Avaya Solution & Interoperability Test Lab

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

Abstract

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

NovaMail lets user's record individual welcome messages. These can be manually activated or permanently assigned to a call reason. In the latter case, the system knows why the call has reached the VoiceBox and informs the caller that user is not in the building, is temporarily absent from the workplace, are on the phone, or that the call is being received outside office hours. In all cases, a distinction can be made if required between internal and external calls, with calls connected to various messages accordingly. This ensures that callers are informed at all times as to why you are unable to take the call personally, and told when they can expect a return call.

2. General Test Approach and Test Results

This section describes the compliance testing used to verify interoperability of NovaMail with IP Office and covers the general test approach and the test results. Calls were made to NovaMail over SIP trunks connecting Avaya IP Office and NovaMail. IP Office Server Edition with an IP Office 500 v2 expansion was used for compliance testing and various Avaya endpoints were registered to the Server Edition side and the IP Office 500 v2 side. The SIP trunk was connected between the Server Edition and NovaMail 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 NovaMail to carry out a variety voicemail functions in various conditions to multiple types of endpoint according to the configuration made via the web interface. These included:

- Forwarding to voicemail.
- Leaving and retrieving voicemail to/from PSTN/SIP/H.323/Digital endpoints.
- Message Waiting Indication (MWI).
- Use of DTMF for retrieval and menu navigation.
- NovaMail calling to local and PSTN endpoints.
- Serviceability testing consisted of verifying the ability of NovaMail to recover from power or network interruption to both IP Office and NovaMail.

2.2 Test Results

All functionality and serviceability test cases were completed successfully with the following observations noted.

1. When a user forwards their phoneset to voicemail NovaMail uses the A-Party number instead of the B-Party number and a workaround is put in place by forwarding the phoneset to an additional mailbox number.
2. When a H323 phone is unplugged with the MWI light on, the MWI light does not come back on again after the reboot.

2.3 Support

Technical support can be obtained for NovaMail 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 NovaMail with Avaya IP Office Server Edition R9.1 & an Avaya IP Office 500 v2 expansion. The connection between the NovaMail and the IP Office solution is via SIP Trunks.

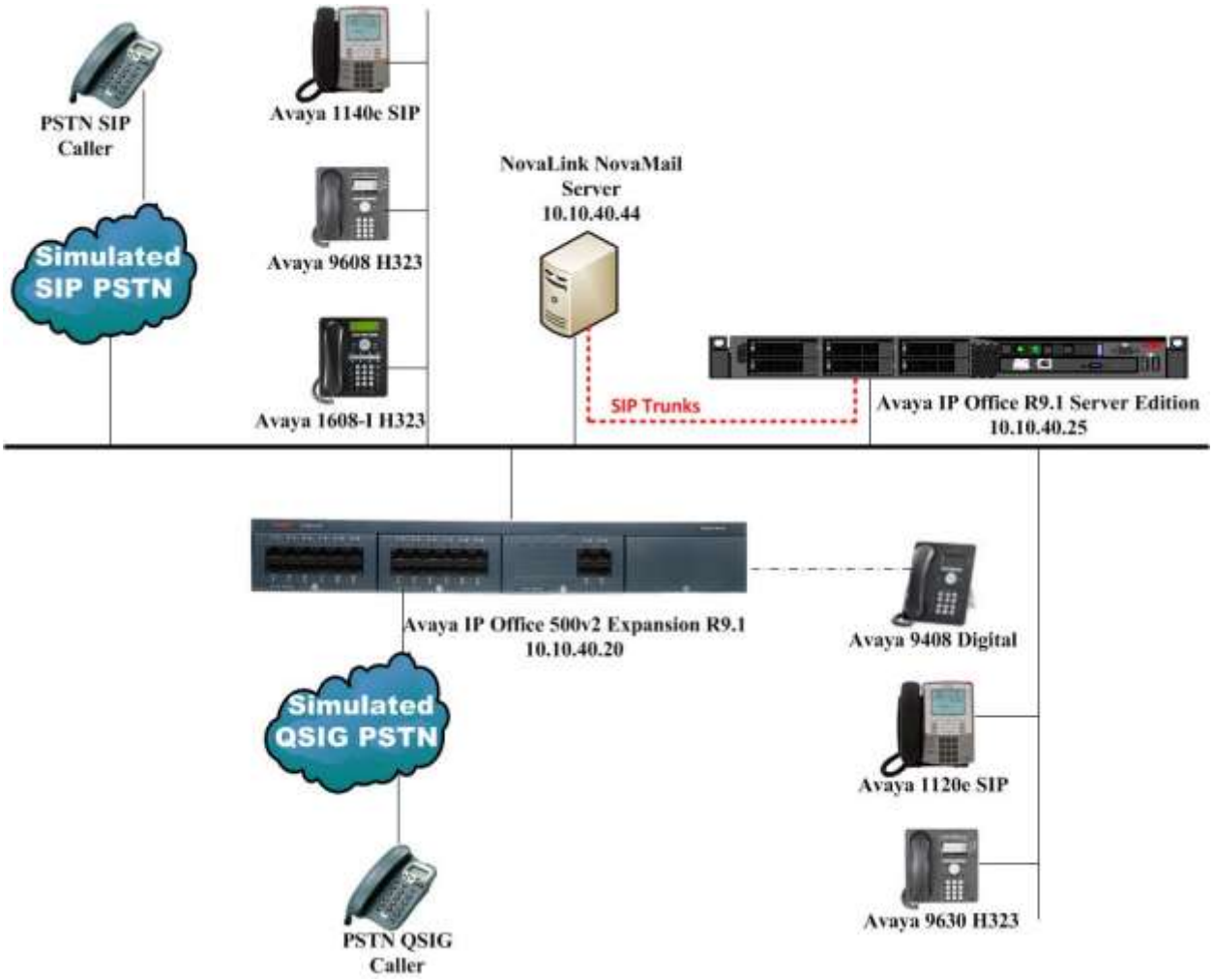


Figure 1: Connection of NovaMail from NovaLink with Avaya IP Office Server Edition & Avaya IP Office 500 v2 Expansion R9.1

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)	R9.1.0.0 (Build 260) R9.1.0.0 (Build 260)
Avaya 1608 I Deskphone	H323 1608UA1_350B.bin
Avaya 9630 Deskphone	96xx H.323 Release 6.4014U
Avaya 1140e SIP	R 04.03.12.00
Avaya 1120e SIP	R 04.03.12.00
Avaya 9408 Digital	Version 2
NovaMail running on a Windows 2012 virtual server	9.8

Note: 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.

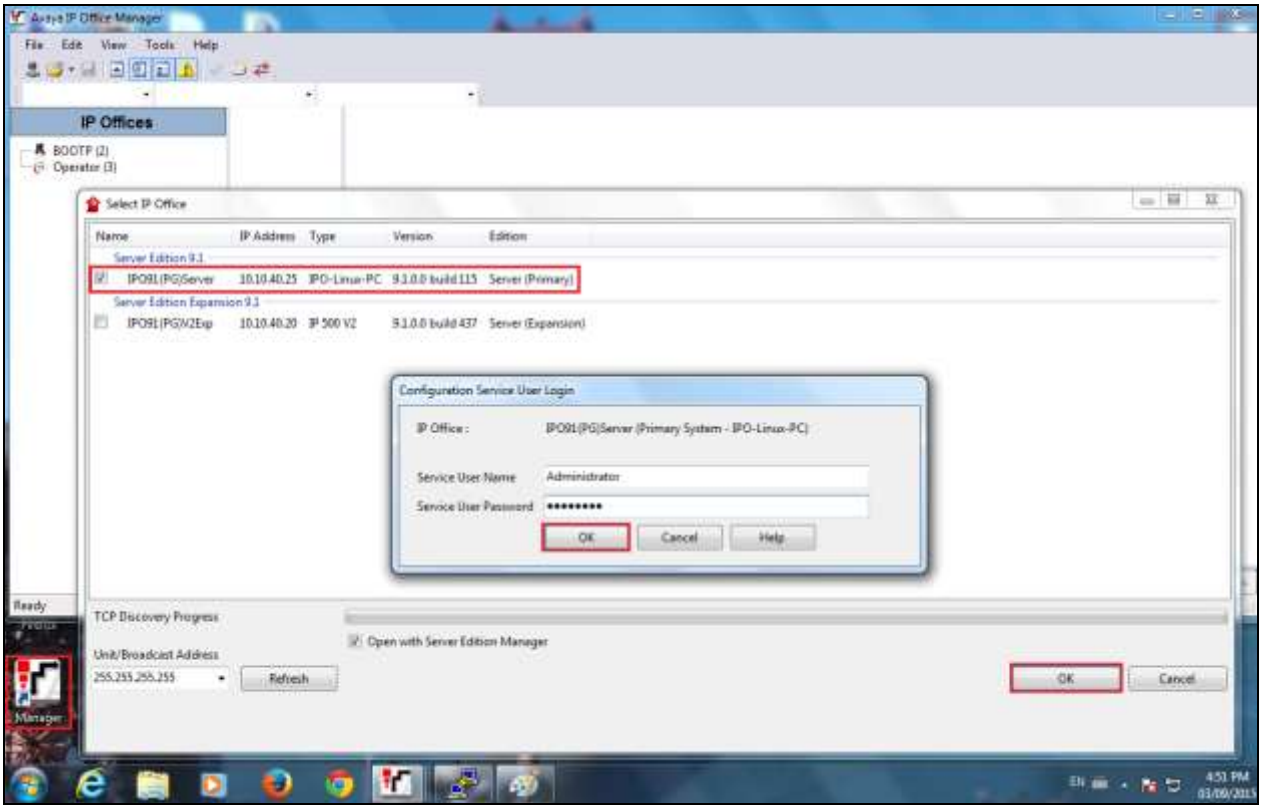
5. Configuration of Avaya IP Office

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 10**. 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.
- Configure Short Codes.
- Save Configuration.

5.1 Launch Avaya IP Office Manager

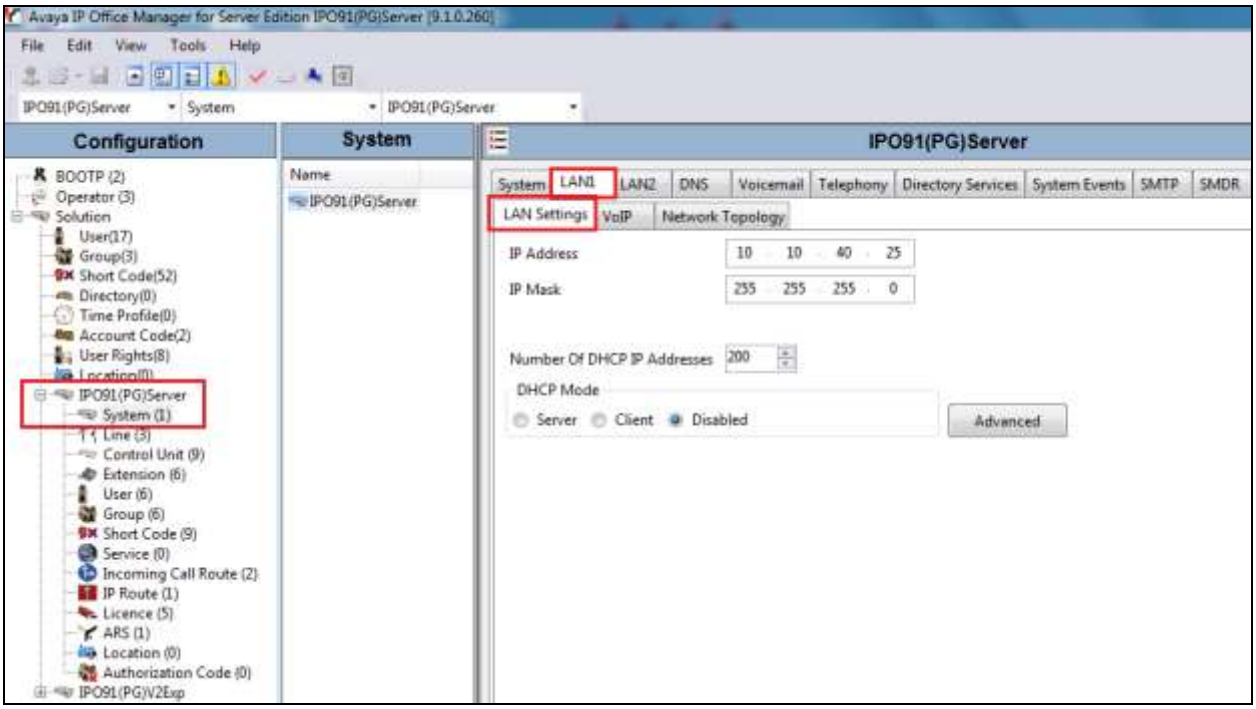
From the Avaya IP Office Manager PC, go to **Start → Programs → IP Office → Manager** to launch the Manager application or use the **shortcut on the desktop** highlighted. Tick the required server to log in to, this will be the Server Edition and log in to Avaya IP Office using the appropriate credentials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



5.2 Display LAN Configuration

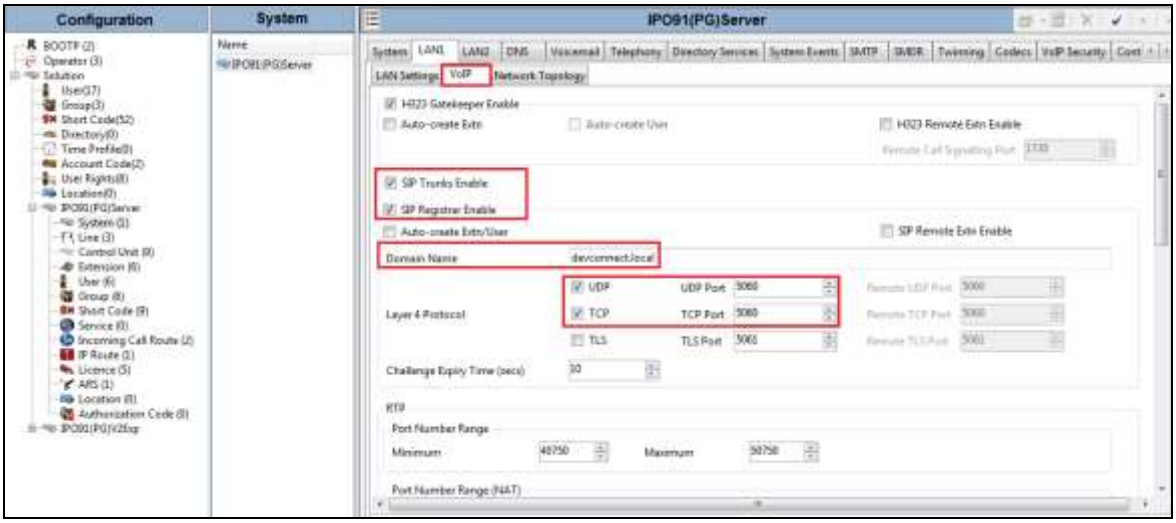
In the IP Offices window expand the configuration tree in the left pane and double-click **System**. During compliance testing the System was called **IPO91(PG)Server**. Select the **LAN** tab and note the following information:

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

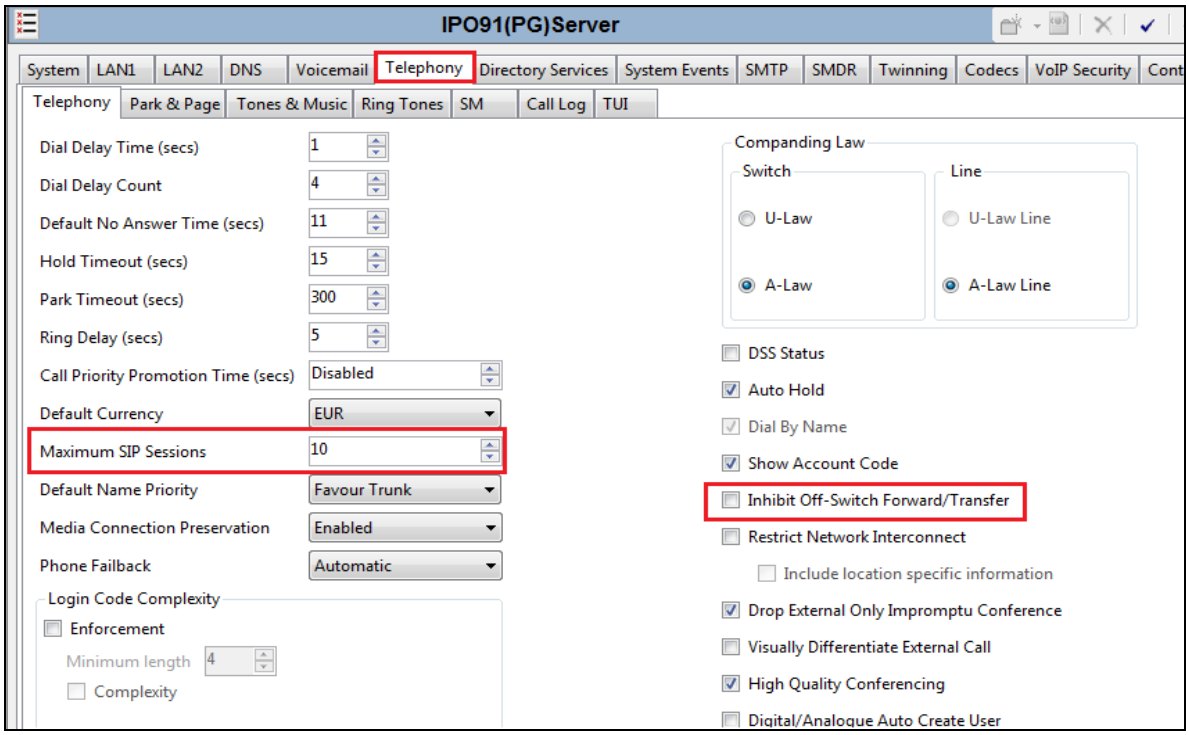


Click on the VoIP tab and set the following.

