**Document Purpose and Target Audience**

This document will serve as a reference guide to configure the ShoreTel ShoreGear 30 Voice Switch IP PBX to interoperate with Time Warner Cable (TWC) SIP Trunk Service.

This guide is not intended to be a replacement of the PBX manufacture’s user or configuration guide. It is intended to provide additional guidance on configuring the PBX in preparation to receive voice service from the SIP Trunk. It provides detailed instructions and best practices for a successful installation with TWC SIP Trunks.

There are many options for establishing and maintaining service using the ShoreTel ShoreGear 30 series. This guide focuses on the minimum configurations essential for successful interoperability with Time Warner Cable Business Class SIP Trunks.

This configuration guide is based on:

**Customer Premise Equipment:**

<table>
<thead>
<tr>
<th>Model</th>
<th>ShoreTel ShoreGear 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firmware</td>
<td>6.1.5</td>
</tr>
<tr>
<td></td>
<td>Shoreware Director Version 13.1</td>
</tr>
</tbody>
</table>

**TWC Network Equipment:**

| ESG            | InnoMedia ESBC 9378-4B |
SIP Trunk Components

The Time Warner Cable Business Class (TWCBC) SIP Trunks product is an IP-based, voice only trunk that uses Session Initiation Protocol (SIP) to connect an IP PBX to the PSTN. The IP PBX uses SIP to exchange signaling information with the service provider and to deliver and receive voice in IP packets.

The IP PBX is connected to the TWC Enterprise SIP Gateway (ESG), which provides network access for voice traffic. The customer is responsible for the LAN infrastructure and configuration, including the physical connection to the LAN port 2 on the ESG.

The ESG is the demarcation point to the TWC network. The ESG is connected to a dedicated router for SIP Trunks delivered over a fiber connection or to a cable modem when delivered over a DOCSIS connection.

SIP Trunk components located on the customer premise, including connections to the TWC network, are illustrated below.

All TWC SIP Trunk calls are routed over Time Warner Cable’s IP network and are not routed over the public internet.
## Getting Started

You will need to have the TWC “SIP Trunk Questionnaire” and “Business Class (BC) SIP Trunks: Customer Cut Sheet” in order to configure your IP PBX for TWC Business Class SIP Trunk service.

Confirm that your IP PBX model number and software versions recorded on the Customer Cut Sheet match those associated with your current equipment. If they do not, be sure to alert your TWC sales engineer or TWC project manager as this can impact how TWC designs your service configuration.

### Example from Customer Cut Sheet for Cisco UC 560:

<table>
<thead>
<tr>
<th>SERVICE INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT</td>
</tr>
<tr>
<td>Business Class SIP TRUNK</td>
</tr>
<tr>
<td>IP-PBX MAKE</td>
</tr>
<tr>
<td>Cisco</td>
</tr>
<tr>
<td>IP-PBX MODEL</td>
</tr>
<tr>
<td>UC560</td>
</tr>
<tr>
<td>IP-PBX SOFTWARE VERSION</td>
</tr>
<tr>
<td>15.1(4)</td>
</tr>
</tbody>
</table>

While configuring your IP PBX for BC SIP Trunk service, you will need to know your Lead Telephone Number and the IP address of your IP PBX.

The **Lead Number** is confirmed on the Customer Cut Sheet as seen below:

<table>
<thead>
<tr>
<th>Trunk Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>DID Range</td>
</tr>
</tbody>
</table>

The **IP Address** of the IP PBX was recorded on the SIP Trunk Questionnaire, Section 5. Signaling and Media as shown below:

This document is intended as an aid to help configure a customer’s IP PBX for interoperability with TWCBC SIP Trunk Service.
ShoreGear 30 Configurations

The instructions provided in this section are intended to help the customer configure the ShoreGear 30 Voice Switch to connect to the Time Warner Cable ESG. They are not intended for advanced functionality setups. It is further assumed that there is already knowledge of ShoreGear 30 Voice Switch operations.

Shoretel does not provide DHCP server for dynamic IP address assignments to IP SIP phones. DHCP server and TFTP server can run on win 2008 server where Shoretel Director is installed.

Connect ShoreGear phones to the same subnet as ShoreGear 30 Voice Switch.

Connect an analog phone and a FAX machine to ShoreGear 30 Voice Switch FXS ports.

Start Shoreware Director software.

Login to Shoreware Director.

Setup IP Network Configuration and Register Shoreware Director

Configuring Network Connection

1. ShoreGear 30 Voice Switch must have
2. a valid IP address from a DHCP server or the BOOTP server on the Shoreware Director server, or
3. an address statically configured from the console port.

