

XO SIP Service

Customer Configuration Guide for
ShoreTel 10.2 and Ingate SIParator 4.8.1
with XO SIP



1. Overview

About This Document This document describes interoperability between XO SIP Package 1 (G.711) and Package 2 (G.729a) and ShoreTel release 10.2 and Ingate SIParator version 4.8.1 deployed with an XO-provided Cisco 2432 Integrated Access Device (IAD) as the router/demarcation device.

This document assumes the audience has a general understanding of network provisioning and the connectivity requirements of XO Communications SIP service offering.

ShoreTel has posted their Application Notes on their website at the following address:

http://www.shoretel.com/partners/tech_partners/ecosystem/XO_Communications.html

Known Issues While XO certifies interoperability between XO SIP service and the IP PBX as outlined herein, the following known issues were identified during Interoperability testing. The customer should be aware that certain features and functions may not be fully supportable. In some cases, special configurations and/or PBX software patches may be available from the vendor.

- 1) Ingate SIParator is required as an edge device when using ShoreTel with XO SIP. Please see the ShoreTel configuration guide for Ingate SIParator configuration.
- 2) In order for outgoing calls to complete, "Trunk Group Dialing Rules" need to be added using ShoreTel Director tool to strip off "+1". Detailed description of this workaround can be found in the ShoreTel configuration guide.
- 3) In order for Call Forward Always/BUSY/No Answer calls to PSTN to complete, a Diversion Header must be added using the ShoreTel Director tool:
 - Custom Parameters" – 'HistoryInfo=diversion' needs to be added via ShoreTel Director.
 - "Enable Original Called Information" flag under 'Trunk Group' on ShoreTel Director also needs to be enabled.
 Detailed description of this workaround can be found in ShoreTel configuration guide.
- 4) Faxing is only supported using XO SIP Package 1 (G.711). Fax is **NOT** supported on XO SIP Package 2 (G.729) and T.38 Fax is **NOT** supported.
- 5) Modem calls are not supported using XO SIP Package 2 (G.729).
- 6) *67 Caller ID Blocking is not supported and will cause the call to fail.
- 7) XO SIP Package 2 (G.729) requires a Windows registry configuration change. Please see the ShoreTel configuration guide for details.
- 8) XO SIP Call Center feature is not supported with XO SIP Package 2 (G.729)
- 9) If an incoming call to the ShoreTel auto attendant transfers the call to an extension and the caller hangs up before the extension picks up, the extension keeps ringing. When extension picks up, ShoreTel user hears a busy tone.
- 10) Conference Calls from ShoreTel extensions are not supported on the ShoreTel SG30 voice switch used for XO lab testing as the SG30 does not support assigning conferencing functionality to the ports. Other ShoreTel switches, including SG40, SG50, SG60, SG90 and SG120, do support this functionality it was not verified by the XO lab.
- 11) Caller doesn't hear ring back when IPPBX hunt group DID number called.

Workaround for PKG1:

- On InGate "SIP Services" => "Sessions and Media" => "B2BUA request pending timeout" set it to a value of '2' from '0'.
- **No workaround found for PKG2.**

- 12) ShoreTel IP PBX's Music on Hold (MoH) was not tested. MoH was provided by XO SIP

feature servers during testing.

Registration Method Static registration is utilized between the ShoreTel IP PBX and Ingate SIParator and the XO call agent.

XO SIP Service Packages Supported

Pkg	Codec	DTMF	Fax
1	G.711	RFC2833 only	Fax is supported as pass-through on Pkg. 1. T.38 Fax is NOT supported
2	G.729a	RFC2833 only	Fax is NOT supported as on Pkg. 2 as there is no failover to G.711. T.38 Fax is NOT supported

2. Testing of ShoreTel 10.2 with Ingate SIParator 4.8.1

2.1. Software and Hardware Versions Tested

Cisco 2400 used as a router
Cisco IOS Software, 2400 Software (C2430-IS-M), Experimental Version
12.4(20060718:201451) [acphan-V124_4_T2_1 104]
System image file is "flash:c2430-is-mz.xo"

SHORETEL

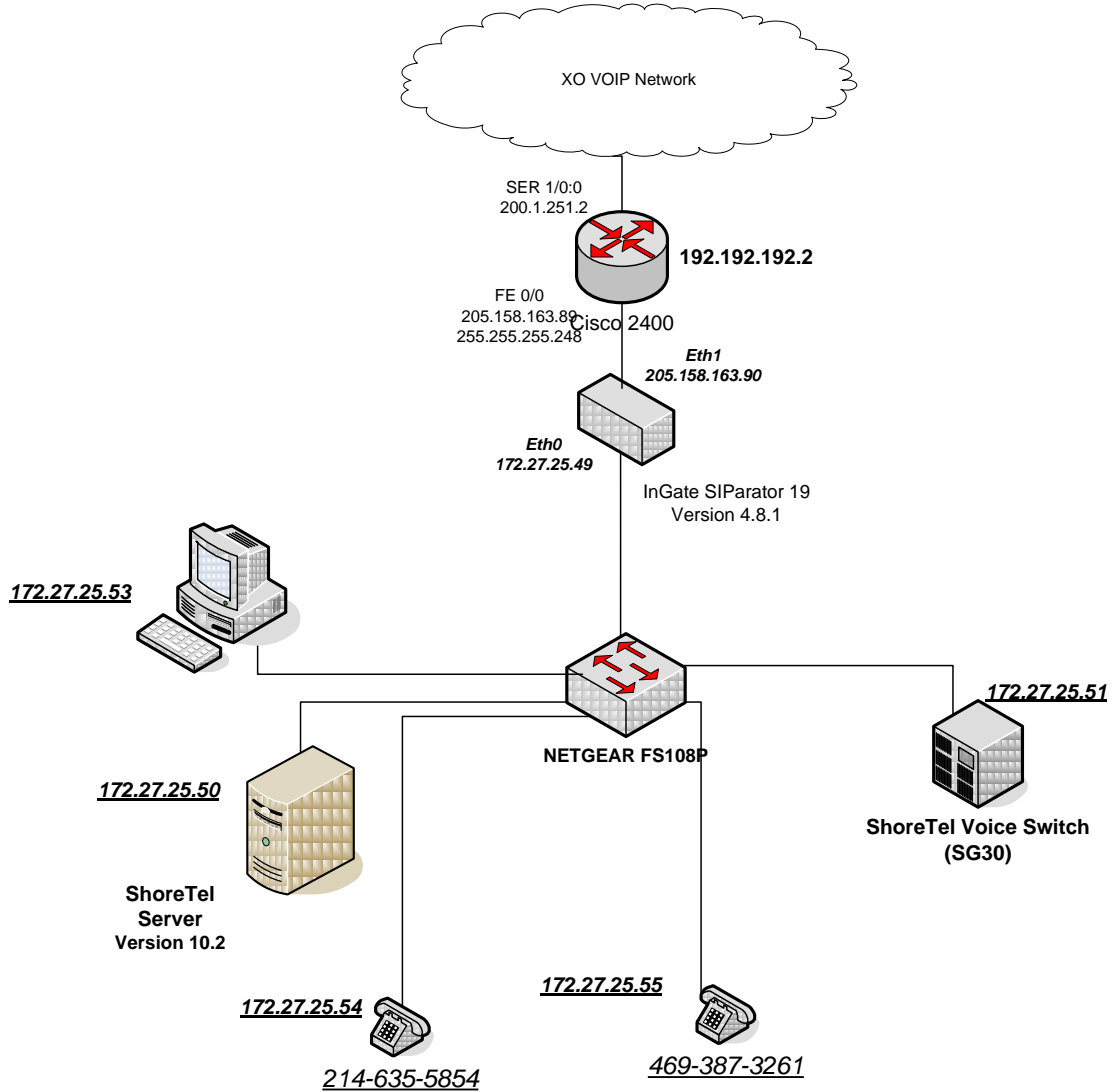
- a. ShoreTel Version: 10.2
- b. ShoreTel Director: Build 15.14.3005.0

