Avaya IP-Office 500
version 9.0 IP-PBX

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SIP Trunking using the Optimum Business SIP Trunk Adaptor and the Avaya IP-Office 500 version 9.0 IP-PBX

Table of Contents

1 Overview

The purpose of this configuration guide is to describe the steps needed to configure the Avaya IP-Office 500 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.

2. Open a Web browser and go to IP Address http://10.10.200.1. A login box will appear.

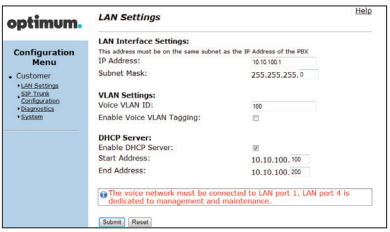
3. Enter login and password and click 'OK'.
   Login: pbxinstall
   Password: s1ptrunk

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.



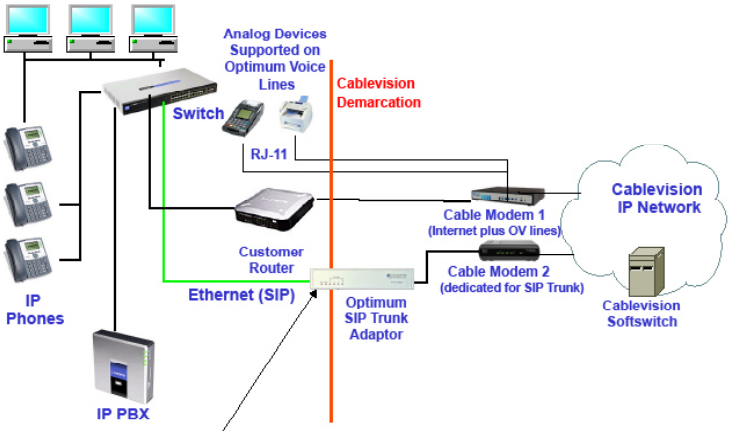
2. Optional: Specify a VLAN for your voice traffic. Click the 'Enable Voice VLAN Tagging' check box. The default VLAN ID is 100.

   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.

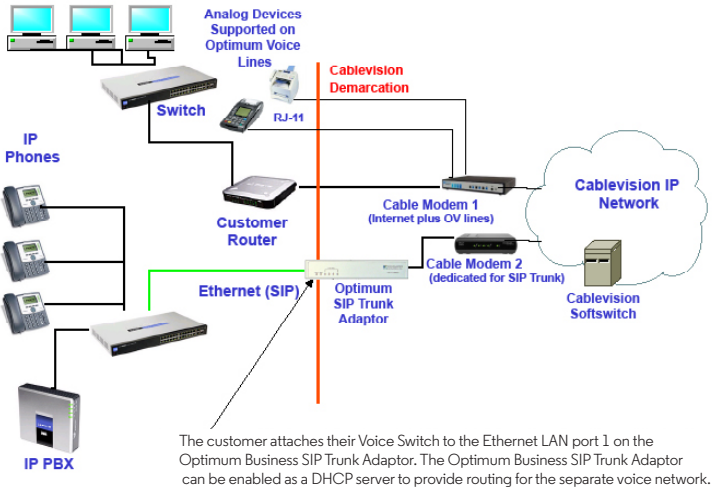
4. Click 'Submit'.

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.

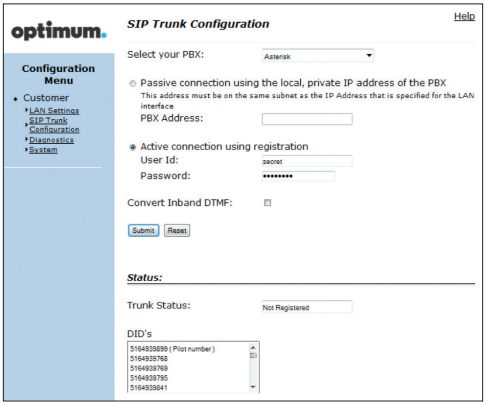
Step 3:

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.

