

SPA8800 Voice Gateway Added to a Cisco Business Edition 3000 Solution Configuration Example



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Introduction

This document provides validated and optimized configuration steps to help Cisco partners add a Cisco Small Business Pro SPA8800 voice gateway to the Cisco Business Edition 3000 (BE3000) solution. This option provides backup Public Switched Telephone Network (PSTN) connectivity and emergency calling for remote sites with the use of the Cisco BE3000 with Cisco SMART Unified Communications solutions, which are documented at Unified Communications.

For the procedure to upgrade the SPA8800, refer to the Quick Start Guide for the Cisco Small Business Pro SPA8800 IP Telephony Gateway.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on these software and hardware versions:

- Cisco Small Business Pro SPA8800 Firmware Version 6.1.7
- Cisco BE3000 Software Release 8.6.3

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

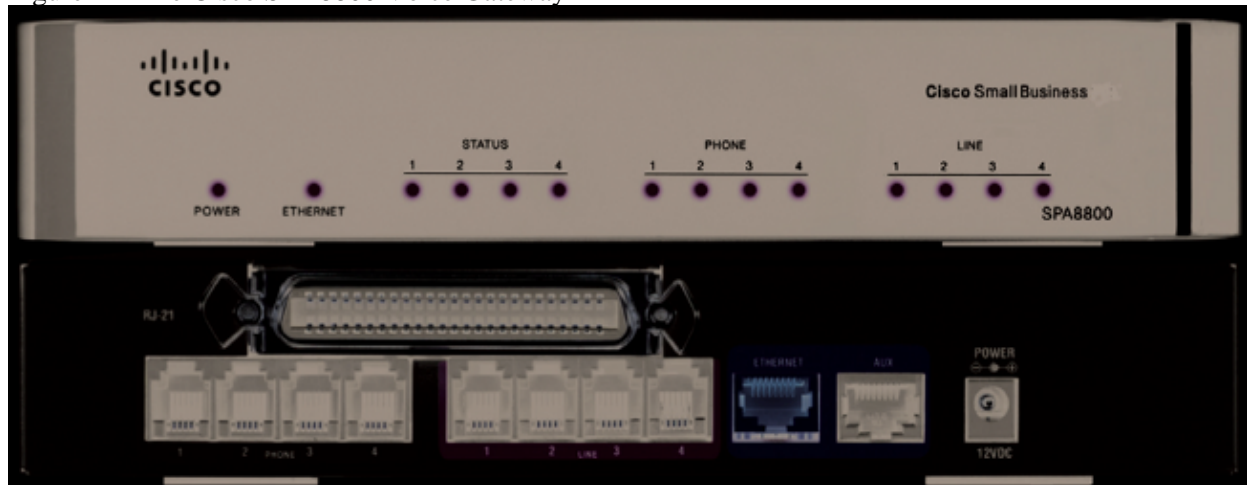
Conventions

Refer to Cisco Technical Tips Conventions for information on document conventions.

Configure

The Cisco SPA8800 is an affordable IP telephony gateway solution that is ideal for Unified Communication solutions for small and medium businesses (SMB) that require a connection to the PSTN and use traditional analog lines. The SPA8800 can also be used to connect current analog devices, such as phones and fax machines, to a Unified Communications network. This lets SMB customers protect and extend their current investments. The SPA8800 provides four Foreign Exchange Station (FXS) ports for adding analog devices and four Foreign Exchange Office (FXO) ports that provide four analog phone connections to the PSTN, as shown in Figure 1.

Figure 1 – The Cisco SPA8800 Voice Gateway



Add an SPA8800 Voice Gateway to a Cisco Business Edition 3000 Solution

The validated sequence to provision the SPA8800 is:

1. Configure a static IP address for the SPA8800
2. Connect and provision the SPA8800 with a Cisco BE3000 solution
3. Register the SPA8800 voice gateway with the Cisco BE3000

Each of these steps is explained in the next sections.

