Spectralink DECT Servers

Provisioning Guide

Spectralink IP-DECT Server 200/400/6500
Virtual IP-DECT Server One
DECT Server 2500/8000

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Chapter 1: About This Guide

This guide describes how to configure a Spectralink IP-DECT Server 200/400/6500, Spectralink Virtual IP-DECT Server One and Spectralink DECT Server 2500/8000 for connecting to a provisioning server that keeps the server configuration file, handset configuration file and firmware files for the:

- Spectralink IP-DECT/DECT/Virtual IP-DECT Server
- Spectralink IP-DECT/Digital DECT Base Stations
- Spectralink DECT Media Resources
- Spectralink Virtual IP-DECT Media Resources
- Spectralink DECT Handset

The Spectralink IP-DECT Server 200/400/6500, Spectralink Virtual IP-DECT Server One and Spectralink DECT Server 2500/8000 use a common method for provisioning.

In the following the servers will be referred to as “Spectralink IP-DECT/DECT/Virtual IP-DECT Server”.

This guide is intended for qualified technicians and the reader is assumed to have a basic knowledge about the Spectralink IP-DECT/DECT/Virtual IP-DECT Server and the provisioning server. It is also assumed, that you have an installed and functioning provisioning server and Spectralink IP-DECT/DECT/Virtual IP-DECT Server.

Requirements for Provisioning Server

In most scenarios provisioning will put a very small load on an FTP/TFTP/HTTP server. Only when serving a large number of devices and/or when using very short provisioning intervals will provisioning require anything more than the minimal server configuration. Please refer to the relevant FTP/TFTP/HTTP server vendor documentation for further guidance on requirements.

Related Documentation

All Spectralink documents are available at http://support.spectralink.com/.

Safety and Handling information is available online at http://support.spectralink.com/products. Regulatory information is available online at http://support.spectralink.com/products.

Subject	*Documentation*
Spectralink DECT Handset	For more information about the handset, refer to the user guide available online at http://support.spectralink.com/products.

Subject	*Documentation*
Site Survey Function in Handset	For more information about the site survey function in handset, refer to the guide available online at http://support.spectralink.com/products.
Synchronization and Deployment	For more information about synchronization and deployment, refer to the guide available online at http://support.spectralink.com/products.
Spectralink Redirection and Provisioning Service	For more information about the redirection service, refer to the guide available online at http://support.spectralink.com/product.
Spectralink IP-DECT/DECT/Virtual IPDECT Server	For more information about the server, refer to the guide available online at http://support.spectralink.com/products.
Spectralink IP-DECT/Digital DECT Base Station	For more information about the base station, refer to the guide available online at http://support.spectralink.com/products.
Spectralink DECT Repeater	For more information about the repeater, refer to the guide available online at http://support.spectralink.com/products.
Spectralink Technical Bulletins	Available online at http://support.spectralink.com/products.
Release Notes	Document that describes software changes, bug fixes, outstanding issues, and hardware compatibility considerations for new software releases. Available online at http://support.spectralink.com/products.
Spectralink DECT training material	In order to gain access to the Spectralink training material, you must attend training and become Spectralink Certified Specialist. Please visit http://-partneraccess.spectralink.com/training/classroom-training for more information and registration.

Provisioning Overview

The provisioning concept is essentially very simple: programmable parameters configure settings and enable features. The parameters are enabled or disabled and given a value or values as applicable. These parameters are contained in configuration files that are configured by the system administrator and reside on a provisioning server.

Provisioning Architecture

When the Spectralink IP-DECT/DECT/Virtual IP-DECT Server is powered and configured to use DHCP provisioning, it contacts the DHCP server to obtain the network parameters.

If a provisioning server is specified, it contacts the provisioning server to check/update its:

- firmware for:
  - Spectralink IP-DECT/DECT/Virtual IP-DECT Server
  - Spectralink IP-DECT/Digital DECT Base Stations (not relevant to Spectralink IP-DECT Server 200 and Spectralink IP-DECT Server 400 single cell solution)
  - Spectralink DECT Media Resources (only relevant to Spectralink IP-DECT Server 6500 and Spectralink Virtual IP-DECT Server One)
  - Spectralink Virtual IP-DECT Media Resource (only relevant to Spectralink Virtual IP-DECT Server One)
  - Spectralink DECT Handsets
- server configuration
- user list
- handset configuration (not relevant to Spectralink DECT Servers)

Note: Firmware

Provisioning of firmware for Spectralink IP-DECT/Digital DECT Base Stations, Spectralink DECT Media Resources, Spectralink Virtual IP-DECT Media Resources and Spectralink DECT Handsets requires acquisition of additional Enhanced Provisioning License for Spectralink IP-DECT Server 400/6500, Spectralink Virtual IP-DECT Server One and Spectralink DECT Server 2500/8000.

Provisioning of firmware (including Spectralink DECT Handset firmware) for the Spectralink IP-DECT Server 200 does not require acquisition of additional Enhanced Provisioning License.

Automatic update must be enabled on the devices. For more information, see Enabling Enhanced Provisioning.

Note: Handset configuration

Handset configuration is not supported on Spectralink DECT Servers.

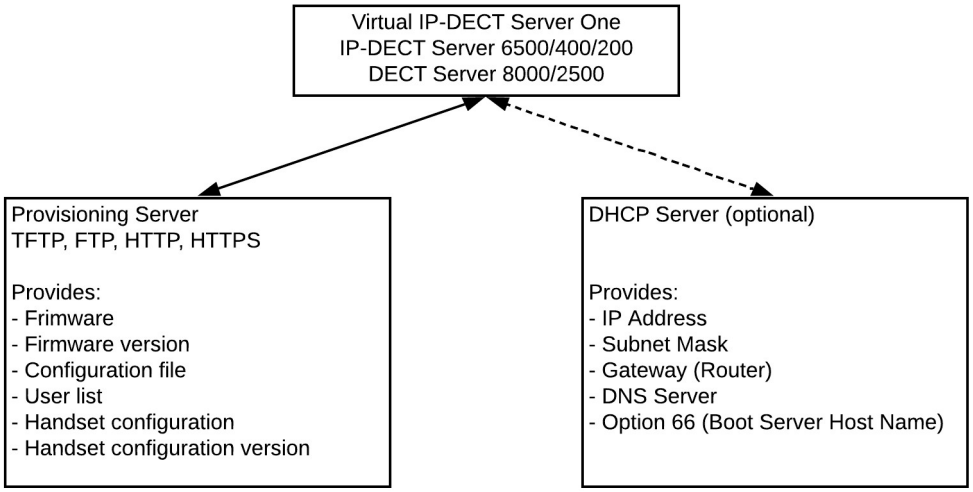
Only Spectralink DECT Handset 7202/7212, 7502, 7522/7532, 7622/7642 and 7722/7742 with firmware PCS 19K_ or newer can be updated using Handset Configuration Over The Air (OTA).

Only Spectralink IP-DECT/Virtual IP-DECT Servers with firmware PCS 19C_ or newer support Handset Configuration Over The Air.

Handset Configuration Over The Air is not supported on redundant systems. Provisioning of handset configuration for the Spectralink IP-DECT Server 400/6500 and Spectralink Virtual IP-DECT Server One requires acquisition of additional Enhanced Provisioning License.

Provisioning of handset configuration for the Spectralink IP-DECT Server 200 does not require acquisition of additional Enhanced Provisioning License.

Automatic update must be enabled on the devices. For more information, see Enabling Enhanced Provisioning.



DHCP Server

When using DHCP, option 66 (TFTP server name) is used to provide the provisioning server URL. This is a string type option configured on the DHCP server of the network.

Provisioning Server (Protocols and Files)

A central provisioning server keeps the server configuration file, handset configuration file and firmware files for the devices. The firmware and configuration is pulled from the provisioning server by the Spectralink IP-DECT/DECT/Virtual IP-DECT Server using a protocol. All the protocols are available at the target and no additional software is required. Within the provisioning server URL it is specified what protocol to use.

To download firmware and configuration there are four available protocols:

- FTP
- TFTP
- HTTP
- HTTPS

Note:

When HTTPS is used, the Spectralink IP-DECT/DECT/Virtual IP-DECT Server requires the provisioning server to present a server certificate that can be verified using a known CA certificate. The Spectralink IP-DECT/DECT/Virtual IP-DECT Server firmware is shipped with a bundle of known CA certificates. It is preferred to use a server certificate signed by one of these certificate authorities.

If this is not suitable, a custom CA bundle can be imported into the Spectralink IP-DECT/DECT/Virtual IP-DECT Server via the web-based Administration Page > **Configuration** > **Certificates** (Spectralink IP-DECT Server 200/400/6500/Spectralink Virtual IP-DECT Server One) or **Installation** > **Certificates** (Spectralink DECT Server 2500/8000).

The bundle must be in PEM format.

The central provisioning server provides the following files to the Spectralink IP-DECT/DECT/Virtual IP-DECT Server:

- Firmware files
- Firmware version files (.ver)
- Server configuration file
- User list file
- Handset configuration file

Firmware Files

Firmware files/option	*Server 200*	*Server 400*	*Server 6500*	*Virtual Server One*	*Server 2500/8000*
IP-DECTserver200firmware.bin	✓	-	-	-	-
IP-DECTserver400firmware.bin	-	✓	-	-	-
IP-DECTserver6500firmware.bin	-	-	✓	-	-
VirtualIP-DECTServer-Onefirmware.ova	-	-	-	✓	-
DECTserver8000firmware.bin	-	-	-		✓
Option: Firmware default on base station and media resource	-	✓	✓	✓	-

Firmware files/option	*Server 200*	*Server 400*	*Server 6500*	*Virtual Server One*	*Server 2500/8000*
		(License required)	(License required)	(License required)	
IP-DECTbasestationfirmware.bin	-	-	-	-	✓ (License required)
DigitalDECTbasestationfirmware.bin	-	-	-	-	✓ (License required)
Handsetfirmware.bin	✓	✓ (License required)	✓ (License required)	✓ (License required)	✓ (License required)

Note:

The Spectralink IP-DECT Servers support doing firmware updates directly from a firmware file and also from firmware files contained in a ZIP file. Zip file firmware update is only supported on systems running firmware PCS 20B_ or newer. On the Spectralink Virtual IP-DECT Server One, it is required to use a ZIP file containing both the Spectralink Virtual IP-DECT Server One firmware (.ova file) and the Spectralink IP-DECT Server firmware (.bin file) in order to use the firmware as default for base stations and media resources.

Defining Firmware File Names

The file name(s) can be defined in two ways—Directly in the XML configuration file or through the web-based Administration Page of the Spectralink IP-DECT/DECT/Virtual IP-DECT Server. See Enabling Provisioning for XML file examples

1 Directly in the XML configuration file.

Example from Spectralink IP-DECT Server 200:

```
<provisioning>
   <firmware>
      <kws>kws.bin</kws>
      <pp14208700>pp14208700.bin</pp14208700>
      <pp14225100>pp14225100.bin</pp14225100>
      <pp14225110>pp14225110.bin</pp14225110>
      <pp14225190>pp14225190.bin</pp14225190>
   </firmware>
</provisioning>
```

Example from Spectralink IP-DECT Server 6500:

```
<provisioning>
   <firmware>
      <kws>kws.bin</kws>
      <default_kws>true</default_kws>
      <pp14208700>pp14208700.bin</pp14208700>
      <pp14225100>pp14225100.bin</pp14225100>
      <pp14225110>pp14225110.bin</pp14225110>
      <pp14225190>pp14225190.bin</pp14225190>
   </firmware>
</provisioning>
```

Example from Spectralink Virtual IP-DECT Server One:

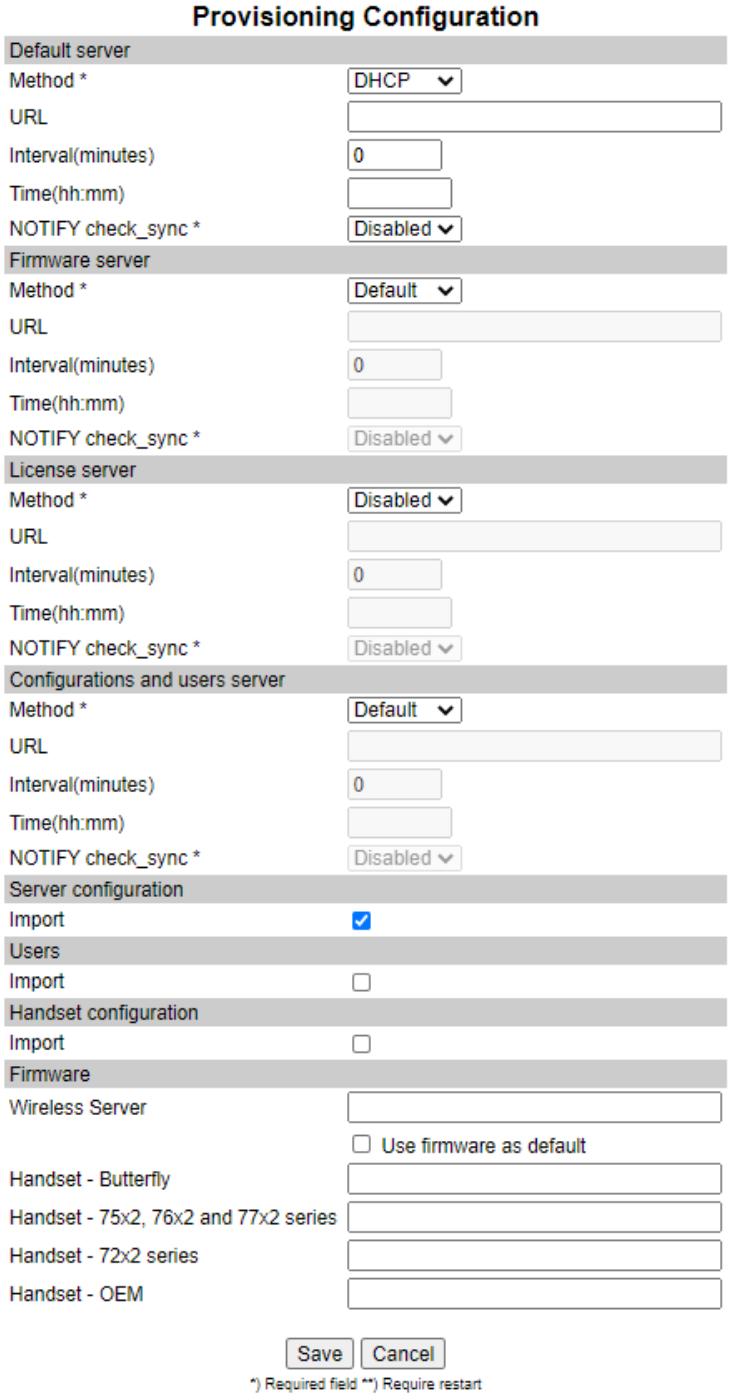
```
<provisioning>
   <firmware>
      <kws>ipdect.ova</kws>
      <default_kws>true</default_kws>
      <pp14208700>pp14208700.bin</pp14208700>
      <pp14225100>pp14225100.bin</pp14225100>
      <pp14225110>pp14225110.bin</pp14225110>
      <pp14225190>pp14225190.bin</pp14225190>
   </firmware>
</provisioning>
```

