

Experiment No. 7

Aim

Build and install software from source code, familiarity with make and cmake utilities expected.

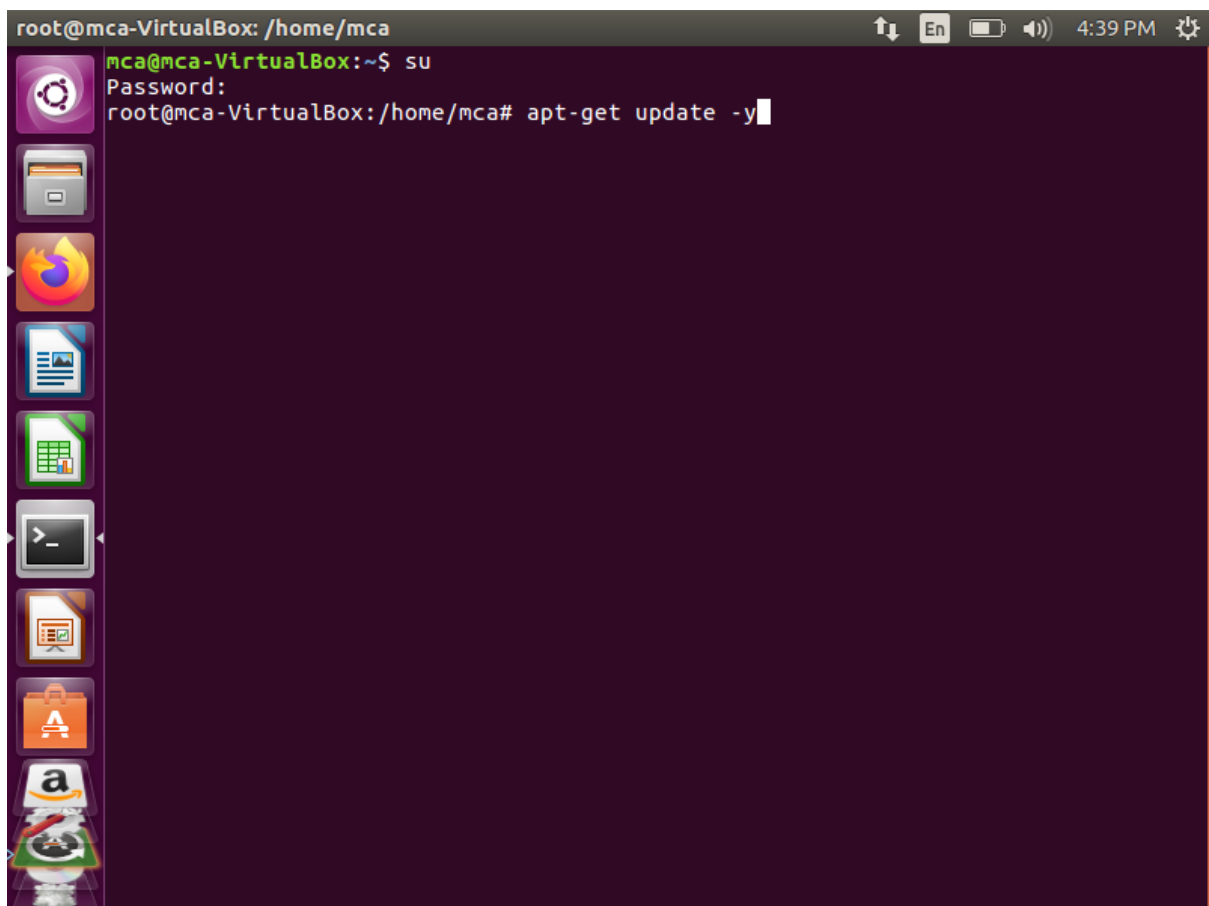
Procedure

Here you will be installing the git versioning software system. Make sure you are logged in as the root user.

