

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

Provisioning Guide

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Contact Information

US Location
+ 1 800-775-5330

Spectralink Corporation
2560 55th Street
Boulder, CO 80301
USA

info@spectralink.com

UK Location
+44 (0) 20 3769 9800

Spectralink Europe UK
329 Bracknell, Doncastle Road
Bracknell, Berkshire, RG12 8PE
United Kingdom

infoemea@spectralink.com

Denmark Location
+45 75602850

Spectralink Europe ApS
Bygholm Søpark 21 E Stuen
8700 Horsens
Denmark

infoemea@spectralink.com

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About This Guide

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

- Spectralink IP-DECT/DECT Server
- Spectralink IP-DECT/DECT Base Stations
- Spectralink DECT Media Resources
- Spectralink DECT Handsets

Both Spectralink IP-DECT Server 200/400/6500 and Spectralink DECT Server 2500/8000 use a common method for provisioning.

In the following both servers will be referred to as “Spectralink IP-DECT/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 Server and the provisioning server. It is also assumed, that you have an installed and functioning provisioning server and Spectralink IP-DECT/DECT Server.

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 .
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 IP-DECT/DECT Server	For more information about the server, refer to the guide available online at http://support.spectralink.com/products .
Spectralink IP-DECT/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

About Provisioning

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 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 Server
 - Spectralink IP-DECT/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)
 - Spectralink DECT Handsets
- configuration
- user list

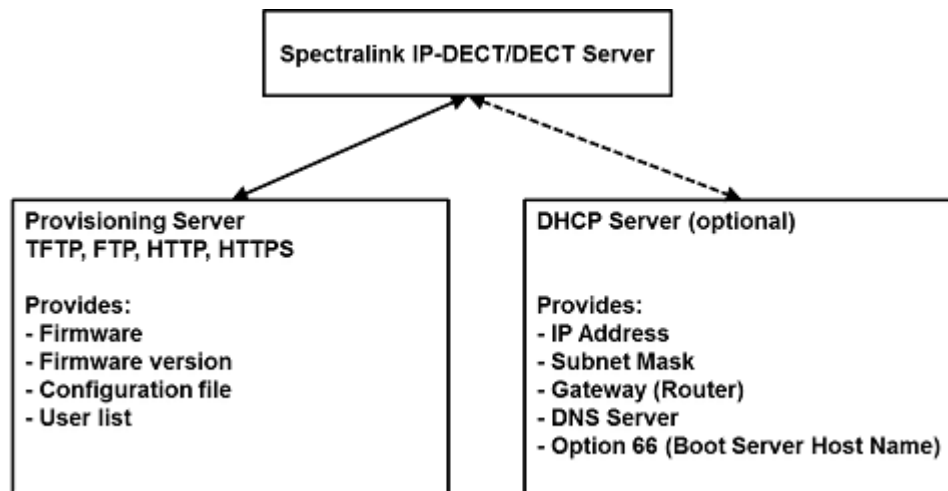


Note:

Provisioning of firmware for Spectralink IP-DECT/DECT Base Stations (not relevant to Spectralink IP-DECT Server 400 single cell solution), Spectralink DECT Media Resources (only relevant to Spectralink IP-DECT Server 6500) and Spectralink DECT Handsets requires acquisition of additional Enhanced Provisioning Interface License for Spectralink IP-DECT Server 400/6500 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 Interface License.

Automatic update must be enabled on the devices. For more information, see ["Enabling Enhanced Provisioning" on page 16](#).



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 configuration file and firmware files for the devices. The firmware and configuration is pulled from the provisioning server by the Spectralink IP-DECT/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 Server requires the provisioning server to present a server certificate that can be verified using a known CA certificate. The Spectralink IP-DECT/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 Server via the web based Administration Page > **Configuration** > **Certificates** (Spectralink IP-DECT Server 200/400/6500) 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 Server:

- [Firmware files](#)
- [Firmware version files \(.ver\)](#)
- [Configuration file](#)
- [User list file](#)

Firmware Files

Firmware files/option	Server 400	Server 6500	Server 2500/8000	Server 200
IP-DECTserver200firmware.bin	-	-	-	✓
IP-DECTserver400firmware.bin	✓	-	-	-
IP-DECTserver6500firmware.bin	-	✓	-	-
DECTserver8000firmware.bin	-	-	✓	-
Option: Firmware default on base station and media resource	✓ (License required)	✓ (License required)	-	-
IP-DECTbasestationfirmware.bin	-	-	✓ (License required)	-
DigitalDECTbasestationfirmware.bin	-	-	✓ (License required)	-
Handsetfirmware.bin	✓ (License required)	✓ (License required)	✓ (License required)	✓

