Avaya Solution & Interoperability Test Lab

Application Notes for configuring Ascom Myco 2 with Avaya IP Office R11.0 - Issue 1.0

Abstract

These Application Notes describe the configuration steps for provisioning Ascom's Myco 2 smartphone to interoperate with Avaya IP Office.

Readers should pay attention to **Section 2**, in particular the scope of testing as outlined in **Section 2.1** as well as any observations noted in **Section 2.2**, to ensure that their own use cases are adequately covered by this scope and results.

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 configuration steps for provisioning Ascom Myco 2 wireless smartphones (Myco) to interoperate with Avaya IP Office R11.0. Ascom Myco wireless smartphones are configured on Avaya IP Office as SIP users, therefore enabling them to make/receive internal and PSTN/external calls and have other telephony facilities available on Avaya IP Office. The wireless communication is made using a wireless router connected to the same LAN as the Avaya IP Office.

Note: Ascom Myco 2 may be referred to as Myco, Myco handset or Myco smart device throughout this document. These names all refer to the same product, a smart phone that is connected to IP Office by registering as a third-party SIP extension.

Note: The Avaya IP Office solution consists of a primary server and an IP500V2 expansion. Both systems are linked by IP Office Line IP trunks that can enable voice networking across these trunks to form a multi-site network. Each system in the solution automatically learns each other's extension numbers and user names. This allows calls between systems and support for a range of internal call features.

2. General Test Approach and Test Results

The general test approach was to configure Ascom Myco smartphones to communicate with IP Office as implemented on a customer's premises. The interoperability compliance testing evaluates the ability of Myco to make and receive calls to and from Avaya H.323, SIP and Digital deskphones as well as PSTN endpoints. The integrated IP Office Voicemail was used to test for DTMF and Message Waiting Indication (MWI) on the Myco smartphones. See **Figure 1** for a network diagram. The interoperability compliance test included both feature functionality and serviceability tests.

Note: For compliance testing, Ascom Myco handsets were registered to both the Primary and Secondary servers but not simultaneously, i.e., two handsets were registered to the Server Edition primary server and two were registered to the IP500 V2 expansion. For most operational sites any/all SIP handsets would register to the Server Edition only.

Note: Ascom Myco handsets are 3rd party SIP handsets and as such 3rd party SIP telephone features, beyond basic call handling via the IP Office, will vary between SIP devices.

Note: The Ascom Myco smart device can be set up to use Wi-Fi, GSM or both. For compliance testing only Wi-Fi was used and a wireless router was used to provide a network connection. This wireless router was considered a part of the member's overall solution.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by

DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

Avaya's formal testing and Declaration of Conformity is provided only on the headsets/Smartphones that carry the Avaya brand or logo. Avaya may conduct testing of non-Avaya headset/Smartphone to determine interoperability with Avaya phones. However, Avaya does not conduct the testing of non-Avaya headsets/Smartphones for: Acoustic Pressure, Safety, Hearing Aid Compliance, EMC regulations, or any other tests to ensure conformity with safety, audio quality, long-term reliability or any regulation requirements. As a result, Avaya makes no representations whether a particular non-Avaya headset will work with Avaya's telephones or with a different generation of the same Avaya telephone.

Since there is no industry standard for Smartphone interfaces, different manufacturers utilize different Smartphone/headset interfaces with their telephones. Therefore, any claim made by a headset vendor that its product is compatible with Avaya telephones does not equate to a guarantee that the headset will provide adequate safety protection or audio quality.

Avaya recommends our customers implement Avaya solutions using appropriate security and encryption capabilities enabled by our products. The testing referenced in these DevConnect Application Notes included the enablement of supported encryption capabilities in the Avaya products. Readers should consult the appropriate Avaya product documentation for further information regarding security and encryption capabilities supported by those Avaya products.

Support for these security and encryption capabilities in any non-Avaya solution component is the responsibility of each individual vendor. Readers should consult the appropriate vendor-supplied product documentation for more information regarding those products.

For the testing associated with these Application Notes, the interface between Avaya systems and Ascom Myco did not include use of any specific encryption features as requested by Ascom.

Note: Compliance testing was carried out using TCP as the transport for signalling, a selection of basic calls and transfer calls were carried out using UDP.

2.1. Interoperability Compliance Testing

The testing included:

- Registration/Invalid Registration
- Basic calls/PSTN calls
- Blind Transfer, Supervised Transfer and 3 Party Conference
- Feature calls using short codes
- Call Alerting and Call Waiting
- Mobile Twinning
- Call forwarding unconditional, no reply, busy
- DTMF support, voicemail and MWI

- Codec support
- Serviceability testing

Note: Compliance testing does not include redundancy testing as standard. Where some LAN failures were simulated, and the results observed, there were no redundancy or failover tests performed.

2.2. Test Results

Tests were performed to ensure full interoperability between Ascom Myco Wireless Smartphones and IP Office. The tests were all functional in nature and performance testing was not included. The following observations were noted during testing.

- Ascom Myco 2 does not support blind three-party conference.
- Ascom Myco 2 does not support local call diversion like Call Forward All, Call Forward Busy and Call Forward No Answer.
- The SIP Expires timer of 180 seconds is hard coded on IP Office. When the amount of IP Office Users configured exceeds 180 this timer will also increase with the number of users. For Example, if there are 290 users configured the SIP Expiry Timer will be hardcoded at 290 seconds.
- In order to test G.722, this codec was added as the only codec on IP Office to force the endpoints to use it. Other codecs were negotiated correctly depending on which was placed at the top of the list.
- When using Mobile Twinning and Myco, if the call is answered by the Avaya phone the Myco shows a missed call and "No Response" is shown on the display momentarily.
- Feature Access codes can be configured on the Myco as buttons using "My Services App", this will need to be unhidden by an Ascom engineer.
- It was observed, during compliance testing, that a Myco, registered on the IP500 V2 expansion, makes a call to a SIP PSTN (trunk between Server Edition and Communication Manager via Session Manager) and the PSTN user places the Myco on hold, the Myco receives static noise and can only be recovered once the Myco places the PSTN on hold and retrieves. This issue was observed when the IP Office Media Security was set to Preferred and disappeared when the Media Security was set to Disabled.

The following issues were found during compliance testing.

1. **Ascom Myco (A-Party) updating after Transfer**
   There were a number of scenarios where Myco calls to either another Myco or an Avaya endpoint and after the transfer was complete (both blind and supervised) the A-party (original Myco caller) display was not updated with the new call information. Avaya are investigating this issue.
2. **Feature Access Code being displayed for Call Pickup**
   When a Myco phone initiates a "Call Pickup" by dialling the Call Pickup Short Code, this short code is then displayed on the Myco instead of the call information. Avaya are investigating this issue.

2.3. Support

Support from Avaya is available by visiting the website http://support.avaya.com and a list of product documentation can be found in **Section 9** of these Application Notes. Technical support for the Ascom Myco handsets can be obtained through a local Ascom supplier or Ascom global technical support:

- Email: support@ascom.com
- Help desk: +46 31 559450

3. Reference Configuration

Figure 1 illustrates the network topology used during compliance testing. The Avaya solution consists of an IP Office with the Ascom Myco smartphones configured as SIP users. Avaya SIP, H323 and Digital phones were configured on IP Office. PRI and SIP trunks were configured to simulate a connection to the PSTN. A wireless router was connected to the IP network to provide a connection for the Myco smartphones. IP Office Manager was used to manage IP Office.

A laptop on the network that can access and connect to the Ascom Device Manager is used to configure the Ascom Myco smartphones. The Ascom Unite Connectivity Manager (UniteCM) is the core software platform in the Ascom system.