➤ Step 1: Get The Server Ready

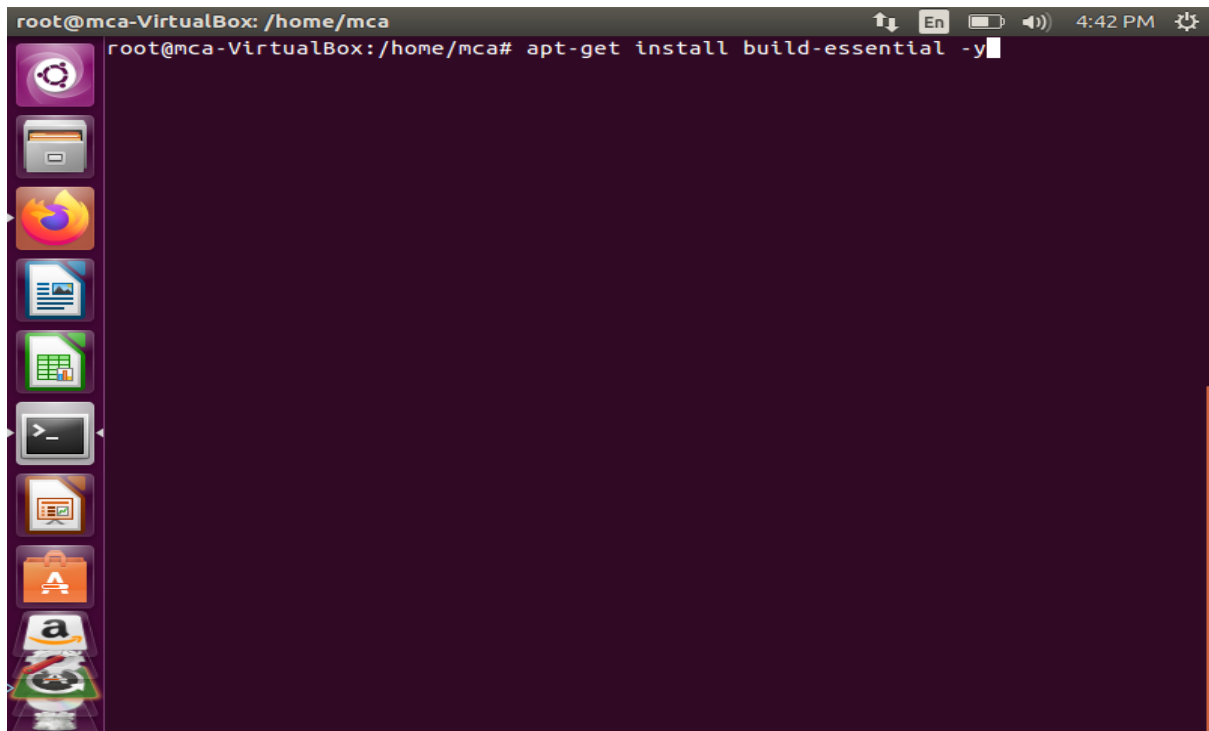
Make sure your packages are up to date:

```
apt-get update -y
```



- Next, you'll need to make sure you have a compiler available. Run this command to install build-essential:

```
apt-get install build-essential -y
```

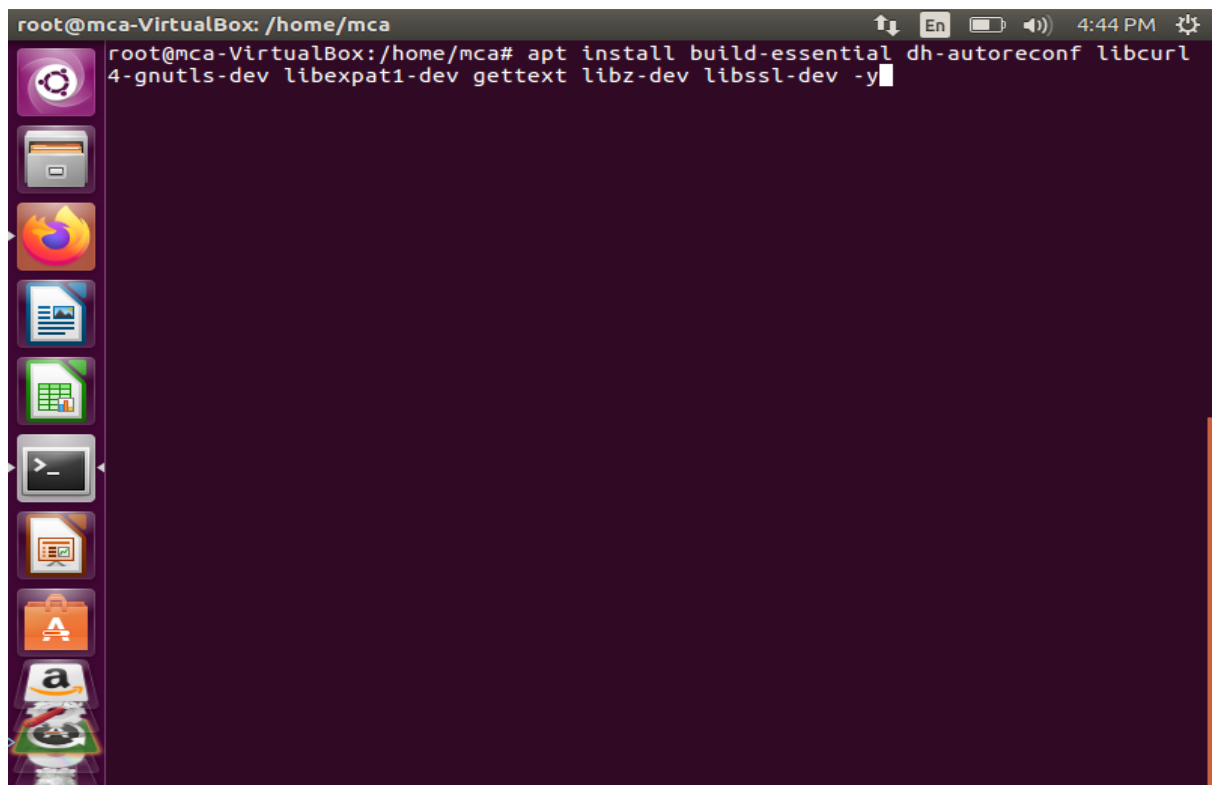


```
root@mca-VirtualBox: /home/mca
root@mca-VirtualBox:/home/mca# apt-get install build-essential -y
```

