

Optimum Business Trunking and the ShoreTel IP PBX Configuration Guide

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1 Overview

The purpose of this configuration guide is to describe the steps needed to configure the Shoretel 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: slptrunk



Step 2:

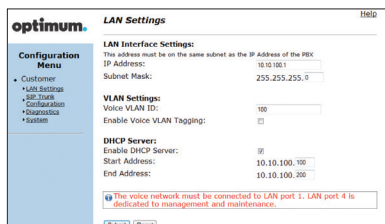
Click on the LAN Settings Link

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.

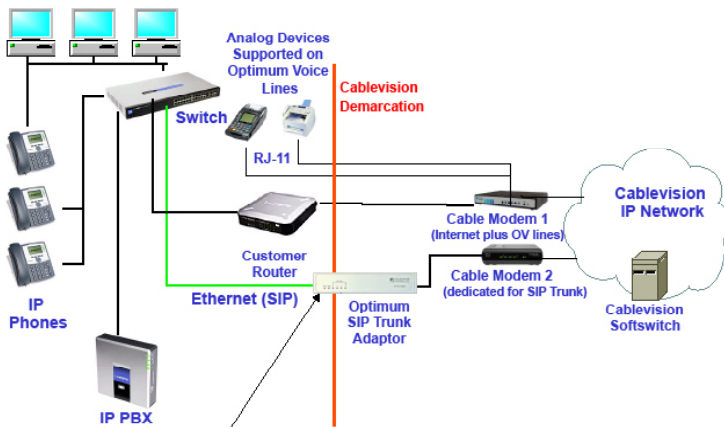
2. Optional: Specify a VLAN for your voice traffic. Click the 'Enable Voice VLAN Tagging' check box. The default VLAN ID is 100.

Note: VLAN 200 should not be used. It is dedicated to port 4 for management.



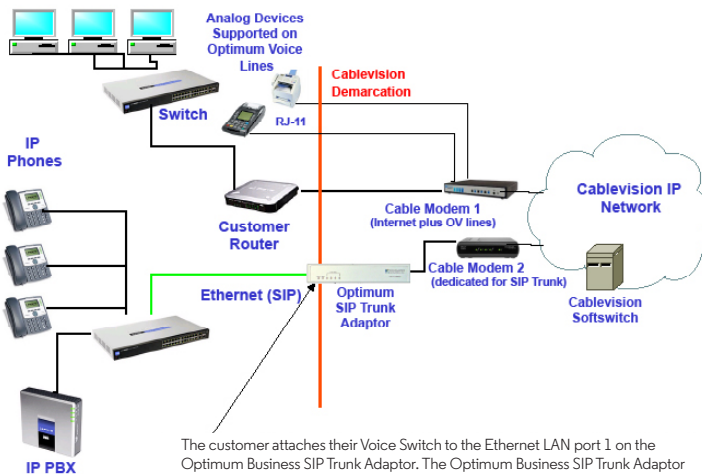
- Optional: Enable the DHCP server. This will allow the SIP Trunk Adaptor to act as a DHCP server, which will provide IP addresses to the voice network, and create a dedicated voice LAN, as per diagram 2.
- Click 'Submit'.

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

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Configuration Menu

- Customer
 - LAN Settings
 - SIP Trunk Configuration
 - Diagnostics
 - System

System[Help](#)

Software Version:
Version 11.6.14.1 -- Fri Jan 4 17:49:28 PST 2013

Hostname:
5164939899

Model:
EdgeMarc 4552

Vendor:
Cablevision

LAN Interface MAC Address:
A8:70:A5:00:D8:18

Registration Status:
The ALG feature is registered. View [license key](#).

System Date:
02/29/2016 15:03:40 UTC

Change Password:

- [pbxinstall](#)

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

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Configuration Menu

- Customer
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Set Password[Help](#)

Change the GUI password by filling in the fields below. The password must be between 6 and 8 characters in length.

Username:

pbxinstall

Current Password:

New Password:

Confirm Password:

Submit

Reset

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.

