



**Avaya Solution & Interoperability Test Lab**

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## **Application Notes for Configuring Avaya IP Office 500 v2 R8.1 with NovaLink NovaMail on NovaBox – Issue 1.0**

### **Abstract**

These Application Notes describe the configuration for connecting the NovaLink NovaMail on NovaBox voicemail system via an H.323 interface to Avaya IP Office.

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

The purpose of this document is to describe the configuration for connecting the NovaLink NovaMail on NovaBox voicemail system via an H.323 interface to Avaya IP Office, as well as the compliance tests which were performed, and a summary of the results of those tests.

NovaMail lets user 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

NovaMail on NovaBox was manually configured using the web interface to receive, store , alert and playback voicemail messages.

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 on NovaBox 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 on NovaBox calling to local and PSTN endpoints

Serviceability testing consisted of verifying the ability of NovaMail on NovaBox to recover from power or network interruption to both IP Office and NovaMail on NovaBox.

### 2.2. Test Results

All test cases were executed successfully.

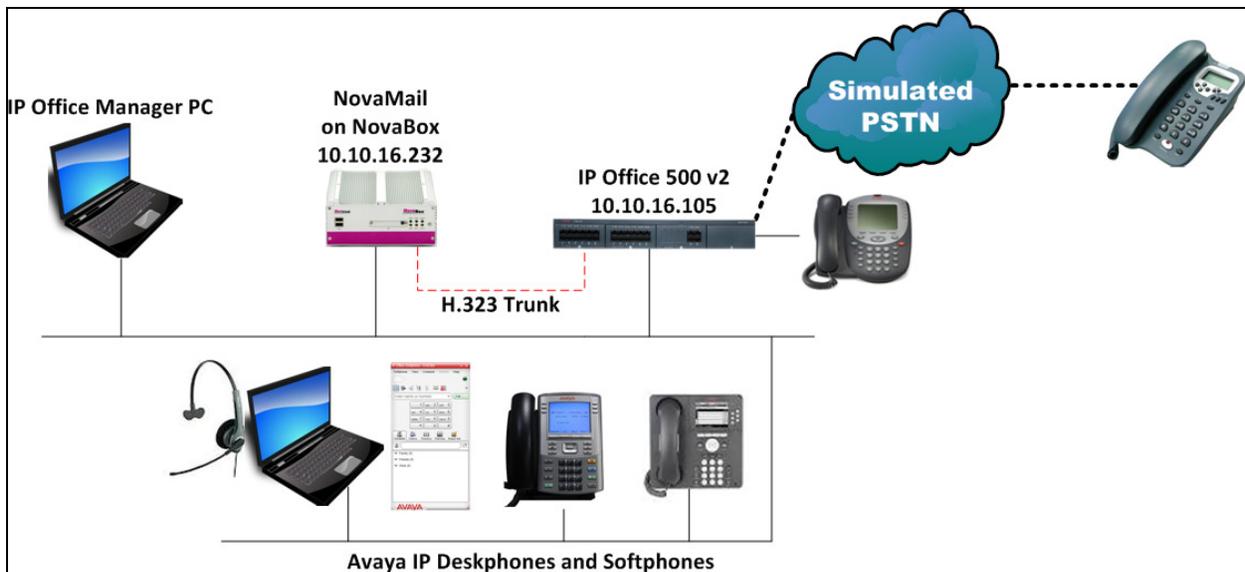
### 2.3. Support

Technical support from NovaLink can be obtained through the following:

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

### 3. Reference Configuration

**Figure 1** below shows the compliance tested configuration comprising of IP Office connected to NovaMail on NovaBox over an H.323 trunk and an assortment IP endpoints with a simulated PSTN connection.



**Figure 1: Avaya IP Office with NovaMail on NovaBox Solution**

### 4. Equipment and Software Validated

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

Equipment/Software	Release/Version
Avaya IP Office on Avaya IP 500 v2	R8.1 (69)
Avaya 1140E	4.3 SP1
Avaya 9630	3.2
Avaya IP Office Softphone	3.2.3.15 64595
NovaMail on NovaBox	9.8

Testing was performed with IP Office 500 R8.1, but it also applies to IP Office Server Edition R8.1. Note that IP Office Server Edition requires an Expansion IP Office 500 v2 R8.1 to support analog or digital endpoints or trunks.

