Avaya Solution & Interoperability Test Lab

Application Notes for Esna Officelinx 10 with Avaya IP Office Server Edition 9.1 - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Officelinx 10 to interoperate with Avaya IP Office Server Edition 9.1.

Officelinx is SIP-based unified communications that connects to IP Office Server Edition 9.1 via SIP Trunk, and TAPI to provide Voice, Message Waiting Indicator (MWI) and Call control for iLink Pro Google application.

The Avaya IP Office Server Edition configuration consisted of two Avaya IP Office systems, a primary Linux server at the Main site and an expansion IP Office 500V2 at the Remote site that were connected via Small Community Network trunks. In the compliance testing, two Officelinx servers used the SIP trunk and TAPI interfaces from the local Avaya IP Office system to provide voice, MWI and call control to iLink Pro users on the local system.

Readers should pay attention to section 2, in particular the scope of testing as outlined in Section 2.1 as well as the 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.

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1. Introduction

These Application Notes outline the steps necessary to configure Officelinx from ESNA to interoperate with Avaya IP Office Server Edition and Avaya IP Office 500V2.

Officelinx is SIP-based unified communications that connects to IP Office Server Edition 9.1 via SIP Trunk to provide voice/attendant system, and TAPI to provide MWI and Call control for iLink Pro users on the local system.

The Avaya IP Office Server Edition configuration consisted of two Avaya IP Office systems, a primary Linux server at the Main site and an expansion IP Office 500V2 at the Remote site that were connected via Small Community Network trunks. In the compliance testing, two Officelinx servers used the SIP trunk and TAPI interfaces from the local Avaya IP Office system to provide voice, MWI and call control to iLink Pro users on the local system.

2. General Test Approach and Test Results

The interoperability compliance test included feature and serviceability testing. Upon starting the Officelinx server, it is automatically obtained the list of phones from the local IP Office system.

For the manual part of testing, click-to-call was manually placed to and from other iLink Pro users and telephones. The feature testing focused on the integration of iLink Pro with IP Office H.323 phones to verify phone operation such as dialing, hold, resume, transfer, disconnect. Additional features such as take message using Avaya IP Office Short codes were also verified.

The serviceability testing focused on verifying that Officelinx and iLink Pro came back into service after re-connecting the Ethernet connection or rebooting the server.

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.

2.1. Interoperability Compliance Testing

The interoperability compliance testing included feature and serviceability testing. The serviceability testing introduced failure scenarios to see if Officelinx could resume after a link failure with IP Office. The testing included:

- Click-to-call on iLink Pro and the voice path is established between two physical phones.
- Verify status of iLink Pro is updated correctly "On the call/Ready" when the physical phone is "off-hook/on-hook".
- Answer incoming call using Answer button on iLink Pro.
- Take message by using Take message button on iLink Pro for incoming call.
- Put a call on hold and resume call.
- Consult transfer a call.
- Leave and retrieve the voice message for iLink Pro user via Gmail account.
- Verify Message Waiting Indication (MWI) on physical device and iLink Pro.
- Hang up the call using Hang Up button on iLink Pro.
- G.711MU and G.711A codecs.

2.2. Test Results

Tests were performed to insure interoperability between Officelinx and Avaya IP Office. The tests were completed with the following observations:

1. Blind transfer is not supported in iLink Pro.
2. MWI is not lit on Avaya 1100 Series SIP Deskphones; therefore, they are not supported with this solution.

2.3. Support

For technical support for Esna Technologies Inc, please use the following web link:
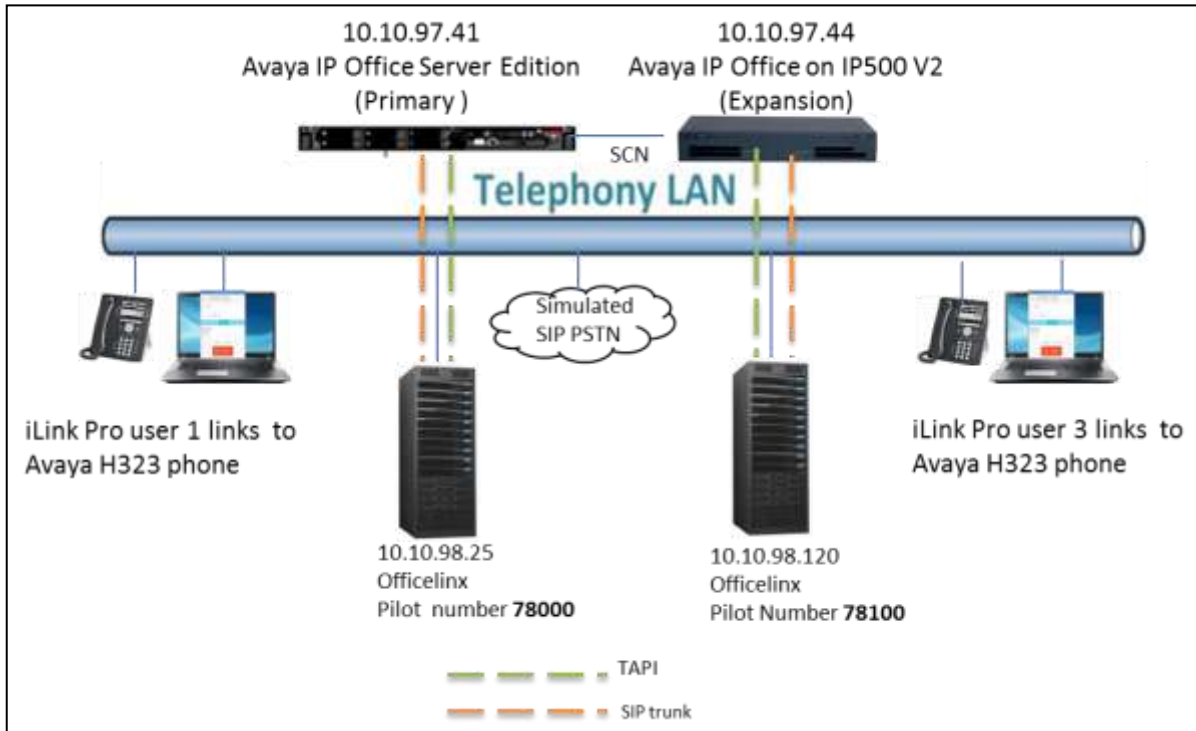http://www.esna.com

30 West Beaver Creek Rd., Suite 101
Richmond Hill, ON. CANADA L4B 3K1

Tel: +1 905-707-9700
Fax: +1 905-707-9170

3. Reference Configuration

The configuration used for the compliance test is shown below. The Avaya IP Office Server Edition configuration consisted of two Avaya IP Office systems, a primary Linux server at the Main site and an expansion IP Office 500V2 at the Remote site that were connected via Small Community Network trunks. In the compliance testing, two Officelinx servers used the SIP trunk and TAPI interfaces from the local Avaya IP Office system to provide voice/auto attendant, MWI and call control to iLink Pro users on the local system.

Figure 1: Avaya IP Office Server Edition and Esna Officelinx Reference Configuration

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4. Equipment and Software Validated

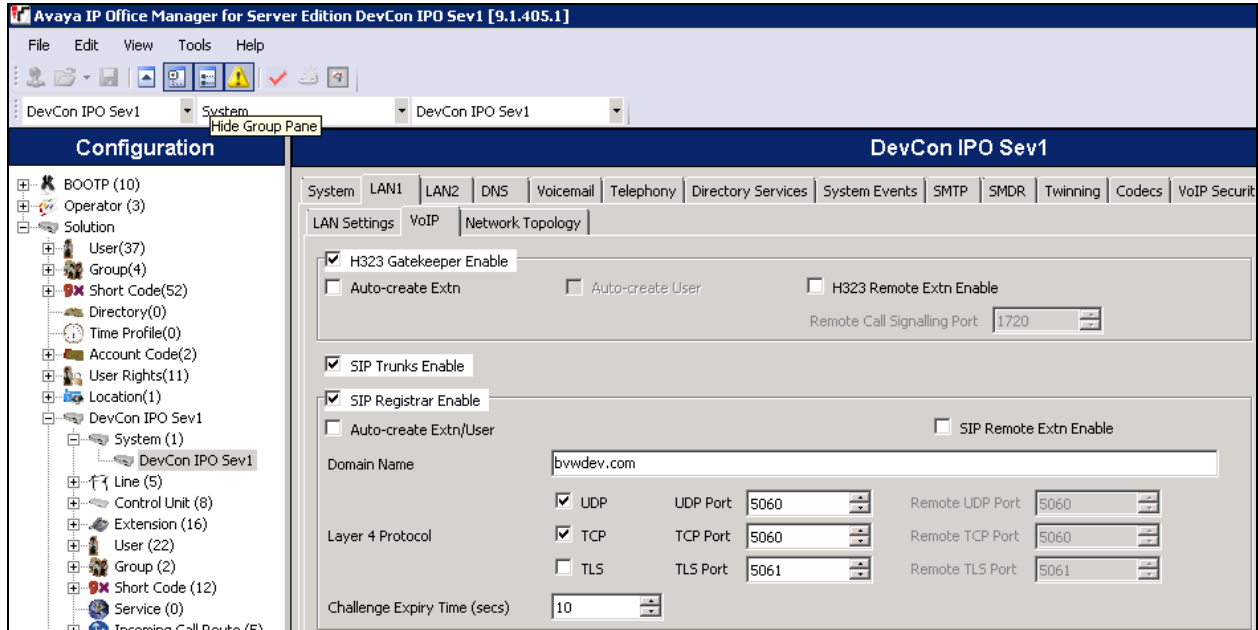The following equipment and software were used for the sample configuration provided:

Equipment/Software	Release/Version
Main Site	
Avaya IP Office Server Edition (Primary)	9.1.400.137
Avaya 9621G IP Deskphone (H.323)	6.6029
Officelinx on Windows 2008 Server R2 iLink Pro Avaya IP Office TAPI2 Driver (tspi2w_64.tsp)	10.1 10.1.1.1908 1.0.0.42
Remote Site	
Avaya IP Office on IP500 V2 (Expansion)	9.1.400.137
Avaya 9608 IP Deskphone (H.323)	3.230A
Officelinx on Windows 2008 Server R2 iLink Pro Avaya IP Office TAPI2 Driver (tspi2w_64.tsp)	10.1 10.1.1.1908 1.0.0.42

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

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5. Configure Avaya IP Office

This section provides the procedures for configuring IP Office. In order to support iLink Pro user on Expansion systems with IP Office Server Edition, multiple Officelinx systems will be needed, one for each IP Office system that has iLink Pro user links to its local extension. These Application Notes only show the IP Office configuration for one Officelinx system. A similar configuration will be needed for additional Officelinx systems.

Configuration and verification operations on the Avaya IP Office illustrated in this section were all performed using Avaya IP Office Manager. The information provided in this section describes the configuration of the Avaya IP Office for this solution. It is implied a working system is already in place with the necessary licensing. For all other provisioning information, such as initial installation and configuration, refer to the product documentation in **Section 9**.The configuration operations described in this section can be summarized as follows:

- Verify License
- Create SIP Trunk
- Configure Incoming Call Route
- Create Short Code (Route Calls)
- Save Configuration

5.1. Verify License

In Manager, navigate to License settings and verify the following licenses are present (these are required for integration with Esna Officelinx):

- **CTI Link Pro**: Required for CTI integration (provides rich presence, call control, and MWI functionality)
- **SIP Trunk Channels**: Required for voice integration (Auto attendant, IVR, voicemail, speech access, etc.).

5.2. Verify SIP Trunk Enable

Go to **System → LAN1 → VoIP** and make sure that SIP Trunks Enable and SIP Register Enable are checked.

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5.3. Create SIP Trunk

To create the SIP trunk from the IP Office to Officelinx, navigate to **System** and right click on **Line** followed by **New → SIP Line**. In this example, line **11** was created to connect to Officelinx (not shown).

In the subsequent **SIP Line** window, enter the following in the **SIP Line** tab. **Note:** The **Line number** is filled in automatically.

- **ITSP Domain Name**   Enter the IP address of the Officelinx Server, ex: 10.10.98.26.
- **URI Type**   Ensure that it is set to SIP. Defaults were used for the remaining fields.

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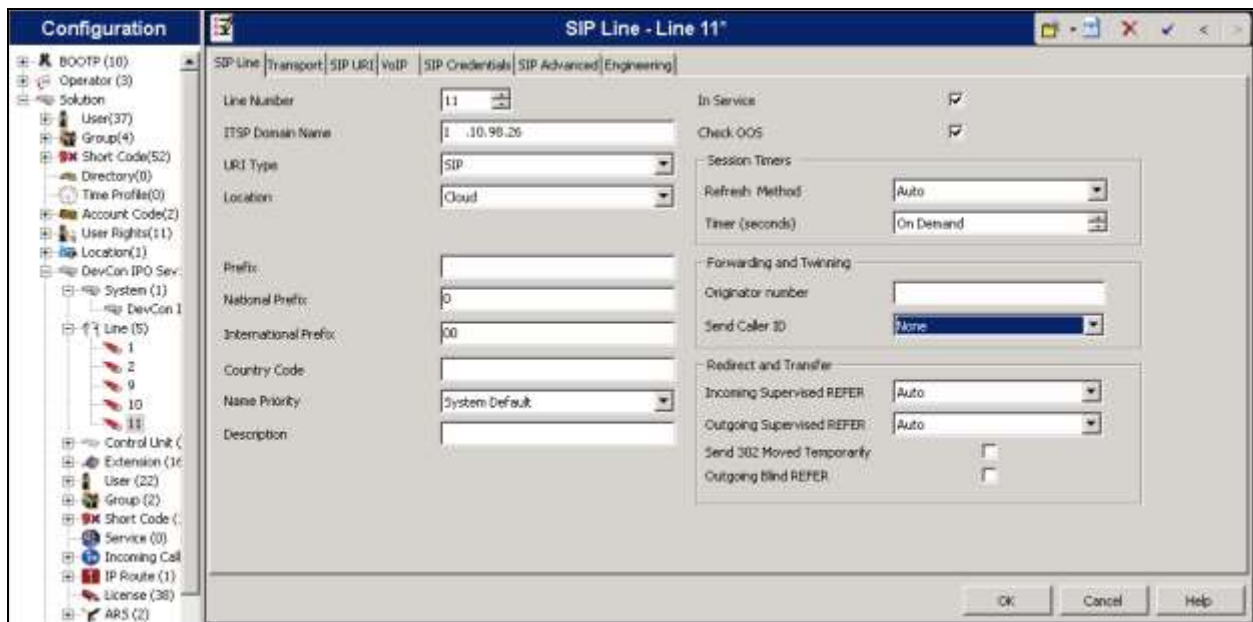
In the **Transport** tab, enter the IP address of the Officelinx Server in the **ITSP Proxy Address** field. Default values were used for the remaining fields.

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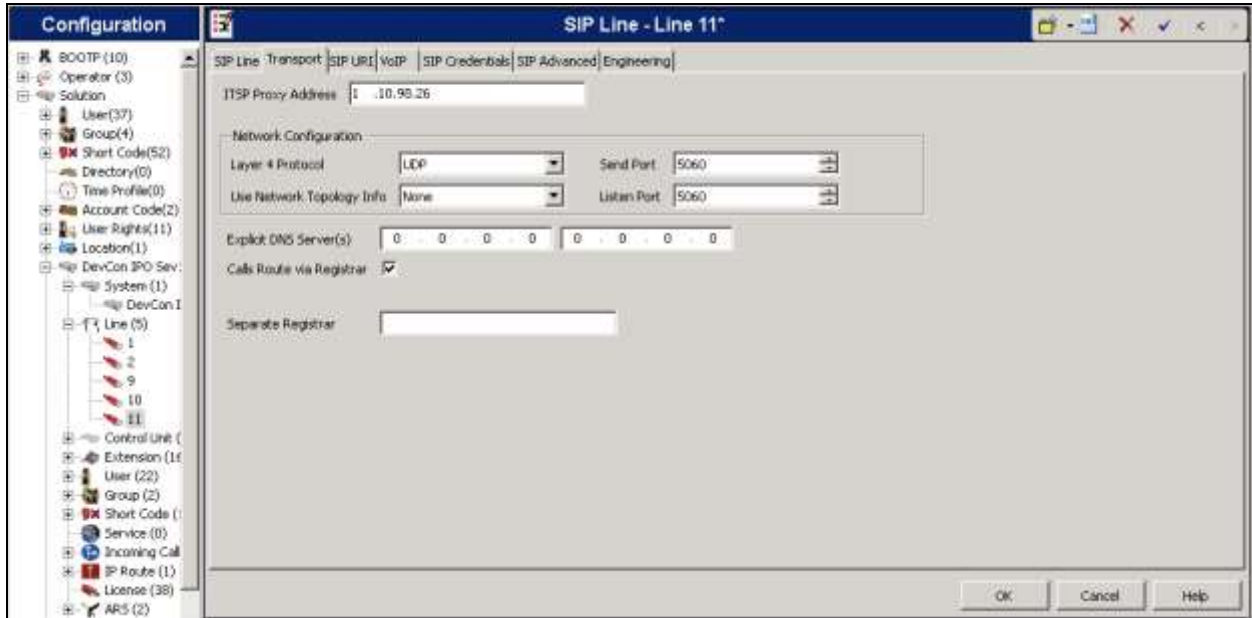
In the **SIP URI** tab, click on the **Add** button. In the subsequent window, enter the following:

- **Local URI**   Enter *****.
- **Contact**   Enter *.
- **Display Name**   Select ***** from the dropdown menu.
- **PAI**   Select ***** from the dropdown menu.
- **Incoming Group**   Enter the Incoming Group number, select SIP trunk created for this compliance test, in this example, it is 11.
- **Outgoing Group**   Enter the **Line Group ID**, select SIP trunk created for this compliance test, in this example, it is 11.
- **Mac Calls per Channel** Set to the number of voice ports present on the Esna Officelinx system (this value is restricted by the IP Office SIP Trunk channels license quantity).

