Avaya Solution & Interoperability Test Lab

Application Notes for configuring NovaLink NovaConf with Avaya IP Office R9.1 - Issue 1.0

Abstract

These Application Notes describe the configuration steps for NovaConf from NovaLink with Avaya IP Office R9.1. NovaConf integrates with Avaya IP Office using SIP Trunks.

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.

1. Introduction

These Application Notes describe the configuration steps for NovaConf from NovaLink to interoperate with Avaya IP Office R9.1 Server Edition with an Avaya 500 v2 expansion.

NovaConf is an application which is used in a health care, hotel or industrial environment for to allow users setup conference calls using an existing telephone system such as IP Office. NovaConf offers all the conferencing possibilities, which make it easier to reach the persons required. Thus, the Conference Server is able to call and look for anyone at various telephone numbers. Some of the features of NovaConf include:

- Dial Out.
  With conferences programmed to a certain time, a person is automatically called by the Server and connected to the conference.
- Dial In.
  Alternately, one can dial into the conference using the specific access data, received in an email.
- Ad Hoc.

With the simple and clear desktop ad-hoc conferences can be setup on the spot.

2. General Test Approach and Test Results

This section describes the compliance testing used to verify interoperability of NovaConf with IP Office and covers the general test approach and the test results. Calls were made to and from NovaConf over SIP trunks connecting Avaya IP Office and NovaConf. IP Office Server Edition with a 500 v2 expansion was used for compliance testing and various Avaya endpoints were registered to the Server Edition side and the 500 v2 side using all endpoints during compliance testing. The SIP trunk was connected between the Server Edition and NovaConf with all number/dial-plan setup with that in mind.

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 evaluated the ability of NovaConf to handle conference calls. These conferences are then assessed by IP Office users over a SIP trunk. Test cases are selected to exercise a sufficiently broad segment of functionality to have a reasonable expectation of interoperability in production configurations. Serviceability testing will also be conducted to assess the reliability of the solution. These included accessing the conference bridge on NovaConf from Avaya SIP/H.323/Digital endpoints.

- Dialing into a conference.
- Having NovaConf dial out to initiate a conference.
- Serviceability testing consisted of verifying the ability of NovaConf to recover from power or network interruption to both IP Office and NovaConf.

2.2 Test Results

All functionality and serviceability test cases were completed successfully.

2.3 Support

Technical support can be obtained for NovaConf from the website http://www.novalink.ch/en/ or from the following.

NovaLink GmbH
Businesstower
Zuercherstrasse 310
8500 Frauenfeld
Switzerland
helpdesk@novalink.ch
Phone: +41 52 762 66 77
Fax: +41 52 762 66 99

3. Reference Configuration

The configuration in **Figure 1** is used to compliance test NovaLink NovaConf with Avaya IP Office Server Edition R9.1 & an expansion using an Avaya IP Office 500v2. The connection between the NovaConf and the IP Office solution is via SIP Trunks.

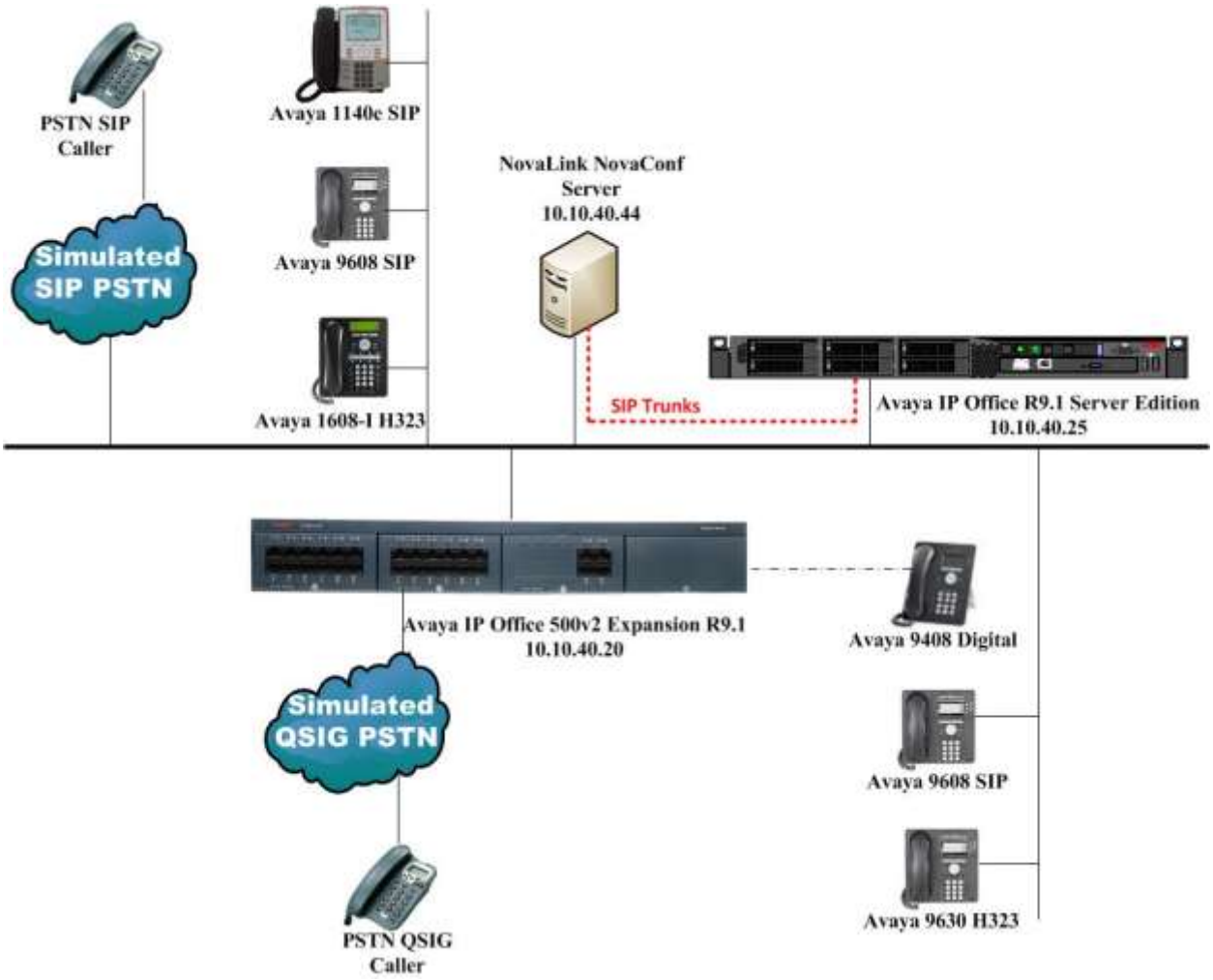


Figure 1: Connection of NovaConf from NovaLink with Avaya IP Office Server Edition & Expansion R9.1

4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya IP Office Server Edition running on a virtual server (Primary Server) Avaya IP Office 500 v2 (Expansion)	R9.1 R9.1
Avaya 1608 I Deskphone	H323 1608UA1_350B.bin
Avaya 9630 Deskphone	96xx H.323 Release 6.4014U
Avaya 9608 Deskphone	96x1 SIP 6.4.1.25
Avaya 1140e SIP	R 04.03.12.00
Avaya 9408 Digital	Version 2
NovaConf running on a Windows 2012 virtual server	9.8

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.

Testing was performed with IP Office Server Edition R9.1. Note that IP Office Server Edition requires an Expansion IP Office 500 v2 R9.1 to support analog or digital endpoints or trunks.

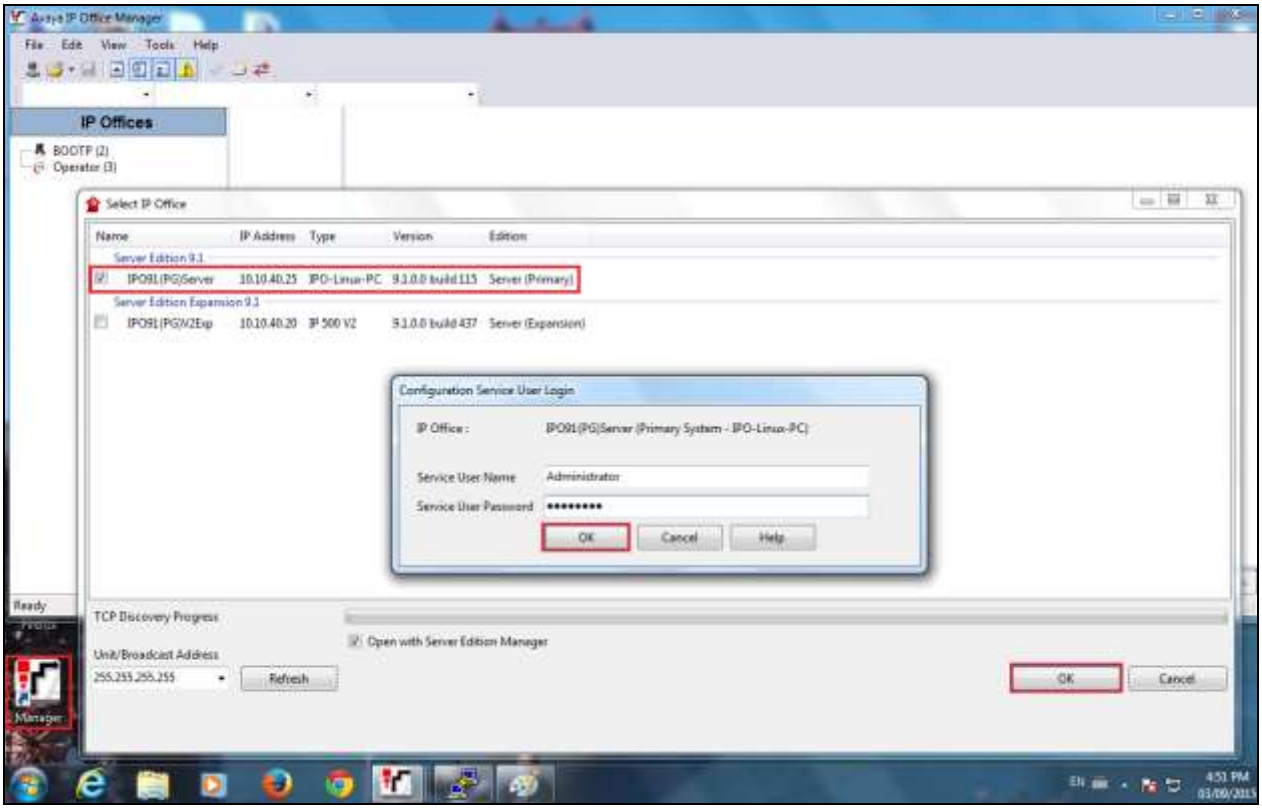
5. Configuration of Avaya IP Office

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. 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.
- Display LAN Configuration.
- Configure Incoming Route for SIP Trunk.
- Configure SIP Trunk.
- New Short Code to Dial NovaConf
- Save Configuration.

5.1 Launch Avaya IP Office Manager

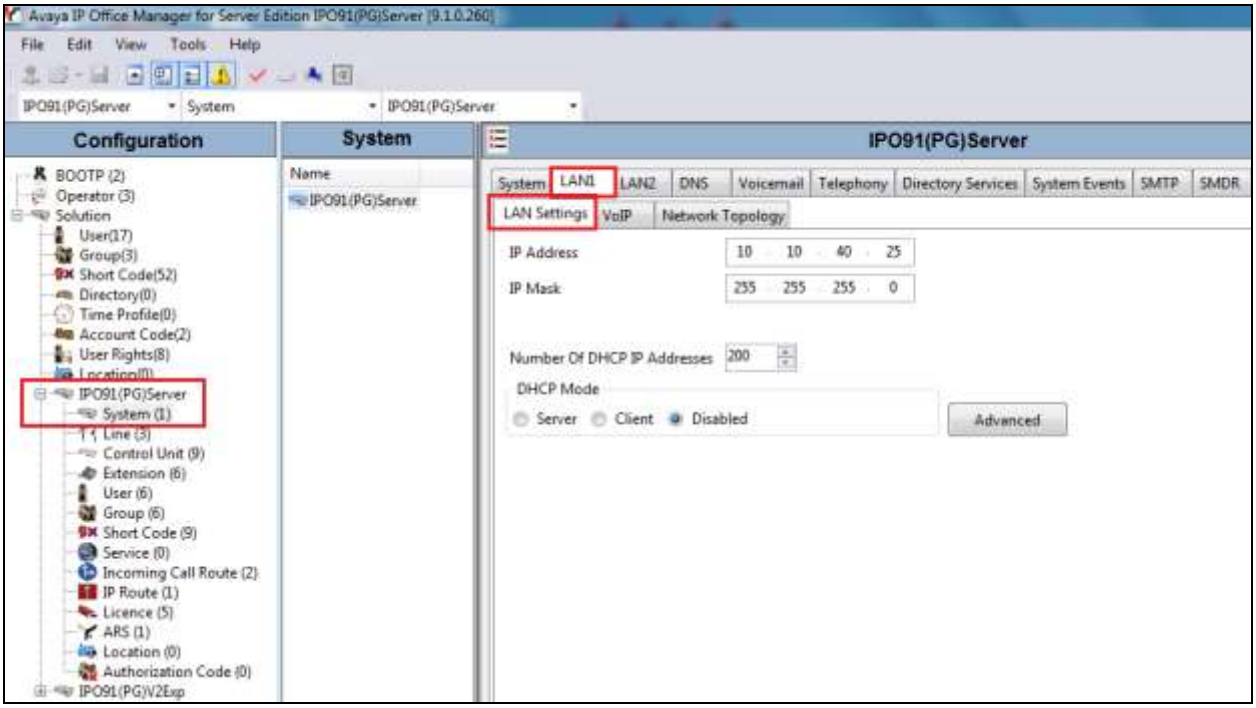
From the Avaya IP Office Manager PC, go to **Start → Programs → IP Office → Manager** to launch the Manager application or use the **shortcut on the desktop** highlighted. Tick the required server to log in to, this will be the Server Edition and log in to Avaya IP Office using the appropriate credentials to receive its configuration.



5.2 Display LAN Configuration

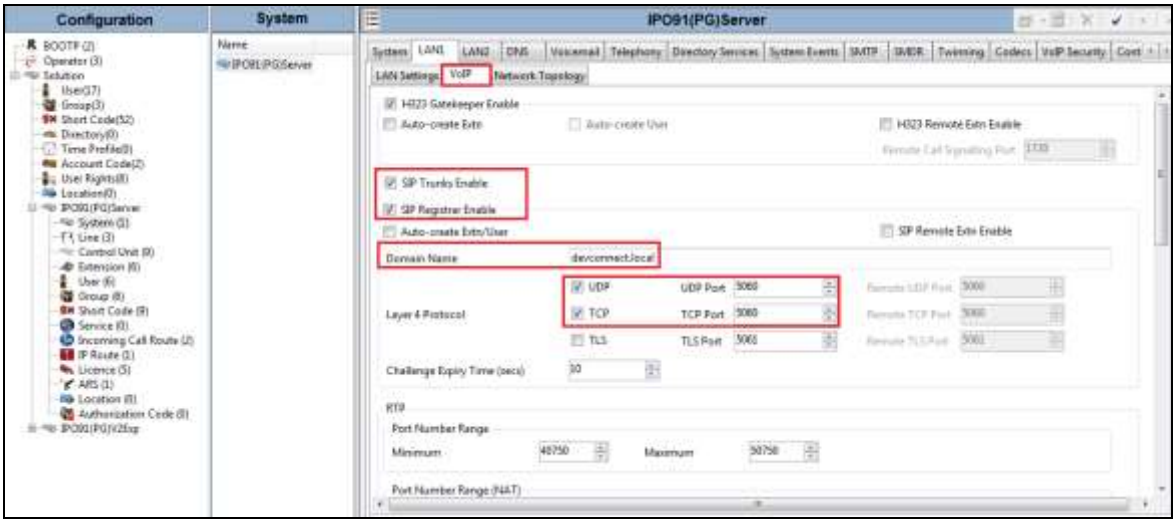
In the IP Offices window expand the configuration tree in the left pane and double-click **System**. During compliance testing the System was called **IPO91(PG)Server**. Select the **LAN Settings** tab within the LAN1 tab and note the following information:

- **IP Address** IP Address of the IP Office that will be required in **Section 6.1** for the configuration of the SIP Trunk on NovaConf.
- **IP Mask** Subnet mask for the IP Office.
- **Primary Trans IP** Gateway IP Address.

