Avaya Solution & Interoperability Test Lab

Application Notes for Call*media* Contact Centre Suite with Avaya IP Office – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for the Call*media* Contact Centre Suite to successfully interoperate with Avaya IP Office.

The Call*media* contact centre suite is designed to handle inbound and outbound telephone calls, emails, web interactions, SMS messages and faxes. The Telephony API (TAPI) interface is used to monitor and control agent stations, and handle routing of external calls. The Call*media* contact centre suite comprises of three core components: Call*media* Enterprise, Call*media* Advance and Call*media* Professional. An additional component called Call*media* Express was not compliance tested.

Information in these Application Notes has been obtained through compliance testing and additional technical discussions. Testing was conducted via the Developer*Connection* Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe a compliance-tested configuration using a Call*media* 4.0.1 contact centre server and an Avaya IP Office 3.1.

The Call*media* suite comprises three core components:

- Call*media* Professional – Call*media* Professional is the foundation layer for the rest of the Call*media* contact centre suite.
- Call*media* Enterprise – Only inbound and outbound calls were tested during compliance testing, although the application is also designed to handle, emails, web interactions, SMS messages and faxes.
- Call*media* Advance – Provides preview, progressive and predictive dialling. It is not possible to do predictive dialling with Avaya IP Office.

Call*media* agents log on to Call*media* with a username and password configured within the Call*media* application. This logon is linked to a phone extension configured on Avaya IP Office.

Call*media* Inbound call routing and allocating to users.
Users (Agents) and their teams have skills on Call*media* Enterprise Queues. Inbound calls queue on the Avaya IP Office hunt group. The hunt group is mapped to a Call*media* Enterprise queue. When Call*media* Enterprise has an available skilled user, Call*media* will route the call to the user's phone.

Call*media* Outbound.
Preview and Progressive Call*media* outbound users are given customer telephone numbers, contained in the Call*media* calling list (in the Call*media* database), to dial. These calls are launched from the user's extensions using TAPI MakeCall. The call progress is monitored and controlled using TAPI.

Call*media* is composed of four Windows Services:

- Call*media* Log - Manages logging for Call*media* Applications
- Call*media* Server - Client connections and CTI link
- Call*media* Enterprise - Task Allocation Engine
- Call*media* Scheduler - Outbound Engine and Calls List management

An additional component called Call*media* Express that allows the agent to transfer and conference calls was not compliance tested as part of the Call*media* contact centre suite.

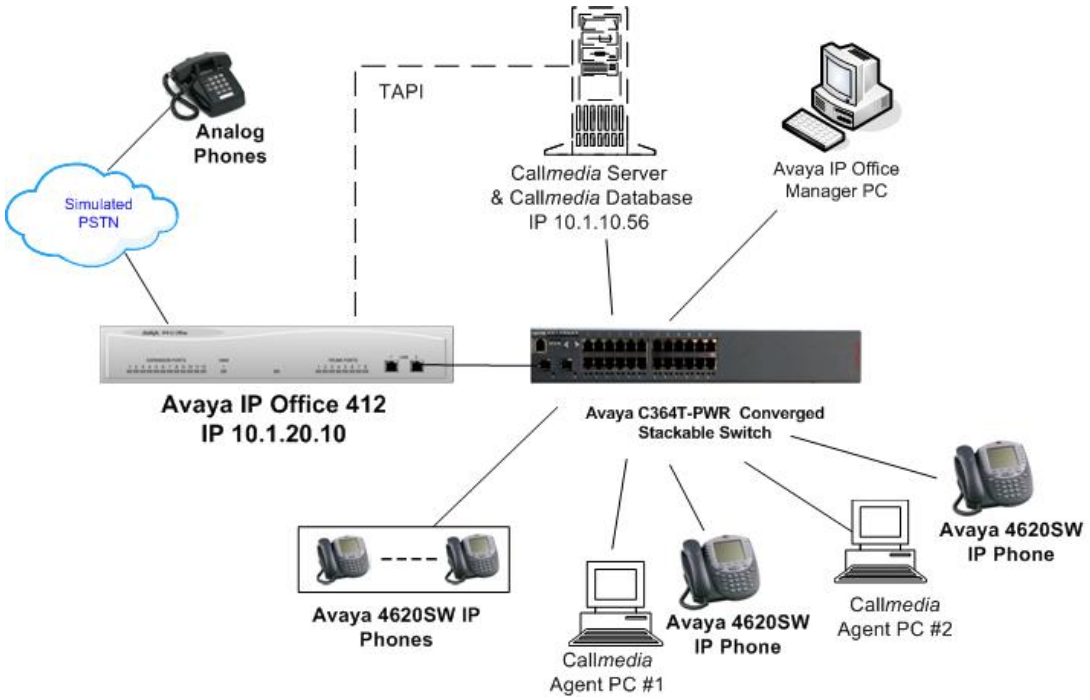


Figure 1: Avaya IP Office System with Call*media* Contact Centre Suite

2. Equipment and Software Validated

Equipment	Software
Avaya IP Office 412	3.1(56)
Avaya TAPI	1.0.0.27
Avaya IP Office Manager software	5.1(56)
Avaya C364T-PWR Converged Stackable Switch	4.3.12
Avaya 4600 Series IP Telephones	2.2.3 (4620SW)
Call*media* contact centre suite	4.0.1
Call*media* Server	3.4.13 (running on Windows Server 2003 SP 1)
Call*media* Log	2.4.1.1
Call*media* Enterprise	2.1.0.781
Call*media* Scheduler	2.5.1.22
Call*media* IP Office Switch Driver	1.2.4.78
Microsoft SQL Server 2000	SQL 2000 SP3
Operating System for Call*media* Agent PC's	Windows XP

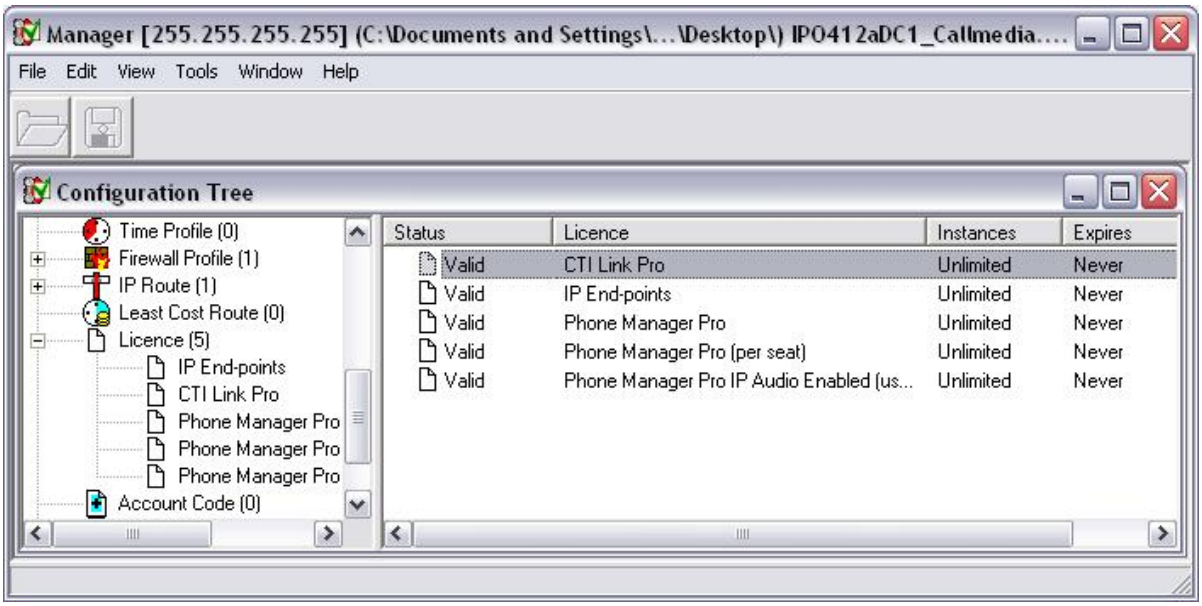
3. Configure Avaya IP Office

These Application Notes address the provisioning of Avaya IP Office as it relates to integration of the Callmedia application. For all other provisioning information, such as provisioning of the trunks for outbound dialling, call coverage, extensions, etc., refer to the Avaya IP Office documentation in Section 9.

