, set **PBX IpAddress** to the IP address of Avaya IP Office (**10.40.1.1**) and **PBX Monitor Password** to the password used to log into the Avaya IP Office SysMonitor application, and click **OK**. The **TcIpOff** window minimizes to the Windows system tray.
4. To verify TcIpOff established communication with Avaya IP Office, click the **TcIpOff** icon on the Windows system tray. When the **TcIpOff** window is displayed, verify **PBX: Up** is displayed in **Current State**. Click **OK** to minimize the window.

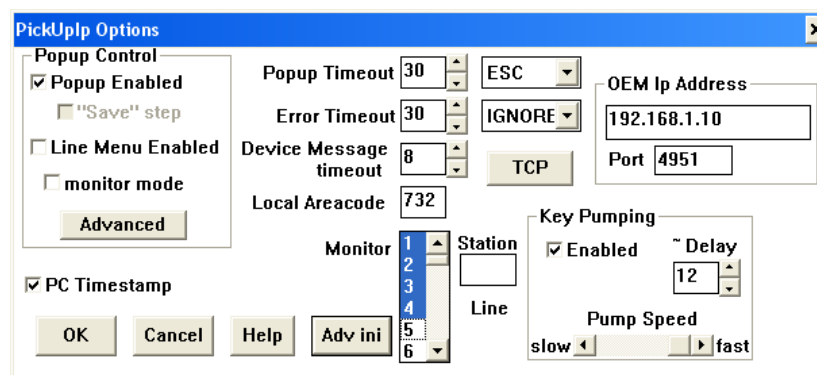


4.2.2. Configure Telcomp PickUpIp

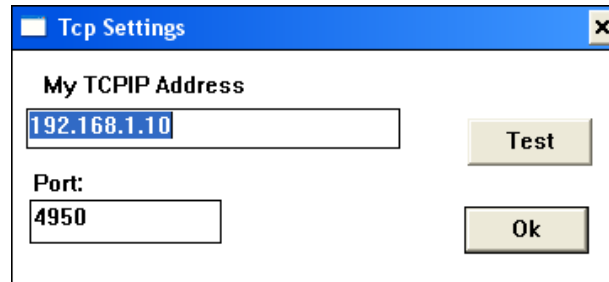
1. Log into the Telcomp server with administrative privileges and go to **Start → Programs → Telcomp → PickUpIp** to launch the application.
2. Click **PickUpIp Connected** on the Windows taskbar to open the **PickUpIp Line Menu** window.
3. Left-click the telephone icon (?) on the top left corner of either the **PickUpIp (Connected to Host & OEM)** window or the **PickUpIp Line Menu** window and select **Options...** in the menu that is displayed.



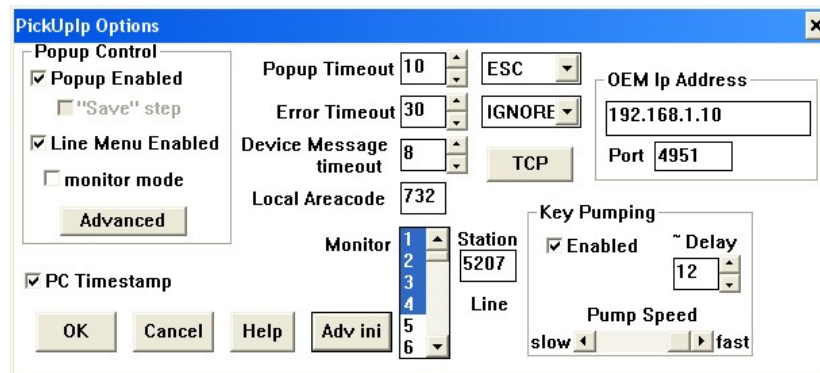
4. In the **PickUpIp Options** window that is displayed, click **TCP**.



5. In the **Tcp Settings** window that is displayed, set **My TCPIP Address** to the IP address of the Telcomp PickUpIp server, e.g., **192.168.1.10** and click **OK**.



6. In the **PickUpIp Options** window that is displayed, set **OEM Ip Address** to the IP address of the Telcomp PickUpIp server, e.g., **192.168.1.10** and click **OK**. By default, Telcomp PickUpIp is configured to monitor (**Monitor**) the first four lines on the Avaya IP Office. Please refer to Telcomp Help for information on how to adjust the lines to be monitored.



