

Uklanjanje starih verzija kernela



Vijest o ranjivosti Linux kernela potakla je mnoge da provjere koja im je verzija jezgre instalirana, kako bi je zamijenili novom, "bezgriješnom". Usput je prilika da se razmisli što sa starijim, ranjivim inačicama kernela. Najbolje ih je ukloniti. Osim toga, ako koristite zasebnu *boot* particiju, ne želite reskirati da vam se zapuni brojnim zastarjelim verzijama jezgre.

Najbrži način provjere koje su verzije kernela instalirane jest ovaj:

```
$ dpkg -l | grep linux-
ii  linux-firmware                      1.127.2
                                     all          Firmware for Linux kernel drivers
ii  linux-generic                      3.13.0-29.35
amd64 Complete Generic Linux kernel and headers
ii  linux-headers-3.13.0-24            3.13.0-24.47
all   Header files related to Linux kernel version 3.13.0
ii  linux-headers-3.13.0-24-generic    3.13.0-24.47
amd64 Linux kernel headers for version 3.13.0 on 64 bit x86 SMP
ii  linux-headers-3.13.0-26            3.13.0-26.48
all   Header files related to Linux kernel version 3.13.0
ii  linux-headers-3.13.0-26-generic    3.13.0-26.48
amd64 Linux kernel headers for version 3.13.0 on 64 bit x86 SMP
ii  linux-headers-3.13.0-27            3.13.0-27.50
all   Header files related to Linux kernel version 3.13.0
ii  linux-headers-3.13.0-27-generic    3.13.0-27.50
amd64 Linux kernel headers for version 3.13.0 on 64 bit x86 SMP
ii  linux-headers-3.13.0-29            3.13.0-29.52
all   Header files related to Linux kernel version 3.13.0
ii  linux-headers-3.13.0-29-generic    3.13.0-29.52
amd64 Linux kernel headers for version 3.13.0 on 64 bit x86 SMP
ii  linux-headers-generic              3.13.0-29.35
amd64 Generic Linux kernel headers
rc  linux-image-3.11.0-12-generic       3.11.0-12.19
amd64 Linux kernel image for version 3.11.0 on 64 bit x86 SMP
rc  linux-image-3.11.0-13-generic       3.11.0-13.20
amd64 Linux kernel image for version 3.11.0 on 64 bit x86 SMP
rc  linux-image-3.11.0-14-generic       3.11.0-14.21
amd64 Linux kernel image for version 3.11.0 on 64 bit x86 SMP
rc  linux-image-3.11.0-15-generic       3.11.0-15.25
amd64 Linux kernel image for version 3.11.0 on 64 bit x86 SMP
rc  linux-image-3.11.0-17-generic       3.11.0-17.31
amd64 Linux kernel image for version 3.11.0 on 64 bit x86 SMP
rc  linux-image-3.11.0-18-generic       3.11.0-18.32
amd64 Linux kernel image for version 3.11.0 on 64 bit x86 SMP
rc  linux-image-3.11.0-19-generic       3.11.0-19.33
amd64 Linux kernel image for version 3.11.0 on 64 bit x86 SMP
ii  linux-image-3.11.0-20-generic       3.11.0-20.34
amd64 Linux kernel image for version 3.11.0 on 64 bit x86 SMP
ii  linux-image-3.13.0-24-generic       3.13.0-24.47
amd64 Linux kernel image for version 3.13.0 on 64 bit x86 SMP
```

```
ii linux-image-3.13.0-26-generic          3.13.0-26.48
amd64 Linux kernel image for version 3.13.0 on 64 bit x86 SMP
ii linux-image-3.13.0-27-generic          3.13.0-27.50
amd64 Linux kernel image for version 3.13.0 on 64 bit x86 SMP
ii linux-image-3.13.0-29-generic          3.13.0-29.52
amd64 Linux kernel image for version 3.13.0 on 64 bit x86 SMP
rc linux-image-3.8.0-23-generic           3.8.0-23.34
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-3.8.0-25-generic           3.8.0-25.37
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-3.8.0-26-generic           3.8.0-26.38
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-3.8.0-27-generic           3.8.0-27.40