Defining Firmware File Names

The file name(s) can be defined in two ways:

- 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>
```

For a valid XML configuration file example (for Spectralink IP-DECT Server 200), see "[Provisioning Configuration XML File Example \(Spectralink IP-DECT Server 200\)](#)" on page 25.

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>
```

For a valid XML configuration file example (for Spectralink IP-DECT Server 6500), see "[Provisioning Configuration XML File Example \(Spectralink IP-DECT Server 6500\)](#)" on page 26.

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>
```

For a valid XML configuration file example (for Spectralink IP-DECT Server 8000), see "[Provisioning Configuration XML File Example \(Spectralink DECT Server 8000\)](#)" on page 27.

- Through the web based Administration Page of the Spectralink IP-DECT/DECT Server by navigating to **Configuration > Provisioning**.
- On the Spectralink IP-DECT Server 200, the **Provisioning Configuration** page looks like this:

The screenshot shows the 'Provisioning Configuration' web page. It is organized into several sections with grey headers: 'Server', 'Checking', 'Configuration', 'Users', and 'Firmware'. Under 'Server', there are fields for 'Method *' (set to 'DHCP'), 'URL', and 'Interval(minutes)' (set to '0'). Under 'Checking', there are fields for 'Time(hh:mm)' and 'NOTIFY check_sync *' (set to 'Disabled'). Under 'Configuration', there is a checked 'Import' checkbox. Under 'Users', there is an unchecked 'Import' checkbox. Under 'Firmware', there are five text input fields for 'Wireless Server', 'Handset - Butterfly', 'Handset - 75x2, 76x2 and 77x2 series', 'Handset - 72x2 series', and 'Handset - OEM'. At the bottom, there are 'Save' and 'Cancel' buttons, and a legend indicating '*' for required fields and '**' for fields requiring a restart.

Provisioning Configuration	
Server	
Method *	DHCP ▼
URL	
Checking	
Interval(minutes)	0
Time(hh:mm)	
NOTIFY check_sync *	Disabled ▼
Configuration	
Import	☒
Users	
Import	☐
Firmware	
Wireless Server	
Handset - Butterfly	
Handset - 75x2, 76x2 and 77x2 series	
Handset - 72x2 series	
Handset - OEM	
Save Cancel	
*) Required field **) Require restart	

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

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

Provisioning Configuration

Server

Method *

URL

Checking

Interval(minutes)

Time(hh:mm)

NOTIFY check_sync *

Configuration

Import ☒

Users

Import ☐

Firmware

Wireless Server

☐ Use firmware as default

Handset - Butterfly

Handset - 75x2, 76x2 and 77x2 series

Handset - 72x2 series

Handset - OEM

*) Required field **) Require restart

- 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 Interface License installed, the **Provisioning Configuration** page looks like this:

Provisioning Configuration Help	
Server	
Methode *	DHCP ▼
URL	
Checking	
Interval(minutes)	0
Time(hh:mm)	
NOTIFY check_sync *	Disabled ▼
Configuration	
Import	☒
Users	
Import	☐
Firmware	
Wireless Server	
IP Base Station	
Digital Base Station - RFP6	
Handset - Butterfly	
Handset - 75x2, 76x2 and 77x2 series	
Handset - 72x2 series	
Handset - OEM	
Save *) Required field **) Require restart	

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

For more information, see ["Enabling Provisioning through Web Based Administration Page" on page 28](#).

Firmware Version Files (.ver)

Firmware version files/option	Server 400	Server 6500	Server 2500/8000	Server 200
IP-DECTserver200firmware.bin.ver	-	-	-	✓
IP-DECTserver400firmware.bin.ver	✓	-	-	-
IP-DECTserver6500firmware.bin.ver	-	✓	-	-
DECTserver8000firmware.bin.ver	-	-	✓	-
Option: Firmware default on base station and media resource	✓ (License required)	✓ (License required)	-	-
IP-DECTbasestationfirmware.bin.ver	-	-	✓ (License required)	-
DigitalDECTbasestationfirmware.bin.ver	-	-	✓ (License required)	-
Handsetfirmware.bin.ver	✓ (License required)	✓ (License required)	✓ (License required)	✓

**Note:**

A .ver file is a text file with text describing the current firmware version (e.g. "PCS17Ea 58478").

The .ver file is included in the firmware package.

Configuration File

An XML formatted file (see ["Appendix B" on page 74](#)):

- <IP-DECT/DECT Server MAC address>- config.xml
example: 0013d1800032-config.xml

User List File

An XML formatted file (see ["Appendix D" on page 81](#)):

- <IP-DECT/DECT Server MAC address>- users.xml
example: 0013d1800032-users.xml

Enabling Enhanced Provisioning

**Note:**

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

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

To set up provisioning for Spectralink IP-DECT/DECT Base Stations, Spectralink DECT Media Resources and Spectralink DECT Handsets you must do the following:

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

**Note:**

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

**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.

Ordering and Loading Enhanced Provisioning Interface License

The Enhanced Provisioning Interface License allows update of firmware using provisioning server for the following: Spectralink IP-DECT/DECT Base Stations, Spectralink DECT Media Resources (only Spectralink IP-DECT Server 6500) and Spectralink DECT Handsets.

To order a License

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>.

The screenshot shows the 'Spectralink License Key Generator' web form. At the top, there is a header with the Spectralink logo and 'support' text, and a link for 'PRODUCT RESOURCES RMA's'. The main title is 'Spectralink License Key Generator'. Below this is a section titled 'LICENSE KEY GENERATOR' with a note: 'Fields with an asterisk are required.' The form contains four input fields: 'ARI (DECT) / Serial number (Wi-Fi) *', 'Redundancy Primary Aricode (DECT only)', 'Authentication Product Key', and 'Your Email Address'. A blue 'SUBMIT' button is at the bottom left. At the bottom of the page, there is a copyright notice: '© 2016 Spectralink Corporation. All rights reserved. Terms and Conditions | Product Warranty'.



Note:

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

To Load a License

1. If using Spectralink IP-DECT 400/6500, 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 configuration file or through the web based Administration Page of the Spectralink IP-DECT/DECT Server.



Note:

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

Enable Automatic Update of Devices through Configuration File

To allow automatic update of the firmware for Spectralink IP-DECT/DECT Base Stations, Spectralink DECT Media Resources and Spectralink DECT Handsets, the "Enable"/"Auto" parameter must be set to "true" in the 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):