This document assumes that the current Cisco BE3000 solution is operational and is deployed in accordance with the Cisco Business Edition 3000 (Single-Site Deployment) Implementation Guide, available from Unified Communications. The Cisco BE3000 solution is implemented over a SMART Designs Secure Network Foundation (SNF) network, which is documented at Secure Network Foundation.

Configure a Static IP address for the SPA8800

This section describes how to configure a static IP address for the SPA8800 in the local server VLAN 10. In the implementation guide for the Cisco BE3000 solution, the 10.1.10.0 network is used for the local server VLAN and the Cisco BE3000 is assigned two IP addresses: 10.1.10.5 and 10.1.10.6. This document uses 10.1.10.7 for the SPA8800 gateway. In order to configure a static IP address, complete these steps:

1. Remove the SPA8800 from the shipping box.
2. Connect the power adapter to power up the SPA8800.
3. Configure a static IP address for the administration notebook or PC. Use an IP address of 192.168.1.11 with the Subnet mask 255.255.255.0. Connect the PC to the SPA8800 on its Aux Port as shown in Figure 1.
4. In a web browser, navigate to <http://192.168.0.1/admin/advanced> as shown in Figure 2.
5. Set the static IP address for WAN to 10.1.10.7.

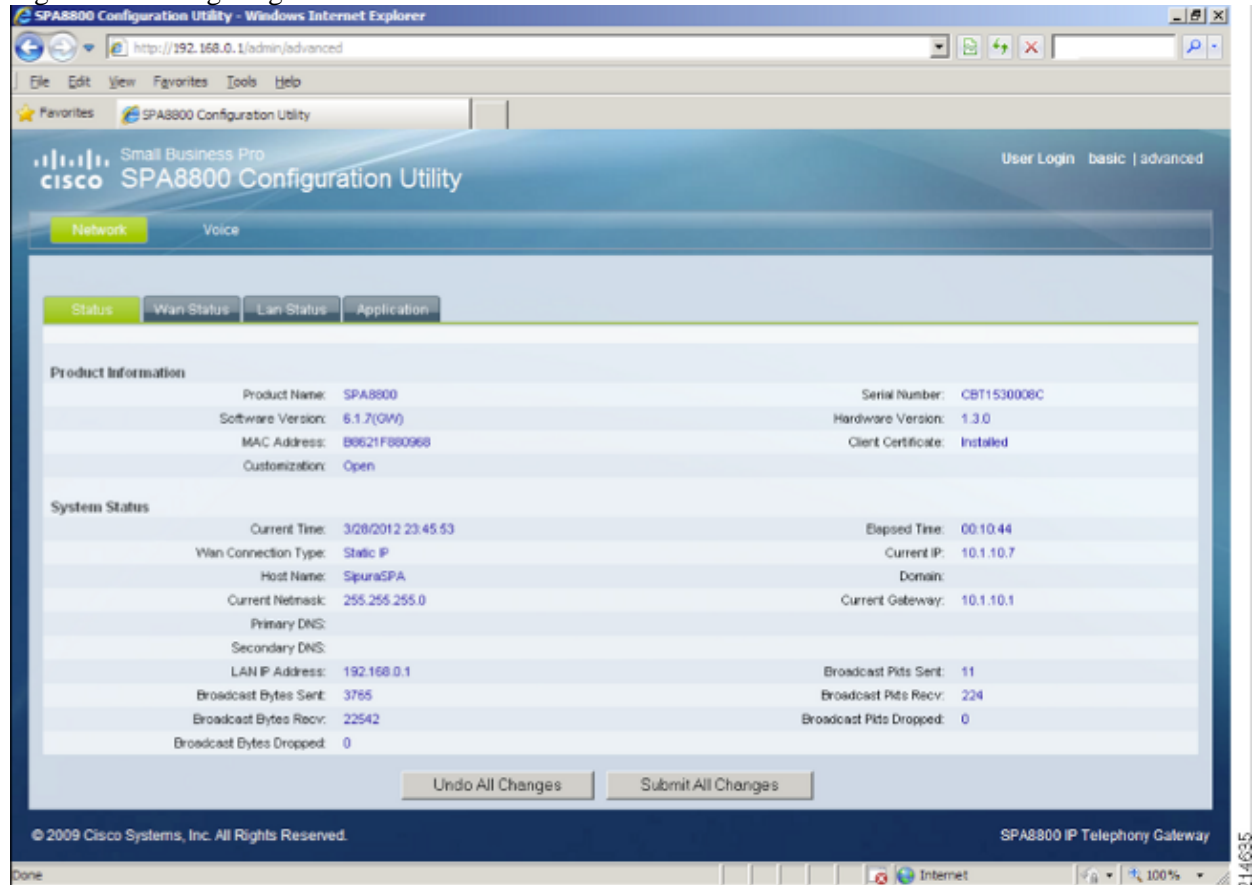
Note: A user name or password is not required to change the SPA8800 settings.

