

# SIP Phone Support (SPS)

Version 3.0





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## Notice

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## Abbreviations and Terminology

Each abbreviation, unless widely used, is spelled out in full when first used.



**Note:** In this guide:

- *Gateway* refers to AudioCodes' Mediant 1000B Gateway and E-SBC.
- *Network* means the LAN, accessed via the gateway's OSN server's Ethernet interface.



**Warning:** The gateway and its components - OSN (Open Solution Network) server and MPM (Media Processing Module) - are supplied as a sealed unit. It must only be serviced by qualified service personnel.

## Document Revision Record

LTRT	Description
28804	Installation of the database schema modified. Installation of the data component modified. Activation of the SPS modified.
28805	Update to Skype for Business support from Lync support.
28806	Update information for sending client license requests.
28807	Updates for 2008 R2 and 2012 R2 Installation components.
28808	Updates throughout document for support for Windows 2016; update to sections Installing the Schema and Activating the SPS on Skype for Business.
28809	Updates throughout document for support for Windows 2019 and Skype for Business Server 2019; updates to sections Disabling Windows Firewall and Anti-Virus, Installing Components and Installing the SPS Deployment Wizard.

## Documentation Feedback

AudioCodes continually strives to produce high quality documentation. If you have any comments (suggestions or errors) regarding this document, please fill out the Documentation Feedback form on our Web site at <https://online.audiocodes.com/documentation-feedback>.

## Related Documentation

Manual Name
SPS Web Admin User Guide
Mediant 1000B Gateway and E-SBC User's Manual
Mediant 1000B Gateway and E-SBC Installation Guide
Mediant 800B Gateway and E-SBC SIP User's Manual
Mediant 800B Gateway and E-SBC Hardware Installation Guide
Firewall Setup for SIP Phone Support (SPS)
SPS for Microsoft Office Communications Server (OCS) Initialization & Configuration Guide



# 1 Introduction

This guide describes how to quickly get started with the SPS for Skype for Business.



**Note:** Microsoft has rebranded Lync as Skype for Business and therefore, whenever the term Skype for Business appears in this document, it also applies to Lync Server 2013.

## 1.1 About SPS for Skype for Business

SIP Phone Support (SPS) is a value-added application that enables third-party SIP IP phones to smoothly connect with Skype for Business.

SPS is a software product that can run on a physical Server, virtual machine or on an OSN (Open Solution Network) server hosted by the gateway and E-SBC. Both the Mediant 1000 and the Mediant 800 devices support SPS installed on the OSN.

Customers receive the gateway with all SPS components (installation files) already *loaded* on the gateway's OSN server.

Customers must *install* the SPS components for the SPS application to run on their premises. The SPS cannot be pre-installed before shipping, as the gateway's OSN server must be added to the specific customer's domain before the SPS can be installed.

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## 2 Getting Started

This section summarizes the procedures required for setting up and activating the SPS.

➤ **To quickly get started:**

1. Connect the hardware (relevant only for SPS running on the Mediant Gateway and E-SBC OSN module):
  - a. Connect the gateway to power.
  - b. Connect the gateway's OSN interface to the network.
  - c. Connect the gateway to a PC.See Section 2.1.
2. Define HyperTerminal Settings (relevant only for SPS running on the Mediant Gateway and E-SBC OSN module):
  - a. Set the date and time via command line
  - b. Get the SPS IP address via command lineSee Section 2.2
3. Connect to the SPS Server via Remote Desktop:
  - a. Rename the SPS server and add it to your domain
  - b. Verify that .NET framework 3.5.1, Lync client, and UCMA are installed.See Section 0-3.4.
4. Install Microsoft components from the Skype for Business CD:
  - a. Prepare Active Directory
  - b. Topology Builder
  - c. Local Configuration Store
  - d. Install UCMASee Section 3.5-3.6
5. Install the SPS:
  - a. Install the SPS license
  - b. Install the SPS Web Admin
  - c. Install the SPS Core
  - d. Install the SPS SwitchSee Section 3.7.
6. Activate the SPS:
  - a. Activate the SPS application in the Skype for Business environment
  - b. Activate the SPS licenseSee Section 4.

## 2.1 Connecting the Hardware

This section describes how to connect the hardware in case running the SPS on OSN module, in case running on a dedicated customer server or virtual machine you can skip to section 3.

### 2.1.1 Connecting the Mediant 1000B

This section describes how to connect the Mediant 1000B device.

➤ **To connect the Mediant 1000B:**

1. Connect the gateway to power.
2. Connect the gateway's OSN interface to the LAN.
3. Connect the gateway to a PC USB/serial port.



**Note:** Refer to the *Mediant 1000 Gateway and E-SBC Installation Guide* for detailed information.

### 2.1.2 Connecting the PC to the OSN Data Port

This section describes how to connect the PC to the OSN data port.

➤ **To connect the PC to the OSN data port:**

- Connect the data cable to the gateway's OSN data port (RJ-45 or USB port).

## 2.2 Defining HyperTerminal Settings

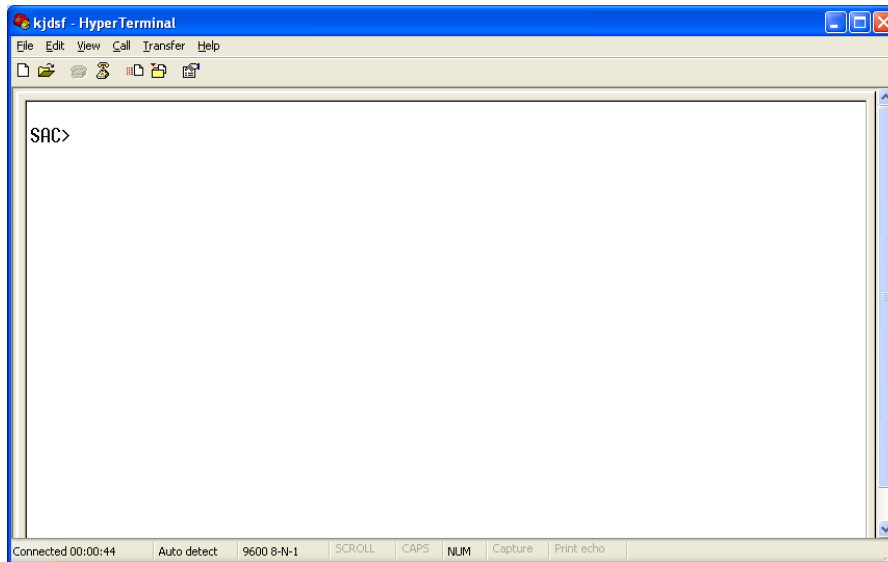
This section describes how to define HyperTerminal settings.

➤ **To define HyperTerminal settings:**

1. Open HyperTerminal on the PC and define the following parameters:
  - RJ-45 parameter
  - Bit per second: 11520
  - Data bits: 8
  - Parity: None
  - Stop bits: 1
  - Flow control: None
  - USB parameter:
  - Bit per second: 9600
  - Data bits: 8
  - Parity: None
  - Stop bits: 1
  - Flow control: None

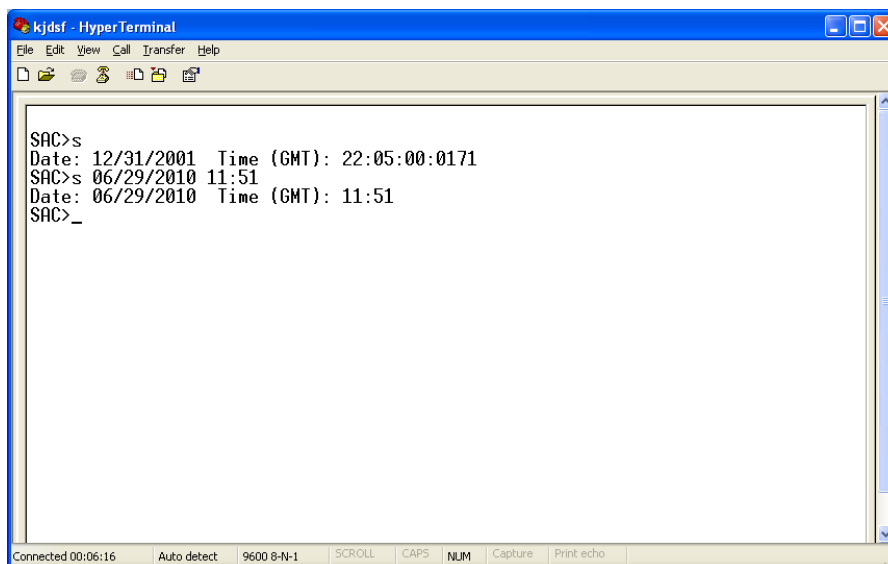
The prompt **SAC>** : appears. If it doesn't, press Enter.

**Figure 2-1: HyperTerminal SAC>: Prompt**



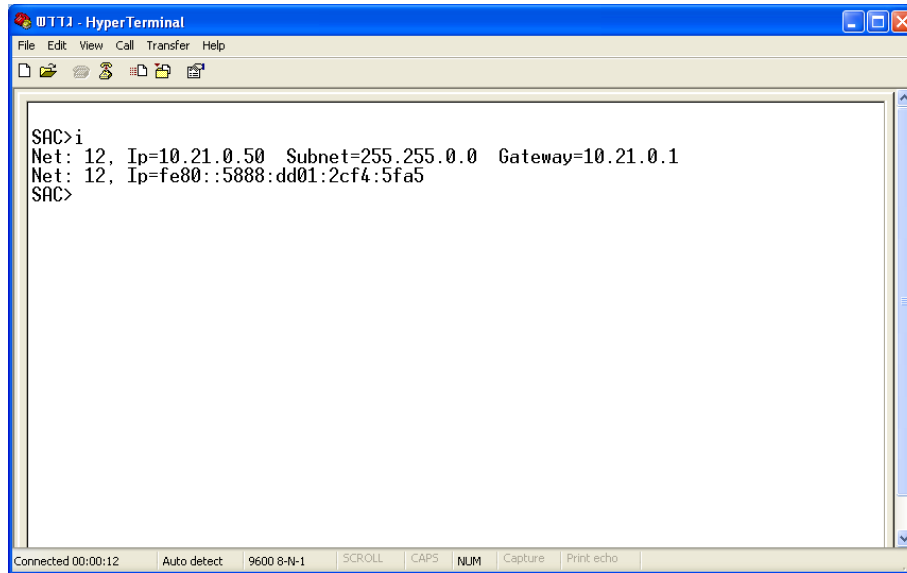
2. Type **s** to display the system date and time. If the incorrect date and time is shown, type **s mm/dd/yyyy** at the prompt, and then press Enter to set the new date:

**Figure 2-2: HyperTerminal: Time and Date Display**



3. At the prompt, type `i`; the IP address of the gateway's OSN server is displayed:

**Figure 2-3: HyperTerminal: OSN Server IP Address**



4. Make a note of the displayed information to use when connecting to the OSN server (see below).

## 2.3 Connecting to the SPS Server

In case running on a customer server or virtual machine, the Windows OS must be installed by the customer. The User, Password and IP are set by the customer, as well as the date and time.

In case running on gateway's OSN module, the Windows OS is pre-installed, initially provided with default factory settings, such as 'Server Time' and 'IP Address'. To change these to conform to customer site settings, the system administrator must first connect to the gateway and E-SBC OSN server using Microsoft's Remote Desktop Connection.

➤ **To connect to the SPS server:**

1. Start the Remote Desktop Connection program (**Start > Programs > Accessories > Communications**).
2. Enter the IP address of the SPS (for OSN server that you received when you ran the "i" command see Section 2.2).
3. Enter the user name and password.  
Defaults for OSN are as follows:
  - **User name:** administrator
  - **Password:** Pass123



**Note:** The password is case sensitive.

You're now connected to the SPS server via Remote Desktop Connection.



**Note:** It's advisable to change the server's IP Settings from 'Dynamic IP Address' to **Static IP Address**.

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## 3 Installing Components

This section describes how to install the SPS components.

### 3.1 Installing the Microsoft Infrastructure

This section outlines how to install the Microsoft Windows features and components on the SPS server. This is a prerequisite for and needs to be performed **before** running the SPS Deployment Wizard.



**Note:** If installing on a **Lync 2010** platform, the prerequisites *only* include the installation of .NET framework (see below). The installation of the .NET 4.5, Desktop experience feature, and Power Shell 3.0 components are not required for **Lync 2010**.

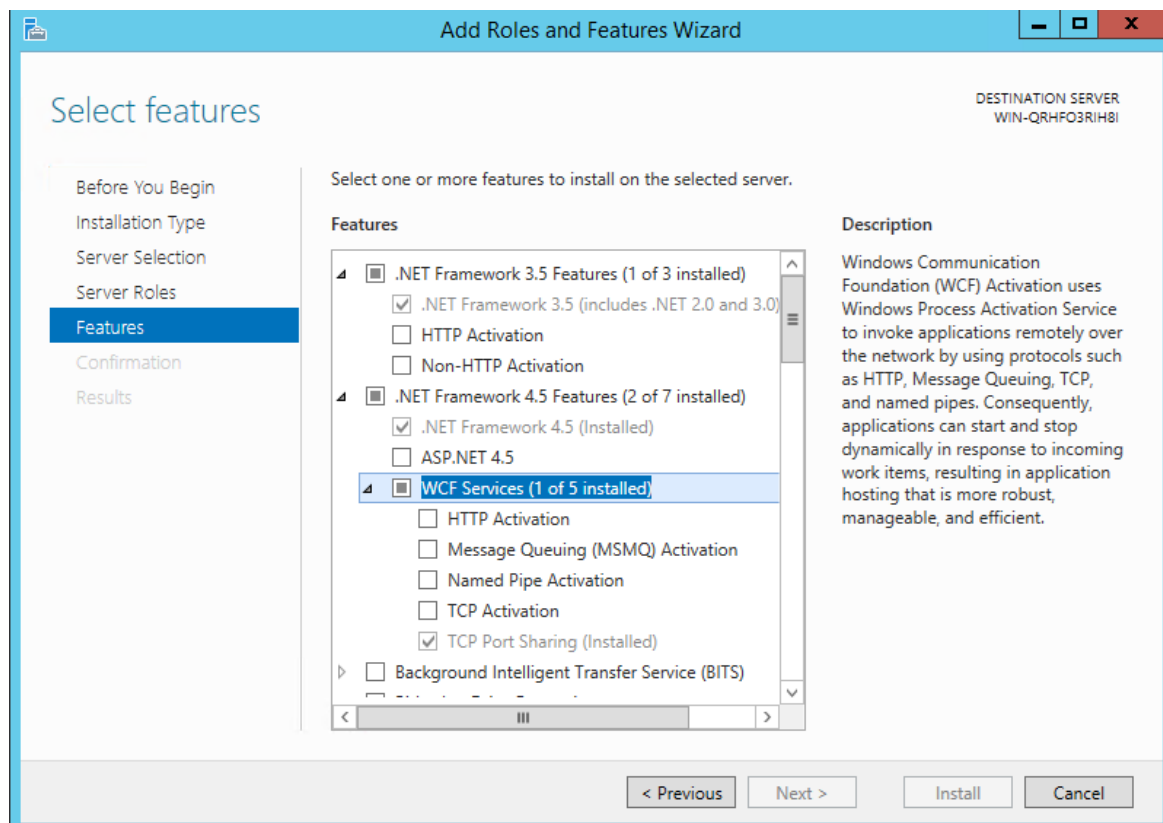
#### 3.1.1 Installing .NET Framework

This section describes how to install .NET Framework.

➤ **To install the .Net Framework:**

1. Open the Server Manager on the SPS server.
2. Go to **Features > Add Features**; the Add Features Wizard is displayed:

**Figure 3-1: Add Features Wizard: Select Features**



3. Select the **.NET Framework 3.5 Features** check box, and then click the **Install** button.
4. For Windows 2012 R2, select the **.Net Framework 4.5** feature as well.
5. For Windows 2016, select the **.Net Framework 4.6** feature as well.
6. For Windows 2019, select the **.Net Framework 4.7** feature as well.


**Notes:**

- For **SPS for Skype for Business Server 2019**, you need to install .Net 4.7.2 or later.
- For **Net 3.5 for Windows 2016/2019**:  
When installing **Net 3.5**, you will get the following note, and you will need to select the **Specify an alternate source path** option to select a path to the side-by-side (sxs) folder of the Windows 2016/2019 installation.

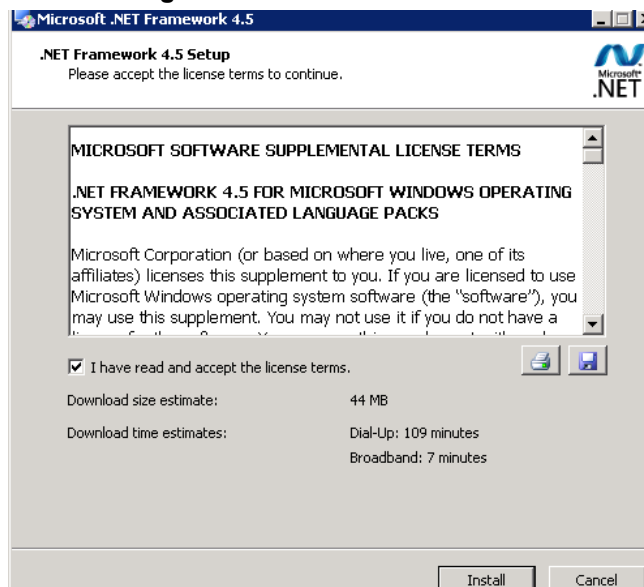
### 3.1.2 Installing the .NET 4.5 – Windows 2008 R2

This section describes how to install the .NET 4.5 platform on the SPS server based on Windows 2008 R2.

