

84-Series Software Update Procedures

The Spectralink 84-Series handsets support multiple methods for updating handset software. This document will detail each of those processes in order to give you the greatest flexibility when administering software.

Available Update Methods

Software updates can be performed utilizing the over-the-air methods or via USB. The over-the-air methods are preferred and should always be utilized before considering the use of USB. The over-the-air methods include FTP, HTTP, HTTPS, SFTP and TFTP and will be performed using a provisioning server. The default method used by the handset is FTP and will be the method that is most highly recommended in your deployment. There is also a software updater built into the handset's web UI that can be utilized with some additional configuration requirements in your environment.

Provisioning Server

The use of a provisioning server is required for the update of software on the Spectralink 84-Series handsets. It is recommended that all customers use a provisioning server for the regular configuration and management of their handsets. We will start by explaining some of the basic information as it relates to the provisioning server itself before going into the details on how to use the provisioning server to update the handset software. If you've already setup your provisioning server then feel free to skip ahead to the [Updating Software with a Provisioning Server](#) section.

Provisioning Server Basics

Your standard provisioning server will require a system that meets a few basic needs. The system must have a network connection, preferably capable of 100MB/Full Duplex or better. At least 10GB of hard disk space for the storage of configuration files, log files and software files. And an operating system capable of running an FTP, TFTP or HTTP server. Customers commonly utilize a Windows Server environment or a Linux server for this purpose.

The next component is the choice of file transfer protocol to use. As the default is FTP we will focus on applications that provide FTP services. When it comes to FTP servers your options are quite broad. Many customers opt to use a Windows Server and the available FTP service that is part of Windows. Others choose to use a standalone server application such as 3CDAemon or Filezilla. Spectralink does not certify or warrant any specific provisioning option or method and instead recommends that customers select the method that most closely fits their business requirements and policies.

For the purposes of this document we will assume that you've chosen to use Filezilla as your server of choice and that you've followed the Filezilla documentation on how to install the software onto the server that will act as your provisioning server. Now you'll need to setup a couple of user accounts on the server to allow the 84-Series Handsets to connect and download files and software.

As Spectralink has moved away from Polycom there have been some changes to the handset provisioning account. Under Polycom, the provisioning account was PlcmSplp with the password of PlcmSplp; however, Spectralink recently changed this account to Administrator with the password of admin123. This change occurred in the 4.3 release of Spectralink software. To ensure that all of your handset are able to communicate with the provisioning server it is recommended that you add both of these accounts. Both accounts should have full permissions to the root directory of the provisioning server to ensure that they are able to upload, download and replace files as needed. Note that this is not the giving the accounts full permissions to the entire server but just to the folder where the files will reside. If you choose to change the default account credentials then just be sure to add that account to your provisioning server as well.

If you've never used a provisioning server with your phones then you will want to add DHCP option 66 to your DHCP scope with the IP address of the provisioning server. This is because the default provisioning server IP address on the phone is 169.254.1.1 and this will only be accessible via USB. If you're not using DHCP with your phones then you'll have to touch each phone to add the provisioning server IP address via the keypad, or by connecting to the web interface of the phone and programming it from there. Making this change will cause a phone to reboot so if you are doing it via the web interface be prepared for that occurrence.

Updating Software with a Provisioning Server

To start out you will need to download the appropriate software release for your handsets from the [Spectralink Support Portal](#)¹. Keep in mind that there are two flavors of handsets available now; those that support Microsoft Lync integration and those that don't. You can verify which version you need by checking the reference table in [Appendix A](#) at the end of this document. Once you've downloaded the appropriate software version from the website you will need to place it in the root directory of your provisioning server. The software comes in an archive that will then need to be extracted so you can access the actual software file.

Once extracted, you will need to copy and paste the software file into the root directory of your provisioning server. If you are using Microsoft Lync then the filename will be slnk84xx.lync.ld and if you're using non-Lync, called SIP from now on, then the filename will be slnk84xx.sip.ld.