6. On the SPA8800, click the **WAN Status** tab and change the WAN IP address type to **Static**. Then, change the assigned address to 10.1.10.7 and use 10.1.10.1 for the Gateway.

Note: By default, the WAN IP address type for the SPA8800 is DHCP.

7. Click **Submit All Changes**.

Figure 2 – Configuring a Static IP Address on the SPA8800



8. Verify that the value for Firmware Version is 6.1.7 or later.

Note: If you encounter a configuration or upgrade issue, refer to the Quick Start Guide for the Cisco Small Business Pro SPA8800 IP Telephony Gateway. This document is also shipped with the SPA8800.

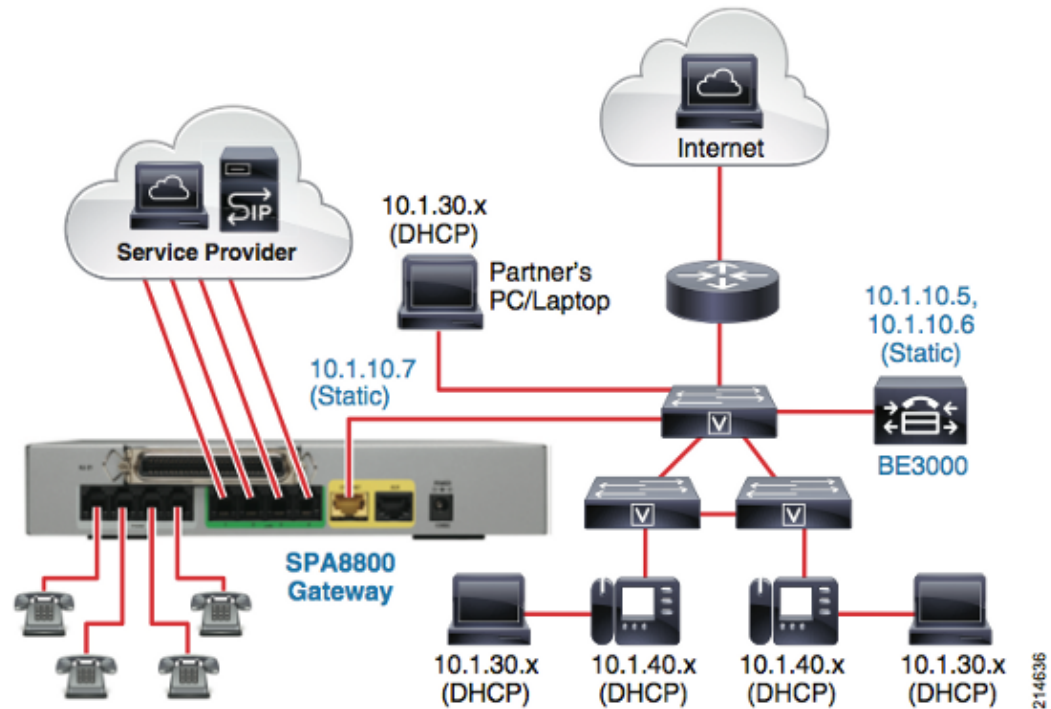
9. Disconnect the administration PC from the SPA8800 Aux port and set the IP address type to **DHCP**.
10. Connect the administration PC and the SPA8800 to the Cisco BE3000 solution, as described in Connect and Provision the SPA8800 with a Cisco BE3000 Solution.

