Avaya Solution & Interoperability Test Lab

Application Notes for Configuring the ESNA Telephony Office-LinX v8.0 with Avaya Business Communications Manager Release 6.0 - Issue 1.0

Abstract

These Application Notes describe the procedure for configuring the ESNA Telephony Office-LinX v8.0 to interoperate with the Avaya Business Communications Manager Release 6.0.

The Telephony Office-LinX Enterprise Edition server connects to the Avaya Business Communication Manager via SIP connectivity and provides unified communications features such as greeting menu, user mailbox services, wake up services and transfer functionalities.

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 procedure for configuring the ESNA Telephony Office-LinX v8.0 (TOL) to interoperate with Avaya Communications Manager (BCM) Release 6.0.

The objective of this compliance testing is to verify that TOL can connect via SIP trunk to the BCM and provide unified communication services like greetings, messaging and transfer functionalities.

1.1. Interoperability Compliance Testing

The interoperability compliance test included features and serviceability that operate via SIP connectivity. The focus of the compliance testing was primarily on verifying the interoperability between ESNA TOL v8.0 and the Avaya BCM R6 so that the following features operate:

- BCM clients can access the TOL pilot number.
- TOL can access the BCM clients.
- TOL provides messaging services to the BCM clients.
- TOL can conduct transfer operations for the BCM clients.

1.2. Support

Technical support for the ESNA Telephony Office-LinX solution can be obtained by contacting ESNA:

- URL – techsupp@esna.com
- Phone – (905) 707-1234

2. Reference Configuration

Figure 1 illustrates the configuration used in these Application Notes. The sample configuration shows an enterprise with a BCM talking to the TOL via a SIP trunk. The BCM has an analog, a digital and an IP Telephone connected as endpoints.

For interoperability, the TOL requires the use of the G.711MU codec, and transmission of DTMF tones using RFC2833.

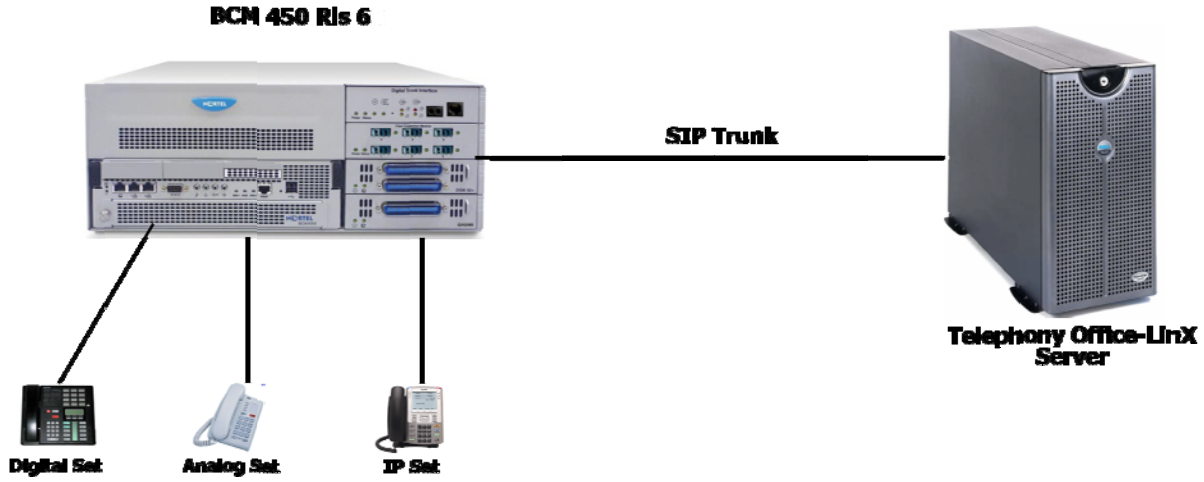

Figure 1: Solution Configuration

3. Equipment and Software Validated

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

Equipment		Software/Firmware
Avaya BCM 450		System software version : 10.0.1.02.120 Software version : Avaya BCM450 Rls 6 Manufacturer s/w version : 450.06
Avaya Telephones		
	M7310 (Digital) Link (Analog) I2007 (IP)	06PAF20 06AEB00 0621C7G
ESNA Telephony Office-LinX		8.0.0.0163

4. Configure Avaya BCM R6

This section describes the procedure for setting up BCM R6. The steps include setting up SIP trunking, IP Trunks, Dialing plan, Target lines and Active sets. The highlights in the following screens indicate the values used during the compliance test. Default values may be used for all other fields. Please keep in mind that the values used in this guide may be unique to the example shown. User will have to use values unique to their site, where this solution is being deployed (e.g., site's IP address, extension numbers, etc).

BCM configurations can be performed through Business Element Management only.

4.1. SIP Trunking Configuration

This section explains the steps to configure a SIP trunk routing entry that will access the TOL server from the BCM.

After logging into the BCM element manager, configure a private routing entry for the SIP trunking by selecting,

Configuration > Resources > IP Trunks > SIP Trunking

Select the tab ***Private > Routing Table*** to add a routing entry as shown in Figure 2 below.

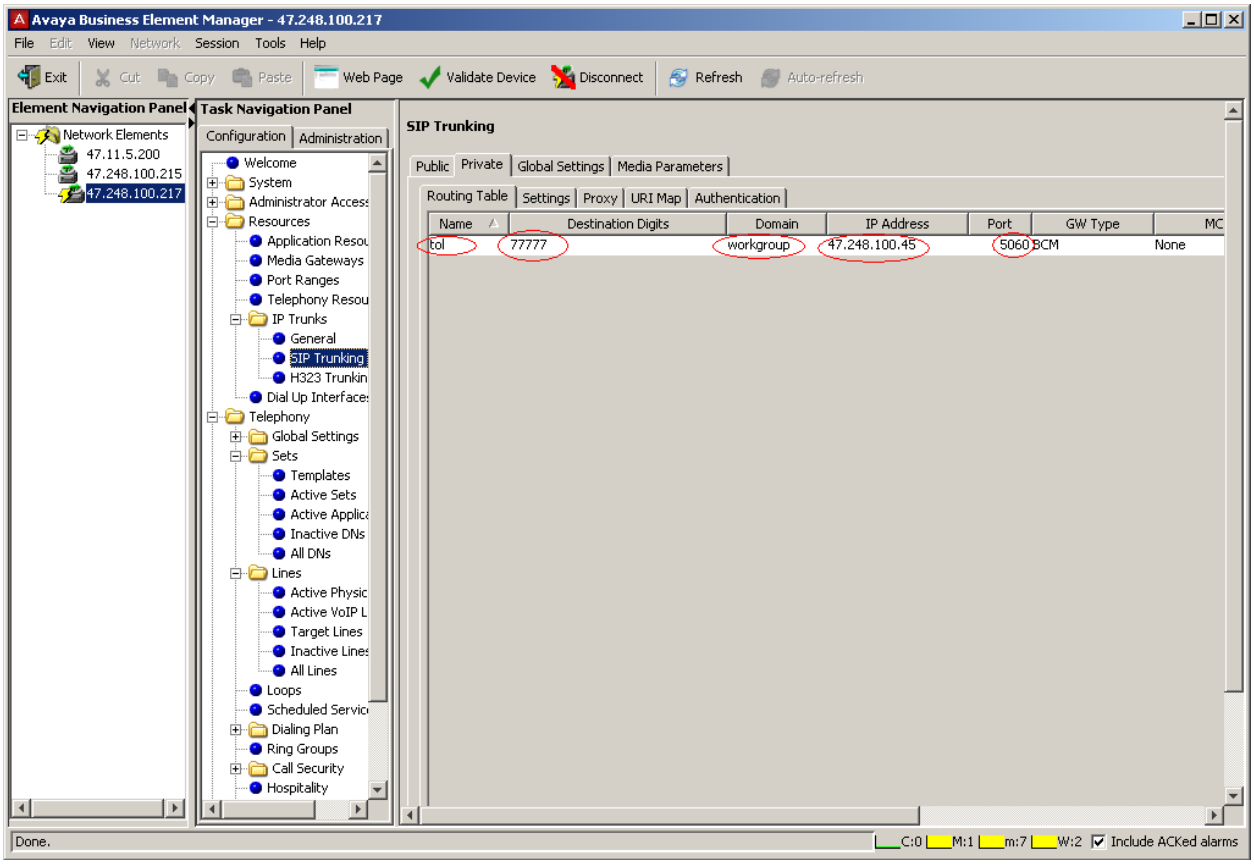

Figure 2: Routing Table

- Destination digits represent the pilot number used to call the TOL.
- Domain is the local network domain that the TOL server resides in.
- IP address is the TOL server's assigned IP.
- Port 5060 is the default SIP port.

To configure the SIP Trunking URI Map, go to:

Configuration > Resources > IP Trunks > SIP Trunking

Select the tab ***Private > URI Map*** as shown in Figure 3 below.

