# **[How to check and list installed packages in CentOS Linux](https://www.cyberciti.biz/faq/check-list-installed-packages-in-centos-linux/)**

How do I check installed packages in CentOS Linux version 6.x/7.x/8.x/9.x? How can I List installed packages on CentOS Enterprise Linux server?  
  
This page shows you how to check and list all installed packages in CentOS Linux server version 6.x/7.x/8.x/9.x using various command-line utilities. Such a list is useful in case if you need to restore/reinstall or mirror the same packages across different CentOS servers.

| **Tutorial details** | |
| --- | --- |
| Difficulty level | [Easy](https://www.cyberciti.biz/faq/tag/easy/) |
| Root privileges | [Yes](https://www.cyberciti.biz/faq/how-can-i-log-in-as-root/) |
| Requirements | Linux terminal |
| Category | [Package Manager](https://www.cyberciti.biz/faq/check-list-installed-packages-in-centos-linux/#Package_Manager) |
| OS compatibility | Alma • [CentOS](https://www.cyberciti.biz/faq/category/centos/) • [Fedora](https://www.cyberciti.biz/faq/category/fedora-linux/) • [RHEL](https://www.cyberciti.biz/faq/category/redhat-and-friends/) • Rocky • [Stream](https://www.cyberciti.biz/faq/tag/centos-stream/) |
| Est. reading time | 7 minutes |

## How to check installed packages in CentOS

The procedure is as follows to list installed packages:

1. Open the terminal app.
2. For remote server log in using the ssh command: **ssh user@centos-linux-server-IP-here**
3. Show information about all installed packages on CentOS, run: **sudo yum list installed**
4. To count all installed packages run: **sudo yum list installed | wc -l**
5. Want to save all installed packages names in a file? Try: **sudo yum list installed > my\_list.txt**
6. Execute the command **sudo yum update** to refresh package database and install updates if any.

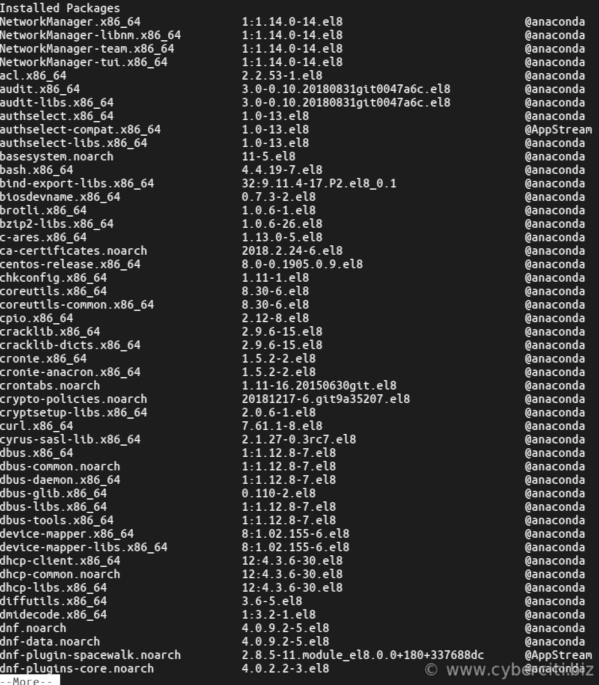
Let us see all commands and examples in details.

## Check and list installed packages with yum command

From the dnf/yum man [page](https://dnf.readthedocs.io/en/latest/command_ref.html#list-command):

The list command dumps lists of packages depending on the packages’ relation to the system. A package is installed if it is present in the RPMDB, and it is available if it is not installed but it is present in a repository that DNF knows about. The list command can also limit the displayed packages according to other criteria, e.g. to only those that update an installed package. The exclude option in configuration file (.conf) might influence the result, but if the command line option –disableexcludes is used, it ensure that all installed packages will be listed.

Hence, to lists installed packages on CentOS, type the following [yum command](https://www.cyberciti.biz/faq/rhel-centos-fedora-linux-yum-command-howto/?utm_source=Linux_Unix_Command&utm_medium=faq&utm_campaign=nixcmd):  
sudo yum list --installed  
sudo yum list --installed | more  
The above command may not work on an older version of CentOS, hence try:  
sudo yum list installed  
sudo yum list installed | more



List all installed packages in CentOS Linux using yum

One can use the [grep command](https://www.cyberciti.biz/faq/howto-use-grep-command-in-linux-unix/?utm_source=Linux_Unix_Command&utm_medium=faq&utm_campaign=nixcmd) as filter too. For example, find out if nginx installed or not:  
sudo yum list --installed | grep nginx  
## OR ##  
yum list installed | grep nginx  
Want to lists extras packages installed on the system that are not available in any known repository? Try:  
sudo yum list --extras  
Sample outputs

Last metadata expiration check: 0:21:58 ago on Friday 29 November 2019 05:19:57 PM UTC.

Extra Packages

qemu-guest-agent.x86\_64 15:2.12.0-64.module\_el8.0.0+44+94c1b039.2 @AppStream

Lists all packages known to us:  
sudo yum list --all  
Finally, show available packages, run:  
sudo yum list --available  
One can count all installed packages using the wc command:  
sudo yum list --installed | wc -l  
sudo yum list --all | wc -l  
sudo yum list --available | wc -l

### **Display packages list that needs updates/patching**

Keeping your CentOS box secure is an essential task. One can get a list of all upgrades available for the installed packages too. Type:  
sudo yum list --upgrades  
sudo yum list --upgrades | more  
sudo yum list --upgrades | grep -i kernel  
Sample outputs:

Available Upgrades

bash.x86\_64 4.4.19-8.el8\_0 BaseOS

dracut.x86\_64 049-10.git20190115.el8\_0.1 BaseOS

dracut-config-rescue.x86\_64 049-10.git20190115.el8\_0.1 BaseOS

dracut-network.x86\_64 049-10.git20190115.el8\_0.1 BaseOS

dracut-squash.x86\_64 049-10.git20190115.el8\_0.1 BaseOS

grub2-common.noarch 1:2.02-66.el8\_0.1 BaseOS

grub2-pc.x86\_64 1:2.02-66.el8\_0.1 BaseOS

grub2-pc-modules.noarch 1:2.02-66.el8\_0.1 BaseOS

grub2-tools.x86\_64 1:2.02-66.el8\_0.1 BaseOS

grub2-tools-extra.x86\_64 1:2.02-66.el8\_0.1 BaseOS

grub2-tools-minimal.x86\_64 1:2.02-66.el8\_0.1 BaseOS

initscripts.x86\_64 10.00.1-1.el8\_0.1 BaseOS

kernel.x86\_64 4.18.0-80.11.2.el8\_0 BaseOS

kernel-core.x86\_64 4.18.0-80.11.2.el8\_0 BaseOS

kernel-modules.x86\_64 4.18.0-80.11.2.el8\_0 BaseOS

kernel-tools.x86\_64 4.18.0-80.11.2.el8\_0 BaseOS

kernel-tools-libs.x86\_64 4.18.0-80.11.2.el8\_0 BaseOS

kpartx.x86\_64 0.7.8-7.el8\_0.2 BaseOS

libnfsidmap.x86\_64 1:2.3.3-14.el8\_0.2 BaseOS

platform-python.x86\_64 3.6.8-4.el8\_0 BaseOS

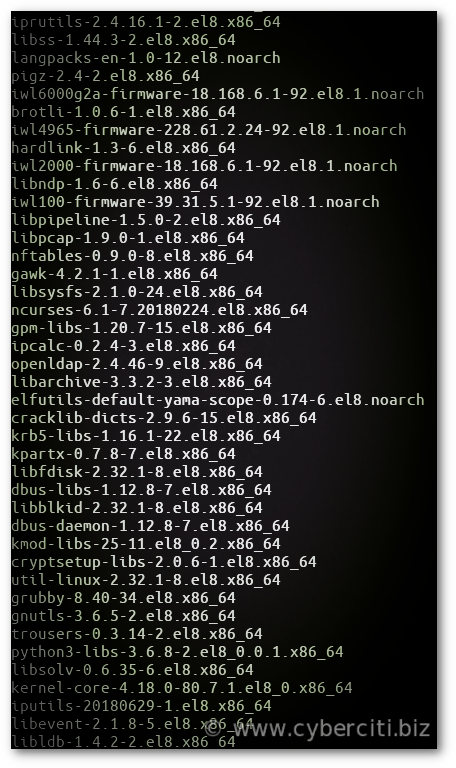
python3-libs.x86\_64 3.6.8-4.el8\_0 BaseOS

python3-perf.x86\_64 4.18.0-80.11.2.el8\_0 BaseOS

python3-rpm.x86\_64 4.14.2-11.el8\_0 BaseOS

## Get a list of all installed packages with rpm command

Simply run the following [rpm command](https://www.cyberciti.biz/howto/question/linux/linux-rpm-cheat-sheet.php?utm_source=Linux_Unix_Command&utm_medium=faq&utm_campaign=nixcmd):  
sudo rpm -qa  
sudo rpm -qa | more  
sudo rpm -qa | wc -l  
sudo rpm -qa | grep bash



Use rpm command to display a list of install installed packages on CentOS server

Is nginx and bash package installed? Find out, run:  
**sudo rpm -q nginx**  
package nginx is not installed  
**sudo rpm -q bash**  
bash-4.4.19-7.el8.x86\_64

## Use repoquery command from dnf-utils package

First, install yum-utils (CentOS 6.x/7.x) or dnf-utils on a CentOS 8.x:  
sudo yum install yum-utils ## centos 6.x/7.x ##  
sudo yum install dnf-utils ## centos 8.x ##  
Sample outputs:

Last metadata expiration check: 0:40:40 ago on Friday 29 November 2019 05:19:57 PM UTC.

Dependencies resolved.

**===================================================================================================**

Package Arch Version Repository Size

**=**==================================================================================================

Installing:

dnf-utils noarch 4.0.2.2-3.el8 BaseOS 62 k

Transaction Summary

**=**==================================================================================================

Install 1 Package

Total download size: 62 k

Installed size: 18 k

Is this ok **[y/N]**: y

Downloading Packages:

dnf-utils-4.0.2.2-3.el8.noarch.rpm 11 MB/s | 62 kB 00:00

---------------------------------------------------------------------------------------------------

Total 6.1 MB/s | 62 kB 00:00

Running transaction check

Transaction check succeeded.

Running transaction test

Transaction test succeeded.

Running transaction

Preparing : 1/1

Installing : dnf-utils-4.0.2.2-3.el8.noarch 1/1

Running scriptlet: dnf-utils-4.0.2.2-3.el8.noarch 1/1

Verifying : dnf-utils-4.0.2.2-3.el8.noarch 1/1

Installed:

dnf-utils-4.0.2.2-3.el8.noarch

Complete!

To check installed packages in CentOS Linux, execute:  
sudo yum repoquery -a --installed

NetworkManager-1:1.14.0-14.el8.x86\_64

NetworkManager-libnm-1:1.14.0-14.el8.x86\_64

NetworkManager-team-1:1.14.0-14.el8.x86\_64

NetworkManager-tui-1:1.14.0-14.el8.x86\_64

acl-0:2.2.53-1.el8.x86\_64

audit-0:3.0-0.10.20180831git0047a6c.el8.x86\_64

audit-libs-0:3.0-0.10.20180831git0047a6c.el8.x86\_64

authselect-0:1.0-13.el8.x86\_64

authselect-compat-0:1.0-13.el8.x86\_64

authselect-libs-0:1.0-13.el8.x86\_64

basesystem-0:11-5.el8.noarch

....

..

