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).

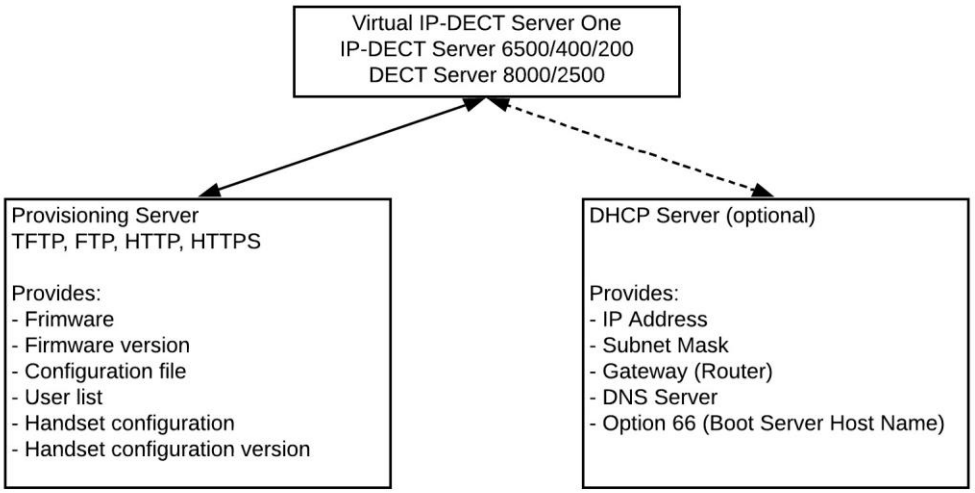
Only Spectralink IP-DECT/Virtual IP-DECT Servers with firmware PCS 19C_ or newer support Handset Configuration Over The Air.

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	-	✓	-	-	-

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

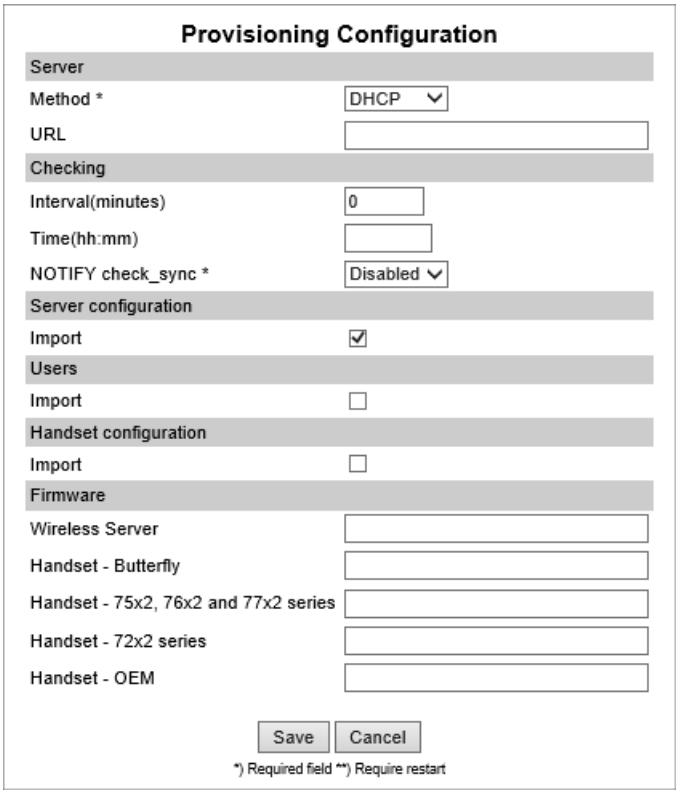
```
<provisioning>
   <firmware>
      <kws>ipdect.ova</kws>
      <default_kws>true</default_kws>
      <pp14208700>pp14208700.bin</pp14208700>
      <pp14225100>pp14225100.bin</pp14225100>
      <pp14225110>pp14225110.bin</pp14225110>
      <pp14225190>pp14225190.bin</pp14225190>
   </firmware>
</provisioning>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

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>
```

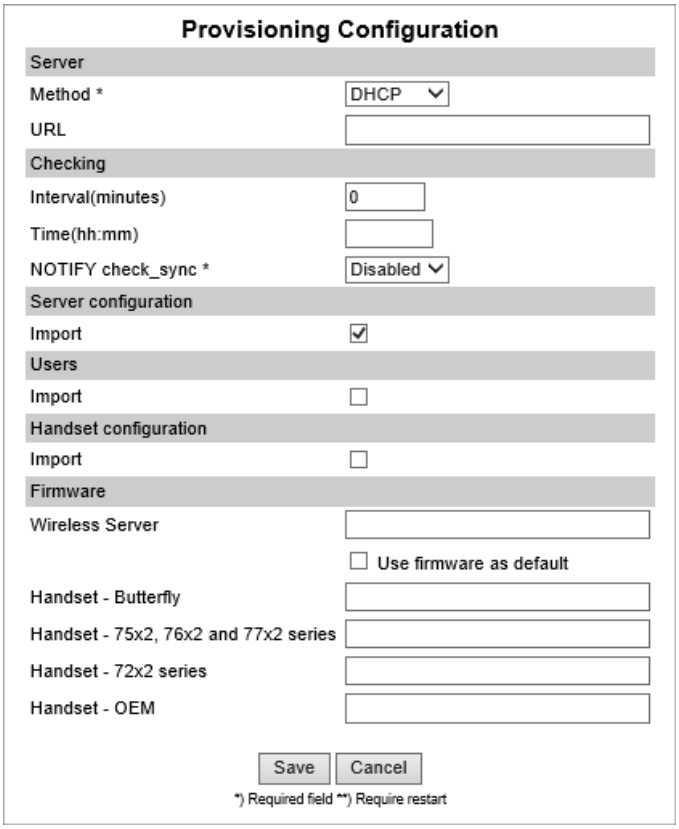
2 Through the web-based Administration Page of the Spectralink IP-DECT/DECT/Virtual IP-DECT Server by navigating to **Configuration** > **Provisioning**.

- 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).

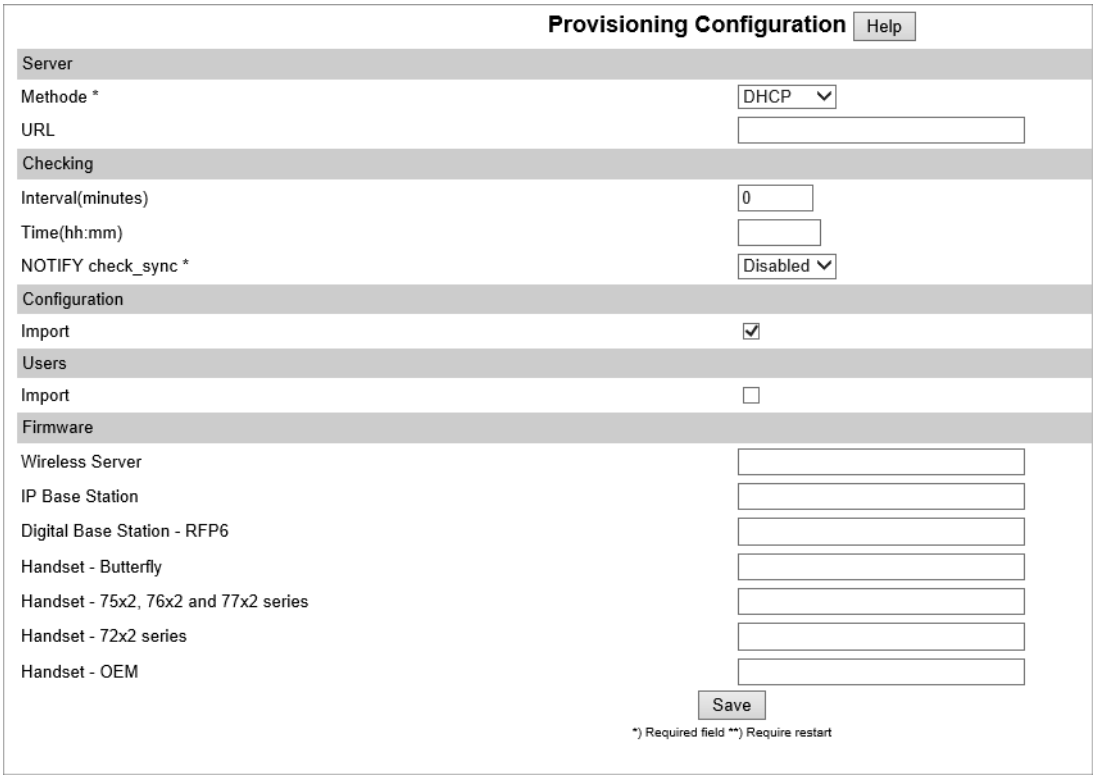
- On the Spectralink IP-DECT Server 400/6500 and Spectralink Virtual IP-DECT Server One, if having the Enhanced Provisioning License installed, the **Provisioning Configuration** page looks like this:



  - 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).

- 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	-	-	✓	-	-
VirtualIP-DECTServer-Onefirmware.ova.ver	-	-	-	✓	-
DECTserver8000firmware.bin.ver	-	-	-		✓
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.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.

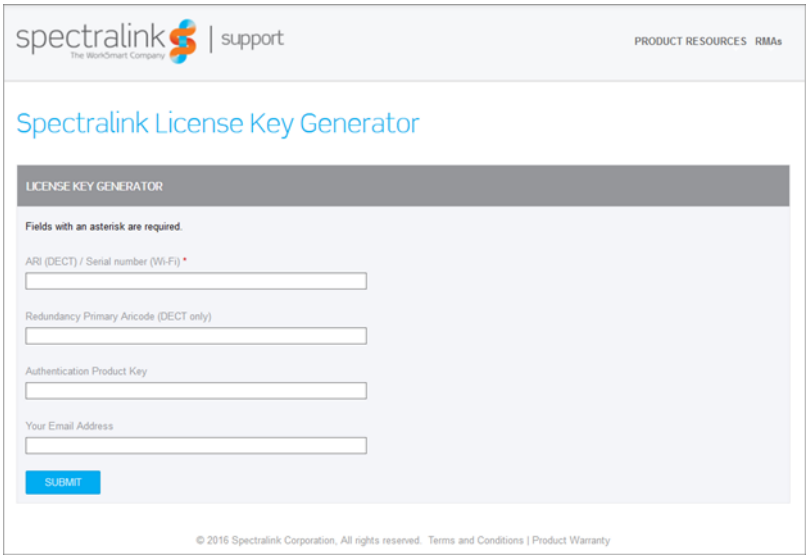
Ordering and Loading Enhanced Provisioning License

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

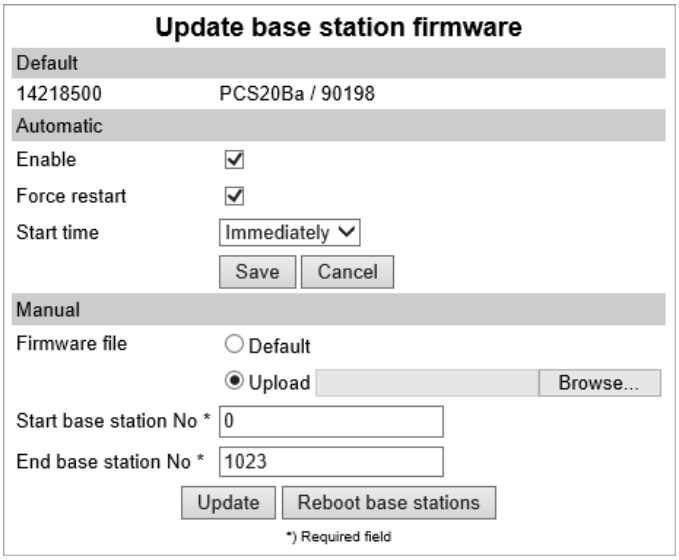
1 If using Spectralink IP-DECT Server 400/6500 or Spectralink Virtual IP-DECT Server One, click **Firmware**, and then click **Base Station**.