NOTE: **Popup Timeout** value was modified from **0** to **10** (which means screen pop generated by Telcomp PickUpIp will pause 10 seconds before minimizing), **Error Timeout** was changed from **0** to **30** (which means Telcomp PickUpIp will wait 30 seconds before timing out any error message popup) and **Station** was set to **45207**¹ (which means Telcomp PickUpIp will generate a screen pop for inbound trunk calls answered at extension 5207). These changes were done in the course of setting up the application for compliance testing, and are not required for interoperability between the Telcomp software and Avaya IP Office. Please refer to the Telcomp Help file for a detailed description of these fields and their use.

¹ Although extension dialing functions correctly, Telcomp does not visually support a 5 digit dial plan. Therefore extension 45207 is displayed as extension 5207.

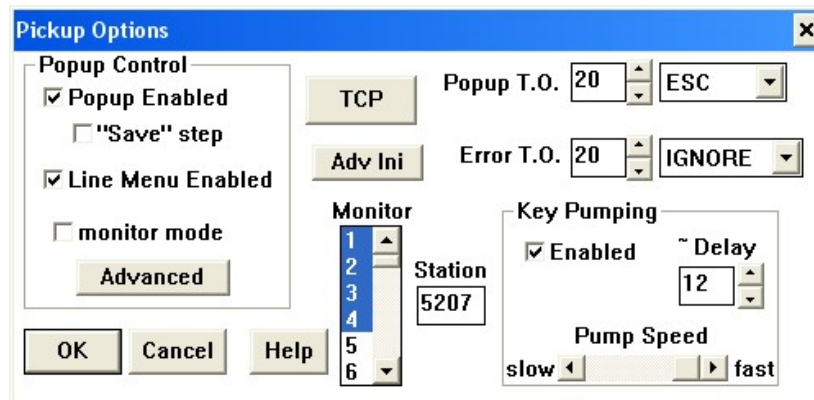
4.3. Load and Configure Telcomp PickUpEm

Load the Telcomp CD on a client PC and allow the auto-boot sequence to take place. Select **911 Client for Avaya IpOffice** and click **Next**. Allow installation of **911 Client for Avaya IpOffice** to complete. See section 4.2.

1. Log into the Telcomp PickUpEm client PC and go to **Start → Programs → Telcomp → PickUpEm** to launch the application.
2. Left-click the telephone icon (📞) on the top left corner of either the **PickUpEm Line Menu** screen or the **PickUpEm Disconnected 192.168.1.10** window and select **Options...** in the menu that is displayed.

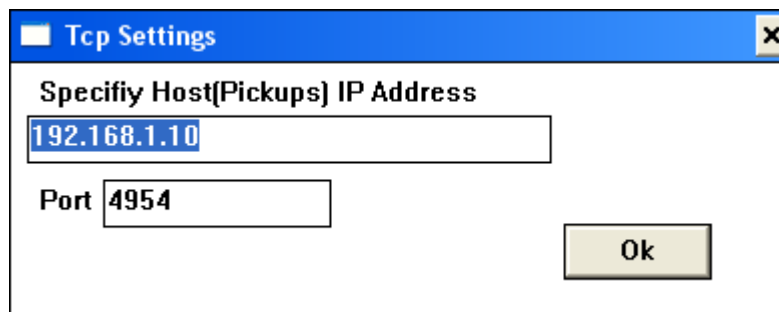


3. In the **Pickup Options**² window that is displayed, click **TCP**. **Note:** The administration of Telcomp PickUpEm and Telcomp PickUpIp are very similar.



Popup T.O. value was modified from **0** to **20** (which means screen pop generated by Telcomp PickUpEm will pause 20 seconds before minimizing), **Error T.O.** was changed from **0** to **20** (which means Telcomp PickUpEm will wait 20 seconds before timing out any error message popup). These changes were done in the course of setting up the application for compliance testing, and are not required for interoperability between the Telcomp software and Avaya IP Office. Please refer to the Telcomp Help file for a detailed description of these fields and their use.

4. In the **Tcp Settings** window that is displayed, set **Specify Host (Pickups) IP Address** to the IP address of the Telcomp PickUpIp server, e.g., **192.168.1.10**, and click **OK**.