....

vim-minimal-2:8.0.1763-10.el8.x86\_64

virt-what-0:1.18-6.el8.x86\_64

which-0:2.21-10.el8.x86\_64

xfsprogs-0:4.19.0-2.el8.x86\_64

xkeyboard-config-0:2.24-3.el8.noarch

xz-0:5.2.4-3.el8.x86\_64

xz-libs-0:5.2.4-3.el8.x86\_64

yum-0:4.0.9.2-5.el8.noarch

zlib-0:1.2.11-10.el8.x86\_64

Display name, architecture and the containing repository of all nginx packages:  
sudo yum repoquery --queryformat '%{name}.%{arch} : %{reponame}' nginx  
List all available packages providing “webserver”:  
sudo yum repoquery --whatprovides webserver  
Or list all available packages providing “webserver” but only for “i686” architecture:  
sudo yum repoquery --whatprovides webserver --arch i686

### **More on repoquery option**

Custom display format created using the -qf %{format} or --queryformat %{format} syntax. The %{format} is nothing but a string to output for each matched package. Every occurrence of %{<tag>} within is replaced by corresponding attribute of the package. List of recognized tags can be displayed by running  
dnf repoquery --querytags  
Sample outputs:

Available query-tags: use --queryformat ".. %{tag} .."

name, arch, epoch, version, release, reponame (repoid), evr,

debug\_name, source\_name, source\_debug\_name,

installtime, buildtime, size, downloadsize, installsize,

provides, requires, obsoletes, conflicts, sourcerpm,

description, summary, license, url

For instance, one can build fancy list as follows:  
repoquery -a --installed \  
--queryformat "%{name}-%{arch}-%{version} installed at '%{installtime}' from '%{reponame}'"  
Sample outputs:

newt-x86\_64-0.52.20 installed at '2019-09-25 14:48' from '@System'

nftables-x86\_64-0.9.0 installed at '2019-09-25 14:48' from '@System'

npth-x86\_64-1.5 installed at '2019-09-25 14:48' from '@System'

numactl-libs-x86\_64-2.0.12 installed at '2019-09-25 14:48' from '@System'

openldap-x86\_64-2.4.46 installed at '2019-09-25 14:48' from '@System'

openssh-clients-x86\_64-7.8p1 installed at '2019-09-25 14:49' from '@System'

openssh-server-x86\_64-7.8p1 installed at '2019-09-25 14:49' from '@System'

openssh-x86\_64-7.8p1 installed at '2019-09-25 14:49' from '@System'

openssl-libs-x86\_64-1.1.1 installed at '2019-09-25 14:48' from '@System'

openssl-pkcs11-x86\_64-0.4.8 installed at '2019-09-25 14:48' from '@System'

openssl-x86\_64-1.1.1 installed at '2019-09-25 14:48' from '@System'

os-prober-x86\_64-1.74 installed at '2019-09-25 14:48' from '@System'

p11-kit-trust-x86\_64-0.23.14 installed at '2019-09-25 14:48' from '@System'

p11-kit-x86\_64-0.23.14 installed at '2019-09-25 14:48' from '@System'

pam-x86\_64-1.3.1 installed at '2019-09-25 14:48' from '@System'

parted-x86\_64-3.2 installed at '2019-09-25 14:49' from '@System'

passwd-x86\_64-0.80 installed at '2019-09-25 14:49' from '@System'

## How to check for installed packages on CentOS and backup them

One can list and backup all installed packages using the following syntax:

rpm -qa --qf "%{NAME}**\n**" **|**\

**sort** **>** **/**nas**/**installed-software-mm-dd-yyyy.log

Use the [cat command](https://www.cyberciti.biz/faq/linux-unix-appleosx-bsd-cat-command-examples/?utm_source=Linux_Unix_Command&utm_medium=faq&utm_campaign=nixcmd) to review list:  
cat /nas/installed-software-mm-dd-yyyy.log  
To restore all those packages when needed, run:  
yum -y install $(cat /nas/installed-software-mm-dd-yyyy.log)  
See “[Linux Get List of Installed Software for Reinstallation / Restore All the Software Programs](https://www.cyberciti.biz/tips/linux-get-list-installed-software-reinstallation-restore.html)” for more info.

## A note about listing all installed packages with yum on CentOS history command

The yum command has history option on the latest version of CentOS / RHEL v6.x+. One can view historical installation date and data on your cloud based server. Type the following command to see a list and history:  
sudo yum history  
Sample outputs:

ID | Command line | Date and time | Action(s) | Altered

-------------------------------------------------------------------------------

4 | install dnf-utils | 2019-11-29 18:00 | Install | 1

3 | remove dnf-utils | 2019-11-29 18:00 | Removed | 1

2 | install yum-utils | 2019-11-29 17:21 | Install | 1

1 | | 2019-09-25 14:48 | Install | 396 EE

We can examine history entries in detail too using ID number from the above outputs:  
sudo yum history info ID  
sudo yum history info 2  
Sample outputs:

Transaction ID : 2

Begin time : Friday 29 November 2019 05:21:50 PM UTC

Begin rpmdb : 393:911fb7e090842db316c671dc9e4b3bba7ffc7f2d

End time : Friday 29 November 2019 05:21:50 PM UTC (0 seconds)

End rpmdb : 394:e2078e6f2b3657ae7b67053902eae91a492a54a5

User : root <root>

Return-Code : Success

Releasever : 8

Command Line : install yum-utils

Packages Altered:

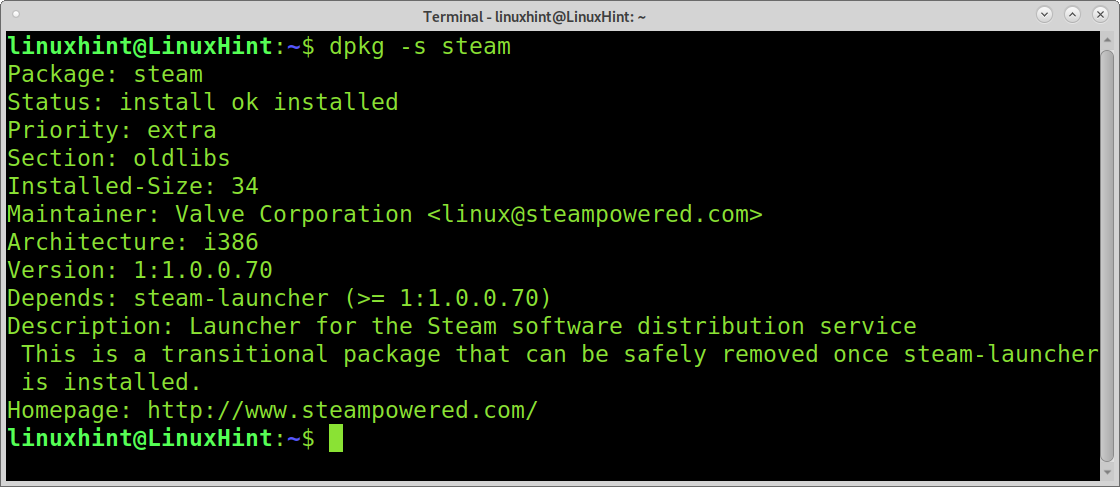
Install dnf-utils-4.0.2.2-3.el8.noarch @BaseOS

