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1 Overview

The purpose of this configuration guide is to describe the steps needed to configure the Fonality Trixbox Pro IP PBX for proper operation Optimum Business Sip Trunking.

2 SIP Trunk Adaptor Set-up Instructions

These instructions describe the steps needed to configure the LAN side of the Optimum Business SIP Trunk Adaptor.

Step 1:

Log on to the Optimum Business SIP Trunk Adaptor

1. Connect a PC to port 4 of the Optimum Business SIP Trunk Adaptor, the silver device labeled Edgewater Networks, 4550 series.


3. Enter login and password and click ‘OK’.
   Login: pbxinstall
   Password: s1ptrunk

Step 2:

Click on the LAN Settings Link

1. Assign an IP Address to the LAN interface of the SIP Trunk Adaptor. The IP address must be on the same subnet as the IP PBX. This changes the address on port 1 of the Optimum Business SIP Trunk Adaptor.
   Note: This will become your local SIP proxy IP address. No other IP addresses will be provided by Cablevision.

2. Optional: Specify a VLAN for your voice traffic. Click the ‘Enable Voice VLAN Tagging’ check box. The default VLAN ID is 100.
   Note: VLAN 200 should not be used. It is dedicated to port 4 for management.
3. Optional: Enable the DHCP server. This will allow the SIP Trunk Adaptor to act as a DHCP server, which will provide IP addresses to the voice network, and create a dedicated voice LAN, as per diagram 2.

4. Click ‘Submit’.

**Diagram 1**  
**SIP Trunk Adaptor for IP-PBXs**  
**Example: Single LAN Configuration**

Using a connection from the customer’s LAN, the SIP Trunk Adaptor’s address can be a statically assigned private IP address. It may not be assigned a Public IP address.

**Diagram 2**  
**SIP Trunk Adaptor for IP-PBXs**  
**Example: Separate Voice and Data Networks Configuration**

The customer attaches their Voice Switch to the Ethernet LAN port 1 on the Optimum Business SIP Trunk Adaptor. The Optimum Business SIP Trunk Adaptor can be enabled as a DHCP server to provide routing for the separate voice network.
Step 3:  
Click on the SIP Trunk Configuration Link

1. Select your IP PBX make and model from the drop-down menu.

2. Specify how the IP PBX will register to the Optimum Business SIP Trunk Adaptor.

3. The Cablevision network only supports Inband DTMF. Click on the check box next to “Convert Inband DTMF” if you cannot configure your IP PBX to send out Inband DTMF. The DTMF tone duration generated by the phones and/or PBX may need to be increased from their default setting. Some phones and/or PBX have a default setting between 180ms to 200ms. This setting is too low. The recommended setting is 600ms.

4. Click ‘Submit’.

Step 4:  
Diagnostics Link

You can make a test call directly from your phone or use the test call application under the Diagnostics link.
### Step 4 continued

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outbound Call Test</strong></td>
<td>Specifies an outside phone number to which an outbound call will be initiated. The pilot telephone number of the SIP Trunk will be prepopulated.</td>
</tr>
<tr>
<td><strong>TelephoneNumber</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Pilot Number</strong></td>
<td>Displays the provisioned pilot number, which is used for outbound and inbound call tests.</td>
</tr>
<tr>
<td><strong>Call</strong></td>
<td>Initiates a call outbound to a telephone number entered or inbound to the pilot number displayed.</td>
</tr>
<tr>
<td><strong>Inbound Call Test</strong></td>
<td>Indicates whether inbound test call will be enabled or disabled. If inbound test calls are enabled, calls made to the pilot number will be redirected to the test UA for fifteen minutes. When the pilot number is dialed, you will hear a test message play.</td>
</tr>
<tr>
<td>(radio button)</td>
<td></td>
</tr>
<tr>
<td><strong>Submit</strong></td>
<td>Enables or disables the inbound call test.</td>
</tr>
<tr>
<td><strong>IP Address to Ping</strong></td>
<td>Verifies basic connectivity to a networking device. Successful ping test results indicate that both physical and virtual path connections exist between the system and the test IP address.</td>
</tr>
<tr>
<td><strong>Ping Button</strong></td>
<td>Sends a ping to the IP address specified in the field “IP Address to Ping”.</td>
</tr>
<tr>
<td><strong>IP Address to Trace</strong></td>
<td>Tracks the progress of a packet through the network. The packet can be tracked through the WAN or LAN interfaces of the adaptor.</td>
</tr>
<tr>
<td>(radio button)</td>
<td></td>
</tr>
<tr>
<td><strong>Interface</strong></td>
<td>Indicates whether a packet will be tracked through the LAN or the WAN.</td>
</tr>
<tr>
<td><strong>Traceroute Button</strong></td>
<td>Initiates a traceroute to the specified IP address on either the LAN or the WAN.</td>
</tr>
<tr>
<td><strong>Reset</strong></td>
<td>Clears all fields and selections and allows you to enter new information. Reset applies to outbound call test, ping and traceroute.</td>
</tr>
</tbody>
</table>
3 Additional Set-up Information