➤ **To install the .NET 4.5:**

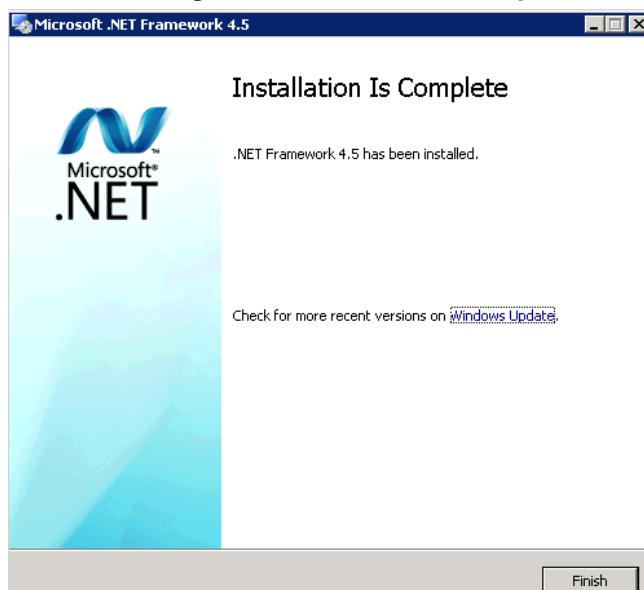
1. On the SPS server, go to `C:\SPS_installtion\SPS_2013\Microsoft_files`.
2. Run the `dotNetFx45_Full_setup` file.
3. Click **Install**.

**Figure 3-2: Microsoft.NET Framework**



4. Click **Finish**.

**Figure 3-3: Installation Complete**



### 3.1.3 Adding the Desktop Experience Feature – For Windows 2008 R2

This section describes how to add the Desktop Experience Feature on the SPS server.

➤ **To add the Desktop Experience feature:**

1. On the SPS server, open the Server manager.
2. Click the **Add Features** button.
3. Select the **Desktop Experience** check box, and then click **Install**.



**Note:** When the installation completes, a restart is required.

### 3.1.4 Installing Media Foundation on Windows 2012 R2, Windows 2016 and Windows 2019

This section describes how to install Media Foundation on Windows 2012 R2, Windows 2016 and Windows 2019.

➤ **To install Media Foundation for Windows 2012 R2, Windows 2016 and Windows 2019**

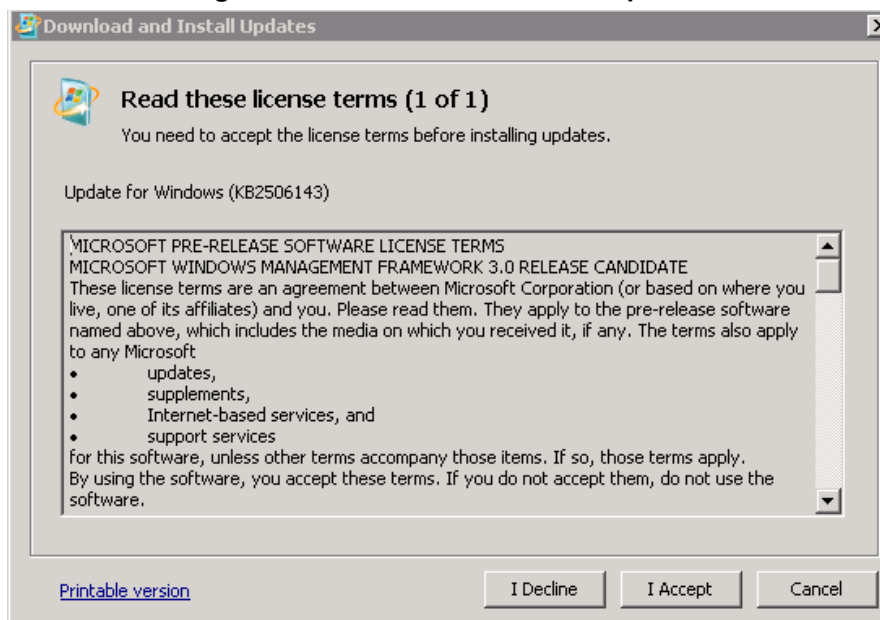
1. For Windows 2012 R2, Windows 2016 and Windows 2019 server only, install Microsoft Media Foundation by opening the Microsoft Server Manager.
2. Navigate to **Add Features**.
3. Enable the **Media Foundation** feature.

### 3.1.5 Installing PowerShell Version 3.0 for Windows 2008 R2

This section describes how to install PowerShell Version 3.0 for Windows 2008 R2.

➤ **To install Power Shell Version 3.0:**

1. On the SPS server, run the *Windows6.1-KB2506143-x64* setup file.
2. Click **I Accept** to accept the terms of the license agreement.

**Figure 3-4: Download and Install Updates**

## 3.2 Installing the SPS Deployment Wizard

To facilitate SPS installation, a Deployment Wizard is provided. The wizard is an executable file named sps\_setup.



**Note:** Previous versions of the SPS do not include the Deployment Wizard. Therefore, it's advisable to download the latest SPS application version from AudioCodes' FTP site and use the latest Deployment Wizard. Complete installation of the new version **before** deleting the previous version.

The SPS application for Skype for Business 2019, Skype for Business 2015 and Lync 2013 can be downloaded from:

[https://downloads-audiocodes.s3.amazonaws.com/Download/AC\\_SPS\\_IW.html](https://downloads-audiocodes.s3.amazonaws.com/Download/AC_SPS_IW.html)



**Note:** Be sure to download the version that is suitable for your Skype/Lync system.

**Figure 3-5: Download Now**



File download will start in few seconds, if not click the "Download Now" button.



File Name: SfB SPS Installer, Version 3.0.50  
Size: 1GB

**DOWNLOAD NOW**

Older Platform Version - download the following:

[Download Lync 2013 SPS 3.0.50](#)



**Note:** For SPS for Lync 2010, contact AudioCodes.

Extract it to **C:\SPS\_Installation**.

The Deployment wizard installs the SPS in the following stages:

### 1. Deployment Prerequisites

The Wizard checks for the following prerequisite components. If any of these prerequisites are missing, the Wizard walks you through the required steps to complete the process successfully:

- Adding server to domain. See Section 3.3.
- .NET FrameWork features. See Section 3.4.
- Skype for Business components. See Section 3.5.
- UCMA. See Section 3.6.

### 2. SPS Components

The installation process consists of the following SPS components:

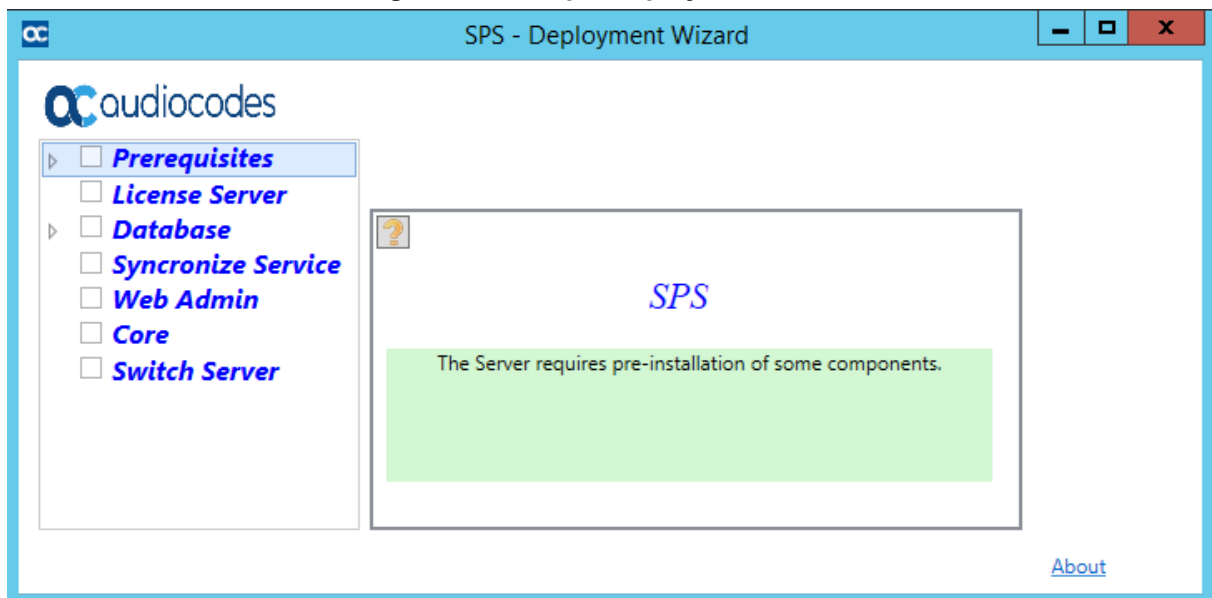
- License server
- Web Admin
- Core
- Switch server

### 3. Add a data base level. See Section 3.9.2.

#### ➤ To start the deployment wizard:

1. Double-click the **sps\_setup** icon; the following is displayed:

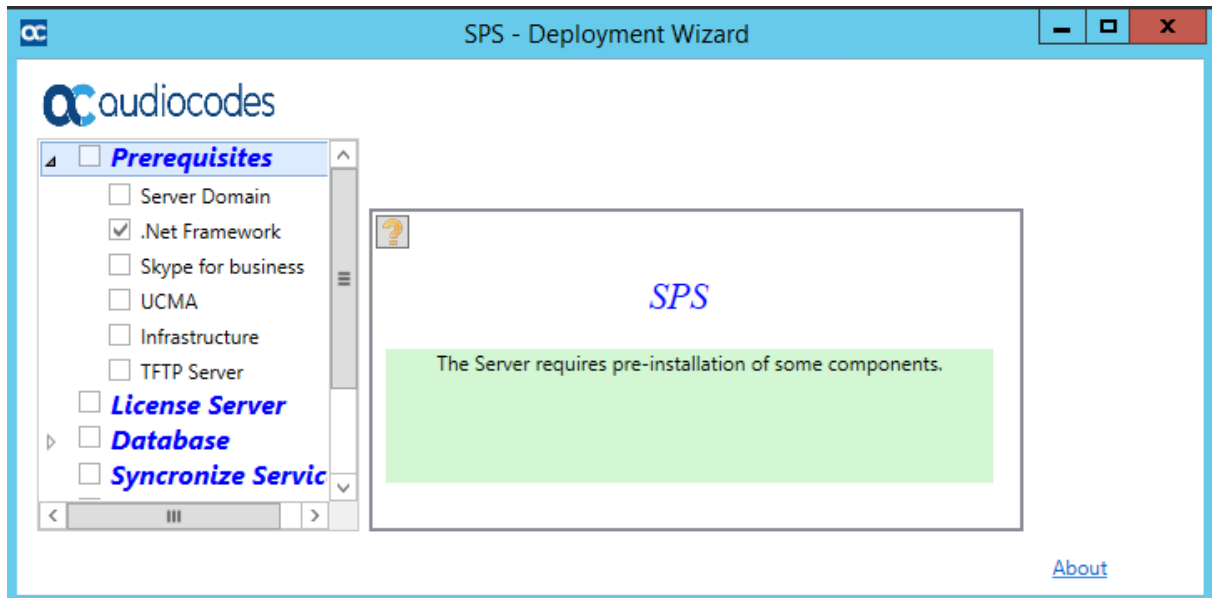
**Figure 3-6: Setup – Deployment Wizard**



The window on the left displays all the components required for the SPS installation. All the gray-colored boxes adjacent to each of the required components should be marked with '✓'.

2. Click each component that is not marked with '✓', following the order they are displayed. In this example, the Prerequisites is not marked with '✓'.
3. Click the '+' to expand the **Prerequisites** components; the following screen is displayed:

Figure 3-7: SPS Deployment Wizard



The Deployment wizard now does the following:

- Checks if your computer was added to a domain. If it wasn't, the gray-color box adjacent to **Server Domain** will not be marked with '✓'. Proceed according to Section 3.3 below.
- Checks if .NET is installed. If it's not, the gray-color box adjacent to **.Net Framework** will not be marked with '✓'. Proceed according to Section 3.4 below.
- Checks if Skype for Business components are installed. If they're not, the gray-color box adjacent to **Skype for Business** will not be marked with '✓'. Proceed according to Section 3.5 below.
- Checks if Unified Communications Managed API (UCMA) is installed. If it's not, the gray-color box adjacent to **UCMA** will not be marked with '✓'. Proceed according to Section 3.6 below.



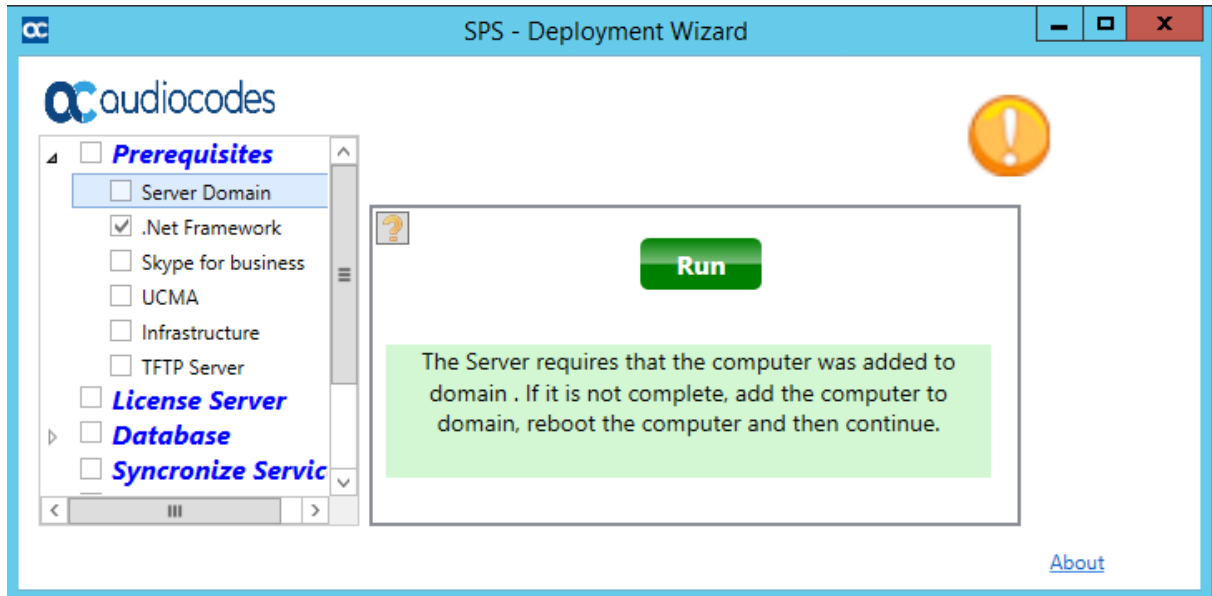
### 3.3 Renaming the OSN Server and Adding to Domain

This section describes how to rename the OSN server and add it to a domain.

➤ To rename the gateway's OSN server and add it to a domain:

1. Click **Server Domain**; the following is displayed:

Figure 3-8: SPS-Deployment Wizard



2. Click **Run**; the following is displayed:

Figure 3-9: Add Server to Domain

3. Enter the **Machine Name**, **Domain**, **User Name**, **Password**, and **DNS IP**.

4. Click **Apply**.



**Note:** The **User Name** must be a domain user who has permissions to add this server to the domain. After completing this procedure, restart the SPS server and re-login.



**Note:** To install the SPS, login to Windows using the name of a user who is a domain Administrator member. This is only required for setup. The domain administrator credentials will not be used during run time.

## 3.4 Installing .NET Framework

The .NET Framework 3.5.1 is already installed on the gateway's OSN server. Note the following:

- If you're installing the SPS on a machine on which .NET is *not* installed (e.g., a standard PC server or on a virtual machine), install it.
- To install the .Net Framework follow the Installing the Microsoft Infrastructure section above.

## 3.5 Installing Microsoft Components

Microsoft components install the run-time modules used by the SPS Core. Therefore, you must install and configure the following three applications from the Skype for Business CD:

- Prepare Active Directory
- Topology Builder
- Local Configuration Store



**Note:**

- Perform this step prior to installing the SPS.
- Skype for Business CD is not provided with the SPS. Use your original Skype for Business CD.
- To install via an installation file on external storage media (e.g., a USB), first copy the file to the \\C: directory of your machine.
- If you run the installation in a Skype for Business environment, then point to the Skype for Business setup CD/Files.
- The figures shown in this installation are for a Lync 2013 environment. For Skype for Business or Lync 2010, the figures are identical, except that "Skype for Business" or "2010" replace "2013".

### 3.5.1 Verifying that Prepare Active Directory is Installed

Verify that the Prepare Active Directory component is installed.

➤ **To verify that Prepare Active Directory is installed:**

1. Do one of the following:
  - If you do not have the Setup.exe file on your computer or network, then on the Skype for Business RTM CD, run the Skype for Business Installation Wizard from the Setup.exe in directory \Setup\amd64\Setup.exe.



**Note:** If you are running the installation in a Skype for Business environment, then point to the Skype for Business setup CD/Files.

