



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.
- 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

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- 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

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





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

optimum.	SIP Trunk Configur	ration He
Configuration Menu • Customer • LAN Sattings SIP Trusk Configuration • Diggnestics • System	Select your PBX: Passive connection u This address must be on the interface PBX Address: Active connection using	Assense Assense to be a specified for the PBX assense subset as the IP address of the PBX assense subset as the IP Address that is specified for the LA assense subset as the IP Address that is specified for
	User Id: Password: Convert Inband DTMF:	2000E
	Status: Trunk Status: DID's 5164838899 (Pilot number)	Not Registered
	5164939768 5164939769 5164939795 5164939841	

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.

ontimum	Network Test Tools
optimom.	A network administrator may use the test tools on this page to verify connectivity of the System and trace the path of data throughout the
Configuration	network.
Customer <u>LAN Settings</u> <u>SIP Trunk</u> <u>Configuration</u> Diagnostics	Outbound Call Test: This taxt will place a call to the provided telephone number and play a series of tones for 30 seconds. Pilot Number: \$154455555 Telephone Number:
▶ <u>System</u>	Call Reset
	Inboard Call Text: When this rest is enabled calls received for the pilot number as diverted to the internal Test UA for 15 minutes, when this allopsed time the test is automatically disabled. © Enabled Setmin
	Ping Test:
	IP Address to Ping: Ping Reset
	Traceroute Test:
	Transmite



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

optimum.	System Help
Configuration Menu	Software Version: Version 11.6.14.1 Fri Jan 4 17:49:28 PST 2013
Customer LAN Settings SIP Trunk	Hostname: 5164939899
Configuration Diagnostics System	Model: EdgeMarc 4552
	Vendor: Cablevision
	LAN Interface MAC Address: A8:70:A5:00:D8:18
	Registration Status: The ALG feature is registered. View <u>license kev</u> .
	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

optimum.	Set Password				
-	Change the GUI password b must be between 6 and 8 ch	y filling in the fields below. The password paracters in length.	l .		
Configuration Menu • Customer • LAN Settings SIP Truck Configuration • Diagnostics • System	Username: Current Password: New Password: Confirm Password: Submit Reset	pbxinstall			



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.

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5 PBX Confguration

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. 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.

ShoreWare Director - Windows In	nternet Explorer		1. J. (_ 🗆 🗵
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ShoreTe l	Quick Look on localhost	Last updated: 8/19/2010 3 Local time: 8/19/2010 3	8:17:34 PM (GN 8:17:53 PM (GN	IT -07:00) <u>Refres</u> IT -07:00)	2			<u>Help</u>
ShoreWare Director		Switches				Servers	Tod	av's
Build 15.21.7406.0 Logoff Administrator	Site	TMS Comm	lisane	Service	Server	Status Service	Disk DB Used	ents
Administration	+ Headquarters	2/2	Off-Hook	in Service	+ Headquarters	in Service Running	31% 0	0 11
Users Trunks IP Phones	Apply This Comma	nd to All Switches: Select.	×					
Switches Call Control	Temporarily Di	sable IP Phone Failover A	pross Sites					
Voice Hall Auto-Attendant Menus Workgroups	© 1998-2010 ShoreTel, Inc	All rights reserved.						
Schedules Call Manager System Directory								
Application Servers Conference Bridges								
IM Servers SIP Servers Sites								
System Parameters Preferences								
Maintenance								
Voice Mail Servers Switch Connectivity								
Conference Ports Event Log								
Services Event Filters								
Reporting Reports Options 								
Documentation Administration Guide 								
Planning and Installation Guide								

 Select "Administration > Call Control > Options" to configure the Call Control options.



3. Select "Administration > Sites" to configure the Site settings.



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



 Select "Administration > Switches > Primary" to get to the ShoreGear-40/8 switch for resource allocation.

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Maintenance Quick Look	(F

 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.

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ShoreWare Directo	Edit this record	Refresh this page		
Build 15.21.7406.0 Logoff Administrator	Name:	EWN-QA-LAB-1		
Administration	Description:	EWN-QA-LAB-ShoreGear		
Users	Site:	Headquarters		
IP Phones	IP Address:	192,163,1,151 Find Switche	4	
Switches	Ethernet Address	00-10-45-03-04-04	_	
o Spare				
Call Control	Server to Manage Switch:	Headquarters		
Voice Mail Auto-Attendant	Caller's Emergency Service Identification (CESI	D): (e.g. +1 (408) 331-3300)	
Menus	Music On Hold Source			
Workgroups Schodulor				
Call Manager	ShoreTel LAN 1 LAN 2	MAINT EXT 5	ShoreGear-40/8	
System Directory	🛛 🗧 🙂 🖉 👘 🖉 📲 📰			
Application Servers Conference Bridges				
IM Servers	EWN-QA-LAB-1			
SIP Servers Sites				
System	Port Port Type	Trunk Group	cristion Jack Number L	retion
Parameters	SIP Phones	P01		
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Maintenance	2			
Quick Look Voice Mail Servers	3 Contevence	P03		
Switch Connectivity	4 Conference	P04		
Conference Ports Event Log	5 Available	P05		
Services	6 Conference	POS		
Event Filters	7 Conference	P07		
Reporting	8 S SIP Trunks	P03		-
• Reports 💌	•			•

