**Document Purpose and Target Audience**

This document will serve as a reference guide to configure the 3CX Phone System 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 3CX Phone System 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>3CX Phone System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release</td>
<td>12.5</td>
</tr>
</tbody>
</table>

**TWC Network Equipment:**

<table>
<thead>
<tr>
<th>ESG</th>
<th>InnoMedia ESBC 9378-4B</th>
</tr>
</thead>
</table>
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><strong>PRODUCT</strong></td>
</tr>
<tr>
<td>IP-PBX MAKE</td>
</tr>
<tr>
<td>IP-PBX MODEL</td>
</tr>
<tr>
<td>IP-PBX SOFTWARE VERSION</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>TWC TRUNK Group ID</th>
<th>DID Range</th>
<th>Lead Number</th>
<th>Inbound Call Blocking</th>
<th>Outbound Call Blocking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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.
3CX Configurations

The instructions provided in this section are intended to help the customer configure the 3CX PBX to connect to the ESG. They are not intended for advanced functionality setups. It is further assumed that the customer already have knowledge of 3CX operations.

Once logged into the 3CX GUI as an Administrator, follow these steps to configure SIP Trunk Service.

Navigate your web browser to the IP address of your 3CX SIP PBX.

1. Create Extension
2. Create SIP Trunk

Create a 3CX Extension

1. From your 3CX Administration console, click Add Extension. Referring to Figure 1

![Figure 1 Add Extension](image1.png)

Figure 1 Add Extension

Figure 2 Adding a new extension
2. Click **Apply** or **OK** button to save the configuration.

## Create a VoIP Provider

1. Navigate to **VOIP Providers**.

![Figure 3 Add Providers](image)

2. Click the **Add Provider** button to create a new VOIP Provider.

3. Under **Name of Provider**, enter TWC SIP Trunk (or whatever name you want). Select “Generic SIP Trunk”

![Figure 4 Select Provider Type](image)

4. Click **Next**, Under **VOIP Providers Details**, enter the SIP server IP address as ESG LAN IP address. Note: Please check the SIP account information we send you, the SIP Server or IP address will be different from the IP address below. It is just an example.
5. Click **Next**. Enter your SIP account information here according to SIP UA account of ESG. Enter DID (the number we assigned to you) as External Number, Enter authentication ID, Enter Authentication Password. Enter the maximum simultaneous call. The number should be matching our system setting.

6. Click **Next**. Here you are required to setup the behavior of 3CX when receiving SIP trunk incoming call. You can connect the call to certain extension, or you can connect to Digital Receptionist (Auto Attendant), provided that you already have recorded the voice message. For initial testing purpose, we recommend you to connect the call to extension, so you can test the incoming call after setup.

7. Click **Next**. Here you need to setup the outgoing call behavior. In general, to distinguish the internal call between extension and outgoing call to outside number, you can setup a prefix so 3CX know how to route the call through SIP trunk. For example, you can add Calls to numbers starting with Prefix with “9”. When you want to dial out from extension, simply dial 9+10 digital number you want to dial.
8. Click **Finish** to complete the initial setup. You can observe if the trunk or extension is registering correctly by looking at Port/Trunks Status or Extension Status.

That completes the configuration of adding ESG SIP Trunk to 3CX.
Appendix

TWC Turn-up Testing Procedure

To ensure proper service between the IP PBX and the TWC network, test calls from the IP PBX will be made. Typically, the 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.