

102.5 Use RPM and YUM package management

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ASIX M01-ISO LPI 102-Linux_installation_and_package_management/

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Paquets amb DNF / YUM i RPM

Descripció

Conceptes clau:

- ☐ Paquets amb rpm
- ☐ Paquets amb DNF (YUM)
- ☐ Repositoris
- ☐ Paquets binaris i sources

Ordres a treballar:

- ☐ rpm
- ☐ dnf (yum)
- ☐ /etc/yum.repos.d
- ☐ /etc/pki/rpm-gpg

Gestió de paquets amb rpm

```
rpm -qa
```

```
rpm -qa | wc -l

rpm -ql nmap
rpm -ql nmap | grep bin
rpm -ql tree

rpm -qf /etc/passwd
rpm -qf /etc/fstab
rpm -qf /usr/bin/tree
rpm -qf /usr/bin/ls
rpm -qi tree
rpm -qi nmap
```

```
rpm -q --requires tree
rpm -q --provides tree

rpm -q --requires procps-ng
rpm -q --provides procps-ng
```

```
dnf download nmap
ls -l nmap-7.70-5.el8.x86_64.rpm
file nmap-7.70-5.el8.x86_64.rpm
rpm -qi nmap-7.70-5.el8.x86_64.rpm

rpm -i nmap-7.70-5.el8.x86_64.rpm
rpm -i <url del paquet>

rpm --reinstall nmap-7.70-5.el8.x86_64.rpm

rpm --upgrade nmap-7.70-5.el8.x86_64.rpm
rpm -U nmap-7.70-5.el8.x86_64.rpm

rpm -e nmap
rpm --erase nmap
```

```
dnf download xinetd
ls -la xinetd-2.3.15-24.el8.x86_64.rpm
file xinetd-2.3.15-24.el8.x86_64.rpm
rpm -qi xinetd-2.3.15-24.el8.x86_64.rpm

rpm -i xinetd-2.3.15-24.el8.x86_64.rpm
rpm -e xinetd
```

Gestió de paquets amb DNF / YUM

```
yum clean all

yum upgrade
deprecated [yum update]

yum repolist
```

```
yum install xinetd
yum upgrade xinetd
yum remove xinetd

yum download nmap
yum install ./nmap-7.70-5.el8.x86_64.rpm
yum install <url del paquet a instal·lar>

yum install <ruta a un file/prog que no existeix i es vol instal·lar>
yum install /usr/bin/ldapsearch
```

```
yum info pwgen

yum search pwgen
yum search nmap
yum search ldap

yum provides cal
yum provides ldapsearch
yum provides passwd
yum provides /etc/passwd
yum provides /etc/fstab

yum repoquery -l xinetd [sense estar instal·lat]
```

```
yum deplist tree
yum repoquery --requires nmap

yum repoquery --provides tree
yum repoquery --provides httpd
```

```
yum group

yum group list
yum group list --installed
yum group list --available
```

```
yum install @nomgrup
yum group install nomgrup

yum install @Virtualization
yum install "@Host de virtualizació"
yum group instal "Empaquetador de Fedora"

yum remove @nomgrup
yum group remove nomgrup

yum upgrade @nomgrup
yum group upgrade nomgrup
```

```
yum group info "Host de virtualizació"
yum group info "Debugging Tools"
yum group -v info "GNOME"
```