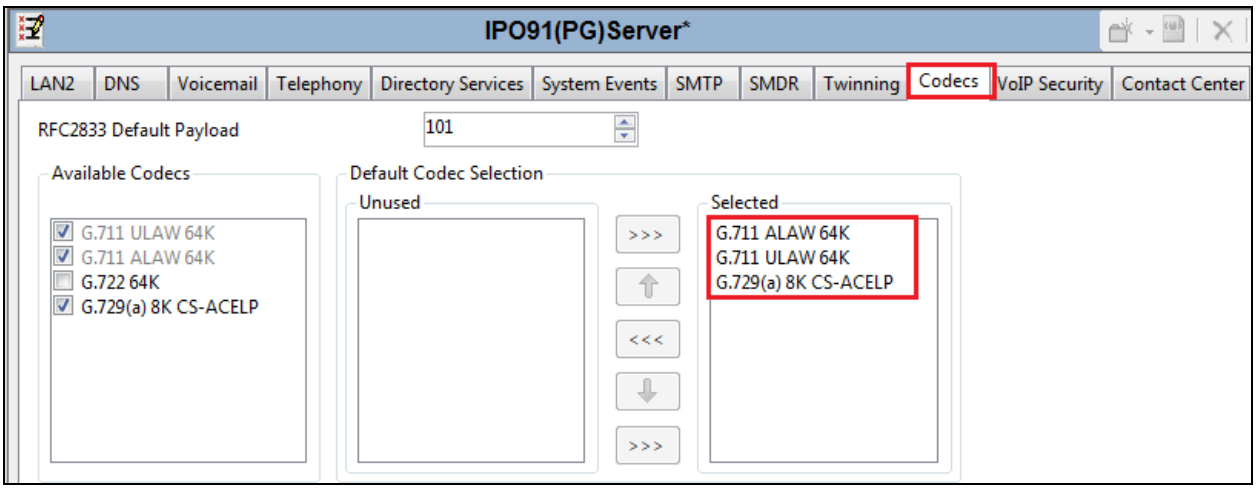
- **SIP Trunks Enable**.
- **SIP Registrar Enable**.
- **Domain Name**, set this to the telephony domain name.
- **UDP** set the UDP Port to **5060**.
- **TCP** set the TCP Port to **5060**.



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.

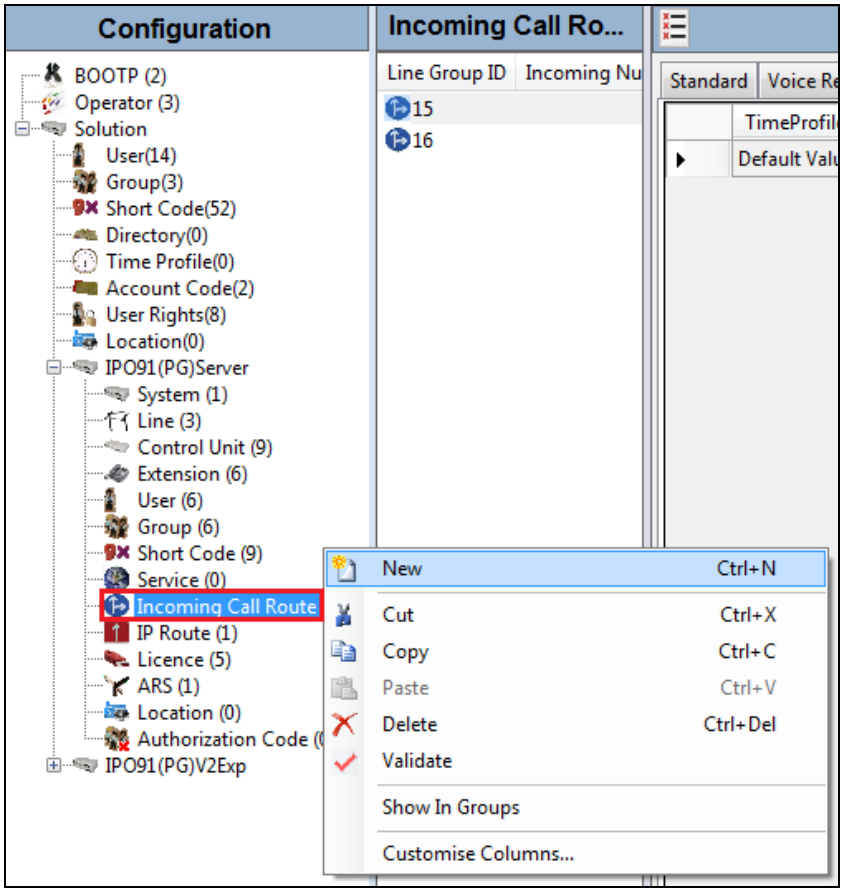


Click on the **Codecs** tab. Ensure that the correct Codecs are Selected.

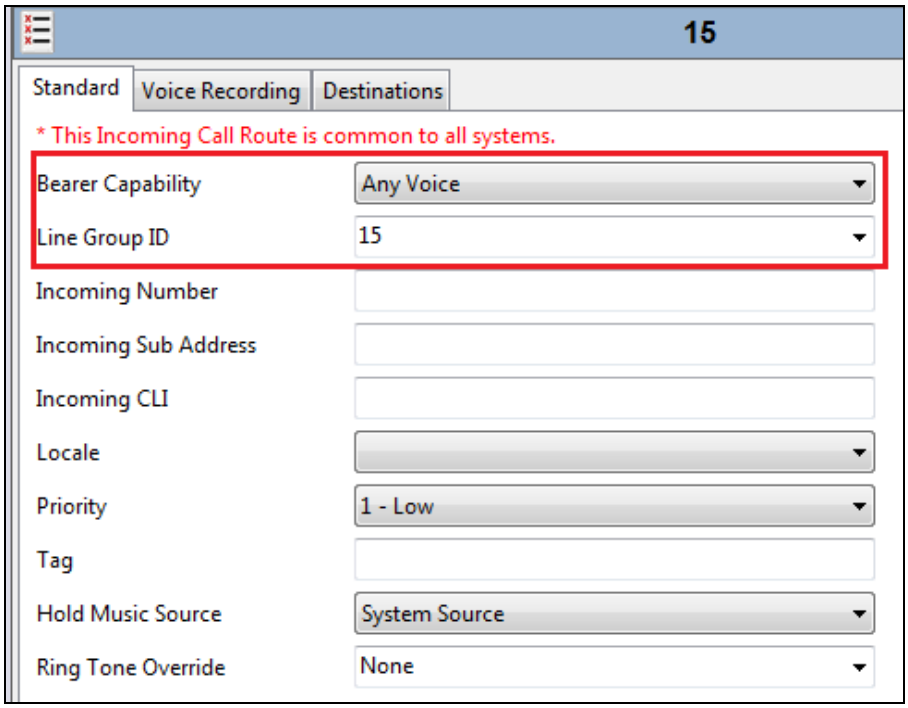


5.3 Configure Incoming Route for SIP Trunk

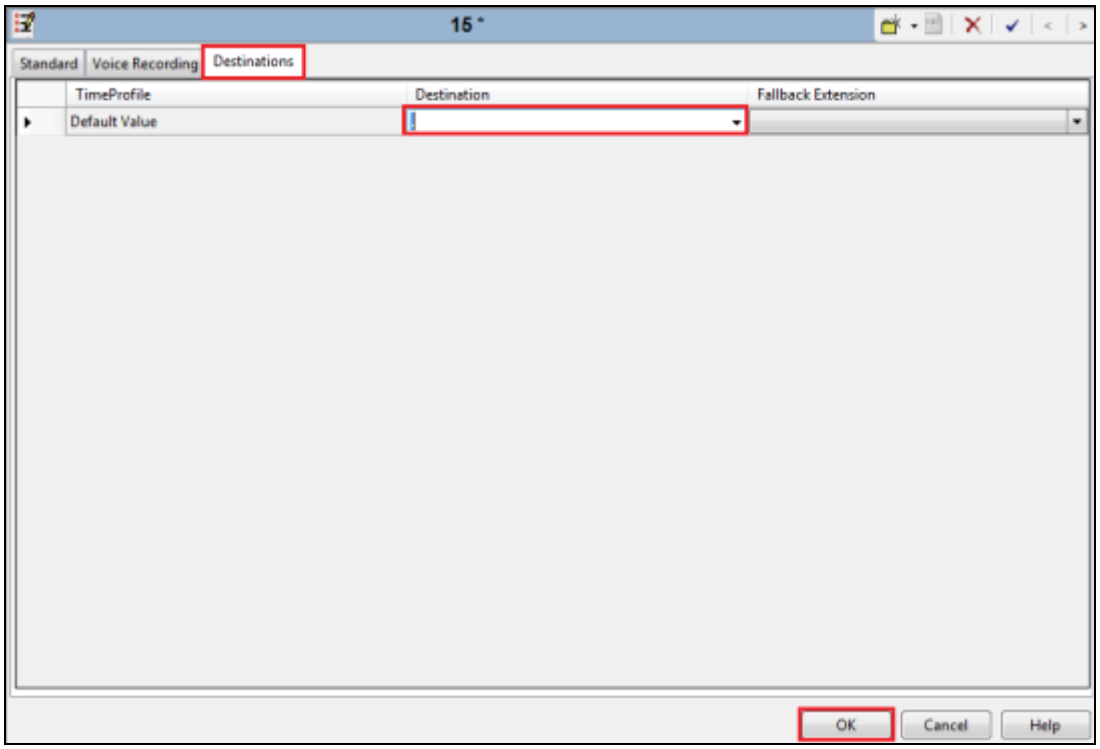
An incoming route must be added for the SIP trunk that will be setup in **Section 5.4**. Navigate to **Server Edition (IPO91(PG)Server) → Incoming Call Route**. Right click on Incoming Call Route select **New**.



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.**



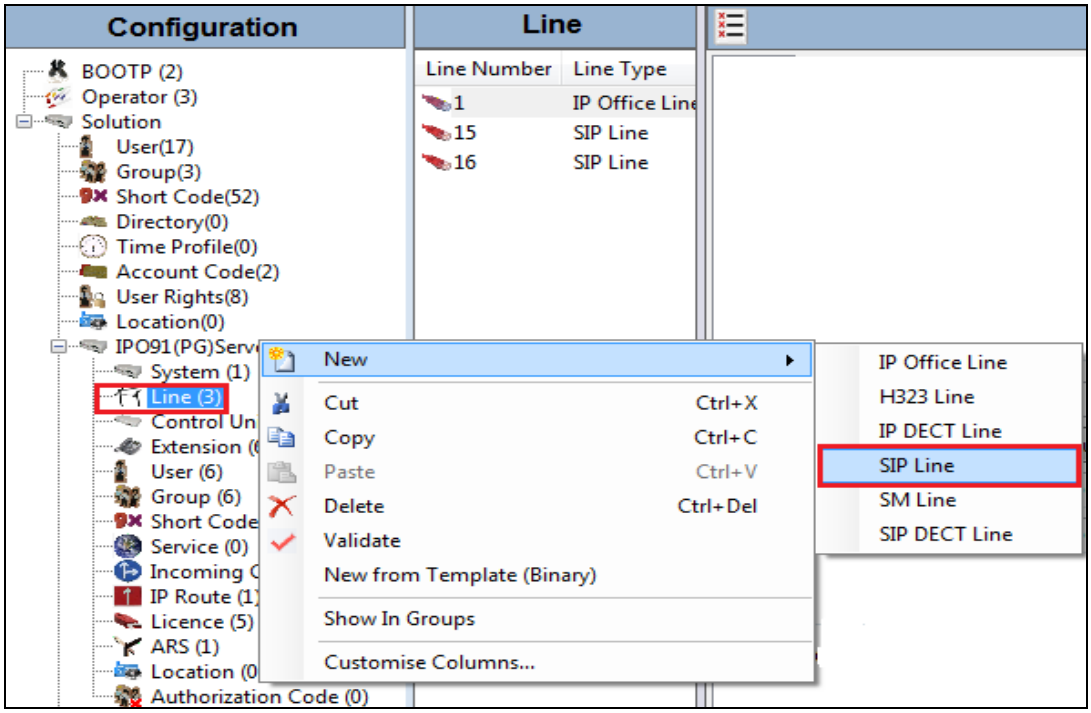
From the Destinations tab, select **.** for the **Destination**. Click on **OK** to continue.



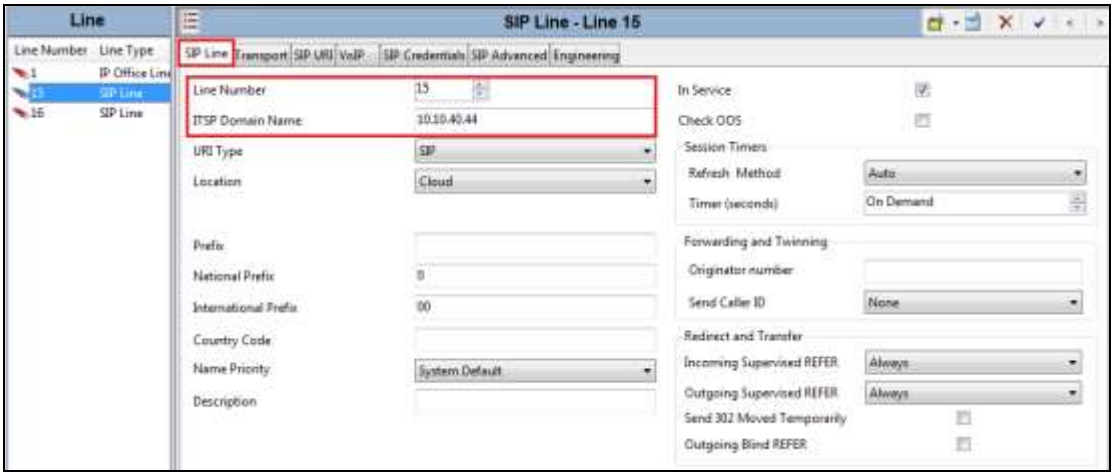
5.4 Configure SIP Trunk

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

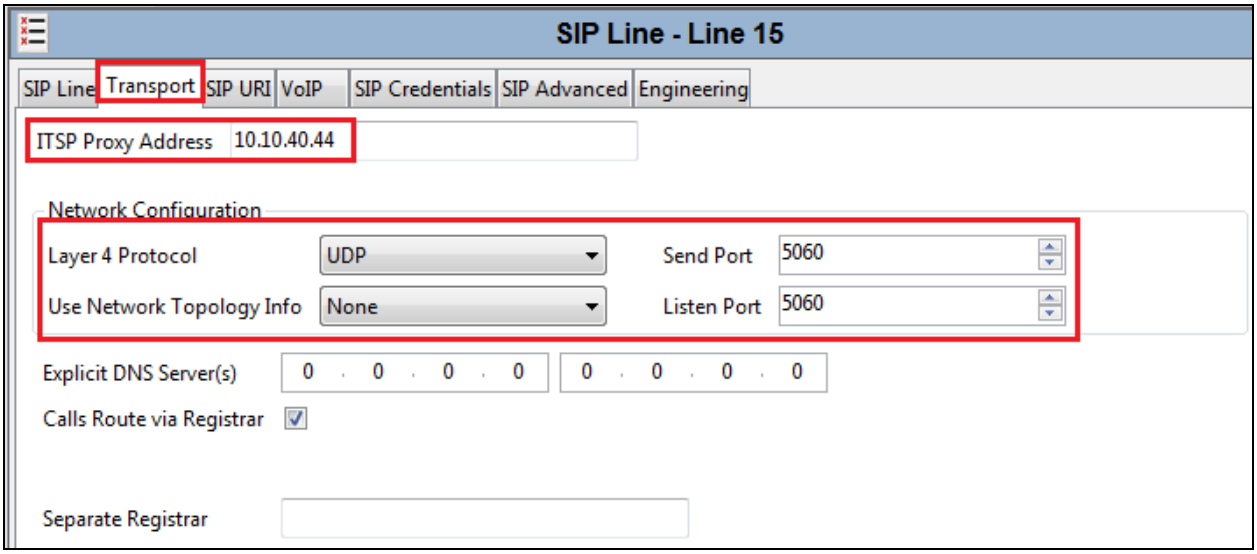
Navigate to **Server Edition → Line**, then right click on **Line** and select **New → SIP Line**.