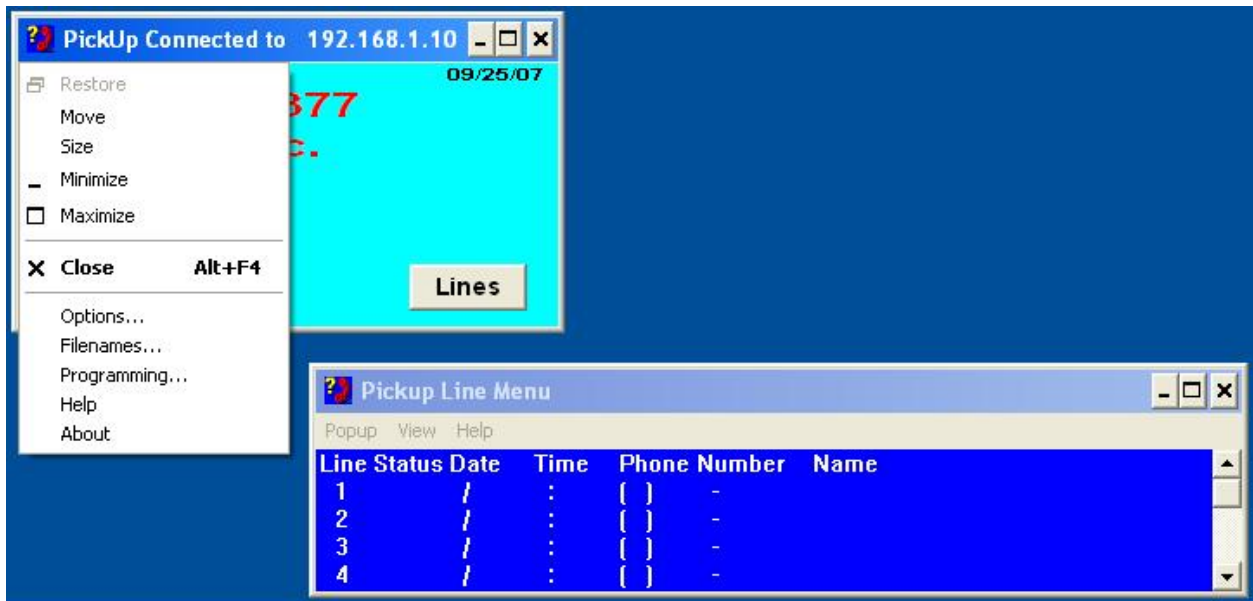
4.4. Load and Configure Telcomp PickUp Client

Load the Telcomp CD on a client PC and allow the auto-boot sequence to take place. Select **PickUp Client for Avaya IpOffice** and click **Next**. Allow installation of **PickUp Client for Avaya IpOffice** to complete. See section 4.2.

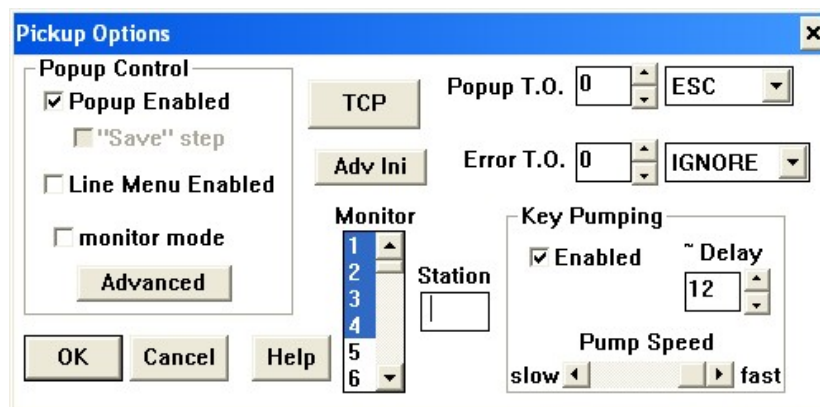
1. Log into a Telcomp PickUp client with administrative privileges and go to **Start → Programs → Telcomp → PickUp** to launch the application

² The Pickup Options header should read PickUpEm Options. Telcomp is aware of the problem.

- Click **PickUp** on the Windows taskbar to open the **PickUp Line Menu** window.
- Left-click the telephone icon (📞) on the top left corner of either the **PickUp Line Menu** window or the **PickUp Connected to 192.168.1.10** window and select **Options...** in the menu that is displayed.