Example from Spectralink DECT Server 8000

```
<provisioning>
   <firmware>
      <kws>kws.bin</kws>
      <rfp>rfp.bin</rfp>
      <rfp6>rfp6.bin</rfp6>
      <pp14208700>pp14208700.bin</pp14208700>
      <pp14225100>pp14225100.bin</pp14225100>
      <pp14225110>pp14225110.bin</pp14225110>
      <pp14225190>pp14225190.bin</pp14225190>
   </firmware>
</provisioning>
```

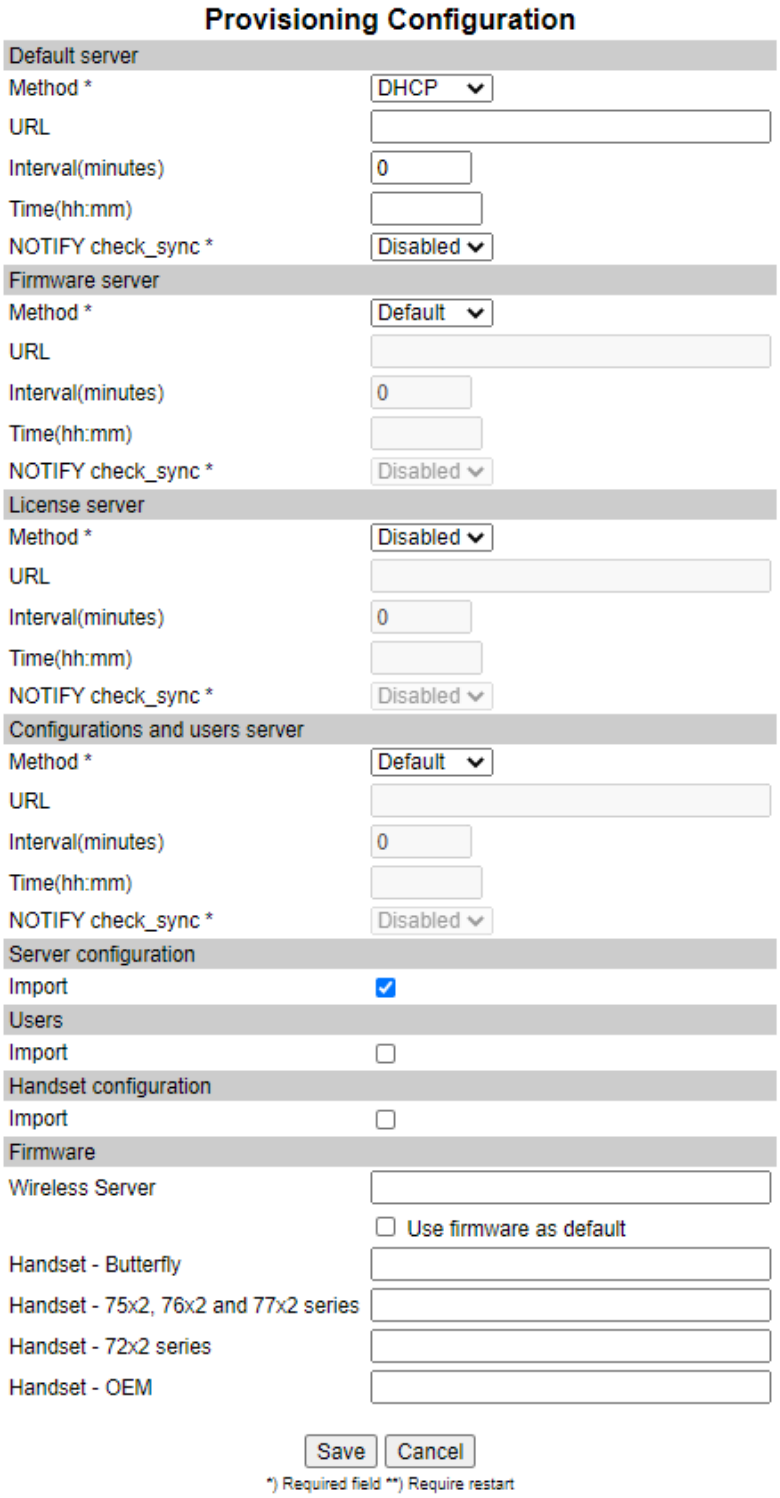
2 Through the web-based Administration Page of the Spectralink IP-DECT/DECT/Virtual IP-DECT Server by navigating to **Configuration** > **Provisioning**.

- On the Spectralink IP-DECT Server 200, the **Provisioning Configuration** page looks like this:



  - On the **Provisioning Configuration** page, under **Firmware**, enter the relevant name (s).

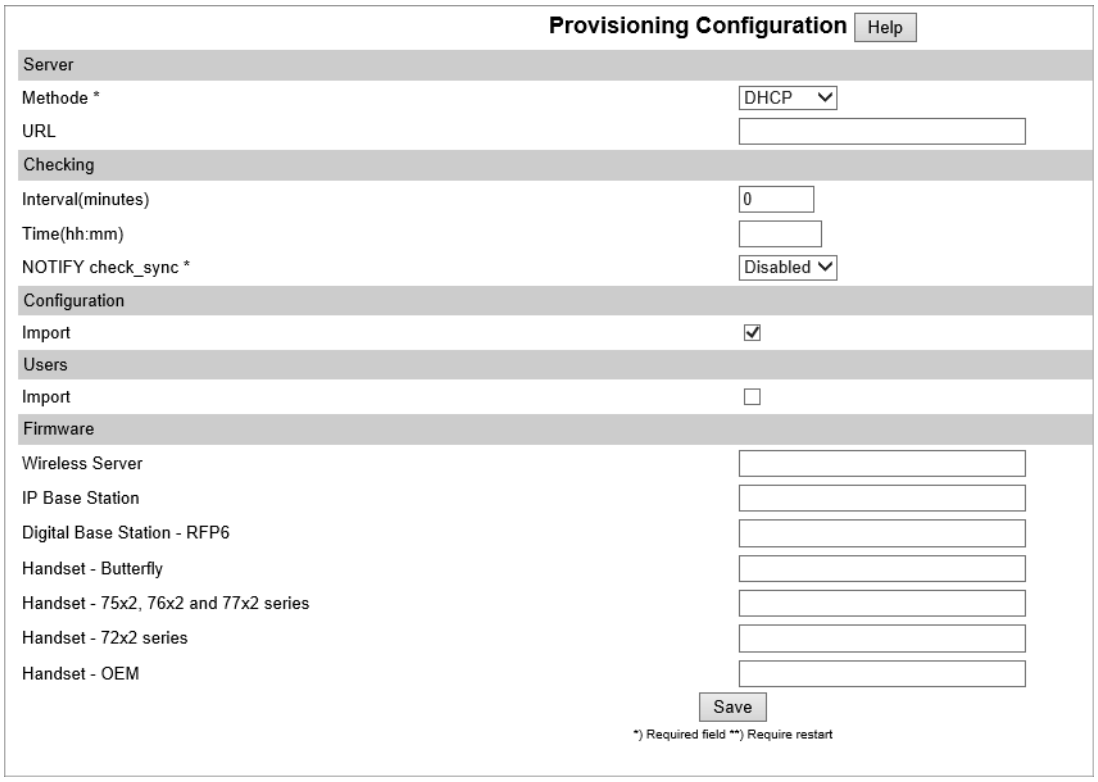
- On the Spectralink IP-DECT Server 400/6500 and Spectralink Virtual IP-DECT Server One, if having the Enhanced Provisioning License installed, the **Provisioning Configuration** page looks like this:



  - On the **Provisioning Configuration** page, under **Firmware**, enter the relevant name (s).

Enable the **Use firmware as default** check box if you want the server firmware as default for all base stations and media resources (recommended). Not available on the Spectralink IP-DECT Server 400 without a Multi-cell License

- On the Spectralink DECT Server 2500/8000, if having the Enhanced Provisioning License installed, the **Provisioning Configuration** page looks like this:



  - On the **Provisioning Configuration** page, under **Firmware**, enter the relevant name (s).

For more information, see Web Based Administration Page

Firmware Version Files (.ver)

Firmware files/option	*Server 200*	*Server 400*	*Server 6500*	*Virtual Server One*	*Server 2500/8000*
IP-DECTserver200firmware.bin.ver	✓	-	-	-	-
IP-DECTserver400firmware.bin.ver	-	✓	-	-	-
IP-DECTserver6500firmware.bin.ver	-	-	✓	-	-

Firmware files/option	*Server 200*	*Server 400*	*Server 6500*	*Virtual Server One*	*Server 2500/8000*
VirtualIP-DECTServer-Onefirmware.ova.ver	-	-	-	✓	-
DECTserver8000firmware.bin.ver	-	-	-		✓
Option: Firmware default on base station and media resource	-	✓ (License required)	✓ (License required)	✓ (License required)	-
IP-DECTbasestationfirmware.bin.ver	-	-	-	-	✓ (License required)
DigitalDECTbasestationfirmware.bin.ver	-	-	-	-	✓ (License required)
Handsetfirmware.bin.ver	✓	✓ (License required)	✓ (License required)	✓ (License required)	✓ (License required)

Note:

A .ver file is a text file with text describing the current firmware version (e.g. "PCS17Ea58478").

The .ver file is included in the firmware package.

When provisioning firmware contained in ZIP files, the .ver file must be created manually. Zip file firmware update is only supported on systems running firmware PCS 20B_ or newer. Zip file firmware update is not supported on DECT systems.

Server Configuration File

An XML formatted file (see Appendix B: Server XML File Examples):

IP-DECT/DECT Server	*Virtual IP-DECT Server One*
<IP-DECT/DECT Server MAC address>-config.xml example: 0013d1800032-config.xml	<VirtualIP-DECT Server UUID>-config.xml example: 89fed27f-7c47-43f5-8347-cb854cedc538-config.xml

Note:

When provisioning/importing a server configuration file into the Spectralink IP-DECT Server 200/400/6500 and Spectralink Virtual IP-DECT Server One, it is possible to merge the configurations in the provisioned/imported server configuration file. By merging the server configuration file, all other configurations in the server are preserved. If not using merge, all configurations not defined in the server configuration file are over- written with default values. The Spectralink DECT Server 2500/8000 only supports the overwrite method.

To merge server configurations, you must manually append the root element (<config>) in the server configuration file with the following attribute:

```
<config merge_type="merge">
```

If there is no merge attribute or wrong/miss-spelled attribute value, all other configurations will be overwritten with default values as is the case without the attribute (the root element <config> alone).

For examples of server configuration files to be merged, see Appendix B: Server XML File Examples.

User List File

An XML formatted file (see Appendix D: User XML File Example):

IP-DECT/DECT Server	*Virtual IP-DECT Server One*
<IP-DECT/DECT Server MAC address>-users.xml example: 0013d1800032-users.xml	<Virtual IP-DECT Server UUID>-users.xml example: 89fed27f-7c47-43f5-8347-cb854cedc538-users.xml

Handset Configuration File

Note:

Handset configuration is not supported on Spectralink DECT Servers.

An XML formatted file (see Appendix E: Handset Configuration):

IP-DECT Server 200/400/6500	*Virtual IP-DECT Server One*
<IP-DECT Server MAC address>-handset_config_group<Group ID>.xml example: 0013d1800032-handset_config_group_100.xml	<Virtual IP-DECT Server UUID>-users.xml example: 89fed27f-7c47-43f5-8347-cb854cedc538-users.xml

Handset Configuration XML File(s) and .Ver File

A Handset Configuration XML file must be created for each configuration group. To use provisioning, also a .ver file must be created listing the handset configuration files.

The .ver file contains information about available Handset Configuration XML files to be provisioned into the Spectralink IP-DECT/Virtual IP-DECT Server, including information about the version number. E.g. GROUP100 VERSION1.

When provisioning the handset configuration file, the Spectralink IP-DECT/Virtual IP-DECT Server reads the .ver file, and then starts downloading the handset configuration files.

The listed Handset Configuration XML files will only be provisioned, if the version numbers differ from existing handset configuration files.

For more information about managing handset configuration and creating Handset Configuration XML files, see *IP-DECT Server 200/400/6500 and Virtual IP-DECT Server One Installation and Configuration Guides*.

Creating a xxxx-handset_config_list.ver File (in text editor)

Examples of .ver file:

0013d1800032-handset_config_list.ver
(0013d1800032 is the MAC adress of the Spectralink IP-DECT Server)

89fed27f-7c47-43f5-8347-cb854cedc538-handset_config_list.ver
(89fed27f-7c47-43f5-8347-cb854cedc538 is the UUID of the Spectralink Virtual IP-DECT Server One)

The .ver file can look like this:

GROUP100 VERSION1
GROUP101 VERSION1
GROUP102 VERSION1
GROUP103 VERSION1

Note:

There must only be white space between GROUP and VERSION. The naming is case sensitive.

The .ver file describes that we in the example above have 4 Handset Configuration XML files:

“0013d1800032-handset_config_group_100.xml” / "89fed27f-7c47-43f5-8347-cb854cedc538-handset_config_group_100.xml"

“0013d1800032-handset_config_group_101.xml” / "89fed27f-7c47-43f5-8347-cb854cedc538-handset_config_group_101.xml”

“0013d1800032-handset_config_group_102.xml” / "89fed27f-7c47-43f5-8347-cb854cedc538-handset_config_group_102.xml”

“0013d1800032-handset_config_group_103.xml” / "89fed27f-7c47-43f5-8347-cb854cedc538-handset_config_group_103.xml”

When created, all handset configuration files and .ver file must be uploaded to the provisioning server with other provisioning files.