# How do I check if a package is installed on Debian and Ubuntu

## ****Checking if a specific package is installed using****dpkg****:****

To check if a specific package is installed on [Debian based Linux distributions](https://www.debian.org/derivatives/" \l "list), you can use the dpkg command followed by the -s (status) flag and the package name. The command below shows an example of dpkg, used to check the status of the package Steam.

dpkg -s steam



0 seconds of 0 secondsVolume 0%

As you can see, the command returns information on the package, including the following:

**Package name**: Package name.

**Package status:** Here, you can see the package status on your system.

**Priority:** There are 5 possible priority levels for packages: The priority **‘Required’** belongs to packages that are essential for the system; removing packages marked as ‘Required’ may lead to a system failure. The second possible priority mode for a is the **‘Important’** priority for packages that are not essential for the system but the user, for example, a text editor like nano or net-tools. The third priority is **‘Standard’**, which includes packages that are defined to be installed by default. The fourth priority level is the **‘Optional’,** which includes optional packages in Debian/Ubuntu installations. Finally, the fifth priority is **‘Extra’**, which is deprecated and is replaced by ‘Optional’. The status ‘Extra’ was used for specialized packages.

**Section:**Packages are classified by categories; currently available categories include admin, database, cli-mono, debug, devel, doc, editors, education, gnustep, embedded, fonts, games, gnome, gnu-r, electronics, graphics, interpreters, hamradio, haskell, httpd, python, introspection, javascript, java, ruby, kde, localization, kernel, libdevel, libs, lisp, mail, math, metapackages, ocaml, net, news, misc, comm, oldlibs, otherosfs, perl, php, rust, science, shells, sound, text, video, tasks, tex, utils, vcs, web, x11, xfce, and zope.

**Installed size:**You can see the estimated required disk space in bytes to install the package.

**Maintainer:** This field shows the information on the package’s developer.

**Architecture:**Here, you can see the package architecture.

**Version:**Package version.

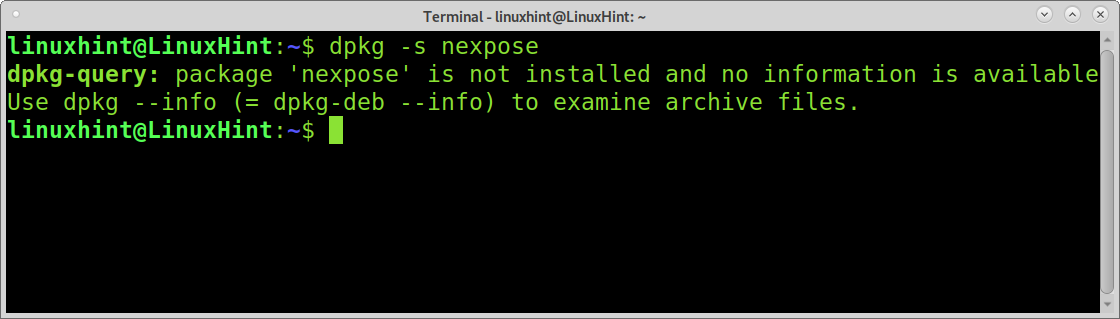
**Depends:**Package dependencies.

**Description:**Package description.

**Homepage:**Package/Developer website.

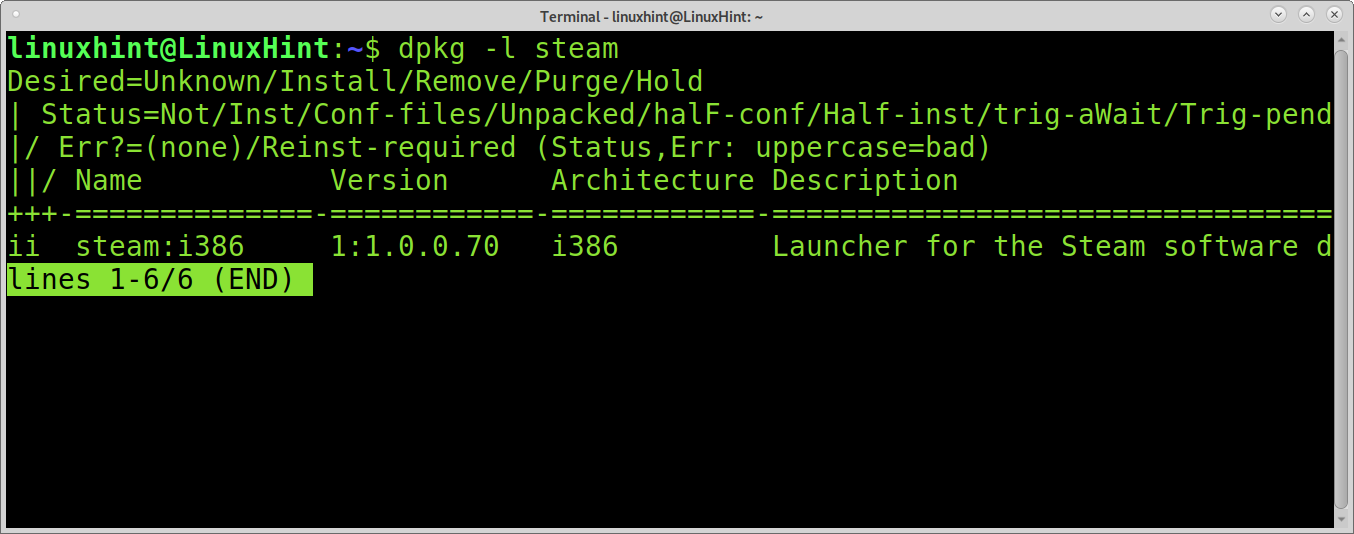
The screenshot below shows the output when you check a package that isn’t installed.

dpkg -s nexpose



You can also use the dpkg command followed by the -l flag to check a specific package status, as shown in the example below.