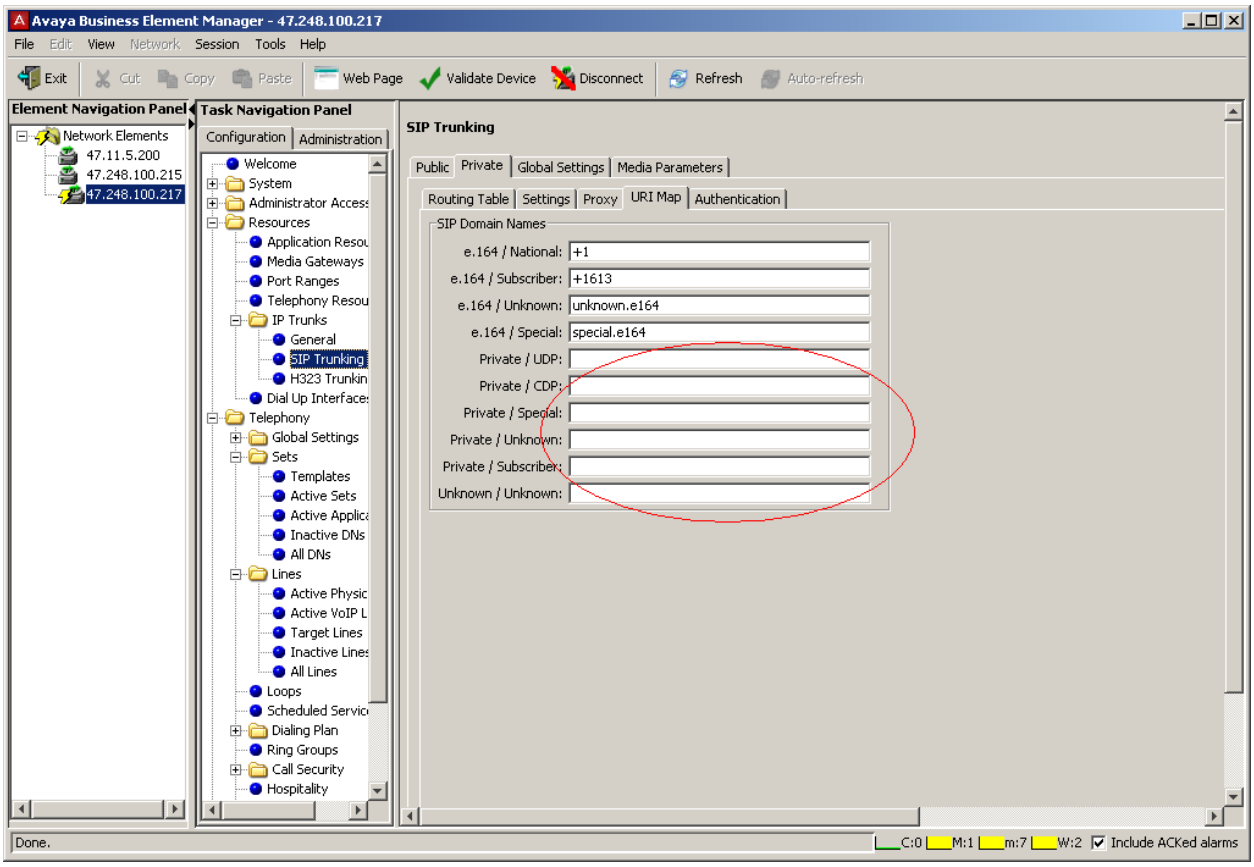

Figure 3: URI Map

Do note here that some values need to be blank for the TOL to integrate correctly with the BCM. Entering any values here will cause the integration to fail since TOL does not recognize these values. For example if you populate *Private/CDP* field with *cdp.udp*, the BCM tags the phone context in the SIP messages and TOL does not recognize these and therefore fails to integrate with BCM.

To configure the SIP Trunking Global settings go to:

Configuration > Resources > IP Trunks > SIP Trunking

Select the tab ***Global Settings*** as shown in Figure 4 below.

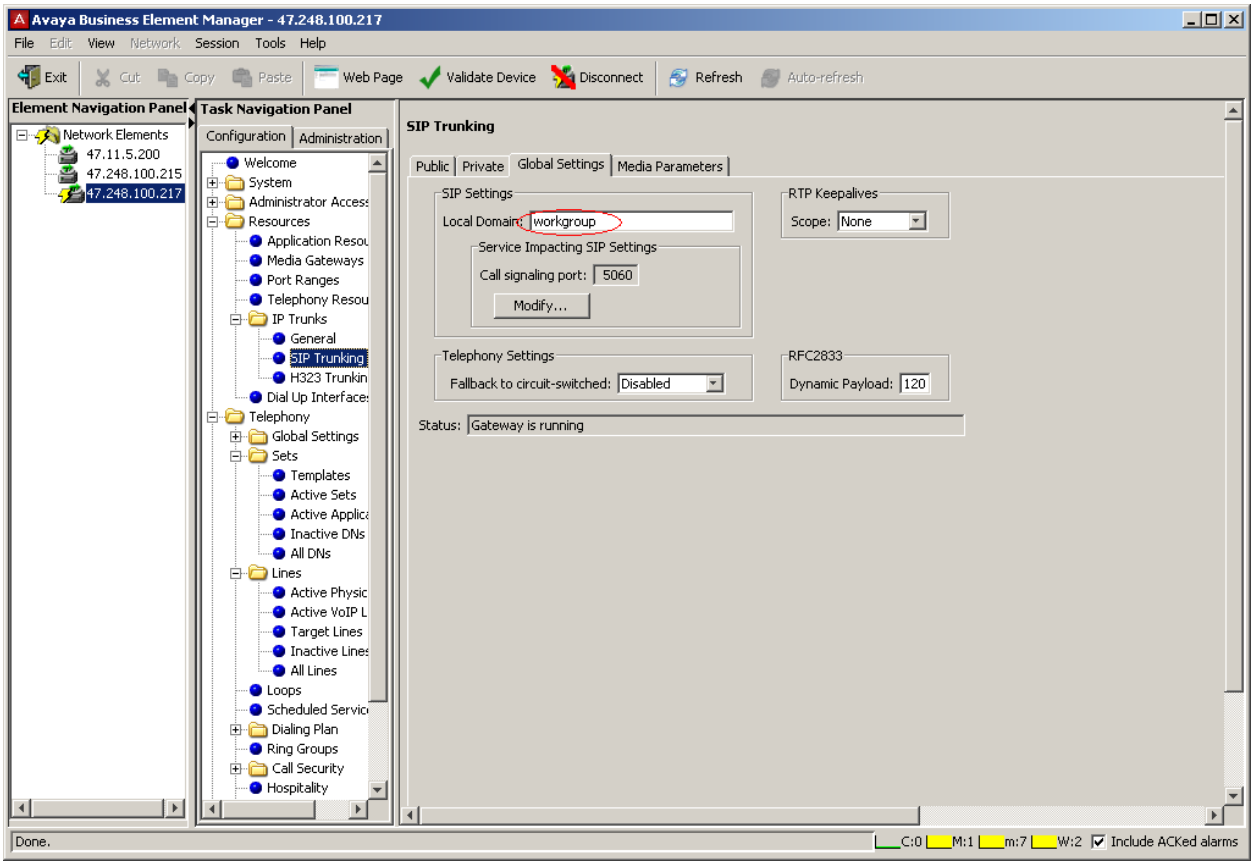

Figure 4: Global Settings

- Local Domain is the defined domain that the TOL system is assigned to.

4.2. IP Trunks Configuration

This section describes how to configure the general IP trunk settings.

To configure the general IP trunk settings, go to:

Configuration > Resources > IP Trunks > General

In the Figure 5 shown below, select the ***IP Trunk Settings*** tab and change the *Forward redirected OLI* value to *First Redirect*.

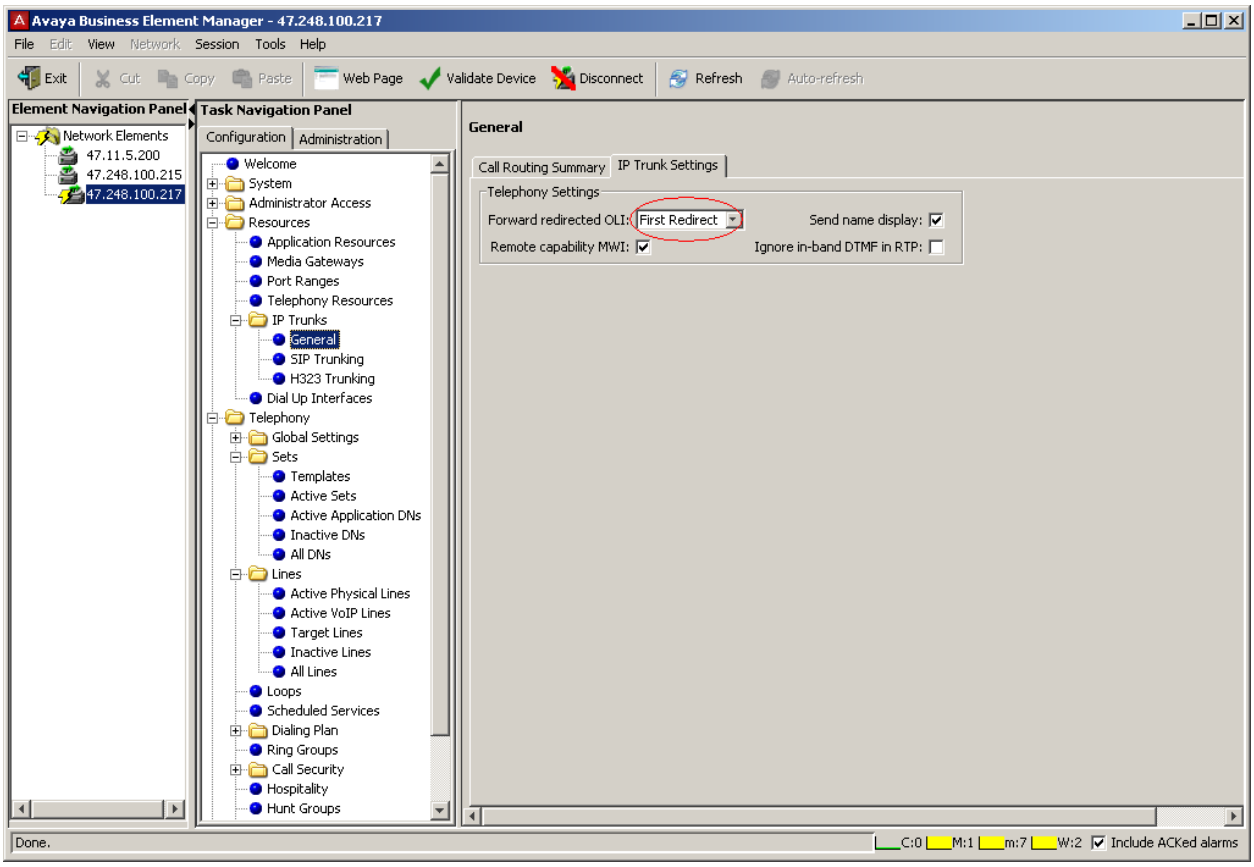

Figure 5: IP Trunk Settings

4.3. Dialing Plan Configuration

This section describes how to configure the dialing plan that will be used by the BCM to communicate with the TOL server.