Note:

When uploading a handset configuration file into the Spectralink IP-DECT/Virtual IP-DECT Server, the configuration group (Group ID) is the unique identifier.

The version number determines whether the configuration XML file is different from the existing file. If version number is different, the new handset configuration file is automatically uploaded to the handsets with matching group IDs.

Handset configuration not mentioned in the configuration XML file will remain unchanged. Therefore, be aware that when changing configuration groups – then if settings are set by the previous configuration group and not set for the new configuration group, the old setting will remain in the handset for that individual user. If some features mentioned in the configuration XML file are not supported in the handset, these features will be ignored.

Chapter 2: Enabling Enhanced Provisioning

Note:

Enhanced provisioning requires a license for Spectralink IP-DECT Server 400/6500, Spectralink Virtual IP-DECT Server One and Spectralink DECT Server 2500/8000.

- Enhanced Provisioning | IP-DECT Server 400 (part no. 14075701)
- Enhanced Provisioning | IP-DECT Server 6500 (part no. 14075700)
- Enhanced Provisioning 1 Year | Virtual IP-DECT Server (part no. 14233250)
- Enhanced Provisioning | DECT Server 2500 (part no. 14075702)
- Enhanced Provisioning | DECT Server 8000 (part no. 14075703)

To set up provisioning for Spectralink IP-DECT/Digital DECT Base Stations, Spectralink

DECT Media Resources, Spectralink Virtual IP-DECT Media Resources and Spectralink DECT Handsets you must do the following:

1. Order and download the Enhanced Provisioning License (if required).
2. Enable automatic update for the Spectralink IP-DECT/Digital DECT Base Station, Spectralink DECT Media Resource, Spectralink Virtual IP-DECT Media Resource and Spectralink DECT Handset either through the server configuration file or the web-based Administration Page.

Note:

Automatic update of Spectralink IP-DECT Base Stations requires base stations with firmware version PCS 15 or newer.

Note:

Provisioning of firmware to Spectralink DECT Media Resources is only relevant to the Spectralink IP-DECT Server 6500 and Spectralink Virtual IP-DECT Server One.

Provisioning of firmware to Spectralink Virtual IP-DECT Media Resources is only relevant to the Spectralink Virtual IP-DECT Server One.

Note:

Provisioning of firmware to Spectralink IP-DECT Base Stations is not relevant to the Spectralink IP-DECT Server 200 and Spectralink IP-DECT Server 400 single cell solution. This firmware is updated with the server firmware file.

Note:

Provisioning of firmware to Spectralink Digital DECT Base Stations is only relevant to the Spectralink DECT Server 2500/8000.

Note:

Only Spectralink DECT Handset 7202/7212, 7502, 7522/7532, 7622/7642 and 7722/7742 with firmware PCS 19K_ or newer can be updated using Handset Configuration Over The Air.

Only Spectralink IP-DECT/Virtual IP-DECT Servers with firmware PCS 19C_ or newer support Handset Configuration Over The Air.

Handset Configuration Over The Air is not supported on redundant systems.

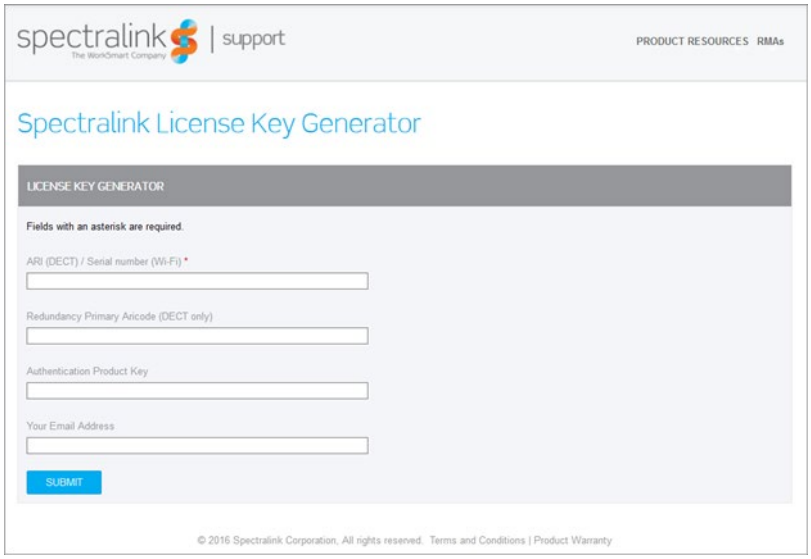
Ordering and Loading Enhanced Provisioning License

The Enhanced Provisioning License allows update of firmware using provisioning server for the following: Spectralink IP-DECT/Digital DECT Base Stations, Spectralink DECT Media Resources, Spectralink Virtual IP-DECT Media Resources and Spectralink DECT Handsets.

Ordering licenses

Spectralink IP-DECT Server 200/400/6500 and Spectralink DECT Server 2500/8000

1. Send your Purchase Order (PO) including the software part number and the number of licenses needed to Spectralink Order Management via (EMEA and APAC) emeaom@spectralink.com or (NALA) nalaom@spectralink.com .
2. When your order is processed, Order Management will send you an email including an Authentication Product Key for your software license.
3. To activate your software license, use the License Key Generator available at http://support.spectralink.com/keycode .



Note:

Once a software license is generated, this is locked to the specified ARI code, and cannot be changed.

Spectralink Virtual IP-DECT Server One

1. Send your Purchase Order (PO) including the Server ID (UUID) and the number of licenses needed to Spectralink Order Management via (EMEA and APAC) emeaom@spectralink.com or (NALA) nalaom@spectralink.com .
2. When your order is processed, Order Management will send you an email including a license key for the relevant software license.

Loading a License

1. If using Spectralink IP-DECT 400/6500 or Spectralink Virtual IP-DECT Server One, click **Administration**, and then click **License**.

   If using Spectralink DECT 2500/8000, click **Installation**, and then click **License**.
2. Copy the provided license key from your email, paste it in the **License** field, and then click **Load**.
3. Reboot the server to activate the license.

Enable Automatic Update

You can enable automatic update of the devices either through the server configuration file or through the web-based Administration Page of the Spectralink IP-DECT/DECT/Virtual IP-DECT Server.

Note:

For Spectralink IP-DECT Server 200 it is only necessary to enable automatic update for the handsets.

Note:

Automatic update of Spectralink IP-DECT Base Stations requires base stations with firmware version PCS 15 or newer.

Devices through Server Configuration File

To allow automatic update of the firmware for Spectralink IP-DECT/Digital DECT Base Stations, Spectralink DECT Media Resources, Spectralink Virtual IP-DECT Media Resources and Spectralink DECT Handsets, the "Enable"/"Auto" parameter must be set to "true" in the server configuration file.

See example below (Spectralink IP-DECT Server 200):

```
<suota>
    <auto>true</auto>
    <incharger>true</incharger>
    <load>high</load>
    <start_time>immediately</start_time>
</suota>
```

See example below (Spectralink IP-DECT Server 6500/Spectralink Virtual IP-DECT Server One):

```
<mr>
    <auto>
       <enable>true</enable>
       <force>true</force>
       <start_time>00:00</start_time>
    </auto>
</mr>
<rfp>
    <auto>
       <enable>true</enable>
       <force>true</force>
       <start_time>immediately</start_time>
    </auto>
</rfp>
<suota>
    <auto>true</auto>
    <incharger>true</incharger>
    <load>high</load>
    <start_time>immediately</start_time>
</suota>
```

Note:

When the "Force" parameter is set to "true", the devices will be updated at the specified Start time regardless of activity.

Base Station through Web-Based Administration Page

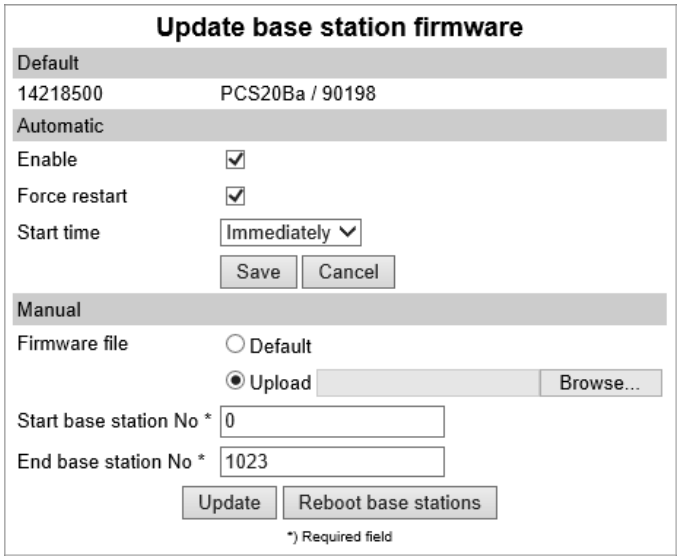
1 If using Spectralink IP-DECT Server 400/6500 or Spectralink Virtual IP-DECT Server One, click **Firmware**, and then click **Base Station**.

If using Spectralink DECT Server 2500/8000, click **Firmware**, then click either **IP Base Station** or **Digital Base Station**.

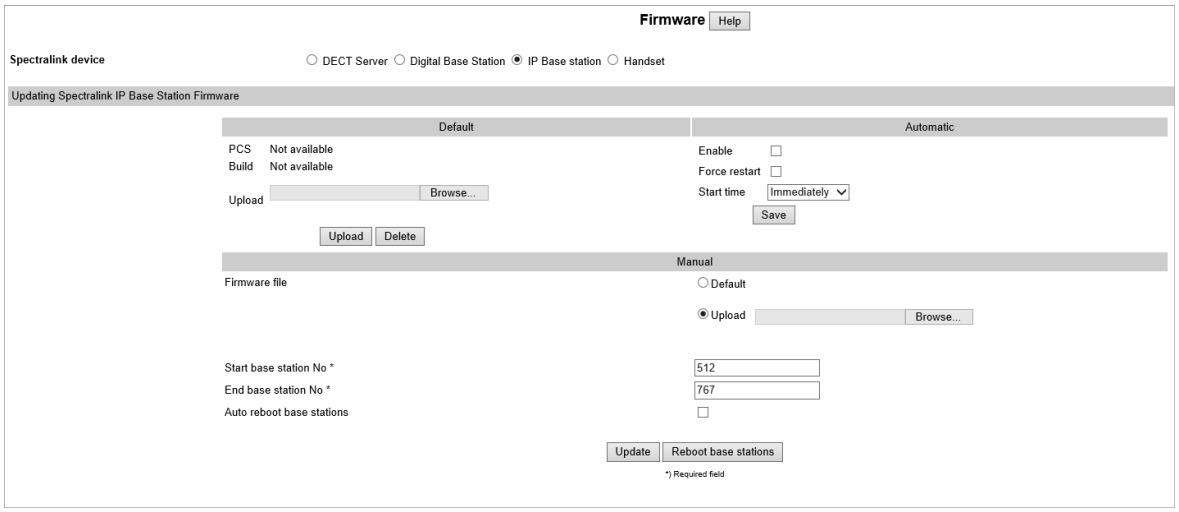
2 On the **Update Base Station Firmware** page, enter the following data:

Field	*Setting*
Automatic	
Enable	Enable. This will make automatic update possible if a default firmware file is available.
Force restart	When **Force restart** is enabled, the devices will be updated and restarted at the selected Start time. If **Force restart** is disabled, the devices will be updated when they become idle after the selected Start time.
Start time	Default value is **Immediately**. If you want to upload later, select an appropriate time within the next 24 hours.

Spectralink IP-DECT Server 400/6500 and Spectralink Virtual IP-DECT Server One:



Spectralink DECT Server 2500/8000:



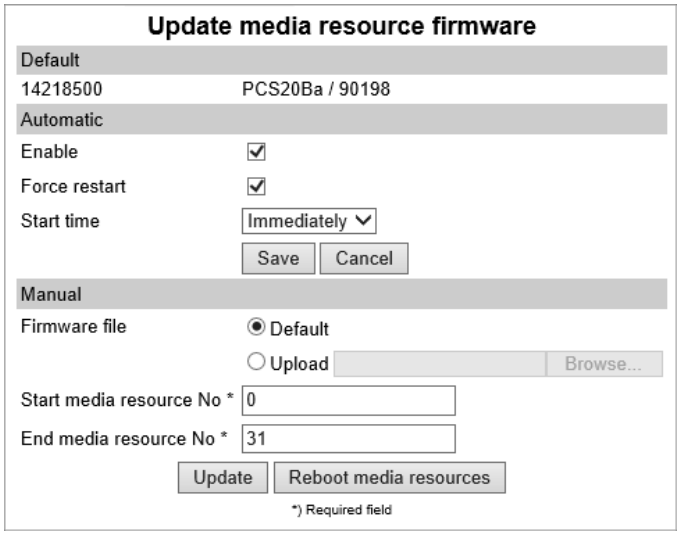
3 Click **Save**.

Media Resource through Web-Based Administration Page

1 Click **Firmware**, and then click **Media Resource**.

2 On the **Update Media Resource Firmware** page, enter the following data:

Field	*Setting*
Automatic	
Enable	Enable. This will make automatic update possible if a default firmware file is available.
Force restart	When **Force restart** is enabled, the devices will be updated and restarted at the selected Start time. If **Force restart** is disabled, the devices will be updated when they become idle after the selected Start time.
Start time	Default value is **Immediately**. If you want to upload later, select an appropriate time within the next 24 hours.



3 Click **Save**.

Handset Firmware through Web-Based Administration Page

1 Click **Firmware**, and then click **Handset**.

2 On the **Handset update settings** page, enter the following data:

Field	*Setting*
Automatic update	
Enable	Enable. This will make automatic update possible.
Only in charger	If enabled, only handsets in charger will be updated.
Start time	Default value is **Immediately**. If you want to upload later, select an appropriate time within the next 24 hours.
System load	Select relevant upload capacity. The load corresponds to the number of maximum simultaneous updates. Possible values: **Low**, **Medium** or **High**. On Spectralink IP-DECT/Virtual IP-DECT Servers: Default value: Medium **Low**: 1 handset at a time. **Medium**: 4 handsets per media resource. **High**: 16 handsets per media resource. Example: 2 media resources and High load = 2*16 = 32 simultaneous updates. On Spectralink DECT Servers: **High**: 130%, **Medium**: 100% and **Low**: 70%. Example: 10 base stations * Low load (70%) = 7 simultaneous updates.

