Avaya BCM Solutions Test Lab

Business Communication Manager BCM 50 and BCM450 Release 5.0 Configuration Guide for Verizon Business SIP Trunking

Issue 1.1

Abstract

This document provides guidelines for configuring a SIP Trunk between a BCM50 or BCM450 Release 5.0 and Verizon Business SIP Trunking

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1.0 Introduction

This document is intended to provide information to installers configuring a BCM50 or a BCM450 Release 5.0 for SIP trunk inter-working with the Verizon Business IP network. The information provided is specific for the SIP trunk inter-working, unrelated configuration is not considered within this guide. This document assumes that the installer has undergone Avaya approved BCM training and has a working knowledge of BCM installations.

1.1 Document Change History

Date	Version	Summary of Changes
March 16, 2010	1.0	Original publication
March 19th, 2010,	1.1	Added steps for configuring analog sets

2.0 System Software / Loadware

To achieve successful interoperability between the BCM and Verizon SIP Trunking, the various network elements must be running the version of software as shown below:

System	Platform	Firmware
BCM 50	All platforms	• Release 5.0 plus most recent smart update
BCM450	All platforms	• Release 5.0 plus most recent smart update
BCM Phones	All supported phones	As provided by most recent smart update

Table 1 Validated Equipment and Software

3.0 Features

3.1 Features Supported

The following are capabilities tested and validated:

- Basic calls (G711 a-law and G729 both with 20ms packetization)
- Calling line (number) identification presentation
- Calling line (number) presentation restriction
- DTMF (RFC 2833)
- Call hold
- Call transfer (attended and unattended)
- Conference calls
- Call forward
- Call waiting
- Transparent FAX using G.711

3.2 Technical Caveats

1. FAX using T.38 is not supported on the VzB network.

4.0 Overview

Figure 4-1 shows a typical deployment of a SIP trunk between BCM R5 and Verizon Business Network. In the test configuration, there were no NAT between the BCM and Verizon's SIP network. All IP addresses assigned to the BCM as well as BCM IP phones were routable from Verizon's SIP network.

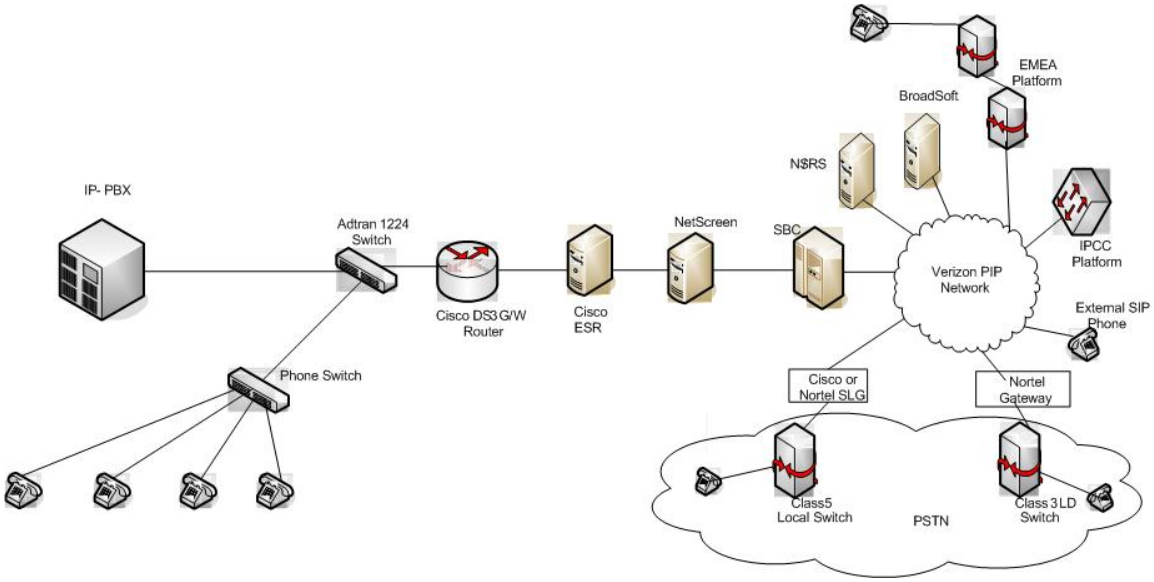

Figure 4-1 SIP Trunking between BCM and Verizon Business Network

5.0 System Configuration

This section provides procedures for configuring a SIP trunk on BCM Rls. 5.0 to Verizon Business IP network