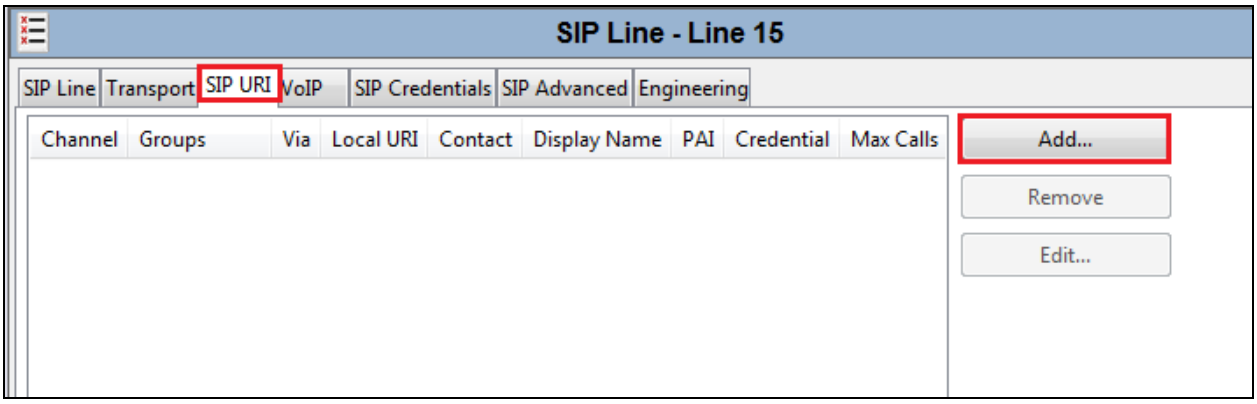
Click the **SIP Line** tab and select the new **Line Number** and insert the IP Address of the NovaMail server for the **ITSP Domain Name**.



Click on the **Transport** tab and enter the IP Address of the NovaMail server for **ITPS Proxy Address**. Ensure that the **Layer 4 Protocol** is set to **UDP**, set **Use Network Topology Info** to **None** and that the **Send Port** and **Listen Port** are both set to **5060**.

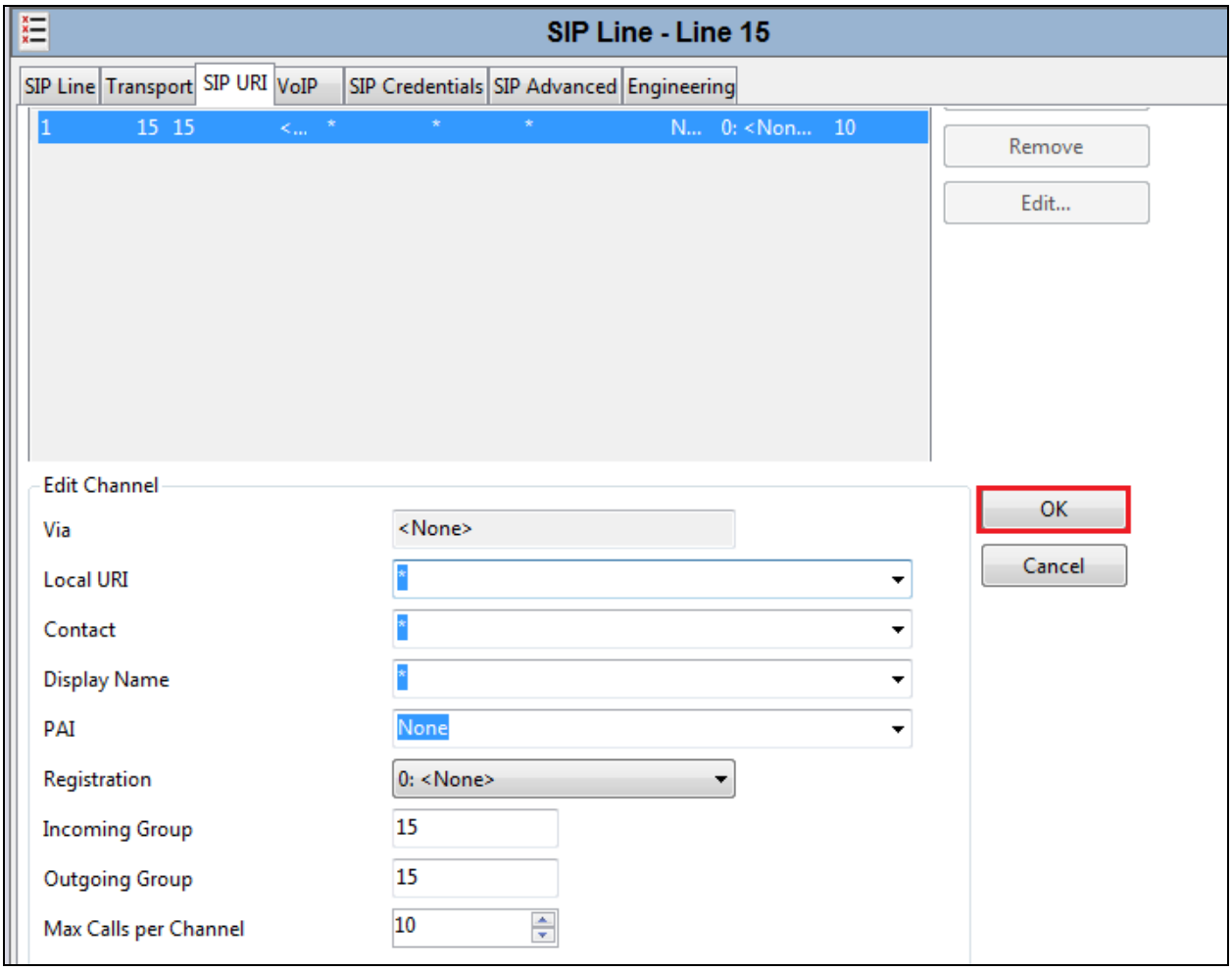


Click on the **SIP URI** tab and click on **Add**.

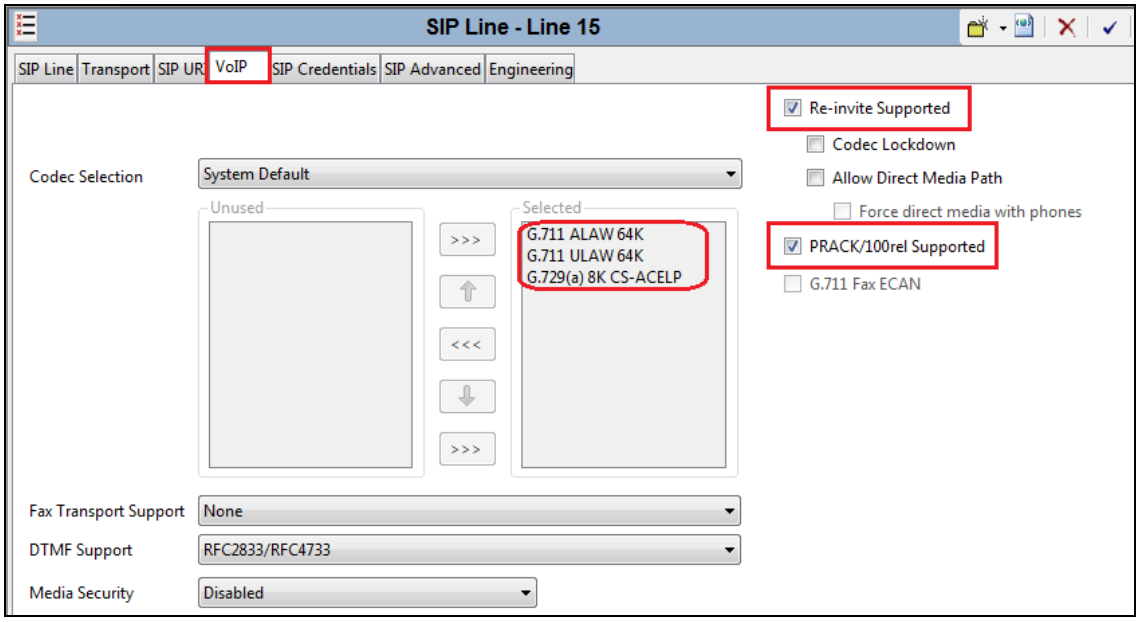


The following should be set as is shown below; anything else can be left as default or as it is displayed in the screen shot below. Click on **OK** to continue.

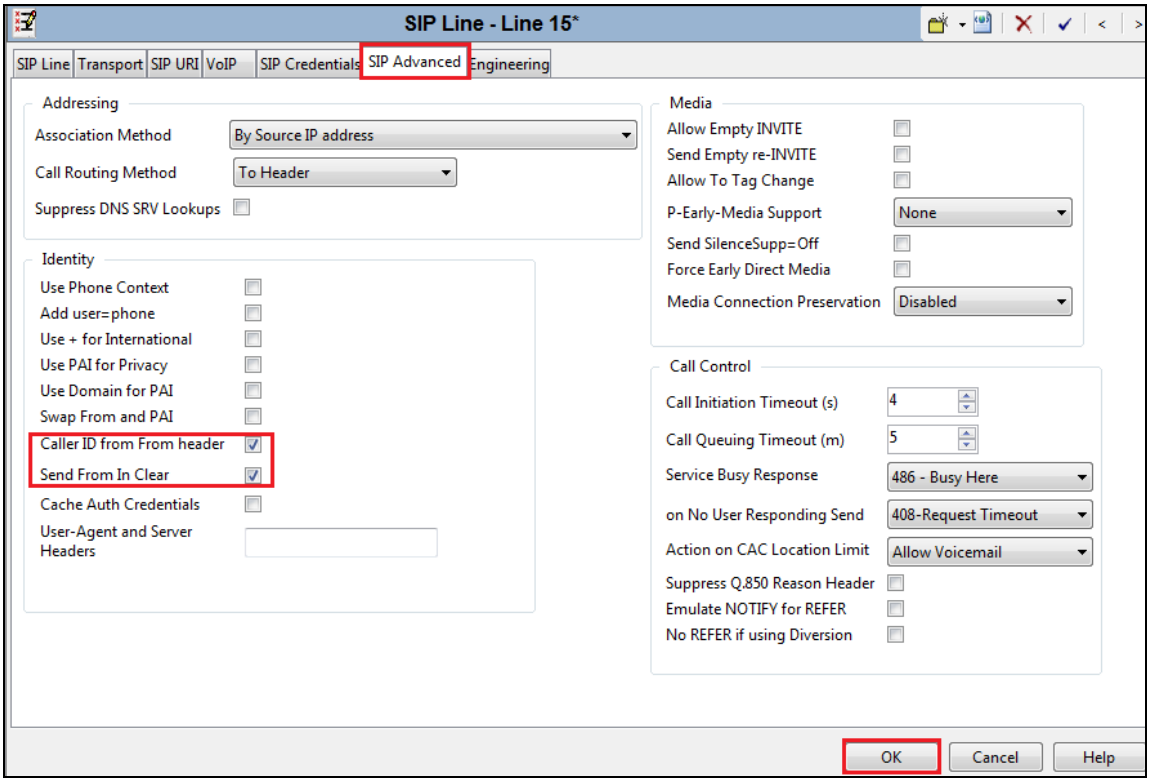
- **Local URI** Set to ***
- **Contact** Set to ***
- **Display Name** Set to ***
- **PAI** Set to **None**
- **Incoming Group** Set to the incoming group number for the SIP trunk (**15** in this case)
- **Outgoing Group** Set to the outgoing group number for the SIP trunk (**15** in this case)
- **Max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



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.

