

# Upgrading Debian-based Raspberry Pi IRLP Nodes

March 31, 2020 by VE7LTD

## Step 1 – Perform a backup

While performing an update, problems can occur. The best kind of backup is a full image of the SD card. This can be done using a USB to SD/microSD card adapter and another computer. Rather than re-iterating the process, we suggest you look online for the best way to image your card.

Here is a link to a comprehensive tutorial on imaging SD cards: <https://tinyurl.com/jyrhvxe>

If you choose not to make a backup, you should at least create an IRLP Backup file by running the command: `/home/irlp/scripts/backup-for-reinstall`

## Step 2 – Determine what version of Debian is running on the node currently

- Log in as root
- Execute : `cat /etc/debian_version`

It will return a number, such as 7.2. The number before the decimal (7) is the release number. Look up the release number to determine its name:

5	lenny	9	stretch
6	squeeze	10	buster
7	wheezy	11	bullseye
8	jessie	12	bookworm

In our example, the name for release number 7 is “wheezy”.

You need to be aware of what the latest stable release is. You do not want to go beyond a stable release. If your node is already at the stable release STOP HERE. The best source to check on the latest stable release is to visit the Debian website:

<https://www.debian.org/releases/stable/>

## Step 3 – Determine the next release name

In our example, the next release name is “jessie”. This is one release higher than the current in our example.

#### Step 4 – Make sure your system is up to date

Log in as root and execute the following commands in order:

```
apt-get clean all
apt-get update
apt-get -y upgrade
apt-get -y dist-upgrade
apt-get -y autoremove
```

#### Step 5 – Update the apt sources files to reflect the next version

There are two files that you have to update in order to force apt-get to perform an update to the next release. The files are:

```
/etc/apt/sources.list
/etc/apt/sources.list.d/raspi.list
```

You need to replace the current version release name in these files to the NEXT release. Do not update it to anything but the next release or your system will likely fail.

*/etc/apt/sources.list (original)*

```
deb http://mirrordirector.raspbian.org/raspbian/ wheezy main contrib non-free rpi
```

*/etc/apt/sources.list (updated with changes bolded)*

```
deb http://mirrordirector.raspbian.org/raspbian/ jessie main contrib non-free rpi
```

*/etc/apt/sources.list.d/raspi.list (original)*

```
deb http://archive.raspberrypi.org/debian/ wheezy main
```

*/etc/apt/sources.list.d/raspi.list (updated with changes bolded, note added "ui" to end)*

```
deb http://archive.raspberrypi.org/debian/ jessie main ui
```

If your files contain additional lines, they should be commented out by placing a “#” as the first character in the line. There may be a few other lines that are already commented out with a “#” in front of them. They can be ignored as they are already commented out.

## Step 6 – Perform the update

NOTE – This process can take a LONG time, depending on the version of the Pi you are using and the speed of your internet connection. 30 minutes is not uncommon.

Log in as root and execute the following commands in order:

```
apt-get clean all
apt-get update
apt-get -y upgrade
apt-get -y dist-upgrade
apt-get -y autoremove
```

During the upgrade and dist-upgrade you may be asked to confirm some changes to files, such as issue, issue.net, services, mlocate, .bashrc, sysctl.conf, logins.defs, apache2.conf, envvars, dir.conf, and sshd\_config. In all cases, you can choose the default action, which is usually “N”. These prompts come up because the new versions of some programs have new default configuration files, and the files contain modifications. We can choose to fix these files later once the system is fully updated.

You will likely be asked if processes can be restarted without asking. The default is NO, but I suggest you choose YES here, or it will ask multiple times if you want to restart processes .

You may also be asked if you want to disable ssh password authentication for root. Unless you have another way to log in as root, such as an SSH key, you should say NO.

If the upgrade or dist-upgrade stops at some point, you should use Google to see if others have had the same problem. When the update stops in the middle, you have to carefully get it back on track, or the resulting system may be broken. This is why a full backup is so important.

## Step 7 – Reboot

After the last command in Step 6 above, the node should be rebooted properly by issuing the command:

```
reboot
```

## Step 8 – Run GPIO\_fix

After it boots, you should log in as root, and issue the command:

```
/home/irlp/scripts/GPIO_fix
```

This will update any GPIO mapping for newer versions of the kernel and make the IRLP node functional again.

### **Step 9 – Return to Step 2 if required**

Now that you have upgraded to the next release, go back to Step 2 until your node is running the current stable release. If you are running the current stable release, STOP HERE.