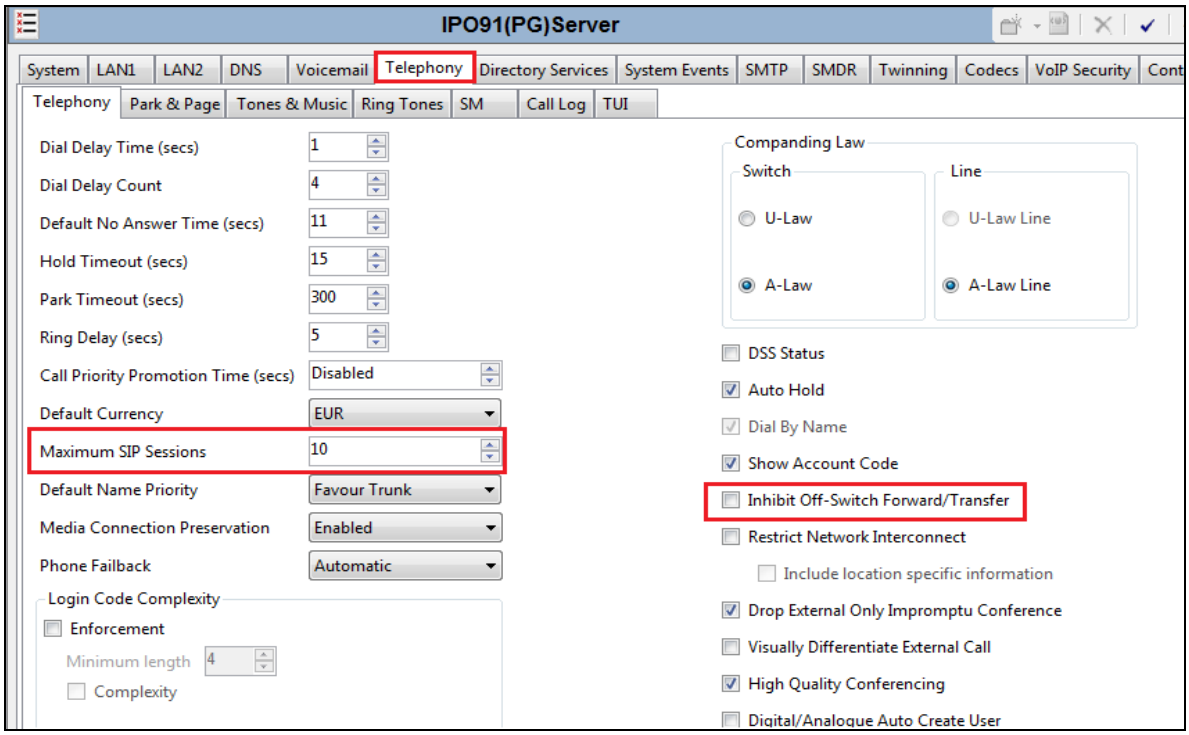


Click on the **VoIP** tab and set the following.

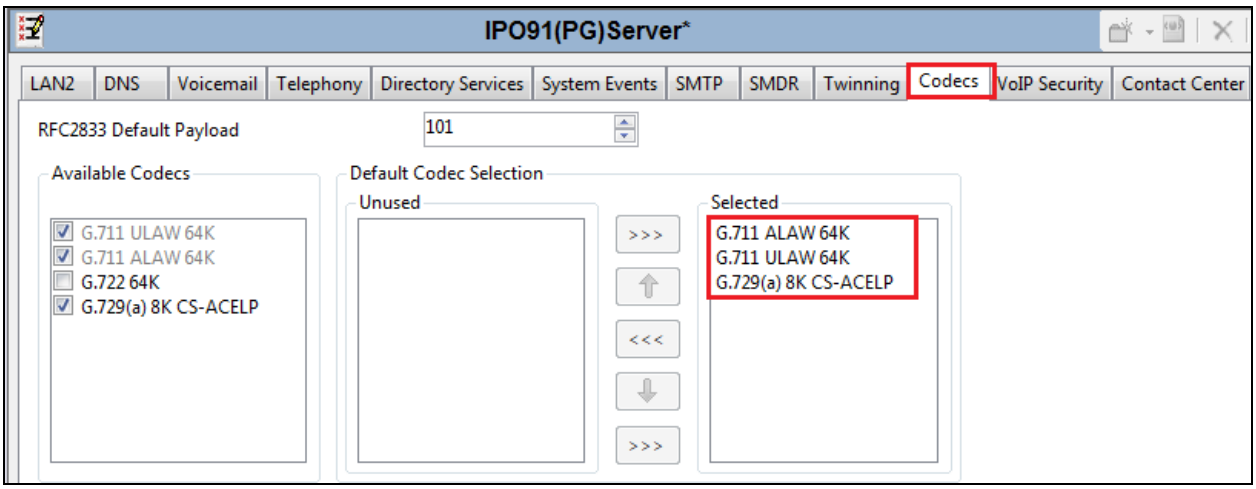
- **SIP Trunks Enable**.
- **SIP Registrar Enable**.
- **Domain Name**, set this to the telephony domain name.
- **UDP** set the UDP Port to **5060**.
- **TCP** set the TCP Port to **5060**.



Click on the **Telephony** tab. Ensure that the **Maximum SIP Sessions** is set to the correct number and is not set to 0. Also ensure that **Inhibit Off-Switch Forward/Transfer** to not ticked.

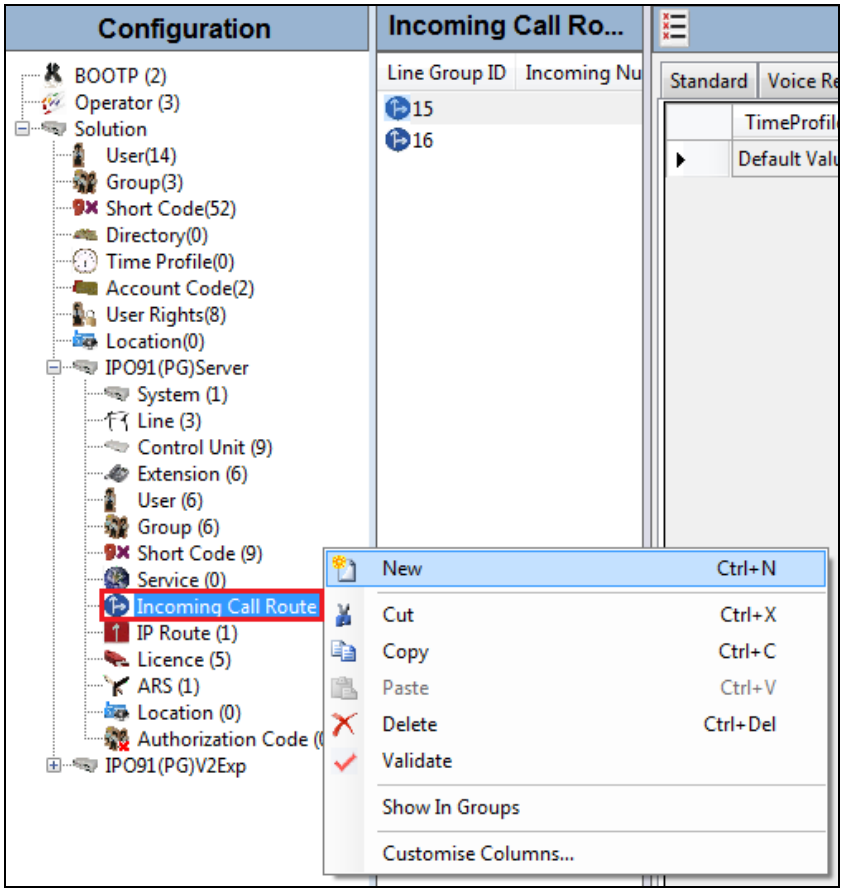


Click on the **Codecs** tab. Ensure that the correct codecs are selected.

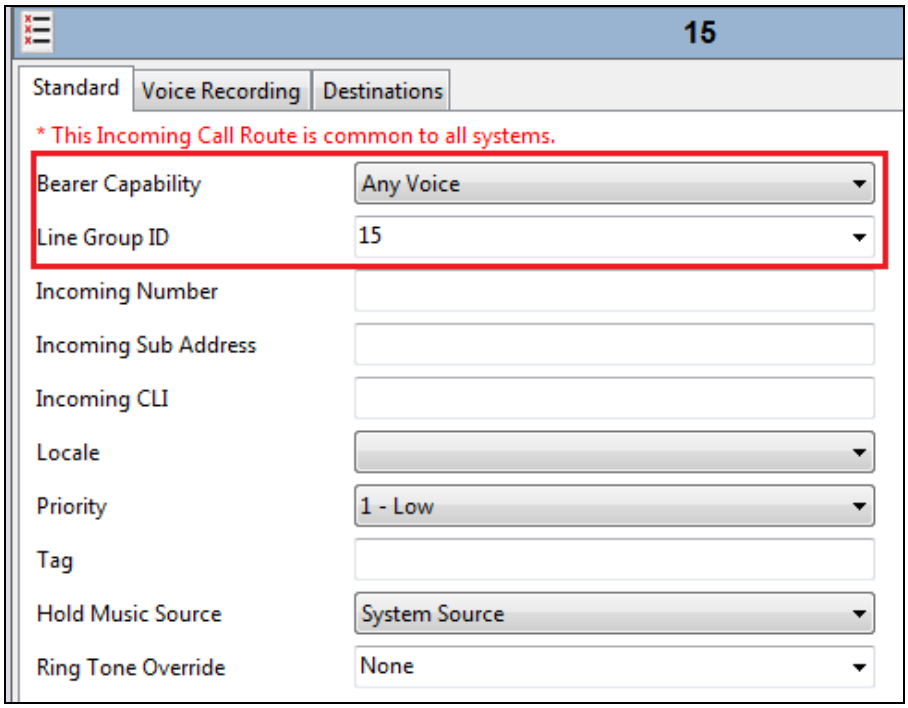


5.3 Configure Incoming Route for SIP Trunk

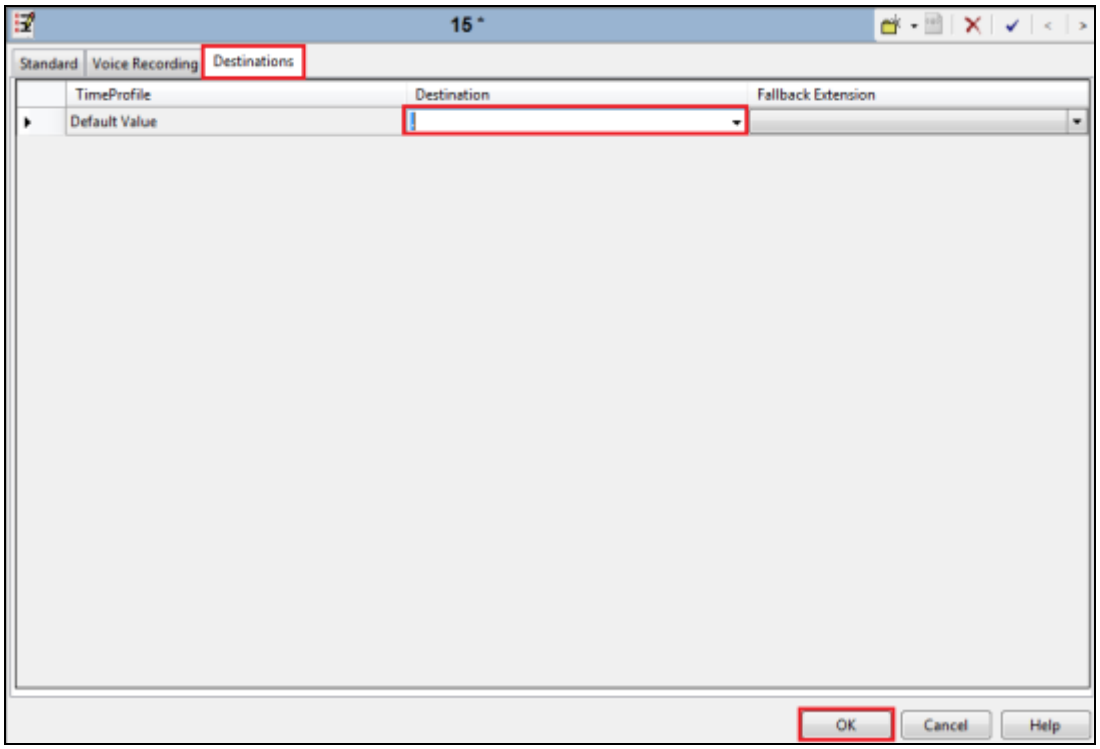
An incoming route must be added for the SIP trunk that will be setup in **Section 5.4**. Navigate to **Server Edition → Incoming Call Route**. Right click on Incoming Call Route select **New**.



From the **Standard** tab, enter the **Line Group ID;** this can be kept the same as the SIP Line that is to be created for convenience. **Bearer Capability** can be set to **Any Voice.**



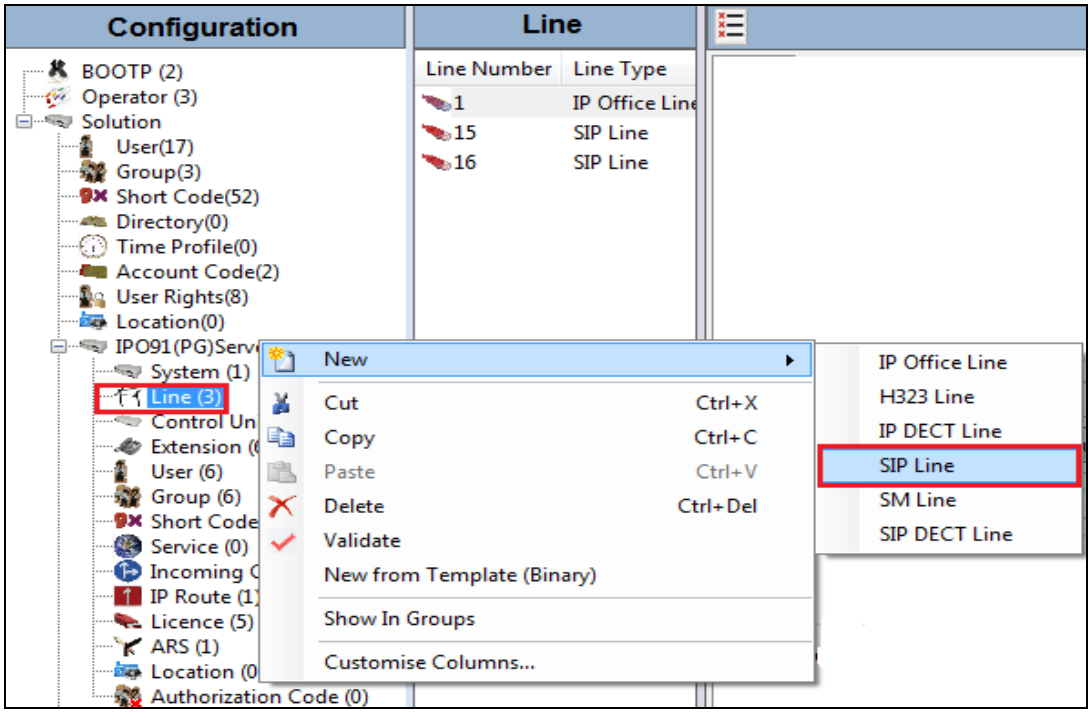
From the **Destinations** tab, select **.** for the **Destination**. Click on **OK** to continue.



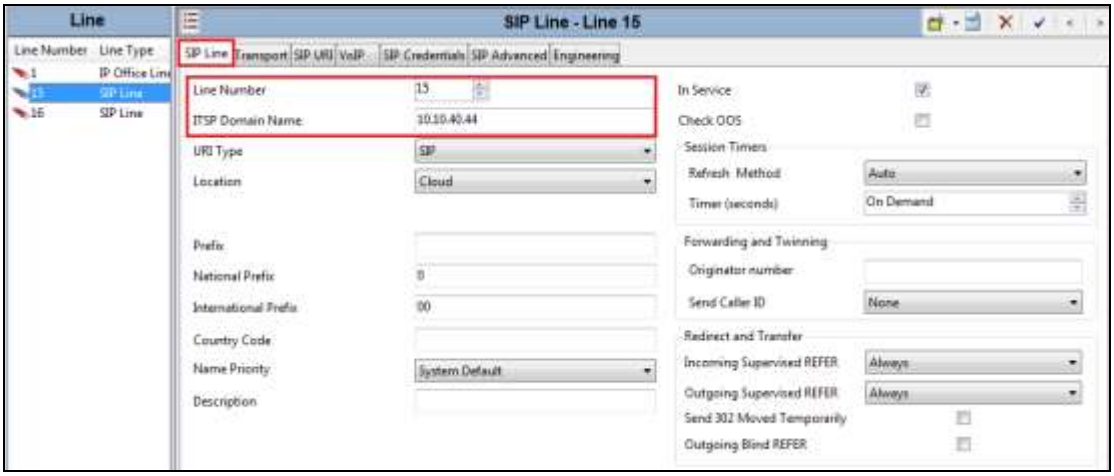
5.4 Configure SIP Trunk

This section shows how to add a new SIP Trunk in order to facilitate the connection to NovaConf. Navigate to the Server Edition or the IP Office module that NovaConf is connecting to. During compliance testing NovaConf connected to the IP Office Server Edition using SIP trunks, the SIP Line was therefore created on the Server Edition.

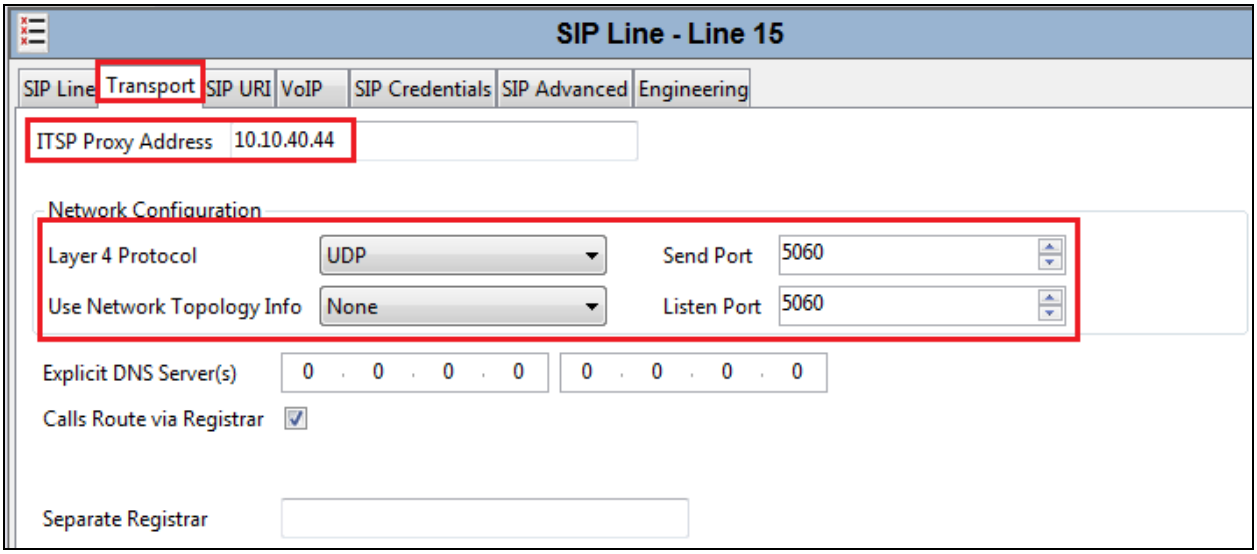
Navigate to **Server Edition → Line**, then right click on **Line** and select **New → SIP Line**.