3.1. Verify IP Office CTI Licences

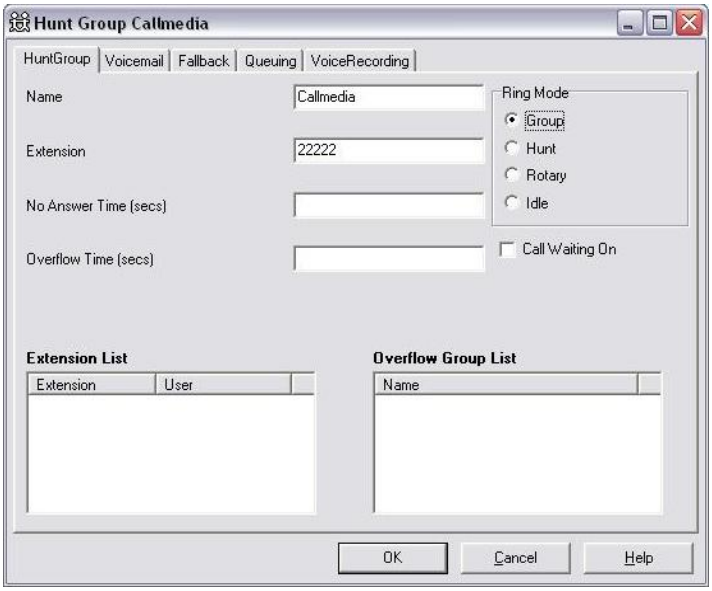
On the IP Office Manager PC, click on **Start → Programs → IP Office → Manager** to launch the Manager application. Log in to the Manager application using the appropriate credentials.

In the Manager window, select **File → Open** to search for the IP Office system in the network. Log in to the IP Office system using the appropriate login credentials. In the Manager window, go to the Configuration Tree and double-click **Licence** to open the list of licences installed in the IP Office system. Verify that enough **CTI Link Pro** Instances are available.

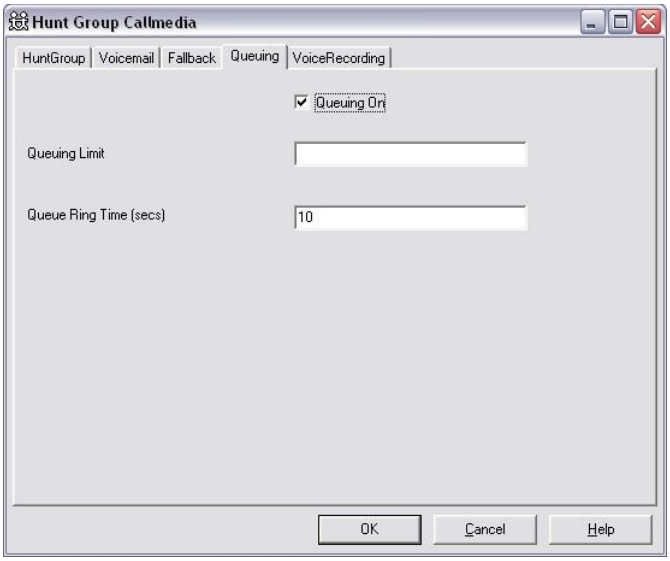


3.2. Configure Call*media* Hunt group

In the Manager window, go to the Configuration Tree and double-click **Hunt Group** to open the list of hunt groups on Avaya IP Office. Right-click in the right pane of the Manager window and click on **New**. Enter an appropriate name for the hunt group in the **Name** field and the hunt group extension in the **Extension** field. Ensure that no extensions are listed in the **Extension List** section as the Call*media* application controls the allocation of inbound calls to agent stations. Set the **Ring Mode** to **Group**, and ensure that **Call Waiting On** is unchecked.

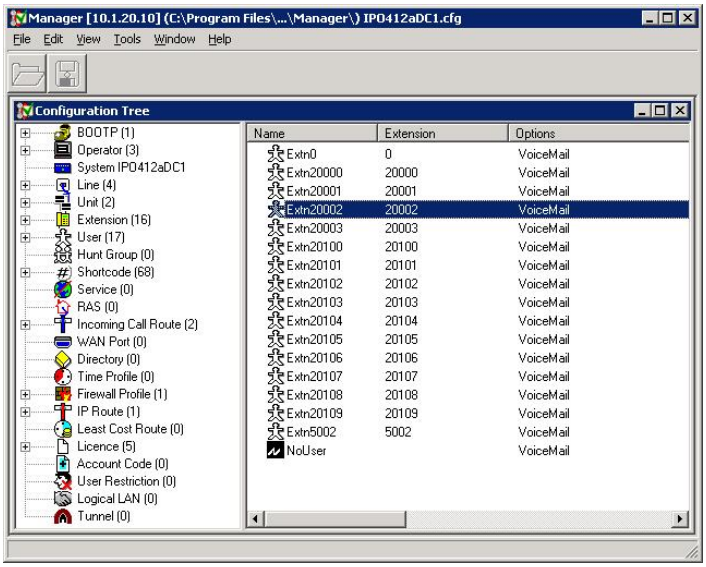


In the **Queuing tab** of the Hunt Group window, check **Queuing On** and click **OK**.



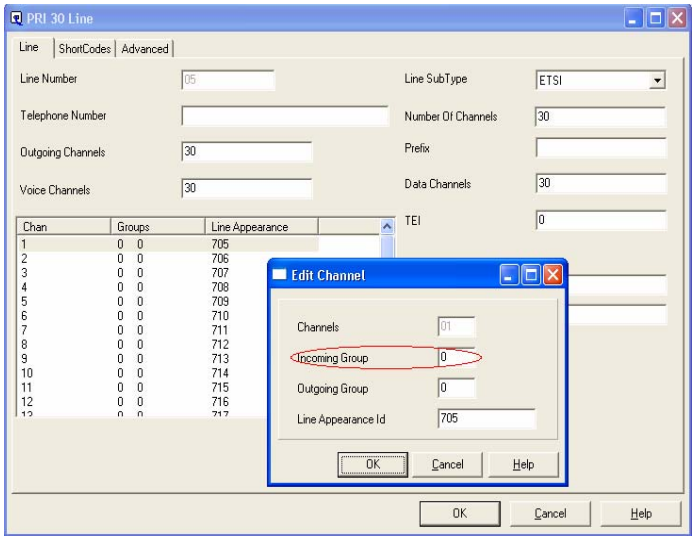
3.3. Configure Extensions to be Used by Call*media*

Please refer to Avaya IP Office documentation referenced in Section 9 for information on configuring Avaya IP Office extensions. During compliance testing, several extensions in the "20000" range were created as shown below. Extension 20002 was used for alternative routes in Section 4.1



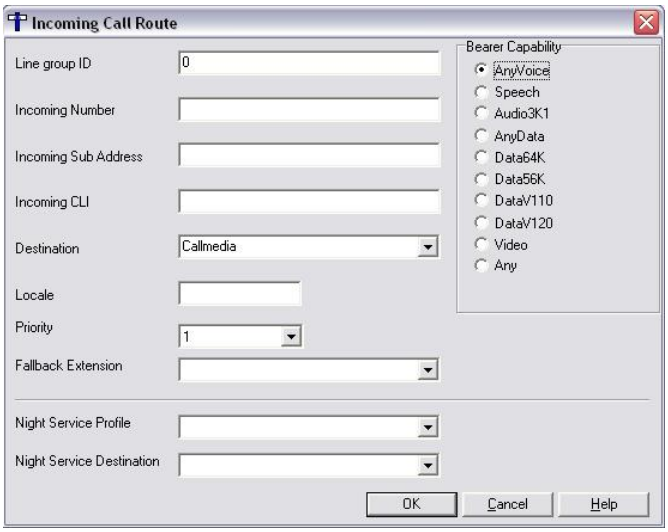
3.4. Assign Trunks to the Incoming Call Route

In the Manager window, go to the Configuration Tree and double-click **Line** to open the list of lines (trunks) available on Avaya IP Office. Double-click the PRI 30 Line whose incoming calls are to be routed to the Hunt Group Callmedia (22222), created earlier in Step 3.2. By default the **Incoming** and **Outgoing Group** are set to "0" in the Line window that appears. It is possible to edit the **Incoming Group** by double-clicking on every channel and editing the **Incoming Group** field in the Edit Channel dialog box. Make a note of the **Incoming Group** and click **OK**.



3.5. Configure Incoming call Route

In the Manager window, go to the Configuration Tree and double-click **Incoming Call Route** to open the list of incoming call routes on Avaya IP Office. Right click in the Incoming Call Route window and select **New**. From the **Destination** drop down list, select **Callmedia**. For **Line group ID**, enter the **Incoming Group** value noted in Step 3.4. Click **OK**.