Click the **OK** button.
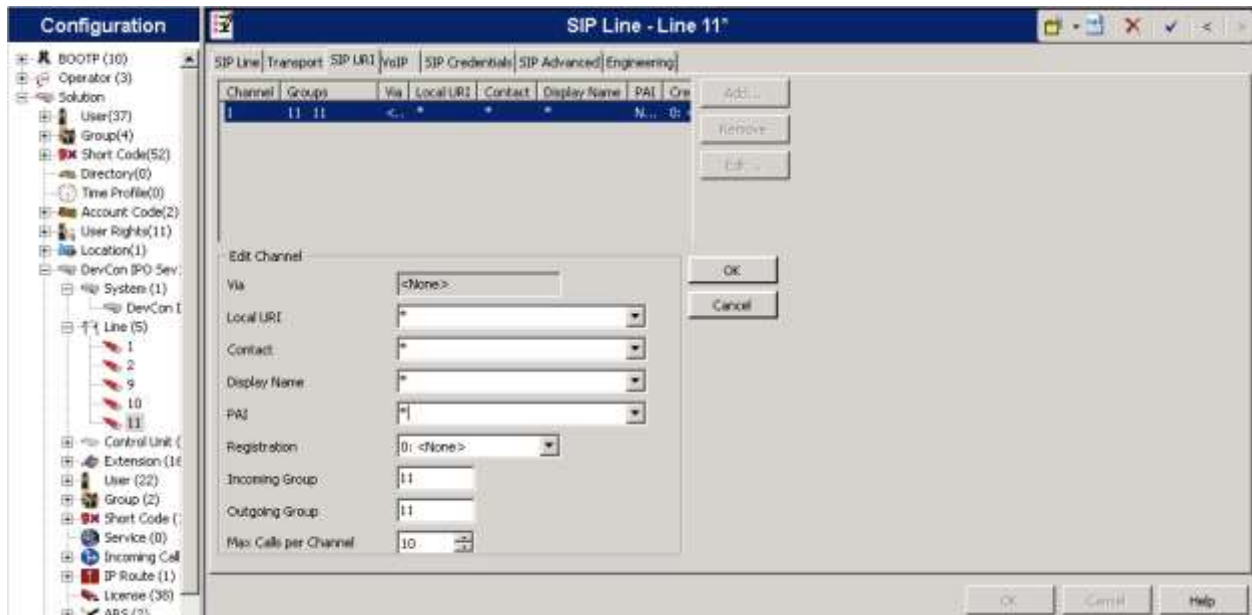
Default values were used for the remaining fields and tabs. Example of SIP Advanced tab used during compliance test:
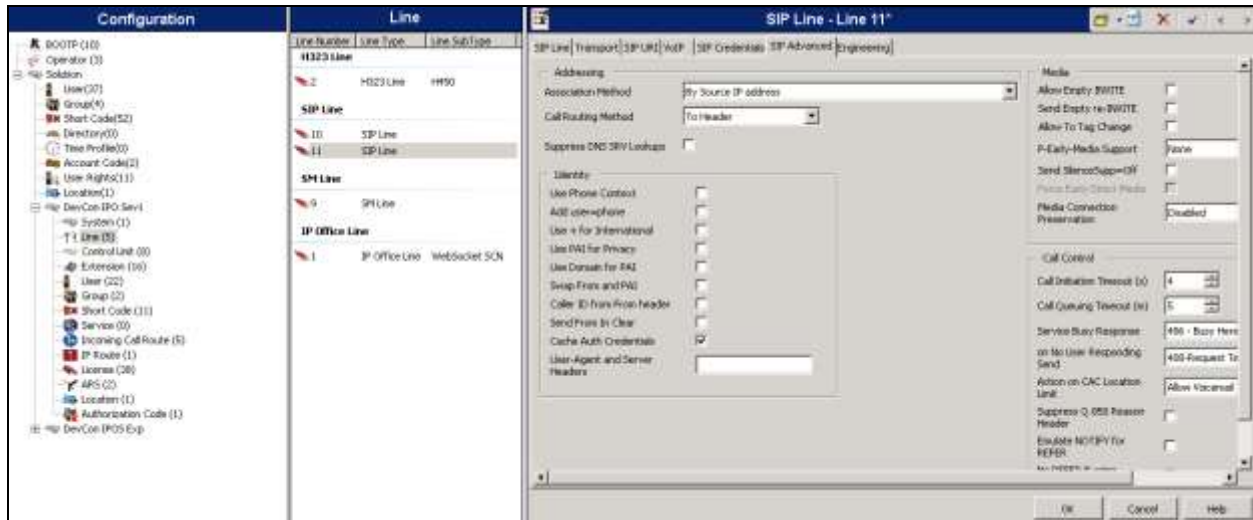
Click the **OK** button to save changes for the new SIP line.

5.4. Configure Incoming Call Route

To configure the Incoming Call Route, navigate to **System** and right click on **Incoming Call Route** followed by **New** (not shown). In the subsequent window, enter the following in the **Standard** tab:

- **Line Group ID**   Enter the Incoming Group number created in above section**,** ex: 11

Default values were used for the remaining fields.
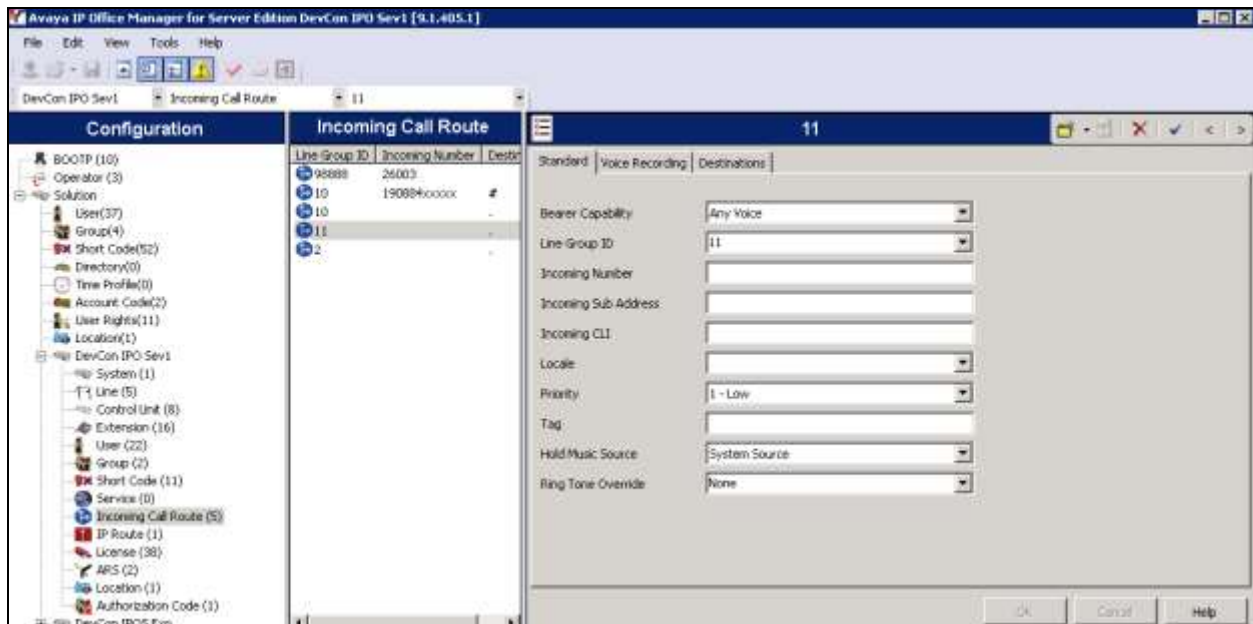
In the **Destinations** tab, enter a **.** (Full stop/Period) in the **Destination** field. Default values were used for the remaining fields and tabs. Click on the **OK** button.
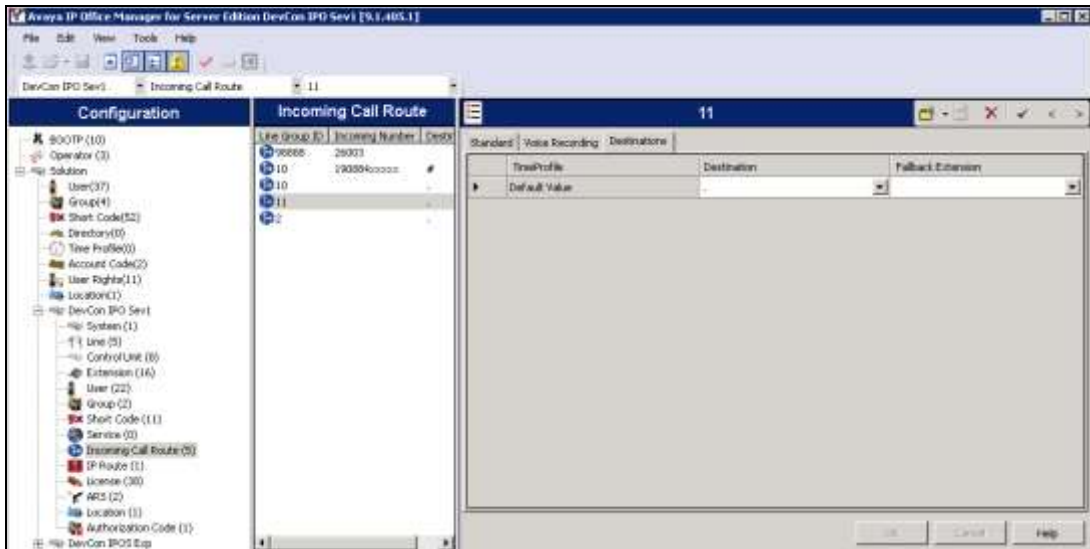
5.5. Create Short Code (Route Calls)

A Short Code needs to be configured on the IP Office to route calls to Officelinx. Navigate to System and right click on **Short Codes,** and select **New**.