Connect and Provision the SPA8800 with a Cisco BE3000 Solution

As shown in Figure 3, connect the SPA8800 to the current Cisco BE3000 solution, which has been implemented over SNF, with the use of a switchport in VLAN 10. Refer to the SMART Designs SNF

documentation for details about VLANs and IP addresses. For details on how to implement the Cisco BE3000, refer to the Cisco Business Edition 3000 (Single-Site Deployment) Implementation Guide available from Unified Communications.

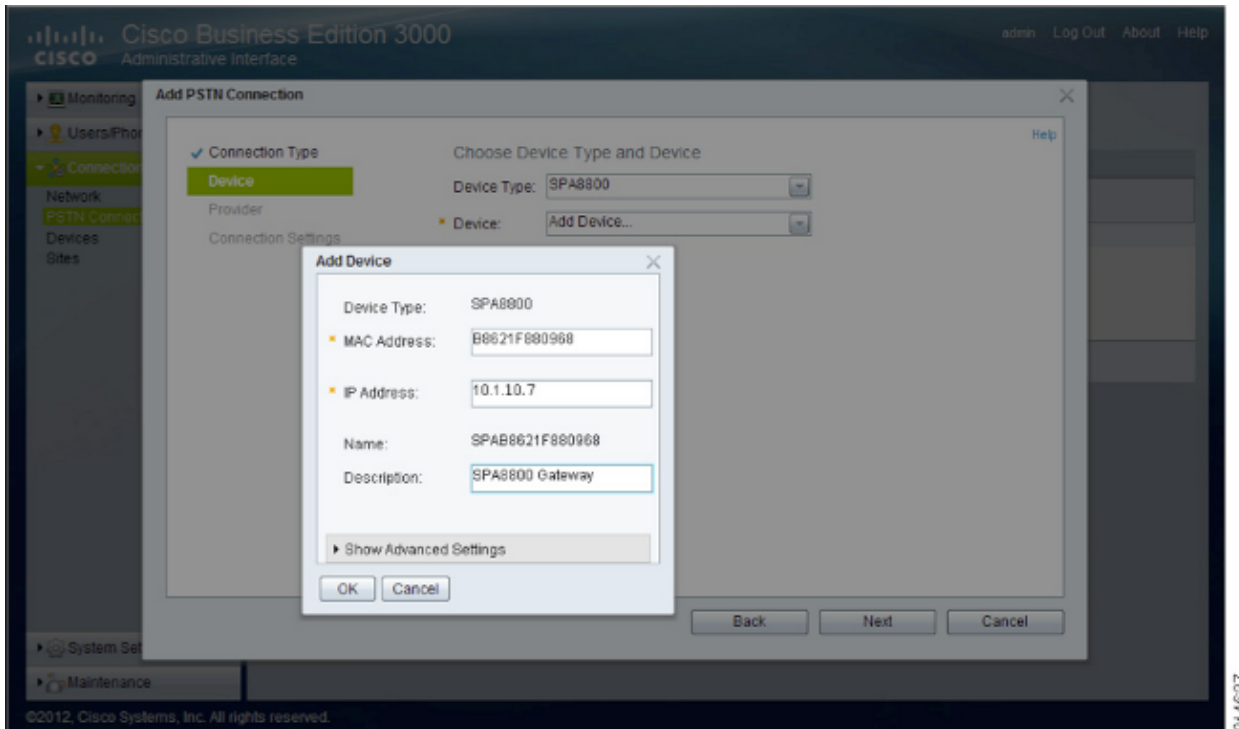
Figure 3 – SPA8800 Connection and Placement in a Cisco BE3000 Solution



