Technical Bulletin CS-15-07

PIVOT Recommended Software Update Procedures

This technical bulletin explains how to update the software on your PIVOT handsets most efficiently and easily.

System Affected

Spectralink 87-Series Wireless Handsets - PIVOT

Description

Spectralink PIVOT handsets utilize the Android operating system and provide a number of methods for updating the software. Because of the Android operating system there are some considerations that need to be accounted for when attempting to update handsets.

Spectralink introduced the Android version known as KitKat in release 1.3. Prior releases of software used the Android version known as JellyBean. Because of the differences in these two Android software releases there are some underlying steps needed for software updates.

Any handset that is running version 1.0 or 1.1 will need to be updated to version 1.2 before being updated to version 1.3. In order to update to the 1.4 release phones must first be on the 1.3 release. This has the potential to create several update steps in order to get your handsets onto the most recent versions of software. Figure 1 below provides a diagram of the software versions you must step through to update your handsets.

Version 1.0 or 1.1

Version 1.2

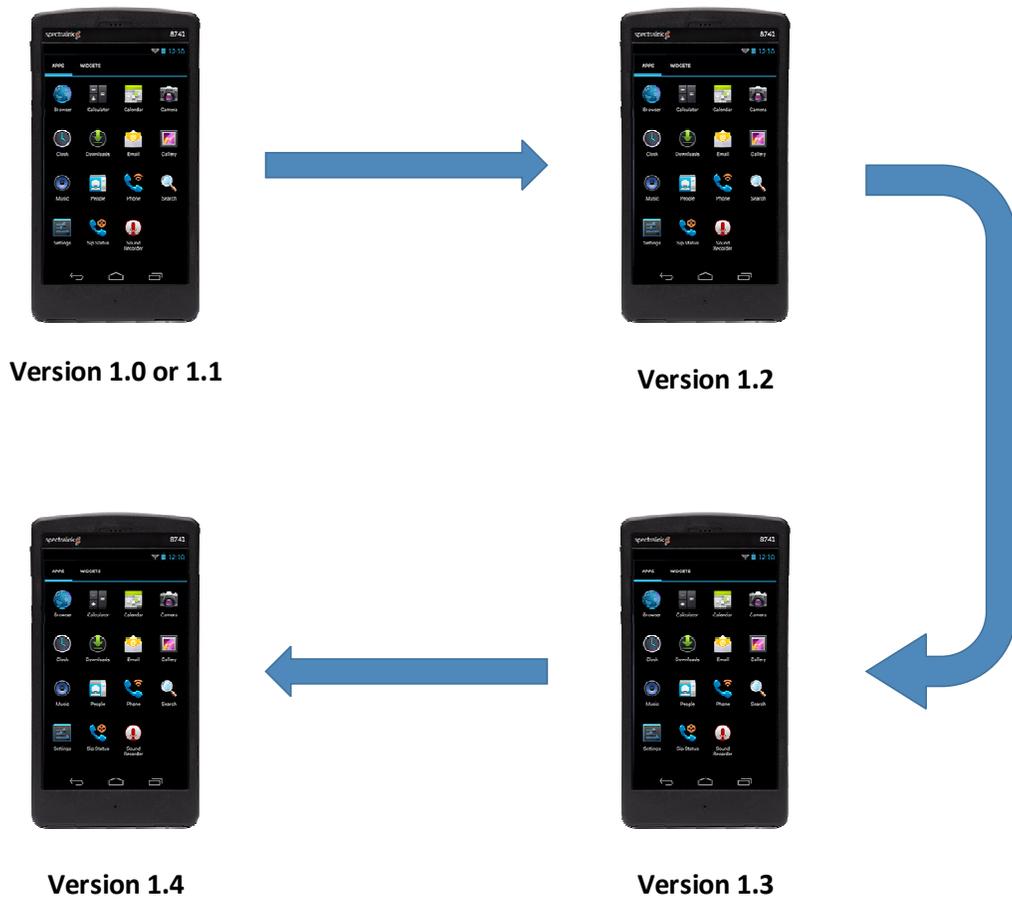**Version 1.4**

Version 1.3

Figure 1

To move between these software versions, your best option is always to use your Spectralink CMS. Your CMS is able to support two different software versions which helps you update your handsets more rapidly. If you look at the Over-The-Air Configuration in your CMS you will see the following when you have multiple software versions available, see Figure 2.

Your current update(s):

The version of spectralink firmware which will be downloaded to your (1.3+) devices is: **spectralink Jellybean version 1.4.0.9980**

The version of firmware which will be downloaded to devices running firmware older than 1.2.0.6893: **spectralink Jellybean version 1.2.0.6893**

Complete Upgrade Path The patches required to complete an upgrade from 1.0 / 1.1 to 1.3 are present on this system.

Figure 2

There are situations where you may need to have up to three different versions of software available in order to update your handsets, such as a phone running 1.0 or 1.1. To accomplish this you have a couple of different options.

1. You can load version 1.2 and version 1.3 onto your CMS and allow the phones to complete their update to 1.3 and then load 1.4 onto the CMS to complete the update procedure.

2. You can load version 1.3 and version 1.4 onto your CMS and load version 1.2 with a separate HTTP web server.

Pivot uses HTTP as the primary update transport mechanism which enables you to use any HTTP server to complete the upgrade process. To use multiple HTTP servers will require manual intervention on each handset so for any installation with more than a few phones this isn't going to be a very good solution.

Your best solution will still be to use CMS, even if you need to load additional software to finish the process, because this will not require you to modify the System Update server information.

How to Start

If you've got a new handset out of the box you can use SLIC to configure it for the WLAN and CMS information, or you can just set things up manually. Again, for a few handsets this is fine but for a large deployment you're going to want to use SLIC. If you're just updating phones so they're ready for a later deployment then manual is likely the way to go. We'll walk you through doing it manually here as the SLIC documentation already covers how to do this.

