

.rpm is the package name and tools to manage the package is yum/dnf and rpm

### Become root before doing this exercise

#### 1. List all the installed rpm packages

##### a. rpm -qa | more

```
fonts-filesystem-2.0.5-7.el9.1.noarch
xkeyboard-config-2.33-2.el9.noarch
abattis-cantarell-fonts-0.301-4.el9.noarch
yelp-xsl-40.2-1.el9.noarch
mozilla-filesystem-1.9-30.el9.x86_64
google-noto-fonts-common-20201206-4.el9.noarch
foomatic-db-filesystem-4.0-72.20210209.el9.noarch
adobe-mappings-cmap-20171205-12.el9.noarch
libreport-filesystem-2.15.2-6.el9.noarch
adobe-mappings-cmap-deprecated-20171205-12.el9.noarch
dejavu-sans-mono-fonts-2.37-18.el9.noarch
dejavu-sans-fonts-2.37-18.el9.noarch
langpacks-core-font-en-3.0-16.el9.noarch
adobe-source-code-pro-fonts-2.030.1.050-12.el9.1.noarch
google-droid-sans-fonts-20200215-11.el9.2.noarch
thai-scalable-fonts-common-0.7.2-5.el9.noarch
poppler-data-0.4.9-9.el9.noarch
mobile-broadband-provider-info-20210805-2.el9.noarch
hunspell-filesystem-1.7.0-11.el9.x86_64
hplip-common-3.21.2-6.el9.x86_64
gawk-all-langpacks-5.1.0-6.el9.x86_64
adwaita-cursor-theme-40.1.1-3.el9.noarch
adobe-mappings-pdf-20180407-10.el9.noarch
publicsuffix-list-dafsa-20210518-3.el9.noarch
urw-base35-fonts-common-20200910-6.el9.noarch
basesystem-11-13.el9.noarch
popt-1.18-8.el9.x86_64
xz-libs-5.2.5-8.el9.x86_64
libxcrypt-4.4.18-3.el9.x86_64
bzip2-libs-1.0.8-8.el9.x86_64
libzstd-1.5.1-2.el9.x86_64
libpng-1.6.37-12.el9.x86_64
libicu-67.1-9.el9.x86_64
libseccomp-2.5.2-2.el9.x86_64
libunistring-0.9.10-15.el9.x86_64
readline-8.1-4.el9.x86_64
--More--
```

##### b. rpmquery -a | more

```
fonts-filesystem-2.0.5-7.el9.1.noarch
xkeyboard-config-2.33-2.el9.noarch
abattis-cantarell-fonts-0.301-4.el9.noarch
yelp-xsl-40.2-1.el9.noarch
mozilla-filesystem-1.9-30.el9.x86_64
google-noto-fonts-common-20201206-4.el9.noarch
foomatic-db-filesystem-4.0-72.20210209.el9.noarch
adobe-mappings-cmap-20171205-12.el9.noarch
libreport-filesystem-2.15.2-6.el9.noarch
adobe-mappings-cmap-deprecated-20171205-12.el9.noarch
dejavu-sans-mono-fonts-2.37-18.el9.noarch
dejavu-sans-fonts-2.37-18.el9.noarch
langpacks-core-font-en-3.0-16.el9.noarch
adobe-source-code-pro-fonts-2.030.1.050-12.el9.1.noarch
google-droid-sans-fonts-20200215-11.el9.2.noarch
thai-scalable-fonts-common-0.7.2-5.el9.noarch
poppler-data-0.4.9-9.el9.noarch
mobile-broadband-provider-info-20210805-2.el9.noarch
hunspell-filesystem-1.7.0-11.el9.x86_64
hplip-common-3.21.2-6.el9.x86_64
gawk-all-langpacks-5.1.0-6.el9.x86_64
adwaita-cursor-theme-40.1.1-3.el9.noarch
adobe-mappings-pdf-20180407-10.el9.noarch
publicsuffix-list-dafsa-20210518-3.el9.noarch
urw-base35-fonts-common-20200910-6.el9.noarch
basesystem-11-13.el9.noarch
popt-1.18-8.el9.x86_64
xz-libs-5.2.5-8.el9.x86_64
libxcrypt-4.4.18-3.el9.x86_64
bzip2-libs-1.0.8-8.el9.x86_64
libzstd-1.5.1-2.el9.x86_64
libpng-1.6.37-12.el9.x86_64
libicu-67.1-9.el9.x86_64
libseccomp-2.5.2-2.el9.x86_64
libunistring-0.9.10-15.el9.x86_64
readline-8.1-4.el9.x86_64
--More--
```

