



SMART Designs

Cisco Unified Communications



Adding a SPA8800 Voice Gateway to a Cisco Business Edition 3000 Solution

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Cisco SMART Designs

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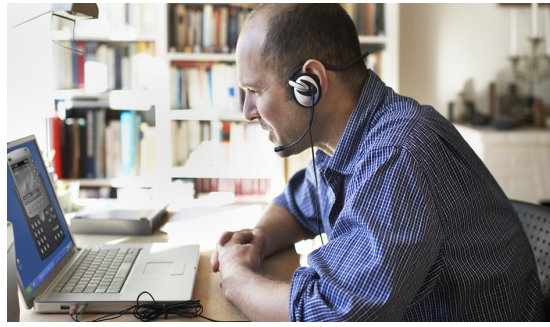
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Adding a SPA8800 Voice Gateway to a Cisco Business Edition 3000 Solution
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Adding a SPA8800 Voice Gateway to a Cisco Business Edition 3000 Solution

This application note documents an optional enhancement to the Cisco Business Edition 3000 (BE3000) solution, which is part of the Cisco SMART Designs suite. It includes the following sections:

- [Cisco SPA8800 Voice Gateway, page 1](#)
- [Provisioning Sequence, page 2](#)
- [Configuring a Static IP address for the SPA8800, page 2](#)
- [Connecting and Provisioning a SPA8800 with a Cisco BE3000 Solution , page 4](#)
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This document provides validated and optimized configuration steps to help Cisco partners add a Cisco Small Business Pro SPA8800 voice gateway to a the Cisco BE3000 solution. This option provides backup public switched telephone network (PSTN) connectivity and emergency calling for remote sites using the Cisco BE3000 with Cisco SMART Unified Communications solutions, which are documented at the following website: <http://www.cisco.com/go/smartdesigns/uc>



Note

This application note is written for SPA8800 firmware version 6.1.7 and Cisco BE3000 software version 8.6.3. For the procedure to upgrade the SPA8800, refer to the *Quick Start Guide Cisco Small Business Pro SPA8800 IP Telephony Gateway*.

Cisco SPA8800 Voice Gateway

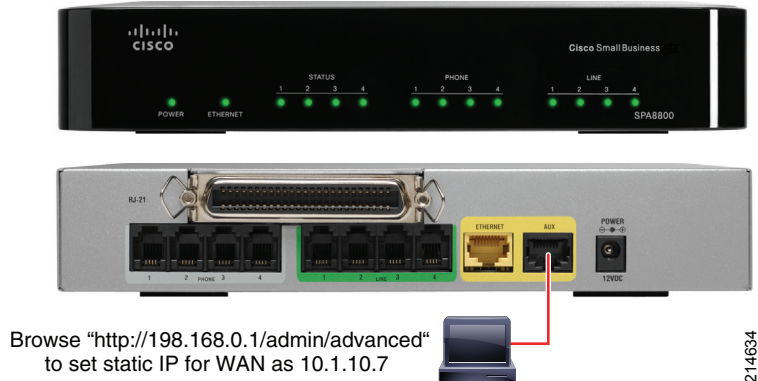
The Cisco SPA8800 is an affordable IP telephony gateway solution that is ideal for Unified Communication solutions for small and medium businesses (SMB) that require a connection to the PSTN using traditional analog lines. The SPA8800 can also be used to connect existing analog devices, such as phones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



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Figure 1 The Cisco SPA8800 Voice Gateway



Provisioning Sequence

The following is the validated sequence for provisioning:

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 following sections.

This application note assumes that the existing Cisco BE3000 solution is operational and is deployed according to the *Cisco Business Edition 3000 (Single-Site Deployment) Implementation Guide*, available at the following website: <http://www.cisco.com/go/smartdesigns/uc>. The Cisco BE3000 solution is implemented over a SMART Designs Secure Network Foundation (SNF) network, which is documented at the following website: <http://www.cisco.com/go/smartdesigns/snf>

Configuring 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 SPA8800 gateway. To configure a static IP address, complete the following steps.

Procedure

-
- Step 1** Remove the SPA8800 from the shipping box.
 - Step 2** Power on the SPA8800 by connecting the power adapter.
 - Step 3** Configure a static IP address for the administration notebook or PC, using the address *192.168.1.11* with the Subnet mask *255.255.255.0* and connect the PC to the SPA8800 on its Aux Port as shown in [Figure 1](#).
 - Step 4** Using a web browser, go to <http://192.168.0.1/admin/advanced> as shown in [Figure 2](#).
Changing the SPA8800 settings does not require a username or password.

