

Installing and Configuring Linksys SPA941

Introduction

The Linksys SPA941 is an affordable and feature-rich IP telephone. The SPA941 leverages industry leading Voice over Internet Protocol (VoIP) technology from Linksys to deliver an upgradeable high-quality IP phone that is unparalleled in features, value, and support. Standard features on the SPA941 include two active lines, a high-resolution graphical display, speakerphone, and a 2.5 mm headset port. The Linksys SPA941 is interoperable with ADTRAN's NetVanta Enterprise Communications Server and supports autodetection and automatic configuration. The purpose of this technical note is to provide instructions about configuring the Linksys SPA941 to operate with the NetVanta Enterprise Communications Server.



Known Integration Issues

- Once the phone is in a configured state, in other words, it has an identity assigned, it cannot revert to the unconfigured (default) state.
 - To reset the phone to an unconfigured state, perform a factory reset.
- Blind transfers will not work and result in the call disconnecting.
 - To transfer calls, perform a supervised (attended) transfer. Refer to Linksys' user guide for more information on how to perform a supervised transfer. There is no workaround at this time.

Enabling Autodetection and Configuration

This section describes how to install the Linksys configuration files and phone firmware so that the Linksys SPA941 phone can be automatically detected and provisioned by the UC server.

Installing the Configuration Files

Included with this technical note is a folder containing configuration files and templates used by the UC server to automatically detect and provision Linksys SPA941 telephones. This folder must be copied into the UC server folder tree.

To install the configuration files:

1. Extract the Linksys folder from the .zip file (located in the same directory as this document) and copy it under the PhoneTypes folder located here:

X:\Program Files\ADTRAN\NetVanta UC Server\Data\System\PhoneTypes, where **X** is the drive where the UC server program files are installed.

For example, the resultant path after the folder is copied (henceforth known as the *Linksys PhoneTypes folder*) might appear as follows:

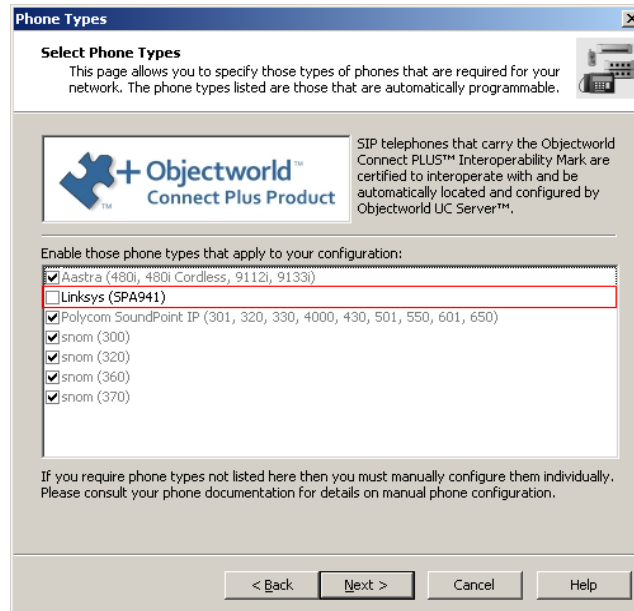
C:\Program Files\ADTRAN\NetVanta UC Server\Data\System\PhoneTypes\Linksys

2. Restart the NetVanta UC Server Application Service.
 - Select **Start > Control Panel > Administrative Tools > Services**.
 - Scroll down and select **NetVanta UC Server Application Services**.
 - Right-click the entry and select **Restart**.

Enabling Support for Linksys SPA941 Phones

1. Select **Start > All Programs > NetVanta UC Server > Server Configuration Wizard**.
2. Select **Phone Types**.
3. Select **Next** to bypass the welcome screen.

4. Select the checkbox next to **Linksys** (see the figure below).



5. Continue through the wizard by selecting **Next** at each page until the wizard is finished.

Preparation


Initial Boot

After the configuration files are installed and the phone is booted for the first time, you may see the idle screen with no configured lines. Please be patient while it loads the configuration and reboots automatically. It may take up to 30 seconds to synchronize to the initial configuration.

Determining the Factory-Installed Firmware Version

Refer to *NetVanta UC Server Interoperable SIP Device Features and Comparisons* technical note, available online at <http://kb.adtran.com>, to determine the most recently supported version of firmware for the Linksys SPA941 telephones.

