SPS

SIP Phone Support

SPS for Skype for Business

Administrator's Guide

SAS
Stand Alone Survivability
Continuous VoIP Service

HD VoIP
Sounds Better

Skype for Business

Microsoft Partner
Gold Unified Communications

AudioCodes

Version 3.00

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Notice

This document describes AudioCodes' SIP Phone Support (SPS) application for Skype for Business.

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Abbreviations and Terminology

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

Note: Where 'network' appears in this manual, it means LAN, WAN, etc., accessed via the gateway's Ethernet interface.

Notes: The Mediant 1000B and the relevant additional components – OSN and MPM modules – are supplied as sealed units and must only be serviced by qualified service personnel.

1 Introducing AudioCodes SPS

AudioCodes SIP Phone Support (SPS) is a value-added application for AudioCodes Mediant Media Gateways which enables smooth connectivity of affordable, high-quality AudioCodes 300HD and 400HD Series IP Phones, as well as third-party IP Phones, with 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.

SPS enables the connection of the 300HD and 400HD Series with Skype for Business, while providing features such as enhanced presence, active directory, and support for Real Time Audio (RTA) - Microsoft's high-definition, wideband coder.

SPS can also be used to enable connectivity and provisioning of AudioCodes certified third-party SIP IP Phones from leading vendors, such as Cisco and Avaya, providing IT managers with full investment protection for their IP Phones.

SPS can be offered as an appliance, running on the Open Solutions Network (OSN) Server within AudioCodes' Mediant 800 or Mediant 1000, or alternatively, as a standalone server that uses external DSP resources on the AudioCodes gateways, if required. AudioCodes gateways hosting the SPS service can simultaneously function as an "Enhanced" Media Gateway or Survivable Branch Appliance (SBA) for the Microsoft Unified Communications system.

1.1 About this Guide

This guide provides administrators instructions on how to manage AudioCodes' SIP Phone Support (SPS) application using AudioCodes' SPS Web Admin Tool, a web-based management interface that enables system administration, user management, viewing system online status, producing historical reports, and other functionalities.

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2 Introducing the Web Admin Tool

AudioCodes' Web Admin Tool makes setting up and managing the SPS server simple and straightforward. Use the tool to change your administrator password, load a new license, view server alarms and log files, manage SPS users, configure other system configuration parameters, and more.

The tool is a secured Web client that runs on any standard Web browser, such as Internet Explorer, Firefox or Chrome. No pre-installation is necessary to use it.

To access it, you must be an authorized SPS system administrator.

The tool provides three major functionalities:

- Configuration: First-time configuration such as license and security. Used by the SPS system administrator during first-time configuration.
- Management: Per application management tool. Enables the SPS system administrator to manage users, provision IP Phones, and more.
- Status and Diagnostics: Enables the SPS system administrator to view system logs, alarms and status. Used for maintenance purposes.

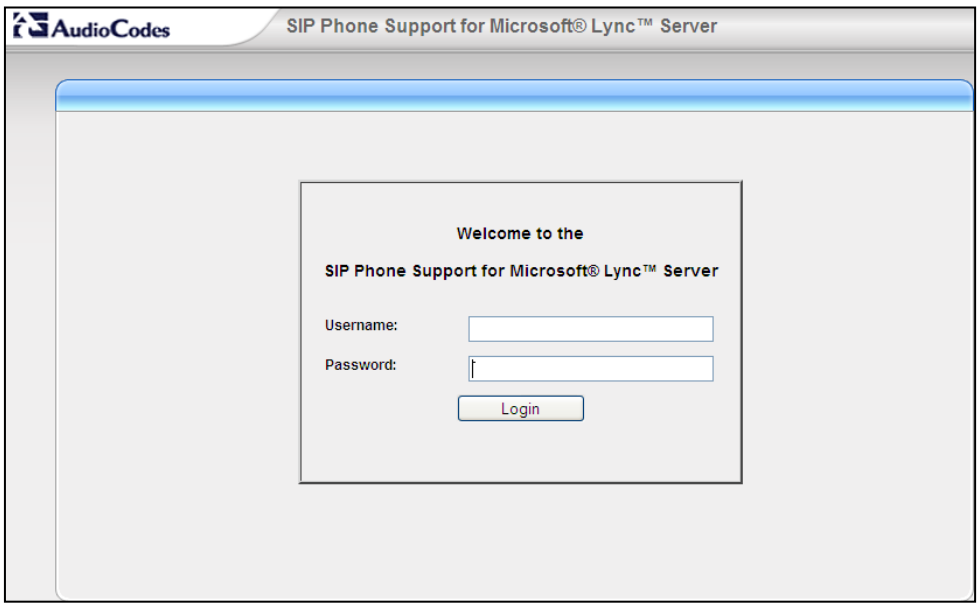
2.1 Accessing the SPS Web Admin Tool

This sub-section shows how to access the SPS Web Admin Tool.

➢ **To access the SPS Web Admin Tool:**

1. In your browser, browse to the URL of the SPS Web Admin Tool (e.g., **http://sps-server/** or **http://10.1.10.11/**):

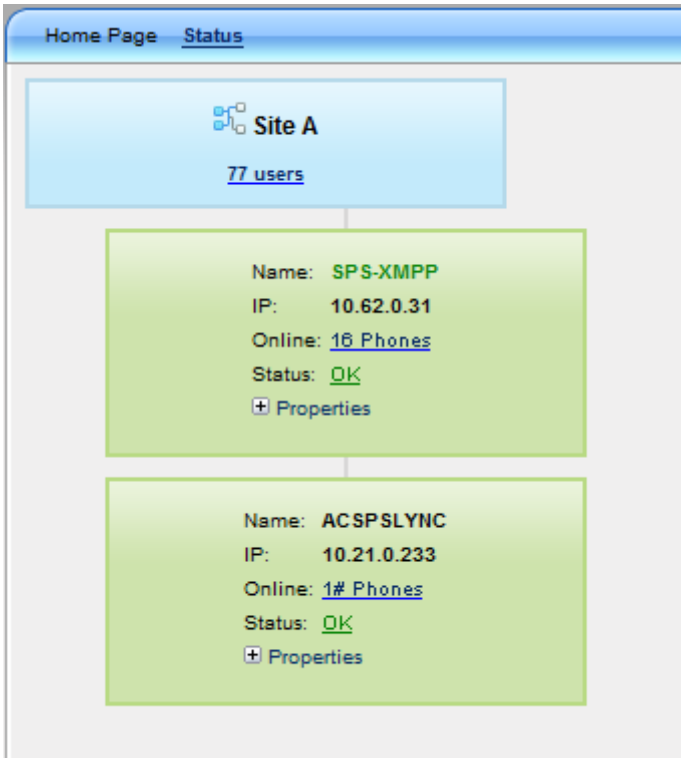
Figure 2-1: SPS Web Admin Tool - Login



2. Enter your Username and Password (default = **Admin** and **Admin**) and click **Login**; the login information is verified and the application is launched; the **SPS Home Page** is displayed.

Note: For security reasons, it's advisable to modify the password following first-time login.

Figure 2-2: SPS Home Page



2.2 Accessing the SPS Web Admin Tool via a Secured Connection

The Web Admin Tool enables administrators to connect via a secured connection, i.e., via **HTTPS**; all information is transferred via a secured network channel. This subsection shows how to access the SPS Web Admin Tool via a secured connection.

➢ **To access the Web Admin Tool via a secured connection:**

- When browsing for the first time to the Web Admin Tool via HTTPS, i.e., **https://sps-server/** or **https://10.1.10.11/**, the browser displays a warning message that the current certificate is invalid. That's because the system is configured with an AudioCodes Certificate signature that is not recognized by the administrator's internet browser.

  To prevent your browser from displaying this warning message and to allow you to continue, accept the AudioCodes certificate and then configure it in your browser as a trusted certificate.

2.3 Getting Acquainted with the Web Admin Tool

The SPS Web Admin Tool interface includes:

- **Toolbar** (providing commonly used command buttons)
- **Navigation pane** (comprising the Navigation Bar and Navigation Tree)
- **Configuration pane** (in which the configuration is displayed and modified)

2.3.1 Toolbar

The toolbar displays the following buttons:

Table 2-1: Description of Toolbar Buttons

Button	Description
Home	Navigates to the Web Admin Tool Home Page
Synchronize	Performs database synchronization between all SPS servers
Help	Displays online context-sensitive Help topics
Log Off	Enables you to log off the Web Admin client

2.3.2 Navigation Bar

The Navigation Bar tabs enable quick access to Navigation Tree options:

Table 2-2: Navigation Bar Tabs

Tab	Description
Configuration	Enables you to view and change SPS configuration settings (see Section 3 on page 19)
Management	Enables you to manage SPS users, IP Phones and specific settings (see Section 4 on page 47)
Status & Diagnostics	Enables you to view current SPS system status and archived system logs (see Section 5 on page 77)

- Expand or collapse the navigation tree as required.

2.3.3 Home Page

The first page displayed after login, the Home Page displays the network architecture in a top-down block diagram format. See Figure 2-2 above.

In this example, the network consists of one site – Site A, and two SPS servers:

- SPS XMPP
- AC SPSLYNC

The Home Page also displays the total number of Users in site A, and the following information for each of the SPS servers:

Table 2-3: Servers Information

Property	Description
Name	Defines the Server name
IP	Defines the Server IP address
Online	Defines the number of online phones for this server. Click on this link to display the On Line Phones screen.
Status	Defines the Server status. Click on this link to display the General Information and System Status for this server. See 3.4.1 on page 29.
Properties	Defines various server properties. Click on this link to access detailed information for the following properties: • **Properties** - See Section 3.3.1 on page 40 • **Status** - See Section 3.3.2 on page 41 • **Capture Traffic** - See 5.3.2 on page 81 • **SPS Status** - See Section 5.4.2 on page 83 • **License** - See Section 3.3.4 on page 44 • **Calls Status** - See Section 5.4.1 on page 82 • **Application Logs** – See Section 5.3.1 on page 79

To get the Servers Status click on the **Status** link (on the right side of the Home Page) and then click on the Server's name to view its status. The following screens are displayed:

Figure 2-3: Servers Status

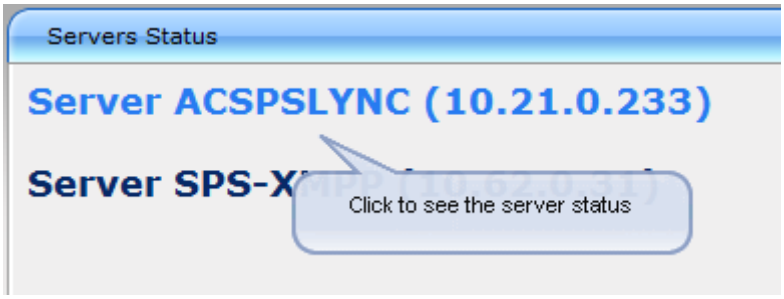
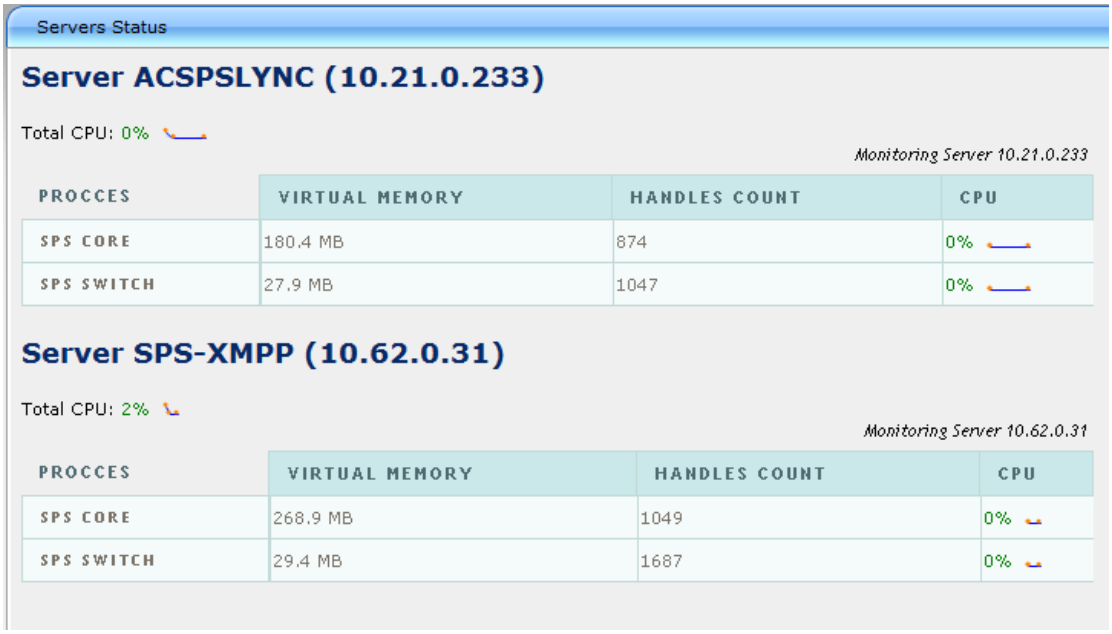


Figure 2-4: Servers Status - Expanded



3 Configuring the SPS System

The Configuration navigation tree enables you to easily manage SPS system issues such as licensing and administrator security.

3.1 Configuring Administrators Settings

The Administrators Settings navigation tree enables changing the Administrator's Username and Password and adding a new administrator.

Tip: For security reasons, it's advisable to change the default Username and Password. Write down the new Username and Password and keep in a safe place. It's not possible to restore a forgotten password.

The default Username and Password are **Admin** and **Admin**.

➢ **To change Username and Password:**

1. Click the **Configuration** tab in the navigation pane and under **Administrators**, click **Administrator Password**.

Figure 3-1: Administrator Password Settings

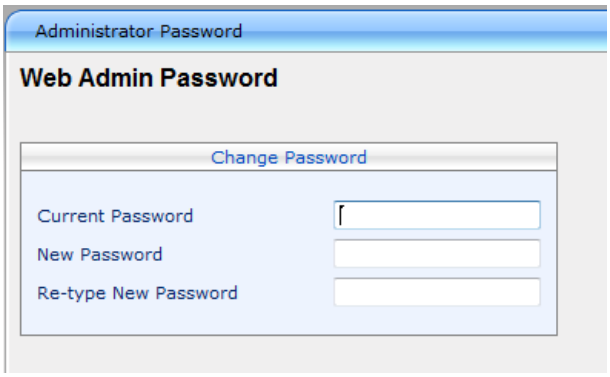


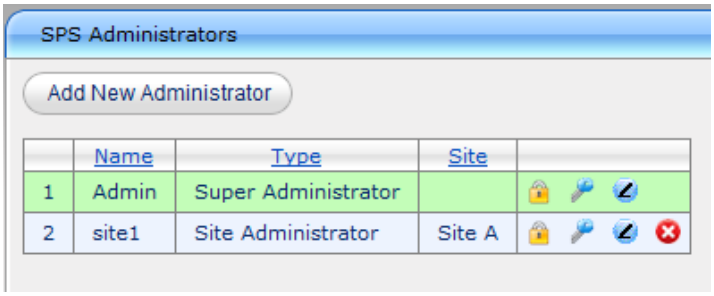
Figure 3-2: Administrator Account

2. Enter your current password in the 'Current Password' field.
3. In the 'New Password' field, enter the new password. Then re-enter the new password in the 'Re-type New Password' field.
4. Click **Submit**.

➢ **To add a new administrator:**

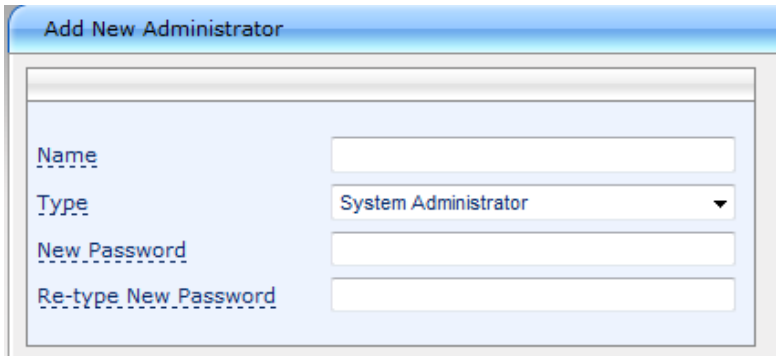
1. Click the **Configuration** tab in the navigation pane and under **Administrators**, click **Administrators.**

Figure 3-3: SPS Administrators



2. Click **Add New Administrator**.

Figure 3-4: Add New Administrator



3. In the 'Name' field, enter the name of the new administrator.
4. Select the new Administrator's type in the 'Type' field. Possible 'Type' options are displayed in the table below.

Table 3-1: Administrators Type

Type	Description
System Administrator	Not implemented yet
Site Administrator	Can configure and manage only his site, not other sites
Super Administrator	Can configure and manage all sites

5. In the 'New Password' field, enter your password.
6. In the 'Re-type New Password' field, enter your password again.

You can display the Administrator's password, change the password, update the administrator, or delete the administrator by clicking on one the icons right to the Site column.

3.2 Configuring SPS System Settings

The System Settings navigation tree enables configuring various parameters globally or per server and per services (e.g. core, and switch). These parameters are configured by assigning/editing values to the relevant keys.

The SPS application is provided with general default values to all the system settings. For advanced users and purposes, it is possible to change the following settings, under **Configuration** > **System** > **Configuration**:

- **SPS Admin** – Includes the Web Admin parameters
- **SPS General** – Includes most of the parameters of the SPS system
- **SPS Core** – Includes the SPS Core parameters
- **SPS Switch** – Includes the Free Switch parameters

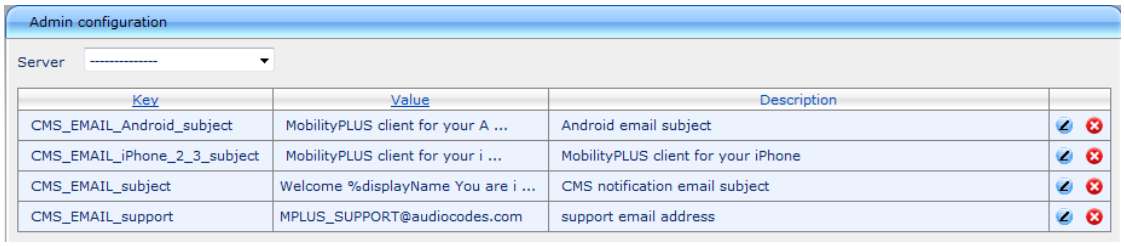
3.2.1 Configuring SPS Admin Parameters

This sub-section describes how to configure SPS Admin Parameters.

➢ **To modify the Admin configuration:**

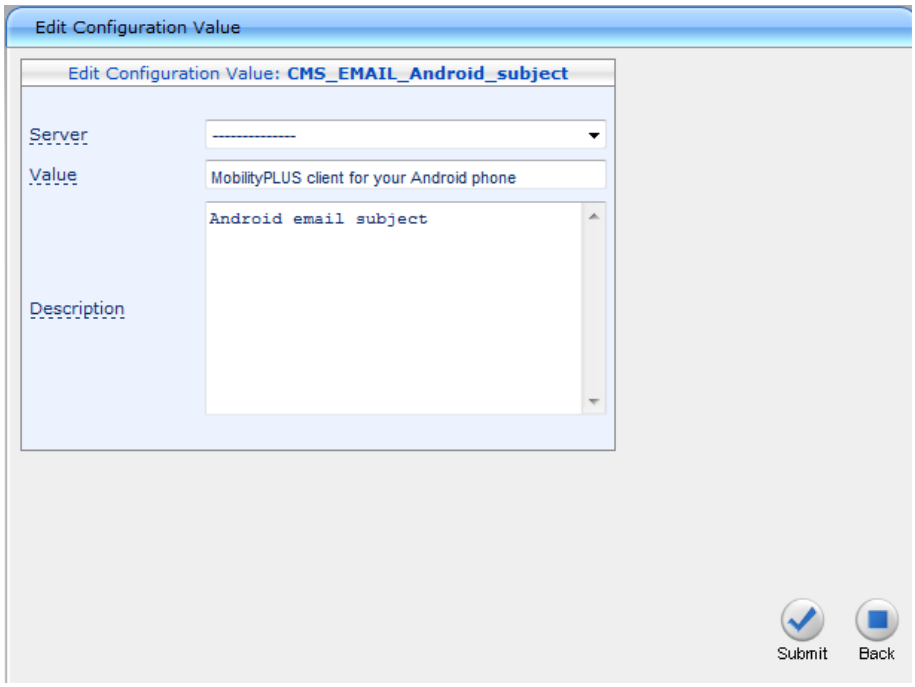
1. Access the 'Admin Configuration' page (**Configuration** > **System** > **Configuration** > **Admin**); the following page appears:

Figure 3-5: Admin Configuration



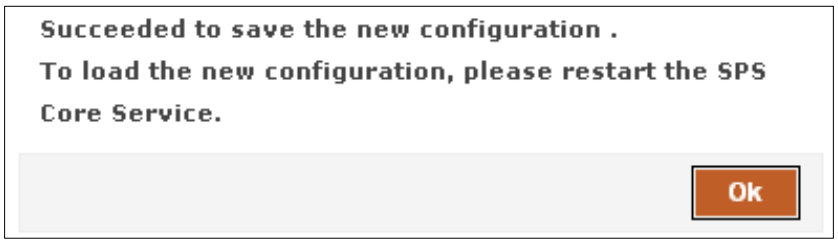
2. To edit a configuration, click the edit icon .

Figure 3-6: Edit Configuration Value



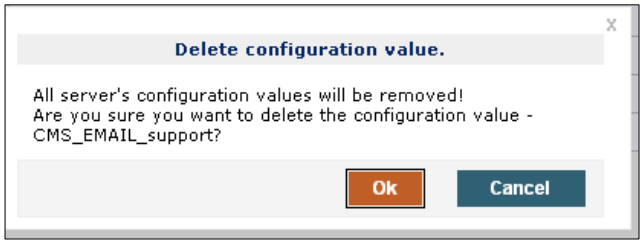
3. From the 'Server' drop-down list, select the Server.
4. In the 'Value' field, enter the configuration value.
5. In the 'Description field, enter a description.
6. Click **Submit**; the following message appears.

Figure 3-7: Success Message



➢ **To delete a configuration:**

1. Select the configuration you wish you delete, and then click the **Delete** icon; the following screen appears:



2. Click **Ok**.

3.2.2 Configuring System Architecture Settings

The system architecture is based on a hierarchical structure that consists of the following building blocks:

- **SPS Server** – The SPS server is the platform on which the SPS application runs. The SPS application is a value-added application for AudioCodes Mediant Media Gateways which enables smooth connectivity of AudioCodes IP Phones, as well as third-party IP Phones, with the Skype for Business environment. Generally, two SPS servers will be defined as part of one Access Pool.
- **Access Pool** – An entity that defines the SPS servers that will be accessed by the system's users. In every site, an Access Pool is defined. An Access Pool contains two SPS servers.
- **Site** – A system can be deployed in one or more sites. A typical example is a bank with several branches. Each branch is typically located in a unique geographical place, and can be defined as a site. If the bank has 10 branches, then there will probably be 10 sites.

To define new settings for a system, first define the SPS server settings, then the Access Pool, and then the site.

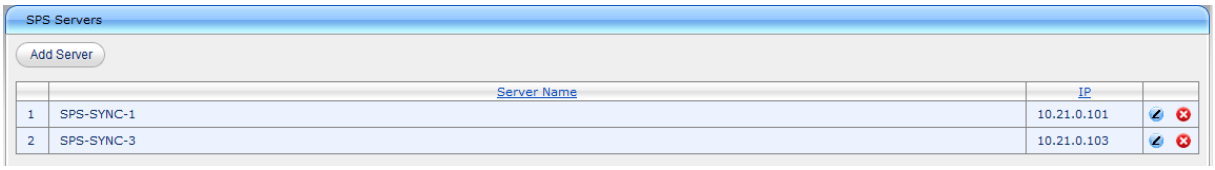
3.2.2.1 SPS Servers

This section describes how to configure SPS Servers settings.