Ingate SIParator
Release: 4.8.1

SIP Phones
Version: ShoreTel 230

2.2. Lab Test Configuration

SIP TRUNK TEST SHORETEL LAB SETUP



3. ShoreTel IP PBX and Ingate SIParator Configuration

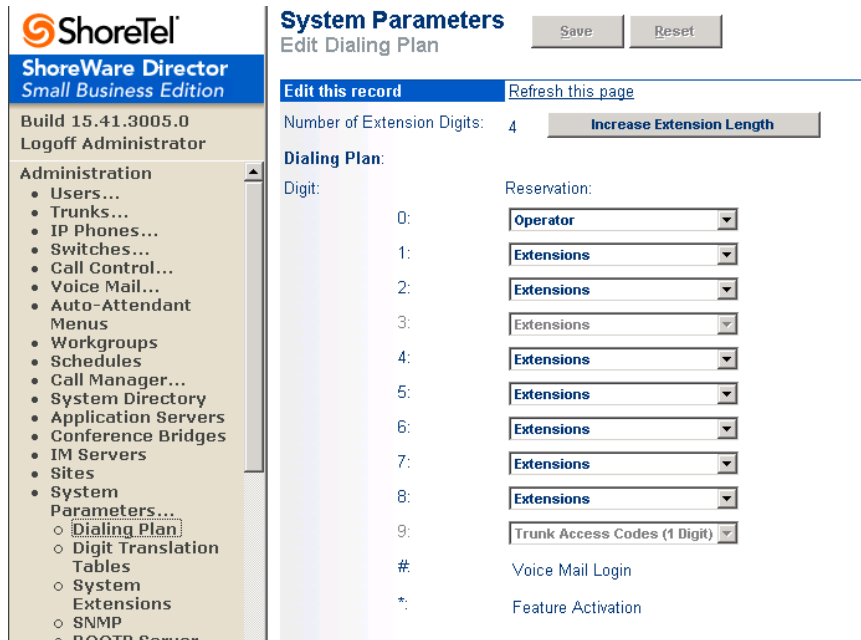
In This Section

XO performed the minimum amount of configuration required to achieve successful completion of test calls over XO SIP. It is beyond the scope of this document and the testing efforts to show a complete configuration, therefore screenshots of the GUI interface are provided only for the details of the SIP trunk configuration that are relevant to interfacing with XO's SIP product.

This section contains screenshots which detail the SIP trunk configurations.

3.1 ShoreTel 10.2 Configuration using ShoreTel Director

System Parameter – Numbering plan



The screenshot shows the ShoreTel System Parameters configuration page for the Dialing Plan. The interface includes a left-hand navigation menu, a main content area with a 'Save' and 'Reset' button, and a table for defining digit reservations.

System Parameters
Edit Dialing Plan

Buttons: Save, Reset

Number of Extension Digits: 4 [Increase Extension Length](#)


Dialing Plan:

Digit	Reservation
0:	Operator
1:	Extensions
2:	Extensions
3:	Extensions
4:	Extensions
5:	Extensions
6:	Extensions
7:	Extensions
8:	Extensions
9:	Trunk Access Codes (1 Digit)
#:	Voice Mail Login
*:	Feature Activation

Navigation Menu:

- Administration
 - Users...
 - Trunks...
 - IP Phones...
 - Switches...
 - Call Control...
 - Voice Mail...
 - Auto-Attendant
 - Menus
 - Workgroups
 - Schedules
 - Call Manager...
 - System Directory
 - Application Servers
 - Conference Bridges
 - IM Servers
 - Sites
 - System
- Parameters...
 - Dialing Plan
 - Digit Translation Tables
 - System Extensions
 - SNMP
 - ROTP Server

System Parameter – System extension



ShoreWare Director
Small Business Edition

Build 15.41.3005.0
Logoff Administrator

Administration

- Users...
- Trunks...
- IP Phones...
- Switches...
- Call Control...
- Voice Mail...
- Auto-Attendant Menus
- Workgroups
- Schedules
- Call Manager...
- System Directory
- Application Servers
- Conference Bridges
- IM Servers
- Sites
- System Parameters...
 - Dialing Plan
 - Digit Translation Tables
 - **System Extensions**
 - SNMP

System Parameters

Edit System Extensions Save Reset

[Edit this record](#) [Refresh this page](#)

Voice Mail:

Voice Mail Extension:

Voice Mail Login Extension:

Voice Mail Broadcast Mailbox:

Account Codes:

Account Code Extension:

Auto-Attendant:

Auto-Attendant Extension:

Backup Auto-Attendant Extension:

Make Me Conference:

Make Me Conference Extension:

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Sites



ShoreWare Director
Small Business Edition

Build 15.41.3005.0
Logoff Administrator

Administration

- Users...
- Trunks...
- IP Phones...
- Switches...
- Call Control...
- Voice Mail...
- Auto-Attendant Menus
- Workgroups
- Schedules
- Call Manager...
- System Directory
- Application Servers
- Conference Bridges
- IM Servers
- Sites
- System Parameters...
 - Dialing Plan
 - Digit Translation Tables
 - System Extensions
 - SNMP

Maintenance

- Quick Look
- Voice Mail Servers
- Switch Connectivity
- Conference Ports
- Event Log...
- Services
- Event Filters

Reporting

Sites

Edit Site New Copy Save Delete Reset

[Edit this record](#) [Refresh this page](#)

Name:

Country:

Language:

Parent:

Use Parent As Proxy

Local Area Code:

Additional Local Area Codes:

Caller's Emergency Service Identification (CESID):

Time Zone:

Night Bell Extension:

Night Bell Switch: [Edit Night Bell Call Handling](#)

Paging Extension:

Paging Switch:

Operator Extension:

FAX Redirect Extension:

SMTP Relay:

Bandwidth:

Admission Control Bandwidth: kbps



Sites (Continued)

ShoreTel
ShoreWare Director
Small Business Edition
 Build 15.41.3005.0
 Logoff Administrator

Administration

- Users...
- Trunks...
- IP Phones...
- Switches...
- Call Control...
- Voice Mail...
- Auto-Attendant Menus
- Workgroups
- Schedules
- Call Manager...
- System Directory
- Application Servers
- Conference Bridges
- IM Servers
- Sites
- System Parameters...
- Preferences

Maintenance

- Quick Look
- Voice Mail Servers
- Switch Connectivity
- Conference Ports
- Event Log...
- Services
- Event Filters

Night Bell Extension:

Night Bell Switch: **None** [Edit Night Bell Call Handling](#)

Paging Extension:

Paging Switch: **None**

Operator Extension: **Search**

FAX Redirect Extension: **Search**

SMTP Relay: **Ping**

Bandwidth:

Admission Control Bandwidth: kbps

Intra-Site Calls: **XO PKG2**

Inter-Site Calls: **XO PKG2**

FAX and Modem Calls: **Fax Codecs - High Bandwidth**

SIP Proxy:

Virtual IP Address:

Proxy Switch 1: **None**

Proxy Switch 2: **None**

Emergency Number List

Trunk Access Code Required **Add More...**

[Edit IP Phone Address Map](#)

Switches

ShoreTel
ShoreWare Director
Small Business Edition
 Build 15.41.3005.0
 Logoff Administrator

Administration

- Users...
- Trunks...
- IP Phones...
- Switches...
 - Primary
 - Spare
- Call Control...

Primary Switches

Add new switch at site: **Headquarters** of type: **ShoreGear 120/24** **Go**

Name	Description	Site	Server	Type	IPAddress	MAC Address	Serial Number	IP Phones In Use	IP Phones Capacity	SIP Trunks In Use	SIP Trunks Capacity	SIP Proxy Capacity
SG-30		Headquarters	Headquarters	SG-30	172.27.25.51	00-10-49-11-95-D6	S30J09091195D6	3	5	3	10	0
SoftSwitch	SoftSwitch	Headquarters	Headquarters	SW	172.27.25.50			0	0	0	0	0
Total								3	5	3	10	0

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Switches (SG30)

The screenshot displays the ShoreTel ShoreWare Director interface for editing a ShoreGear 30 Switch. The left sidebar shows the navigation menu with 'Switches' selected. The main area contains the following configuration fields:

- Name:** SG-30
- Description:** (empty)
- Site:** Headquarters
- IP Address:** 172.27.25.51 (highlighted with a red box)
- Ethernet Address:** 08-10-49-11-95-06
- Server to Manage Switch:** Headquarters
- Caller's Emergency Service Identification (CESID):** (empty)
- Built-in Capacity:** 0 IP Phone + 10 SIP Trunk = Total = 10 of 10 (0 SIP proxy ports)
- Music On Hold Source
- Music On Hold Gain (-49 to 13):** 0 dB
- Use Analog Extension Ports as DID Trunks

At the bottom of the configuration page, there is an image of the physical ShoreTel ShoreGear 30 switch hardware, labeled 'SG-30'.

IP Address: IP Address of ShoreTel switch.