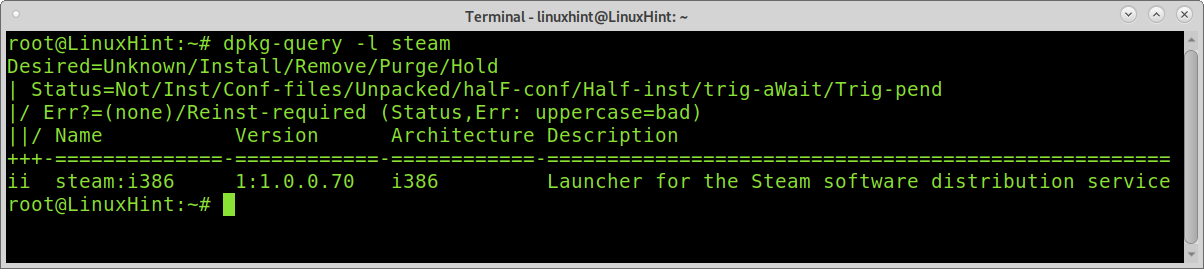
dpkg -l steam



## Checking if a specific package is installed using dpkg-query:

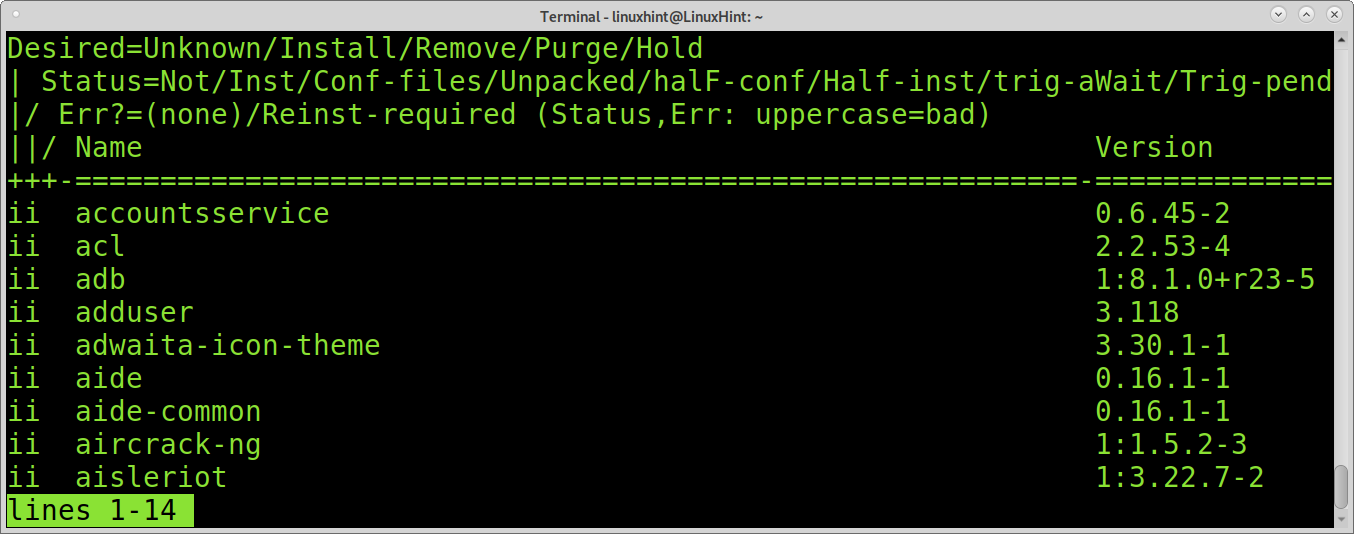
The dpkg-query command can be used to show if a specific package is installed in your system. To do it, run dpkg-query followed by the -l flag and the name of the package you want information about. The example below shows how to check if the Steam package is installed.

dpkg-query -l steam



You can use the same command to list all installed packages by omitting the package name, as shown in the example below.

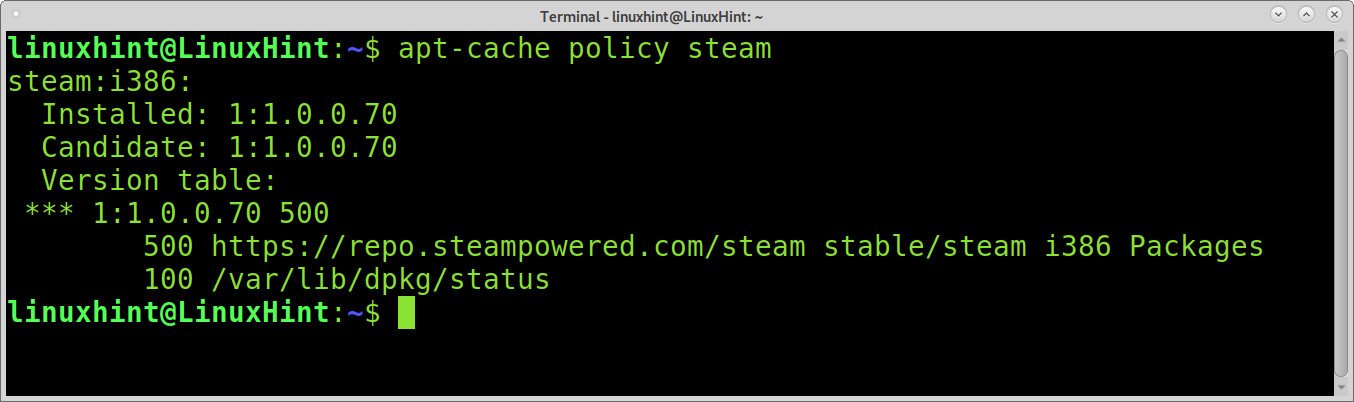
dpkg-query -l

****

## Check if a package is installed using apt-cache:

The apt-cache command can also show information on packages, installed versions, and more. To get this output, you need to add the policy option followed by the package name, as shown in the example below.