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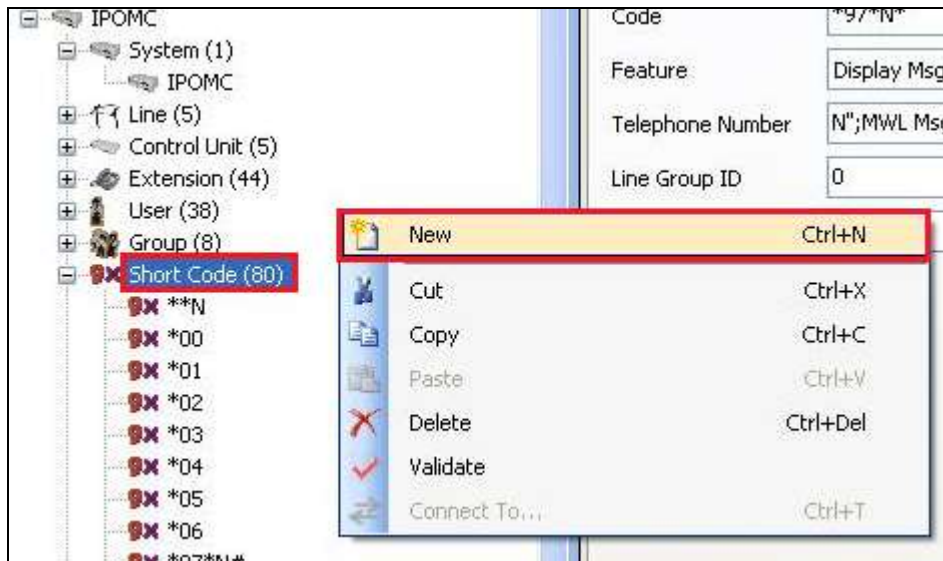
In the subsequent window, enter the following:
- **Code**   Enter the number range that will be routed to Officelinx (during compliance testing, all numbers beginning with 780N were sent to Officelinx, therefore 780N was entered).
- **Feature**   Select **Dial** from the dropdown menu.
- **Telephone Number**   Enter 780N''@Officelinx's IP Address'', in this examples IP is 10.10.98.26.
- **Group Line ID**   Enter the Incoming Group number created above section.

Defaults were used for the remaining fields. Click the **OK** button.
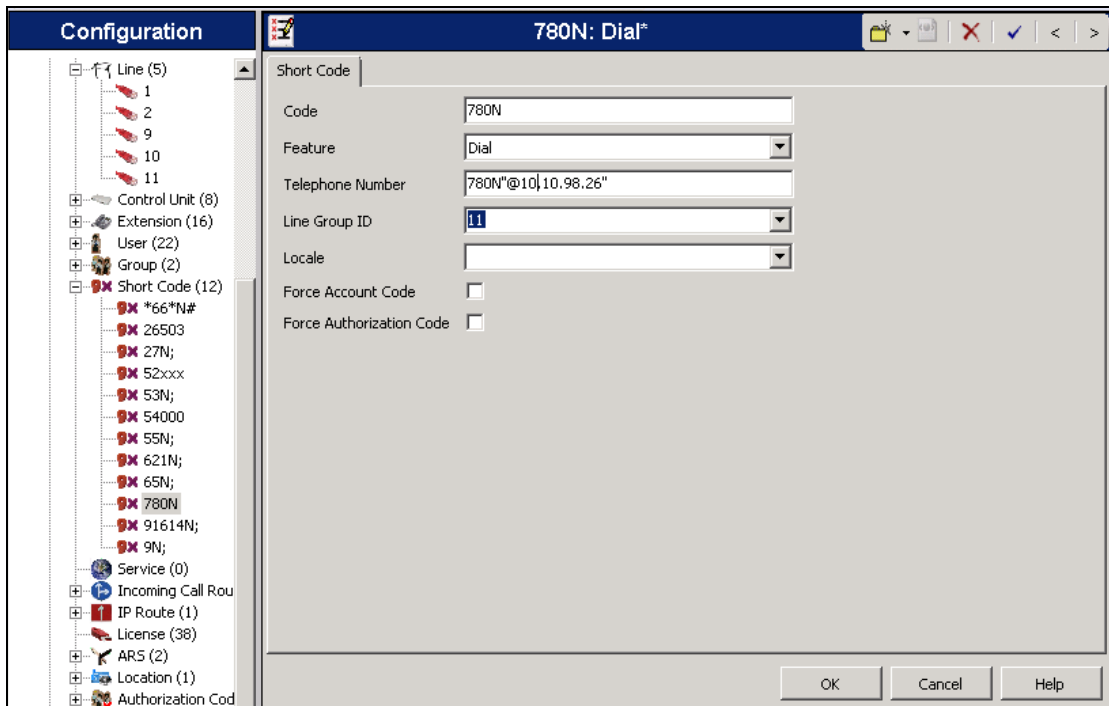
5.6. Enable Call Forward to Officelinx Voicemail

Under each user, go to the **Forwarding** tab and set the following parameters:

- **Forward On Busy**   Enabled.
- **Forward on No Answer**   Enabled.
- **Forward Number**   Set to the voicemail pilot defined for the Esna Officelinx SIP trunk in the previous step plus the digits of the currently configured extension, in this example, the user for extension 2004 is being configured so the number is set to 7802004.
- **Forward Internal Calls**   Enabled.

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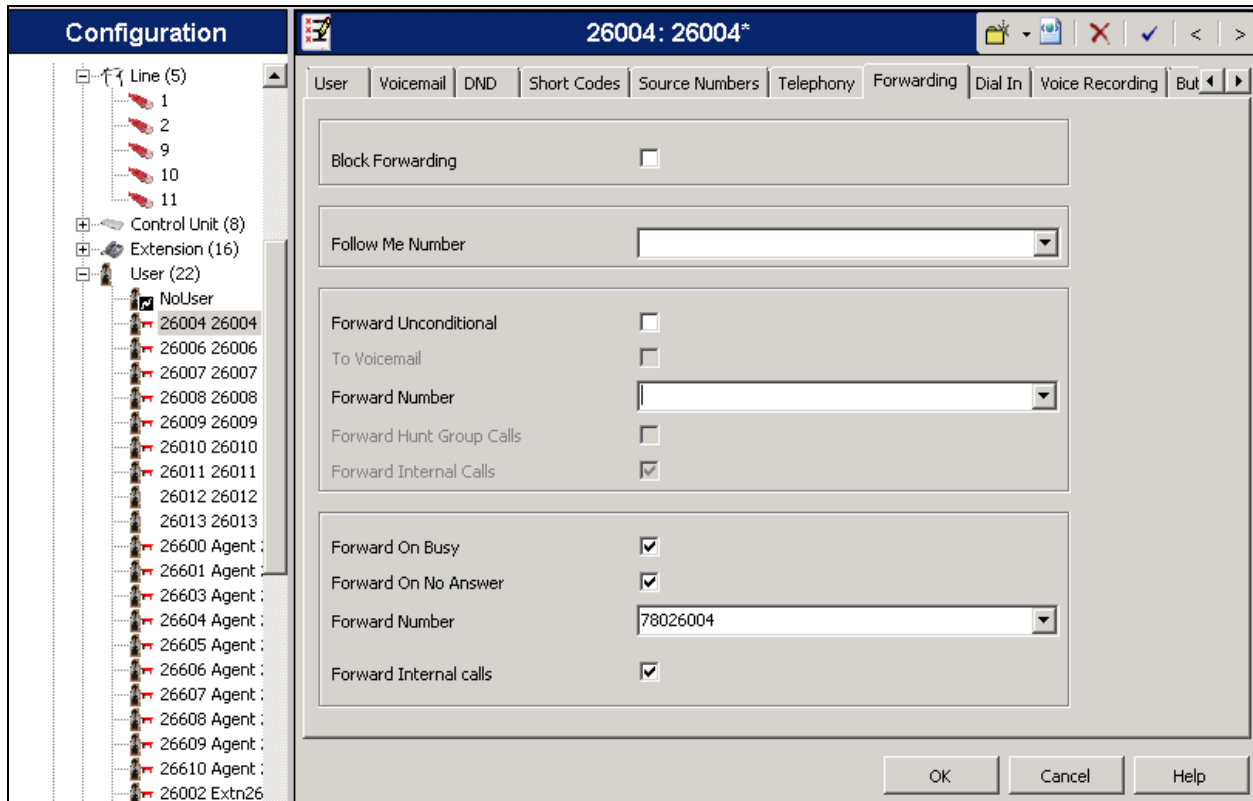
5.7. Save Configuration

