Upgrading Raspbian from Jessie to Stretch

I noticed that it's been a while since I upgraded my Raspberry Pi systems. I have updated Raspberry Pi firmware on all of them recently enough, but now decided to upgrade distro. Since Raspbian OS is based on Debian released, it meant I would have to upgrade Raspbian from Jessie base to Stretch.
**Step 1: Update/upgrade existing distribution**

This simply means we want to upgrade all existing packages before we’ll be moving to the next release.

Refresh package info:

`greys@s7:~ $ sudo apt-get update`

**Upgrade all the Raspbian OS packages**

`greys@s7:~ $ sudo apt-get upgrade`

```
...  
```

```
greys@s7:~ $ sudo apt dist-upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... The following packages were automatically installed and are no longer required:
libcwiid1 libjs-prettify libllvm3.7 libqscintilla2-11
libqscintilla2-11n libqt4-network libqt4-xmlpatterns
libqtwebkit4 libruby1.9.1
libruby1.9.1-dbgl libtcl8.5 libtcltk-ruby1.9.1 libtk8.5 pix-icons pix-plym-splash pixel-wallpaper ri1.9.1 ruby1.9.1
ruby1.9.1-dev
ruby1.9.1-examples ruby1.9.1-full ruby1.9.3 supercollider
supercollider-common supercollider-ide supercollider-language
supercollider-supernova
tcl8.5 tk8.5
Use 'apt-get autoremove' to remove them.
```