➤ Step 2: Download Dependencies

When installing a package from source code, you'll need to manage the installation of the package dependencies. We'll use apt-get to install git's dependencies:

```
apt install build-essential dh-autoreconf libcurl4-gnutls-  
dev libexpat1-dev gettext libz-dev libssl-dev -y
```

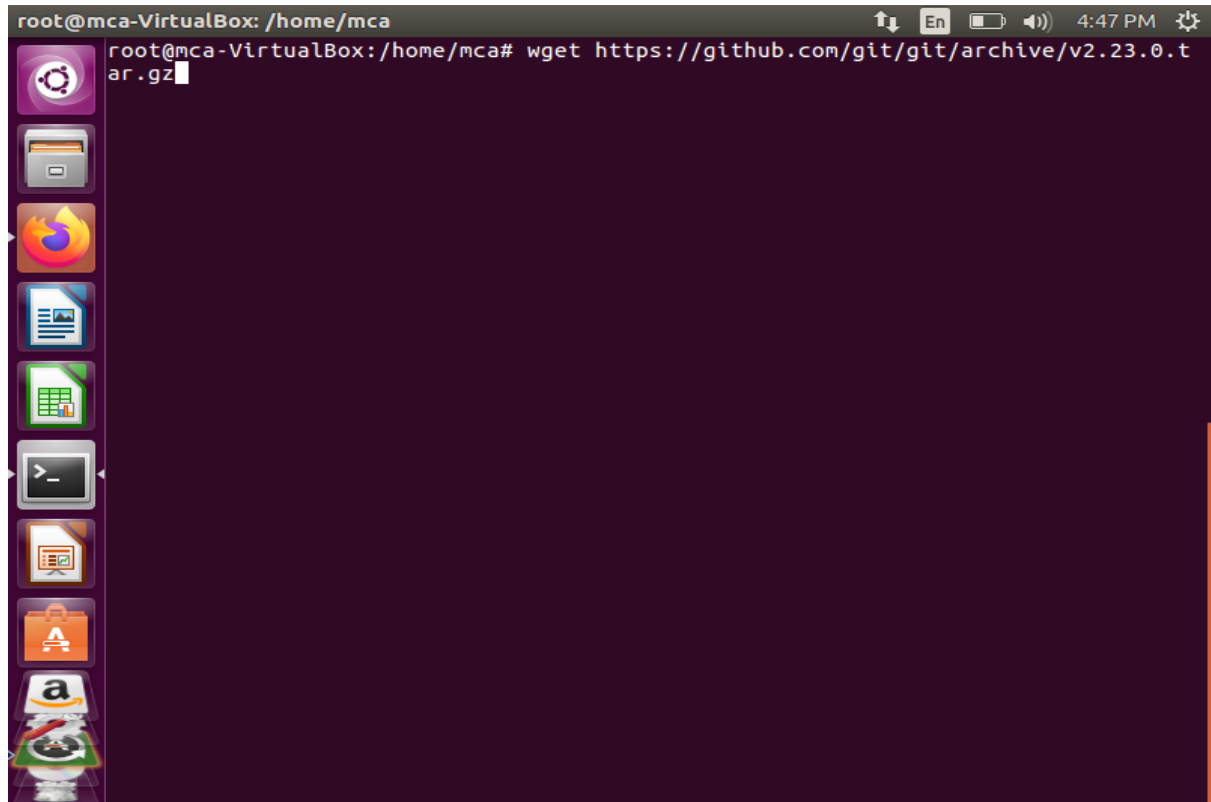


```
root@mca-VirtualBox: /home/mca
root@mca-VirtualBox:/home/mca# apt install build-essential dh-autoreconf libcurl  
4-gnutls-dev libexpat1-dev gettext libz-dev libssl-dev -y
```