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-3.8.0-28-generic           3.8.0-28.41
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-3.8.0-29-generic           3.8.0-29.42
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-3.8.0-30-generic           3.8.0-30.44
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-3.8.0-31-generic           3.8.0-31.46
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
ii linux-image-3.8.0-32-generic           3.8.0-32.47
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-extra-3.11.0-12-generic    3.11.0-12.19
amd64 Linux kernel extra modules for version 3.11.0 on 64 bit x86 SMP
rc linux-image-extra-3.11.0-13-generic    3.11.0-13.20
amd64 Linux kernel extra modules for version 3.11.0 on 64 bit x86 SMP
rc linux-image-extra-3.11.0-14-generic    3.11.0-14.21
amd64 Linux kernel extra modules for version 3.11.0 on 64 bit x86 SMP
rc linux-image-extra-3.11.0-15-generic    3.11.0-15.25
amd64 Linux kernel extra modules for version 3.11.0 on 64 bit x86 SMP
rc linux-image-extra-3.11.0-17-generic    3.11.0-17.31
amd64 Linux kernel extra modules for version 3.11.0 on 64 bit x86 SMP
rc linux-image-extra-3.11.0-18-generic    3.11.0-18.32
amd64 Linux kernel extra modules for version 3.11.0 on 64 bit x86 SMP
rc linux-image-extra-3.11.0-19-generic    3.11.0-19.33
amd64 Linux kernel extra modules for version 3.11.0 on 64 bit x86 SMP
ii linux-image-extra-3.11.0-20-generic    3.11.0-20.34
amd64 Linux kernel extra modules for version 3.11.0 on 64 bit x86 SMP
ii linux-image-extra-3.13.0-24-generic    3.13.0-24.47
amd64 Linux kernel extra modules for version 3.13.0 on 64 bit x86 SMP
ii linux-image-extra-3.13.0-26-generic    3.13.0-26.48
amd64 Linux kernel extra modules for version 3.13.0 on 64 bit x86 SMP
ii linux-image-extra-3.13.0-27-generic    3.13.0-27.50
amd64 Linux kernel extra modules for version 3.13.0 on 64 bit x86 SMP
ii linux-image-extra-3.13.0-29-generic    3.13.0-29.52
amd64 Linux kernel extra modules for version 3.13.0 on 64 bit x86 SMP
rc linux-image-extra-3.8.0-23-generic      3.8.0-23.34
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-extra-3.8.0-25-generic      3.8.0-25.37
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-extra-3.8.0-26-generic      3.8.0-26.38
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-extra-3.8.0-27-generic      3.8.0-27.40
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-extra-3.8.0-28-generic      3.8.0-28.41
amd64 Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-extra-3.8.0-29-generic      3.8.0-29.42
```

```
amd64      Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-extra-3.8.0-30-generic      3.8.0-30.44
amd64      Linux kernel image for version 3.8.0 on 64 bit x86 SMP
rc linux-image-extra-3.8.0-31-generic      3.8.0-31.46
amd64      Linux kernel image for version 3.8.0 on 64 bit x86 SMP
ii linux-image-extra-3.8.0-32-generic      3.8.0-32.47
amd64      Linux kernel image for version 3.8.0 on 64 bit x86 SMP
ii linux-image-generic                    3.13.0-29.35
amd64      Generic Linux kernel image
ii linux-libc-dev:amd64                  3.13.0-29.52
amd64      Linux Kernel Headers for development
ii linux-sound-base                      1.0.25+dfsg-0ubuntu4
all        base package for ALSA and OSS sound systems
ii syslinux-common                      3:4.05+dfsg-6+deb8u1
all        collection of boot loaders (common files)
ii syslinux-legacy
```