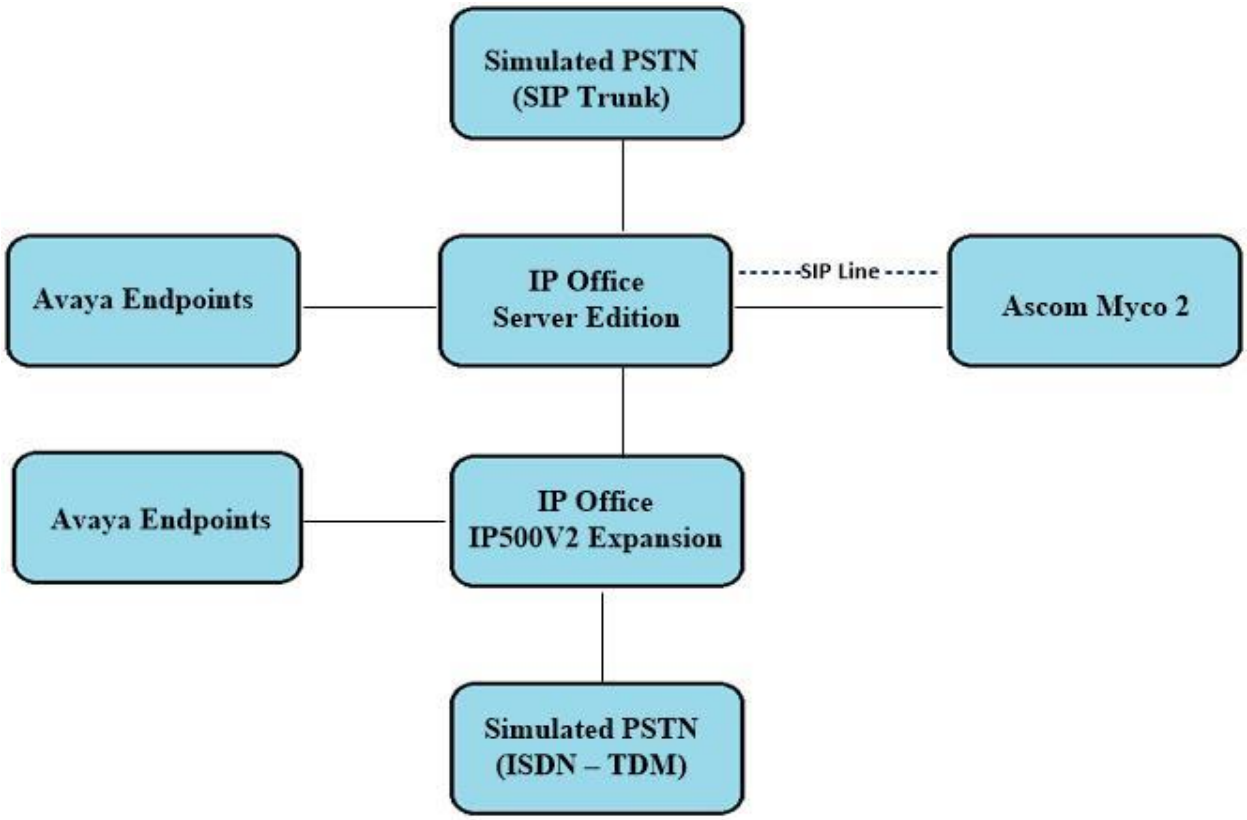


Figure 1: Connection of Ascom Myco 2 with Avaya IP Office R11.0

4. Equipment and Software Validated

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

Equipment/Software	Version/Release
Avaya IP Office Server Edition running on a virtual platform	R11.0.4.1.0 Build 11
Avaya IP Office IP500 V2	R11.0.4.1.0 Build 11
Avaya 1140e Deskphone	SIP R04.04.33.00
Avaya 96x1 Deskphone	H.323 Release 6.6.115
Avaya 1608-I Deskphone	H.323 1608UA1_350B.bin
Avaya 9508 Digital Deskphone	V0.6
Ascom Myco 2 Ascom SIP APP	16.0.0 V2.2 (12R1 121237)
Ascom Unite Connectivity Manager	V5.16.1

Note: Compliance Testing is applicable when the tested solution is deployed with a standalone IP Office 500 V2 and when deployed with IP Office Server Edition in all configurations.

5. Avaya IP Office Configuration

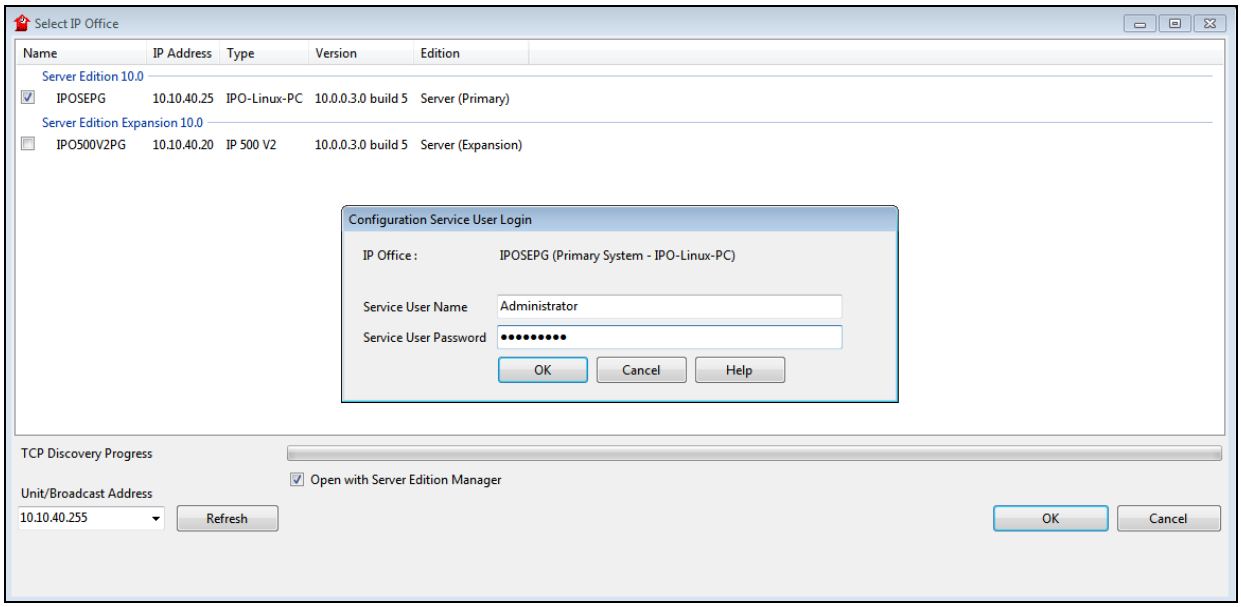
The document assumes that Avaya IP Office Server Edition has been installed and configured to work with an IP500 V2 expansion. This section only describes the details on how to configure both the IP Office Server Edition (Primary) and IP Office IP500 V2 (Expansion) to work with Ascom Myco. Configuration and verification operations on the Avaya IP Office illustrated in this section were all performed using Avaya IP Office Manager. For all other provisioning information such as initial installation and configuration, please refer to the product documentation in **Section 9**. The configuration operations described in this section can be summarized as follows:

- Launch Avaya IP Office Manager (Administration)
- Display LAN Properties
- Create a new User
- Check Extension Properties
- Save Configuration

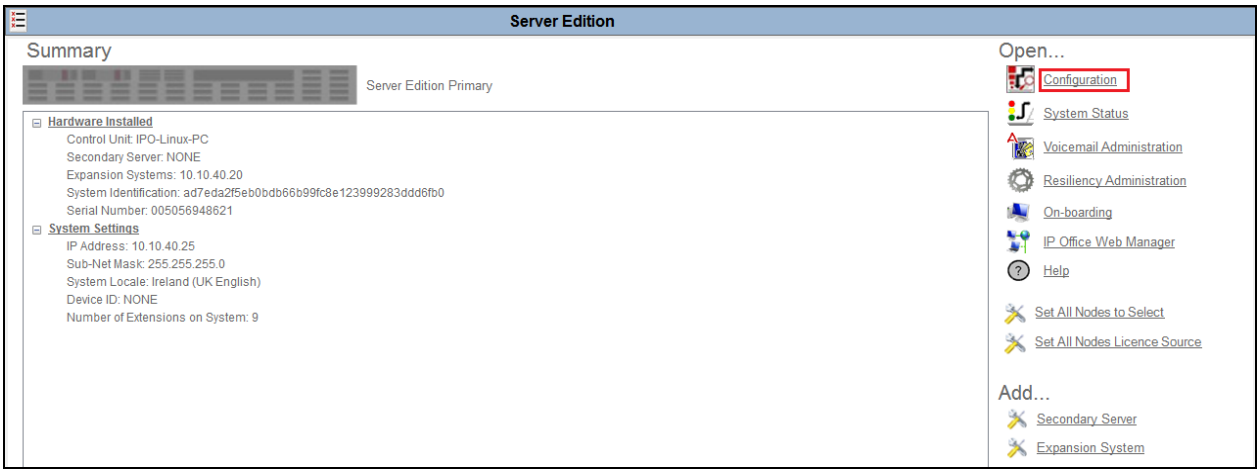
Note: Only the unique prompts are shown in the screen captures below, all other inputs can be left at default.

5.1. Launch Avaya IP Office Manager (Administration)

From the IP Office Manager PC, click **Start → Programs → IP Office → Manager** to launch the Manager application (not shown). Select the required Server Edition as shown below and enter the appropriate credentials. Click on the **OK** button.

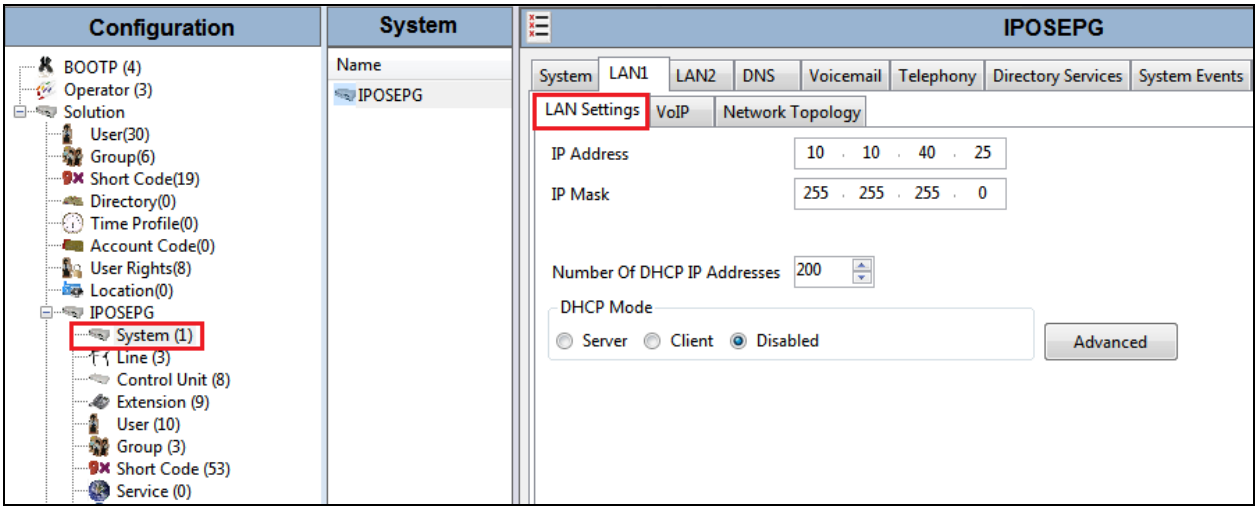


Click on **Configuration** at the top right of the page, as shown, to receive the IP Office configuration.