In the Manager window, select **File → Save** to write the configuration to Avaya IP Office and select the option to reboot immediately.

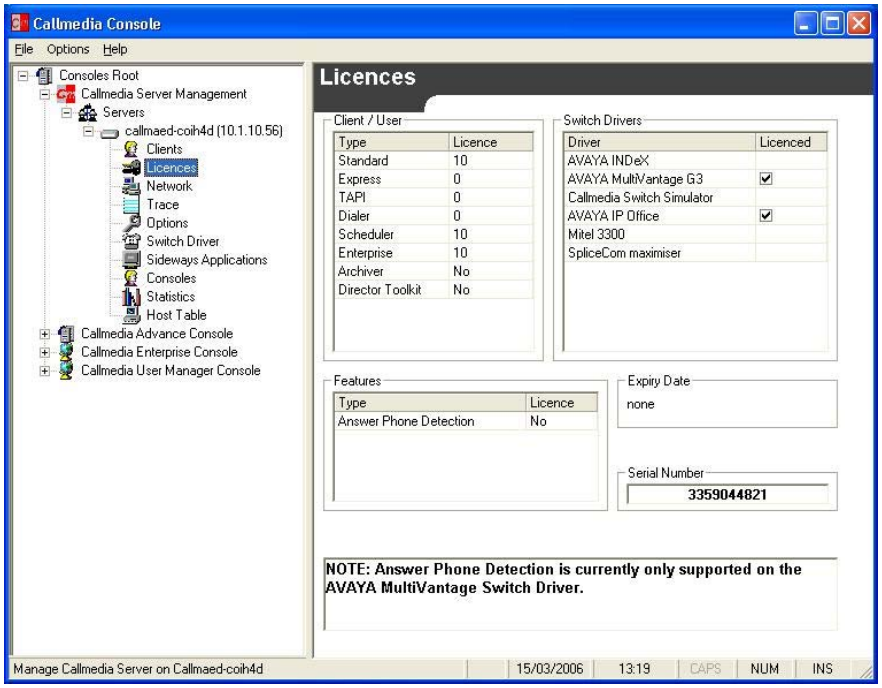
4. Configure the Call*media* Contact Centre Server

The Call*media* Server and SQL database were pre-installed on the same machine for convenience during the compliance testing. The standard practice would be to install the SQL database on a separate machine. Note the Call*media* Enterprise Database and Call*media* Advance Database are preconfigured during the installation stage of the Call*media* server. Refer to Call*media* Advance Book 2 and Call*media* Enterprise Book 2 documentation referenced in Section 9 for information related to Callmedia database configuration.

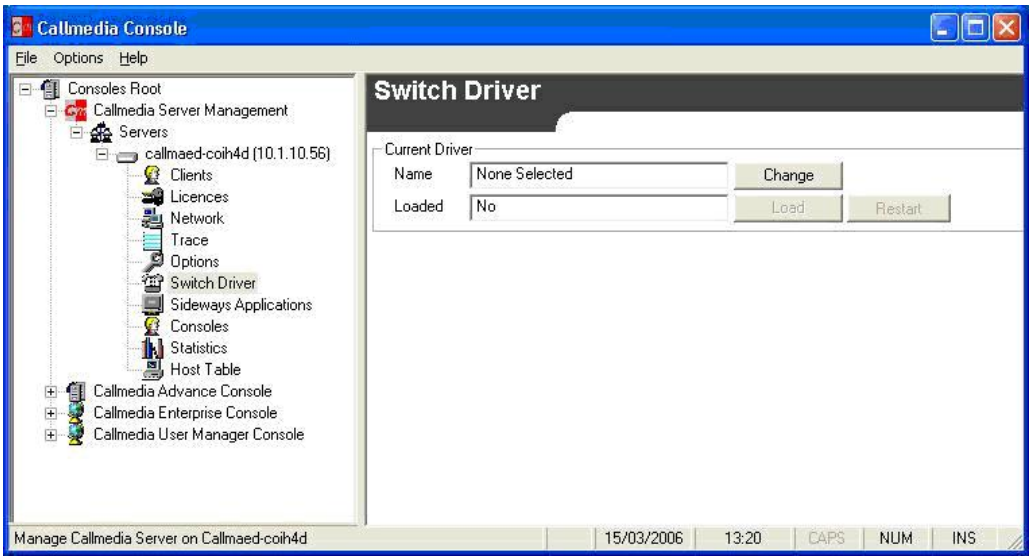
4.1. Call*media* Server Configuration

Launch the Call*media* Console by clicking **Start → Programs → Callmedia → Callmedia Console** and log in with the appropriate **User Name** and **Password**.

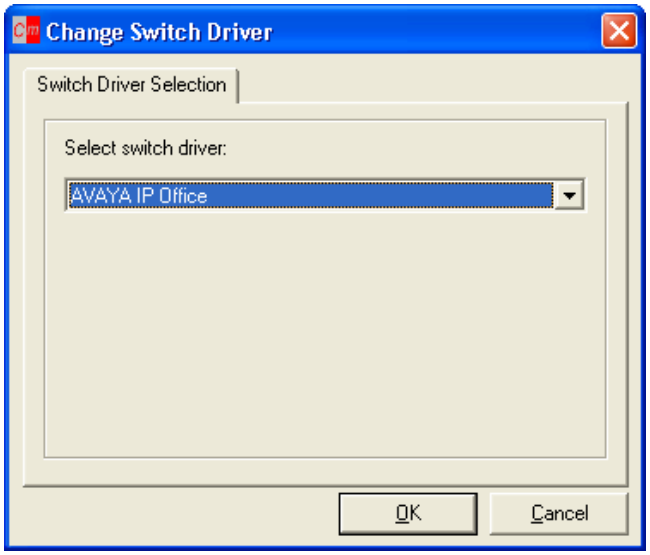
Expand the tree view in the Call*media* Console by clicking on **Callmedia Server Management → Servers** and expand the node for the preinstalled Call*media* Server (callmaed-coih4d). Click on **Licences** to ensure that the **AVAYA IP Office** under the Switch Drivers section is licensed by having a tick in the check box.



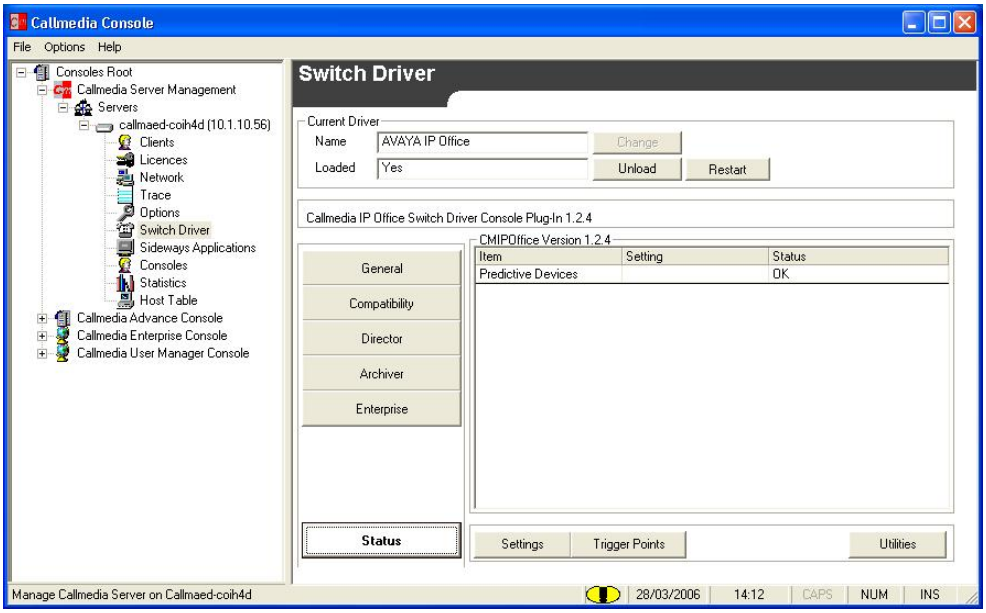
Under the same preinstalled Call*media* Server options, click on **Switch Driver** and click **Change** in the Current Driver section.



