



Avaya Solution & Interoperability Test Lab

Application Notes for Configuring Avaya IP Office IP 500 v2 R8.1 with NovaLink NovaAlert on NovaBox using H.323 Trunks – Issue 1.0

Abstract

These Application Notes describe the configuration for connecting the NovaLink NovaAlert on NovaBox alarm 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 NovaAlert on NovaBox alarm 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.

NovaLink NovaAlert on NovaBox is an application which is used in a health care, hotel or industrial environment for alerting, messaging or information services. NovaLink NovaAlert on NovaBox can react to external alarm stimuli which indicate the existence of an emergency situation by informing affected persons of the situation.

Alarms can be triggered from various possible input sources including manual input via Web browser, Smartphone Apps's, Databases, E-Mails, serial interfaces, potential free contacts, SNMP, OPC, SMS, IP, etc. "Direct" alarms can also be defined which allow alarms to be input and triggered via telephone calls. The alarm triggering described within these Application Notes is restricted to those methods which involve interaction with Avaya IP Office.

Once an alarm has been triggered, the medium selected when the alarm was configured is used to deliver the alarm. Possible delivery interfaces include phone calls (including conferences), Smartphone App's, Desktop-Clients, E-Mail, Pager, SMS, Fax, Printers, etc. Multiple recipients can be configured for an alarm, thus possibly creating multiple simultaneous telephone calls. These Application Notes focus on those delivery methods which involve interaction with Avaya IP Office.

Alarms which are triggered via Avaya IP Office can include pre-recorded or ad hoc voice messages, or can generate voice messages via a text-to-speech mechanism. The calling party name can also be configured to contain a brief alarm message, so that this alarm message will appear in the caller list of intended recipients who are unable to answer an alarm call.

NovaLink NovaAlert on NovaBox supports a wide range of interfaces for input and output, where telephony is the one most commonly used for alarming.

2. General Test Approach and Test Results

NovaAlert on NovaBox was manually configured using the web interface to deliver variety of alarms under a number of conditions.

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 NovaAlert on Novabox to carry out a variety of alarming functions, in various conditions, to multiple types of endpoint according to the configuration made via the web interface. These included:

Recording of alarms from SIP/H.323/Digital endpoints

- Delivery of voice recorded and TTS alarm to SIP/H.323/Digital endpoints
- Intrusion calls to deliver alarms
- Verification of Calling Party Name
- Over-ride forwarding to deliver alarms
- Following forwarding to deliver alarms
- Alarms delivered to Voicemail
- DTMF PIN Entry

Serviceability testing consisted of verifying the ability of NovaAlert on NovaBox to recover from power or network interruption to both IP Office and NovaAlert 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
Busnesstower
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 500 v2 connected to NovaAlert on NovaBox over an H.323 trunk and an assortment of Digital and IP endpoints.