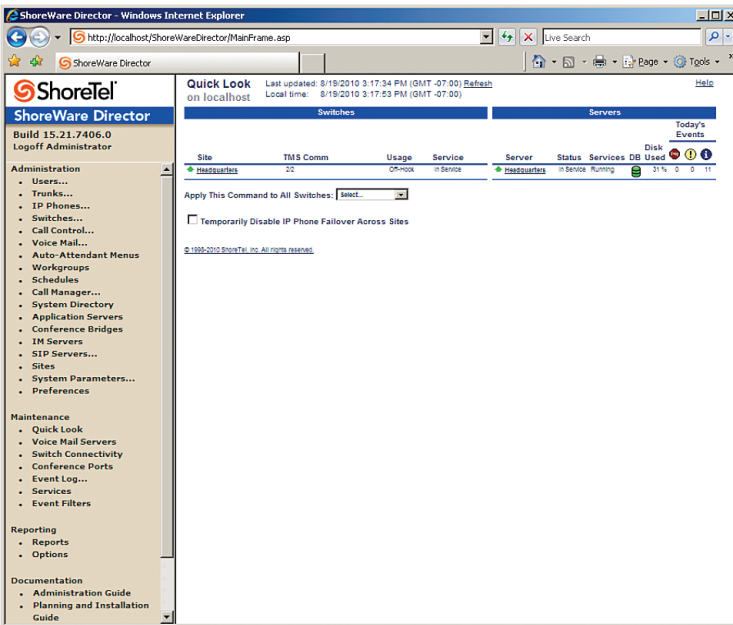
5 PBX Configuration

The steps on the next pages describe the minimum configuration required to enable the ShoreTel PBX to use Optimum Business SIP Trunking for inbound and outbound calling. Please refer to the ShoreTel IP Phone System product documentation for more information on advanced PBX features.

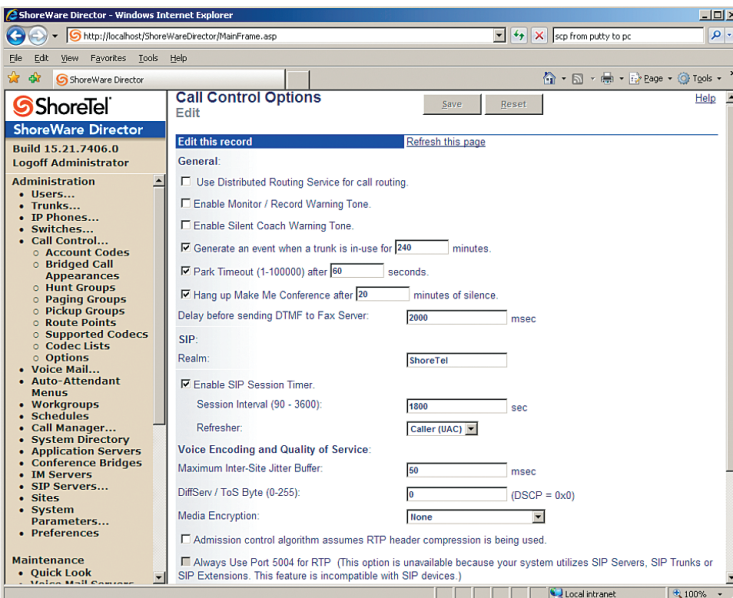
NOTE: The ShoreTel IP Phone System only supports static/non-registration mode. This configuration guide provides the configuration steps for the static/non-registration mode of PBX operation. You must configure the Optimum SIP Trunk Adaptor for a Passive Connection using a local, private, static IP address. This is Step 3 in the Optimum Business SIP Trunk Set-Up Guide.

The configuration described here assumes that the ShoreTel PBX is already configured and operational with station side phones using assigned extensions or DIDs. This configuration is based on ShoreTel IP Phone System version/Build 15.21.7406.0.

1. Start the ShoreWare Director software application from Windows 2003 server. Login to the ShoreWare Director. The default login is “**admin**” and the default password is “**changeme**”. The initial screen defaults to the Quick Look screen.