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:

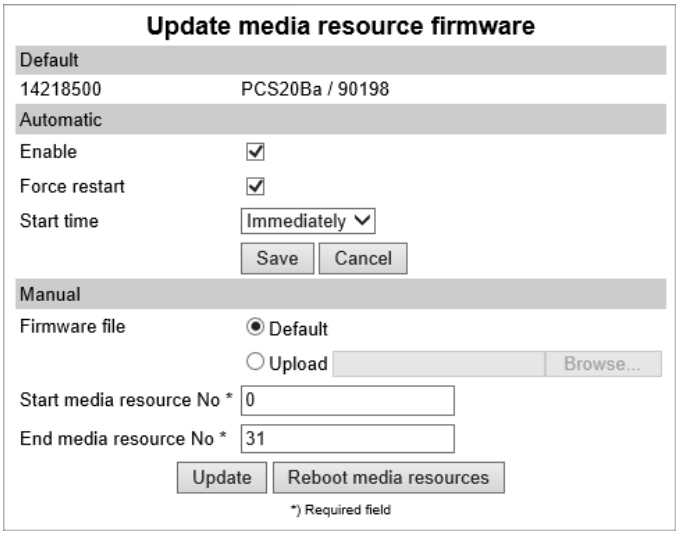
3 Click **Save**.

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

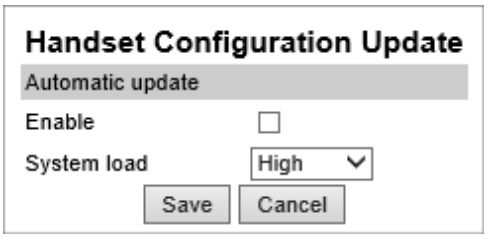
3 Click **Save**.

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)

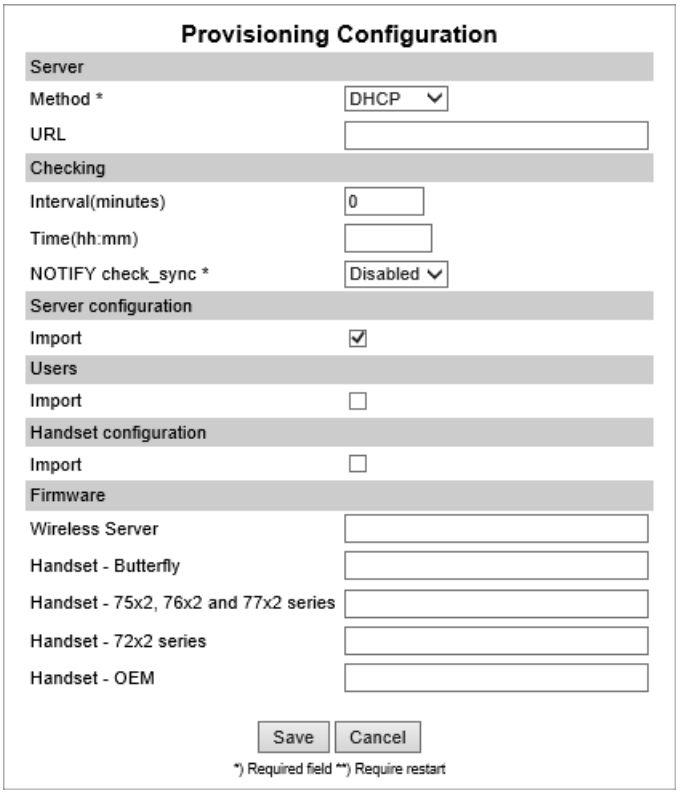
```
   <?xml version="1.0" encoding="UTF-8" standalone="yes"?>
   <config>
      <network>
         <bootproto>dhcp</bootproto>
      </network>
      <rfp>
         <auto>
            <enable>true</enable>
            <force>false</force>
            <start_time>immediately</start_time>
            <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>
```

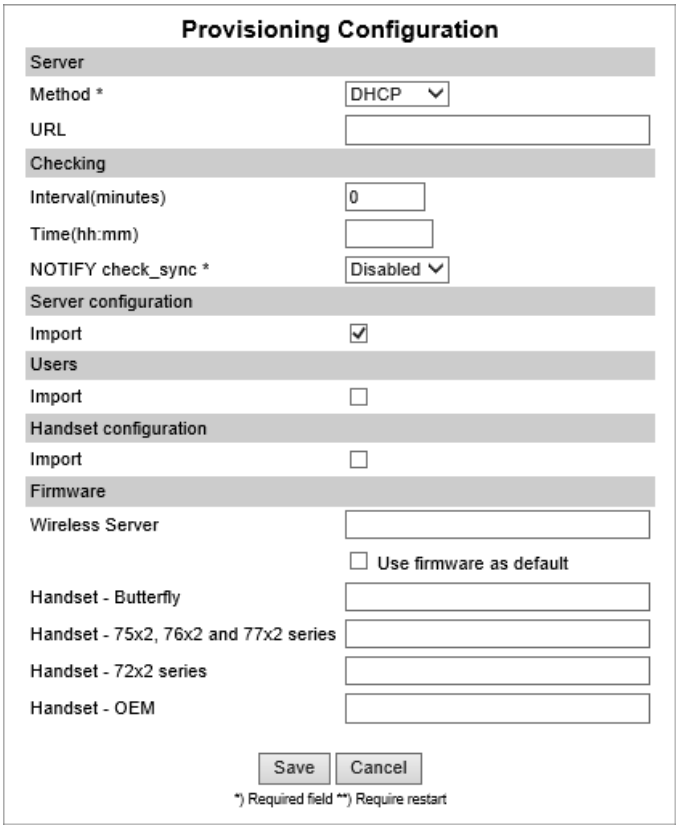
Web Based Administration Page

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

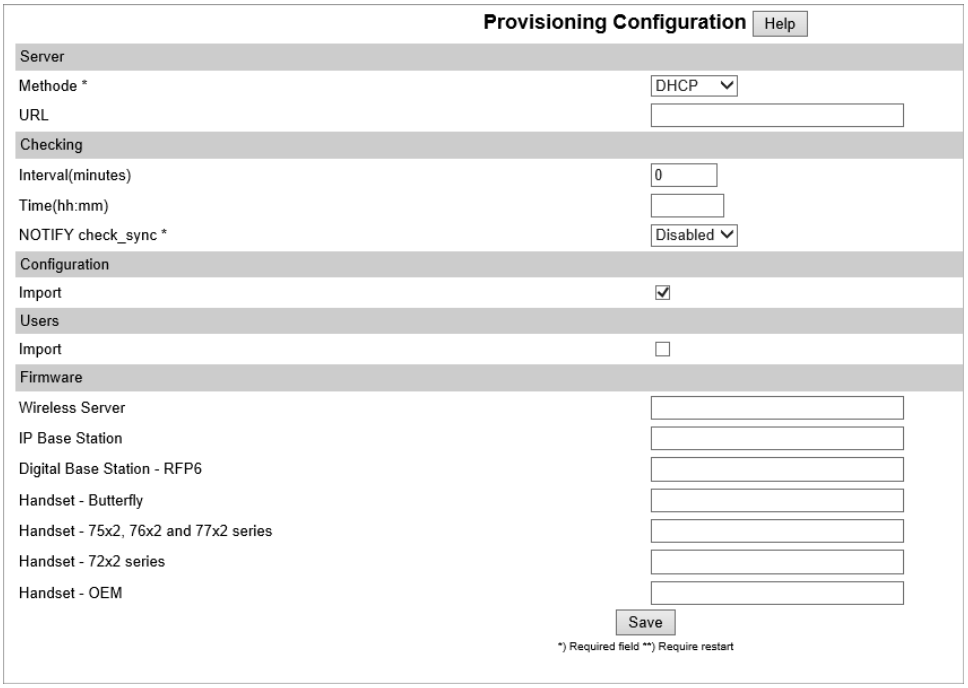
On the Spectralink IP-DECT Server 200, the **Provisioning Configuration** page looks like this:



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 - 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) 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: • 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
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	

Field	*Setting*
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.
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.

Field	*Setting*
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. Leave empty for no firmware download.

3 Click **Save**.

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

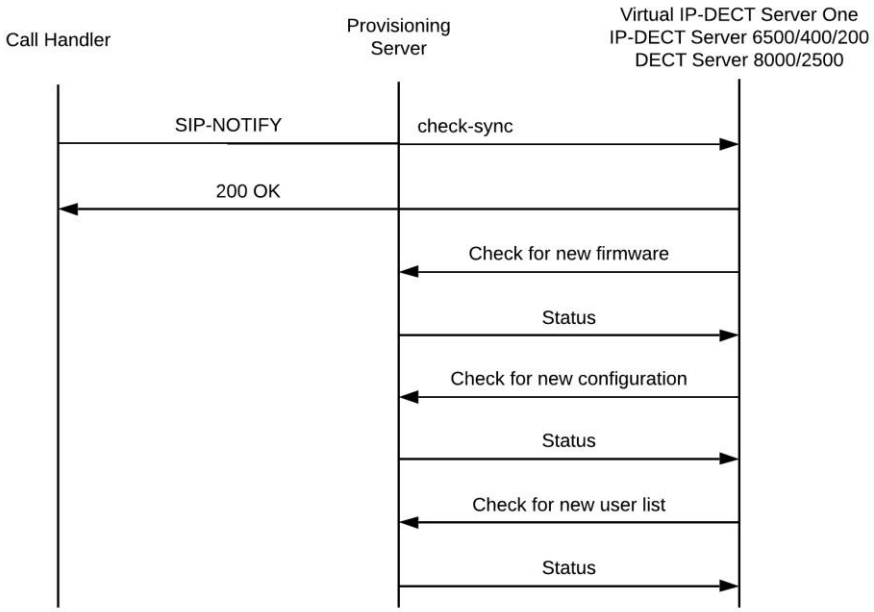
Polling

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

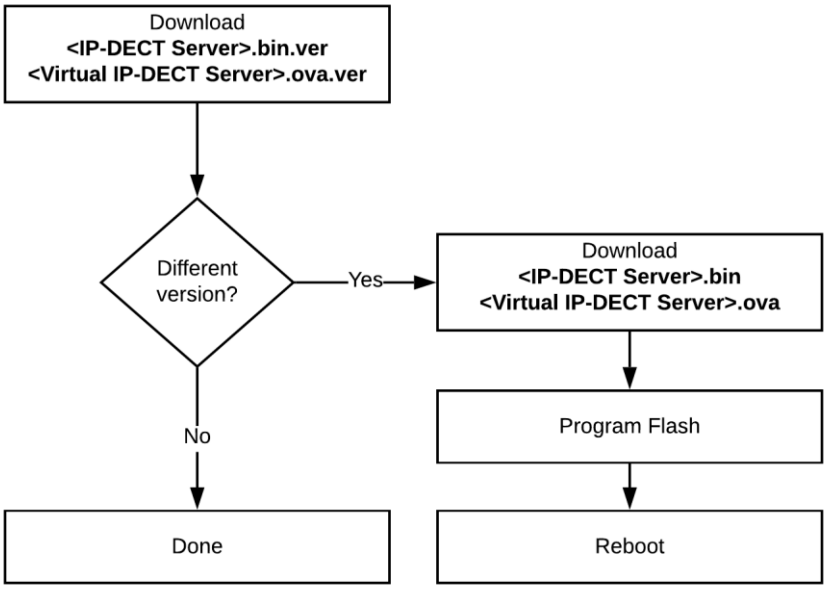
Firmware Update

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.