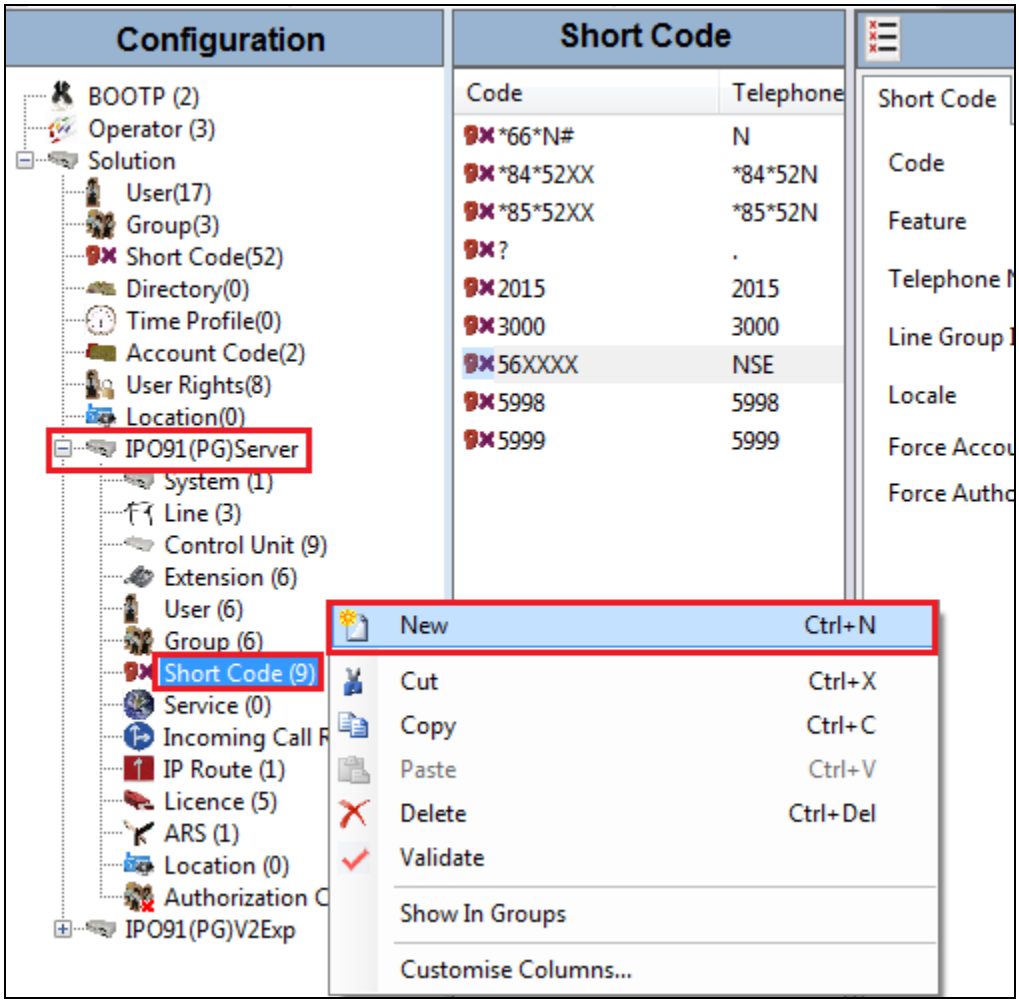


5.5 New Short Code to Dial NovaMail

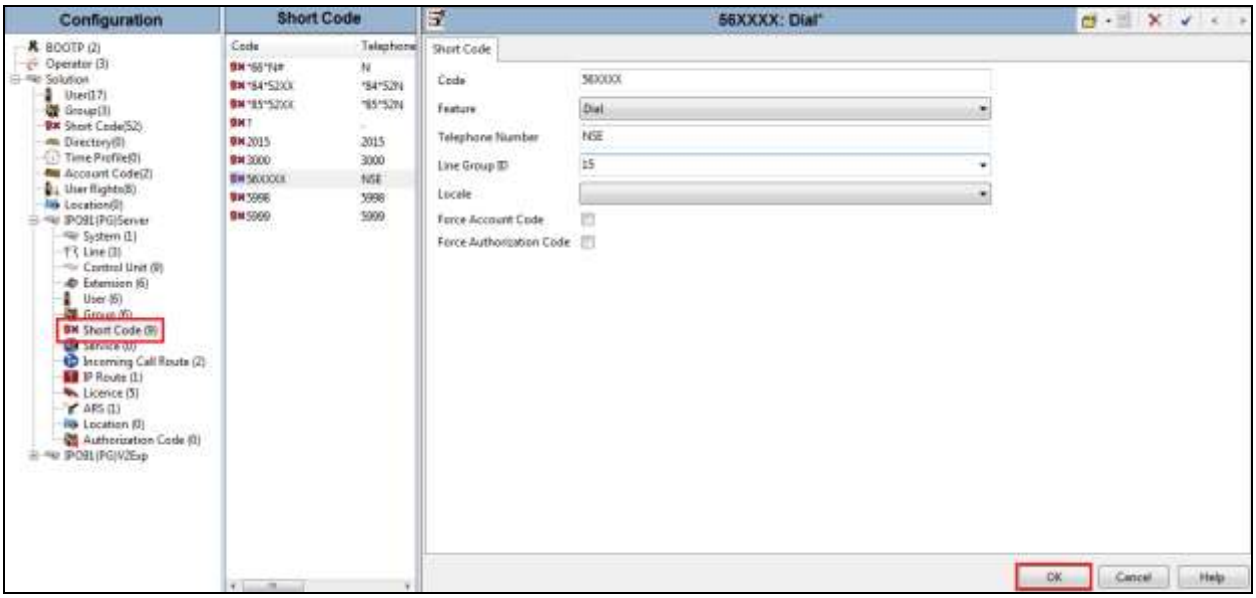
A short code will need to be added to both the Server Edition and the 500v2 in order to allow IP Office users dial into NovaMail.

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 (IPO91(PG)Server)→ Short Code**. Right click on **Short Code** and select **New**.



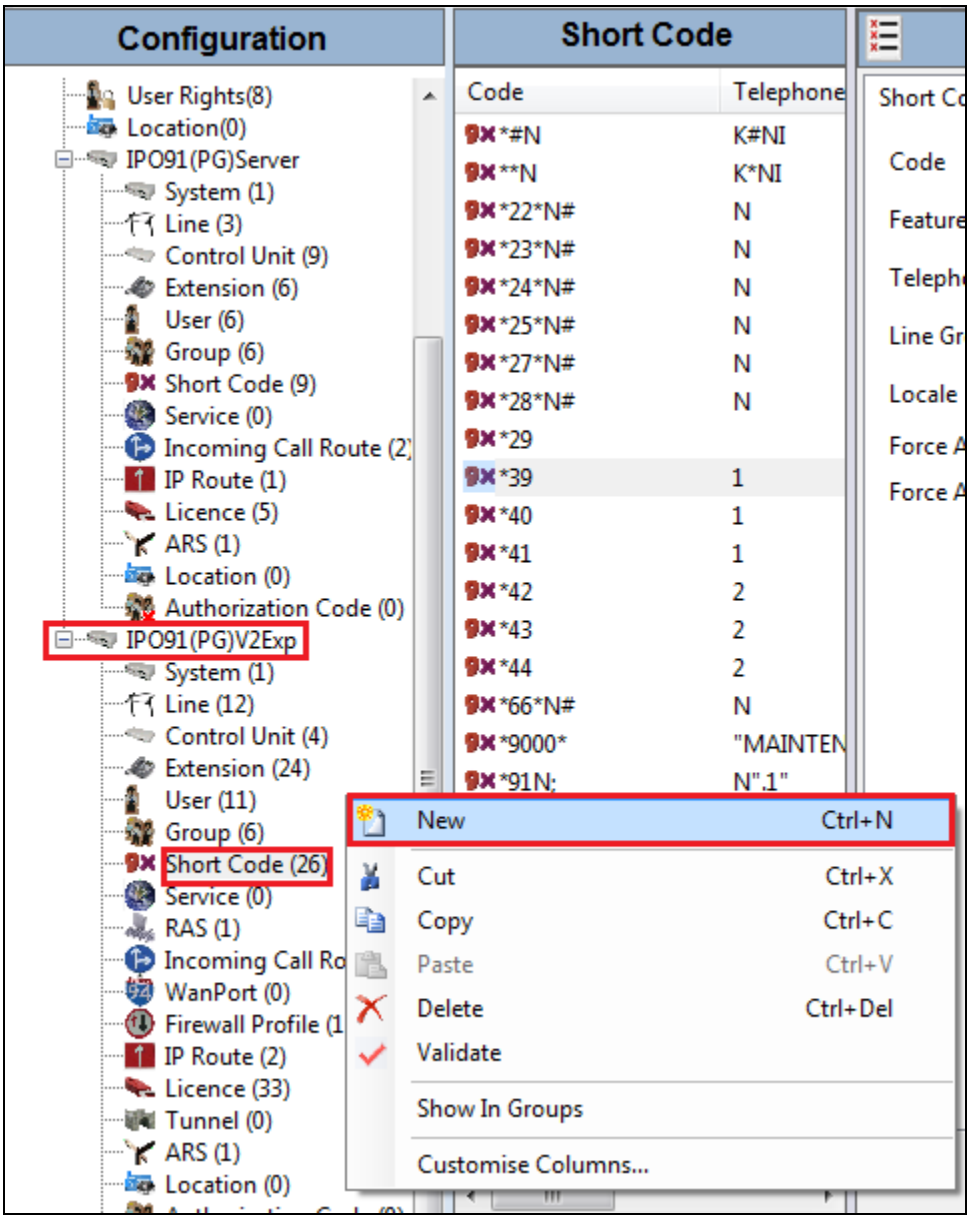
Enter the number to be dialled in the window named **Code**. In the example below the number was **56** followed by any 4 digits. These 4 digits are represented by for X's so when a user dials for example 561234 this will activate this short code. The actual number that will be sent over the SIP trunk 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.



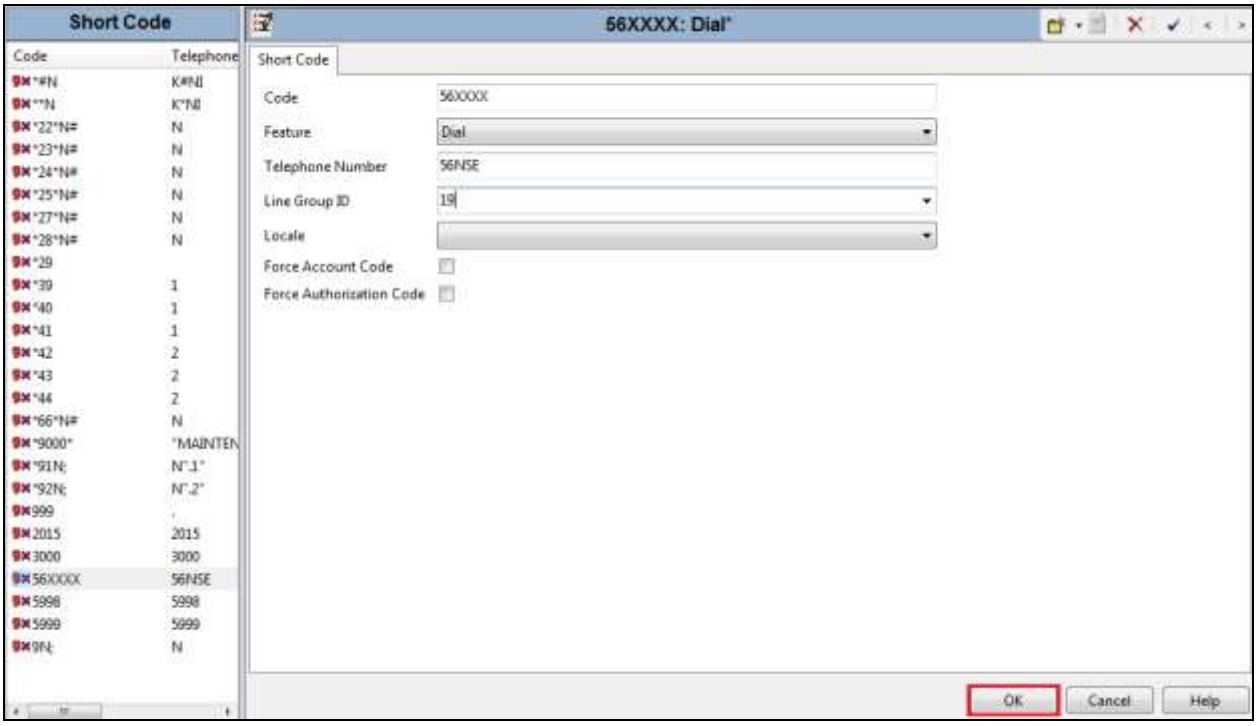
5.5.2 Short Code on the Avaya IP Office 500 v2 Expansion

If the user is calling from a 500 v2 extension such as a digital or analog phoneset, 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 (IPO91(PG)V2Exp) → Short Code** and right click on **Short Code** and click on **New**.

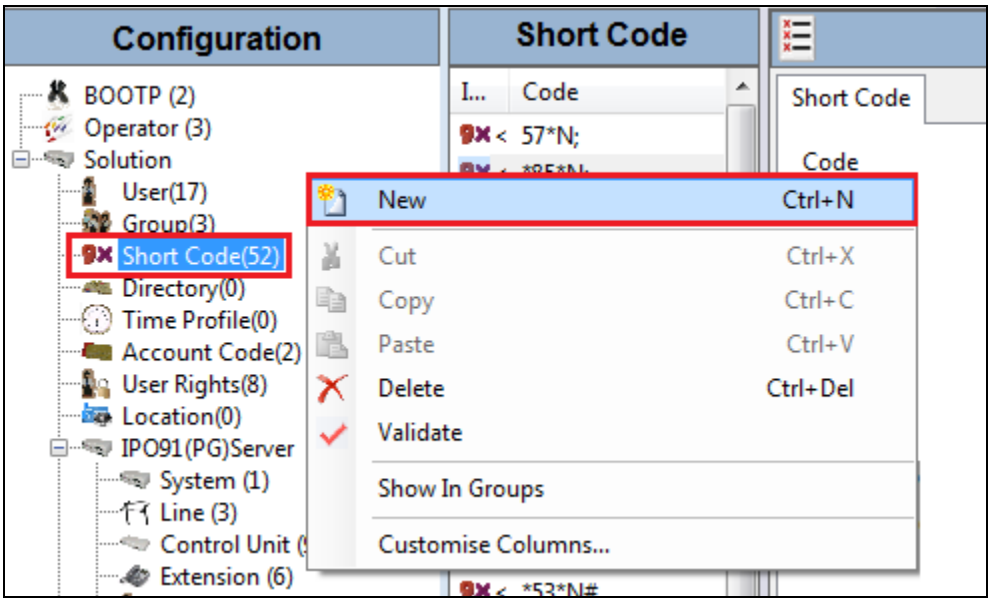


Enter the number to be dialled in the window named **Code**. In the example below the number was **56** followed by any 4 digits. These 4 digits are represented by for X's so when a user dials for example 561234 this will activate this short code. The actual number that will be sent over the H323 SCN 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 instruction to send the following as 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.

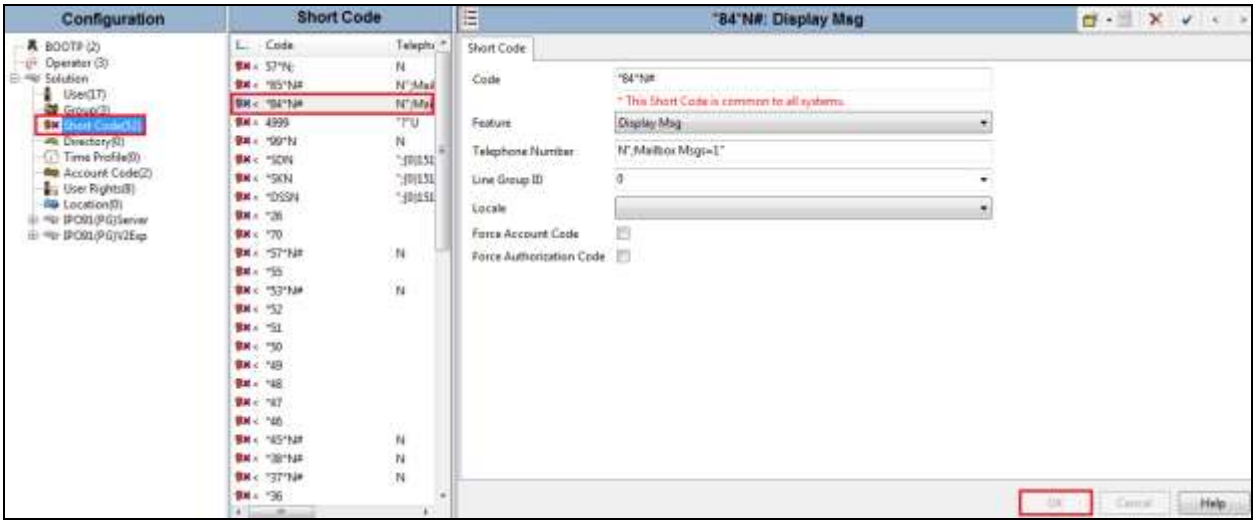


5.6 New Short Code for Message Waiting

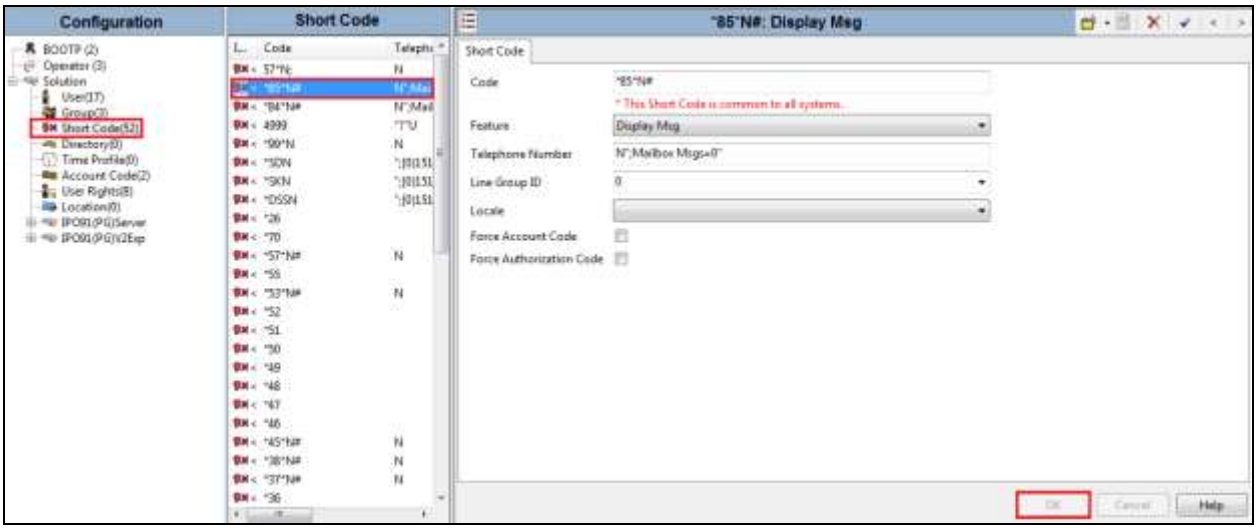
NovaMail sends the IP Office digits to turn on and turn off message waiting. Short Codes need to be setup on IP Office to turn on the MWI on the phoneset and again to turn this off. To add a new Short Code for MWI this is added for both systems as shown below. From the left menu navigate to **Solution → Short Code**, right click on **Short Code** and select **New**. This will add a new Short Code for the whole system.