To configure the dialing plan, select:

Configuration > Telephony > Dialing Plan > Routing

Add a route and classify it under *BlocA* pool as shown in Figure 6 below under the ***Routes*** tab.

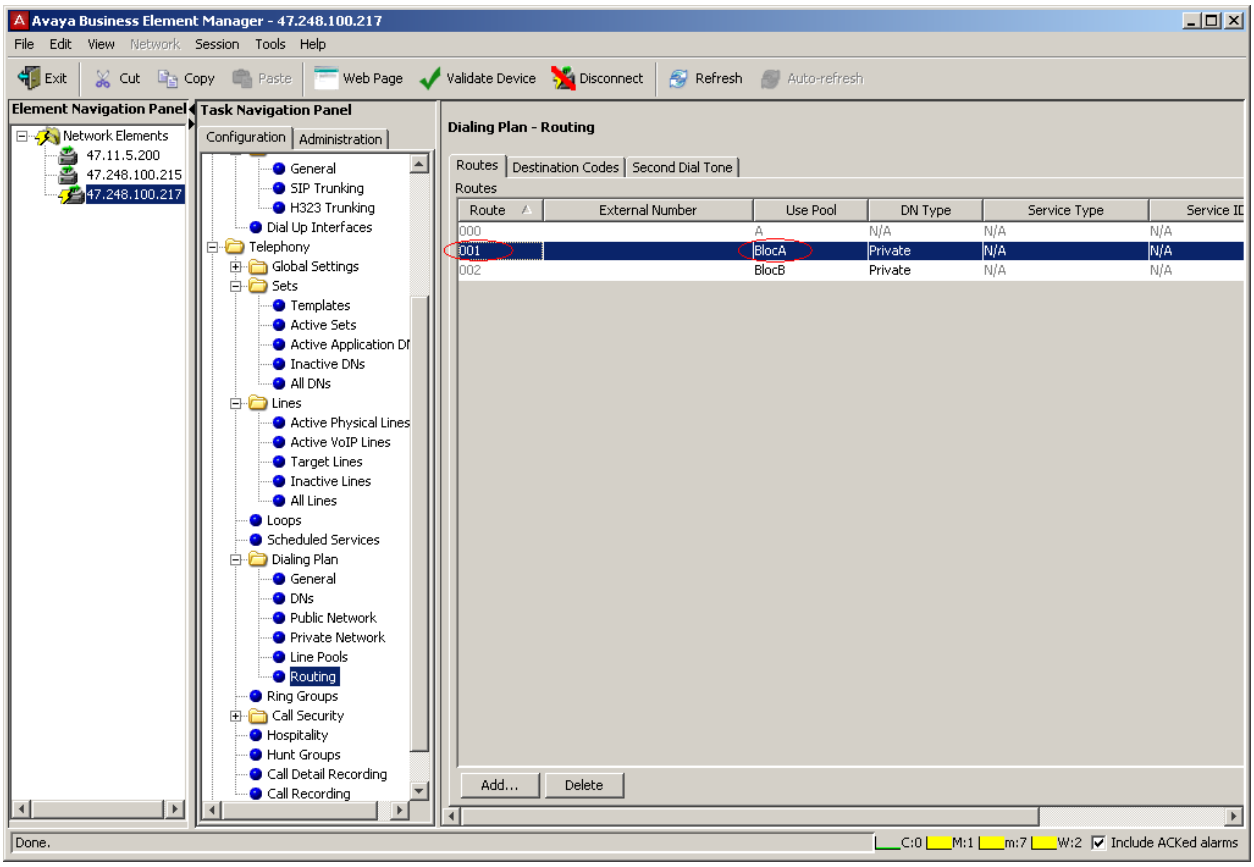

Figure 6: Routes

To configure the destination code that the newly added route will use, go to:

Configuration > Telephony > Dialing Plan > Routing

Add a destination code as shown in Figure 7 below under the ***Destination Codes*** tab.

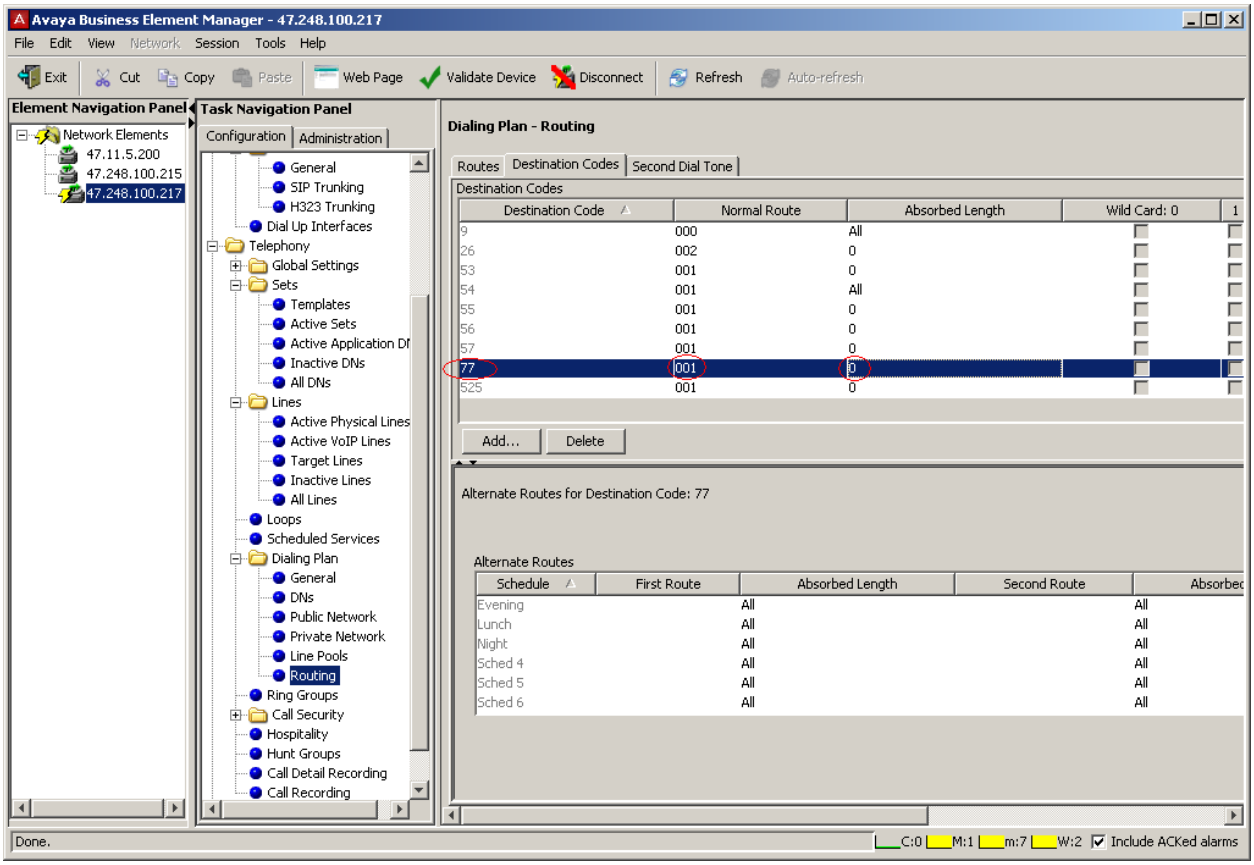

Figure 7: Destination Codes

The destination code 77 is chosen because the TOL pilot number used in the example is 77777.

To configure the private network that this newly added route will use, go to:

Configuration > Telephony > Dialing Plan > Private Network

Configure the private network as shown in Figure 8 below.