Gestió de repositoris

```
yum repolist
yum repolist --all
yum repolist --enabled
yum repolist --disabled

yum repolist fasttrack
yum repolist baseos
```

```
[ yum repoquery == rpm -q però als repoas]

yum repoquery
yum repoquery | wc -l
```

```
yum repoquery ldap

yum repoquery --repo extras
yum repoquery --repo baseos | wc -l
```

```
yum repository-packages jenkins list
yum repository-packages baseos list | head 10
yum repository-packages extras list --available
yum repository-packages baseos list --installed
```

```
# tree /etc/yum.repos.d/
/etc/yum.repos.d/
├── CentOS-Linux-AppStream.repo
├── CentOS-Linux-BaseOS.repo
├── CentOS-Linux-ContinuousRelease.repo
├── CentOS-Linux-Debuginfo.repo
├── CentOS-Linux-Devel.repo
├── CentOS-Linux-Extras.repo
├── CentOS-Linux-FastTrack.repo
├── CentOS-Linux-HighAvailability.repo
├── CentOS-Linux-Media.repo
├── CentOS-Linux-Plus.repo
├── CentOS-Linux-PowerTools.repo
├── CentOS-Linux-Sources.repo
├── epel-modular.repo
├── epel-playground.repo
├── epel.repo
├── epel-testing-modular.repo
├── epel-testing.repo
└── jenkins.repo
```

```
# cat /etc/yum.repos.d/CentOS-Linux-BaseOS.repo
# CentOS-Linux-BaseOS.repo
#
# The mirrorlist system uses the connecting IP address of the client and the
# update status of each mirror to pick current mirrors that are geographically
# close to the client.  You should use this for CentOS updates unless you are
# manually picking other mirrors.
#
# If the mirrorlist does not work for you, you can try the commented out
# baseurl line instead.

[baseos]
name=CentOS Linux $releasever - BaseOS
mirrorlist=http://mirrorlist.centos.org/?release=$releasever&arch=$basearch&repo=BaseOS&
infra=$infra
#baseurl=http://mirror.centos.org/$contentdir/$releasever/BaseOS/$basearch/os/
gpgcheck=1
enabled=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-centosofficial
```

```
# cat /etc/yum.repos.d/CentOS-Linux-Extras.repo
# CentOS-Linux-Extras.repo
#
# The mirrorlist system uses the connecting IP address of the client and the
# update status of each mirror to pick current mirrors that are geographically
# close to the client.  You should use this for CentOS updates unless you are
# manually picking other mirrors.
#
# If the mirrorlist does not work for you, you can try the commented out
# baseurl line instead.

[extras]
name=CentOS Linux $releasever - Extras
mirrorlist=http://mirrorlist.centos.org/?release=$releasever&arch=$basearch&repo=extras&
```

```
infra=$infra
#baseurl=http://mirror.centos.org/$contentdir/$releasever/extras/$basearch/os/
gpgcheck=1
enabled=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-centosofficial
```

```
# cat /etc/yum.repos.d/CentOS-Linux-FastTrack.repo
# CentOS-Linux-FastTrack.repo
#
# The mirrorlist system uses the connecting IP address of the client and the
# update status of each mirror to pick current mirrors that are geographically
# close to the client. You should use this for CentOS updates unless you are
# manually picking other mirrors.
#
# If the mirrorlist does not work for you, you can try the commented out
# baseurl line instead.

[fasttrack]
name=CentOS Linux $releasever - FastTrack
mirrorlist=http://mirrorlist.centos.org/?release=$releasever&arch=$basearch&repo=fasttrack&infra=$infra
#baseurl=http://mirror.centos.org/$contentdir/$releasever/fasttrack/$basearch/os/
gpgcheck=1
enabled=0
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-centosofficial
```

```
file /etc/pki/rpm-gpg/RPM-GPG-KEY-centosofficial
/etc/pki/rpm-gpg/RPM-GPG-KEY-centosofficial: PGP public key block Public-Key (old)
```

```
cat /etc/pki/rpm-gpg/RPM-GPG-KEY-centosofficial
-----BEGIN PGP PUBLIC KEY BLOCK-----
Version: GnuPG v2.0.22 (GNU/Linux)

mQINBf2M9xkBEADHrskpBgN9QphmhRkc7P/YraAGSv17kfu+e9KAu6f5MeAVyn
r1oM43yYgGfYwGj2M8/rur7EMFY2yt+2q/1Zf1VCRn9856JqTiq0XRpD0e4nRQ
8BIA7wDVZoSdWzKSutIyExbdF0cpw89Tcf62Mmi8j74v81py1PgJWL5494b3X
5xAd1dH4bGgZyXtqPzUPu+eC0VBq1qF94PpG6U0v8G0V0V1+1FmCGK597c
aevoSc1P1gTgqN84DpudjP89/zSndw87KxXCV66HxCGKagRReFYDWG5PA5coU/e
f+yObOnC43yF0VpGgQ4KaJ6+SM7ZOK1M8Ycy1BwLqwrj08F1Jgkv8Vfag/ZUR7
JINdyqHhO1UQZm6HXSrK4Vjtwl4F9EUKaBWRrskYR31RZLX1WqeO1/+ezYOW0m
vuf7Kevah+Prl1VnuMEFJ3BmW0SpaLdFp01Dms8P503SCFPAKXpD7eP7Ej1Yk
nHqQaKE01aWVSU1ygn7F7rYemGyV9Vr7LbW5p20vqSC72a5B3sF2I1UHk6aNry
Gat3aqt3qtX0cRA/dPKX9cWE+UR5wo/A2UDKJZL1ghM2WJ31tmG748V9Ce5N9Y
m4CKdzvg7EWj1t1Frd/8WJ2KoQOE91edPeXRPncubJf6LL1HyG09h9KQARQAAB
tqDZ0501MgKEN1bnRPY8FZmzp121hbCfAWuW5n1E1e8kgPHN1Y3YaxR5
QOK1baRvcyfVnc+1q13BMB8qphh8K3cPaZa1aBgaJ3CctkgPYCA1CcpUPH1B
Ah4BAheAAoJEAJ1Vb0Eg8ZdJ0aP/2ygsXh9jgfFOU98KyJd1raL2g1utq2388p1
Gy/qnb9QD1EJv642x0Ehcy2W9VJf1pnf3yBuAto7zvKe/G1nxH4Bt6WTJQCKJce
N3qPwax1Va1aEz7hXG1HyM6Ky4x29bQ9K1ok1QKAU7ZrD3/1NGXNCRZ2bKjD
0Cv7ezh21drt1LdgW11ygrtF7A8v8v8w+SM8PbKcKJao51ayT8gSSp1orWwq
a0Cb+cmCQ014/MY+ktVzoexfG7xhkDq0w0xmpH9RQqK1TbNQCdaxSgwbF27+gw
byaDvk54xtR68oj7BKJKAncnf5n4C50r0K1UgM2BtDMbFQq1hn621ZJN6Z2/4dg
qHRTqY9yuzXKafPj9L/PqH2D4eexGgBv0Uba/2auy7GagqC5PnB8tYahCpLyOK
40TRe51+9wX1/rvValuwhg9+qB3COTKp6A3zn/a5Yr3hG3DgnNEM/ByLTF9z
V6CXqQ0/8JRvaik/JsgCf+eeLZ0w4ko1j2GEag041uyNTJhX0e/QHEVCYAqNLHXS
rCTTbCn3NSU09qEXC+K/1mlKaXoCGAU0W1VGZ1J51FbbMx0Yxq/brpEZFPYm+32
o8XfbcocBw1jFUJ+6a1jTvZ3LJLKTSPWTF0+GXycA0mCgh1Xh21c61Tc41PACqy
yyw8hSv
=kkH7
-----END PGP PUBLIC KEY BLOCK-----
```

