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Avaya Solution & Interoperability Test Lab

Application Notes for Resource Software International Visual Rapport with Avaya IP Office – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Resource Software International (RSI) Visual Rapport to work with Avaya IP Office and generate screen pops for inbound calls. Visual Rapport is a visual communication console that provides employee telephone status, instant messaging, and screen pop at the client computer. Information in these Application Notes was obtained through 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 configuration steps required for Resource Software International (RSI) Visual Rapport to work with Avaya IP Office. RSI Visual Rapport is an intuitive integrated visual communication console that provides real-time employee telephone status, instant messaging, email, screen pop, call logging, and file transfer in the same product.

Business calls are usually linked with information that exists in database software or contact management applications, such as Access, Outlook, Act!, Maximizer, Goldmine or even a unique in-house custom application. As an example, a travel agency with a proprietary customer database could use Visual Rapport to receive screen pops at every agent's desktop and access the details of each customer's travel plans from their database.

Visual Rapport simplifies call handling. Perform time-consuming telephony functions (including Answer, Hold, Park, and Transfer) with a few mouse-clicks. When an incoming call arrives, Visual Rapport can unobtrusively notify the user with the incoming Caller ID number information and enables the user to decide what to do with the call.

Visual Rapport consists of a server and client module. Each Visual Rapport client interfaces with the Avaya IP Office via TAPI 1st party (single-party) call control. The Avaya IP Office TAPI driver must be installed on the Visual Rapport client PC to establish the connection to the Avaya IP Office for the extension to be controlled by the Visual Rapport client.

The Visual Rapport clients also connect to the Visual Rapport server. Each Visual Rapport client reports its status to the Visual Rapport server thereby providing the Visual Rapport server with the ability to propagate Busy Lamp Field (BLF) and other status information of all registered and logged-in Visual Rapport clients. Communication between the Visual Rapport clients and server is via multicasting or broadcasting (user configurable) using a proprietary protocol. For the purposes of these Application Notes, the Visual Rapport clients and server were configured with multicasting (default).

NOTE: The Visual Rapport server does not support TAPI 3rd party control.   Thus, the Visual Rapport server does not have the ability to report on the BLF or other status information of extensions and/or lines on the Avaya IP Office that do not have a TAPI 1st party call control link to a Visual Rapport client.

The configuration in **Figure 1** shows a network consisting of an Avaya IP412 Office, Avaya IP Office Manager PC, RSI Visual Rapport server and clients and an Avaya 4600 Series IP Telephone connected to the same network.

The Avaya IP412 Office has PRI and analog trunks to the PSTN. Analog telephones and Avaya 6400 Series Digital Telephones are connected to Avaya IP400 Expansion modules, which connect to the Avaya IP412 Office.

Each of the RSI Visual Rapport clients in **Figure 1** have been configured with TAPI 1st party call control connectivity to the Avaya IP Office and is registered to a distinct extension.   Please refer to **Table 1** for the mapping of extension to Visual Rapport client to Visual Rapport login User Id.

Client	Avaya IP Office extension	Visual Rapport client User Id
Visual Rapport client 1	x6501	6501
Visual Rapport client 2	x6504	6504
Visual Rapport client 3	x6517	6517

Table 1 – RSI Client To Avaya IP Office Extension To Visual Rapport Client User Id Mapping

The tested configuration is shown in **Figure 1**.
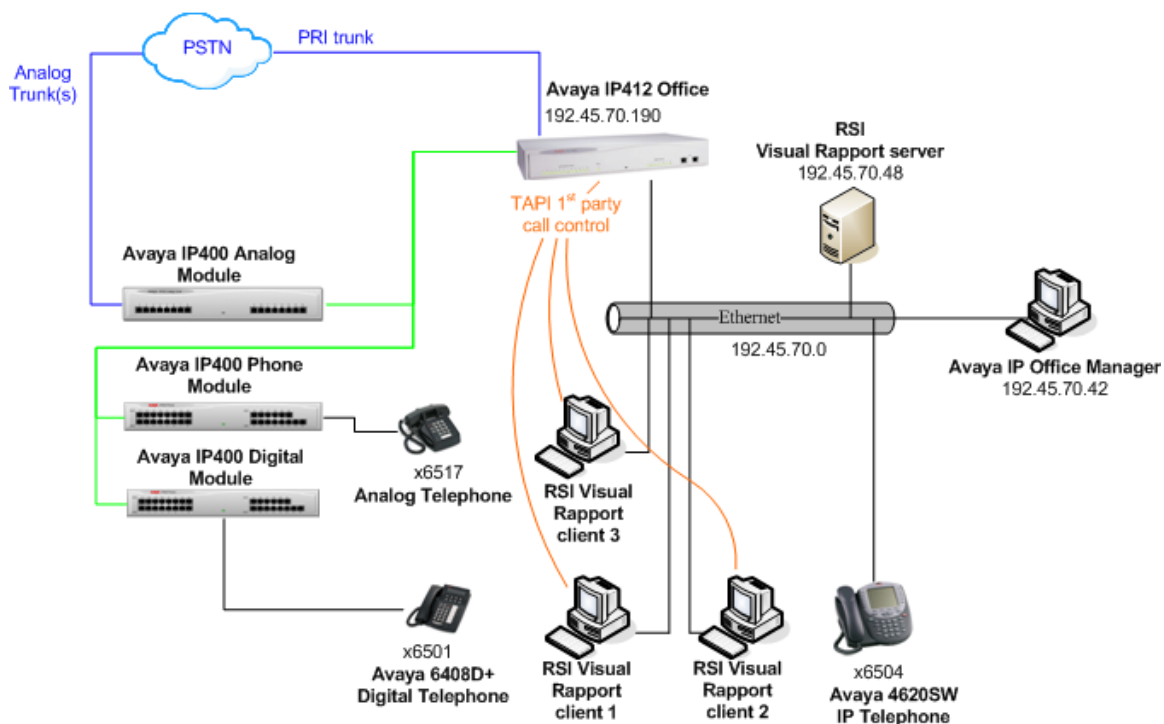
Figure 1 – Network Configuration Diagram