## 5. Configure Avaya IP Office

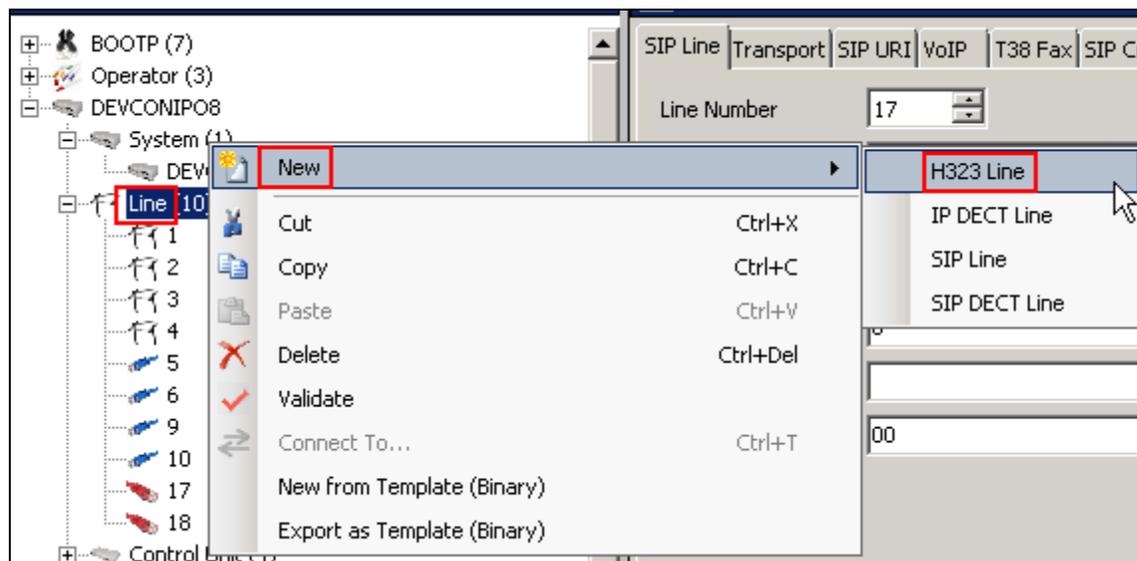
The configuration of IP Office is performed from the IP Office Manager application and can be summarized as follows:

- Configure H.323 Trunk
- Configure Call Routing
- Configure Call Forwarding

It is assumed that endpoints have been pre-configured as required, for more information see **Section 9**.

### 5.1. Configure H.323 Trunk

An H.323 trunk must be administered between IP Office and NovaMail on NovaBox. In the left pane of the Manager application right click **Line** → **New** → **H.323 Line**.



Take a note of the **Line Number** and **Outgoing Group ID** which should match, and set the **Number of channels** as required.

H323 Line - Line 18\*

VoIP Line | Short Codes | VoIP Settings

Line Number: 18

TEI: 0

Telephone Number: [Empty]

Prefix: [Empty]

National Prefix: [Empty]

International Prefix: [Empty]

Outgoing Group ID: 18

Number of Channels: 4

Outgoing Channels: 4

Voice Channels: 4

Click the **VoIP Settings** tab and configure as follows:

- **Gateway IP Address** – enter the IP Address of NovaMail on NovaBox.
- Check the **Out Of Band DTMF** and **Allow Direct Media Path** boxes.
- **Supplementary Services** – select **H450** from the drop-down list.

Click OK when done (not shown).