Repositories free/nonfree i altres repos

RPM Fusion free / nonfree (Fedora 32)

```
# rpm -ivh
http://download1.rpmfusion.org/free/fedora/rpmfusion-free-release-32.noarch.rpm
# rpm -ivh http://download1.rpmfusion.org/nonfree/fedora/rpmfusion-nonfree-release-32.noarch.rpm
```

Adobe flash plugin

```
# dnf -y install
http://linuxdownload.adobe.com/adobe-release/adobe-release-x86_64-1.0-1.noarch.rpm
# rpm --import /etc/pki/rpm-gpg/RPM-GPG-KEY-adobe-linux
# dnf -y install flash-plugin
```

```
# yum repolist
```

Pràctica examinar/instal·lar adobe-release repo

```
# wget
http://linuxdownload.adobe.com/adobe-release/adobe-release-x86_64-1.0-1.noarch.rpm

# rpm -qi ./adobe-release-x86_64-1.0-1.noarch.rpm
advertencia:./adobe-release-x86_64-1.0-1.noarch.rpm: EncabezadoV3 DSA/SHA1
Signature, ID de clave f6777c67: NOKEY
Name       : adobe-release-x86_64
Version    : 1.0
Release    : 1
Architecture: noarch
Install Date: (not installed)
Group      : System Environment/Base
Size       : 1909
License    : BSD
Signature  : DSA/SHA1, vie 01 abr 2011 19:25:05 CEST, Key ID 3a69bd24f6777c67
Source RPM : adobe-release-x86_64-1.0-1.src.rpm
Build Date : vie 01 abr 2011 19:23:48 CEST
Build Host : fplayerbuild6-lnx.macromedia.com
Relocations: (not relocatable)
Packager   : Adobe Systems Inc.
Vendor     : Adobe Systems Inc.
URL        : http://linuxdownload.adobe.com/
Summary    : linux.adobe.com Repository Configuration
Description:
linuxdownload.adobe.com repository contains RPM packages of Adobe Linux Software

# rpm -i ./adobe-release-x86_64-1.0-1.noarch.rpm
advertencia:./adobe-release-x86_64-1.0-1.noarch.rpm: EncabezadoV3 DSA/SHA1
Signature, ID de clave f6777c67: NOKEY

# rpm -qa | grep adobe-release
adobe-release-x86_64-1.0-1.noarch
```

```
# rpm -ql adobe-release-x86_64
/etc/pki/rpm-gpg/RPM-GPG-KEY-adobe-linux
/etc/yum.repos.d/adobe-linux-x86_64.repo
```

```
# cat /etc/yum.repos.d/adobe-linux-x86_64.repo
[adobe-linux-x86_64]
name=Adobe Systems Incorporated
baseurl=http://linuxdownload.adobe.com/linux/x86_64/
enabled=1
gpgcheck=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-adobe-linux
```

```
# ls /etc/pki/rpm-gpg/
RPM-GPG-KEY-adobe-linux  RPM-GPG-KEY-centosofficial  RPM-GPG-KEY-centostesting
RPM-GPG-KEY-EPEL-8

# file /etc/pki/rpm-gpg/RPM-GPG-KEY-adobe-linux
/etc/pki/rpm-gpg/RPM-GPG-KEY-adobe-linux: PGP public key block Public-Key (old)

# cat /etc/pki/rpm-gpg/RPM-GPG-KEY-adobe-linux
-----BEGIN PGP PUBLIC KEY BLOCK-----
Version: GnuPG v1.2.6 (GNU/Linux)
```