To determine what version of firmware the Linksys SPA941 phone is using:

1. Power on the phone.
2. Find the IP address of the phone by doing the following:
 - Press the **Setup** button. 
 - Press the down arrow until you see **Network**.
 - Press the **Select** softkey. The IP address is listed under **Current IP**.
3. Enter the IP address found in Step 2 in your Web browser.
4. The firmware version is listed beside **Software Version**.

If the firmware version on the phone is earlier than the version noted in *NetVanta UC Server Interoperable SIP Device Features and Comparisons*, then you must upgrade the firmware. The firmware can be upgraded as described in the section below.

Applying the Firmware Upgrade

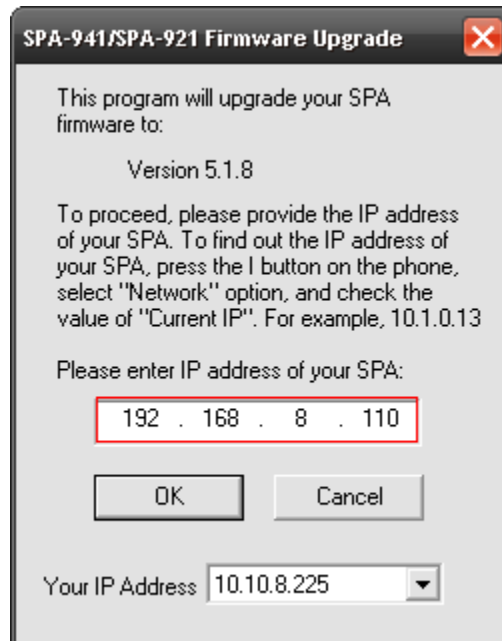
The Linksys IP phones are updated through a Windows®-based utility program.

To upgrade the firmware:

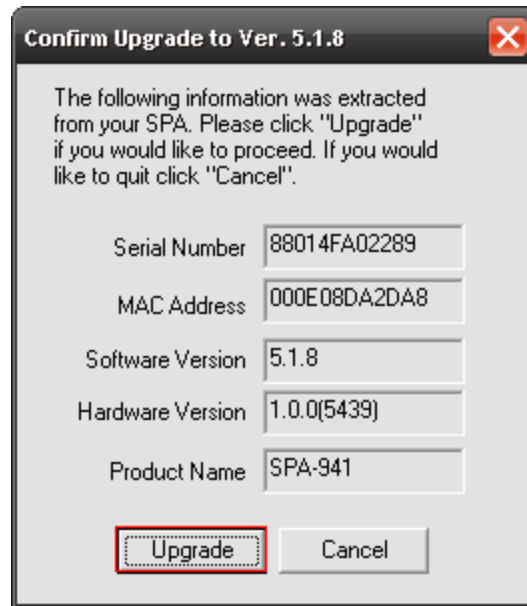
1. Run the firmware upgrade program.
2. Select **Continue**.



3. Enter the IP address of your Linksys phone and select **OK**.



4. Select **Upgrade** to continue. The phone will automatically start the upgrade and return to the idle screen after the update is complete.



Adding an Identity

You must either have an unused identity that you can add to the phone, or you must create a new identity/user to associate with the phone. For more information about creating users and identities in the UC server, refer to *NetVanta UC Server Administrator Guide—Enterprise Communications Edition*, available online at <http://kb.adtran.com>.

Associating an Identity with the Phone

After you install the phone and create a user/identity, you must associate that identity with the phone.

To associate the identity with the phone:

1. Launch the UC client by selecting **Start > All Programs > UC Client**.
2. Log in using the **admin** authentication or using an authentication with **admin** profile access.
3. In the administration menu, select **Phones**.

