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## How to Easily Remove Old Kernels in Ubuntu 16.04

May 6, 2016

For LVM, encrypted, or limited-storage systems, you need to regularly remove old kernels to prevent your computer (/boot partition) from running out of storage space.

Removing old kernels is easy. You can do it manually, or set unattended-upgrades to do it automatically. For details, open terminal from App Launcher or via **Ctrl+Alt+T** shortcut keys, and follow the steps below:

### Remove Automatically Installed Kernels:

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1. To remove the kernels that were automatically installed via regular system updates, open terminal and run:

```
sudo apt autoremove --purge
```



It will ask you to type in user password and then remove old kernels as well as other automatically installed packages that are no longer needed.

```
handbook@xenial: ~  
handbook@xenial:~$ sudo apt autoremove --purge  
[sudo] password for handbook:
```

2. To enable automatic removing of old kernels:

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Enable Kernel autoremoving may cause problems if your package management is broken, see [this bug](#).

- Run command to enable unattended upgrades. For Desktop Ubuntu 16.04, this is enabled by default.

```
sudo dpkg-reconfigure unattended-upgrades
```

- Edit the config file via command (first install gksu via

```
sudo apt install gksu):
```

```
gksudo gedit /etc/apt/apt.conf.d/50unattended-upgrades
```

When the file opens, uncomment the following line and change the value to true:

```
//Unattended-Upgrade::Remove-Unused-Dependencies "false";
```

So it looks like:

```
handbook@xenial:~$ gksudo gedit /etc/apt/apt.conf.d/50unattended-upgrades
```

```
// 'mailx' must be installed. E.g. "user@example.com"
//Unattended-Upgrade::Mail "root";

// Set this value to "true" to get emails only on errors. Default
// is to always send a mail if Unattended-Upgrade::Mail is set
//Unattended-Upgrade::MailOnError "true";

// Do automatic removal of new unused dependencies after the upgrade
// (equivalent to apt-get autoremove)
Unattended-Upgrade::Remove-Unused-Dependencies "true";

// Automatically reboot *WITHOUT CONFIRMATION*
// if the file /var/run/reboot-required is found after the upgrade
//Unattended-Upgrade::Automatic-Reboot "false";
```

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## Remove Manually Installed Kernels:

If you install latest kernels from [Kernel PPA](#), or build your own kernels with patches, a “purge-old-kernels” script is the best and the easiest way to remove old kernels.

1. The script is maintained in byobu package, so first install it via:

```
sudo apt install byobu
```

2. Then run the script regularly to remove old kernels:

```
sudo purge-old-kernels
```



```
handbook@xenial:~  
handbook@xenial:~$ sudo purge-old-kernels  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following package was automatically installed and is no longer required:  
  linux-headers-4.4.0-18  
Use 'sudo apt autoremove' to remove it.  
The following packages will be REMOVED:  
  linux-headers-4.4.0-18-generic* linux-image-4.4.0-18-generic*  
  linux-image-extra-4.4.0-18-generic* linux-signed-image-4.4.0-18-generic*  
0 upgraded, 0 newly installed, 4 to remove and 14 not upgraded.  
After this operation, 224 MB disk space will be freed.  
Do you want to continue? [Y/n]
```

## Remove Old Kernels via DPKG

If your /boot partition has already full while doing an upgrade or package install, and `apt` (the script above uses `apt`) can't remove packages due to broken dependency, here you can

Rodrigo on How to Install  
RTL8723DE Wifi Driver in Ubuntu  
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Fancsali István on How to Install  
Brave web browser in Ubuntu /  
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Nimu on How to Install RTL8723DE  
Wifi Driver in Ubuntu 19.04

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manually find out the old kernel packages and remove them via DPKG:

1. Run command to check out current kernel and DON'T REMOVE it:

```
uname -r
```

2. List all kernels excluding the current booted:

```
dpkg -l | tail -n +6 | grep -E 'linux-image-[0-9]+' |  
grep -Fv $(uname -r)
```

