Epics Tutorial 2a: Installation on Linux

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- This tutorial was based on the epics documentation. For more information check epics website - http://www.aps.anl.gov/epics/index.php.
- Epics can be installed on any Linux distribution (Ubuntu, Debian, etc.). This tutorial was made using Debian - https://www.debian.org/.
- Copy and paste the commands in the Linux terminal.
- Don't hesitate to send me questions, comments and suggestions.

Before begin

Epics requires some extra libraries, I believe it is enough to install the following libraries:

- autoconf
- libtool
- libncurses5-dev
- libreadline5 (old versions)
- libreadline-gplv2-dev (old versions)
- lesstif2-dev
- libXmu-headers
- libxmu6
- libbz2-dev
- libfreetype6-dev
- libpng12-dev
- libxml2-dev
- zlib1g-dev
- re2c
- intltool
- libglib-2.0 dev
- libboost-program-options-dev
- pkg-config
- libusb-dev

Open the linux terminal and type the following commands:

```
sudo apt-get install autoconf libtool libncurses5-dev lesstif2-dev
sudo apt-get install libxmu-headers libxmu6
sudo apt-get install libpng12-dev libxml2-dev libusb-dev
sudo apt-get install libbz2-dev libfreetype6-dev
sudo apt-get install zlib1g-dev intltool re2c libglib-2.0 dev
sudo apt-get install libboost-program-options-dev pkg-config
```

Making it easy

Set `HOSTNAME` equal the "computer user name" (so you can copy and paste commands directly in the linux terminal):

```
export HOSTNAME = username
```

For example: `export HOSTNAME = carlosgaldino`

If you don't know your username, use the command:

```
whoami
```

To determine whether the command worked just type:

```
echo $HOSTNAME
```

The terminal must return the user name recorded. Another way to verify that the command "export" worked is to use the command "env", which shows a list of all variables defined.

```
env
```

Preparing files

We are going to install epics on `\opt`. First, go to `opt` folder.

```
cd /opt
```

Create epics folder and changes the permissions (the folder can have any other folder name like "myepics" or "EPICS"):

```
sudo mkdir epics
sudo chown $HOSTNAME epics
sudo chmod -R 777 epics
```

Now go to epics website and download epics base:

http://www.aps.anl.gov/epics/base/R3-14/index.php

Go to folder "epics" and Unzip the files inside the folder epics folder:

```
cd epics
tar-zxvf $HOSTNAME/home//Downloads/baseR3.14.12.4.tar.gz
```

Create this link (links are like shortcuts on windows):

```
ln-s 3.14.12.4/base base
```

Note that the last two commands might change according to the version you downloaded and where you saved the tar file.

Go back to \opt. The folder might be blocked for edition, so change the permissions again.

```
cd ..
sudo chown $HOSTNAME epics
sudo chmod-R 777 epics
```

Setting variables

Set the following variables:

- Path to the BASE

OS (note that epics automatically reads your OS, use the command `echo` command to check if it got it right.)

```
export EPICS_BASE = "/opt/epics/base"
export EPICS_HOST_ARCH = ' $ {EPICS_BASE}/startup/EpicsHostArch '
```

Include epics binaries to PATH

```
export PATH = "$ {PATH}: $ {EPICS_BASE}/bin/$ {EPICS_HOST_ARCH}"
```

Include epics library to LD_LIBRARY_PATH

```
export LD_LIBRARY_PATH = "$ {LD_LIBRARY_PATH}: $ {EPICS_BASE}/lib/$ {EPICS_HOST_ARCH}"
```

Building BASE

Enter the base folder and build (install) the base.

```
cd epics/base
sudo make
```

Have a coffee.

You might find some error along the way, mostly because of missing libraries. Don't panic, use the command `make clean uninstall` to undo the build.

```
make clean uninstall
```

Try figure out what is missing, correct it and run the command `make` again.

Congratulations

You have successfully installed epics. Go have fun.

Don't forget to add