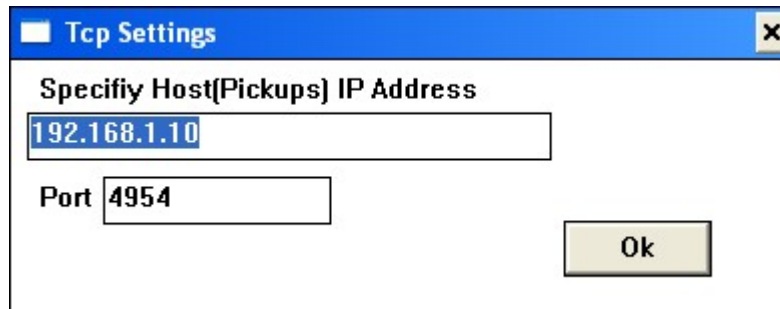


- In the **PickUp Options**³ window verify **Key Pumping Enabled** is checked, and then click **TCP**.

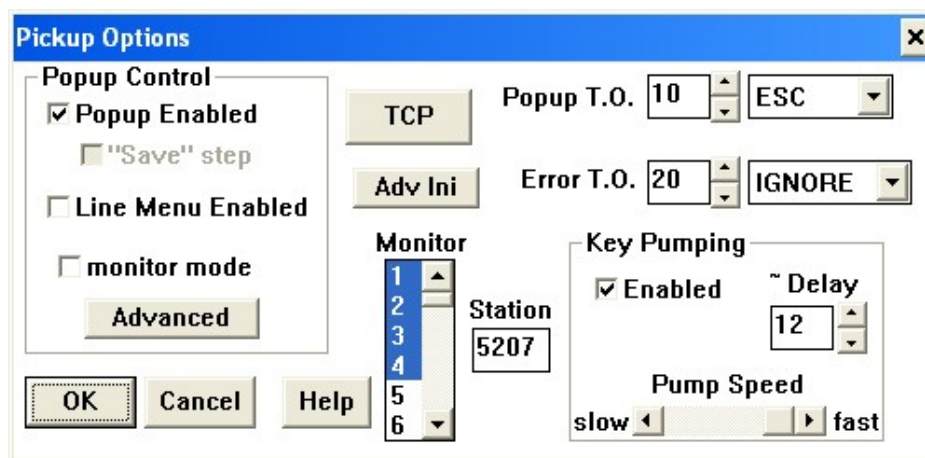


³ Telcomp is aware of the inconsistent header labeling of PickUp / Pickup.

5. In the **Tcp Settings** window that is displayed, set **Specify Host (Pickups) IP Address** to the IP address of the Telcomp PickUpIp server, e.g., **192.168.1.10**, and click **OK**.



6. In the **PickUp Options** window that is displayed, set **Popup T.O.** to **10**, set **Error T.O.** to **20**, set **Station** to the extension to be monitored by this Telcomp PickUp client, e.g. **45207** and click **Advanced**.



7. In the **PickUp Popup Controls** window that is displayed, verify **Key Pump** is checked, verify **Answer** is checked, and verify none of the checkboxes in the **BYPASS Control** section are checked. Click **OK**. The **PickUp Options** window is re-displayed, click **OK**.

Pickup Popup Controls		
RECALL Control		
<input checked="" type="checkbox"/> Main Popup	<input type="checkbox"/> Line Menu	
ENABLE Control		
<input checked="" type="checkbox"/> Main Popup	<input type="checkbox"/> Line Menu	<input checked="" type="checkbox"/> Key Pump
EVENT Control		
<input type="checkbox"/> Ring	<input checked="" type="checkbox"/> Ring	<input type="checkbox"/> Ring
<input checked="" type="checkbox"/> Answer	<input checked="" type="checkbox"/> Answer	<input type="checkbox"/> Answer
<input type="checkbox"/> Pickup	<input type="checkbox"/> Pickup	<input type="checkbox"/> Pickup
BYPASS Control		
<input type="checkbox"/> New	<input type="checkbox"/> New	<input type="checkbox"/> New
<input type="checkbox"/> Normal	<input type="checkbox"/> Normal	<input type="checkbox"/> Normal
<input type="checkbox"/> VIP	<input type="checkbox"/> VIP	<input type="checkbox"/> VIP
<input type="checkbox"/> Outside	<input type="checkbox"/> Outside	<input type="checkbox"/> Outside
<input type="checkbox"/> Private	<input type="checkbox"/> Private	<input type="checkbox"/> Private
EXIT Control		
<input checked="" type="checkbox"/> Minimize	<input checked="" type="checkbox"/> Minimize	
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/>		

8. Left-click the telephone icon on the top left corner of the PickUp Line Menu that is displayed and select **Close** to save the configuration. A Telcomp PickUp screen pop should displayed prompting whether to terminate PickUp, click **Yes**.
9. Repeat steps 1 through 8 for each Telcomp PickUp client. For the purposes of these Application Notes, Telcomp PickUp clients were setup to monitor extensions 45201, 45202, 45203. The Telcomp PickUpIp was setup to monitor extension 45207; in addition it functioned as server to the Telcomp PickUp clients.