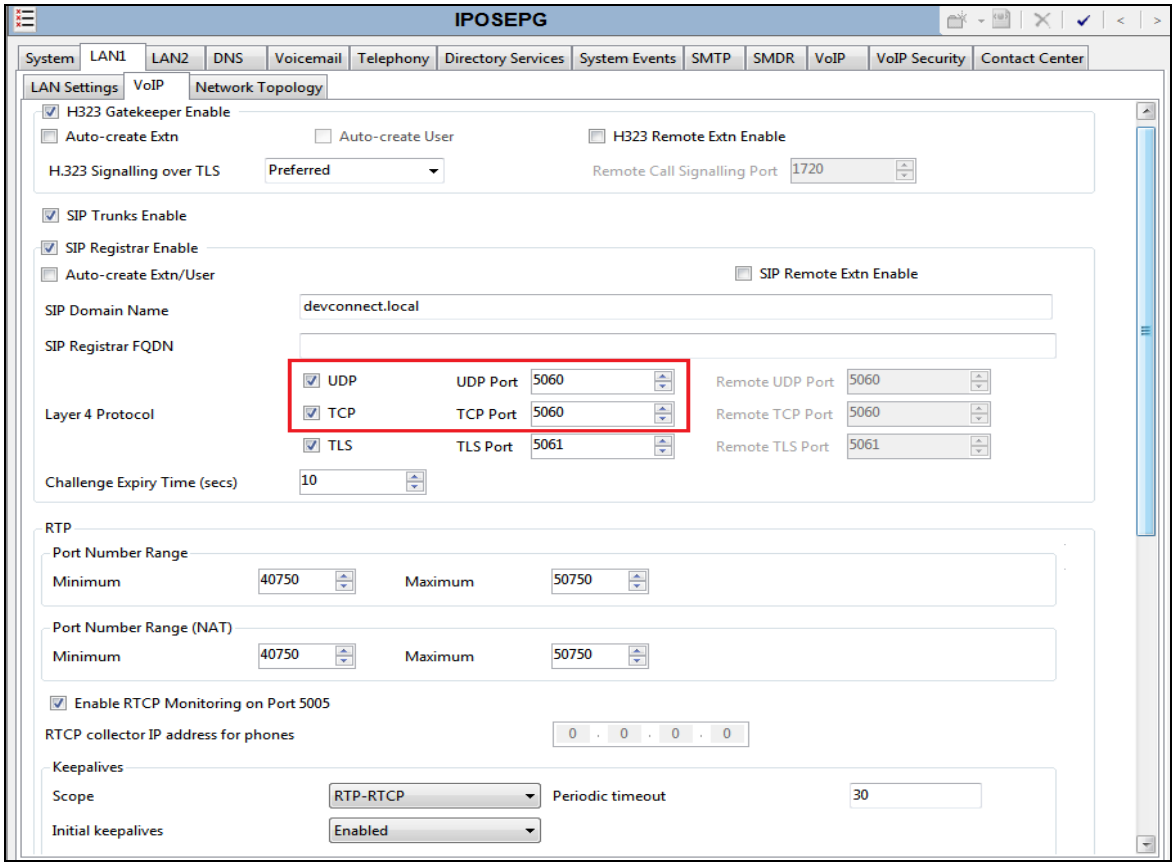


5.2. Display LAN Properties

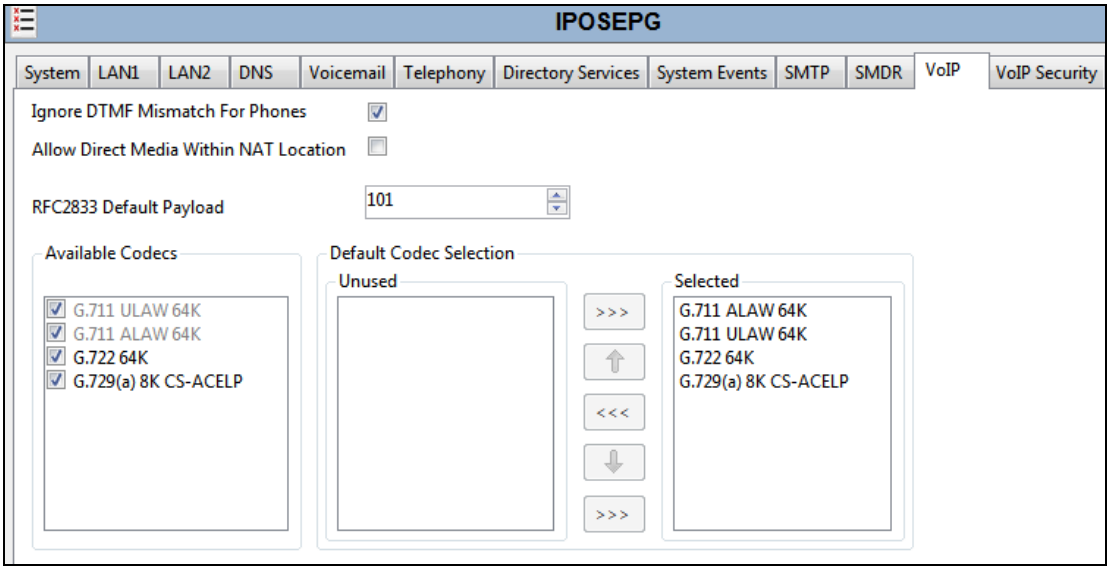
From the left window navigate to **System** as shown and in the main window click on the **LAN1** tab and within that tab select the **LAN Settings** tab. The **IP Address** of the IP Office is shown, and this will be required for setup in **Section 6.1**.



Within the **LAN1** tab, click on the **VoIP** tab. Ensure that **TCP** and **UDP** boxes are checked and that port **5060** is being used. During compliance testing **RTP-RTCP Keepalives** were set to **30** secs.

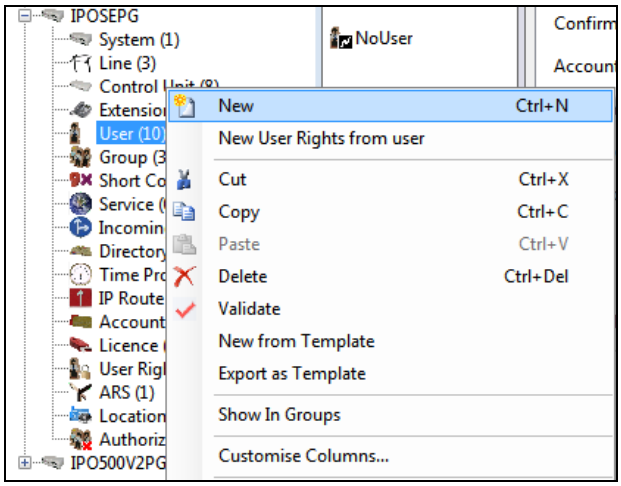


The Codec and DTMF settings can be changed under the **VoIP** tab as shown below.