VoIP Line | Short Codes | VoIP Settings

Gateway IP Address: 10 . 10 . 16 . 232

Codec Selection: System Default

Unused: [Empty]

Selected: G.729(a) 8K CS-ACELP, G.711 ULAW 64K, G.723.1 6K3 MP-MLQ, G.711 ALAW 64K

Supplementary Services: H450

VoIP Silence Suppression

Enable Fast Start

Fax Transport Support

Out Of Band DTMF

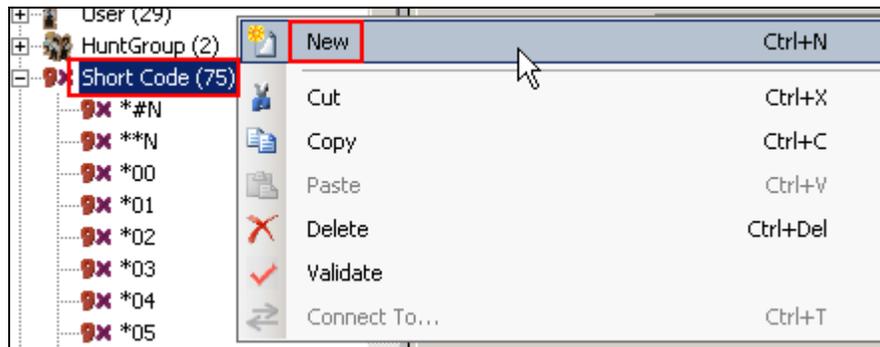
Local Tones

Allow Direct Media Path

Default Name From Display

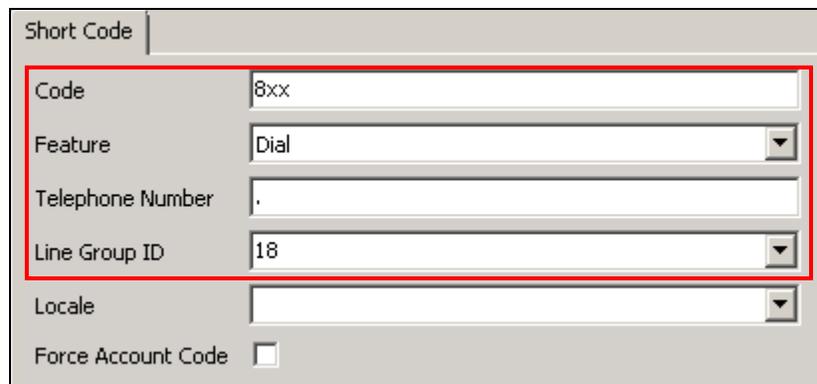
## 5.2. Configure Call Routing

A Short Code must be configured to route calls over the H.323 trunk to NovaMail on NovaBox. For the purpose of the compliance test users with extension 2xx were mapped and forwarded to mailboxes of 8xx. In the left pane, right click on **Short Code** → **New**.



Configure the short Code as follows:

- **Code** – enter the digits to reach NovaMail on NovaBox.
- **Feature** – select **Dial** from the drop down list.
- **Telephone Number** – enter . to define the telephone number is as per the **Code**.
- **Line Group ID** – enter the **Line Number** configured when creating the H.323 trunk previously.

A screenshot of a configuration dialog box titled 'Short Code'. It contains several fields: 'Code' with the value '8xx', 'Feature' with a dropdown menu set to 'Dial', 'Telephone Number' with the value '.', and 'Line Group ID' with a dropdown menu set to '18'. Below these are 'Locale' (dropdown) and 'Force Account Code' (checkbox). A red rectangular box highlights the 'Code', 'Feature', 'Telephone Number', and 'Line Group ID' fields.

Configure an additional short code for access to NovaMail on NovaBox from the PSTN to retrieve messages. In the example below a shortcode of **999** is used to access NovaMail on NovaBox.

Short Code	
Code	999
Feature	Dial
Telephone Number	.
Line Group ID	18
Locale	
Force Account Code	<input type="checkbox"/>