- If you already have the Setup.exe file on your computer or network, point to it by clicking **Skype for Business** under Prerequisites, and then click the **Browse** button in the SPS - Deployment Wizard screen.

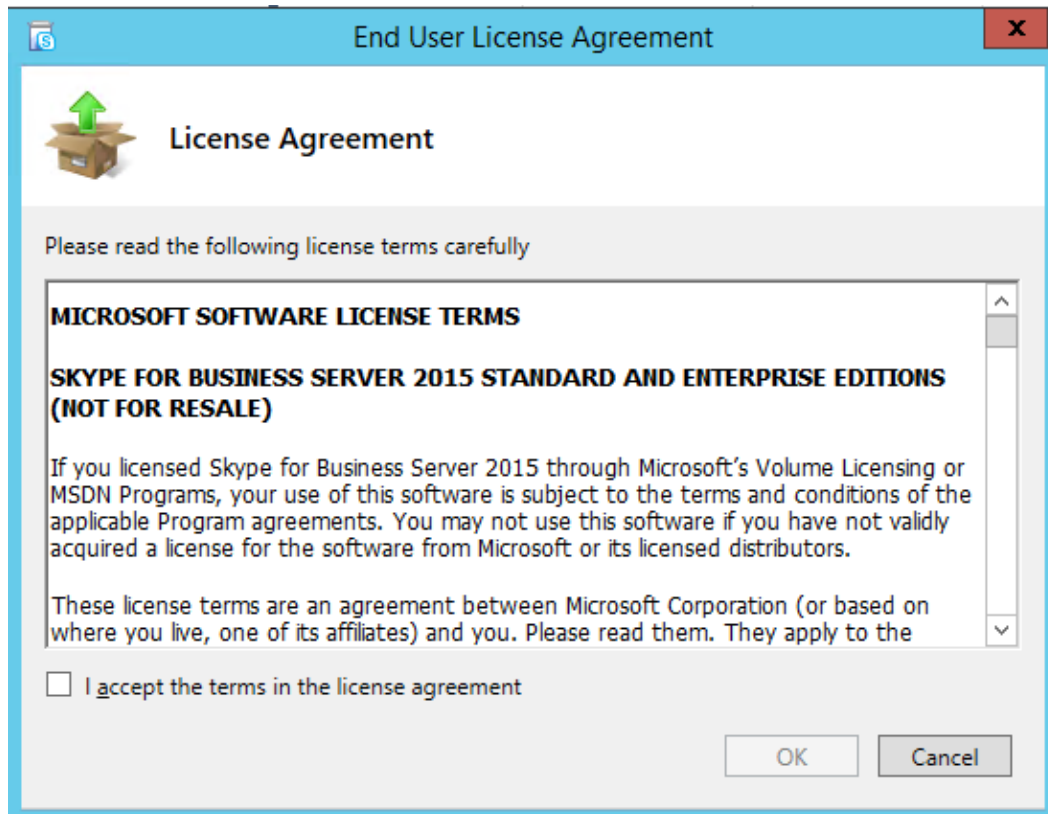
The following is displayed:

**Figure 3-10: Check for Updates and set Installation Location**



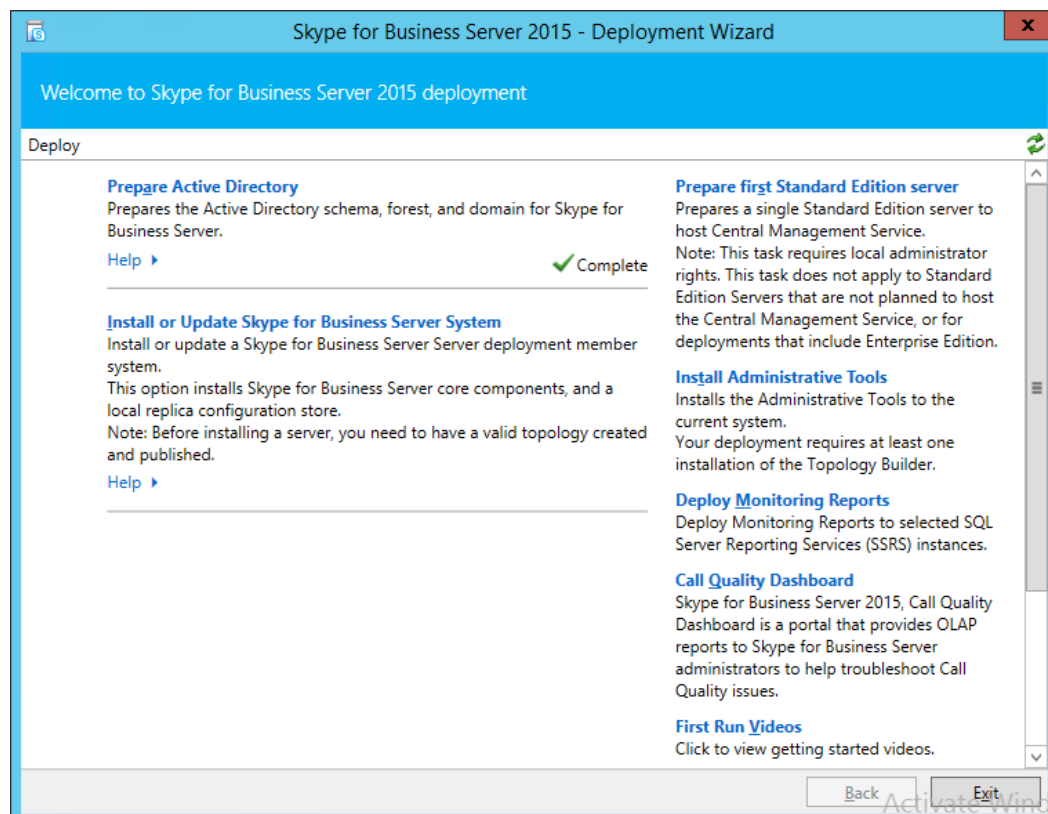
- Click the **Install** button; the License Agreement is displayed:

**Figure 3-11: End User License Agreement**



- Enable the terms of the EULA, and then click **OK**.

**Figure 3-12: Deployment Wizard**



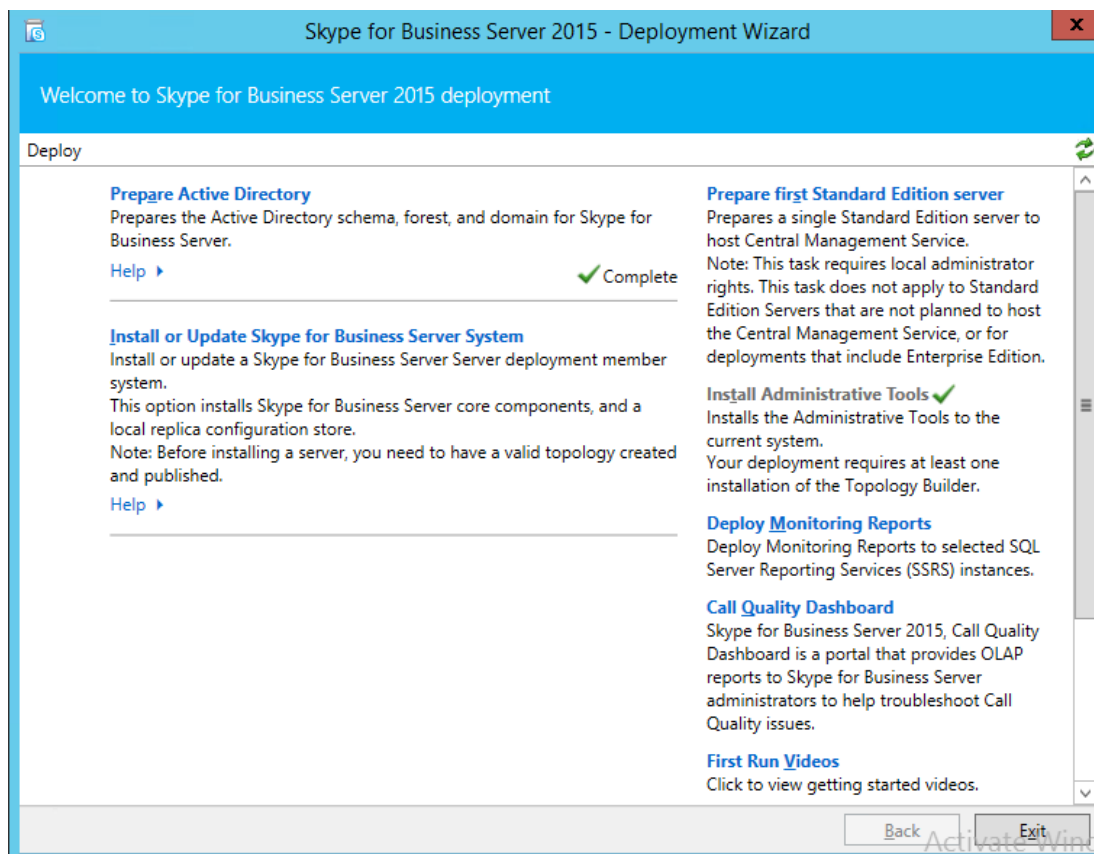
4. Verify in the Deployment Wizard's Welcome screen that **Prepare Active Directory** object is marked 'Complete' with a green tick, as displayed above.  
If this object is not marked with a green tick, check that you log in with the correct domain user to perform the SPS installation.

### 3.5.2 Installing Topology Builder

This section describes how to install the Topology Builder.

- **To install the Topology Builder:**
  - In the Deployment Wizard's Welcome screen, click **Install Administrative Tools** (**Install Topology Builder** for Lync 2010).

**Figure 3-13: Deployment Wizard: Welcome Screen**



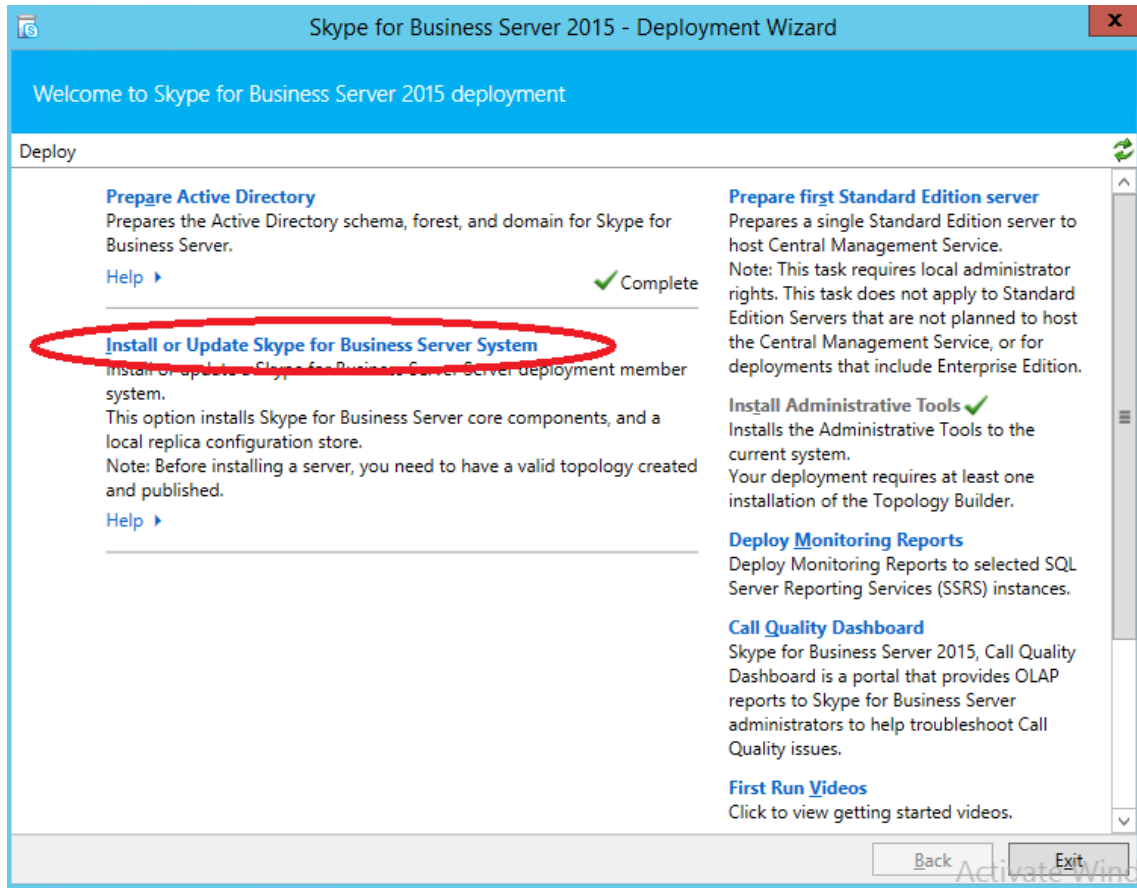
### 3.5.3 Installing Local Configuration Store

This section describes how to install the Local Configuration Store component.

➤ **To install local configuration store:**

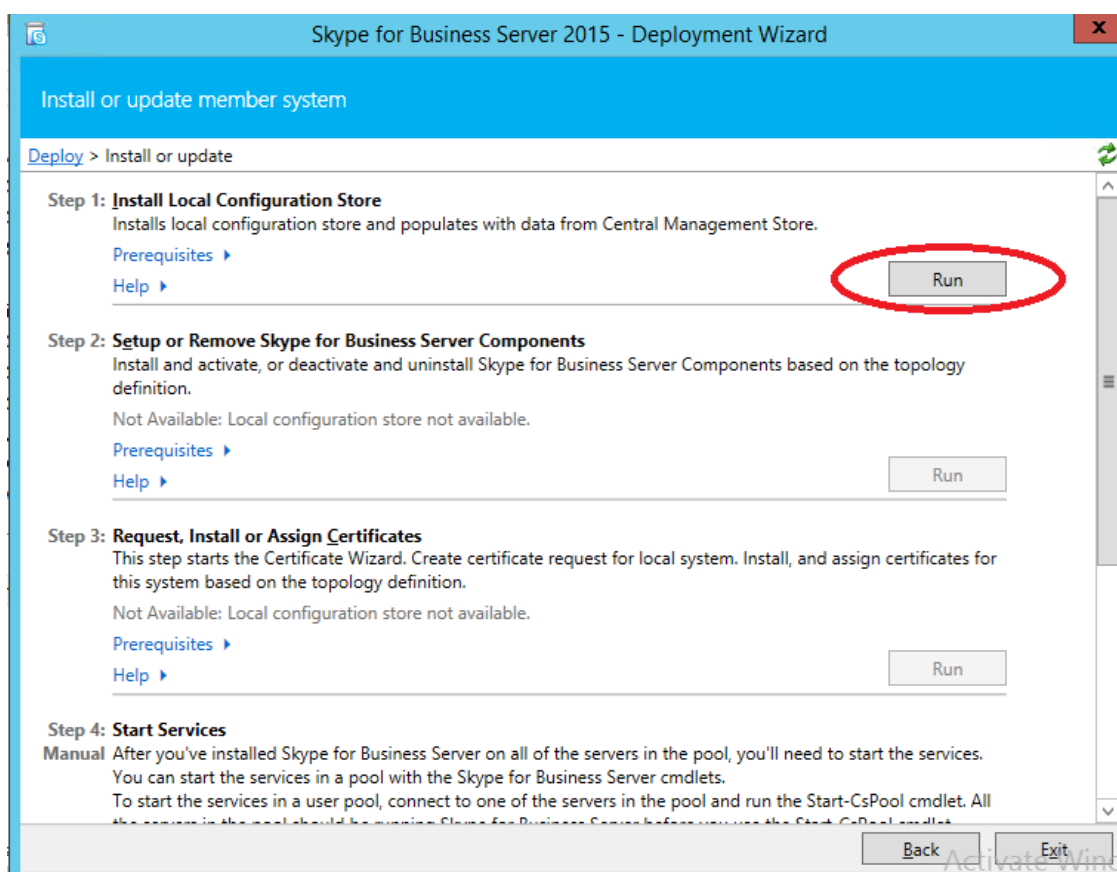
1. On the Deployment Wizard's Welcome screen, select **Install or Update Skype for Business Server System** > **Install Local Configuration Store**.

**Figure 3-14: Deployment Wizard: Install or Update**



2. On the **Install Local Configuration Store** pane, click **Run**.

**Figure 3-15: Deployment Wizard: Install Local Configuration Store**



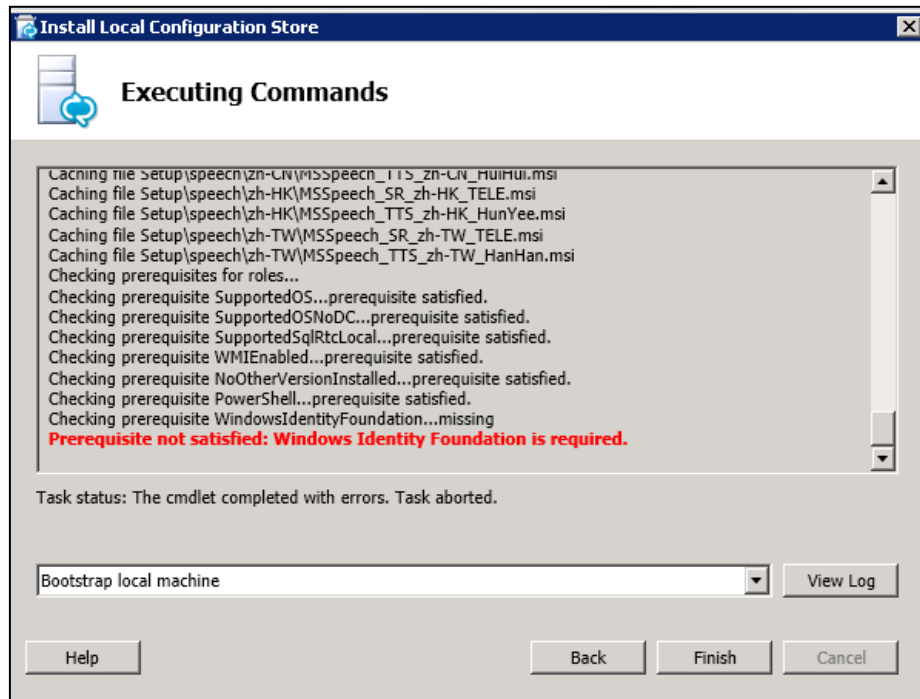
**Note:** Wait until this step completes. It may take a few minutes.