Field	*Setting*
	Note: The number of base stations have an impact on the number of simultaneous updates. Only half of media resource capacity (32 channels/2 = 16 channels) can be used for SUOTA. Default value: Medium

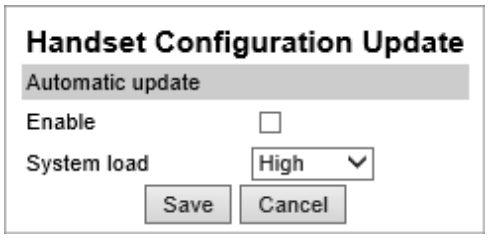
3 Click **Save**.

Handset Configuration through Web-Based Administration Page

1 Click **Users**, and then click **Handset Configuration**.

2 On the **Handset Configuration Update** page, enter the following data:

Field	*Setting*
Automatic update	
Enable	Enable. This will make automatic update possible.
System load	Select relevant upload capacity. The load corresponds to the number of maximum simultaneous updates. Possible values: **Low**, **Medium** or **High**. Default value: Medium



3 Click **Save**.

Chapter 3: Setting Up Provisioning

This chapter covers setting up provisioning on the DECT servers: Spectralink IP-DECT/DECT/Virtual IP-DECT Server

You can enable provisioning either through the server configuration file or through the web-based Administration Page of the Spectralink IP-DECT/DECT/Virtual IP-DECT Server.

To enable provisioning and to make provisioning of the relevant files to actually take place, you must do the following:

1. Ensure that the relevant files (user, server configuration, handset configuration (+xxxx_handset_config_list.ver) and firmware) are available on the provisioning server.

   Note:

   When provisioning/importing a server configuration file into the Spectralink IP-DECT Server 200/400/6500 and Spectralink Virtual IP-DECT Server One, it is possible to merge the configurations in the provisioned/imported server configuration file. By merging the server configuration file, all other configurations in the server are preserved. If not using merge, all configurations not defined in the server configuration file are overwritten with default values. The Spectralink DECT Server 2500/8000 only supports the overwrite method.

   For more information about files, see Provisioning Server (Protocols and Files).

2. Also ensure that enhanced provisioning is enabled, if you want to set up provisioning for Spectralink IP-DECT/Digital DECT Base Stations, Spectralink DECT Media Resources, Spectralink Virtual IP-DECT Media Resources and Spectralink DECT Handsets as well.

   For more information, see Enabling Enhanced Provisioning.

3. Define the relevant protocol (specified within the provisioning server URL), method for contacting the provisioning server, address of the provisioning server and the update interval.

   For more information about protocols, see Provisioning Server (Protocols and Files).

4. Enable import of server configuration file, user file and handset configuration file.

5. Define the file names of the firmware to be updated. These file names must match the file names on the provisioning server.

Enabling Provisioning

DECT provides two methods for enabling provisioning: the server configuration XML file and a web-based administration page.

Server Configuration XML File

The server configuration XML file example shows an example of provisioning configurations including server, base stations, media resources and handsets.

Provisioning Configuration XML File Example (Spectralink IP-DECT Server 200)

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<config>
    <network>
       <bootproto>dhcp</bootproto>
    </network>
    <suota>
       <auto>true</auto>
       <incharger>true</incharger>
       <load>high</load>
       <start_time>immediately</start_time>
    </suota>
    <provisioning>
       <check>
          <check_sync>disabled</check_sync>
          <interval>60</interval>
          <time>00:00</time>
       </check>
       <config>
          <check>true</check>
       </config>
       <cota>
          <check>true</check>
       </cota>
       <firmware>
          <kws>kws.bin</kws>
          <pp14208700>pp14208700.bin</pp14208700>
          <pp14225100>pp14225100.bin</pp14225100>
          <pp14225110>pp14225110.bin</pp14225110>
          <pp14225190>pp14225190.bin</pp14225190>
       </firmware>
       <server>
          <method>static</method>
          <url>example.com</url>
       </server>
       <users>
          <check>true</check>
       </users>
    </provisioning>
</config>
```

Provisioning Configuration XML File Example (Spectralink IP-DECT Server 6500)

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<config>
    <network>
       <bootproto>dhcp</bootproto>
```

```
    </network>
    <mr>
       <auto>
          <enable>true</enable>
          <force>false</force>
          <start_time>00:00</start_time>
       </auto>
    </mr>
    <rfp>
       <auto>
          <enable>true</enable>
          <force>false</force>
          <start_time>immediately</start_time>
       </auto>
    </rfp>
    <suota>
       <auto>true</auto>
       <incharger>true</incharger>
       <load>high</load>
       <start_time>immediately</start_time>
    </suota>
    <provisioning>
       <check>
          <check_sync>disabled</check_sync>
          <interval>60</interval>
          <time>00:00</time>
       </check>
       <config>
          <check>true</check>
       </config>
       <cota>
          <check>true</check>
       </cota>
       <firmware>
          <kws>kws.bin</kws>
          <default_kws>true</default_kws>
          <pp14208700>pp14208700.bin</pp14208700>
          <pp14225100>pp14225100.bin</pp14225100>
          <pp14225110>pp14225110.bin</pp14225110>
          <pp14225190>pp14225190.bin</pp14225190>
       </firmware>
       <server>
          <method>static</method>
          <url>example.com</url>
       </server>
       <users>
          <check>true</check>
       </users>
    </provisioning>
 </config>
```

Provisioning Configuration XML File Example (Spectralink Virtual IP-DECT Server One)

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<config>
    <network>
       <bootproto>dhcp</bootproto>
    </network>
    <mr>
       <auto>
          <enable>true</enable>
          <force>false</force>
          <start_time>00:00</start_time>
       </auto>
    </mr>
    <rfp>
       <auto>
          <enable>true</enable>
          <force>false</force>
          <start_time>immediately</start_time>
       </auto>
    </rfp>
    <suota>
       <auto>true</auto>
       <incharger>true</incharger>
       <load>high</load>
       <start_time>immediately</start_time>
    </suota>
    <provisioning>
       <check>
          <check_sync>disabled</check_sync>
          <interval>60</interval>
          <time>00:00</time>
       </check>
       <config>
          <check>true</check>
       </config>
       <cota>
          <check>true</check>
       </cota>
       <firmware>
          <kws>ipdect.ova</kws>
          <default_kws>true</default_kws>
          <pp14208700>pp14208700.bin</pp14208700>
          <pp14225100>pp14225100.bin</pp14225100>
          <pp14225110>pp14225110.bin</pp14225110>
          <pp14225190>pp14225190.bin</pp14225190>
       </firmware>
       <server>
          <method>static</method>
          <url>example.com</url>
       </server>
       <users>
```

```
            <check>true</check>
         </users>
      </provisioning>
   </config>
```

Provisioning Configuration XML File Example (Spectralink DECT Server 8000)

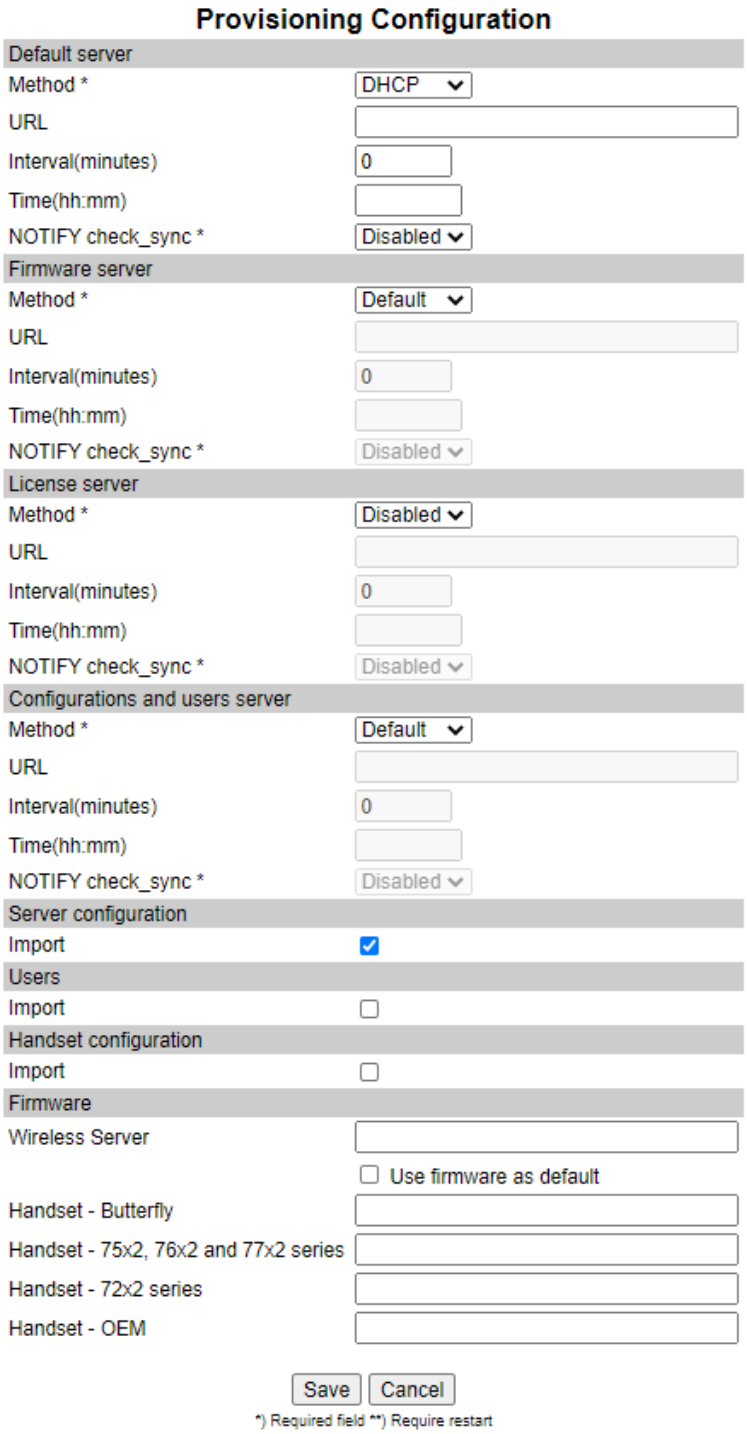
```
   <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
   <config>
      <network>
         <bootproto>dhcp</bootproto>
      </network>
      <rfp>
         <auto>
            <enable>true</enable>
            <force>false</force>
            <start_time>immediately</start_time>
            <enable_digital>true</enable_digital>
            <force_digital>false</force_digital>
            <start_time_digital>immediately</start_time_digital>
         </auto>
      </rfp>
      <suota>
         <auto>true</auto>
         <incharger>true</incharger>
         <load>high</load>
         <start_time>immediately</start_time>
      </suota>
      <provisioning>
         <check>
            <check_sync>disabled</check_sync>
            <interval>60</interval>
            <time>00:00</time>
         </check>
         <config>
            <check>true</check>
         </config>
         <firmware>
            <kws>kws.bin</kws>
            <rfp>rfp.bin</rfp>
            <rfp6>rfp6.bin</rfp6>
            <pp14208700>pp14208700.bin</pp14208700>
            <pp14225100>pp14225100.bin</pp14225100>
            <pp14225110>pp14225110.bin</pp14225110>
            <pp14225190>pp14225190.bin</pp14225190>
         </firmware>
         <server>
            <method>static</method>
            <url>example.com</url>
         </server>
         <users>
            <check>true</check>
```