The Avaya IP Office was configured to route incoming calls to a hunt group or specific extensions, based on the test case being executed. During an incoming trunk call, the Avaya IP Office rang the destination extension. While this event occurred, the Avaya IP Office also sent TAPI 1st party call control signaling to the Visual Rapport client associated with the destination extension. The user then received visual notification of the incoming call from the Visual Rapport client in addition to the audible notification from the telephone. The Visual Rapport

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client could be configured to take different actions during an incoming call. For the purposes of compliance testing and these Application Notes, the Visual Rapport clients were configured to generate a screen pop when an incoming call was answered at the extension. Screen pop was in the form of Visual Rapport launching Notepad and the incoming call information was written to Notepad's buffer.

2. Equipment and Software Validated

The following products and software were used for the configuration in **Figure 1**:

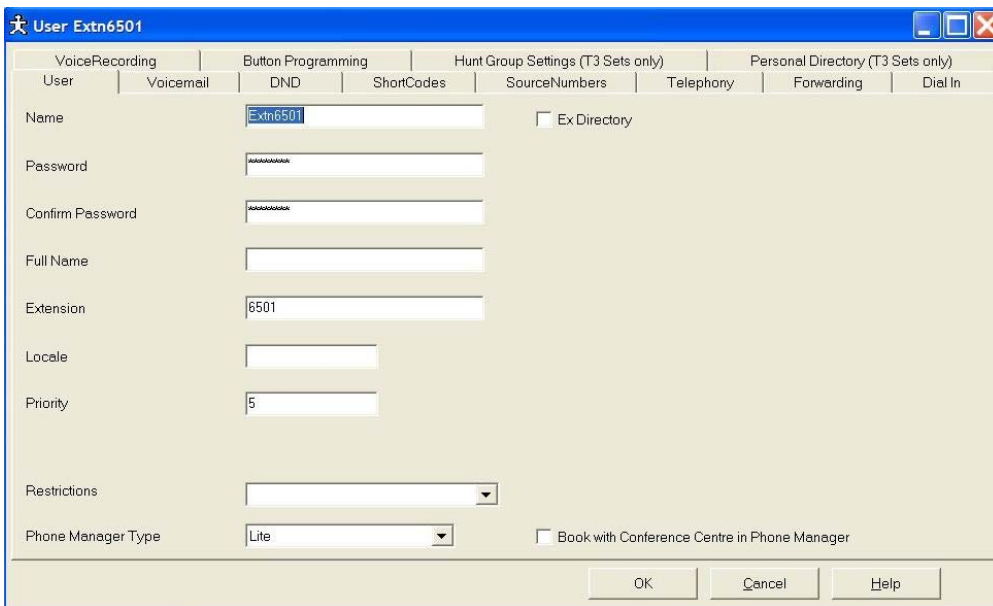| Product	Software/Version
Avaya IP412 Office	3.1(48)
Avaya IP400 Office Analog Module	5.1(48)
Avaya IP400 Office Digital Module	5.1(48)
Avaya IP400 Office Phone Module	5.1(48)
Avaya IP Office Manager	5.1(48)
Avaya 4620SW IP Telephone	2.3
Avaya 6408D+ Digital Telephone	-
RSI Visual Rapport server	1.08
RSI Visual Rapport client	1.08
PCs for Avaya IP Office Manager and RSI Visual Rapport server and clients	Windows 2000 Professional Service Pack 4
Analog Telephone	-
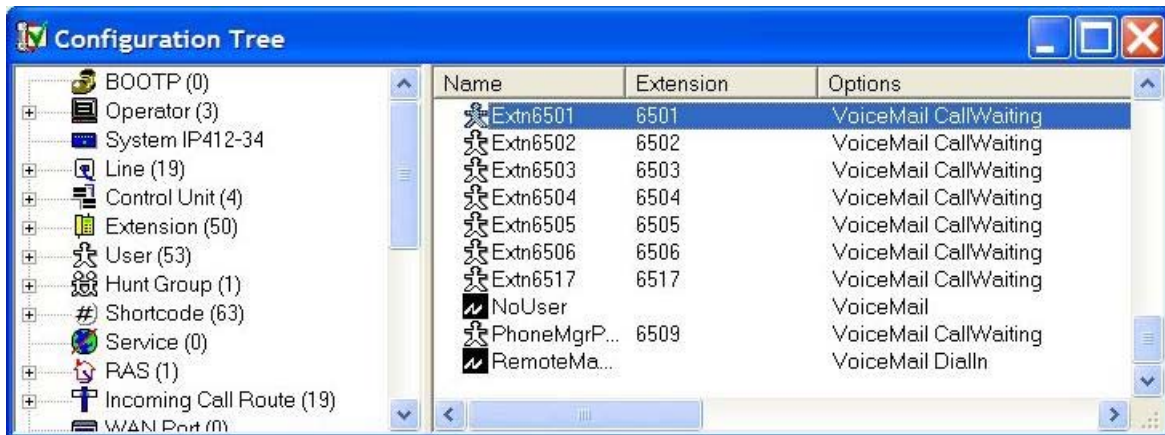
Table 2 – Product and Software Version

3. Configure Avaya IP Office

The configuration information provided in this section describes the steps required to set up User extensions and passwords on Avaya IP Office. While this is part of a typical Avaya IP Office configuration, the information is needed for the TAPI driver configuration on the Visual Rapport clients.