Configuring SIP Server and Profile

1. Navigate to SIP Servers → SIP Servers
2. Click “New” button as in Figure 3
3. Enter SIP server parameters in a pop-up window and click “Save” button
Registering ShoreGear 30 Voice Switch to ShoreWare Director

1. Log in Shoreware Director
2. Click Platform/Hardware → Voice Switch/Service Appliances → Primary
3. Click “Find Switches” and select the discovered switch on a popped up window or enter manually and click “Save” button.
Figure 3 Add ShoreGear 30 Voice switch to Shoreware Director

Figure 4 Shoreware Director finds Voice Switch
Figure 5 Configure ShoreGear 30 Voice Switch

SIP Trunk Setting

SIP Profiles

- Navigate to Trunks → SIP Profiles
- Click “New” button

Figure 6 Add a new SIP Profile

- Name Profile, set User Agent, check “enable option” and add to “1CodecAnswer=1” Custom Parameters
Figure 7 Configure a new SIP Profile

SIP Trunkgroups

1. Navigate to Trunks → Trunk Groups.
2. Select SIP and click “Go” link

Figure 8 Add a new trunk group

3. Enter SIP Profiles parameters
   4. Assign a trunk group name.
   5. Select a profile for the trunk group.
   6. Uncheck "Enable SIP INFO for G711 DTMF Signaling"
   7. Enter 11 in "Number of digit from CO"
   8. Check option DNIS
   9. Check option DID
   10. Click "Edit DID Range", enter the Base Phone Number and number of Phone Numbers and click “Add this record” to add the DID Numbers, and click “Save’.
   11. Uncheck “Extension”
   12. Check “Tandem Trunking”
13 Select “ESBC Group” for “User Group”
14. Check “Outbound” option

15. Enter your the digit you use for getting an outside line; e.g 9 or 8, for “Access Code” field, enter your “Local Area Code”, and “ 1 (NPA) NXX-XXXX (telephone number from the Cut Sheet)” for Billing Telephone Number” field.

16. Check the following option for “Trunk Services”
   i. Local
   ii. Long Distance
   iii. International
   iv. Enable Original Caller Information
   v. n11 (e.g. 411, 611, except 911 which is specified below)
   vi. Emergency(e.g. 911)
   vii. Easily Recognizable Codes (ERC) (e.g. 800, 888, 900)
   viii. Explicit Carrier Selection (e.g. 1010xxx)
   ix. Operator Assisted(e.g. 0+)
   x. Caller ID not blocked by default
b. Check “Dial 7 digits for Local Area Code” option
c. Select the first three numbers of the 7-digit telephone number for "Local Prefix"
d. Enter the last four digits of the main telephone number in “Prepend Dial Out Prefix” field.
e. Click "Save" button.
For PBX Static Operation Mode

By default, ShoreGear 30 Voice Switch use static registration.
Configuring Users and Phones

User Groups

1. Navigate to Users → User Groups.
2. Click “Add New”

![Image](image.png)

**Figure 12** Add a user group

3. Enter a name for this user group.
4. Select “Full Featured” for COS – Telephony
5. Select “Internal Only” for COS – Permission.
6. Select “Large Mail Box” for COS – Voice Mail
7. Select “Disabled” from dropdown list for Account Code Collection
8. Check the following options
   9. Send Caller ID as Caller’s Emergency Service Identification (CESID)
   10. Send DID as Caller’s Emergency Service Identification (CESID)
   11. Outgoing Trunk Groups (Access Code) – Analog Loop Start, ESBC SIP Trunk Group
**Figure 13** Configure a user group

**Individual Users**

To add a new user,

1. Navigate to **Users → Individual Users**

2. Click “Go” as below

**Figure 14** Add a new individual user

3. Enter user info

   4. Enter Name, Number (extension), Caller ID.
   5. Check DID Range
   6. Enter DID number.
8. Select “Headquarters” for Site.
9. Select “IP Phones” radio button and then select IP Phone MAC.
10. Click “Save” button.

**Figure 15** Configure a new individual user

**IP Phone Address Map**
- Navigate to IP Phones → IP Phone Address Map
- Click “New”

**Figure 16** Configure IP Phone Address Mapping
• Enter IP Low and High IP addresses

**Figure 17** IP Phone Address Map
Appendix

TWC Turn-up Testing Procedure

To ensure proper service between your IP-PBX and the TWC network, test calls from the IP PBX will be made. Typically following call types will be used (call testing varies depending on service configuration):

1. Outbound/Inbound call to a local number
2. Outbound/Inbound call to a long distance number
3. Calls to 411 and 611
4. Outbound calls to a blocked number to verify call blocking settings
5. Other calls based on customer request, e.g. FAX testing using T.38 or calls to an auto-attendant to verify DTMF

Questions

If you have questions, please contact your Time Warner Cable Business Class Account Executive.