**Systems**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pbxinstall Link</td>
<td>Select to change the default password for the pbxinstall login ID. Only the password can be changed. The login ID cannot be changed.</td>
</tr>
</tbody>
</table>

**Password**
Fonality

4 International Calling

Optimum Voice Business Trunking offers an optional International Calling Service for direct-dialed calls made from the Customer’s business or from any phone via the Optimum Voice International Calling remote access number to destinations outside of the United States, Puerto Rico, Canada and the U.S. Virgin Islands at per minute rates. The Customer must login to the Optimum Business Account Center and activate the service on the Optimum Business Trunk Pilot telephone number to activate the service and manage the monthly International spending limit for the account.

Activating International calling on the Pilot TN will enable International calling for all Direct Inward Dial (DIDs) telephone numbers as well. Blocking International calling for one or more DIDs is managed by the customer directly from the PBX phone system configuration. To minimum the exposure to fraudulent calling, It is recommended to limit International calling capability to those DID’s that require it and set up an account spending limit that reflects what is necessary to run the business.

It is the Customer (and/or the Customer Agent’s) responsibility to properly secure the customer’s PBX to prevent the PBX from being compromised and fraudulent calls from being made by unauthorized (internal or external) users. If fraudulent calls are detected, Cablevision reserves the right to disable International Calling until the PBX is properly secured by the customer.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Username</td>
<td>Specifies the username for which the password can be changed.</td>
</tr>
<tr>
<td>Current Password</td>
<td>Specifies the current password.</td>
</tr>
<tr>
<td>New Password</td>
<td>Specifies the new password.</td>
</tr>
<tr>
<td>Confirm Password</td>
<td>Confirms the new password.</td>
</tr>
<tr>
<td>Submit</td>
<td>Applies the settings configured on this page.</td>
</tr>
<tr>
<td>Reset</td>
<td>Clears all fields and selections and allows you to enter new information.</td>
</tr>
</tbody>
</table>
5 PBX Configuration

The steps on the next page describe the minimum configuration required to enable the PBX to use Optimum Business SIP Trunking for inbound and outbound calling. Please refer to the Trixbox Pro product documentation for more information on advanced PBX features.

The configuration described here assumes that the PBX is already configured and operational with station side phones using assigned extensions or DIDs. This configuration is based on Trixbox Pro Standard Edition v4.1.2-p13.
1. The PBX, the phones and the Optimum SIP Trunk Adaptor should be on the same LAN segment. The PBX should be configured with a static IP address (i.e.: 192.168.1.2/24) and its gateway set to the Optimum Business SIP Trunk Adaptor’s port 1 LAN IP address (i.e.: 192.168.1.1/24). All the Polycom phones are shipped with default set to obtaining an IP address via DHCP. All the Polycom phones also support Auto Discovery that is strongly recommended for the PBX. You should enable the Optimum Business SIP Trunk Adaptor’s DHCP server option when connected to the LAN, so the phones can get an assigned IP address and register with the PBX, once the PBX is configured for adding the phones.