Enter ***84*N#** for the new **Code** for turning on the message waiting lamp. **Feature** should be set to **Display Msg** and the **Telephone Number** is set to **N";Mailbox Msgs=1"**. This will turn on the message waiting lamp for the number N that will be sent by NovaMail. Click on **OK** to save the changes.

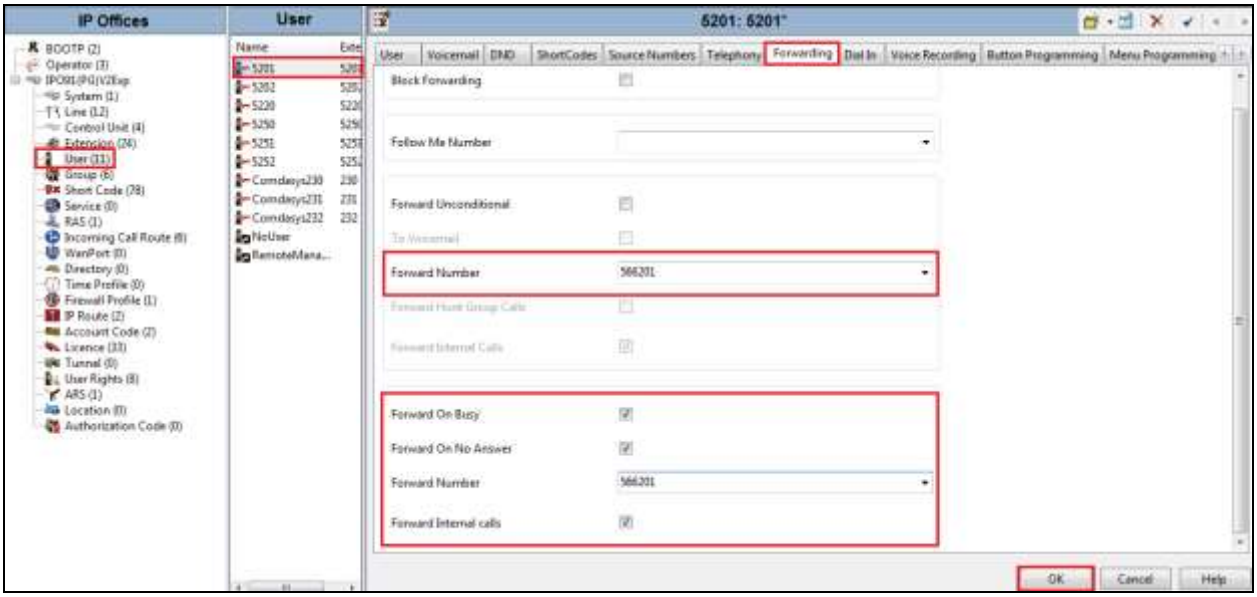


Enter ***85*N#** for the new **Code** for turning on the message waiting lamp. **Feature** should be set to **Display Msg** and the **Telephone Number** is set to **N";Mailbox Msgs=0"**. This will turn on the message waiting lamp for the number N that will be sent by NovaMail. Click on **OK** to save the changes.



5.7 Change call forward option to Voicemail

A workaround is put in place to allow call forward to NovaMail. Edit the necessary user by selecting the user and click on the **Forwarding** tab. Enter 56 plus <additional mailbox number> that is setup in **Section 6.2**. For example if the additional mailbox number is 6201 add **566201** into the forwarding number. Click on **Ok** to save the changes.



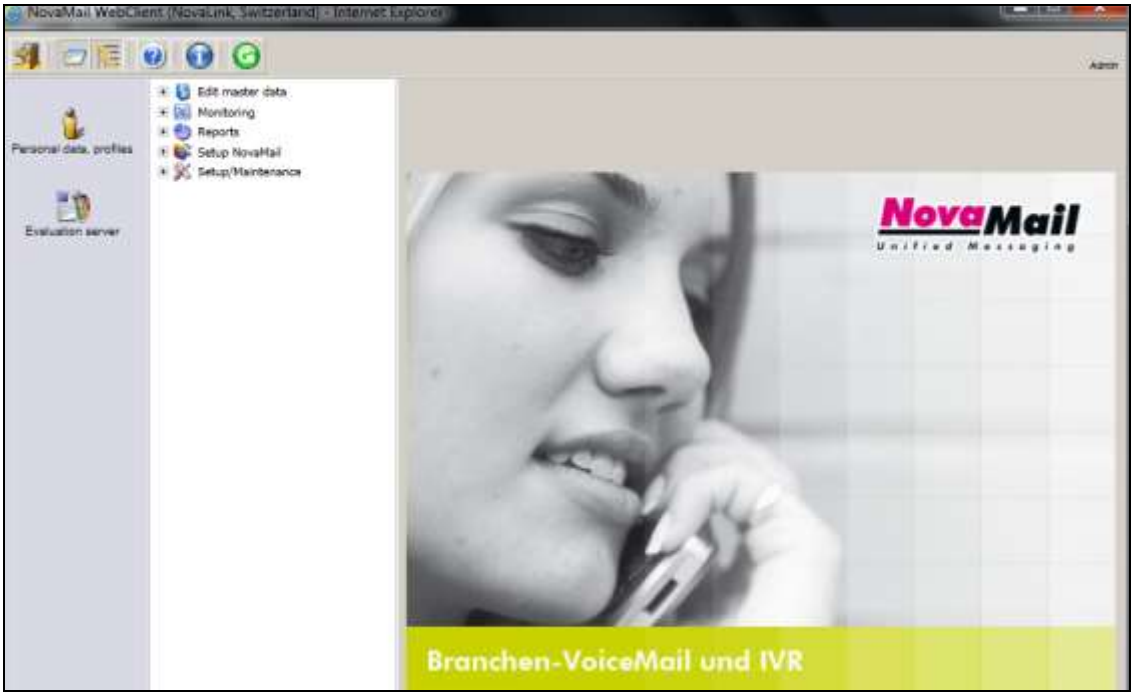
5.8 Save Configuration

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 NovaMail

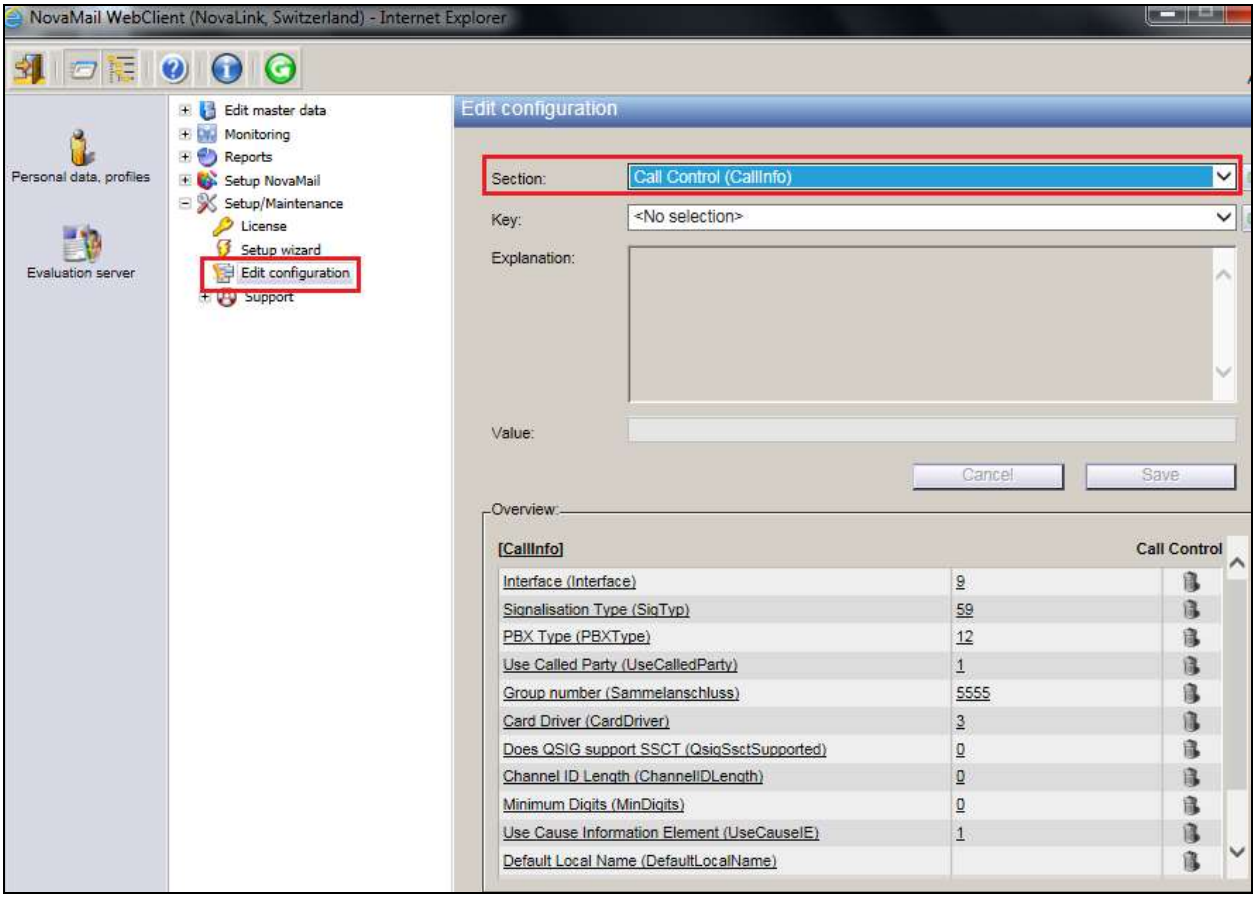
The following sections describe the steps required to configure NovaMail in order to successfully connect to Avaya IP Office using SIP trunks. All configuration changes are made to NovaMail using a web browser session to the NovaMail server. Open a web browser session to the IP Address of the NovaMail server followed by /NovaMail. For example what was used for compliance testing was **http://10.10.40.44/NovaMail**. 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.

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

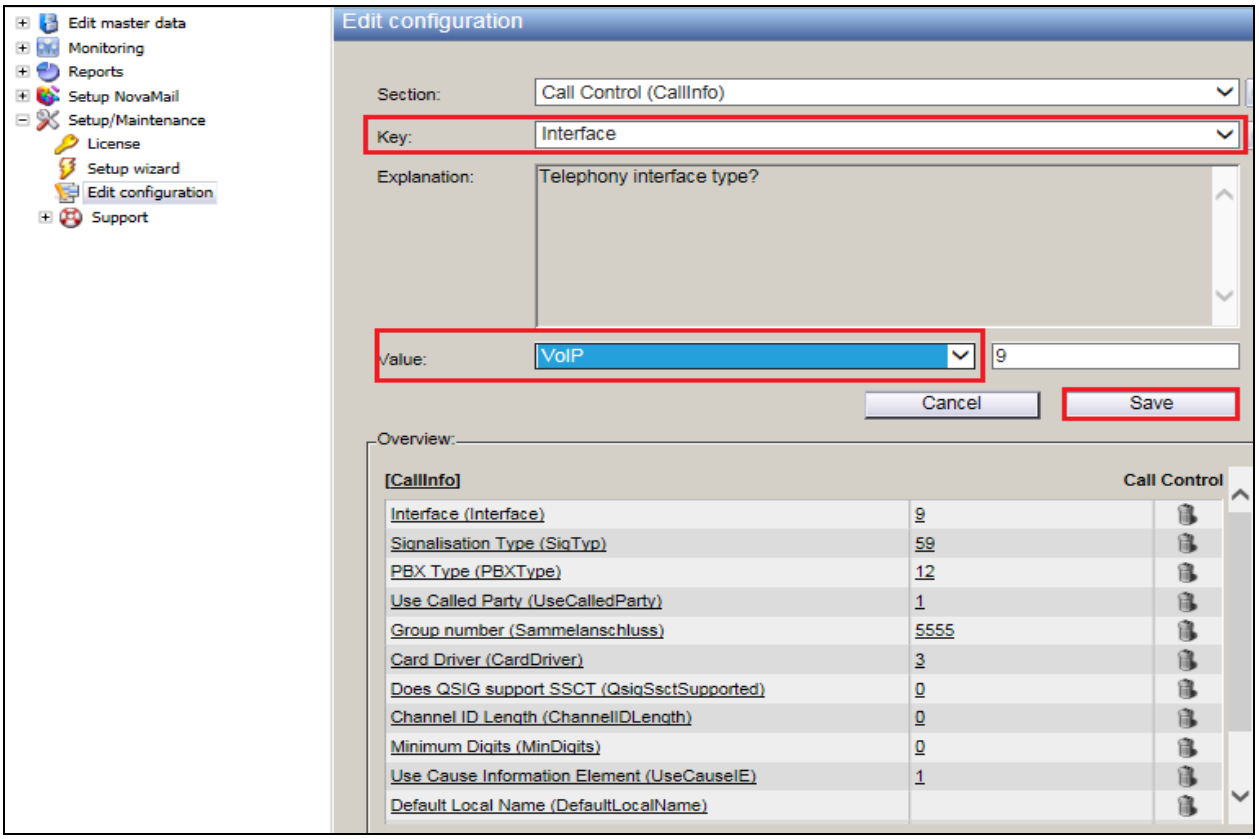


6.1 Configure NovaMail SIP Trunk Connection

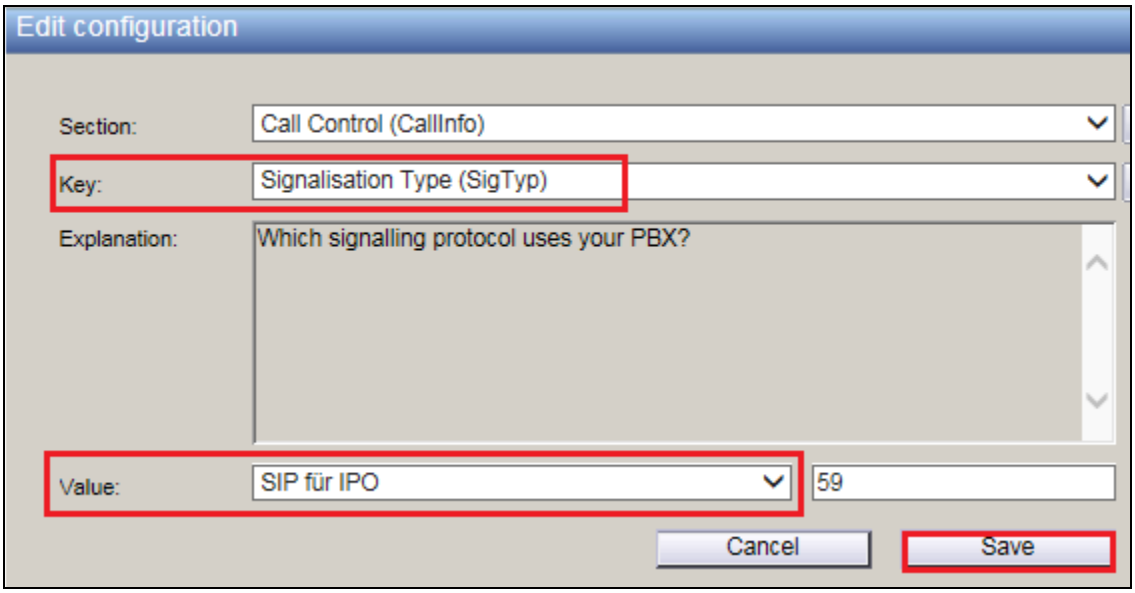
To begin the configuration of NovaMail in order to connect to IP Office using SIP trunks, from the main menu, expand **Setup/Maintenance** and click on **Edit configuration**. From the main window select the **Section**, **Call Control (CallInfo)**, from the drop-down menu.