c. `rpm -qa | wc -l`

```
[root@siddharrth siddharrth]# rpm -qa | wc -l
1196
```

d. `rpmquery -a | wc -l`

```
[root@linux siddharrth]# rpmquery -a | wc -l
1202
```

e. `rpm -qa --last`

```

poppler-data-0.4.9-9.el9.noarch      Monday 30 September 2024 12:49:58
PM
mobile-broadband-provider-info-20210805-2.el9.noarch Monday 30 September 2024 12:
:49:58 PM
langpacks-core-font-en-3.0-16.el9.noarch      Monday 30 September 2024 12:49:58
PM
google-droid-sans-fonts-20200215-11.el9.2.noarch Monday 30 September 2024 12:49:
58 PM
dejavu-sans-mono-fonts-2.37-18.el9.noarch      Monday 30 September 2024 12:49:58
PM
dejavu-sans-fonts-2.37-18.el9.noarch      Monday 30 September 2024 12:49:58
PM
adobe-source-code-pro-fonts-2.030.1.050-12.el9.1.noarch Monday 30 September 2024
12:49:58 PM
yelp-xsl-40.2-1.el9.noarch      Monday 30 September 2024 12:49:54
PM
mozilla-filesystem-1.9-30.el9.x86_64      Monday 30 September 2024 12:49:54
PM
libreport-filesystem-2.15.2-6.el9.noarch      Monday 30 September 2024 12:49:54
PM
google-noto-fonts-common-20201206-4.el9.noarch Monday 30 September 2024 12:49:54
PM
foomatic-db-filesystem-4.0-72.20210209.el9.noarch Monday 30 September 2024 12:49
:54 PM
adobe-mappings-cmap-deprecated-20171205-12.el9.noarch Monday 30 September 2024 1
2:49:54 PM
adobe-mappings-cmap-20171205-12.el9.noarch      Monday 30 September 2024 12:49:54
PM
abattis-cantarell-fonts-0.301-4.el9.noarch      Monday 30 September 2024 12:49:54
PM
xkeyboard-config-2.33-2.el9.noarch      Monday 30 September 2024 12:49:53
PM
fonts-filesystem-2.0.5-7.el9.1.noarch      Monday 30 September 2024 12:49:53
PM
[root@siddharrth siddharrth]#

```

## 2. Check whether acl ,shadow-utils,passwd,firewalld package is installed

a. rpm -qa acl

```

[root@siddharrth siddharrth]# rpm -qa | grep acl
libacl-2.3.1-4.el9.x86_64
acl-2.3.1-4.el9.x86_64

```

b. rpm -qa | grep acl

```

[root@siddharrth siddharrth]# rpm -qa | grep acl,shadow-utils,passwd,firewalld

```

c. rpmquery acl

```

[root@siddharrth siddharrth]# rpmquery acl
acl-2.3.1-4.el9.x86_64

```

d. rpmquery -a | grep acl

```

[root@siddharrth siddharrth]# rpmquery -a | grep acl
libacl-2.3.1-4.el9.x86_64
acl-2.3.1-4.el9.x86_64

```

e. rpm -q acl

```
[root@linux siddharrth]# rpm -q acl
acl-2.3.1-4.el9.x86_64
```