At this point you should be able to access the SPA8800 configuration utility at <http://10.1.10.7/>. However, the SPA8800 does not register with the Cisco BE3000 until it is provisioned. In order to provision the SPA8800 with the use of the Cisco BE3000 administrative utility, complete these steps:

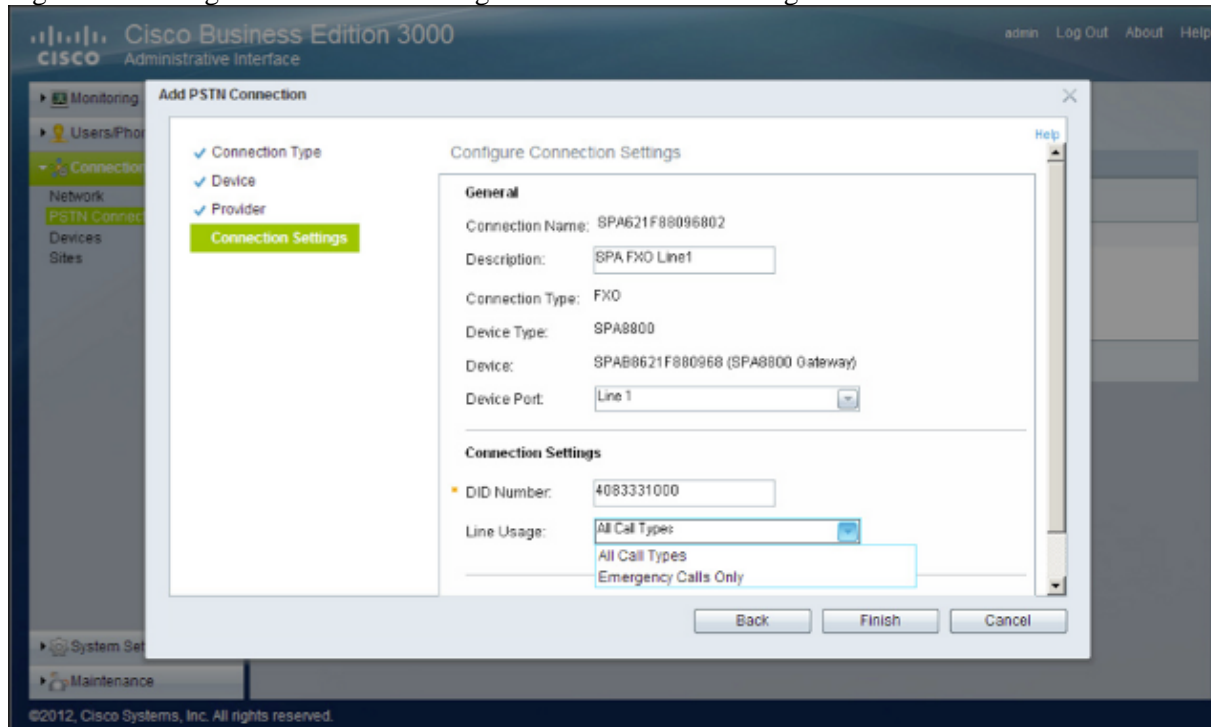
1. Log in to BE3000 administrative utility at <http://10.1.10.5/>.
2. Choose **Connections** > **PSTN** Connections and click **Add PSTN Connection**.
The Add PSTN Connection window is displayed.
3. From the Connection Type drop-down, choose **FXO** and click **Next**.
4. Choose **SPA8800** for Device Type and choose **Add Device** for Device.
The Add Device window is displayed.
5. Enter the MAC Address and IP Address for the SPA8800 device as shown in Figure 4. Refer to Figure 2 for the MAC and IP addresses to use for the SPA8800 gateway.
6. Enter a meaningful description and click **OK** to close the Add Device window. Click **Next** in the Add PSTN Connection window.