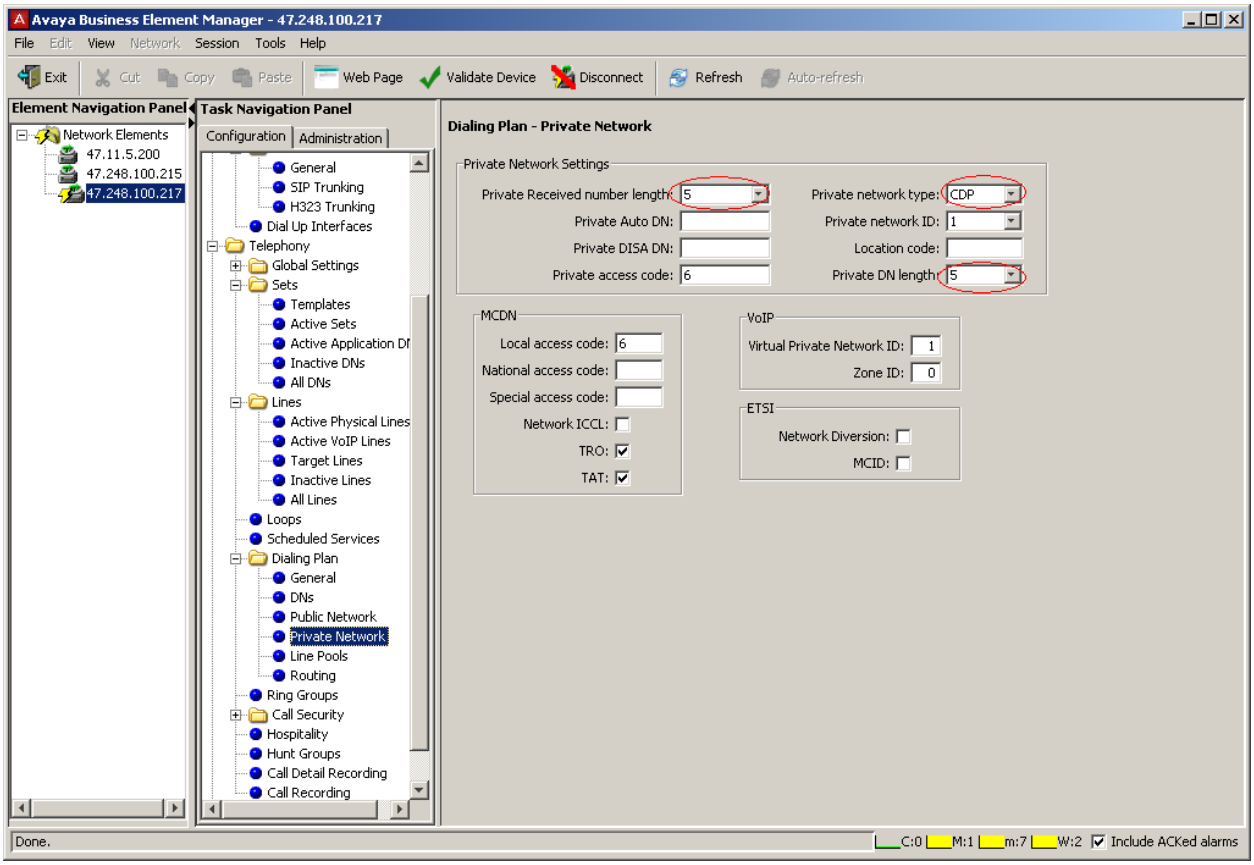

Figure 8: Dialing Plan – Private Network

The BCM used for compliance testing is set to 5 digit DN length and therefore the same format is used when entering the values for the DN length under the private network.

The private network type can be either CDP or UDP depending on the site's requirement.

While configuring the Public network under:

Configuration > Telephony > Dialing Plan > Public Network (not shown), the attribute for *Public Received number length* also needs to be *5* and attribute for *Public network dialing plan* needs to be *Public (Unknown).*

4.4. Target Lines Configuration

This section describes how to configure target lines which will be assigned to telephones that will be used as endpoints connected to the BCM.

To configure a target line, go to:

Configuration > Telephony > Lines > Target Lines

Select a line, and assign a DN. For example in the Figure 9 shown below, line 410 has been selected and a DN 22624 has been assigned by clicking on the ***Add*** button under the ***Assigned DNs*** tab.

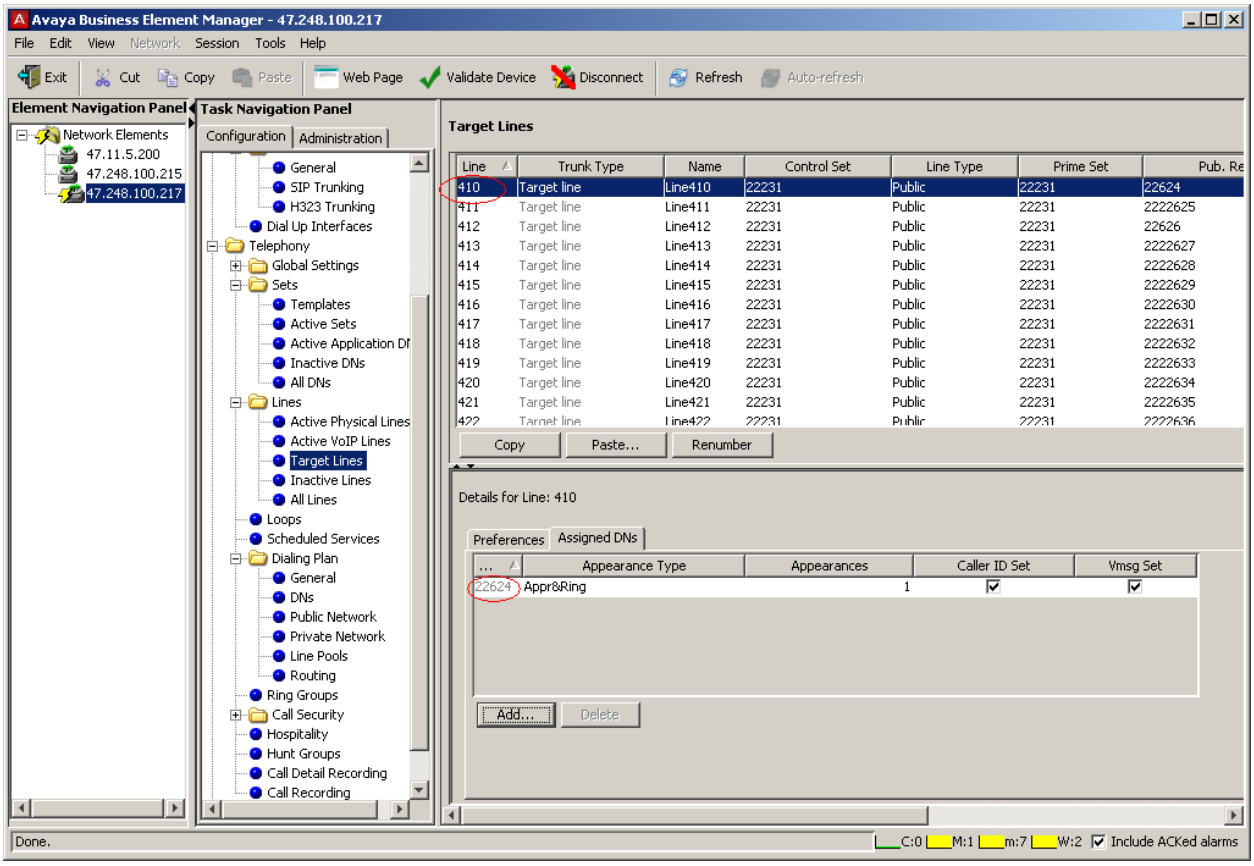

Figure 9: Target Lines

- Add unique set DN to one Target line.
- Requires one line assignment for every telephone device in the system.

Also for the assigned set to generate busy tone while it is busy, the *Busy tone* option in *If Busy* field found under the ***Preferences*** tab has to be selected as shown in Figure 10 below.

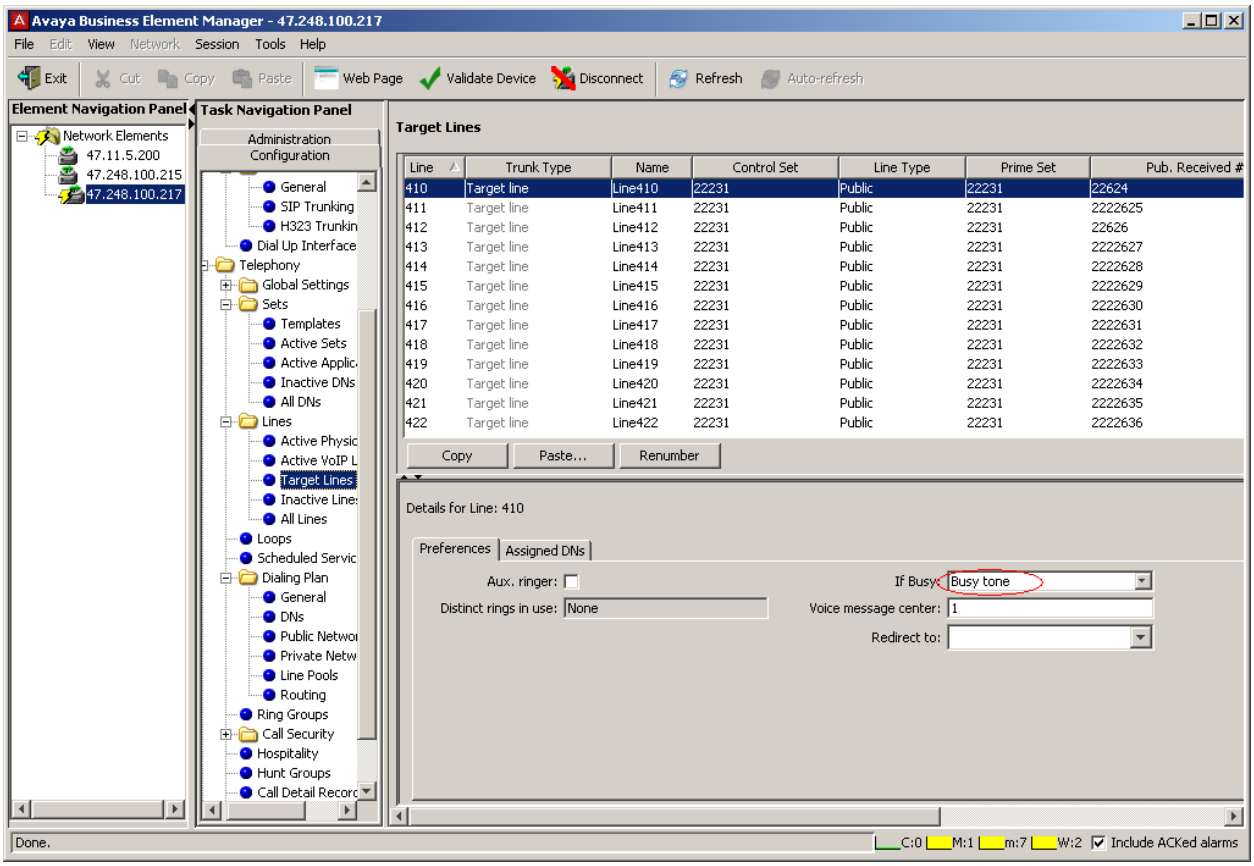

Figure 10: Busy Tone

4.5. Active Sets Configuration

This section describes the steps to configure the sets that has been assigned to a line as explained in section 4.4