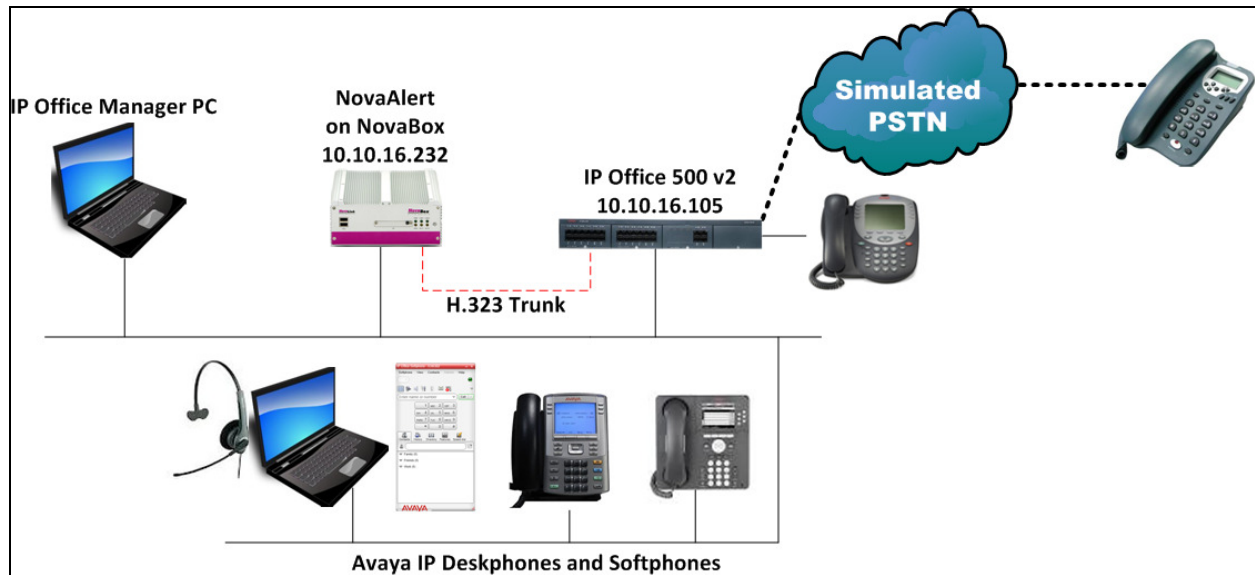


Figure 1: Avaya IP Office with NovaAlert on NovaBox Solution

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
NovaAlert 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

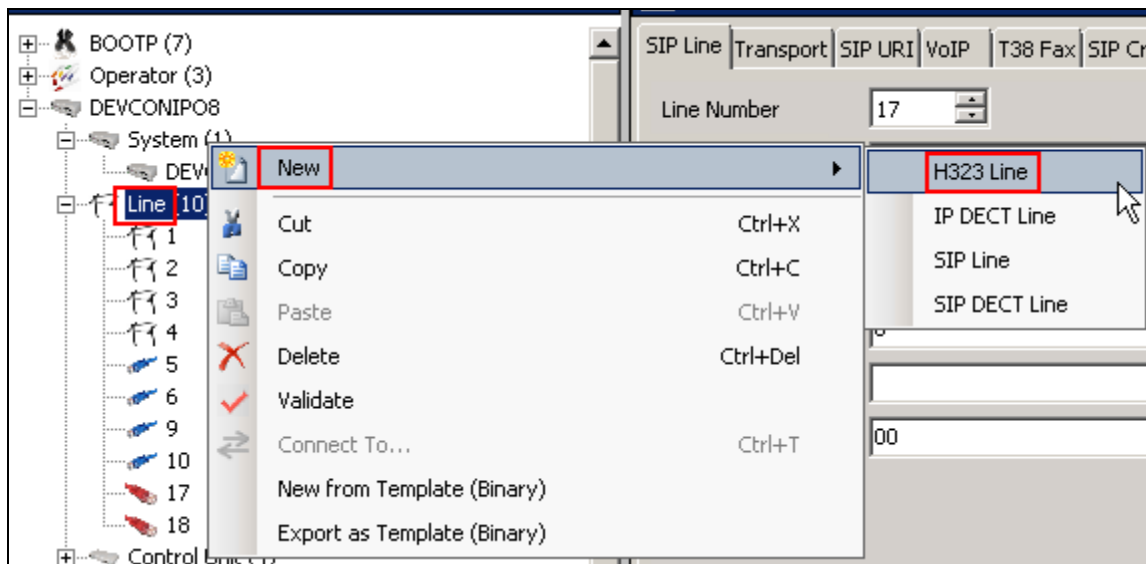
The configuration of IP Office is performed from the IP Office Manager application and can be summarized as follows:

- Configure H.323 Trunk
- Configure Call Routing
- Configure Call Intrude Short Code
- Configure Call Intrude for User

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 NovaAlert 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.