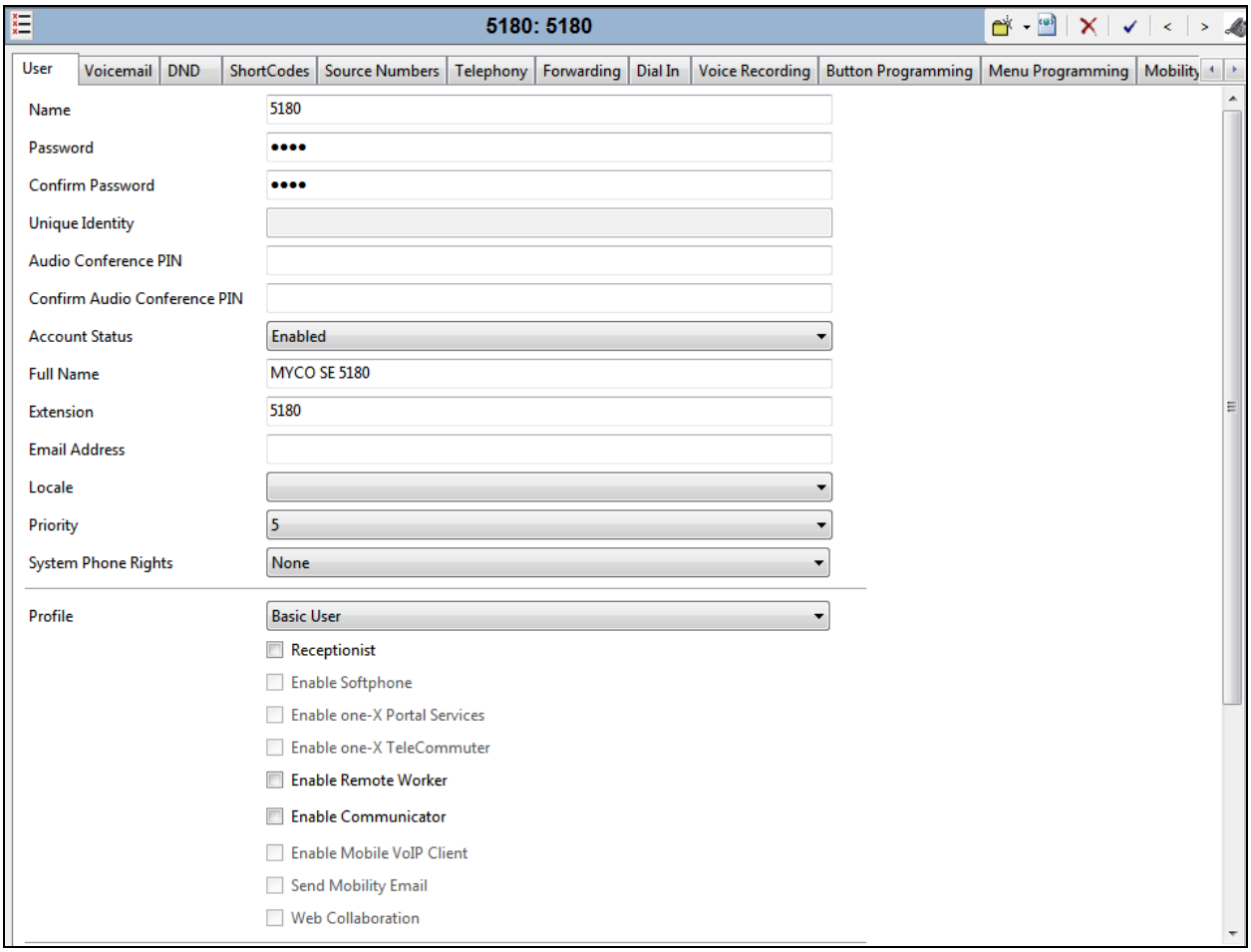


5.3. Create a new User

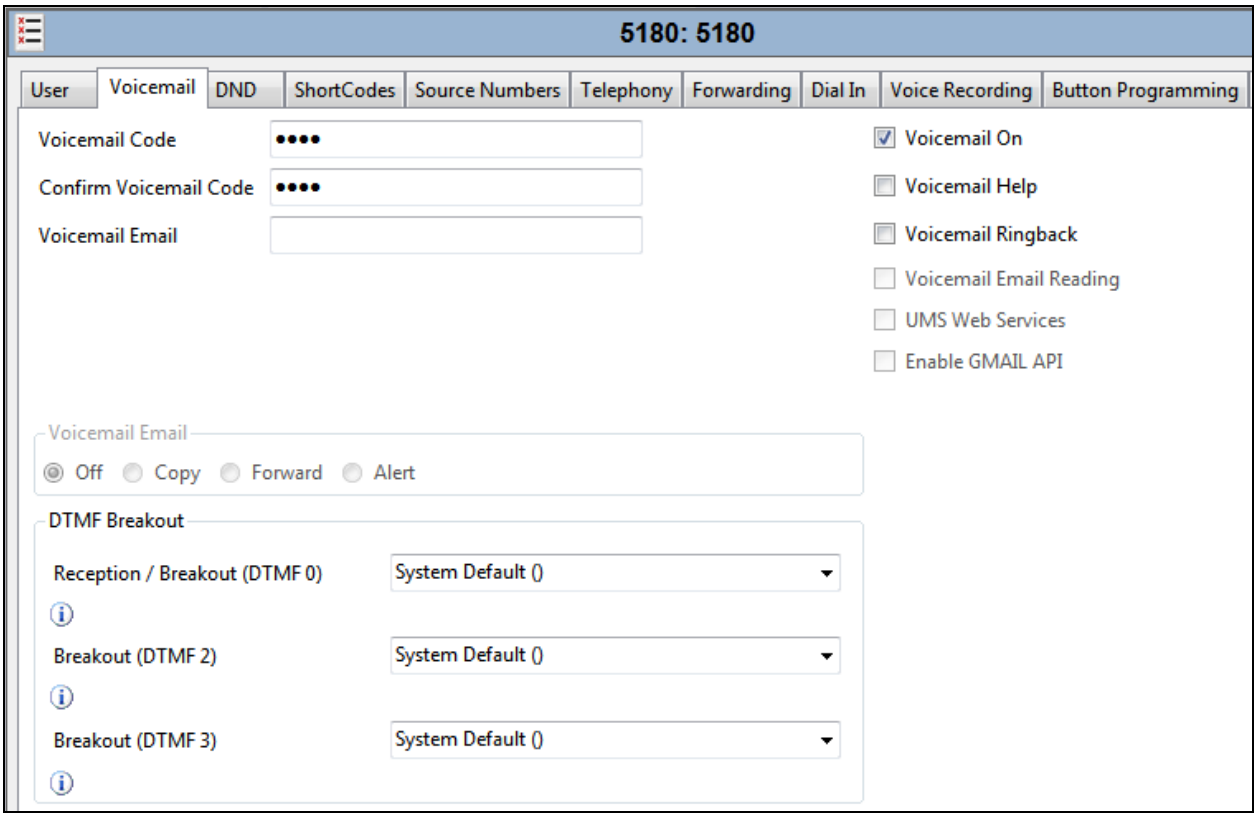
From the left window, right click on **User** and select **New**.



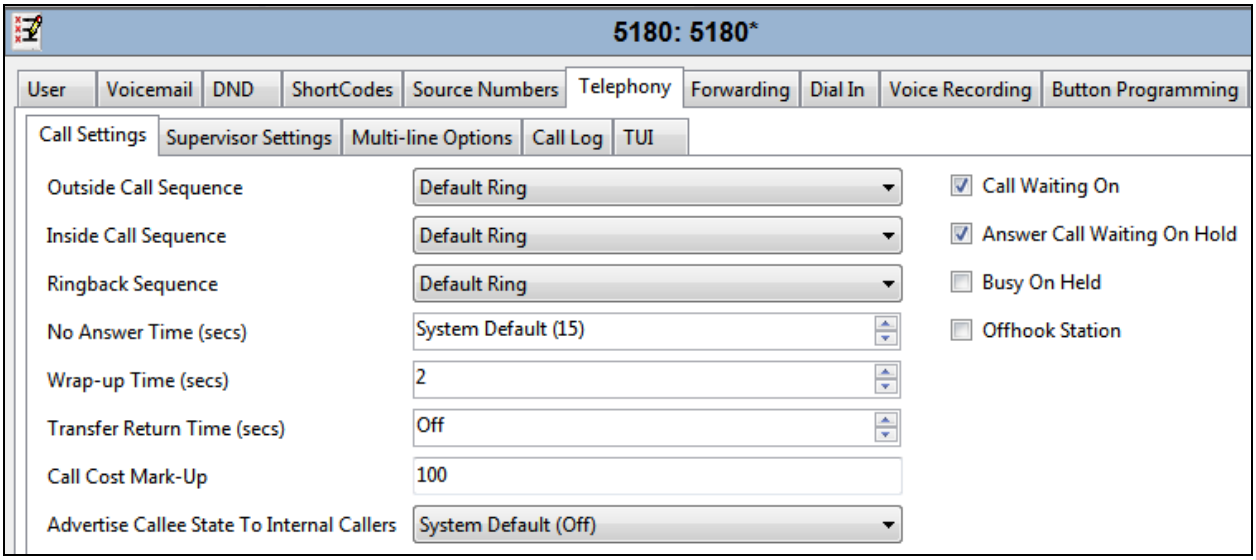
In the **User** tab add a **Name** and **Password** along with the **Extension**.



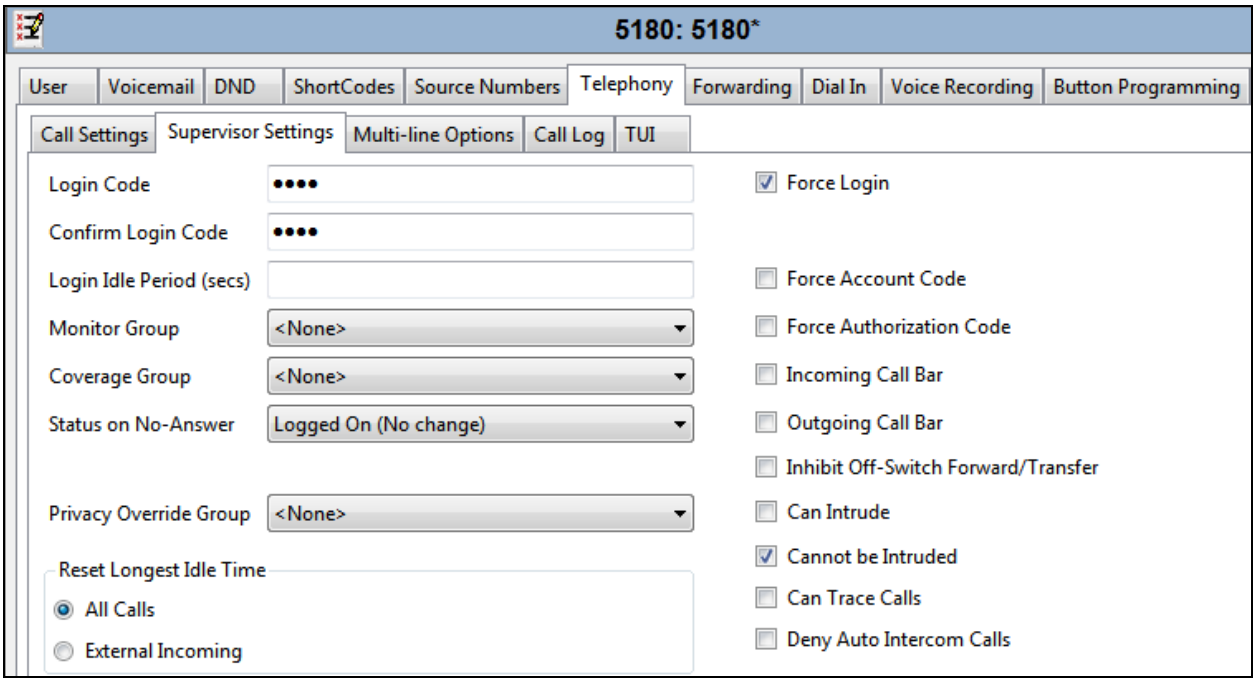
Under the **Voicemail** tab, **Voicemail On** can be selected in order to provide voicemail to this user/extension.