To configure the Active sets, go to:

Configuration > Telephony > Sets > Active Sets

In the example shown in Figure 11 below, DN 22624 is assigned to line 410. The *Fwd No Answer* and *Fwd Busy* fields under ***Line Access*** tab has been populated with 77777, which is the pilot number of the TOL.

In the bottom window ***Line Assignment*** tab, the *Vmsg Set* box is enabled so that TOL voice mail can be accessed by the DN 22624 and the DN value is populated in the *Priv. Received #* and *Pub. Received #* fields.

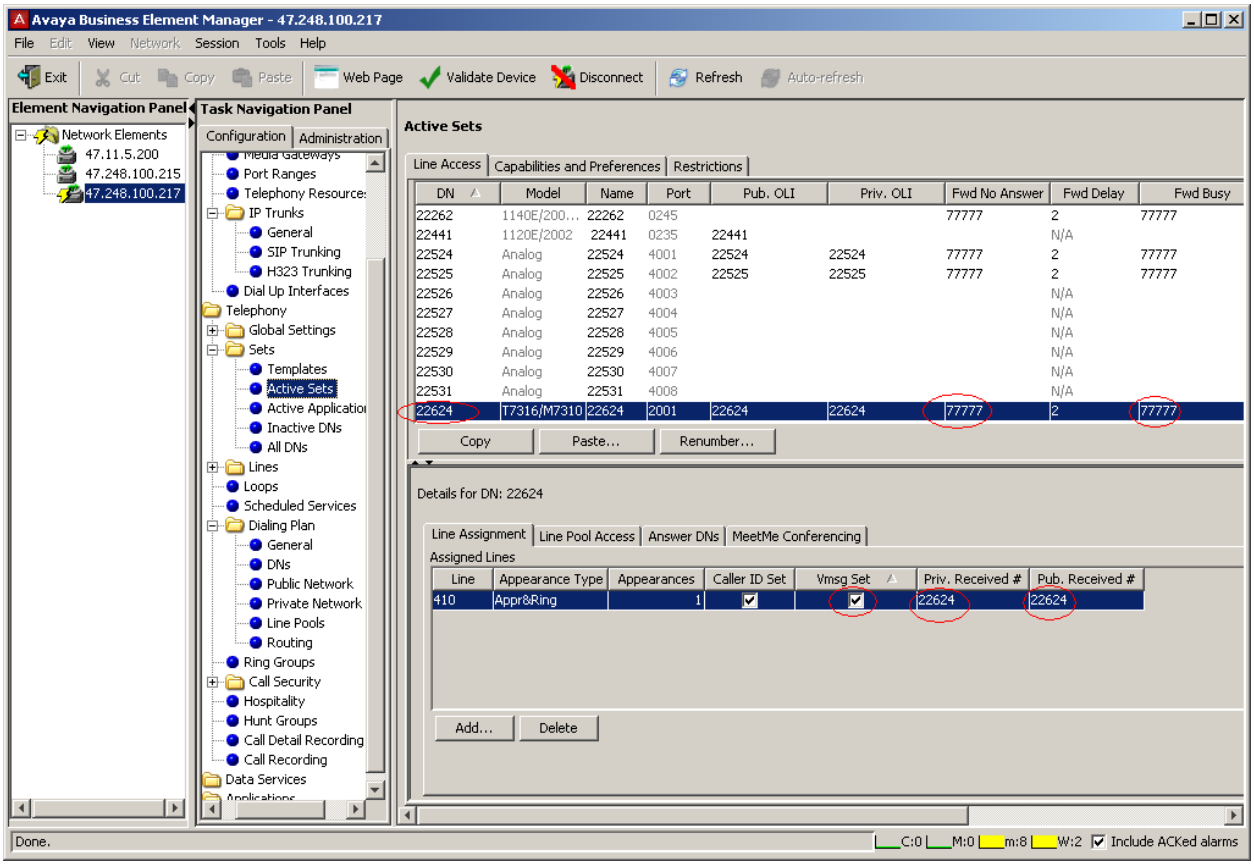

Figure 11: Active Sets

Figures 12 and 13 below show the additional configurations to be done to the selected DN which has to be member of the *BlocA* pool found in the ***Line Pool Access*** tab and fields *DND on Busy* and *Allow redirect* boxes needs to be enabled. These latter two fields can be found under the ***Capabilities and Preferences*** tab.