### 5.3. Configure Call Forwarding

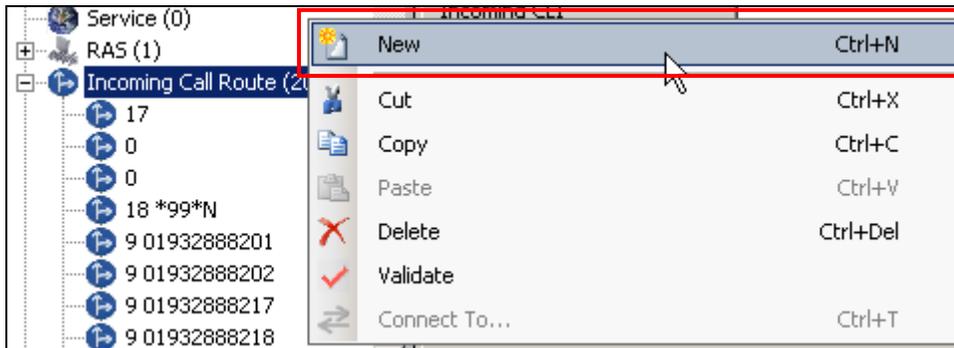
Each user that requires voicemail should be configured with the forwarding destination for their respective mailbox. As explained above, extension 2xx forwards to 8xx. Click **User** in the left hand pane and select the user to be configured (not shown). Click the **Forwarding** tab and enter the appropriate **Forward Number**. In the example below extension 201 is forwarded to mailbox **801**. Check the **Forward On Busy**, **Forward On No Answer** and **Forward Internal Calls** boxes as required.

User	Voicemail	DND	ShortCodes	Source Numbers	Telephony	Forwarding	Dial In	Voicemail
Follow Me Number								
Forward Unconditional	<input type="checkbox"/>							
To Voicemail	<input type="checkbox"/>							
Forward Number								
Forward Hunt Group Calls	<input type="checkbox"/>							
Forward Internal Calls	<input checked="" type="checkbox"/>							
Forward On Busy	<input checked="" type="checkbox"/>							
Forward On No Answer	<input checked="" type="checkbox"/>							
Forward Number								
Forward Internal calls	<input checked="" type="checkbox"/>							

## 5.4. Configure Incoming Call Route

An incoming call route must be configured for so that call from the PSTN can access the NovaMail on NovaBox voicemail service. The configuration of the PSTN trunk is outside of the scope of these Application Notes.

Right click on **Incoming Call Route** → **New**

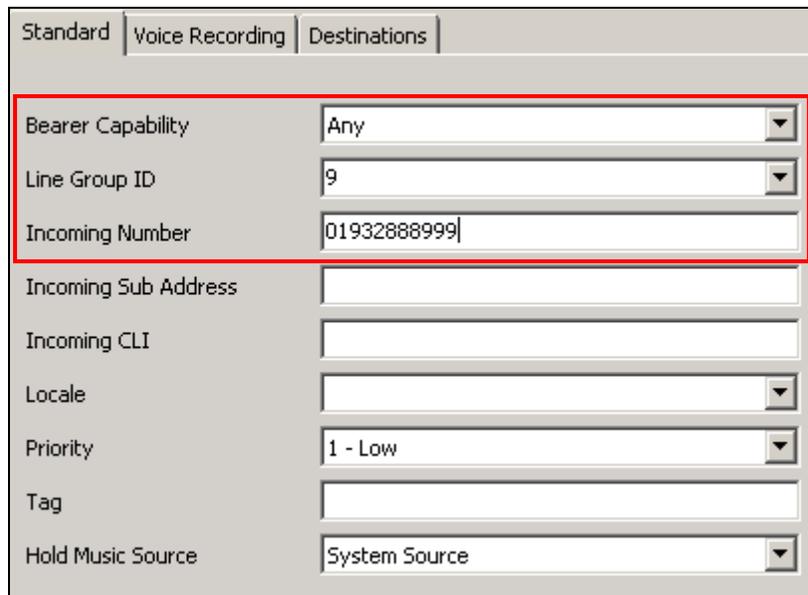


Configure as follows:

**Bearer Capability** – set to **Any**

**Line Group ID** – set to the Line Group ID of the pre-configured PSTN Line, in this case **9**

**Incoming Number** – configure an appropriate incoming number which will be used to access NovaMail on NovaBox

A screenshot of a configuration dialog box with three tabs: 'Standard', 'Voice Recording', and 'Destinations'. The 'Standard' tab is active. The dialog contains several fields:

- Bearer Capability**: A dropdown menu set to 'Any'.
- Line Group ID**: A dropdown menu set to '9'.
- Incoming Number**: A text field containing '01932888999'.
- Incoming Sub Address**: An empty text field.
- Incoming CLI**: An empty text field.
- Locale**: A dropdown menu.
- Priority**: A dropdown menu set to '1 - Low'.
- Tag**: An empty text field.
- Hold Music Source**: A dropdown menu set to 'System Source'.