5.1 BCM Configuration

In order to configure a SIP trunk between BCM and Verizon Business network, do the following:

5.1.1 IP Trunks Settings Configuration

1. Under ***Configuration → Resources → Telephony Resources:*** Select module type "**IP Trunks**" and click on the "**IP Trunks Settings**" tab
2. **Enable Forward redirected OLI:** by click on the check box next to it.

5.1.2 SIP Settings Configuration

1. Under ***Configuration → Resources → Telephony Resources:*** Select module type "**IP Trunks**" and click on the "**SIP Settings**" tab
2. In the **SIP Settings** section:
   - **Local Domain**: The IP address of the Session Border Controller. Obtain this information from Verizon.
   - **Call Signaling Port**: This port is defined by Verizon. Obtain this information from Verizon
3. In RFC2833 section
   - **Dynamic Payload**: Set this value to 101
4. In the **Service Impacting SIP Settings**, click on **Modify** and **Disable PRACK**. Click **OK**
5. Leave the rest of parameters under the **SIP Settings** tab at the default values

5.1.3 SIP Proxy Configuration

1. Under ***Configuration → Resources → Telephony Resources:*** Select module type "**IP Trunks**" and click on the "**SIP Proxy**" tab
2. In the SIP Proxy section:
    - **Domain**: Set this field to the IP address of the Session Border Controller. Obtain this information from Verizon.
    - **Route all calls using proxy**: This field must be checked
    - **MCDN Protocol**: None
3. Click on the **Add** button to configure the BCM with identity of the outbound SIP Proxies
4. In the Add Proxy Server dialog box, configure the fields as follows:
    - **Name**:
    - **IP Address**:
    - **Port**:
    - **Load-balancing weight**:
    - **Keep alive**:
5. Repeat step 4 above for each additional outbound SIP Proxy

5.1.4 SIP Media Parameters Configuration

1. Under ***Configuration → Resources → Telephony Resources:*** Select module type "**IP Trunks**" and click on the **SIP Media Parameters** tab.
2. In the **Preferred Codecs** section, configure G.729, G.711-aLaw as the first and second preferred codec respectively.
3. In the codec **Settings** section, uncheck **Enable Voice Activity Detection**.
4. In the codec **Settings** section, select 20ms as the payload size for both G.729 and G.711
5. Again in the codec **Settings** section set G.711 as the **Fax transport**.
6. **Force G.711 for 3.1KHz audio** must be **checked.**
7. **Provide in-band ringback** must be left **unchecked**.

5.2 Configuring Analog Sets

1. Under ***Configuration → Telephony →Sets→Active Sets***, click on the **Capabilities and Preferences** tab
2. Click on the DN of the first analog set
3. In the Capabilities tab that shows up at the bottom, configure this analog device to receive short tones by checking the checkbox next to Receive Short Tones.
4. Repeat Steps 2 to 3 for each of the analog DNs

5.3 Dialing Plan

5.3.1 Line Pool Configuration

1. Under ***Configuration → Telephony → Dialing Plan***; select **Line Pools.**
2. Select **BlocA**.
3. Click on the "**Add**" button to add DNs of sets that need to access the above line pool.