- Step 5** On the SPA8800, click **WAN Status** 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.
- By default, the WAN IP address type for the SPA8800 is DHCP.
- Step 6** Click **Submit All Changes**.

Figure 2 Configuring a Static IP Address on the SPA8800



- Step 7** Verify that the value for **Firmware Version** is **6.1.7** or later.



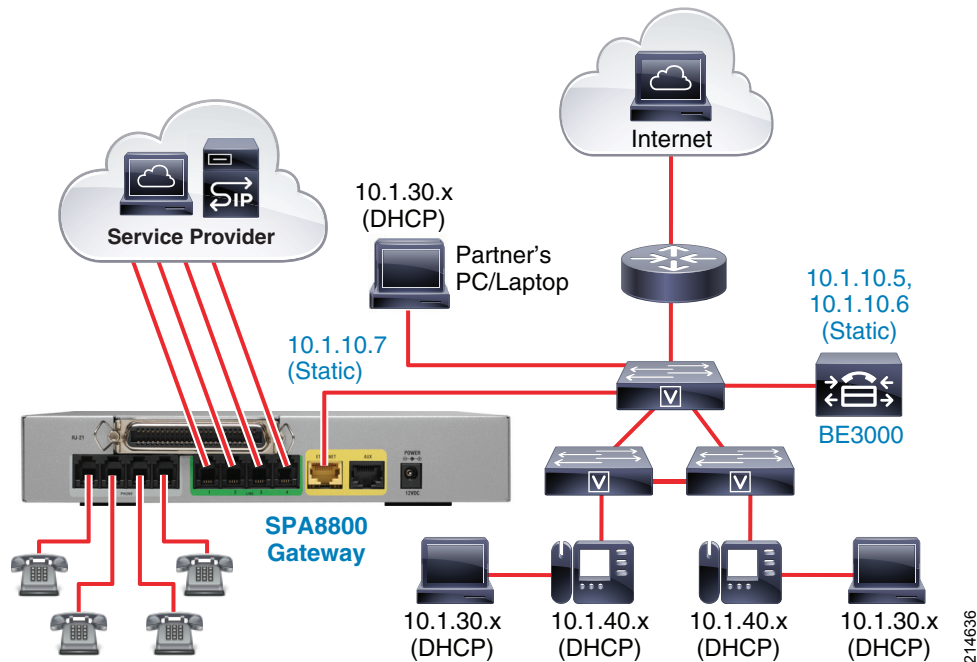
Note If you encounter a configuration or upgrade issue, refer to the *Quick Start Guide Cisco Small Business Pro SPA8800 IP Telephony Gateway*, shipped with the SPA8800 and listed in the [“For More Information”](#) section on page 9.

- Step 8** Disconnect the administration PC from the SPA8800 Aux port and set the IP address type to DHCP.
- Step 9** Connect the administration PC and the SPA8800 to the Cisco BE3000 solution, as described in [“Connecting and Provisioning a SPA8800 with a Cisco BE3000 Solution”](#) section on page 4.

Connecting and Provisioning a SPA8800 with a Cisco BE3000 Solution

As shown in [Figure 3](#), connect the SPA8800 to the existing Cisco BE3000 solution, which has been implemented over SNF, using a switchport in VLAN 10. Refer to the SMART Designs SNF documentation for details about VLANs and IP addresses, For details about implementing the Cisco BE3000, refer to the *Cisco Business Edition 3000 (Single-Site Deployment) Implementation Guide*.