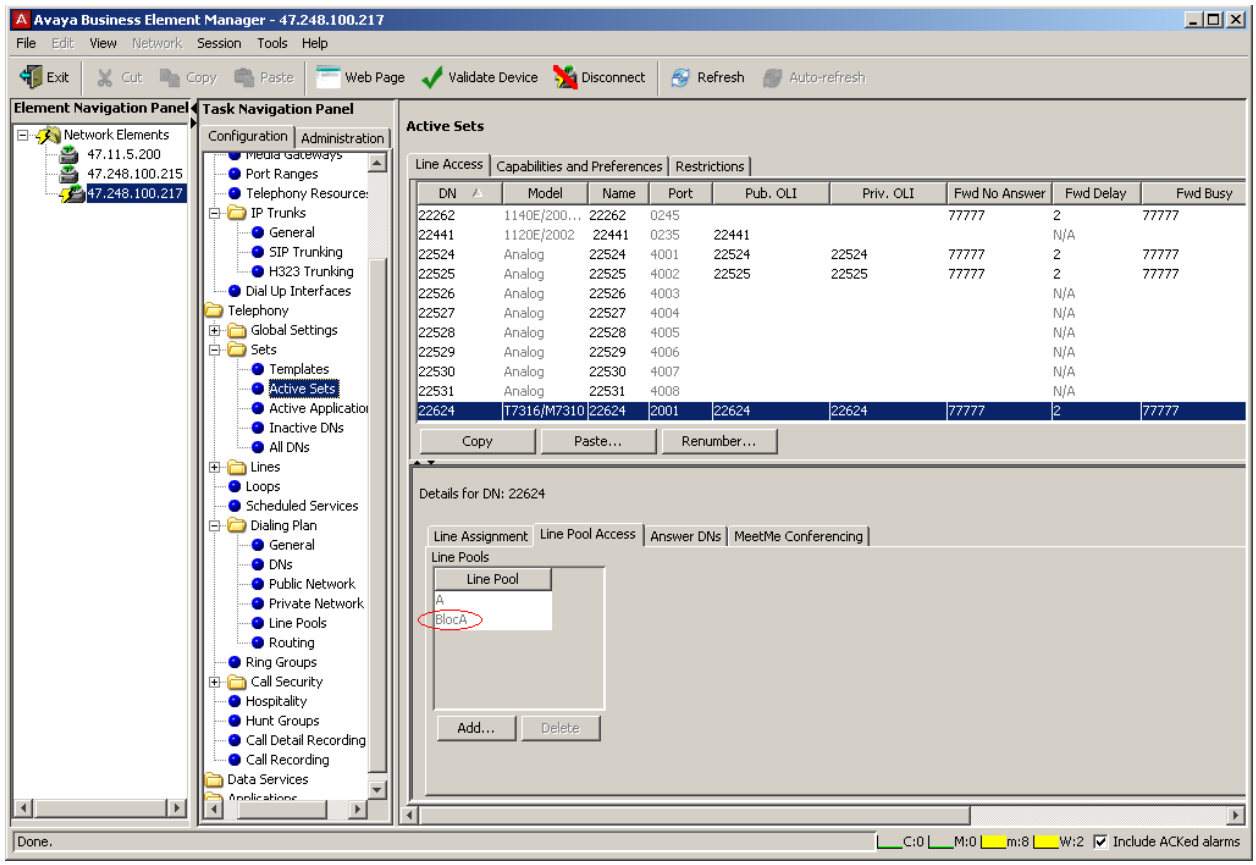

Figure 12: Line Pool

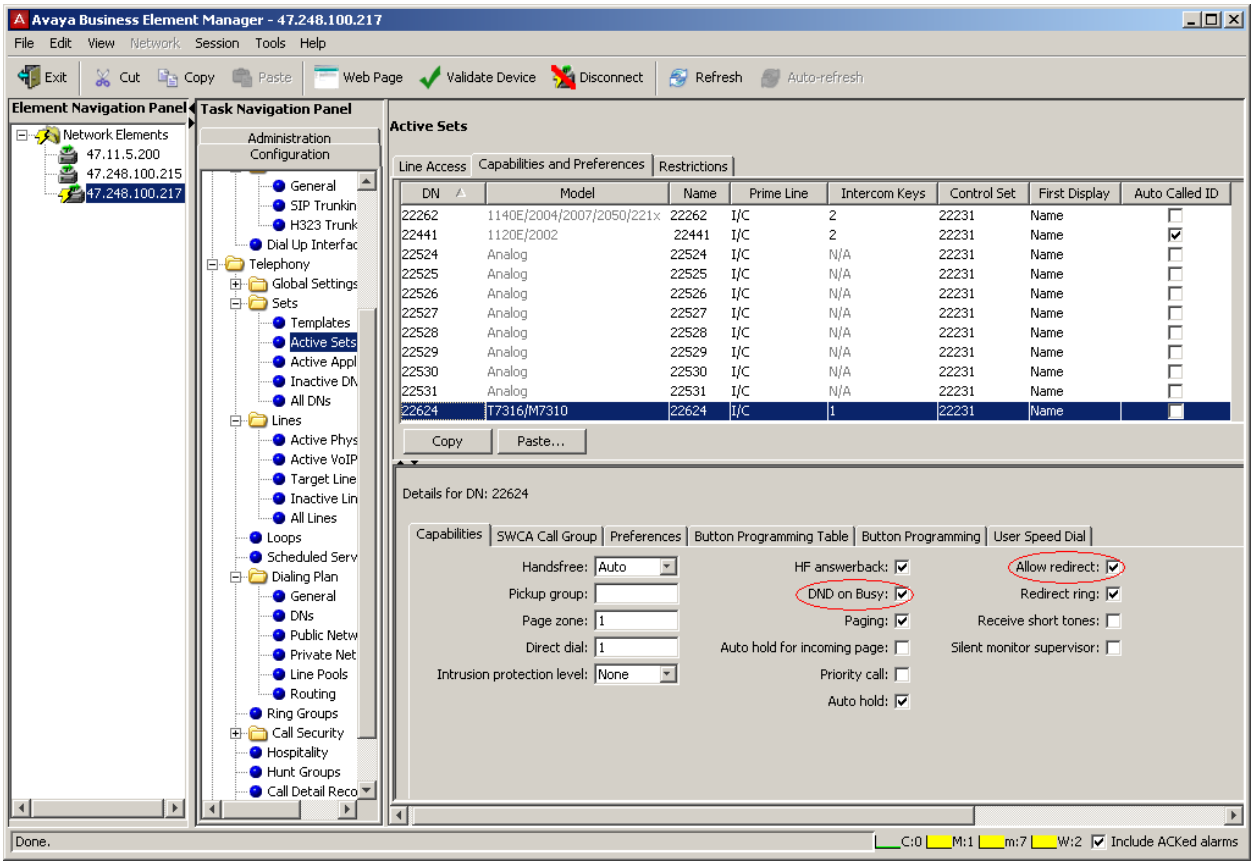

Figure 13: Capabilities

5. Configuring the ESNA Telephony Office-LinX

ESNA installs, configures, and customizes the TOL application for their end customers. Thus, this section only describes the interface configuration, so that the TOL can talk to the BCM R6. Highlighted values are the ones that were configured for the compliance test.

For further details on the TOL configuration steps not covered in this document, refer to section 9.

The integration of TOL with BCM R6 is done from the TOL's SIP Configuration Tool. Figures 14 to 19 shown below explain the configuration to be completed on the TOL platform.

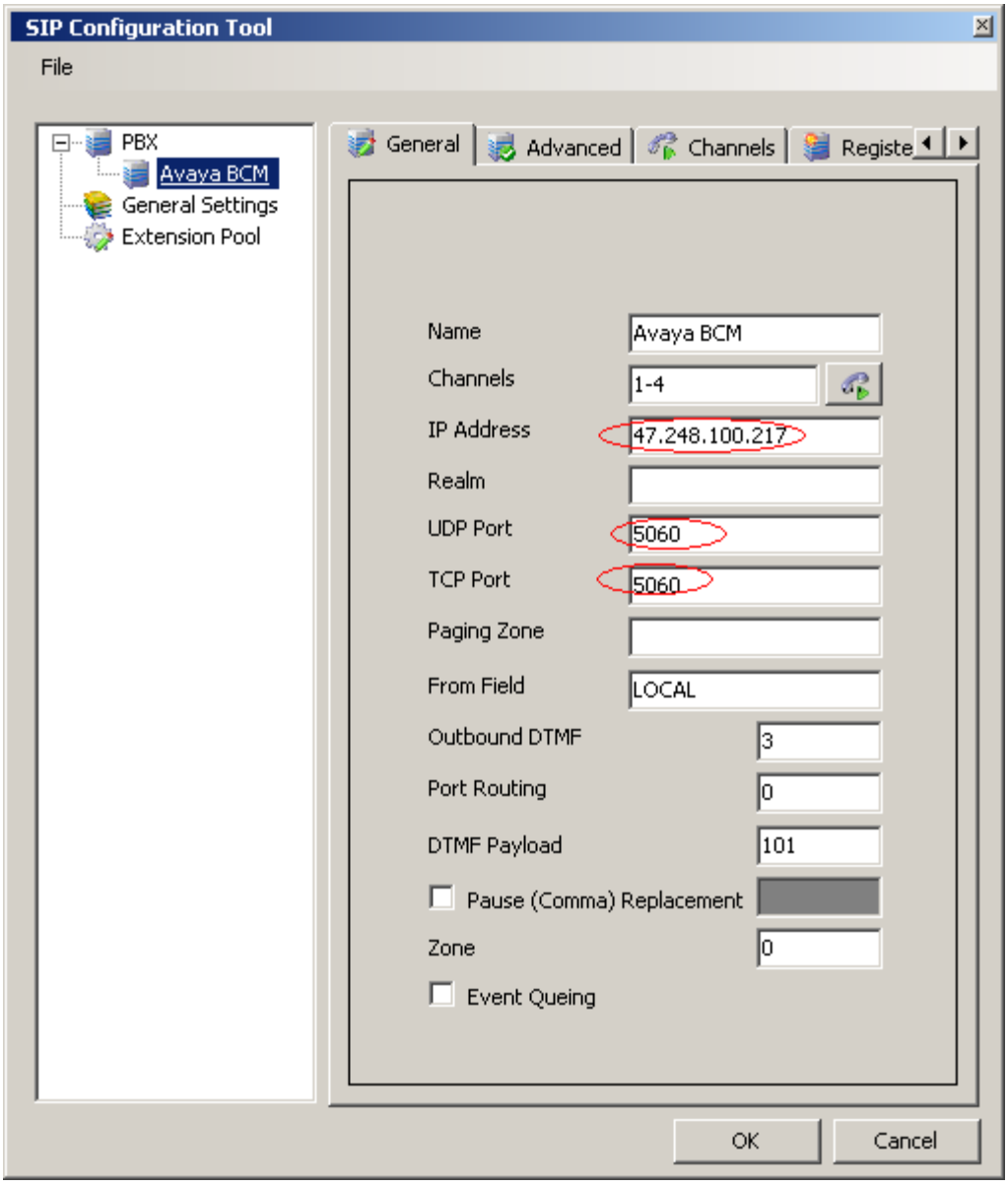

Figure 14: General

- IP Address refers to the IP address of the BCM R6.
- Port 5060 is the default SIP port value.