```
<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.

Enable Automatic Update for Base Station through Web Based Administration Page

1. If using Spectralink IP-DECT Server 400/6500, 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 firm-ware 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:

Update base station firmware

Default

PCS Not available

Build Not available

Automatic

Enable ☒

Force restart ☒

Start time Immediately ▾

Save Cancel

Manual

Firmware file ☐ Default ☒ Upload Browse...

Start base station No *

End base station No *

Update Reboot base stations

*) Required field

Spectralink DECT Server 2500/8000:

Firmware [Help](#)

Spectralink device ☐ DECT Server ☐ Digital Base Station ☒ IP Base station ☐ Handset

Updating Spectralink IP Base Station Firmware

Default		Automatic	
PCS	Not available	Enable	☐
Build	Not available	Force restart	☐
Upload	Browse...	Start time	Immediately Save
Upload Delete			

Manual

Firmware file

☐ Default

☒ Upload [Browse...](#)

Start base station No *

512

End base station No *

767

Auto reboot base stations

☐

*) Required field

3. Click **Save**.

Enable Automatic Update for 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 firm-ware 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.

Update media resource firmware

Default

PCS Not available

Build Not available

Automatic

Enable ☒

Force restart ☒

Start time

Manual

Firmware file ☒ Default ☐ Upload

Start media resource No *

End media resource No *

*) Required field

3. Click **Save**.

Enable Automatic Update for Handset 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. <u>On Spectralink IP-DECT Servers:</u> 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 = $2 \times 16 = 32$ simultaneous updates. <u>On Spectralink DECT Servers:</u> High: 130%, Medium: 100% and Low: 70%. Example: 10 base stations * Low load (70%) = 7 simultaneous updates. Note: The number of base stations have an impact on the number of simultaneous updates. Only half of media resource capacity ($32 \text{ channels} / 2 = 16 \text{ channels}$) can be used for SUOTA. Default value: Medium



The image shows a 'Handset update settings' dialog box. It has a title bar with the text 'Handset update settings'. Below the title bar is a section header 'Automatic update'. Under this header, there are four settings: 'Enable' with a checked checkbox, 'Only in charger' with a checked checkbox, 'Start time' with a dropdown menu showing 'Immediately', and 'System load' with a dropdown menu showing 'Medium'. At the bottom of the dialog box are two buttons: 'Save' and 'Cancel'.