apt-cache policy steam

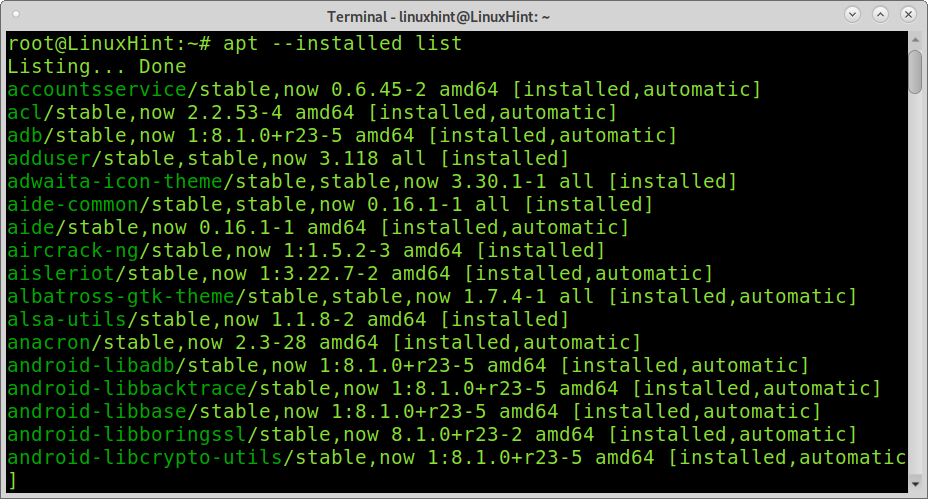


[https://ib.3lift.com/static/buttons/edaa/OBA_TRANS.png](https://eb2.3lift.com/pass?tl_clickthrough=true&redir=https%3A%2F%2Frtb-us-west.linkedin.com%2Flax%2Fclk%3Ftrk%3DCwEAAAGEWrvOj4jQHkNIjOgempYgnAeEAZlA4EtdHy-gHW7W8qfqhEOZA2yuwH1UnYhxzTZ9TO63kjz13R4MFyyRygwjN879Fif0kQFWSOuGIZGstayLkbJ5DOhazvwGICL9m2kdl6IxmEJ3rx7ksP0wwUdePrP1A34VP14iXAFaQSVU37q1bhWQ-Rk90cYkLI3rNJI78V0nQyb_cNGwCxoj3GYF8cShOYQ7eun_e6LwIhW3VtgrIAYG2ty8OmEZoe80aFB5x_etlvAIscO-8P54C_Eu9pFXHo9iZtONqtVlGngXIns-lHUC0PlMKd704YSFZb7MJhsZcKAgi81AP0KvyeEROYBlM27QuqfC-E2yiF054ZLwhFbrtNoSb3TbZMB_gUaHqgCwU7ae1mSrSdS_ZDpL4EomK_obyg5ZruouAJeYdn7GRtMn5xNhVAIjguyKxbXykCPTuvW7kfdesOY4CPPookN9gAdU5DwGgdwlMb3mR2e6XfTv9RKr0kHpSOd4659I8bGALWRmXvdUYpVJX1MvbRf2b6y4YVDt1mwJ4rmnP2fPn0aICTF-RHguZNHjzH_iWt13b2IOvV1LmZHwLt9CiioMX1Jej13cpNHWyf84aHNYZutybZZ9FDnnqdiU14VJzjQeG3G8Tsm7nd_M_VWsWs1vJeFzIviPsKK6wpFU15h3oeju0DasMkPFmeDXBcLPuZq9H3_yncRwxfUwCru9k6TqYYgfIni5b3KWQtPOxNR5zDrw5it2Z3fzADff82BuV_ujvjgqV267zaeuCppkBPe-L2xBKCL7Qmwk1dW9GDFpKvpf4W-BQiWlqbj5n5KeyxXneQl1K6SK9kF2v4hYwlI6nIeO0MdtNSFUYdGf4SM46UbiHUmBgLTwMXmB-oa277Dl0iVleDTsH4RDoLnDUBKM6tRm8iELBe5GW-CdbLrRb_tS1tnHh9ZjV4PaQVgNlkq8IzbRxAdUozybkehNfAx1e-MiSGjMSLD9OhDkOQLmhBl9tL9PaWNZMU1KMAzBVVgYaJHEP72VGml8nleAROazILnGdRY7qEHSm2PDvaZn2TYgHWjdLwQsU2sBWSuFQ6Yy4uFk3oyTci4kEpWXSnvrtBTpAdF2ZyL5LGfM5lGhWQ013SleBDzbNEphBegjYdiGocGYI3cEVjThSpn0sD2n5DRTxAFTeggAd9ralVgsoAQIxWs6dMubK8NO_gptJKYsFdViJYfZhwQfRA1ddt7A3C27-1gfJdSNLWdPuqVOchf_W89tkFv9-QNJXm_naMuuZEJE-IcOwluG7PVmG66D0bGeKIkmySlGjDg3gJRFm7ihbExSqdcOA8t4W6CuWBSFIpBQHQFUqNr1mw1eckt88I9mKWhvGoOJBLvl8VenK7N7rvnW4D7okg9CpuSry7dL7Eqp9F-ymmSMv-AAsy8TMYB5pEIwGFuqqaoFIN5-94p5bYotYexhA4mC1oRi_j9EykoUqfq_-Mo1FfnU85IUl1LDAIbSWm-wNcCN-FHzDxCjTelSCoJKFP1cLpF7HqU44zpdDHuyOtumdNux%26action%3Dclick%26laxrid%3Dbee6a977-7987-4554-ba67-ff21db8601fb%26laxbid%3D2%26eid%3D3%26crtype%3Dvid%26laxerid%3D44573329034491460062230%26adfmt%3D6%26urle%3DCwEAAAGEWrvOkZEHlUhwkSSv5nER-l56EBGPf9DWybLEQRf9gxhtHOG0hoEAuhxmkps3XialgacHFTjlNMgsZ_YkuU79wiRuZn2EJtyhO1ShBoopB66Rb_1HLe4-OEYAKywlvsU6wzTjXh73cXXLzrxx9kdJLW3U2upXupBthul8Z2KkpPoVS1vS-YnneXGQYqXI5EZL2o2Mmf-_EbZO8t5YAQ%26urlhash%3D-J8n&pr=0.33&bc=0.747&aid=44573329034491460062230&bmid=6250&biid=6250&sid=66552&brid=186047&adid=188468964&crid=70875745&ts=1667969568&bcud=747&ss=12&cb=80491" \t "_blank)

## Get a list of all installed packages using apt:

If you want to print a list of all installed packages on your system instead of checking if a specific package was installed, you can achieve it using the apt command as shown in the example below.

apt --installed list

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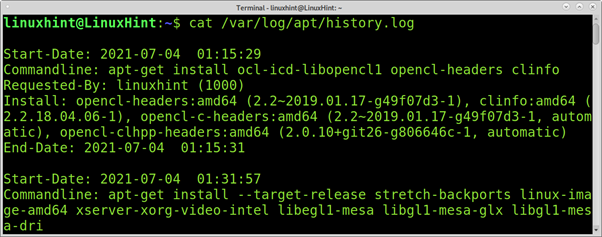
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## Get a list of all installed packages reading logs:

Another method widely used to get a list of all installed packages is reading apt or dpkg logs.