Once all the configurations have been made, it must be sent to IP Office. Click on the **Save** Icon as shown below.
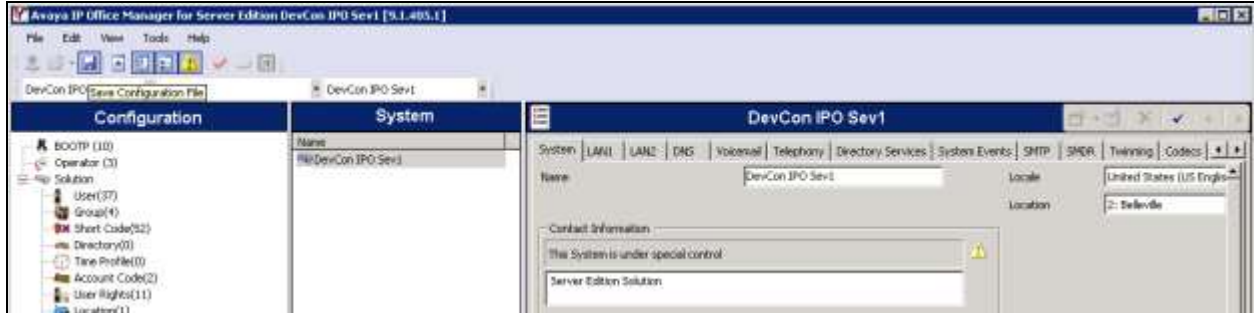
Once the **Save Configuration** window opens, click the **OK** button to save changes on primary and expansion IP Office 500 V2.

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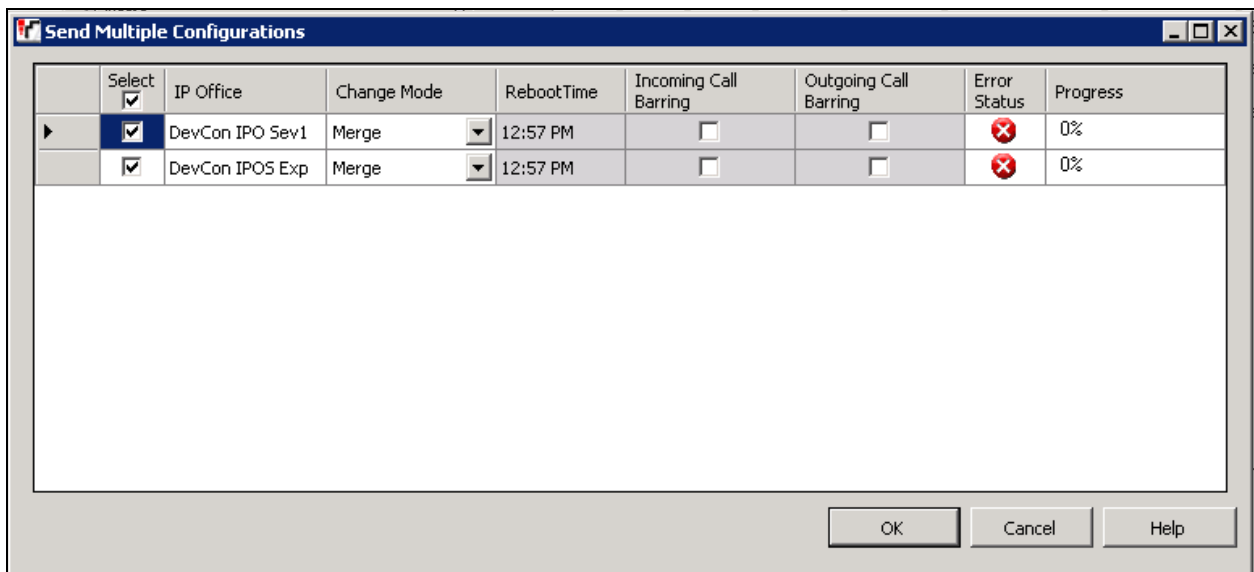
6. Configure Esna Officelinx

This section provides the procedures for configuring Officelinx. In order to support iLink Pro user on Expansion systems with IP Office Server Edition, multiple Officelinx systems will be needed, one for each IP Office system that has extension links to iLink Pro users. These Application Notes only show the Officelinx configuration for one system. A similar configuration will be needed for additional systems.

This section shows how to configure Officelinx to successfully connect to IP Office. The installation of the Officelinx software is assumed to be completed and services are up and running. The steps to configure SIP Trunks are as follows:

- Configure Avaya IP Office TAPI
- Configure PBX Properties
- Configure Computer Telephony Integration Setting
- Configure SIP Trunk connection IP
- Configure User Mailbox in Officelinx Admin Office
- Install and configure iLink Pro

6.1. Configure Avaya IP Office TAPI

The Avaya IP Office TAPI is required on each Officelinx server to allow features of Officelinx to interoperate with each IP Office primary and IP Office 500 V2. It is implied that the TAPI software and Enterprise company directory is already installed. (It is important that the TAPI software installation was run as administrator to ensure that the application receives the correct rights to run).

Click on **Start → Control Panel → Phone and Modem** (not shown). Select the **Advanced** tab. Once the **Advanced** tap opens, select **Avaya IP Office TAPI2 Service Provider** and click on the **configure** button.

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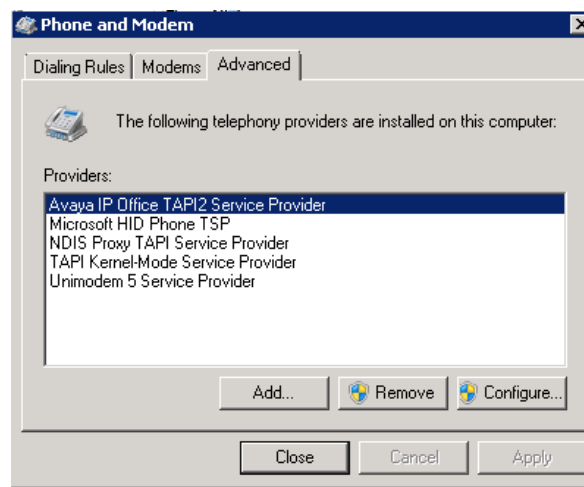
Once the **Avaya TAPI2 Configuration** window opens, enter the following:
- **Switch IP address**   Enter the IP address of the IP Office, in this case it is 10.10.97.41.
  Repeat on the other Officelinx for TAPI connection to Expansion 10.10.97.44
- **Third Party**   Click on the radio button.
- **Switch Password**   Enter the password of the IP Office.

Click the **OK** button.

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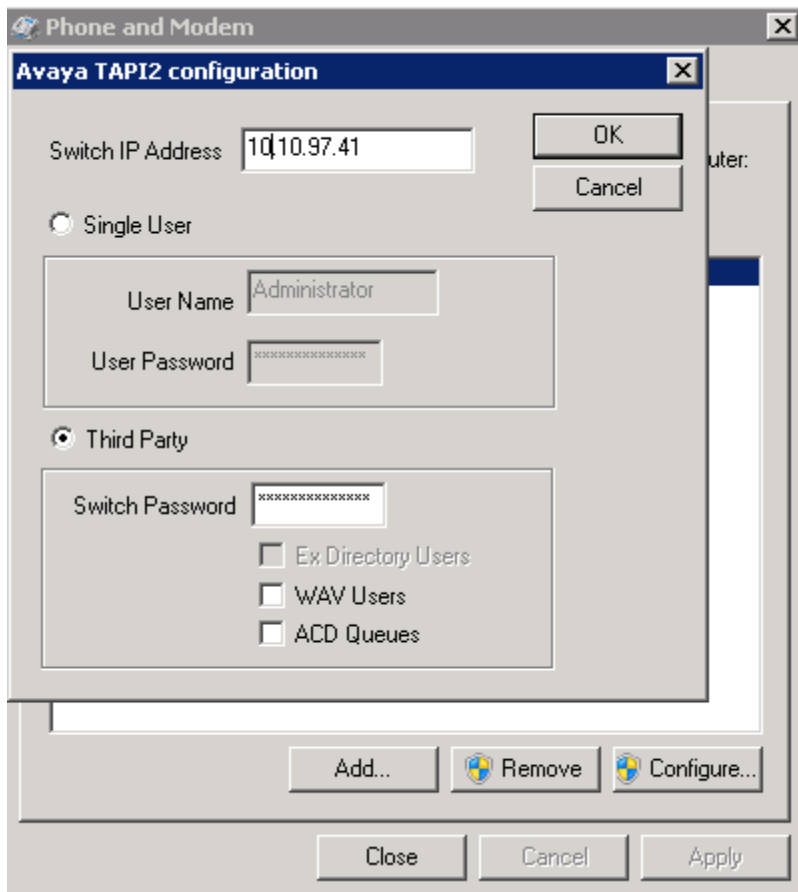
6.2. Configure PBX Properties

During the Officelinx installation, the selection of the Avaya IP Office templates should provide all the correct settings and configuration. This section is intended to provide a reference for configuration validation.