For all other provisioning information, such as Avaya IP Office installation and configuration, etc., please refer to the Avaya IP Office product documentation in reference [1].

Step	Description
1.	Log into the IP Office Manager PC and go to **Start → Programs → IP Office → Manager** to launch the Manager application. Log into the Manager application using the appropriate credentials.
2.	In the Manager window that appears, select **File → Open** to search for the IP Office system in the network.

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Step	Description
3.	Log into the IP Office system using the appropriate login credentials to receive its configuration.
4.	In the Manager window, go to the Configuration Tree and double-click **User**. In the list of Users that appears in the right-hand pane, scroll down to the user and extension name mapped to the first Visual Rapport client listed in **Table 1**, select it then double-click it.
5.	In the User window that appears, set **Password** to the password to use for this extension. Click **OK**.
6.	Repeat Steps 4 – 5 for each extension listed in **Table 1**.
7.	In the Manager window, select **File → Save** to push the configuration to the IP Office system and wait for the system to update. This completes configuration of Avaya IP Office.
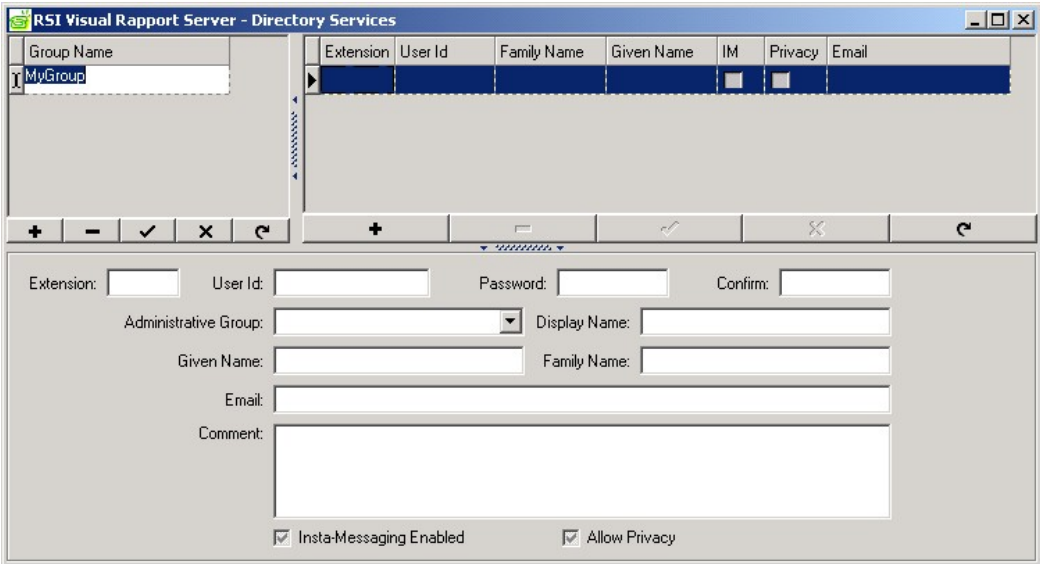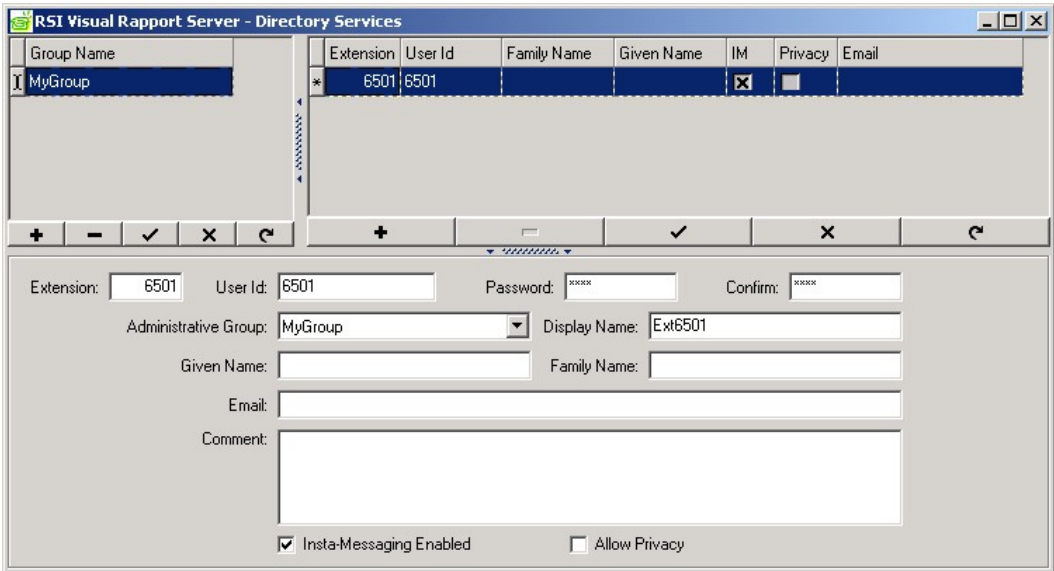
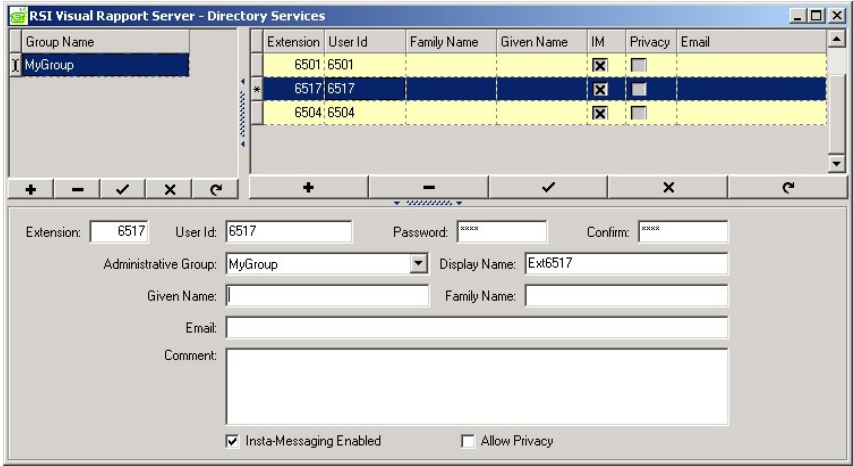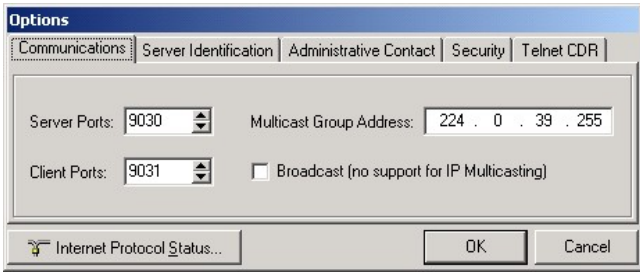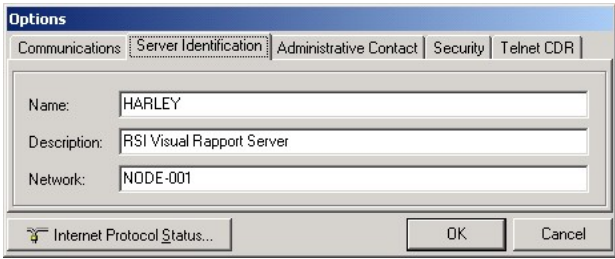# 4. Configure RSI Visual Rapport server