A red rectangular box highlights the 'Bearer Capability', 'Line Group ID', and 'Incoming Number' fields.

Click the **Destinations** tab and enter the short code administered in **Section 5.2** for access to NovaMail on NovaBox from the PSTN in the **Destination** field, in this case **999**.

Standard	Voice Recording	<b>Destinations</b>
	TimeProfile	Destination
▶	Default Value	999

## 6. Configure Novalink NovaMail on Novabox

The configuration of NovaMail on NovaBox is performed using its web interface and can be summarized as follows:

- Configure IP Office Integration Parameters
- Configure H.323 Trunk
- Configure Mailboxes

Navigate to [http://NovaAlert\\_IP\\_ADDR/NovaAlert](http://NovaAlert_IP_ADDR/NovaAlert) and enter the appropriate credentials and click **Login**, where NovaAlert\_IP\_ADDR is the IP address of NovaAlert on NovaBox.

22.07.2013 13:22:13

**NovaAlert**  
Monitoring and Messaging

User Name: Administrator

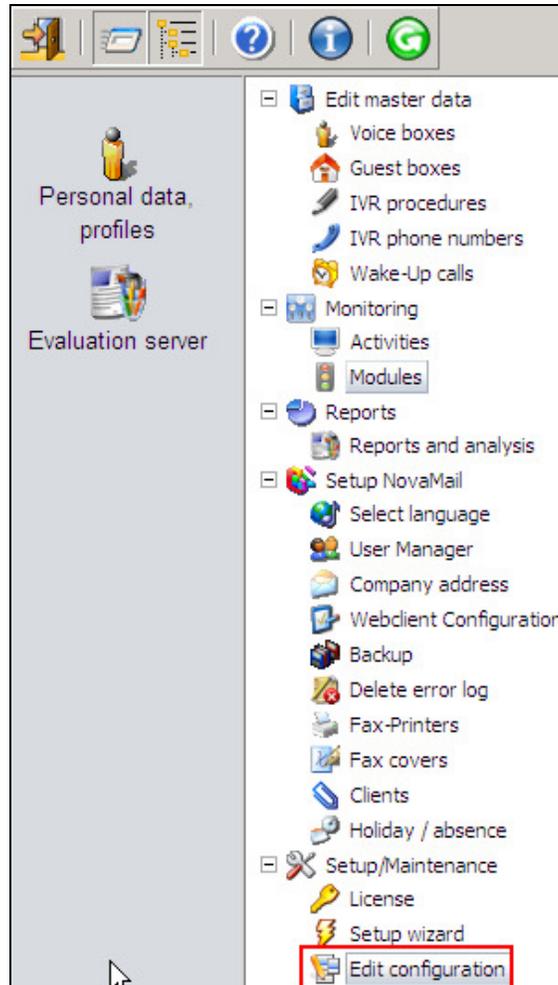
Password: ..... [Change password](#)

I accept the important information below.

Login

## 6.1. Configure IP Office Integration Parameters

Click System → Setup/Maintenance → Edit Configuration



In the right hand pane, configure as shown below where:

- **Signalisation Type** – set to **42** to define IP Office H.323 trunk parameters
- **PBX Type** – set to **12** to define IP Office parameters
- **Use Called Party** – set to **1** to detect the called party number and not waiting for any diverting party information
- **Group number** – set to the number used to retrieve messages from internal extensions, as configured in **Section 5.2**.
- **Default Calling Party** – set to the number required as calling party number for outcalls
- **Change incoming calling numbers** – set according to the number length of the users extension on IP Office. e.g. where a number starting with **8** which is **3** digits in length has the first digit replaced with **2**. This is necessary as the diverting party information is missing in the setup information of incoming calls to NovaMail. All extensions have a different number for diversion to NovaMail as shown in **Section 5.3**. In this example, all extensions with numbers 2xx divert to 8xx, extensions with numbers 3xx divert to 9xx and NovaMail detects the last 3 digits and changes the first digit back to “2” or “3” for accessing the right mailbox-number.