Handset update settings

Automatic update

Enable ☒

Only in charger ☒

Start time Immediately ▼

System load Medium ▼

Save Cancel

3. Click **Save**.

Setting Up Provisioning on the Spectralink IP-DECT/DECT Server

You can enable provisioning either through the configuration file or through the web based Administration Page of the Spectralink IP-DECT/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, configuration and firmware) are available on the provisioning server.

For more information about files, see ["Provisioning Server \(Protocols and Files\)" on page 8](#).

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

For more information, see ["Enabling Enhanced Provisioning " on page 16](#).

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 \(Protocols and Files\)" on page 8](#).

4. Enable import of configuration file and user 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 through Configuration XML File

The 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>
  </provisioning>
  <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>
    <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 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>
```

Enabling Provisioning through 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:

Provisioning Configuration	
Server	
Method *	DHCP ▼
URL	
Checking	
Interval(minutes)	0
Time(hh:mm)	
NOTIFY check_sync *	Disabled ▼
Configuration	
Import	☒
Users	
Import	☐
Firmware	
Wireless Server	
Handset - Butterfly	
Handset - 75x2, 76x2 and 77x2 series	
Handset - 72x2 series	
Handset - OEM	
Save Cancel	
*) Required field **) Require restart	

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

Provisioning Configuration	
Server	
Method *	DHCP ▼
URL	
Checking	
Interval(minutes)	0
Time(hh:mm)	
NOTIFY check_sync *	Disabled ▼
Configuration	
Import	☒
Users	
Import	☐
Firmware	
Wireless Server	
	☐ Use firmware as default
Handset - Butterfly	
Handset - 75x2, 76x2 and 77x2 series	
Handset - 72x2 series	
Handset - OEM	
Save Cancel	
*) Required field **) Require restart	

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

Provisioning Configuration Help	
Server	
Methode *	DHCP ▼
URL	
Checking	
Interval(minutes)	0
Time(hh:mm)	
NOTIFY check_sync *	Disabled ▼
Configuration	
Import	☒
Users	
Import	☐
Firmware	
Wireless Server	
IP Base Station	
Digital Base Station - RFP6	
Handset - Butterfly	
Handset - 75x2, 76x2 and 77x2 series	
Handset - 72x2 series	
Handset - OEM	
Save	
*) Required field **) Require restart	

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

Field	Setting
Provisioning Configuration - Server	
Method	The Spectralink IP-DECT/DECT Server must know the protocol and address of server containing the firmware and configuration. The Spectralink IP-DECT/DECT Server can use the following methods to obtain the provisioning server URL: • Disabled (The Spectralink IP-DECT/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>://[<user-name>:<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 For more information about protocols and , see "Protocol" on page 1.