The next step will require some editing of the master configuration file for the handsets. If you've never used a provisioning server before then this may seem a little confusing at first but for you old pros this should be pretty straight forward. The master configuration file is essentially an

¹ Spectralink Support Portal URL - <http://support.spectralink.com/products/wi-fi/spectralink-84-series-wireless-telephone>

index file that tells the phone what other files it needs to download from the provisioning server. Included with the software you just downloaded are copies of the standard configuration files and a master configuration file. This file is also known as the all-zeros configuration file because it is filename *000000000000.cfg*. Figure 1 below is screenshot of what this file looks like.



Admin Tip

Spectralink Support recommends the use of either Notepad++ or FOXE for 84-Series XML Configuration file editing.

```
<?xml version="1.0" standalone="yes"?>
<!-- ***** -->
<!-- * Default Master SIP Configuration File for FLAT DEPLOYMENTS * -->
<!-- * -->
<!-- * This file is read by every handset at boot to specify where to load its * -->
<!-- * software from (APP_FILE_PATH), to specify the sequence in which to read* -->
<!-- * configuration files (CONFIG_FILES) and whether to store or retrieve * -->
<!-- * information in specific directories (server root by default) * -->
<!-- ***** -->

<MASTER_CONFIG>

<!-- You can specify a path with subdirectories to specify the location of the handset software. -->
<!-- See the Deployment Guide for more information about setting up subdirectories. -->

<SOFTWARE
  APP_FILE_PATH="sip.ld"
/>

<!-- Information from files on the left overrides information from files to their right -->
<!-- [PHONE_MAC_ADDRESS] dynamically gets replaced by that handset's MAC address -->
<!-- For FLAT DEPLOYMENT, create a <macaddress>-ext.cfg for each handset following the -->
<!-- template provided in this directory -->
<CONFIGURATION
  CONFIG_FILES="[PHONE_MAC_ADDRESS]-ext.cfg, site.cfg"
/>

<DIRECTORIES
  LOG_FILE_DIRECTORY=""
  OVERRIDES_DIRECTORY=""
  CONTACTS_DIRECTORY=""
  CALL_LISTS_DIRECTORY=""
/>

</MASTER_CONFIG>
```

Figure 1

The first thing you'll notice when opening this file are the container headings. The Software container is where we'll focus for this document. Within the Software container is an attribute called APP_FILE_PATH. This attribute is used to tell the phone the software filename it should look for on the provisioning server as it boots up. Now, you might be a little confused because in Figure 1 you see "sip.ld" in the attribute but the filename you put into your root directory was slnk84xx.sip.ld or slnk84xx.lync.ld. The reason for this is that the handset knows to prepend

information to the sip.ld in order to locate the correct file. However, if you're using Lync capable software then you still may need to modify this file. Handsets running software prior to 4.2 will be looking for software files that do not match the newer filenames. This means that handsets upgrading from pre-4.2 builds may have problems locating the software file if you just leave "sip.ld" in the attribute.

Based on the filename of the software you downloaded, we'll replace the attribute with the correct filename to ensure that all phones are able to download the software file. Using your text or XML editor of choice, open the all-zeros configuration file and change the sip.ld to either slnk84xx.sip.ld or slnk84xx.lync.ld. If you're using a text editor to do this, be sure that you include the two quotation marks or the file will not be parsed correctly by the phone. In a text editor this will look like `APP_FILE_PATH="slnk84xx.sip.ld"`. When using an XML editor, the editor will handle correcting the syntax to add the quotation marks. Lastly, you will want to clear all the filenames from the `CONFIG_FILES` attribute so it is just empty quotes. Now save the all-zeros configuration file and close it.

For those of you that setup your phones with unique MAC address master configuration files you will either need to modify the `APP_FILE_PATH` attribute in each of those files or convert your environment to use the all-zeros master configuration file.