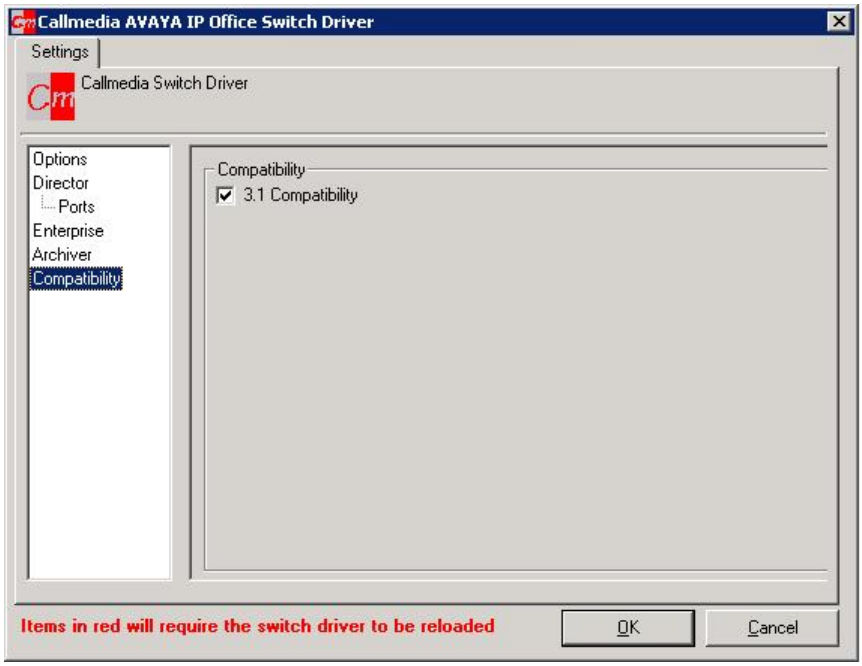
Select **AVAYA IP Office** from the drop-down list of the **Select switch driver** field. Click **OK**.



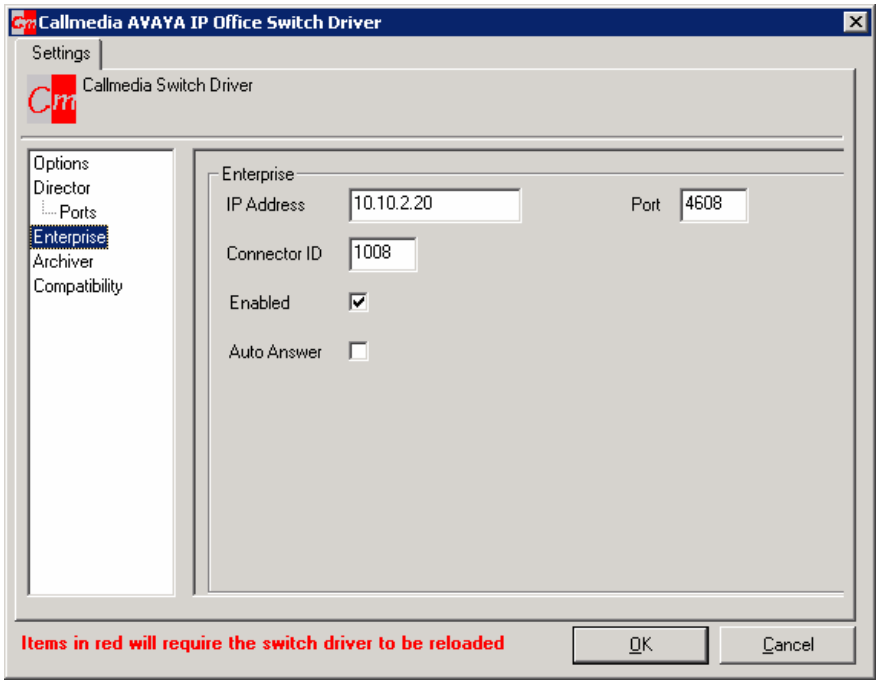
In the Current Driver section, click on the **Load** button to load the switch driver. The **Loaded** field changes to **Yes** and the **Load** button changes to **Unload**. Once the switch driver has loaded, its console snap-in should load into the Call*media* Console.



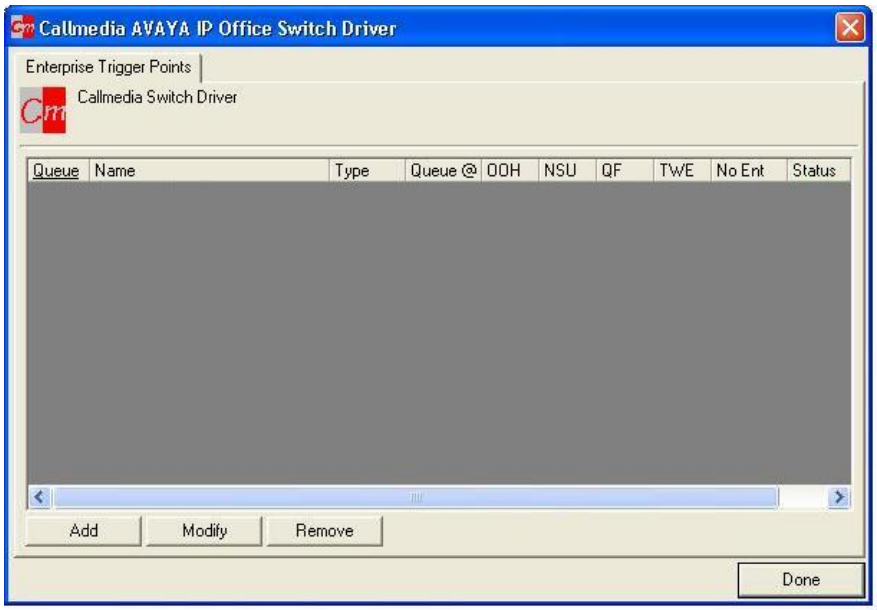
In the Call*media* AVAYA IP Office Switch Driver window, click on the **Compatibility** tab in the left panel and tick the **3.1 Compatibility** check box option.



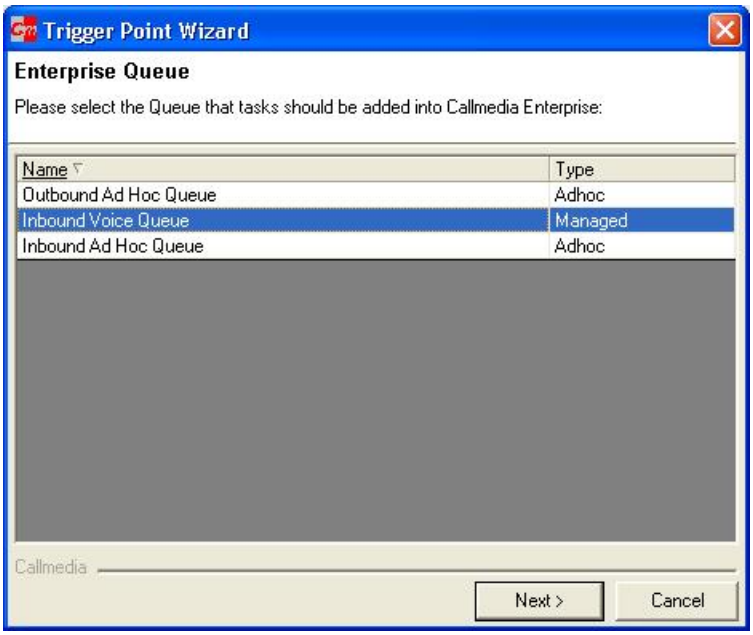
Click on **Enterprise** in the left pane and tick the **Enabled** check box. By default, the Call*media* switch driver will not attempt to connect to Call*media* Enterprise. The **Enterprise IP Address**, **Connecter ID** and **Port** are populated by default. Click **OK**.



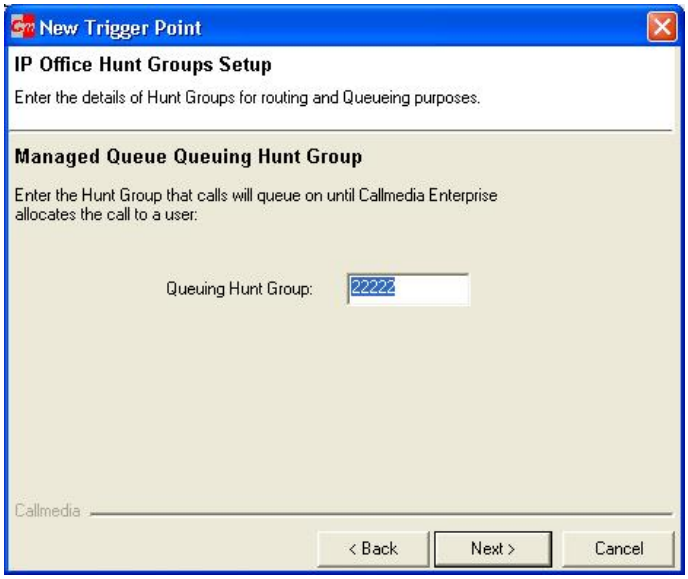
In the Switch Driver screen in the main Call*media* Console, click on the **Trigger Points** button. Click the **Add** button in the **Enterprise Trigger Points** tab of the Call*media* AVAYA IP Office Switch Driver window below.