Switches (Soft Switch)

ShoreWare Director
Small Business Edition

Build 15.41.3005.0
Logoff Administrator

Administration

- Users...
- Trunks...
- IP Phones...
- Switches...
 - Primary
 - Spare
- Call Control...
- Voice Mail...
- Auto-Attendant Menus

Switches

Edit SoftSwitch

[Help](#)

Edit this record [Refresh this page](#)

Name:

Description:

Site: [Headquarters](#)

IP Address: 172.27.25.50 [Go to Server page to change IP Addresses](#)

Secondary IP Address: None

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IPPhones (Individual IP Phones)

ShoreWare Director
Small Business Edition

Build 15.41.3005.0
Logoff Administrator

Administration

- Users...
- Trunks...
- IP Phones...
 - Individual IP Phones
 - IP Phone Address Map
 - SIP Profiles
 - Options
 - Switches...

IP Phones

Filter IP Phones

By Sites:

By Switches:

IP Phone List 0 records checked.

Show Page:

Name	Site	Switch	MAC Address	IP Address	User		Phone Type	Assign To	Expiration
					Current	Home			
<input type="checkbox"/> XO Lab1	Headquarters	SG-30	00-10-49-0F-20-E6	172.27.25.55	ShoreTel Jack	ShoreTel Jack	IP230		
<input type="checkbox"/> XO Lab2	Headquarters	SG-30	00-10-49-0F-20-E5	172.27.25.56	ShoreTel Jim	ShoreTel Jim	IP230		
<input type="checkbox"/> XO Lab3	Headquarters	SG-30	00-10-49-0F-20-E4	172.27.25.57	Jane 3266	Jane 3266	IP230		

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Trunk (Individual Trunks)

ShoreWare Director
Small Business Edition

Build 15.41.3005.0
Logoff Administrator

Administration

- Users...
- Trunks...
 - Individual Trunks
 - Trunk Groups
 - SIP Profiles
 - Local Prefixes

Trunks by Group

Add new trunk at site: in trunk group:

Show page: 3 Records | 25 per page

Name	Group	Type	Site	Switch	Port/Channel	SIP IP Address
XO Lab	XO	SIP	Headquarters	SG-30	0	172.27.25.49
XO Lab (1)	XO	SIP	Headquarters	SG-30	0	172.27.25.49
XO Lab (2)	XO	SIP	Headquarters	SG-30	0	172.27.25.49

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Trunk (Individual Trunks) XO lab

The screenshot shows the ShoreTel ShoreWare Director interface. On the left is a navigation menu with categories like Administration, IP Phones, Switches, and Call Control. The main area is titled 'Trunks Edit Trunk' and contains the following configuration fields:

- Site: Headquarters
- Trunk Group: XO
- Name: XO Lab
- Switch: SG-30
- SIP Trunk Type:
 - Dynamic
 - Use IP Address (highlighted with a red box) with the value 172.27.25.49

Buttons for 'New', 'Copy', 'Save', 'Delete', and 'Reset' are visible at the top right. A 'Refresh this page' link is also present.

“Use IP address” – Add internal side IP of InGate. This is when InGate is used in front of ShoreTel.

Trunk Groups (XO)

The screenshot shows the ShoreTel ShoreWare Director interface for editing a SIP Trunk Group. The main area is titled 'Trunk Groups Edit SIP Trunk Group' and contains the following configuration fields:

- Name: XO
- Site: Headquarters
- Language: English(US)
- Teleworkers
- Enable SIP Info for G.711 DTMF Signaling
- Profile: XO
- Digest Authentication: <None>
- User ID: [empty field]
- Password: [empty field]
- Inbound:
 - Number of Digits from CO: 10
 - DNIS (with 'Edit DNIS Map' button)
 - DID (with 'Edit DID Range' button)
 - Extension
 - Translation Table: <None>
 - Prepend Dial In Prefix: [empty field]
 - Use Site Extension Prefix
 - Tandem Trunking

Buttons for 'New', 'Copy', 'Save', and 'Delete' are visible at the top right. A 'Refresh this page' link is also present.

Trunk Groups (XO) continue:

ShoreWare Director
Small Business Edition

Build 15.41.3005.0
Logoff Administrator

- Administration
 - Users...
 - Trunks...
 - Individual Trunks
 - Trunk Groups
 - SIP Profiles
 - Local Prefixes
 - IP Phones...
 - Switches...
 - Call Control...
 - Voice Mail...
 - Auto-Attendant Menus
 - Workgroups
 - Schedules
 - Call Manager...
 - System Directory
 - Application Servers
 - Conference Bridges
 - IM Servers
 - Sites
 - System Parameters...
 - Preferences
- Maintenance
 - Quick Look
 - Voice Mail Servers
 - Switch Connectivity
 - Conference Ports
 - Event Log...

Tandem Trunking

User Group: Executives

Prepend Dial In Prefix:

Destination: 3100 : ShoreTel AA Search

Outbound:

Network Call Routing:

Access Code:

Local Area Code:

Additional Local Area Codes: Edit

Nearby Area Codes: Edit

Trunk Services:

Local

Long Distance

International

Enable Original Called Information

n11 (e.g. 411, 611, except 911 which is specified below)

Emergency (e.g. 911)

Easily Recognizable Codes (ERC) (e.g. 800, 888, 900)

Explicit Carrier Selection (e.g. 1010xxx)

Operator Assisted (e.g. 0+)

Caller ID not blocked by default

Trunk Groups (XO), continued:

ShoreWare Director
Small Business Edition

Build 15.41.3005.0
Logoff Administrator

- Administration
 - Users...
 - Trunks...
 - Individual Trunks
 - Trunk Groups
 - SIP Profiles
 - Local Prefixes
 - IP Phones...
 - Switches...
 - Call Control...
 - Voice Mail...
 - Auto-Attendant Menus
 - Workgroups
 - Schedules
 - Call Manager...
 - System Directory
 - Application Servers
 - Conference Bridges
 - IM Servers
 - Sites
 - System Parameters...
 - Preferences
- Maintenance
 - Quick Look
 - Voice Mail Servers
 - Switch Connectivity
 - Conference Ports

International

Enable Original Called Information

n11 (e.g. 411, 611, except 911 which is specified below)

Emergency (e.g. 911)

Easily Recognizable Codes (ERC) (e.g. 800, 888, 900)

Explicit Carrier Selection (e.g. 1010xxx)

Operator Assisted (e.g. 0+)

Caller ID not blocked by default

Trunk Digit Manipulation:

Remove leading 1 from 1+10D
Hint: Required for some long distance service providers.

Remove leading 1 for Local Area Codes (for all prefixes unless a specific local prefix list is provided below)
Hint: Required for some local service providers with overlay area codes.

Dial 7 digits for Local Area Code (for all prefixes unless a specific local prefix list is provided below)
Hint: Local prefixes required for some local service providers with mixed 7D and 1+10D in the same home area.

Dial in E.164 Format

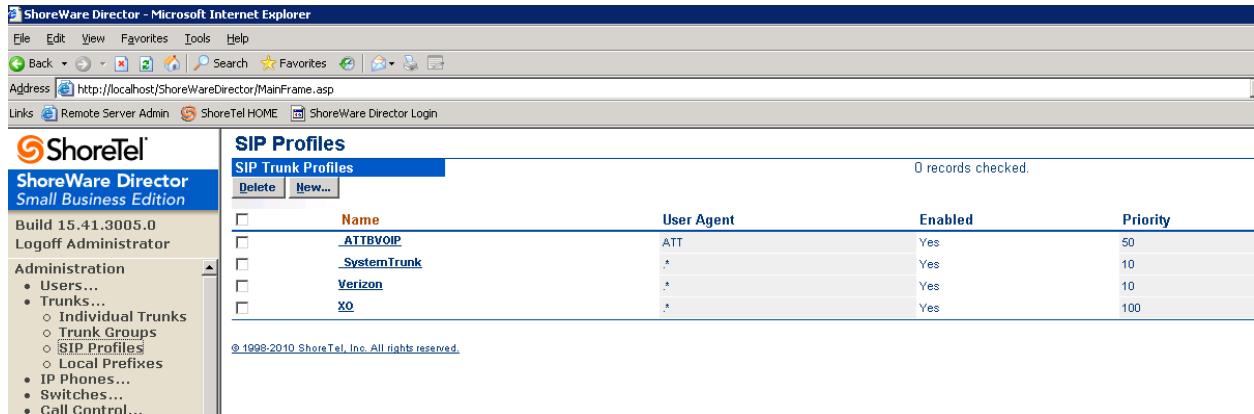
Local Prefixes: None [Go to Local Prefixes List](#)

Prepend Dial Out Prefix:

Off System Extensions: Edit

Translation Table: <None>

SIP Profile:



ShoreWare Director - Microsoft Internet Explorer

Address: http://localhost/ShoreWareDirector/MainFrame.asp

Links: Remote Server Admin, ShoreTel HOME, ShoreWare Director Login

ShoreTel
ShoreWare Director
Small Business Edition
Build 15.41.3005.0
Logoff Administrator

Administration

- Users...
- Trunks...
 - Individual Trunks
 - Trunk Groups
 - SIP Profiles
 - Local Prefixes
- IP Phones...
- Switches...
- Call Control...