Figure 3 SPA8800 Connection and Placement in a Cisco BE3000 Solution



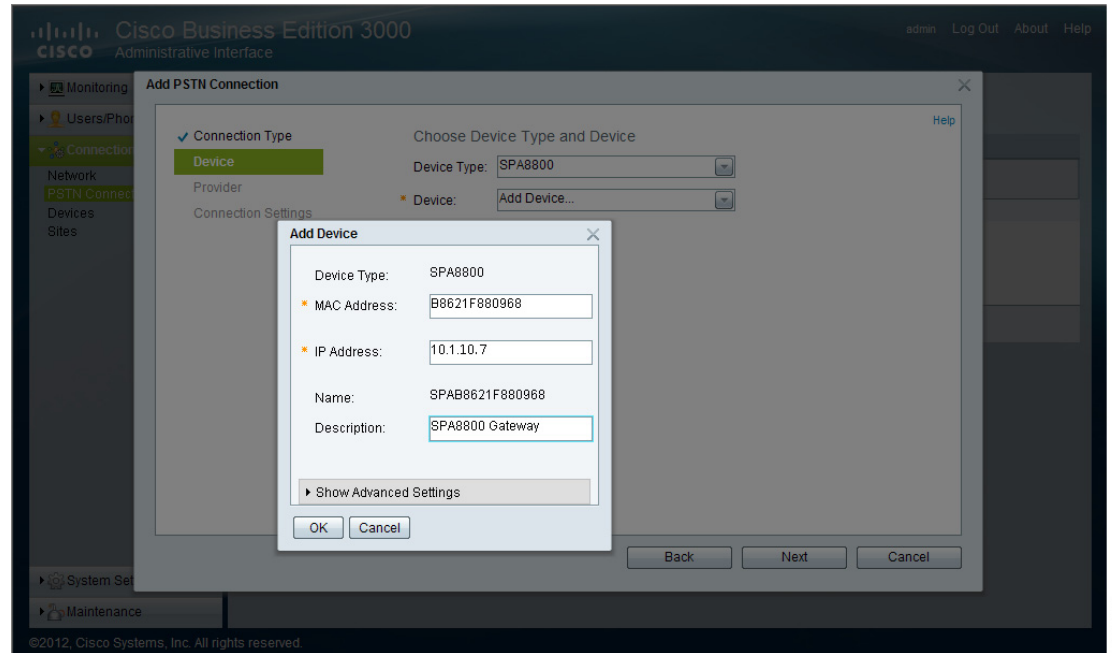
At this point you should be able to access the SPA8800 configuration utility at <http://10.1.10.7/>. However, the SPA8800 does not register with the Cisco BE3000 until it is provisioned. To provision the SPA8800 using the Cisco BE3000 administrative utility, complete the following steps.

Procedure

- Step 1** Log in to BE3000 administrative utility at <http://10.1.10.5/>.
- Step 2** Select **Connections > PSTN Connections** and click **Add PSTN Connection...**
The Add PSTN Connection window is displayed.
- Step 3** Select **FXO** from the Connection Type pull-down selection list and click **Next**.
- Step 4** Select **SPA8800** for Device Type and select **Add Device...** for Device.
The Add Device window is displayed.
- Step 5** Enter the MAC Address and IP Address for the SPA8800 device as shown in [Figure 4](#).
Refer to [Figure 2 on page 3](#) for the MAC and IP addresses to use for the SPA8800 gateway.

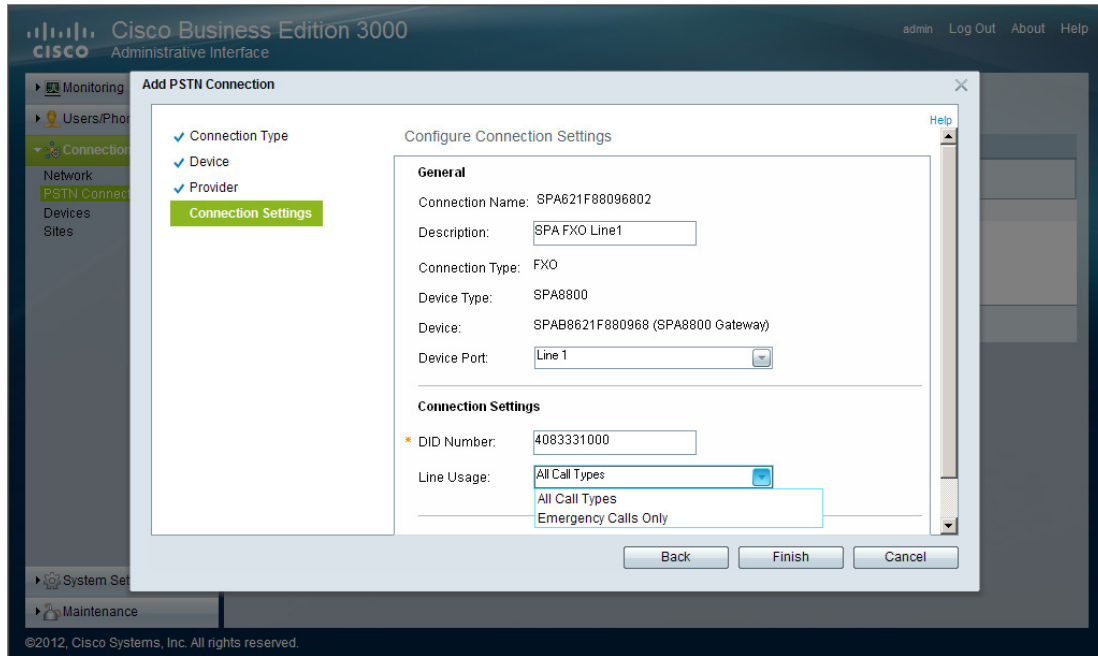
- Step 6** Enter a meaningful description and click **OK** to close the Add Device window. Then click **Next** in the Add PSTN Connection window.

