

102.5 Use RPM and YUM package management

Curs 2021 - 2022

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)

mQINBf2M9xkBEADHrskBgn9QphmhRkc7P/YraAGSv17kfu+e9KAu6f5MeAVyn
r1oM43yYgKgyFyWgJ2M8/rur7EMFY2yt+2q/1Zf1VCRn9856JqTiq0XRpD0e4nRQ
8BIA7wDVZoSdWzKSutIyExbdF0cpw89Tcf62Mmi18j74v81py1PgJWL5494b3X
5xAd1dH4bqFzyXtqFzUPu+eC0Vba1qf94PpG6U0v8G0V0V1+1FmCGK597c
aevoSc1Rf1gqTgN84DpudjP89/zSndw7KxXCV6HxKcKagRReFYDWG5PA5c0L/e
f+yObOnC43yF0VpGgQ4KaJ6+SMTZOK1M8Ycy1BwLqwrj08F1Jgkv8Vfag/ZUR7
JINdyqHh0LHQ2m6HxSwR4Vjtwl4F9EUKaBWRrskYR31RZLX1Wqe0L/+ezYOW0m
vuf7Kevah+Prl1VnuMEFJ3BmW0SpaLdFp01Dmsd8FS03SCFPAKXpD7eP7Ej1Yk
nHqQaKE01aWVSUJ1ygn7F7rYemGyV9Vr7LbW5p20vqSC72a5B3sFzIIuHk6aNry
Gat3aqt3qtX0cRA/dPKX9cWE+UR5wo/A2UDKJZL1ghM2WJ31tmG748V9Ce5AN9Y
m4CKdzvg7EWj1t1Frd/8WJ2KoQOE91edPeXRPncubJfJ6LL1HyG09h9KQARQAAB
tqDZ0501MgKEN1bnRPY8FZmzp121hbCfAWuW5n1E1e8kgPHN1Y3YaxR5
QOK1baRvcyfvcnc+1qt3BMB8qphh80c+PzA2a1BgaJ3CctkgPYCA1CcpUPH1B
Ah4BAheAAoJEAJW1Vb0Eg8ZdJ0aP/2ygsXh9Jqff0U98KyJd1raL2g1utq2388p1
Gy/qnb9QD1EJv642x0Ehcy2W9VJf1pnf3yBuAto7zvKe/GlnxH4Bt6WTJQCKJce
N3qPwax1Va1aEz7hXG1HyM6Ky4x29bQ9Kt1ok1QKAU7ZrD3/1NGXNCRZ2bKjD
0Cv7ezh21drt1LdgW11ygrtFfA8v8v8w+SM8PbKcKJao51ayT8qSSp1orWwq
a0Cb+cmCQ014/MY+ktVzoexfG7xhkDq0w0xmpH9RQqK1TbNQCdaxSgwbF27+gw
byaDvk54xtR68oj7BKJfKmcnf5fn4C50r0KLDqM2BtDMbFQqihh621ZJN62Z/4dg
qHRTqY9yuzXKafPj9L/PqH2D4eexGgBv0Uba/7auy/7GagqC5PnB8tYahCpLyOK
40TRe51+9wXt/rvValuwhg9+qB3COTKp6A3zn/a5Yr3hG3DgnNEM/8yLTF9z
V6CXqQ0/8JRvaik/JsgCf+eeLZ0w4ko1j2GEag041uyNTJhX0e/QHEVCYAqNLHXG
rCTTbCn3NSU09qEXC+K/1mlKaXoCGAU0W1VGZ1J51fbbMx0Yxq/brpEZFPYm+32
o8XfbcocBw1jFUJ+6a1jTvZ3LJLKTSPWTF0+GXycA0mCgh1Xh21c61Tc41PACqy
yyw8h8v
=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)
```

```

b1d1HEK1abB8ACGAGpAMHRTenW5S8P0Se7e8a7p1370M72m1ITM42v/IT8
b1LAVtXCV8mPRF4qV4ANh34E8m2W/771M6U16r0t1tTF/g9D0s/8r7G0gh
FvT9uKcQ4b6u0u00Q02G0R2C47a2AP0E0i0u0g1d01d0d0g0Q17H0m0G0w0
w20/30y0UCLTASm166d0p/2762754321IT8T3IV8VJ0m0f1cK8k0u0FvPRF
Iv0+30t161C0R0g0m013h030t0y01a0z0m080R0G16/0y4016m0t0R0A
Fv0H0m0A70d051Y0G01z11v0H0g74R0RFTT7V0R0U/0A0h0d0000000A0R
G0U4/97c0ag01DTU0t1d27a0m0W0K740E0R0G1e0A0R0R0A031u0J0m0f0R0
978R0P44T0E0G0u0141N01g0a011c0T0g00V0T01000V01001141R0F0m0d
9h13f0G011e0x041b01d0b0d00000u0J0C200E0p0w74R0P0R0Vmd0p011
T0c0y0b0m0v00m0f0C0G00g0p0w04750270R0m0b0m0f1e0A0R0P0M137p0
Z0H01201551b0v0FE0E00C0A0F0X1ab0c000W0C0W0B0M0A000A00m0A0CR0G
F0A0C0G0m0h02T0F0E0R0g70R000R10R00E0E0k0g10165P0A0W0b7a7a7d0C2
B0h0c7w0dY0G0A0b010881a0040Q020P040d0R0w0C0R0c0c0c0t1a0b000
W0F0B0m0d00000000000001501x121F0B0P0K0u0004a0g00740v014u0z0
Y0A01y040t0y040t0Y00u0F0U070a110T0P0R0w0w0w0p0u0Q1000g0R0p0
Y04930v035M0P0g0R0B13u0k0W0E0P0g0W0F0t0y0t0f0C0F0U0D0A0s0d0
00000071b0d010d010b010000000000000000000000000000000000000
R0P0Y0C0W0m0474p0P0R1T0P0M1+1b0A0b0A0+00LM0L1W0b070AM0P4/40504
W0d0e01d0g0W0C0M0B0191v181A027a0Q0150M0A0w0A0Q011c70B0R0E0M0
0P0P0C0g0p0u012011c11t1148400000040Q0030F0G0M0B170b0p03V480g
R71b1A0g0Q0/d0Q07P0g027d0u011c1y0T0160007J0u0B0W0080E0t0F0
0000004050a0c0000000G01y0470f0b0R00000000000000000000000000
R73t04g0B0k0G0d0f0i211m0w0E0Q0T0E78L0R0Q040V0A70M0R0Q000g0038V7
0e0R0T0v0g0P0R11E0E0F0E0A01ab0c0000000000000000000000000000
R0A0c0a0f0a0k0A0R1L112A0R057E0g00D0r1f0W0P0U0A00A
=0007
-----END PGF PUBLIC KEY BLOCK-----

```

```
# 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
epel                                              Extra Packages for Enterprise Linux 8 -
x86_64                                           Extra Packages for Enterprise Linux Modular
epel-modular                                     CentOS Linux 8 - Extras
8 - x86_64                                       Jenkins-stable
extras
jenkins

# yum repolist adobe-linux-x86_64
id del repositorio                                nombre del repositorio
estado
adobe-linux-x86_64                               Adobe Systems
Incorporated                                     habilitado
```

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/stable
...

# 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
```

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.