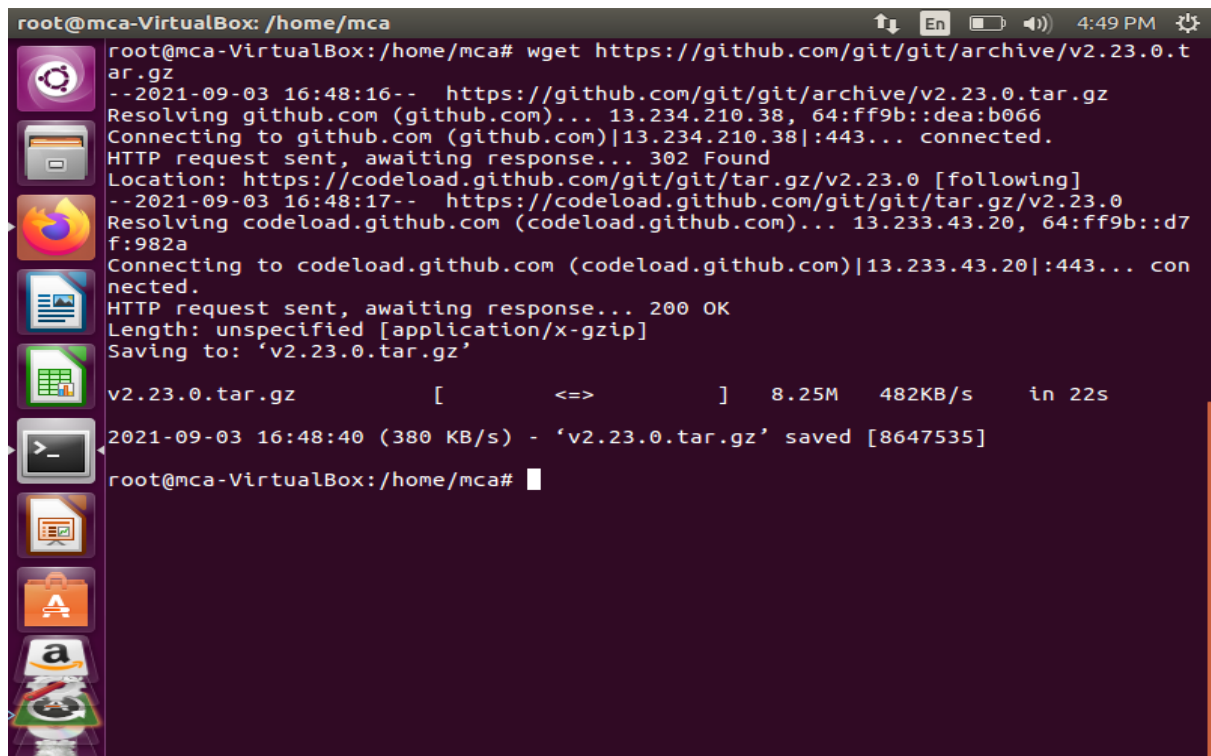
➤ Step 3: Download The Source Package

Once the package dependencies are in place, download the package with wget:

```
wget https://github.com/git/git/archive/v2.23.0.tar.gz
```



A terminal window titled 'root@mca-VirtualBox: /home/mca' with a system tray at the top showing 'En', battery, and '4:47 PM'. The terminal shows the command 'root@mca-VirtualBox:/home/mca# wget https://github.com/git/git/archive/v2.23.0.tar.gz' being entered. On the left side of the terminal, there is a vertical dock with icons for various applications including a terminal, file manager, Firefox, LibreOffice, and Amazon.