2. Select “**Administration > Call Control > Options**” to configure the Call Control options.



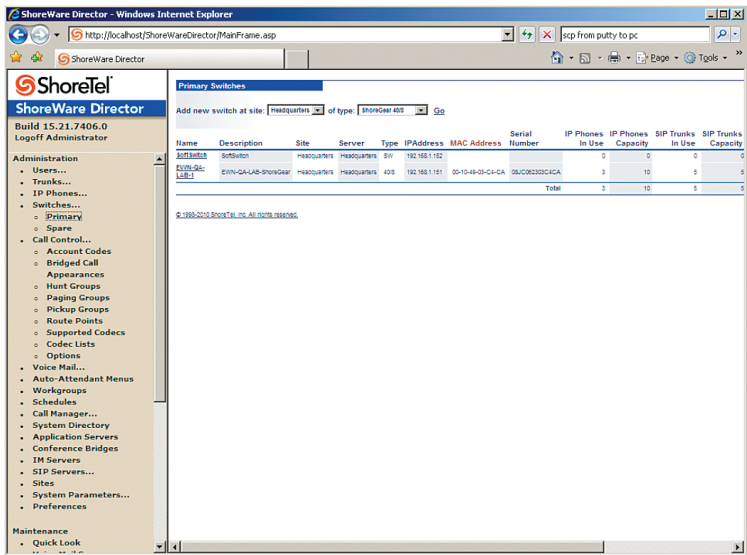
3. Select **“Administration > Sites”** to configure the Site settings.

The screenshot shows the 'Edit Site' configuration page in the ShoreTel ShoreWare Director. The left sidebar contains a navigation menu with 'Administration' expanded, showing 'Users...', 'Trunks...', 'IP Phones...', 'Switches...', 'Call Control...', 'Voice Mail...', 'Auto-Attendant', 'Menus', 'Workgroups', 'Schedules', 'Call Manager...', 'System Directory', 'Application Servers', 'Conference Bridges', 'IM Servers', 'SIP Servers...', 'Sites', 'System Parameters...', and 'Preferences'. The 'Sites' section is selected. The main area is titled 'Edit Site' and contains various configuration fields: Name (Headquarters), Country (United States of America), Language (English(US)), Parent (Top of Tree), Local Area Code (631), Additional Local Area Codes (Edit), Caller's Emergency Service Identification (CESID) (e.g. +1 (408) 331-3300), Time Zone ((GMT-08:00) Pacific Time (US & Canada), Pacific Standard Time), Night Bell Extension, Night Bell Switch (None), Paging Extension, Paging Switch (None), Operator Extension (Search), FAX Redirect Extension (Search), and SMTP Relay (Ping). The status bar at the bottom indicates 'Local intranet' and '100%' zoom.

4. From **“Administration > Sites”**, continue to configure the Admission Control Bandwidth.

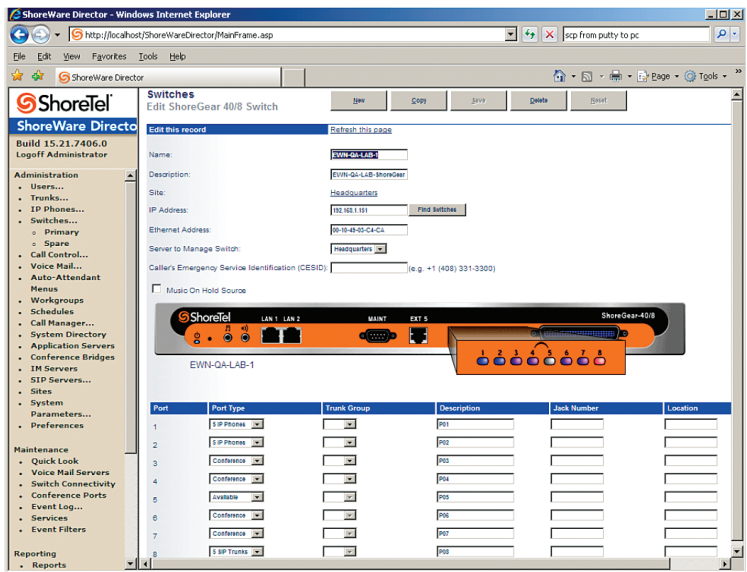
The screenshot shows the 'Bandwidth' configuration page in the ShoreTel ShoreWare Director. The left sidebar is the same as the previous screenshot, with 'Sites' selected. The main area is titled 'Bandwidth' and contains configuration fields: Admission Control Bandwidth (1024 kbps), Intra-Site Calls (Medium Bandwidth Codecs), Inter-Site Calls (Low Bandwidth Codecs), FAX and Modem Calls (Fax Codecs - High Bandwidth), SIP Proxy, Virtual IP Address, Proxy Switch 1 (None), Proxy Switch 2 (None), Emergency Number List (911), and a checkbox for 'Trunk Access Code Required'. There are also links for 'Edit IP Phone Address Map' and 'Add More...'. The status bar at the bottom indicates 'Local intranet' and '100%' zoom.