[illegible]

<pre># yum repolist id del repositorio adobe-linux-x86_64 appstream baseos epel x86_64 epel-modular 8 - x86_64 extras jenkins</pre>	<pre>nombre del repositorio Adobe Systems Incorporated CentOS Linux 8 - AppStream CentOS Linux 8 - BaseOS Extra Packages for Enterprise Linux 8 - Extra Packages for Enterprise Linux Modular CentOS Linux 8 - Extras Jenkins-stable</pre>
<pre># yum repolist adobe-linux-x86_64 id del repositorio estado adobe-linux-x86_64 Incorporated</pre>	<pre>nombre del repositorio Adobe Systems habilitado</pre>

Pràctica instal·lar Docker per Centos

```
# yum install -y yum-utils
# yum-config-manager --add-repo \
    https://download.docker.com/linux/centos/docker-ce.repo
```

```
# ls -l /etc/yum.repos.d/docker-ce.repo
-rw-r--r-- 1 root root 1919 oct 17 19:25 /etc/yum.repos.d/docker-ce.repo

# head /etc/yum.repos.d/docker-ce.repo
[docker-ce-stable]
name=Docker CE Stable - $basearch
baseurl=https://download.docker.com/linux/centos/$releasever/$basearch/stable
enabled=1
gpgcheck=1
gpgkey=https://download.docker.com/linux/centos/gpg

[docker-ce-stable-debuginfo]
name=Docker CE Stable - Debuginfo $basearch
baseurl=https://download.docker.com/linux/centos/$releasever/debug-$basearch/stab
le
...
```

```
# yum repolist
id del repositorio                               nombre del repositorio
adobe-linux-x86_64                               Adobe Systems Incorporated
appstream                                         CentOS Linux 8 - AppStream
baseos                                             CentOS Linux 8 - BaseOS
docker-ce-stable                                 Docker CE Stable - x86_64
epel                                               Extra Packages for ... Linux 8 - x86_64
epel-modular                                     Extra Packages for ...Linux Modular 8 -
x86_64
extras                                             CentOS Linux 8 - Extras
jenkins                                           Jenkins-stable
```

```
# yum install docker-ce docker-ce-cli containerd.io
# systemctl start docker
```

```
# docker run hello-world
```

```
# docker run --rm -h myfedora fedora:32 /bin/bash
```

```
# docker run --rm -h mydebian debian /bin/bash
```

Problemes amb el repository centos?

The correct and easy way to migrate from CentOS Linux 8 to CentOS Stream 8 is to run:

```
# dnf --disablerepo '*' --enablerepo=extras swap centos-linux-repos centos-stream-repos  
# dnf distro-sync
```

```
# sudo sed -i -e "s/mirrorlist=/#mirrorlist=g" /etc/yum.repos.d/CentOS-  
# sudo sed -i -e "s|#baseurl=http://mirror.centos.org|baseurl=http://vault.centos.org|g"  
/etc/yum.repos.d/CentOS-  
# sudo dnf update
```

Exercicis d'exemple

1. Install the packages geany and pwgen.
2. List the pwgen package contents.
3. Show the geany package info.
4. Show the openldap-clients package info (not installed).
5. The file /etc/fstab to which package belongs?
6. The command /usr/bin/date to which package belongs?
7. Download the package (not install) nmap.
8. Install the local package nmap. Reinstall if necessary.
9. List all the repos installed.
10. Show the centos.repo file configuration.
11. Install docker for CentOS.
12. Realitza els exercicis indicats a:
[102.5 Use RPM and YUM package management](#)
13. Realitza els exercicis del Question-Topics 102.5.