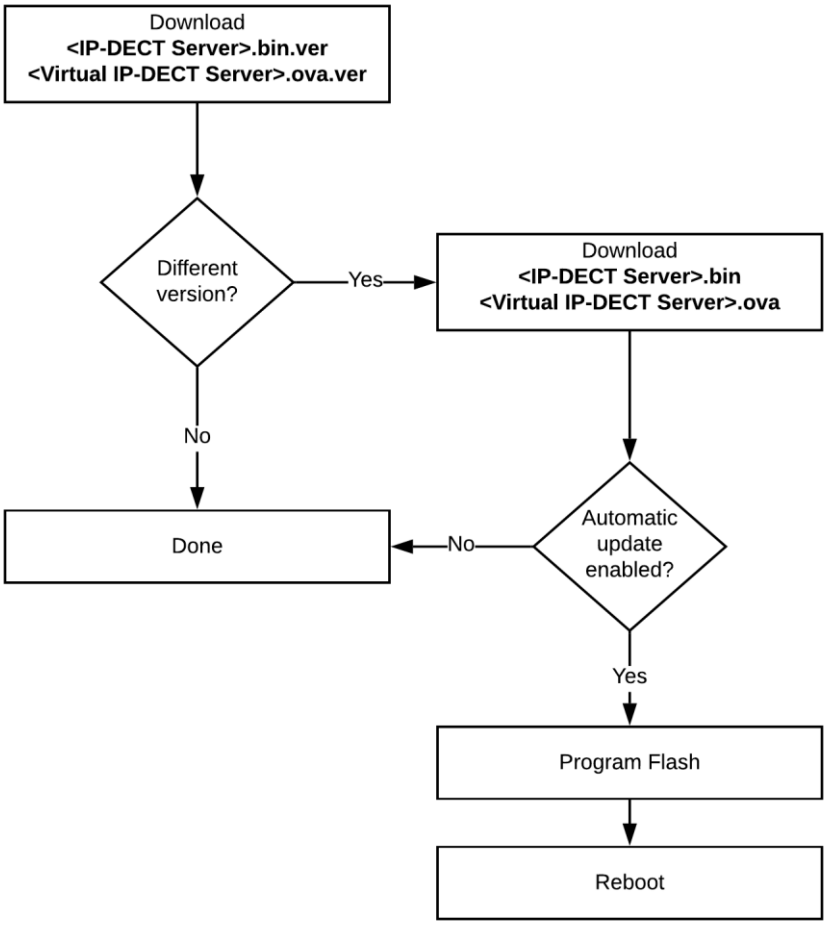
For flexibility, the name of the firmware file is stored in the XML configuration.

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:

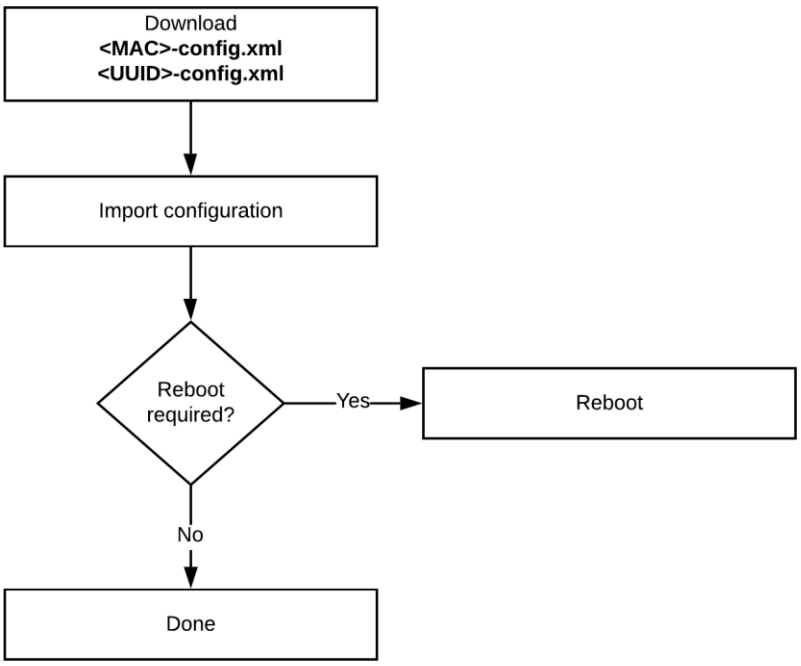


Example of provisioning of firmware for base stations, media resources and handsets with Enhanced Provisioning License installed:



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.

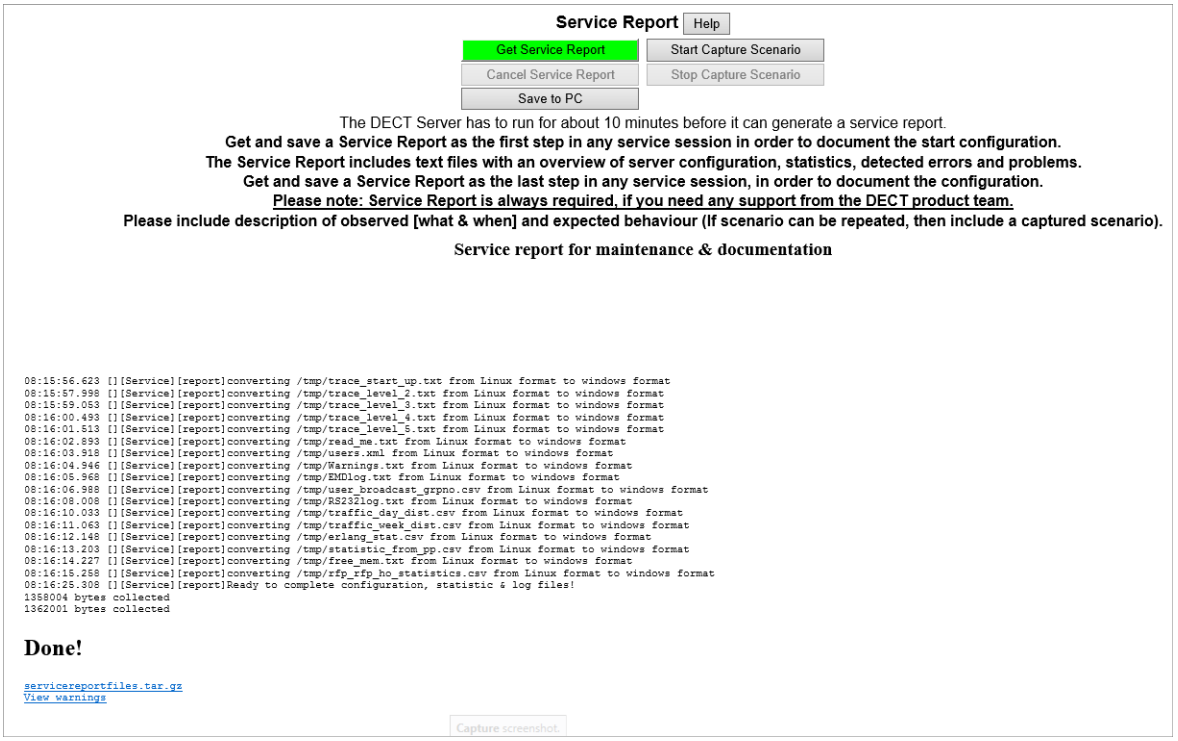
To Retrieve XML Files

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.

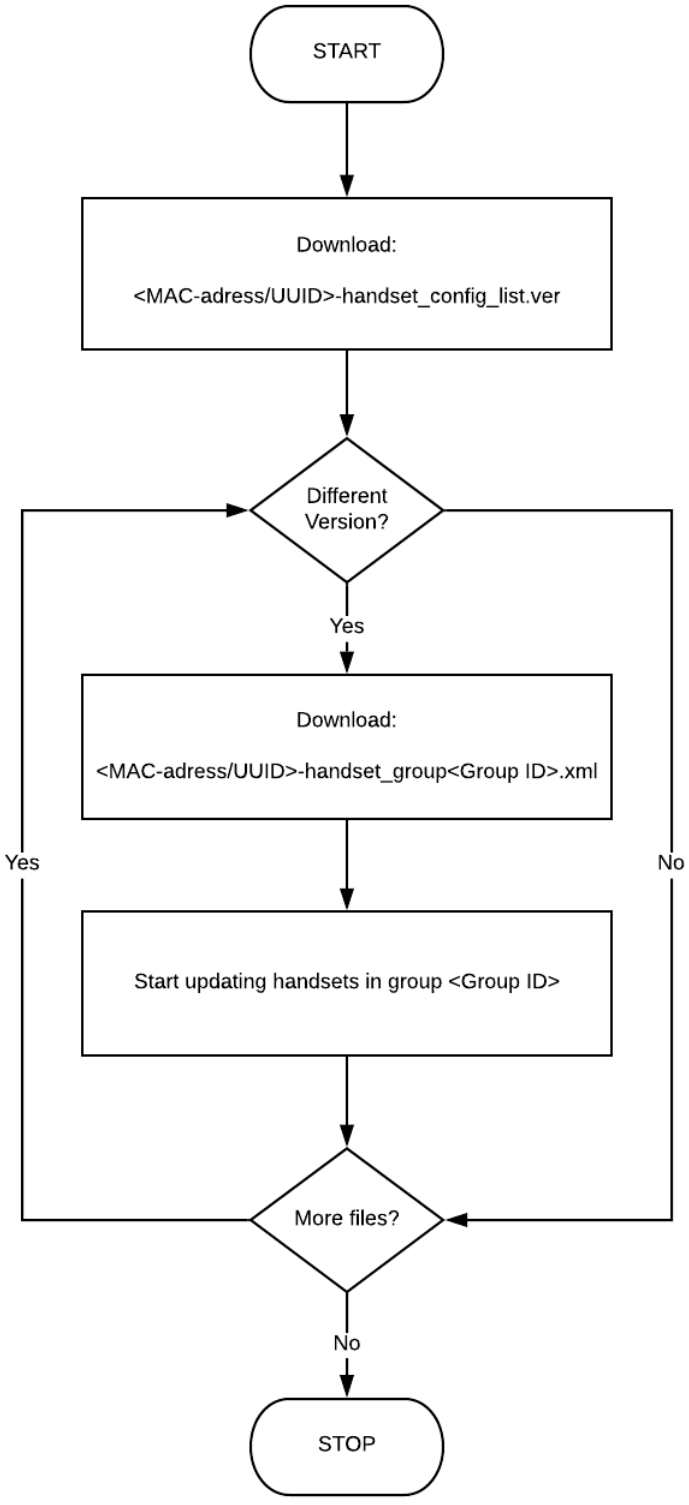
Spectralink DECT Server 2500/8000

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.