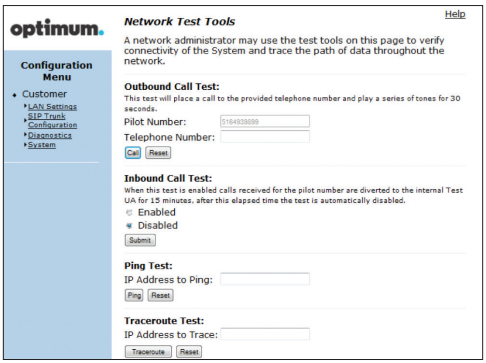


4. Click 'Submit'.

Step 4:

Diagnostics Link

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

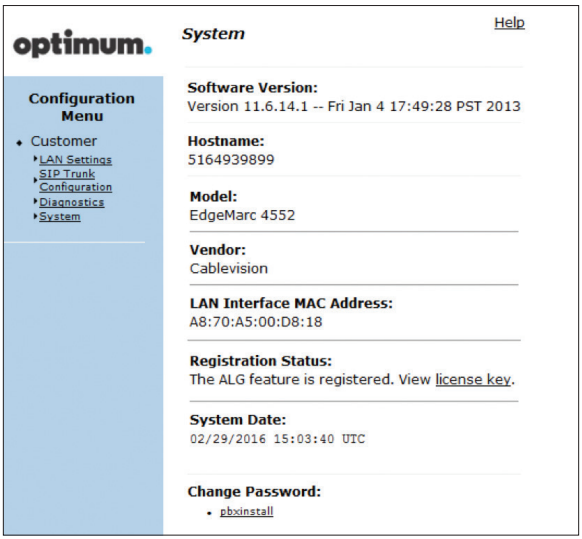


Step 4 continued

Field	Description
Outbound Call Test TelephoneNumber	Specifies an outside phone number to which an outbound call will be initiated. The pilot telephone number of the SIP Trunk will be prepopulated.
Pilot Number	Displays the provisioned pilot number, which is used for outbound and inbound call tests.
Call	Initiates a call outbound to a telephone number entered or inbound to the pilot number displayed.
Inbound Call Test (radio button)	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.
Submit	Enables or disables the inbound call test.
IP Address to Ping	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.
Ping Button	Sends a ping to the IP address specified in the field “IP Address to Ping”.
IP Address to Trace	Tracks the progress of a packet through the network. The packet can be tracked through the WAN or LAN interfaces of the adaptor.
Interface (radio button)	Indicates whether a packet will be tracked through the LAN or the WAN.
Traceroute Button	Initiates a traceroute to the specified IP address on either the LAN or the WAN.
Reset	Clears all fields and selections and allows you to enter new information. Reset applies to outbound call test, ping and traceroute.

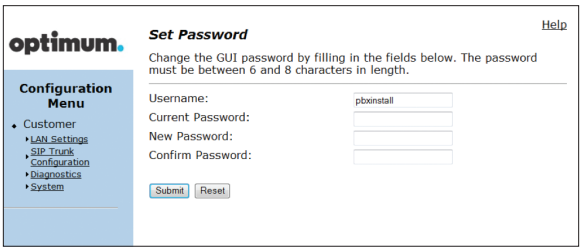
3 Additional Set-up Information

Systems



Field	Description
Pbxinstall Link	Select to change the default password for the pbxinstall login ID. Only the password can be changed. The login ID cannot be changed.

Password



Field	Description
Username	Specifies the username for which the password can be changed.
Current Password	Specifies the current password.
New Password	Specifies the new password.
Confirm Password	Confirms the new password.
Submit	Applies the settings configured on this page.
Reset	Clears all fields and selections and allows you to enter new information.

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.

5 PBX Configuration

The steps below describe the minimum configuration required to enable the PBX to use Optimum Business SIP Trunking for inbound and outbound calling. Please refer to the Avaya IP Office 500 product documentation for more information other advanced PBX feature configuration.

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 Avaya IP Office 500 version 9.0. In this document the address of the Avaya which is communicating with the Optimum Business SIP Trunk IP Adaptor is 10.10.101.11 /24 while the Optimum Business SIP Trunk Adaptor's IP address is 10.10.101.1 /24.

SIP authentication credentials

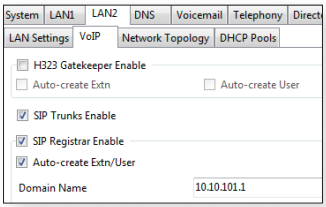
- This guide provides the configuration steps for both PBX registration and static or non-registration modes of PBX operation.