4. Double-click the Linksys phone to which you want to associate the identity.

MAC Address	Description	IP Address	Phone Type	Number of Buttons	Associated Identity
00-04-13-26-05-78	snom370/7.1.30	192.168.8.118	snom-370	12	1003
00-04-F2-12-CC-AB	PolycomSoundPointIP-SPIP_650-UA/...	192.168.8.87	Polycom SoundPoint IP-650	12	1001
00-04-F2-14-B5-54	PolycomSoundPointIP-SPIP_330-UA/...	192.168.8.65	Polycom SoundPoint IP-330	2	1002
00-0E-08-DA-2D-A8	Linksys/SPA941-5.1.8	192.168.8.120	Linksys-SPA941	4	<Not configured>

MAC address:	00-0E-08-DA-2D-A8
Description:	Linksys/SPA941-5.1.8
IP Address:	192.168.8.120
Phone type:	Linksys-SPA941
Number of buttons:	4
Associated identities:	<Not configured>

5. Select **Add**.

The 'Phone' dialog box is shown with the following details:

- General information:**
 - MAC address: 00 - 0E - 08 - DA - 2D - A8
 - IP address (optional): 192 . 168 . 8 . 120
 - Description (optional): Linksys/SPA941-5.1.8
 - Phone type: Linksys-SPA941
 - Number of buttons: 4
- Assigned identities:** Includes an 'Add...' button highlighted in red.

6. Select the identity you want to use and select **Select**.

7. Select **OK**.

8. The phone will automatically reboot in under 10 seconds.

- If the phone does not reboot automatically, navigate back to the **Phones** pane in the UC client, right-click the specific phone and select **Restart Phones**.
- If the phone does not restart at this point, disconnect and reconnect the power to the phone.

9. After the bootup process is complete, the new identity will appear on the phone display.

Troubleshooting

1. Linksys phone does not appear in the Phones list in the UC client.

Verify the following:

- Dynamic Host Configuration Protocol (DHCP) server option 66 is present, enabled, and contains the IP address of the UC server machine.
 - NetVanta Trivial File Transfer Protocol (TFTP) service is running.
 - Select **Start > Control Panel > Administrative Tools > Services**.
 - Scroll down to NetVanta TFTP Server.
 - Ensure service is set to **Automatic**.
 - Ensure service is running.
 - Ensure Windows Firewall is not blocking the TFTP port.
 - Disable Windows Firewall.
- Or**
- Create an exception for the **NetVanta TFTP Service** program:
C:\Program Files\ADTRAN\NetVanta UC Server\Bin\TFTPService.exe.
- Ensure the Linksys phone family is enabled.
 - Run the **Server Configuration Wizard** and ensure that the Linksys phone family is checked.
 - If the checkbox is cleared, perform the steps outlined in [Enabling Support for Linksys SPA941 Phones on page 2](#).
 - Ensure Linksys firmware and configuration files are present in the TFTP Server.
 - Navigate to *.\Program Files\ADTRAN\NetVanta UC Server\Data\TFTP*.
 - Ensure (at a minimum) that the following files are present:
 - spa941.cfg
 - spa-template.cfg
 - spa-unconfigured.cfg
 - If not present, perform the steps outlined in [Enabling Autodetection and Configuration on page 2](#).


2. Linksys phone does not download its configuration from the TFTP server after being assigned an identity with the UC client.

Verify the following:

- NetVanta TFTP service is running.
 - Select **Start > Control Panel > Administrative Tools > Services**.
 - Scroll down to NetVanta TFTP Server.
 - Ensure service is set to **Automatic** and is running.
 - Ensure Windows Firewall is not blocking the TFTP port.
 - Disable Windows Firewall.
- Or**
- Create an exception for the **NetVanta TFTP Service** program:
For example, *C:\Program Files\ADTRAN\NetVanta UC Server\Bin\TFTPService.exe*.
- Ensure that configuration files exist for the phone being provisioned.
 - Navigate to *.\Program Files\ADTRAN\NetVanta UC Server\Data\TFTP*.
 - Ensure (at a minimum) that the following files are present:
 - spa941.cfg
 - spa<MAC>.cfg (where <MAC> is the medium access control (
 - .MAC) address of the phone being provisioned)
 - If not present, redo the steps outlined in [Enabling Autodetection and Configuration on page 2](#).
 - Ensure that the NetVanta UC Server Application Services service has full permissions for the TFTP folder *.\Program Files\ADTRAN\NetVanta UC Server\Data\TFTP*.

3. Linksys phone does not respond to restart/reload configuration requests from the UC client, or incorrect identity/identities are assigned to the phone.

If you experience the symptoms above, you will have to perform a factory reset:

- Press the **Setup** button. 
- Press the down arrow until you see **Factory Reset**.
- Press the **Select** softkey.
- Press **OK** on the next screen.