3. Repeat the 2.a –e for shadow-utils,passwd and firewallld

```
[root@siddharrth siddharrth]# rpm -e passwd
```

4. Install vsftpd package

- a. Download the package from internet ([vsftpd-3.0.3-49.el9.x86\\_64.rpm](https://mirror.stream.centos.org/9-stream/AppStream/x86_64/os/Packages/vsftpd-3.0.3-49.el9.x86_64.rpm) [CentOS9Stream Download \(pkgs.org\)](https://mirror.stream.centos.org/9-stream/AppStream/x86_64/os/Packages/vsftpd-3.0.3-49.el9.x86_64.rpm))

```
[root@siddharrth siddharrth]# wget https://mirror.stream.centos.org/9-stream/AppStream/x86_64/os/Packages/vsftpd-3.0.3-49.el9.x86_64.rpm
--2024-10-17 19:57:50-- https://mirror.stream.centos.org/9-stream/AppStream/x86_64/os/Packages/vsftpd-3.0.3-49.el9.x86_64.rpm
Resolving mirror.stream.centos.org (mirror.stream.centos.org)... 108.159.80.75, 108.159.80.122, 108.159.80.125, ...
Connecting to mirror.stream.centos.org (mirror.stream.centos.org)|108.159.80.75|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 173002 (169K) [application/x-rpm]
Saving to: 'vsftpd-3.0.3-49.el9.x86_64.rpm'

vsftpd-3.0.3-49.el9 100%[=====>] 168.95K 253KB/s in 0.7s

2024-10-17 19:57:52 (253 KB/s) - 'vsftpd-3.0.3-49.el9.x86_64.rpm' saved [173002/173002]

[root@siddharrth siddharrth]#
```

- b. Install using rpm -ivh vsftpd.....rpm

```
[root@siddharrth siddharrth]# rpm -ivh vsftpd-3.0.3-49.el9.x86_64.rpm
warning: vsftpd-3.0.3-49.el9.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID 8483c65d: NOKEY
Verifying...                               ##### [100%]
Preparing...                               ##### [100%]
Updating / installing...
 1:vsftpd-3.0.3-49.el9                      ##### [100%]
[root@siddharrth siddharrth]#
```

5. Download Apache server – httpd package and before installing

- a. Check for dependencies using – rpm -qRp packagename

```
[root@siddharrth siddharrth]# rpm -qRp httpd-2.4.57-6.el9.x86_64.rpm
warning: httpd-2.4.57-6.el9.x86_64.rpm: Header V4 RSA/SHA256 Signature, key ID 8
483c65d: NOKEY
/bin/sh
/bin/sh
/bin/sh
/bin/sh
config(httpd) = 2.4.57-6.el9
httpd-core = 0:2.4.57-6.el9
libbrotlienc.so.1()(64bit)
libc.so.6()(64bit)
libc.so.6(GLIBC_2.2.5)(64bit)
libc.so.6(GLIBC_2.4)(64bit)
libsystemd.so.0()(64bit)
libsystemd.so.0(LIBSYSTEMD_209)(64bit)
rpmllib(CompressedFileNames) <= 3.0.4-1
rpmllib(FileDigests) <= 4.6.0-1
rpmllib(PayloadFilesHavePrefix) <= 4.0-1
rpmllib(PayloadIsZstd) <= 5.4.18-1
rtld(GNU_HASH)
system-logos-httpd
systemd-units
systemd-units
systemd-units
[root@siddharrth siddharrth]#
```

- b. Get info abt the package using – rpm -qip packagename

```
[root@siddharrth siddharrth]# rpm -qip httpd-2.4.57-6.el9.x86_64.rpm
warning: httpd-2.4.57-6.el9.x86_64.rpm: Header V4 RSA/SHA256 Signature, key ID 8
483c65d: NOKEY
Name       : httpd
Version    : 2.4.57
Release    : 6.el9
Architecture: x86_64
Install Date: (not installed)
Group      : Unspecified
Size       : 60849
License    : ASL 2.0
Signature  : RSA/SHA256, Saturday 06 January 2024 09:36:15 AM, Key ID 05b555b38
483c65d
Source RPM : httpd-2.4.57-6.el9.src.rpm
Build Date : Thursday 14 December 2023 06:45:27 PM
Build Host : x86-04.stream.rdu2.redhat.com
Packager   : builder@centos.org
Vendor     : CentOS
URL        : https://httpd.apache.org/
Summary    : Apache HTTP Server
Description:
The Apache HTTP Server is a powerful, efficient, and extensible
web server.
[root@siddharrth siddharrth]#
```