Figure 4 Adding the SPA8800 for FXO PSTN Connectivity



- Step 7** Configure the connection setting for each FXO port by completing the following steps:
- Enter a meaningful description and select the device port.
 - Enter the direct inward dial (DID) number for the PSTN line to be connected on the selected device port.
 - Select the usage of this PSTN connection: for all calls, or for emergency calls only (see [Figure 5](#)).

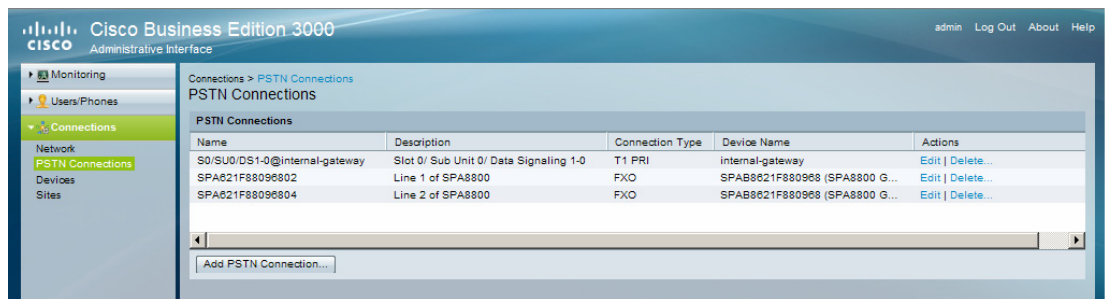
Figure 5 Configuring Connection Settings with DID and Line Usage



- 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.

Step 8 Verify that all PSTN connections are listed by selecting **Connections > PSTN Connections** (see [Figure 6](#)).

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



Step 9 To add analog devices, such as phones or fax devices, complete the following steps:

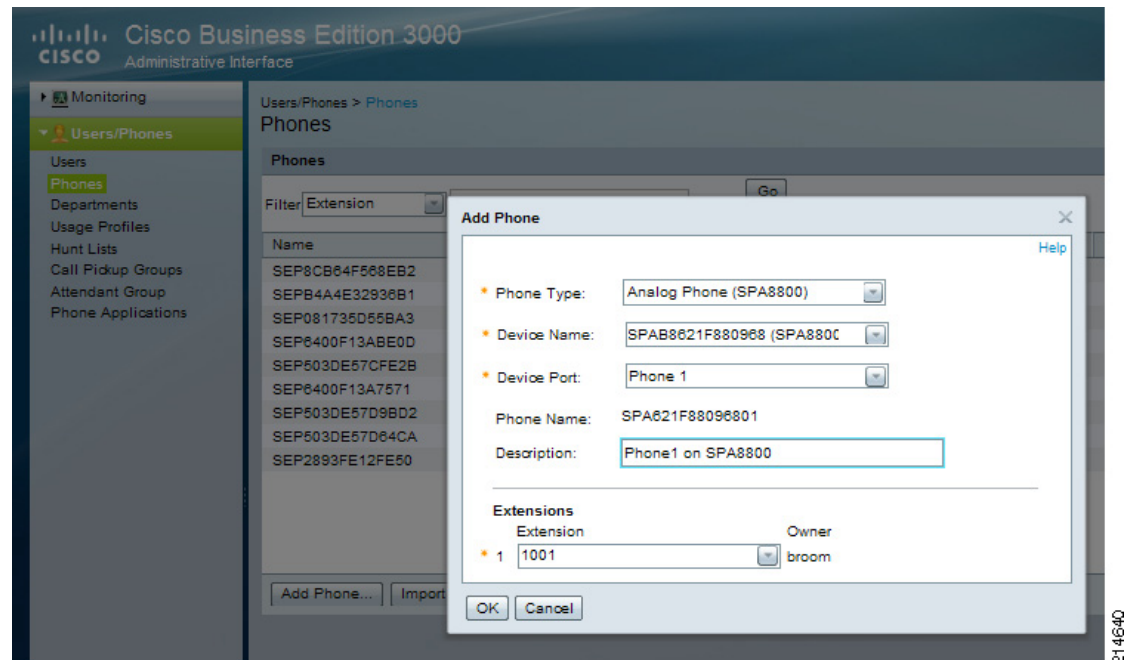
- a. Add Users or Departments for these devices by selecting **Users/Phones > Users** or **Users/Phones > Departments**.