The configuration information provided in this section describes the steps required to configure user accounts in RSI Visual Rapport server. This information is provided for completeness since Visual Rapport server does not interface with Avaya IP Office.

For all other provisioning information, such as software installation, installation of optional components, general configuration of Visual Rapport server, please refer to the RSI Visual Rapport product documentation in references [2] and [3].

The information provided in this section assumes the Visual Rapport server has already been successfully installed and licensed on the PC.

Step	Description
1.	Log into the Visual Rapport server PC with the appropriate administrative credentials.
2.	Select the RSI Visual Rapport Server application running on the desktop and click the switch icon to turn the Communication Services off.
3.	In the RSI Visual Rapport Server window, select **Tools → Directory Services…**

Step	Description
4.	In the RSI Visual Rapport Server – Directory Services window that appears, click the ✚ in the left-hand pane, enter a Group Name, and then click ✔ to save the information.
5.	In the RSI Visual Rapport Server – Directory Services window, click the ✚ in the right-hand pane, set **Extension** to *6501*, **User Id** to *6501*, **Password** to the desired password, **Administrative Group** to the group name defined in Step 4, **Display Name** to *Ext6501* and click ✔ to save the information.

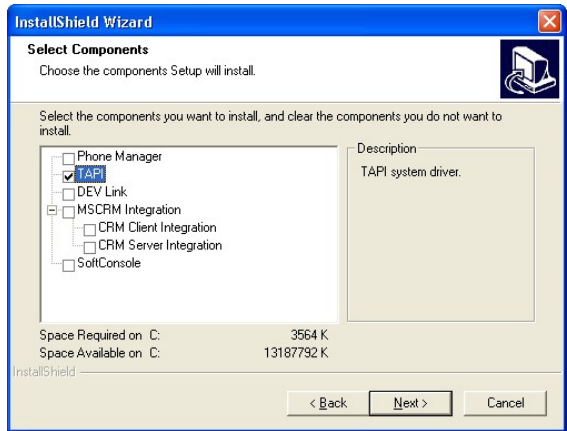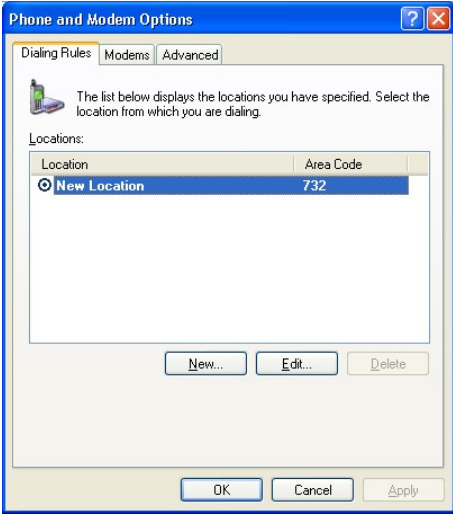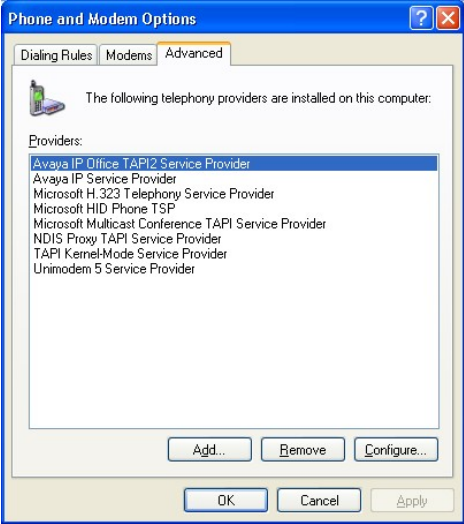| Step	Description
6.	Repeat Step 5 for each extension listed in **Table 1**. When done, close the window.
7.	In the RSI Visual Rapport Server window, select **Tools → Options…**
8.	In the Options window that appears, make a note of the **Server Ports**, **Client Ports** and **Multicast Group Address** settings in the Communication tab, as it will be referenced in Section 5.2 Step 4. Select the **Server Identification** tab. This example shows the default values.
9.	In the Server Identification information that appears, make a note of the **Name**, **Description** and **Network** information entered, as it will be referenced in Section 5.2 Step 5. This example shows values entered during installation. If the information does not appear, refer to documentation in [2] and [3]. Click **OK**.
10.	This completes configuration of the Visual Rapport server.