**Note:**

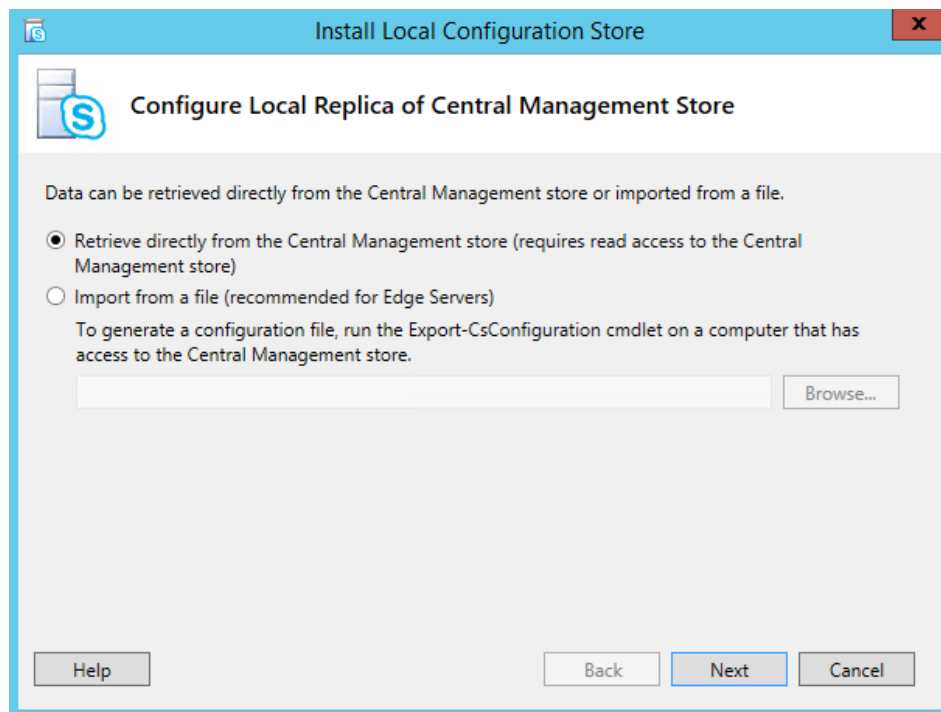
- If the error **Prerequisite not satisfied: Windows Identity Foundation is required** (see [Figure 3-16](#) below) is received during the component installation (Local Configuration Store) on OS Windows 2008 R2, then for Windows Server 2008 R2 check whether this component has already been installed on your computer. To do this, go to **Add/Remove Programs, View Installed Updates**, and search under **Windows** for the entry **Windows Identity Foundation (KB974405)**. For details about installing Windows Identity Foundation, see <http://go.microsoft.com/fwlink/p/?linkId=204657>.
- If necessary, install the required file **Windows6.1-KB974405-x64** from C:\SPS\_installtion\SPS\_2013\Microsoft\_files.

Figure 3-16: Executing Commands



3. Wait until the installation finishes; the Configure Local Replica of Central Management Store screen is displayed:

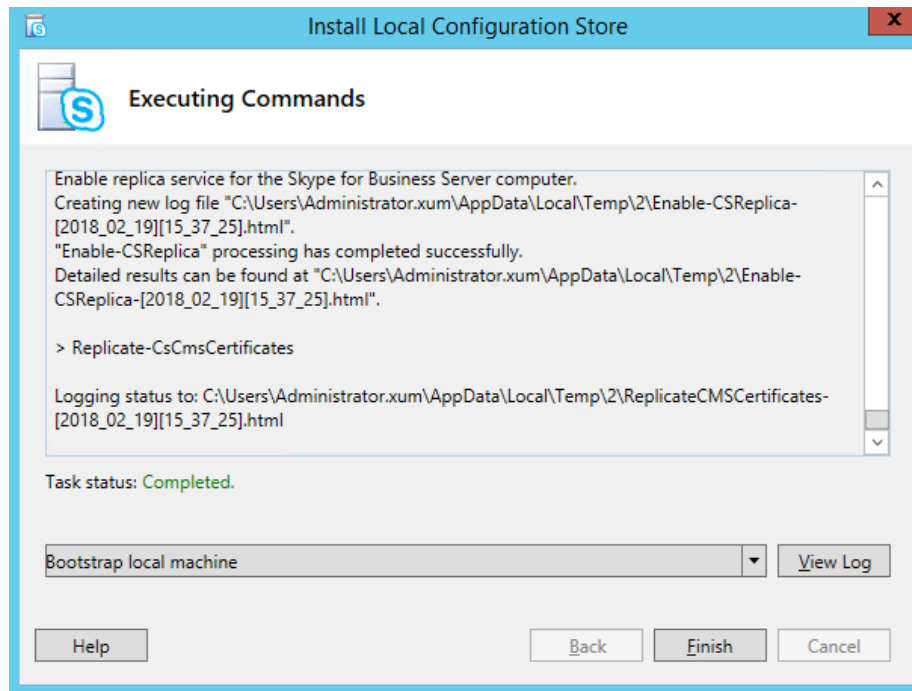
Figure 3-17: Deployment Wizard: Configure Local Replica of Central Management Store





- Click **Next**; the Executing Commands screen is displayed:

**Figure 3-18: Deployment Wizard: Executing Commands**



- Click **Finish**.



**Note:** It's recommended that the SPS and the Lync/Skype server environment have the same Cumulative Update version. Perform the Cumulative Update on the SPS server only after you have upgraded your Lync/Skype server environment with the same Cumulative Update version. For more information, refer to *Product Notice - SPS - Microsoft CUxx Release Announcement*.

## 3.6 Installing UCMA

The SPS server requires that the UCMA (Unified Communications Managed API) is installed. If this component has not been installed, perform the procedure below.



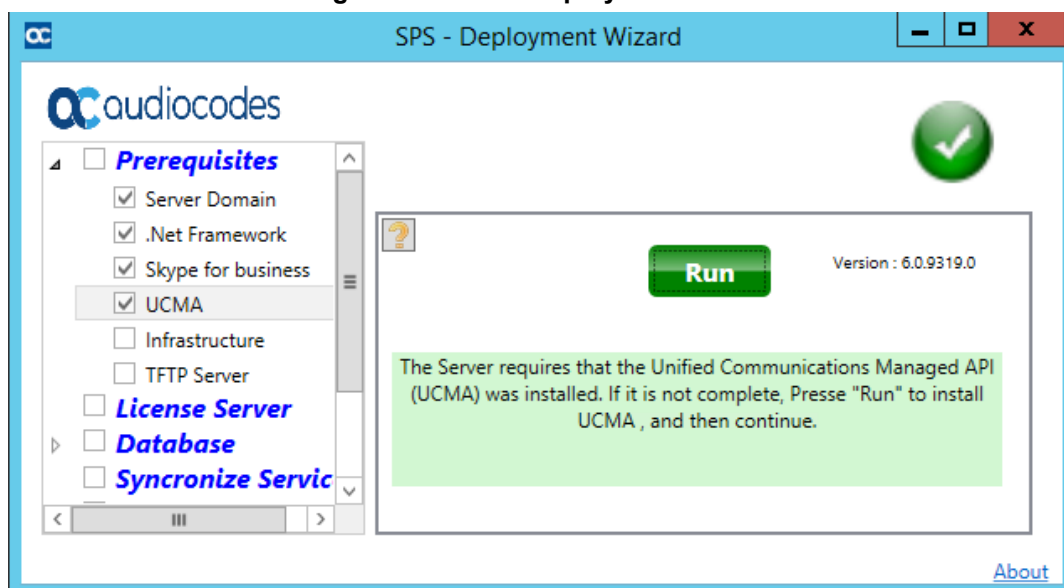
### Notes:

- After completing the Local Store installation, the UCMA check box may be enabled. Even though it is enabled, you should install the UCMA using the wizard again.
- Only if you click **Run** and a message is displayed that the UCMA is already installed, can you cancel the UCMA installation and continue to the next step.

### ➤ To install UCMA:

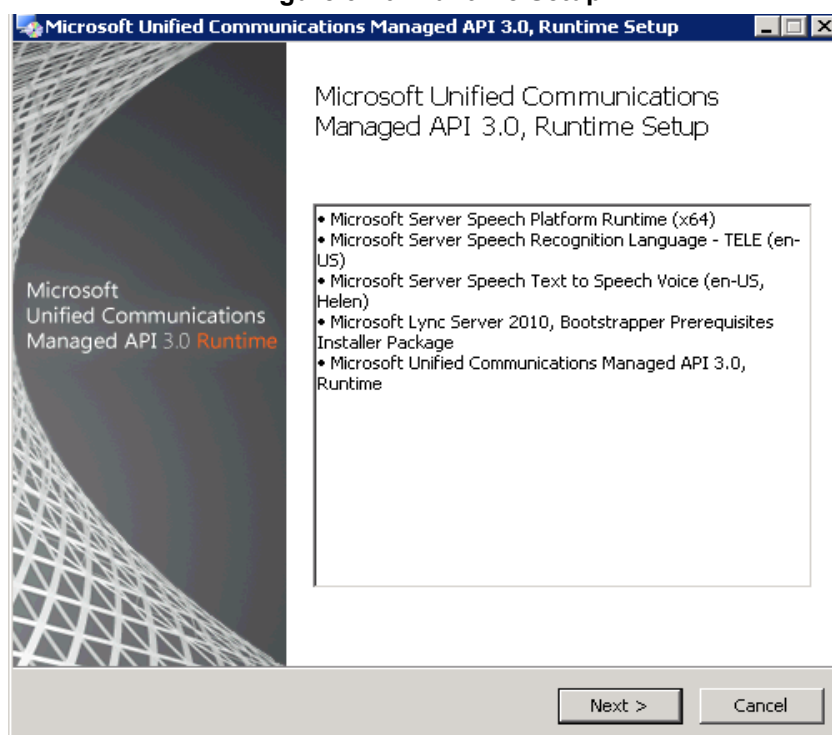
1. Click **UCMA**; the following is displayed:

Figure 3-19: SPS-Deployment Wizard

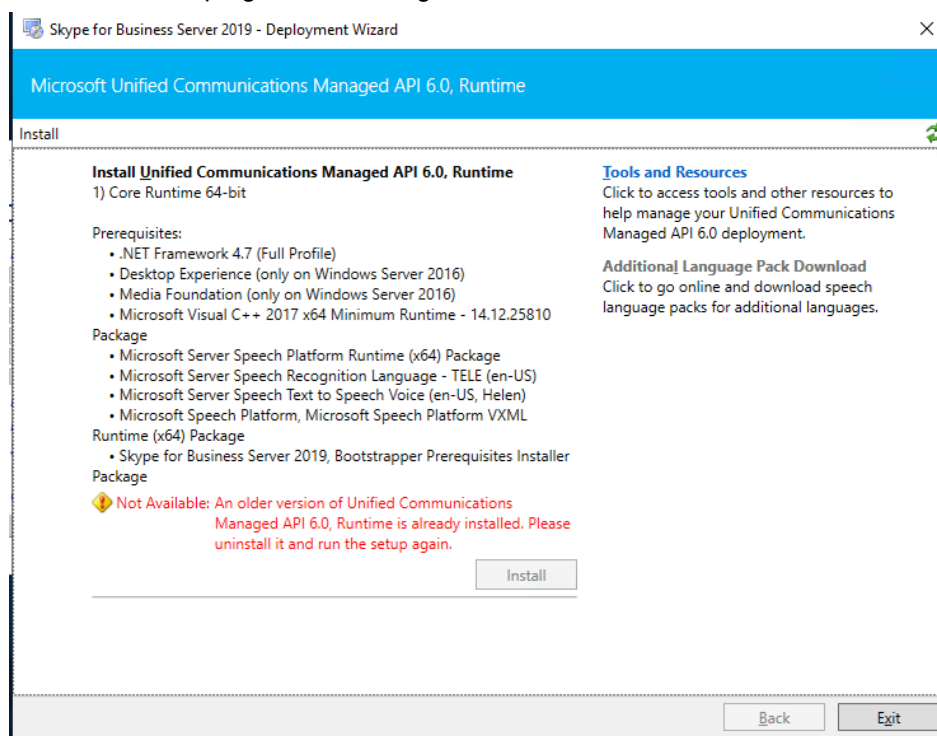


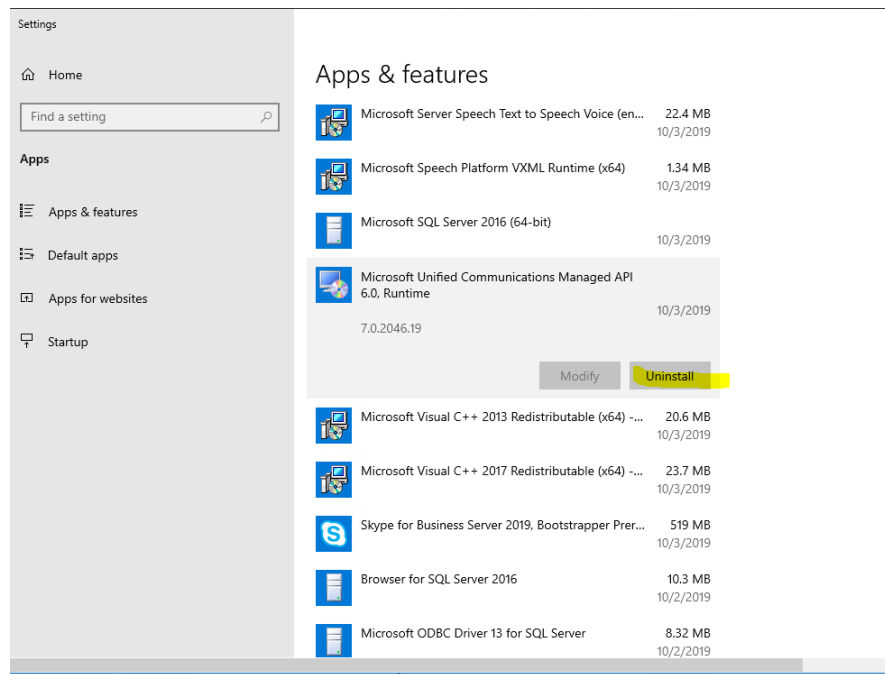
2. Click **Run**; the following is displayed:

**Figure 3-20: Runtime Setup**



3. Click **Next**, and follow the installation instructions.
4. For Skype for Business Server 2019, you may get the error that appears below. In this case, login to the SPS server with the local Administrator, and uninstall the UCMA software using 'Add or Remove Program' and login using the domain user again.
5. Run this step again even though it is marked as installed.



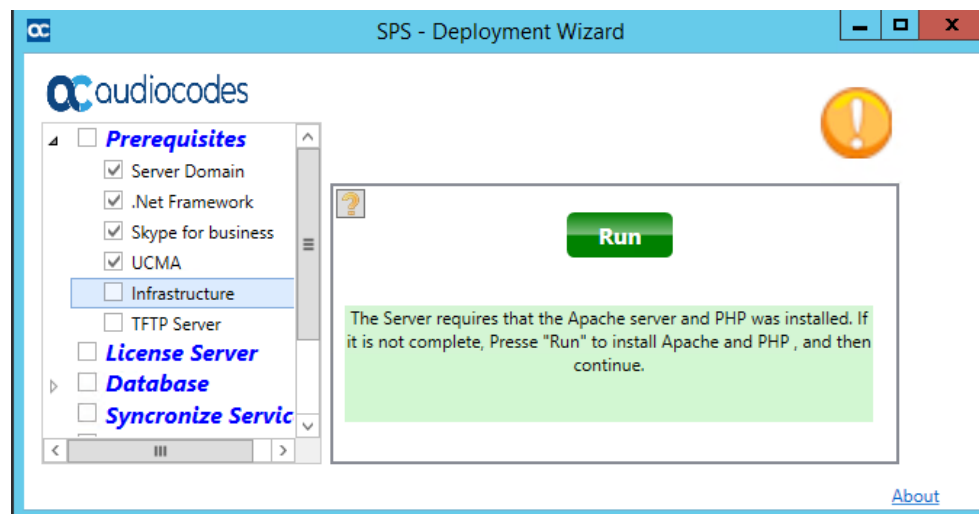


## 3.7 Installing Infrastructure

This step installs the infrastructure required by the SPS Software components (Apache Server)

- Click **Run** to install it.