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 [“For More Information”](#) section on page 9.

- b. After adding users or departments for analog devices, add them in the Cisco BE3000 by selecting **Users/Phones > Phones**, and click **Add Phone...**

- c. Select **Analog Phone (SPA8800)** from the Phone Type pull-down selection list and select **SPA8800** from the Device Name pull-down selection list.
The SPA8800 should be available because it was added when adding a PSTN connection.
- d. Select the Device Port, enter a description, and select the extension added for the user or department (see [Figure 7](#)).

Figure 7 Adding 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.

Registering the SPA8800 with the Cisco BE3000

To register the SPA8800 voice gateway with the Cisco BE3000, complete the following steps. The Cisco BE3000 was configured with the SPA8800 settings in previous sections.

Procedure

- Step 1** Access the SPA8800 configuration utility at <http://10.1.10.7/admin/advanced/>.
- Step 2** Click the **Voice** tab, and then click the **Provision** tab and enter **tftp://10.1.10.5/spa\$MA.cnf.xml** for the **Profile rule**. Then click **Submit All Changes**, as shown in [Figure 8](#).

Figure 8 Configuring the SPA8800 with the Cisco BE3000 TFTP Address

Small Business Pro
 cisco SPA8800 Configuration Utility

User Login basic | advanced

Network **Voice**

Info System SIP **Provision** Regional

Phone 1 Phone 2 Phone 3 Phone 4 Line 1 Line 2 Line 3 Line 4

Configuration Profile

Provision Enable: Resync On Reset:

Resync Random Delay: Resync Periodic:

Resync Error Retry Delay: Forced Resync Delay:

Resync From SIP: Resync After Upgrade Attempt:

Resync Trigger 1:

Resync Trigger 2:

Resync Fails On FNF:

Profile Rule:

Profile Rule B:

Profile Rule C:

Profile Rule D:

Log Resync Request Msg:

Log Resync Success Msg:

Log Resync Failure Msg:

Reset Rule:

Undo All Changes Submit All Changes

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Step 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 completed, the SPA8800 is controlled by the Cisco BE3000.

Step 4 Click **Voice**, and then click the **Info** tab to observe the registration status of all the configured SPA8800 ports (see [Figure 9](#)).

Figure 9 SPA8800 Voice Gateway Registered to the Cisco BE3000

Step 5 Make internal test calls to and from analog phones connected to SPA8800.

Step 6 Test making calls to the PSTN DID number at the FXO port of SPA8800.

This should trigger the auto attendant.

Step 7 After successful testing, disable access to the SPA8800 device over the WAN, by selecting **Network > WAN status**.

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

For more details on about using the SPA8800 and supporting remote sites with the Cisco BE3000, refer to the *Administration Guide for Cisco Business Edition 3000*.

For More Information

- Cisco SMART Designs for SMB UC Solutions—<http://www.cisco.com/go/smartdesigns/uc>
- Cisco Small Business support community—<http://www.cisco.com/go/smallbizsupport>
- SPA8800 Product Home Page—<http://www.cisco.com/en/US/partner/products/ps10446/index.html>
- SPA8800 Quick Start Guide—
http://www.cisco.com/en/US/docs/voice_ip_comm/csbpvg/SPA8800/quick_start/guide/REV_SPA8800_QuickStart.pdf
- SPA8800 Data Sheet—
http://www.cisco.com/en/US/prod/collateral/voicesw/ps6790/gatecont/ps10024/ps10446/data_sheet_c78-534718.pdf
- Administration Guide for Cisco Business Edition 3000 Version 8.6.3—
http://www.cisco.com/en/US/docs/voice_ip_comm/cucmbe3k/8_6_3/system/BE3K_BK_C30C50F6_00_cucm-be3000-admin-guide.pdf