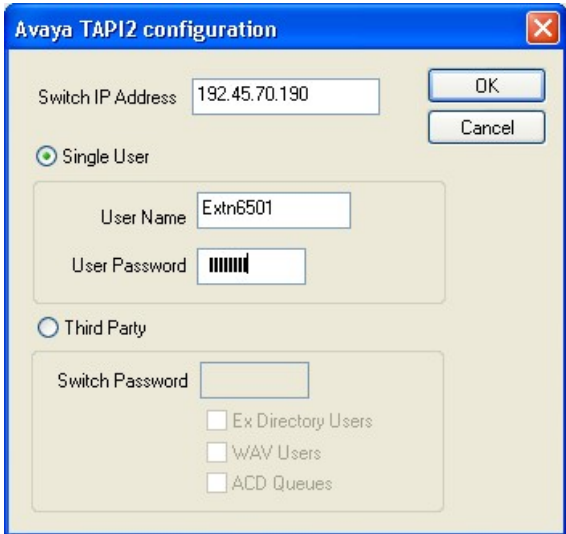# 5. Configure RSI Visual Rapport Client PC

The configuration information provided in this section describes the steps required to configure the Visual Rapport client PC.

For all other provisioning information, such as software installation, installation of optional components, configuration of Visual Rapport client software to integrate with other 3rd party products, etc., please refer to the RSI Visual Rapport product documentation in references [2] and [3].

5.1. Install and Configure Avaya TAPI Driver

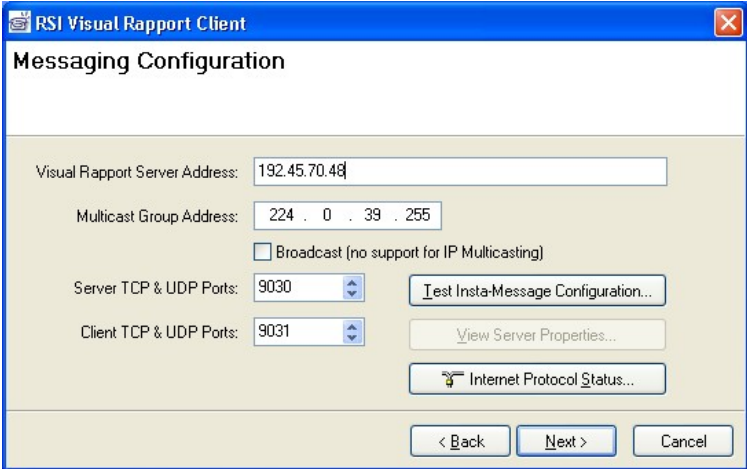| Step	Description
1.	Log into the Visual Rapport client PC with administrative privileges and launch the Avaya IP Office User Suite setup.exe on the CDROM drive.
2.	Click **Next** in the InstallShield wizard until the Select Components window appears. Check **TAPI** to install the IP Office TAPI driver on the PC.
3.	Click **Next** to complete the installation of the Avaya IP Office User Suite. At the InstallShield Wizard Complete window, click **Finish**.
4.	Go to **Start → Control Panel** and double-click the **Phone and Modem Options** icon in the Control Panel window that appears.

Step	Description
5.	In the Phone and Modem Options window that appears, select the **Advanced** tab.
6.	In the Advanced tab window that appears, highlight **Avaya IP Office TAPI2 Service Provider** and click **Configure…**