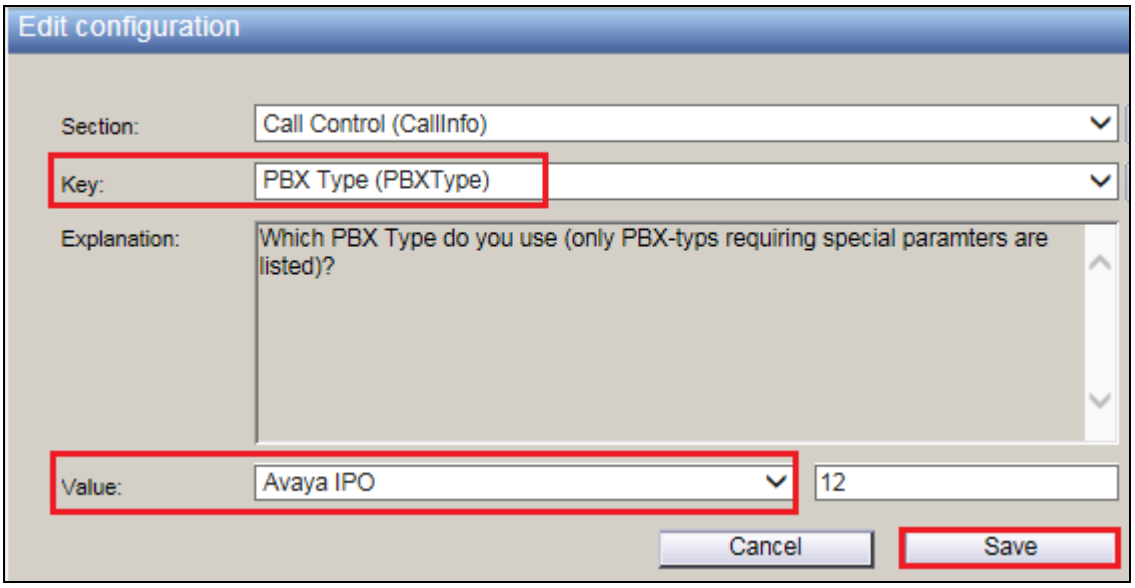
Select **Interface** from the **Key** drop-down menu. Ensure that **Value** is set to **VoIP** and click on **Save**.



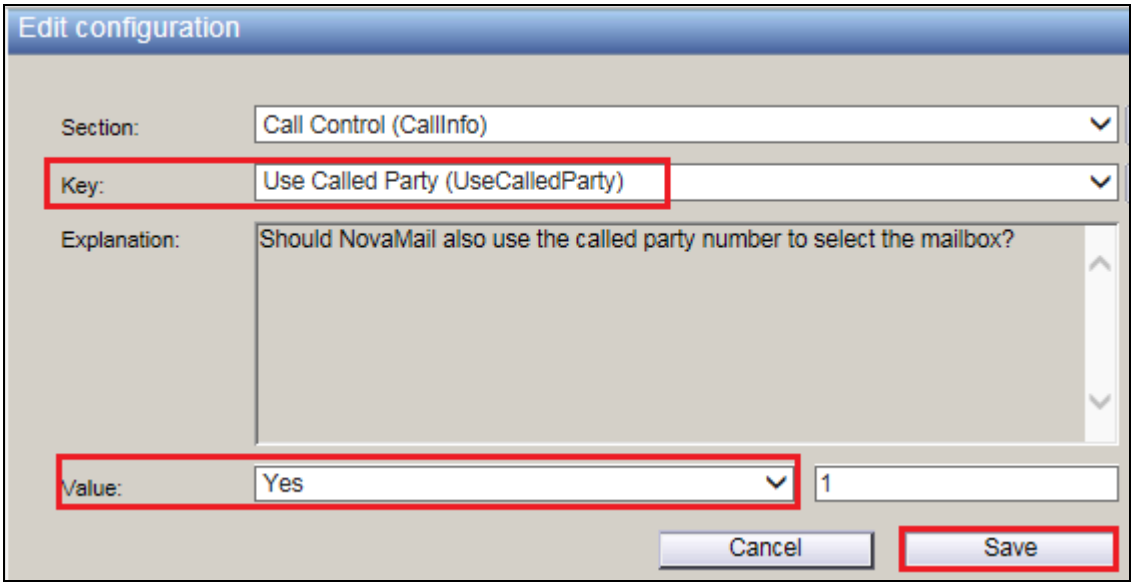
Remaining in the same **Section**, select **Signalisation Type (SigTyp))** from the **Key** drop-down menu and ensure that **Value** is set to **SIP fur IPO**. Click on **Save** to complete.



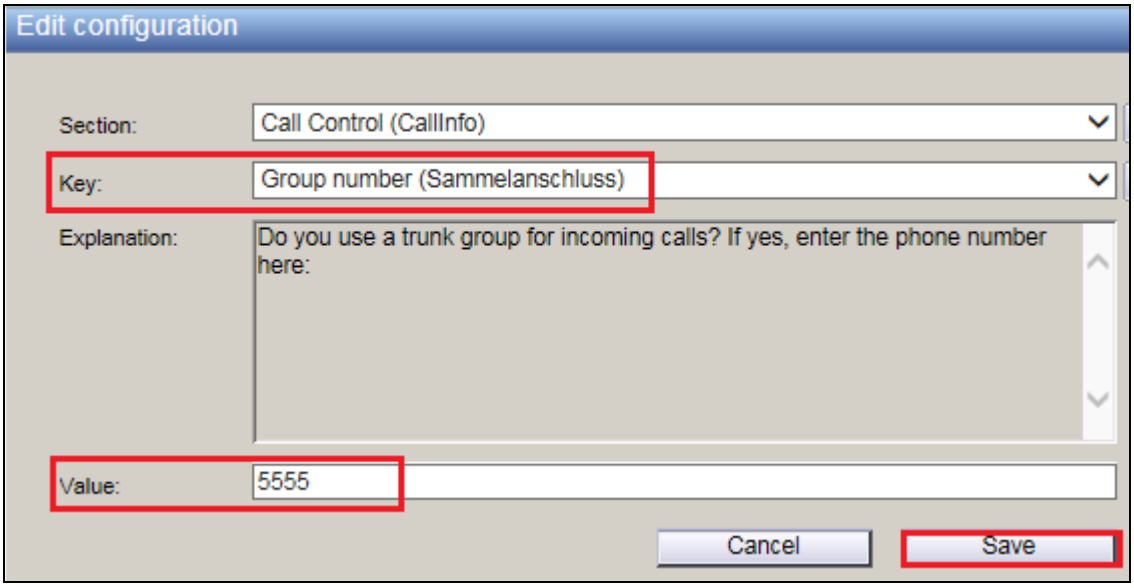
Remaining in the same **Section**, select **PBX Type (PBXType)** from the **Key** drop-down menu and ensure that **Value** is set to **Avaya IPO**. Click on **Save** to complete.



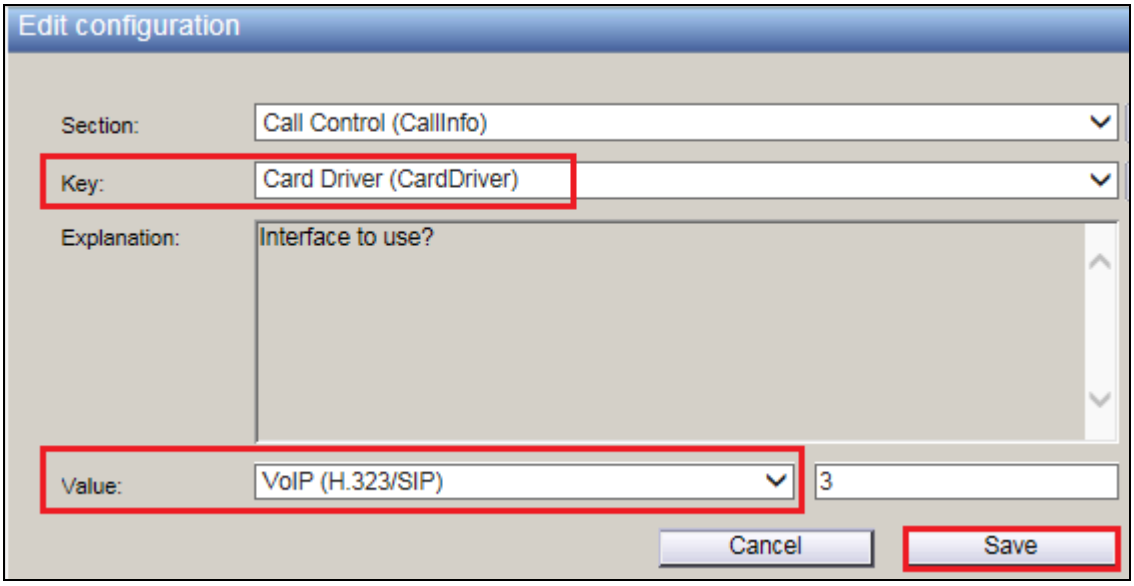
In the same **Section**, select the **Use Called Party (UseCalledParty) Key**. Set **Value** to **Yes** and click on **Save**. This will allow NovaMail use the called party number for voicemail.



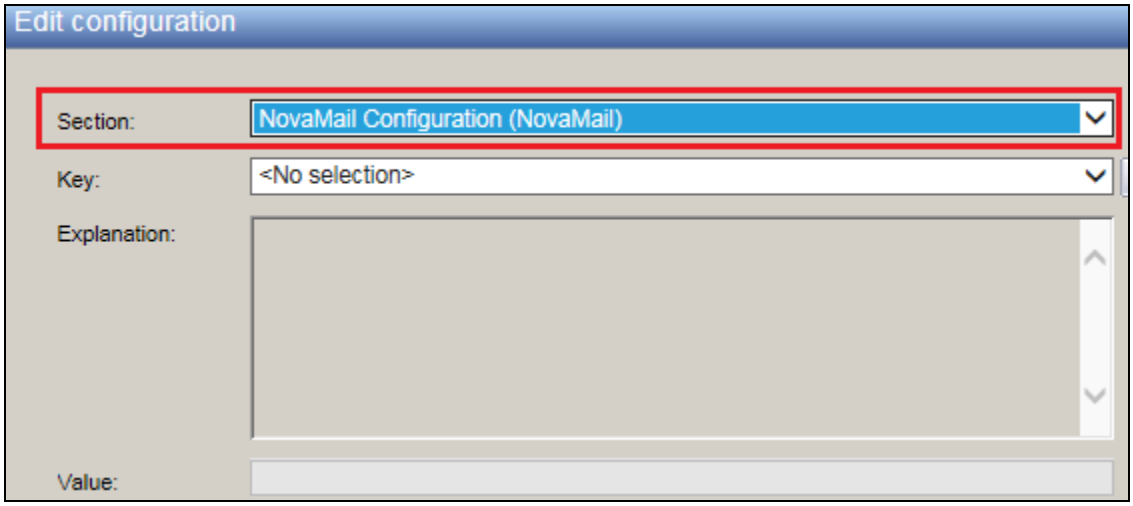
In the same **Section**, select the **Group number (Sammelanschluss) Key**. Set **Value** to **x**, where x is the voicemail number that IP Office users will call. Note this is the XXXX that is represented in the short code created in **Section 5.5**. Click on **Save** to continue.



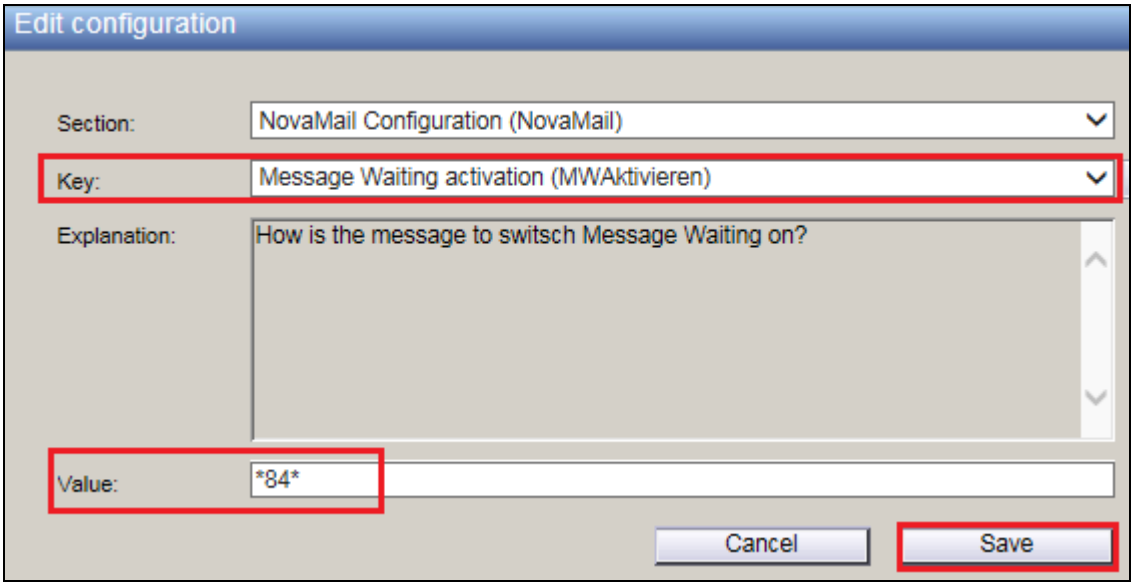
In the same **Section,** select the **Card Driver (CardDriver) Key**. Set **Value** to **VoIP (H.323/SIP)** and click on **Save**.



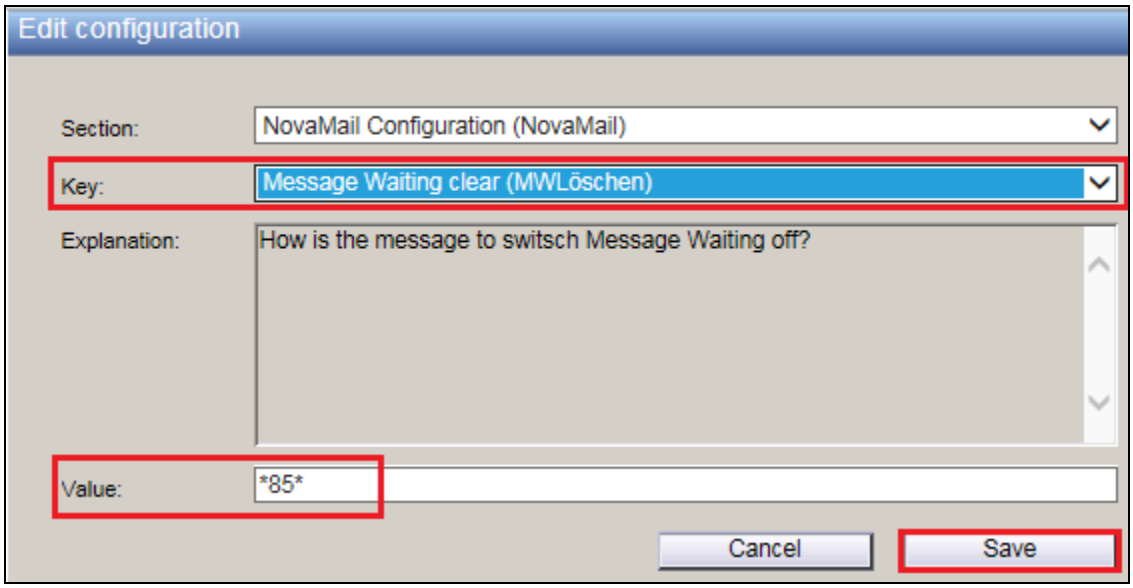
Select **NovaMail Configuration (NovaMail)** from the **Section** drop-down menu.



