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. [1]


You also need “VirtualBox Guest Additions”.

You can fetch them (if not in your usual program repositories) from: [2]

https://www.virtualbox.org/wiki/Downloads

Or use specific instructions for your own operating system, if your prefer. Some urls that might help are: [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 your 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. [4]

https://lubuntu.net/lubuntu-18-04-bionic-beaver-released/

http://cdimage.ubuntu.com/lubuntu/releases/18.04/release/lubuntu-18.04-desktop-amd64.iso

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

```bash
sudo add-apt-repository -y ppa:nilarimogard/webupd8 # per a launchpad-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:ubuntu-ui-look/unity-3d-stable # per a paquets d'analisi geoespacial
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 marutter 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 librgraphviz-dev libjg-dev libmagick++-dev libmpfr-dev libproj-dev libprotobuf-dev libssh2-1-dev libssl-dev libx11-dev libxml2-dev libxt-dev
```

Libraries:

```r
library(pacman)
```

Paquets de CRAN: posar dins de la comanda:

```r
Rstudio Addins: CRANsearcher, addonslist, regexp lain
```

Latex

- TexStudio

Paquets lubuntu 18.04: textstudio

1.2.5. RStudio

Server version, to use through browser at http://localhost:8787
Seeds For Change - seeds4c.org

```
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/

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
```

datascience@datasciencepc:/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

```
>>>=====================================================================
Anaconda End User License Agreement
=====================================================================

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The following packages are included in this distribution that relate to cryptography:

**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:

datascience vm 2019 64bits | datascience ova 64bits | 2020 datascience vm 64 bits | 2020 datascience vm

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