The screenshot shows the 'H323 Line - Line 18*' configuration window. The 'VoIP Line' tab is selected. The 'Line Number' is set to 18. The 'Outgoing Group ID' is also set to 18. The 'Number of Channels' is set to 4. The 'Outgoing Channels' are set to 4. The 'Voice Channels' are set to 4. The 'TEI' is set to 0. The 'Telephone Number' field is empty. The 'Prefix', 'National Prefix', and 'International Prefix' fields are also empty.

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

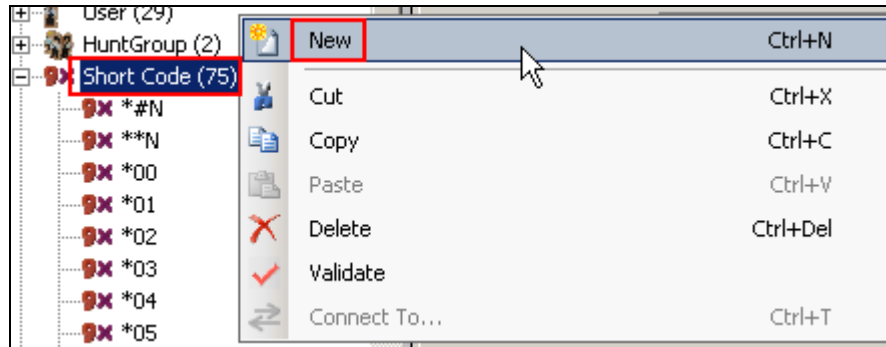
- **Gateway IP Address** – enter the IP Address of NovaAlert on NovaBox.
- Check the **Out Of Band DTMF** and **Allow Direct Media Path** boxes.
- **Supplementary Services** – select **H450** from the drop-down list.

Click OK when done (not shown).

The screenshot shows the 'VoIP Settings' tab. The 'Gateway IP Address' is set to 10 . 10 . 16 . 232. The 'Codec Selection' is set to 'System Default'. The 'Unused' list is empty. The 'Selected' list contains: G.729(a) 8K CS-ACELP, G.711 ULAW 64K, G.723.1 6K3 MP-MLQ, and G.711 ALAW 64K. The 'Supplementary Services' dropdown is set to H450. The 'Out Of Band DTMF' and 'Allow Direct Media Path' checkboxes are checked. The 'VoIP Silence Suppression', 'Enable Fast Start', 'Fax Transport Support', 'Local Tones', and 'Default Name From Display' checkboxes are unchecked.

5.2. Configure Call Routing

A Short Code must be configured to route calls over the H.323 trunk to NovaAlert on NovaBox. In the left pane, right click on **Short Code** → **New**.



Configure the Short Code as follows:

- **Code** – enter the digits to dial to access NovaAlert on NovaBox.
- **Feature** – select **Dial Emergency** 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 'Short Code' configuration window. The window has a title bar and a tab labeled 'Short Code'. Inside, there are several input fields and a checkbox. The 'Code' field contains '999'. The 'Feature' field is a dropdown menu showing 'Dial Emergency'. The 'Telephone Number' field contains a period '.'. The 'Line Group ID' field is a dropdown menu showing '18'. The 'Locale' field is a dropdown menu that is currently empty. The 'Force Account Code' checkbox is unchecked. A red rectangular box highlights the 'Code', 'Feature', 'Telephone Number', and 'Line Group ID' fields.