Configurations for Spectralink Servers
DECT 2500/8000,
IP-DECT 200/400/6500 and
Virtual IP-DECT Server One

ToC:

1. Introduction

This document lists configuration parameters for Spectralink DECT and IP-DECT servers.

The configuration parameters are stored in an XML file and have a hierarchical structure with the root element <config> and sub elements grouped together based on relations. This document presents the hierarchical structure with a →
For example, the configuration:

feature_codes → call_forward → unconditional → enable

represents the following XML structure where the characters #21# are the value of the parameter.

```
<feature_codes>
    <call_forward>
        <unconditional>
            <enable>#21#<enable>
        </unconditional>
    </call_forward>
</feature_codes>
```

Some configurations are represented as arrays. For example the following configuration has three arrays, shelf, card and port which can be of any number depending on installation:

bif08 → shelf[] → card[] → port[] → enable (ex. bif08 → shelf1 → card2 → port3 → enable)

1.1 Revision history

Date	Initials	Changes	Version
2017-03-06	KIE	Initial version	001
2017-06-07	KIE	External version	002
2017-06-26	KIE	Added descriptions	003
2017-08-23	KIE	Added configurations for provisioning and automatic update of handsets, base stations and media resources	004
2017-11-13	KIE	Changed provisioning configurations and added security configurations	005
2018-02-08	KIE	Changed Suota Load description	006
2018-02-20	KIE	Added IP-DECT 200	007
2018-05-02	KIE	Changed description for Phonebook source	008
2018-05-15	KIE	Corrections: ipv6.methods, global_tx_power and network.vlan	009
2018-05-18	SOS	Added nat_keepalive and nat_keepalive_interval	010
2018-05-23	KIE	Added dect.early_encryption_rekeying and dect.subscription_window. Changed options and default setting of encrypt_voice_data	011
2018-05-30	KIE	Removed media_resource.server and rfp.server as they are a MR and a RFP configurations respectively. Changes: ptp.transport, rfp.ptp.cos and rfp.ptp.tos	012
2018-06-15	SOS	Added redundancy.peer.factoryid	013
2018-08-29	KIE	Changed default value of dect.early_encryption_rekeying from enabled to disabled	014
2018-09-19	TQD	Added new setting rfp.auto.source_digital	015
2018-10-03	MMM	Added new setting sip.blacklist_timeout & sip.registration_max_pending	016
2018-10-08	SOS	Added new settings rfp.gui_allowed & server.gui_allowed	017
2018-10-17	SOS	Changed rfp.gui_allowed to rfp.allow_gui and server.gui_allowed to security.allow_gui	018
2018-11-02	KIE	Added options to sip.registration_max_pending	019

2019-04-05	MMM	Added option ”sip.allow_internal_routing”	020
2019-05-28	MTH	Added ”sip.application.enable_fas”	021
2019-09-02	SOS	Added “dect.global_lal	022
2019-10-03	MTH SSOE KIE	Added “application. enable_atex_gap” Added “provisioning.cota.check” Added “sip.hold_before_refer” Added “security.legacy_tls” Removed Taiwan and China from “dect.frequency” Added “rfp.paging_method”	023
2019-10-23	MTH	Changed description for global_lal and paging methode	024
2019-10-30	KIE	Added settings for “phonebook.broadworks” and added broadworks to phonebook.source	025
2019-12-02	TQD KIE	Added “sip.convert_sip_uri_to_phone” Added “dect.radio.HandoverInfo” Added licensee Added Virtual IP-DECT Server One to document title.	026
2020-04-23	MTH	Removed Licensee	027
2020-06-25	MMM	Added AMiE configurations: • “amie.enable” • “amie.region” • “amie.server” • “amie.auth_token” • “amie.proxy”	028
2020-06-26	IC	Added Statistics threshold configurations	029
2020-11-03	IC	Added COTA default configurations	030

2. Configurations

* = hidden or license required

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
amie	enable		x	true/false	false	If enabled, the IP-DECT Server will attempt to raise a connection to AMiE.
	region		x	IE, custom	IE	AMiE regions available. If "custom" is selected, the next field "server" defines where the IP-DECT Server connects to.
	server		x	-	-	AMiE custom server name.
	auth_token		x	-	-	Specifies the authentication token, used to authenticate the IP-DECT Server towards AMiE. The token is generated in AMiE and is unique to the registered IP-DECT Server.
	proxy		x	-	-	It is possible to use a HTTP proxy when connecting to AMiE.
app_db	ab_always_onhook_on_busytone	x		true/false	false	Specifies if the DECT server should always try to detect busy tone and release incoming call on analog lines as they were auto answered.
application	enable_rpc	x	x	true/false	false	Specifies if the XML-RPC application interface is enabled.
	enable_msf		x	true/false	false	Specifies if the MSF application interface is enabled.
	internal_messaging (same as: system_events → msf_between_pp on 2500/8000)		x	true/false	true	Controls if messaging between handsets is handled internally or by an external application. If enabled messages will be handled internally.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	enable_fas		x	True/false	false	Specifies if the connectivity to FAS is enabled. FAS is a vendor specific messaging server.
	enable_atex_gap		x	True/false	false	Specifies if GAP as enrolment type for Atex handsets is enabled, if not enabled DoIP enrolment type will be used.
	password	x	x	-	Default: IP-DECT Server 400/6500 “f621c2268a8df249 55ef4052bfbb80cf” (password “ip6500” encrypted) Default: DECT Server 2500/8000 “8e49ea4c7249f802a983ad c7d50375f1”(password “kws8000” encrypted)	Specifies the password required for applications to log in.
	username	x	x	-	GW-DECT/admin	Specifies the user name required for applications to log in.
cota	reset → menus		x	true/false	true	Specifies if Handset Configuration reset to default command will reset device menus
	reset → settings		x	true/false	true	Specifies if Handset Configuration reset to default command will reset device settings
bif08	shelf[] → card[] → port[] → enable	x		true/false	true	Specifies if the base station at the given location is enabled or disabled.
dect	auth_call (same as: system_events → auth_call on 2500/8000)		x	true/false	true	Specifies if DECT authentication should be used when establishing calls.
	accesscode (same as: system_events → system_access_code on 2500/8000)		x	-	-	Specifies a system wide DECT access code required for subscribing handsets. The access code is from 0 to 8 decimal digits. Access codes assigned for specific users will override this setting.
	early_encryption_rekeying		x	disabled/enabled/required	disabled	If enabled, this enables encryption immediately after connection establishment and regular re-keying until connection termination