PBX Information

Manufacturer:	Avaya
Model:	IP Office 500
Software Version:	9.0
Does the PBX send SIP Registration messages (Yes/No)?	Yes
Vendor Contact:	www.avaya.com

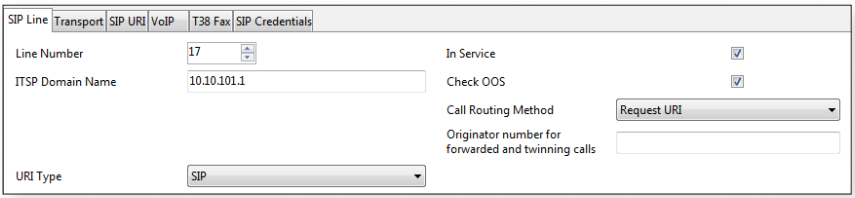
6 SIP Settings

To configure SIP navigate first to **System→LAN2→VoIP** and check **SIP Trunks Enable, SIP Registrar Enable**, & **Auto-create Extn/User**. Next to **Domain Name** enter the address of the Optimum Business SIP Trunk Adaptor which in this case was 10.10.101.1. The IP address was assigned to the Optimum Business SIP Trunk Adaptor in step 2 of the Optimum Business SIP Trunk Set-Up guide.

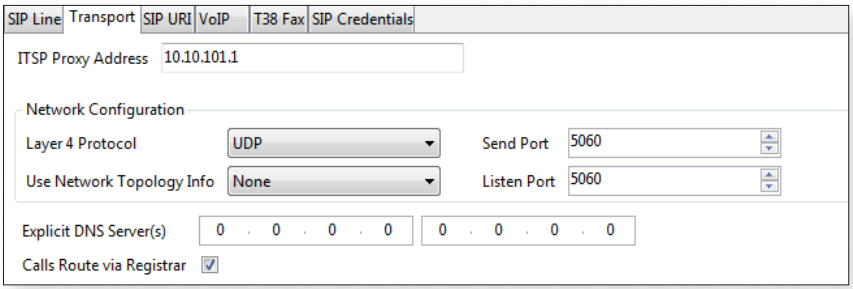


NOTE: Click the interface that is communicating to the Optimum Business SIP Trunk Adaptor. In this example it was LAN2.

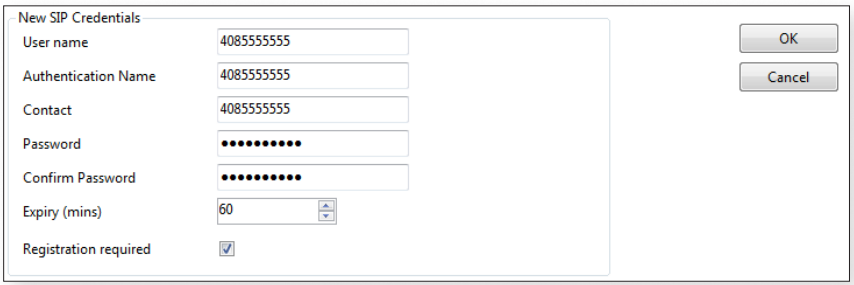
Navigate to **Line** then click on the **SIP Line** tab. Enter the address of the Optimum Business SIP Trunk Adaptor next to **ITSP Domain Name**. Check **In Service**. Select **SIP** next to **URI Type** and **Request URI** next to **Call Routing Method**. The **Line Number** in this case was **17**. When done click **OK**.



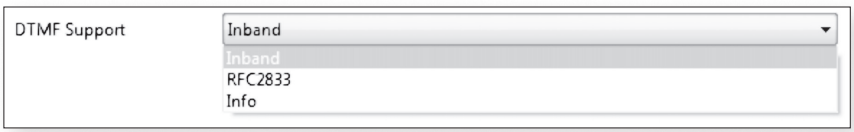
Click on the **Transport** tab. Enter the address of the Optimum Business SIP Trunk Adaptor next to **ITSP Proxy Address**. Select **UDP** next to **Layer 4 Protocol** & enter **5060** for ports. Check **Calls Route via Registrar**. When done click **OK**.