5. Select “**Administration > Switches > Primary**” to get to the ShoreGear-40/8 switch for resource allocation.

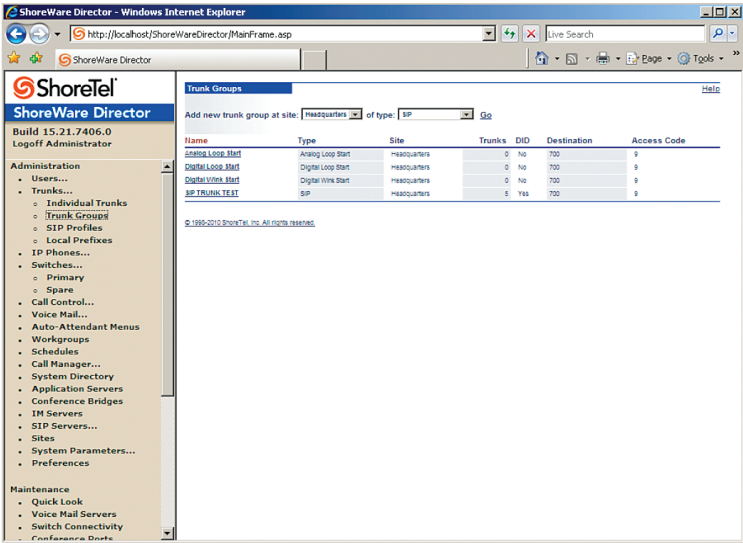


6. Click on “**EWN-QA-LAB-1**” to configure the ShoreGear-40/8 Switch PBX to set aside resources for SIP Trunks and DSP resources for phone conferences (a minimum of 4 ports).

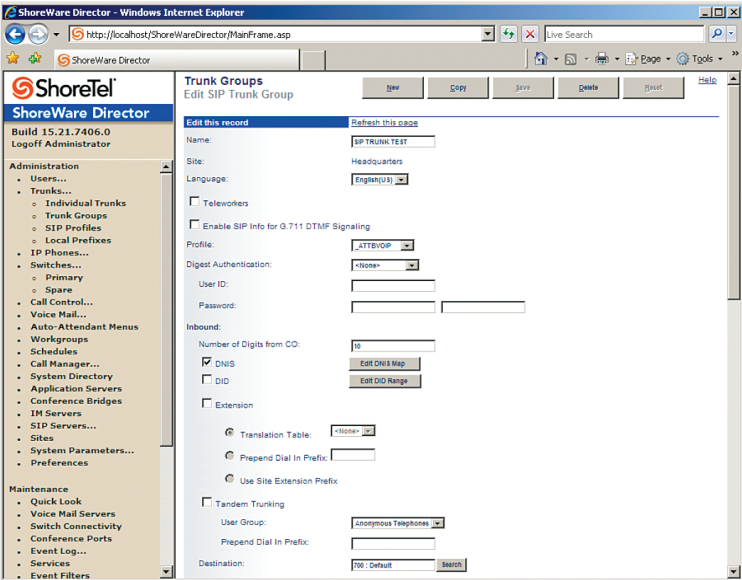
NOTE: In the Optimum Business SIP Trunk Adaptor’s configuration, the PBX’s IP address needs to be the same as the ShoreGear-40/8 Switch’s IP address. This is the IP Address that is specified in Step 3 of the Optimum Business SIP Trunk Adaptor Set-Up Guide. You must select “passive connection” in this step. The ShoreTel IP Phone System only supports static/ non-registration mode.