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	encrypt_voice_data (same as: system_events → encrypt_voice_data on 2500/8000)		x	disabled/enabled/required	required	Specifies if DECT encryption should be used for voice calls.
	global_tx_power	x	x	0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24	0	Specifies the output power (dBm) of all connected base stations supporting power control.
*	handset_login		x	true/false	false	Specifies if handset login is enabled or disabled.
	handset_sharing		x	true/false	false	Specifies if handset sharing is enabled or disabled.
	send_date_time (same as: system_events → send_date_time on 2500/8000)		x	true/false	true	Specifies if the date and time should be sent to the handsets.
	subscription_allowed (same as: system_events → subscription_allowed on 2500/8000)		x	true/false	true	Specifies if handset subscription is allowed.
	subscription_window		x	true/false	true	If set, subscriptions will automatically be disallowed after 120 seconds or when a subscription succeeds
*	frequency	x	x	Europe, South America, USA	-	Specifies the DECT frequency band to be used. Europe (EMEA, Australia and New Zealand). USA (USA & Canada).
	allow_long_messages		x	true/false	true	Specifies if long MSF messages and long call back numbers are allowed.
*	radio → ExternalAntenna	x		0 = both 1 = internal 2 = external	0	Specifies which antenna(s) are used when an external antenna is connected. This setting is ignored when no external antenna is connected.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	global_lal		x	Location Area Level (LAL). Called zones in web GUI. Possible zones. 0 = No zones (is set to zero if paging method is different from "Zone based") 3 = 32 base stations per zone. 4 = 16 base stations per zone. 5 = 8 base stations per zone.	0	Sets the Location Area Level (LAL), also called zones in web GUI. dect_global_lal is used when paging method "rfp.paging_method" is set to "zone based". The global_lal value determine how many zones a site is divided into. Currently 3 zone sizes are available. 8, 16 or 32 base stations per zone
	radio→ HandoverInfo	x	x	1 = Disallow 3 = Allow		Allow/disallow bearer handover between repeater and base station.
license		x	x	A comma separated list of licenses	-	Stores the license, if installed.
feature_ codes	enable	x	x	true/false	false	Enables/disables local handling of feature codes.
	call_forward → unconditional →disable	x	x	-	*21*$#	Specifies the feature code used for disabling unconditional call forward (CFU). The feature code users must dial to disable unconditional call forward. D
	call_forward → unconditional →enable	x	x	-	#21#	Specifies the feature code used for enabling unconditional call forward (CFU).
*	call_forward → voicemail →enable	x	x	-	*21*	Specifies the feature code used for enabling voicemail call forwarding.
*	pickup →local	x	x	-	**3	Specifies the feature code used for picking up a local call.
*	pickup →group_other	x	x	-	**8	Specifies the feature code used for picking up a call in an associated group.
*	conference →meetme	x	x	-	**5$	Specifies the feature code used for starting a Meet-Me conference.
*Handset_ sharing	deAssign1	x		-	Logged out by another user	Specifies the text displayed in a handset if a user is logged out by another user.
*	deAssign2	x		-	Logged out by coexist timer	Specifies the text displayed in a handset if a user is logged out by the coexist timer.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
*	deAssign3	x		-	Logged out by charger	Specifies the text displayed in a handset if placed in a charger.
*	hs_react_multicharger	x		0x00, 0x01, 0x02, 0x04, 0x08 (All chargers, Multi charger only, No action, Power on/off, Long press 8)	0x01	Specifies when to start login/logout procedure. **All Chargers:** Shared handsets will login/logout in all chargers. **Multi charger only:** Shared handsets will login/logout in multi chargers only. **No action:** Shared handsets will NOT login/logout if placed in any charger type. **Power on/off:** is ticked, the shared handset will login/logout if the handset is respectively powered up or down. **Long press 8** is ticked, the shared handset will start the login/logout procedure when the "8" key on the shared handset is pressed for about 2 seconds.
*	linebusy	x		-	Extension busy	Specifies the text displayed in a handset if a user tries to login to a busy extension.
*	max_simul_users	x		1/2/3	1	Specifies the number of simultaneous users for a specific line. All assigned phone on a line will ring on incoming calls, all phones will receive incoming MSF; If one phone have an active call, then the other phone on that line can't make calls.
*	text1	x		-	Enter Extension	Specifies the text displayed in a handset when a login procedure begins. The text is displayed when user is prompted to enter an extension number.
*	text2	x		-	Failed: re-enter DN	Specifies the text displayed in a handset when a login procedure begins. The text is displayed when user is prompted to re-enter an extension number.
*	text3	x		-	Enter Password	Specifies the text displayed in a handset when a login procedure begins. The text is displayed when user is prompted to enter a password.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
*	text4	x		-	Failed: re-enter password	Specifies the text displayed in a handset when a login procedure begins. The text is displayed when user is prompted to re-enter a password.
*	timeout_assigned	x		0 – 240 hours	24	Specifies the time that a handset can be subscribed to a line.
*	timeout_simul_users	x		0 – 240 minutes	5	Specifies the time that users can coexist on the same line. The oldest line subscriptions will be removed on timeout.
installation	auto_restart	x		"enabled, Day, Hour, Minute, Weekday, DayWeekOrMonth"	0,20,2,15,2,1	Specifies if automatic restart of DECT server is enabled or disabled.
	company → Address	x		-	Address	Specifies the company's address
	company → city	x		-	City	Specifies the company's city
	company → contact_person	x		-	Contact person	Specifies the company's contact person
	company → country	x		-	Country	Specifies the company's country
	company → direct_email	x		-	Direct email address	Specifies the company's direct email address
	company → direct_phone	x		-	Direct phone number	Specifies the company's direct phone number
	company → fax	x		-	Fax number	Specifies the company's fax number
	company → name	x		-	Company name	Specifies the company name. The company name will be added to the start of all file names in system generated service reports.
	company → phone	x		-	Phone number	Specifies the company's phone number
	company → state	x		-	State	Specifies the company's state
	company → zip	x		-	Zip	Specifies the company's zip
	email → mail_timing	x		-	0	Specifies how often an email should be sent.
	email → reciepient_address	x		-	KWS8000Statistics@spectralink.com	Specifies who shall receive the email
	email → reply_address	x		-	kws8000@emea430.dk	Specifies an email address to reply to.
	email → smtp_address	x		-	-	Specifies the address of the mail server to use.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	email → smtp_password	x		-	-	Specifies the password of the user on the mail server to use. Writing “none” will reset the password.
	email → smtp_port	x		-	25	Specifies the port on the mail server to use.
	email → smtp_user	x		-	-	Specifies the user name on the mail server to use.
language		x	x	da, de, cs, en, es, fi, fr, it, nl, nb, pl, pt, ru, sv, tr	en	Specifies the language of system messages displayed on phones.
log	syslog → facility		x	0 - 23	16 (local 0)	Specifies the remote syslog facility used for log messages. Refer to RFC5424 for details.
	syslog → host		x	-	-	Specifies the remote syslog server host address.
	syslog → level		x	emergency, critical, error, warning, notice, info, debug	info	Used to specify what log levels to send via syslog. All log messages that have a higher level than the one specified will be sent.
	syslog → port		x	-	514	Specifies the remote port of the syslog server.
	syslog → scope_of_settings		x	all, server only, server and mr	all	Specifies the scope of syslog. The setting all applies to server, media resource and base stations. The setting server and mr applies to Server and media resources. The setting server only applies to the server.
phonebook	source	x	x	disabled, ldap, csv, broadworks	disabled	Specifies the Phonebook source of data. Disabled, use an LDAP server, import a CSV file or retrieve phonebooks/directories from a BroadWorks server.
	csv_number_fields	x	x	-	2	Specifies the indexes of the columns that contain dialable numbers.
	encoding	x	x	utf-8, windows-1252, iso8859-1	utf-8	Specifies the character encoding of the imported CSV file.
	ldap_uri	x	x	-	-	The URI of the LDAP server.
	ldap_bind_user	x	x	-	-	user name used to login to the LDAP server.
	ldap_bind_password	x	x	-	-	Password used to login to the LDAP server.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	ldap_base	x	x	-	-	The base path where the users are located in the LDAP structure.
	ldap_filter	x	x	refer to RFC4515	(objectClass=person)	The filter used for the LDAP query. The (objectClass=person) filter can be used successfully in most cases.
	ldap_attributes	x	x	-	cn,telephoneNumber,mobile	The LDAP attributes to retrieve and user.
	ldap_number_attributes	x	x	-	telephoneNumber,mobile	Specifies the name of the LDAP attributes that contain dialable numbers.
	ldap_names	x	x	-	-	The attribute names assigned to the Attributes specified, separated by a comma.
	ldap_prefixes	x	x	-	+=00	The phone number prefixes to replace or strip, separated by a comma. For example, if the phone number is +45678912345 and the user must dial the 12345 extension, then "+456789" is specified in the strip prefixes field. If a "=" is added, the prefix will be replaced instead of stripped. For example, if the phone number is +4576280001 and the user must dial the 004576280001 extension, then "+=00" is specified in the strip prefixes field.
	ldap_refresh_interval	x	x	sec	3600	The interval in seconds for querying the LDAP server for updates.
	broadworks → url		x	-	-	Specifies the URL of the BroadWorks server
	broadworks → enterprisedirectory		x	true/false	true	Specifies if Enterprise directory is enabled.
	broadworks → enterprisecommon		x	true/false	true	Specifies if Enterprise common is enabled.
	broadworks → groupdirectory		x	true/false	true	Specifies if Group directory is enabled.
	broadworks → groupcommon		x	true/false	true	Specifies if Group common is enabled.
	broadworks → personaldirectory		x	true/false	true	Specifies if Personal Directory is enabled.
media_ resource	enabled		x	true/false	true	Specifies if the internal media resource if enabled.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
mr	auto → enable		x	true/false	false	Specifies if automatic update is enabled or disabled.
	auto → start_time		x	immediately, hh:mm	immediately	Specifies when to perform the update, immediately or at a specific time within 24h.
	auto → force		x	true/false	false	Specifies if an automatic update should be executed immediately or wait until devices are idle.
msf	local_longpress_0	x		true = Phonebook false = Send key to interface	true	Specifies whether the DECT Server shall handle long key press (from handsets) locally (default) or the key strokes shall be send to messaging interface (XML-RPC or EMD).
	local_longpress_1	x		true = Phonebook false = Send key to interface	true	Same as local_longpress_0
	local_longpress_2	x		true = Phonebook false = Send key to interface	true	Same as local_longpress_0
	local_longpress_3	x		true = Phonebook false = Send key to interface	true	Same as local_longpress_0
	local_longpress_4	x		true = Phonebook false = Send key to interface	true	Same as local_longpress_0
	local_longpress_5	x		true = Phonebook false = Send key to interface	true	Same as local_longpress_0
	local_longpress_6	x		Not used false/true = Send key to interface	true	Same as local_longpress_0
	local_longpress_7	x		true = Master handset false = Send key to interface	true	Same as local_longpress_0
	local_longpress_8	x		true = Handset Sharing false = Send key to interface	true	Same as local_longpress_0
	local_longpress_9	x		true = SFB Sign In/out false = Send key to interface	true	Same as local_longpress_0
network	bootproto	x	x	dhcp/static	8000: static 6500: dhcp	Specifies if the IP configuration is provided by DHCP or static.
	dns1	x	x	-	-	Specifies the Primary DNS.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
dns2	x	x	-	-	Specifies the secondary DNS.
domain	x	x	-	-	Specifies the name of the domain the system belongs to.
gateway	x	x	-	-	Specifies the IP address of the default gateway.
hostname	x	x	-	-	Specifies a hostname that will be inserted into headers in SIP and published via DHCP making the device appear in the DNS.
http-port	x		-	80	Specifies the HTTP port number of the server.
ipaddr	x	x	-	-	Specifies the IPv4 address of the server.
ipv4enable	x		true/false	true	Specifies if IPv4 is enabled or disabled.
ipv6addr	x		-	-	Specifies the static IPv6 address of the server.
ipv6 → ipaddr		x	-	-	Specifies the static IPv6 address of the server with an optional prefix length. Address and prefix length must be separated by a /
ipv6ctype	x		static, slaac, dhcp, llo	slaac	Specifies the IPv6 connection type. **Manual:** Manually setting the IPv6 address, Subnet Prefix Length, Default Gateway, Primary DNS Server, and Secondary DNS Server. **Stateless Address Autoconfiguration (SLAAC):** An IPv6 address is automatically generated based on the prefix being advertised on the connected network. **DHCPv6:** IPv6 address, DNS servers and DNS search list will be obtained from router. **Link-local-address:** A Link-local address is automatically generated using EUI-64. This address is only reachable with other IPv6-capable devices on the LAN side.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
ipv6 → method		x	disabled/static/dhcp/slaac	disabled	Specifies the IPv6 connection method. **disable:** IPv6 is disabled. **static:** Manually setting the IPv6 address, Subnet Prefix Length, Default Gateway, Primary DNS Server, and Secondary DNS Server. **slaac:** An IPv6 address is automatically generated based on the prefix being advertised on the connected network. **dhcp:** IPv6 address, DNS servers and DNS search list will be obtained from router.
ipv6enable	x		true/false	false	Specifies if IPv6 is enabled or disabled.
ipv6gateway	x		-	-	Specifies the IPv6 address of the default gateway.
ipv6 → gateway		x	-	-	Specifies the IPv6 address of the default gateway.
ipv6mtu	x		1280 bytes - 64KB	0 (use default value)	Specifies the IPv6 Maximum Transmission Unit.
ipv6prefix	x		0 - 128	64	Specifies the subnet's prefix length.
mac	x		-	-	Specifies the system's mac address.
mtu	x	x	576 bytes - 1500 bytes	0 (use default value)	Specifies the Maximum Transmission Unit.
netmask	x	x	-	-	Specifies the network mask.
ntp	x	x	-	-	Specifies the address of the NTP server.
ntp → enable	x		true/false	false	Specifies if the should contact the given NTP server or not
telnet-port	x		-	10000	Specifies the port number for telnet connections.
timezone	x	x	Europe, USA & Canada, Non-geographic, other	CET	Specifies the time zone in Posix time zone string format.
vlan	x	x	1 - 4095	-1	Specifies the VLAN to which the device belongs.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
provisioning	check → check_sync	x	x	disabled/update/reboot	disabled	Specifies how the Spectralink IP-DECT Server or DECT Server will react to SIP NOTIFY check-sync events. disabled - do not react. reboot - reboot and check for updates update - check for updates and reboot if necessary.
	check → interval	x	x	minutes	0	Specifies a checking interval for updates.
	check → time	x	x	hh:mm	-	Specifies a certain checking time for each day. The format is HH:MM.
	config → check	x	x	true/false	true	Specifies if the Spectralink IP-DECT Server or DECT Server will try to download and import configurations from the provisioning server.
	cota → check		x	true/false	false	Specifies if the IP-DECT server will try to download the handset configuration files
	firmware → kws	x	x	file name	-	Specifies the name of the firmware image to use for a Spectralink IP-DECT Server or DECT Server. The Spectralink IP-DECT Server or DECT Server checks for a version file and a binary file. They must be located as /.bin.ver and /.bin
	firmware → default_kws		x	true/false	false	Specifies whether to use Wireless Server firmware as default for all Base Stations and Media Resources.
	firmware → rfp	x		file name	-	Specifies the name of the firmware image to use for Spectralink IP-Base stations. The Spectralink IP-DECT Server or DECT Server checks for a version file and a binary file. They must be located as /.bin.ver and /.bin
	firmware → rfp6	x		file name	-	Specifies the name of the firmware image to use for Spectralink RFP6 Digital-Base stations. The Spectralink IP-DECT Server or DECT Server checks for a version file and a binary file. They must be located as /.bin.ver and /.bin