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.

Field	Setting
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 For more information about polling, SIP Notification Check-Sync method and "check-sync" events, see " Automatic Check for New Firmware and Configuration " on page 33.
Provisioning Configuration - Configuration	
Import	Enable. If enabled, this will make automatic update possible if a default firmware file is available.
Provisioning Configuration - Users	
Import	Enable. If enabled, this will make automatic update possible.
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)	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).

Field	Setting
Wireless Server (Only relevant to Spectralink DECT Server 2500/8000)	Enter name of firmware image file. Must match file name on provisioning server. Leave empty for no firmware download.
IP Base Station (Only relevant to Spectralink DECT Server 2500/8000)	Enter name of firmware image file. Must match file name on provisioning server. Leave empty for no firmware download.
Digital Base Station - RFP6 (Only relevant to Spectralink DECT Server 2500/8000)	Enter name of firmware image file. Must match file name on provisioning server. Leave empty for no firmware download.
Handset - Butterfly	Enter name of firmware image file (-Over-the-Air.bin). Must match file name on provisioning server. Leave empty for no firmware download.
Handset - 75x2, 76x2 and 77x2 series	Enter name of firmware image file (-Over-the-Air.bin). Must match file name on provisioning server. Leave empty for no firmware download.
Handset - 72x2 series	Enter name of firmware image file (-Over-the-Air.bin). Must match file name on provisioning server. Leave empty for no firmware download.
Handset - OEM	Enter name of firmware image file. Must match file name on provisioning server. Leave empty for no firmware download.

3. Click **Save**.



Note:

If no provisioning server is configured or obtained, the Spectralink IP-DECT/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 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 Server must download it. In order to do this, the Spectralink IP-DECT/DECT Server needs to know when the data is available.

There are two methods supplied for this:

- Periodic polling
- SIP notifications

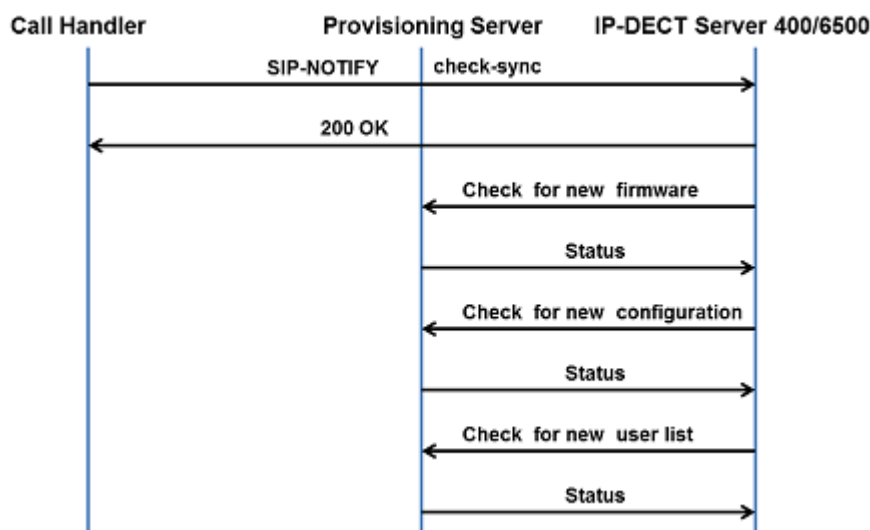
Polling

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 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/user names handled by the Spectralink IP-DECT/DECT Server, and when it is received, the Spectralink IP-DECT/DECT Server initiates a check for updates.



Upgrading Firmware