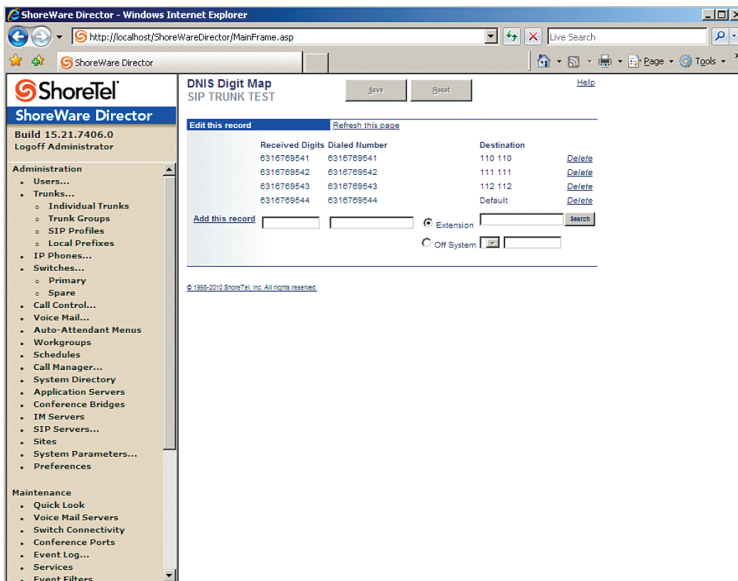
7. Select “**Administration > Trunk Groups**” to create a Trunk Group of type “SIP”.



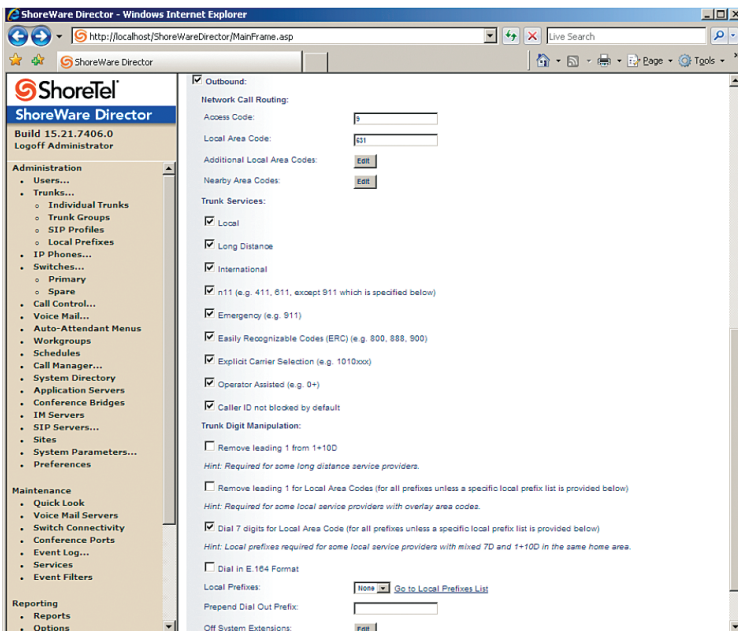
8. Click on “**SIP TRUNK TEST**” to configure the SIP Trunk Group for inbound calls.



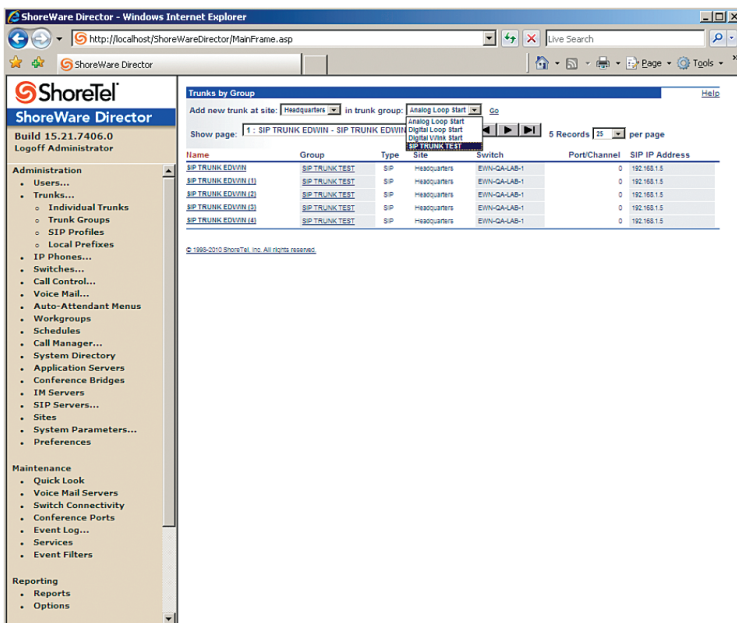
9. Check the “**DNIS**” box and click “**Edit DNIS MAP**” to map the received digits (DIDs) with extensions.