- c. Get the config files using – rpm -qcp packagename

```
[root@siddharrth siddharrth]# rpm -qcp httpd-2.4.57-6.el9.x86_64.rpm
warning: httpd-2.4.57-6.el9.x86_64.rpm: Header V4 RSA/SHA256 Signature, key ID
483c65d: NOKEY
/etc/httpd/conf.modules.d/00-brotli.conf
/etc/httpd/conf.modules.d/00-systemd.conf
```

- d. Get the docs using -rpm -qdp packagename

```
[root@siddharrth siddharrth]# rpm -qdp httpd-2.4.57-6.el9.x86_64.rpm
warning: httpd-2.4.57-6.el9.x86_64.rpm: Header V4 RSA/SHA256 Signature, key ID 8483c65d: NOKEY
/usr/share/man/man5/httpd.conf.5.gz
/usr/share/man/man8/apachectl.8.gz
/usr/share/man/man8/fcgistarter.8.gz
/usr/share/man/man8/htcacheclean.8.gz
/usr/share/man/man8/htcacheclean.service.8.gz
/usr/share/man/man8/httpd.8.gz
/usr/share/man/man8/httpd.service.8.gz
/usr/share/man/man8/httpd.socket.8.gz
/usr/share/man/man8/httpd@.service.8.gz
/usr/share/man/man8/rotatelogs.8.gz
/usr/share/man/man8/suexec.8.gz
```

## 6. Install httpd package

```
[root@siddharrth siddharrth]# rpm -ivh https://mirror.stream.centos.org/9-stream/AppStream/x86_64/os/Packages/httpd-2.4.57-6.el9.x86_64.rpm
Retrieving https://mirror.stream.centos.org/9-stream/AppStream/x86_64/os/Packages/httpd-2.4.57-6.el9.x86_64.rpm
warning: /var/tmp/rpm-tmp.cdKI0P: Header V4 RSA/SHA256 Signature, key ID 8483c65d: NOKEY
error: Failed dependencies:
    httpd-core = 0:2.4.57-6.el9 is needed by httpd-2.4.57-6.el9.x86_64
    system-logos-httpd is needed by httpd-2.4.57-6.el9.x86_64
[root@siddharrth siddharrth]#
```

## 7. List all files of the package using – rpm -ql vsftpd

```
[root@siddharrth siddharrth]# rpm -ql vsftpd
/etc/logrotate.d/vsftpd
/etc/pam.d/vsftpd
/etc/vsftpd
/etc/vsftpd/ftpusers
/etc/vsftpd/user_list
/etc/vsftpd/vsftpd.conf
/etc/vsftpd/vsftpd_conf_migrate.sh
/usr/lib/.build-id
/usr/lib/.build-id/72
/usr/lib/.build-id/72/ca63b253f865702e043a3e2b9dc9093556b550
/usr/lib/systemd/system-generators/vsftpd-generator
/usr/lib/systemd/system/vsftpd.service
/usr/lib/systemd/system/vsftpd.target
/usr/lib/systemd/system/vsftpd@.service
/usr/sbin/vsftpd
/usr/share/doc/vsftpd
/usr/share/doc/vsftpd/AUDIT
/usr/share/doc/vsftpd/BENCHMARKS
/usr/share/doc/vsftpd/BUGS
/usr/share/doc/vsftpd/COPYING
/usr/share/doc/vsftpd/ChangeLog
/usr/share/doc/vsftpd/EXAMPLE
/usr/share/doc/vsftpd/EXAMPLE/INTERNET_SITE
```

## 8. Upgrade an rpm package using – rpm -Uvh packagename

```
[root@siddharrth siddharrth]# rpm -Uvh vsftpd-3.0.3-49.el9.x86_64.rpm
warning: vsftpd-3.0.3-49.el9.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID
8483c65d: NOKEY
Verifying... ##### [100%]
Preparing... ##### [100%]
package vsftpd-3.0.3-49.el9.x86_64 is already installed
```