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	firmware → pp14208700	x	x	file name	-	Specifies the name of the firmware image to use for Spectralink Butterfly handsets. The Spectralink IP-DECT Server or DECT Server checks for a version file and a binary file. They must be located as /.bin.ver and /.bin
	firmware → pp14225100	x	x	file name	-	Specifies the name of the firmware image to use for Spectralink 75x2, 76x2 and 77x2 series handsets. The Spectralink IP-DECT Server or DECT Server checks for a version file and a binary file. They must be located as /.bin.ver and /.bin
	firmware → pp14225110	x	x	file name	-	Specifies the name of the firmware image to use for Spectralink 72x2 series handsets. The Spectralink IP-DECT Server or DECT Server checks for a version file and a binary file. They must be located as /.bin.ver and /.bin
	firmware → pp14225190	x	x	file name	-	Specifies the name of the firmware image to use for Spectralink OEM handsets. The Spectralink IP-DECT Server or DECT Server checks for a version file and a binary file. They must be located as /.bin.ver and /.bin
	server → method	x	x	dhcp/static/disabled	dhcp	Specifies how can the Spectralink IP-DECT Server or DECT Server obtain the provisioning server address.
	server → url	x	x	-	-	Specifies the static provisioning server URL.
	users → check	x	x	true/false	false	Specifies if the Spectralink IP-DECT Server or DECT Server will try to download and import users from the provisioning server.
RS232	shelf → card0 → port1 → conf	x		Baud rate: 100, 150, 200, 300, 600, 1200, 1800, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400 Data bits: 7, 8 Stop bits: 1, 2 Parity: None, Odd, Even, Mark, Space	115200,8,1,N	Specifies the Baud rate, Data bits, Stop bits and parity of a serial connection.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	shelf → card0 → port1 → flow	x		None CTS & RTS XON & XOFF	CTS/RTS	Specifies the Flow control of a serial connection.
	shelf → card0 → port1 → modeminit	x		ON/OFF	ON	Specifies if a connected modem should be initialized.
	shelf → card0 → port1 → msgprotocol	x		Standard EMD, Old KWS1500 MSF, TAP 1.8	Standard EMD	Specifies the messaging protocol to use.
	shelf1 → card0 → port1 → useoldmsfreleasecodes	x		false/true	true	If OldKWS1500 is set a msgprotocol then some newer release codes can be converted to codes used in KWS1500
rfp	default_sync_type	x	x	free running, radio, lan	radio	Specifies the synchronisation type used for the DECT radio.
	media → port		x	-	57000	Specifies the start port for media.
	multicast → address	x	x	-	-	Specifies the multicast address for RFP signalling.
	auto → enable	x	x	true/false	false	Specifies if automatic update is enabled or disabled. Only applies to IP base stations.
	auto → start_time	x	x	immediately, hh:mm	immediately	Specifies when to perform the update, immediately or at a specific time within 24h. Only applies to IP base stations.
	auto → force	x	x	true/false	false	Specifies if an automatic update should be executed immediately or wait until devices are idle. Only applies to RFP6 base stations.
	auto → enable_digital	x		true/false	false	Specifies if automatic update is enabled or disabled. Only applies to RFP6 base stations.
	auto → source_digital	x		builtin/loaded	builtin	Specifies the firmware source to be used in update. builtin: Built-in in server firmware. loaded: Upload by user or via provisioning server.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	auto → start_time_digital	x		immediately, hh:mm	immediately	Specifies when to perform the update, immediately or at a specific time within 24h. Only applies to RFP6 base stations.
	auto → force_digital	x		true/false	false	Specifies if an automatic update should be executed immediately or wait until devices are idle. Only applies to IP base stations.
	paging_method		x	0-3 Paging method: 0: Default paging method. 1: Multicast paging method. 2: Site based paging method. 3: Zone based paging method.	0	Specifies the paging method to use to handle incoming calls. Basically, it's about how to page a handset. "Default" sends paging to all base stations individually. "Multicast" sends paging to all base stations at once. "Site based" Sends paging to all base stations on a specific site. "Zone based" Sends paging to all base stations in specific zone, within a specific site. Since changing this setting can affect all calls please read the installation and configuration guide carefully before changing this setting.
	multicast → ttl	x	x	1-255	1	Specifies the TTL for RFP multicast.
*	ptp → cos	x	x	0-7	-1	Specifies LAN sync class of service.
*	ptp → tos	x	x	0-255	184	Specifies LAN sync type of service.
*	ptp → transport	x	x	l2/ipv4/ipv6	ipv4	Specifies the procotol transport layer used by PTP for LAN sync.
	allow_gui		x	true/false	true	Controls if the web-GUI is accessible or not.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
security	allow_new_media_resource	x	x	true/false	true	Controls whether new media resources are allowed to connect to the Spectralink IP-DECT/DECT Server. Any media resource which is known by the Spectralink IP-DECT Server or DECT Server i.e. has been connected before, is allowed to connect regardless of this setting; however new (unknown) media resources will not be allowed if this setting is false.
	allow_gui		x	true/false	true	Controls if the web-GUI is accessible or not
	allow_new_rfp	x	x	true/false	true	Controls whether new base stations are allowed to connect to the Spectralink IP-DECT/DECT Server. Any base stations which is known by the Spectralink IP-DECT Server or DECT Server i.e. has been connected before, is allowed to connect regardless of this setting; however new (unknown) base stations will not be allowed if this setting is false.
	allow_new_rfp_as_active		x	true/false	false	New base stations will become active when added. Otherwise they will have to be manually activated
	allow_new_media_resource_as_active		x	true/false	false	New media resources will become active when added. Otherwise they will have to be manually activated
	rfp_encryption		x	true/false	false	Require an encrypted connection with the base stations. Note: Not compatible with previous generation base stations.
	legacy_tls		x	true/false	false	Enabled legacy TLS versions 1.0 and 1.1 and SHA1 certificate signing support
	media_resource_encryption		x	true/false	false	Require an encrypted connection with the media resource. Note: Not compatible with previous generation media resources.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	passwords_unexportable		x	true/false	false	Remove user passwords from exported files. Note: This will prevent full systems backups. Note: This setting can only be reset by a factory reset, removing all configuration and user data
	allow_http		x	true/false	false	Specifies if unencrypted HTTP request to the web GUI are allowed.
	password		x	-	admin	Password for the user who logs on to the web GUI.
	password_lifetime		x	0(forever), 30, 90 days	0	Specifies how many days the web GUI password is valid. Note: Can only be reset by a factory reset.
	strict_password		x	true/false	false	Specifies Controls if strict password quality rules are enabled. Note: Can only be disabled by a factory reset.
	username		x	-	admin	User name of the user who logs on to the web GUI.
*	srtp_rfp	x	x	true/false	false	If enabled, it enforces the use of secure RTP for base station audio connections. If internal SRTP is enabled, the number of available voice channels on each base station is reduced from 12 to 6
*redundancy	mode		x	master/slave/single	single	Specifies the mode of the node: either a normal single node system, a master or a slave node in a redundant system.
*	peer		x	-	-	Specifies the hostname or IP address of the redundancy peer node.
*	Peer→factoryid		x	String that consists of 16 hexadecimal numbers.	Empty	When the server is in redundant mode, this will contain the P-ID of the peer.
*	failovertime		x	sec	15 (8000) 10 (6500)	The time in seconds from a redundancy node, detects a failure until it initiates a failover operation.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
*	database_uuid		x	-	-	Represents the unique ID of the distributed database of the system which must match for replication to be performed. When reset on the master it is automatically generated and when reset on the slave, it is retrieved from the master. It must be reset when changing a master node to a slave node or when moving a slave node to another system.
*suota	load	x	x	medium, low, high	medium	Specifies the system load due to software update, i.e. the number of simultaneous uploads. IP-DECT 6500/400: 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 gives 2*16 = 32 simultaneous updates. DECT 8000/2500: Low: 70% of total number of Base stations. Medium: 100% of total number of Base stations. High: 130% of total number of Base stations. Example: 10 base stations and Low load(70%) gives 7 simultaneous updates. Note: Only half of media resource capacity (32 channels/2 = 16 channels) can be used for SUOTA.
	start_time	x	x	immediately, hh:mm	immediately	Specifies when to perform the update, immediately or at a specific time within 24h.
	pcs_ignore	x	x	true/false	false	Specifies whether same or older software versions can be uploaded or only newer versions.
	incharger	x	x	true/false	false	Specifies if only handsets in a charger should be updated.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	auto	x	x	true/false	false	Specifies if automatic update is enabled or disabled.
sip	allow_internal_routing		x	true/false	false	Specifies if internal routing should be used if connection cannot be established for any proxies.
	auth → password	x	x	-	-	Specifies the default password for the handset authentication (if no specific handset authentication password is specified).
	auth → realm	x	x	-	-	Realm used for SIP authentication. The realm is presented by the SIP server and is used for encrypting the SIP user password.
	auth → username	x	x	-	-	Specifies the default user name for the handset authentication (if no specific handset authentication user name is specified).
	blacklist_timeout	x	x	sec (5-600)	30	Specifies the blacklist timeout for SIP server blacklisting. (Used for redundant SIP server setups when loosing connection to a SIP proxy.)
	callwaiting	x	x	true/false	true	Used to control whether Call Waiting is enabled.
	client_transaction_timeout	x	x	Msec (1000 -32000)	16000	Specifies the timeout for client transactions. This controls timer B and F as specified in RFC3261.
	dect_detach_action	x	x	ignore/deregister	ignore	Specifies an action to perform when a handset is turned off.
	defaultdomain	x	x	-	example.com	Specifies the default domain for the handset (if no specific handset domain is mentioned).
	dnsmethod	x	x	arecord/dnssrv	arecord	Specifies the DNS method used to resolve host names for SIP requests.
	dtmf → duration	x	x	msec	270	Specifies the time length of the DTMF tones.
	dtmf → info	x	x	true/false	false	Specifies if the keypad signalling should be sent as SIP INFO.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	dtmf → rtp	x	x	true/false	true	Specifies if the keypad signalling should be sent as RTP packets with DTMF code.
	dtmf → rtp_payload_type	x	x	refer to RFC2833	96	Specifies the payload type for RFC2833 in SDP offers.
	gruu	x	x	true/false	true	Specifies the use of Globally Routable UA URI (GRUU) which is an URI that routes to a specific UA instance. If enabled, a GRUU will be obtained from a server and communicated to a peer within a SIP dialog.
	hold_before_refer		x	true/false	true	Put all calls on hold before sending a REFER
	convert_sip_uri_to_phone		x	true/false	true	When enabled, the IP-DECT server will convert the callers SIP URI received from the PBX to a phone number, e.g. “SIP:1234@example.com” to “1234”. The phone number is then displayed in a DECT handset as the caller ID instead of the SIP URI. This makes the Call back functionality unusable for users on a different domain.
	localport	x	x	-	5060	Specifies the SIP port.
	maxforwards	x	x	-	70	Specifies the maximum number of times the SIP messages can be forwarded.
	media → codecs	x	x	0 = none 1 = G711U 2 = G711A 64 = G726_32 1024 = G729A (6500)	64,1,2,0,0,0	Specifies the codec priority.
*	media → default_relay	x	x	true/false	false	Specifies if the default address for TURN server should be used.
	media → ice → enable	x	x	true/false	false	Enable ICE support.
	media → port	x	x	-	58000	Specifies the start port for media.
	media → ptime	x	x	msec	20	Specifies the packet duration for media (ms).
*	media → rfc3489	x	x	true/false	true	Specifies if STUN is enabled or disabled.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	media → sdp_answer_single	x	x	true/false	false	Specifies if the media handling must provide only a single CODEC in SDP answers.
	media → sdp_answer_with_preferred	x	x	true/false	false	Specifies if the media handling must ignore the remote SDP offer CODEC priorities. Note: Enabling this option, violates the RFC3264 SDP offer/answer model.
*	media → sdp_hold_attribute_sendonly	x	x	true/false	true	When putting a call on hold, the Spectralink IP-DECT Server or DECT Server sends sendonly. Configuring this setting as false, makes the Spectralink IP-DECT Server or DECT Server send inactive.
*	media → sdp_hold_null_connection	x	x	true/false	false	If this setting is true, the Spectralink IP-DECT Server or DECT Server will revert to the old way of signalling a hold.
	media → sdp_ignore_version	x	x	true/false	false	Specifies whether to ignore the version information in incoming SDP received from remote endpoints.
	media → tos	x	x	-	184 (0xb8)	Specifies the media's TOS/Diffserv.
	media → turn → enable	x	x	true/false	false	Enable TURN support.
	media → turn → password	x	x	-	-	Specifies the TURN server password. If left blank, the per-user authentication password will be used.
	media → turn → server	x	x	-	-	Specifies the TURN server address.
	media → turn → username	x	x	-	-	Specifies the TURN server user name. If left blank, the per-user authentication username will be used.
	media → vlan_cos	x	x	0 - 7	5	This setting controls the RTP 802.1p Class-of-Service Priority Code Point (PCP): A 3-bit field which refers to the IEEE 802.1p priority. It indicates the frame priority level. These values can be used to prioritize different classes of traffic (voice, video, data, etc.). The setting requires VLAN tagging to be enabled.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
*	media → srtp → enable	x	x	true/false	true	If enabled, external SRTP is supported and optional. It must be negotiated with the remote endpoint. If external SRTP is enabled the number of available voice channels on a Spectralink IP-DECT/DECT Server/media resource is reduced from 32 to 16, (if a codec card is used from 24 to 16).
*	media → srtp → required	x	x	true/false	false	If enabled, the usage of SRTP is required. If negotiation of SRTP with the other end is unsuccessful, call establishment is aborted).
*	media → srtp → lifetime	x	x	true/false	false	Handles the RFC 4568 SRTP lifetime key parameter in SDP offers.
*	media → srtp → mki	x	x	true/false	false	Handles the RFC 4568 SRTP Master Key Index Parameter in SDP offers.
	music_on_hold	x	x	true/false	false	Specifies if playing music on hold for the remote end is enabled or disabled.
	mwi → enable	x	x	true/false	true	Enables the MWI (Message Waiting Indicator).
	mwi → expire	x	x	sec	3600	Specifies the MWI subscription expiration time (s).
	mwi → subscribe	x	x	true/false	false	Enables MWI subscription.
	nat_keepalive		x	0 - 2	1	Specifies the type of NAT keepalive method. 0 = Disabled, 1 = CRLF, 2 = SIP OPTIONS
	nat_keepalive_interval		x	10, 20, 30	30	Specifies the NAT keepalive send interval in seconds.
	onholdtone	x	x	true/false	true	Specifies if the handset should hear the on-hold tone when put on-hold.
	pound_dials_overlap	x	x	true/false	false	Specifies if '#' should end overlap dialling.
	proxy → domain	x	x	-	-	Specifies the SIP Proxy address.
	proxy → domain2	x	x	-	-	-
	proxy → domain3	x	x	-	-	-
	proxy → domain4	x	x	-	-	-