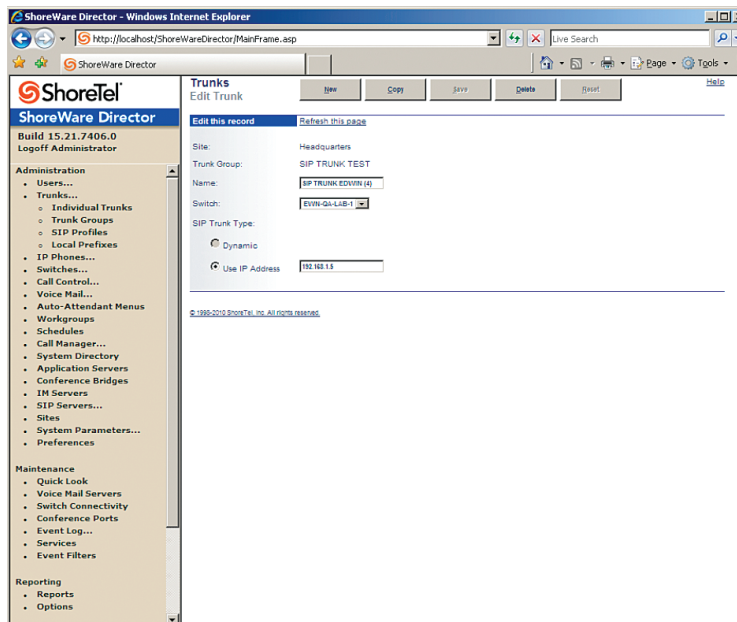
10. Continue to configure the **“SIP TRUNK TEST”** SIP Trunk Group for outbound calls. Note that the ShoreTel PBX does not support **“9+ 10-digit number”** dialing, you must dial **“91”** first, followed by the 10-digit number. For 7-digit number dialing, dial **“9”** first, followed by the 7-digit number within the same area code.



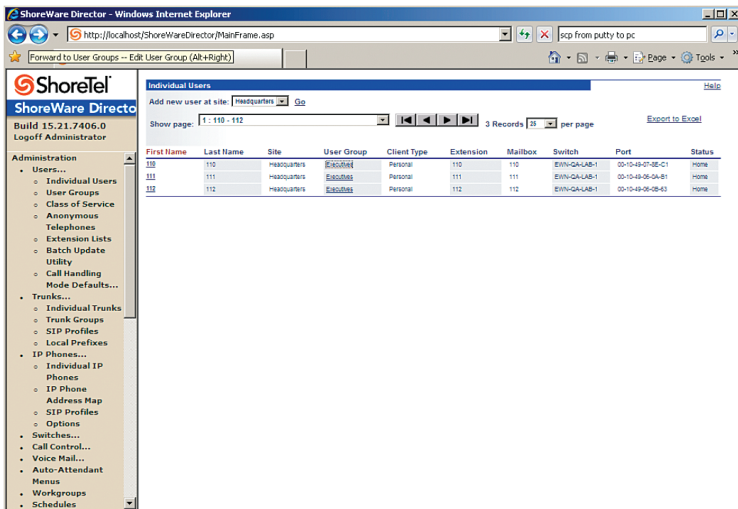
11. Select **“Administration > Trunks > Individual Trunks”** to add SIP Trunks to the SIP Trunk Group.



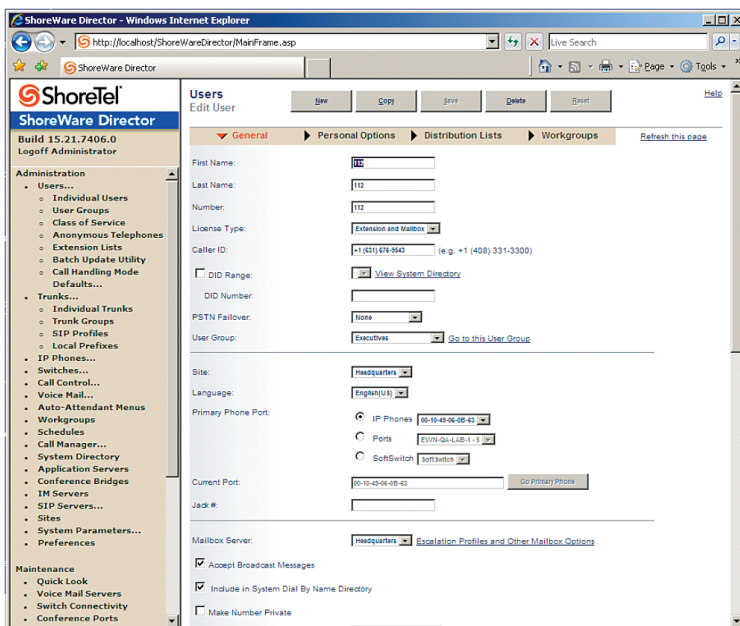
12. By default, the ShoreTel PBX does not support SIP registration. Click each SIP Trunk to make sure the **"Use IP Address"** is selected for **"SIP Trunk Type"**. This must be the same IP address that was configured on the Optimum Business SIP Trunk Adaptor's LAN port 1. This is Step 2 in the Optimum Business SIP Trunk Set-Up Guide.