➢ **To add a new SPS server:**

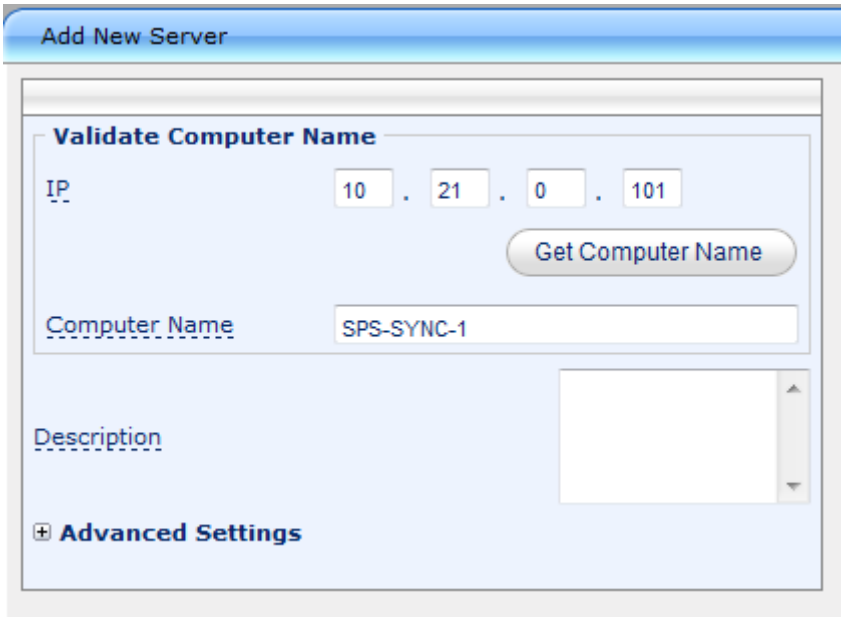
1. Access the 'SPS Servers' page (**Configuration** > **System** > **System Architecture** > **SPS Servers**); the following page appears:

Figure 3-8: SPS Servers



2. Click **Add Server**; the following page appears:

Figure 3-9: Add New Server

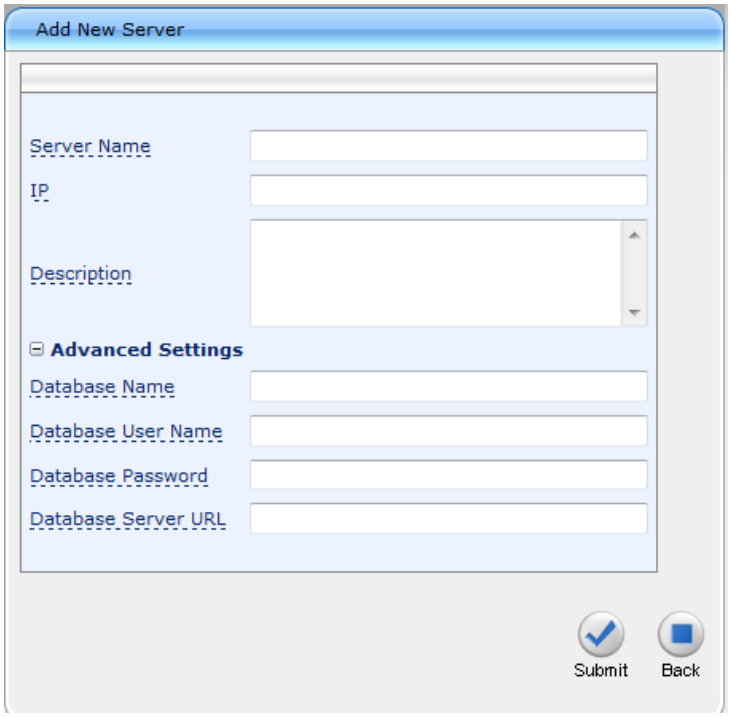


3. Enter the IP address.
4. Click the **Get Computer Name** button; the system gets the computer name whose IP address is the one you entered.
5. Enter a description of the server.

Note: An SPS server can support mobility for system users. In this case, an XMPP server will be defined and will run with the SPS server on the same platform. In such a case, the 'Support Mobility' field is set to **Yes**.

6. Click **Advanced Settings** to display the Advanced fields; the following page appears:

Figure 3-10: Add New Server – Advanced Settings



7. Enter the Advanced parameters according to the following table and then click **Submit**.

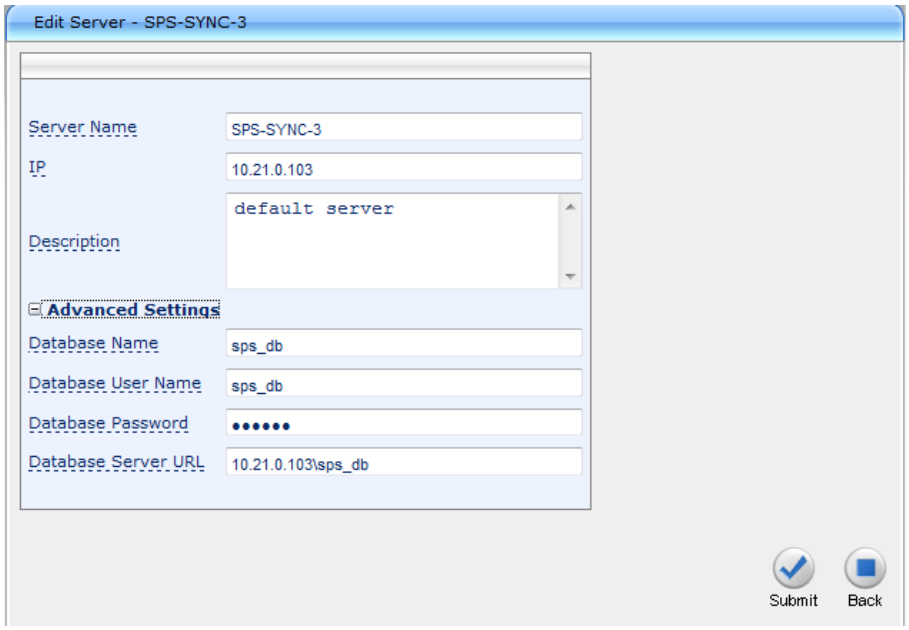
Table 3-2: Advanced Settings

Type	Description
Database Name	Defines the name of the database
Database User Name	Defines the name of the user name
Database Password	Password
Database Server URL	URL of the database server

➢ To edit SPS Servers Settings:

1. Click on the edit icon for the server you are editing; the following screen appears.

Figure 3-11: Edit SPS Server



2. Edit the desired parameters and click **Submit**.

➢ To delete an SPS server:

1. Select the server you wish to delete and then click on the **Delete** icon.
2. Click **Ok**.

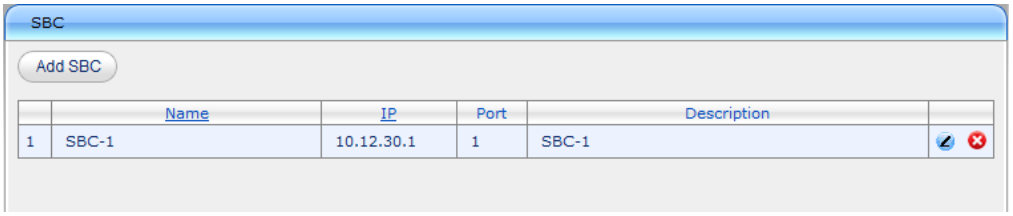
3.2.2.2 SBC Settings

This sub-section describes how to configure SBC settings.

➢ **To add a new SBC:**

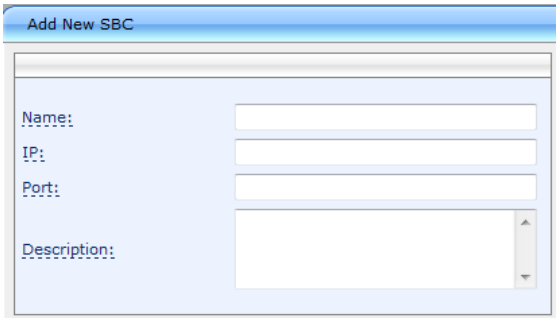
1. Access the 'SPS Servers' page (**Configuration** > **System** > **System Architecture** > **SBC**); the following page appears:

Figure 3-12: Add SBC



2. Click **Add SBC**; the following screen appears:

Figure 3-13: Add New SBC



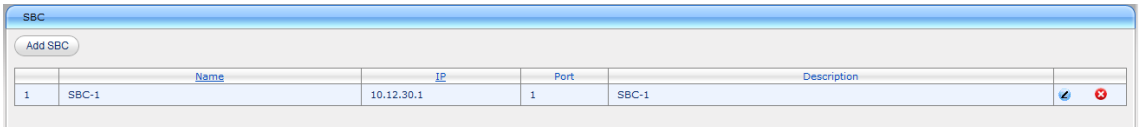
3. Enter the following parameters:
   - Name
   - IP
   - Port
   - Description

Note: The IP address and Port Number should be the values of the WAN side. i.e., the IP address and port that Mobile clients should connect to / from the internet.

➢ **To edit SBC Settings:**

1. Access the 'SPS Servers' page (**Configuration** > **System** > **System Architecture > SBC**).
2. Click the edit icon for the SBC you are editing.

Figure 3-14: Edit SBC



3. Edit the desired parameters and click **Submit**.

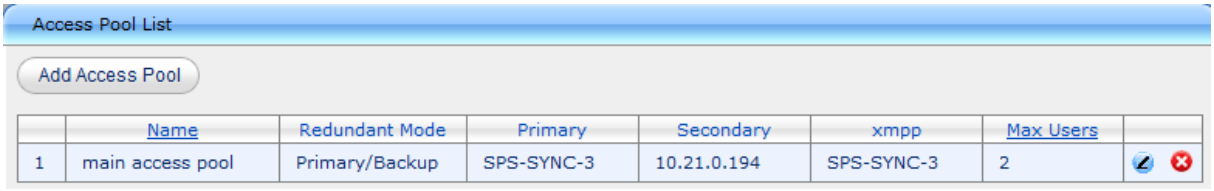
3.2.2.3 Access Pool Settings

This sub-section describes how to configure Access Pool Settings.

➢ **To add an Access Pool:**

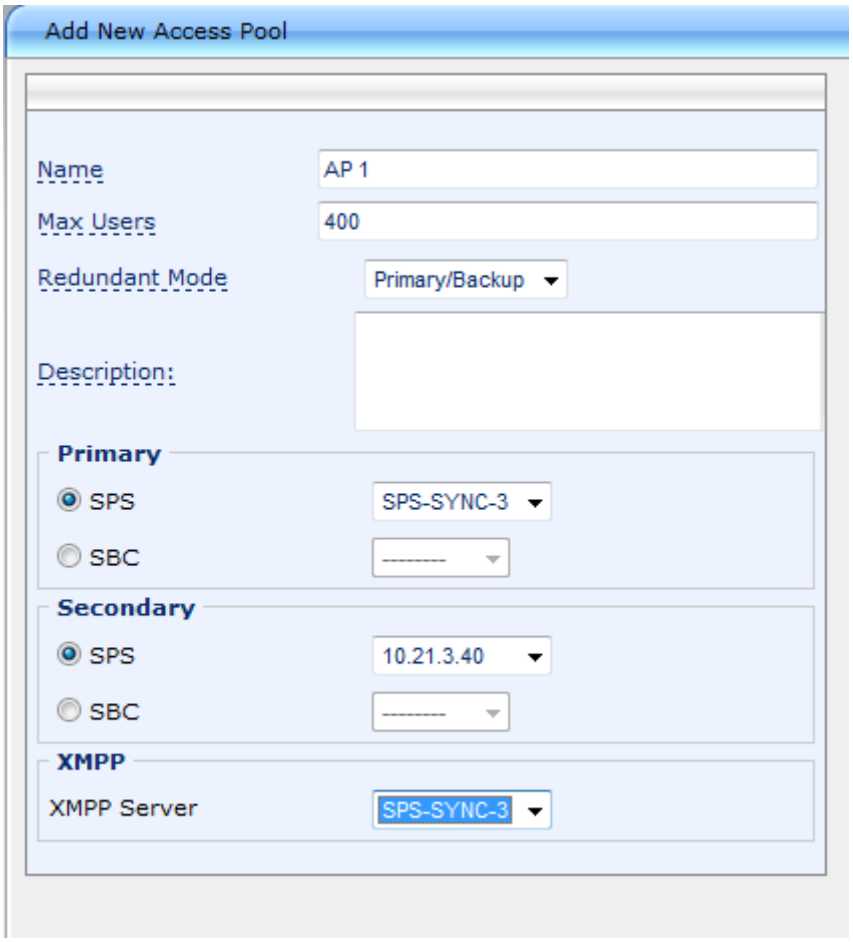
1. Access the 'Access Pool List' page (**Configuration** > **System** > **System Architecture** > **Access Pool**); the following page appears:

Figure 3-15: Access Pool List



2. Click **Add Access Pool**; the following screen appears:

Figure 3-16: Add New Access Pool



3. Fill in the required parameters according to the following table, and then click **Submit**.

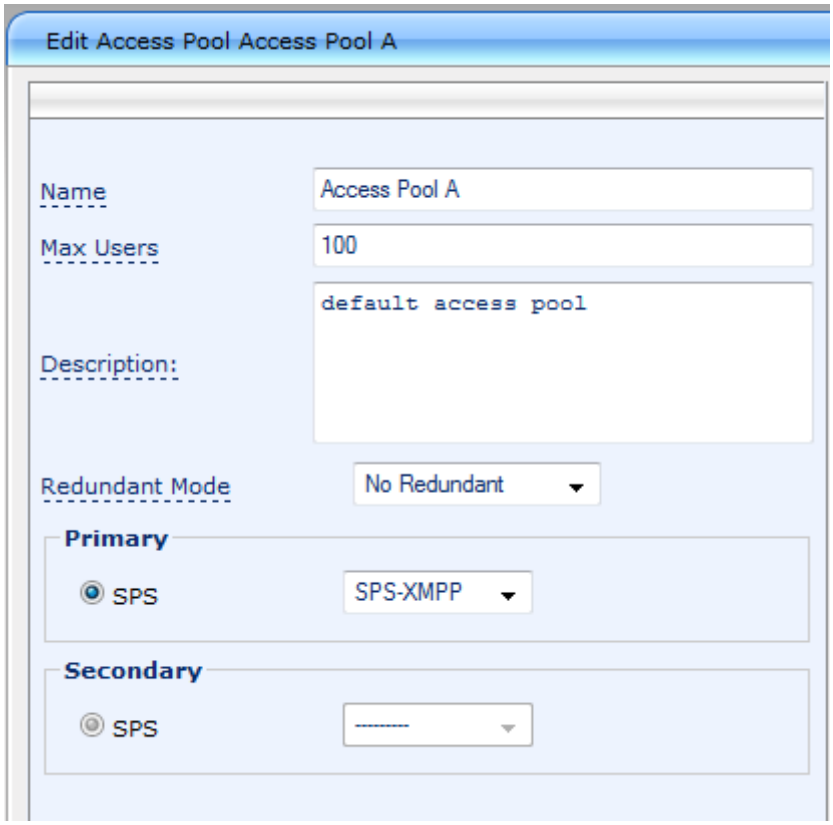
Table 3-3: Access Pool Settings

Type	Description
Name	Defines the name of the Access Pool.
Max Users	Defines the maximum number of users that the SPS server can serve.
Redundant Mode	Defines Redundant Mode: • **No Redundant** – Only Primary SPS is available • **Primary/Backup** – Need to define which SPS is Primary and which is Secondary
Primary	Defines the SPS server that the Users will use as the primary server.
Secondary	Defines the SPS server that the Users will use in case the Primary SPS server will be unavailable.
XMPP	Defines which SPS server the XMPP server runs on. The XMPP server enables the connection of users to the MobilityPlus application.

➢ **To edit an Access Pool:**

1. Access the 'Access Pool' page (**Configuration** > **System** > **System Architecture** > **Access Pool**).
2. Click the edit icon for the Access Pool you are editing; the following screen appears.

Figure 3-17: Edit Access Pool



3. Edit the desired parameters and click **Submit**.

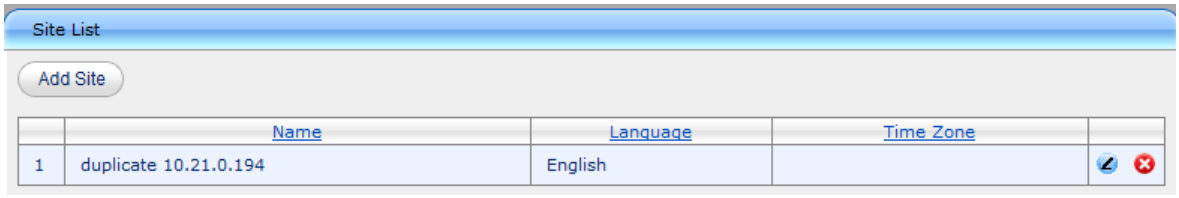
3.2.2.4 Site Settings

This sub-section describes how to configure Site Settings.

➢ **To add a new site:**

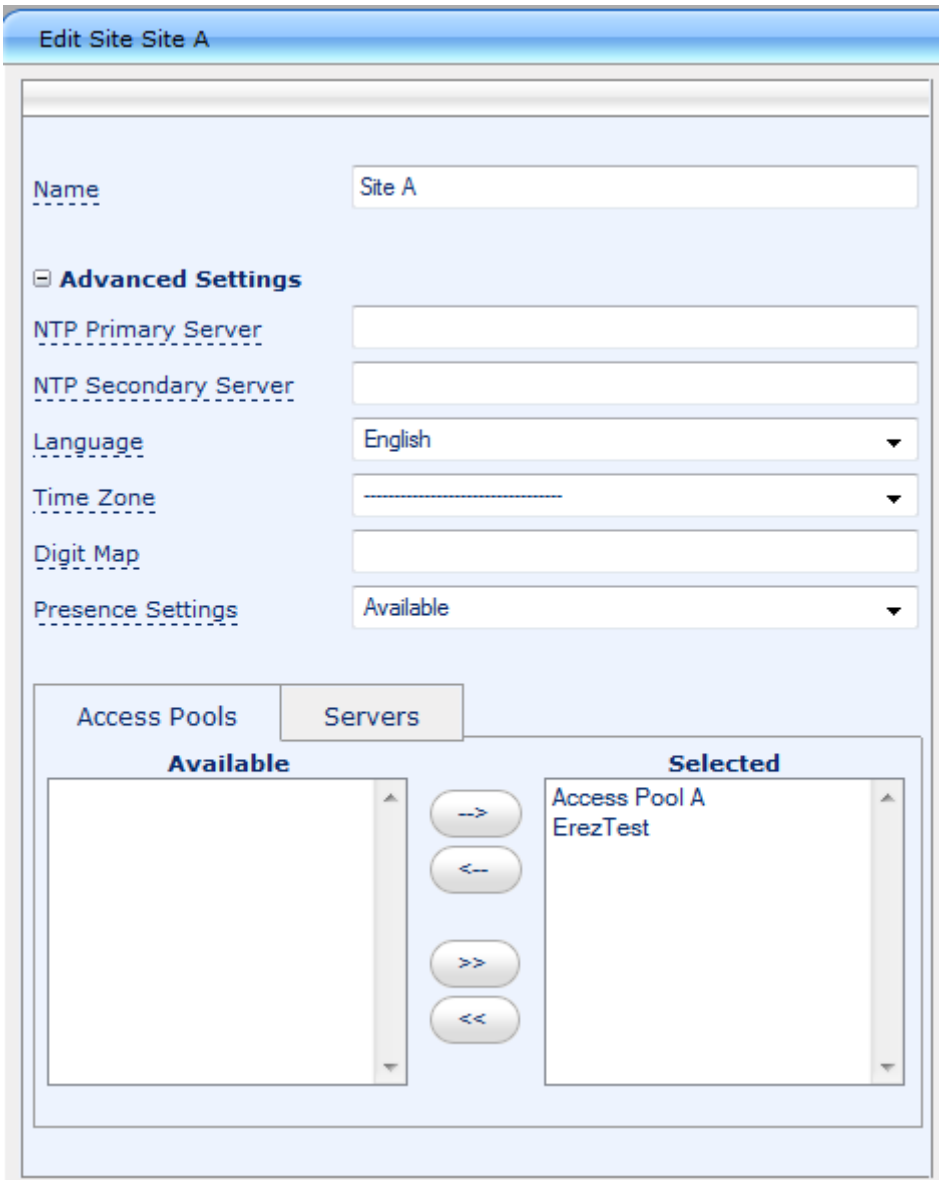
1. Access the 'Access Pool List' page (**Configuration** > **System** > **System Architecture** > **Sites**); the following page appears:

Figure 3-18: Site List



2. Click **Add Site** to add a new site; the following page appears:

Figure 3-19: Add New Site



3. Enter the desired parameters according to the table below, and then click **Submit**.

Table 3-4: Add New Site Settings

Type	Description
Name	Defines the name of the site.
NTP Primary Server	Defines the name of the primary NTP (Network Time Protocol) server.
NTP Secondary Server	Defines the name of the secondary NTP (Network Time Protocol) server.
Language	Defines the language of the site to be used in the User Interface.
Time Zone	Defines the time zone of the site.
Digit Map	Defines the Digit Map.
Presence Settings	Defines the Presence settings from the drop-down list. e.g., Away, Busy, etc.
Access Pools, Servers	Select the desired entity (Access Pool, Server) from the **Available** field, and move it to the **Selected** field.

Note: All parameters defined in **Advanced Settings**, will overwrite the IP Phone configuration per site.

.

3.2.3 Configuring Network Settings

This sub-section describes how to configure Lightweight Directory Access Protocol (LDAP), which is an application protocol for accessing and maintaining distributed directory information services over an IP network.

The LDAP can be used for both AudioCodes IP Phones and for MobilityPLUS clients.

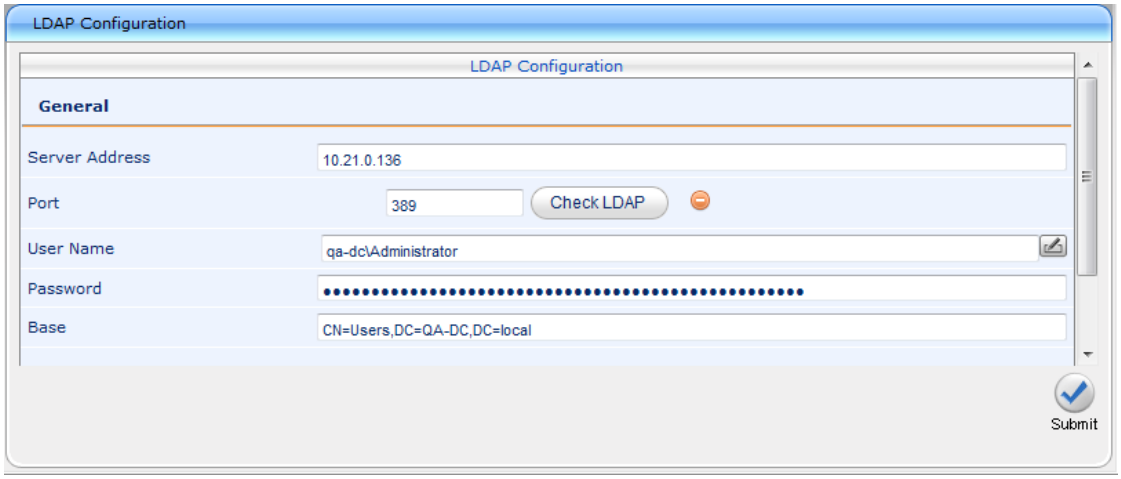
3.2.3.1 Configuring LDAP Configuration General Settings

This section shows how to configure LDAP Configuration General Settings.

➢ **To configure LDAP Configuration General Settings:**

1. Access the 'LDAP Configuration' page (**Configuration** > **System** > **Network** > **LDAP Configuration**); the following page appears:

Figure 3-20: LDAP Configuration



2. Configure the LDAP General Settings according to the parameters in the table below, and then click **Submit**.

Table 3-5: LDAP General Settings

Parameter Name	Description
Server Address	Defines the IP address or URL of the LDAP server.
Port	Defines the LDAP service port.
User Name	Defines the user name used for the LDAP search request.
Password	Defines the password of the search requester.
Base	Defines the access point on the LDAP tree.