SIP Profiles

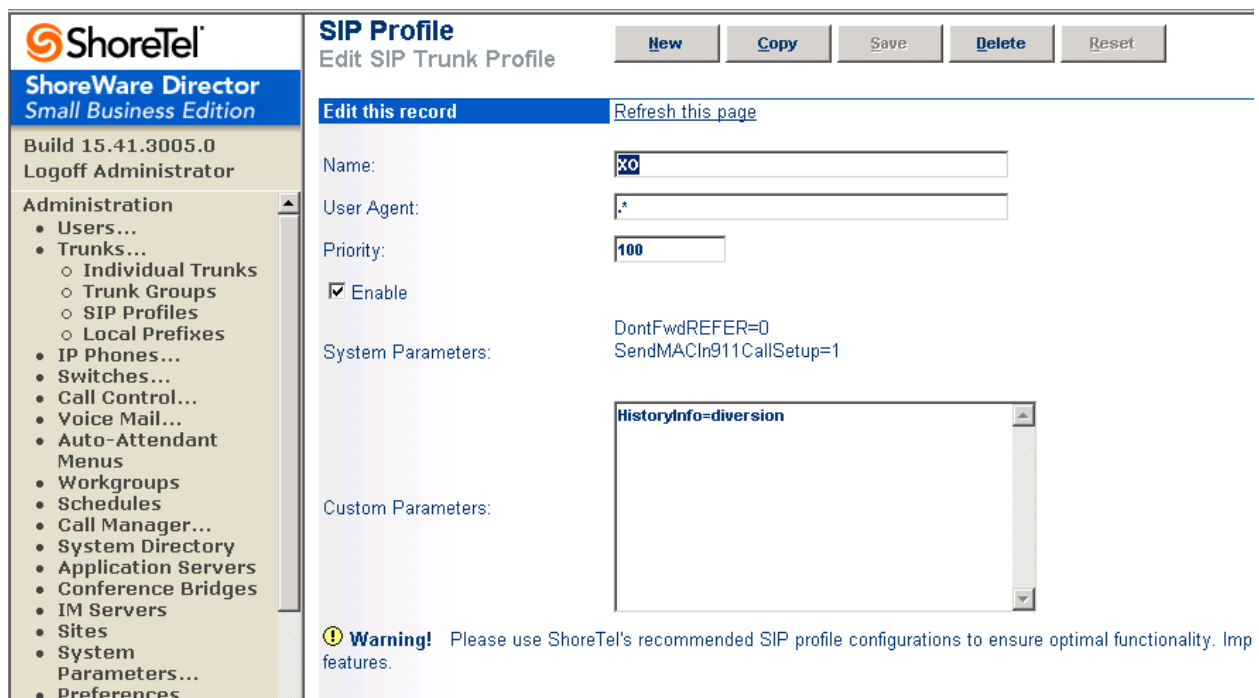
SIP Trunk Profiles 0 records checked.

Delete New...

<input type="checkbox"/>	Name	User Agent	Enabled	Priority
<input type="checkbox"/>	ATTBVOIP	ATT	Yes	50
<input type="checkbox"/>	SystemTrunk	*	Yes	10
<input type="checkbox"/>	Verizon	*	Yes	10
<input type="checkbox"/>	XO	*	Yes	100

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SIP Profile – ‘XO’



ShoreTel
ShoreWare Director
Small Business Edition
Build 15.41.3005.0
Logoff Administrator

Administration

- Users...
- Trunks...
 - Individual Trunks
 - Trunk Groups
 - SIP Profiles
 - Local Prefixes
- IP Phones...
- Switches...
- Call Control...
- Voice Mail...
- Auto-Attendant Menus
- Workgroups
- Schedules
- Call Manager...
- System Directory
- Application Servers
- Conference Bridges
- IM Servers
- Sites
- System Parameters...
- Preferences

SIP Profile Edit SIP Trunk Profile

New Copy Save Delete Reset

Edit this record Refresh this page

Name: XO

User Agent: *

Priority: 100

Enable

System Parameters: DontFwdREFER=0 SendMACIn911CallSetup=1

Custom Parameters: HistoryInfo=diversion

Warning! Please use ShoreTel's recommended SIP profile configurations to ensure optimal functionality. Imp features.

DID Range

ShoreTel
ShoreWare Director
UNLICENSED
Build 13.24.5910.0
Logoff Administrator

DID Range Save Reset [Help](#)

[Edit this record](#) [Refresh this page](#)

Base Phone Number	# Phone Numbers	
+1 (469) 387-3260	4	Delete
+1 (469) 387-3265	2	Delete

[Add this record](#) +1

[View DID Digit Map](#)

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ShoreTel
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Build 13.24.5910.0
Logoff Administrator

Number of Digits from CO: Edit DNIS Map Edit DID Range

DNIS
 DID
 Extension

Translation Table:
 Prepend Dial In Prefix:
 Use Site Extension Prefix

Tandem Trunking
User Group:
Prepend Dial In Prefix:

Destination:

Outbound:

Network Call Routing:
Access Code:
Local Area Code:
Additional Local Area Codes: Edit
Nearby Area Codes: Edit


Additional Local Area Codes -- Web Page Dialog

Dial phone numbers with the following area codes as local:

214	New...
469	Remove

OK Cancel

USERS - Edit User



ShoreWare Director
UNLICENSED

Build 13.24.5910.0
Logoff Administrator

Administration

- Users...
 - Individual Users
 - User Groups
 - Class of Service
 - Anonymous Telephones
 - Extension Lists
 - Batch Update Utility
 - Call Handling Mode Defaults...
- Trunks...
- IP Phones...
 - Individual IP Phones
 - IP Phone Address Map
 - Options
- Switches
- Call Control...
- Voice Mail...
- Auto-Attendant Menus
- Workgroups
- Schedules
- Call Manager...
- System Directory

Users
Edit User

▼ **General** ► Personal Options ► Distribution Lists ► Workgroups

[New](#) [Copy](#) [Save](#) [Delete](#) [Reset](#)

First Name:

Last Name:

Number:

License Type:

Caller ID: (e.g. +1 (408) 331-3300)

DID: (DID Range: +14693873260 - 4693873263)

PSTN Failover:

User Group: [Go to this User Group](#)

Site:

Language:

Home Port:


IP Phones

Ports

SoftSwitch

Current Port: [Go Home](#)

USERS - Edit User [Continued...]



ShoreWare Director
UNLICENSED

Build 13.24.5910.0
Logoff Administrator

Administration

- Users...
 - Individual Users
 - User Groups
 - Class of Service
 - Anonymous Telephones
 - Extension Lists
 - Batch Update Utility
 - Call Handling Mode Defaults...
- Trunks...
- IP Phones...
 - Individual IP Phones
 - IP Phone Address Map
 - Options
- Switches
- Call Control...
- Voice Mail...
- Auto-Attendant Menus
- Workgroups
- Schedules
- Call Manager...
- System Directory

Jack #:

Mailbox on Server: [Escalation Profiles and Other Mailbox Options](#)

Accept Broadcast Messages

Include in System Dial By Name Directory

Make Number Private

Fax Support:

Client Type: Enable Contact Center Integration

Allow Video Calls:

Allow Telephony Presence

Allow Use of Soft Phone

Allow Phone API

Allow Mobile Call Manager

Delayed Ringdown

Extension:

External Number: (e.g. 9+1 (408) 331-3300)

Ringdown Delay: sec

Client User ID:

Client Password:

USERS - Edit User [Continued...]