Under the **Telephony** tab and **Call Settings** tab, **Call Waiting On** can be turned on/off depending on what is required by the user.

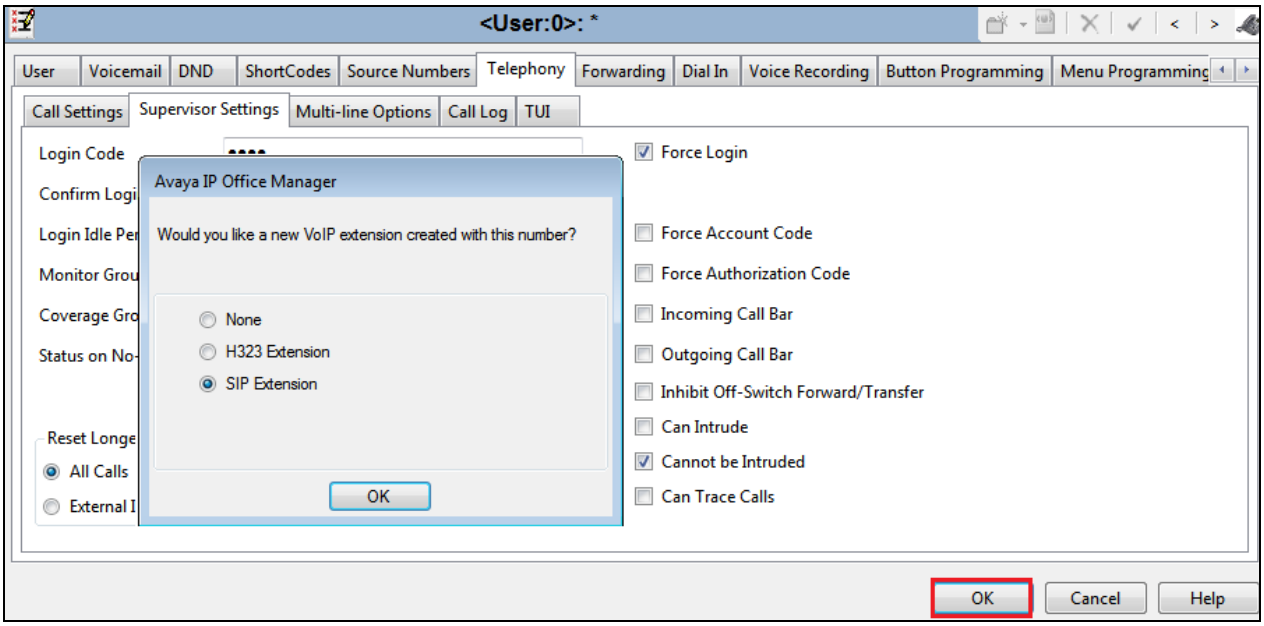


Under **Supervisor Settings** tab enter the password again for the **Login Code**. Ensure that **Force Login** box is checked.



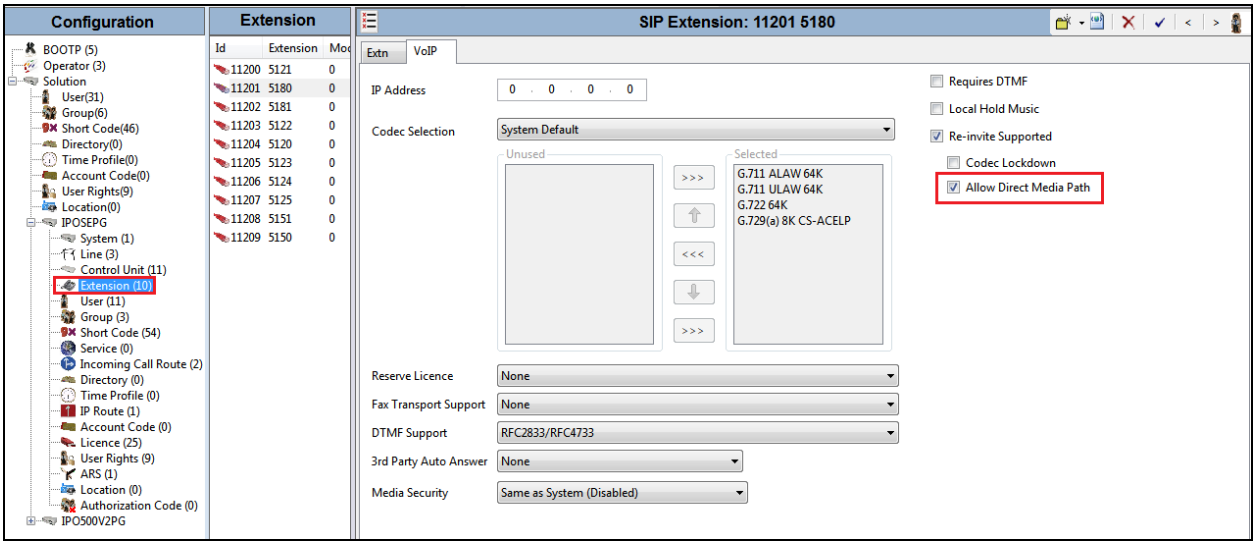
Once **OK** is clicked at the bottom of the screen a new window should appear asking to create a new extension. Select **SIP Extension** as is shown below.

Note: If the system is not setup to auto-create extensions then a new extension can be added by right-clicking on Extension on the left window and selecting New, (not shown).



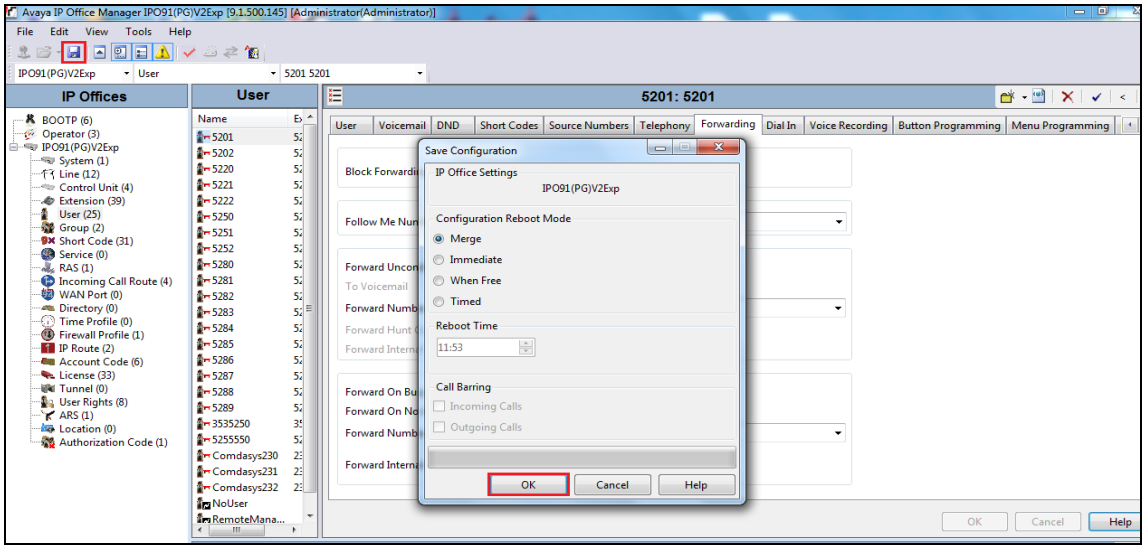
5.4. Check Extension Properties

Direct Media Path can be set on/off in the extension properties. This will allow RTP to be sent directly between devices. Once the SIP extension has been successfully created in **Section 5.3**, open the extension configuration to check to see if Allow Direct Media Path is selected. Select **Extension** in the left window and select the required extension number. In the main window under **VoIP** tab, **Allow Direct Media Path** can be checked or unchecked as shown below. Other settings such as **DTMF Support** and **Codec Selection** are possible to change here as well if required by Ascom.



5.5. Save Configuration

Once all the configurations have been made it must be saved to IP Office. Click on the **Save** icon at the top of the screen and the following window appears, click on **OK** to commit the changes to memory.