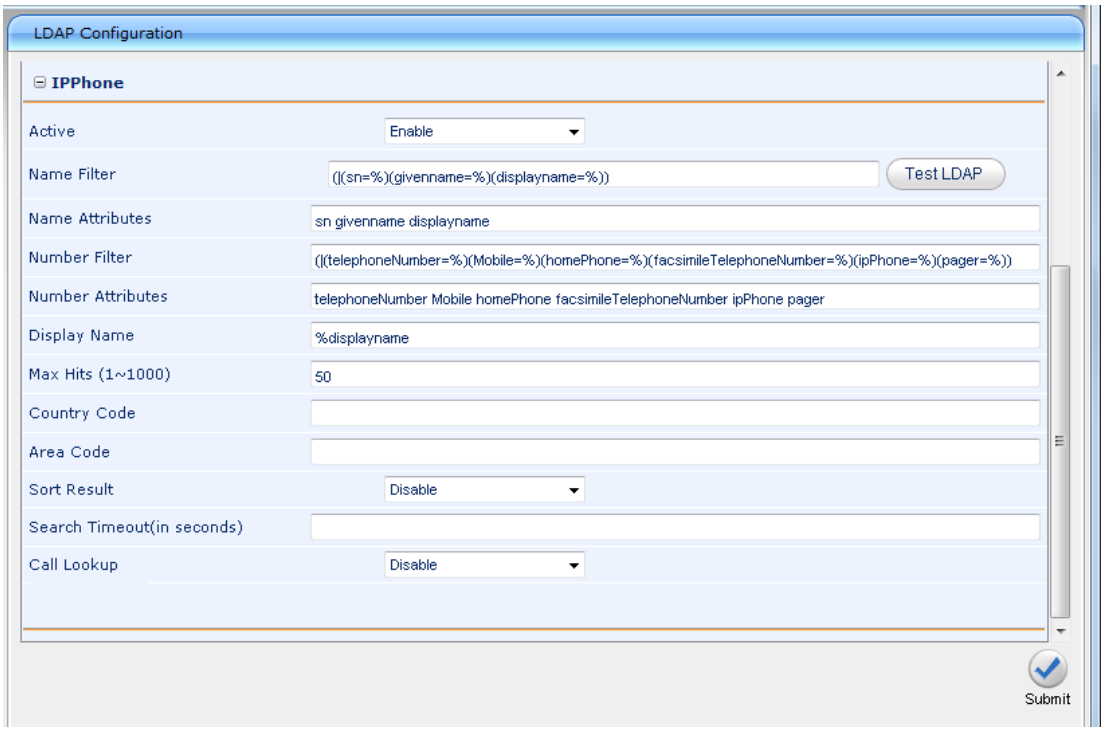
3.2.3.2 Configuring LDAP Configuration IP Phone Settings

This section shows how to configure LDAP Configuration IP phone settings.

➢ **To configure the LDAP parameters for IP phones:**

1. Access the 'LDAP Configuration' page (**Configuration** > **System** > **Network** > **LDAP Configuration**).
2. Click **IPPhone**; the IP Phone parameters are displayed on the screen.

Figure 3-21: LDAP Configuration - IPPhone



3. Configure the LDAP settings for the IP Phones according to the parameters in the table below, and then click **Submit**.

Table 3-6: LDAP Settings – IP Phones

Parameter Name	Description
Active	Defines the active state for IP Phones. Select Enable or Disable LDAP for the IP Phones
Name Filter	Specifies your search pattern for name look ups. For example: When you type in the following field: *(&(telephoneNumber=*)(sn=%))*, the search result includes all LDAP records, which have the 'telephoneNumber' field set and the '("sn"-->surname)' field starting with the entered prefix. When you type in the following field: *(|(cn=%)(sn=%))*, the search result includes all LDAP records which have the ("cn"-->CommonName) OR ("sn"-->Surname) field starting with the entered prefix. When you type in the following field: *(!(cn=%))*, the search result includes all LDAP records which "do not" have the "cn" field starting with the entered prefix.
Name Attribute	Specifies the LDAP name attributes setting, which can be used to specify the "name" attributes of each record which is returned in the LDAP search results. When you type in the following field, for example, "*cn sn displayName*", this requires you to specify 'cn-->commonName'. This is the Full name of the user, sn-->Surname, last name or family name and "displayName" fields for each LDAP record.
Number Filter	Specifies your search pattern for number look ups. When you type in the following field, for example, *(|(telephoneNumber=%)(Mobile=%)(ipPhone=%))*, the search result is all LDAP records which have the "telephoneNumber" OR "Mobile" OR "ipPhone"field match the number being searched. When you type in the following field: *(&(telephoneNumber=%)(sn=*))*, the search result is all LDAP records which have the "sn" field set and the "telephoneNumber" match the number being searched.
Number Attribute	Specifies the LDAP number attributes setting, which can be used to specify the "number" attributes of each record which is returned in the LDAP search results. When you type in the following field, for example, *Mobile telephoneNumber ipPhone*, you must specify 'Mobile', 'telephoneNumber' and 'ipPhone' fields for each LDAP record.

Parameter Name	Description
Display Name	Specifies the format in which the "name, e.g. "Mike Black" of each returned search result is displayed on the IPPHONE. When you type in the following field, for example:**%sn, %givenName**, the displayed result returned should be "Black, Mike".
Max Hits	Specifies the maximum number of entries expected to be sent by the LDAP server (this parameter is sent to the LDAP server).
Country Code	Defines the country code prefix added for number search.
Area Code	Defines the area code prefix added for number search.
Sort Result	Sorts the search result by display name on the client side.
Search Timeout	Defines the time out value for LDAP search (this parameter is sent to the LDAP server).
Call Lookup	Performs an LDAP search during call (search the display name for a number).

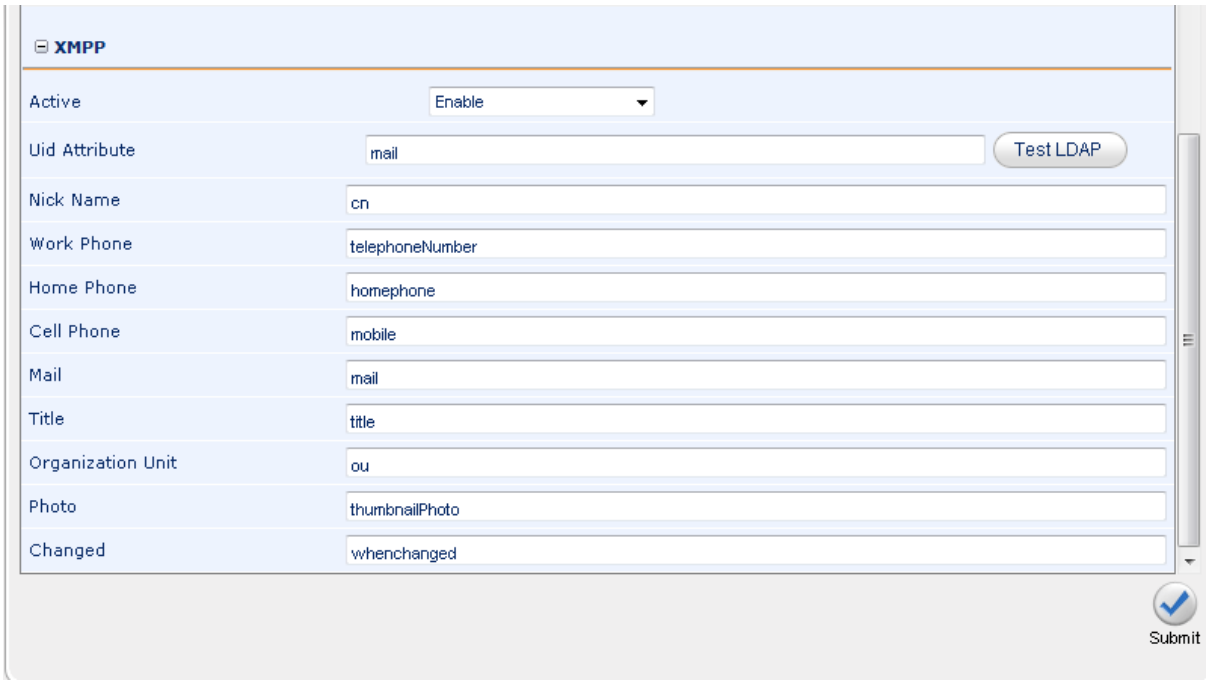
3.2.3.3 Configuring LDAP Configuration Mobility Plus Settings

This section shows how to configure LDAP Configuration Mobility Plus Settings.

➢ **To configure the LDAP parameters for MobilityPLUS:**

1. Access the 'LDAP Configuration' page (**Configuration** > **System** > **Network** > **LDAP Configuration**).
2. Click **XMPP**; the MobilityPLUS parameters are displayed on the screen.

Figure 3-22: LDAP Configuration - XMPP



3. Configure the LDAP settings for XMPP according to the parameters in the table below, and then click **Submit**.

Table 3-7: LDAP Settings – XMPP

Parameter Name	Description
Active	Defines the active state for XMPP. Select **Enable** or **Disable** LDAP for the XMPP.
Uid Attribute	Defines the User ID. The default value is “mail”.
Nick Name	Defines the user’s nick name. The default is “cn” (Common Name).
Work Phone	Defines the user’s work phone number. The default value is TelephoneNumber.
Home Phone	Defines the user’s home phone number.
Cell Phone	Defines the user’s cellular phone number.
Mail	Defines the user’s Email address.
Title	Defines the user’s title.
Organization Unit	Defines the name of the organization’s unit that the user belongs to.
Photo	Defines the user’s photo name.
Changed	Defines the time when a field in the user’s Vcard has changed.

3.2.4 Configuring a System License

The system is based on one-license-server concept. Regardless of the number of SPS servers in a system, there will be only one license server.

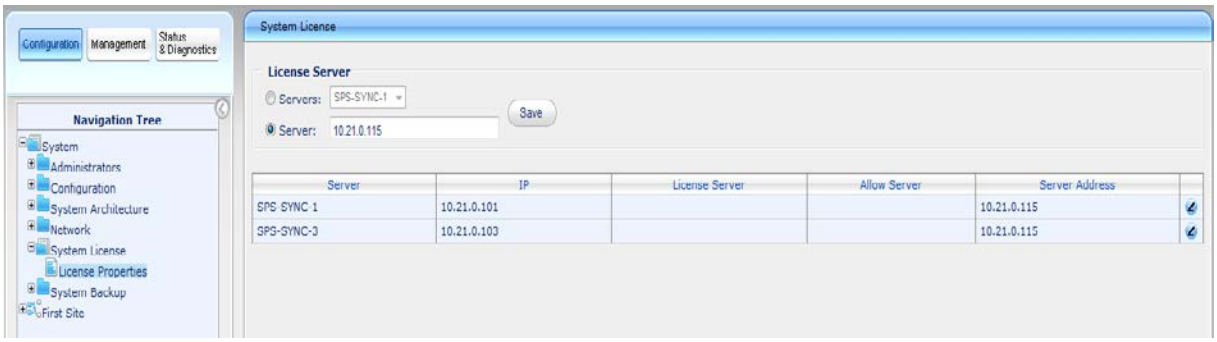
The license server can be either one of the SPS servers, or an external server.

When one of the servers is defined as the license server, all the other servers are referred to that single license server to get their license from it.

When adding new SPS servers, you need to update the license on the license server.

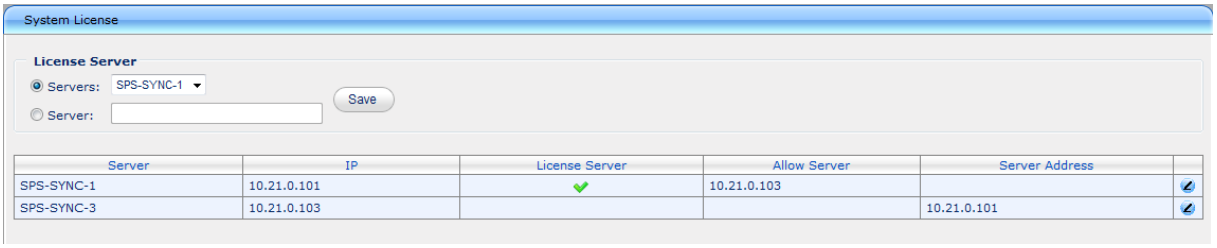
➢ **To configure the system license:**

1. Access the 'System License' page (**Configuration** > **System** > **System License** > **License Properties**):

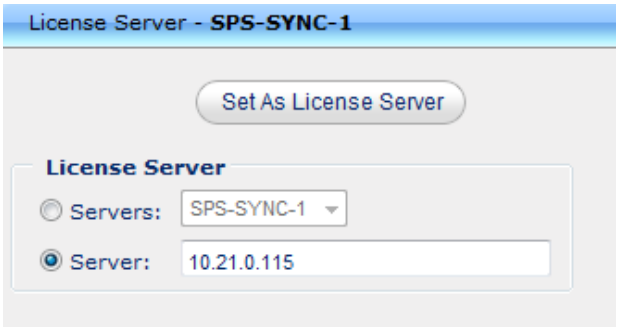


Select the license server. If the license server is one of the SPS servers, click **Servers** and select the server from the dropdown list. In the example, it's SPS-SYNC-1. If the license server is an external server, click **Server** and type the IP address of the external server. In the example, it's 10.21.0.115 and both SPS-SYNC-1 and SPS-SYNC-3 refer to it as their license server.

2. Click **Save**; this causes the selected SPS server or the external server to become the license server. Additionally, it causes all other SPS servers to obtain their license from the defined license server. The following screen displays the system license status after selecting SPS-SYNC-1 as the license server:

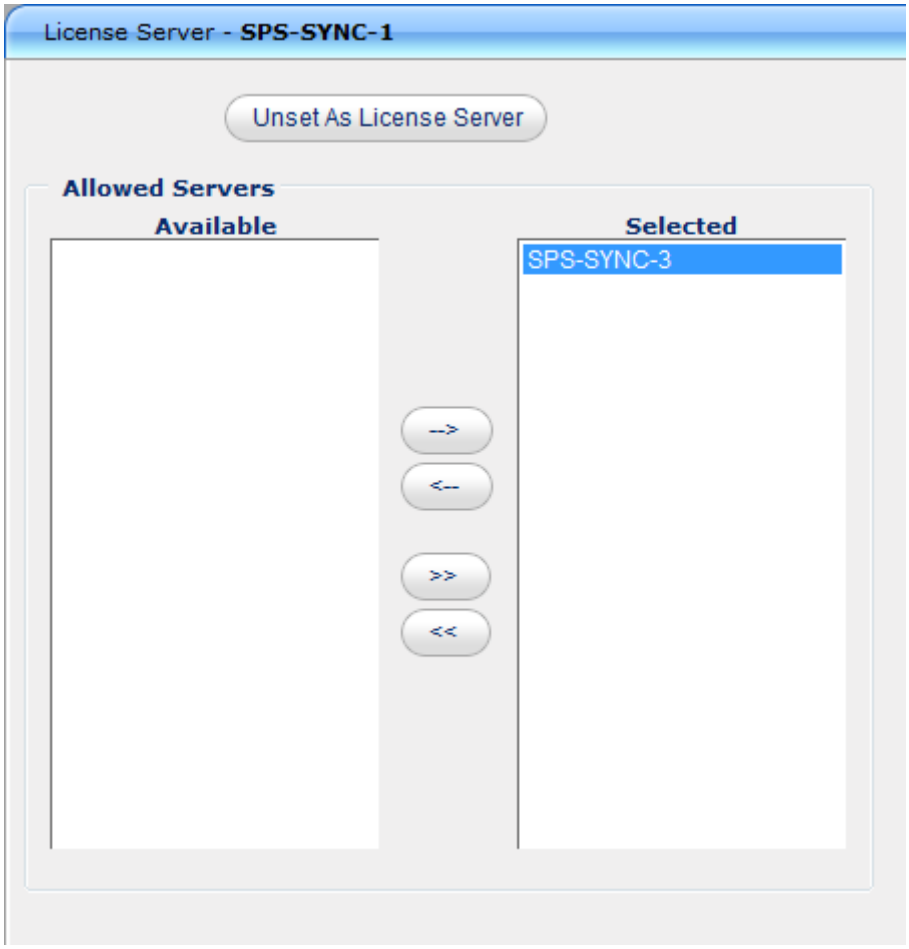


3. To set an SPS server as the license server, click for the required server; the following screen appears:



4. Click **Set As License Server**, then click **Submit**.

5. To unset an SPS server from being the license server, click for the required server; the following screen appears:



6. Click **Unset As License Server**, then click **Submit**.

3.2.5 Performing System Backup

The system provides an easy way to back up and restore all your system settings. You should make a system backup before making changes to your system, when your system is healthy and running correctly. Backups are quick and easy to create and they provide you with a safety net before making any system configuration changes.

The backup mechanism will back up all your system settings including architecture, users, administrators, configuration, and LDAP configuration. It is advised to store the backup file in a safe place.

➢ **To perform a system backup:**

1. Access the 'Backup' page (**Configuration** > **System** > **System Backup** > **Backup**); the following page appears:

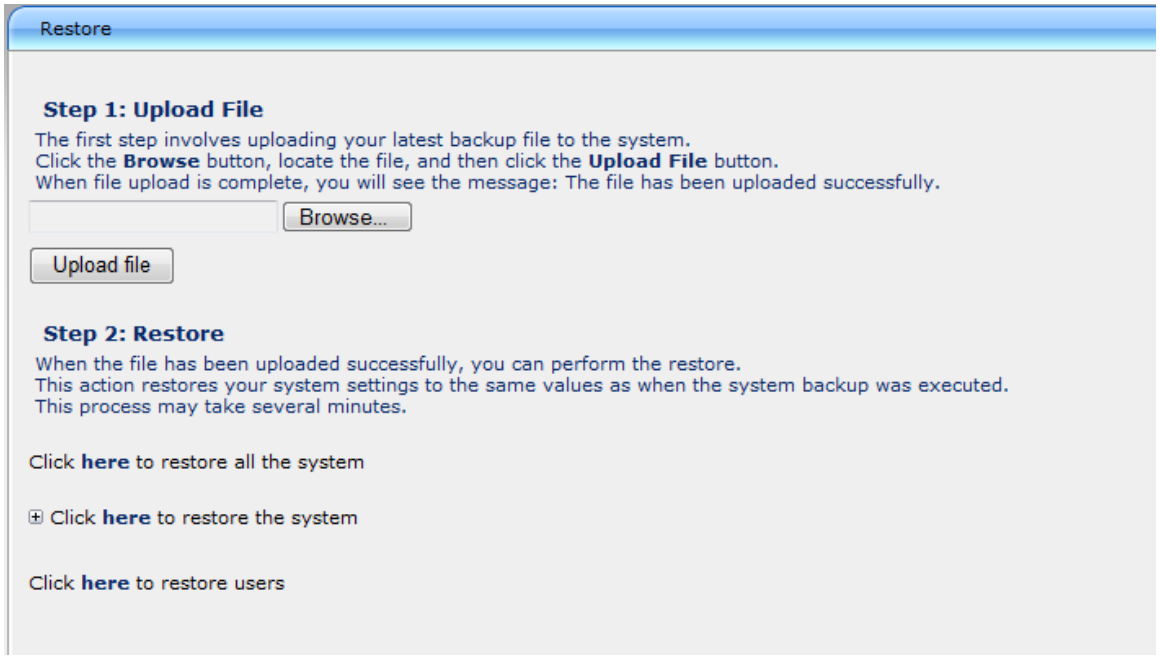
Figure 3-23: Backup

2. Select the desired backup option:
   - All the system
   - Selected parts of the whole system (Architecture, Users, etc.),
   - Users

➢ **To perform System Restore:**

1. Access the 'Restore' page (**Configuration** > **System** > **System Backup** > **Restore**); the following page appears:

Figure 3-24: Restore



2. Click **Browse**, to locate your Backup file.
3. Click **Upload File** to upload your Backup file.

3.3 Configuring Site Settings

The Site Settings navigation tree enables configuring various parameters for each of the servers in this site.

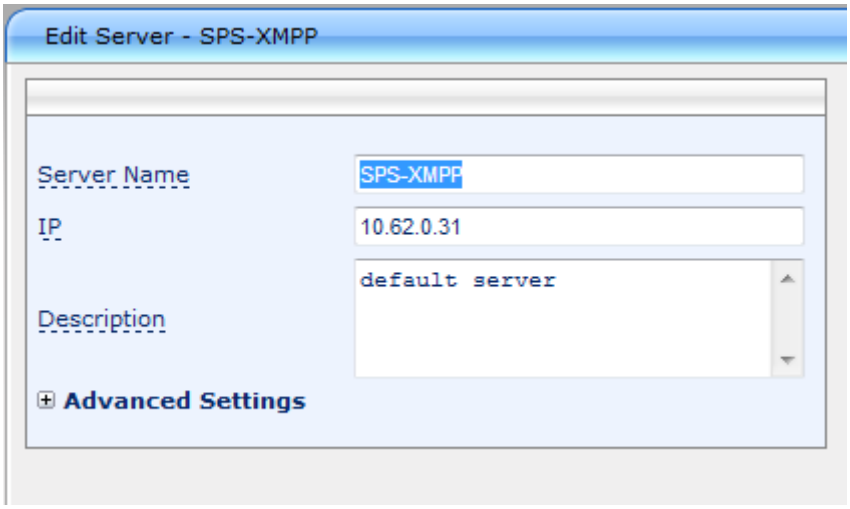
3.3.1 Configuring a Site's SPS Server Properties

This section shows how to configure the site's SPS Server properties.

➢ **To edit the properties of a server:**

1. Access the 'Edit Server' page (**Configuration** > ***Site A*** > ***Server Name*** (SPS-XMPP in this example) > **Properties**); the following page appears:

Figure 3-25: Edit Server



2. Enter the desired parameters, and then click **Submit**.

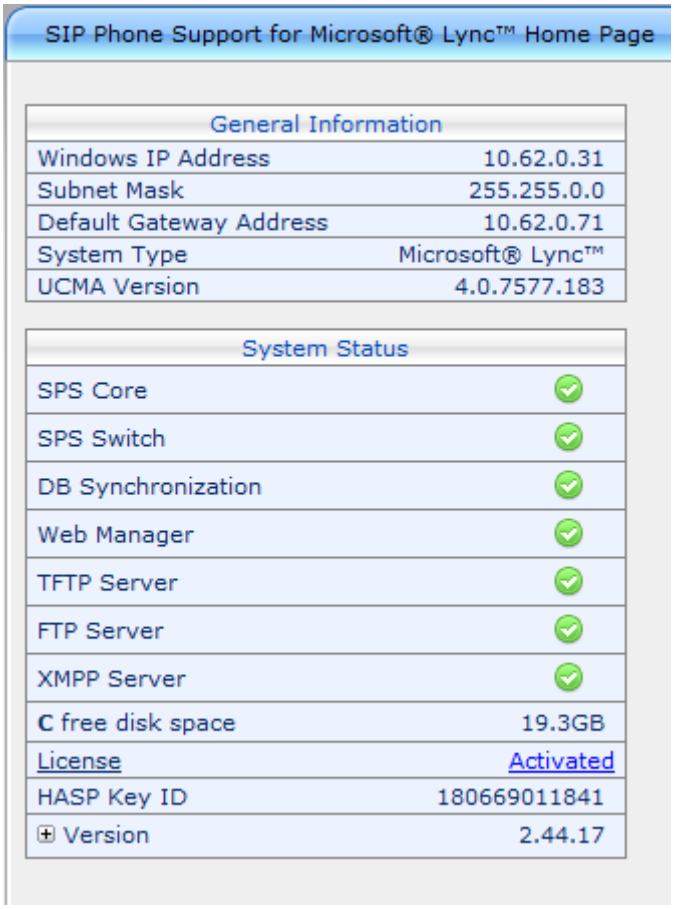
3.3.2 Displaying Server Status

This section shows how to display the status of a server.