2. To configure the PBX, launch the browser and access http://cp.trixbox.com from an Internet-ready PC.

3. Enter the **username** and **password** for the PBX and hit the “**Login**” button.
4. Select “Options>network” to verify or change the network configuration on the PBX. Hit the “Apply All Changes” button if you make any changes.
5. Select “Options>voip” to create a VoIP account for communicating with the Optimum Business SIP Trunk Service.
   a. Enter a descriptive name in the “Route Name” field.
   b. Select “Other” and “SIP” from the 2 drop-down menus for the “Provider” fields.
   c. Select “yes” in the “Register” field if the Optimum Business SIP Trunk Adaptor is configured to receive SIP registration from the PBX; select “no” if Optimum Business SIP Trunk Adaptor is configured to communicate with the PBX via the PBX’s static IP address.
   d. If PBX registration is required, enter the username in the “Username” field and password in the “Password” field. Note that the username and password must match what are configured on the Optimum Business SIP Trunk Adaptor. In this example, the pilot DID, 6316769604, is used for both the username and the password.
   e. In the Advanced section, select “no” in the “NAT” field.
   f. If PBX registration is required, make sure the SIP registration string (see example from screen shot below) entered in the “Register String” field is in the form of “username:password@server/username”.
   g. Leave other fields as default and hit the “Add VoIP Account” button.
6. Select “Extensions>phone numbers” to add the DIDs/phone numbers assigned for the SIP trunk services.
   a. Enter the phone number in the “Number” field.
   b. Select “VoIP” in the “Type” field.
   c. Enter a description in the “Description” field.
   d. If the DID is a pilot DID (main number), select “yes” for the “Primary” field.
   e. Hit the “Add Phone Number” button.

7. Select “Extensions>phones” to create/add device for phones.
   a. Enter the MAC address of the phone in the “MAC” field.
   b. Select the phone vendor in the “Vendor” field.
   c. Enter a description in the “Desc.” field.
   d. Hit the “Add Device” button. If you have trouble getting the phone to register with the PBX, click the “these instructions” link for more information.
8. Select “Extensions>add extension” to create/add extension and associate the extension with the phone and the assigned DID.
   a. Enter an extension number in the “Extension Number” field.
   b. Enter a description in the “Description” field.
   c. Enter the first name and last name of the phone user in the “First / Last Name” field.
   d. Enter a username in the “Web Username” field.
   e. Enter a password in the “Web Password” field.
   f. In the “Inbound Phone No.” field, select the DID for routing incoming calls to this extension. Note that in this example, we use the pilot DID to associate with the first extension number.
   g. In the “Outbound Caller-ID” field, select the DID/username as the caller ID. Note that for PBX registration mode, the Optimum Business SIP Trunk Adaptor will always relay the outbound call with the pilot DID as the caller ID. Also, the caller ID that is used by the PBX for any outbound call must be the same username that is successfully registered with the Optimum Business SIP Trunk Adaptor. For static IP mode, the outbound caller ID can be the same as the DID phone number.
   h. In the “Phones / Devices” field, select the phone/device for this extension. Note that the detected phone/device will show up in the available list even when it cannot successfully register with the PBX.
   i. Enter a password in the “Voicemail Password” field.
   j. Select “no” in the “NAT” field.
   k. Leave all other fields as default and hit the “Add Extension” button.
9. Select "Extensions>view extensions" to verify that all phones are properly registered with the PBX. A green icon should be shown next to each extension. Mouse-over the “status” header to see what other status you may get. Note that you may need to set the “NAT” field for the extension to “yes” in order to get the green icon to appear.
10. Select “Options>dial plan” to add dial plan for making outbound calls with “9+ 10-digit number”.
   a. Enter “nxxnxxxxxx” in the “Dial String” field.
   b. Enter a description in the “Description” field.
   c. Select “long distance” in the “Type” field.
   d. Select the Route name for the Optimum Business SIP Trunk Adaptor in the “Route” field.
   e. Leave other fields as default and hit the “Add Dial Plan” button.
11. To configure the Trixbox PBX with a specific DTMF mode, follow the steps below.

Go to the “Options” tab, then select the “voip” link. In the drop-down box labeled “DTMF Mode”, there are four options: RFC2833, Auto, Info, and Inband. Select “Auto”. This will allow both Inband and RFC2833 protocols.