Overview:		Call Control
[CallInfo]		
Interface (Interface)	<u>9</u>	
Signalisation Type (SigTyp)	<u>42</u>	
PBX Type (PBXType)	<u>12</u>	
Use Called Party (UseCalledParty)	<u>1</u>	
Group number (Sammelanschluss)	<u>999</u>	
Card Driver (CardDriver)	<u>3</u>	
Does QSIG support SSCT (QsigSsctSupported)	<u>0</u>	
Channel ID Length (ChannelIDLength)	<u>0</u>	
Minimum Digits (MinDigits)	<u>0</u>	
Use Cause Information Element (UseCauseIE)	<u>1</u>	
Default Local Name (DefaultLocalName)	<u>NovaMail</u>	
Default Calling Party (DefaultCallingParty)	<u>01932888999</u>	
Change incoming call numbers (MailboxUmrechnen)	<u>8,3,2;9,3,3</u>	
Use Last Diverting Party (UseLastDivertingParty)	<u>0</u>	

Continue to scroll down to the **NovaMail** section and ensure the **Message Waiting activation** and **Message Waiting clear** fields are empty.

Overview:

[NovaMail]	NovaMail Configuration	
<u>Own numbers (EigeneNr)</u>	<u>0</u>	
<u>Alarm Server Phone number (AlarmServerNr)</u>		
<u>Timeout internal (CallLängeIntern)</u>	<u>30</u>	
<u>Timeout external (CallLängeExtern)</u>	<u>30</u>	
<u>Front Office Numbers (FrontOfficeNummer)</u>		
<u>Main numbers (ZentraleNummer)</u>	<u>999</u>	
<u>Main number Reset (ZentraleReset)</u>	<u>1</u>	
<u>Min Mail length (MinMailLänge)</u>	<u>20000</u>	
<u>Max Mail length (MaxMailLänge)</u>	<u>120</u>	
<u>Profile deactivation (DeaktivierenProfile)</u>	<u>0</u>	
<u>PraefixIntRufNr (PraefixIntRufNr)</u>		
<u>Calling Party Identification (RufnummerIdentifikation)</u>	<u>0</u>	
<u>Message Waiting activation (MWAktivieren)</u>		
<u>Message Waiting clear (MWLöschen)</u>		

## 6.2. Configure H.323 Trunk

Continuing from the previous section, scroll down the page displayed and configure the **VoIP** section as shown below where **H323 Gateway** is the IP address assigned to IP Office.

Overview:

[VoIP]	Voice over IP Configuration	
<a href="#">Driver Preferences (DriverPref)</a>	<u>2</u>	
<a href="#">Local User Name (LocalUserName)</a>	<u>NovaMail</u>	
<a href="#">H323 Gateway (H323_Gateway)</a>	<u>10.10.16.105</u>	
<a href="#">H323 Use Fast Start (H323_UseFastStart)</a>	<u>0</u>	
<a href="#">H323 Use H245 Tunneling (H323_UseH245Tunneling)</a>	<u>0</u>	
<a href="#">H323 Listener Configuration (H323_ListenerConfig)</a>	<u>*:1720</u>	
<a href="#">H323 Use GateKeeper (H323_UseGateKeeper)</a>	<u>0</u>	
<a href="#">H323 GateKeeper Address (H323_GateKeeperAddress)</a>		
<a href="#">H323 GateKeeper Zone (H323_GateKeeperZone)</a>		
<a href="#">H323 GateKeeper Password (H323_GateKeeperPwd)</a>		

## 6.3. Configure Mailboxes

Voicemail boxes must be configured on NovaMail on NovaBox, click **Edit master Data** → **Voice Boxes** → **New voice box**.



Configure the new voice box as follows:

- **Internal phone number** – enter the extension number for the IP Office user
- **Surname / First name** – enter a descriptive name
- **Pin code** – enter the PIN number used to access the voice box
- **From own unit without Pin** – place a check in this box

The screenshot shows the 'Process participants' configuration window. At the top, there are fields for 'Number:', 'Name:', and 'Client:' (set to 'All'). Below these are tabs for 'General', 'Email', 'Additional participants', 'Profiles', and 'Messages'. The 'General' tab is selected. A red box highlights the following fields: 'Internal phone number' (201), 'Surname / First name' (Extn201), 'Pin code' (1234), and 'From own unit without Pin' (checked). Other visible fields include 'Language' (English), 'Internal fax number', 'Outg. fax authorization' (unchecked), and 'Fax priority' (Normal).