Figure 4 – Adding the SPA8800 for FXO PSTN Connectivity



7. In order to configure the connection setting for each FXO port, complete these steps:
 - a. Enter a meaningful description and choose the device port.
 - b. Enter the direct inward dial (DID) number for the PSTN line to be connected on the selected device port.
 - c. Select the usage of this PSTN connection: for all calls, or for emergency calls only (refer to Figure 5).

Figure 5 – Configure Connection Settings with DID and Line Usage



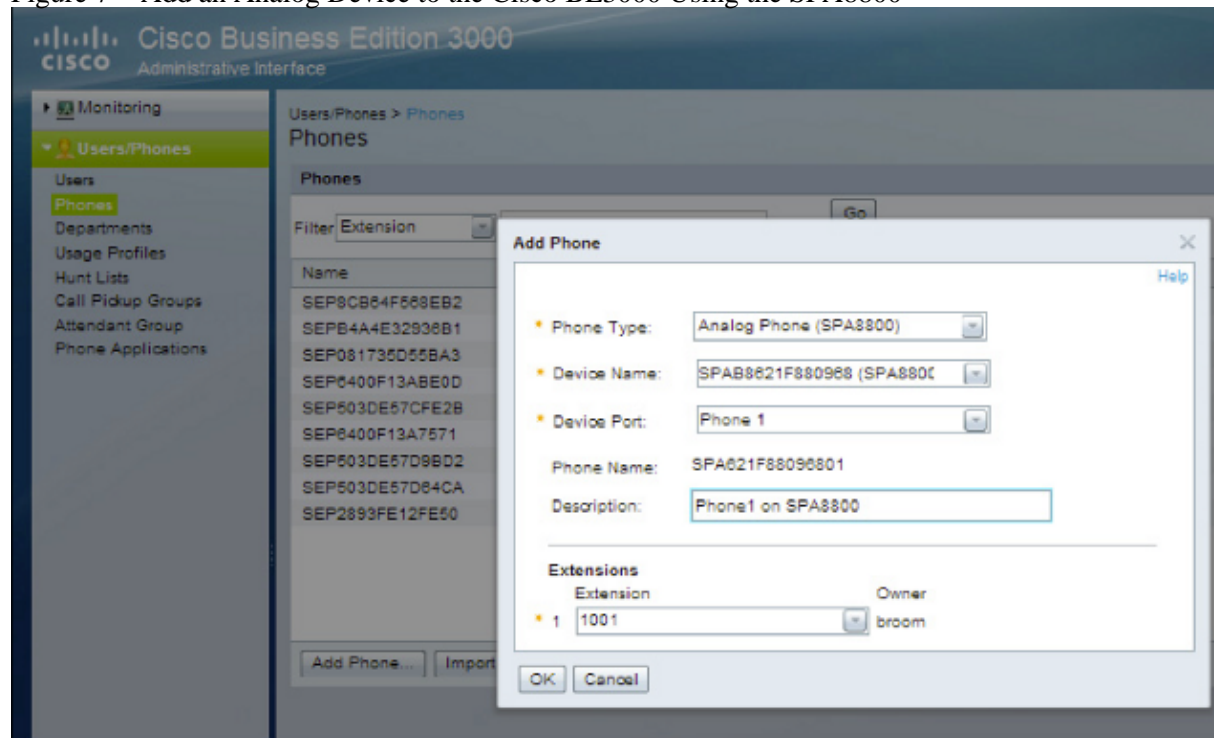
- d. Click **Finish** to complete the configuration of the FXO port.
 - e. Repeat these configuration steps for each FXO port until all analog PSTN connections are configured.
8. Choose **Connections > PSTN Connections** in order to verify that all PSTN connections are listed (refer to Figure 6).