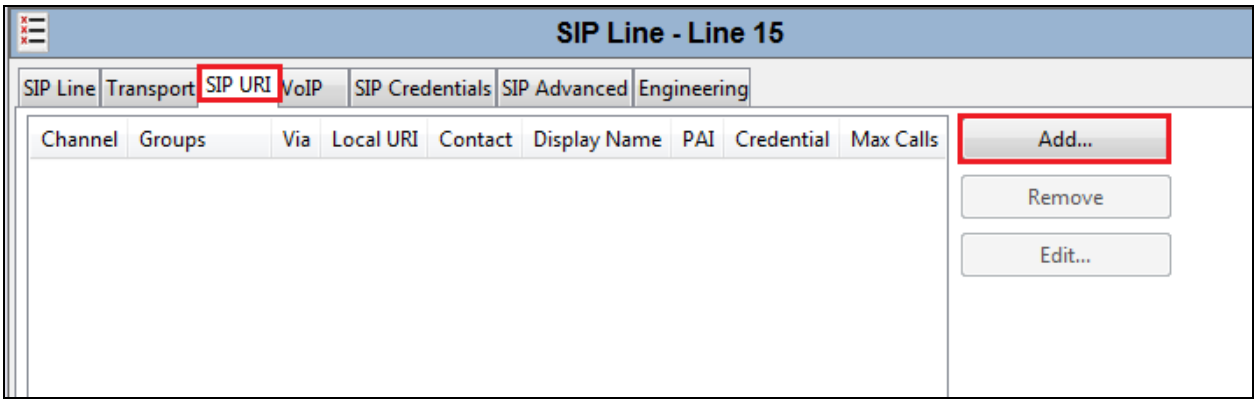
Click the **SIP Line** tab and select the new **Line Number** and insert the IP Address of the NovaConf server for the **ITSP Domain Name**.



Click on the **Transport** tab and enter the IP Address of the NovaConf server for **ITPS Proxy Address**. Ensure that the **Layer 4 Protocol** is set to **UDP** and that the **Send Port** and **Listen Port** are both set to **5060**.

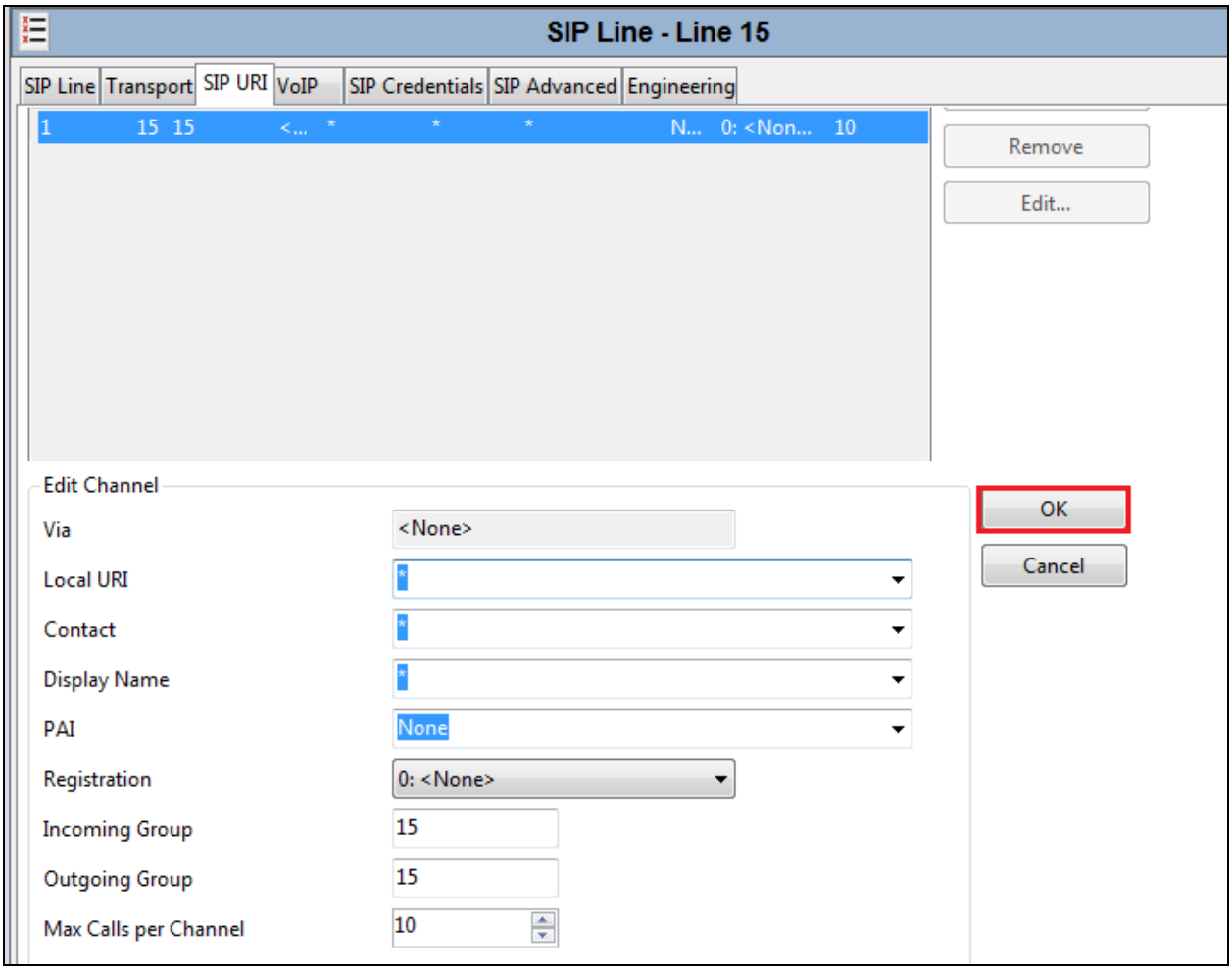


Click on the **SIP URI** tab and click on **Add**.

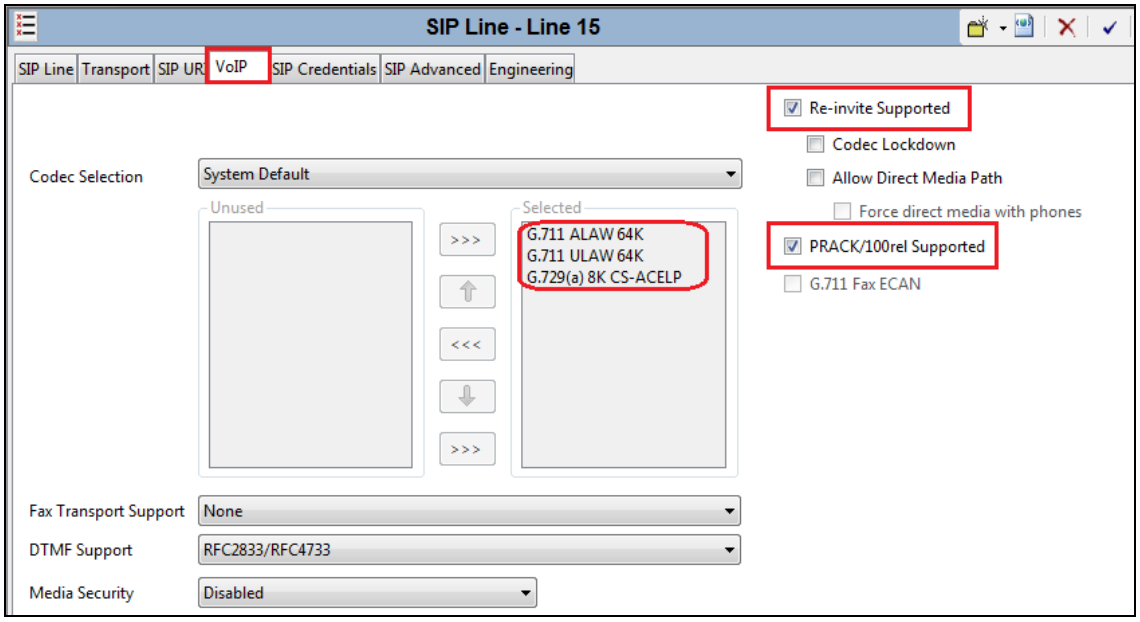


The following should be set as shown below; anything else can be left as default or as it is displayed in the screen shot below. Click on **OK** to continue.

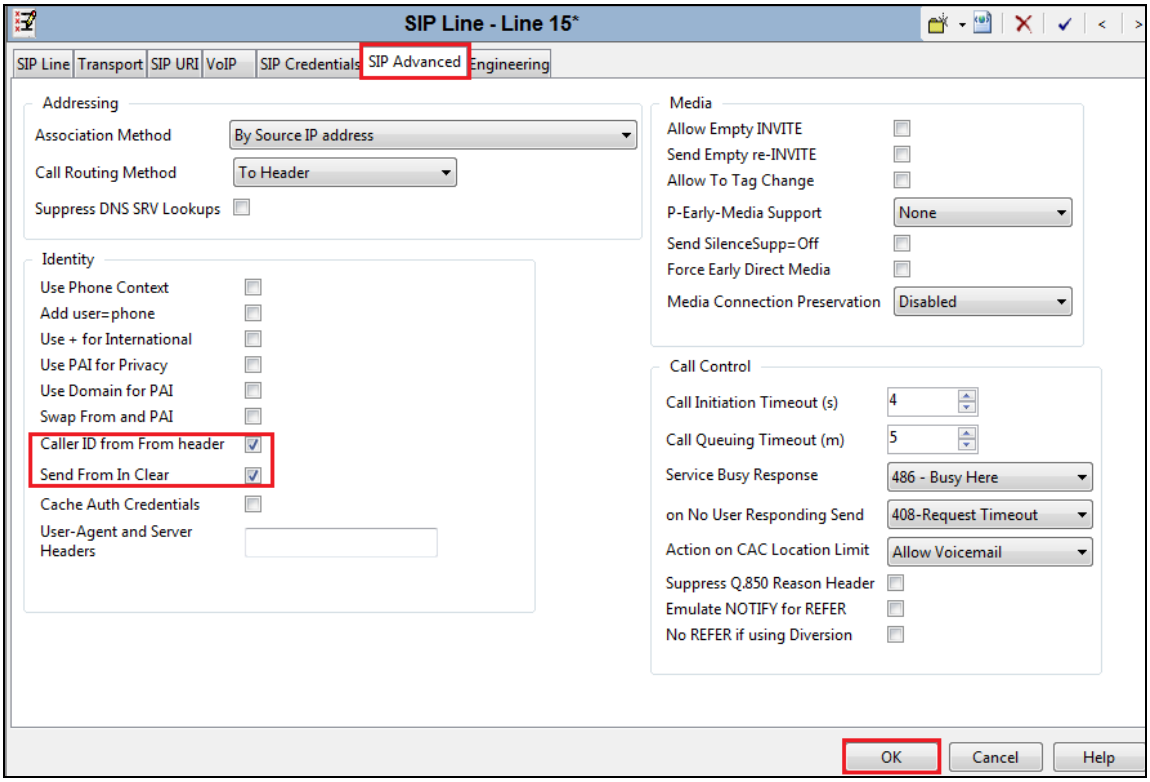
Local URI	Set to *****
Contact	Set to *****
Display Name	Set to *****
PAI	Set to **None**
Incoming Group	Set to the incoming group number for the SIP trunk (**15** in this case)
Outgoing Group	Set to the outgoing group number for the SIP trunk (**15** in this case)
Max Calls per Channel	Will depend on the number of SIP Licenses on IP Office and NovaConf



Select the **VoIP** tab and ensure that the correct **Codecs** are **Selected**. The **Re-invite Supported** and **Prack/100rel Supported** boxes are also ticked. Everything else can be left as default or as is shown below.



Under the **SIP Advanced** Tab, ensure that **Caller ID from From header** and **Send From In Clear** are both ticked. Click on **OK** to continue and that will also finish the Line setup.

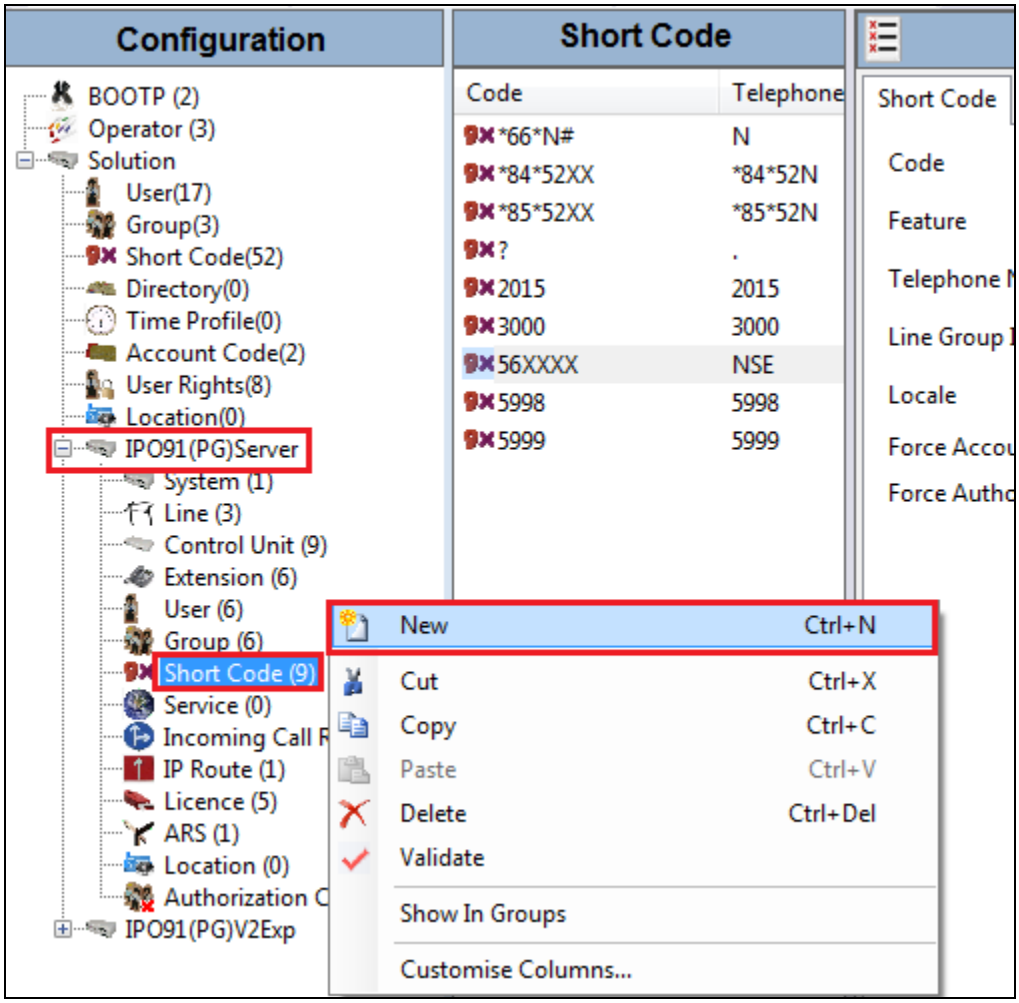


5.5 New Short Code to Dial NovaConf

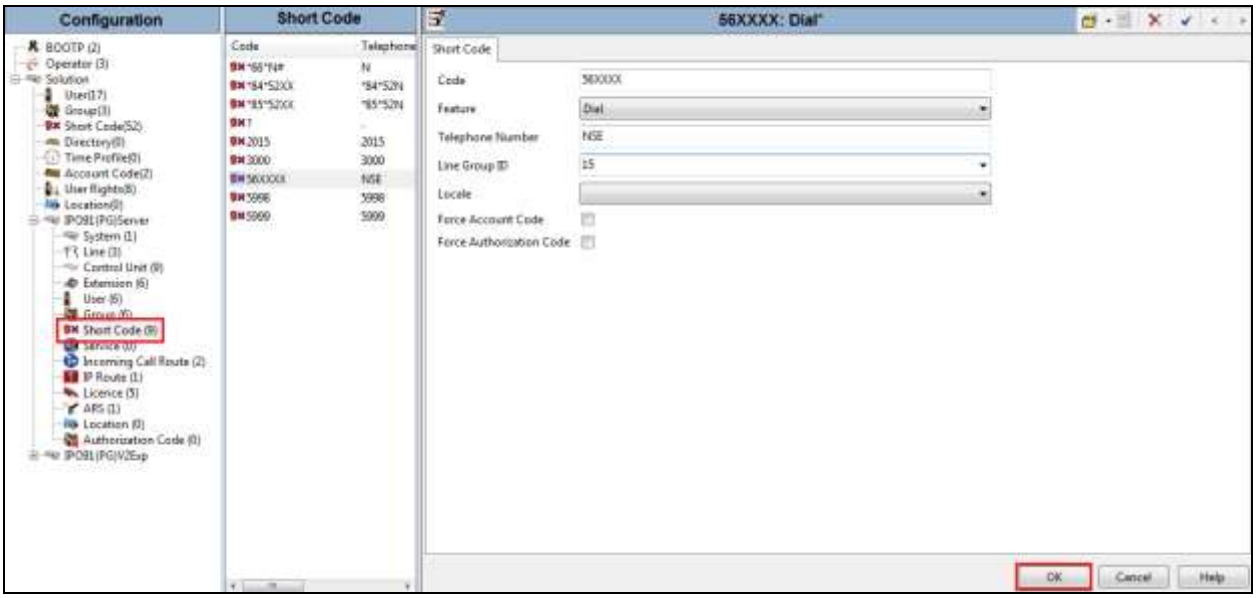
A short code will need to be added to both the Server Edition and the 500v2 in order to allow IP Office users dial into NovaConf.