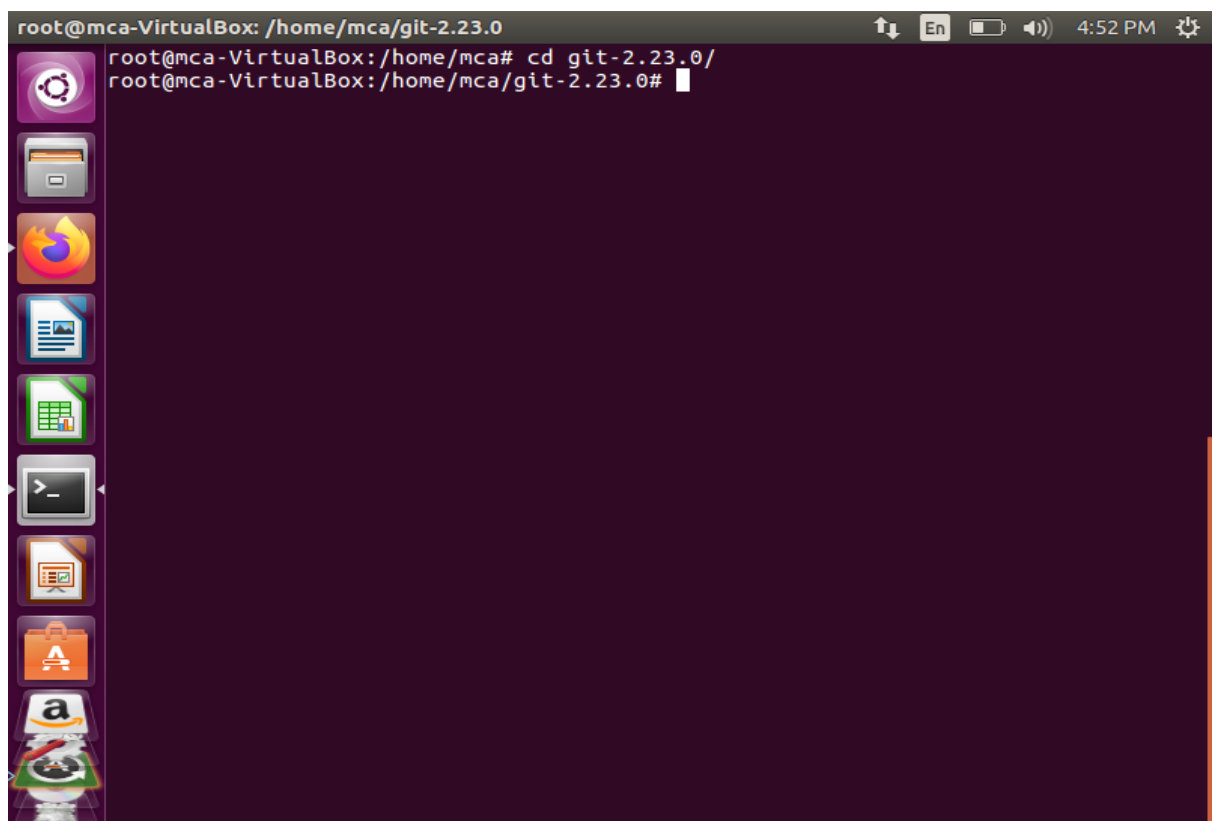
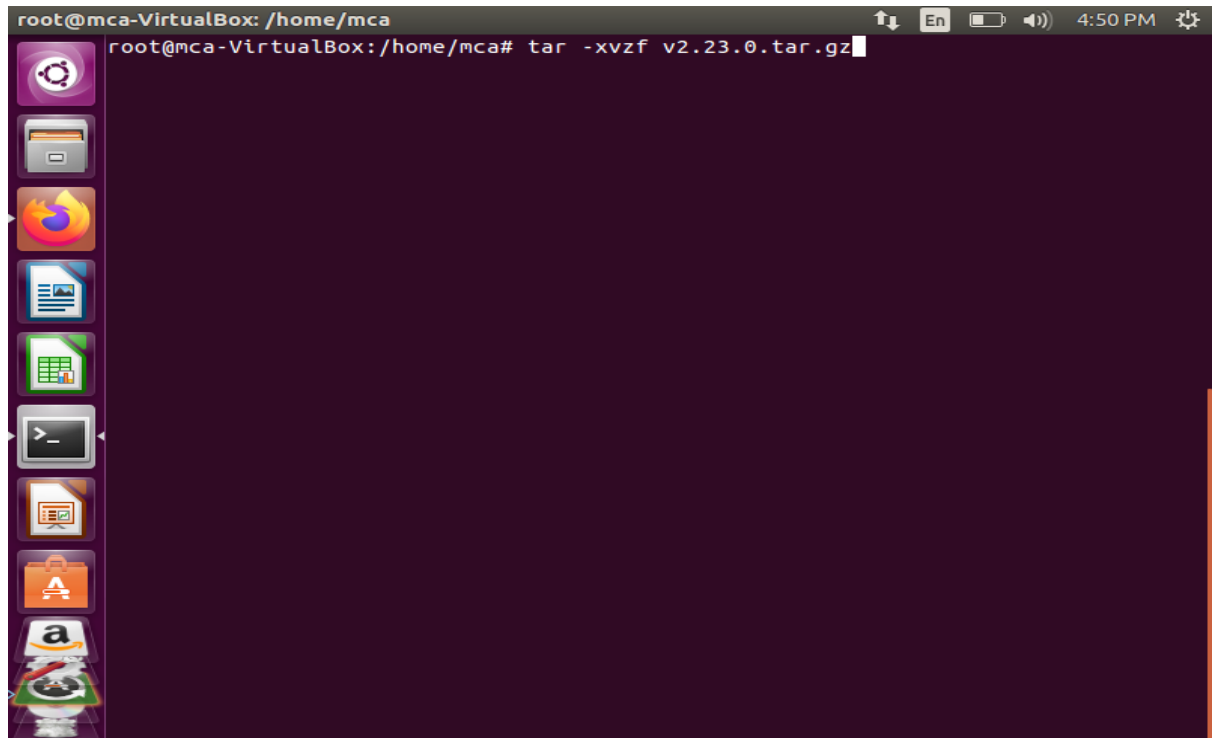