Figure 3-21: Install Apache Server

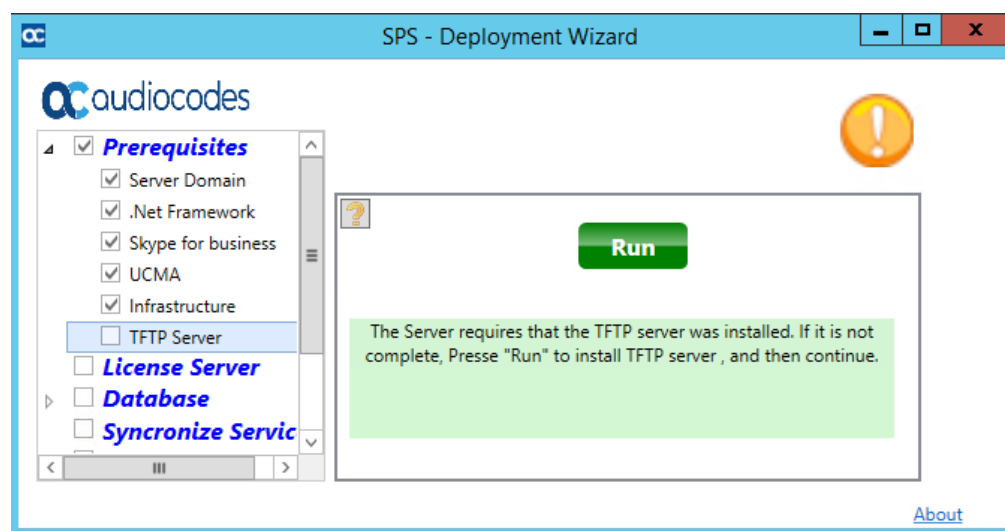


## 3.8 Install TFTP Server

If you need to install a TFTP server for the IPP configuration phone, select the prerequisites – **TFTP server** - and then click **Run**.

The installation of this component is optional.

Figure 3-22: Install TFTP Server



## 3.9 Installing the SPS

After you run the prerequisite deployments as described in the above sections, and then the SPS-Deployment Wizard screen consequently shows all four prerequisite components (Server Domain, .Net Framework, Microsoft LYNC and UCMA) checked as 'Complete', you are ready to install the SPS application.



**Note:**

- Customers receive the gateway with all SPS components (installation files) already *loaded* on the OSN server.
- Customers must now *install* these components for the SPS application to run on their premises. The SPS cannot be pre-installed before shipping as the gateway's OSN server must be added to the specific customer's domain before the SPS can be installed.

This section describes how to *install* the SPS components.

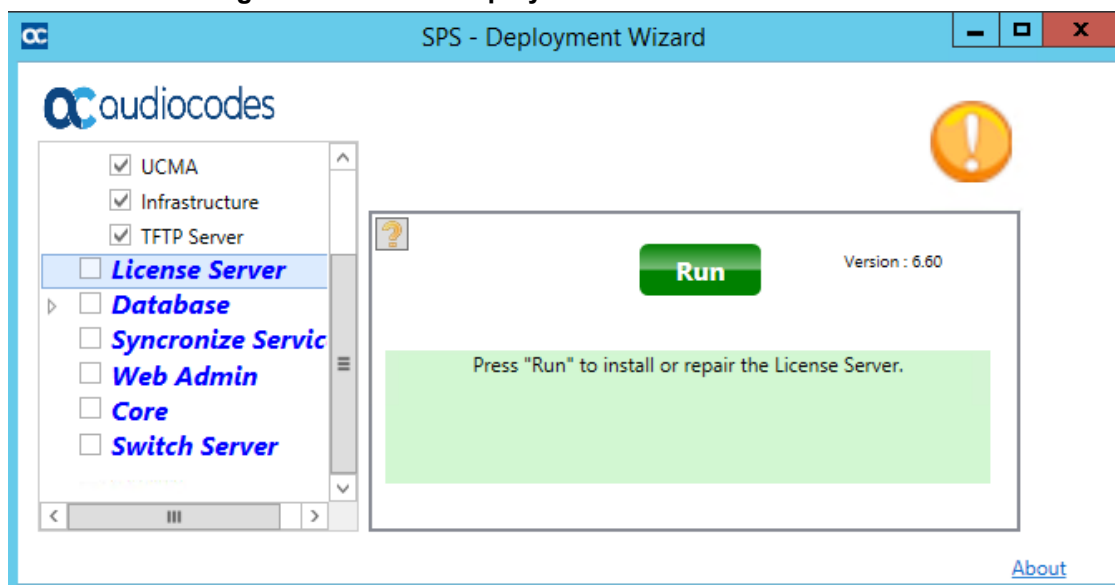
### 3.9.1 Installing the SPS License

This section describes how to install the SPS license.

➤ **To install the SPS license:**

1. In the SPS Components Installation screen, click **License server**; the following is displayed:

**Figure 3-23: SPS – Deployment Wizard – License Server**



2. Click the **Run** button.

## 3.9.2 Installing the Database Infrastructure

The procedure described in this section is required for a multi-server architecture - an SPS network that consists of several SPS servers with a single synchronized database. The installation includes the following components:

- SQL Server Instance
- Schema
- Data

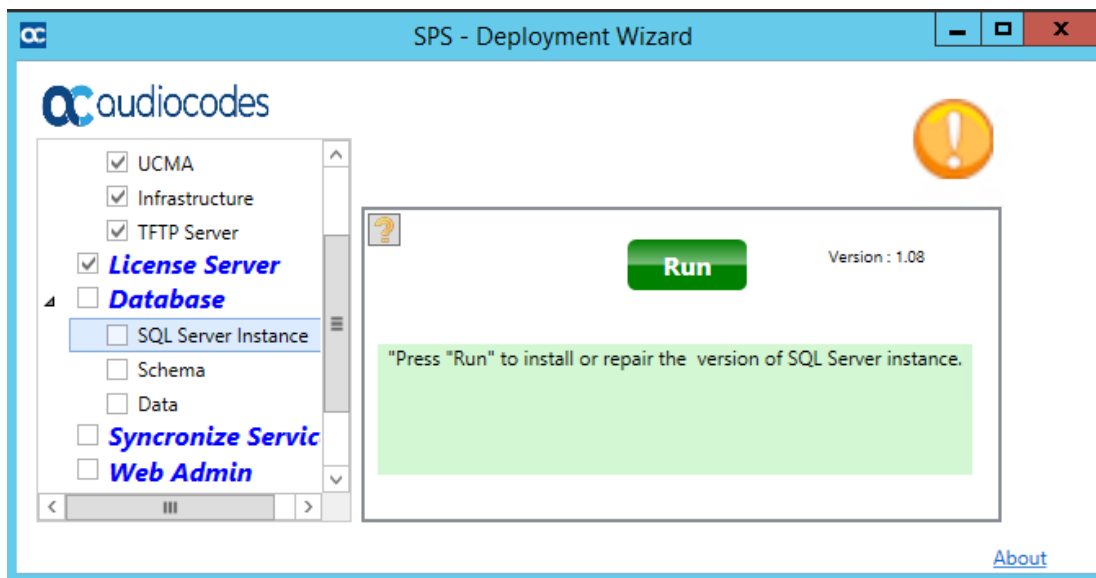
### 3.9.2.1 Installing the SQL Server Instance

This section describes how to install the SQL Server Instance.

➤ **To install SQL server instance:**

1. In the SPS Components Installation screen, select the **SQL Server Instance** check box; the following is displayed:

**Figure 3-24: SPS – Deployment Wizard– SQL Server Instance**



2. Click **Run**; the installation commences.

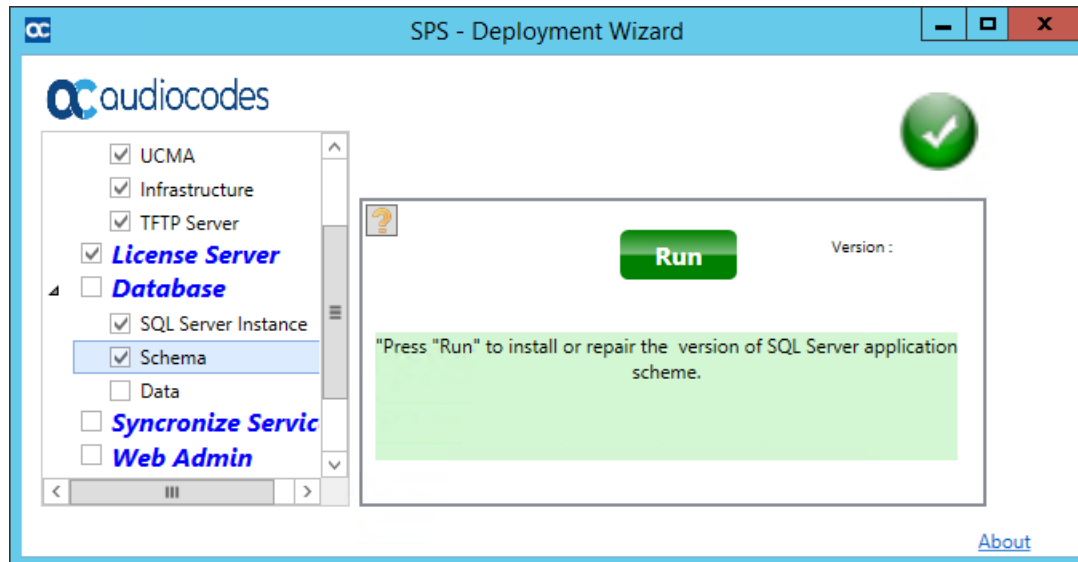
### 3.9.2.2 Installing the Schema

This section describes how to install the Database Schema.

➤ **To install the Database Schema:**

1. In the SPS Components Installation screen, select the **Schema** option; the following screen opens:

**Figure 3-25: SPS – Deployment Wizard – Schema**



2. Click **Run**; if this is the first SPS in a multi-SPS environment or standalone SPS, when you have completed, see Section 3.9.2.3.
3. In the case of a multi-SPS environment and not the installation of the initial SPS, go to the Data step and enable the 'Join to existing multi SPS...' checkbox. Don't click **Run** under Data.





4. Go back again to the Schema step and click **Run again** to copy the schema from the first SPS; the application shown in [Figure 3-26](#) opens.

**Figure 3-26: Mirror SPS DB**

Source

Instance URL 0.0.0.0\sps\_db

Destination

IP address

Instance name sps\_db

SA Password 1q2w3e\$

☒ Insert server to source DB

Server Name

Clean DB

Run

5. In the 'Instance URL' field under Source, enter the existing server to copy from.
6. In the 'IP address' field under Destination, enter the new server's IP address.
7. In the 'SA Password' field, enter "CTI21q2w3e\$r5t".
8. Select the 'Insert server to source DB' option.
9. In the 'Server Name' field, enter the destination's computer name, and then click **Run**; the application mirrors the entire schema from the source to the new server, and adds the new server name to the list. All data on the source server is synchronized during the next synchronization cycle.



**Note:** If the 'Schema' option is not selected, then search for a Temp directory under C:\. If you don't find a Temp directory, create one, and then repeat the above procedure.

### 3.9.2.3 Installing the Data Component

This section describes how to install the data component.

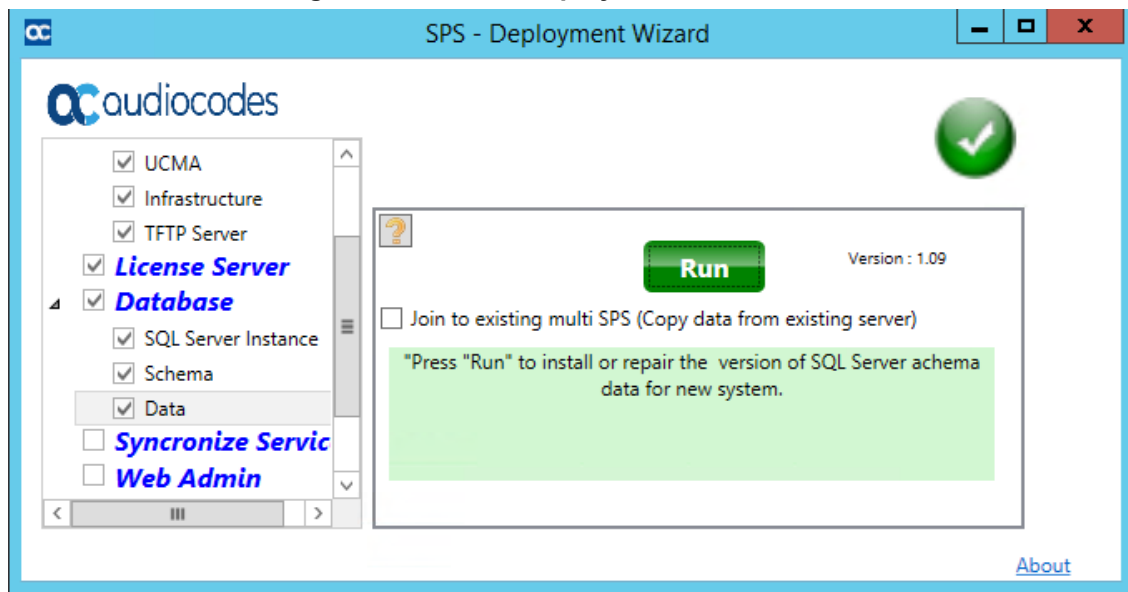


**Note:** This section is not relevant in a multi-SPS environment when it is not the first server, i.e., when the scheme and data from the first SPS have already been copied.

➤ **To install the data component:**

1. In the SPS Components Installation screen, select the **Data** check box; the following is displayed:

**Figure 3-27: SPS – Deployment Wizard – Data**



2. Click **Run**; the installation commences.

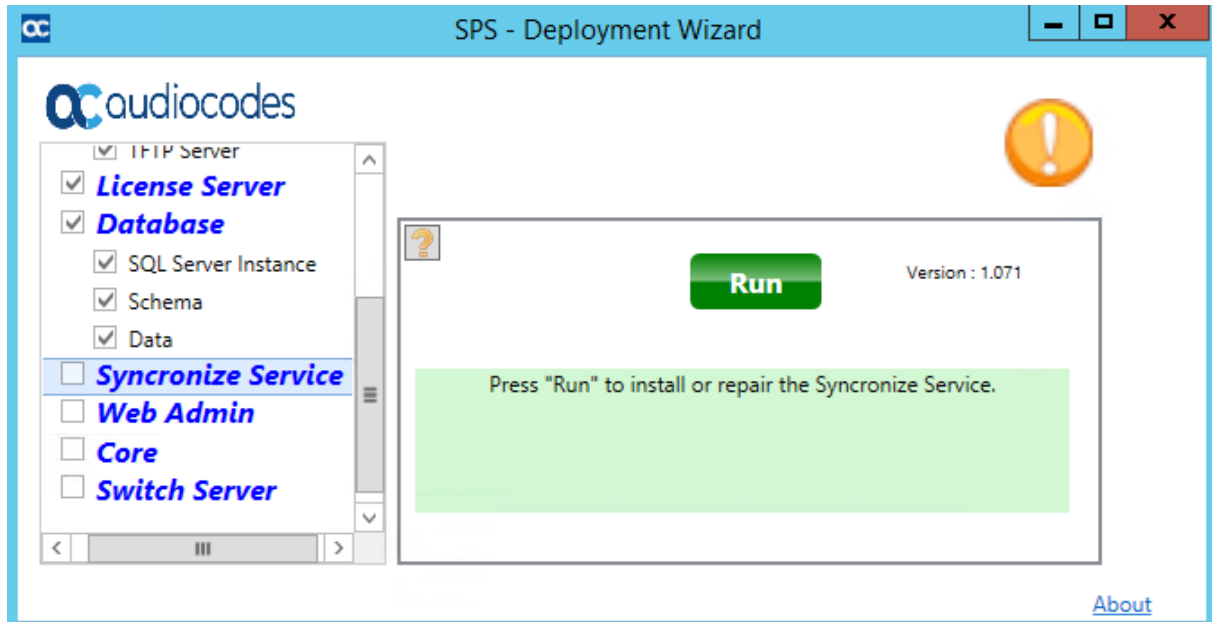
### 3.9.3 Installing the Synchronize Service

This section describes how to install the Synchronize Service.