The Spectralink IP-DECT/DECT Server automatically downloads firmware, configuration and users from a provisioning server. This assumes that provisioning is enabled on the Spectralink IP-DECT/DECT Server. For more information about enabling provisioning on the Spectralink IP-DECT/DECT Server, see ["Setting Up Provisioning on the Spectralink IP-DECT/DECT Server" on page 24](#).

**Note:**

If no provisioning server is configured or obtained, the Spectralink IP-DECT/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 Server and the files must be available on the provisioning server.

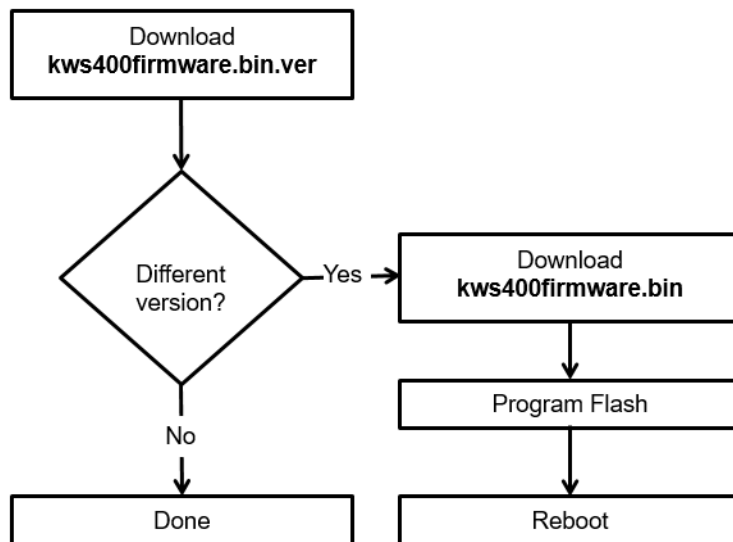
Firmware Update

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.

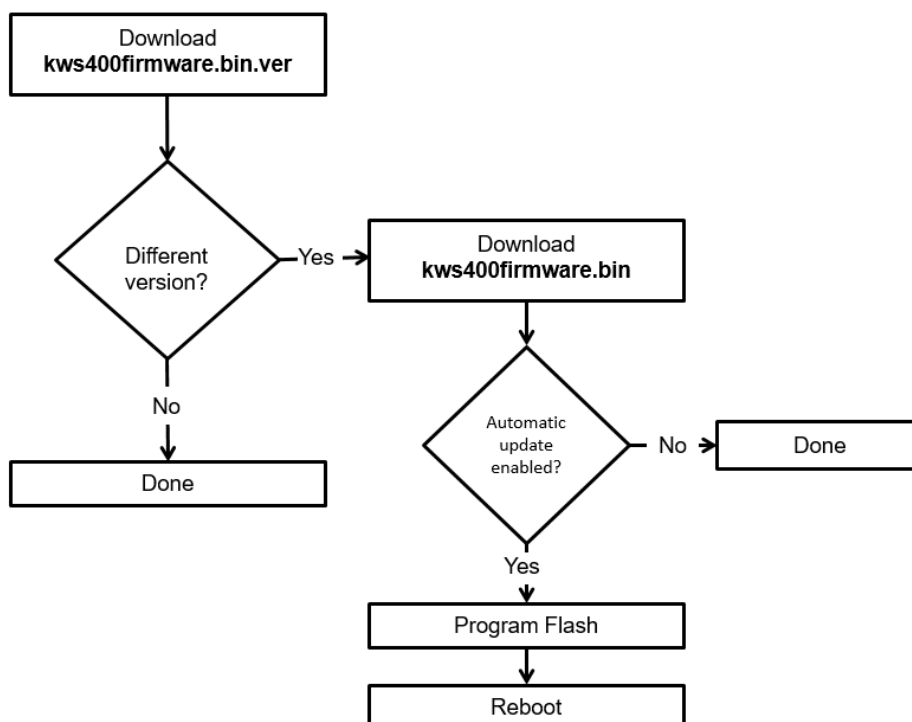
For flexibility, the name of the firmware file is stored in the XML configuration.

File	Description
xxxfirmware.bin	A binary file containing the firmware image.
xxxfirmware.bin.ver	A text file with text describing the current firmware version. E.g. PCS17Ea 58478

Example of provisioning of server firmware:

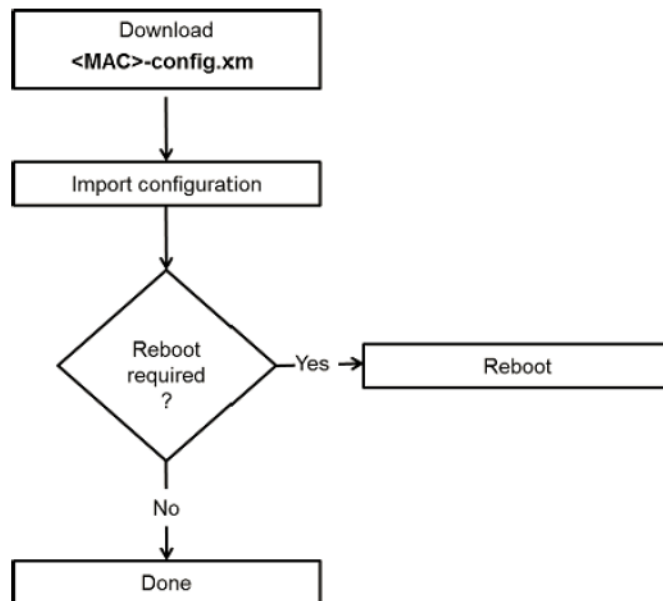


Example of provisioning of firmware for base stations, media resources and handsets with Enhanced Provisioning Interface License installed:



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 Server is rebooted immediately after the firmware is updated.

Configuration Update



The [XML configuration file](#) is downloaded and imported into the Spectralink IP-DECT/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 Server are identical.

User List Update

The users are stored in a separate "[<MAC>-users.xml](#)" file.



Note:

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

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

Each record must have at least a user name field.

For an example of a user.xml file, see "[Users XML File Example for Spectralink IP-DECT Server 200/400/6500](#)" on page 81.

- 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 "[Users XML File Example for Spectralink DECT Server 2500/8000](#)" on page 82.

To Retrieve XML File from Spectralink IP-DECT Server 200/400/6500

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.

To Retrieve XML File from 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.

Service Report Help

Get Service Report
Start Capture Scenario

Cancel Service Report
Stop Capture Scenario

Save to PC

The DECT Server has to run for about 10 minutes before it can generate a service report.
Get and save a Service Report as the first step in any service session in order to document the start configuration.
The Service Report includes text files with an overview of server configuration, statistics, detected errors and problems.
Get and save a Service Report as the last step in any service session, in order to document the configuration.
Please note: Service Report is always required, if you need any support from the DECT product team.
Please include description of observed [what & when] and expected behaviour (If scenario can be repeated, then include a captured scenario).
Service report for maintenance & documentation