Click on the **Profiles** tab and enter the PSTN number to be used for outcalling in the **Alternative Phone number 1** field. Click **Adopt data** when done.

Process participants Back ?

Number:  Name:

Client:

General | Email | Additional participants | **Profiles** | Messages

Alternative Phone number 1:

Alternative phone number 2:

Deputy's phone number:

Fixed diversion dest. for messages:

Click on **Voice boxes** to view the newly administered voice box. Repeat as necessary.

Admin

Personal data, profiles

- Edit master data
- Voice boxes**
- Guest boxes
- IVR procedures
- IVR phone numbers
- Wake-Up calls
- Monitoring

Voice boxes ? Admin

Internal Number	Name		
201	Extn201		

## 7. Verification Steps

This section provides the steps that can be performed to verify the proper configuration of NovaMail with IP Office.

### 7.1. Verify Avaya IP Office H.323 Trunk Status

Using the IP Office System Status application, click on the appropriate trunk group and verify the **Current State** is **Idle**.

The screenshot shows the IP Office System Status application interface. On the left is a navigation tree with categories: System, Alarms (8), Extensions (18), Trunks (10), Active Calls, Resources, Voicemail, and IP Networking. Under Trunks, lines 1-4, 5, 6, 9, 10, 17, and Line: 18 are listed. The main content area is titled 'H.323 Trunk Summary' and has tabs for Status, Utilization Summary, and Alarms. The Status tab is active, displaying the following configuration details:

- IP Address: 10.10.16.232
- Line Number: 18
- Number of Administered Channels: 20
- Number of Channels in Use: 0
- Administered Compression: G729 A, G711 Mu, G7231, G711 A
- Small Community Networking: Not Enabled
- Direct Media Path: On
- Enable Faststart: Off
- Silence Suppression: Off

Below the configuration details is a table showing the status of the trunk channels:

Channel Number	Call Ref	Current State	Time in State	Remote Media Address	Codec	Connection Type	Caller ID or Dialed Digits	Other Party on Call
1		Idle	00:00:12					
2		Idle	4 days 04:...					
3		Idle	4 days 04:...					
4		Idle	4 days 04:...					

### 7.2. Verify NovaLink NovaMail on NovaBox Status

From the NovaMail on NovaBox web interface navigate to **Monitoring** → **Activities** and verify that the icon in the left column is green indicating that the H.323 trunks are in service and the IP Office can be reached.

The screenshot shows the 'Activities' window in the NovaMail on NovaBox web interface. At the top, there are buttons for 'Refresh' and 'Settings'. Below these is a 'Status:' section with a dropdown menu set to 'Lines' and a 'Details' button. The main area displays a table with four rows, each representing a line:

Line	Status	Message
Line 1	Green circle, three vertical bars	Waiting for call!
Line 2	Green circle, three vertical bars	Waiting for call!
Line 3	Green circle, three vertical bars	Waiting for call!
Line 4	Green circle, three vertical bars	Waiting for call!

### 7.3. Verify Successful Delivery of Voicemail

Place a call to an IP Office user with forwarding to voicemail configured. Ensure that NovaMail on NovaBox 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..

### 7.4. Verify Successful Retrieval of Voicemail

Dial the voicemail retrieval access number from the IP Office User. Ensure that NovaMail on NovaBox 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 NovaLink NovaMail on NovaBox to successfully interoperate with Avaya IP Office. All feature test cases were completed successfully with any observations noted in **Section 2.2**.

## 9. Additional References

This section references the product documentation relevant to these Application Notes.

1. <http://marketingtools.avaya.com/knowledgebase/>.
2. <ftp://support.novalink.ch/Technikerhandbuch/English/Technikerhandbuch NovaLink GmbH EN.chm>  
(please request Login and Password from NovaLink)

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