ShoreTel
ShoreWare Director
UNLICENSED
Build 13.24.5910.0
Logoff Administrator

Administration

- Users...
 - Individual Users
 - User Groups
 - Class of Service
 - Anonymous Telephones
 - Extension Lists
 - Batch Update Utility
 - Call Handling Mode Defaults...
- Trunks...
- IP Phones...
 - Individual IP Phones
 - IP Phone Address Map
 - Options
- Switches
- Call Control...
- Voice Mail...
- Auto-Attendant Menus
- Workgroups
- Schedules
- Call Manager...
- System Directory

Allow Use of Soft Phone
 Allow Phone API
 Allow Mobile Call Manager
 Delayed Ringdown

Extension:
 External Number: (e.g. 9+1 (408) 331-3300)
 Ringdown Delay: sec
 Client User ID:
 Client Password:
 Voice Mail Password: Must Change On Next Login
 SIP Password:
 Email Address:
 Conference Bridge:
 Server:
 User ID:
 Password:
[Edit System Directory Record](#)

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USER GROUPS

ShoreTel
ShoreWare Director
UNLICENSED
Build 13.24.5910.0
Logoff Administrator

Administration

- Users...
 - Individual Users
 - User Groups
 - Class of Service
 - Anonymous Telephones
 - Extension Lists
 - Batch Update Utility
 - Call Handling Mode Defaults...
- Trunks...
- IP Phones...
 - Individual IP Phones

User Groups

Name	Telephony Features	Permissions		SMDI	Account Codes	DID AS
		Call	Voice Mail			
Account Code Service	Minimally Featured	No Restrictions	No Mail Box	None	Disabled	Yes
Anonymous Telephones	Minimally Featured	Internal Only	No Mail Box	None	Disabled	Yes
Executives	Fully Featured	No Restrictions	Large Mail Box	None	Disabled	Yes
House Telephones	Minimally Featured	Internal Only	No Mail Box	None	Disabled	Yes
IP Telephones	Minimally Featured	Internal Only	No Mail Box	None	Disabled	Yes
Managers	Partially Featured	No Restrictions	Medium Mail Box	None	Disabled	Yes
Staff	Partially Featured	Long Distance Calling	Medium Mail Box	None	Disabled	Yes
Voice Mail Notification	Minimally Featured	No Restrictions	No Mail Box	None	Disabled	Yes

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Codec list (XO PKG1)

The screenshot shows the 'Codec Lists' configuration page in ShoreTel. The left sidebar contains the navigation menu with 'Options' selected. The main content area is titled 'Codec Lists' and 'Edit Codec Lists'. It features buttons for 'New', 'Copy', 'Save', 'Delete', and 'Reset'. Below these, there are links for 'Edit this record' and 'Refresh this page'. The 'Name' field is set to 'XO PKG1'. The 'Choose Codecs' list includes: L16/8000, DV14/8000, G729/8000, L16/16000, AAC_LC/32000, PCMA/8000, G722/8000, BV32/16000, and BV16/8000. The 'Codec List Members' list contains 'PCMU/8000'. Control buttons include 'Add >>', '<< Remove', 'Move Up ^', and 'Move Down v'. A copyright notice at the bottom reads: '© 1998-2009 ShoreTel, Inc. All rights reserved.'

Options

The screenshot shows the 'Call Control Options' configuration page in ShoreTel. The left sidebar contains the navigation menu with 'Options' selected. The main content area is titled 'Call Control Options' and 'Edit'. It features buttons for 'Save' and 'Reset'. Below these, there are links for 'Edit this record' and 'Refresh this page'. The 'General' section includes:

- Use Distributed Routing Service for call routing.
- Enable Monitor / Record Warning Tone.
- Generate an event when a trunk is in-use for minutes.
- Park Timeout (1-100000) after seconds.
- Hang up Make Me Conference after minutes of silence.

 The 'Delay before sending DTMF to Fax Server' is set to msec. The 'SIP' section includes:

- Realm:
- Enable SIP Session Timer.
- Session Interval (90 - 3600): sec
- Refresher:

 The 'Voice Encoding and Quality of Service' section includes:

- Maximum Inter-Site Jitter Buffer: msec
- DiffServ / ToS Byte (0-255):
- Admission control algorithm assumes RTP header compression is being used.
- Enable Media Encryption

Auto Attendant Menu

ShoreTel
ShoreWare Director
UNLICENSED
Build 13.24.5910.0
Logoff Administrator

Administration

- Users...
- Trunks...
- IP Phones...
- Switches
- Call Control...
- Voice Mail...
- Auto-Attendant
- **Menus**
- Workgroups
- Schedules
- Call Manager...
- System Directory
- Application Servers
- Conference Bridges
- IM Servers
- Sites
- System Parameters...
- Preferences

Menu
Edit Menu

Buttons: **New** **Copy** **Save** **Delete** **Reset**

Refresh this page

Menu Name:

Extension:

DID: +1 (DID Range: +14693873260 - 4693873263)

DNIS:

Language:

Make Number Private

Allow Prompt Recording Using Telephone

Menu Password:

▼ **On-Hours** ▶ Off-Hours ▶ Holiday ▶ Custom

Disable Monitor / Record Warning Tone.

Timeout (0 - 30000 milliseconds):

Prompt Text:

Auto Attendant Menu (Continued)

ShoreTel
ShoreWare Director
UNLICENSED
Build 13.24.5910.0
Logoff Administrator

Administration

- Users...
- Trunks...
- IP Phones...
- Switches
- Call Control...
- Voice Mail...
- Auto-Attendant
- **Menus**
- Workgroups
- Schedules
- Call Manager...
- System Directory
- Application Servers
- Conference Bridges
- IM Servers
- Sites
- System Parameters...
- Preferences

Maintenance

- Quick Look
- Voice Mail Servers
- Switch Connectivity
- Conference Ports
- Event Log...
- **Services**

Prompt:

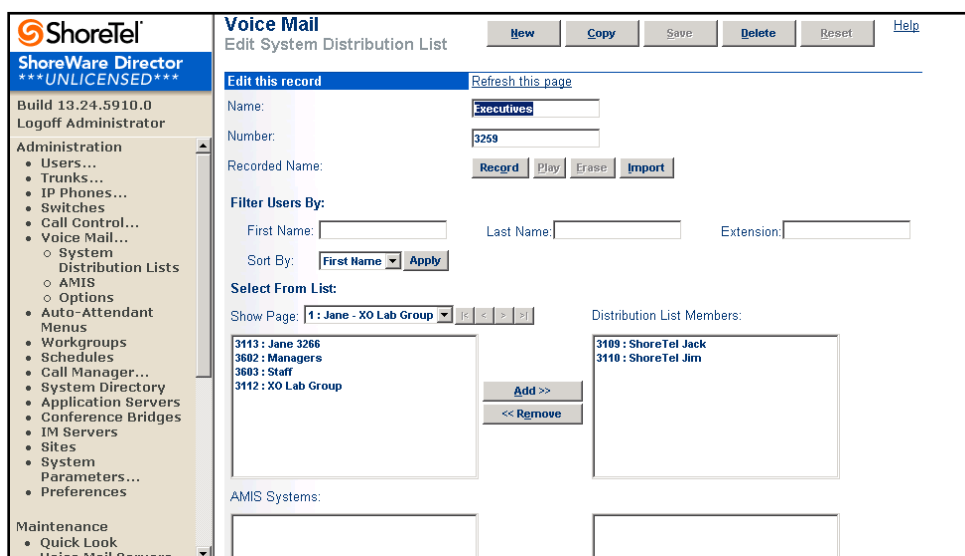
Buttons: **Record** **Play** **Erase** **Import**

Schedule: [Go to this schedule](#)

Operation	Ext	Operation	Ext
0	Go to menu	8	<None>
1	Dial by last name	9	<None>
2	Dial by first name	*	<None>
3	Hang up	#	Go to menu
4	<None>		Repeat prompt
5	<None>		Hang up
6	<None>		Repeat prompt
7	<None>		Transfer to extension

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Voice Mail



ShoreTel
ShoreWare Director
UNLICENSED
Build 13.24.5910.0
Logoff Administrator

Voice Mail
Edit System Distribution List

[New](#) [Copy](#) [Save](#) [Delete](#) [Reset](#) [Help](#)

Edit this record [Refresh this page](#)

Name:
Number:
Recorded Name: [Recgrd](#) [Play](#) [Erase](#) [Import](#)

Filter Users By:
First Name: Last Name: Extension:
Sort By: [First Name](#) [Apply](#)

Select From List:
Show Page: [1 : Jane - XO Lab Group](#) [|<](#) [>](#) [|>](#)

Distribution List Members:

3113 : Jane 3266	3109 : ShoreTel Jack
3602 : Managers	3110 : ShoreTel Jim
3603 : Staff	
3112 : XO Lab Group	

[Add >>](#) [<< Remove](#)

AMIS Systems:

Workarounds:

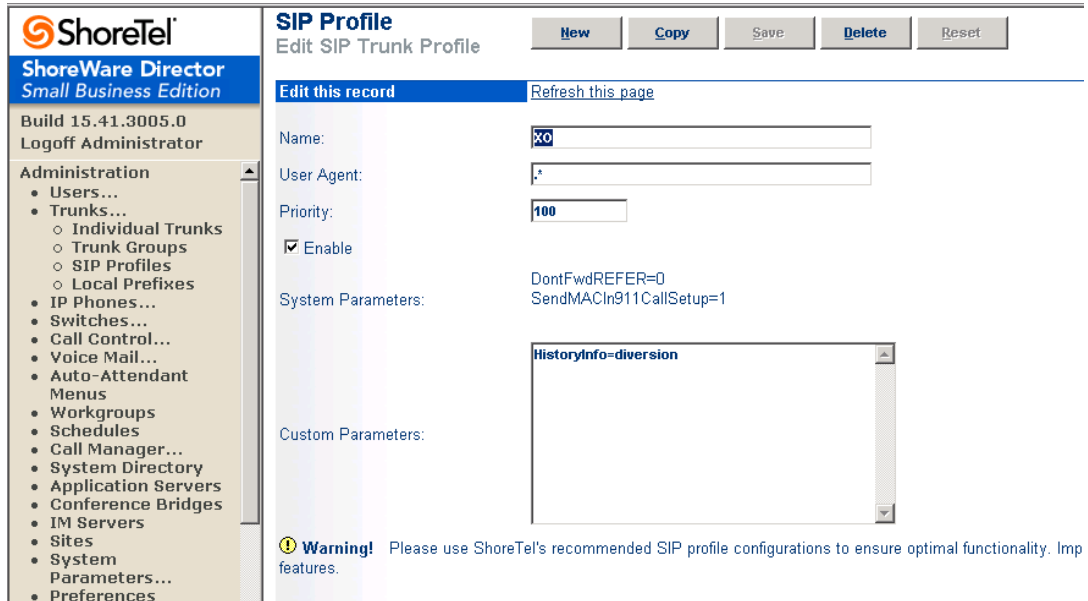
1. To remove '+1' from FROM header.

- At the Director login screen, hold down the CTRL and Shift keys and click on the "U" of User Id, if done correctly you should now see ***Support Entry*** displayed on the page, log in normally.
- Go to the SIP Trunk Group you've defined and edit it. Scroll to bottom of the page, in the "Trunk Group Dialing Rules:" section, click on the "Custom" Edit button.
- In the pop-up window enter ;10E and save the entry, that's it, you should now see the FROM and DIVERSION headers in non-E.164 format without a leading one.

2. To add 'Diversion' header.

- Go to the "Trunks" section, then to "SIP Profiles", and then click on the "New" button.
- Define a "Name", set the "User Agent" to .* (just period then asterisk), check the "Enable" parameter, in the "Custom Parameters" area enter the following (case sensitive):

HistoryInfo=diversion



ShoreTel
ShoreWare Director
Small Business Edition
Build 15.41.3005.0
Logoff Administrator

Administration

- Users...
- Trunks...
 - Individual Trunks
 - Trunk Groups
 - SIP Profiles
 - Local Prefixes
- IP Phones...
- Switches...
- Call Control...
- Voice Mail...
- Auto-Attendant Menus
- Workgroups
- Schedules
- Call Manager...
- System Directory
- Application Servers
- Conference Bridges
- IM Servers
- Sites
- System Parameters...
- Preferences

SIP Profile
Edit SIP Trunk Profile

[New](#) [Copy](#) [Save](#) [Delete](#) [Reset](#)

[Edit this record](#) [Refresh this page](#)

Name:

User Agent:

Priority:

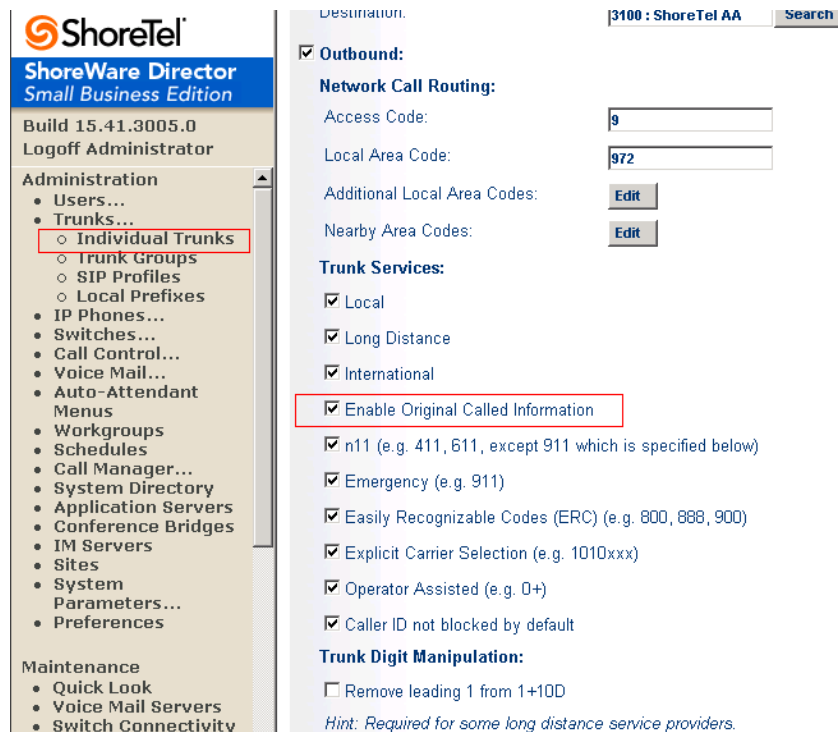
Enable

System Parameters: DontFwdREFER=0
SendMACIn911CallSetup=1

Custom Parameters:

Warning! Please use ShoreTel's recommended SIP profile configurations to ensure optimal functionality. Imp features.

- Save the change.
- Go to the "Trunk Group" page and select the SIP trunk group you've defined for your SIP trunks, select to modify. Then configure the "Profile" from "_SystemTrunk" to the name you defined in step 2.
- Towards the middle of the "Edit Trunk Group" page you'll see a parameter named "Enable Original Called Information", enable (check) this parameter then save the changes.



ShoreTel
ShoreWare Director
Small Business Edition
Build 15.41.3005.0
Logoff Administrator

Administration

- Users...
- Trunks...
 - Individual Trunks
 - Trunk Groups
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 - Local Prefixes
- IP Phones...
- Switches...
- Call Control...
- Voice Mail...
- Auto-Attendant Menus
- Workgroups
- Schedules
- Call Manager...
- System Directory
- Application Servers
- Conference Bridges
- IM Servers
- Sites
- System Parameters...
- Preferences

Maintenance

- Quick Look
- Voice Mail Servers
- Switch Connectivity

Destination: 3100 : ShoreTel AA Search

Outbound:

Network Call Routing:

Access Code: 9

Local Area Code: 972

Additional Local Area Codes: Edit

Nearby Area Codes: Edit

Trunk Services:

Local

Long Distance

International

Enable Original Called Information

n11 (e.g. 411, 611, except 911 which is specified below)

Emergency (e.g. 911)

Easily Recognizable Codes (ERC) (e.g. 800, 888, 900)

Explicit Carrier Selection (e.g. 1010xxx)

Operator Assisted (e.g. 0+)

Caller ID not blocked by default

Trunk Digit Manipulation:

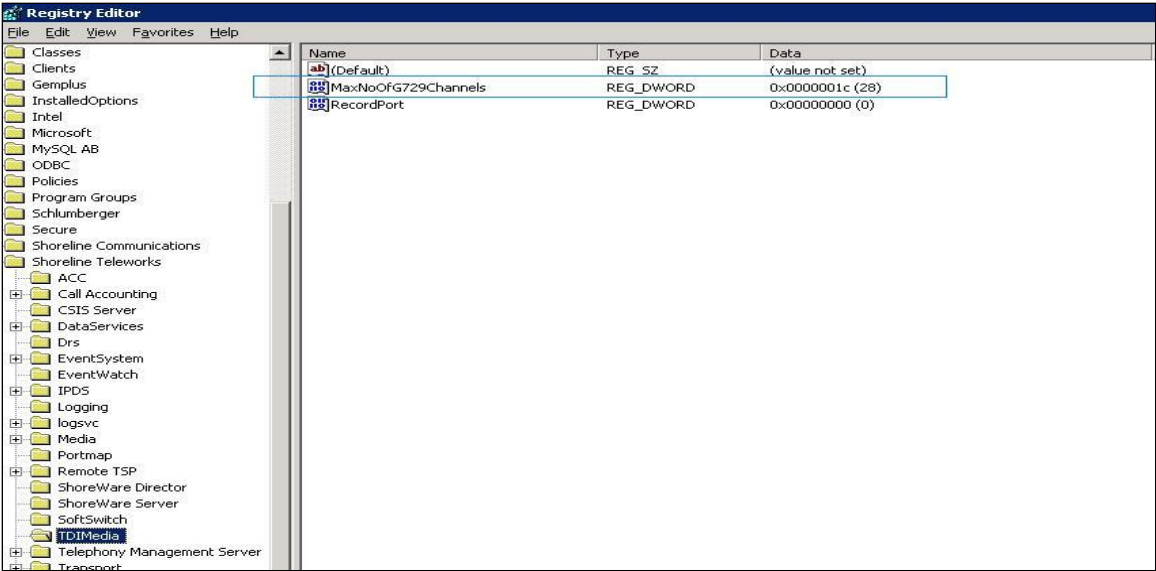
Remove leading 1 from 1+10D

Hint: Required for some long distance service providers.