In the Officelinx administrator interface, go to **PBX Properties** → **Message Light**, set the following parameter: **SIP:** Enabled.
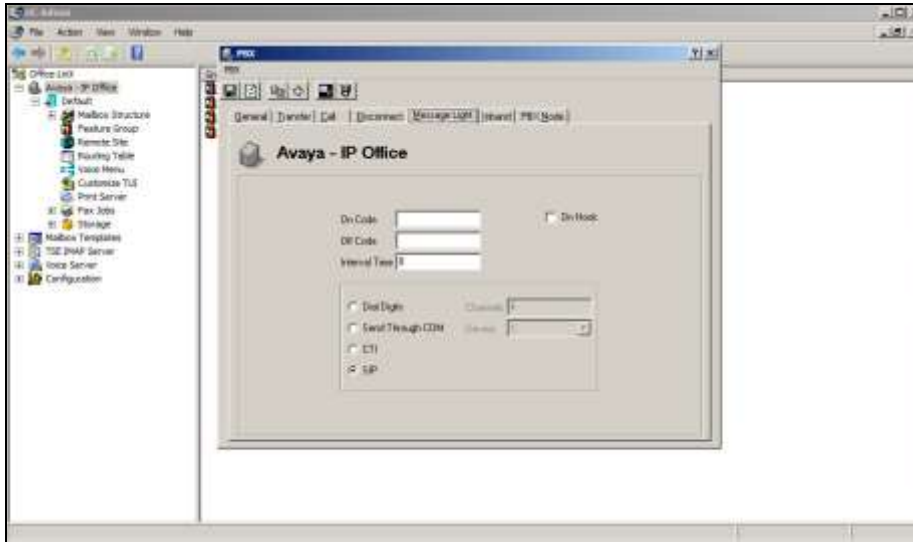
Go to **PBX Properties** → **Inband**, set the following parameter: **Integration**: OFF.
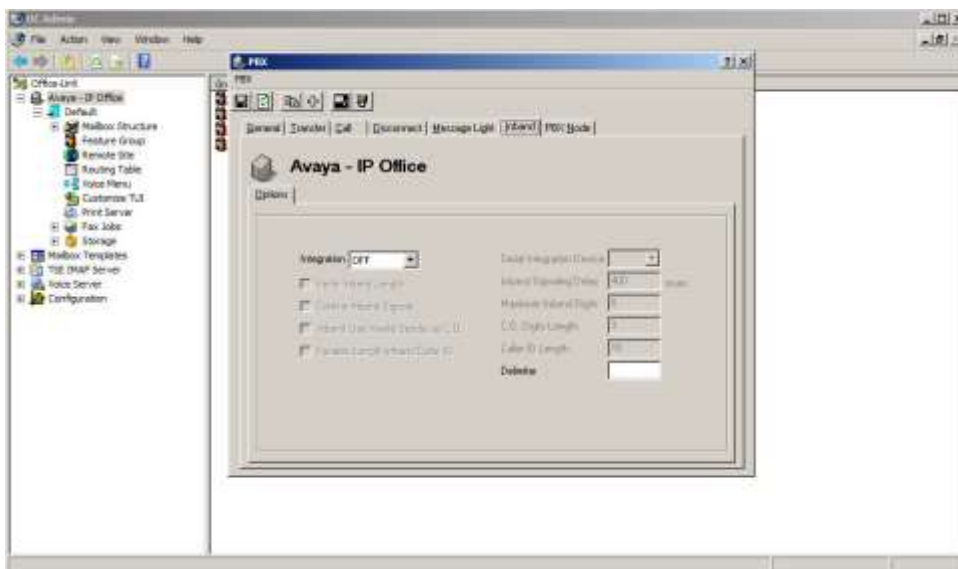
Note: If you are prompted to set the Message Light Integration type to Digital Digits, select No.

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6.3. Configure Computer Telephony Integration Setting

Go to **Configuration** → **Device Management Settings** → **CTI Settings** and set the following parameters:
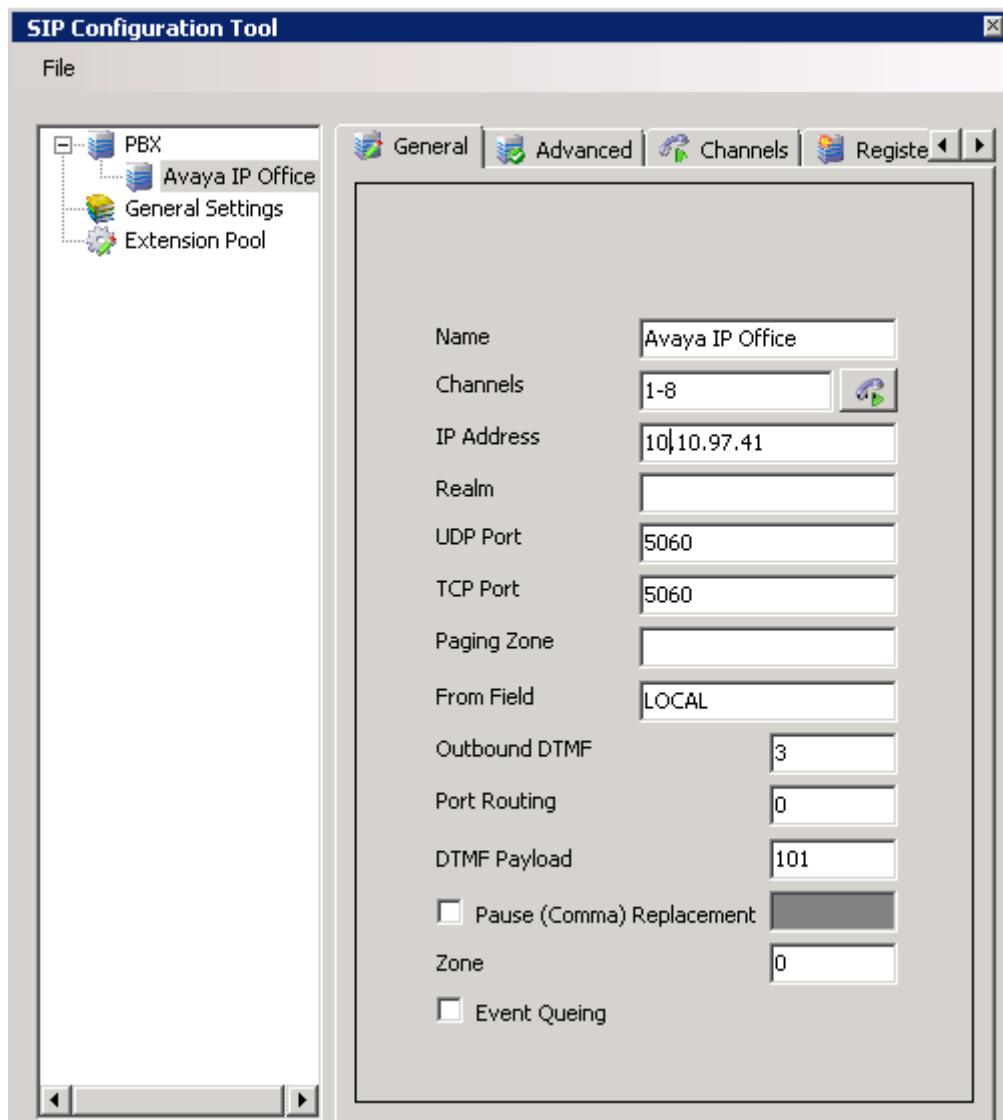
- **CTI Installed**   Enabled.
- **CTI Mode**   Set to TAPI.
- **Pop Caller IF When Event** Enabled.