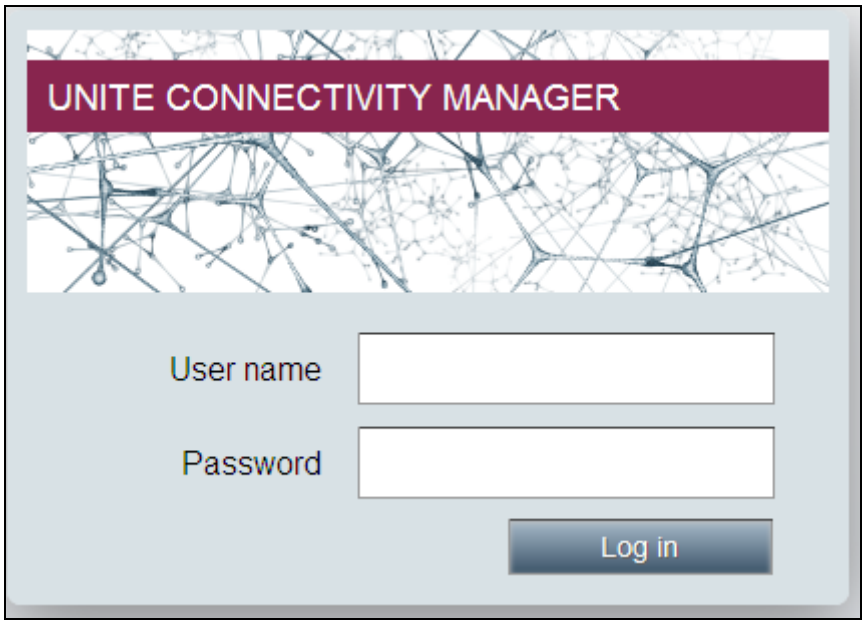


6. Configure Ascom Myco Wireless Smartphones

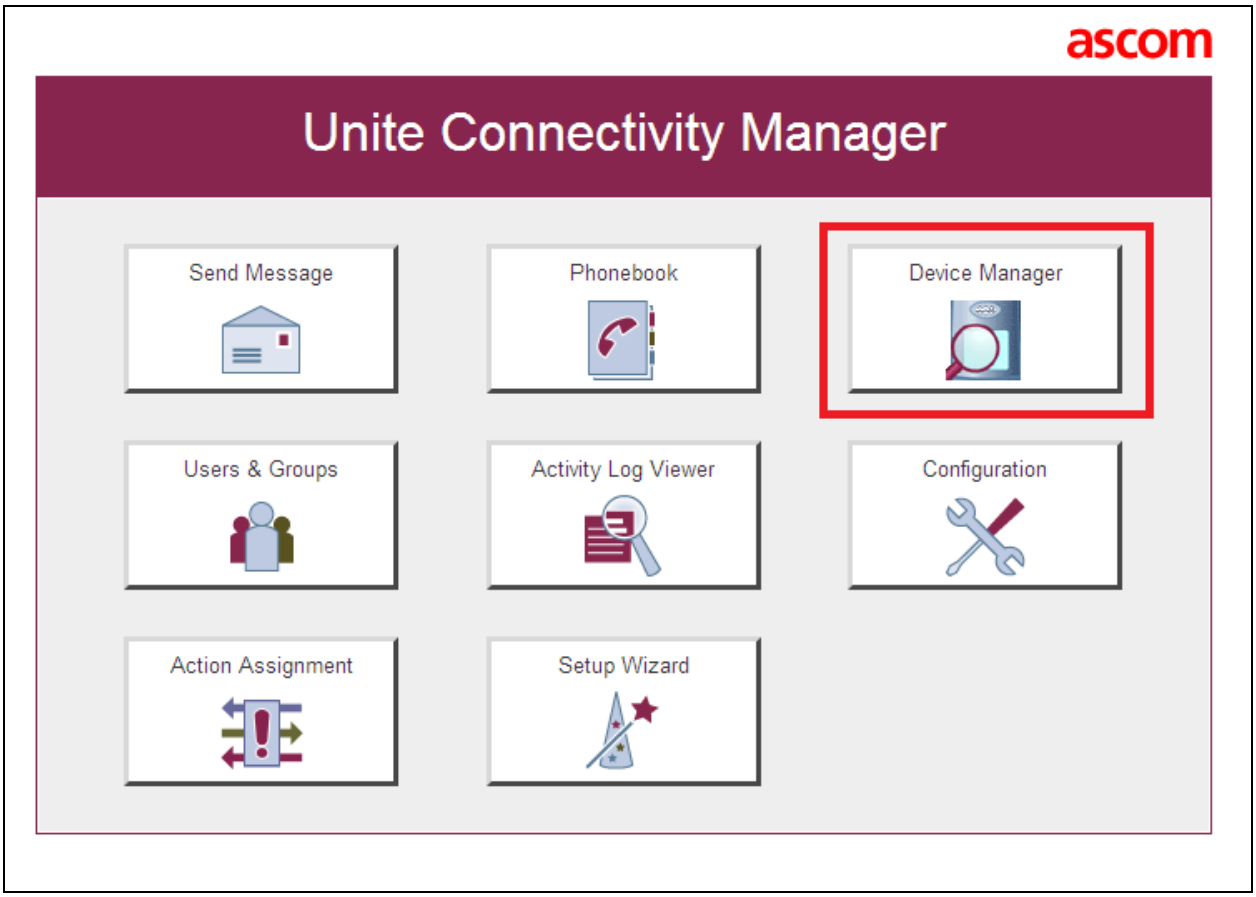
This section describes how to access and configure Myco via the Device Manager. It is implied that the Wifi network has been configured and operational and the Ascom UniteCM box has an IP address assigned.

Note: The Wireless router and Ascom UniteCM configuration are outside the scope of these Application Notes.

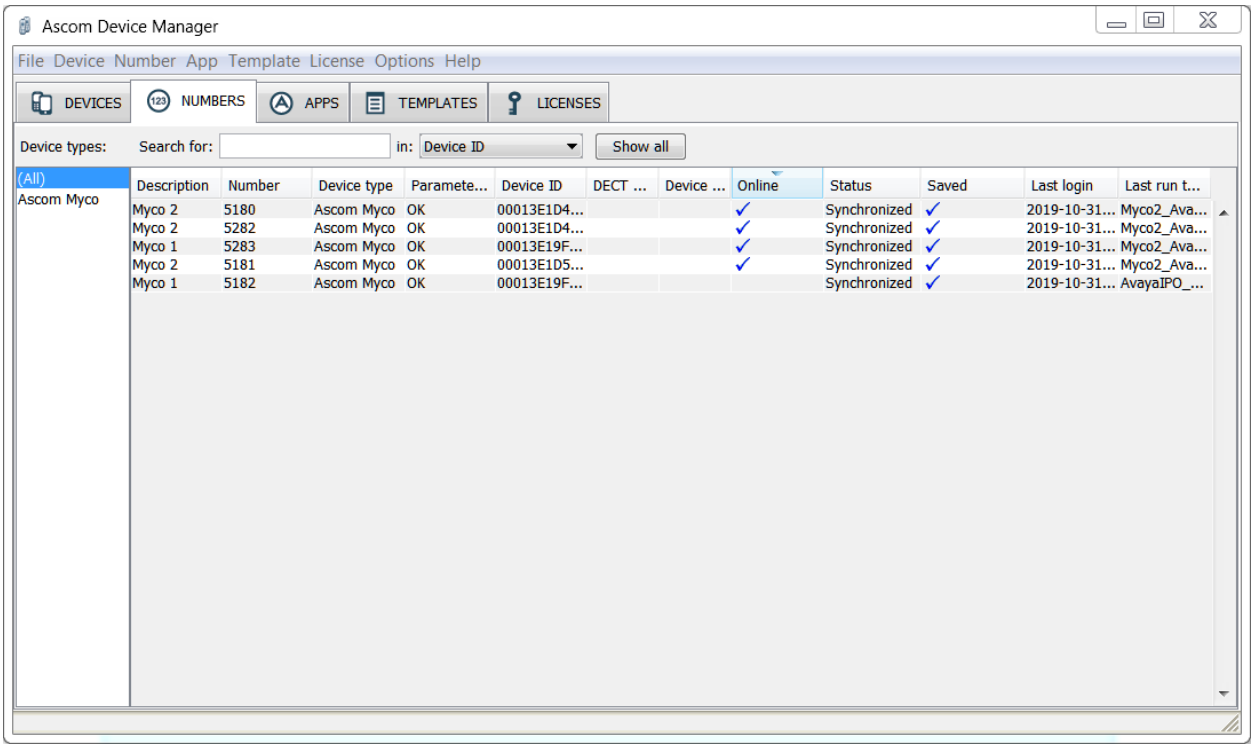
Access the UniteCM box by typing the URL, http://<ip address> in a web browser (not shown). Screen below shows the login screen. Enter the required credentials in the **User name** and **Password** fields and click on **Log in**.