➢ **To display the status of a server:**

1. Access the 'SIP Phone Support for Microsoft Lync Home Page' page (**Configuration** > ***Site A*** > ***Server Name*** (SPS-XMPP in this example) > **Status**); the following page appears:

Figure 3-26: SIP Phone Support for Home Page



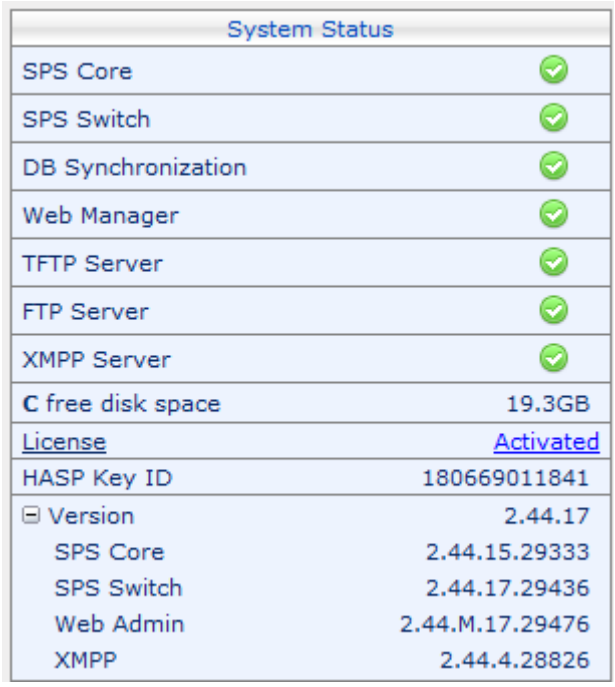
The 'General Information' pane includes these properties:

Table 3-8: General Information - Properties

Property	Description
Windows IP Address	Defines the Windows IP address
Subnet Mask	Defines the Server subnet mask
Default Gateway Address	Defines the Server default gateway address
System Type	Defines the Microsoft server environment types: ▪ **OCS** ▪ **Skype for Business**
UCMA Version	Defines the UCMA version

The 'System Status' pane displays the real-time status of SPS system processes and alarms.

Figure 3-27: System Status

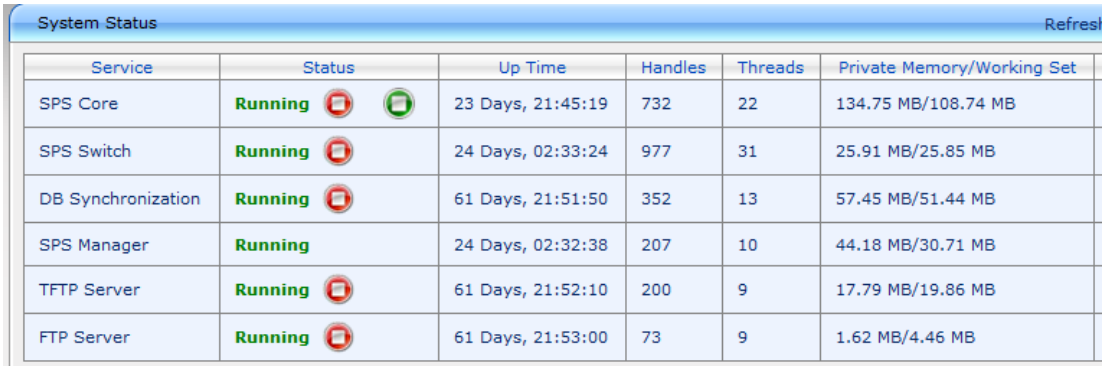


= a running service
= a stopped service

➢ **To display the process management window:**

- Click a service icon to open the associated process management window; the following screen appears:

Figure 3-28: Process Management Window

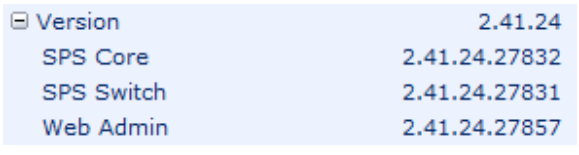


Service	Status	Up Time	Handles	Threads	Private Memory/Working Set
SPS Core	Running	23 Days, 21:45:19	732	22	134.75 MB/108.74 MB
SPS Switch	Running	24 Days, 02:33:24	977	31	25.91 MB/25.85 MB
DB Synchronization	Running	61 Days, 21:51:50	352	13	57.45 MB/51.44 MB
SPS Manager	Running	24 Days, 02:32:38	207	10	44.18 MB/30.71 MB
TFTP Server	Running	61 Days, 21:52:10	200	9	17.79 MB/19.86 MB
FTP Server	Running	61 Days, 21:53:00	73	9	1.62 MB/4.46 MB

➢ **To display the SPS Version:**

- Click **Version**; the SPS application's 'Version' pane displays the SPS module's internal version number.

Figure 3-29: SPS Version



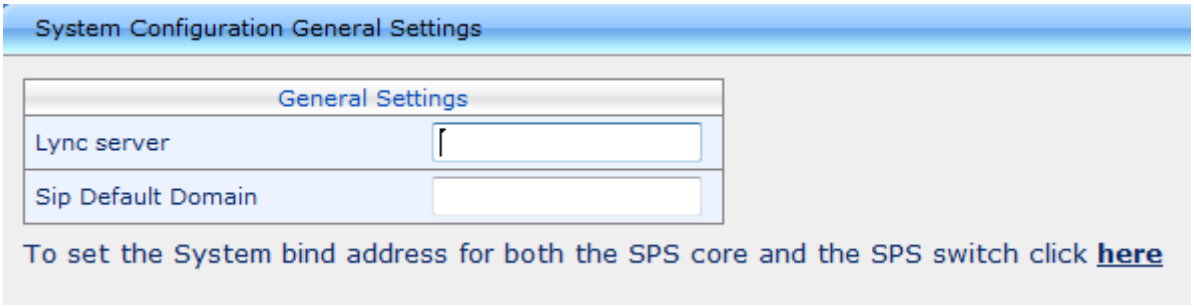
3.3.3 Configuring Server System Settings

This section shows how to configure the system settings of a server.

➢ **To configure the system settings of a server:**

1. Access the 'System Configuration General Settings' page (**Configuration** > ***Site A*** > ***Server Name*** (SPS-XMPP in this example) > **System Settings** > **General Settings**); the following page appears:

Figure 3-30: System Configuration General Settings



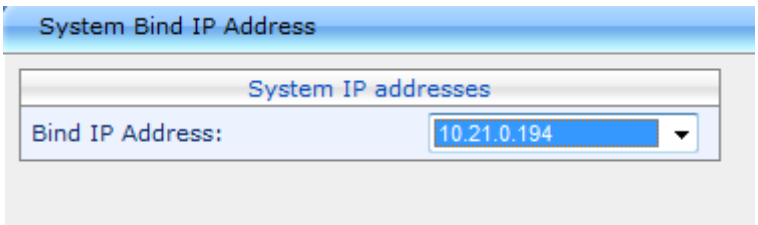
2. If the Skype for Business server is installed, leave the 'Lync server' field empty. If an OCS server is installed, enter the OCS name.
3. Enter the system's default SIP domain. This field is used for IP phones that send the "to" URI host as an IP address instead of a domain.
4. Click the **Submit** button.

Notes:

- The 'OCS Server' field is available only in the OCS 2007 R2 installation, in which case it is mandatory.
- The 'Lync Server' field is optional and should be empty by default. If empty, a DNS SRV query is made in order to find the server (in the same way that the Skype for Business client does).

5. Click the **here** link to set up the correct bind IP address. If the SPS server is equipped with several network interfaces, it may cause the SPS to listen on the wrong NIC interface. Therefore, it is important to configure the correct one.

Figure 3-31: System Bind IP Address Settings



6. Select the correct IP address the system must bind with and click the **Submit** button.

Note: After you made changes to the bind IP address, restart both the SPS core and the SPS switch.

3.3.4 Enabling the Server's License Features

This section shows how to view, upload, update, and activate the server's license.

Note: The SPS license is associated with the installed system's serial number. An installed and licensed SPS system must not be cloned to a different Virtual Machine instance. Doing so will disable the SPS license.

➢ **To view SPS system license information:**

- Access the 'System Configuration General Settings' page (**Configuration** > ***Site A*** > ***Server Name*** (SPS-XMPP in this example) > **License** > **License Information**); the following page appears:

Figure 3-32: License Information

License Information

License Information	
License version	1
Maximum system users	30000
Latest date allowed for upgrade	31/12/2022
Maximum users with Audiocodes IPP	10000
Maximum users with 3rd party IPP	10000
Maximum Mobile users	10000
HASP Key ID	154537021894
Expiration date	31/12/2021
Days Left	3564
Type	expiration

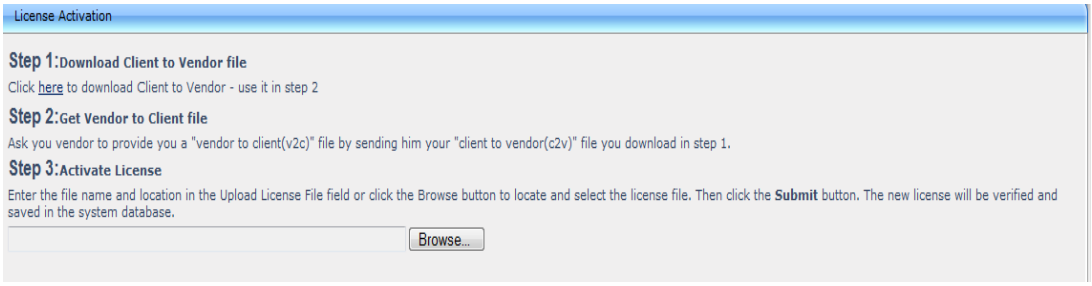
Users Information	
Maximum users	30000
Current registered users	4
Current AC Users	31
Current 3rd party IPP	0
Current Mobile users	29

You can extend SPS system capabilities by uploading a new license. First make sure you have the new license file. It's a text file which includes all feature keys that the specific customer is allowed to use. The license is encrypted. It appears as a string of digits and numbers.

➢ **To load a new license file:**

1. Access the 'System Configuration General Settings' page (**Configuration** > ***Site A*** > ***Server Name*** (SPS-XMPP in this example) > **License** > **License Activation**); the following page appears:

Figure 3-33: Loading a New License



2. If you already have the new license file (Vendor to Client *.v2c), skip to **Step 3**.
3. Under **Step 1** in the screen above, click the **here** link and then save the **Client to Vendor** file to your PC.
4. Send the **Client to Vendor** file to your vendor (AudioCodes).
5. When you receive a valid SPS License Key (Vendor to Client file) from AudioCodes:
   a. Navigate to the License Activation page (**Configuration** tab > **License** menu > **License Activation**).
   b. Load the **Vendor to Client** file that you received from AudioCodes.
6. Click **Submit**.
7. Restart the SPS server.

This page is intentionally left blank.

4 Managing the SPS System

The Management navigation tree enables administrators to easily manage SPS users and IP phones. It also includes direct links to other SPS tools and documentation.

4.1 Managing System Settings

This section shows how to manage System settings. The **Management** > **System Settings** menu options include:

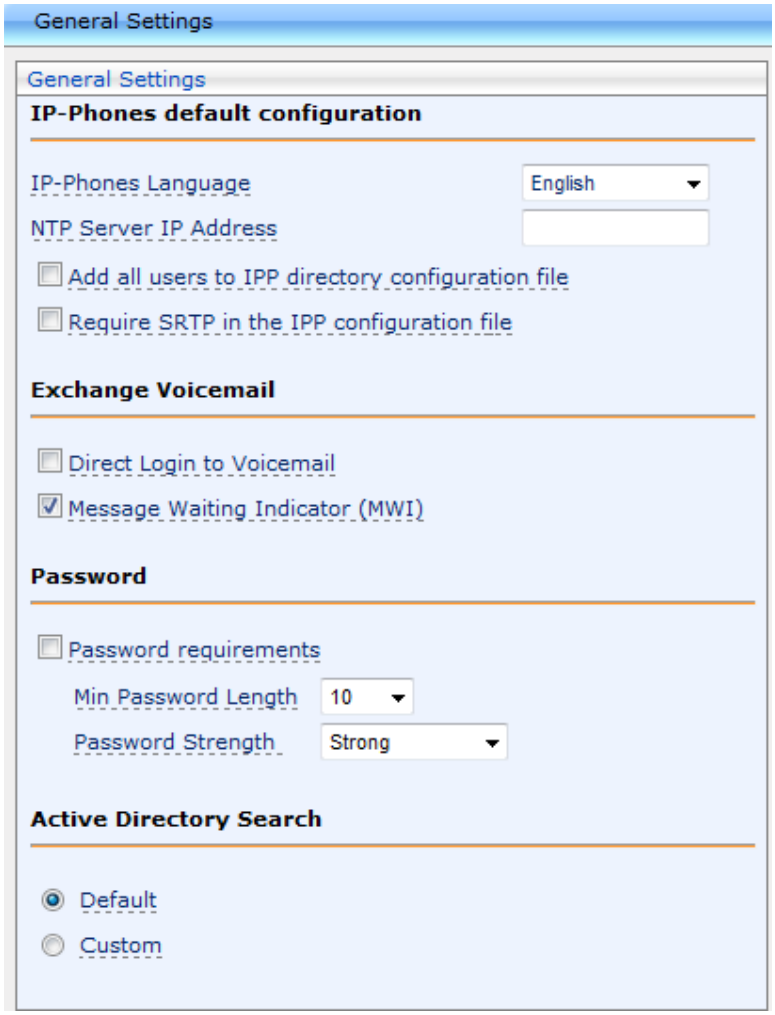
- General Settings
- Dial Codes
- Presence Settings
- Call Park

4.1.1 Managing General Settings

➢ **To modify General Settings:**

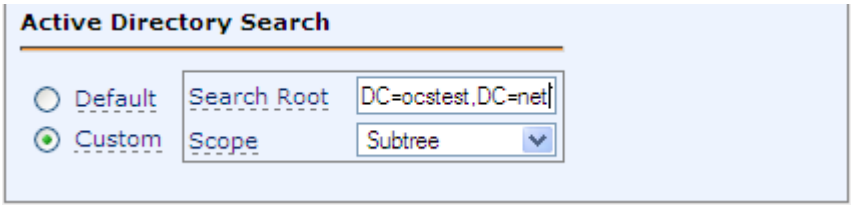
1. Access the 'General Settings' page (**Configuration** > **System Architecture** > **General Settings**); the following page appears:

Figure 4-1: General Settings



2. From the **IP-Phones Language** drop-down list, select the default language for the IP Phones.
3. In the 'NTP Server IP Address' field, enter the NTP (Network Time Protocol) server address. This field is used for the IP Phone configuration files.
4. Select the **Add all users to IPP directory configuration file** option to add all SPS users to the IP Phones Directory file (the SPS automatically generates IP Phones Directory files).
5. Select the **Require SRTP in the IPP configuration file** option to require SRTP in the IP Phone configuration file.
6. Select the **Direct Login to Voicemail** option to enable direct access without authenticating with PIN code to the Exchange voicemail.
7. Select the **Message Waiting Indicator (MWI)** option to enable the Message Waiting Indicator.
8. Select the **Password requirements** option for newly created SPS extensions.
9. Select the minimum SIP password length to be used for newly created SPS extensions.
10. Select the SIP password strength to be checked for newly created SPS extensions.
11. Under **Active Directory Search**, select the **Custom** option to define settings for Active Directory that are different to the default. (The SPS uses the Active Directory when defining new users. The SPS automatically determines the enterprise's default Active Directory search node).

Figure 4-2: Active Directory Search - Custom



12. Set Active Directory **Search root** and the type of search **Scope** and click the **Submit** button.

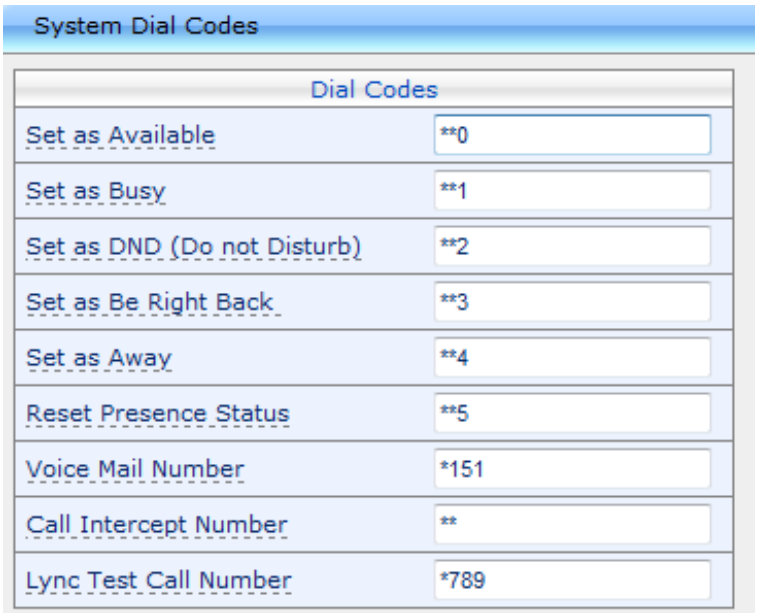
4.1.2 Managing Dial Codes

Dial Codes are special DTMF codes that enable the user to activate special commands, e.g., to dial to the Exchange voicemail, change the presence mode, etc. The SPS system enables changing the default settings of most predefined Dial Codes.

➢ **To manage Dial Codes:**

1. Access the 'System Dial Codes' page (**Management** > **System Settings** > **Dial Codes**); the following page appears.

Figure 4-3: System Dial Codes



2. Modify the Dial Codes sequence accordingly.
3. Click **Submit**.

The SPS includes the following Dial Codes:

Table 4-1: Dial Codes

Property	Description
Set as Available	Defines the number to dial to set the presence status to Available.
Set as Busy	Defines the number to dial to set the presence status to Busy.
Set as DND (Do not Disturb)	Defines the number to dial to set the presence status to Do Not Disturb.
Set as Be Right Back	Defines the number to dial to set the presence status to Be Right Back.
Set as Away	Defines the number to dial to set the presence status to Away.
Reset Presence Status	Defines the number to dial to Reset the presence status.
Voice mail Number	Defines the number to dial in order to dial to the user's Exchange voicemail URI.
Call Intercept Number	Defines the number to dial to pick up a ringing call from a team-group member.
Skype for Business Test Call Number	Defines the number to dial to test Skype for Business call quality.

Note: If your SPS system is using a voicemail service other than Exchange, this Dial Code will not work. The user will need to dial the direct voicemail number.

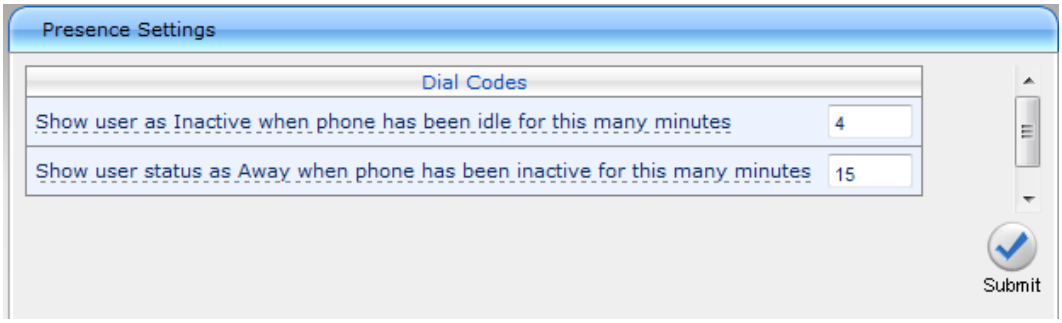
4.1.3 Defining User Presence

SPS enables you to define how IP phone user activities affect presence.

➢ **To define presence settings:**

1. Access the 'Presence' page (**Management** > **System Settings** > **Presence Settings**); the following page appears.

Figure 4-4: Presence Settings



2. In the 'Show user as Inactive when phone has been idle for this many minutes' field, enter the time, in minutes, that the user's presence will become **Inactive** after the phone has been idle.

   You can also enter one of the following:

   - 0 = Changes the status immediately to **Inactive**
   - -1 = Disables the feature (i.e., the user will always be available)

3. In the 'Show user status as Away when phone has been inactive for this many minutes' field, enter the time, in minutes, after which the user's presence changes to **Away** after the phone has been inactive.

   You can also enter one of the following:

   - 0 = Changes the phone status immediately to **Away**
   - -1 = Disables the feature (i.e., the user will never be **Away**)

4. Click **Submit**.

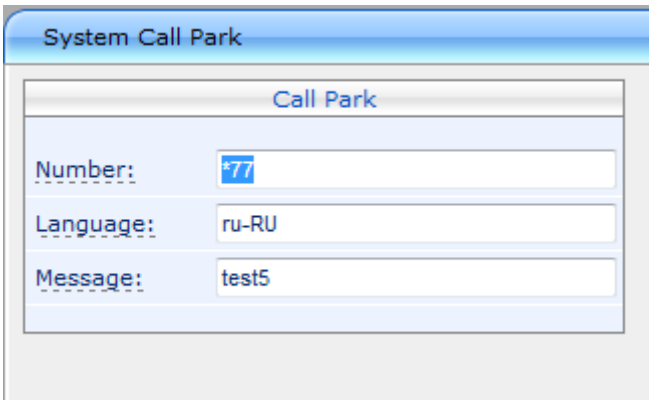
4.1.4 Defining Call Park

Call Park allows an Enterprise Voice user to put a call on hold from one telephone and then retrieve the call later by dialing an internal number (known as a Call Park orbit) from any telephone.

➢ **To define Call Park settings:**

1. Access the 'System Call Park' page (**Management** > **System Settings** > **Call Park**); the following page appears.

Figure 4-5: System Call Park



2. Enter the Call park access number in the **Number** field.
3. Enter the system Call Park language in the **Language** field.
4. Enter the system Call Park message in the **Message** field.
5. Click the **Submit** button.

4.2 Managing Users

SPS users are the SIP entities your SPS system uses. To be able to connect to Skype for Business (or to OCS), each SIP entity must be defined as an SPS user.

The SPS supports up to 5 SIP device registrations for every user.

The SPS user page displays SPS users as well as devices per user.

Note:

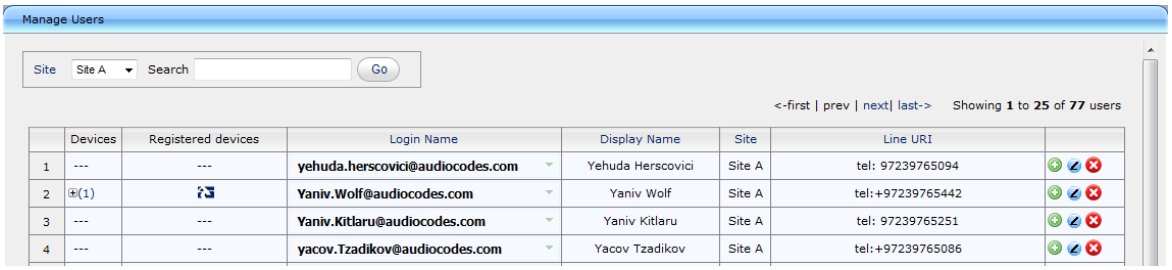
To define a user in the SPS, the user must first be defined in Skype for Business with the following properties:

- **Telephone**: Voice Enterprise
- **Line URI**: tel:+xxxxxxxxx

4.2.1 To manage SPS users:

1. Access the 'Manage Users' page (**Management** > **Users** > **Users**); the following page appears.

Figure 4-6: Managing Users



Tips:

- Click on a column header to sort user entries according that column.
- Use the 'Search' field to quickly find a user. Search by Login name or Display name.