5.5.1 Short Code on the Avaya IP Office Server Edition

To add a new Short code on the Server Edition, navigate to **Server Edition → Short Code**. Right click on **Short Code** and select **New**.



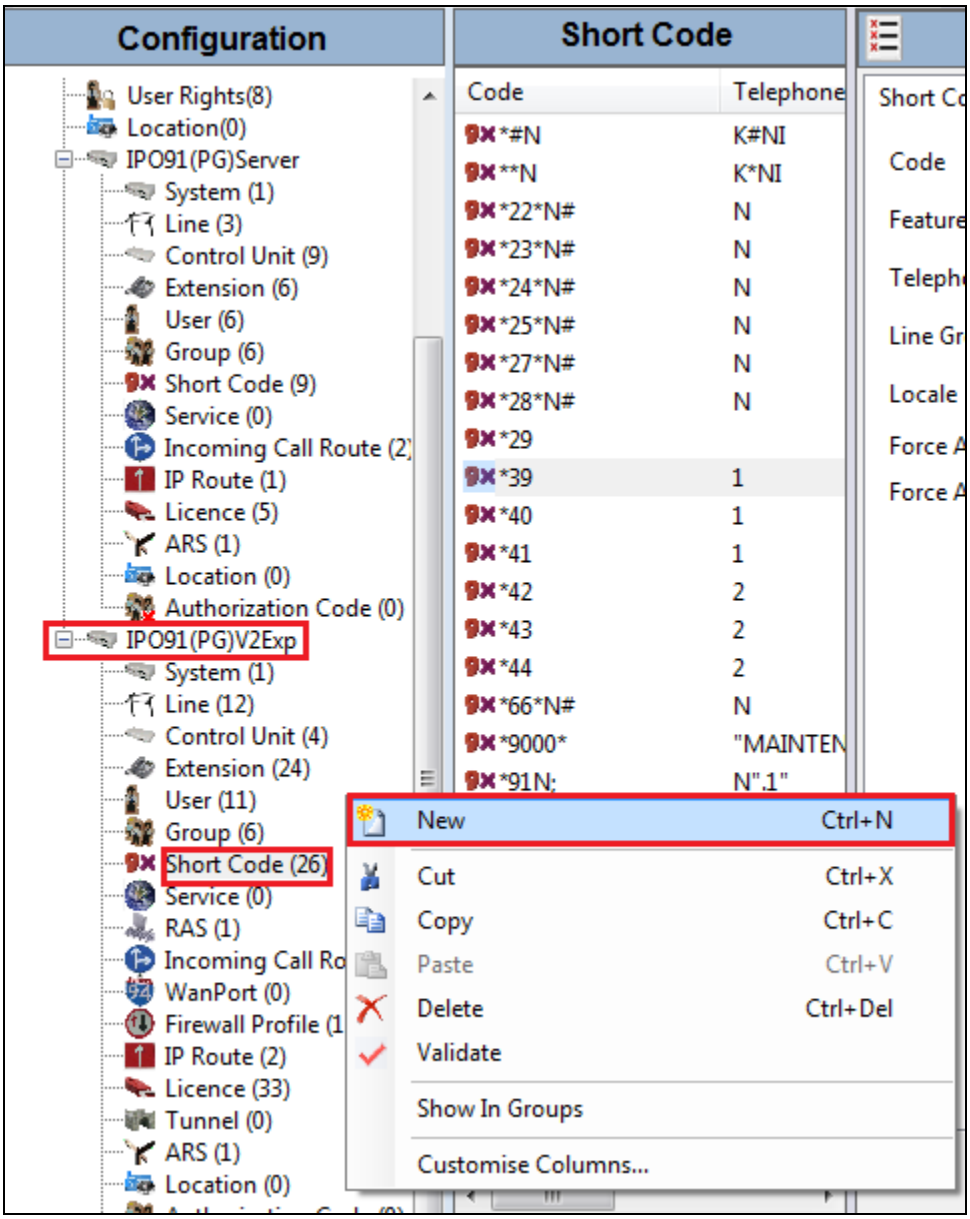
Enter the number to be dialled in the window named **Code**. In the example below the number was **56** followed by any 4 digits. These 4 digits are represented by for X's so when a user dials for example 561234 this will activate this short code. The actual number that will be sent over the SIP trunk is represented by the entry for **Telephone Number**. The example below shows on entry of **NSE** where N is number dialled after 56 and SE where S is the calling party. E means Extension or User Number. The **Line Group ID** will be that outgoing group that was created during the SIP Line addition in **Section 5.4**. Click on **OK** to complete the addition.



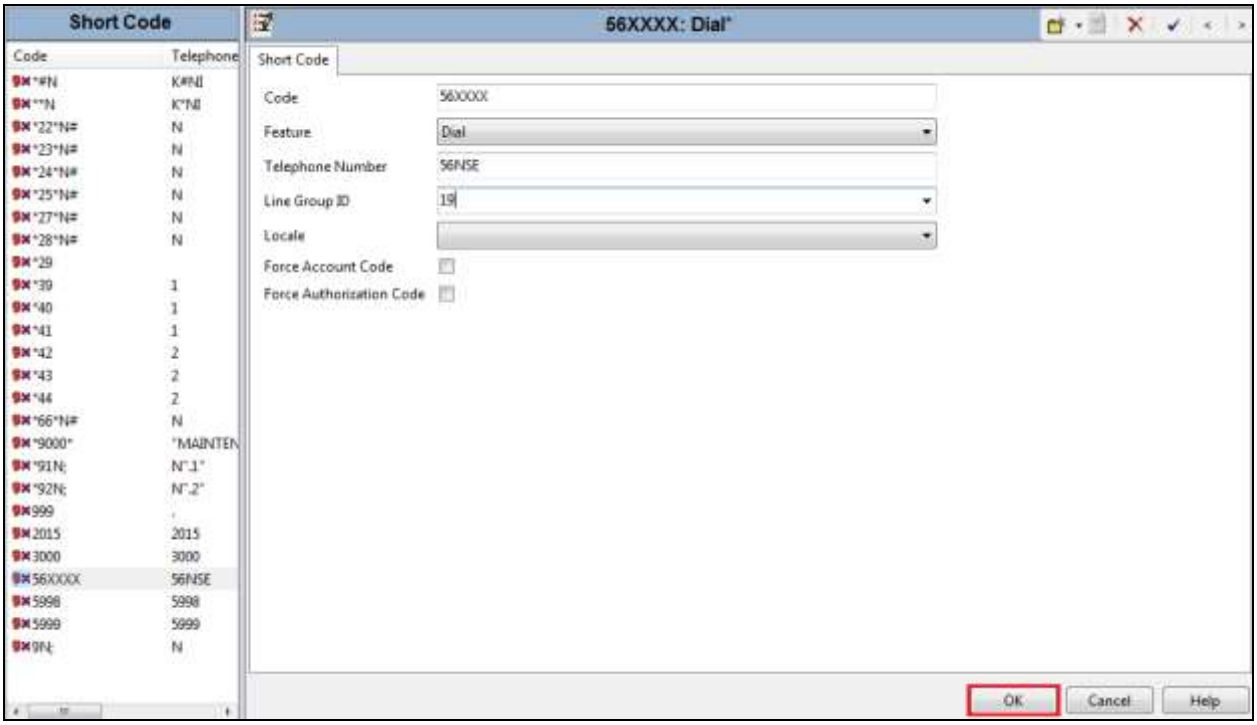
5.5.2 Short Code on the Avaya IP Office 500 v2 Expansion

If the user is calling from a 500 v2 extension say a digital or analog set, a short code will need to be added here also in order to get the call across to the Server Edition and then out on the SIP trunk.

From the left menu navigate to the **500 v2 Expansion → Short Code** and right click on **Short Code** and click on **New**.

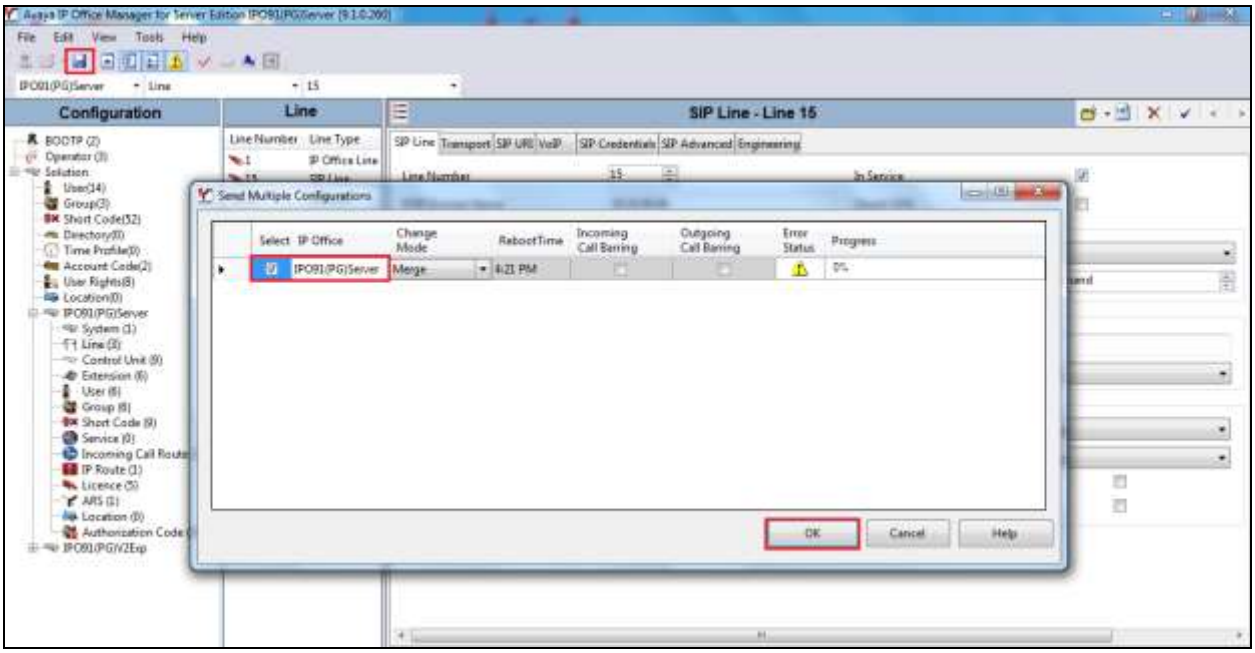


Enter the number to be dialled in the window named **Code**. In the example below the number was **56** followed by any 4 digits. These 4 digits are represented by for X's so when a user dials for example 561234 this will activate this short code. The actual number that will be sent over the H323 trunks to the Server Edition is represented by the entry for **Telephone Number**. The example below shows on entry of **56NSE** where 56N is number dialled including the 56 in order to be able to activate the short code on the Server Edition and SE is where S is the calling party. E means Extension or User Number. The **Line Group ID** will be that outgoing group for the H323 trunks between the 500 v2 and the Server Edition. Click on **OK** to complete the addition.



5.6 Save Configuration

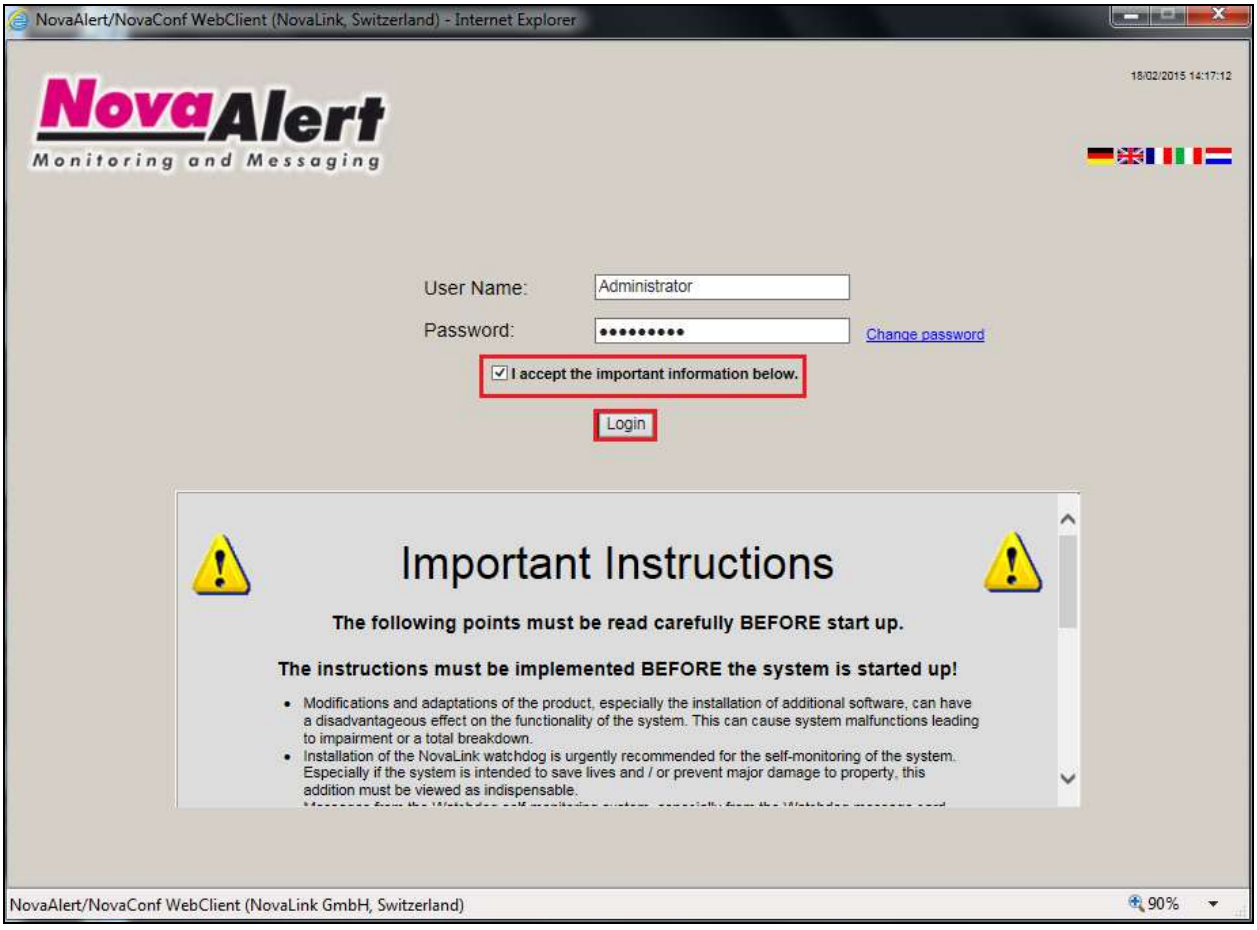
Once the configuration has been made it must be sent to the IP Office. Click on the **Save** Icon at the top left of the screen as shown below. Once the **Save Configuration** window opens, either the **Merge** or **Immediate** button will be filled in depending on the changes that are made. Click on the **OK** button.



6. Configuration of NovaLink NovaConf

The following sections describe the steps required to configure NovaConf in order to successfully connect to IP Office using SIP trunks. All configuration changes are made to NovaConf using a web browser session to the NovaConf server. Open a web browser session to the IP Address of the NovaConf server followed by /NovaConf. For example what was used for compliance testing was **http://10.10.40.44/NovaConf**. The following screen is shown asking for the **User Name** and **Password**. Enter these and click on the tick box as shown and click on the **Login** button.

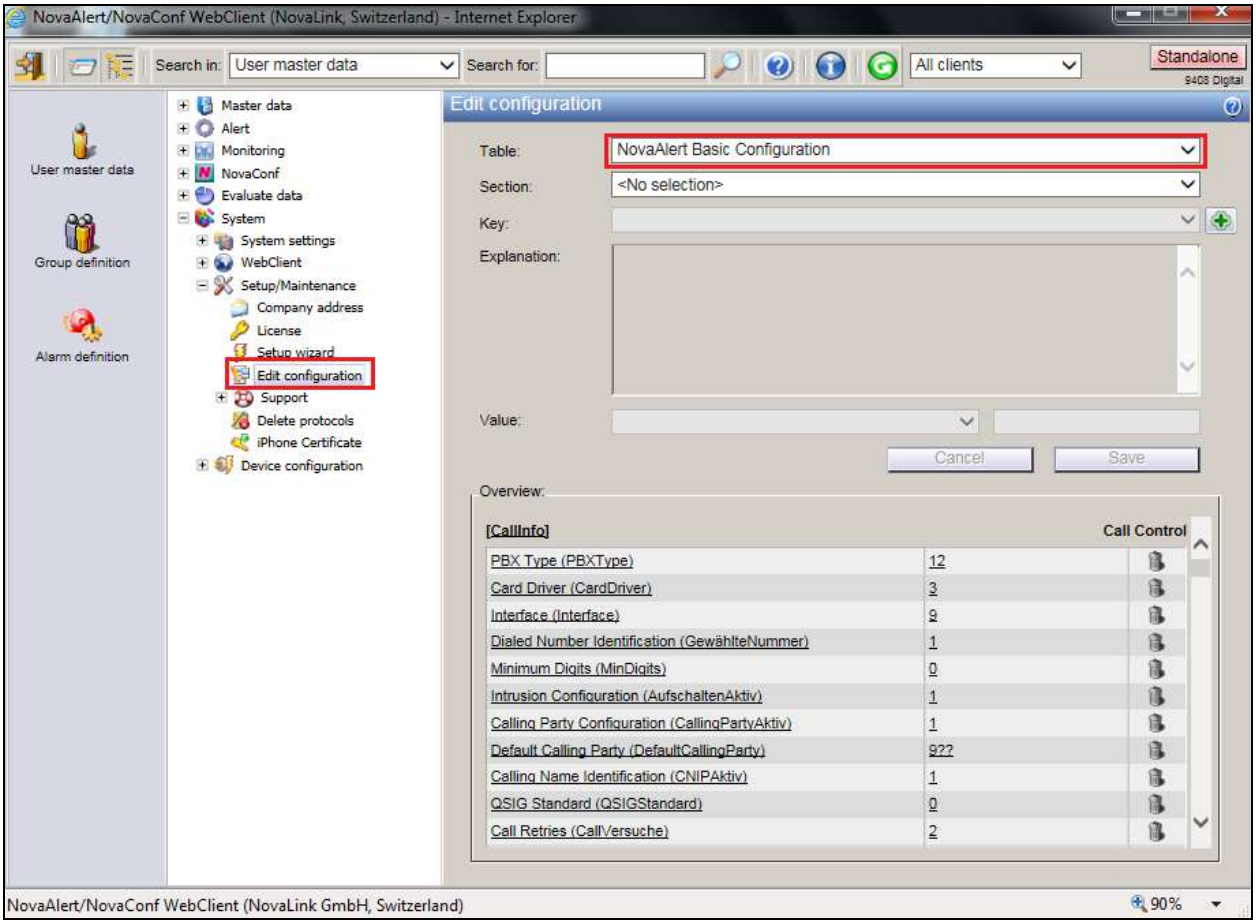
Note: NovaConf and NovaAlert are similar modules from NovaLink. The following screen shots will show NovaAlert and this is because NovaConf uses NovaAlert for the connection to IP Office.