Configuration parameter	Dect	IP-Dect	Options	Default	Description
proxy → port	x	x	-	0	Specifies the SIP Proxy port.
proxy → port2	x	x	-	0	-
proxy → port3	x	x	-	0	-
proxy → port4	x	x	-	0	-
proxy → priority	x	x	-	1	Specifies the priority for using a SIP proxy. Proxies with lowest priority will be preferred and higher priorities will be used for failover.
proxy → priority2	x	x	-	2	-
proxy → priority3	x	x	-	3	-
proxy → priority4	x	x	-	4	-
proxy → weight	x	x	-	100	Specifies the weight for using a proxy. If more proxies have the same priority the Spectralink IP-DECT Server or DECT Server will do load balancing using the weight to determine how much each proxy will be loaded.
proxy → weight2	x	x	-	100	-
proxy → weight3	x	x	-	100	-
proxy → weight4	x	x	-	100	-
registration_expire	x	x	sec	3600	Specifies the number of seconds before a SIP registration is renewed.
registration_max_pending		x	1-100	1	Specifies the maximum number of pending users attempting to register a SIP server.
send_to_current_registrar	x	x	true/false	false	Specifies if the system should send all the messages to the current registrar.
separate_endpoint_ports	x	x	true/false	false	Specifies if the endpoints should register on separate ports.
showstatustext	x	x	true/false	true	Shows the information for the call status in the handset display (ring, hold etc).