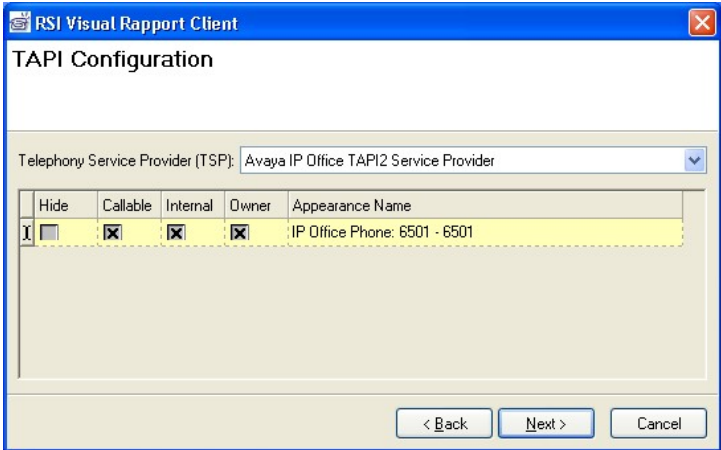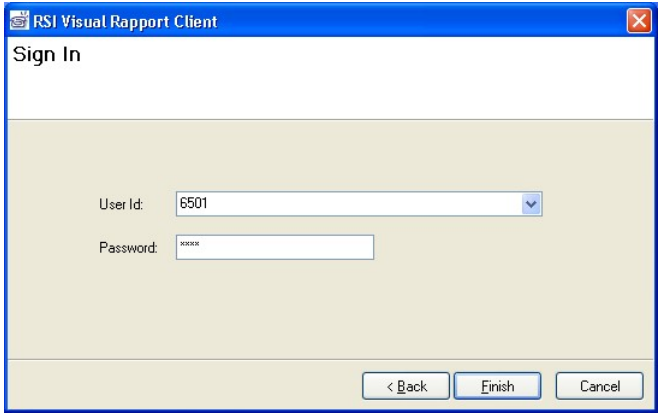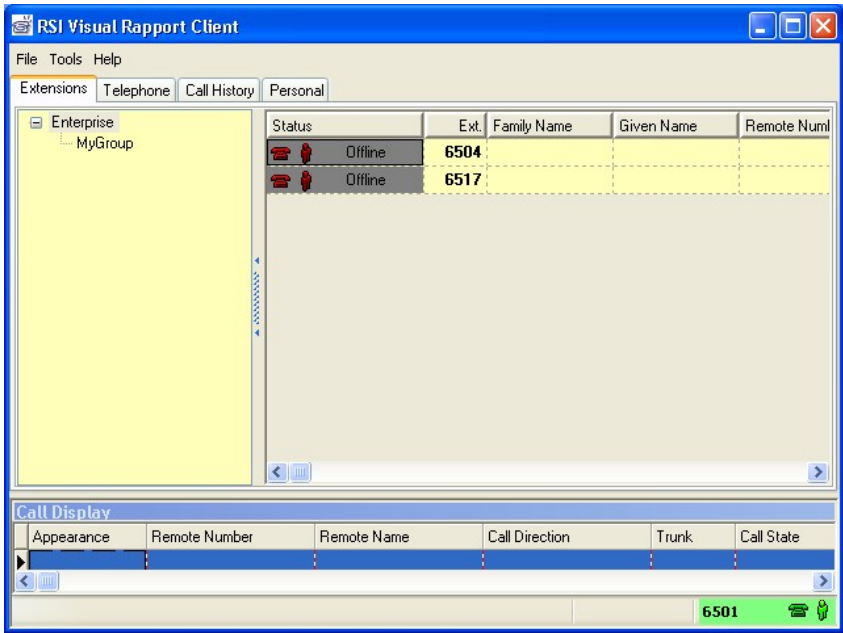| Step	Description
7.	In the Avaya TAPI2 configuration window that appears, set **Switch IP Address** to the IP Address of the Avaya IP Office, select **Single User**, set **User Name** to the name associated with the extension that will be controlled by this Visual Rapport client PC, e.g., *Extn6501* and set **User Password** to the password set for the User in Section 3 Step 5. Click **OK**.
8.	In the Phone and Modem Options window, click **OK**.
9.	Reboot the client PC for the new changes to take effect. This completes configuration of the Avaya TAPI Driver on the client PC.
10.	Repeat Steps 1 – 9 for each Visual Rapport client listed in **Table 1**.

5.2. Configure RSI Visual Rapport Client

The information provided in this section assumes Visual Rapport client has already been successfully installed and licensed on the PC.

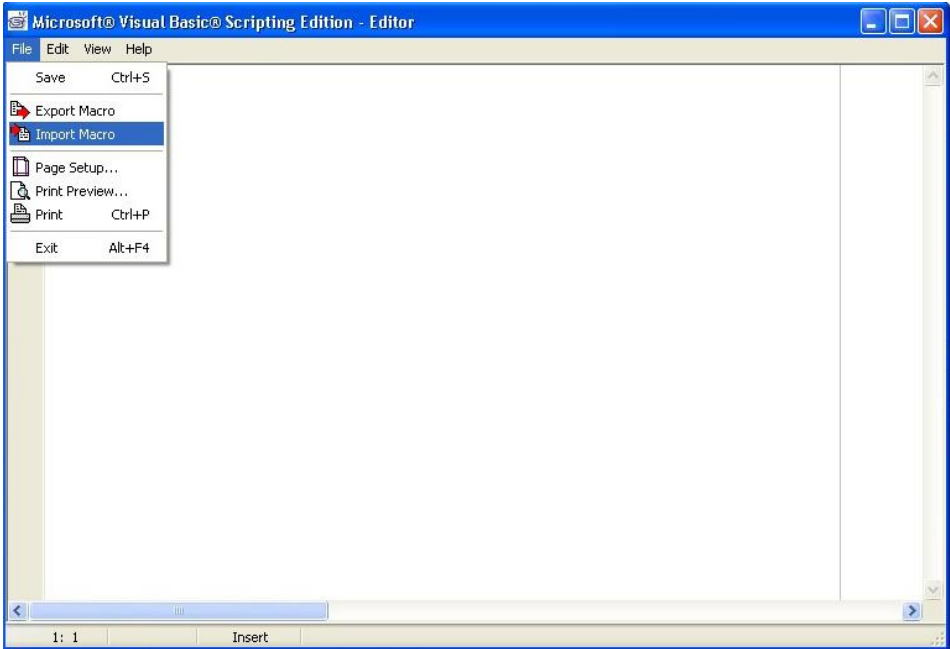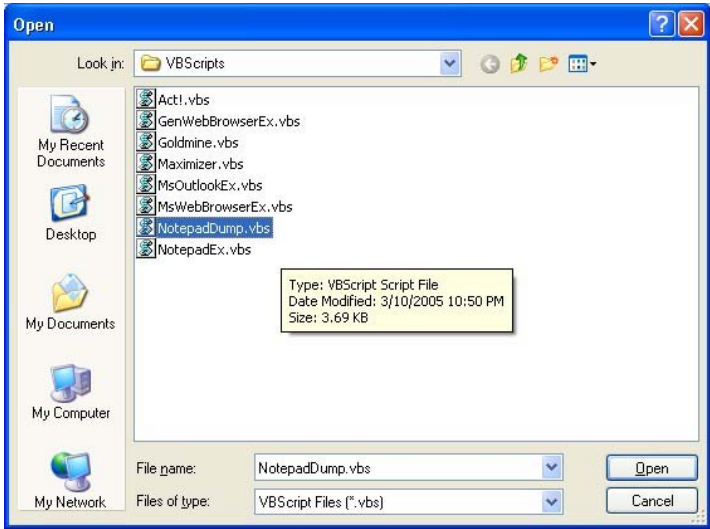| Step	Description
1.	Log into the Visual Rapport PC with the appropriate administrative credentials and navigate to **Start → Programs → RSI → Visual Rapport for TAPI → Desktop Console**.
2.	Click through the initial screens that appear, responding to prompts as appropriate for the local configuration.