3. Special Setting for PKG2 (G729)

On ShoreTel (Windows) server:

- Open regedit on the ShoreWare server
- Navigate to HKEY_LOCAL_MACHINE\SOFTWARE\Shoreline Teleworks\TDIMedia
- Add DWORD entry named "MaxNoOfG729Channels" and set it to a value of 28 hex (40 decimal). Please note that this entry is case sensitive and must be a DWORD.



3.2 Ingate SIParator 4.8.1 Configuration

InGate version:

inGate SIParator Configured by Ingate Startup Tool Version 2.5.1 Log Out

- Administration
- Basic Configuration
- Network
- SIP Services
- SIP Traffic
- Failover
- Virtual Private Networks
- Quality of Service
- Logging and Tools
- About

Ingate SIParator 19
Serial number: IG-092-719-5066-0

Version: 4.8.1
Installed patches:

Installed modules:

- Standard SIP features
- SIP Trunking
- Enhanced Security
- Failover
- VPN (IPsec and PPTP)

Installed licenses:

- 10 SIP User Registration Licenses
- 5 SIP Traversal Licenses

Network >> Networks and Computers

- Administration
- Basic Configuration
- Network
- SIP Services
- SIP Traffic
- Failover
- Virtual Private Networks
- Quality of Service
- Logging and Tools
- About

• Changes have been made to the preliminary configuration, but have not been applied.

- Networks and Computers
- Default Gateways
- All Interfaces
- VLAN
- Eth0
- Eth1
- Eth2
- Interface Status
- PPPoE
- Topology

Name	Subgroup	Lower Limit		Upper Limit (for IP ranges)		Interface/VLAN	Delete Row
		DNS Name or IP Address	IP Address	DNS Name or IP Address	IP Address		
+ Generic_ITSP	-	205.158.163.138	205.158.163.138	255.255.255.255	255.255.255.255	outside (eth1 untagged)	<input type="checkbox"/>
+ LAN	-	172.27.25.0	172.27.25.0	172.27.25.255	172.27.25.255	inside (eth0 untagged)	<input type="checkbox"/>
+ ShoreTel	-	172.27.25.51	172.27.25.51	255.255.255.255	255.255.255.255	inside (eth0 untagged)	<input type="checkbox"/>
+ WAN	-	0.0.0.0	0.0.0.0	255.255.255.255	255.255.255.255	outside (eth1 untagged)	<input type="checkbox"/>
+ localhost	-	127.0.0.1	127.0.0.1			-	<input type="checkbox"/>



Network >> All interfaces

Administration Basic Configuration **Network** SIP Services SIP Traffic Failover Virtual Private Networks Quality of Service Logging and Tools About

• Changes have been made to the preliminary configuration, but have not been applied.

Networks and Computers Default Gateways **All Interfaces** VLAN Eth0 Eth1 Eth2 Interface Status PPPoE Topology

Interface Overview

General

Physical Device	Interface Name	Active	Speed and Duplex
eth0	inside	Yes	Autonegotiation
eth1	outside	Yes	Autonegotiation
eth2	Ethernet2	No	Autonegotiation

Directly Connected Networks (Help)

Name	Address Type	DNS Name or IP Address	IP Address	Netmask / Bits	Network Address	Broadcast Address	Interface	VLAN Id	VLAN Name	Delete Row
inside	Static	172.27.25.49	172.27.25.49	255.255.255.0	172.27.25.0	172.27.25.255	inside (eth0)		-	<input type="checkbox"/>
outside	Static	205.158.163.90	205.158.163.90	255.255.255.248	205.158.163.88	205.158.163.95	outside (eth1)		-	<input type="checkbox"/>

Add new rows 1 rows.

Outside IP Address: XO SONUS IP

Inside IP Address: LAN IP of InGate facing ShoreTel Director.

SIP Services >> Interoperability

Administration Basic Configuration Network **SIP Services** SIP Traffic Failover Virtual Private Networks Quality of Service Logging and Tools About

Basic Signaling Encryption Media Encryption **Interoperability** Sessions and Media Remote SIP Connectivity VoIP Survival

Loose Routing (Help)

Use lr
 Use lr=true

Remove Via Headers (Help)

SIP Server		Delete Row
DNS Name or IP Address	IP Address	

Add new rows 1 rows.

Expires Header (Help)

Never add Expires header
 Add Expires header if the request contained one
 Always add Expires header

Relaxed Refer-To (Help)

Recommended setting: Only allow Refer-To "?" with angle brackets

Only allow Refer-To "?" with angle brackets
 Allow Refer-To "?" without angle brackets

Translation Exceptions (Help)

Except This From Translation		Delete Row
DNS Name or IP Address	IP Address	

Add new rows 1 rows.

Force Translation (Help)

Always Translate This	Delete Row

Add new rows 1 rows.

<p>URI Encoding (Help)</p> <p>Recommended setting: Always encrypt URIs</p> <ul style="list-style-type: none"> <input type="radio"/> Always encrypt URIs <input checked="" type="radio"/> Use shorter, encrypted URIs <input type="radio"/> Escape URIs <input type="radio"/> Keep username in URIs 	<p>Signaling Order of Re-INVITES (Help)</p> <p>Recommended setting: Send re-INVITES all the way directly</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Send re-INVITES all the way directly <input type="radio"/> Send response before re-INVITES are forwarded 						
<p>Loose Username Check (Help)</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Use the username as authentication name <input type="radio"/> Use the entire address as authentication name 	<p>User Matching (Help)</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Match only on username <input type="radio"/> Match on username and domain 						
<p>Accept RTP/AVP With sdescriptions (Help)</p> <p>Recommended setting: Accept RTP/AVP with sdescriptions offer</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Accept RTP/AVP with sdescriptions offer <input type="radio"/> Only accept RTP/SAVP with sdescriptions offer 	<p>Transmit RTP/AVP With sdescriptions (Help)</p> <p>Recommended setting: Transmit RTP/SAVP with sdescriptions offer</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Transmit RTP/SAVP with sdescriptions offer <input type="radio"/> Transmit RTP/AVP with sdescriptions offer 						
<p>Force Record-Route for Outbound Requests (Help)</p> <p>Recommended setting: No</p> <p>Force Record-Route for outbound requests: <input type="radio"/> Yes <input checked="" type="radio"/> No</p>	<p>Force Record-Route for All Requests (Help)</p> <p>Recommended setting: No</p> <p>Always force Record-Route: <input type="radio"/> Yes <input checked="" type="radio"/> No</p>						
<p>Force Remote TLS Connection Reuse (Help)</p> <table border="1" data-bbox="277 905 574 953"> <thead> <tr> <th>DNS Name or IP Address</th> <th>IP Address</th> <th>Delete Row</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Add new rows <input type="text" value="1"/> rows.</p>	DNS Name or IP Address	IP Address	Delete Row				<p>Accept TCP Marked As TLS (Help)</p> <p>Recommended setting: Only accept TLS transport for TLS marked signaling</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Only accept TLS transport for TLS marked signaling <input type="radio"/> Accept TCP marked as TLS
DNS Name or IP Address	IP Address	Delete Row					
<p>Allow Large UDP Packets (Help)</p> <p>Recommended setting: Use TCP for large packets</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Use TCP for large packets <input type="radio"/> Allow large UDP packets 	<p>Remove Headers in 180 Responses (Help)</p> <p>Recommended setting: Keep Record-Route and Contact headers in 180 responses</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Keep Record-Route and Contact headers in 180 responses <input type="radio"/> Remove Record-Route and Contact headers in 180 responses 						
<p>Forward CANCEL Body (Help)</p> <p>Recommended setting: Send CANCEL without body</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Send CANCEL without body <input type="radio"/> Forward CANCEL body 	<p>Use CANCEL Body in ACK (Help)</p> <p>Recommended setting: Send ACK without CANCEL body</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Send ACK without CANCEL body <input type="radio"/> Use CANCEL body in ACK 						
<p>Preserve RFC 2543 Hold (Help)</p> <p>Recommended setting: Use RFC 3264 Hold for all SDPs</p>	<p>Force RFC 3264 Hold Compliance (Help)</p> <p>Recommended setting: Preserve RFC 3264 hold type</p>						