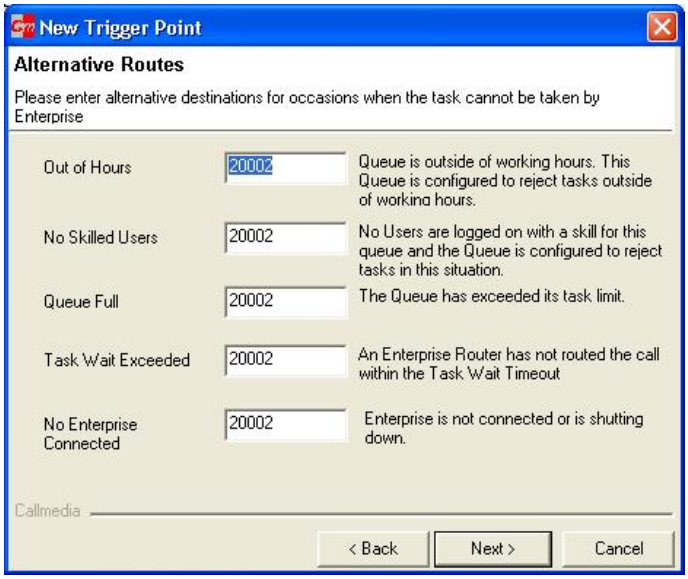
The Trigger Point Wizard is launched, and the three queues present are configured as part of the Call*media* Server installation. Select the **Inbound Voice Queue** and click **Next**.



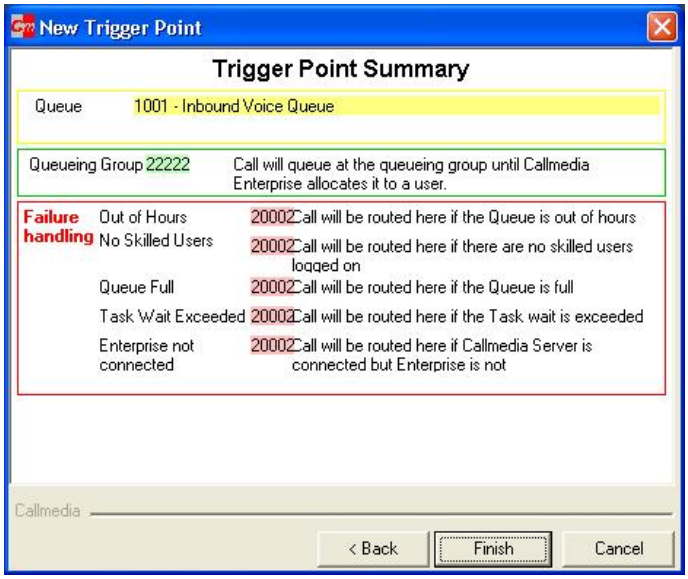
In the Managed Queue Queuing Hunt Group section, enter **22222** in the **Queuing Hunt Group** field. Click **Next**.



Alternative Routes are used in situations where Call*media* Enterprise cannot handle the call. For example, when the Enterprise Queue is outside of its working hours, or there are no skilled users logged on, the call can be routed elsewhere. During compliance testing, one of the extensions "20002" configured on Avaya IP Office (see Section 3.3) was used for Alternative Routes, although Alternative Routes can be interactive voice response systems or a voice mail number. Click **Next**.



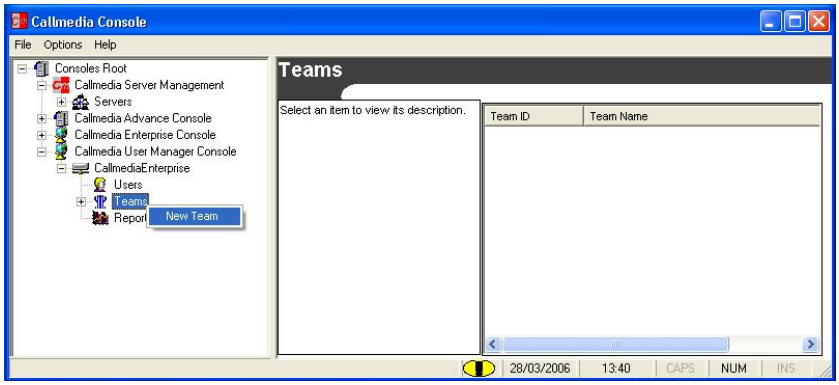
The final screen is the Trigger Point Summary. Click **Finish**.



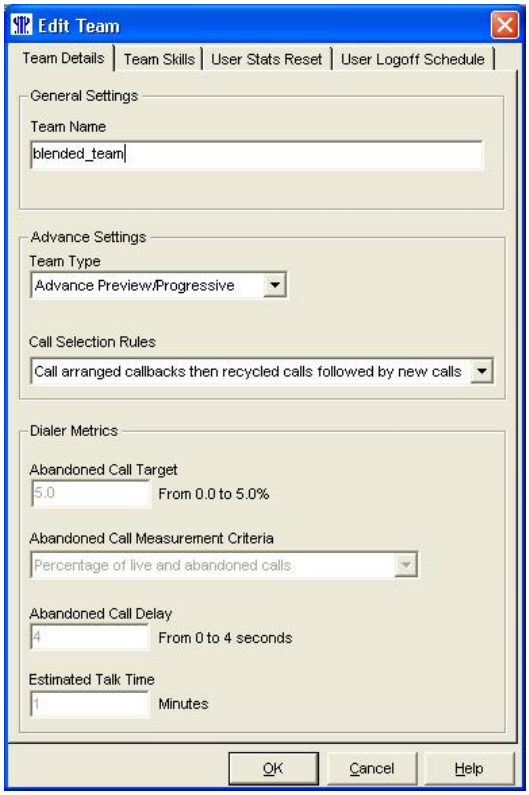
4.2. Create Call*media* Teams and Users

Three sets of teams and users were created for the compliance testing. This section shows the setup for the blended team and blended user only. For compliance testing, inbound and outbound teams and users were also configured.

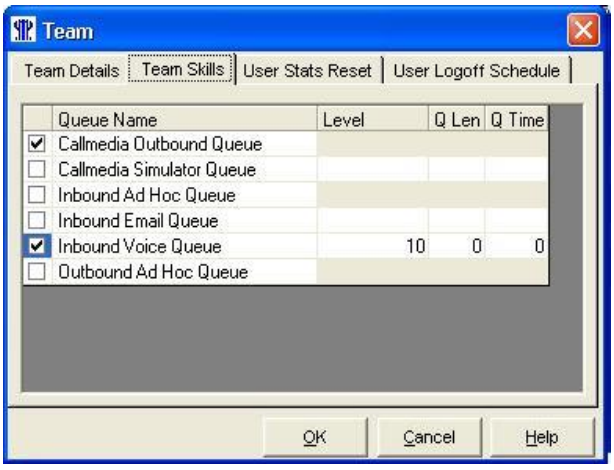
Expand the tree view in the Call*media* Console by clicking on **Call*media* User Manager Console → CallmediaEnterprise** and right-clicking on **Teams**. Click on **New Team**



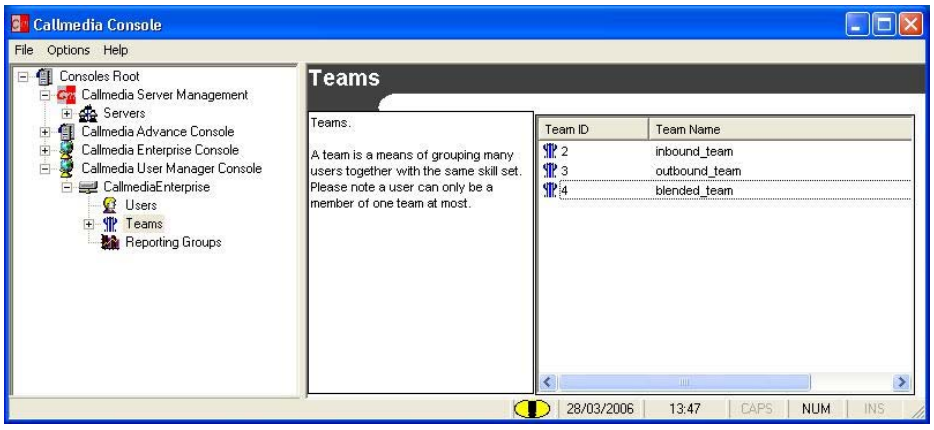
In the Edit Team dialog box, click on the **Team Details** tab, and enter a team name in the **Team Name** field. From the **Team Type** drop-down list, select **Advance Preview/Progressive**. The **Call Selection Rules** can be left with the default choice.