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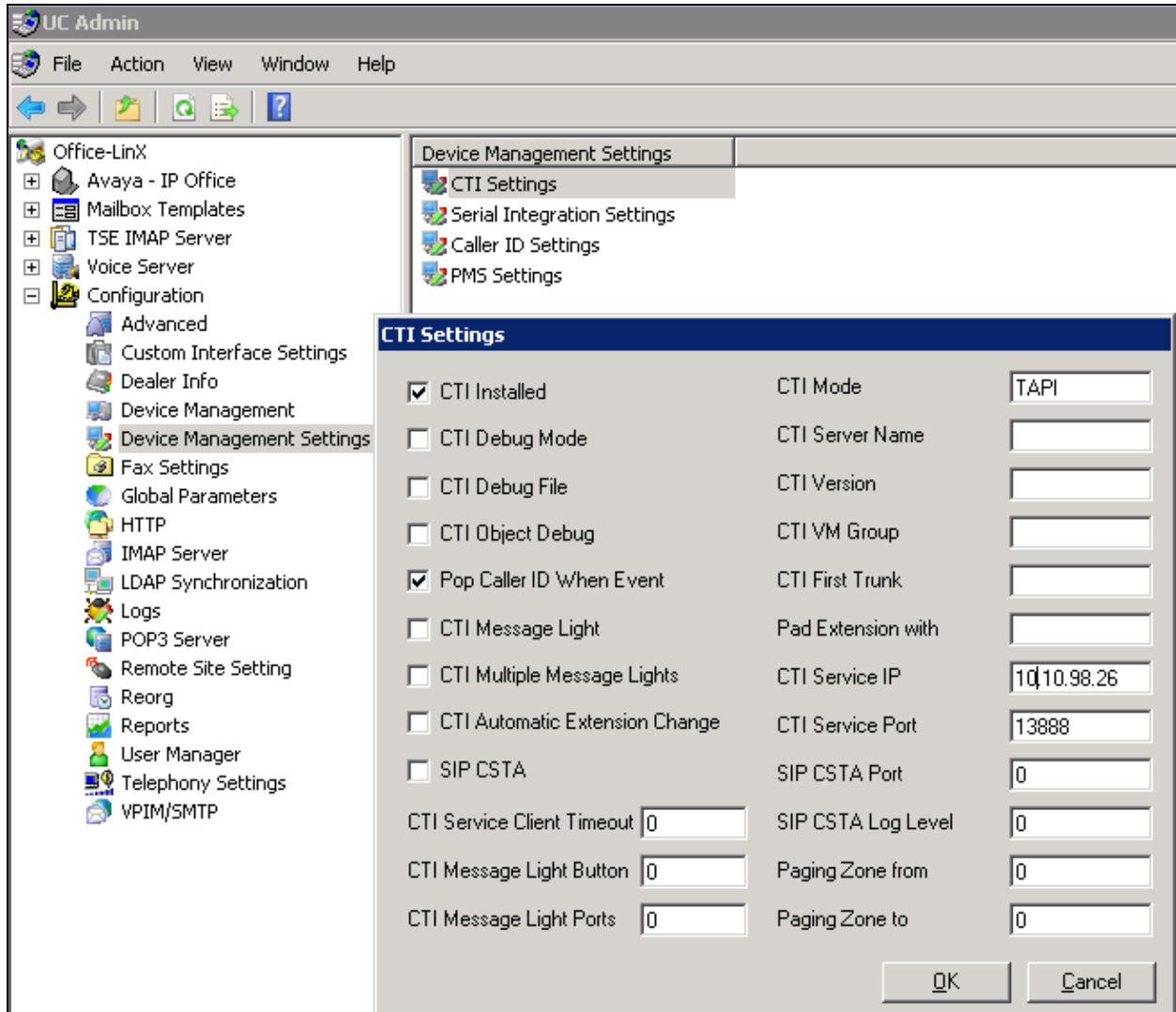
6.4. Configure SIP Trunk connection IP Office

In the Officelinx SIP configuration tool interface, go to **PBX → General** and set the following parameters:

- **Name**   Label for this PBX connection.
- **Channels**   Define a range where the total quantity is the number defined for the Max Calls or Channel for the Esna Officelinx SIP trunk connection on IP Office.
- **IP Address**   IP address of the IP Office network interface, in this case it is 10.10.97.41.

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Go to the **Advanced** tab and set the following parameters:
- **Enable Internal Bridging**   Enabled.
- **Accept Refer**   Disabled.
- **Accept Forwarded Calls**   Disabled.

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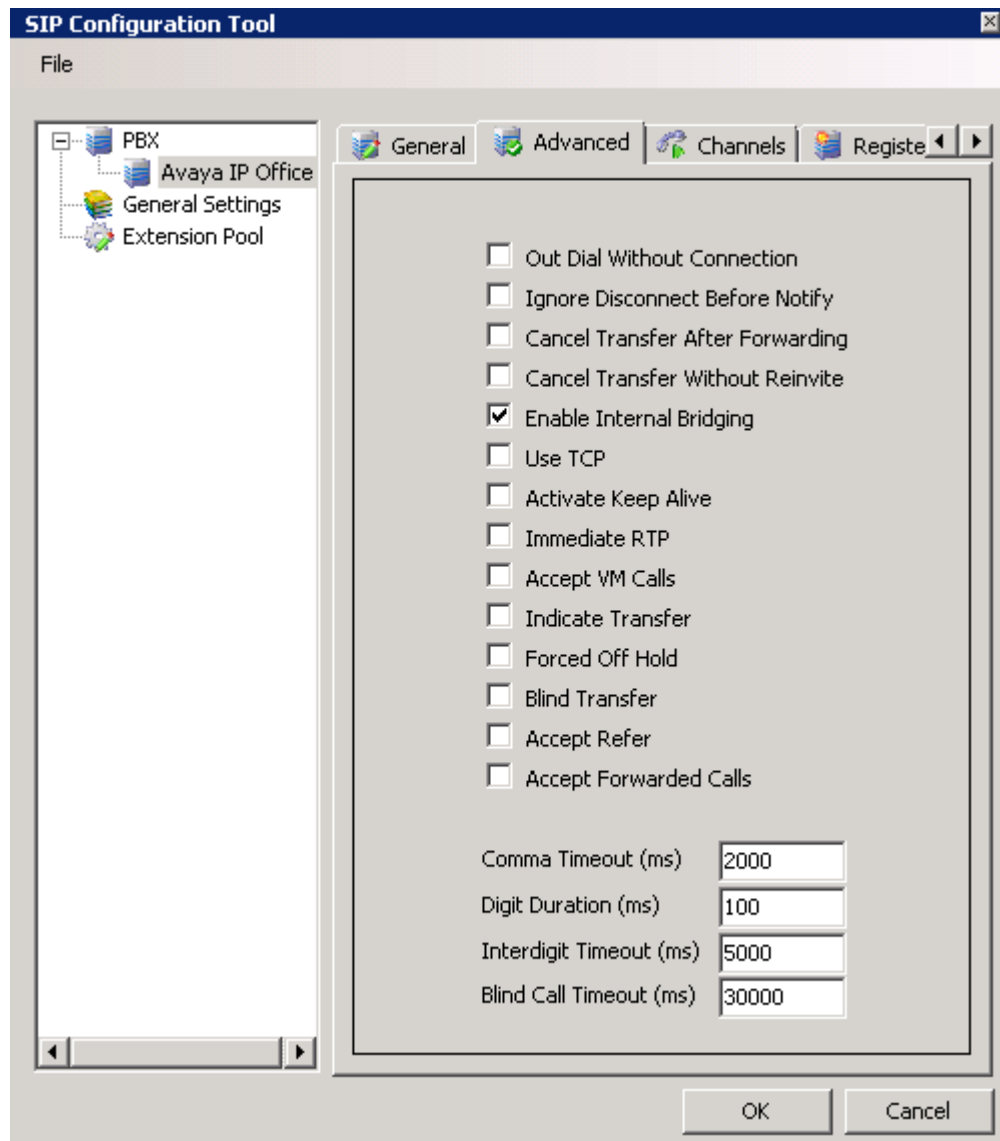
Navigate to the **Channels** tab and set the following parameters:
Set the first channel to the short code number defined for dialing the trunk on IP Office, in this case it is 780.
Set the remaining channels as asterisks (*) to indicate trunk connectivity.
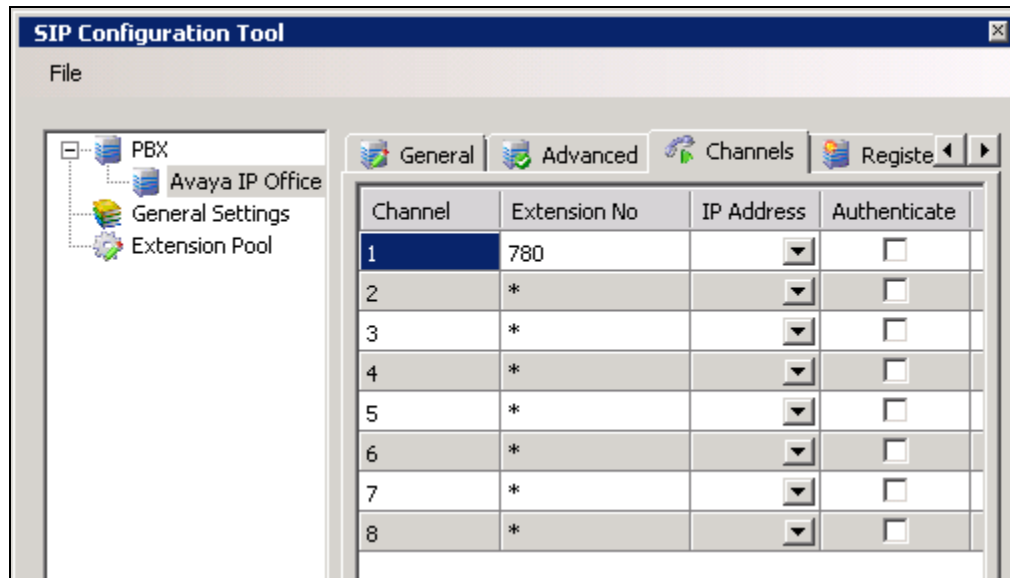
Upon completion of the configuration process, a restart of the Esna Officelinx voice and CTI services will be required, simply reboot Officelinx server.