The same terminal window now shows the output of the 'wget' command. The text in the terminal is as follows:
root@mca-VirtualBox:/home/mca# wget https://github.com/git/git/archive/v2.23.0.tar.gz
--2021-09-03 16:48:16-- https://github.com/git/git/archive/v2.23.0.tar.gz
Resolving github.com (github.com)... 13.234.210.38, 64:ff9b::dea:b066
Connecting to github.com (github.com)|13.234.210.38|:443... connected.
HTTP request sent, awaiting response... 302 Found
Location: https://codeload.github.com/git/git/tar.gz/v2.23.0 [following]
--2021-09-03 16:48:17-- https://codeload.github.com/git/git/tar.gz/v2.23.0
Resolving codeload.github.com (codeload.github.com)... 13.233.43.20, 64:ff9b::d7f:982a
Connecting to codeload.github.com (codeload.github.com)|13.233.43.20|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: unspecified [application/x-gzip]
Saving to: 'v2.23.0.tar.gz'
v2.23.0.tar.gz [=====>] 8.25M 482KB/s in 22s
2021-09-03 16:48:40 (380 KB/s) - 'v2.23.0.tar.gz' saved [8647535]
root@mca-VirtualBox:/home/mca#

- Next, we need to extract the archive and cd (change directories) into the new git directory:

```
tar -xvzf v2.23.0.tar.gz
```

```
cd git-2.23.0/
```



➤ Step 4: Install Git

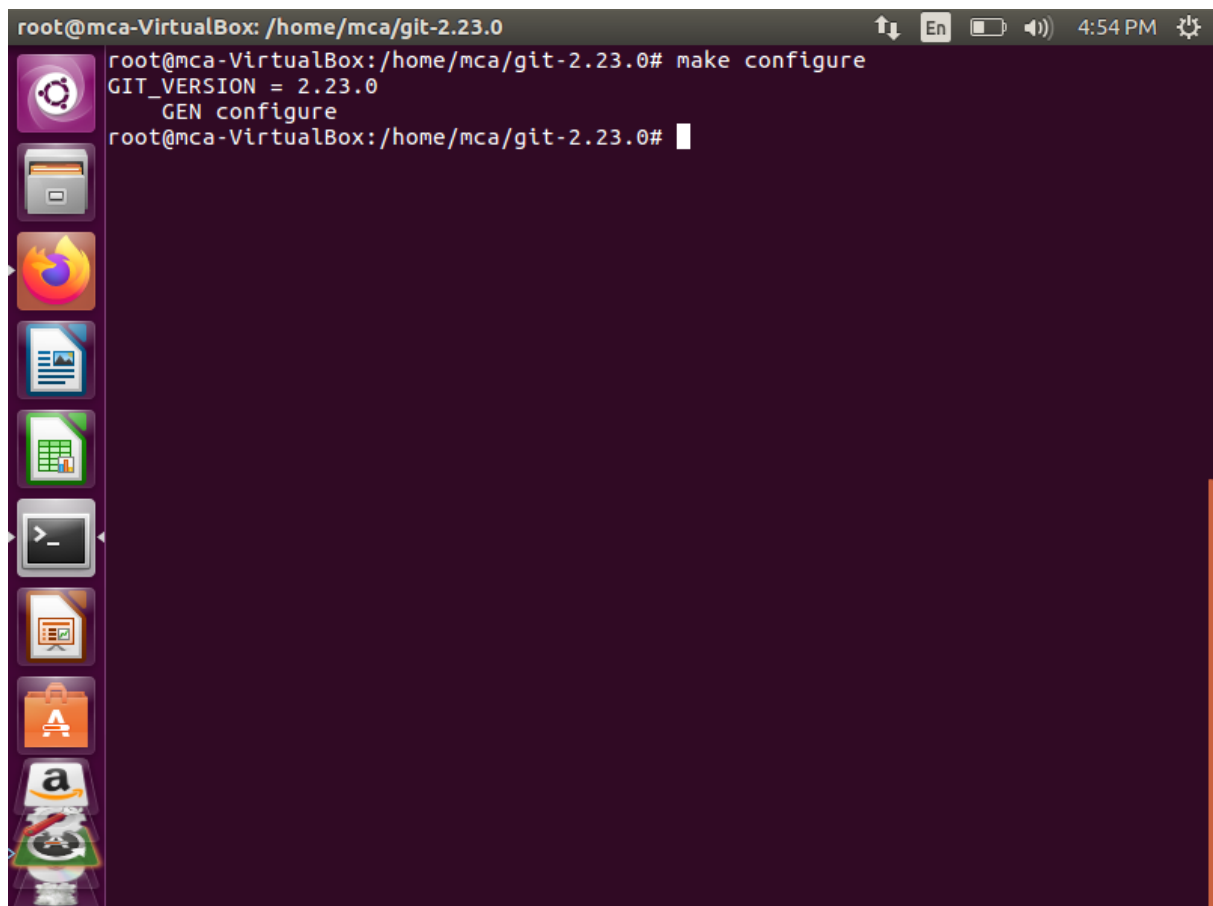
Now that we have our package extracted and ready to go, we need to configure it:

```
make configure
```