5.3. Configure Call Intrude Short Code

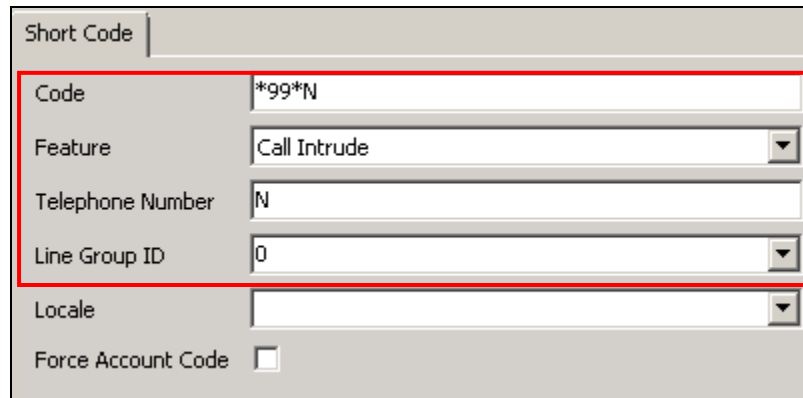
Call Intrude is used to intrude on calls currently in progress and to over-ride if call forwarding is configured. Create a new Short Code as shown in the previous Section and configure as follows:

Code – enter the code used to access the call intrude feature, in this case *99*N is used, where N is the extension number to be intruded.

Feature – select **Call Intrude** from the drop down list.

Telephone Number – enter N.

Line Group ID – leave at the default setting.



The screenshot shows a web form titled "Short Code" with a tabbed interface. The "Short Code" tab is selected. Below the tab, there are several input fields. A red rectangular box highlights the following fields: "Code" (containing "*99*N"), "Feature" (a dropdown menu showing "Call Intrude"), "Telephone Number" (containing "N"), and "Line Group ID" (a dropdown menu showing "0"). Below the highlighted fields are "Locale" (a dropdown menu) and "Force Account Code" (a checkbox that is unchecked).

Short Code	
Code	*99*N
Feature	Call Intrude
Telephone Number	N
Line Group ID	0
Locale	
Force Account Code	<input type="checkbox"/>

5.4. Configure Call Intrude for User

By default users on IP Office cannot be intruded. In the left pane click on **User** → **Telephony** → **Supervisor Settings** (not shown) and uncheck the **Cannot Be Intruded** box.

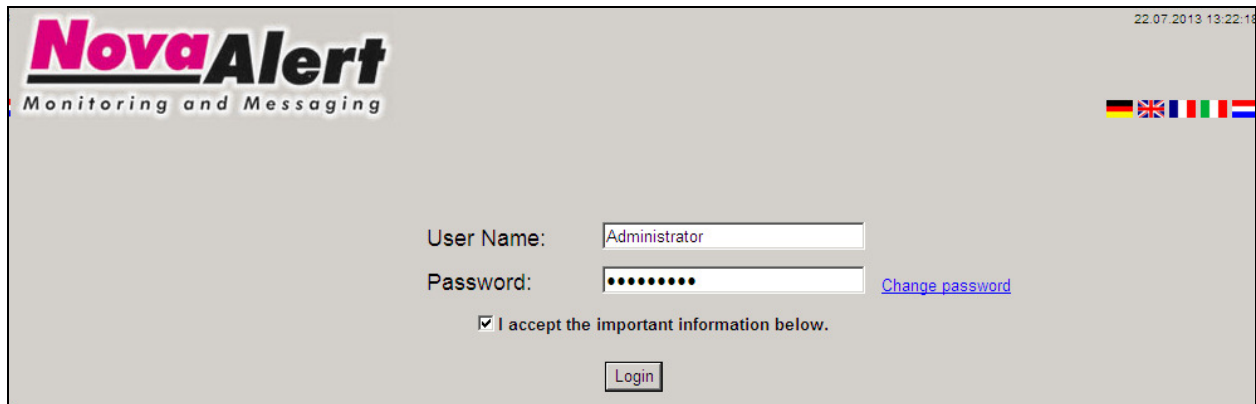
The screenshot displays the 'Supervisor Settings' tab within the 'Telephony' section of the Avaya IP Office configuration interface. The interface includes a top navigation bar with tabs: User, Voicemail, DND, ShortCodes, Source Numbers, Telephony, Forwarding, Dial In, Voice Recording, and Button Pr. Below this, the 'Supervisor Settings' tab is active, showing various configuration options. On the left, there are fields for Login Code (****), Login Idle Period (secs), Monitor Group (<None>), Coverage Group (<None>), and Status on No-Answer (Logged On (No change)). A section for 'Reset Longest Idle Time' has two radio buttons: 'All Calls' (selected) and 'External Incoming'. At the bottom left, the 'After Call Work Time (secs)' is set to 'System Default (10)'. On the right, a list of checkboxes includes: Force Login, Force Account Code (checked), Outgoing Call Bar, Inhibit Off-Switch Forward/Transfer, Can Intrude, **Cannot be Intruded** (highlighted with a red box), Can Trace Calls, CCR Agent, Automatic After Call Work, and Deny Auto Intercom Calls.