5. Interoperability Compliance Testing

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

5.1. General Test Approach

Feature and functionality testing was performed manually on the Avaya IP Office configured with inbound trunk calls ringing at all extensions. Analog and PRI trunks from the central office were connected to the Avaya IP Office. The Telcomp TcIpOff application was configured to establish a *DevLink* connection to the Avaya IP Office. The PickUpIp server was set up to monitor an extension and generate a screen pop when its assigned extension was answered. Each Telcomp PickUp client was configured to generate a screen pop when its assigned extension was answered. Each Telcomp PickUp client was configured through its macro-programming interface to send keystrokes to an untitled Notepad file and send incoming call information⁴. When an inbound trunk call was made to the Avaya IP Office, all extensions would ring. When the call was answered at a particular extension, the corresponding Telcomp PickUp client would generate a screen pop with the incoming CallerID number, if available. When the screen pop timed out after a few seconds interval (user configurable), this action invoked the PickUp client programming macro to send the call information to an open Notepad file.

5.2. Test Notes and Observations

The following notes and observations regarding this solution were made during compliance testing.

- **Incoming CallerID information limited to number only** – Telcomp provides CallerID number information received from the *DevLink* stream. In order to provide CallerID name information, Telcomp would need to also interface to the Avaya IP Office via TAPI. Since *DevLink* and TAPI 3rd party call control require the same CTI license (TAPI 1st party does not require license), Telcomp is reviewing whether to add this in the next Telcomp release. Note however, TAPI CallerID information streams are available for internal calls but are not available for external calls.
- **Display of PRI trunk channels needs work** – Telcomp needs to further refine how incoming calls from distinct channels in a PRI trunk will be displayed in the Telcomp Line Menu. Current implementation is to display each PRI trunk channel as a distinct line number for display purposes only. This is exacerbated by the fact that the *DevLink* output doesn't distinguish between the channels of a PRI trunk when reporting inbound trunk calls on a given PRI trunk. They're all identified with the same line number.
- **Screen-pop updates only if client minimized:** Telcomp recommends keeping the Telcomp PickUp client minimized on the Windows taskbar because if it is left open, the screen pop does not update CallerID information for subsequent calls.
- **A Dial plan greater than 4 digits is not fully displayed:** 5 digit dial plans function normally but only the last 4 digits are displayed in the Station configuration fields.
- **Incoming SIP trunk information not properly displayed:** Information regarding a SIP URL is not properly displayed on the Telcomp PickUpIp popup display.

5.3. Test Results

Most feature and functionality test cases passed successfully. All observations noted during testing were presented in section 5.2.

⁴ For information on how to configure this functionality, please refer to the Telcomp Help File.

6. Verification Steps

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

- Place an inbound trunk call to the Avaya IP Office and answer it. Verify the Telcomp PickUpIp Line Menu shows the call status information throughout the call.
- Place an inbound trunk call to the Avaya IP Office. Answer the call from an extension monitored by a Telcomp PickUp client. Verify the Telcomp PickUp client generates a screen pop when the call is answered.
- Place a 911 call from an Avaya IP Office extension to a CO simulator. Verify the Telcomp PickUpEm application displayed a screen pop with the calling extension information.

7. Support

Customers should call the Telcomp Customer Service Center when having problems related to the Telcomp product components. For technical support on PickUpIp, TcIpOff, PickUpEm, and PickUp, contact the Telcomp Customer Service Center at (407) 889-7377. Technical support email can be sent to larry@TELCOMP.com.

8. Conclusion

These Application Notes describe the configuration steps required for Telcomp's TcIpOff, PickUpIp, PickUp, and PickUpEm to successfully interoperate with Avaya IP Office. Features and functionality were successfully validated.

9. Additional References

- [1] Avaya IP Office 4.0 Installation Manual, 15-601042 Issue 15e (January 2007)
- [2] Avaya IP Office CTI Link DevLink Programmer's Guide, 15-601036 Issue 12 (December 2006)
- [3] Telcomp PickUpIp / PickUp / PickUpEm Help File

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