You should see an output similar to this:

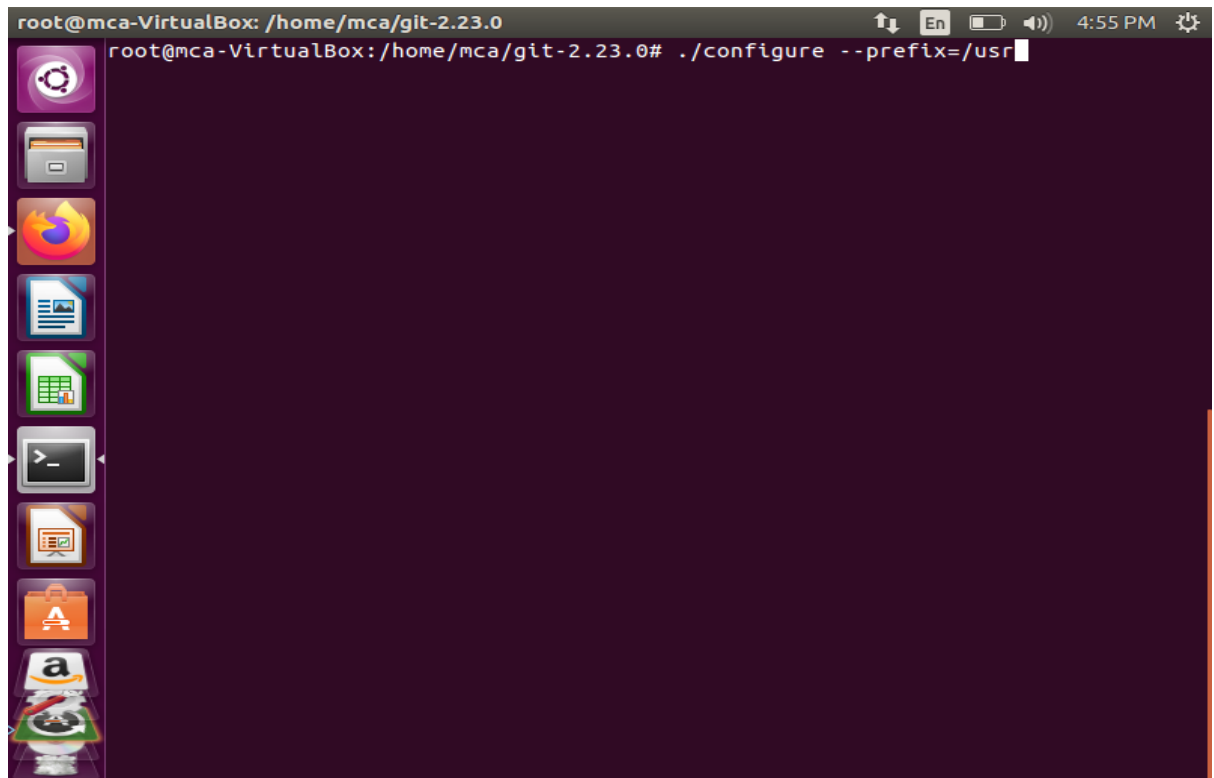
```
GIT_VERSION = 2.23.0
```

```
GEN configure
```