Gornji ispis je lista paketa koji zadovoljavaju kriterij na mom Ubuntu Linuxu 14.04. Većina će se, baš kao i ja, iznenaditi količinom paketa koji sadrže jezgru Linuxa. Tu su verzije od 3.8 do 3.13. Ispred nekih piše *rc*, što bi značilo *removed-configured*, odnosno da je paket deinstaliran, ali nije uklonjena njegova konfiguracija. No još je uvijek i više nego dovoljno paketa sa statusom *ii*, uspješno instaliranih.

Kod ostalih paketa normalno je da novi paket zamijeni stari, ali ne i kod jezgre. Uobičajena je praksa da se stara verzija jezgre zadrži još neko vrijeme, tako da se sustav može u slučaju problema podići i sa starom verzijom, ako s novom neke stvari ne rade kako treba.

Nepotrebne i zastarjele verzije paketa uklanjaju se naredbom

```
$ sudo apt-get autoclean
```

No to ne vrijedi za jezgru. Stare verzije kernela morat ćete sami ukloniti. Iz gornjeg ispisa vidljivo je da nazivi paketa s jezgrom počinju s *linux-*, ali ih ima nekoliko grupa:

```
linux-header
linux-image
linux-image-extra
linux-image-generic
```

Filter je pokupio i neke pakete koji ne sadrže jezgru:

```
ii linux-libc-dev:amd64      3.13.0-29.52      am
d64      Linux Kernel Headers for development
ii linux-sound-base        1.0.25+dfsg-0ubuntu4      al
l        base package for ALSA and OSS sound systems
ii syslinux-common        3:4.05+dfsg-6+deb8u1      al
l        collection of boot loaders (common files)
ii syslinux-legacy        2:3.63+dfsg-2ubuntu5      am
d64      Bootloader for Linux/i386 using MS-DOS floppies
```

Cilj nam je automatizacija brisanja starih verzija jezgre, da ne moramo deinstalirati svaki paket pojedinačno. Pritom treba biti oprezan da ne bismo uklonili i nešto što je trebalo ostaviti. Na primjer, ne smijemo ukloniti zadnju verziju jezgre, zar ne? :)

Prije nego se bacimo na pisanje skripte, kao svaki lijeni sistemac potražiti ćemo da li je netko već riješio taj problem. Čemu otkrivati toplu vodu, zar ne? I zaista, nije trebalo dugo tražiti:

<http://ubuntugenius.wordpress.com/2011/01/08/ubuntu-cleanup-how-to-remove-all-unused-linux-kernel-headers-images-and-modules/> [1]

Tu se nalazi ovakav one-liner:

```
$ dpkg -l 'linux-*' | sed '/^ii/!d;/'"$$(uname -r | sed "s/^(.*)-([^\0-9]\+)/\1/")"/d;s/^[^ ]* [^ ]* \([^ ]*\).*/\1/;/[0-9]/!d' | xargs sudo apt-get -y purge
```

Nećemo ga samo tako pokrenuti na živom sustavu, vjerujući na slijepo da će sve ispasti dobro. Hajdemo najprije malo analizirati što skripta radi.

Prvi dio je jasan, tražimo pakete čiji nazivi počinju s linux:

```
$ dpkg -l 'linux-*'
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name                               Version                               Architecture
||/ Description
+++-----
```

	Name	Version	Architecture
un	linux-doc-3.11.0	<none>	<none>
	(no description available)		
un	linux-doc-3.13.0	<none>	<none>
	(no description available)		
un	linux-doc-3.8.0	<none>	<none>
	(no description available)		
ii	linux-firmware	1.127.2	all
	Firmware for Linux kernel drivers		
ii	linux-generic	3.13.0-29.35	amd64
	Complete Generic Linux kernel and headers		
un	linux-headers	<none>	<none>
	(no description available)		
un	linux-headers-3.0	<none>	<none>
	(no description available)		
un	linux-headers-3.11.0-20-generic	<none>	<none>
	(no description available)		
ii	linux-headers-3.13.0-24	3.13.0-24.47	all
	Header files related to Linux kernel version 3.13.0		
ii	linux-headers-3.13.0-24-generic	3.13.0-24.47	amd64
	Linux kernel headers for version 3.13.0 on 64 bit x86 SMP		
ii	linux-headers-3.13.0-26	3.13.0-26.48	all
	Header files related to Linux kernel version 3.13.0		
ii	linux-headers-3.13.0-26-generic	3.13.0-26.48	amd64
	Linux kernel headers for version 3.13.0 on 64 bit x86 SMP		
...			

Ovaj je način nešto bolji od našeg prvog primjera s grepom, jer ostaje zaglavlje koje nam olakšava razumijevanje

I ovo je lako:

```
$ uname -r
3.13.0-29-generic
```

Naredba ispisuje izdanje (release) instalirane verzije jezgre, koju moramo ostaviti na miru.
Zapamtimo ovu numeraciju verzije: 3.13.0-29