6. Configure NovaLink NovaAlert on NovaBox

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

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

Navigate to 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.

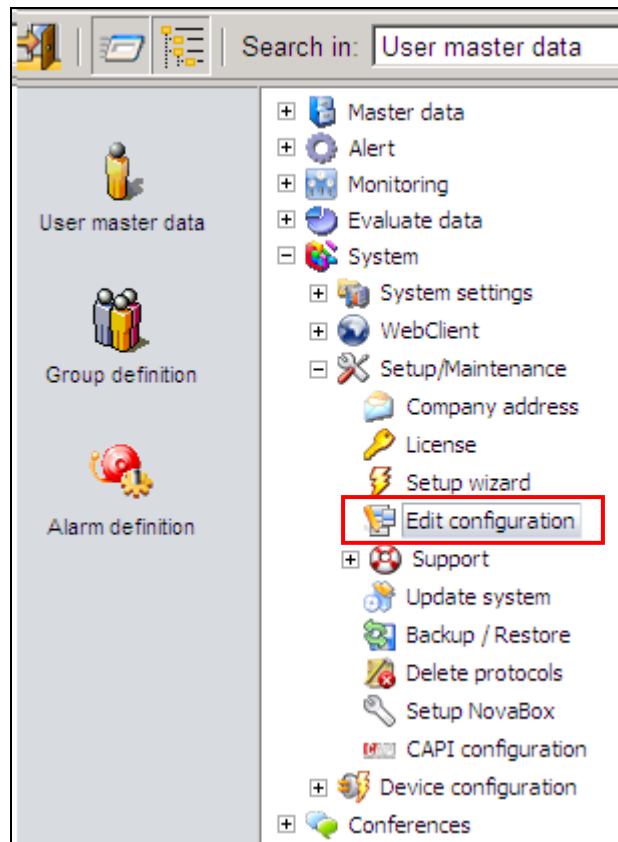


The screenshot shows the NovaAlert web interface. At the top left is the logo "NovaAlert" in pink and black, with the tagline "Monitoring and Messaging" below it. At the top right is the date and time "22.07.2013 13:22:13" and a row of flags (Germany, UK, France, Italy, Spain). The main area contains a login form with the following elements:

- User Name:** A text input field containing "Administrator".
- Password:** A text input field with masked characters (dots).
- [Change password](#): A blue link next to the password field.
- ☒ I accept the important information below.
- Login**: A button at the bottom of the form.












6.1. Configure IP Office Integration Parameters

Click System → Setup/Maintenance → Edit Configuration










In the right hand pane, configure as shown below:

- **PBX Type** - with a value of **12** defines IP Office parameters.
- **Dialed Number Identification** – to process the dialed number and not any diverting party information in case of calling NovaAlert
- **Intrusion Configuration** – set to **2**, to start a new call with intrusion if extension is busy