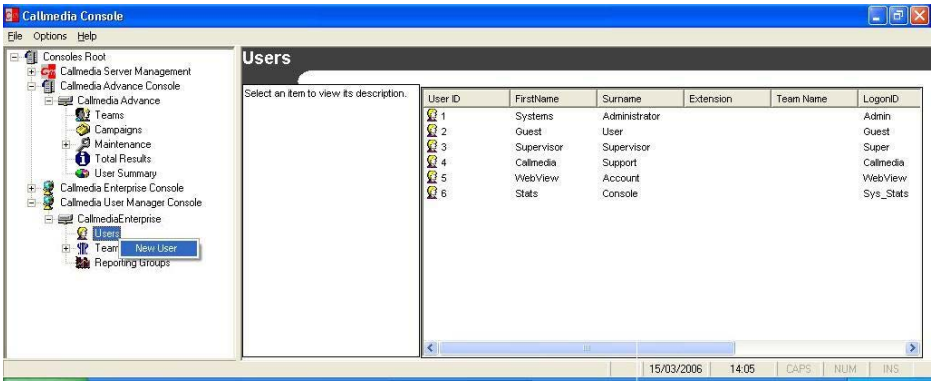
Click on the **Team Skills** tab and tick the **Callmedia Outbound Queue** and **Inbound Voice Queue** check boxes. Click **OK**.



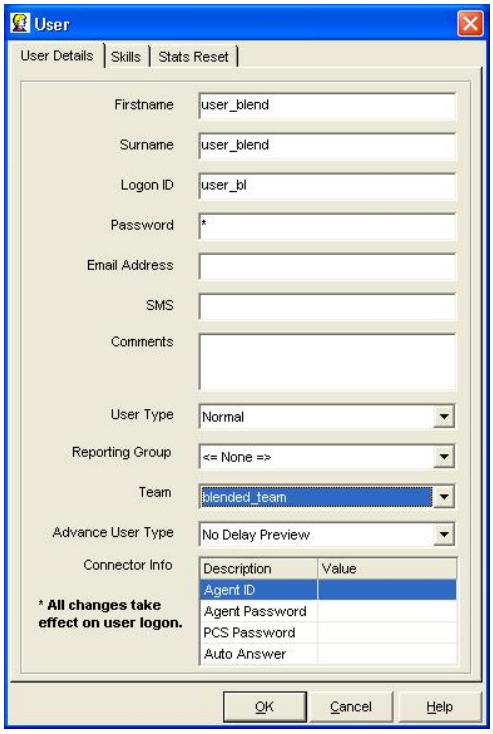
The Teams page in the main Callmedia Console shows a summary of all teams. Ensure that the three teams are correctly set up. In this setup there are three teams: "inbound_team", "outbound_team" and "blended_team".



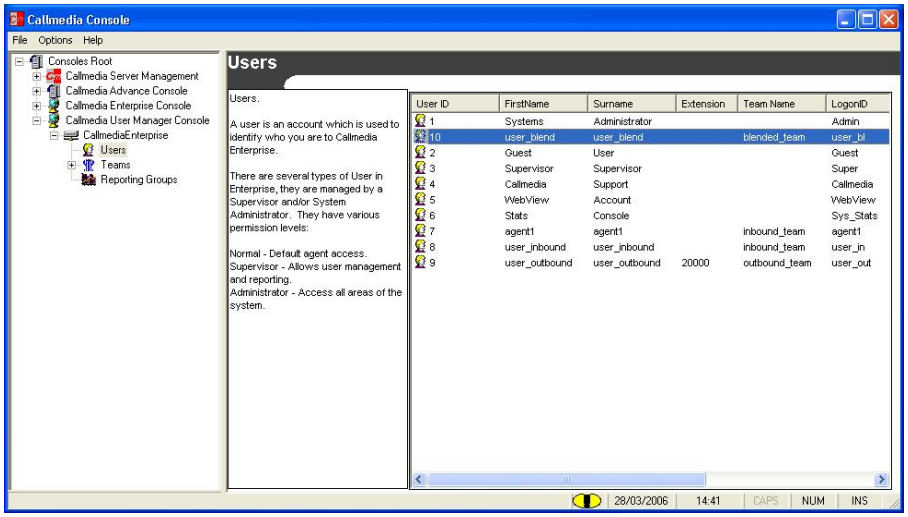
Expand the tree view in the Call*media* Console by clicking on **Callmedia User Manager Console → CallmediaEnterprise**, and right-click on **Users**. Click on **New User**.



In the User form, click on the **User Details** tab and complete the agent user information. The **Logon ID** and **Password** will be used during agent logon. Select the appropriate team from the drop-down list in the **Team** field.

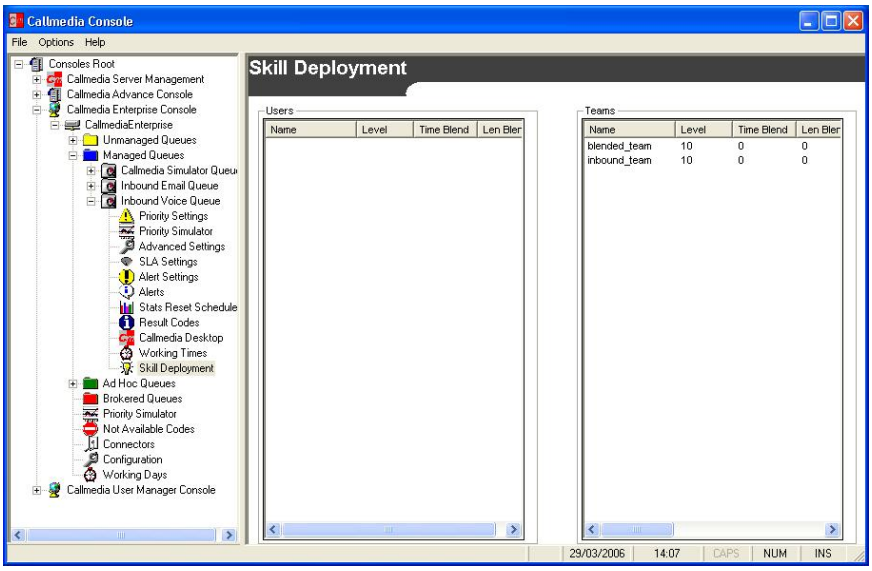


The Users page in the main Callmedia Console shows a summary of all users configured. Ensure that the three users are correctly set up. In this setup, there are three users: "user_inbound", "user_outbound" and "user_blend".



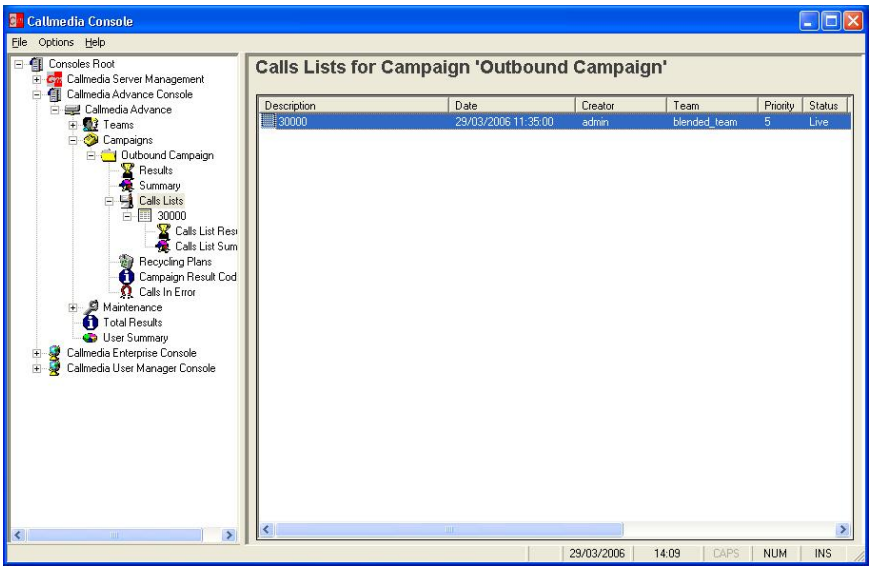
4.3. Check Inbound Voice Queues

To check that the necessary skills for the teams have been set up correctly, expand the tree view in the Call*media* Console. Click on **Callmedia Enterprise Console → CallmediaEnterprise → Managed Queues → Inbound Voice Queue → Skill Deployment**. The configured teams that will be used for inbound calls will be listed.