7. Select "Administration > Trunk Groups" to create a Trunk Group of type "SIP".

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Shore Tel [®]	Trunk Groups					!	Help
ShoreWare Director	Add new trunk group	at site: Meadquarters 💌 d	of type: SIP	Go			
Build 15.21.7406.0 Logoff Administrator	Name	Туре	Site	Trunks DID	Destination	Access Code	
Administration	Analog Loop Start	Analog Loop Start	Headquarters	0 N0	700	9	
• Users	Digital Wink Start	Digital Wink Start	Headquarters	0 No	700	9	
Trunks	SIP TRUNK TEST	SIP	Headquarters	5 Yes	700	9	
Cirunk Groups STD Profiles Local Prefixes Local Prefixes Iz Phones Switches Syntem Call Control Voice Hall Auto-Attendant Henus Schedules Call Annager System Directory Application Servers Sites System Directory Sites System Parameters Sites System Parameters Sites System Darameters Sites System Darameters Sites System Darameters Sites System Servers Sites System Darameters Succhasters Succhasters	9 1862202 Provide in A						

8. Click on "SIP TRUNK TEST" to configure the SIP Trunk Group for inbound calls.

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ShoreWare Director Build 15:21:7406-0 Logoff Administrator diministration indextained indextained	Edit SIP Trunk Group Edit Ne record Name Site: Language: Enable SIP Info for 0.711 DTMF Polifie: Digest Authentication: Use 10: Passond: Inbound: Number of Digits from CO: Digits form G Translation Table: Prepared Dial In Prefix: C Use Site Extension Prefix	201 2019 (111) Partial bits case (111) (111) Partis case (111) <th></th>	
Voice Mail Servers Switch Connectivity	User Group:	Anonymous Telephones 💽	
Contrence Ports Event Log Services Event Filters	Prepend Dial In Prefix: Destination:	700 : Default Beatch	•

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.



 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.

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ShoreWare Director	Edit this record	Refresh this page						-
Build 15.21.7406.0 Logoff Administrator	Site:	Headquarters						
Administration	Trunk Group:	SIP TRUNK TEST						
Users Trunks	Name:	SIP TRUNK EDWIN (4)						
 Individual Trunks 	Switch:	EWN-QA-LAB-1						
 Trunk Groups SIP Profiles 	SIP Trunk Type:							
 Local Prefixes 	C Dynamic							
Switches	C Use IP Address	192.168.1.5						
Call Control Voice Mail								_
Auto-Attendant Menus	© 1995-2010 ShoreTel, Inc. All right	ts reserved.						
Workgroups Schedules								
Call Manager								
Application Servers								
Conference Bridges IM Servers								
SIP Servers								
Sites System Parameters								
Preferences								
Maintenance								
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Conference Ports Event Log	l I							
Services								
Event Filters								
Reporting								
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13. Select "Administration > Users Individual > Users" to get to the extensions and assign Caller ID.

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 Individual Users User Groups 	112	112	Headquarters	Electros	Personal	112	112	EWN-QA-LAB-1	00-10-49-06-08-63	Home
Class of Service Anonymous Telephones Scheding Service Individual Transs Indinterree Indinterree In										

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

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	Users Edit User	Here Sons From Beers					
Build 15.21.7406.0 Logoff Administrator Administration • Users • Individual Users • User Groups • Class of Service • Anonymous Telephones • Extension Lists	General First Name: Last Name: Number: License Type: Collect ID	Personal Options Distribution Lists Workgroups Refresh this page					
Extension Lists Extension Lists Call Handling Mode Defaults Trunks Induktoal Trunks Sutchess SUP Profiles Local Profiles Local Profiles Local Profiles Sutchess Call Ananger Auto-Attendant Menuss Workgroups Schedules Call Manager System Directory Application Servers Conference Bridges IM Servers Sitp Servers Site	DID Range: DID Number: PSTN Failover: User Group:	Experiences Constant (e.g. + 1 (e.g.) 31-3300)					
	Site: Language: Primary Phone Port:	Pedepartins Pedepartins Pede					
	Current Port: Jack#:	06-16-49-496-483					
System Parameters Preferences Maintenance Quick Look Voice Mail Servers Switch Connectivity	Mailbox Server:	Presquenter C Escalation Profiles and Other Mailbox Options pes by Name Directory					
Conference Ports		<u> </u>					

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".



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.

optimum.						
Configuration Menu	SIP Trunk Configura	ation Help				
Customer LAN Settings SIP Trunk Configuration Diagnostics Sustant	Select your PBX: ShoreTel v15.21.7406.0 • Passive connection using the local, private IP address of the PBX					
	for the LAN interface PBX Address:	192.168.1.10 g registration				
	User Id: Password: Convert Inband DTMF:					
	Submit Reset					
	Status:	Registered				
	DID's 6316769522 (Pilot number) 6316769523 6316769524 6316769525	registered				

c. Click the "Submit" button to update this setting.