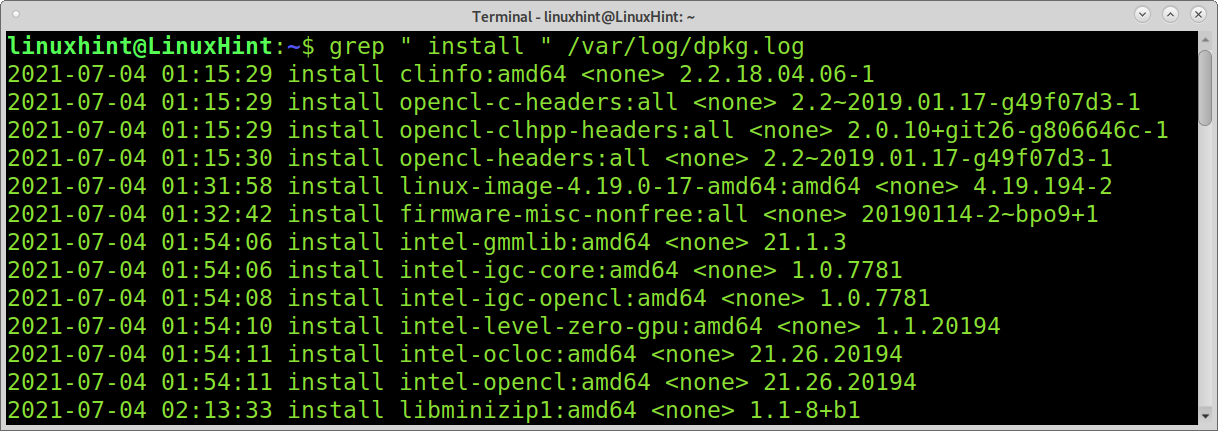
To read the apt log, run the following command.

cat /var/log/apt/history.log



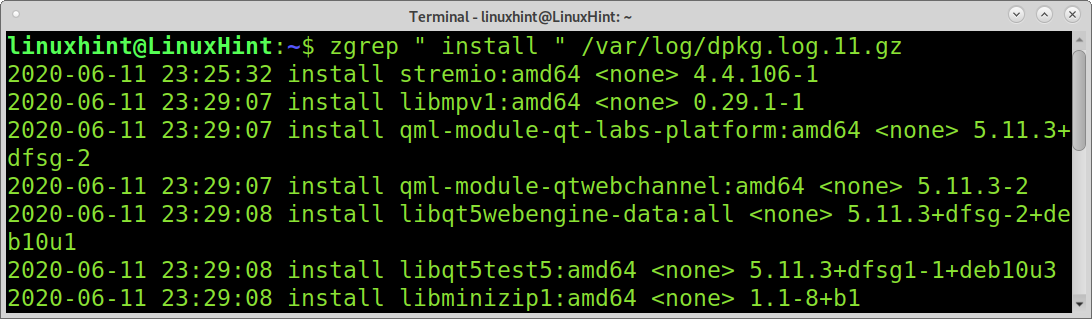
To read the dpkg log to get information on installed packages, run the command below.

grep " install " /var/log/dpkg.log



You also can read compressed dpkg logs using the zgrep command instead of grep, as shown in the example below.

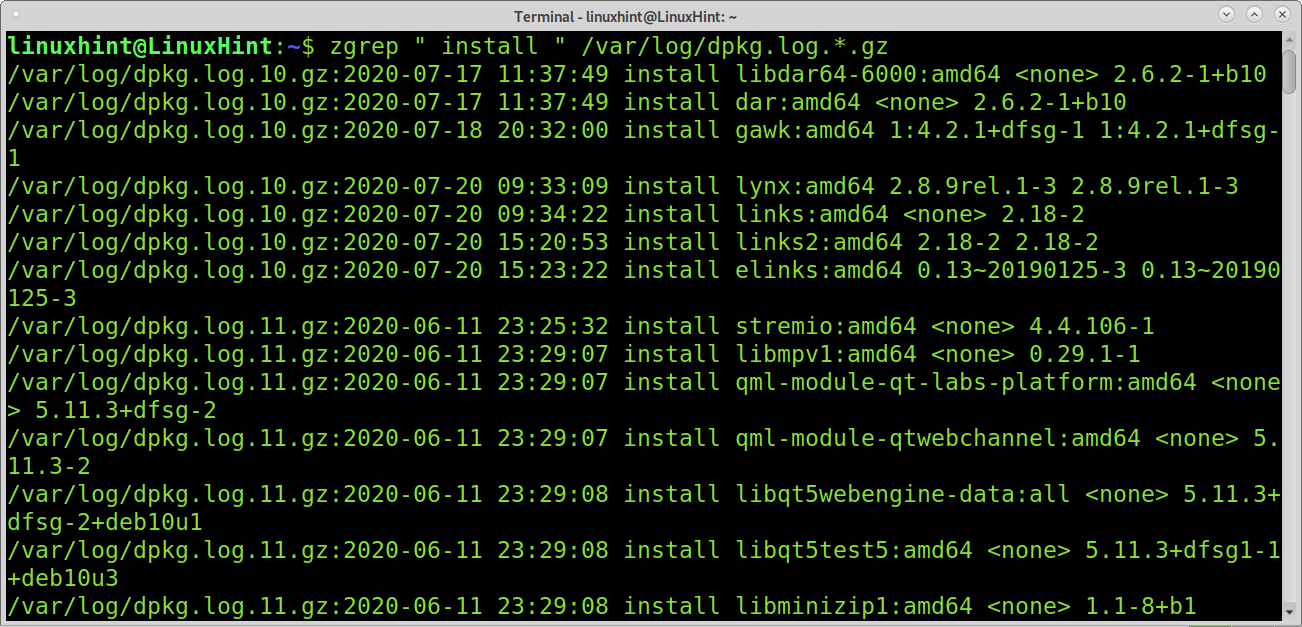
zgrep " install " /var/log/dpkg.log.11.gz



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As you can see, compressed logs will give you partial information, but you can implement a wildcard (\*) to read all compressed logs at once, as shown in the following example.