➤ **To install Synchronize Service:**

1. In the SPS Components Installation screen, select the **Synchronize Service** check box; the following is displayed:

**Figure 3-28: SPS – Deployment Wizard – Synchronize Service**



2. Click **Run**; the installation commences.

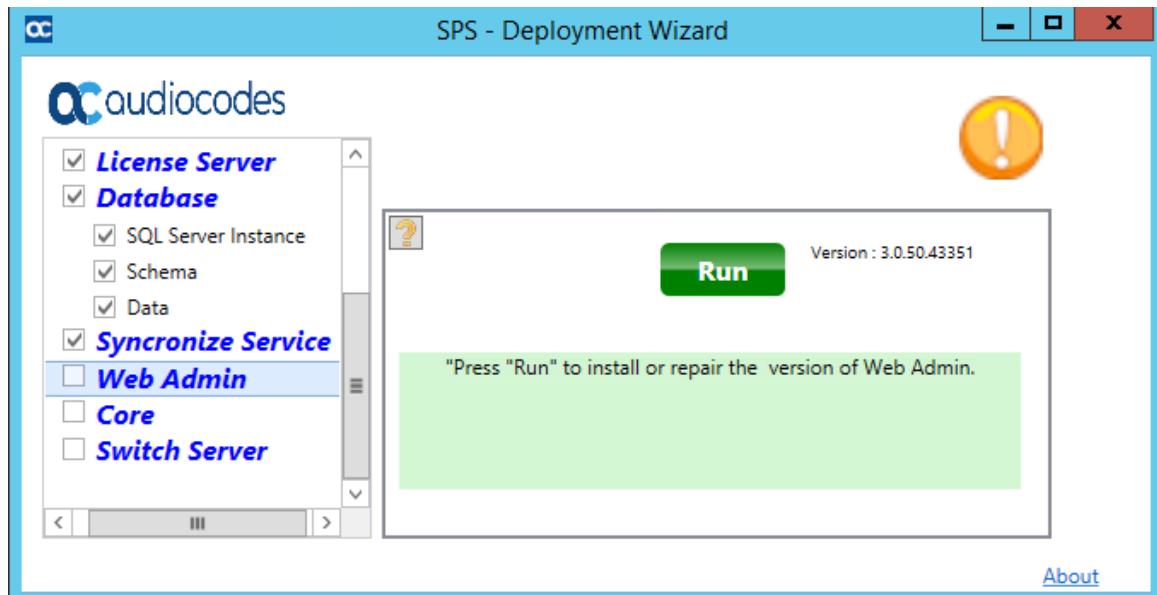
### 3.9.4 Installing the SPS Web Admin

This section describes how to install the SPS Web Admin.

➤ **To install Web Admin:**

1. In the SPS Components Installation screen, click the **Web Admin**; the following is displayed:

**Figure 3-29: SPS Web Admin Setup Wizard - Welcome**



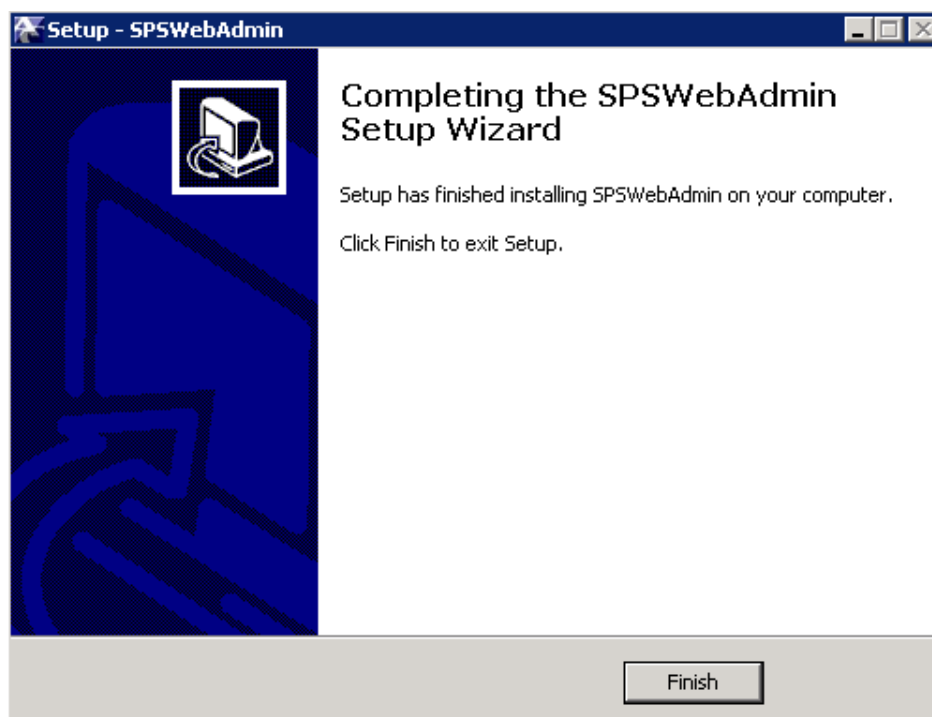
2. Click **Run**; the installation commences.



**Note:** This process takes a few minutes.

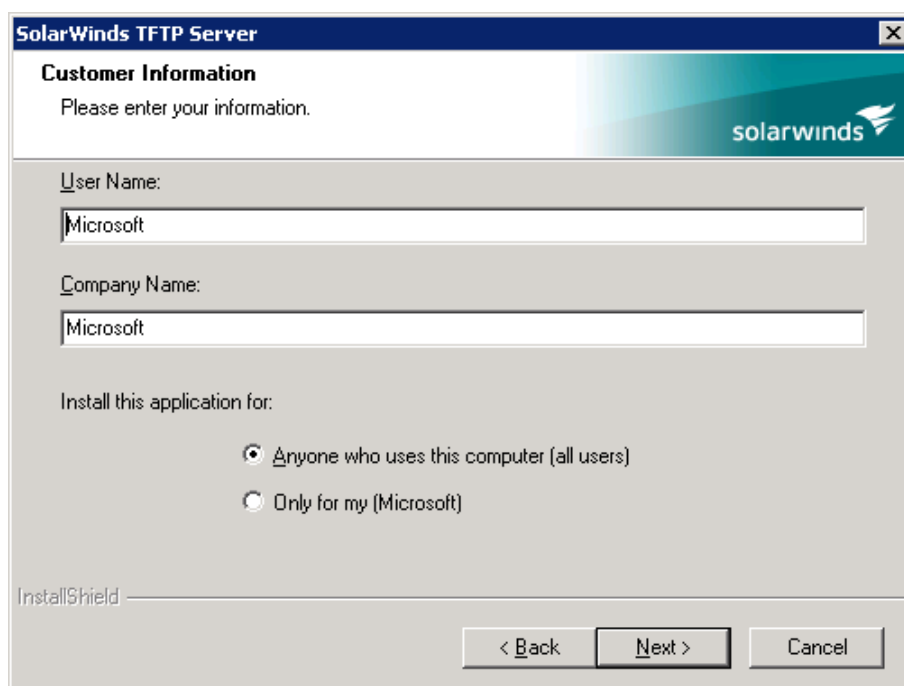
3. Click **Finish**.

**Figure 3-30: SPS Web Admin Setup - Completion**



4. If the SolarWinds TFTP Server application is not already installed on your system, install it.

**Figure 3-31: SolarWinds TFTP Server**



5. Enter the **Customer Information** and click **Next**. Wait until the screen closes to complete the installation process.

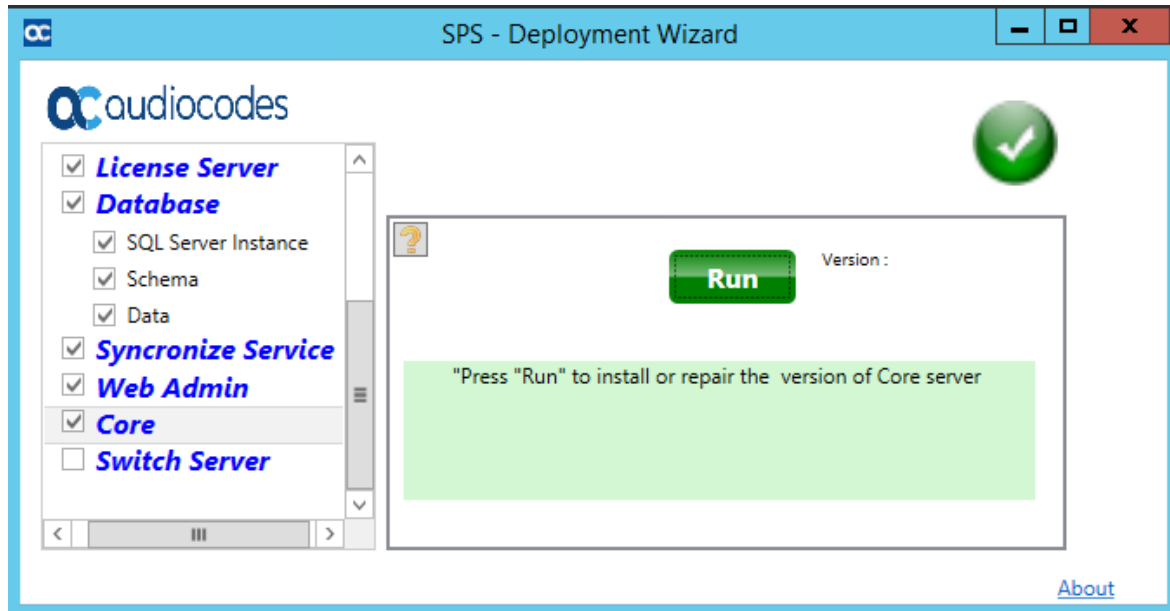
### 3.9.5 Installing the SPS Core

This section describes how to install and setup the SPS Core.

➤ **To install and set up the SPS core:**

1. In the SPS Components Installation screen, select the **Core** check box; the following screen is displayed:

**Figure 3-32: SPS Setup Wizard – Welcome**



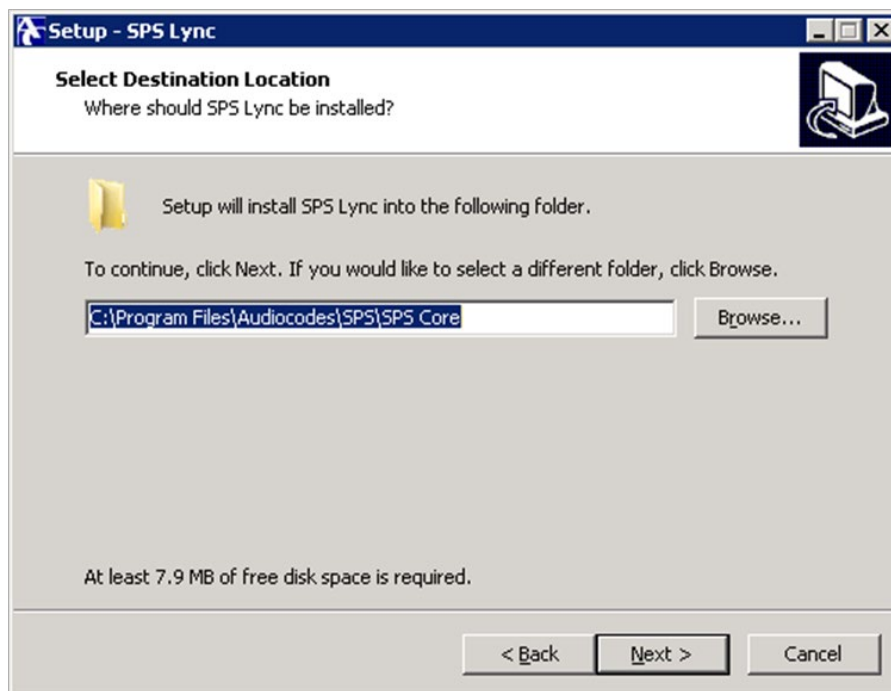
2. Click **Run**; the Welcome screen is displayed:

**Figure 3-33: Welcome to the SPS Setup Wizard**



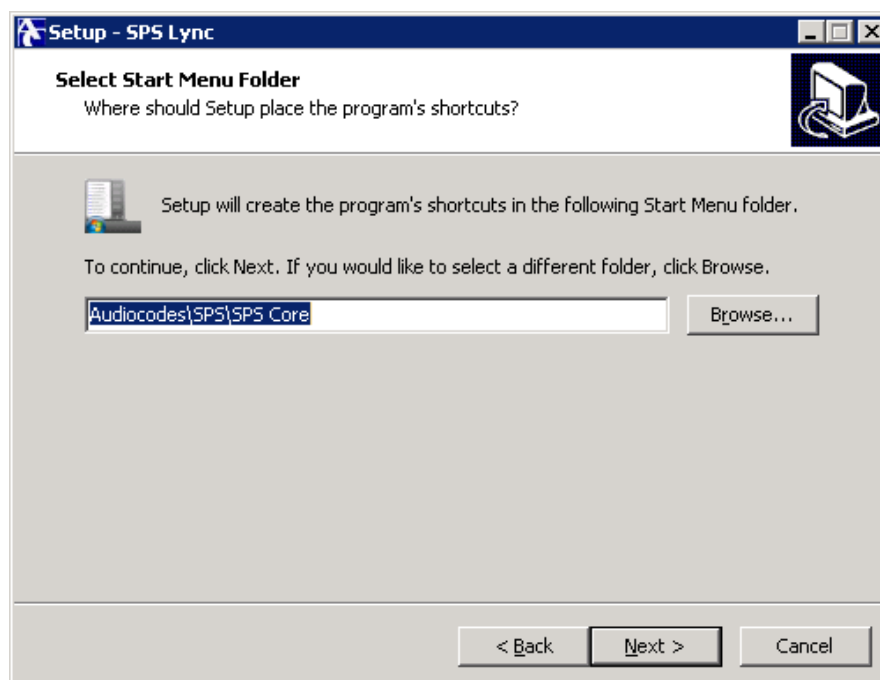
3. Click **Next**; the following is displayed:

**Figure 3-34: SPS Setup Wizard - File Location**



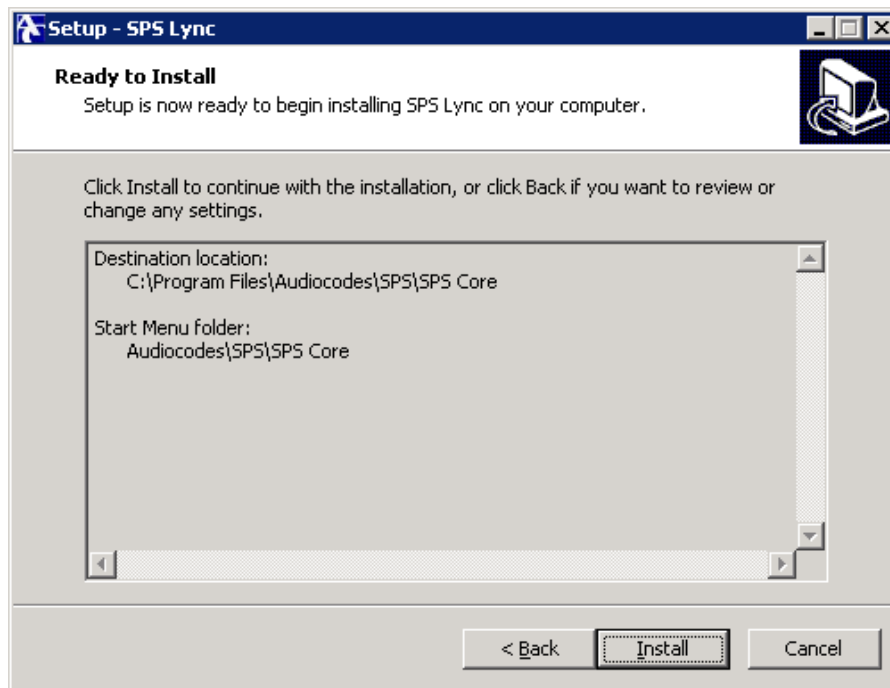
4. Select the **Destination Location** of the installation; choose the default, and then click **Next**; the following is displayed:

**Figure 3-35: SPS Setup Wizard – Select Start Menu**



5. Select the **Start Menu** folder and click **Next**; the following is displayed:

**Figure 3-36: SPS Setup Wizard – Ready to Install**



6. Click **Install**.

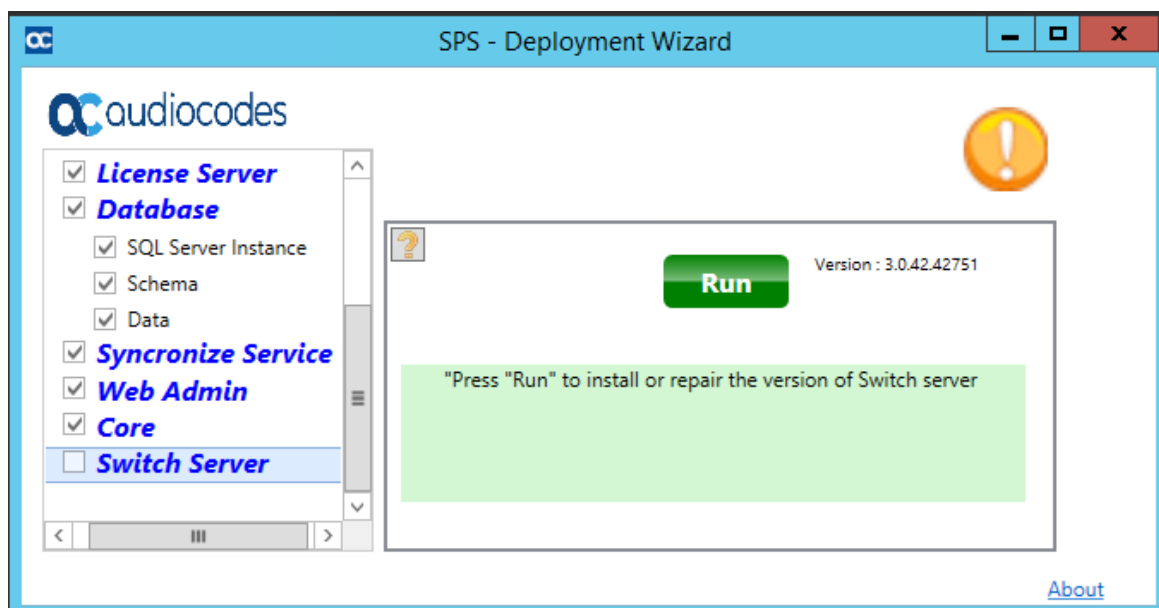
### 3.9.6 Installing the SPS Switch

This section describes how to install and setup the SPS switch.