<p>Inhibit Hold (Help) Recommended setting: Allow hold</p> <p><input checked="" type="radio"/> Allow hold <input type="radio"/> Inhibit hold</p>	<p>Convert Escaped Whitespaces in URIs (Help)</p> <p><input type="radio"/> Preserve "%20" in URIs <input checked="" type="radio"/> Convert "%20" into whitespace in URIs</p>
<p>Strip ICE Attributes (Help)</p> <p><input checked="" type="radio"/> Keep ICE attributes in SDPs <input type="radio"/> Strip ICE attributes in SDPs</p>	<p>Ports and the maddr Attribute (Help)</p> <p><input checked="" type="radio"/> Use original URI port when using the maddr attribute <input type="radio"/> Ignore original URI port when using the maddr attribute</p>
<p>Keep User-Agent Header When Acting as B2BUA (Help)</p> <p><input checked="" type="radio"/> Use Ingate SIParator as User-Agent header <input type="radio"/> Keep existing User-Agent header</p>	<p>SDP Offer in re-INVITE (Help)</p> <p><input checked="" type="radio"/> Re-use old answer for SDP offer in re-INVITE <input type="radio"/> Add codecs to new SDP offer in re-INVITE</p>
<p>Use RTCP Attribute in SDP (Help)</p> <p><input checked="" type="radio"/> Always receive RTCP one port number above RTP media <input type="radio"/> Use RTCP attribute in SDP</p>	<p>Keep To Header in Forwarded Requests (Help)</p> <p><input checked="" type="radio"/> Change To header into the forwarding target <input type="radio"/> Keep the To header when forwarding requests</p>
<p>Media Stream Reuse Time (Help) Recommended setting: 0 Remember media streams after use:</p> <p>0 <input type="text"/> seconds</p>	<p>Wildcard Server Domain Certificate Match (Help) Recommended setting: Don't allow wildcard in server certificates</p> <p><input checked="" type="radio"/> Don't allow wildcard in server certificates <input type="radio"/> Allow wildcard in server certificates</p>
<p>Media Stream Reuse Time (Help) Recommended setting: 0 Remember media streams after use:</p> <p>0 <input type="text"/> seconds</p>	<p>Wildcard Server Domain Certificate Match (Help) Recommended setting: Don't allow wildcard in server certificates</p> <p><input checked="" type="radio"/> Don't allow wildcard in server certificates <input type="radio"/> Allow wildcard in server certificates</p>
<p>DNS Override When Redirecting on 3xx (Help) Recommended setting: Use DNS Override</p> <p><input checked="" type="radio"/> Use DNS Override <input type="radio"/> Skip DNS Override</p>	<p>Open Port 6891 for File Transfer (Help) Recommended setting: Do not open port 6891 unless negotiated</p> <p><input checked="" type="radio"/> Do not open port 6891 unless negotiated <input type="radio"/> Open port 6891 at File transfer</p>
<p>Allow RFC 2069 Authentication (Help) Recommended setting: No Allow RFC 2069 Digest authentication: <input type="radio"/> Yes <input checked="" type="radio"/> No</p>	<p>Ignore INFO containing media_control in the B2BUA (Help) Recommended setting: Reject INFO containing application/media_control+xml</p> <p><input checked="" type="radio"/> Reject INFO containing application/media_control+xml <input type="radio"/> Ignore INFO containing application/media_control+xml</p>
<p>Pretend to Support "privacy" Option Tag in Proxy (Help) Recommended setting: Don't pretend to support "privacy" option tag</p> <p><input checked="" type="radio"/> Don't pretend to support "privacy" option tag <input type="radio"/> Pretend to support "privacy" option tag</p> <p><input type="button" value="Save"/> <input type="button" value="Undo"/> <input type="button" value="Look up all IP addresses again"/></p>	

SIP Services >> Session and media

60 seconds

Limitation of RTP Codecs [\(Help\)](#)

Allow all codecs
 Limit codecs as configured

Local Ringback [\(Help\)](#)

Local Ringback Played at Call Transfer	Ring Tone for Local Ringback
<input type="radio"/> Never play local ringback <input checked="" type="radio"/> Play local ringback when transferer hangs up <input type="radio"/> Play local ringback when new target rings	<input checked="" type="radio"/> US ring tone <input type="radio"/> UK ring tone

Music on Hold Redirection [\(Help\)](#)

Redirect calls on hold to Music on Hold server
 Leave calls on hold as they are

Requests [\(Help\)](#)

Default timeout for INVITE requests: <input type="text" value="40"/> seconds	Base retransmission timeout for SIP requests: <input type="text" value="0.5"/> seconds
Maximum timeout for INVITE requests: <input type="text" value="60"/> seconds	Maximum number of retransmissions for INVITE requests: <input type="text" value="6"/>
SIP blacklist interval (no blacklisting if 0): <input type="text" value="41"/> seconds	Maximum number of retransmissions for non-INVITE requests: <input type="text" value="10"/>
B2BUA request pending timeout: <input type="text" value="2"/> seconds	Maximum SIP packet size: <input type="text" value="131072"/> bytes



SIP Traffic >> Dial Plan

Administration Basic Configuration Network SIP Services **SIP Traffic** Failover Virtual Private Networks Quality of Service Logging and Tools About

- Changes have been made to the preliminary configuration, but have not been applied.

SIP Methods Filtering Local Registrar Authentication and Accounting SIP Accounts **Dial Plan** Routing Time Classes SIP Status

Use Dial Plan (Help) **Emergency Number** (Help)

On
 Off
 Fallback

Emergency Number: 911

Matching From Header (Help)

Name	Use This Or This	Transport	Network	Delete Row
	Username	Domain	Reg Expr			
Generic ITSP	*	*		UDP	Generic_ITSP	<input type="checkbox"/>
ShoreTel	*	*		UDP	ShoreTel	<input type="checkbox"/>

Add new rows 1 rows.

Matching Request-URI (Help)

Matching Request-URI (Help)

Name	Use This Or This	Delete Row	
	Prefix	Head	Tail	Min. Tail	Domain		
Inbound			-		Reg Expr	Reg Expr	<input type="checkbox"/>
Outbound			-		Reg Expr	Reg Expr	<input type="checkbox"/>

Add new rows 1 rows.

Forward To (Help)

Name	Subno.	Use This Or This			... Or This	Delete Row
		Account	Replacement Domain	Port	Transport	Reg Expr	
Generic ITSP	1	-			-	Reg Expr	<input type="checkbox"/>
ShoreTel	1	-			-	Reg Expr	<input type="checkbox"/>

Add new rows 1 groups with 1 rows per group.

Dial Plan [\(Help\)](#)

No.	From Header	Request-URI	Action	Forward To	Add Prefix		ENUM Root	Time Class	Comment	Delete Row
					Forward	ENUM				
1	Generic ITSP	Inbound	Forward	ShoreTel			-	-		<input type="checkbox"/>
2	ShoreTel	Outbound	Forward	Generic ITSP			-	-		<input type="checkbox"/>

Add new rows rows.

Methods in Dial Plan [\(Help\)](#)
The ACK, PRACK, CANCEL, BYE, NOTIFY, UPDATE and INFO methods cannot be handled by the Dial Plan.

Method	Delete Row
INVITE	<input type="checkbox"/>
OPTIONS	<input type="checkbox"/>
SUBSCRIBE	<input type="checkbox"/>
MESSAGE	<input type="checkbox"/>
REFER	<input type="checkbox"/>

Add new rows rows.

REGISTER in Dial Plan [\(Help\)](#)

- Keep To headers for REGISTER requests passed through the Dial Plan
- Rewrite To headers for REGISTER requests passed through the Dial Plan

SIP Traffic >> Routing

Local REFER Handling [\(Help\)](#)

Always handle REFER locally

For clients not supporting REFER

For clients not supporting replaces

For dialogs with specified From URI

For dialogs with specified User-Agent

From URIs For Which REFER is Handled Locally

URI	Delete Row

Add new rows rows.

User-Agent Headers For Which REFER is Handled Locally

User-Agent	Delete Row

Add new rows rows.

User Routing [\(Help\)](#)

User	Forward Action	To	Comment	Delete Row

Add new rows rows.