Overview:		
[CallInfo]		Call Control
PBX Type (PBXType)	<u>12</u>	
Card Driver (CardDriver)	<u>3</u>	
Interface (Interface)	<u>9</u>	
Dialed Number Identification (GewählteNummer)	<u>1</u>	
Minimum Digits (MinDigits)	<u>0</u>	
Intrusion Configuration (AufschaltenAktiv)	<u>2</u>	
Calling Party Configuration (CallingPartyAktiv)	<u>1</u>	
Default Calling Party (DefaultCallingParty)	<u>999</u>	
Calling Name Identification (CNIPAktiv)	<u>1</u>	
QSIG Standard (QSIGStandard)	<u>0</u>	
Call Retries (CallVersuche)	<u>2</u>	












Continuing from the previous section, scroll down the page displayed and configure the **NovaAlert** section as shown below with the **Intrusion code** configured with the **Call Intrude** short code configured in **Section 5.3**.

Overview:		
[NovaAlert] NovaAlert Basic Configuration and Line Configuration		
SQL Server Name (SQLServer)		
Static Direct Alarm (DirektAlarmNummer1)		
Word Replacement Type (Ersetzungsart)	<u>1</u>	
Timeout internal calls (CallLängeIntern)	<u>30</u>	
Timeout external calls (CallLängeExtern)	<u>30</u>	
Polling Interval (Intervall)	<u>5</u>	
Intrusion code (AufschaltCode)	<u>*99*</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	
Driver Preferences (DriverPref)	<u>2</u>	
Local User Name (LocalUserName)	<u>NovaAlert</u>	
H323 Gateway (H323_Gateway)	<u>10.10.16.105</u>	
H323 Use Fast Start (H323_UseFastStart)	<u>0</u>	
H323 Use H245 Tunneling (H323_UseH245Tunneling)	<u>0</u>	
H323 Listener Configuration (H323_ListenerConfig)	<u>*.1720</u>	
H323 Use GateKeeper (H323_UseGateKeeper)	<u>0</u>	
H323 GateKeeper Address (H323_GateKeeperAddress)		
H323 GateKeeper Zone (H323_GateKeeperZone)		
H323 GateKeeper Password (H323_GateKeeperPwd)		
SIP Gateway (SIP_Gateway)		

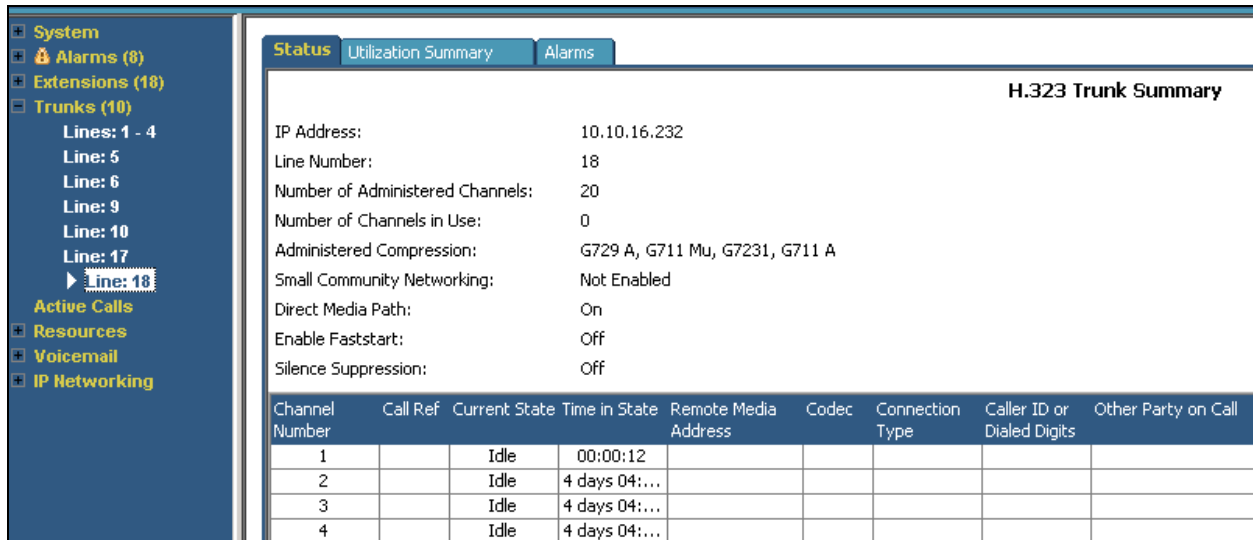
See **Section 9** for more information on configuring NovaAlert on NovaBox.