6.5. Configure User Mailbox in Officelinx Admin

Expand the **OfficelinX → Avaya IP Office → Default → Mailbox Structure**. In the right panel, right click on the window, select new to add new mailbox (not shown).

This section describes a sample configuration of mailbox 26004 for device 9608 H323 and this mailbox is linked to ipoesna1@gmail.com.

In **General** tab:
- **Mailbox Number**   Enter the extension of physical device, 26004.
- **Feature Group**   Select 1: Default Users; this is super group which setup to ensure that there are no conflicts between Officelinx and gmail for more information please see document from ESNA in **Section Error! Reference source not found.**.
- **Last Name**   Enter any name, example: Hanz.
- **First Name**   Enter any name, example: Gomez.

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In **Advanced** tab:
- **Domain Account Name**   Enter **Gmail account** which connect to this mailbox ipoesna1@gmail.com.
- **Desktop Capabilities**   Select **Messaging & Collab**.
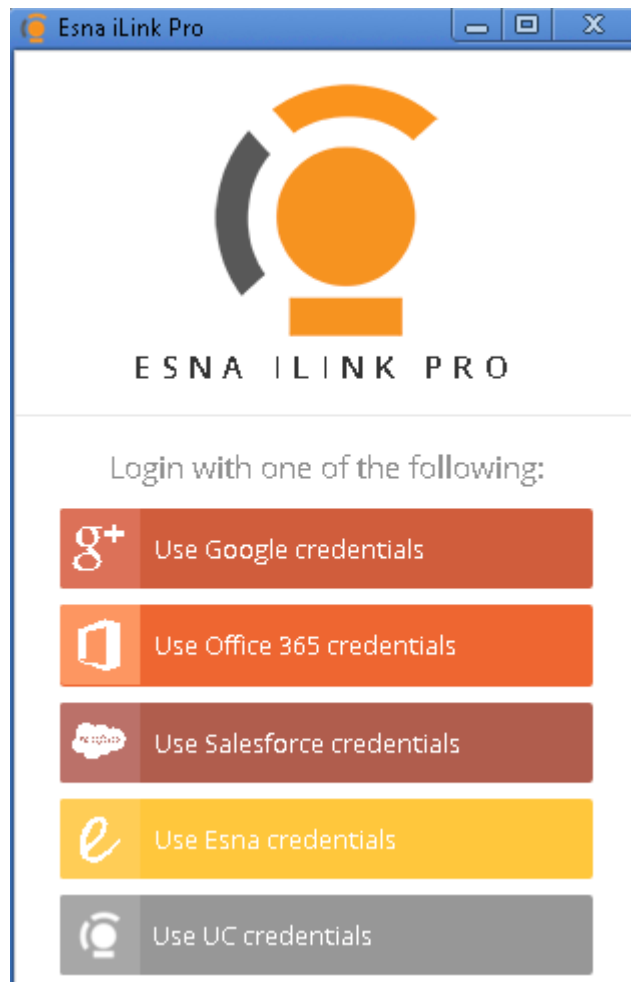

Click **Save** to save changes.

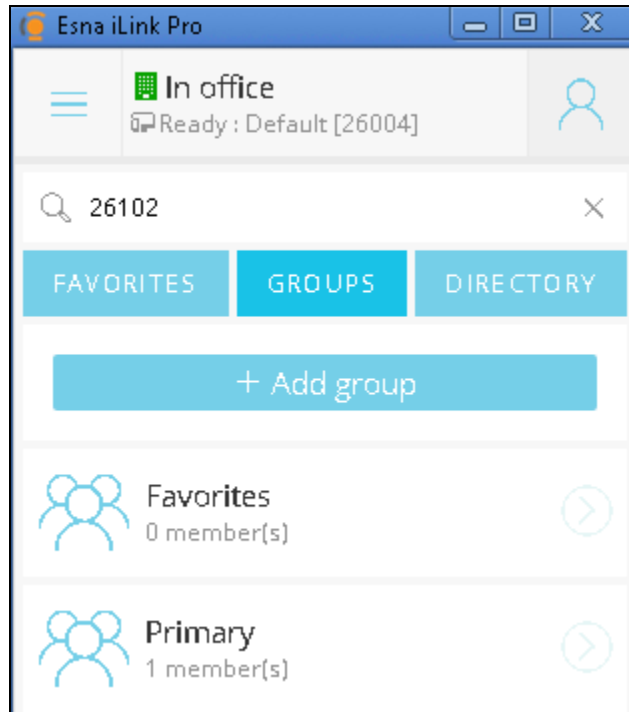## 6.6. Install and Configure iLink Pro

Note that iLink Pro is the google application made by Esna this can be found in the Google Store. Using Google Chrome browse to Chrome store. Perform the search for **iLink Pro**. Select **Extension** tab. Click on **Add to Chrome** to install **ESNA iLink Pro**. Follow the instructions to install **iLink Pro**.

In Chrome browser, user login as ipoesna1@gmail.com. Click **on iLink Pro** icon to launch iLink Pro. Select **Use Google credentials** to login. Follow the instruction on the screens to login (not shown).

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Below is the screenshot of iLink Pro login successfully using extension 26004 created above in Officelinx.

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7. Verification Steps

Verify that Officelinx TAPI successfully is connected to IP Office and able to retrieve full list of devices on IP Office. On Officelinx, follow C:\UC\Logs\VServer\EETapiSvcmmddyy.log.

```
13:04:26.220 DBG 0cbc-  1-<26002>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc-  2-<26600>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc-  3-<26603>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc-  4-<26604>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc-  5-<26605>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc-  6-<26606>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc-  7-<26608>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc-  8-<26609>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc-  9-<26610>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc- 10-<26601>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc- 11-<26607>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc- 12-<26007>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc- 13-<26009>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc- 14-<26011>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc- 15-<26012>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc- 16-<26013>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc- 17-<26006>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc- 18-<26004>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc- 19-<26010>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
13:04:26.220 DBG 0cbc- 20-<26008>[CDevice:SetMonitor] Add Monitor, QueueSize: 1
```

Verify the SIP trunk between IP Office and Officelinx is up.

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Verify that user able to make the call to other iLink Pro user, user with extension 26004 click-to-call to extension 26102 (not shown) and below shown the call is connected between 2 users.
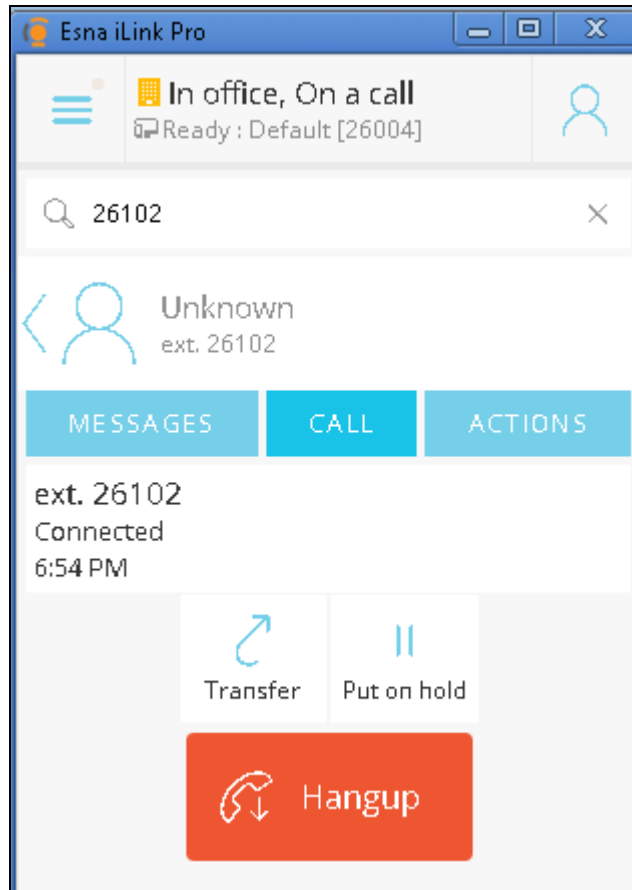
8. Conclusion

These Application Notes describe the configuration steps required for Officelinx to successfully interoperate with Avaya IP Office Server Edition 9.1. All features and serviceability test cases were completed with observations noted in **Section 2.2.**

9. Additional References

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

    [1] Avaya IP Office Manager Release 9.1 Issue 10.27 October 2015

Product Documentation for Esna Officelinx can be obtained in the installed software or at: http://documents.esna.com/officelinx/officelinx-10-0

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SPOC 12/4/2015

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