- **To install and set up the SPS switch:**

1. In the SPS Components Installation screen, select the **Switch Server** check box; the following is displayed:

**Figure 3-37: SPS – Deployment Wizard**





2. Click **Run**.

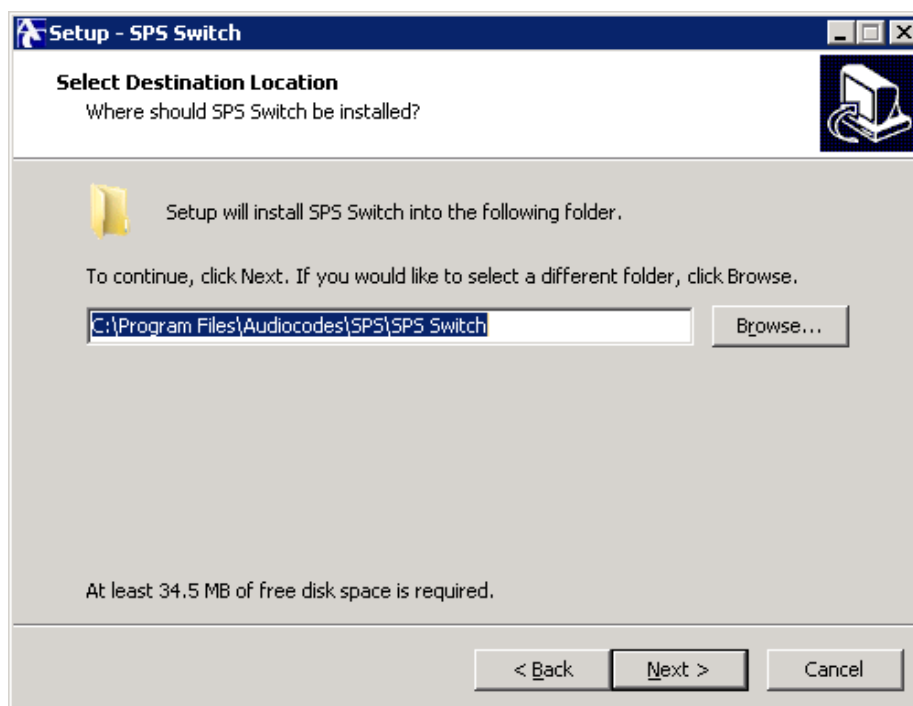
The wizard continues with the installation of the SPS switch; the Switch Welcome screen is displayed:

**Figure 3-38: SPS Switch Setup Wizard – Welcome**



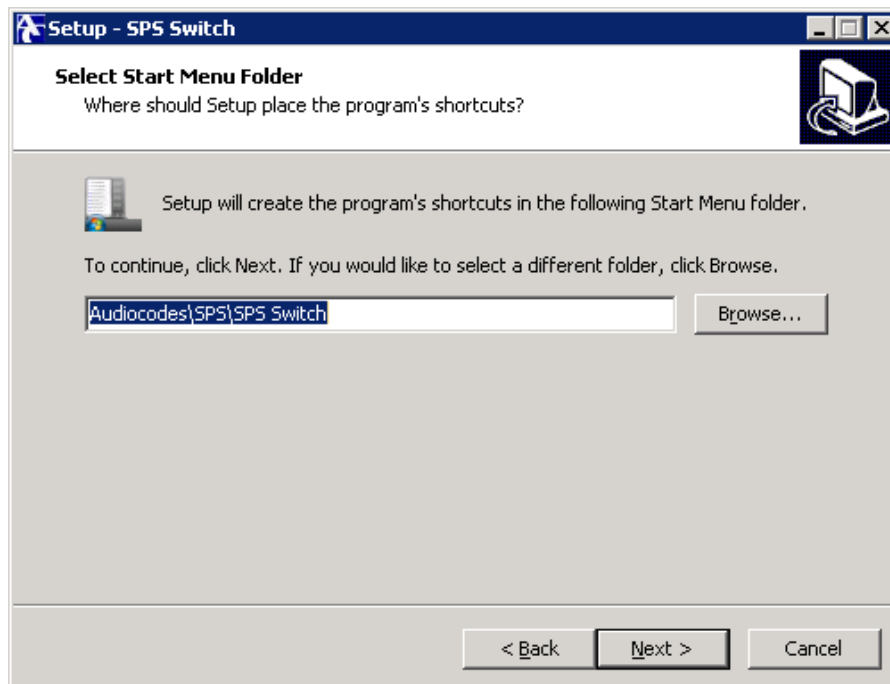
3. Click **Next**.

**Figure 3-39: SPS Switch Setup Wizard – File Location**



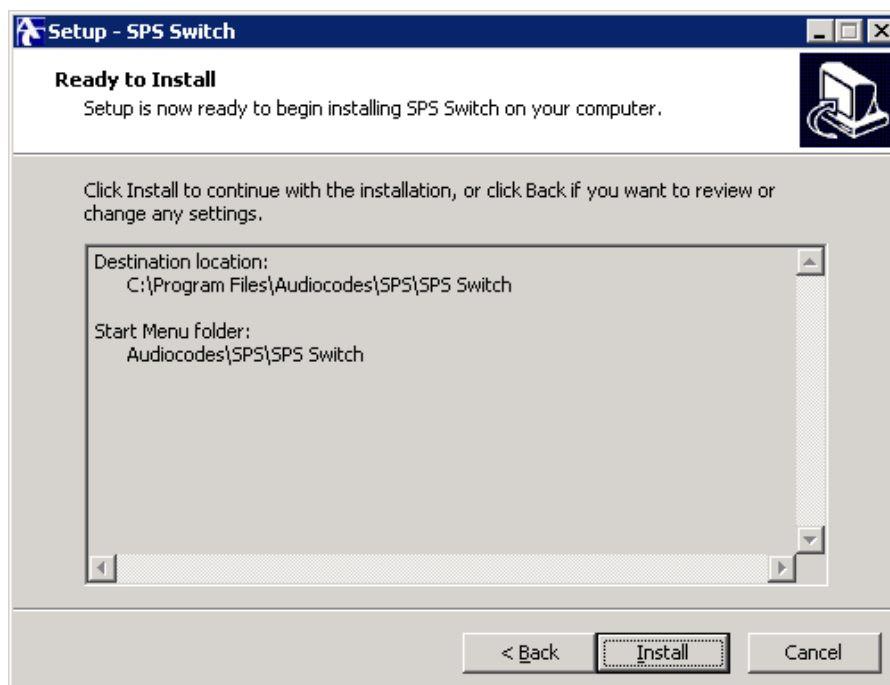
4. Select the **Destination Location** (choose the default), and then click **Next**; the following is displayed:

**Figure 3-40: SPS Switch Setup Wizard – Select Start Menu**



5. Select the **Start Menu** folder, and then click **Next**; the Ready to Install screen opens:

**Figure 3-41: SPS Switch Setup Wizard – Ready to Install**



6. Click **Install**; the Setup Complete screen is displayed:

**Figure 3-42: SPS Switch Setup Wizard – Setup Complete**



7. Click **Finish**.

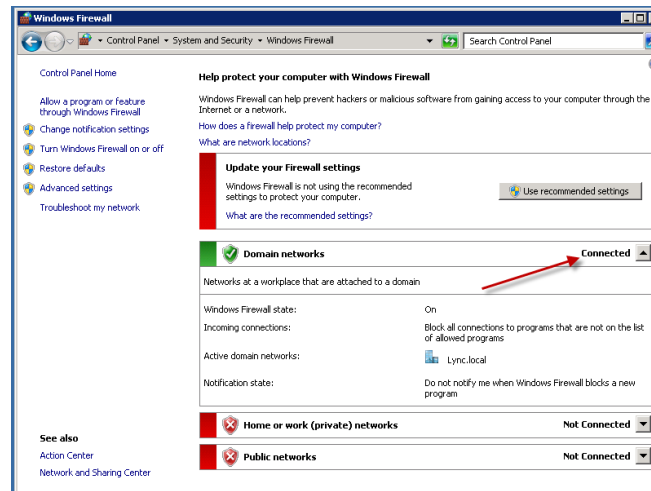
### 3.9.7 Disabling the Windows Firewall and Anti-Virus

After you add the SPS to the company domain, Windows automatically enables the SPS domain network Firewall. You should disable it, unless you define it correctly according to the AudioCodes document *Firewall Setup for SIP Phone Support (SPS)*.

➤ **To disable the Windows Firewall and Anti-Virus:**

1. Open the **Windows Firewall**, go to **Domain networks** and disable (as shown in the figure below).

**Figure 3-43: Windows Firewall**



2. Do the following:

**Windows Updates:**

- Disable to prevent unknown side effects to the SPS application (recommended). AudioCodes only certifies major Service Pack updates.

**Anti-Virus Software:**

- No anti-virus software is included with SPS.
- No specific anti-virus software is tested or certified with SPS.
  - ◆ Anti-virus scanning exclusions for SPS Skype components from Microsoft instructions at <https://docs.microsoft.com/en-us/skypeforbusiness/plan-your-deployment/security/antivirus>. This needs to handle processes and paths that are relevant for the SPS server.

• SPS Software:

- ◆ Services (Processes):
  - ✓ Apache2.4 (httpd.exe)
  - ✓ SPS (SpsLync.exe)
  - ✓ SPS-Switch (FreeSwitch.exe)
  - ✓ SpsHttpCfg (SpsHttpCfg.exe)
  - ✓ sps\_db\_sync (sps\_db\_sync\_srvcs.exe)
- ◆ Paths:
  - ✓ %programfiles%\AudioCodes\SPS

**Windows Defender:**

- Disable the Windows Defender.

## 4 Activating the SPS

This section describes how to activate the SPS application and how to activate the SPS on the Skype for Business server.



**Note:** For the Windows 2016, update the SPS with Skype for Business cumulative update 5 (CU5) or higher.

### 4.1 Activating the SPS Application

This section describes how to activate the SPS application. You need to do the following:

- Request and set a new certificate for the SPS server.
- Set the SPS as a Trusted Application.
- Identify the Skype for Business server and configure the SPS to work with it.



**Note:**

- These steps are performed automatically when there's one site/pool. If there are more than one site/pool, you're prompted to select the site/pool to which the SPS will be trusted.
- These activation steps are performed only once, even if the SPS is later upgraded to a newer version.
- If SPS activation fails, this action can also be performed manually (see Section 6).



**Note:**

- In case of a branch office with the SBA, activation of the SPS needs to be performed on the main site only and not on the SBA. In any case, SBA calls remain local and there's no traffic to the main site.
- If the main site is down or the connection to it is lost, the SPS continues to function normally - though presence is unavailable. This behavior is identical to that of the Lync client.

## 4.2 Activating the SPS on Skype for Business

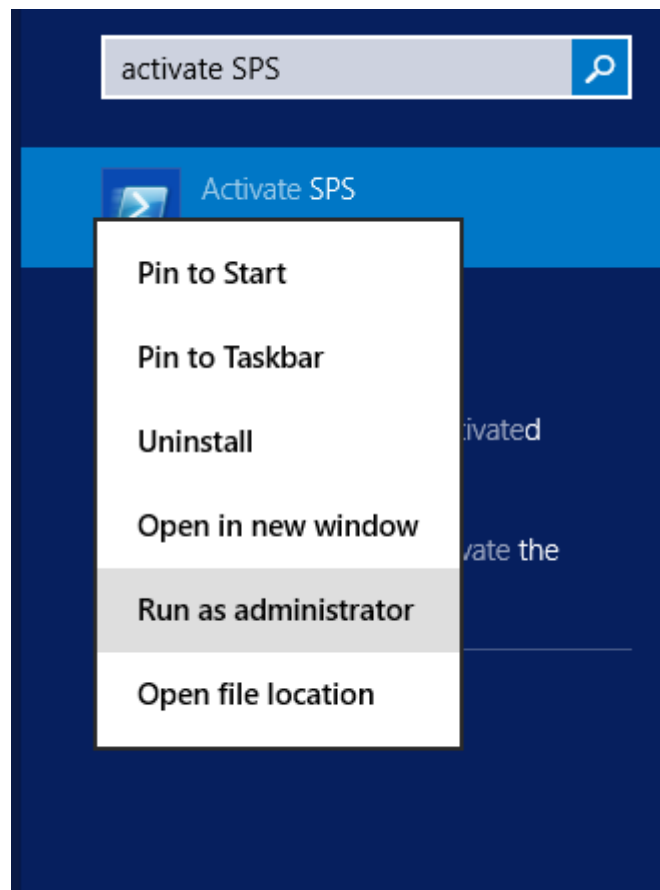
This section describes how to activate the SPS on Skype for Business.



**Note:** Make sure the user running the activation is a member of CSAdministrator, RTCUniversalServerAdmins, and also a local computer administrator even if they are a domain administrator.

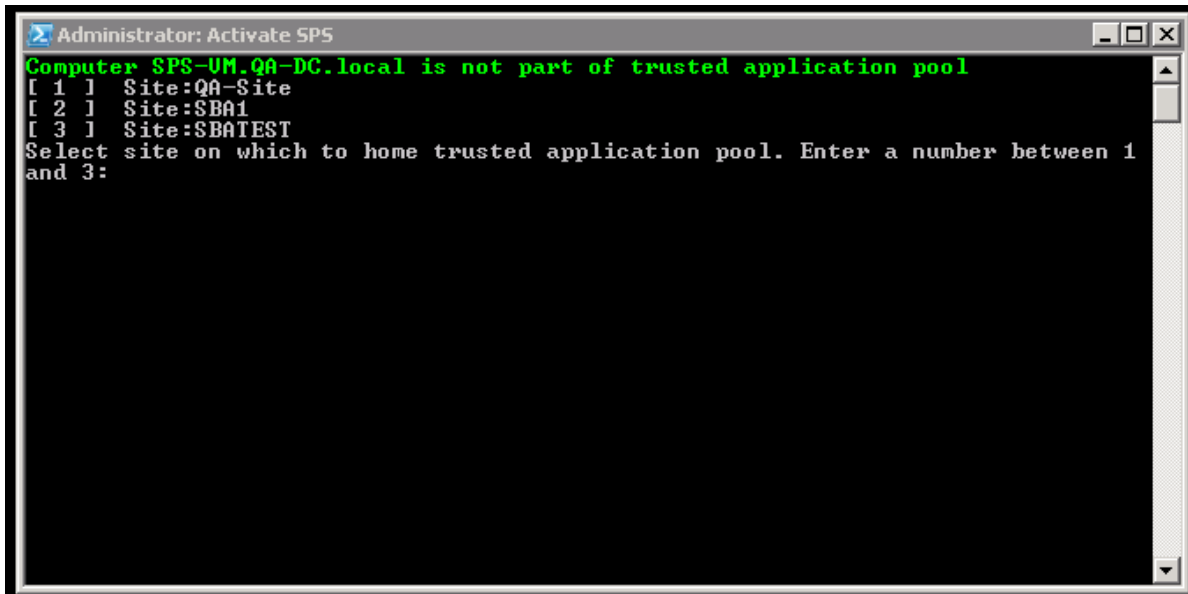
- **To activate the SPS with Skype for Business:**
- 1. In the Deployment Wizard, run **Activate SPS** (**Start > All Programs > Audiocodes > SPS > SPS Core > Activation > Activate SPS**).

Figure 4-1: Deployment Wizard: Activate SPS



2. You're prompted to select the site upon which to home the trusted application pool:

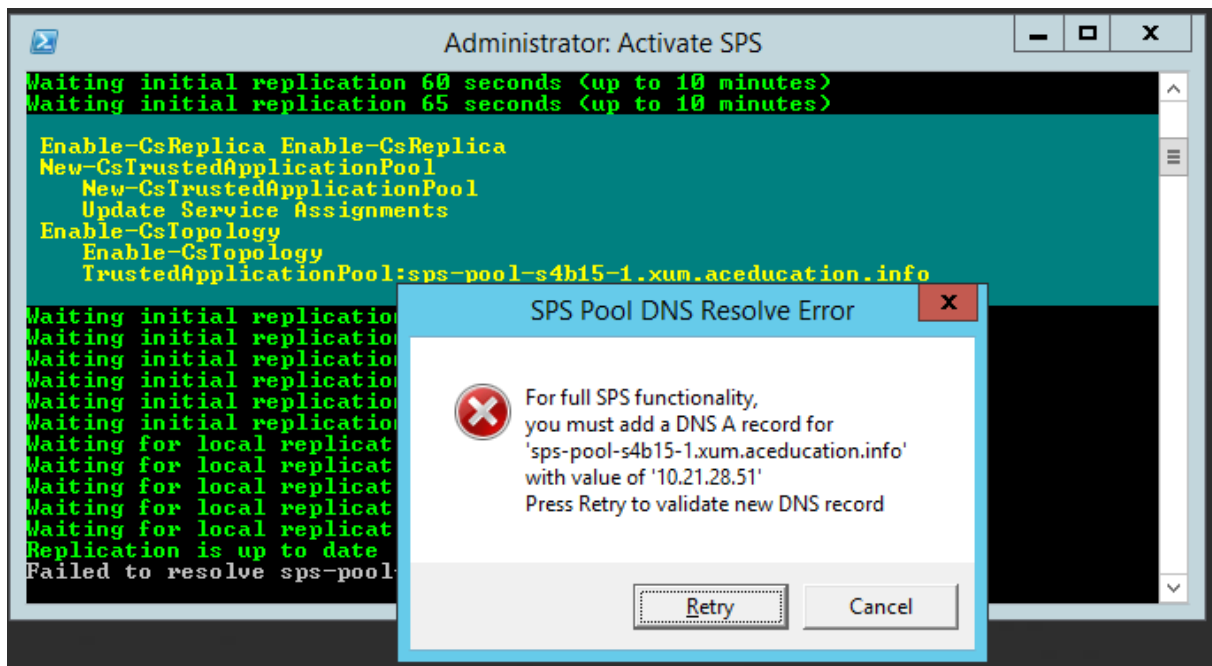
**Figure 4-2: Administrator Prompt: Activate SPS**



3. Wait until the SPS application has successfully activated:

One of the SPS features requires adding a DNS record for the SPS pool to resolve the SPS server. A check for this record is part of the SPS Core installation. The administrator will be warned if this record is missing.