- For some known phone types, an icon displays the IP Phone type currently connected.
- Click the arrow adjacent to an extension number; these menu options become available:
  - **Edit User** (to edit that user's settings)
  - **Delete User** (to delete that user)
  - **Restart IP-Phone** (to send a restart command to *all the devices* of that user)

The Users page shows:

Table 4-2: User Attributes

Attribute	Description
Devices	Defines the number of devices defined for each user
Registered Devices	Defines the currently connected devices
Login Name	Defines the user's Login Name
Display Name	Defines the user's Display Name
Line URI	Defines the user's phone number
Action icons	Defines icons enabling actions (Edit, Delete, Add device) to be performed on users

The Devices page shows:

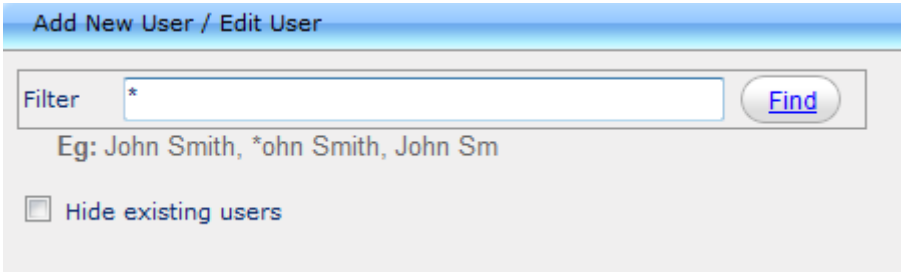
Table 4-3: Device Attributes

Property	Description
Display Name	Defines the device's Display Name
Type	Defines the device type (e.g., AudioCodes 320HD)
MAC address	Defines the device MAC address

4.2.2 To add SPS users:

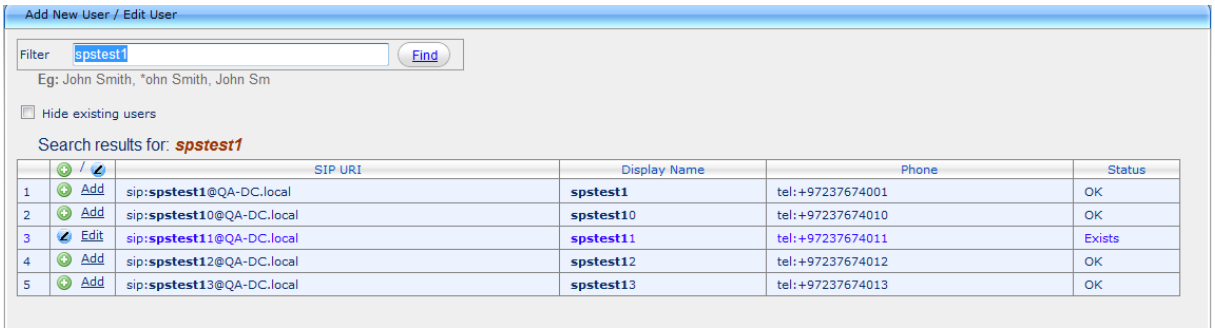
1. Access the 'Add New User/Edit User' page (**Management** > **Users** > **Add User**); the following page appears.

Figure 4-7: Add New User / Edit User



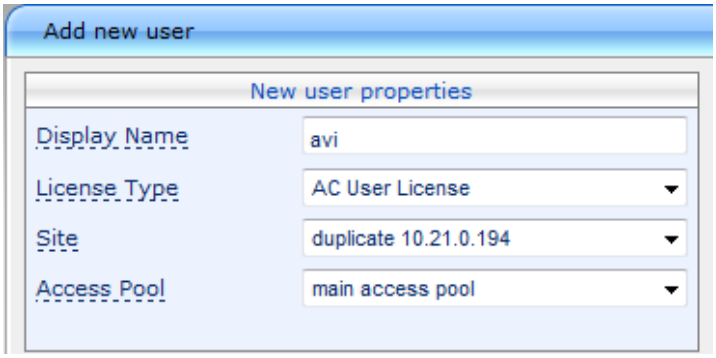
2. To search for a user to add, enter a name/string in the 'Filter' field and click **Find**.

Figure 4-8: Filtering Users



3. Click the **Add** link adjacent to the required user; the following screen appears:

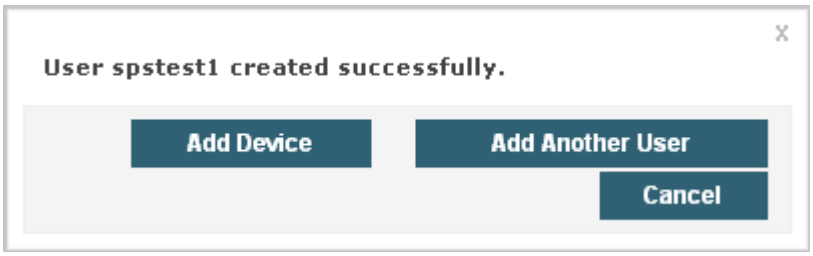
Figure 4-9: Adding a New User



Notes:

- The MOC sign in the name must be the same as that used when signing in to Skype for Business client. Use this format: user@domain.
- The password is unrelated to the Windows password used for MOC login.
- Define the user in Skype for Business as:
  - √ Enabled for UM
  - √ Enabled for enterprise voice
  - √ With a defined Line URI

4. Select the License Type to be used for the user and click **Submit**.



5. You can now either **Add Device** to this user or **Add Another User**.

Note: Users marked in red are Skype for Business users that are not configured with Enterprise Voice settings and cannot be added to the SPS.

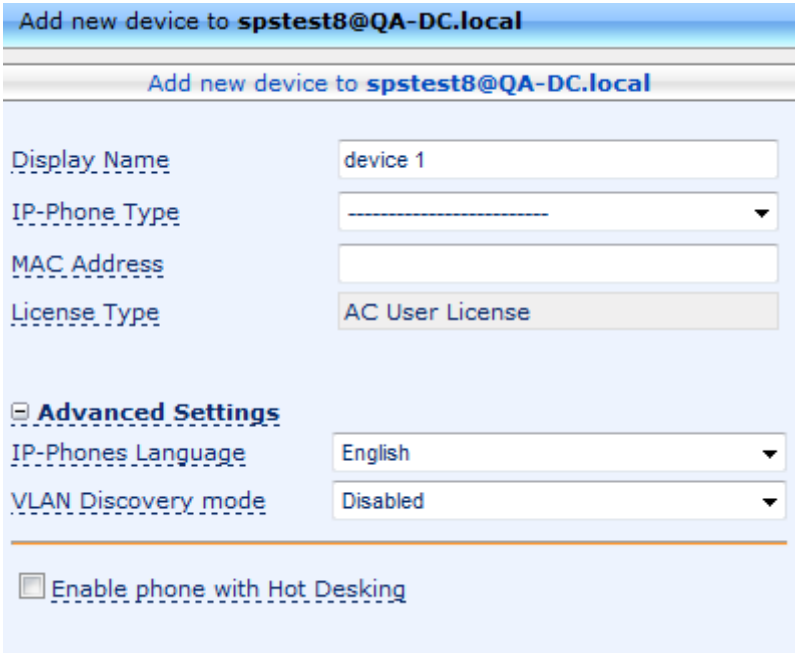
Tip: Users already defined as SPS users have an Edit link option instead of the Add link option.

After creating the user in the SPS, define the user's IP Phone device.

➢ **To add a new device to a user:**

1. Open the user for editing.
2. Click the **Devices** tab.
3. Click the **Add Device** link.

Figure 4-10: Adding a New Device



4. In the 'Display Name' field, enter the device name.
5. From the **IP-Phone Type** drop-down list, select the IP Phone model type for this device.
6. In the 'MAC Address' field, enter the IP Phone MAC Address.
7. For advanced settings, click the **Advanced Setting** link.
8. From the **IP-Phone Language** drop-down list select the user language.
9. Use the **VLAN Discovery mode** drop-down list options to define VLAN settings for the specific user IP Phone. The SPS system will use these VLAN settings when creating the user's IP Phone configuration files. Note that the VLAN settings are available for AudioCodes IP Phones only.
10. Select the **Enable phone with Hot Desking** option, if required.
11. Click **Submit**; the new extension is added with the new services as defined.

Note: SIP registration credentials are the same for all user devices (i.e., SIP user name and password).

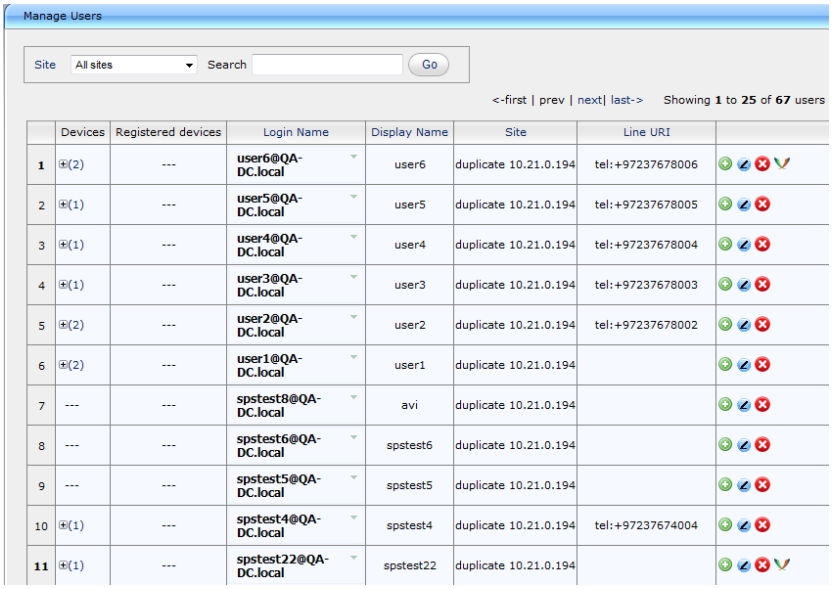
4.2.3 Adding, Editing and Deleting Users

This section shows how to add a new device to a user, edit or delete a user.

➢ To add a new device to a user:

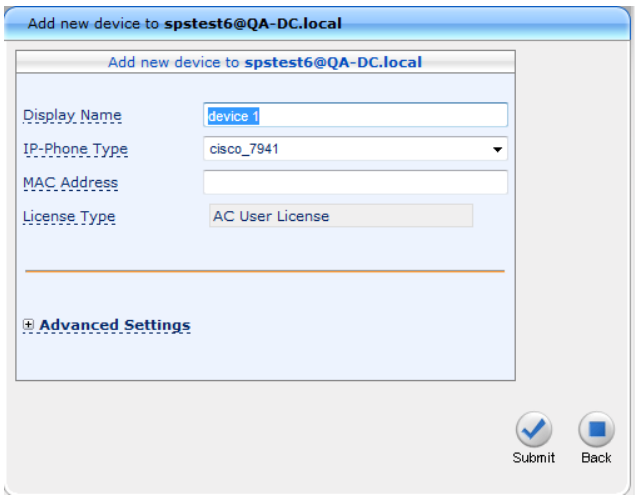
1. Access the 'Manage Users' page (**Management** > **Users** > **Users**); the following screen appears:

Figure 4-11: Manage Users



2. Click the button for the required entry; the following screen appears:

Figure 4-12: Add New Device

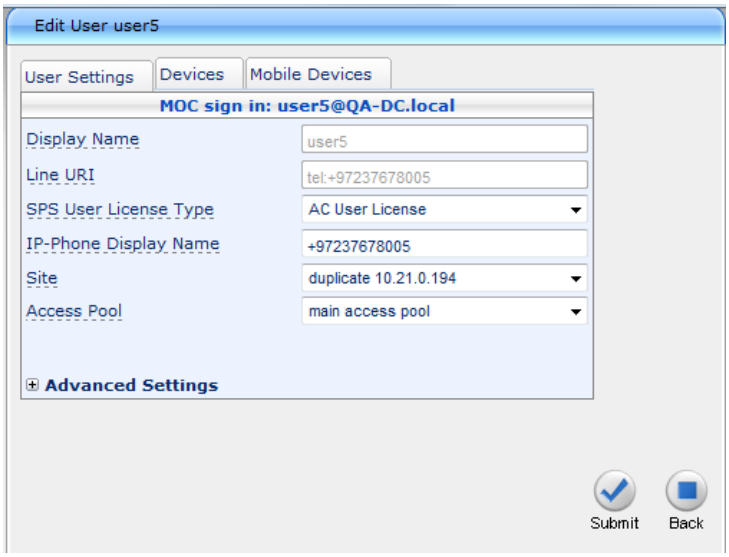


3. Click **Submit**; the selected user can now be edited.

➢ **To edit a user:**

1. Access the 'Manage Users' page (**Management** > **Users** > **Users**).
2. Click the button for the required entry; the following screen appears:

Figure 4-13: Edit User



3. Edit any of the user's fields.
4. Click **Submit**.

➢ **To delete a user:**

1. Access the 'Manage Users' page (**Management** > **Users** > **Users**).
2. Click the button for the required entry; a confirmation message is displayed.
3. Click **Delete** to continue; the selected user is deleted.

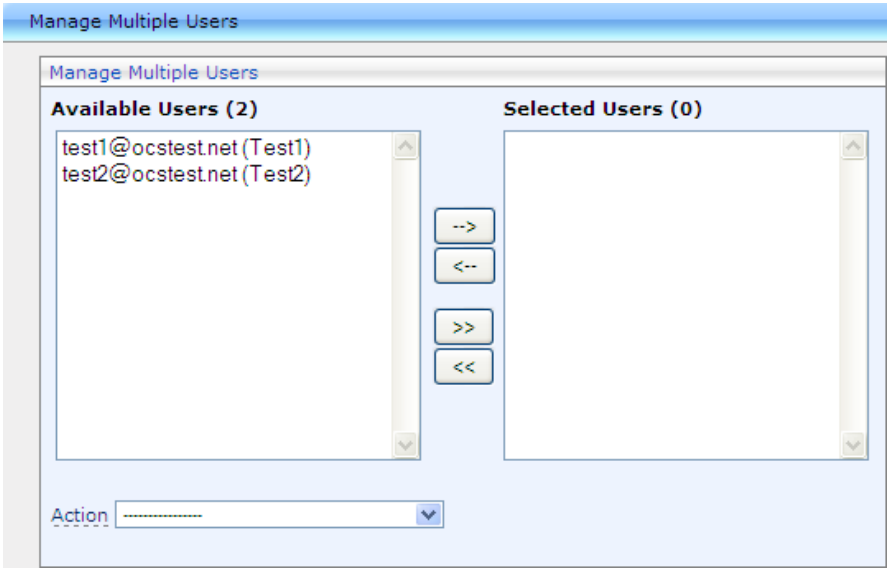
4.2.4 Managing Multiple Users

The Manage Multiple Users page enables easily performing a single operation on all or on multiple SPS users, e.g., delete users, reset SIP Passwords, etc.

➢ **To manage multiple users:**

1. Access the 'Manage Multiple Users' page (**Management** > **Users** > **Manage Multiple Users**); the following screen appears:

Figure 4-14: Manage Multiple Users



2. In the **Available Users** pane, select the users on which to perform the operation.
3. Use the right arrow → to add new users to the Selected Users pane or use the left arrow ← to remove selected users.
4. From the **Action** drop-down list, select the action.

Table 4-4: Managing Multiple Users - Available Actions

Action	Operation
Set Users Site and Access Pool	Defines the Site and Access Pool for a selected user.
Reset Users Password	Defines the user whose SIP password you require to reset (the SPS system generates a random password for each user) and click **Reset**. To create a single SIP password for all users, select the **Set the same password to all users** option.
Delete Users	Defines the users to delete from the SPS system and click **Delete Users**.
Restart Devices	Click the **Restart Devices** button; a reset message is sent to all selected users' devices. Note that the SPS system sends the reset commands in batches; each batch contains 5 devices with a delay of 2 minutes between each batch.
Generate IP-Phone Configuration files	Defines the users for whom to recreate new IP Phone configuration files and click the **Generate IP-Phones Configuration Files** button.
Set SPS User License Type	Defines the devices for which to change their user license type, select the new user license type and click the **Set AC User License** button. To view the user's usage of AC license select a user and click the View Usage button.

Action	Operation
Permission Hot Desking	Defines the users for whom you wish to enable Hot Desking, and click the **Enable** button. To view if a user is enabled for Hot Desking, select a user and click on the **View Usage** button.
Hot Desking Auto Login	Defines the users for whom you wish to enable Hot Desking Auto Login, and click the **Enable** button. To view if a user is enabled for Hot Desking Auto Login, select a user and click on the **View Usage** button.
Bypass Media	Defines the users for whom you wish to enable Bypass Media, and click the **Enable** button. To view if a user is enabled for Bypass Media, select a user and click on the **View Usage** button.

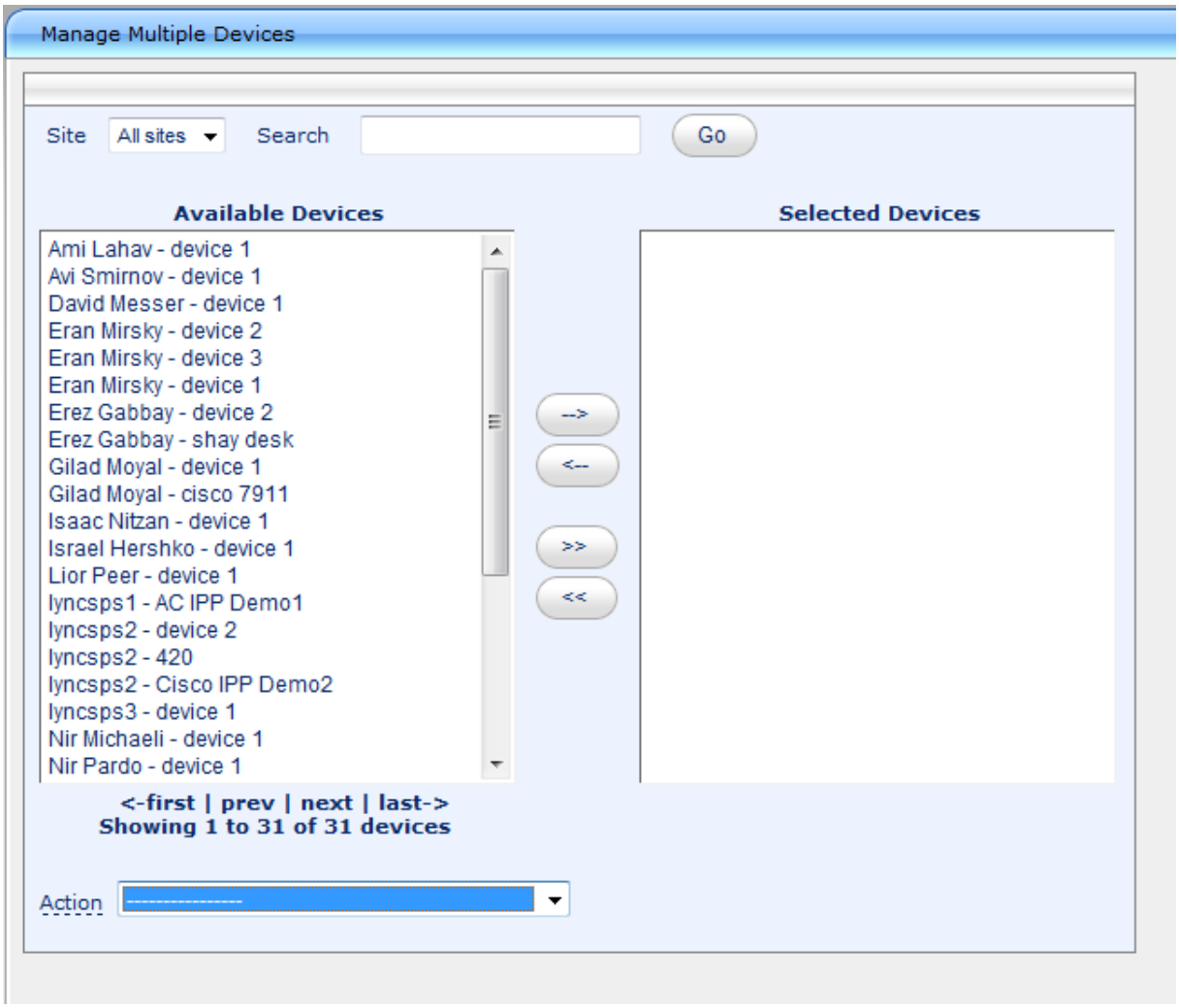
4.2.5 Managing Multiple Devices

The Manage Multiple Devices pages enables performing a single operation on all or on multiple user devices, e.g., delete devices, generate device configuration files, etc.

➢ **To manage multiple devices:**

1. Access the 'Manage Multiple Users' page (**Management** > **Users** > **Manage Multiple Devices**); the following screen appears:

Figure 4-15: Manage Multiple Devices



The devices are displayed in the following format:

`<user display name>-<device display name>` e.g. `Test1-320HD`

2. You can search for devices by entering strings in the search field and then clicking the **Go** button.
3. In the Available Devices pane, select the devices on which to perform the operation.
4. Use the right arrow → to add new devices to the Selected Devices pane, or use the left arrow ← to remove selected devices.
5. From the **Action** drop-down list, select the action.

Table 4-5: Managing Multiple Devices - Available Actions

Action	Operation
Delete Devices	Defines the devices to delete from the SPS system and click the **Delete** button.
Generate IP Phone Configuration files	Defines the devices for which you require creating new IP Phone configuration files and click the **Generate IP Phones Configuration Files** button.
Change IP Phone Type	Defines the devices for which you require changing the phone type and click the **Change** button. To view a usage of an IP Phone Type select one or more devices and click on the **View Usage** button.
Change Language	Defines the devices for which you require changing the phone language, select the new language from the **Change Language** drop-down list and click the **Change** button. To view a usage of a language select one or more devices and click on the **View Usage** button.
Phone with Hot Desking	Defines the devices to enable/disable with Hot Desking.

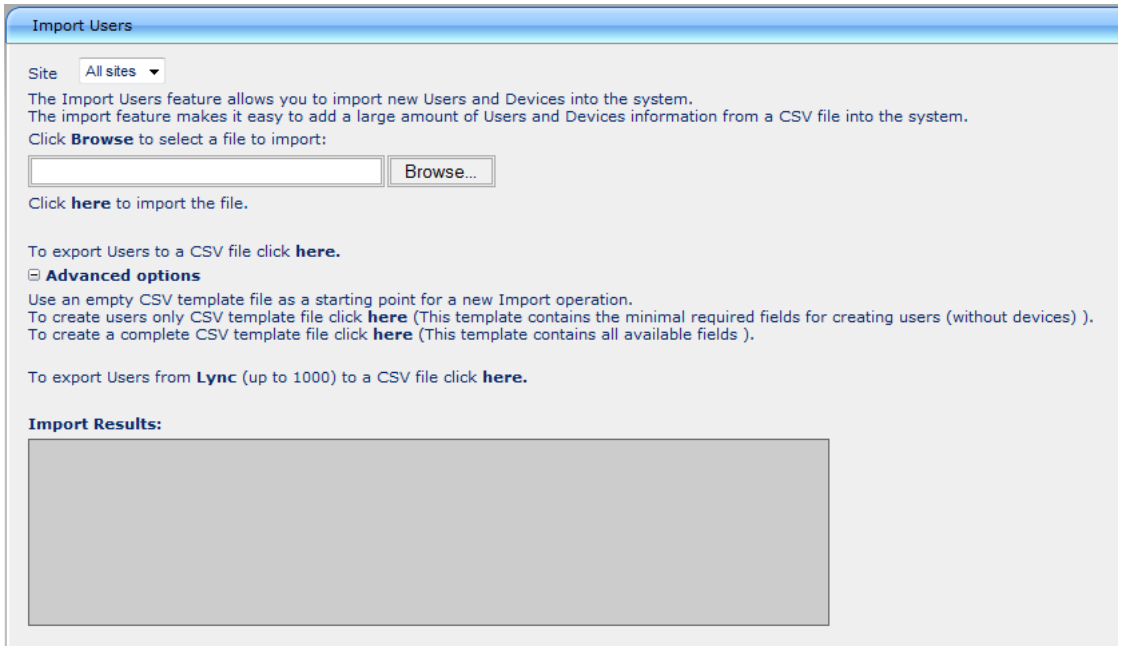
4.2.6 Importing Users

The import feature facilitates easily adding multiple users and devices from a *csv* file into the SPS system. Additionally, the feature enables exporting multiple users from the enterprise's Active Directory.

➢ **To import a user:**

1. Access the 'Import Users' page (**Management** > **Users** > **Import Users**); the following screen appears:

Figure 4-16: Import Users



2. Select the Site.
3. Create an empty Comma Separated Values (*csv*) template file using one of the two **here** link options available under **Advanced Options**.
4. Save the empty *csv* template file to a temporary directory.
5. Edit the empty *csv* file with the new entries. Each new user should occupy a new line using the format according to the header of the file, e.g., <Name>, <Domain>, <Password>, <MAC address>, <IP Phone type>, etc. Example: tom, comp.com, Password, 009012123434, Audiocodes_320HD.
6. Save and close the edited file.
7. Click the **Browse** button and select the import file from your file system.
8. Click the **here** link below the **Browse** button; a confirmation message is displayed.
9. Click the **OK** button in the confirmation message.
10. Review the results of the import in the **Import Results** pane. The exact status is displayed for each entry.