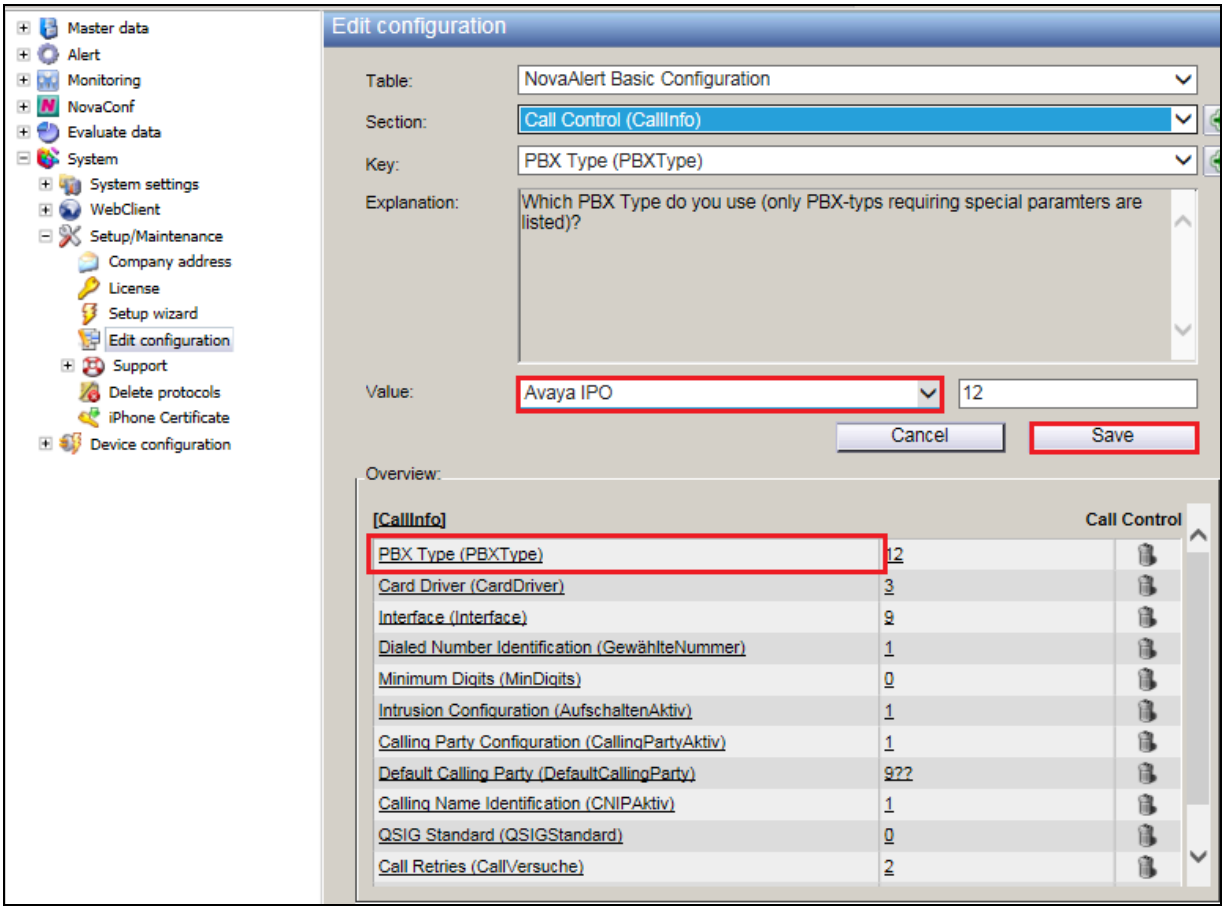
Once logged in the following screen is presented to the user.

6.1 Configure NovaConf SIP Trunk Connection

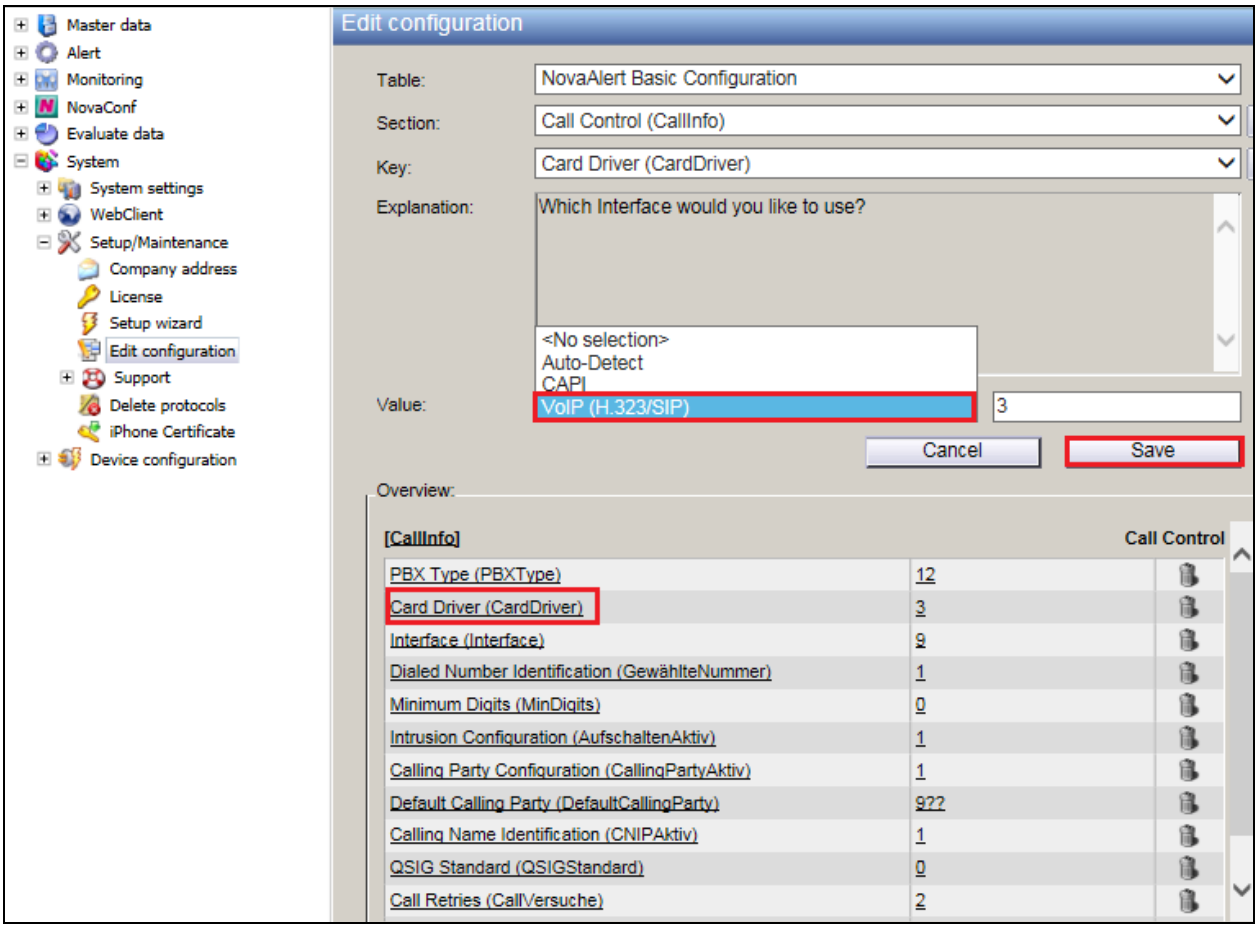
To begin the configuration of NovaConf in order to connect to IP Office using SIP trunks, from the main menu, expand **System → Setup/Maintenance** and click on **Edit configuration**. From the main window select the **Table**, **NovaConf Basic Configuration**, from the drop-down menu.



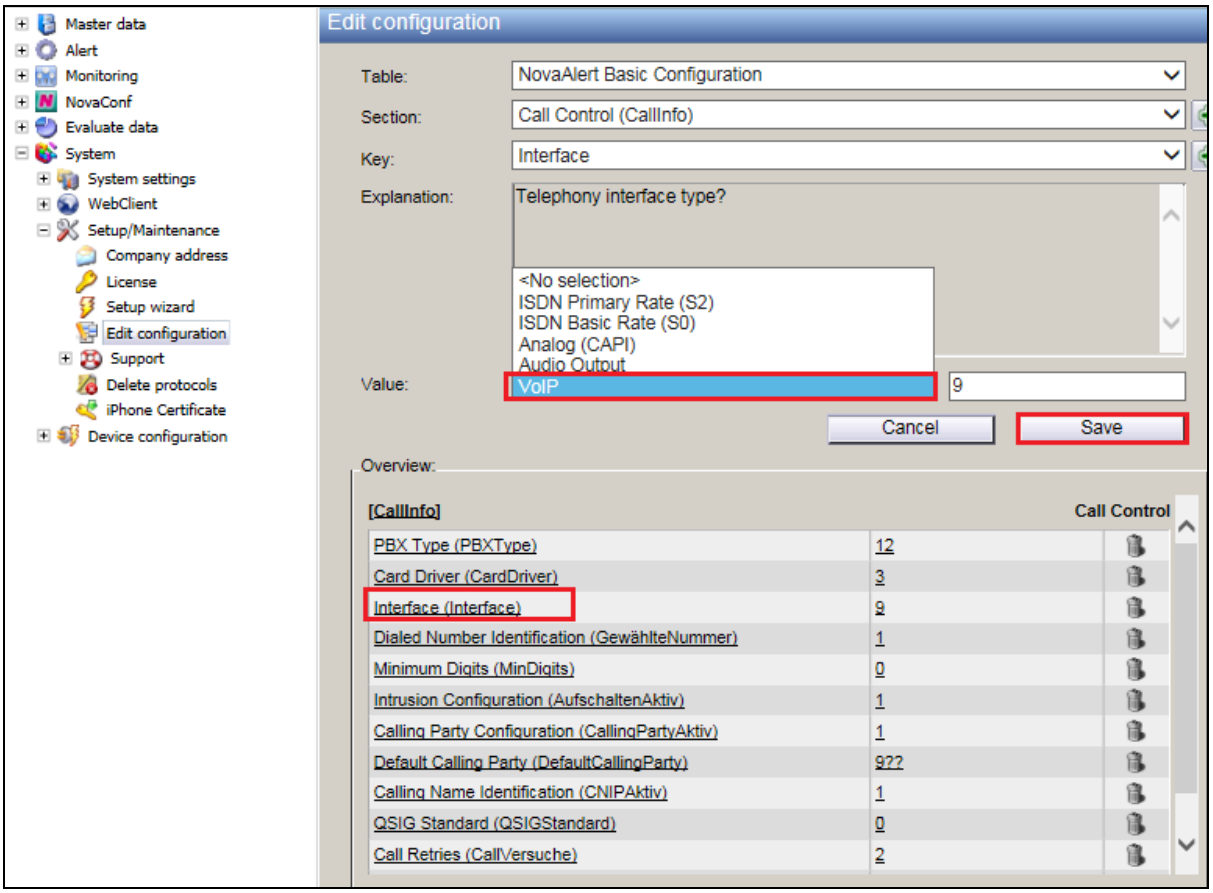
Select **Call Control (CallInfo)** from the **Section** drop-down menu. Select **PBX Type** from the **Key** drop-down menu or click on **PBX Type** highlighted at the bottom of the screen. Ensure that the **Value** is set to **Avaya IPO** and click on **Save**.



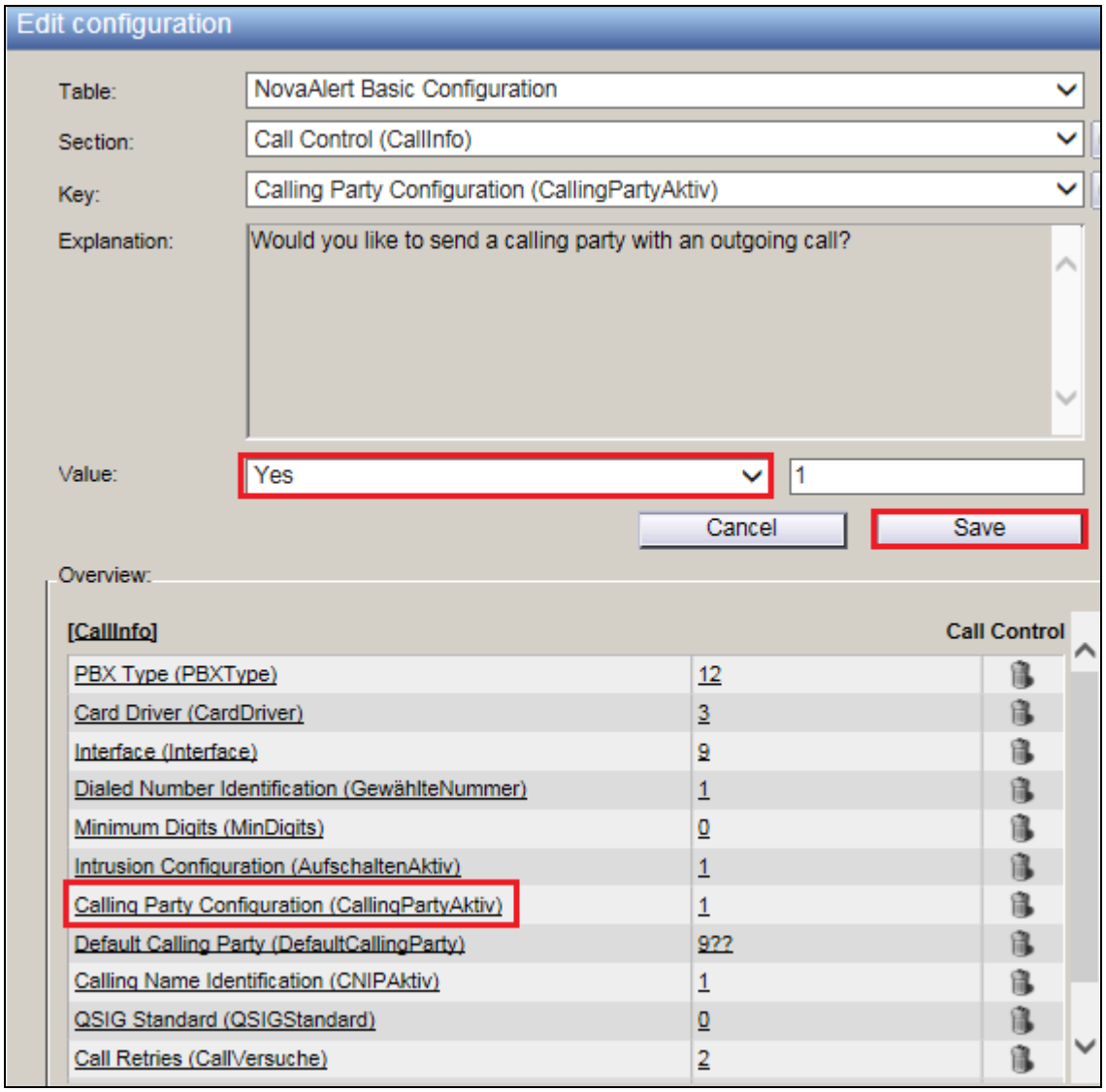
Remaining in the same **Section**, select **Card Driver (CardDriver)** from the **Key** drop-down menu and ensure that the **Value** is set to **VoIP (H323/SIP)**. Click on **Save** to complete