With your phone fresh out of the box you'll want to go into Settings and then to Admin Settings. The default password is admin, all lowercase. First, let's turn on the wireless so we can do the rest of our configuration steps. Click on Wi-Fi at the top and either select the SSID for your network or press the '+' to add a new one. Once you've connected to the WLAN, back up one screen to the Admin settings and scroll to the bottom of the list. Under the System section, press System update.

Here we'll enter the Server Address as an IP address. This will be either the IP address of your CMS or your HTTP server you've setup. The port will be 80 if using CMS or whatever you've chosen if using your own HTTP server. The last bit that's important is the Relative Path on Server. This is where the file the phone will be downloading is located. If you're using CMS then this will be "media/otaupdate", without the quotes. I recommend using a similar path on your own HTTP server as well just to keep things simple. Otherwise, use whatever path you want off of your root directory, or leave it blank to use the root.

Now that we're on the WLAN and have setup the server information to update the software we need to kick off the update process. So, go back one level to the Admin Settings and then back one more level to Settings. At the bottom, press the About Phone and then press the System Update option. You'll see a small arrow pointing at a horizontal line in the top left corner of the screen to indicate the download has initiated. Now, swipe the screen from the top to the bottom to open the Status menu. Here you should now see the phone displaying the download progress. Once the software is downloaded to the phone and verified it will be ready to apply and the phone will make a tone to indicate this. Just press Reboot Now & Apply to complete the update. The phone will reboot and load the new software.

If you're using CMS and have 1.2 and 1.3 loaded, then when the phone comes back up you can simply repeat the process of going to Settings → About Phone → System Update to start the next download. If you're using your own HTTP server then you may need to put the next file in the directory before starting the next download.

> **Note**
>
> All PIVOT software files are called "ota-update.bin" so you'll want to make sure you put them into directories that are properly labeled. Do not rename the files or the phone won't be able to locate the file for download.

Let's assume for a moment that you are using CMS and a second HTTP server to complete the update process. In this scenario we've loaded 1.2 and 1.4 onto the CMS and we're going to load 1.3 via the alternate HTTP server. The process is pretty similar to what's described above but once you've updated to 1.2 you would then need to go back into the Admin Settings and modify the System Update value for the Server Address to be your alternative HTTP server. Then you simply start the update again. Once it's finished and the phones has rebooted you simply go back into Admin Settings and change the System Update server address back to the CMS IP address and start the update for the last time.

I realize this all seems like a lot of steps to get a phone updated but just remember that consumer Android devices live by the same rules. These steps are pretty easy to follow once you've established the setup so it becomes easy to update multiple phones at once.

Final Comments

Just to help ensure things are clear and simple, I'm going to provide the steps again in a bullet format for easier reading. If you want to update a phone from 1.0 or 1.1 then here's what you do. This scenario assumes you're using CMS.

1. Power up new phone go to Settings → Admin Settings → "admin" → Wi-Fi
   a. Configure appropriate WLAN settings for your environment
2. Go to Settings → Admin Settings → "admin" → System Update
   a. Configure server information for software updates
      i. Server Address = IP address of CMS
      ii. Server Port = 80
      iii. Relative Path on Server = media/otaupdate
3. Go to Settings → About Phone → System Update
   a. System download will start, swipe down to display status
   b. Once download completes, select Reboot & Apply
   c. Phone will now reboot with 1.2 software loaded

4. Go to Settings → About Phone → System Update

    a. System download will start, swipe down to display status

    b. Once download completes, select Reboot & Apply

    c. Phone will now reboot with 1.3 software loaded

5. Log into your CMS and go to Over the Air Provisioning

    a. Select the Browse button and navigate to the version 1.4 ota-update.bin file

    b. Select Submit File Upload and wait for the upload to complete

6. Go to Settings → About Phone → System Update

    a. System download will start, swipe down to display status

    b. Once download completes, select Reboot & Apply

    c. Phone will now reboot with 1.4 software loaded

The steps to do this with your own HTTP server are pretty much the same except that you'll obviously need to update the ota-update.bin file between updates to the new version to be loaded. Or, if you're using the multiple server approach, you'll need to update the Server Address as in step 2 above.

Note

If you attempt to upgrade from version 1.2 to version 1.4 you will receive an error message, "write failed: ENOSPC (No space left on device)". If you encounter this error it is an indication that the phone is on version 1.2 and trying to update to 1.4. Check the version you have on your update server to ensure you are trying to download version 1.3 instead.

Note

When performing software updates from 1.3 to version 1.4 or later, you may want to consider performing a reset to factory defaults. This will clean up the icon layout with the addition of Google® applications and give the overall UI a fresh start. This is completely optional though and would be best done on phones that are being updated before deployment.

For those that want a more portable solution for short term use then I would recommend using MiniWeb HTTP Server as it works with Windows natively and can be used quickly and easily to update software. It's free and available for download from http://sourceforge.net/projects/miniweb/?source=typ_redirect.

If you are going to be using a Windows IIS web server to update your handset software you will need to increase the session timeout value from the default value of 120 seconds. You must increase this session timer to prevent the connection from reseting before completing the download. I recommend something like 600 seconds as this will ensure there is sufficient time

for the download to complete. To change the default connection timeout in IIS, navigate to the top level of the site you want to manage and right click. Hover over Manage Web Site and then select Advance Settings. In the dialogue box that opens expand Connection Limits and change Connection Time-out to the new value and click OK.

If you need assistance with installing or configuring your PIVOT handsets, please contact your Spectralink Authorized Reseller or Spectralink Distribution Partner.

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