7. Verification Steps

This section provides the steps that can be performed to verify the proper configuration of NovaAlert 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. On the left is a navigation pane with options: System, Alarms (8), Extensions (18), Trunks (10), Lines: 1 - 4, Line: 5, Line: 6, Line: 9, Line: 10, Line: 17, Line: 18 (selected), Active Calls, Resources, Voicemail, and IP Networking. The main area has tabs for Status, Utilization Summary, and Alarms. The Status tab is active, displaying the 'H.323 Trunk Summary'.

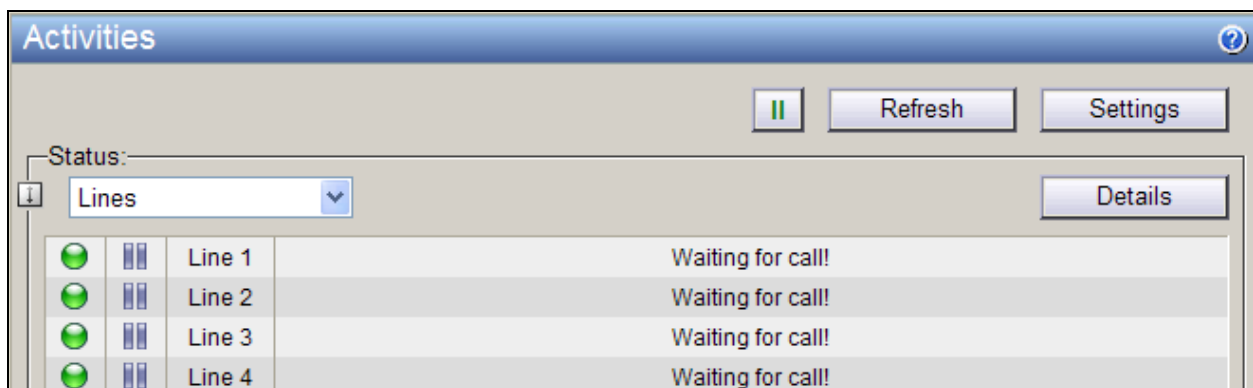
H.323 Trunk Summary

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

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 NovaAlert on NovaBox Status

From the NovaAlert 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 NovaAlert Activities window. It has a title bar 'Activities' with a help icon. Below the title bar are buttons for 'Refresh' and 'Settings'. A 'Status:' label is followed by a dropdown menu set to 'Lines' and a 'Details' button. The main area displays a table with four rows, each representing a line. Each row has a green circle icon, a small icon, and the text 'Waiting for call!'.

Line	Status
Line 1	Waiting for call!
Line 2	Waiting for call!
Line 3	Waiting for call!
Line 4	Waiting for call!

7.3. Verify Successful Recording of Alarm

Configure NovaAlert on NovaBox as required to record an alarm. Place a call into NovaAlert on NovaBox and record a voice alarm.

7.4. Verify Successful Delivery of Alarms

Ensure that the alarm recorded in the previous section is delivered to the defined destinations.

8. Conclusion

These Application Notes describe the configuration steps required for NovaLink NovaAlert on NovaBox to successfully interoperate with Avaya IP Office. All feature test cases were completed successfully.

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](ftp://support.novalink.ch/Technikerhandbuch/English/Technikerhandbuch%20NovaLink%20GmbH%20EN.chm) (please request Login and Password from NovaLink)

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