Slijedi teži dio. *sed* je stream editor, naredba koja koristi pravilne izraze (*regular expressions*). Stari uniksaši će samo nasmiješiti, ali novim generacijama je ovo što slijedi kriptično. Hajdemo redom, od lakšeg prema težem.

```
$ dpkg -l 'linux-*' | sed '/^ii/!d'
ii linux-firmware                1.127.2
    all                          Firmware for Linux kernel drivers
ii linux-generic                 3.13.0-29.35
    amd64                        Complete Generic Linux kernel and headers
ii linux-headers-3.13.0-24      3.13.0-24.47
    all                          Header files related to Linux kernel version 3.13.0
ii linux-headers-3.13.0-24-generic 3.13.0-24.47
    amd64                        Linux kernel headers for version 3.13.0 on 64 bit x86 SMP
ii linux-headers-3.13.0-26      3.13.0-26.48
    all                          Header files related to Linux kernel version 3.13.0
ii linux-headers-3.13.0-26-generic 3.13.0-26.48
    amd64                        Linux kernel headers for version 3.13.0 on 64 bit x86 SMP
ii linux-headers-3.13.0-27      3.13.0-27.50
    all                          Header files related to Linux kernel version 3.13.0
ii linux-headers-3.13.0-27-generic 3.13.0-27.50
    amd64                        Linux kernel headers for version 3.13.0 on 64 bit x86 SMP
ii linux-headers-3.13.0-29      3.13.0-29.52
    all                          Header files related to Linux kernel version 3.13.0
ii linux-headers-3.13.0-29-generic 3.13.0-29.52
    amd64                        Linux kernel headers for version 3.13.0 on 64 bit x86 SMP
ii linux-headers-generic        3.13.0-29.35
    amd64                        Generic Linux kernel headers
ii linux-image-3.11.0-20-generic 3.11.0-20.34
    amd64                        Linux kernel image for version 3.11.0 on 64 bit x86 SMP
ii linux-image-3.13.0-24-generic 3.13.0-24.47
    amd64                        Linux kernel image for version 3.13.0 on 64 bit x86 SMP
ii linux-image-3.13.0-26-generic 3.13.0-26.48
    amd64                        Linux kernel image for version 3.13.0 on 64 bit x86 SMP
ii linux-image-3.13.0-27-generic 3.13.0-27.50
    amd64                        Linux kernel image for version 3.13.0 on 64 bit x86 SMP
ii linux-image-3.13.0-29-generic 3.13.0-29.52
    amd64                        Linux kernel image for version 3.13.0 on 64 bit x86 SMP
ii linux-image-3.8.0-32-generic  3.8.0-32.47
    amd64                        Linux kernel image for version 3.8.0 on 64 bit x86 SMP
ii linux-image-extra-3.11.0-20-generic 3.11.0-20.34
    amd64                        Linux kernel extra modules for version 3.11.0 on 64 bit x8
6 SMP
ii linux-image-extra-3.13.0-24-generic 3.13.0-24.47
    amd64                        Linux kernel extra modules for version 3.13.0 on 64 bit x8
6 SMP
ii linux-image-extra-3.13.0-26-generic 3.13.0-26.48
    amd64                        Linux kernel extra modules for version 3.13.0 on 64 bit x8
6 SMP
ii linux-image-extra-3.13.0-27-generic 3.13.0-27.50
    amd64                        Linux kernel extra modules for version 3.13.0 on 64 bit x8
6 SMP
ii linux-image-extra-3.13.0-29-generic 3.13.0-29.52
    amd64                        Linux kernel extra modules for version 3.13.0 on 64 bit x8
6 SMP
ii linux-image-extra-3.8.0-32-generic  3.8.0-32.47
```

	amd64	Linux kernel image for version 3.8.0 on 64 bit x86 SMP
ii	linux-image-generic	3.13.0-29.35
	amd64	Generic Linux kernel image
ii	linux-libc-dev:amd64	3.13.0-29.52
	amd64	Linux Kernel Headers for development
ii	linux-sound-base	1.0.25+dfsg-0ubuntu4
	all	base package for ALSA and OSS sound systems

Ovakva naredba eliminira sve pakete koji nemaju status "ii" (!d - not delete). No tu još ima paketa koje treba ostaviti na miru, a treba se riješiti i svih stupaca koji ne sadrže ime paketa. Sve to eliminira ostatak skripte:

```
$ dpkg -l 'linux-*' | sed '/^ii/!d;/'"$$(uname -r | sed "s/\(.*\) - \([^\0-9]\+\)/\1/")"'/d;s/^[^ ]* [^ ]* \([^\0-9]\+\).*/\1/;/[0-9]/!d'
linux-headers-3.13.0-24
linux-headers-3.13.0-24-generic
linux-headers-3.13.0-26
linux-headers-3.13.0-26-generic
linux-headers-3.13.0-27
linux-headers-3.13.0-27-generic
linux-image-3.11.0-20-generic
linux-image-3.13.0-24-generic
linux-image-3.13.0-26-generic
linux-image-3.13.0-27-generic
linux-image-3.8.0-32-generic
linux-image-extra-3.11.0-20-generic
linux-image-extra-3.13.0-24-generic
linux-image-extra-3.13.0-26-generic
linux-image-extra-3.13.0-27-generic
linux-image-extra-3.8.0-32-generic
```

Sad su ostali samo paketi koji sadrže jezgru i zaglavlja (potrebna za kompiliranje). Još provjerimo da li je izostavljena zadnja verzija paketa (3.13.0-29). Nema je! Sad bismo mogli pokrenuti cijelu naredbu.