## SHEET -12- PACKAGE MANAGEMENT – RPM

### 9. Get info about the installed rpm package using rpm -qi packagename

```
[root@siddharrth siddharrth]# rpm -qi vsftpd
Name       : vsftpd
Version    : 3.0.3
Release    : 49.el9
Architecture: x86_64
Install Date: Thursday 17 October 2024 07:58:44 PM
Group      : Unspecified
Size       : 356096
License    : GPLv2 with exceptions
Signature  : RSA/SHA256, Wednesday 24 November 2021 05:15:31 PM, Key ID 05b555
38483c65d
Source RPM : vsftpd-3.0.3-49.el9.src.rpm
Build Date : Tuesday 16 November 2021 04:43:38 PM
Build Host : x86-02.stream.rdu2.redhat.com
Packager   : builder@centos.org
Vendor     : CentOS
URL        : https://security.appspot.com/vsftpd.html
Summary    : Very Secure Ftp Daemon
Description:
vsftpd is a Very Secure FTP daemon. It was written completely from
scratch.
```

### 10. Query the files that belongs to which rpm package

#### a. rpm -qf /usr/sbin/useradd

```
[root@siddharrth siddharrth]# rpm -qf /usr/sbin/useradd
shadow-utils-4.9-9.el9.x86_64
```

#### b. rpm -qf /etc/vsftpd

```
[root@siddharrth siddharrth]# rpm -qf /etc/vsftpd/
vsftpd-3.0.3-49.el9.x86_64
```

#### c. rpm -qf /usr/bin/gpasswd

```
[root@linux bin]# rpm -qf /usr/bin/gpasswd
shadow-utils-4.9-9.el9.x86_64
```

#### d. rpm -qf /usr/bin/getfacl

```
[root@siddharrth siddharrth]# rpm -qf /usr/bin/getfacl
acl-2.3.1-4.el9.x86_64
```

11. List the doc and config files of the installed packages

- a. rpm -qcf /usr/bin/gpasswd

```
[root@linux /]# rpm -qcf /usr/bin/gpasswd
/etc/default/useradd
/etc/login.defs
```

- b. rpm -qdf /usr/bin/gpasswd

```
[root@linux /]# rpm -qdf /usr/bin/gpasswd
/usr/share/doc/shadow-utils/HOWTO
/usr/share/doc/shadow-utils/NEWS
/usr/share/doc/shadow-utils/README
/usr/share/man/cs/man1/gpasswd.1.gz
/usr/share/man/cs/man5/gshadow.5.gz
/usr/share/man/cs/man5/shadow.5.gz
/usr/share/man/cs/man8/groupadd.8.gz
/usr/share/man/cs/man8/groupdel.8.gz
/usr/share/man/cs/man8/groupmod.8.gz
```

- c. rpm -qcf or -qdf /etc/vsftpd

```
[root@siddharrth siddharrth]# rpm -qcf /etc/vsftpd
/etc/logrotate.d/vsftpd
/etc/pam.d/vsftpd
/etc/vsftpd/ftpusers
/etc/vsftpd/user_list
/etc/vsftpd/vsftpd.conf
```

12. Remove the package using – rpm -evv or -evh packagename

```
[root@linux /]# rpm -evv vsftpd
ufdio:      1 reads,      17654 total bytes in 0.000004 secs
D: PRAGMA secure_delete = OFF: 0
D: PRAGMA case_sensitive_like = ON: 0
D: loading keyring from pubkeys in /var/lib/rpm/pubkeys/*.key
D: couldn't find any keys in /var/lib/rpm/pubkeys/*.key
D: loading keyring from rpmdb
D: read h#      1908
Header SHA256 digest: OK
Header SHA1 digest: OK
D: added key gpg-pubkey-8483c65d-5ccc5b19 to keyring
D: Using legacy gpg-pubkey(s) from rpmdb
D: read h#      1909
Header V4 RSA/SHA256 Signature, key ID 8483c65d: OK
Header SHA256 digest: OK
Header SHA1 digest: OK
D: Plugin: calling hook init in systemd_inhibit plugin
D: ===== --- vsftpd-3.0.5-6.el9 x86_64/linux 0x2
D: ===== recording tsort relations
D: ===== tsorting packages (order, #predecessors, #successors)
D:      0      0      0      1  -vsftpd-3.0.5-6.el9.x86_64
```



### 13. Remove the package without checking for dependencies

- a. `rpm -ev --nodeps packagename` (nodeps option should be used very carefully as it will remove the package even if it is a dependency for other packages)

```
[root@linux siddharrth]# rpm -ev --nodeps mysql
Preparing packages...
mysql-8.0.36-1.el9.x86_64
```