Figure 6 – FXO PSTN Connections on SPA8800 Listed in the Cisco BE3000



9. In order to add analog devices, such as phones or fax devices, complete these steps:
 - a. Choose **Users/Phones > Users or Users/Phones > Departments** to Add Users or Departments for these devices.
For details, refer to the Cisco Business Edition 3000 (Single-Site Deployment) Implementation Guide or the Administration Guide of Cisco Business Edition 3000 listed in the Related Information section.
 - b. After the users or departments are added for analog devices, choose **Users/Phones > Phones** and click **Add Phone** to add them in the Cisco BE3000.
 - c. From the Phone Type drop-down, choose **Analog Phone (SPA8800)**. From the Device Name drop-down, choose **SPA8800**.
The SPA8800 should be available because it was added when the PSTN connection was added.
 - d. Choose the Device Port, enter a Description, and choose the Extension added for the user or department (refer to Figure 7).

Figure 7 – Add an Analog Device to the Cisco BE3000 Using the SPA8800



- e. Repeat these steps for each analog device to be connected to the four FXS ports provided by the SPA8800.

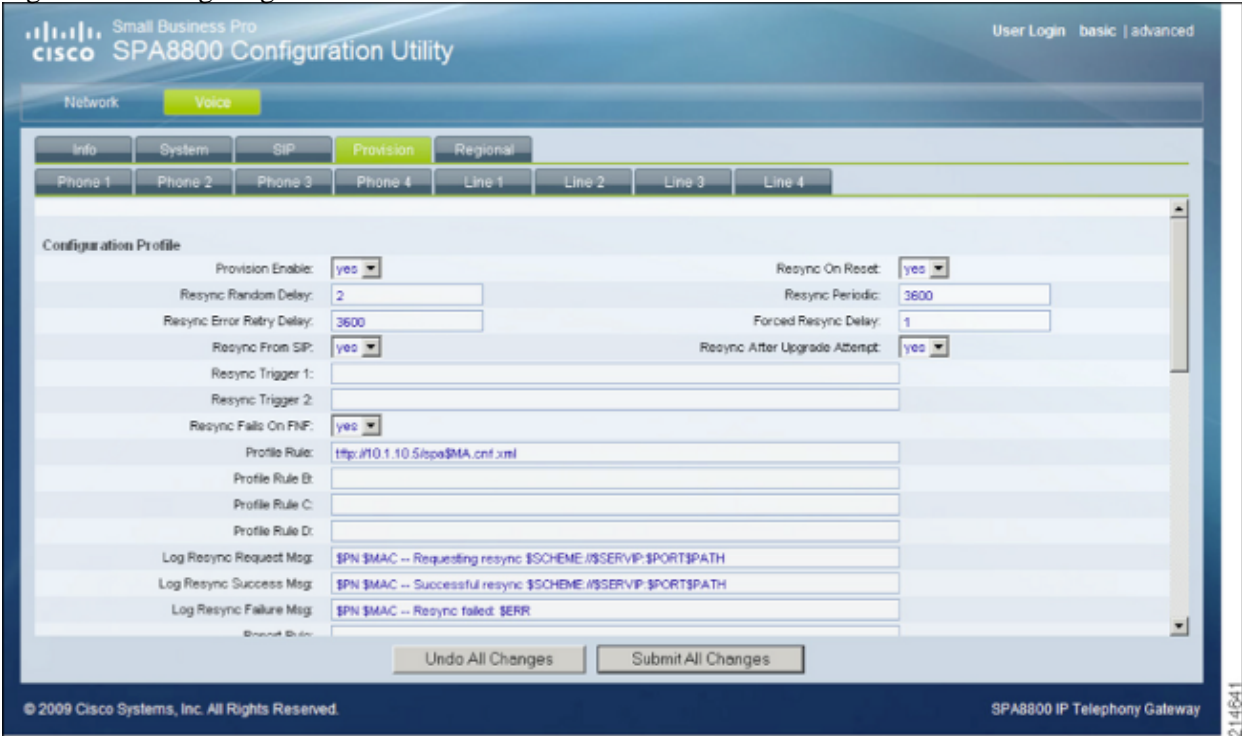
This completes provisioning the SPA8800 on the Cisco BE3000. In the next section, you will provision the SPA8800 to receive its configuration from the Cisco BE3000, which registers it with the Cisco BE3000.