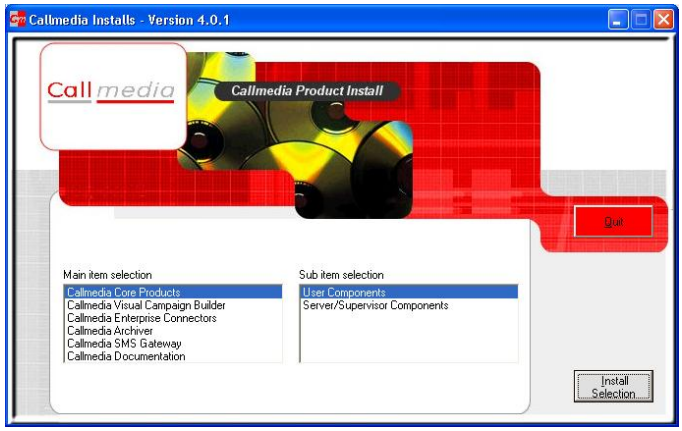
4.4. Check Outbound Call List

For Preview and Progressive outbound dialling a call list was pre-configured. Refer to the Call*media* documentation in Section 9. Click on **Callmedia Advance Console → Callmedia Advance → Campaigns → Outbound Campaign → Calls Lists → Calls List Summary**. The outbound call list is displayed.

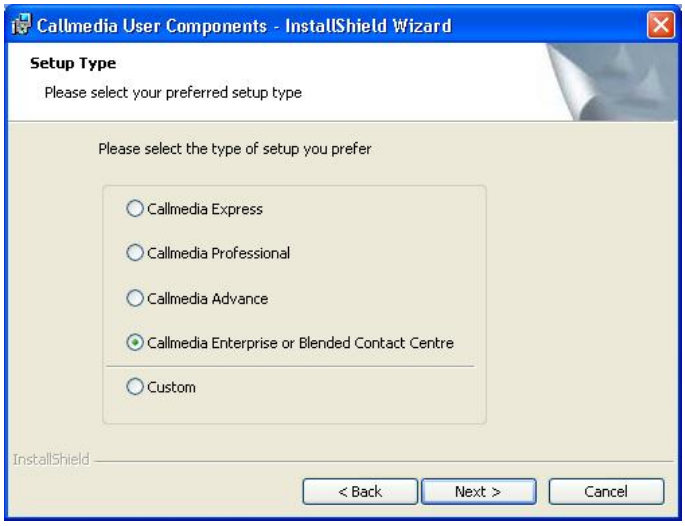


4.5. Call*media* Agent Application Configuration

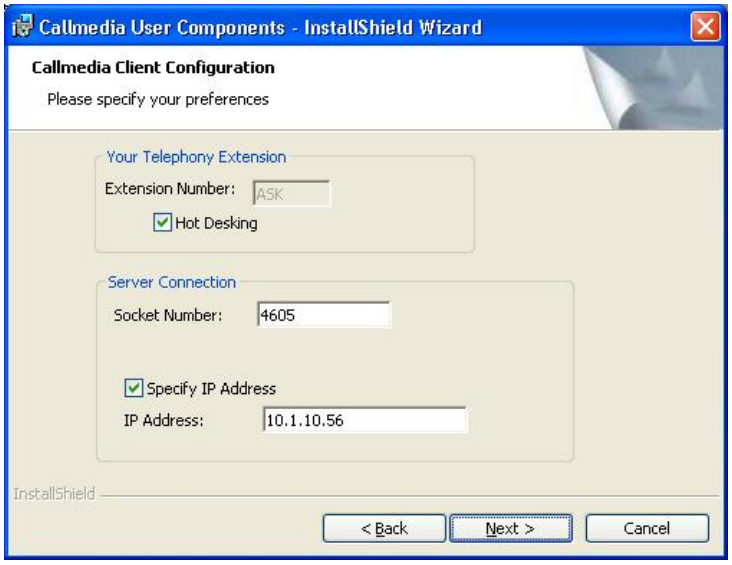
Insert the Call*media* installation CD, and in the Main item selection section, select **Callmedia Core Products.** In the Sub item selection section, select **User Components**. Click **Install Selection**.



The type of user components must be selected; choose the **Callmedia Enterprise or Blended Contact Centre** option. Click **Next**.

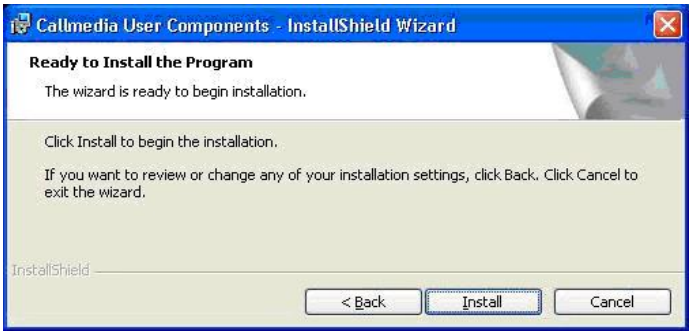


Tick the **Hot Desking** checkbox, to allow the user to enter an extension during login. The **Socket Number** appears as "4605" by default. Tick **Specify IP Address** and enter the **IP Address** of the Call*media* server. Click **Next**.



The Call*media* Desktops Configuration screen allows the desktops to start a browser which can be used as a link into the client's application. Ensure that **Enable Browser** is unchecked (this is the default). Click **Next**.

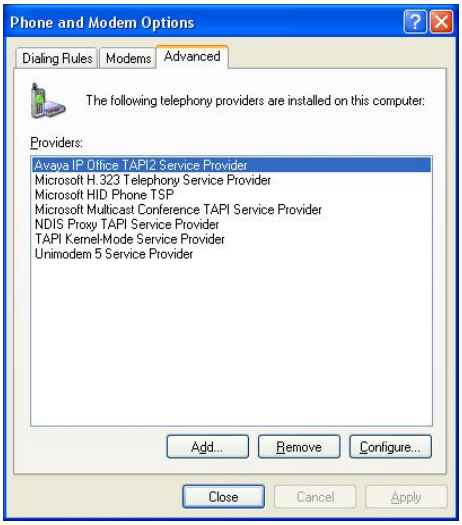
Click **Install** to start the installation.



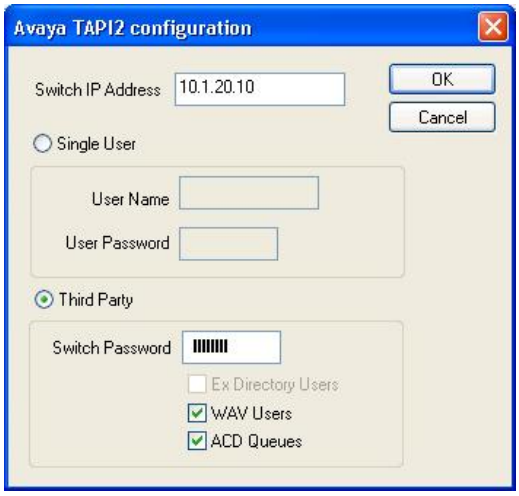
4.6. Install and Configure Avaya IP Office TAPI2 Service Provider

Using the Avaya IP Office User CD, install the Avaya IP Office TAPI Service Provider driver on the Call*media* client machine.

After the Call*media* client machine reboots, log in to the system again as administrator and go to **Start → Settings → Control Panel.** In the Control Panel window that appears, double-click **Phone and Modem Options**. In the **Advanced** tab of the Phone and Modem Options window, double-click **Avaya IP Office TAPI2 Service Provider**.