```

08:15:56.623 [[Service][report]converting /tmp/trace_start_up.txt from Linux format to windows format
08:15:57.998 [[Service][report]converting /tmp/trace_level_2.txt from Linux format to windows format
08:15:59.053 [[Service][report]converting /tmp/trace_level_3.txt from Linux format to windows format
08:16:00.493 [[Service][report]converting /tmp/trace_level_4.txt from Linux format to windows format
08:16:01.513 [[Service][report]converting /tmp/trace_level_5.txt from Linux format to windows format
08:16:02.893 [[Service][report]converting /tmp/read_me.txt from Linux format to windows format
08:16:03.918 [[Service][report]converting /tmp/users.xml from Linux format to windows format
08:16:04.946 [[Service][report]converting /tmp/Warnings.txt from Linux format to windows format
08:16:05.968 [[Service][report]converting /tmp/RMLog.txt from Linux format to windows format
08:16:06.988 [[Service][report]converting /tmp/user_broadcast_grpo.csv from Linux format to windows format
08:16:08.008 [[Service][report]converting /tmp/RS232log.txt from Linux format to windows format
08:16:10.033 [[Service][report]converting /tmp/traffic_day_dist.csv from Linux format to windows format
08:16:11.063 [[Service][report]converting /tmp/traffic_week_dist.csv from Linux format to windows format
08:16:12.148 [[Service][report]converting /tmp/erlang_stat.csv from Linux format to windows format
08:16:13.203 [[Service][report]converting /tmp/statistic_from_pp.csv from Linux format to windows format
08:16:14.227 [[Service][report]converting /tmp/free_mem.txt from Linux format to windows format
08:16:15.258 [[Service][report]converting /tmp/sfp_rfp_no_statistics.csv from Linux format to windows format
08:16:25.308 [[Service][report]Ready to complete configuration, statistic & log files!
1358004 bytes collected
1362001 bytes collected
          