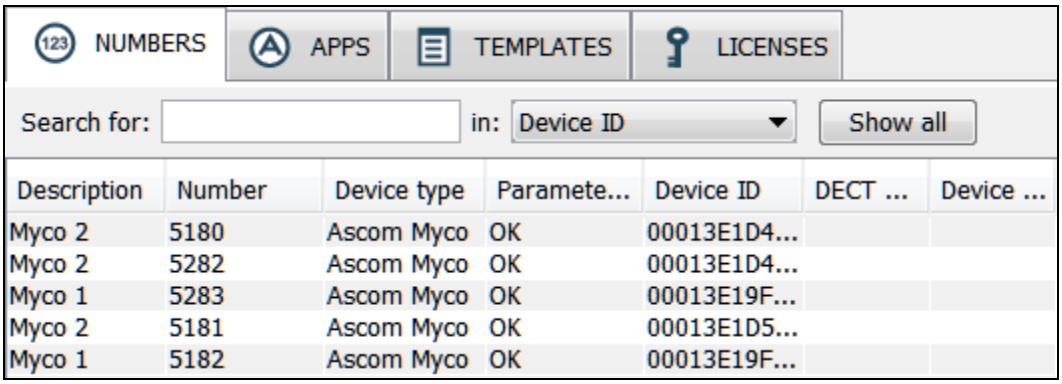
The main screen of Unite Connectivity Manager is seen as shown below. Click on the **Device Manager** application.



The **Ascom Device Manager** screen is seen as shown below. In the example below, a device with number **5180** is discovered. Double click on this number.



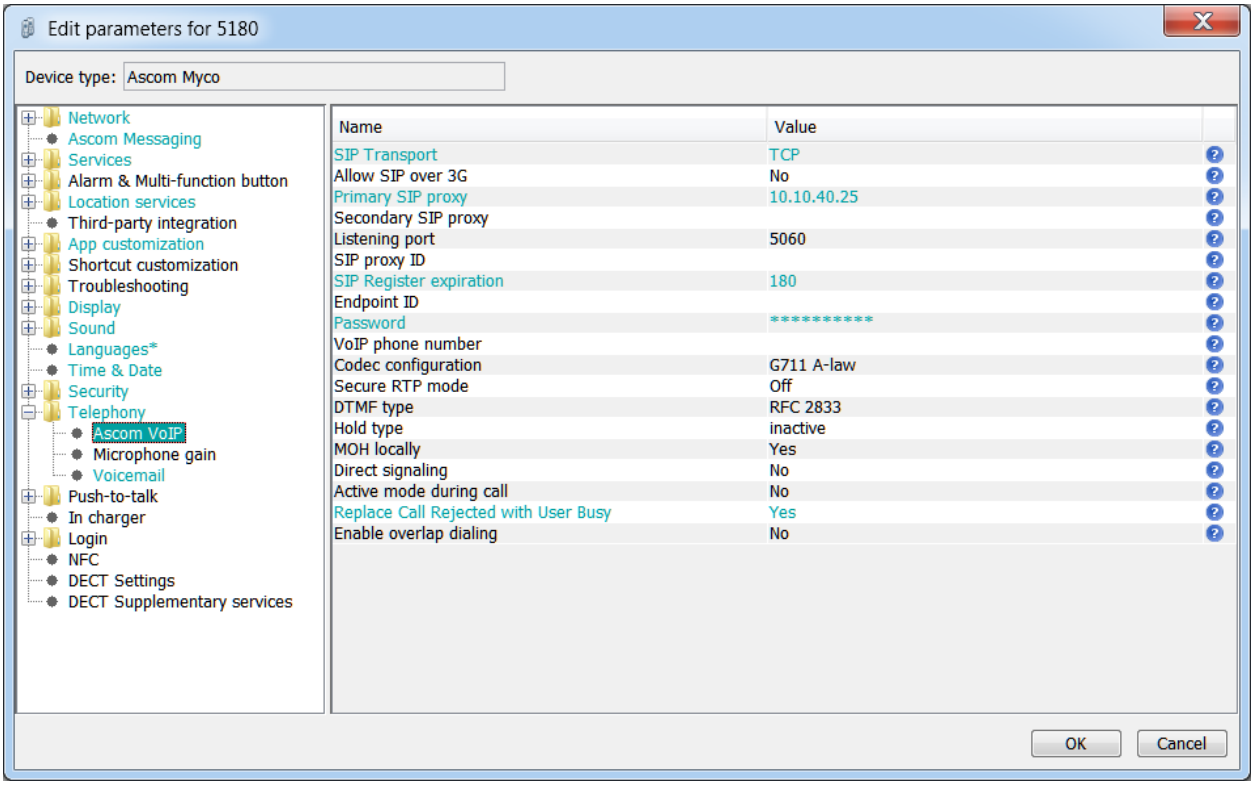
A close up of the same screen shown above shows that **5180**, at the top, was selected.



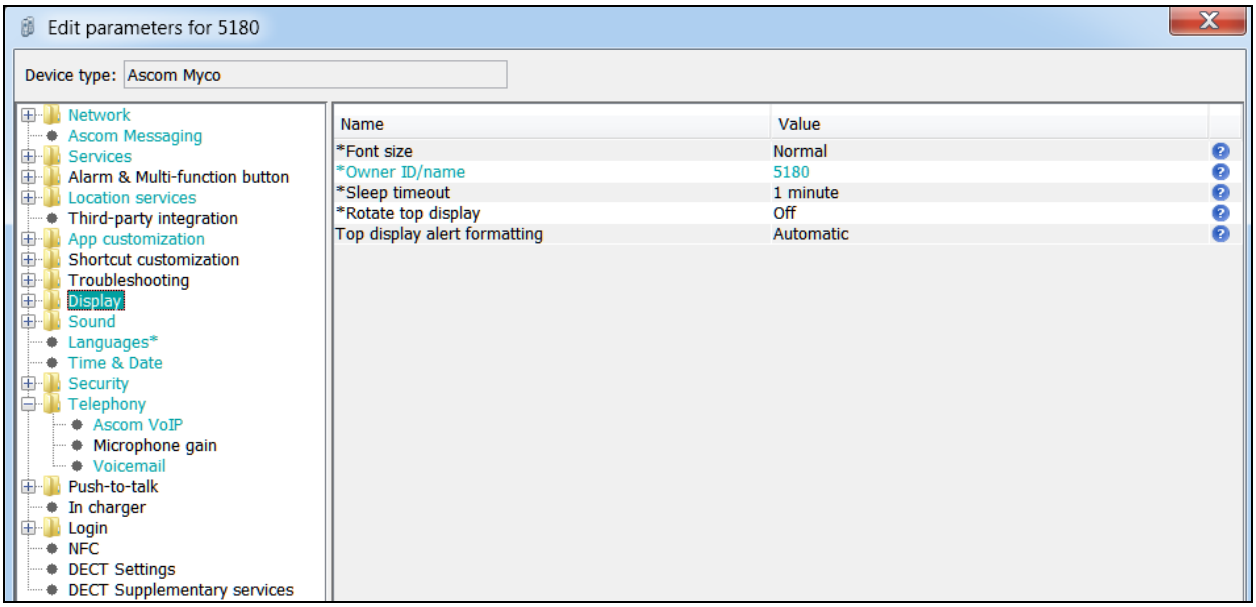
The **Edit parameters for 5180** screen is displayed as shown below. Click on **Ascom VoIP** that is seen on the left-hand side and configure the following values.

- **SIP Transport** — Set to either **TCP** or **UDP** (for compliance testing TCP was selected as shown below)
- **Primary SIP Proxy** — IP address of the IP Office to which this user is to be registered against
- **Listening Port** — **5060**
- **SIP Register Expiration** — **180 (**This value is null and void as this is hardcoded to 180 by IP Office)
- **Endpoint ID** — This is the extension number
- **Password** — The password from the supervisor settings tab assigned to the endpoint in **Section 5.3**
- **Codec configuration** — This will depend on the country **(G711 A-law** was used for compliance testing)
- **DTMF Type** — **RFC 2833** is chosen
- **Replace Call Reject w/ User Busy** — Defines whether calls are rejected using "603 Decline" or "486 Busy Here" messages

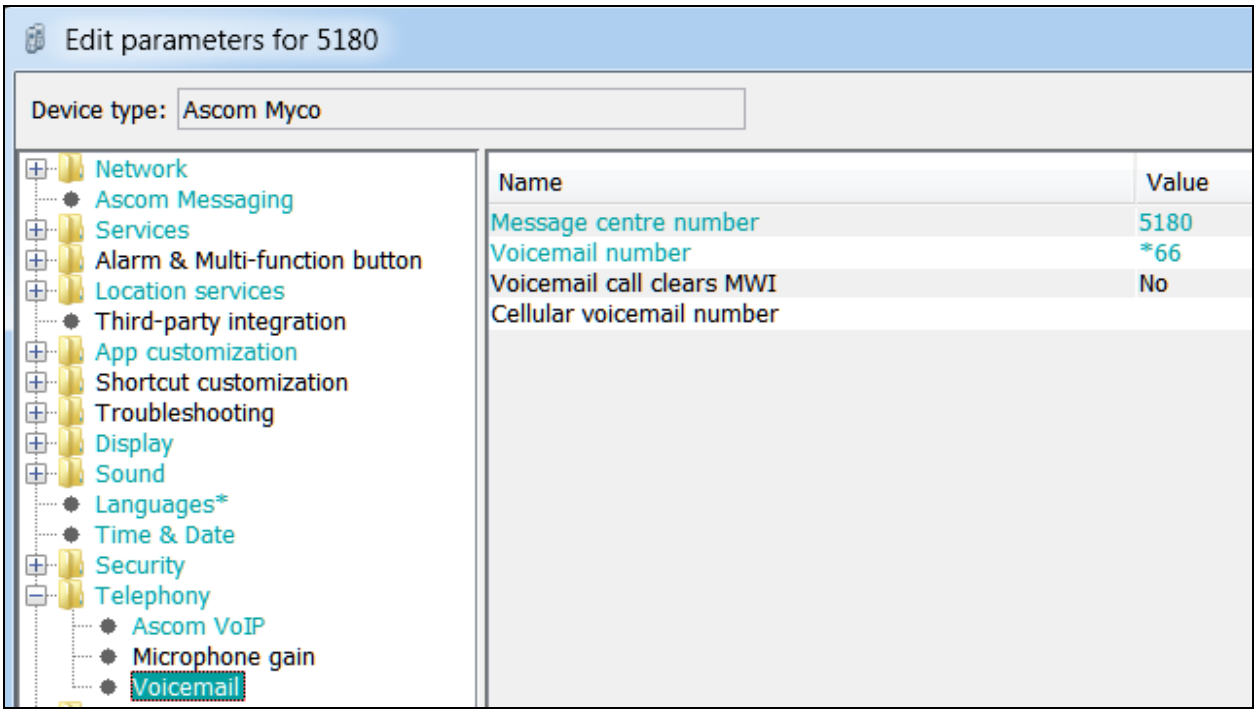
Retain default values for all other fields.