In the Avaya TAPI2 configuration window, set **Switch IP Address** to the IP Address of Avaya IP Office, select **Third Party**, and set **Switch Password** to the password set for Avaya IP Office.



Reboot the Call*media* client machine.

4.7. Call*media* Agent Application

The Callmedia Client will automatically start when Windows starts, and may also be started by selecting **Start → Programs → Callmedia → Callmedia Client**.

When Hot Desking is enabled (as in this installation), enter the user's extension and click **OK**. This can be any station configured on Avaya IP Office.

The user must log in, and enter a valid **Login ID** and **Password** with the user name and password configured in Section 4.2. Click **OK**.

When the user logs on, the desktop will display the user in the "Not Available" state.

When the user clicks **Available**, the desktop display will change, showing the "Waiting" state.

5. Interoperability Compliance Testing

The interoperability compliance testing included basic TAPI interoperability, functionality and serviceability testing. Performance load testing was not performed. The testing examined the Call*media* contact centre suite interoperability with Avaya IP Office 3.1. The majority of the testing focused on the ability of the Call*media* agent application to perform the following operations: Place/receive calls, Hold, and Retrieve. The serviceability testing focused on verifying the ability of the Call*media* contact centre to recover from adverse conditions, such as an Avaya IP Office reboot and disconnecting the Ethernet cable from the Call*media* server.

5.1. General Test Approach

Testing included validation of correct operation of typical call centre functions including inbound voice calls and outbound campaign calls both in preview and progressive modes. Functionality testing included basic telephony operations such as answer, hangup and hold/retrieve, exercised from both the agent telephones and the agent softphones for the inbound and outbound campaign calls. The serviceability test cases were performed manually by rebooting Avaya IP Office from Avaya IP Office Manager and by physically disconnecting and reconnecting the LAN cables.

5.2. Test Results

All test cases passed successfully. Call*media* does not support transfers and conference from the Call*media* agent bar. Predictive dialling is not supported with Avaya IP Office. A separate application called Callmedia Express allows more control functionality over the agent phones, such as transfer and conference although this was not compliance tested.

6. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya IP Office and Call*media* contact centre.

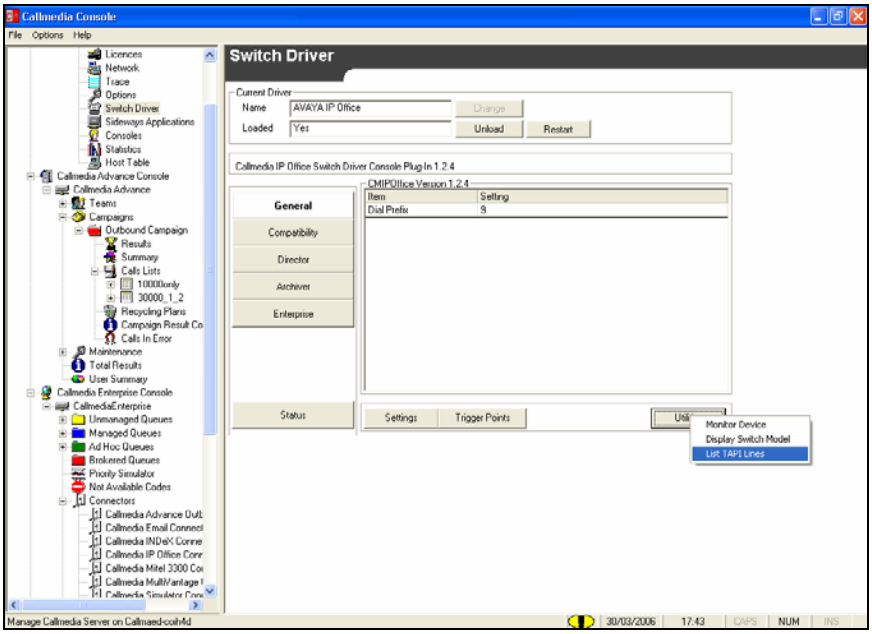
6.1. Verify Avaya IP Office TAPI

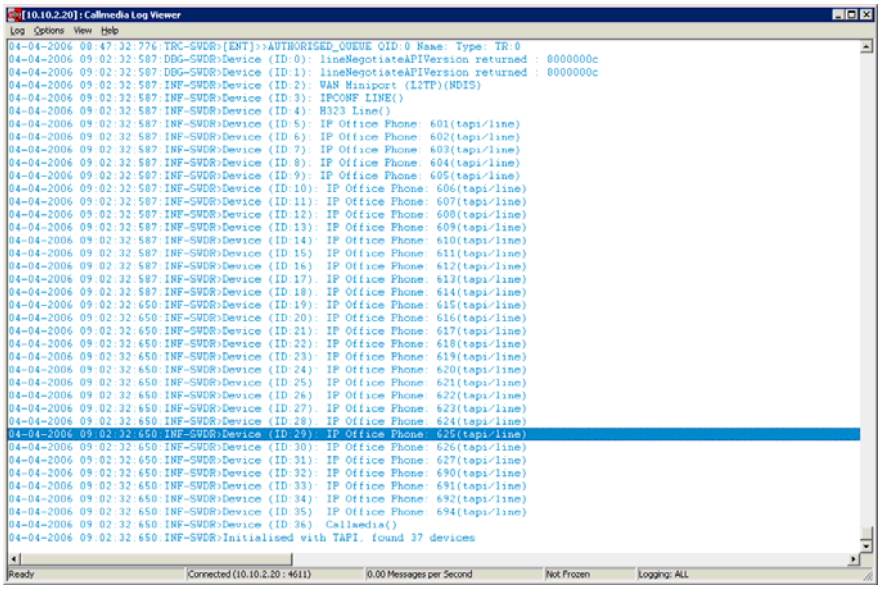
Verify connectivity with Avaya IP Office as follows:

- Log in to the Call*media* client machine and go to **Start → Programs → Accessories → Communications → Phone Dialer**.
- In the Phone Dialer window, select **Edit → Options**.
- In the Lines tab of the Options window, select the **Phone Calls:** drop-down list. If one or more "IP Office Phone: XXX" (where XXX is an extension number) entries appear, then the IP Office TAPI Driver is installed and working properly.

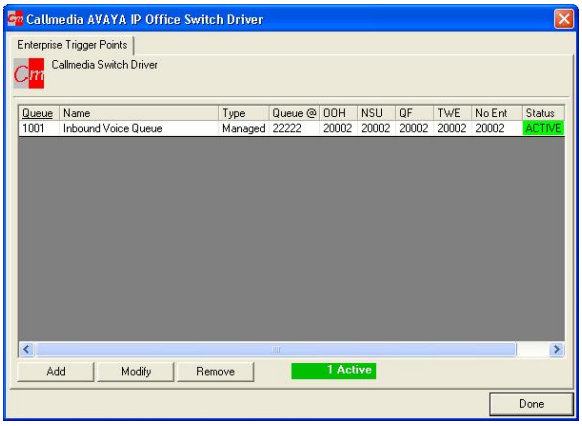
6.2. Call*media* Contact Centre

- List all TAPI Lines, and verify that all expected phones are listed in the log.





- Check that the trigger points are set up and active. In the Call*media* Switch Driver screen, click on the **Trigger Points** button. Ensure that the correct Hunt Group numbers are entered (in this example "22222") and that the state is shown as **ACTIVE**.



7. Support

For technical support on Call*media*, contact Call*media* Support at +44 (0)1489 553525 or via e-mail at support@callmedia.co.uk.

8. Conclusion

These Application Notes describe the configuration steps required for the Call*media* 4.0.1 contact centre suite to successfully interoperate with Avaya IP Office 3.1. All feature functionality, performance and serviceability test cases were completed successfully.

9. Additional References

This section references the Avaya and Call*media* contact centre product documentation that are relevant to these Application Notes.

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

- Avaya IP Office CTI Link Installation Manual, 40DHB0002UKAB – Issue 11a (June 2005)
- Avaya IP Office 3.1 Installation Manual, Issue 13j (Dec 2005)
- Avaya IP Office 3.1 Manager Manual, Issue 17d (Sept 2005)

The following documents can be found on the Call*media* Installation CD:

- Call*media* Enterprise Book 1
- Call*media* Enterprise Book 2
- Call*media* Advance Book 1
- Call*media* Advance Book 2
- Call*media* IP Office Switch Driver Guide
- Call*media* Planning Guide

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.