Done

The following NEW packages will be installed:
bcc coinor-libipopt1 colord colord-data cups cups-browsed cups-core-drivers cups-daemon cups-filters cups-filters-core-drivers cups-ppdc
cups-server-common ghostscript libcolorhug2 libcupscgil
libcupsmime1 libcupspappdc1 libfile-copy-recursive-perl
libfontembed1 libgmmime-2.6-0 libgs9
libgs9-common libgusb2 libgutenprint2 libieeee1284-3
libijs-0.35  libinput-bin  libinput10  libjbig2dec0  libllvm3.9
libmumps-seq-4.10.0  liboauth0
libopenjp2-7  libpam-chksshpwd  libpaper-utils  libpaper1
libpqdf13  libqt5concurrent5  libqt5core5a  libqt5dbus5
libqt5gui5  libqt5network5
libqt5opengl5  libqt5printsupport5  libqt5svg5  libqt5widgets5
libraw10  libsane  libsane-common  libsane-extras  libsane-extras-common
libwacom-bin
libwacom-common  libwacom2  libxcb-icccm4  libxcb-image0  libxcb-keysyms1
libxcb-randr0  libxcb-render-util0  libxcb-xcb1
libxcbcommon-x11-0
printer-driver-gutenprint  python-cffi  python-cryptography
python-ply  python-pycparser  python3-cffi  python3-cryptography
python3-ply
python3-pycparser
qpdpf  qttranslations5-l10n  rpdp-icons  rpdp
plym-splash  rpdp-wallpaper  sane-utils  ssl-cert  update-inetd
wolframscript
xserver-xorg-input-libinput
The following packages will be upgraded:
alacarte  apt  apt-utils  bash  bind9-host  binutils  bluez-firmware
ca-certificates  chromium-browser  cpp-4.9  cron  cups-bsd  cups-client
dbus  dbus-x11  debconf  debconf-i18n  debconf-utils  e2fslibs
e2fsprogs  file  firmware-atheros  firmware-brcm80211  firmware-libertas
firmware-ralink  firmware-realtek  fuse  g++-4.9  gcc-4.9  gcc-4.9-base
girl1.2-gdkpixbuf-2.0  git  git-core  git-man  gnupg  gnupg-agent  gnupg2
gpgv  gpicview
gstreamer0.10-alsa  gstreamer0.10-plugins-base  gstreamer1.0-
alsa  gstreamer1.0-plugins-bad  gstreamer1.0-plugins-base
gstreamer1.0-plugins-good  gstreamer1.0-x  gtk2-engines-pixbuf
idle-python2.7  idle-python3.4  initramfs-tools  isc-dhcp-client
isc-dhcp-common  libapt-inst1.5  libapt-pkg4.12
libarchive13  libasan1  libasound2  libasound2-data  libatomic1
libaudiofile1  libavcodec56  libavformat56  libavresample2
libavutil54  libbind9-90
libblas-common  libblas3  libbluray1  libc-ares2  libc-bin
libc-dev-bin  libc6  libc6-dev  libc6-dev libcaca0  libcairo-gobject2
libcairo2  libcomerr2
libcups2  libcurl3  libcurl3-
gnutls libdb5.3 libdbus-1-3 libdns-export100 libdns100 libdrm- amdgpu1 libdrm-freedreno1
libdrm-nouveau2 libdrm-radeon1 libdvdnav4 libegl1-mesa libelf1 libevent-2.0-5 libexpat1 libexpat1-dev libfaad2
libfcgi-perl libffi6
libfm-data libfm-extra4 libfm-gtk-data libfm-gtk4 libfm-modules liibm4 libfuse2 libgbm1 libgcc-4.9-dev libgcc1
libgcrypt20 libgd3
libgdk-pixbuf2.0-0 libgdk-pixbuf2.0-common libgfortran3
libgl1-mesa-dri libgl1-mesa-glx libglapi-mesa libgles1-mesa
libgles2-mesa libgme0
libgnutls-deb0-28 libgnutls-openssl27 libgomp1 libgraphite2-3
libgsapi-krb5-2 libgst-plugin-plugins-bad1.0-0 libgst-plugin-plugins-base0.10-0
libgst-plugin-plugins-base1.0-0 libgst-plugin1.0-0 libgtk2.0-0
libgtk2.0-bin libgtk2.0-common libgudev-1.0-0 libhogweed2
libcucu52 libidn11
libio-socket-ssl-perl libirs-export91 libisc-export95 libisc95
libiscc-90 libisccfg-export90 libisccfg90 libjasper1
libjpeg62-turbo libjs-jquery
libk5crypto3 libkrb5-3 libkrb5support0 liblapack3 liblcms2-2
libldap-2.4-2 libldbl1 liblwres90 libmad0 libmagic1 libmp3lame0
libmpg123-0
libmwaw-0.3-3 libmysqlclient18 libncurses5 libncursesw5
libnettle4 libnss3 libobrender29 libobt2 libopencv-calib3d2.4
libopencv-contrib2.4
libopencv-core2.4 libopencv-features2d2.4 libopencv-flann2.4
libopencv-highgui2.4 libopencv-imgproc2.4 libopencv-legacy2.4
libopencv-ml2.4
libopencv-objdetect2.4 libopencv-video2.4 libpam-modules
libpam-modules-bin libpam-runtime libpam-systemd libpam0g
libpng12-0 libpng12-dev
libpolkit-agent-1-0 libpolkit-backend-1-0 libpolkit-gobject-1-0 libpoppler46 libprocs3 libpython2.7 libpython2.7-
minimal libpython2.7-stdlib
libpython3.4 libpython3.4-dev libpython3.4-minimal
libpython3.4-stdlib libraspberryi-bin libraspberryi-dev
libraspberryi-doc libraspberryi0
librtmp1 libruby2.1 libstd-2.4 libstdc-client libstdcfile1
libsoudtouch0 libsoup-gnome2.4-1 libsoup2.4-1 libsqlite3-0
libssl2 libssh-4 libssh2-1
352 upgraded, 80 newly installed, 0 to remove and 0 not upgraded.
Need to get 363 MB/729 MB of archives.
After this operation, 245 MB of additional disk space will be used.
Do you want to continue? [Y/n] y

**Double-check Upgrade Was Complete**

If we re-run the same command, there should be no more updates pending:

greys@s7:~ $ sudo apt dist-upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... The following packages were automatically installed and are no longer required:
libcwiid1 libjs-prettify libllvm3.7 libqscintilla2-11
libqscintilla2-l10n libqt4-network libqt4-xmlpatterns
libqtwebkit4 libruby1.9.1
libruby1.9.1-dbg libtcl8.5 libtcltk-ruby1.9.1 libtk8.5 pix-
icons pix-plym-splash pixel-wallpaper ri1.9.1 ruby1.9.1
ruby1.9.1-dev
ruby1.9.1-examples ruby1.9.1-full ruby1.9.3 supercollider
supercollider-common supercollider-ide supercollider-language
supercollider-supernova
tcl8.5 tk8.5
Use 'apt-get autoremove' to remove them.
Done
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.

Perfect! Just a few packages to be tidied up with **apt-get autoremove**.