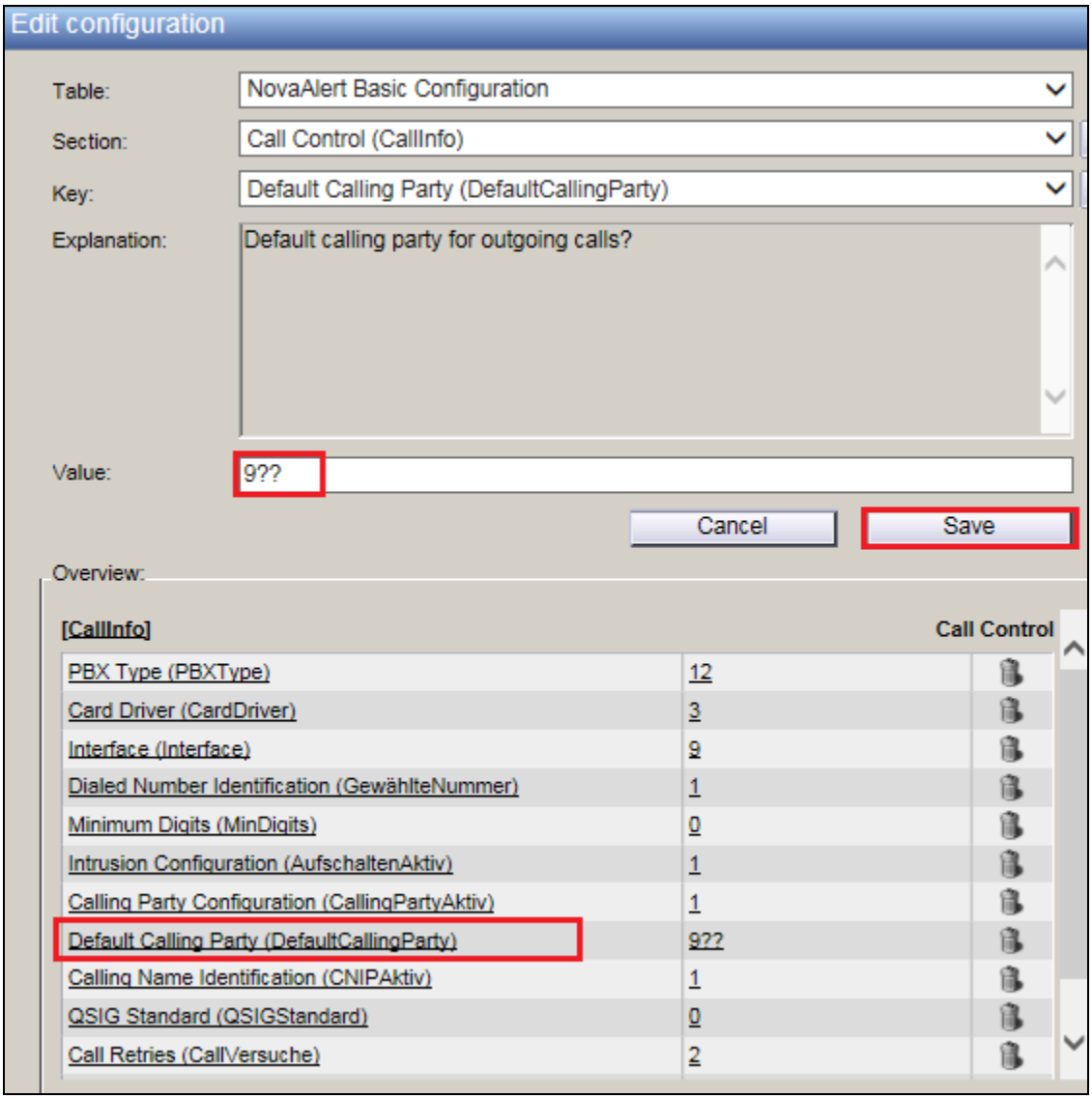
Remaining in the same **Section**, select **Interface** from the **Key** drop-down menu and ensure that the **Value** is set to **VoIP**. Click on **Save** to complete.



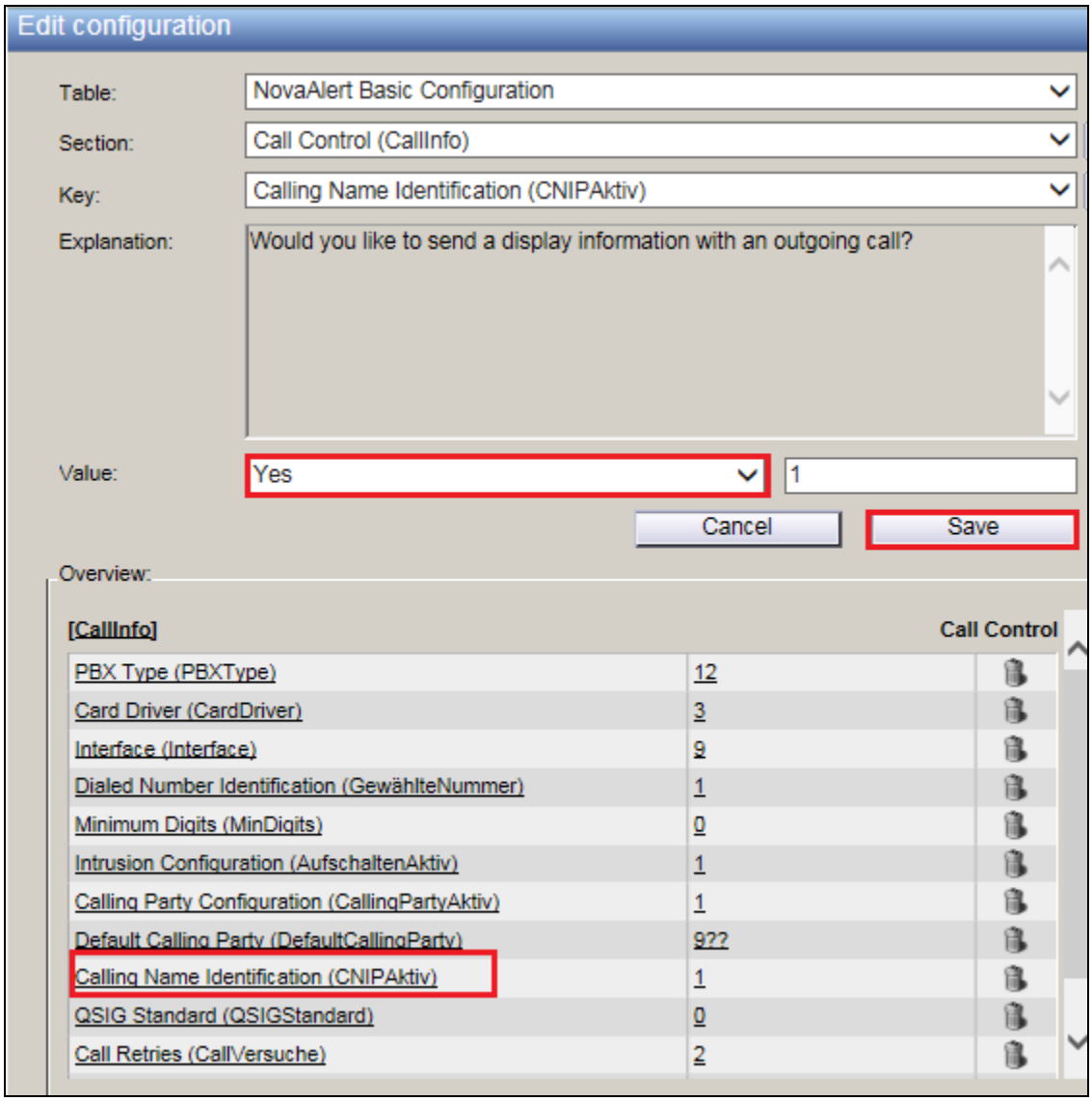
In the same **Section** select the **Calling Party Configuration (CallingPartyAktiv) Key**. Set the **Value** to **Yes** and click on **Save**. This will send the calling party with the outgoing call.



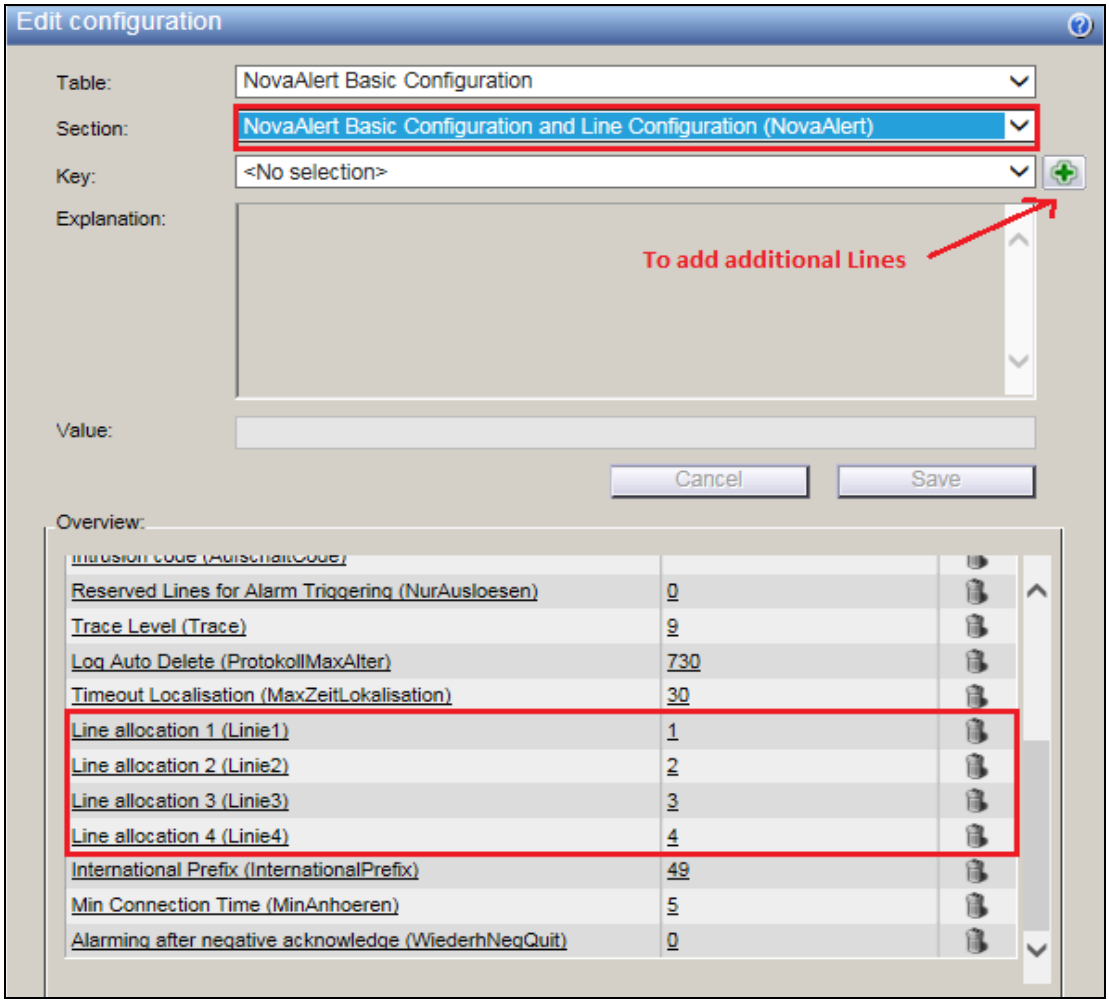
In the same **Section** select the **Default Calling Party (DefaultCallingParty) Key**. Set the **Value** to **9??** and click on **Save.** Note this value will be set for dialing out from IP Office.



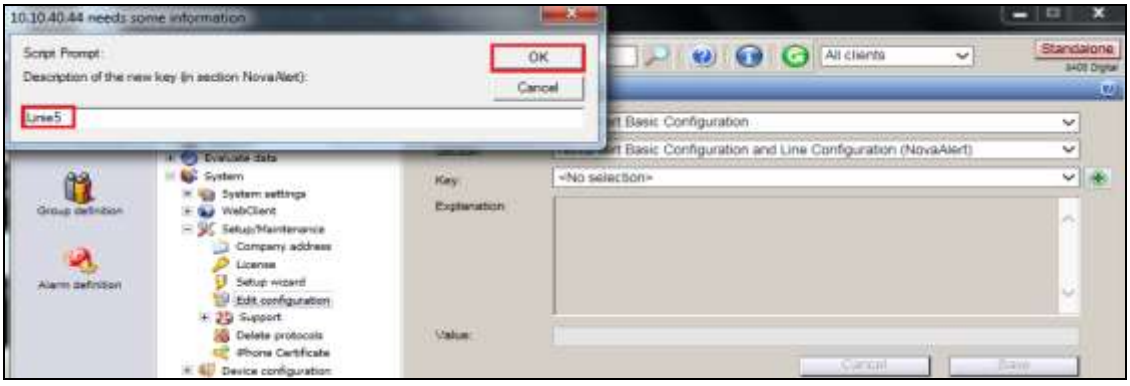
In the same **Section** select the **Calling Name Identification (CNIPAktiv) Key**. Set the **Value** to **Yes** and click on **Save**. This will send the CLID info on the outgoing call.



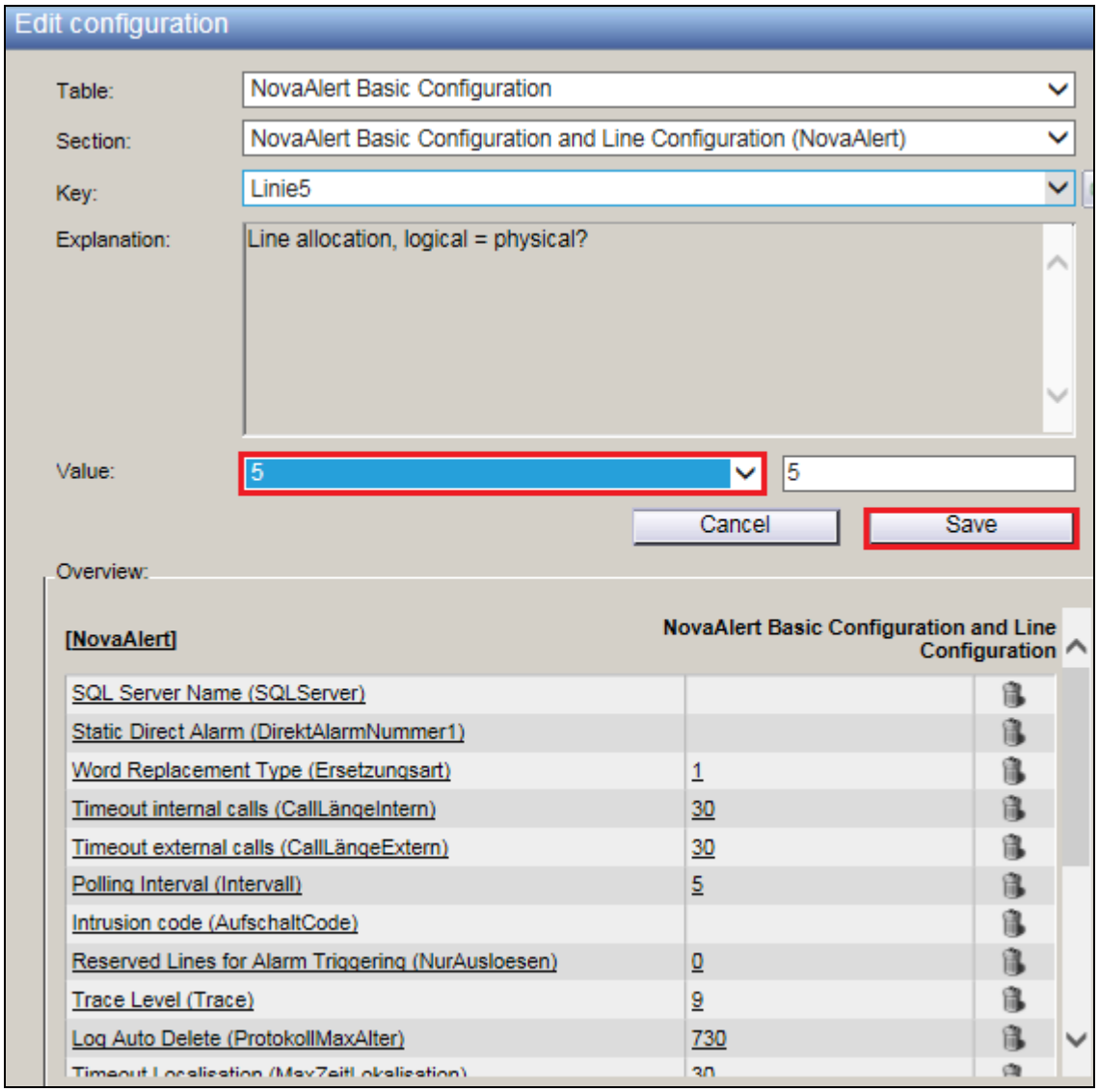
Select **NovaConf Basic Configuration and Line Configuration (NovaConf)** from the **Section** drop-down menu. In order to add lines to any existing lines shown in the **Overview** window, click on the + icon to the right of the **Key** drop down menu, as is shown below.