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	tcp_contact_ephemeral_port	x	x	true/false	false	Enable this to add the TCP ephemeral port (the local TCP port of the outgoing connection) to the contact header used in outgoing SIP messages. Otherwise the local listening port is used.
	tls_allow_insecure	x	x	true/false	false	By default, UDP and TCP transports are disabled when TLS transport is the default. If this setting is true, UDP and TCP are allowed as fall back if TLS fails.
	tos	x	x	-	96 (0x60)	Specifies the SIP TOS/Diffserv.
	transport	x	x	udp/tcp/tls	udp	Specifies the transport mechanism used for SIP requests.
	use_sips_uri	x	x	true/false	true	Normally, SIP communication on a TLS connection is using the SIPS: URI scheme. Disabling this option causes the Spectralink IP-DECT Server or DECT Server to use the SIP: URI scheme with a transport=tls parameter for TLS connections.
*	vlan_cos	x	x	0 - 7	3	This setting controls the signalling 802.1p Class-of-Service Priority Code Point (PCP): A 3-bit field which refers to the IEEE 802.1p priority. It indicates the frame priority level. These values can be used to prioritize different classes of traffic (voice, video, data, etc.). The setting requires VLAN tagging to be enabled.
*	lync → enabled	x	x	true/false	false	Enable Microsoft Lync SIP mode.
*	lync → trusted	x	x	true/false	false	Enable Microsoft Lync trusted server for authenticating users.
snmp	enable		x	true/false	false	This enables SNMP and when enabled the device will respond to SNMP requests.
	community		x	-	public	The community string used for SNMP. The device will respond to requests for this community.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	syscontact		x	-	-	The textual identification of the contact person for this host, together with information about how to contact them.
	syslocation		x	-	-	A descriptive text telling the physical location of the device.
	trapcommunity		x	-	-	The community used for sending traps.
	traphost		x	-	-	The host to which SNMP traps are sent.
system_event	auth_call (same as: dect → auth_call on 400/6500)	x		0x01 = Terminate Access Rights on Authentication error 0x02 = Create Authentication key at subscription 0x04 = Check Authentication when location registration is made 0x08 = Check Authentication on incoming voice calls 0x10 = Check Authentication on outgoing voice calls	0x07	Specifies if DECT authentication should be used when establishing calls.
	acustic_feedback_on_release	x		0,1,2 (acustic feedback, acustic feedback 3 sec timer, automatic release	0	Specifies if acoustic feedback should be sent to handsets.
	encrypt_voice_data (same as: dect → encrypt_voice_data 400/6500)	x		0 – DECT encryption is disabled. 1– DECT encryption is enabled. 2– DECT encryption is enforced and calls are terminated if the handsets do not support encryption.	0	Specifies if DECT encryption should be used for voice calls.
	internal_clip_presentation_ab	x		true/false	true	Only in analogue systems with analogue interface cards. If voice call is between internal DECT handsets, the local clip and presentation text is shown, in spite of external clip.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
internal_switching_permits	x		bit 0: Allow internal switching between DECT-2-DECT and all types bit 1: Also when internal setup is used bit 2: Not used bit 3: When interface fails, Not implemented bit 4: Not used bit 5: Internal witching when possible bit 6 & 7: not used	0	Allow different user types (Analogue-, SIPand DECT to DECT users) to call each other without involving the (i)PBX, the Spectralink IP-DECT Server or DECT Server will switch the calls internally. Please notice, whenever a 'DECT to DECT' handset is involved in a call, transferrer/hold is not possible.
min_ringing_time	x		msec * 10 (units of 10ms) Minimum 40 (equal to 400 ms) Maximum 120 (equal to 1200 ms)	50	Only relevant when system_event.ringing_ mode=”E” and especially handsets newer than 40xx series. Insures the minimum hear able ringing time in the handset (Tip: If hear able ring time in handset is to short, then use ring tone 6 (Spectralink KIRK handsets).
msf_between_pp (same as: application → internal_messaging 400/6500)	x		true/false	false	Used to control if messaging between handsets is handled internally or by an external application. If enabled, messages will be handled internally.
outgoing_line_prefix	x		-	00	Only use full with Analogue users. The cipher(s) you need to get to the PSTN side of the PBX. Typically, prefixes are 0 or 9 but can contain up to 4 characters.
ringing_mode	x		0 = system 1 = exchange (pbx)	1	Choose if handset ringing shall follow PBX ringing cadence or internal handset ringing cadence.
send_date_time (same as: dect → send_date_time 400/6500)	x		true/false	true	Specifies if the date and time will be sent to the handsets.
sio_passwd	x		-	-	Password for the RS232 interface when used as EMD interface.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	subscription_allowed (same as: dect → subscription_allowed 400/6500)	x		0, disallow. 2, allow . 3, wildcard (automatically create a subscribed user).	2	Specifies if handset subscription is allowed or allowed to add a new user when a DECT handset tries to subscribe to the system.
	system_access_code (same as: dect → accesscode 400/6500)	x		-	-	Specifies a system wide access code required to subscribe handsets to the system. The system wide access code can be overruled on a per user basis in the user settings.
TAP	shelf1 → card0 → port1 → CBNStart	x		Position, Start letter, First cipher	First cipher	Specifies the method used to find a call back number in a pager text. **First Cipher** in text is (start of) Call Back number: DECT Server will look though the text until it finds the first cipher and then extract the number. **Position in text:** DECT Server will look on position in text and if a number exist on that position, then it will extract the number. **Start letter** (just before the Call Back Number): DECT Server will though the text for a specific letter and if finds it, then it will look on the next position and extract a phone number if there is one.
	shelf1 → card0 → port1 → CBNprefix	x		-	-	Specifies the number to add in front a call back number.
	shelf1 → card0 → port1 → CBNsegmentReplaceStr	x		-	s	Specifies letters to be used as an extra cipher or a pause is needed as a replacement between the two parts of a call back number.
	shelf1 → card0 → port1 → CBNsegmentStr	x		-	E	Specifies letters to remove between two parts of a call back number. If Fist cipher in text is Call Back number, then this setting can be used to do some extra decoding so “Alarm 712E:5 Normal” result in number 7125 instead of just 712. If the letter(s) is followed by a ‘:’ then this will also be removed from number.
	shelf1 → card0 → port1 → DNorName	x		-	D	Not used.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
shelf1 → card0 → port1 → EOL	x		0 = auto, 1 = CR 2 = LF 3 = CR/LF 4 = LF/CR	1	Specifies what end of line character to use.
shelf1 → card0 → port1 → ExtractCBN	x		true/false	true	Specifies if DECT Server should look into the text of TAP message for a phone number.
shelf1 → card0 → port1 → IgnoreCheckSum	x		0/1	0	Specifies it the checksum should be used for validation or not. Can be used for debugging.
shelf1 → card0 → port1 → LogMethod	x		0 = no online log, 1 = Send trace events (EMD & WEB), 2 = RS232 log printer, 3 = Send trace events & to log printer,	1	Specifies the method to use to log events.
shelf1 → card0 → port1 → LongMessage	x		-	-	Not used.
shelf1 → card0 → port1 → MaxSessionPerLogin	x		-	-	Not used.
shelf1 → card0 → port1 → MaxtimePerLogin	x		-	-	Not used.
shelf1 → card0 → port1 → N1	x		-	-	Not used.
shelf1 → card0 → port1 → N2	x		-	-	Not used.
shelf1 → card0 → port1 → N3	x		-	-	Not used.
shelf1 → card0 → port1 → NCReleaseCmd	x		-	*9	Specifies a Nurse care line release command. Some Nurse care systems require a special release sequence to end a voice call.
shelf1 → card0 → port1 → NoLogin	x		true/false	false	Specifies if the login procedure should be used. If enabled the DECT Server will require a response to “ID=” The expected text is “PG1” but can be changed with the SSTstring parameter.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
shelf1 → card0 → port1 → PositionLetter	x		-	0	Specifies where to find a call back number in a pager text. **Position:** a number indicating the position. **Start letter:** An ASCII value of the start letter ex. 87 for 'W'.
shelf1 → card0 → port1 → RemoveCBNFromText	x		true/false	false	Specifies if a DECT Server shall remove the found phone number from the text before sending the Text to handset.
shelf1 → card0 → port1 → ResponseCodes	x		true/false	true	Specifies whether response codes should be used or not.
shelf1 → card0 → port1 → SMS_AlertPattern	x		0 = Not present, 1 = continuous tone, 2 = internal ringing in pp 3 = external ringing in pp, 4 = alarm in time defined by AlertTimeout	3	Specifies the type of alert pattern to use. This is handset specific.
shelf1 → card0 → port1 → SMS_AlertTmeout	x		0 – 127.5 sec	0	Specifies the timeout of alert.
shelf1 → card0 → port1 → SMS_AlertTone	x		0 = alerting off, 1..9 = tone 1..9, 10 = use tone chosen in pp	10	Specifies the alert tone to use. This is handset specific.
shelf1 → card0 → port1 → SMS_AlertVolume	x		0 - 9	3	Specifies the alert tone volume.
shelf1 → card0 → port1 → SMS_DispTimeout	x		0 – 127.5 sec	0	Specifies the Display timeout.
shelf1 → card0 → port1 → SMS_IconNo	x		0x00 - 0xFF	0	Specifies an icon to be displayed on a handset when receiving a message.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
shelf1 → card0 → port1 → SMS_LedCtrl	x		0x00 None 0x01 Red 0x02 Green 0x04 Blue 0x03 Red, Green 0x05 Red, Blue 0x06 Green, Blue 0x07 Red, Green, Blue 0x08 Slow flashing 0x10 Fast flashing 0x18 Switch slow 0x20 Switch fast	0	Specifies the behaviour of an LED in a handset when receiving a message.
shelf1 → card0 → port1 → SMS_PriColour	x		0x00 Handset's default setting and no priority 0x01 Black text on white background 0x02 Black text on red background 0x03 Black text on yellow background 0x04 Black text on blue background 0x05 Black text on grey background 0x06 Black text on green background 0x07 White text on black background 0x08 White text on red background 0x09 White text on yellow background 0x0A White text on blue background 0x0B White text on grey background 0x0C White text on green background 0x10..0xF0 priority level 1..15	0	Specifies priority level of a message and the background and text colour displayed in a handset.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
shelf1 → card0 → port1 → SMS_ResponseEnabler	x		-	0	Specifies if actions 0x81 to 0x87 are enabled or disabled. **0x01**: use of soft key “unable” will delete the task. **0x02**: accept by soft key (0x81). **0x04**: accept by hook key (0x82). **0x08**: unable by soft key(0x83). **0x10**: started on task(0x84). **0x20**: Nearly completed(0x85). **0x40**: Done(0x86). **0x80**: task can always be deleted.
shelf1 → card0 → port1 → SMS_SetupSpec1	x		-	39(0x27)	Specifies SMS setup specifications. SIS(0x01) – Save in stack. LV(0x02) – Use Local Alert Volume. AV(0x04) – Always Vibrate. IC(0x08) – Ignore SMS if PP in Charger. IIVC(0x010) – Ignore SMS if PP in Voice Call. SIC(0x020) – Silent if PP in Charger
shelf1 → card0 → port1 → SMS_action	x		-	0	Specifies how a DECT server shall handle a received TAP message.
shelf1 → card0 → port1 → SSTstring	x		-	PG1	Specifies a user name in a login procedure.
shelf1 → card0 → port1 → SmsMsf	x		DECT MSF = 0 DECT SMS (MSF III) = 1	0	Specifies if DECT MSF or DECT MSF III is used for messaging. Either DECT MSF or DECT SMS (MSF Format III) will end up as messages in handset. Supported on 74, 75, 76, 77 series handsets. DECT SMS will end up as task list in handset; supported on 7620, 7640, 7720 & 7740 handsets.
shelf1 → card0 → port1 → T1	x		-	2	Not used.
shelf1 → card0 → port1 → T2	x		-	1	Not used.
shelf1 → card0 → port1 → T3	x		-	10	Not used.
shelf1 → card0 → port1 → T4	x		-	4	Not used.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	shelf1 → card0 → port1 → T5	x		-	8	Not used.
	shelf1 → card0 → port1 → TrailingDigitsLen	x		-	0	Specifies the number of trailing in/after pager ID number.
trace_event	level	x		0 – Disabled 1-Subscription requests are shown. 2 - Level 1 plus exceptional cases, startup and user maintenance (i.e. everything but normal operation). 3 -Level 2 plus call trace messages. 4 -Level 3 plus SIP signalling. 5 -All Trace messages + debug messages.	5	Trace message level
*tx_power	handset	x		1, 1.6, 2.5, 4, 6.3, 10, 16, 25, 40, 63, 100, 158, 250 (mW)	250	Specifies the output power of a base.
*	rfp	x		1, 1.6, 2.5, 4, 6.3, 10, 16, 25, 40, 63, 100, 158, 250 (mW)	250	Specifies the output power of a base.
threshold	basestation → calls		x	0 - 4294967295	250	Threshold of total calls from which the warning is calculated.
	basestation → dropcallrate		x	0 – 100%	1%	Threshold in percent of dropped calls rate from which the warning is calculated.
	basestation → droppedcalls		x	0 - 4294967295	50	Threshold of dropped calls from which the warning is calculated.
	basestation → handovercancelled		x	0 - 4294967295	50	Threshold of handover cancelled from which the warning is calculated.
	basestation → handoverrate		x	0 – 100%	20%	Threshold in percent of handover cancel rate from which the warning is calculated.
	basestation → handovertotal		x	0 - 4294967295	100	Threshold of handover total from which the warning is calculated.
	handset → calls		x	0 - 4294967295	100	Threshold of total calls from which the warning is calculated.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
handset → dropcallrate		x	0 – 100%	1%	Threshold in percent of dropped calls rate from which the warning is calculated.
handset → droppedcalls		x	0 - 4294967295	10	Threshold of dropped calls from which the warning is calculated.
handset → handovercancelled		x	0 - 4294967295	10	Threshold of handover cancelled from which the warning is calculated.
handset → handoverrate		x	0 – 100%	20%	Threshold in percent of handover cancel rate from which the warning is calculated.
handset → handovertotal		x	0 - 4294967295	30	Threshold of handover total from which the warning is calculated.
site → calls		x	0 - 4294967295	300	Threshold of total calls from which the warning is calculated.
site → dropcallrate		x	0 – 100%	1%	Threshold in percent of dropped calls rate from which the warning is calculated.
site → droppedcalls		x	0 - 4294967295	30	Threshold of dropped calls from which the warning is calculated.
site → handovercancelled		x	0 - 4294967295	30	Threshold of handover cancelled from which the warning is calculated.
site → handoverrate		x	0 – 100%	20%	Threshold in percent of handover cancel rate from which the warning is calculated.
site → handovertotal		x	0 - 4294967295	100	Threshold of handover total from which the warning is calculated.
system → calls		x	0 - 4294967295	500	Threshold of total calls from which the warning is calculated.
system → dropcallrate		x	0 – 100%	1%	Threshold in percent of dropped calls rate from which the warning is calculated.
system → droppedcalls		x	0 - 4294967295	50	Threshold of dropped calls from which the warning is calculated.
system → handovercancelled		x	0 - 4294967295	50	Threshold of handover cancelled from which the warning is calculated.
system → handoverrate		x	0 – 100%	20%	Threshold in percent of handover cancel rate from which the warning is calculated.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	system → handovertotal		x	0 - 4294967295	100	Threshold of handover total from which the warning is calculated.
	user → calls		x	0 - 4294967295	100	Threshold of total calls from which the warning is calculated.
	user → dropcallrate		x	0 – 100%	1%	Threshold in percent of dropped calls rate from which the warning is calculated.
	user → droppedcalls		x	0 - 4294967295	10	Threshold of dropped calls from which the warning is calculated.
	user → handovercancelled		x	0 - 4294967295	10	Threshold of handover cancelled from which the warning is calculated.
	user → handoverrate		x	0 – 100%	20%	Threshold in percent of handover cancel rate from which the warning is calculated.
	user → handovertotal		x	0 - 4294967295	30	Threshold of handover total from which the warning is calculated.
	zone → calls		x	0 - 4294967295	200	Threshold of total calls from which the warning is calculated.
	zone → dropcallrate		x	0 – 100%	1%	Threshold in percent of dropped calls rate from which the warning is calculated.
	zone → droppedcalls		x	0 - 4294967295	20	Threshold of dropped calls from which the warning is calculated.
	zone → handovercancelled		x	0 - 4294967295	20	Threshold of handover cancelled from which the warning is calculated.
	zone → handoverrate		x	0 – 100%	20%	Threshold in percent of handover cancel rate from which the warning is calculated.
	zone → handovertotal		x	0 - 4294967295	70	Threshold of handover total from which the warning is calculated.
upnp	enable	x	x	true/false	true	Specifies if UPnP support is enabled. If enabled the device will respond to UPnP broadcasts.
	broadcast	x	x	true/false	false	Specifies if UPnP announcements are broadcasted. If enabled the device will periodically broadcast announcements.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
name	x	x	-	-	Specifies the friendly name for UPnP.

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>
```

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*****