**Tidy Up with apt-get autoremove**

greys@s7:~ $ sudo apt-get autoremove
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages will be REMOVED:
libcwiid1 libjs-prettify libllvm3.7 libqscintilla2-11
libqscintilla2-l10n libqt4-network libqt4-xmlpatterns
libqtwebkit4 libruby1.9.1
libruby1.9.1-dbg libtcl8.5 libtcltk-ruby1.9.1 libtk8.5 pix-
icons pix-plym-splash pixel-wallpaper ri1.9.1 ruby1.9.1
ruby1.9.1-dev
ruby1.9.1-examples ruby1.9.1-full ruby1.9.3 supercollider
supercollider-common supercollider-ide supercollider-language
supercollider-supernova
tcl8.5 tk8.5

0 upgraded, 0 newly installed, 29 to remove and 0 not
upgraded.
After this operation, 129 MB disk space will be freed.
Do you want to continue? [Y/n] y
(Reading database ... 138805 files and directories currently
installed.)
Removing supercollider (1:3.6.6-repack-2-1) ...
Removing supercollider-ide (1:3.6.6-repack-2-1) ...
Removing supercollider-language (1:3.6.6-repack-2-1) ...
Removing libcwiid1 (0.6.00+svn201-3.1) ...
Removing supercollider-common (1:3.6.6-repack-2-1) ...
Removing libjs-prettify (2013.03.04+dfsg-4) ...
Removing libllvmm3.7:armhf (1:3.7-4~bpo8+1) ...
Removing libqscintilla2-11 (2.8.4+dfsg-1) ...
Removing libqscintilla2-l10n (2.8.4+dfsg-1) ...
Removing libqtwebkit4:armhf (2.3.4. dfsg-3) ...
Removing libqt4-xmlpatterns:armhf (4:4.8.6+git64-
g5dc8b2b+dfsg-3+deb8u1+ral1) ...
Removing libqt4-network:armhf (4:4.8.6+git64-
g5dc8b2b+dfsg-3+deb8u1+ral1) ...
Removing ruby1.9.1-full (1.9.3.484-2) ...
Removing ruby1.9.1-dev (1.9.3.484-2) ...
Removing ruby1.9.3 (1.9.3.484-2) ...
Removing libruby1.9.1-dbg (1.9.3.484-2) ...
Removing libtcltk-ruby1.9.1 (1.9.3.484-2) ...
Removing tk8.5 (8.5.17-1) ...
Removing tcl8.5 (8.5.17-1) ...
Removing libtk8.5:armhf (8.5.17-1) ...
Removing pix-icons (0.8) ...
Removing pix-plym-splash (0.11) ...
Removing pixel-wallpaper (0.4) ...
Removing ri1.9.1 (1.9.3.484-2) ...
Removing ruby1.9.1-examples (1.9.3.484-2) ...
Removing supercollider-supernova (1:3.6.6-repack-2-1) ...
Removing libtcl8.5:armhf (8.5.17-1) ...
Removing ruby1.9.1 (1.9.3.484-2) ...
Removing libruby1.9.1 (1.9.3.484-2) ...
Processing triggers for gnome-menus (3.13.3-6) ...
Processing triggers for desktop-file-utils (0.22-1) ...
Processing triggers for mime-support (3.58) ...
Processing triggers for man-db (2.7.5-1~bpo8+1) ...
Processing triggers for libc-bin (2.19-18+deb8u10) ...
Processing triggers for ruby (1:2.1.5+deb8u2) ...

All clean now!

Step 2: Upgrade Raspbian OS to the next Release

You need to do pretty much the same steps as in previous section, but AFTER you update apt sources links to use the next Raspbian OS release.

As you know, Raspbian OS is based on Debian so it uses Debian’s naming conventions.

Meaning my old release was this:

```
jessie
```

… and next one (the one I’m upgrading to) is

```
stretch
```

Update apt sources.lst with new release name

So let’s update /etc/apt/sources.list file to reference stretch, which is the Debian release we want:

greys@s7:~ $ sudo vi /etc/apt/sources.list

edit this line:

```
debug http://raspbian.raspberrypi.org/raspbian/ jessie main
```

```
contrib non-free rpi

so it looks like this:

deb http://raspbian.raspberrypi.org/raspbian/ stretch main contrib non-free rpi

Refresh apt information

greys@s7:~ $ sudo apt-get update

Upgrade all the packages once again

This time they’ll be upgraded to the latest versions available for the next Raspbian OS release:

greys@s7:~ $ sudo apt-get upgrade 
...
greys@s7:~ $ sudo apt dist-upgrade

That should be it. Now let’s reboot and Raspberry Pi should come back online sporting a brand new Raspbian OS release:

greys@s7:~ $ sudo shutdown -r now

Took around 1 minute for it to reboot… Then:

greys@s7:~ $ cat /etc/debian_version
9.9

See Also

- Raspbian OS
- My Raspberry Pi servers and PCs
- Check Raspbian Version
- Unix Tutorial
- apt command
- cat command
- VIM editor