datascience vm 64 bits
Libraries and programs for a generic datascience virtual machine to test data-science-related topics and setups.

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1.1. How to use it

1.1.1. Import the OVA file
Import the Oracle Virtualbox Appliance (.ova) file into a running instance of VirtualBox in your own computer.
https://www.maketecheasier.com/import-export-ova-files-in-virtualbox/¹

You also need "VirtualBox Guest Additions".
You can fetch them (if not in your usual program repositories) from:
https://www.virtualbox.org/wiki/Downloads²

Or use specific instructions for your own operating system, if your prefer. Some urls that might help are:
https://www.tecmint.com/install-virtualbox-guest-additions-in-ubuntu/³

1.1.2. Main user credentials
Main system user is:
System user: datascience
Password: datascience

It is in the sudoers group, so that you can run commands as root if you prepend those commands with sudo, as usual.
1.1.3. Anaconda (and python)
Use Anaconda as usual

1.1.4. R & RStudio
Open the browser, and it will launch RStudio server in it by default ([http://localhost:8787](http://localhost:8787)).

You have R 3.6 installed.

1.2. How it has been developed

1.2.1. Operating System
Lubuntu GNU/Linux 18.04 (64 bits). Fetch iso from their website.

1.2.2. Enable Ubuntu Partners repository
First enable "partners" repos.

```
# Contents of the updated /etc/apt/sources.list

## Uncomment the following two lines to add software from Canonical's
## 'partner' repository.
## This software is not part of Ubuntu, but is offered by Canonical and the
## respective vendors as a service to Ubuntu users.
deb http://archive.canonical.com/ubuntu bionic partner
deb-src http://archive.canonical.com/ubuntu bionic partner
```

1.2.3. Other repositories
```
sudo add-apt-repository -y ppa:nilarimogard/webupd8 # per a launchpadd-getkeys i
altres
sudo add-apt-repository -y ppa:utappia/stable # per a ucaresystem-core
sudo add-apt-repository -y ppa:webupd8team/java # per a java propietari (on calgui)
sudo add-apt-repository -y ppa:ubuntugis/ubuntugis-unstable # per a paquets d'analisi
geoescpecial
sudo add-apt-repository -y 'deb https://cloud.r-project.org/bin/linux/ubuntu bionic-
cran35/' # main binary packages for R 3.5.x
sudo add-apt-repository -y ppa:marutter/c2d4u3.5 # extra binary packages for R 3.5.x
from the usual marruter repo
```

```
# Add the key for the new repo for R 3.6.x from cloud.r-project.org
apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv-keys E084DAB9 # marutter
```
apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv 089EBE08314DF160 # ubuntugis-stable

Other general packages installed:

```bash
sudo apt install -y curl htop mc kupfer git cups-pdf bleachbit parcellite
```

Launch parcellite and kupfer. Change parcellite to store 250 entries. And set kupfer to launch automatically on user login.

### 1.2.4. R 3.6.x

We add these repos to use the latest R versions released

Comandes i paquets lubuntu 18.04:

```bash
sudo apt-get install -y bwidget dos2unix freeglut3 freeglut3-dev git libc6 libcairo2-dev libcurl4-gnutls-dev libgdal-dev libgeos-dev libglpk-dev libgraphviz-dev libjq-dev libmagick++-dev libmpfr-dev libproj-dev libprotobuf-dev libssh2-1-dev libssl-dev libunits2-dev libv8-dev libx11-dev libxml2 libxml2-dev libxml2:i386 libxt-dev pandoc protobuf-compiler r-cran-cairodevice r-cran-devtools r-cran-doparallel r-cran-geor r-cran-ggmap r-cran-ggplot2 r-cran-gstat r-cran-igraph r-cran-leaflet r-cran-lme4 r-cran-mapdata r-cran-maps r-cran-misc3d r-cran-ncdf4 r-cran-raster r-cran-rcolorbrewer r-cran-rgl r-cran-rglpk r-cran-rjags r-cran-rjava r-cran-rmio r-cran-rmysql r-cran-roxygen2 r-cran-snow r-cran-sp r-cran-xlsx r-cran-xmin r-recommended subversion texlive-lang-spanish texlive-latex-extra texmaker tk-dev tk-table unaccent xvfb libssh2-1-dev ucaresystem-core libunits2-dev gigolo filezilla
```

Paquets de CRAN: posar dins de la comanda:

```r
text(pacman)
```

Rstudio Addins: CRANsearcher, addinslist, regexplain

Latex

- TexStudio
1.2.5. RStudio

Server version, to use through browser at [http://localhost:8787](http://localhost:8787)

```
sudo apt-get install gdebi-core
wget https://download2.rstudio.org/server/bionic/amd64/rstudio-server-1.2.1335-amd64.deb
sudo gdebi rstudio-server-1.2.1335-amd64.deb
```

1.2.6. Anaconda 3

Anaconda3

See:

- [https://www.anaconda.com/distribution/#linux](https://www.anaconda.com/distribution/#linux)

1.2.6.1. Installation on /opt/py/anaconda3

We will install anaconda on a system folder as `/opt/py/`:

```
sudo mkdir /opt/py
sudo chmod 777 /opt/py
cd /tmp
curl -O https://repo.anaconda.com/archive/Anaconda3-2019.03-Linux-x86_64.sh
bash Anaconda3-2019.03-Linux-x86_64.sh
```

data science@data science pc:/tmp$ bash Anaconda3-2019.03-Linux-x86_64.sh

Welcome to Anaconda3 2019.03

In order to continue the installation process, please review the license agreement.
Please, press ENTER to continue

```bash
> Welcome to Anaconda3 2019.03.
> In order to continue the installation process, please review the license agreement.
> Please, press ENTER to continue
```

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openssl
The OpenSSL Project is a collaborative effort to develop a robust, commercial-grade, full-featured, and Open Source toolkit implementing the Transport Layer Security (TLS) and Secure Sockets Layer (SSL) protocols as well as a full-strength general purpose cryptography library.

pycrypto
A collection of both secure hash functions (such as SHA256 and RIPEMD160), and various encryption algorithms (AES, DES, RSA, ElGamal, etc.).

pyopenssl
A thin Python wrapper around (a subset of) the OpenSSL library.

kerberos (krb5, non-Windows platforms)
A network authentication protocol designed to provide strong authentication for client/server applications by using secret-key cryptography.

cryptography
A Python library which exposes cryptographic recipes and primitives.

Do you accept the license terms? [yes|no]
[no] >>> yes

Anaconda3 will now be installed into this location:
/home/gid/anaconda3
- Press ENTER to confirm the location
- Press CTRL-C to abort the installation
- Or specify a different location below

[/home/datascience/anaconda3] >>> /opt/py/anaconda3
...

1.2.7. Python
Paquets lubuntu 18.04:
sudo apt install -y python-numpy python-pandas python-matplotlib python-seaborn ipython-notebook ipython-doc

Alias names for this page:
data science vm 2019 64bits | data science ova 64bits | 2020 data science vm 64 bits | 2020 data science vm