Note: Importing multiple entries can take a few seconds or minutes. Wait until the operation is successfully finished.

11. To export user entries:

Use the export feature to export all user entries to a *csv* file which can then be used for archiving purposes or as a starting point for a new import operation.

Tip: It's advisable to create a single user. Verify that all the user's settings are defined correctly and then use the export feature. The exported file will include the single user settings. Use the existing user settings to duplicate new users' lines in a newly imported file.

12. To export user entries from Active Directory:

Use the **Export users from Skype for Business** feature to export all Skype for Business user entries to SPS import file format. Edit the newly created file as required (i.e., remove users, add device settings, modify passwords, etc.) and then use the new file to import all users to the SPS.

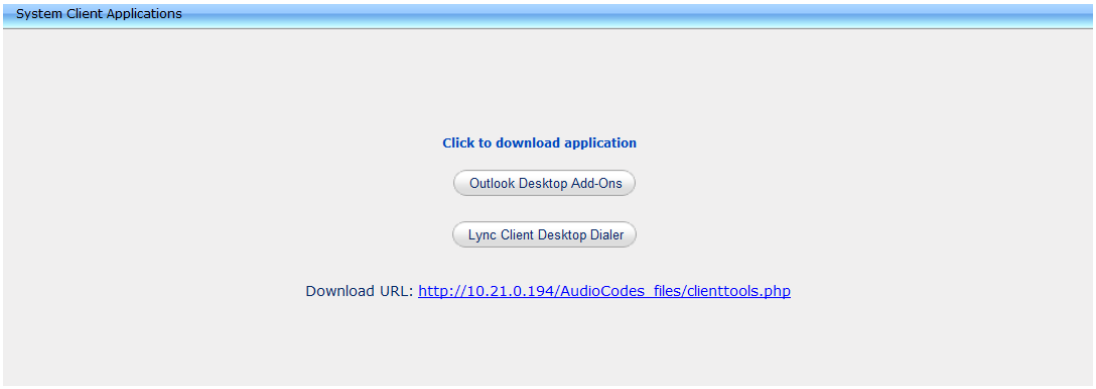
4.3 Downloading Outlook Desktop Add-Ons and Skype for Business Client Desktop Dialer

Management Tools provides links to Outlook and Skype for Business Desktop Dialer. Skype for Business Desktop Dialer enables users to select a contact or any mail recipient and initiate a phone call to the recipient with the click of a button.

➢ **To download the Dialer:**

1. Access the 'System Client Applications' page (**Management** > **Management Tools** > **SPS Dialer**); the following screen appears:

Figure 4-17: Download Skype for Business Desktop Dialer



2. Click **Outlook Desktop Add-Ons** to download Outlook desktop add-ons and to enable the Dialer feature in Outlook 2010.
3. Click **Lync Client Desktop Dialer**; the download Skype for Business Client desktop dialer installation program starts.
4. Select the destination to which to download the installation file on your PC.
5. The **Lync Client Desktop Dialer** download link is also available at the bottom of the page. The link can be useful if you need to send the URL to company users. In this way, users can self-download the Dialer.

4.4 Managing IP Phones

In a VoIP environment, IP Phones must be configured using configuration files generally located on a FTP/TFTP server. These configuration files contain user extension numbers, SIP proxy IP address, company directory, etc.

SPS automatically creates IP Phone configuration files according to the device model. The SPS system may handle multiple types of models from different vendors simultaneously.

To support different IP Phone configurations for different customers and different countries, a sophisticated template mechanism is provided to manage IP Phone configuration files. IP Phone configuration templates are *xml* files that describe one or more IP Phone configuration files. Each *xml* file describes a specific IP Phone model, for example, the IP Phone's global configuration files, global directory file, and user-specific configuration file.

The IP Phone template files support special placeholder tags automatically resolved with their associated values when the IP Phone configuration file is created, for example, %ITCS_**SipIpPbxPort**% is replaced with the SPS system's SIP port number configured in the SPS system when the configuration file is created, e.g., 5060.

In most cases, there's no need to make any change to IP Phone templates. They're preconfigured with factory defaults.

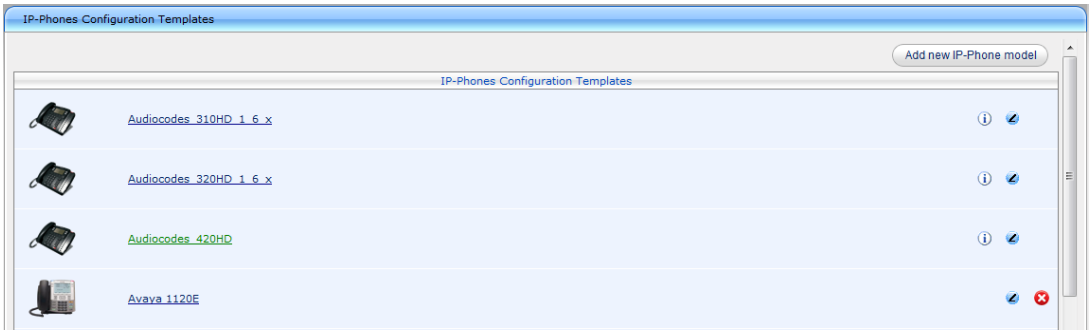
4.4.1 Managing IP Phone Configuration Template Files

This subsection shows how to manage IP phone configuration template files.

➢ **To manage IP phone configuration template files:**

1. Access the 'IP-Phones Configuration Templates' page (**Management** > **IP-Phones Configuration** > **Templates**); the following screen appears:

Figure 4-18: IP Phones Configuration Templates



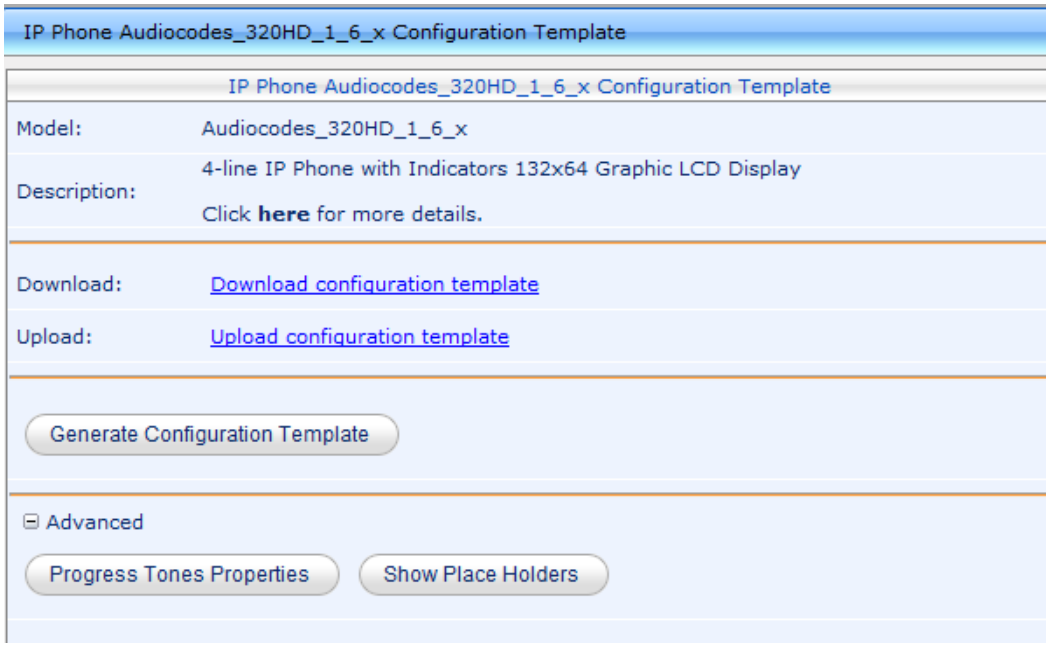
The IP Phones Configuration Templates page displays all IP Phone models currently supported by the SPS system's auto-configuration mechanism.

2. To modify a specific model's factory default template, click on either the link of the IP Phone or on the **Edit** icon.
3. To restore a specific model's template file, click the **Restore to default** button (displayed only if a change has been made).

➢ **To modify an IP Phone configuration template file:**

1. In the IP Phones Configuration Templates page, click on either the link of the IP Phone or on the **Edit** icon.

Figure 4-19: IP Phone Configuration Template



The model name and a short description of the IP Phone are displayed.

2. To download the existing model template file, click the **Download configuration template** link and select the folder in which to save it. The downloaded file is in *xml* format.
3. To upload a new template file, click the **Upload configuration template** link and select a file from your personal computer. The new file will be used as the *xml* template for this specific IP Phone model.

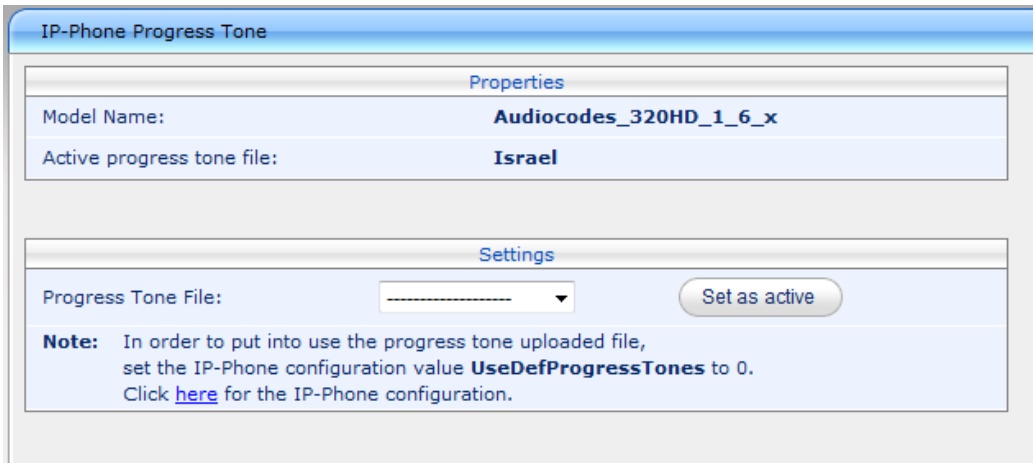
Note: The new template file is used only for newly created IP Phone configuration files, i.e., configuration files already created by the SPS system in the past are not updated according to the new model template.

4. To update all existing configuration files according to the new template, use the **Generate IP-Phones Configuration Files** option in the **Manage Multiple Devices** page.
5. To manage different settings for different countries such as Progress Tones settings per country, click the **Progress Tones Properties** button.
6. To generate the configuration template file of the specific model in the TFTP server, click the **Generate Configuration Template** button. All the specific model global configuration files, including the directory files, are created.

➢ **To set Progress Tones:**

1. Click the **Progress Tones Properties** button of the selected IP Phone.

Figure 4-20: Progress Tones Settings



- Progress Tones files are preconfigured files that hold parameter settings per country. This method helps you to quickly configure multiple parameters for all IP Phones for your country location.
- The 'Active progress tone file' field displays the file currently used by the SPS system when creating new configuration files for the specific IP Phone model.

2. To set the active Progress Tones settings to be used in your SPS system, select the country from the **Progress Tone File** drop-down list and click the **Set as active** button.

4.4.2 Managing IP Phone Site Configuration

This subsection shows how to manage IP phone site configuration.

➢ **To manage IP phone site configuration:**

1. Access the 'IP-Phones Configuration Templates' page (**Management** > **IP-Phones Configuration** > **Templates**); the following screen appears:

Figure 4-21: Manage Site Configuration

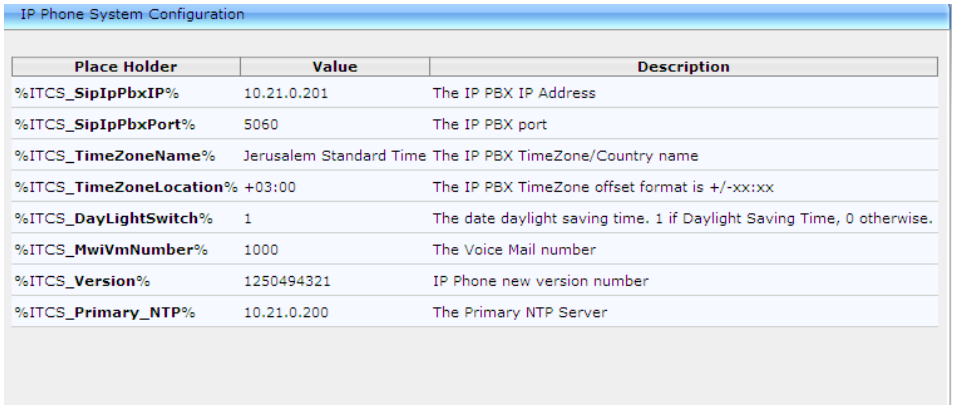
4.4.3 Managing the IP Phone System Configuration

This subsection shows how to manage IP Phone system configuration.

➢ To manage IP Phone system configuration:

1. Access the 'IP Phone System Configuration' page (**Management** > **IP Phone System Configuration**); the following screen appears:

Figure 4-22: IP Phones Templates System Configuration


IP Phone System Configuration

Place Holder	Value	Description
%ITCS_**SipIpPbxIP**%	10.21.0.201	The IP PBX IP Address
%ITCS_**SipIpPbxPort**%	5060	The IP PBX port
%ITCS_**TimeZoneName**%	Jerusalem Standard Time	The IP PBX TimeZone/Country name
%ITCS_**TimeZoneLocation**%	+03:00	The IP PBX TimeZone offset format is +/-xx:xx
%ITCS_**DayLightSwitch**%	1	The date daylight saving time. 1 if Daylight Saving Time, 0 otherwise.
%ITCS_**MwiVmNumber**%	1000	The Voice Mail number
%ITCS_**Version**%	1250494321	IP Phone new version number
%ITCS_**Primary_NTP**%	10.21.0.200	The Primary NTP Server

- The IP Phones System Configuration page displays all the SPS system global placeholder tags. The system tags cannot be deleted or modified. System tags can be used in any place in the IP Phone configuration files.
- The system tags include parameters such as the SPS IP address, SIP port, etc.
- The Place Holder column displays the tag name as it should be used in the *xml* template files.

4.4.4 Managing IP Phone Model Configuration

The SPS system enables creating specific placeholder tags per IP Phone model. These are used only for configuration files created for the specific model.

➢ **To manage IP Phone model configuration:**

1. Access the 'Manage IP-Phone Model Configuration' page (**Management** > **IPP Model Configuration**); the following screen appears:

Figure 4-23: IP Phones Tags Configuration

	Placeholder	Value	Description
1	%ITCS_AC_DIRECTORY%	%name%,%number%,%home%,%mobile%,%user_define%	Directory support for audiocodes ip phones
2	%ITCS_DayLightActivate%	Enable	Day Light Activate - Enable/Disable
3	%ITCS_DayLightEndDay%	12	Day Light End Day
4	%ITCS_DayLightEndMonth%	9	Day Light End Month
5	%ITCS_DayLightStartDay%	26	Day Light Start Day
6	%ITCS_DayLightStartMonth%	3	Day Light Start Month
7	%ITCS_destination%	c:\\tftpsrv\\files	Configuration Files destination (use TFTP ...
8	%ITCS_IPPhonePassword%	1234	IP Phone Administration Password
9	%ITCS_IPPhoneUsername%	admin	IP Phone Administration user name
10	%ITCS_RegCountry%	Israel	The country name - need to use the correct...
11	%ITCS_SipDgitMap%	**xxxx	Digit map for the IPP e.g 4xxx for 4 digit...
12	%ITCS_SipPort%	5060	IP Phone Sip Port
13	%ITCS_TimeZoneName%	Israel	Time Zone Name
14	%ITCS_UseDefProgressTones%	0	Use ip phone default progress tone if valu...
15	%ITCS_VoIpDialTimeout%	5	The Dial Timeout
16	%ITCS_VoIpPhoneNumberMaxSize%	20	Phone Number max size

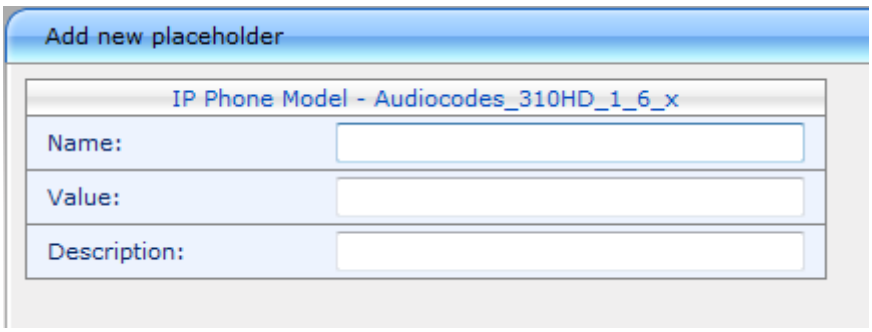
The IP Phones Model Configuration page displays all placeholder tags defined for a specific IP Phone model. For example, you can create different parameter values per model by defining different values per IP Phone model.

2. From the **IP Phone Model** drop-down list, select different models.

➢ **To create a new placeholder tag per IP phone model:**

1. From the **IP Phone Model** drop-down list, select the IP Phone model.
2. Click **Add new placeholder**.

Figure 4-24: IP Phone Model Tag Configuration



3. In the 'Name' field, enter the name of the tag. Make sure you don't enter the **%ITCS_** prefix; it's added automatically by the SPS system.
4. In the 'Value' field, enter the value of the new tag.
5. In the 'Description' field, enter a short description for the new tag.
6. Click **Submit**; the new tag is added to the table.

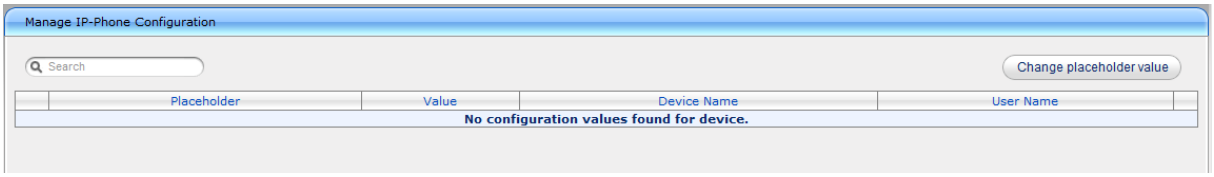
4.4.5 Managing Tags per Device

The SPS system enables you to create specific placeholder tags per device. These are used for configuration files created for the specific device.

➢ **To create specific placeholder tags per device:**

1. Access the 'Manage IP-Phone Configuration' page (**Management** > **IP-Phone Configuration** > **Devices Configuration**); the following screen appears:

Figure 4-25: Devices Configuration



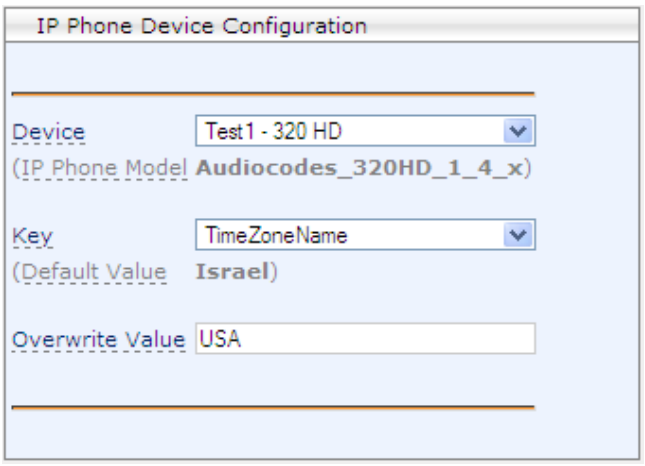
The Manage IP Phones Devices Configuration page displays all placeholder tags defined per device. For example, you can create different parameter values for different devices.

Tip: Use the 'Search' field to quickly find a specific device. You can search the device by name or by extension.

➢ **To change a placeholder value per device:**

1. Click **Change placeholder value**.

Figure 4-26: Device Tag Configuration



2. From the **Device** drop-down list, select the device to modify. Wait a few seconds for the IP Phone model to display the specific device below the list.
3. From the **Key** drop-down list, select the key to modify. Wait a few seconds for the default key value to be displayed in the 'Default Value' field.
4. In the 'Override Value' field, enter the key override value i.
5. Click **Submit**; the new tag is added to the table.

Note: The new override tag value is not automatically created in the Device IP Phone configuration file. Use the **Generate Configuration Template** button in the device page to create the new device in the IP Phone configuration template file.

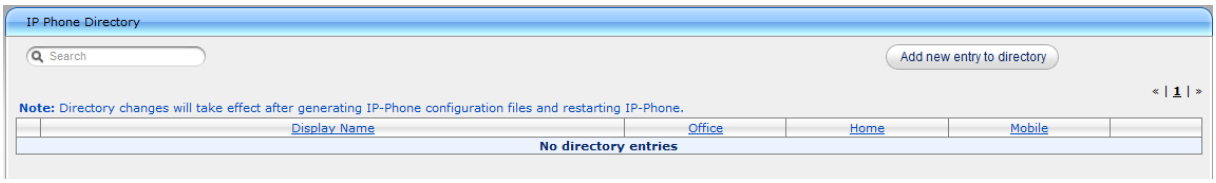
4.4.6 Managing the IP Phone Directory

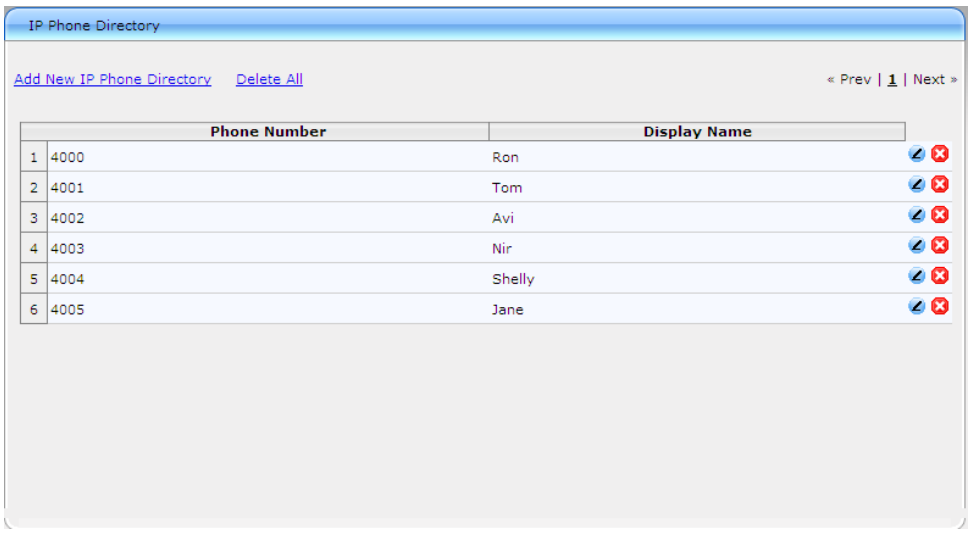
Most IP Phones use global directory configuration files to load the enterprise directory to the IP Phone. The SPS system automatically creates this directory file. The IP Phone directory file contains all users defined in the SPS system and all contacts defined in the SPS system directory. The SPS system directory is a free database that can hold any contact such as users' mobile numbers, company suppliers' numbers, home users' numbers, etc.

