

# How to upgrade Debian

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In every two year period, Debian will have no changes. Program and feature versions remain the same during this time. The security fixes are backport (get the new version and then switch to the old version). Sometimes, there are rare exceptions in which a package needs new features. For example, drivers can be upgraded to add support for more hardware. But this case is very rare.

Keeping things constant also has certain advantages, such as making the operating system more reliable. You almost never encountered an error. Everything is almost never broken after updating the package. Without new features means no unwanted behavior will happen.

But after every two years, a new version of Debian is released. And the new version often brings significant improvements and new features. On a 'clean' system, upgrading from one main version to the next is 'smooth', making you feel like you've just upgraded some non-important packages.

## Detailed instructions on how to upgrade Debian

1. Before upgrading, clean up sources.list!
2. Prepare sources.list to upgrade
3. Upgrade Debian

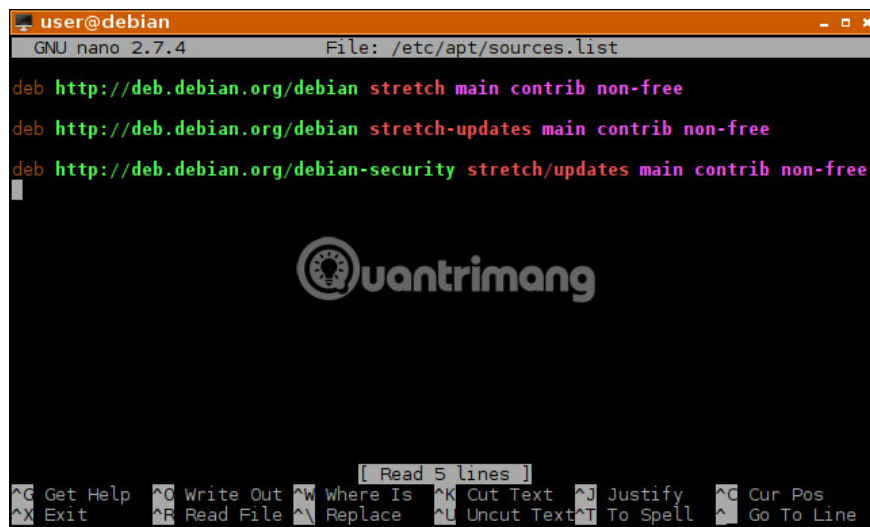
## Before upgrading, clean up sources.list!

Some users experience problems when they try to upgrade Debian, such as unable to resolve conflicts between deleted packages, important software, etc. Finally, they only have to uninstall. Put old and install a new version. However, in most cases, it is not a bug with Debian. The reason these users encounter problems is often because they accidentally do some things that break their operating system. The fact that the operating system is still working doesn't mean the package manager has no problems. That's why it's always recommended to remove any reference to third party software from '**sources.list**' files before continuing.

Please open this file to edit:

```
sudo nano /etc/apt/source.list
```

Delete any references to software outside of the official Debian archive. There are only three lines you need in this file.



```
user@debian
GNU nano 2.7.4 File: /etc/apt/sources.list
deb http://deb.debian.org/debian stretch main contrib non-free
deb http://deb.debian.org/debian stretch-updates main contrib non-free
deb http://deb.debian.org/debian-security stretch/updates main contrib non-free
[ Read 5 Lines ]
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^L Uncut Text ^T To Spell ^_ Go To Line
```

If you need a template, copy the example below and modify it as needed.

It is important to keep the current codename of the Debian release! For example, if it's 2021 and you're running Debian Buster, replace **stretch** with **buster** or whatever applies to your case.

```
deb http://deb.debian.org/debian stretch main deb http://deb.debian.org/debian s
```

Also, keep the ending strings intact. In this example, the line ends with the string **'main'**. But if your current **'sources.list'** ends with **'main contrib non-free'**, add **'contrib non-free'** at the end of each line. In this case, the final result looks like this:

```
deb http://deb.debian.org/debian stretch main contrib non-free deb http://deb.de
```

To save the file, press **Ctrl + X**, followed by **y** and then **Enter**.

Update package information:

```
sudo apt update
```

Upgrade packages:

```
sudo apt upgrade
```

If a change like the following image appears, after reading it, you can exit by pressing **q**.

```
user@debian
gnutls28 (3.3.30-0+deb8u1) jessie-security; urgency=high

To ease maintenance and ensure complete coverage of complex security
issues fixed upstream, we have upgraded to the latest upstream
version of the 3.3.x branch. This includes some interoperability
changes:

* ARCFOUR (RC4) and SSL 3.0 are no longer included in the default
  priorities list. Those have to be explicitly enabled, e.g., with
  a string like "NORMAL:+ARCFOUR-128" or "NORMAL:+VERS-SSL3.0",
  respectively.

* The ciphers utilizing HMAC-SHA384 and SHA256 have been removed
  from the default priority strings. They are not necessary for
  compatibility or other purpose and provide no advantage over
  their SHA1 counter-parts, as they all depend on the legacy TLS
  CBC block mode.

* Follow closely RFC5280 recommendations and use UTCTime for dates
  prior to 2050.

* Require strict DER encoding for certificates, OCSP requests,
  private keys, CRLs and certificate requests, in order to reduce
```

Remove unnecessary packages:

```
sudo apt autoremove
```

## Prepare sources.list to upgrade

It is worth noting that you should only upgrade from one main version to the next. For example, you should upgrade Debian 7 to 8 or 8 to 9, not upgrade from 7 to straight 9.