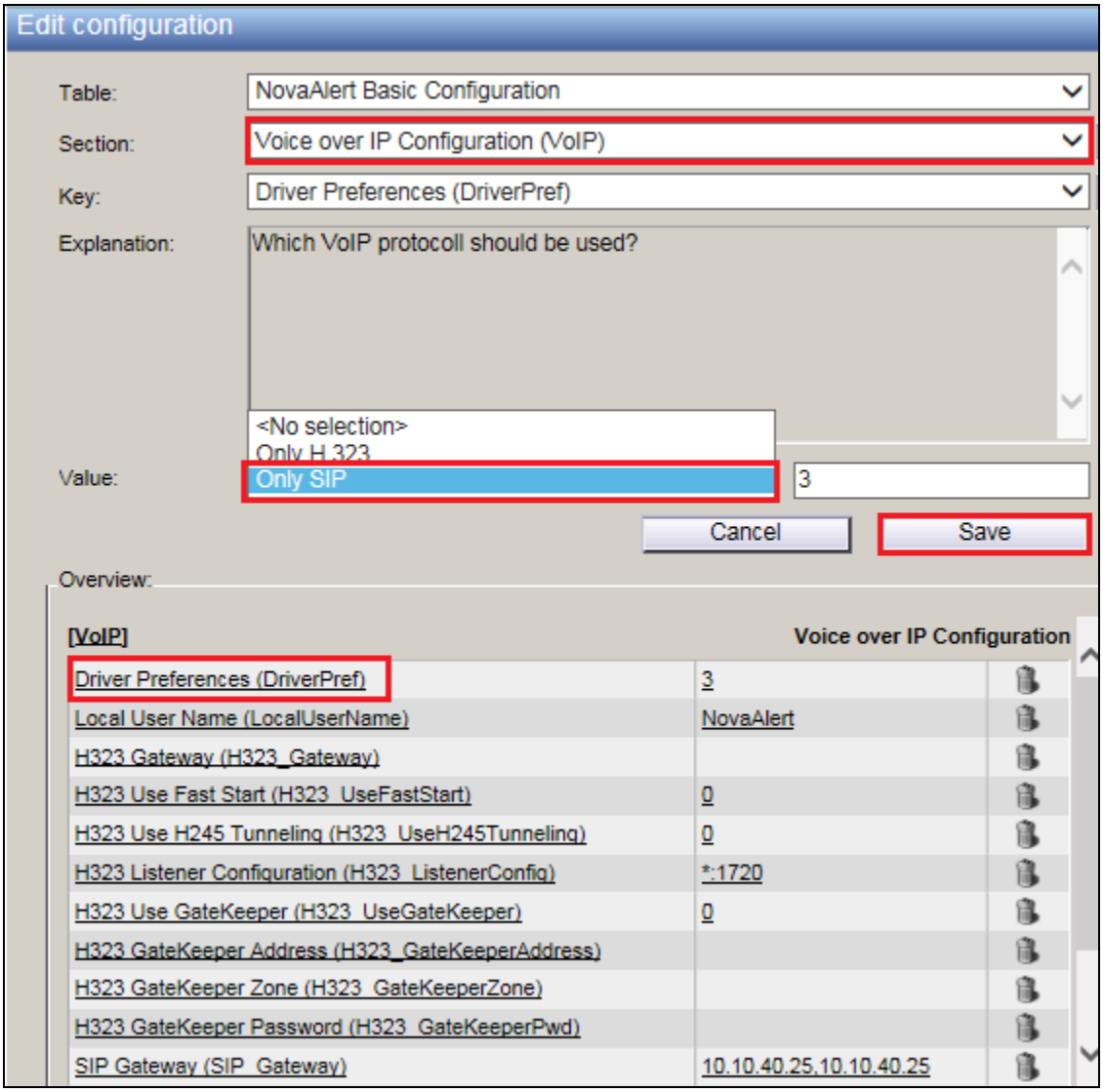
The following window opens, enter **LinieX** into the window and click on **OK**, where X is the next line number to be added.



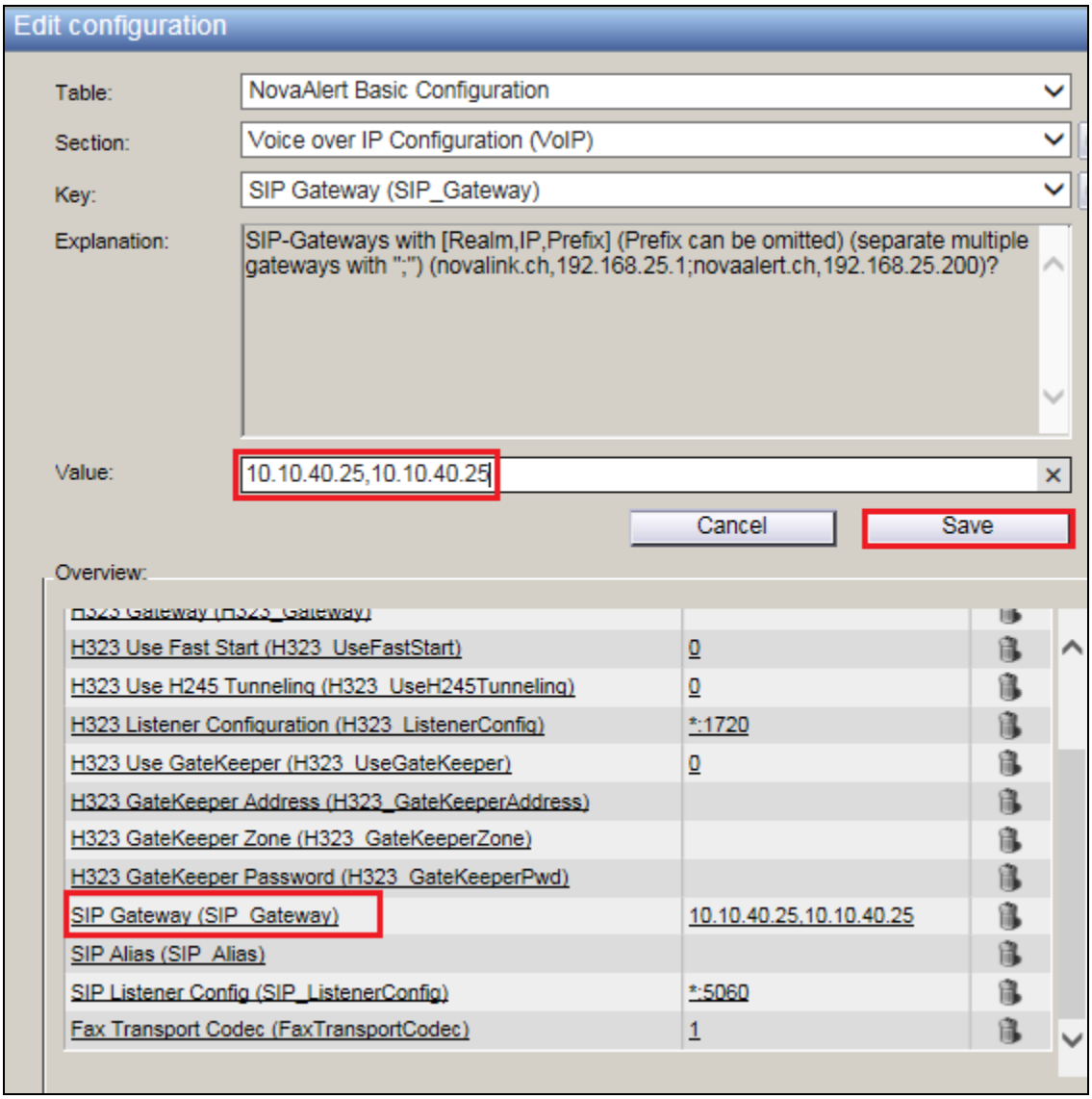
The Key added above, Linie5 should now populate the **Key** menu. Enter the **Value** X where X is the next line number to be added; in this case it is **5**. Click on **Save** to continue.



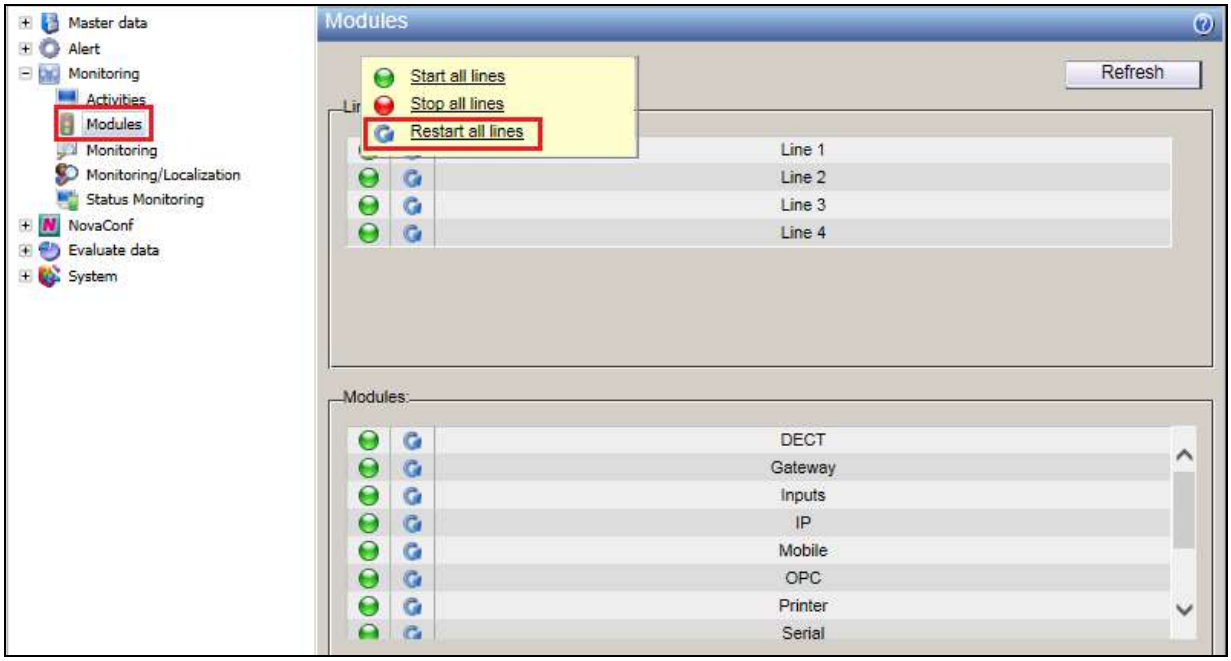
Choose a new section, **Voice over IP Configuration (VoIP)** from the **Section** drop-down menu. Select **Driver Preferences (DriverPref)** from the **Key** drop-down menu. Select **Only SIP** from the drop-down menu for **Value** and click on **Save** to continue.



Staying with the same **Section**, using the drop-down menu change the **Key** to **SIP Gateway (SIP_Gateway)**. Enter the **Value** for the SIP Gateway which will be the IP address of the IP Office, in this case the IP address of the Server Edition. This is entered in the format IP Address, IP Address or **10.10.40.25**, **10.10.40.25** as is shown below. Click on **Save** to continue.



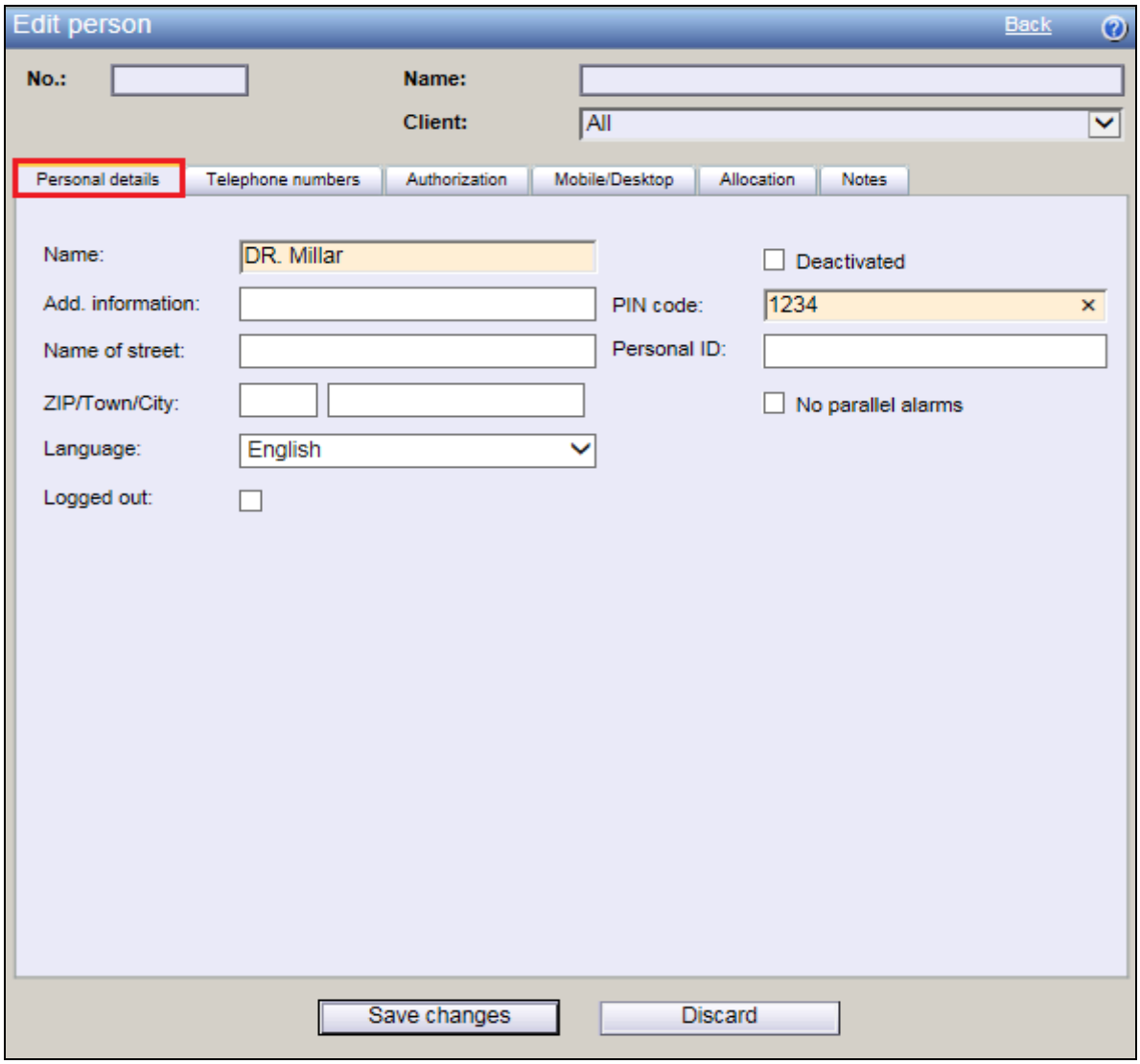
To finish out the configuration a restart of the lines is required. From the menu section navigate to **Monitoring → Modules** and from the main window click on the **refresh icon** beside any of the lines and select **Restart all lines**, as shown below.



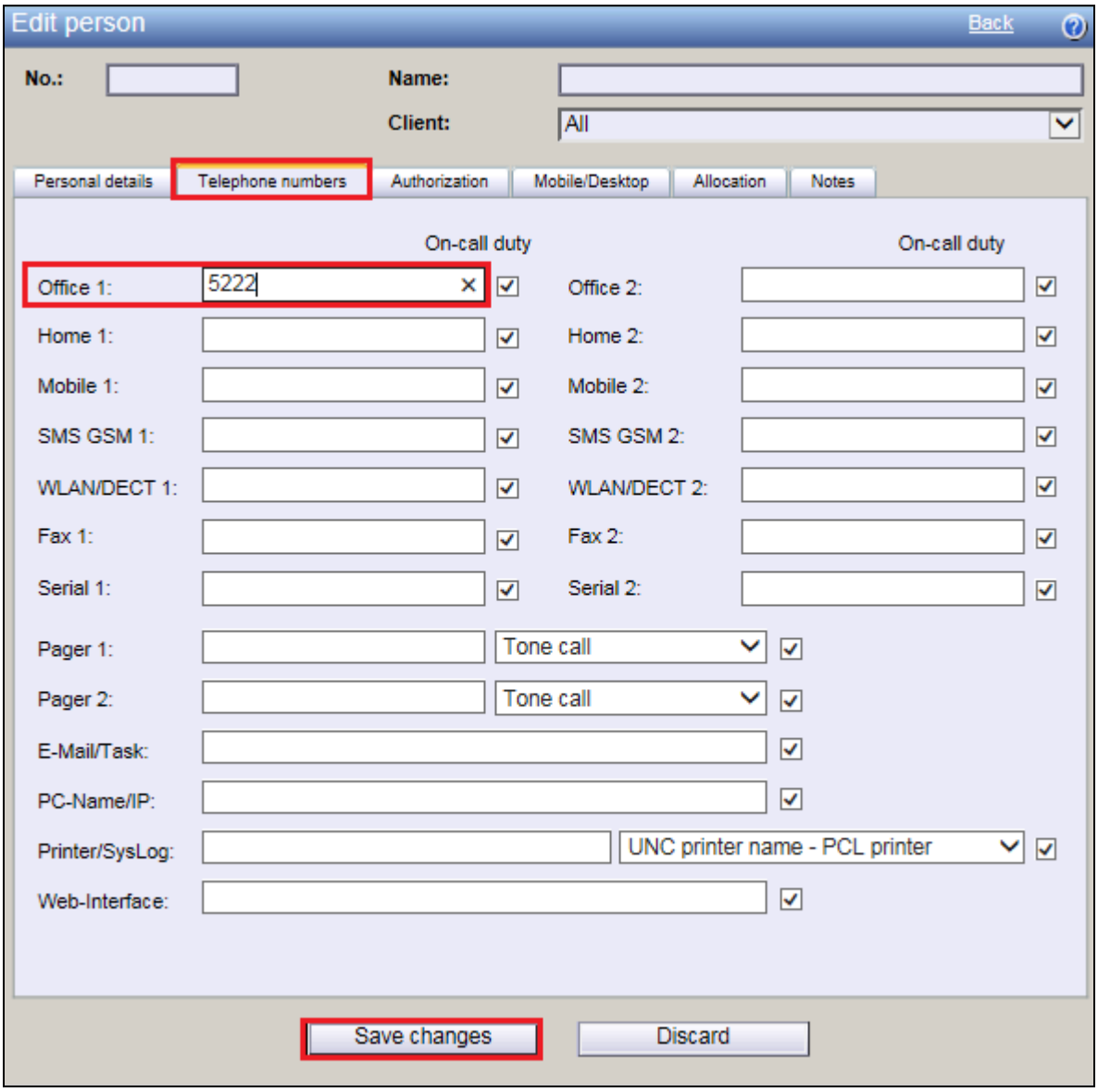
6.2 Add an Avaya IP Office extension for Conference

In order to send an alarm to IP Office an extension will need to be added. This extension is then called by NovaConf when the alarm is activated. From the main menu, navigate to **Master data → User master data**. In the main window select **New person** as shown below.