Register the SPA8800 with the Cisco BE3000

In order to register the SPA8800 voice gateway with the Cisco BE3000, complete these steps. The Cisco BE3000 was configured with the SPA8800 settings in previous sections.

1. Access the SPA8800 configuration utility at <http://10.1.10.7/admin/advanced/>.
2. Click the **Voice** tab and click the **Provision** tab. In the Profile Rule field, enter **ftp://10.1.10.5/spa\$MA.cnf.xml**. Click **Submit All Changes**, as shown in Figure 8.

Figure 8 – Configuring the SPA8800 with the Cisco BE3000 TFTP Address



The screenshot displays the SPA8800 Configuration Utility web interface. The top navigation bar includes 'Network' and 'Voice' tabs, with 'Voice' selected. Below this, there are sub-tabs for 'Info', 'System', 'SIP', 'Provision', and 'Regional', with 'Provision' selected. A secondary row of tabs lists 'Phone 1' through 'Phone 4' and 'Line 1' through 'Line 4'. The main content area is titled 'Configuration Profile' and contains various configuration fields:

- Provision Enable: yes
- Resync Random Delay:
- Resync Error Retry Delay:
- Resync From SIP: yes
- Resync Trigger 1:
- Resync Trigger 2:
- Resync Falls On FNF: yes
- Profile Rule:
- Profile Rule B:
- Profile Rule C:
- Profile Rule D:
- Log Resync Request Msg:
- Log Resync Success Msg:
- Log Resync Failure Msg:

Additional fields include 'Resync On Reset' (yes), 'Resync Periodic' (3600), 'Forced Resync Delay' (1), and 'Resync After Upgrade Attempt' (yes). At the bottom of the form are 'Undo All Changes' and 'Submit All Changes' buttons. The footer contains '© 2009 Cisco Systems, Inc. All Rights Reserved.' and 'SPA8800 IP Telephony Gateway'.

3. Wait for the SPA8800 to apply this configuration and then reset. The SPA8800 may take a few minutes to get its configuration from the Cisco BE3000 and register. Once this process is complete, the SPA8800 is controlled by the Cisco BE3000.
4. Click **Voice**, and then click the **Info** tab to observe the registration status of all the configured SPA8800 ports (refer to Figure 9).

Figure 9 – SPA8800 Voice Gateway Registered to the Cisco BE3000



5. Make internal test calls to and from analog phones connected to SPA8800.
6. Test calls to the PSTN DID number at the FXO port of SPA8800.
This should trigger the auto attendant.
7. After successful testing, choose *Network* > *WAN status* to disable access to the SPA8800 device over the WAN.

IVR instructions are also provided in the Quick Start Guide Cisco Small Business Pro SPA8800 IP Telephony Gateway.

For more details on about the use of the SPA8800 and how to support remote sites with the Cisco BE3000, refer to the Administration Guide for Cisco Business Edition 3000, Version 8.6.3.

Verify

There is currently no verification procedure available for this configuration.

Troubleshoot

There is currently no specific troubleshooting information available for this configuration.

Related Information

- *Cisco SMART Designs for SMB UC Solutions*
- *Cisco Small Business Support Community*
- *SPA8800 Product Home Page*
- *SPA8800 Data Sheet*
- *Administration Guide for Cisco Business Edition 3000, Version 8.6.3*
- *SPA8800 Quick Start Guide*
- *Technical Support & Documentation – Cisco Systems*