```

Done!

[servicereportfiles.tar.gz](#)
[View warnings](#)

Capture screenshot

3. When done, click the link **[servicereportfiles.tar.gz](#)**, and save the file in a relevant place.

Appendix A

On the following pages you will find a description of all the configuration parameters of the Spectralink IP-DECT/DECT Server.

Configurations for Spectralink Servers

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

 The WorkSmart Company	Document type: Configurations for Spectralink Servers	To be maintained.		Doc. no: 1411 0652-PA	Author/Released by: SOS
	Document name:14110652_PA_014_configurations_for_servers_extern.doc	Doc ed: 013	Date: 2018-08-29	Page of pages: 1 of 34	

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2.	Configurations	3

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)

 The WorkSmart Company	Document type: Configurations for Spectralink Servers	Doc. no: 1411 0652-PA		Author/Released by: SOS
	Document name:14110652_PA_014_configurations_for_servers_extern.doc	Doc ed: 013	Date: 2018-08-29	Page of pages: 2 of 34

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

	Document type:	To be maintained.	Doc. no:		Author/Released by:
	Configurations for Spectralink Servers		1411 0652-PA		SOS
	Document name:	14110652_PA_014_configurations_for_servers_extern.doc	Doc ed:	Date:	Page of pages:
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2. Configurations

* = hidden or license required

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
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.
	password	x	x	-	Default: IP-DECT Server 400/6500 “f621c2268a8df24955ef4052bfbb80cf” (password “ip6500” encrypted) Default: DECT Server 2500/8000 “8e49ea4c7249f802a983adc7d50375f1”(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.
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.

	Document type:	To be maintained.	Doc. no:		Author/Released by:
	Configurations for Spectralink Servers		1411 0652-PA		SOS
	Document name:	14110652_PA_014_configurations_for_servers_extern.doc	Doc ed:	Date:	Page of pages:
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	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	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
	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, China, South America, Taiwan, USA	Europe	Specifies the DECT frequency band to be used.
	allow_long_messages		x	true/false	true	Specifies if long MSF messages and long call back numbers are allowed.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	* 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.
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.
	* deAssign3	x		-	Logged out by charger	Specifies the text displayed in a handset if placed in a charger.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
*	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 → recipient_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.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	email → smtp_address	x		-	-	Specifies the address of the mail server to use.
	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	disabled	Specifies the Phonebook source of data. Disabled, use an LDAP server or import a CSV file.
	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.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	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.
	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.
media_resource	enabled		x	true/false	true	Specifies if the internal media resource if enabled.
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.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	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.
	dns2	x	x	-	-	Specifies the secondary DNS.
	domain	x	x	-	-	Specifies the name of the domain the system belongs to.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
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.
	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.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
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.
	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 → useoldmsfreasecodes	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.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	auto → enable_digital	x		true/false	false	Specifies if automatic update is enabled or disabled. Only applies to RFP6 base stations.
	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.
	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 protocol transport layer used by PTP for LAN sync.
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_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.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
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.
media_resource_encryption		x	true/false	false	Require an encrypted connection with the media resource. Note: Not compatible with previous generation media resources.
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.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	* 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.
	* 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.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
*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 $2 \times 16 = 32$ 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 ($32 \text{ channels} / 2 = 16 \text{ channels}$) 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.
	auto	x	x	true/false	false	Specifies if automatic update is enabled or disabled.
sip	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.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
auth → username	x	x	-	-	Specifies the default user name for the handset authentication (if no specific handset authentication user name is specified).
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.
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.
localport	x	x	-	5060	Specifies the SIP port.
maxforwards	x	x	-	70	Specifies the maximum number of times the SIP messages can be forwarded.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
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.
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.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
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.
* 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).

Configuration parameter	Dect	IP-Dect	Options	Default	Description
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	-	-	-
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	-

Configuration parameter	Dect	IP-Dect	Options	Default	Description
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.
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).
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.

	Configuration parameter	Dect	IP- Dect	Options	Default	Description
	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.
	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.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
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.
	acoustic_feedback_on_release	x		0,1,2 (acoustic feedback, acoustic 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.
	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.

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Configuration parameter	Dect	IP-Dect	Options	Default	Description
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.
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.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
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.
	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.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
shelf1 → card0 → port1 → IgnoreChecksum	x		0/1	0	Specifies if 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 → NCRReleaseCmd	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.
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.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
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_AlertTimeout	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.
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.

Configuration parameter	Dect	IP-Dect	Options	Default	Description
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.

	Configuration parameter	Dect	IP-Dect	Options	Default	Description
	shelf1 → card0 → port1 → T4	x		-	4	Not used.
	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.
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.
	name	x	x	-	-	Specifies the friendly name for UPnP.

Appendix B

Configuration XML File Example for 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>
    <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>
```

Configuration XML File Example for 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>
    <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>
```

Configuration XML File Example for 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

Users XML File Reference

Parameter	Description	Values	Server
user.ipei	The DECT IPEI of the users handset	A valid IPEI in the format XXXXX XXXXXXXX or empty.	200 400 6500 2500 8000
user.accesscode	Access code required for subscribing the handset to the system	A number with 0-8 digits.	200 400 6500 2500 8000
user.standbytext	The text displayed in the handset when idle	A text string.	200 400 6500 2500 8000
user.username	The user name/extension used when communicating with the SIP server	A valid SIP user name. Note: Max. length of a SIP user name 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 2500 8000

Parameter	Description	Values	Server
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 2500 8000
user.displayname	The display name sent with SIP requests.	A valid SIP display name.	200 400 6500 2500 8000
user.authuser	User name for authenticating the user.	A valid SIP authentication user name. Note: Max. length of a SIP user name is 63 characters. Following characters are allowed in the configuration file: A-Z a-z 0-9 - _ ! ~ * ' () & = + \$, ; ? /	200 400 6500 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 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 2500 8000

Parameter	Description	Values	Server
user.lid	Line Identifier is only supposed to be used with analogue interface cards. xyyzzzz xx is shelf number yy is card number in shelf zzzz is line number on analogue card	xx - (01 – 08) yy – (01-08) zzzz – (0000 - 0015) empty or leave out if user is not assigned to a analogue interface card.	2500 8000
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

Parameter	Description	Values	Server
users.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 2500 8000

Appendix D

Users XML File Example for Spectralink IP-DECT Server 200/400/6500

```
<?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>
    <displayname>Morten Mortensen</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>
  </user>
</users>
```

Users XML File Example for 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>Morten Mortensen</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>
```