Example output:

```
rc linux-image-4.4.0-15-generic 4.4.0-  
15.31 amd64  
Linux kernel image for version 4.4.0 on 64 bit  
x86 SMP  
ii linux-image-4.4.0-18-generic 4.4.0-  
18.34 amd64  
Linux kernel image for version 4.4.0 on 64 bit  
x86 SMP  
rc linux-image-4.6.0-040600rc3-generic 4.6.0-  
040600rc3.201604120934 amd64  
Linux kernel image for version 4.6.0 on 64 bit  
x86 SMP
```

There will be three status in the listed kernel images:

- **rc**: means it has already been removed.
- **ii**: means installed, eligible for removal.
- **iU**: DON'T REMOVE. It means not installed, but queued for install in apt.

3. Remove old kernel images in status **ii**, it's "linux-image-4.4.0-18-generic" in the example above:

```
sudo dpkg --purge linux-image-4.4.0-18-generic
```

If the command fails, remove the dependency packages that the output tells you via `sudo dpkg --purge PACKAGE`.

And also try to remove the respective header and common header packages (Don't worry if the command fails):

```
sudo dpkg --purge linux-image-4.4.0-18-header linux-i  
mage-4.4.0-18
```

Finally you may fix the apt broken dependency via command:

```
sudo apt -f install
```



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## Ji m

I'm a freelance blogger who started using Ubuntu 5+ years ago and wishes to share my experiences and some useful tips with Ubuntu beginners and lovers. Please notify me if you find any typo/grammar/language mistakes. English is not my native language. Contact me on [Google Plus](#) or email to [ubuntuhandbook1@gmail.com](mailto:ubuntuhandbook1@gmail.com)

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## 7 responses to *How to Easily Remove Old Kernels in Ubuntu 16.04*



**Salam** [May 10, 2016 at 8:41 pm](#)

Thank you Ji m for your help,I am an old user of ubuntu in a sense of consumer cause I do not have any knowledge of programing or any kind of a sort.  
Have a nice day



**Keiran** [September 14, 2016 at 7:23 pm](#)

Just used this page for a corrupted update Ji, thanks man!!



**JPo** *September 15, 2016 at 7:51 am*

good work!

the header package name is a bit different for me though,  
and can be listed with:

```
dpkg -l | tail -n +6 | grep -E 'linux-headers-[0-9]+' | grep -Fv $(uname -r)
```

those can be removed e.g with:

```
sudo dpkg --purge linux-headers-4.6.6-040606-generic
```

```
sudo dpkg --purge linux-headers-4.6.6-040606
```



**Klaas Visscher** *October 4, 2016 at 9:49 pm*

sudo apt autoremove --purge  
was not a valid command in Ubuntu 15.10

sudo apt-get autoremove --purge  
did work, and next I could upgrade to Ubuntu 16.04



**Jarno Suni** *October 22, 2016 at 7:54 am*

I suppose you got the information to your article from [this](#)  
Ubuntu Community Wiki article I wrote mainly.

I have written a powerful script that makes purging even  
easier, and it handles even some trickier conditions. You  
can find it [here](#).



**Fani** *February 21, 2017 at 7:31 pm*

The purge-old-kernels (basically just a list of old kernels  
with apt-get purge) is a handy script. Strange it is a part of



byobu terminal program!

Also, a word of caution on the last command – which removes all kernels except current booted one. This is not a good idea. You could've booted an earlier kernel to check something and if you build automation around this, you will blow away a newer kernel.

You can just get it back but still...

Going by timestamps is not idea (as with `purge-old-kernels`) but unless you muck around `/boot` you should be fine.



**complex** *March 12, 2017 at 10:54 pm*

I had problem with installing a package using “apt-get” that required some dependencies however it throw errors regarding not enough space on `/boot`. I followed DPKG methods to free up some spaces on `/boot` and problem gone.

Thanks a lot

Best regards