Step	Description
3.	In the RSI Visual Rapport Client wizard window that next appears, click **Next**.
4.	In the Messaging Configuration window that appears, set **Visual Rapport Server Address** to the IP Address of the Visual Rapport server as listed in **Figure 1**, verify **Multicast Group Address**, **Service TCP & UDP Ports**, and **Client TCP & UDP Ports** match the settings made on the Visual Rapport server configuration in Section 4 Step 8. Click **Test Insta-Message Configuration…**

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Step	Description
5.	If a popup such as the one listed below appears, the connection between the Visual Rapport client and server is operational. Close the popup. If the popup does not appear, refer to [2] and [3] for troubleshooting information.
6.	In the Messaging Configuration window, click **Next**.
7.	In the TAPI Configuration window that appears, select **Avaya IP Office TAPI2 Service Provider** from the pull-down menu for Telephony Service Provider (TSP). Verify that **Callable**, **Internal** and **Owner** are checked and click **Next**.

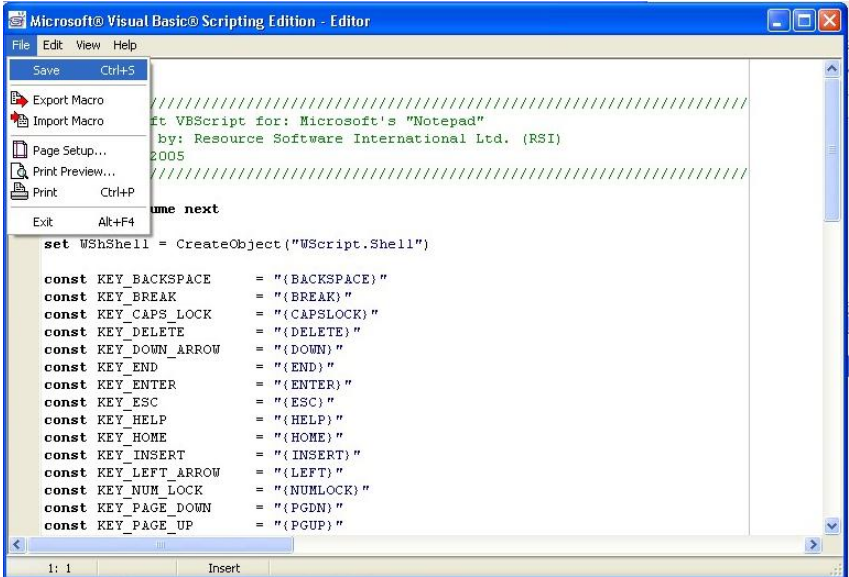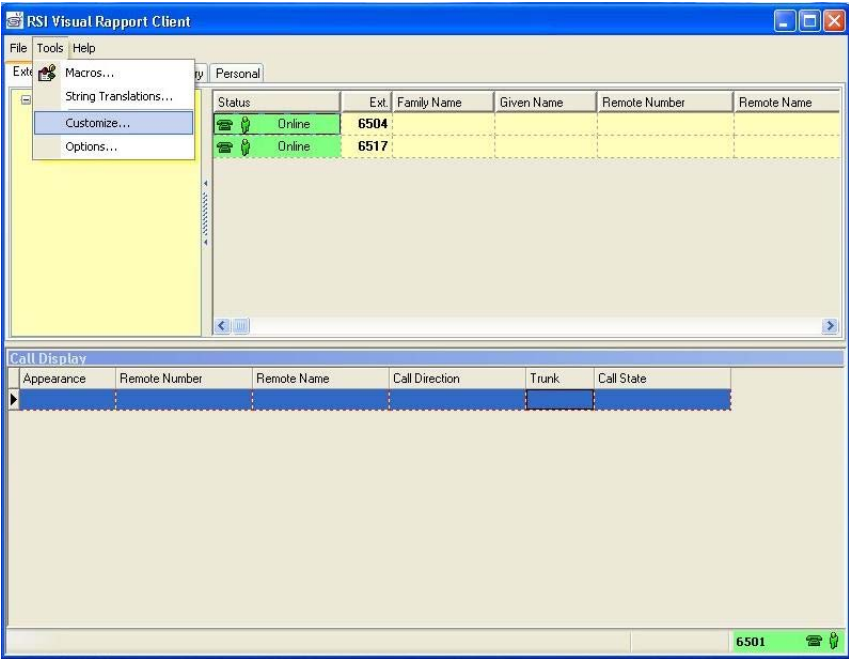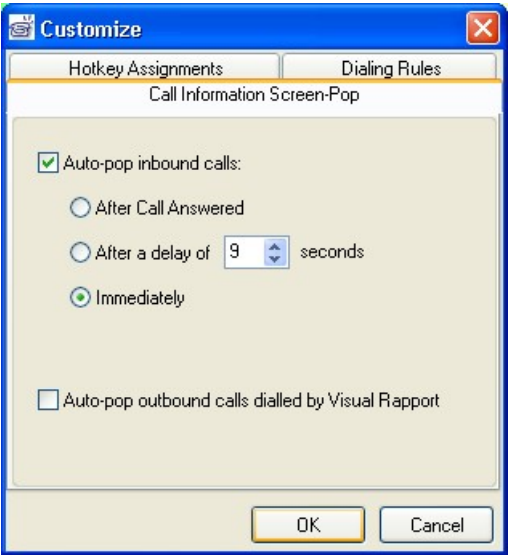| Step	Description
8.	In the Sign In window that appears, select the first Visual Rapport client extension number listed in **Table 1** and enter the password defined for the Visual Rapport client in Section 4 Step 5. Click **Finish**.
9.	In the RSI Visual Rapport client window that appears, confirm the bottom right corner shows the logged-in extension with a green background.
10.	Repeat Steps 1 – 9 for each extension defined in **Table 1**. This completes initial configuration of the Visual Rapport client.