Assuming that your phone is already on the WLAN and the IP address of the provisioning server is accessible to handsets the phone should now be able to connect to the provisioning server. You can initiate this process by performing an update configuration on the phone via `Settings->Basic Settings->Update Configuration`, performing a restart via the Basic Settings menu or rebooting the phone. The phone will boot up and automatically check the provisioning server IP address it is provided either statically or via DHCP and when it locates the all-zeros configuration file it will download and parse the file. The phone will then reboot to attempt to download the new software. As the phone boots up it will access the provisioning server and begin the software update process. This will take approximately 2 minutes on most network environments with the phone rebooting at least two additional times during the update process.

This entire process can be done via any of the mentioned transport protocols. The setup for FTP and HTTP are quite similar from the phone's perspective and the use of HTTPS and SFTP will require that you load a certificate onto the phone via the initial provisioning method as described in the 84-Series Admin Guide. The use of TFTP is limited and not recommended as some versions of TFTP servers are not able to transfer large files.

Web UI Software Updates

It is possible to use the handsets built-in web UI to update the software. However, this does require some additional setup on your part to make this work correctly. Spectralink does publish software to the web downloads server that is utilized by the web UI but this will load whatever version is currently available and may not be the version you want to load onto your handsets. This section of the document will describe how to setup your own web server to be used for loading software to the handsets.



Note

This process is not recommended for any deployment but especially not for large deployments. It will require that you connect to each handset individually via its web interface to perform the update.

Web Server Requirements

In order to utilize the 84-Series Web UI to update software you will need to have your own web server available. This server can be any type of web server and is not restricted by Spectralink or the handsets. The setup is identical regardless of the type of server chosen. Directory browsing must be enabled for the folder where the software will be stored.

In order to properly setup the server you will need to create an XML file that will act as the software index for the phone. When you enter the custom server address into the handset's Web UI you will need to include this filename in the path. The format of the file is fairly basic but does include some required components. Figure 2 below shows the basic format and syntax of this file.

```
<?xml version="1.0" encoding="utf-8" standalone="yes" ?>
  <PHONE_IMAGES>
    <REVISION>
      <PHONE_IMAGE>
        <VERSION>6.2.0.2221</VERSION>
        <PATH>http://192.168.0.101/slnk84xx.sip.ld</PATH>
      </PHONE_IMAGE>
    </REVISION>
  </PHONE_IMAGES>
```

Figure 2

All containers are required in this file and it is vital that you enter the correct path for the software file that the phone will actually download. Here's a text version of the file to make it easier to duplicate.

```

<?xml version="1.0" encoding="utf-8" standalone="yes" ?>
<PHONE_IMAGES>
  <REVISION>
    <PHONE_IMAGE>
      <VERSION>6.2.0.2221</VERSION>
      <PATH>http://192.168.0.101/slnk84xx.sip.Id</PATH>
    </PHONE_IMAGE>
  </REVISION>
</PHONE_IMAGES>

```

The Version number entered will be the version that is displayed on the Web UI to direct you on which version to load. This is most relevant if you have multiple software versions available for download on the server. The Path doesn't have to be the same server where the XML index file resides not the same directory but does need to be a valid network path that the phone can reach. Note that if you use DNS instead of an IP address then you must ensure that the handset has a DNS server configured either statically or via DHCP.

Figure 3 shows the Web UI pre-populated with the server information that you would need to enter in order to facilitate the update.

Figure 3

The custom server URL that you enter into the phone's Web UI can use either HTTP or HTTPS depending on the requirements you set. When you are ready to update the software on the

handset, simply select the version from the dropdown box and click Install. This will cause the handset to reboot and the update to begin.



Admin Tip

When using this method to update handset software you will encounter issues if you then also choose to use a standard provisioning server for handset configurations. This is because the use of this feature modifies the handset configuration to include an Upgrade Server parameter that will override the standard provisioning server. You can use the Clear Upgrade Server button in the Web UI to clear this parameter and allow for normal provisioning server functionality to resume.

If you choose to utilize this method you can simply update the contents of your XML file to represent new software releases, or you have the option of duplicating the Revision, Phone_Image, Version and Path containers between the Phone_Images container to allow you to keep multiple versions available.