No prije toga odlučio sam obaviti još jedan test. Umjesto sed '/^ii/!d;/ stavio sam sed '/^rc/!d;/. Najprije ćemo eliminirati zaostale konfiguracije paketa s kernelom koje sam već ranije deinstalirao, a usput i provjeriti kako skripta radi.

```
$ dpkg -l 'linux-*' | sed '/^rc/!d;/'"$$(uname -r | sed "s/\(.*\) - \([^\0-9]\+\)/\1/")"'/d;s/^[^ ]* [^ ]* \([^\0-9]\+\).*/\1/;/[0-9]/!d' | xargs sudo apt-get -y purge
```

Naredba *xargs* čita parametre sa standardnog inputa i prosljeđuje ih naredbi *apt-get* koja slijedi.

Uspjelo je, deinstalirani paketi kernela više se na pojavljuju na popisu paketa. Sada možemo napraviti backup korisničkih podataka, za slučaj da će trebati nanovo instalirati Linux (šalimo se, ali samo napola!).

I evo:

```
$ dpkg -l 'linux-*' | sed '/^ii/!d;/'"$$(uname -r | sed "s/\(.*\) - \([^\0-9]\+\)/\1/")"'/d;s/^[^ ]* [^ ]* \([^\0-9]\+\).*/\1/;/[0-9]/!d' | xargs sudo apt-get -y purge
```

Usljedit će cijeli niz radnji koje su zadane pri deinstalaciji paketa s jezgrom, što uključuje pokretanje naredbe *depmod* i regeneriranje konfiguracije boot loadera. Na kraju, stanje izgleda ovako:

```
$ dpkg -l 'linux-*'
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/halF-conf/Half-inst/trig-aWait/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name                               Version                               Archite
cture                                Description                           cture
+++-----
=====
=====
un  linux-doc-3.13.0                    <none>                                <none>
      (no description available)
ii  linux-firmware                      1.127.2                              all
      Firmware for Linux kernel drivers
ii  linux-generic                       3.13.0-29.35                         amd64
      Complete Generic Linux kernel and headers
un  linux-headers                       <none>                                <none>
      (no description available)
un  linux-headers-3.0                   <none>                                <none>
      (no description available)
ii  linux-headers-3.13.0-29             3.13.0-29.52                         all
      Header files related to Linux kernel version 3.13.0
ii  linux-headers-3.13.0-29-generic     3.13.0-29.52                         amd64
      Linux kernel headers for version 3.13.0 on 64 bit x86 SMP
ii  linux-headers-generic               3.13.0-29.35                         amd64
      Generic Linux kernel headers
un  linux-image                         <none>                                <none>
      (no description available)
un  linux-image-3.0                     <none>                                <none>
      (no description available)
ii  linux-image-3.13.0-29-generic       3.13.0-29.52                         amd64
      Linux kernel image for version 3.13.0 on 64 bit x86 SMP
ii  linux-image-extra-3.13.0-29-generic 3.13.0-29.52                         amd64
      Linux kernel extra modules for version 3.13.0 on 64 bit x86 SMP
ii  linux-image-generic                 3.13.0-29.35                         amd64
      Generic Linux kernel image
un  linux-initramfs-tool                <none>                                <none>
      (no description available)
un  linux-kernel-headers                <none>                                <none>
      (no description available)
un  linux-kernel-log-daemon             <none>                                <none>
      (no description available)
ii  linux-libc-dev:amd64                3.13.0-29.52                         amd64
      Linux Kernel Headers for development
un  linux-restricted-common              <none>                                <none>
      (no description available)
ii  linux-sound-base                    1.0.25+dfsg-0ubuntu4                all
      base package for ALSA and OSS sound systems
un  linux-source-3.13.0                 <none>                                <none>
      (no description available)
un  linux-tools                         <none>                                <none>
      (no description available)
```

Situacija nije tako čista kako smo očekivali... Neki su paketi u statusu *un - unknown, not installed*.

Konačni test bit će *reboot*. Srećom, on prolazi bez problema. Usput, zauzeće diska smanjilo se za gotovo gigabajt.

sub, 2014-05-31 23:16 - Aco Dmitrović **Vote:** 0

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Source URL: <https://sysportal.carnet.hr./node/1401>

Links

[1] <http://ubuntugenius.wordpress.com/2011/01/08/ubuntu-cleanup-how-to-remove-all-unused-linux-kernel-headers-images-and-modules/>