**Figure 4-3: SPS Pool DNS Resolve Error**



➤ **To troubleshoot an SPS Pool DNS Resolve Error:**

1. Add the DNS A record according to the displayed message; go to the DNS server and add the A record.
2. Return to the error message and click **Retry**; the Activation continues.

Figure 4-4: Administrator: Activate SPS

```
Administrator: Activate SPS
Issued thumbprint "AFC7EF3D559FE066F11A54451E1D423A7DD266DA" for use "Default" b
y "DC-OCS-RC.ocs-rc-erez.local\ocs-rc-erez-DC-OCS-RC-CA".
Setting new default certificate
The following certificate was assigned for the type "Default":
Default: AFC7EF3D559FE066F11A54451E1D423A7DD266DA sps-pool.ocs-rc-erez.local 12/
12/2012 CN=ocs-rc-erez-DC-OCS-RC-CA, DC=ocs-rc-erez, DC=local 3BD097DE0000000000
28
New default certificate installed successfully
Verifying local replication is up to date...
Replication is up to date
SPS application is already trusted
SPS application endpoint already exists

SPS application activated successfully
You can safely close this windows

SPS

PS C:\Program Files\AudioCodes\SPS\SPS Core>
```



**Note:** If activation fails, the SPS can be activated manually (see Section 6).

3. Point to **Start > Run**, and then type **services** to start the 'SPS' service.
4. Verify that the status has changes to 'running'. The SPS is now up and running.
5. Reset the machine.
6. Open the Web Admin.
7. Add the new SPS Server to SPS Architecture (refer to the Configuring System Architecture Settings in the *SPS Administrator's Guide*:
8. Add the new SPS server to the relevant Access pools and sites.
9. If this is your first SPS, remove the default SPS server (Server 1) from site, access pool and delete it from the SPS server list.
10. Start adding new users and devices to the SPS.

## 4.3 Activating the SPS License

After installing the SPS, activate its license. Initially, AudioCodes provides you with a temporary license until a permanent license is generated.



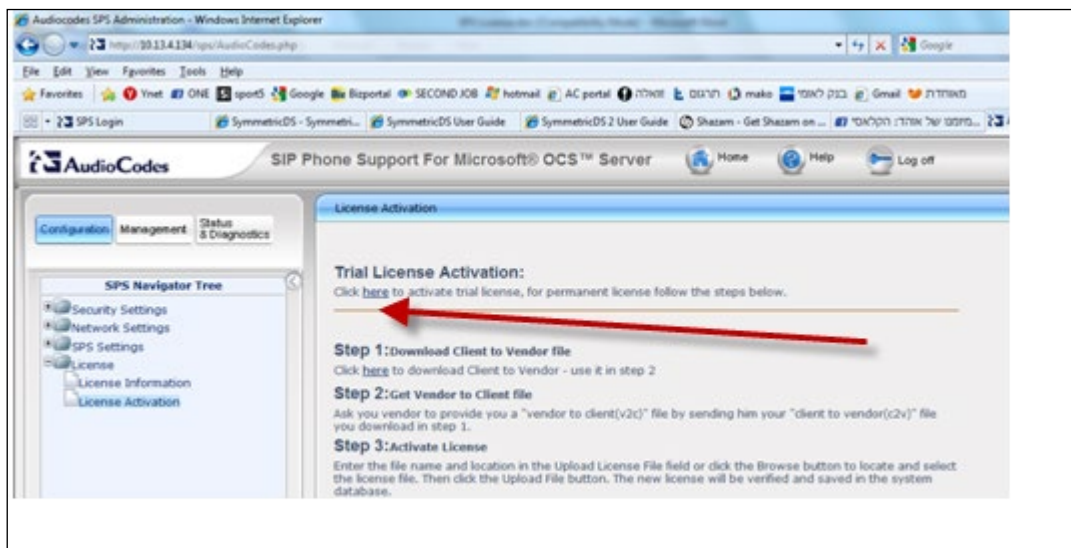
### 4.3.1 Activating a Temporary License

This procedure describes how to activate your SPS with a temporary license for **20** users for **90** days. This enables you to use the SPS until you obtain a permanent license from AudioCodes.

➤ **To activate a temporary license:**

1. Open the Web Admin (<http://<SPS IP address>>).
2. Navigate to the License Activation page (**Configuration** tab > **License** menu > **License Activation**).
3. Under 'Trial License Activation', click the **Click here** link:

**Figure 4-4: Trial License Activation**



4. View the License Information page (**Configuration** tab> **License** menu) to verify that your system is activated with the new license.

### 4.3.2 Activating a Permanent License

This procedure describes how to activate your SPS with a permanent license according to your purchase order.

- **To activate a permanent license:**
1. Under 'Trial License Activation', click the **Click here** link to download a **Client to Vendor (.c2v)** file to the PC.
  2. Send the .C2V file with the AudioCodes Sales Order (SO) number to the following e-mail address: [SPS\\_License@audiocodes.com](mailto:SPS_License@audiocodes.com). In case you don't have the AudioCodes SO, please obtain it from the channel partner or local distributor that submitted this order to AudioCodes.
  3. AudioCodes then sends you a **Vendor to Client (v2c)** file. This is your permanent license.
  4. In the Web interface, navigate to the License Activation page (**Configuration** tab > **License** menu) and load the file that you received from AudioCodes.
  5. Click the **Activate License** button.
  6. View the License Information page (**Configuration** tab > **License** menu) to verify that your SPS is activated with the new license.

**Figure 4-5: SPS License Information**

SPS License Information	
License Information	
License version	1
Maximum system users	10000
Latest date allowed for upgrade	31/12/2021
Maximum users with Audiocodes IPP	10000
Maximum users with 3rd party IPP	10000
Maximum Mobile users	10000
HASP Key ID	154537021894
Expiration date	No expiration date
Days Left	0
Type	perpetual
SPS Users Information	
Maximum users	10000
Current registered users	8

## 5 SPS Debugging Tools

The SPS provides the following debugging tools:

- SPS Core console
- SPS Core Logs
- SPS Switch CLI



**Note:** Skype for Business OCS log tool is recommended for debugging the SPS.

### 5.1 SPS Core Console

The SPS Core console helps to debug the SPS Core application under the following circumstances:

- The system is starting up (to verify that the application loads successfully and if not, to check when it fails).
  - The system is running (to view the logs online).
- **To start the SPS core:**
- In the console mode, point to **Start > Programs > AudioCodes > SPS > SPS Core > Run SPS Core**.

Figure 5-1: Run SPS Core in Console Mode

```

Run SPS Core in console mode
11:46:43 Debug command 'event plain CUSTOM sofia::register sofia::unregister so
fia::expire' ended with 'event listener enabled plain'
11:46:45 Info Stopped restart timer
11:46:45 Debug Added to dict 'sip:qa1@dc-sps-lab.net' endpoint
11:46:45 Info Successfully registered OCS UserEndpoint 'sip:qa1@dc-sps-lab.net'.
Total 1
11:46:45 Info 'sip:qa1@dc-sps-lab.net' registered for incoming calls
11:46:45 Debug Unsubscribed 'sip:qa1@dc-sps-lab.net' presence
11:46:45 Debug 'sip:qa1@dc-sps-lab.net' presence published: 'Set device capabili
ties'
11:46:45 Debug Armed presence update timer to 299994 ms due to user 'sip:qa1@dc-
sps-lab.net'
11:46:45 Debug 'sip:qa1@dc-sps-lab.net' presence published: 'Set machineState av
ailability 3500 containers 2 and 3'
11:51:46 Debug Starting presence timer
11:51:46 Debug Updating presence 'sip:qa1@dc-sps-lab.net' --> Inactive
11:51:46 Debug End presence timer. Set new presence wakeup time in 899966 ms
11:51:46 Debug 'sip:qa1@dc-sps-lab.net' presence published: 'Set machineState av
ailability 5000 containers 2 and 3'
12:06:46 Debug Starting presence timer
12:06:46 Debug Updating presence 'sip:qa1@dc-sps-lab.net' --> Away
12:06:46 Debug End presence timer. No new wakeup set
12:06:46 Debug 'sip:qa1@dc-sps-lab.net' presence published: 'Set machineState av
ailability 15500 containers 2 and 3'
  
```

### 5.2 SPS Core Logs

The SPS Core writes the logs to the "sps-log" file. The SPS saves the log file every 24 hours to the folder "Archives". These files are found at the following locations:

- **sps-log file:** C:\Program Files\Audiocodes\SPS\SPS Core\log\sps-log.txt
- **Archives folder:** C:\Program Files\Audiocodes\SPS\SPS Core\log\archives 0-log.txt 1-log.txt ... x-log.txt

## 5.3 SPS Switch CLI

The SPS Switch CLI can run parallel to the SPS Switch service. Use it to do the following:

- View logs online
- Obtain information about the system using command line
- Change parameters in the SPS Switch using command line

### 5.3.1 Command Line Examples

This section describes command line examples.

➤ **To start the SPS Switch CLI:**

- Open the SPS Switch CLI (**Programs > AudioCodes > SPS > SPS Switch > SPS Switch CLI**).
- To display all SIP IPPs registered to the SPS, enter the following command:  

```
sofia status profile internal reg
```
- To display the IP address and port of the SPS switch listener, enter the following command:  

```
sofia status
```

Figure 5-2: SPS Switch CLI



## 6 Activating the SPS Manually

This section describes how to manually activate the SPS if the automatic script fails. This section also describes how to renew or change a certificate.

- The SPS is normally automatically activated by an activation script (**Start > All Programs > Audiocodes > SPS > SPS Core > Activation > Activate SPS**)

### 6.1 Setting Permissions

Only a domain member is permitted to activate the SPS.

### 6.2 Preparing SPS Activation

This section describes how to prepare the activation of the SPS.

➤ **To prepare the activation of the SPS:**

1. Open Skype for Business Management PowerShell (**Start > All Programs > Skype for Business**).
2. Verify that the Windows service named Skype for Business Replica Replicator Agent is running and configured to start automatically.



**Note:** PowerShell commands and arguments can be auto-completed by pressing the Tab key.

### 6.3 Publishing Topology and Verifying Replication

This section describes how to publish a new topology and verify replication.

➤ **To publish topology and verify replication:**

1. Enter the following commands:

```
Enable-CsTopology
Get-CsManagementStoreReplicationStatus
```

The result for the SPS server must be as follows:

```
"UpToDate          : True"
```

For example:

```
UpToDate           : True
ReplicaFqdn        : devel.corp.lyncptest.org
LastStatusReport   : 6/19/2011 9:38:33 AM
LastUpdateCreation : 5/16/2011 9:48:55 AM
ProductVersion     : 4.0.7577.0
```

2. Repeat the `Get-CsManagementStoreReplicationStatus` command until the 'UpToDate' parameter indicates 'True'.
3. If the returned result is 'Not True' for more than five minutes, this indicates a failure that is outside the scope of the SPS that must be fixed.

## 6.4 Activating the SPS

This section describes how to activate the SPS.

➤ **To activate the SPS:**

1. Verify that the topology and replication are up to date (see Section 6.3).
2. Set the pool name variable by changing the host part of the SPS FQDN:

```
$SpsPoolFqdn = "sps-pool<YOUR-DOMAIN>"
```

For example, if SPS FQDN is sps.corp.lyncnctest.org:

```
$SpsPoolFqdn = "sps-pool.corp.lyncnctest.org"
```

3. Verify that the pool exists by entering the following command:

```
Get-CsTrustedApplicationPool -PoolFqdn $SpsPoolFqdn
```

4. If the pool does not exist, then do the following:

- a. Select `SiteId` by entering the following command:

```
Get-CsSite
```

Select your site ID from the `SiteId` output.

- b. Select Registrar by entering the following command:

```
Get-CsService -Registrar
```

Select your registrar from the `Identity` output.

- c. Create pool by entering the following command:

```
New-CsTrustedApplicationPool -Identity $SpsPoolFqdn -Site  
<YOUR-SITEID> -Registrar <YOUR-REGISTRAR> -ComputerFqdn  
<SPS-FQDN>
```

For example:

```
New-CsTrustedApplicationPool -Identity $SpsPoolFqdn -Site 1  
-Registrar Registrar:se.corp.lyncnctest.org -ComputerFqdn  
devel.corp.lyncnctest.org
```

- d. Verify that replication is up to date as described in Section 6.3.
- e. Verify that the SPS server is a member in the pool by entering the following command:

```
Get-CsTrustedApplicationComputer
```

- f. If it is not, then add it by entering the following command:

```
New-CsTrustedApplicationComputer -Identity <SPS-FQDN> -Pool  
$PoolFqdn
```

## 6.5 Assigning Certificates

This section describes how to assign a certificate.

➤ **To assign a certificate:**

1. Check if a certificate is assigned by entering the following command:

```
Get-CsCertificate -Type Default
```

2. If not defined (no output), a new certificate must be created and assigned to the SPS.



**Note:** A certificate can be created using several methods. The method described below creates a certificate offline using a 3<sup>rd</sup> party CA. For detailed information on creating certificates, see <http://msdn.microsoft.com/en-us/library/gg448309.aspx>

3. Find your CA by entering the following command:

```
certutil.exe
```

4. Find your CA from the Config line output. Note that there may be multiple CAs. You must choose the correct one. For example:

```
Entry 0:
  Name:                                `corp-DC-CA'
  Organizational Unit:                  ` '
  Organization:                         ` '
  Locality:                            ` '
  State:                               ` '
  Country/region:                      ` '
  Config:                              `dc.corp.lyncptest.org\corp-DC-
CA'
  Exchange Certificate:                 ` '
  Signature Certificate:                 ` '
  Description:                          ` '
  Server:                              `dc.corp.lyncptest.org'
  Authority:                            `corp-DC-CA'
  Sanitized Name:                       `corp-DC-CA'
  Short Name:                           `corp-DC-CA'
  Sanitized Short Name:                  `corp-DC-CA'
  Flags:                                `1'
  Web Enrollment Servers:                ` '
CertUtil: -dump command completed successfully.
```

5. Request a new certificate by entering the following command:

```
Request-CsCertificate -New -Type Default -CA <YOUR-CA>
```

The command should output (approximately):

```
Issued thumbprint "EFCD13C2B13FFC81017A4F856112F6D194E80008"
for use "Default" by "dc.corp.lyncptest.org\corp-DC-CA".
Issuer           : CN=corp-DC-CA, DC=corp, DC=lyncptest, DC=org
NotAfter         : 7/13/2013 4:34:28 PM
NotBefore        : 7/14/2011 4:34:28 PM
SerialNumber     : 35FB35D000000000000008
Subject          : CN=sps-pool.corp.lyncptest.org
AlternativeNames : {}
Thumbprint       : EFCD13C2B13FFC81017A4F856112F6D194E80008
Use              : Default
```

6. Set the new certificate with the thumbprint from the previous command output:

```
Set-CsCertificate -Type default -Thumbprint <YOUR-Thumbprint>
```

7. Wait for the replication update to indicate 'True' (see Section 6.3).

## 6.6 Creating a Trusted Application

This section describes how to create a trusted application.

➤ **To create a trusted application:**

1. Check if a trusted application exists by entering the following command:

```
Get-CsTrustedApplication | Where-Object {$_.ApplicationId -eq
"urn:application:sps" -and $_.TrustedApplicationPoolFqdn -eq
$PoolFqdn}
```

2. If it doesn't, create it by entering the following command:

```
New-CsTrustedApplication -ApplicationId "urn:application:sps"
-TrustedApplicationPoolFqdn $SpsPoolFqdn -Port 15061
```

3. Wait for the replication update to indicate 'True' (see Section 6.3).

## 6.7 Creating a Trusted Application Endpoint

This section describes how to create a trusted application endpoint.

➤ **To create a trusted application endpoint:**

1. Find your default SIP domain by entering the following command:

```
Get-CsSipDomain | Where-Object {$_.IsDefault -eq $True}
```

2. Create the Trusted Application Endpoint by entering the following command:

```
New-CsTrustedApplicationEndpoint -ApplicationId sps -
SipAddress sip:sps@<YOUR-DEFAULT-SIP-DOMAIN> -
TrustedApplicationPoolFqdn $SpsPoolFqdn -DisplayName
"Audiocodes SPS application endpoint"
```

3. Wait for the replication update to indicate 'True' (see Section 6.3).



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