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5.2.1. Configure Visual Rapport Client For Generic Screen Pop

Step	Description
1.	Go to **Start → Programs → RSI → Visual Rapport for TAPI → Desktop Console** to launch the Visual Rapport client.
2.	In the RSI Visual Rapport Client window that appears, select **Tools → Macros…**
3.	In the Call Handling Macros window that appears, locate the entry with Inbound 1 in the **Menu Caption** field. Check **Enabled** and **Auto** and click **Edit Macro…**

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Step	Description
4.	In the Microsoft Visual Basic Scripting Edition – Editor window that appears, select **File → Import Macro**.
5.	In the Open popup that appears, select **NotepadDump.vbs** and click **Open**.

Step	Description
6.	In the Microsoft Visual Basic Scripting Edition – Editor window, select **File → Save**.
7.	In the Microsoft Visual Basic Scripting Edition – Editor window, select **File → Exit**.
8.	Return to the Call Handling Macros window and click **Close**.
9.	In the RSI Visual Rapport Client, select **Tools → Customize…**

Step	Description
10.	In the Customize window that appears, check **Auto-pop inbound calls**, select **Immediately** and click **OK**. This completes configuration of Visual Rapport client to generate screen pop for inbound calls.
11.	Repeat Steps 1 – 10 for each Visual Rapport client in **Table 1**.

6. Interoperability Compliance Testing

Interoperability compliance testing evaluated the ability of Visual Rapport to successfully generate screen pops for inbound calls. Answer, Hang Up, Call Hold, Call Transfer, and Call Park of inbound, outbound and internal calls were verified successfully using the Visual Rapport clients. A load test was executed involving the use of a call generator and an automated RapidFire test script written to drive the Visual Rapport client to answer and hang-up incoming calls.

6.1. General Test Approach

The general test approach was to verify that manually placed intra-switch calls, inbound trunk and outbound trunk calls could be placed to and from Visual Rapport clients as well as telephones attached to the Avaya IP Office. Features including Call Hold, Transfer, and Call Park were also verified.

For the load test, a call generator was used to place calls over eight PRI trunk channels to the Avaya IP Office. The Avaya IP Office routed the calls to a hunt group containing the extensions of all eight of the Visual Rapport clients setup for the load test. The hunt group was setup to ring in a circular pattern. As each incoming PRI call was routed to each Visual Rapport client extension, the RapidFire automated test tool drove the Visual Rapport client to answer the call

then hang up after approximately 15 seconds. This behavior was repeated on all Visual Rapport clients for all incoming calls. The load test duration was set for two hours.

6.2. Test Results

Except for Issue 1 described below, all test cases completed successfully. The load test ran for two hours averaging 1680-1690 call attempts per hour. All Visual Rapport clients answered and hung up calls successfully. The total number of calls placed by the call generator was reported to be 3,428 and the total number of calls answered by the clients was 3,428. The call generator reported the average call length at ~14 seconds.

Issue 1 – The Avaya IP Office TAPI did not provide 'Connected' message via TAPI for outbound T1 calls. This prevented the ability to use the Visual Rapport client to properly handle call control such as placing calls on hold, initiating call transfers, etc. for outbound T1 calls. **Status:** A trouble ticket (CQ# 23413) was submitted to the Avaya IP Office team regarding this issue.

The following observations, and/or issues not related to test cases, were noted during testing:

- The Avaya IP Office does not provide Caller ID Name via TAPI for incoming trunk calls. A request to provide this functionality in the future via TAPI will be placed with the Avaya IP Office team.

- Visual Rapport client requires a restart if the client's associated extension is involved in a conference call. Visual Rapport does not support Conference; however, the associated extension's involvement in a Conference call should not adversely affect the client such that a restart of the client is required. RSI is investigating the issue.

- Visual Rapport client does not support Voicemail and Message Waiting Indication (MWI).

- Visual Rapport client does not support 'Do Not Disturb' and 'Call Forwarding'; however, this should not prevent the ability to dial the 'Do Not Disturb' and 'Call Forwarding' shortcodes from the client. RSI is investigating the cause of this issue.

7. Verification Steps

The following steps may be used to verify the configuration:

- Verify each Visual Rapport client PC can successfully ping the Avaya IP Office as well as the RSI Visual Rapport server.

- Place a call between two Visual Rapport client extensions and verify each Visual Rapport client can be used to answer and hang up the call.

- Verify each Visual Rapport client can be used to initiate and drop an inbound or outbound call.

8. Support

Technical support for Visual Rapport can be obtained by contacting Resource Software International Systems, Ltd. at:
- Phone: 800.891.6014 / 905.576.4575
- E-mail: support@telecost.com
- Web: www.telecost.com

9. Conclusion

These Application Notes describe the steps for configuring the RSI Visual Rapport Clients to generate screen pops for inbound calls to their associated Avaya IP Office extension. Except for Issue 1 described in Section 6.2, all test cases completed successfully.

10. References

The following Avaya product documentation can be found at http://support.avaya.com:

[1] Avaya IP Office 3.1 Installation Manual, Issue 13l (23rd January 2006).

The following Resource Software International product documentation is installed to the hard-drive during the Visual Rapport installation process:

[2] Visual Rapport Startup Guide
[3] Visual Rapport User Guide

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