13. Select **"Administration > Users Individual > Users"** to get to the extensions and assign Caller ID.



- Click each extension's **"First Name"** link and configure the Caller ID for that extension. Caller ID can be set to any valid DID.



15. The configuration to support RFC2833 is found in “**Trunks > Group > SIP Trunk Group**”. In order to enable RFC2833, uncheck the box marked “Enable SIP Info for G.711 DTMF Signaling”.

The screenshot shows the ShoreWare Director web interface in a Windows Internet Explorer browser. The address bar shows the URL: http://localhost/ShoreWareDirector/MainFrame.asp. The page title is "ShoreWare Director". The left sidebar contains a navigation menu with the following items: Administration, Users..., Individual Users, User Groups, Class of Service, Anonymous Telephones, Extension Lists, Batch Update Utility, Call Handling Mode, Defaults..., Trunks..., Individual Trunks, Trunk Groups, SIP Profiles, Local Prefixes, IP Phones..., Switches..., Primary, Spare, Call Control..., Voice Mail..., Auto-Attendant Menus, Workgroups, Schedules, Call Manager..., System Directory, Application Servers, Conference Bridges, TR Servers, SIP Servers..., Sites, System Parameters..., and Preferences. The main content area is titled "Trunk Groups" and "Edit SIP Trunk Group". It contains a form with the following fields and options: Name (SIP Trunk TEST), Site (Headquarters), Language (English), Enable SIP Info for G.711 DTMF Signaling (unchecked), Profile (Jitter/GP), Digest Authentication (None), User ID (empty), Password (empty), Inbound: Number of Digits from CO (10), DTMF (checked), DTD (unchecked), Extension (unchecked), Translation Table (None), Prepend Dial In Prefix (empty), Use Site Extension Prefix (unchecked), Tandem Trunking (unchecked), User Group (Anonymous Telephones), Prepend Dial In Prefix (empty), Destination (No Default), and Outbound (checked).

If the change does not take effect, after you make the changes, restart the PBX in the exact order of ShoreWare Director, ShoreGear-40/8 switch and then the phones.

Important: The Cablevision network only supports inband DTMF tones. Some functions of the ShoreTel Shoregear PBX only supports out-of-band DTMF tones. In order for the ShoreTel Shoregear PBX to operate correctly with the Cablevision network, the Optimum SIP Trunk Adaptor must be configured to convert out-of-band DTMF tones sent by the ShoreTel Shoregear PBX to inband DTMF tones.

16. To enable this conversion:
- a. Log into the Optimum SIP Trunk Adaptor using the login and password specified in the Optimum SIP Trunk Adaptor Set-Up Guide.
 - b. On the **SIP Trunk Configuration** page, you **must** check the **“Convert Inband DTMF”** checkbox.
 - c. Click the **“Submit”** button to update this setting.

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Configuration Menu

- Customer
 - LAN Settings
 - SIP Trunk Configuration
 - Diagnostics
 - System

SIP Trunk Configuration

Help

Select your PBX: ShoreTel v15.21.7406.0

Passive connection using the local, private IP address of the PBX

This address must be on the same subnet as the IP Address that is specified for the LAN interface

PBX Address: 192.168.1.10

Active connection using registration

User Id:

Password:

Convert Inband DTMF: ☒

Submit Reset

Status:

Trunk Status: Registered

DID's

- 6316769522 (Pilot number)
- 6316769523
- 6316769524
- 6316769525