```
        </users>
    </provisioning>
</config>
```

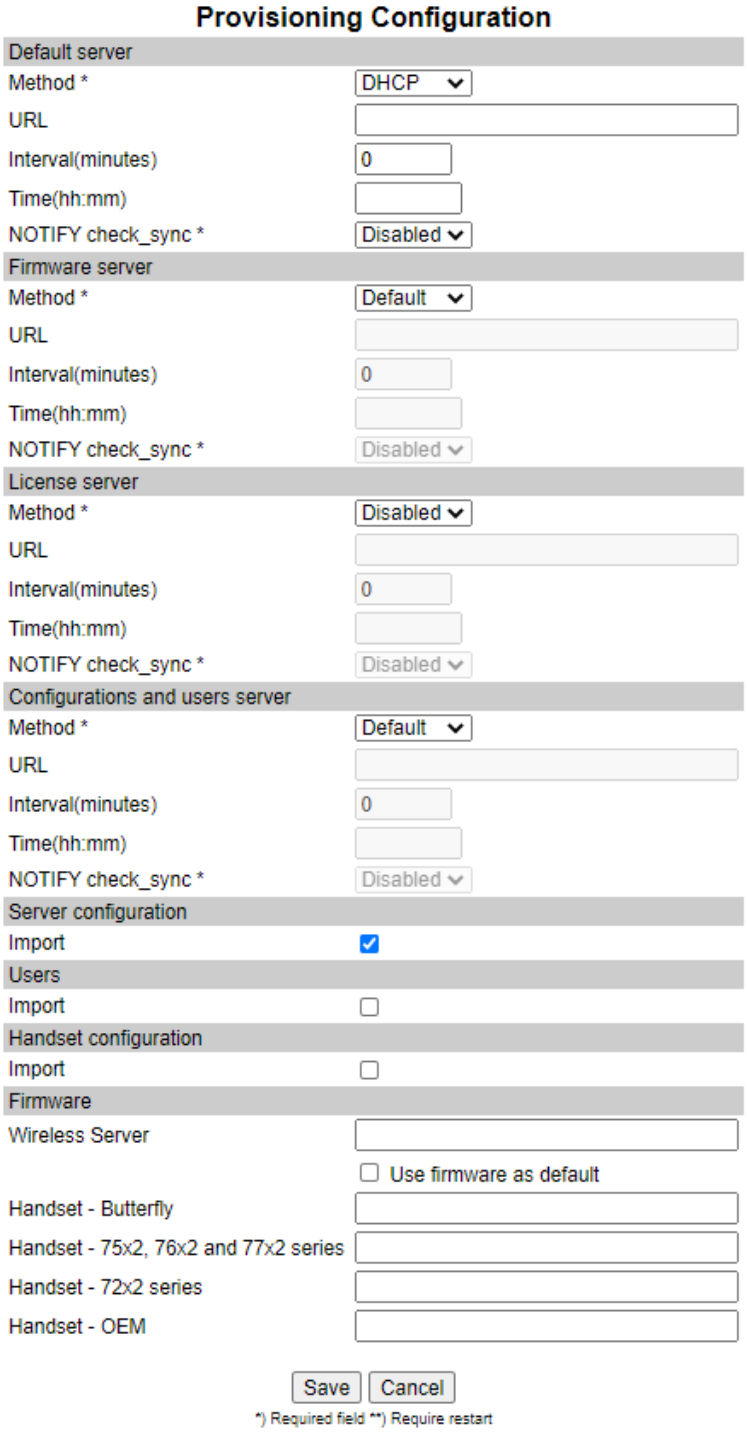
Web Based Administration Page

1 Click **Configuration**, and then click **Provisioning**.

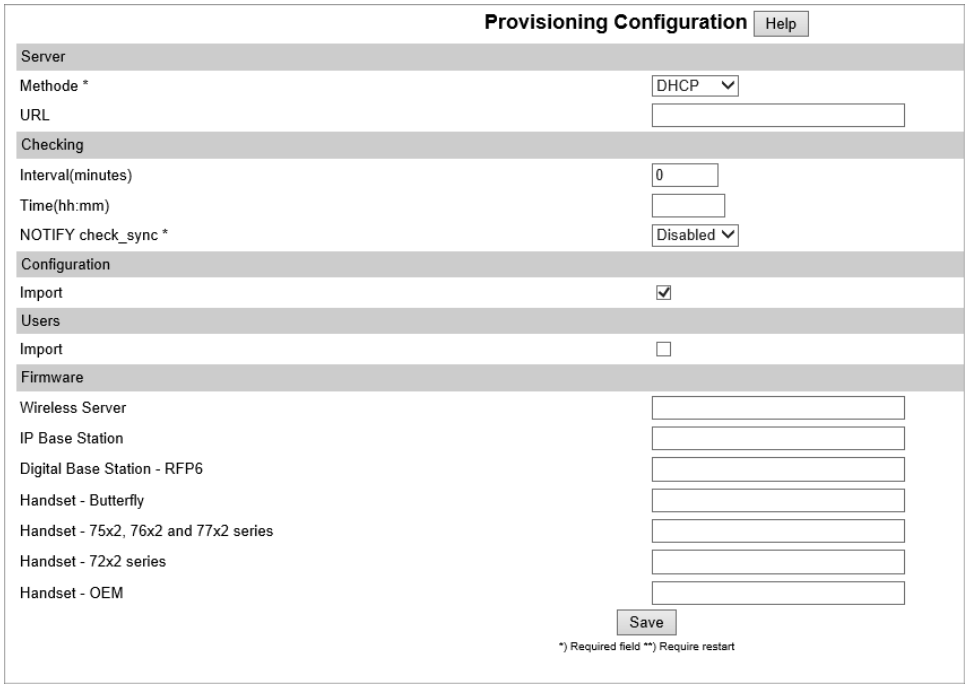
On the Spectralink IP-DECT Server 200, the **Provisioning Configuration** page looks like this:



On the Spectralink IP-DECT Server 400/6500 and Spectralink Virtual IP-DECT Server One, if having the Enhanced Provisioning License installed, the **Provisioning Configuration** page looks like this:



On the Spectralink DECT Server 2500/8000, if having the Enhanced Provisioning License installed, the **Provisioning Configuration** page looks like this:



2 On the Provisioning Configuration page, enter the following data:

Field	*Setting*
Provisioning Configuration – Default Server / Firmware Server / License Server / Configurations and Users server	
Method	The Spectralink IP-DECT/DECT/Virtual IP-DECT Server must know the protocol and address of server containing the firmware and configuration. The Spectralink IP-DECT/DECT/Virtual IP-DECT Server can use the following methods to obtain the provisioning server URL: • **Disabled** (The Spectralink IP-DECT/DECT/Virtual IP-DECT Server will not use provisioning) • **Static** (The administrator must manually specify the URL of the provisioning server) • **DHCP** (Option 66) • **Default** (Available for Firmware, License and Configurations provisioning – the Spectralink IP-DECT/ Virtual IP-DECT Server will use the settings provided in the Default Server section) Select the relevant method for obtaining the URL of the provisioning server. Default value: DHCP.
URL	If using **Static** for obtaining the URL of the provisioning server, enter an URL. Accepted format of URL is: [<protocol>://[<username>:<password>@]]<host>[:<port>][/<path>] Examples:

Field	*Setting*
	• 10.0.0.10 • tftp://provisioning.test.com • ftp://192.168.0.1 • ftp://user:password@provisioning.example.com • http://server.example.com/boot. • https://server.example.com:10443/boot
Interval (minutes)	The interval between polling the provisioning server. If the value is set to 0, then periodic polling is disabled. Enter a value if you want to use polling for checking updates automatically.
Time (hh:mm)	Enter a value to poll the provisioning server at a specific time each day. Leave it empty if not using polling.
NOTIFY check_sync	Possible values: **Disabled**, **Update** or **Reboot**. If disabled is selected, polling (defining specific time/interval for automatic check for new updates) is used. If **Update** is selected, then SIP Notify Check-Sync is used for automatic notification of new updates. Using this method is the optimum way to handle updates. Default value: Disabled
Provisioning Configuration - Checking	
Interval (minutes)	The interval between polling the provisioning server. If the value is set to 0, then periodic polling is disabled. Enter a value if you want to use polling for checking updates automatically.
Time (hh:mm)	Enter a value to poll the provisioning server at a specific time each day. Leave it empty if not using polling.
NOTIFY check_sync	Possible values: **Disabled**, **Update** or **Reboot**. If disabled is selected, polling (defining specific time/interval for automatic check for new updates) is used. If **Update** is selected, then SIP Notify Check-Sync is used for automatic notification of new updates. Using this method is the optimum way to handle updates. Default value: Disabled
Provisioning Configuration - Server configuration	
Import	Enable. If enabled, this will make automatic update possible if a default firmware file is available.
Provisioning Configuration - Users	
Import	Enable. If enabled, this will make automatic update possible.

Field	*Setting*
Provisioning Configuration - Handset configuration (Only relevant to Spectralink IPDECTServers and Spectralink Virtual IP-DECT Server One)	
Import	Enable. If enabled, this will make automatic update possible if a .ver file and handset configuration files are available.
Provisioning Configuration - Firmware	
Wireless Server (Only relevant to Spectralink IP-DECT Server 200)	Enter name of firmware image file. Must match file name on provisioning server. Leave empty for no firmware download.
Wireless Server (Only relevant to Spectralink IP-DECT Server 400/6500 and Spectralink Virtual IP-DECT Server One)	Enter name of firmware image file. Must match file name on provisioning server. Leave empty for no firmware download. Enable the **Use firmware as default** check box if you want the server firmware as default for all base stations and media resources (recommended).
Wireless Server (Only relevant to Spectralink DECT Server 2500/8000)	Enter name of firmware image file. Must match file name on provisioning server. Leave empty for no firmware download.
IP Base Station (Only relevant to Spectralink DECT Server 2500/8000)	Enter name of firmware image file. Must match file name on provisioning server. Leave empty for no firmware download.
Digital Base Station - RFP6 (Only relevant to Spectralink DECT Server 2500/8000)	Enter name of firmware image file. Must match file name on provisioning server. Leave empty for no firmware download.
Handset - Butterfly	Enter name of firmware image file (-Over-the-Air.bin). Must match file name on provisioning server. Leave empty for no firmware download.
Handset - 75x2, 76x2 and 77x2 series	Enter name of firmware image file (-Over-the-Air.bin). Must match file name on provisioning server. Leave empty for no firmware download.
Handset - 72x2 series	Enter name of firmware image file (-Over-the-Air.bin). Must match file name on provisioning server. Leave empty for no firmware download.
Handset - OEM	Enter name of firmware image file. Must match file name on provisioning server.

Field	*Setting*
	Leave empty for no firmware download.

3 Click **Save**.

Note:

On the Spectralink IP-DECT Server 200/400/6500 and Spectralink Virtual IP-DECT Server One, provisioning for the Firmware, License and Configurations can be handled separately. Each provisioning type can be disabled/enabled individually, have its own provisioning server and/or separate schedules. Furthermore, the Default Server can be used for each individual provisioning type by selecting “Default” as the provisioning method.

Note:

If no provisioning server is configured or obtained, the Spectralink IP-DECT/DECT/Virtual IP-DECT Server cannot use provisioning. Also, configuration and users file import and/or firmware file names must be defined on the Spectralink IP-DECT/DECT/Virtual IP-DECT Server, and the files must be available on the provisioning server.

Automatic Check for New Firmware and Configuration

When a new firmware or configuration is available, the Spectralink IP-DECT/DECT/Virtual IP-DECT Server must download it. In order to do this, the server needs to know when the data is available.

There are two methods supplied for this:

- Periodic polling
- SIP notifications

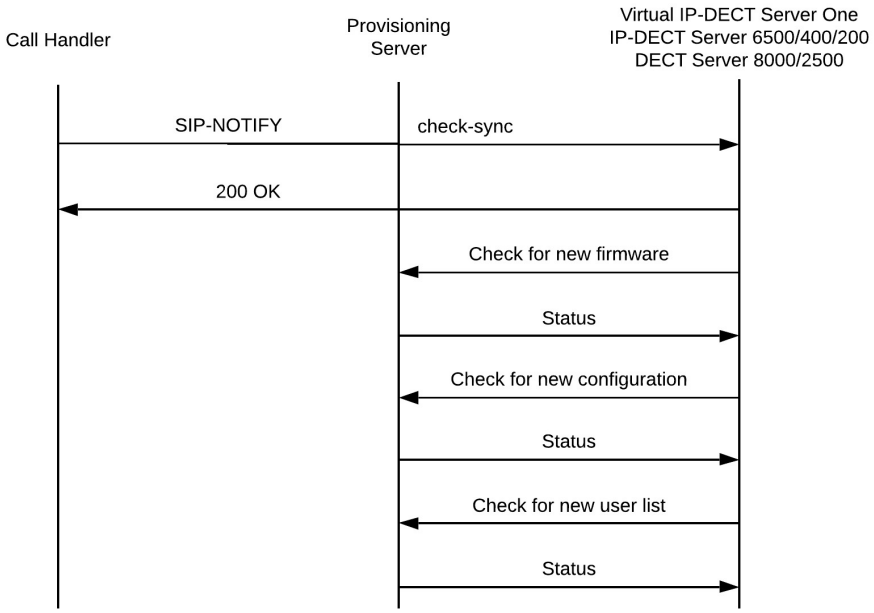
Polling

When polling is selected, the server will automatically initiate a check for updates. The check will be performed at a specified interval or at a specific time.

SIP Notify Check-Sync

The optimum way to handle updates is by notifying the Spectralink IP-DECT/DECT/Virtual IP-DECT Server that updates are available. This is done using SIP NOTIFY method with the event "check-sync".

A "check-sync" event is sent to one of the extensions/usernames handled by the Spectralink IP-DECT/DECT/Virtual IP-DECT Server, and when it is received, the server initiates a check for updates.



Chapter 4: Upgrading Firmware, Configurations and Users

The Spectralink IP-DECT/DECT/Virtual IP-DECT Server automatically downloads firmware, configuration and users from a provisioning server. This assumes that provisioning is enabled on the Spectralink IP-DECT/DECT/Virtual IP-DECT Server. For more information about enabling provisioning, see Enabling Provisioning.

Note:

If no provisioning server is configured or obtained, the Spectralink IP-DECT/DECT/Virtual IP-DECT Server cannot use provisioning. Also, configuration and users file import and/or firmware file names must be defined on the Spectralink IP-DECT/DECT/Virtual IP-DECT Server, and the files must be available on the provisioning server

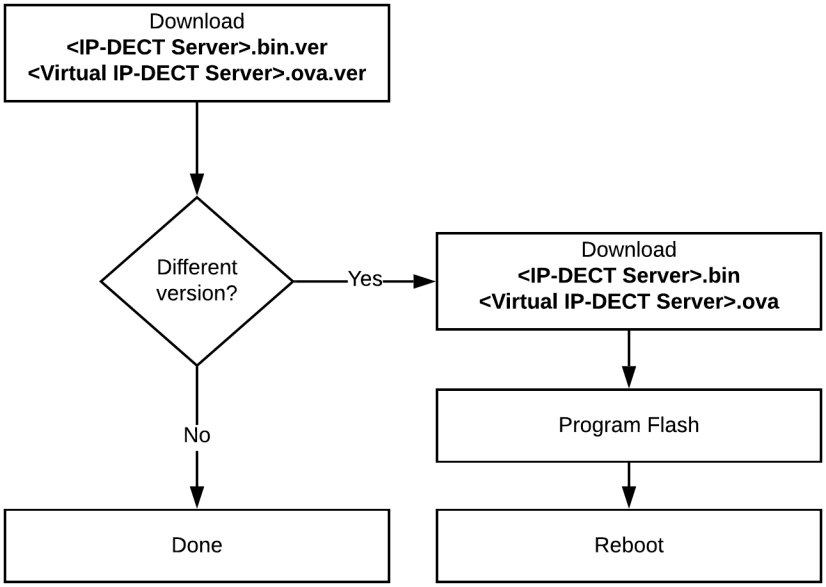
Firmware Update

The firmware must be stored as a file on the provisioning server by the administrator. Together with the firmware file, a firmware version file must be stored by the administrator. The version file is downloaded to determine the version of the firmware without actually downloading the firmware file in order to keep the network load to a minimum.

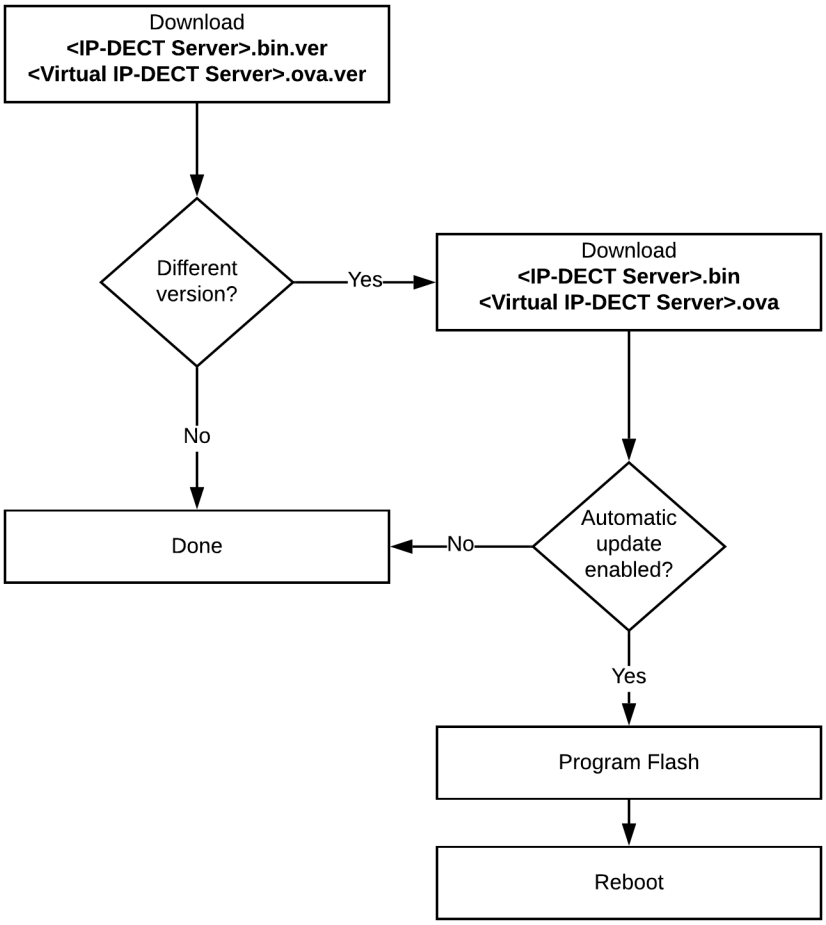
For flexibility, the name of the firmware file is stored in the XML configuration.

Field	*Description*
xxxfirmware.bin/ xxxfirmware.ova/ xxxfirmware.zip	A binary/zip file containing the firmware image.
xxxfirmware.bin.ver/ xxxfirmware.ova.ver/ xxxfirmware.zip.ver	A text file with text describing the current firmware version. E.g. PCS17Ea 58478

Example of provisioning of server firmware:

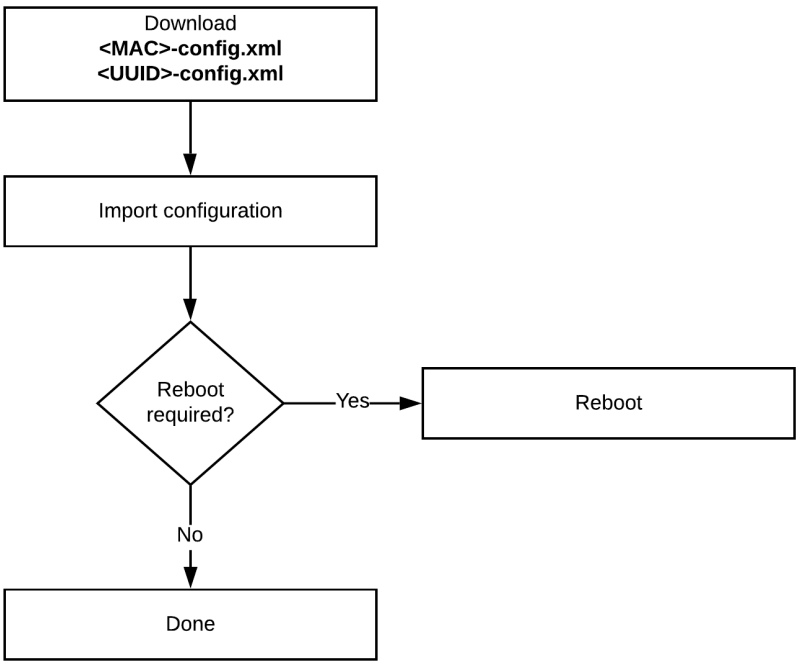


Example of provisioning of firmware for base stations, media resources and handsets with Enhanced Provisioning License installed:



The firmware version specified in the ".ver" file is compared with the firmware version that is currently executed. To avoid problems with different firmware versions being executed and program flash, the Spectralink IP-DECT/DECT/Virtual IP-DECT Server is rebooted immediately after the firmware is updated.

Server Configuration Update



The XML configuration file is downloaded and imported into the Spectralink IP-DECT/DECT/Virtual IP-DECT Server configuration by replacing the existing data. This guarantees that the data located on the provisioning server and on the Spectralink IP-DECT/DECT/Virtual IP-DECT Server are identical.

User List Update

The users are stored in a separate "<MAC>-users.xml"/"<UUID>-users.xml" file.

Note:

Changes in the "<MAC/UUID>-users.xml" file do not require a reboot of the system.

- In an existing Spectralink IP-DECT/Virtual IP-DECT Server installation, the user list file can be retrieved from the web-based Administration Page.

  Each record must have at least a username field.

  For an example of a user.xml file, see Appendix D: User XML File Example.
- In a Spectralink DECT Server installation, the user list file can be retrieved from a service report.

  Each record must have at least a local number field.

  For an example of a user.xml file, see Appendix D: User XML File Example.

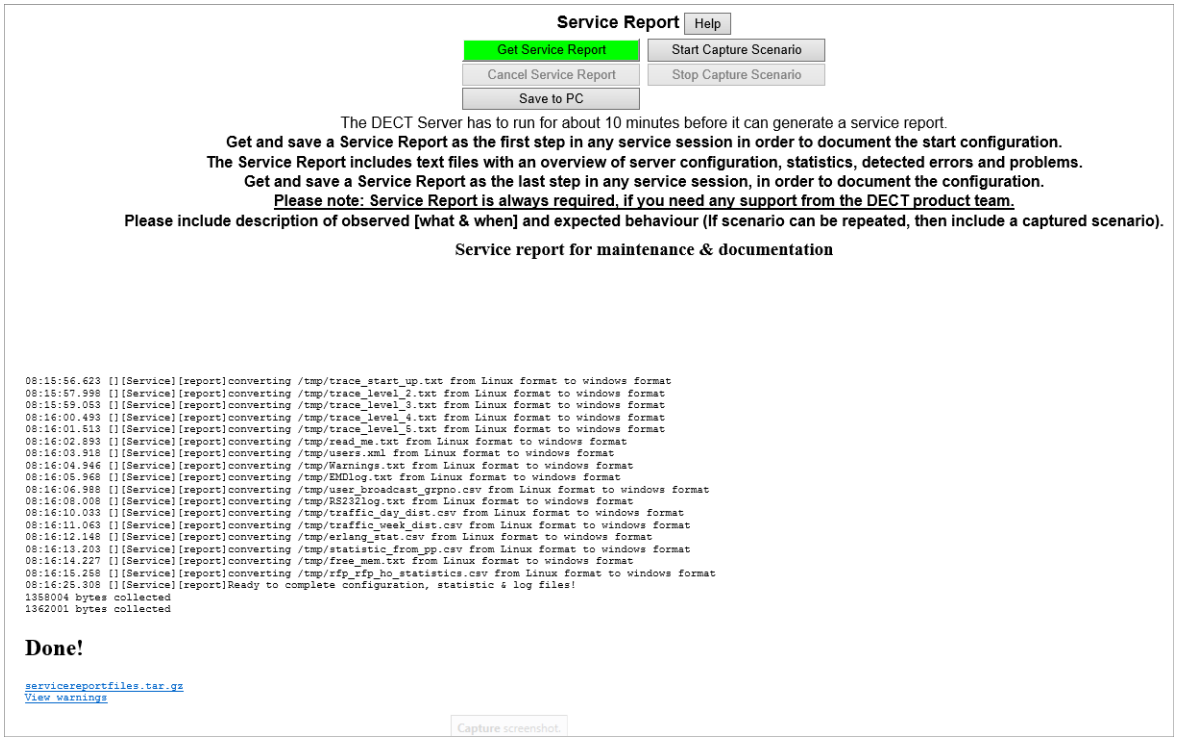
To Retrieve XML Files

Spectralink IP-DECT Server 200/400/6500 and Spectralink Virtual IP-DECT Server One

1. From the web-based Administration Page, click **Users**, and then click **Import/Export**.
2. Under **Export user data**, click **Save** to save the file in XML format.
3. Save the file in a relevant place.

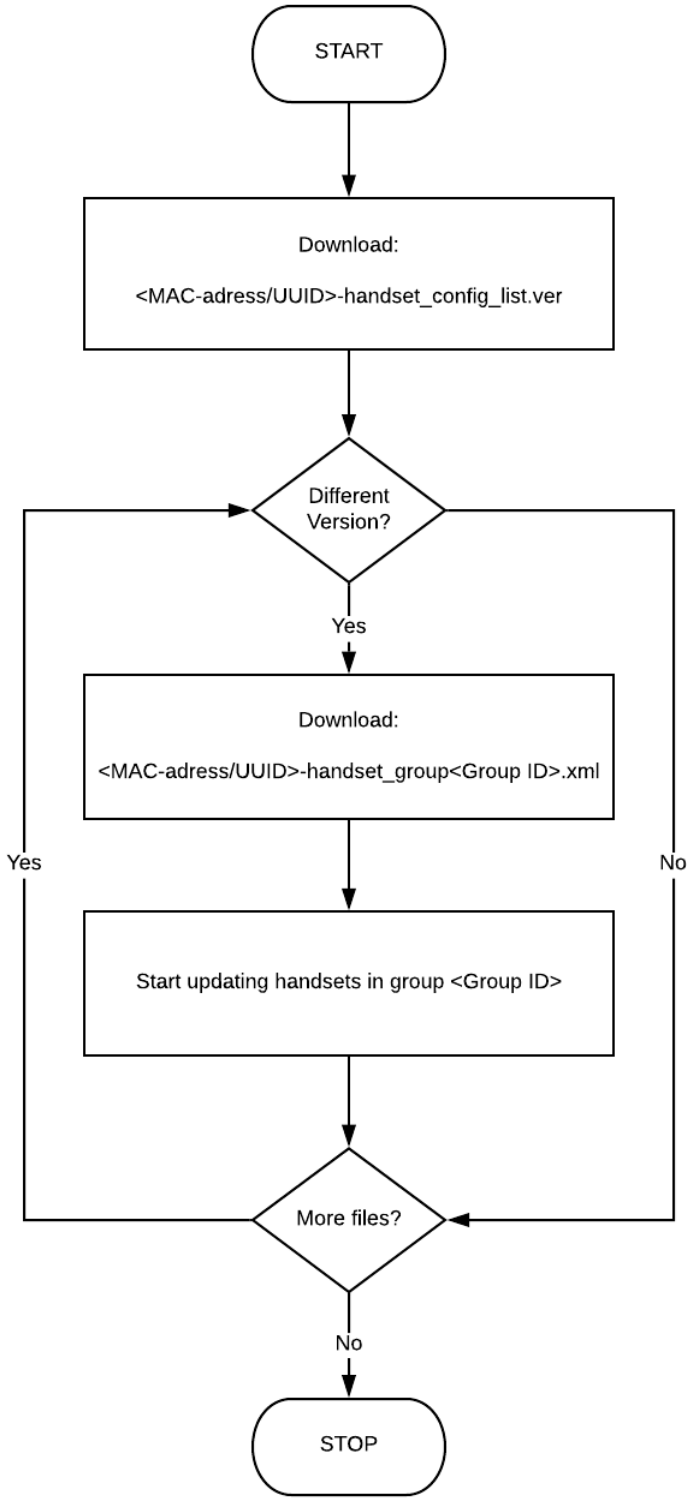
Spectralink DECT Server 2500/8000

1. From the web-based Administration Page, click **Diagnose**, and then click **Service Report**.
2. Click **Get Service Report**. The service report is created.



3. When done, click the link **servicereportfiles.tar.gz**, and save the file in a relevant place.

Handset Configuration Update



The XML configuration file is downloaded and imported into the Spectralink IP-DECT/Virtual IP-DECT Server and replaces the existing data. This guarantees that the data located on the provisioning server and on the Spectralink IP-DECT/Virtual IP-DECT Server are identical.

The handset configuration version specified in the ".ver" file is compared with the handset configuration version that is currently executed.

Note:

When uploading a handset configuration file into the Spectralink IP-DECT/Virtual IP-DECT Server, the configuration group (Group ID) is the unique identifier.

The version number determines whether the configuration XML file is different from the existing file. If version number is different, the new handset configuration file is automatically uploaded to the handsets with matching group IDs.

Handset configuration not mentioned in the configuration XML file will remain unchanged. Therefore, be aware that when changing configuration groups - then if settings are set by the previous configuration group and not set for the new configuration group, the old setting will remain in the handset for that individual user. If some features mentioned in the configuration XML file are not supported in the handset, these features will be ignored.

Appendix A: Configuration Parameters

Please see the entire configuration document starting on the next page.

Appendix B: Server XML File Examples

Examples of server configuration XML files.

Spectralink IP-DECT Server 200

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<config>
    <network>
       <bootproto>dhcp</bootproto>
    </network>
    <suota>
       <auto>true</auto>
       <incharger>true</incharger>
       <load>high</load>
       <start_time>immediately</start_time>
    </suota>
    <provisioning>
       <check>
          <check_sync>disabled</check_sync>
          <interval>60</interval>
          <time>00:00</time>
       </check>
       <config>
          <check>true</check>
       </config>
       <cota>
          <check>true</check>
       </cota>
       <firmware>
          <kws>kws.bin</kws>
          <pp14208700>pp14208700.bin</pp14208700>
          <pp14225100>pp14225100.bin</pp14225100>
          <pp14225110>pp14225110.bin</pp14225110>
          <pp14225190>pp14225190.bin</pp14225190>
       </firmware>
       <server>
          <method>static</method>
          <url>example.com</url>
       </server>
       <users>
          <check>true</check>
       </users>
    </provisioning>
</config>
```