5.3.2 Dial Plan Configuration

1. Under ***Configuration → Telephony → Dialing Plan → Public Network***, define the **Public Received** number length. Check with Verizon for the appropriate value.
2. Set the **Public Network Dialing Plan** to **Public (Unknown)**
3. **In the Public Network DN Lengths table,**
    - Enter a DN prefix of 011 and set the length to 14
    - Enter a DN prefix of 0019 and set the length to 14
    - Change the default length to 10
4. Under ***Configuration → Telephony → Dialing Plan → Routing*****,** and select the **Routes** tab
5. Add a route by clicking on the **Add** button.
6. In the **Add Route** dialog box, provide an unused route and click on the **OK** button.
7. The **Dialing Plan – Routing** table will be displayed.
8. Click on the route just created
9. Under the **Use Pool** column, double click to select **BlocA** from the drop down list.
10. Under the **DN Type** column, double click to select Public **(Unknown)** from the drop down list
11. Click on the **Destination Codes** tab.
12. Configure a destination code to route dialed digits by clicking on the **Add** button. Digits that begin with this destination code will be presented to the SIP trunking component on the BCM for routing towards the Service Provider.
13. In the **Add Destination Code** dialog box, enter a numeric number for the destination code and click on the **OK** button.
14. Select the row representing the Destination Code entered in the previous step
15. Under **Normal Route** column, double click and enter the route entered in Step 5.
16. **Under the** Absorbed Length column, **specify the number of digits that will be absorbed before sending the rest of the digits to the service provider**.

5.3.3 Configuring Incoming Calls from VERIZON to BCM

This can be done in one of two ways;

1. The DID assigned to the BCM can be associated with a target line assigned to a group of set(s) and all calls to the DID will be routed those set(s).
2. All calls to the DID assigned to the BCM can be answered by the Auto Attendant (AA) and from there, a DN can be entered to reach a phone on the BCM

5.3.3.1 Assigning DID to BCM Phones for Incoming Call

1. Navigate to ***Configuration → Telephony → Lines → Target Line*** and click on an unused target line
2. On the selected Target Line, set the "**Pub. Received #**" to the last 4-digis of the Verizon assigned DID.
3. Assign the DN of phones on the BCM that require an appearance on this target line. This will be the phones that will be alerted when call to the Verizon assign DID is received.
    a. Navigate to ***Configuration → Telephony → Lines → Target Line*** and click on the Target Line configured in Step 2 above
    b. Click on the **Assigned DNs** tab
    c. Click the **Add** button to add the DN of set(s) to this Target Line.

5.3.3.2 Configuring AA to Answer Incoming Calls

Alternatively, the AA on the BCM can be configured to answer incoming calls and then call routed to a target phone on the BCM by entering the extension of the set at the AA prompt. To do this,

1. Navigate to ***Configuration → Telephony → Lines → Target Line*** and click on an unused target line
2. On the selected Target Line, set the "**Pub. Received #**" to the last 4-digis of the Verizon assigned DID.
3. Navigate to ***Configuration →Application →Voice Messaging/Contact Center***
4. Click on the **Launch CallPilot Manager**.
5. This launches a web browser to the BCM. Log in with the administrator credentials
6. On the left hand navigation menu, click **on Auto Attendant**
7. In the **Line Administration** web page, scroll down to the Target Line configured in Step 1.
8. Under the **Command Column**, click **Change**
9. In the Line Properties web page, select **Auto-Attendant** as the **Answer Mode**
10. Click the **Submit** button.

5.3.4 Giving Access to SIP Trunks

To give access to BCM phones to make outgoing calls across the SIP trunk;

1. Navigate to ***Configuration→Telephony→Sets→Active Sets***
2. Click on the Line Access tab
3. Click on the DN of each the registered BCM phones in turn and click on the **Line Pool Access** tab
4. Click on the **Add** button
5. In the **Add Line Pool** dialog box, type **bloca**
6. Click **OK**
7. Repeat steps 3 to 6 for each of active sets on the BCM.

If you have any issues with the solution described in this document, please contact 1-800-4-NORTEL