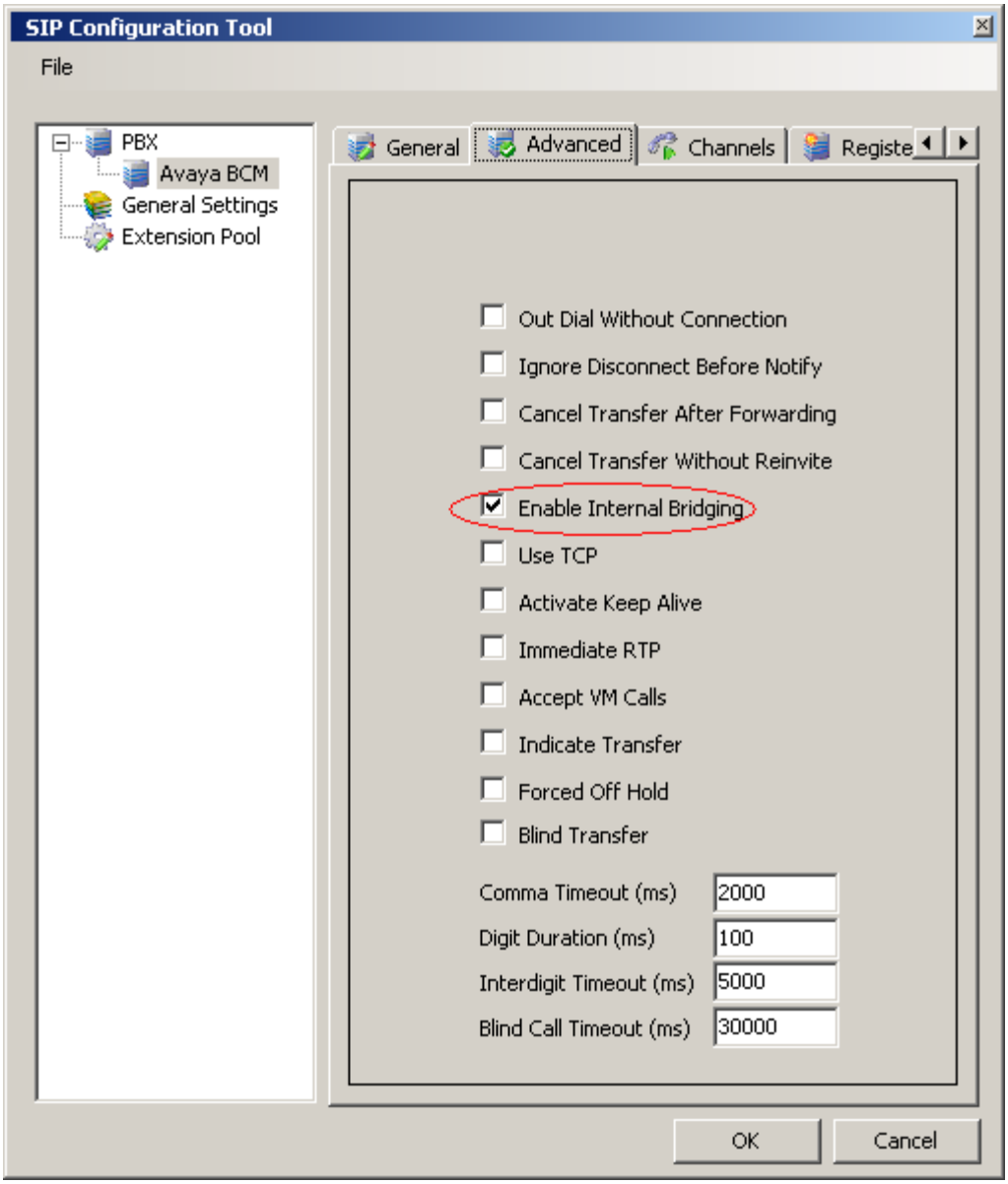

Figure 15: Advanced

- Enable Internal Bridging should be checked.

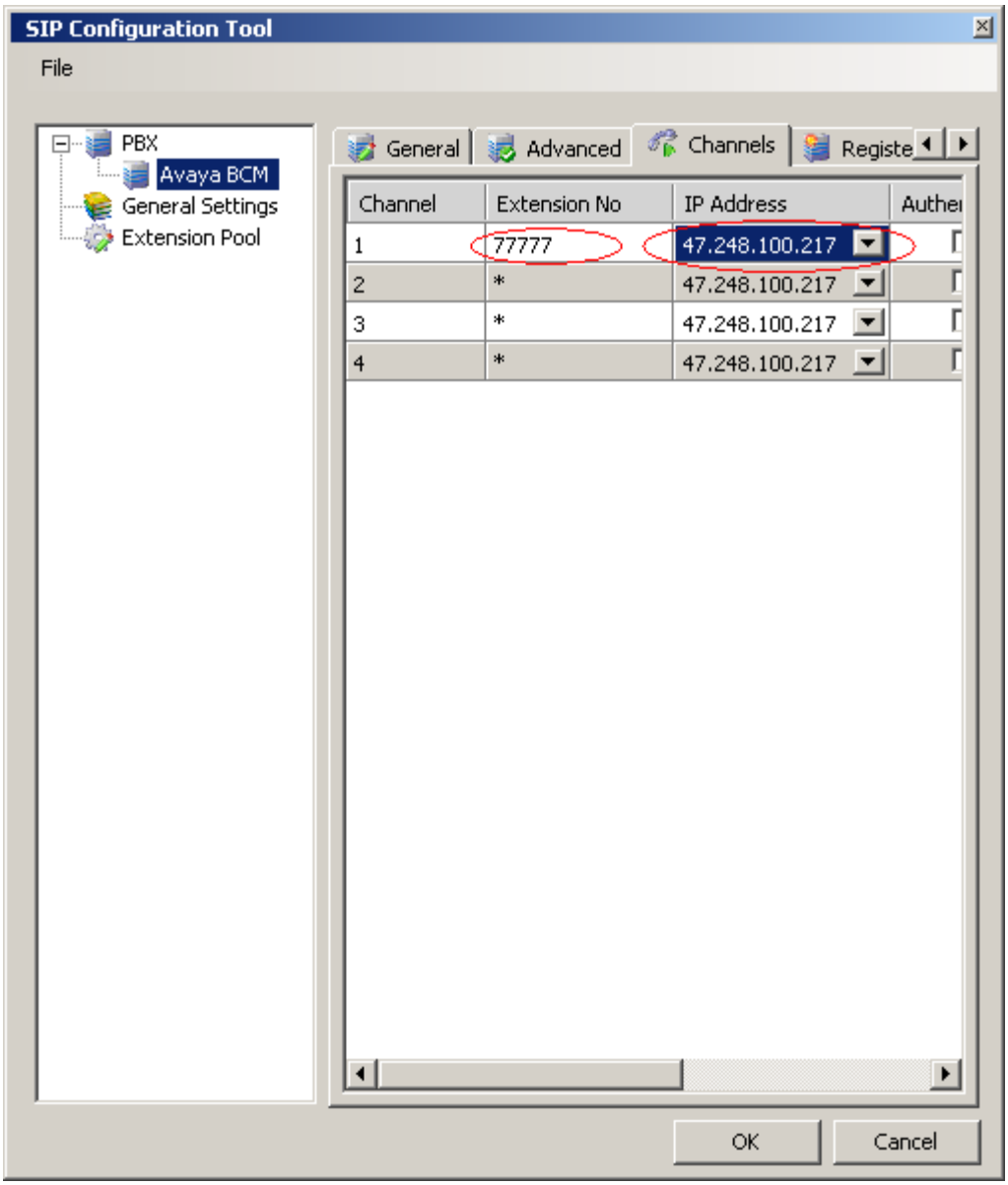

Figure 16: Channels

- Extension No 77777 is the TOL's pilot number.
- IP Address is the IP address of the BCM R6.

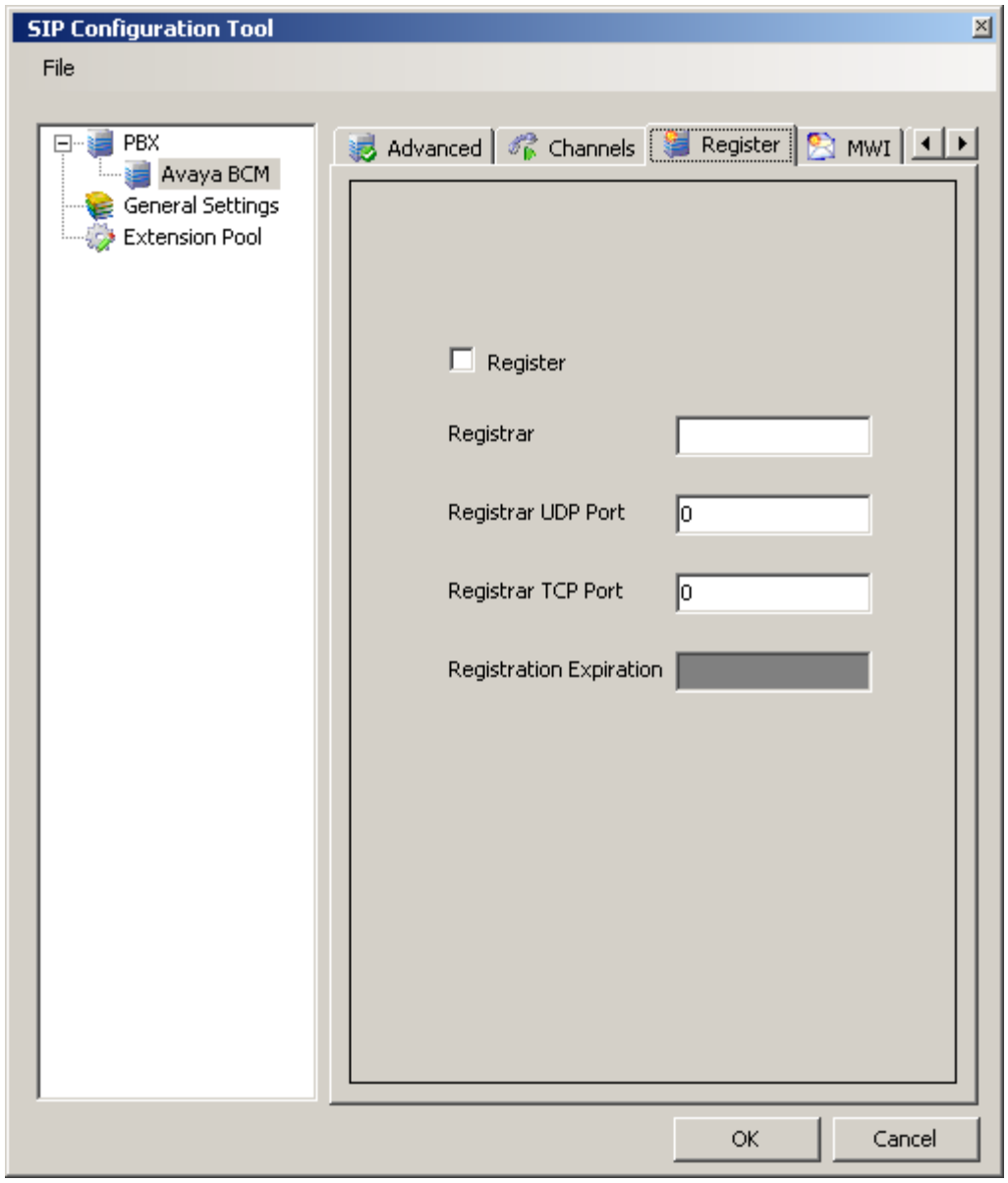

Figure 17: Register

- Leave values as default.