Spectralink IP-DECT Server 6500

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<config>
    <network>
       <bootproto>dhcp</bootproto>
    </network>
    <mr>
       <auto>
          <enable>true</enable>
          <force>false</force>
          <start_time>00:00</start_time>
       </auto>
    </mr>
    <rfp>
       <auto>
          <enable>true</enable>
          <force>false</force>
          <start_time>immediately</start_time>
       </auto>
    </rfp>
    <suota>
       <auto>true</auto>
       <incharger>true</incharger>
       <load>high</load>
       <start_time>immediately</start_time>
    </suota>
    <provisioning>
       <check>
          <check_sync>disabled</check_sync>
          <interval>60</interval>
          <time>00:00</time>
       </check>
       <config>
          <check>true</check>
       </config>
       <cota>
          <check>true</check>
       </cota>
       <firmware>
          <kws>kws.bin</kws>
          <default_kws>true</default_kws>
          <pp14208700>pp14208700.bin</pp14208700>
          <pp14225100>pp14225100.bin</pp14225100>
          <pp14225110>pp14225110.bin</pp14225110>
          <pp14225190>pp14225190.bin</pp14225190>
       </firmware>
       <server>
          <method>static</method>
          <url>example.com</url>
       </server>
```

```
        <users>
           <check>true</check>
        </users>
    </provisioning>
</config>
```

Spectralink Virtual IP-DECT Server One

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<config>
    <network>
       <bootproto>dhcp</bootproto>
    </network>
    <mr>
       <auto>
          <enable>true</enable>
          <force>false</force>
          <start_time>00:00</start_time>
       </auto>
    </mr>
    <rfp>
       <auto>
          <enable>true</enable>
          <force>false</force>
          <start_time>immediately</start_time>
       </auto>
    </rfp>
    <suota>
       <auto>true</auto>
       <incharger>true</incharger>
       <load>high</load>
       <start_time>immediately</start_time>
    </suota>
    <provisioning>
       <check>
          <check_sync>disabled</check_sync>
          <interval>60</interval>
          <time>00:00</time>
       </check>
       <config>
          <check>true</check>
       </config>
       <cota>
          <check>true</check>
       </cota>
       <firmware>
          <kws>ipdect.ova</kws>
          <default_kws>true</default_kws>
          <pp14208700>pp14208700.bin</pp14208700>
          <pp14225100>pp14225100.bin</pp14225100>
```

```
            <pp14225110>pp14225110.bin</pp14225110>
            <pp14225190>pp14225190.bin</pp14225190>
         </firmware>
         <server>
            <method>static</method>
            <url>example.com</url>
         </server>
         <users>
            <check>true</check>
         </users>
      </provisioning>
   </config>
```

Spectralink IP-DECT/Virtual IP-DECT Server

Two example XML files are provided—when using merge and without using merge.