➢ **To manage IP Phone Directory configuration files:**

1. Access the 'Manage IP-Phone Configuration' page (**Management** > **IP-Phones Configuration** > **Directory**); the following screen appears:

Figure 4-27: IP Phone Directory



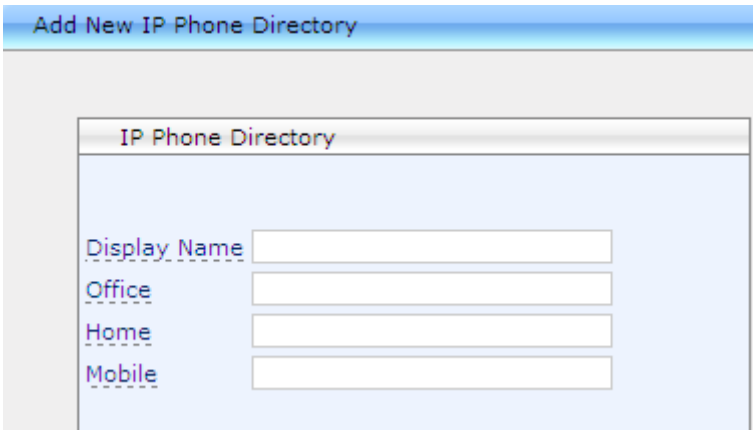


2. The IP Phone Directory page can display up to 25 entries per page. Use the >> and **<<** links to navigate between all contacts.
3. To delete a directory entry, click the button for the required entry.

➢ **To add a new Directory entry:**

1. Click **Add new entry to Directory**.

Figure 4-28: Add New Entry to Directory



2. In the 'Display Name' field, enter the display name of the new entry.
3. In the 'Office', 'Home' and 'Mobile' fields, enter the phone numbers as required.
4. Click **Submit**.

Note: To make sure new changes to the contacts list take effect, recreate the IP Phone global files. Use the **Generate Configuration Template** button in the Manage IP Phone Configuration Template page.

4.4.7 Importing and Exporting Directory Entries

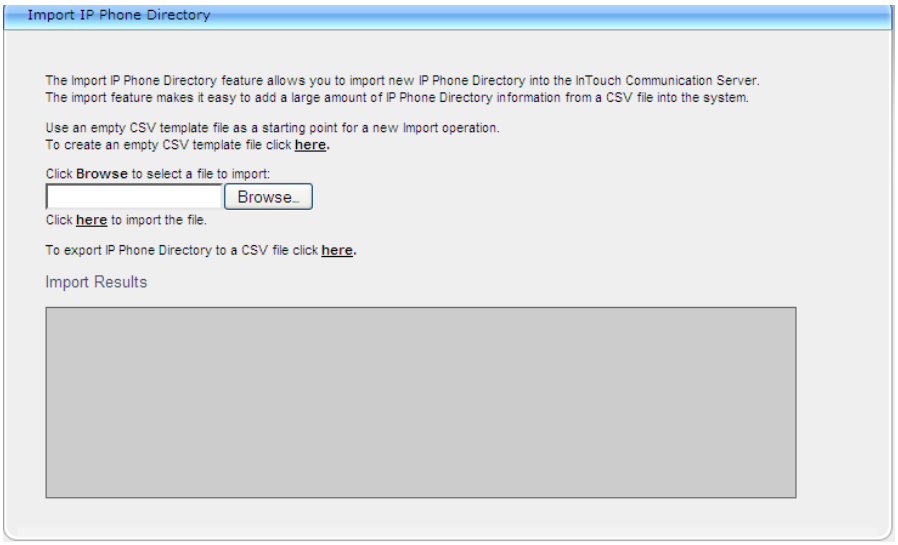
The Import Directory Entries feature allows you to import new directory entries, not defined as extensions in the SPS, into the IP Phone directory files.

The feature enables administrators to easily add multiple entries from a *csv* file into the SPS system.

➢ **To import Directory entries:**

1. Access the 'Manage IP-Phone Configuration' page (**Management** > **IP-Phones Configuration** > **Import Directory**); the following screen appears:

Figure 4-29: Import IP Phone Directory



2. Create an empty Comma Separated Values (*csv*) template file using the uppermost **here** link on the page. Save the empty *csv* template file to a temporary directory.
3. Edit the empty *csv* file with the new entries. Each new entry should be placed on a new line in the format: < Phone Number>,< Display Name>. E.g. 4100, Tom.
4. Save and close the edited file.
5. Click **Browse** and select a file from your file system.
6. Click the **here** link below the **Browse** button.
7. Click **OK** in the confirmation message.
8. Review the import operation results in the **Import Results** section at the bottom of the page. The exact status is displayed for each entry.

Note: Importing multiple entries can take a few seconds. Wait until the operation is finished.

➢ **To export Directory entries:**

- Use the Export IP Phone Directory link feature to export all directory entries to a *csv* file. This file can be used for archiving purposes or as a starting point for a new Import operation.

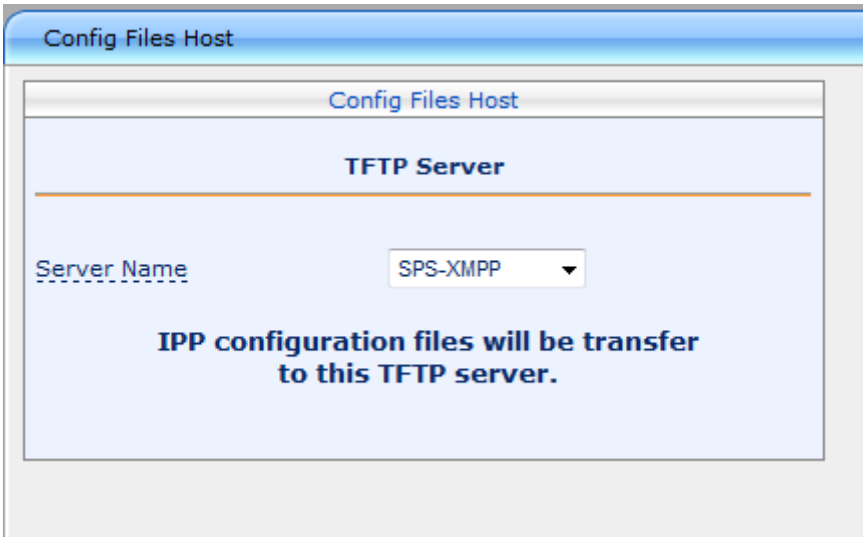
4.4.8 Managing Configuration Files Host

All IP Phone configuration files are created and located on the SPS system's TFTP server. The Web Admin Tool enables you to view and manage the TFTP server to which the IP configuration files will be transferred to.

➢ **To manage the configuration files host:**

1. Access the 'Config Files Host' page (**Management** > **IP-Phones Configuration** > **Configuration Files Host**); the following screen appears:

Figure 4-30: Manage Configuration Files Host



2. View and manage on this page the TFTP server that hosts the IP configuration files.

5 Diagnosing the SPS System and Determining Status

The Status and Diagnostics navigation tree enables administrators view the current status of the SPS server and SPS users and to access archived system log files and alarms.

If an issue with a specific SPS feature is encountered, the Status and Diagnostics functionality can be used to assess the issue and assist Technical Support to troubleshoot it.

5.1 Viewing System Status and Searching Online Phones

The sub-section below describes how to view the system status and search online phones.

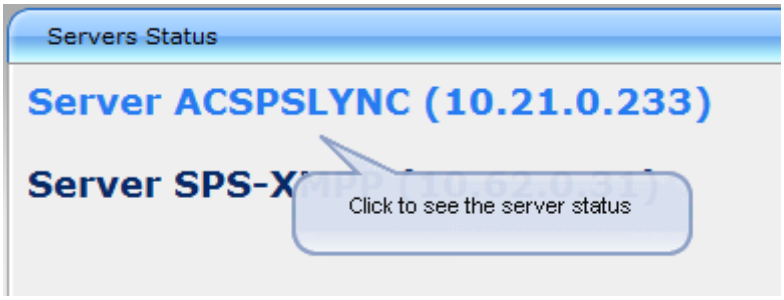
5.1.1 Viewing System Status

The sub-section below describes how to view the system status.

➢ **To view Application Logs:**

1. Access the 'Servers Status' page (**Status & Diagnostics** > **System** > **Servers Status**); the following screen appears:

Figure 5-1: Servers Status



2. For further information refer to Section 2.3.3 on page 17.

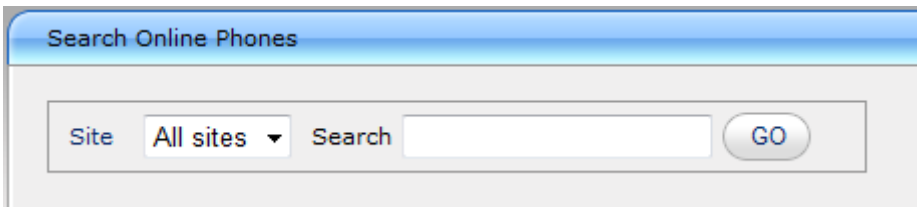
5.1.2 Searching for Online Phones

The sub-section below describes how to search for online phones.

➢ **To search for online phones:**

1. Access the 'Search Online Phones' page (**Status & Diagnostics** > **System** > **Search Online Phones**); the following screen appears:

Figure 5-2: Search Online Phones



2. Enter a partial name of the online phone you are looking for and then click **GO** .

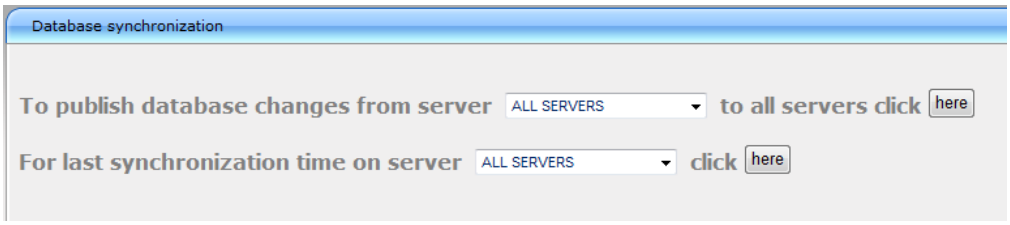
5.2 Managing Database Synchronization

The sub-section below describes how to manage database synchronization.

➢ **To manage database synchronization:**

1. Access the 'Database synchronization' page (**Status & Diagnostics** > **Database** > **Database Synchronization**); the following screen appears:

Figure 5-3: Database Synchronization



2. To publish database changes from the server you select to all servers click **here**.
3. For last synchronization time on the server you select, click **here**.

5.3 Using Logs and the Alarm Tool to Troubleshoot Issues

Each process in the SPS generates log files that may be helpful for troubleshooting and resolving problems.

- Only qualified technicians should use the log files.
- Old log files are automatically deleted from the SPS system to maintain sufficient disk space.
- SPS log files are plain text files that may be viewed in any text editor.
- Each row in the log file contains the action, exact time and date, severity level and description.

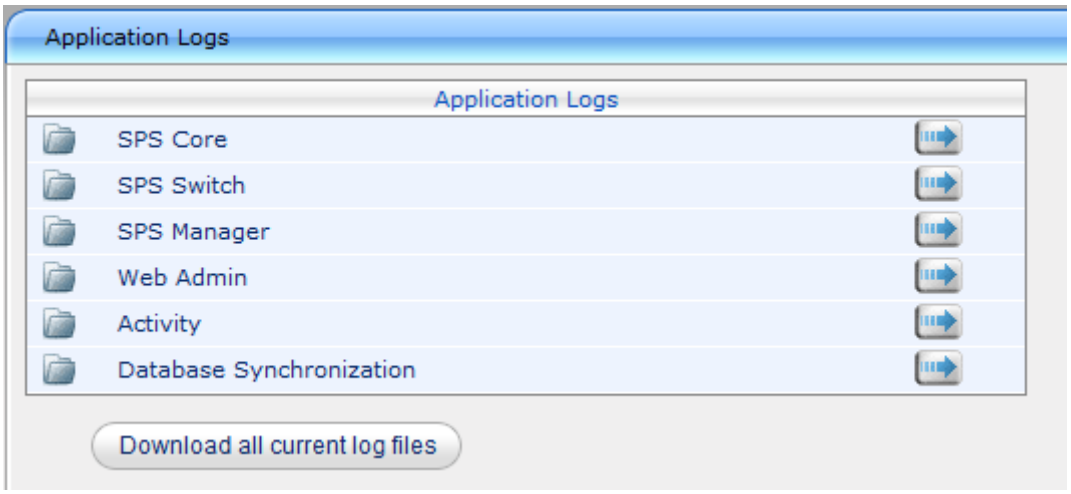
5.3.1 Viewing Application Logs

The Application Logs page provides access to the SPS system's servers and the other application log files running – including that of the Web Admin Tool.

➢ **To view Application Logs:**

1. Access the 'Application Logs' page (**Status & Diagnostics** > ***Site*** > **Logs and Alarms** > **Application Logs**); the following screen appears:

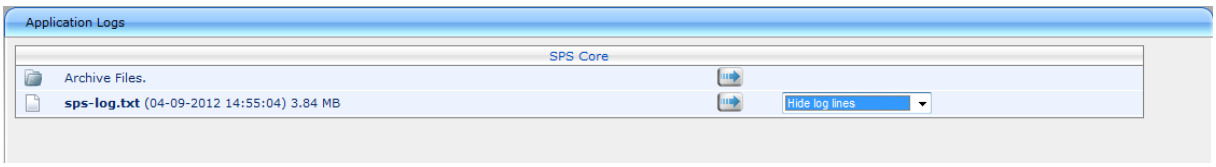
Figure 5-4: Application Logs



The page displays all applications running in the SPS system.

2. Click the button adjacent to the application whose logs you want to access, e.g., SPS Core.

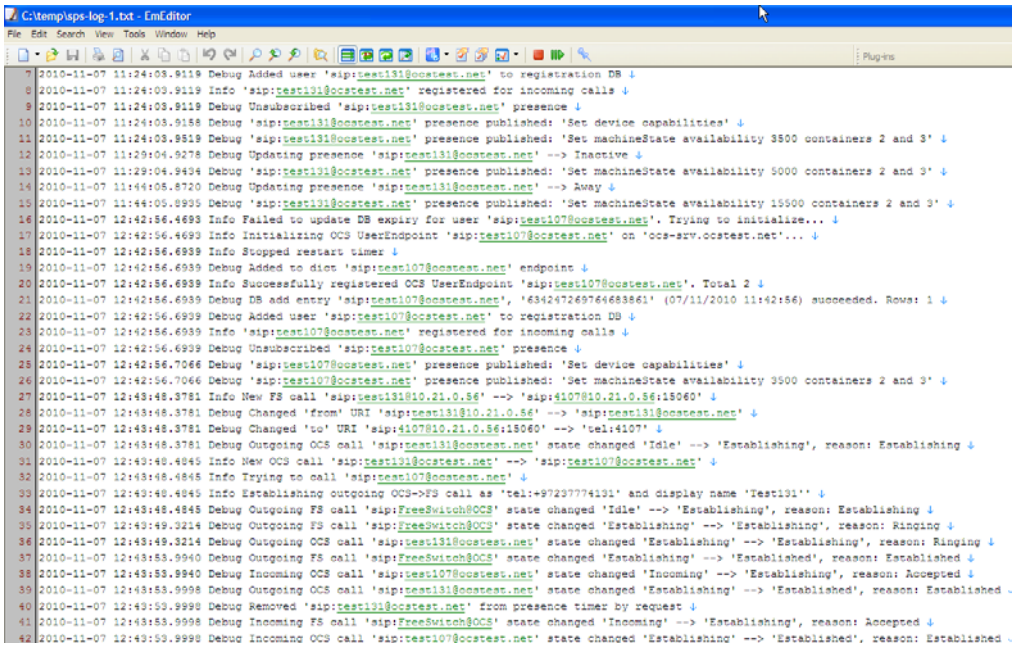
Figure 5-5: Application Logs – SPS Core



The page lists all log files associated with the selected application (SPS Core, in this example).

3. To open a specific log file, select the number of log lines you wish to see and click the button adjacent to the required log file.
4. To open old log files, click the button adjacent to the **Archive Files** folder.
5. Select **Open** in the File Download dialog.

Figure 5-6: Application Log File



Note: SPS log files are named “sps-log.txt”. A new file is created every day. Old files are archived up to five days before being deleted.

Table 5-1: SPS Application

Property	Description
SPS Core	Defines the service that connects to the Microsoft network.
SPS Switch	Defines the SPS proxy server.
SPS Manager	Defines the SPS manager control.
Web Admin	Defines the Web Admin Tool server.
Activity	Defines the Activity log file records any changes made to the SPS system from the Web Admin Tool.
Database Synchronization	Defines the database synchronization files.

Tip: You can download all latest application log files in a single operation using the **Download all current log files** button. The output file is a *zip* file of all applications' latest log files.

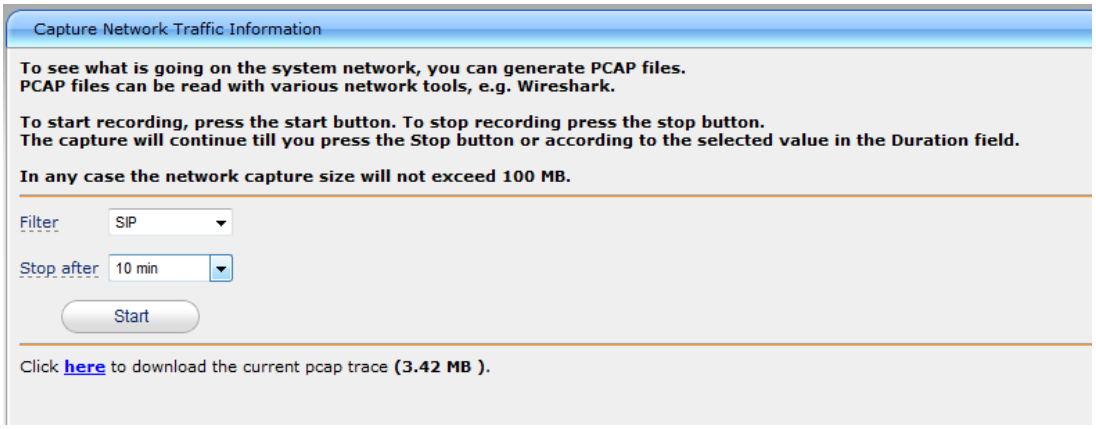
5.3.2 Capturing Network Traffic

An easy-to-use and convenient tool is provided to capture network traffic in the SPS system. The Capture Network Traffic tool generates *.PCAP files. PCAP files can be read with various network tools, for example, Wireshark.

➢ To capture Network Traffic:

1. Access the 'Database synchronization' page (**Status & Diagnostics** > ***Site*** > **Logs and Alarms** > **Capture Network Traffic**); the following screen appears:

Figure 5-7: Capture Network Traffic



2. From the 'Filter' drop-down list, select the filter type (SIP, Port, etc.).
3. From the 'Stop after' drop-down list, select the total time the system should record the network traffic.
4. Click **Start** to start recording the network capture; the system starts recording all network traffic in the SPS server.
5. Click **Stop** or wait until the system stops recording.
6. Click the **here** link to download the new network recording files to your computer. You can also open it directly with an appropriate viewer such as Wireshark.

Tips:

- You can select the unlimited option in the **Stop after** drop-down list; in this case, the system will continue to record network traffic until it is manually stopped. Traffic is recorded in cyclic mode, i.e., old data is deleted when the file becomes too large. The recorded file size will not exceed 100 MB.
- Use Filter mode for the system to record network traffic belonging to a specific IP address or port, e.g., port 5060 for SIP traffic only.

5.4 Viewing SPS System Status

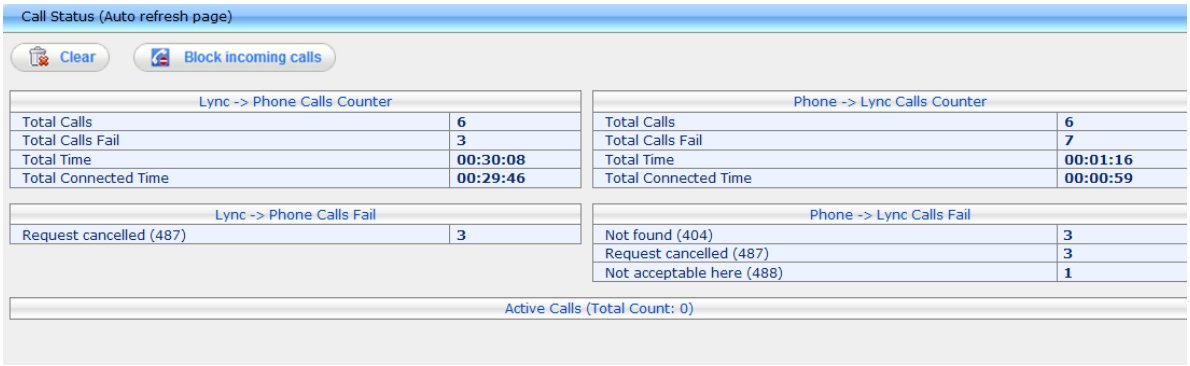
The Call Status page displays the current status of all active extensions as well as additional information on the total number of successful and failed call attempts.

5.4.1 Viewing Current Calls Status and Statistics

➢ **To view current calls status and statistics:**

1. Access the 'Call Status' page (**Status & Diagnostics** > ***Site*** > **System Status** > **Call Status**); the following screen appears:

Figure 5-8: Call Status



- **Lync→ Phone Calls Counter** displays the total counter of call attempts initiated from Skype for Business. It also displays the total number of failed call attempts and the total duration of all calls from Skype for Business.
- **Phone→ Lync Calls Counter** displays the total counter of call attempts initiated from IP Phones. It also displays the total number of failed call attempts and the total duration of all calls.
- **Lync→ Phone Calls Fail** and **Phone→ Lync Calls Fail** displays the number of failed call attempts according to reason for failure.
- **Active Calls** displays the currently-active calls managed by the server. **Active Calls** also displays the current duration of the call and the type of user device (IP Phone or Skype for Business client).

2. To clear all call status data, click **Clear**.
3. To block all incoming calls, click **Block incoming calls**.

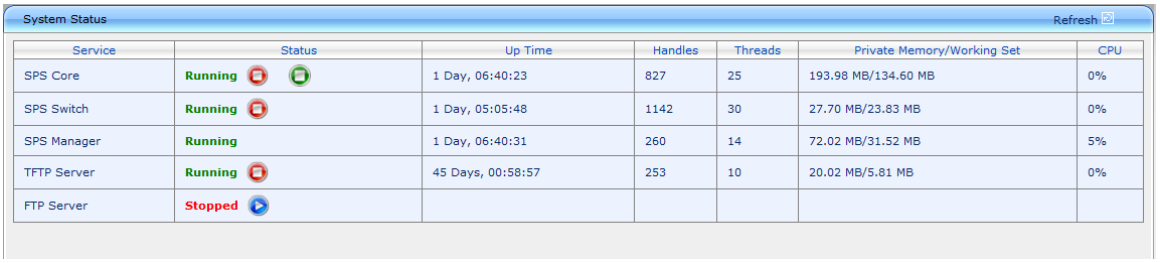
5.4.2 Viewing Application Status

The SPS system includes a watchdog application that ensures all application processes are up and running at any time. Use the Web Admin Tool to monitor the watchdog.

➢ **To view application status:**

1. Access the 'System Status' page (**Status & Diagnostics** > ***Site*** > **System Status** > **SPS Status**); the following screen appears:

Figure 5-9: System Status



The System Status page lists all services. The page enables stopping/starting each service. Each service displays these attributes:

Table 5-2: Service Status

Attribute	Description
Service	Defines the service application name
Status	Defines the current status of the process: Running or Stopped
Up Time	Defines the time the service was started
Handles	Defines the handles count used by the service
Threads	Defines the threads count used by the service
Private Memory / Working Set	Defines the memory usage used by the service
CPU	Defines the CPU usage used by the service

The page includes **Stop/Start** buttons for quick control per service.

- Use the **Stop** button to stop a service.
- Use the **Start** button to start a service.
- Use the **Refresh** button to refresh the page.

Note: The **SPS Manager** service cannot be stopped.