Select **Message Waiting Activation** from the drop-down menu for **Key**. Set **Value** to that set for the "MWI On" Short Code in **Section 5.5**. Click on **Save** to continue.

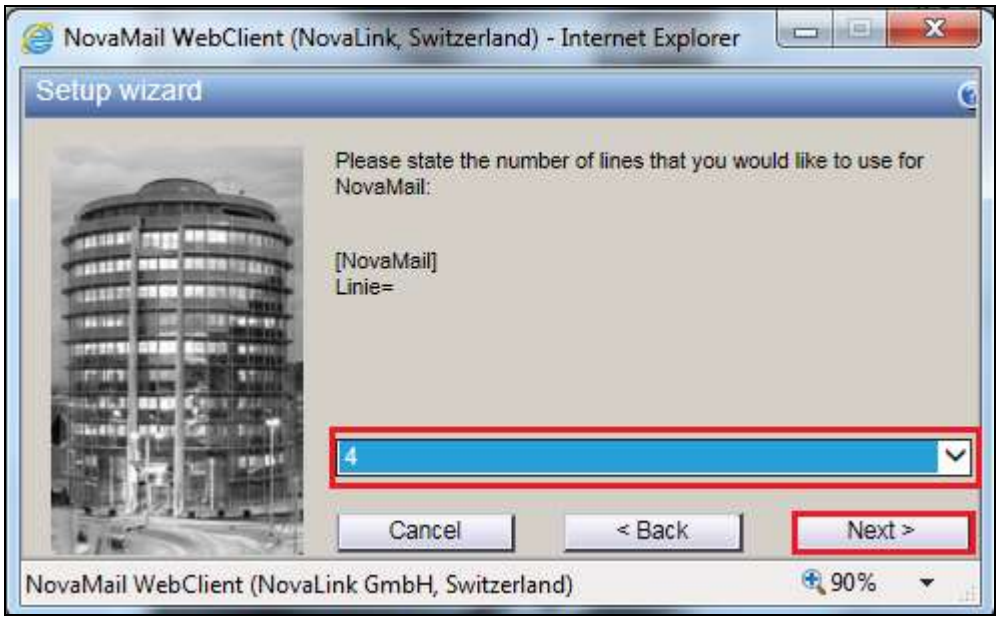


Select **Message Waiting clear** from the drop-down menu for **Key**. Set **Value** to that set for the "MWI Off" Short Code in **Section 5.5**. Click on **Save** to continue.



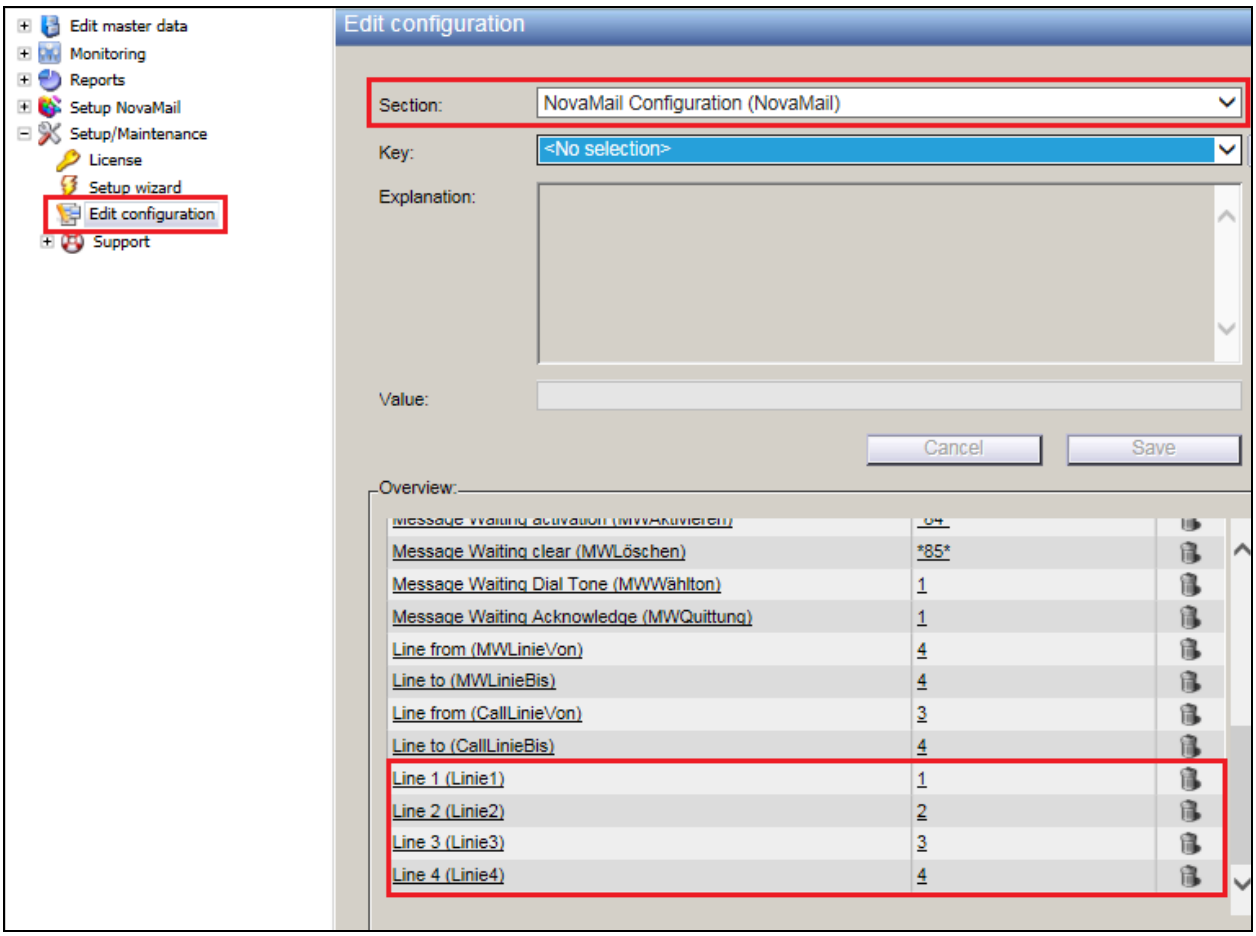
In order to add the SIP channels or lines a wizard must be run from the **Setup/Maintenance** in the left menu. Navigate to **Setup/Maintenance** and click on **Setup wizard**. This will bring up the **Setup wizard** window and click on **Next** to continue.

Enter the number of lines that are to be added in the drop-down box and click on **Next** to continue. The number of lines chosen will depend on the license granted.

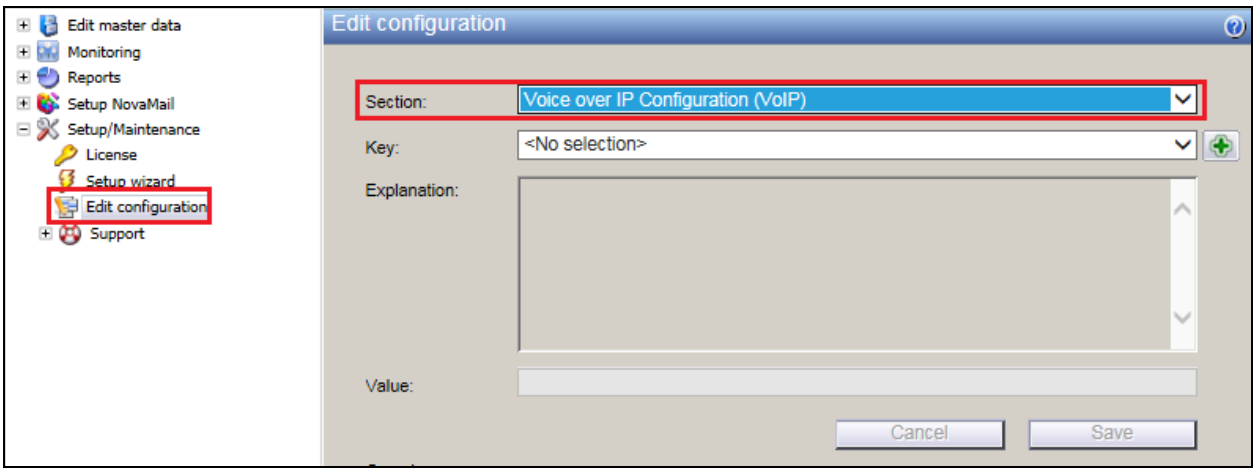


Once this part of the wizard is done click on **Cancel**. The lines will still be added from above.

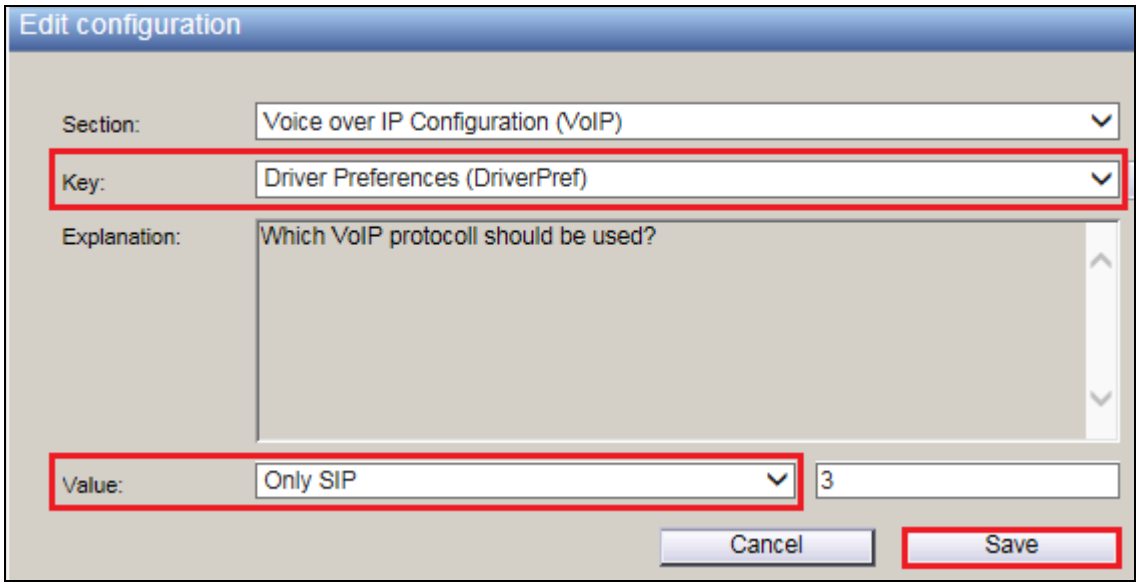
These lines are now clearly seen as been added.



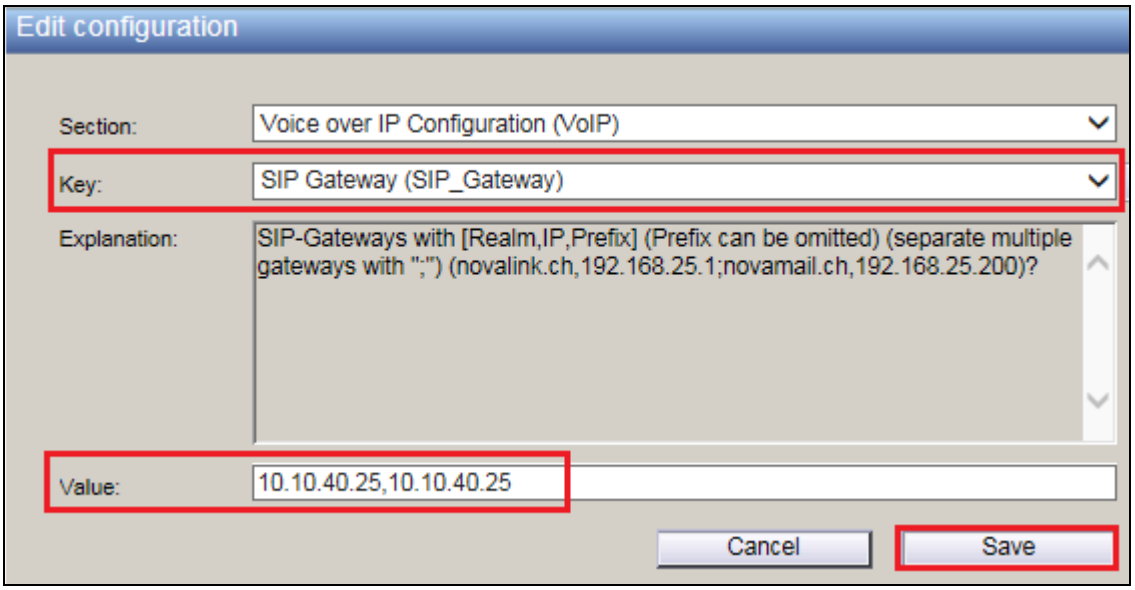
Change the **Section** drop-down to **Voice over IP Configuration (VoIP)**.



Select **Driver Preferences (DriverPref)** from the **Key** drop-down menu. Ensure that **Only SIP** is chosen for **Value** and click on **Save** to continue.

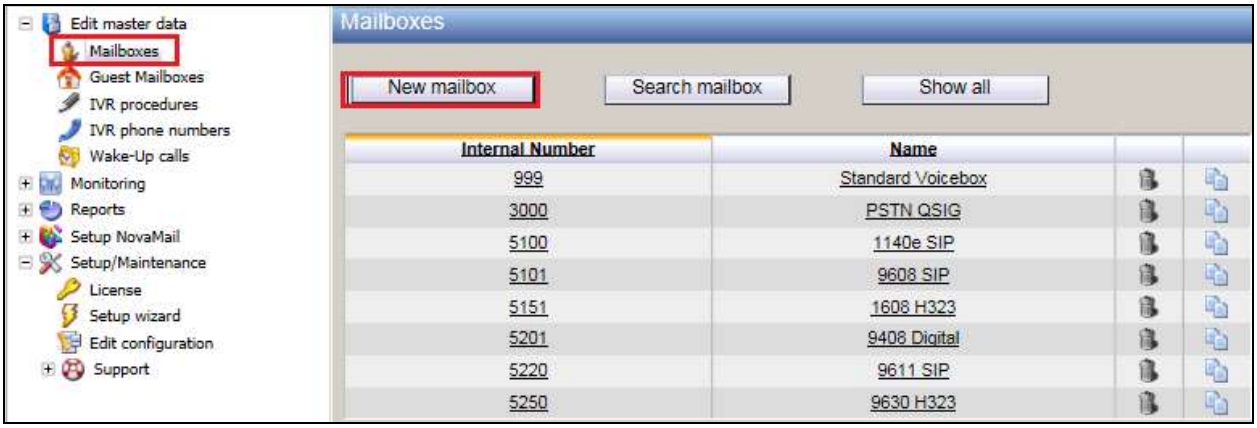


Change the **Key** to **SIP Gateway (SIP_Gateway)** and enter the Server Editions IP address for **Value** in the format <IP Address>,<IP Address>. Click on **Save** to continue.