Note:

To merge server configurations, you must manually append the root element (<config>) in the server configuration file with the following attribute:

```
<config merge_type="merge">
```

If there is no merge attribute or wrong/miss-spelled attribute value, all other configurations will be overwritten with default values as is the case without the attribute (the root element <config> alone).

In the following are a few examples of how the provisioning works differently – with, or without, the merge_type=“merge“ feature. The first examples show how different settings for SIP protocol can be changed using this methodology. The last example shows how to add a license using the merge feature.

Note:

In the below examples:

- All the text in black are the default values in the Spectralink IP-DECT/Virtual IP-DECT Server.
- All the text in green are settings that has been changed before, with either provisioning, through web-based Administration Page or OAM REST API.
- All the text in blue are settings that are changed by provisioning.

The shown list of SIP settings is just a small portion of the whole configuration in the Spectralink IP-DECT/Virtual IP-DECT Server.

Provisioning without Using Merge

Below is an example of how the settings are affected by using provisioning without the merge feature.

First, we take a look at how some settings are in the Spectralink IP-DECT Server/ Spectralink Virtual IP-DECT Server before provisioning:

Settings prior to provisioning

sip.allow_auto_offhook=false
sip.allow_internal_routing=false
sip.tls_allow_insecure=true
sip.blacklist_timeout=20
sip.nat_keepalive=0
sip.nat_keepalive_interval=40
sip.callwaiting=true
sip.dnsmethod=arecord
sip.dtmf.duration=300
sip.dtmf.info=false
sip.dtmf.rtp=false
sip.dtmf.rtp_payload_type=96

Note: The orange text indicates settings that have already been changed from default values (either via web-based Administration Page, provisioning, or OAM REST API).
The black text are default values.

Now we have an XML file with some changes we want to provision to the server. There are, however, three settings that have been changed before that are not included in this XML file.

These settings are:

sip.nat_keepalive_interval=40

sip.dtmf.duration=300

sip.dtmf.rtp=false

Hence – without the merge feature, these three settings will revert to default values upon provisioning.

Below is a comparison on how the settings are before and after provisioning in the Spectralink IP-DECT/Virtual IP-DECT Server.

XML file with changes

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<config>
<sip>
    <tls_allow_insecure>false</tls_allow_insecure>
       <blacklist_timeout>40</blacklist_timeout>
    <nat_keepalive>1</nat_keepalive>
```

XML file with changes

```
</sip>
</config>
```

Note: Only the settings defined in this XML file will be updated in the Spectralink IP-DECT/Virtual IP-DECT Server. All other settings will be reverted to default values.

Settings prior to provisioning	*Settings after provisioning (without "Merge")*
sip.allow_auto_offhook=false	sip.allow_auto_offhook=false
sip.allow_internal_routing=false	sip.allow_internal_routing=false
sip.tls_allow_insecure=true	sip.tls_allow_insecure=false
sip.blacklist_timeout=20	sip.blacklist_timeout=40
sip.nat_keepalive=0	sip.nat_keepalive=1
sip.nat_keepalive_interval=40	sip.nat_keepalive_interval=30
sip.callwaiting=true	sip.callwaiting=true
sip.dnsmethod=arecord	sip.dnsmethod=arecord
sip.dtmf.duration=300	sip.dtmf.duration=270
sip.dtmf.info=false	sip.dtmf.info=false
sip.dtmf.rtp=false	sip.dtmf.rtp=true
sip.dtmf.rtp_payload_type=96	sip.dtmf.rtp_payload_type=96
Note: The orange text are settings that have been changed before, from their default values.	**Note:** The green text are the changes we requested by using the config.xml file. **Note:** All other settings have changed to their default values.

Provisioning when Using Merge

Below is an example of how the settings are affected by using provisioning with the merge feature.

First, we take a look at how some settings are in the Spectralink IP-DECT/Virtual IP-DECT Server before the provisioning:

Settings prior to provisioning

sip.allow_auto_offhook=false
sip.allow_internal_routing=false
sip.tls_allow_insecure=true
sip.blacklist_timeout=20
sip.nat_keepalive=0
sip.nat_keepalive_interval=40
sip.callwaiting=true
sip.dnsmethod=arecord
sip.dtmf.duration=300

Settings prior to provisioning

sip.dtmf.info=false
sip.dtmf.rtp=false
sip.dtmf.rtp_payload_type=96

Note: The orange text indicates settings that have already been changed from default values (either via web-based Administration Page, provisioning, or OAM REST API).

The black text are default values.

Now we have an XML file with some changes we want to provision to the server.

Note:

Notice how the attribute **merge_type="merge"** has been added to the root element <config> (see below).

XML file with changes

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<config merge_type="merge">
<sip>
    <tls_allow_insecure>false</tls_allow_insecure>
    <blacklist_timeout>40</blacklist_timeout>
    <nat_keepalive>1</nat_keepalive>
</sip>
</config>
```

Note: Only the settings defined in this XML file will be updated in the Spectralink IP-DECT/Virtual IP-DECT Server.

All other settings will retain their values, whether they have been changed before from their default values or not.

Below is a comparison on how the settings are before and after provisioning, with the merge feature.

Settings prior to provisioning	*Settings after provisioning (without "Merge")*
sip.allow_auto_offhook=false	sip.allow_auto_offhook=false
sip.allow_internal_routing=false	sip.allow_internal_routing=false
sip.tls_allow_insecure=true	sip.tls_allow_insecure=false
sip.blacklist_timeout=20	sip.blacklist_timeout=40
sip.nat_keepalive=0	sip.nat_keepalive=1
sip.nat_keepalive_interval=40	sip.nat_keepalive_interval=40
sip.callwaiting=true	sip.callwaiting=true
sip.dnsmethod=arecord	sip.dnsmethod=arecord
sip.dtmf.duration=300	sip.dtmf.duration=300
sip.dtmf.info=false	sip.dtmf.info=false

Settings prior to provisioning	*Settings after provisioning (without "Merge")*
sip.dtmf.rtp=false sip.dtmf.rtp_payload_type=96	sip.dtmf.rtp=false sip.dtmf.rtp_payload_type=96
Note: The orange text are settings that have been changed before, from their default values.	**Note:** The green text are the changes we requested by using the config.xml file and the green text are all the changes that were there before.

Adding Licenses When using Merge

Below is an example of three, comma separated, license keys in the Spectralink IP-DECT/Virtual IP-DECT Server.

Licenses in comma seperated string

```
license=11111AAAA11111,22222BBBB22222,33333CCCC33333
```

Note: The licenses are all in the same setting as a long, comma separated, string. By using the merge feature, it is simple to add a license to the existing set of licenses.

Below is an example of how we can add one license key to the existing set of licenses by using the merge function. Notice how the attribute merge_type="merge" has been added to the root element <config>

Adding license using "Merge"

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<config merge_type="merge">
<license>
    44444DDDD44444
</license>
</config>
```

Note: Provisioning licenses to a slave server is done in the same manner by adding the <slave></slave> tag:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<config merge_type="merge">
<slave>
    <license>
        44444DDDD44444
    </license>
</slave>
</config>
```

Below is a comparison on how the license key would be in the Spectralink IP-DECT/Virtual IP-DECT Server by using provisioning with or without the merge feature, respectively.

Provisioning using "Merge"	*Provisioning without using "Merge"*
license=11111AAAA11111,22222BBBB22222, 33333CCCC33333,44444DDDD44444	license=44444DDDD44444
Note: The string contains all the license keys that where before the provisioning, plus the one added by using the config.xml file.	**Note:** The string only contains the provisioned license key. All the keys that were there before the provisioning have been overwritten

Spectralink DECT Server 8000

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<config>
    <network>
       <bootproto>dhcp</bootproto>
    </network>
    <rfp>
       <auto>
          <enable>true</enable>
          <force>false</force>
          <start_time>immediately</start_time>
          <enable_digital>true</enable_digital>
          <force_digital>false</force_digital>
          <start_time_digital>immediately</start_time_digital>
       </auto>
    </rfp>
    <suota>
       <auto>true</auto>
       <incharger>true</incharger>
       <load>high</load>
       <start_time>immediately</start_time>
    </suota>
    <provisioning>
       <check>
          <check_sync>disabled</check_sync>
          <interval>60</interval>
          <time>00:00</time>
       </check>
       <config>
          <check>true</check>
       </config>
       <firmware>
          <kws>kws.bin</kws>
          <rfp>rfp.bin</rfp>
          <rfp6>rfp6.bin</rfp6>
          <pp14208700>pp14208700.bin</pp14208700>
          <pp14225100>pp14225100.bin</pp14225100>
          <pp14225110>pp14225110.bin</pp14225110>
          <pp14225190>pp14225190.bin</pp14225190>
```

```
        </firmware>
        <server>
           <method>static</method>
           <url>example.com</url>
        </server>
        <users>
           <check>true</check>
        </users>
     </provisioning>
  </config>
```

Appendix C: User XML File Reference

Parameter	*Description*	*Values*	*Server*
user.ipei	The DECT IPEI of the users handset	A valid IPEI in the format XXXXXXXXXXXX or empty.	200 400 6500 Virtual Server One 2500 8000
user.configgroup	The handset confguration group ID.	Max number of configuration groups allowed: 99 Accepted values for Group ID: 1 - 9999	200 400 6500 Virtual Server One
user.accesscode	Access code required for subscribing the handset to the system	A number with 0-8 digits.	200 400 6500 Virtual Server One 2500 8000
user.standbytext	The text displayed in the handset when idle	A text string.	200 400 6500 Virtual Server One 2500 8000
user.username	The username/extension used when communicating with the SIP server	A valid SIP username. **Note:** Max. length of a SIP username is 63 characters. Following characters are allowed in the configuration file: A-Z a-z 0-9 -_.!~*'()&=+$,;?/ **Note:** This field is mandatory on a Spectralink IP-DECT Server 400/6500.	200 400 6500 Virtual Server One 2500 8000
user.secondaryusername	The secondary username used to make voice calls if connection to SIP PBX is lost.	A valid, globally unique username. **Note:** Max. length of a SIP username is 63 characters. Following characters are allowed in the configuration file: A-Z	200 400 6500 Virtual Server One

Parameter	*Description*	*Values*	*Server*
		a-z 0-9 -_.!~*'()&=+$,;?/	
user.domain	The SIP domain for the user; used if the user has a different domain than the system default	A valid domain name.	200 400 6500 Virtual Server One 2500 8000
user.displayname	The display name sent with SIP requests.	A valid SIP display name.	200 400 6500 Virtual Server One 2500 8000
user.authuser	Username for authenticating the user.	A valid SIP authentication username. **Note:** Max. length of a SIP username is 63 characters. Following characters are allowed in the configuration file: A-Z a-z 0-9 -_.!~*'()&=+$,;?/	200 400 6500 Virtual Server One 2500 8000
user.authpassword	Password for authenticating the user.	A valid SIP password. **Note:** Max. length of a SIP user password is 35 characters.	200 400 6500 Virtual Server One 2500 8000
user.disabled	Indicates if the user is disabled and unable to make calls.	true: user is disabled. false: user is enabled.	200 400 6500 Virtual Server One 2500 80
user.lid	Line IDentifier is only supposed to be used with analogue interface cards. xxyyzzzz xx is shelf number yy is card number in shelf	xx - (01 – 08) yy – (01-08) zzzz – (0000 - 0015) empty or leave out if user is not assigned to an analogue interface card.	2500 8000

Parameter	*Description*	*Values*	*Server*
	zzzz is line number on analogue card		
user.linetype	Type of interface the handset is subscribed to.	D: DECT to DECT S: SIP interface A: Analogue interface	2500 8000
user.presentationtext	Presentation text can be shown on the display of the handset (only for handsets subscribed to an analogue interface) which makes a local call. (system_event.internal _clip_presentation_ab)	true: show presentation text false: Do NOT show presentation text. Default: false	2500 8000
user.name	Typically the name of the function or user who is using the handset.	A text string	2500 8000
user.localno	Localno is typically the same as user-username. But in case of difference the localnumber (DN) can be used for addressing the handset when sending text messages.	Max. 12 characters. **Note:** This field is mandatory on a Spectralink DECT Server 2500/8000.	2500 8000
user.tx_gain	Adding gain to the handsets transmit path. Not possible to add gain for DECT to DECT users.	From -12 to 12 dB Default: 0	2500 8000
user.rx_gain	Adding gain to the handsets receive path. Not possible to add gain for DECT to DECT users.	From -12 to 12 dB Default: 0	2500 8000
user.cucmdevicename	Requires a CUCM License. Unique ID representing the CUCM device name.	A valid device name starting with SEP. E.g. **SEP123456789ABC**	200 400 6500 Virtual Server One 2500 8000
user.adminrights	Indicates if the user has administration rights to replace a broken handset.	true: user has administration rights. false: user does not have administration rights.	200 400 6500 Virtual Server One

Appendix D: User XML File Examples

Spectralink IP-DECT Server 200/400/6500 and Virtual IP-DECT Server One

Example 1

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<users>
    <user>
       <ipei>00077 0000001</ipei>
       <standbytext>9997</standbytext>
       <username>9997</username>
    </user>
    <user>
       <ipei>00077 0000002</ipei>
       <standbytext>9998</standbytext>
       <username>9998</username>
       <secondaryusername>Solveig</secondaryusername>
       <displayname>Solveig Rank</displayname>
    </user>
    <user>
       <ipei>00077 0000003</ipei>
       <accesscode>1234</accesscode>
       <standbytext>9999</standbytext>
       <username>9999</username>
       <displayname>Ole Olsen</displayname>
       <disabled>true</disabled>
       <cucmdevicename>SEP123456789ABC</cucmdevicename>
       <adminrights>true</adminrights>
    </user>
</users>
```