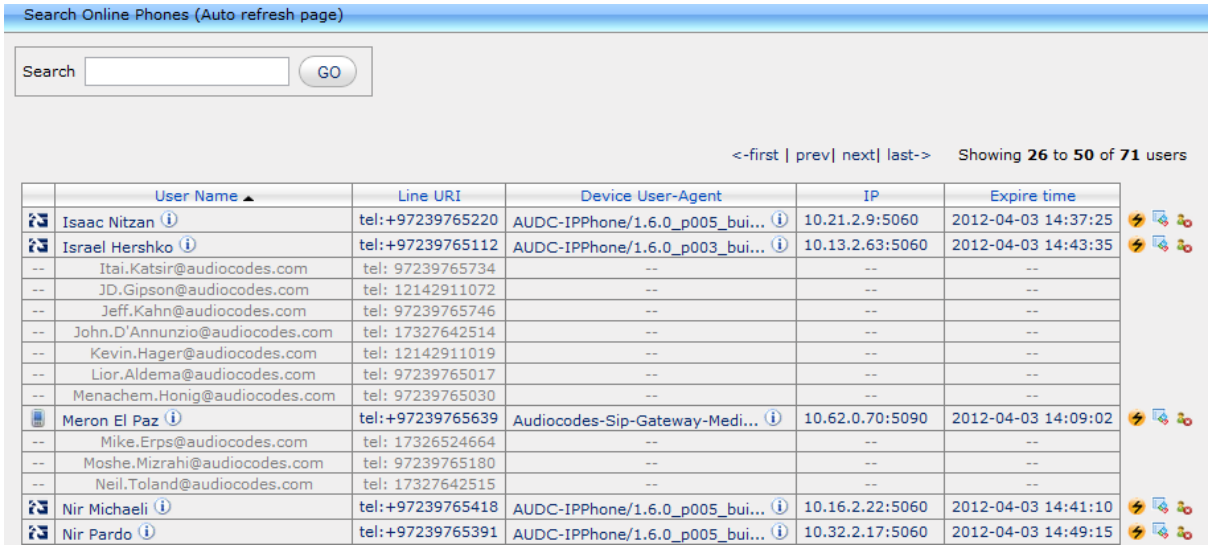
5.4.3 Viewing Phones Status

The System Online Phones Status page displays all phones currently connected to the SPS system. It also displays information such as IP Phone IP address, expiration time, Phone type, etc. The System Online phone viewer is automatically updated.

➢ **To view SPS system online phones:**

1. Access the 'Search Online Phones' page (**Status & Diagnostics** > **Site** > **System Status** > **Phones Status**); the following screen appears:

Figure 5-10: Online Phones Status



Each Phone entry displays these attributes:

Table 5-3: Phone Status

Attribute	Description
User Name	Defines the name of the user
Line URI	Defines the Skype for Business /OCS line URI
Device User-Agent	Defines the User-Agent header that the device sends in the event of registration
IP	Defines the IP address of the phone
Expire Time	Defines the SIP registration expire time
	Defines the Send Restart command to device (only for supported devices)
	Defines the Open device Web Admin Tool page (only for supported devices)
	Defines the Terminate device registration from SPS

5.5 Diagnosing the SPS System

The SPS system enables administrators to easily perform on-line diagnostics on the SPS and on all or selected devices.

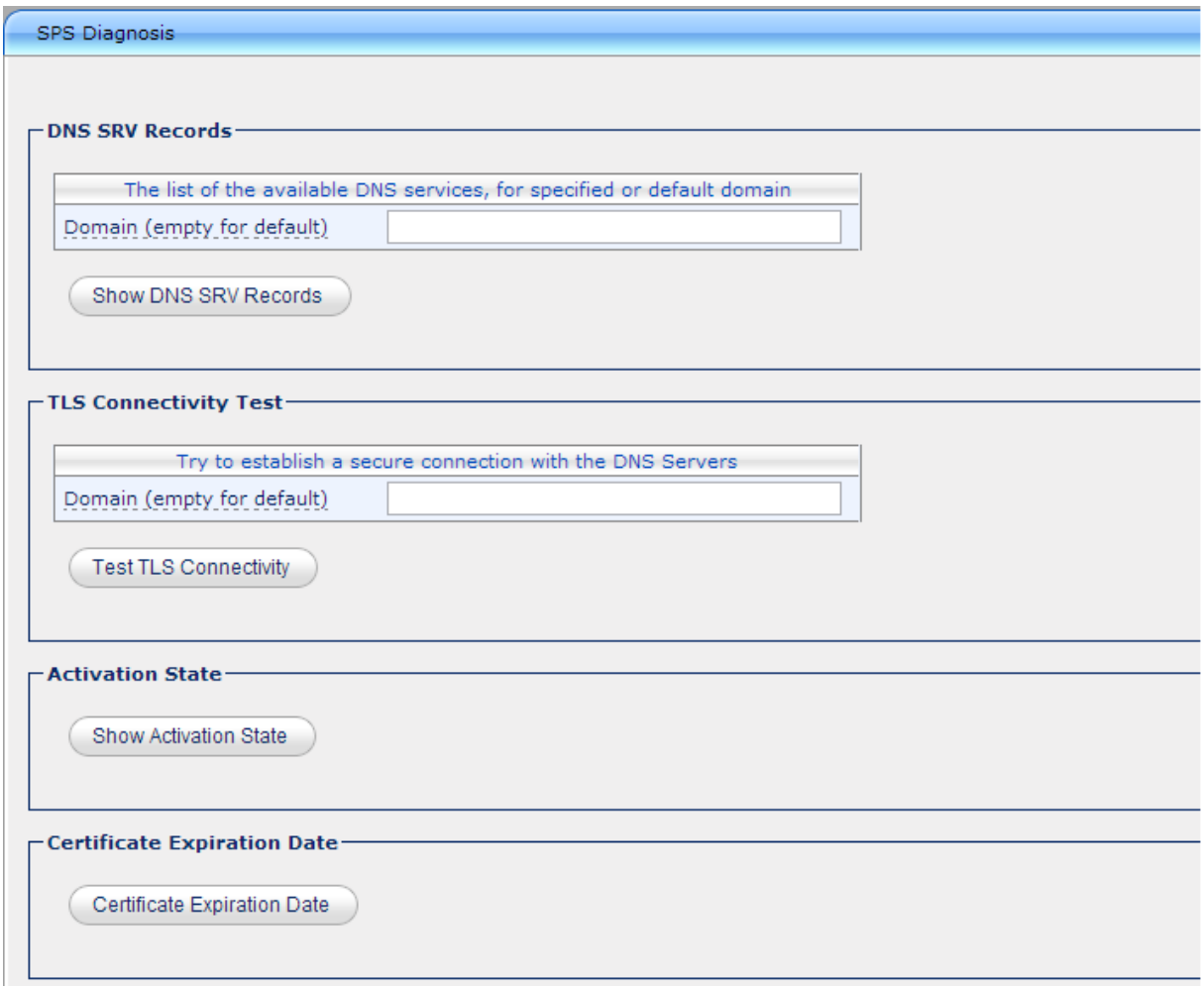
When activating SPS diagnostics, the system checks the SPS activation, license and can make an outgoing and incoming test calls.

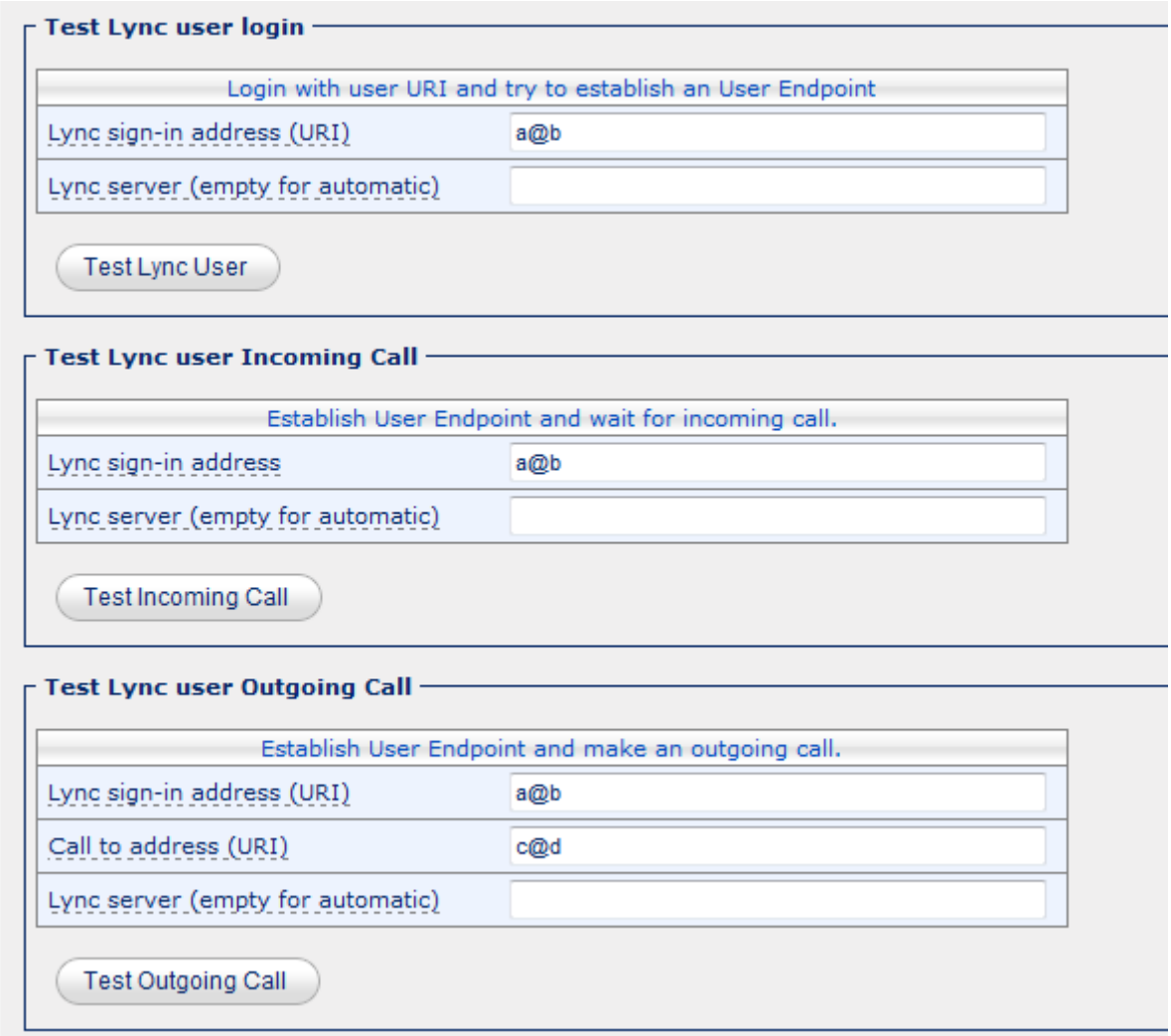
When activating the extensions diagnostics, the SPS system sends a SIP OPTIONS command to the selected devices and displays the SIP responses to the administrator.

➢ **To perform SPS diagnostics:**

1. Access the 'SPS Diagnostic' page (**Status & Diagnostics** > **Site** > **System Diagnostic** > **SPS**); the following screen appears:

Table 5-4: SPS Diagnosis



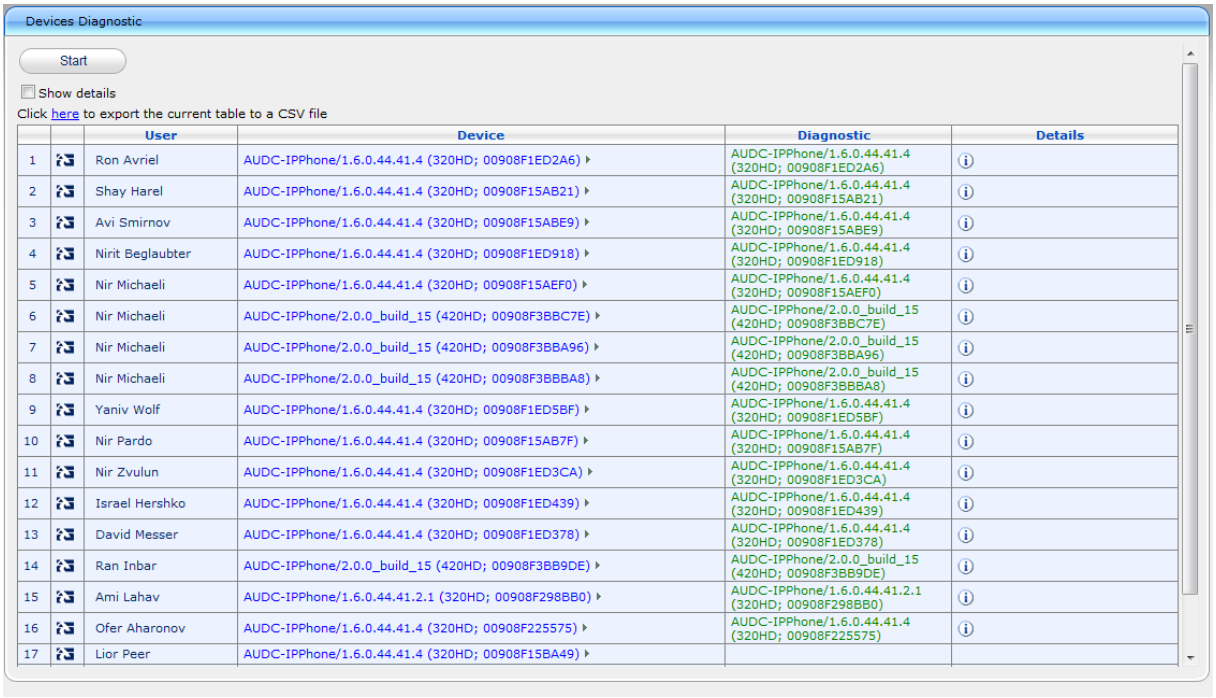


2. To get the list of available DNS services for specified or default domain, click on **Show DNS SRV Records**. A small screen appears, displaying the DNS SRV records.
3. To test the TLS connectivity, click on **Test TLS Connectivity**. A small screen appears, displaying the test results.
4. To get the current activation state of the application endpoint, click on Show Application State. A small screen appears, and if the activation state is ok the following message is displayed: the Application Endpoint is ready, its state is 'Established'.
5. To get the expiration date of the certificate, click on Certificate Expiration Date. A small screen appears, displaying the expiration date.
6. To test a Lync user Login, enter the sign-in address and click on **Test Lync User**. The system will try to login using the Lync sign-in address. A small screen appears, showing the test result.
7. To test an incoming call, enter the sign-in address and click on **Test Incoming Call**. The system will ask you to make a call to this user within 30 seconds, and will report the result in a small screen that appears.
8. To test an outgoing call, enter the sign-in address and the Call to address and click on **Test Outgoing Call**. The system will try to make an outgoing call, and will report the result in a small screen that appears.

➢ **To perform devices diagnostics:**

1. Access the 'Device Diagnostic' page (**Status & Diagnostics** > ***Site*** > **System Diagnostics** > **Devices Diagnostics**); the following screen appears:

Figure 5-11: Extensions Diagnostics



		User	Device	Diagnostic	Details
1		Ron Avriel	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F1ED2A6)	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F1ED2A6)	
2		Shay Harel	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F15AB21)	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F15AB21)	
3		Avi Smirnov	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F15ABE9)	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F15ABE9)	
4		Nirit Beglaubter	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F1ED918)	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F1ED918)	
5		Nir Michaeli	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F15AEF0)	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F15AEF0)	
6		Nir Michaeli	AUDC-IPPhone/2.0.0_build_15 (420HD; 00908F3BBC7E)	AUDC-IPPhone/2.0.0_build_15 (420HD; 00908F3BBC7E)	
7		Nir Michaeli	AUDC-IPPhone/2.0.0_build_15 (420HD; 00908F3BBA96)	AUDC-IPPhone/2.0.0_build_15 (420HD; 00908F3BBA96)	
8		Nir Michaeli	AUDC-IPPhone/2.0.0_build_15 (420HD; 00908F3BBBA8)	AUDC-IPPhone/2.0.0_build_15 (420HD; 00908F3BBBA8)	
9		Yaniv Wolf	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F1ED5BF)	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F1ED5BF)	
10		Nir Pardo	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F15AB7F)	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F15AB7F)	
11		Nir Zvulun	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F1ED3CA)	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F1ED3CA)	
12		Israel Hershko	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F1ED439)	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F1ED439)	
13		David Messer	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F1ED378)	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F1ED378)	
14		Ran Inbar	AUDC-IPPhone/2.0.0_build_15 (420HD; 00908F3BB9DE)	AUDC-IPPhone/2.0.0_build_15 (420HD; 00908F3BB9DE)	
15		Ami Lahav	AUDC-IPPhone/1.6.0.44.41.2.1 (320HD; 00908F298BB0)	AUDC-IPPhone/1.6.0.44.41.2.1 (320HD; 00908F298BB0)	
16		Ofer Aharonov	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F225575)	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F225575)	
17		Lior Peer	AUDC-IPPhone/1.6.0.44.41.4 (320HD; 00908F15BA49)		

2. Click **Start** to run diagnostics on all extensions; the SPS system immediately starts sending SIP OPTIONS to all known extensions one after another. A successful response is displayed in green.
3. For a detailed response view, click the button or select the 'Show details' check-box.
4. To quickly diagnose a specific extension, use the icon adjacent to the extension number.

Tip: Start diagnostics at any time using the **Start** button.

5.6 Obtaining Call Detail Records (CDRs)

The SPS system generates a call record (in a CDR file) for every incoming or outgoing call in the system. A call record contains information such as caller number, called number, time and date of the call, call duration, and the status of the call. CDR files are Comma Separated Value (*csv*) files and can be downloaded and viewed with any text editor or with Microsoft excel.

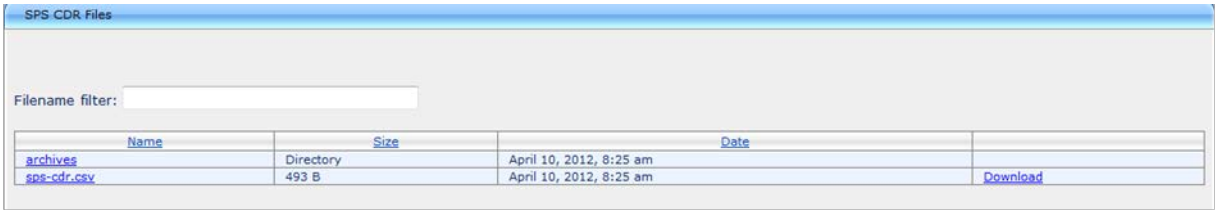
There are two types of CDR files:

- SPS
- XMPP

➢ **To view SPS CDR file content:**

1. Access the 'Device Diagnostic' page (**Status & Diagnostics** > ***Site*** > **CDR** > **CDR Files**); the following screen appears:

Figure 5-12: SPS CDR Files



The SPS CDR Files page lists all SPS system *.cdr* files. Old *.cdr* files are automatically moved to the archives folder.

2. To download or open a specific .cdr file, click the **Download** link adjacent to the required file.
3. Select **Open** or **Save** in the **File Download** dialog.

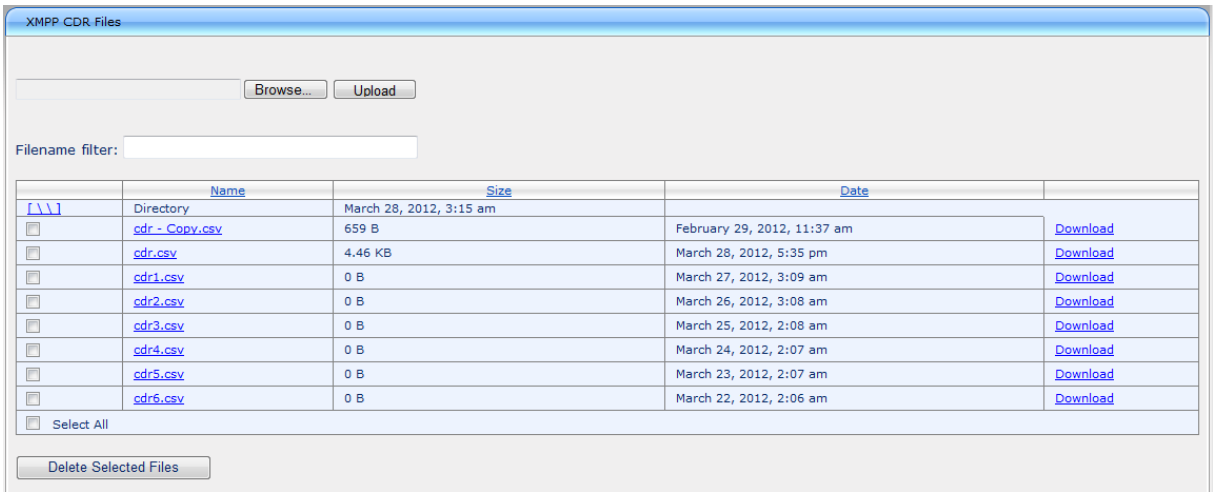
Tips:

- A new *.cdr* file is created every day.
- The currently active *.cdr* file is *SPS-cdr.csv*
- Older *.cdr* files are saved in the 'Archives' directory and are automatically deleted after 30 days. The archived files are named "*N-sps-cdr.csv*" where N =0 for the newest file, N=1 for the next, etc.
- Use the 'File Name' filter to quickly search for and find specific *.cdr* files.

➢ **To view XMPP CDR file content:**

1. Access the 'Device Diagnostic' page (**Status & Diagnostics** > ***Site*** > **CDR** > **XMPP CDR Files**); the following screen appears:

Figure 5-13: XMPP CDR Files



The CDR Files page lists all SPS system XMPP *.cdr* files. Old *.cdr* files are automatically moved to the archives folder.

2. To download or open a specific .cdr file, click the **Download** link adjacent to the required file.
3. Select **Open** or **Save** in the **File Download** dialog.

Tips:

- A new .cdr file is created every day.
- The currently active .cdr file is named SPS-cdr.csv
- Older .cdr files are saved in the 'Archives' directory and are automatically deleted after 30 days. The archived files are named "N-sps-cdr.csv" where N =0 for the newest file, N=1 for the next, etc.
- Use the 'File Name' filter to quickly search for and find specific .cdr files.

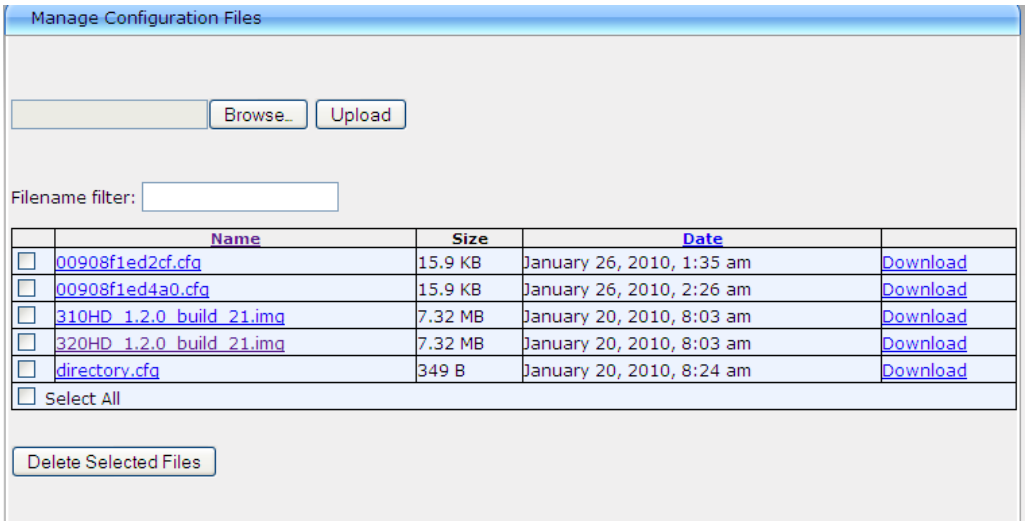
5.7 Viewing IPP Configuration Files

All IP Phone configuration files are created and located on the SPS system's TFTP server. The Web Admin Tool enables you to view and manage TFTP storage and to upload and delete files from TFTP storage.

➢ **To view IPP configuration files:**

1. Access the 'Manage Configuration Files' page (**Status & Diagnostics** > ***Site*** > **IP-Phones Configuration** > **IPP Configuration Files**); the following screen appears:

Figure 5-14: Manage Configuration Files



On this page, you can view all configuration files currently located on the SPS system's TFTP server. The TFTP folder may contain IP Phone Image files, global configuration files, company directory configuration files and IP Phone configuration files.

2. To delete a file, select one or more files using the checkbox to the left of the file name and click **Delete Selected Files**.
3. To upload a new file to the TFTP directory, click **Browse** and select a file from your file system. Click **Upload**.

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AudioCodes

Administrator's Guide

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