Edit your software source file again.

```
sudo nano /etc/apt/sources.list
```

Replace the codename of the current Debian release with the codename of the next version. You can find codename on the Debian distribution list page ( *link: <https://www.debian.org/releases/>* ).

For example, to upgrade Debian 9 to Debian 10, you will change this:

```
deb http://deb.debian.org/debian stretch main contrib non-free deb http://deb.de
```

. into:

```
deb http://deb.debian.org/debian buster main contrib non-free deb http://deb.deb
```

Save the file and then refresh the package information:

```
sudo apt update
```

## Upgrade Debian

If you are performing an upgrade on the desktop, log out of the graphical interface. The update process will restart the graphical stack at some point and cause you to lose access to the terminal application.

Log in to the text console. Press **ALT + CTRL + F2** or **ALT + CTRL + F3** , log in with your username and password, then enter the command on this screen.

Perform safety upgrades first. This step will upgrade all packages without removing anything.

```
sudo apt upgrade
```

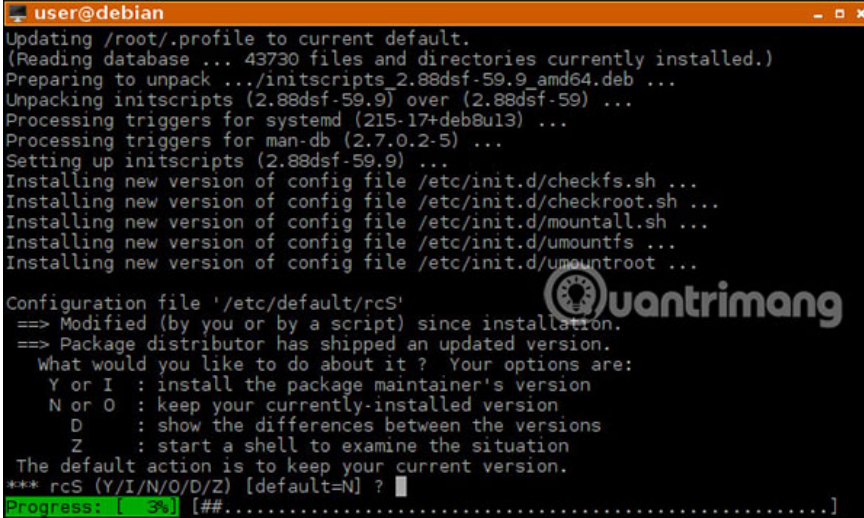
Please note if there are any conflicts that result in the packages being removed. If you use this command and the next command on some systems, things like graphics stacks can be completely removed. However, that will not happen on 'clean' systems, where you have never installed things outside of the Debian archive.

Some packages come with new configuration files. You will be asked to keep the old configuration or upgrade to a new configuration.

If you have modified the configuration file, you may want to keep or upgrade and then add customizations. However, if you have never touched this file, choose to upgrade the new configuration (enter **Y** ). The upgrade may contain important improvements, security fixes or changes needed to make the software work. That's why you should install the version of Google maintenance package as often as possible.

Now, perform the full upgrade. This will upgrade the rest of the packages that cannot be updated with the previous command (the reason is that they conflict with old packages or outdated programs already on the system). Full upgrade will remove some old packages to make room for new packages.

```
sudo apt full-upgrade
```



```
user@debian
Updating /root/.profile to current default.
(Reading database ... 43730 files and directories currently installed.)
Preparing to unpack .../initscripts_2.88dsf-59.9_amd64.deb ...
Unpacking initscripts (2.88dsf-59.9) over (2.88dsf-59) ...
Processing triggers for systemd (215-17+deb8u13) ...
Processing triggers for man-db (2.7.0.2-5) ...
Setting up initscripts (2.88dsf-59.9) ...
Installing new version of config file /etc/init.d/checkfs.sh ...
Installing new version of config file /etc/init.d/checkroot.sh ...
Installing new version of config file /etc/init.d/mountall.sh ...
Installing new version of config file /etc/init.d/umountfs ...
Installing new version of config file /etc/init.d/umountroot ...

Configuration file '/etc/default/rcS'
==> Modified (by you or by a script) since installation.
==> Package distributor has shipped an updated version.
   What would you like to do about it ? Your options are:
     Y or I : install the package maintainer's version
     N or O : keep your currently-installed version
     D      : show the differences between the versions
     Z      : start a shell to examine the situation
   The default action is to keep your current version.
*** rcS (Y/I/N/O/D/Z) [default=N] ? Y
Progress: [ 3%] [##.....]
```

After this command, the upgrade will be completed. You can clean up unnecessary packages with the command:

```
sudo apt autoremove
```

Finally, restart the computer or server:

```
sudo systemctl reboot
```

In most cases, the upgrade process will not encounter any problems. But if you have added third-party software sources to your package manager or installed third-party packages (with commands like `dpkg -i something.deb`), you may encounter conflicts. In such cases, you will have to resolve them manually, by removing the previous violation packages with the command:

```
sudo apt autoremove badpackage
```

Hope you are succesful.

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