Web

The Spectralink Download server address is:

<http://downloads.spectralink.com/software/upgrade/>

This server may need to be specified as the Custom Server in the web interface to update handsets running software prior to version 4.6. Once the handsets are updated to the latest software they will default to the correct update server address for future updates.

Software Updates via USB

Using the handsets USB interface to update software should always be considered a last resort. This process tends to be unreliable and fraught with hiccups due largely to the nature of Windows and USB. Overall, the process is nearly identical to updating the handsets over-the-air as described in the Provisioning Server section above. The primary difference is the interface to the phone will be via the USB port rather than the radio.

To ensure that this process works correctly you will need to verify that you can connect an 84-Series Handset to your PC and have your PC receive an IP address from the phone. This IP should be 169.254.1.1 and the phone will use 169.254.1.2. Please note that with Windows this may require you to download and install the USB driver from the Spectralink Support Portal. Once the handset is connected to your PC you will need to verify that your provisioning server is listening to the correct IP address.

Once all of this has been setup and verified the process to update the software is essentially the same as the Provisioning server process described above. It is important to note that while

performing USB upgrades you may see the process pause or stop during the download of software. If this happens you will likely need to pull the battery from the phone and re-insert it to start again. This is an artifact of Windows and USB not being reliable for this type of connection. You may have to do this multiple times until the upgrade completes properly. Removing the battery during software download will not impact the phone. However, removing the battery when the handset displays a warning to not remove the handset will result in unrecoverable failure in the phone.

Appendix A

| <i>Part Number</i> | <i>Software Supported - Capabilities</i> |
|--------------------|--|
| 2200-37148-001 | 4.3.x – Non-Lync Capable – SIP Only |
| 2200-37165-101 | 4.3.x – Non-Lync Capable – SIP Only |
| 2200-37164-101 | 4.3.x – Non-Lync Capable – SIP Only |
| 2200-37288-001 | 4.3.x – Non-Lync Capable – SIP Only |
| 2200-37288-101 | 4.3.x – Non-Lync Capable – SIP Only |
| 2200-37163-001 | 4.3.x – Non-Lync Capable – SIP Only |
| 2200-37162-001 | 4.3.x – Non-Lync Capable – SIP Only |
| 2200-37161-101 | 4.3.x – Non-Lync Capable – SIP Only |
| 2200-37160-101 | 4.3.x – Non-Lync Capable – SIP Only |
| 2200-37292-001 | 4.3.x – Non-Lync Capable – SIP Only |
| 2200-37292-101 | 4.3.x – Non-Lync Capable – SIP Only |
| 2200-37149-001 | 4.3.x or 4.6.x – Lync Capable |
| 2200-37150-001 | 4.3.x or 4.6.x – Lync Capable |
| 2200-37174-101 | 4.3.x or 4.6.x – Lync Capable |
| 2200-37175-101 | 4.3.x or 4.6.x – Lync Capable |
| 2200-37290-001 | 4.3.x or 4.6.x – Lync Capable |
| 2200-37290-101 | 4.3.x or 4.6.x – Lync Capable |
| 2200-37172-001 | 4.3.x or 4.6.x – Lync Capable |
| 2200-37173-001 | 4.3.x or 4.6.x – Lync Capable |
| 2200-37198-101 | 4.3.x or 4.6.x – Lync Capable |
| 2200-37199-101 | 4.3.x or 4.6.x – Lync Capable |
| 2200-37294-001 | 4.3.x or 4.6.x – Lync Capable |
| 2200-37294-101 | 4.3.x or 4.6.x – Lync Capable |

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The *Product Warranty and Software License and Warranty* and other support documents are available at <http://support.spectralink.com>.

Contact Information

US Location

800-775-5330

Spectralink Corporation
2560 55th Street
Boulder, CO 80301

info@spectralink.com

Denmark Location

+45 7560 2850

Spectralink Europe ApS
Langmarksvej 34
8700 Horsens

infodk@spectralink.com