### 14. Query Format – display columns

- a. `rpm -qa --queryformat '%{name}---%{release}---%{version}\n' | more`

```
fonts-filesystem--7.el9.1--2.0.5
xkeyboard-config--2.el9--2.33
abattis-cantarell-fonts--4.el9--0.301
yelp-xsl--1.el9--40.2
mozilla-filesystem--30.el9--1.9
google-noto-fonts-common--4.el9--20201206
foomatic-db-filesystem--72.20210209.el9--4.0
adobe-mappings-cmap--12.el9--20171205
libreport-filesystem--6.el9--2.15.2
adobe-mappings-cmap-deprecated--12.el9--20171205
dejavu-sans-mono-fonts--18.el9--2.37
dejavu-sans-fonts--18.el9--2.37
langpacks-core-font-en--16.el9--3.0
adobe-source-code-pro-fonts--12.el9.1--2.030.1.050
google-droid-sans-fonts--11.el9.2--20200215
thai-scalable-fonts-common--5.el9--0.7.2
poppler-data--9.el9--0.4.9
mobile-broadband-provider-info--2.el9--20210805
hunspell-filesystem--11.el9--1.7.0
hplip-common--6.el9--3.21.2
gawk-all-langpacks--6.el9--5.1.0
adwaita-cursor-theme--3.el9--40.1.1
adobe-mappings-pdf--10.el9--20180407
publicsuffix-list-dafsa--3.el9--20210518
urw-base35-fonts-common--6.el9--20200910
basesystem--13.el9--11
popt--8.el9--1.18
xz-libs--8.el9--5.2.5
libxcrypt--3.el9--4.4.18
bzip2-libs--8.el9--1.0.8
libzstd--2.el9--1.5.1
libpng--12.el9--1.6.37
libcuc--9.el9--67.1
libseccomp--2.el9--2.5.2
libunistring--15.el9--0.9.10
readline--4.el9--8.1
--More--
```

b. `rpm -qa --queryformat '%{name}---%{size}---%{release}\n' | more`

```

fonts-filesystem--0--7.el9.1
xkeyboard-config--6083876--2.el9
abattis-cantarell-fonts--722408--4.el9
yelp-xsl--1433973--1.el9
mozilla-filesystem--0--30.el9
google-noto-fonts-common--15345--4.el9
foomatic-db-filesystem--0--72.20210209.el9
adobe-mappings-cmap--13746679--12.el9
libreport-filesystem--0--6.el9
adobe-mappings-cmap-deprecated--596942--12.el9
dejavu-sans-mono-fonts--1275703--18.el9
dejavu-sans-fonts--5930958--18.el9
langpacks-core-font-en--351--16.el9
adobe-source-code-pro-fonts--1886539--12.el9.1
google-droid-sans-fonts--6557604--11.el9.2
thai-scalable-fonts-common--18538--5.el9
poppler-data--12058151--9.el9
mobile-broadband-provider-info--509779--2.el9
hunspell-filesystem--0--11.el9
hplip-common--1334441--6.el9
gawk-all-langpacks--1205149--6.el9
adwaita-cursor-theme--12103345--3.el9
adobe-mappings-pdf--4398414--10.el9
publicsuffix-list-dafsa--68815--3.el9
urw-base35-fonts-common--38280--6.el9
basesystem--0--13.el9
popt--130360--8.el9
xz-libs--181557--8.el9
libxcrypt--270692--3.el9
bzip2-libs--78740--8.el9
libzstd--902051--2.el9
libpng--232119--12.el9
libicu--34109009--9.el9
libseccomp--175293--2.el9
libunistring--1643051--15.el9
readline--492844--4.el9
--More--

```

c. `rpm -qa passwd --queryformat '%{name}---%{size}---%{release}\n'`

```

[root@linux ~]# rpm -qa passwd --queryformat '%{name}---%{size}---%{release}\n'
passwd--441719--12.el9

```

d. `rpm -qa acl --queryformat '%{name}---%{size}---%{release}\n'`

```

[root@linux ~]# rpm -qa acl --queryformat '%{name}---%{size}---%{release}\n'
acl--212167--4.el9

```