Click on the **SIP Credentials** tab then click **Add**. Enter the appropriate SIP credentials that will be used between the PBX & the Optimum Business SIP Trunk Adaptor. The credentials must match the credentials configured for the Optimum Business SIP Trunk Adaptor. This was configured in step 3 of the Optimum Business SIP Trunk Set-Up Guide. Enter **60** next to **Expiry (mins)** then check **Registration required** to require registration. When done click **OK**.



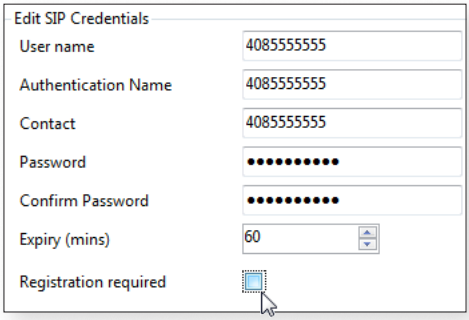
To change DTMF to Inband click on the **VoIP** tab & select **Inband** from the **DTMF Support** menu.



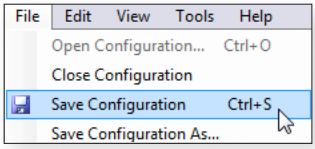
IMPORTANT: The Cablevision network only supports in-band DTMF tones. For proper operation with Optimum Business SIP Trunking, the PBX must be configured to send Inband DTMF. Note, DTMF tone duration can't be modified in the system.

When the device is registered to the Optimum Business SIP Trunk Adpator the **Register** column within the **SIP Credentials** tab will display **True** as shown.

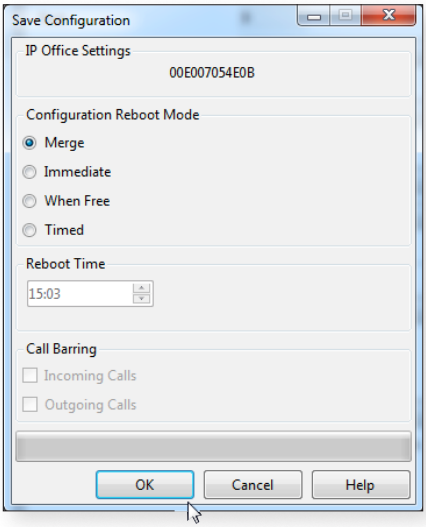
To configure Static Mode simply edit the line configured within the **SIP Credentials** tab & uncheck **Registration Required** as shown. You must configure the Optimum Business SIP Trunk Adaptor for a passive connection using the local, private IP Address of hre PBX. This is step 3 of the Optimum Business SIP Trunk Set-Up Guide.



When done click **OK**. Finally click **File→Save Configuration**.



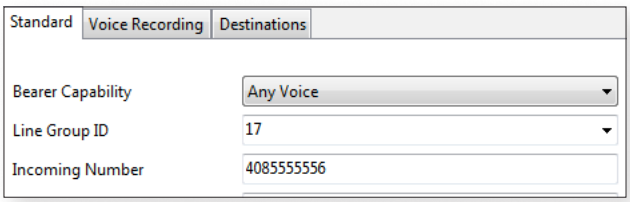
When the below screen appears simply click **Merge**.



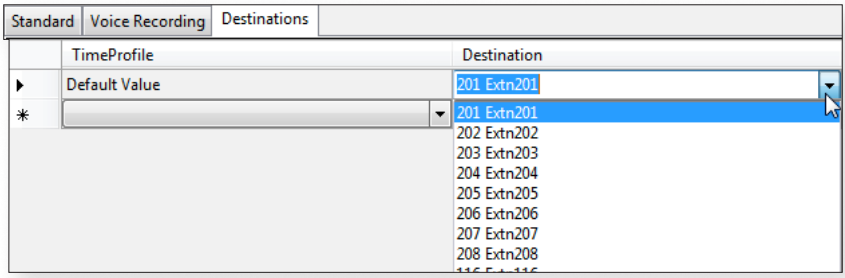
NOTE: Repeat this step each time a change is made to the device for the configuration to take effect.

7 DID Configuration

To associate DIDs to extensions navigate to **Incoming Call Route** & click on the empty screen then select **New**. Select the appropriate **Line Group ID**. Enter the DID next to **Incoming Number**.



Then click on the **Destinations** tab & associate the DID to the appropriate extension.



Repeat this for remaining extensions. When done click **OK**.

8 Backup/Restore

To backup or restore navigate to **File→Backup/Restore**.