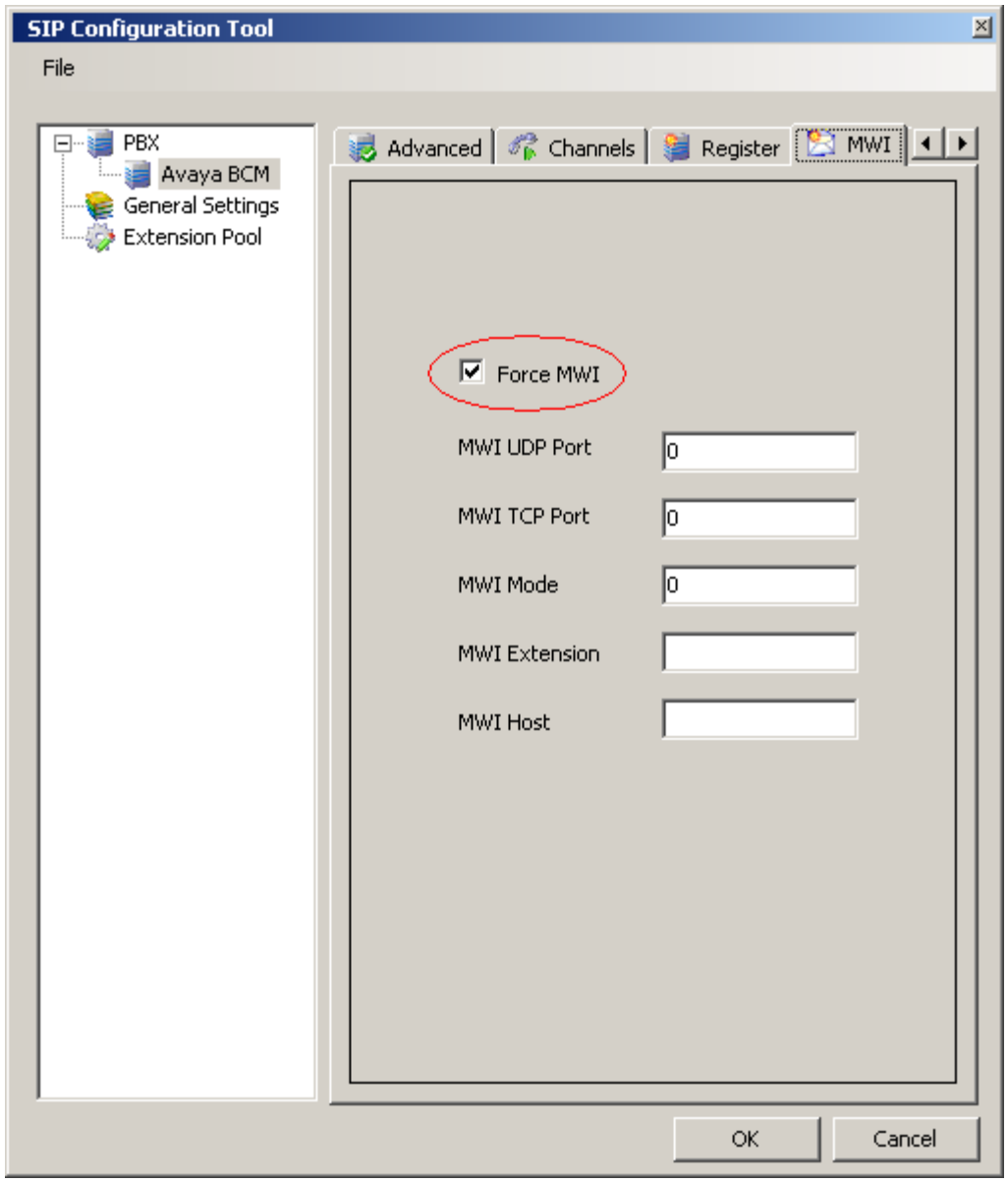

Figure 18: MWI

- Force MWI should be checked.

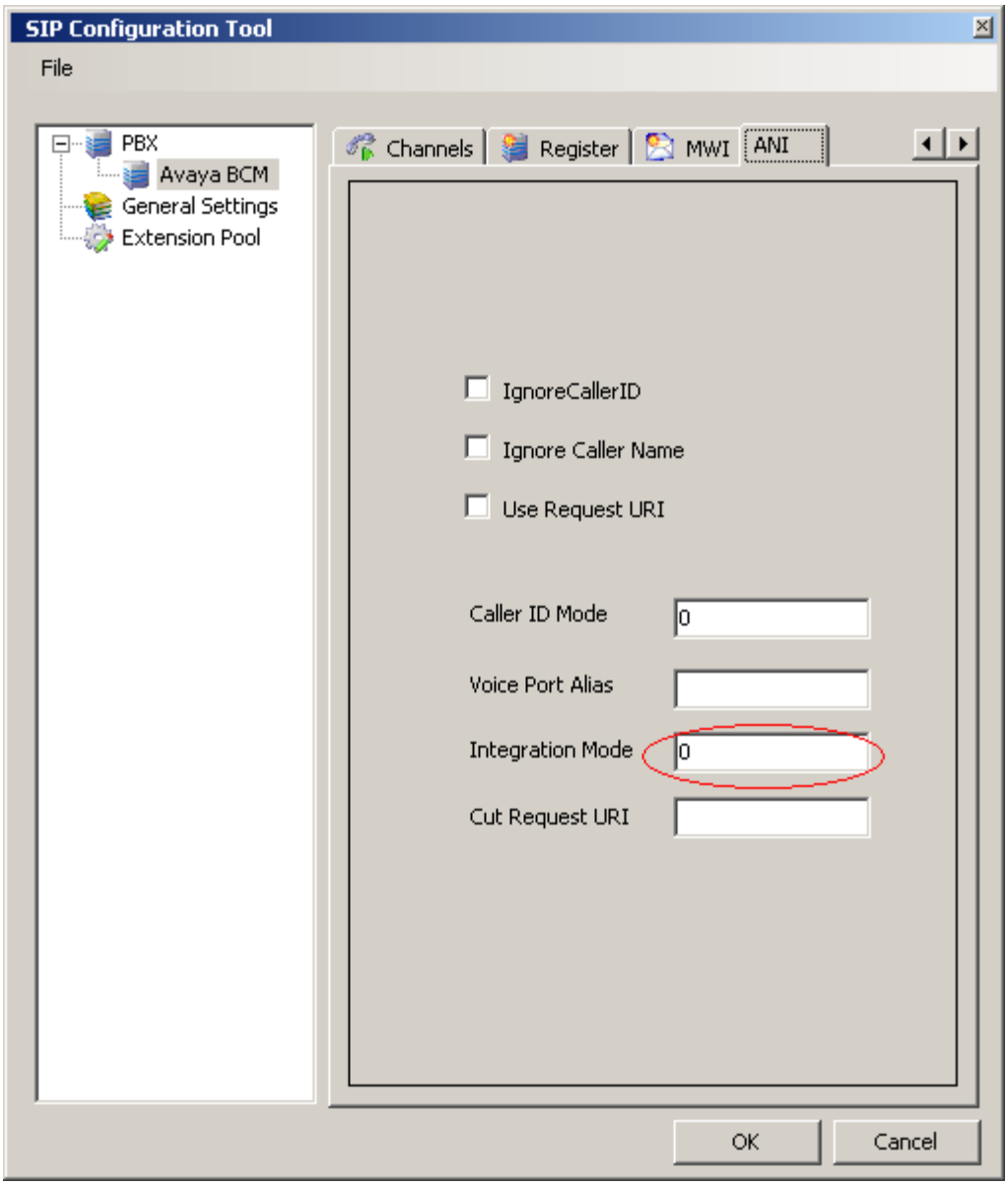

Figure 19: ANI

- Integration mode must be set to 0 for the BCM R6

6. General Test Approach and Test Results

The general test approach was to place calls to ESNA Telephony Office-LinX, and the main objectives were to verify that the user can:

- Successfully establish calls to ESNA Telephony Office-LinX from/to the BCM R6 end points.
- Successfully transfer from ESNA Telephony Office-LinX.
- Successfully leave messages for subscribers and to retrieve the same.

For serviceability testing, failures such as disconnecting the TOL ELNK cable from the network and rebooting the TOL server were applied.

The test objectives were verified. For serviceability testing, ESNA Telephony Office-LinX operated properly after recovering from failures such as cable disconnects, and resets of ESNA Telephony Office-LinX server.

7. Verification Steps

The following steps may be used to verify the integration:

- From the BCM end point call the TOL pilot number 77777 and verify if general greeting is played.
- From the TOL server verify if a BCM endpoint receives a wakeup call.
- Verify if a call from a BCM endpoint to another BCM endpoint can be transferred via the TOL server.
- Verify if correct TOL greeting messages are played depending on the status of the BCM endpoints.
- Verify if a message can be left for a BCM endpoint and retrieved via the TOL server.

8. Conclusion

All of the executed test cases have passed and met the objectives outlined in **Section 6**. The ESNA Telephony Office-LinX v8.0 software is considered compliant with BCM R6.

9. Additional References

Product documentation for Avaya products may be found at:
https://support.avaya.com/css/Products/

Product documentation for ESNA Telephony Office-LinX may be found at:
http://www.esnatech.com/support/tech_index.htm

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.