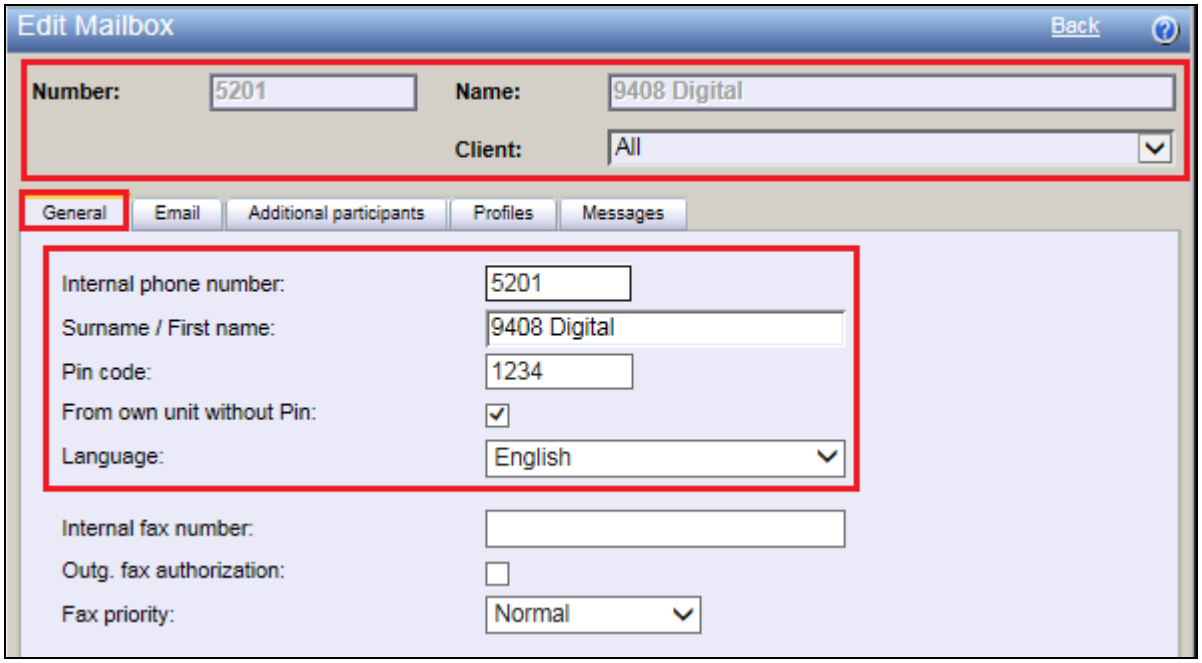


6.2 Add an new Mailbox on NovaMail

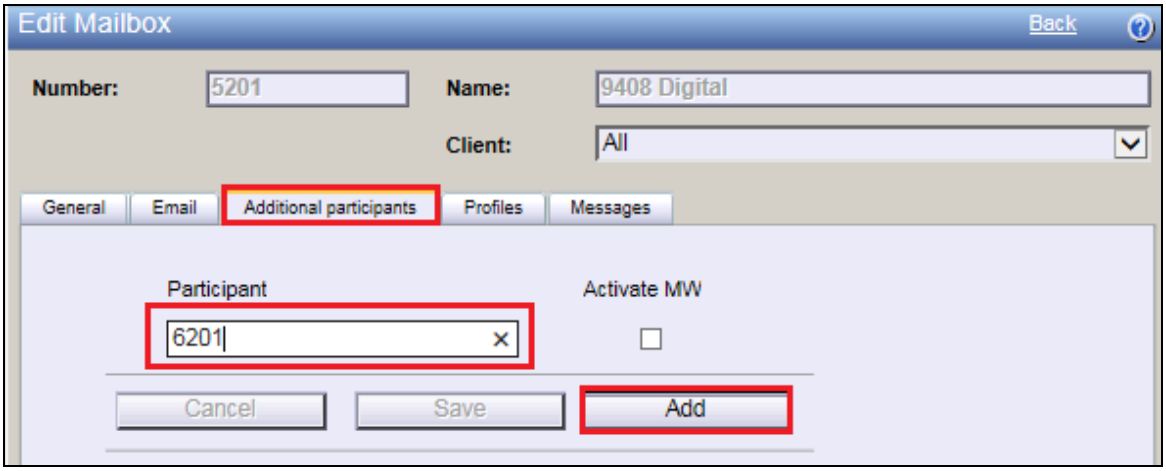
In order to add a new mailbox for an IP Office extension, navigate to **Edit master data** → **Mailboxes** in the left window. Select **New mailbox** in the mail window.



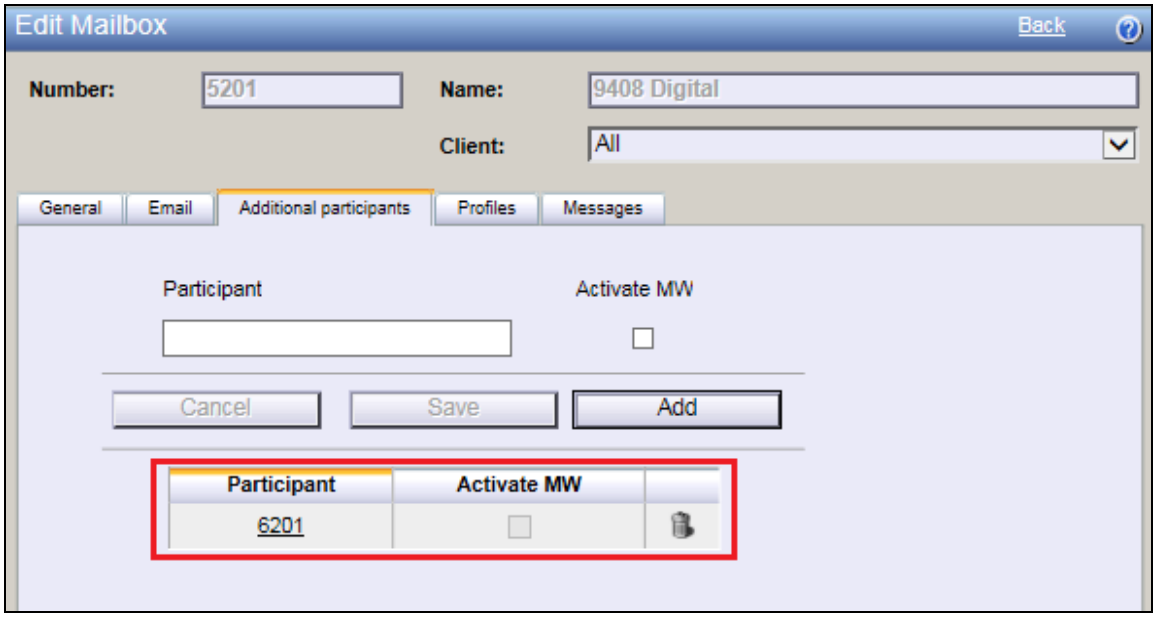
Click on the **General** tab and enter a suitable **Surname / First name** and **Pin code**. Enter the IP Office extension number for **Internal phone number**. Tick **From own unit without Pin** in order to avoid having to type in a password every time one calls from their own telephone.



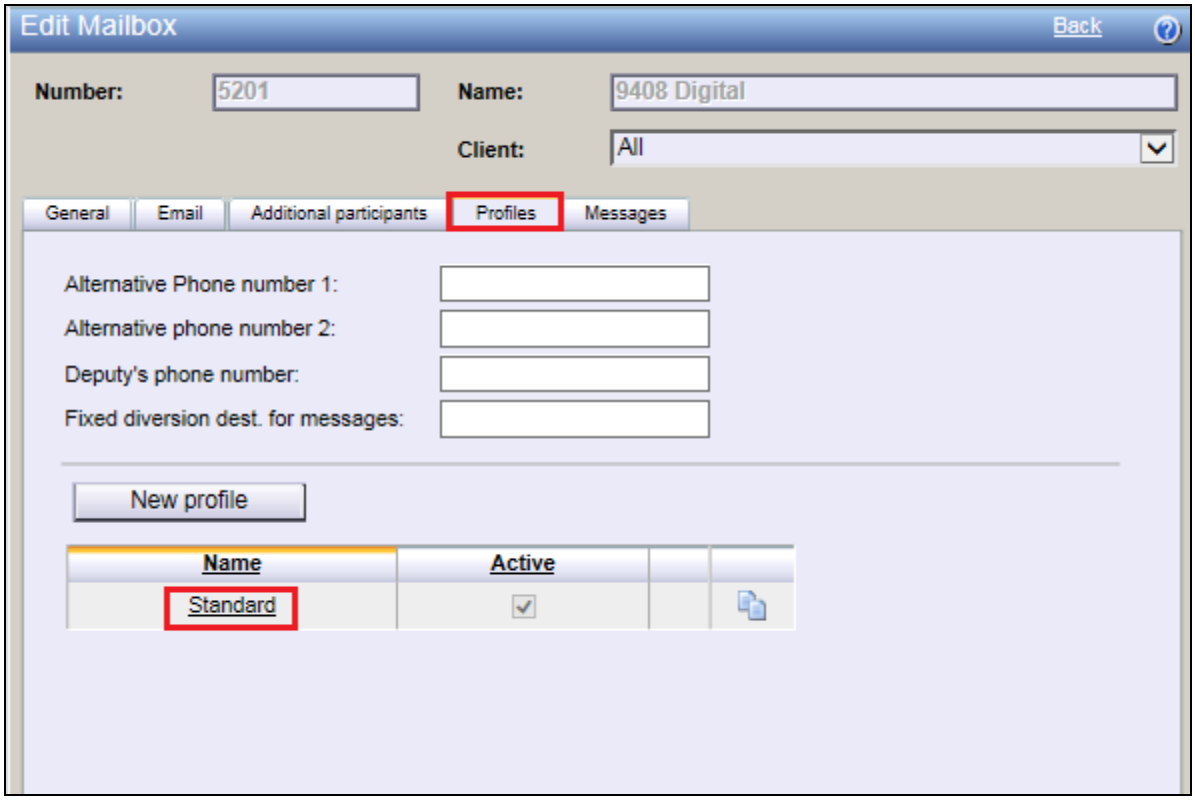
An additional participant needs to be added in order to route calls correctly to voicemail when using call forward. This issue is clearly outlined in **Section 2.2**; this is a workaround that has been put in place to allow users forward their phones to voicemail. Click on the **Additional participants** tab and enter the addition mailbox number for this user, typically this number is logically associated in some way to the original mailbox/extension number. This is the same number that was added for the user in **Section 5.7**. Click on **Add** to add this to the users mailbox setup.



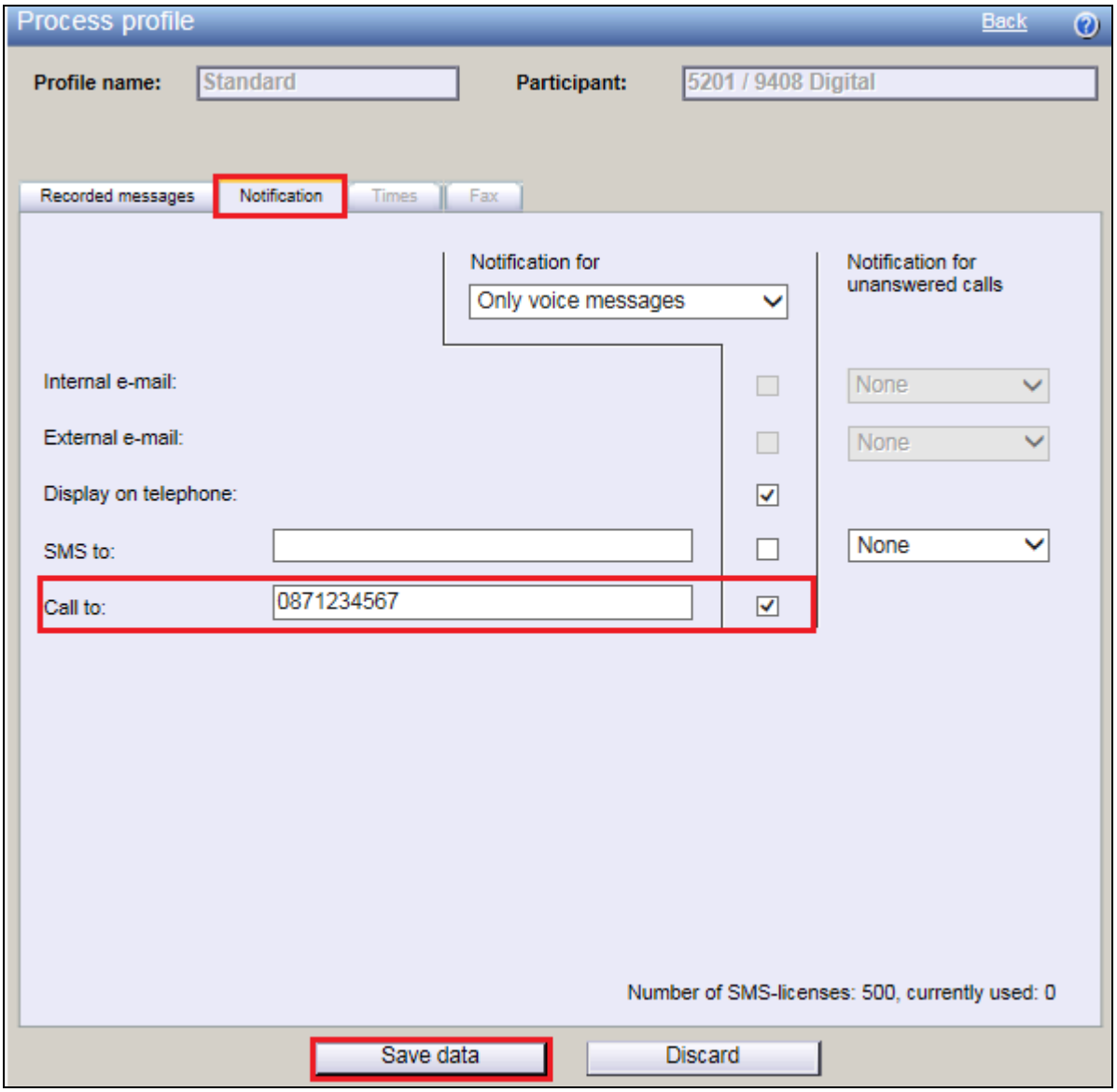
The following screen shows this extra mailbox number added correctly.



Click on the **Profiles** tab. Click on the **Standard** Profile that is already assigned to the mailbox.



In order to allow the voicemail system alert a remote user that they have a new voice message the profile of the user must be changes to allow for **Notification**. Click on the **Notification** tab and enter the mobile or alternative number for this user into the **Call to** box and ensure this is also ticked as shown below. Click on **Save data** to save this mailbox.

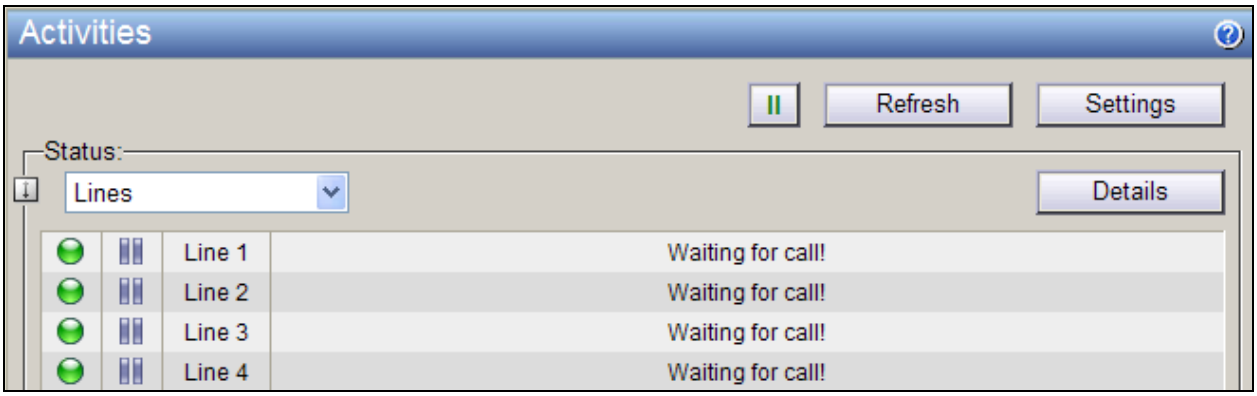


7. Verification Steps

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

7.1 Verify NovaLink NovaMail on NovaBox Status

From the NovaMail web interface (not shown), navigate to **Monitoring → Activities** (not shown) and verify that the icon in the left column is green indicating that the SIP trunks are in service and IP Office can be reached.



7.2 Verify Successful Delivery of Voicemail

Place a call to an IP Office user with forwarding to voicemail configured. Ensure that NovaMail answers the call with the appropriate mailbox greeting and a message can be left. Verify that the message waiting indicator on the endpoint is illuminated.

7.3 Verify Successful Retrieval of Voicemail

Dial the voicemail retrieval access number from an IP Office user. Ensure that NovaMail automatically recognizes the user and is not prompted for a PIN. Verify that the audio prompts advise a message has been left and use the buttons on the telephone keypad to navigate the menu, listen to, and delete the message. Verify that the message waiting indicator is extinguished once all messages have been played back.

8. Conclusion

These Application Notes describe the configuration steps required for NovaMail 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 issued 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 NovaMail from the website http://www.novalink.ch/en/ or from the following.

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Businesstower
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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.