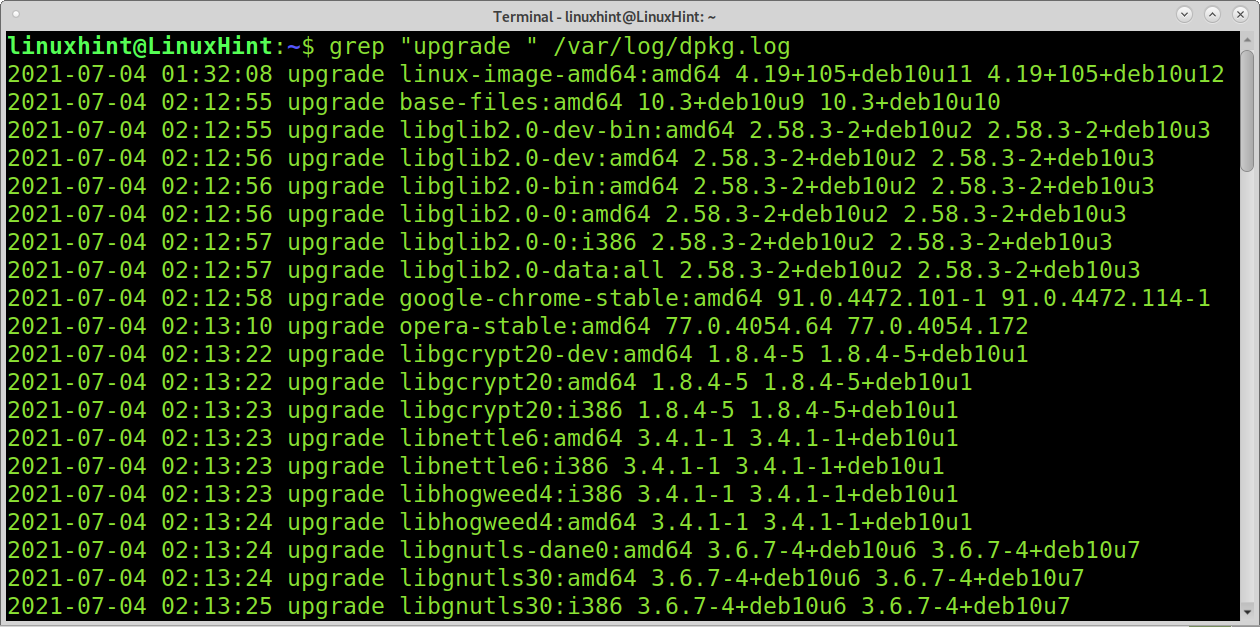
zgrep " install " /var/log/dpkg.log.\*.gz



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## How to check upgraded and removed packages:

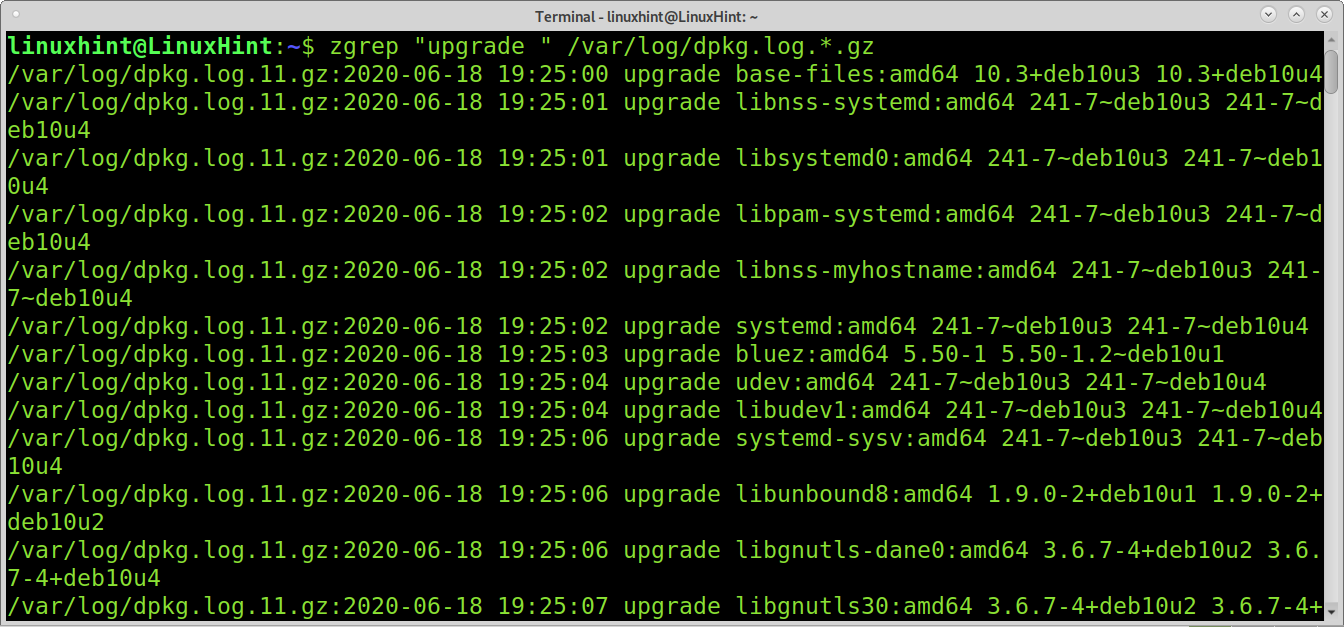
If you want to display information on upgraded packages only, you can achieve it using the command below.



As explained previously, with installed packages, you also can check compressed logs for upgraded packages using the wildcard, as shown in the following example.

APPLY

zgrep "upgrade " /var/log/dpkg.log.\*.gz

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If you want to list removed packages, the method is similar; just replace “upgrade” with “remove,” as shown below.

grep "remove " /var/log/dpkg.log