Example 2

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<users>
    <user>
       <username>Srank</username>
    </user>
    <user>
       <ipei>00077 000011</ipei>
       <configgroup>100</configgroup>
       <username>Solveig</username>
    </user>
    <user>
       <ipei>00077 000012</ipei>
       <standbytext>9990</standbytext>
       <username>John</username>
```

```
        <secondaryusername>9990</secondaryusername>
        <displayname>John</displayname>
        <adminrights>true</adminrights>
    </user>
</user>
```

Spectralink DECT Server 2500/8000

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<users>
    <user>
        <ipei>00077 0000001</ipei>
        <standbytext>9997</standbytext>
        <username>9997</username>
        <localno>9997</localno>
    </user>
    <user>
        <ipei>00077 0000002</ipei>
        <standbytext>9998</standbytext>
        <username>9998</username>
        <localno>9998</localno>
        <displayname>Solveig Rank</displayname>
    </user>
    <user>
        <ipei>00077 0000003</ipei>
        <accesscode>1234</accesscode>
        <standbytext>9999</standbytext>
        <username>9999</username>
        <localno>9999</localno>
        <displayname>Ole Olsen</displayname>
        <disabled>true</disabled>
        <cucmdevicename>SEP123456789ABC</cucmdevicename>
    </user>
</users>
```

Appendix E: Handset Configuration

XML File Example

```
<cota>
    <info>
       <group>100</group>
       <version>1</version>
    </info>
    <data>
       <ringing_volume>
          <volume>7</volume>
       </ringing_volume>
       <ringing_tone>
          <tone>6</tone>
       </ringing_tone>
       <alert_volume>
          <volume>2</volume>
       </alert_volume>
       <vibrate>
          <active>true</active>
       </vibrate>
       <silent_mode>
          <active>false</active>
          <settings>
             <display_flashing>true</display_flashing>
             <vibrate>true</vibrate>
             <short_ring>false</short_ring>
          </settings>
       </silent_mode>
       <auto_key_lock>
          <active>false</active>
       </auto_key_lock>
       <backlight>
          <timeout_state>off</timeout_state>
          <delay>5</delay>
       </backlight>
       <auto_answer>
          <active>false</active>
          <when_to_answer>
             <value>after_first_ring</value>
             <after_first_ring>
                <audio_options>internal</audio_options>
                <also_in_charger>false</also_in_charger>
             </after_first_ring>
          </when_to_answer>
       </auto_answer>
       <out_of_range>
          <active>false</active>
```

```
      <notifications>tone_and_icon</notifications>
   </out_of_range>
   <show_missed_calls>
      <active>true</active>
   </show_missed_calls>
   <absent_in_charger>
      <active>false</active>
   </absent_in_charger>
   <bluetooth>
      <active>false</active>
      <settings>
         <auto_connect>false</auto_connect>
         <headset_volume>4</headset_volume>
      </settings>
   </bluetooth>
   <language>
      <set>english</set>
   </language>
   <headset>
      <alerting>false</alerting>
      <volume>4</volume>
   </headset>
   <hearing_aid_compatibility>
      <active>false</active>
   </hearing_aid_compatibility>
   <microphone_gain>
      <value>0_dB</value>
   </microphone_gain>
   <ear_gain>
      <value>0_dB</value>
   </ear_gain>
   <longkey>
      <value>speed_dial</value>
      <individual_settings>
         <key_0>speed_dial</key_0>
         <key_1>speed_dial</key_1>
         <key_2>speed_dial</key_2>
         <key_3>speed_dial</key_3>
         <key_4>speed_dial</key_4>
         <key_5>speed_dial</key_5>
         <key_6>speed_dial</key_6>
         <key_7>speed_dial</key_7>
         <key_8>speed_dial</key_8>
         <key_9>speed_dial</key_9>
      </individual_settings>
   </longkey>
   <economy_mode>
      <active>true</active>
   </economy_mode>
   <alarm_key>
      <state>send_msf</state>
```

```
      <speed_dial>
         <loudspeaker>false</loudspeaker>
      </speed_dial>
   </alarm_key>
   <rolling_tasks>
      <time_in_sec>5</time_in_sec>
      <indication_interval>1</indication_interval>
   </rolling_tasks>
   <auto_login>
      <active>false</active>
   </auto_login>
   <time_and_date>
      <time_format>24_hour</time_format>
      <date_format>DD/MM/YYYY</date_format>
   </time_and_date>
   <minimum_ring_time>
      <period>off</period>
   </minimum_ring_time>
   <compatibility>
      <cs1k>false</cs1k>
      <extended_location_registration>true</extended_location_registr
      ation>
   </compatibility>
   <handover_profile>
      <profile>normal</profile>
   </handover_profile>
   <local_tones>
      <country>germany</country>
   </local_tones>
   <message_list_content>
      <show>text</show>
   </message_list_content>
   <noisy_environment>
      <active>false</active>
   </noisy_environment>
   <flash_led_on_call>
      <active>false</active>
   </flash_led_on_call>
   <msf_tones_in_a_call>
      <sound>normal</sound>
      <vibrate>false</vibrate>
   </msf_tones_in_a_call>
   <dect_security>
      <monitoring>
         <active>false</active>
      </monitoring>
   </dect_security>
   <standby_text>
      <value>Spectralink</value>
   </standby_text>
   <logo>
```

```
      <type>standard</type>
   </logo>
   <shortcut>
      <phonebook_add_name>false</phonebook_add_name>
      <auto_answer>false</auto_answer>
      <auto_key_lock>false</auto_key_lock>
      <backlight>false</backlight>
      <headset>false</headset>
      <message_inbox>false</message_inbox>
      <message_new>false</message_new>
      <message_templates>false</message_templates>
      <ringing_tone>false</ringing_tone>
      <silent_mode>false</silent_mode>
      <status>false</status>
      <vibrate>false</vibrate>
      <task_list>false</task_list>
      <noisy_environment>false</noisy_environment>
      <phonebook>false</phonebook>
      <external_services>false</external_services>
      <sign_in_out>true</sign_in_out>
      <screen_lock>false</screen_lock>
      <lone_worker_mode>true</lone_worker_mode>
   </shortcut>
   <power_off_password>
      <password></password>
   </power_off_password>
   <in_call_volume>
      <volume>3</volume>
   </in_call_volume>
   <tear_off_alarm>
      <state>off</state>
      <prealarm>false</prealarm>
      <speed_dial>
         <loudspeaker>false</loudspeaker>
      </speed_dial>
      <indication>false</indication>
      <prealarm_indication>false</prealarm_indication>
      <prealarm_4x>false</prealarm_4x>
      <trigger_time>0</trigger_time>
      <prealarm_trigger_time>0</prealarm_trigger_time>
   </tear_off_alarm>
   <running_detector_alarm>
      <state>off</state>
      <prealarm>false</prealarm>
      <speed_dial>
         <loudspeaker>false</loudspeaker>
      </speed_dial>
      <indication>false</indication>
      <prealarm_indication>false</prealarm_indication>
      <prealarm_4x>false</prealarm_4x>
      <trigger_time>0</trigger_time>
```

```
      <prealarm_trigger_time>0</prealarm_trigger_time>
   </running_detector_alarm>
   <man_down_alarm>
      <state>off</state>
      <prealarm>false</prealarm>
      <speed_dial>
         <loudspeaker>false</loudspeaker>
      </speed_dial>
      <indication>false</indication>
      <prealarm_indication>false</prealarm_indication>
      <prealarm_4x>false</prealarm_4x>
      <trigger_time>0</trigger_time>
      <prealarm_trigger_time>0</prealarm_trigger_time>
   </man_down_alarm>
   <screen_lock>
      <active>false</active>
      <auto_lock_time>18</auto_lock_time>
      <unlock_attempts>3</unlock_attempts>
      <minimum_pin_length>6</minimum_pin_length>
      <pin></pin>
   </screen_lock>
   <menu_main>
      <phonebook>true</phonebook>
      <call_register>true</call_register>
      <messages>true</messages>
      <msf_functions>true</msf_functions>
      <external_services>true</external_services>
      <presence>true</presence>
      <status>true</status>
      <settings>true</settings>
   </menu_main>
   <menu_phonebook>
      <find>true</find>
      <add>true</add>
      <speed_dial>true</speed_dial>
      <delete>true</delete>
   </menu_phonebook>
   <menu_call_register>
      <incoming>true</incoming>
      <outgoing>true</outgoing>
      <missed>true</missed>
      <delete>true</delete>
   </menu_call_register>
   <menu_messages>
      <new>true</new>
      <inbox>true</inbox>
      <outbox>true</outbox>
      <erase>true</erase>
      <templates>true</templates>
      <task>true</task>
   </menu_messages>
```

```
<menu_status>
   <silent_mode>true</silent_mode>
   <headset>true</headset>
   <auto_answer>true</auto_answer>
   <economy_mode>true</economy_mode>
   <battery>true</battery>
   <ringing_tone>true</ringing_tone>
   <ringing_volume>true</ringing_volume>
   <rssi>true</rssi>
   <survey>true</survey>
   <general_information>true</general_information>
</menu_status>
<menu_settings>
   <ringing_volume>true</ringing_volume>
   <ringing_tone>true</ringing_tone>
   <alert_volume>true</alert_volume>
   <vibrate>true</vibrate>
   <silent_mode>true</silent_mode>
   <auto_key_lock>true</auto_key_lock>
   <backlight>true</backlight>
   <auto_answer>true</auto_answer>
   <out_of_range>true</out_of_range>
   <missed_calls>true</missed_calls>
   <absent_in_charger>true</absent_in_charger>
   <bluetooth>true</bluetooth>
   <advanced>true</advanced>
</menu_settings>
<menu_backlight>
   <on_off>true</on_off>
   <settings>true</settings>
</menu_backlight>
<menu_silent_mode>
   <on_off>false</on_off>
   <settings>true</settings>
</menu_silent_mode>
<menu_auto_answer>
   <on_off>true</on_off>
   <settings>true</settings>
</menu_auto_answer>
<menu_out_of_range>
   <on_off>true</on_off>
   <settings>true</settings>
</menu_out_of_range>
<menu_advanced>
   <language>true</language>
   <headset>true</headset>
   <hearing_aid_compatibility>true</hearing_aid_compatibility>
   <microphone_gain>true</microphone_gain>
   <long_key>true</long_key>
   <economy_mode>true</economy_mode>
   <alarms>true</alarms>
```

```
            <master_handset>true</master_handset>
            <rolling_tasks>true</rolling_tasks>
            <login>true</login>
            <time_and_date>true</time_and_date>
            <minimum_ring_time>true</minimum_ring_time>
            <compatibility>true</compatibility>
            <handover_profile>true</handover_profile>
            <local_tones>true</local_tones>
            <message_list_content>true</message_list_content>
            <noisy_environment>true</noisy_environment>
            <flash_led_on_call>true</flash_led_on_call>
            <msf_tones_in_a_call>true</msf_tones_in_a_call>
            <dect_security>true</dect_security>
            <screen_lock>true</screen_lock>
            <echo_canceller>true</echo_canceller>
         </menu_advanced>
         <menu_headset>
            <on_off>true</on_off>
            <settings>true</settings>
         </menu_headset>
         <menu_long_key>
            <all>true</all>
            <individual>true</individual>
         </menu_long_key>
         <menu_long_key_individual>
            <key_0>true</key_0>
            <key_1>true</key_1>
            <key_2>true</key_2>
            <key_3>true</key_3>
            <key_4>true</key_4>
            <key_5>true</key_5>
            <key_6>true</key_6>
            <key_7>true</key_7>
            <key_8>true</key_8>
            <key_9>true</key_9>
         </menu_long_key_individual>
         <menu_alarms>
            <alarm_key>true</alarm_key>
            <tear_off>true</tear_off>
            <running_detector>true</running_detector>
            <man_down>true</man_down>
         </menu_alarms>
         <menu_screen_lock>
            <on_off>true</on_off>
            <settings>true</settings>
         </menu_screen_lock>
         <echo_canceller>
            <active>false</active>
         </echo_canceller>
      </data>
   </cota>
```

XML File-Hidden Menu Example

Functionality in the menu_ elements can be hidden, e.g. menu_main, menu_advanced, menu_settings etc. When hiding a setting, the setting is locked at the same time. If not hiding a setting, the setting can be edited by the user.

To hide functionality in the handset menu, the relevant data string must contain the following attribute: "**false**".

In the example below (GROUP101 VERSION1), the menu setting **ringing volume** is set to **false** and will not be visible in the handset menu. The ringing volume will have the locked value: 3

```
<cota>
    <info>
       <group>101</group>
       <version>1</version>
    </info>
    <data>
       <ringing_volume>
          <volume>3</volume>
       </ringing_volume>
       <menu_settings>
          <ringing_volume>false</ringing_volume>
          <ringing_tone>true</ringing_tone>
          <alert_volume>true</alert_volume>
          <vibrate>true</vibrate>
          <silent_mode>true</silent_mode>
          <auto_key_lock>true</auto_key_lock>
          <backlight>true</backlight>
          <auto_answer>true</auto_answer>
          <out_of_range>true</out_of_range>
          <missed_calls>true</missed_calls>
          <absent_in_charger>true</absent_in_charger>
          <bluetooth>true</bluetooth>
          <advanced>true</advanced>
       </menu_settings>
    </data>
</cota>
```

*****END OF DOCUMENT*****