The following step is optional. From the same screen as above, click on **Display** and configure the **Owner ID/name** field with the directory number configured, in this case **5180** as shown below. Retain default values for all other fields and click on **OK** at the bottom of the screen (not shown) to complete the configuration.



The **Voicemail number** is set as ***66**. This is a short code on IP Office that was used to call to Voicemail. This may be different depending on the system. Click on **OK** at the bottom of the screen (not shown) to complete the configuration.

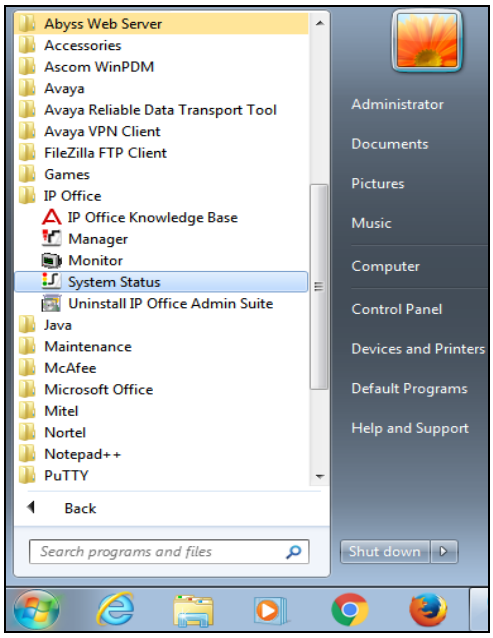


7. Verification Steps

This section provides the tests that can be performed to verify correct configuration of the IP Office and Ascom solution. The best way to verify compliance is to make calls to/from the Ascom Myco handsets. Once calls can be made/received then this will show that the Myco handset is registered correctly with the IP Office and is capable of performing as designed. For further information on registration and call status the following section will be useful.

7.1. Verify the Ascom Myco Wireless Smartphone status

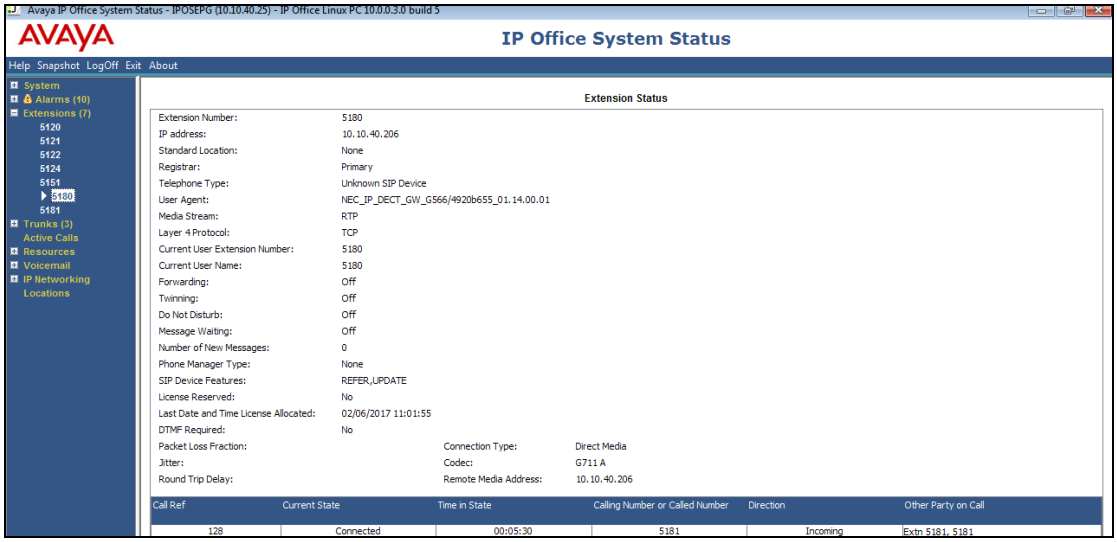
To verify the 'connection type' and the 'media security' IP Office System Status can be used to monitor each handset including the Myco handsets. Open **IP Office System Status** as shown below.



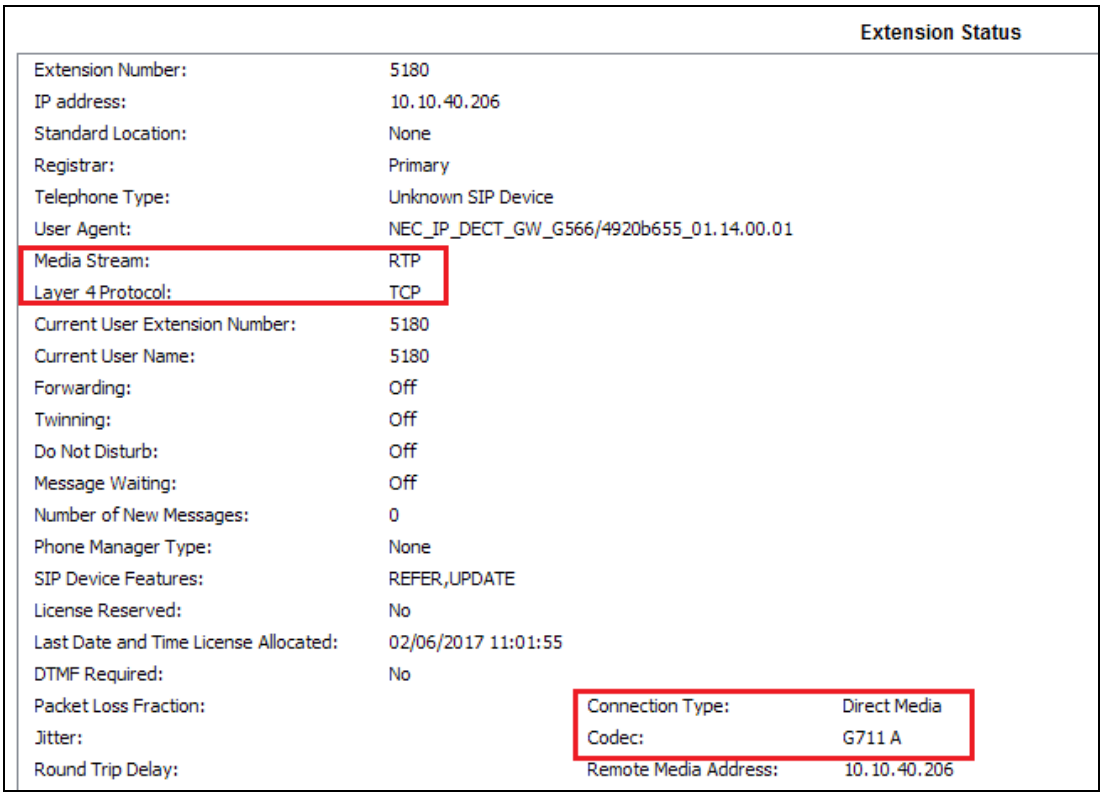
Connect to the required IP Office and enter the appropriate credentials then click on **Logon**.

Place a call to one of the Myco handsets and select the handset as shown below. Information on the call and the connection is displayed in the main window.

Note: The information shown below is intended as an example of what such a call should look like.



Information on the **Media Stream** and the **Layer 4 Protocol** are shown as well as the **Connection Type**. The display below shows a **Direct Media** call using **RTP** and **TCP**.



8. Conclusion

These Application Notes describe the configuration steps required for Ascom Myco 2 smartphone to successfully interoperate with Avaya IP Office R11.0 by registering the Myco handsets with IP Office as SIP phones. Please refer to **Section 2.2** for test results and observations.

9. Additional References

These documents form part of the Avaya official technical reference documentation suite. Further information may be obtained from *http://support.avaya.com* or from your Avaya representative.

[1] Administering Avaya IP Office™ Platform with Manager, Release 11
[2] Avaya IP Office™ Platform Documentation Catalog, Release 11
[3] Avaya IP Office™ Platform 11 Deploying Avaya IP Office™ Platform Servers as Virtual Machines

Product Documentation for Ascom Products can be obtained from an Ascom supplier or may be accessed at https://www.ascom-ws.com/AscomPartnerWeb/Templates/WebLogin.aspx (login required).

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.