Click on the **Personal details** tab and enter a suitable **Name** and **Pin code**.



Click on the **Telephone numbers** tab and enter the IP Office telephone number for this user and click on **Save Changes** at the bottom of the screen.



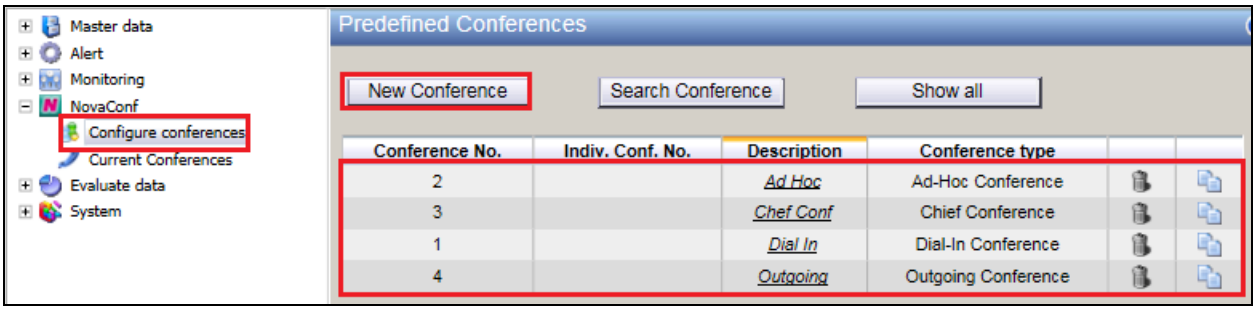
The new user/extension is now clearly shown.

7. Verification Steps

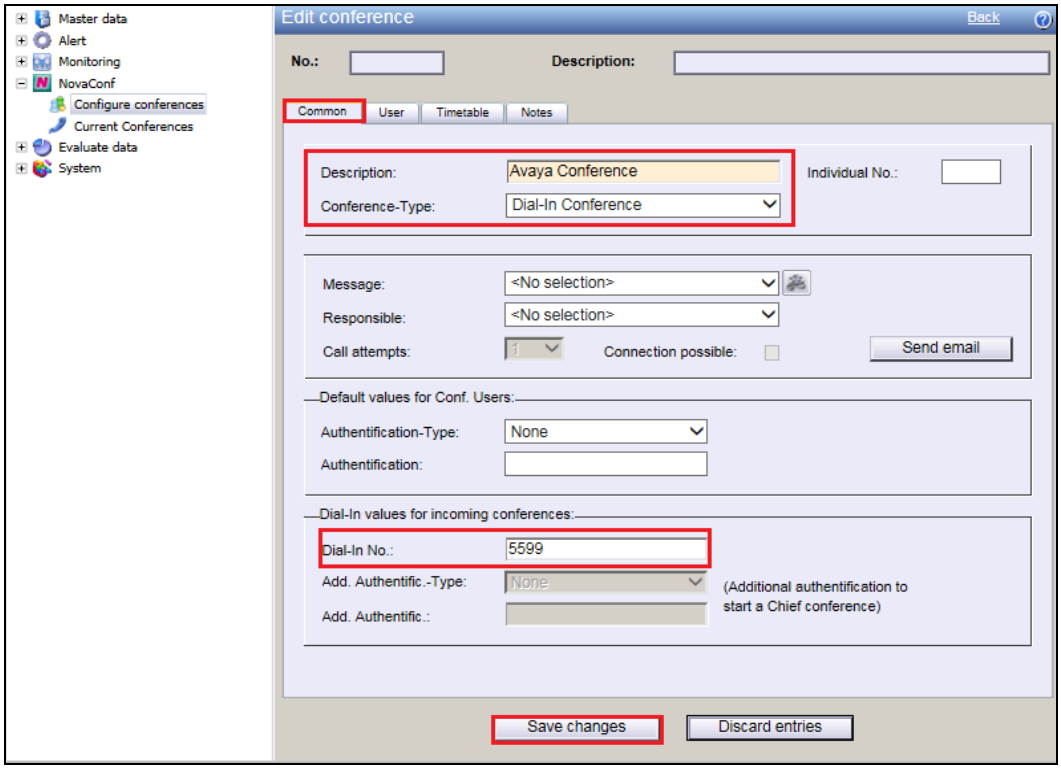
This section illustrates the steps necessary to verify that the NovaConf is configured correctly to allow extensions on IP Office dial in and use the conference facilities using SIP trunks.

7.1 Create a new conference on NovaConf

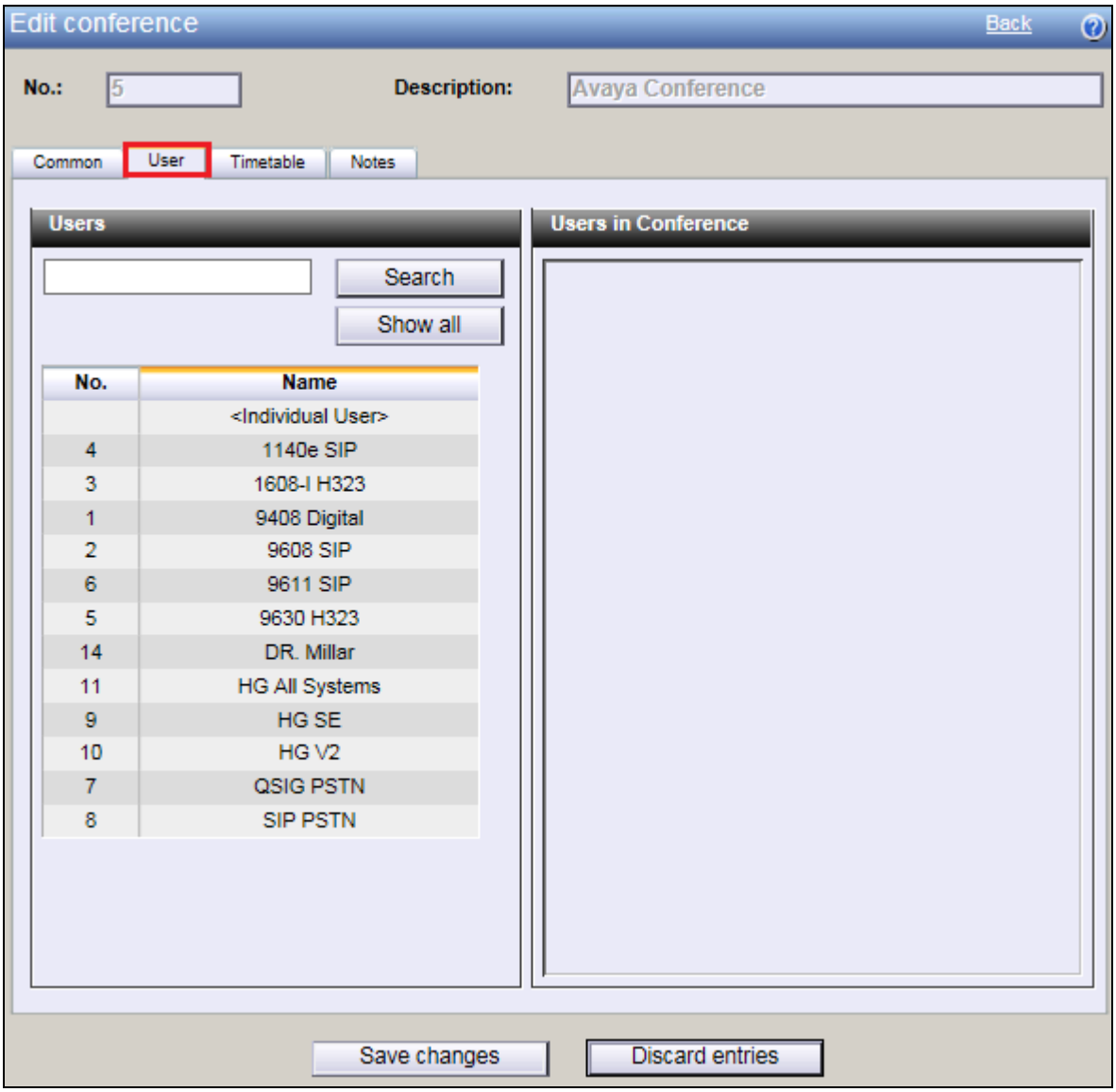
From the main menu navigate to **Master data → NovaConf → Configure conferences**. From the main window, click on **New Conference**, as shown below. Also highlighted are existing conferences that are already created.



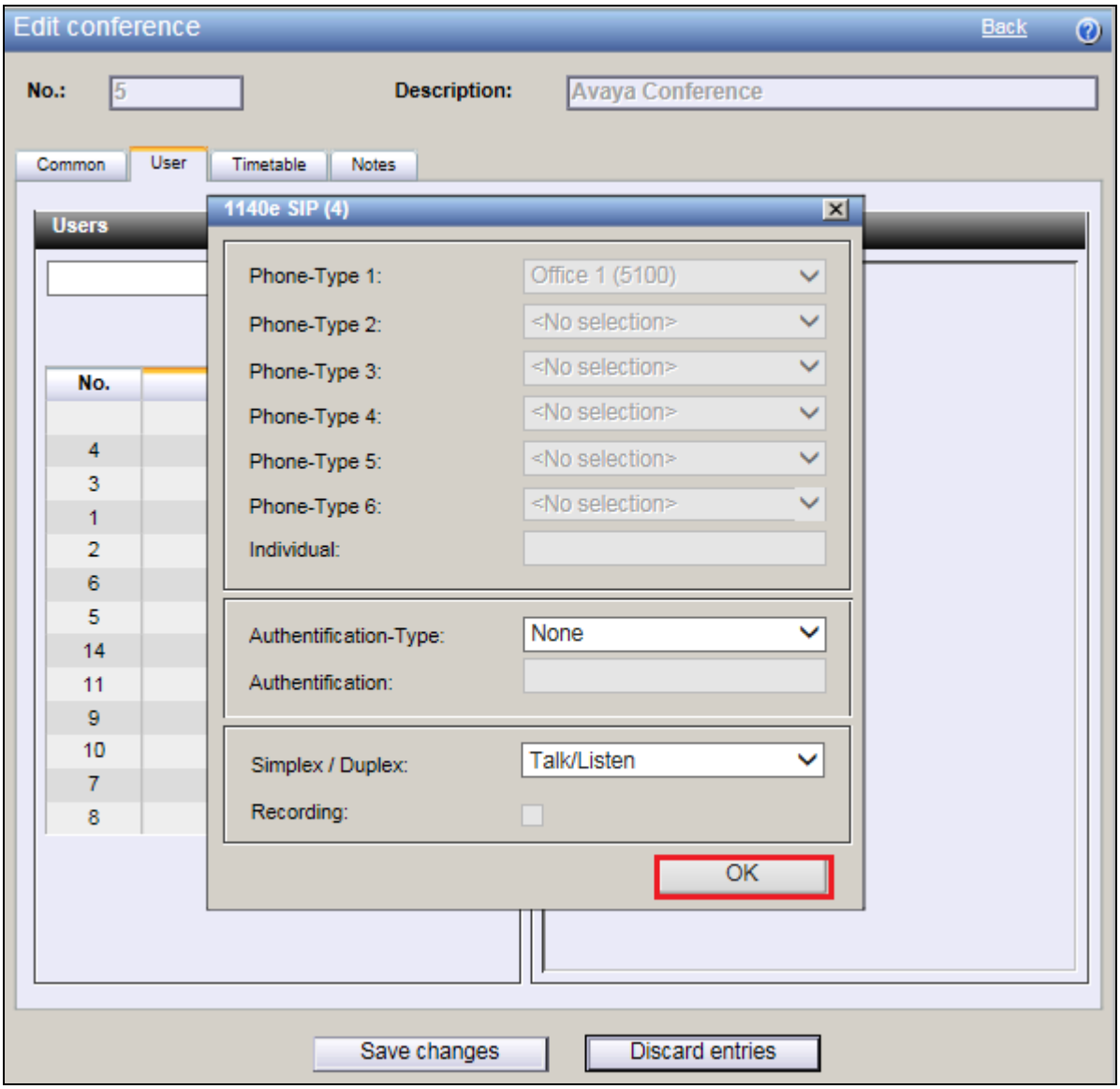
In the **Common** tab, enter a suitable **Description** and **Conference-Type** for the new conference. Enter a suitable **Dial-In No**, this being the number users on IP Office will call to gain access to the conference. This is the number that N represents in the Short Code created in **Section 5.5**. Click on **Save Changes** once this is entered.



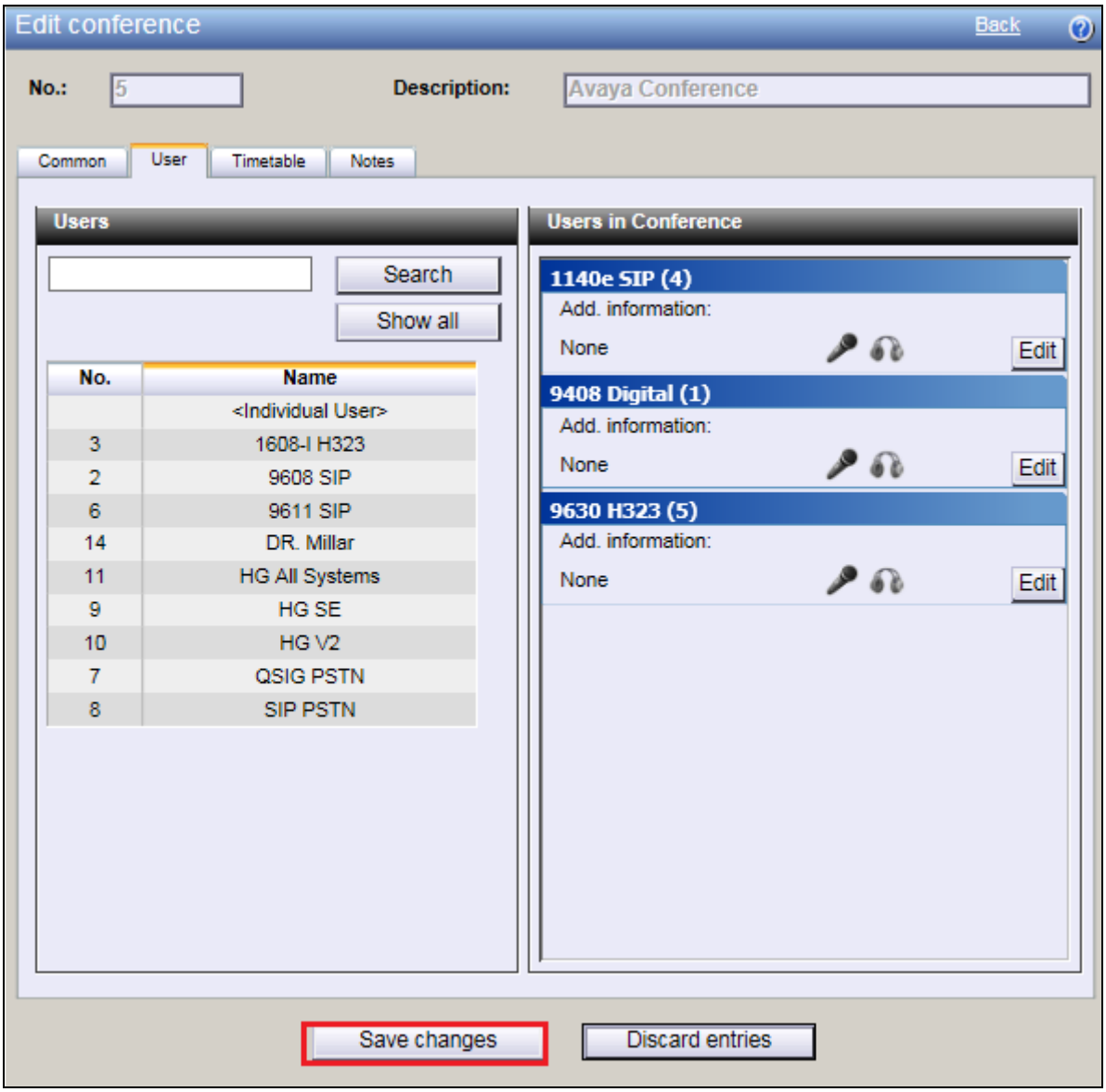
Click on the **User** tab and select the user that may be required for the conference, in the example below the first three users in the list will be selected.



Once the **User** has been correctly selected a new window is opened as shown below, simply click on OK to add the user.



With all three users now added into the conference, click on **Save Changes** at the bottom of the screen.



This new conference called **Avaya Conference** is now visible in the list of **Predefined Conferences**.

Since the number 5599 was entered as the Dial-In No., the IP Office user can dial 56 5599 and this user will be placed into the conference, with 56 accessing the Short Code and 5599 being sent across to NovaConf. Upon dialing this number the IP Office user should hear "welcome to the conference".

8. Conclusion

These Application Notes describe the configuration steps required for NovaConf from NovaLink to interoperate with Avaya IP Office R9.1 Server Edition with an Avaya 500 v2 Expansion. All feature functionality and serviceability test cases were completed successfully with any issues and observations noted in **Section 2.2**.

9. Additional References

This section references the Avaya and NovaLink product documentation that are relevant to these Application Notes.

Product documentation for Avaya products may be found at *http://support.avaya.com*.

[1] *Avaya IP Office R9.1 Manager 10.1, Document Number 15-601011*
[2] *Avaya IP Office R9.1 Doc library*

Technical support can be obtained for NovaConf from the website http://www.novalink.ch/en/ or from the following.

NovaLink GmbH
Businesstower
Zuercherstrasse 310
8500 Frauenfeld
Switzerland
helpdesk@novalink.ch
Phone: +41 52 762 66 77
Fax: +41 52 762 66 99

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.