A screenshot of a terminal window titled 'root@mca-VirtualBox: /home/mca/git-2.23.0'. The terminal shows the command 'make configure' being executed, which outputs 'GIT_VERSION = 2.23.0' and 'GEN configure'. The prompt returns to 'root@mca-VirtualBox: /home/mca/git-2.23.0#'. On the left side of the terminal, there is a vertical dock with various application icons including a gear, a folder, Firefox, LibreOffice Writer, LibreOffice Calc, a terminal icon, LibreOffice Impress, a shopping bag, and an Amazon logo. The top of the window shows system status icons for network, keyboard layout (En), battery, volume, and the time 4:54 PM.

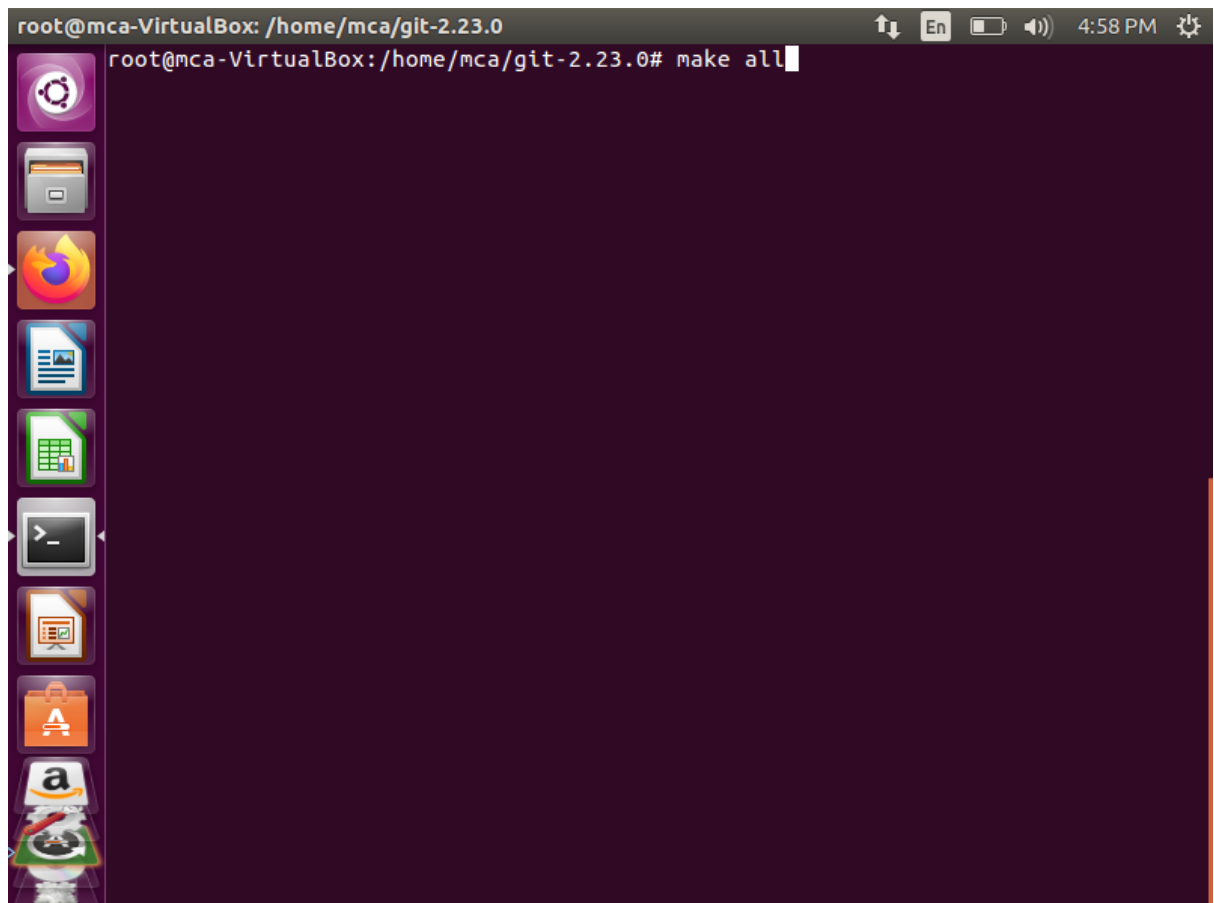
- Next, let's verify that all of the dependencies necessary to build the package are available by running this command:

```
./configure --prefix=/usr
```



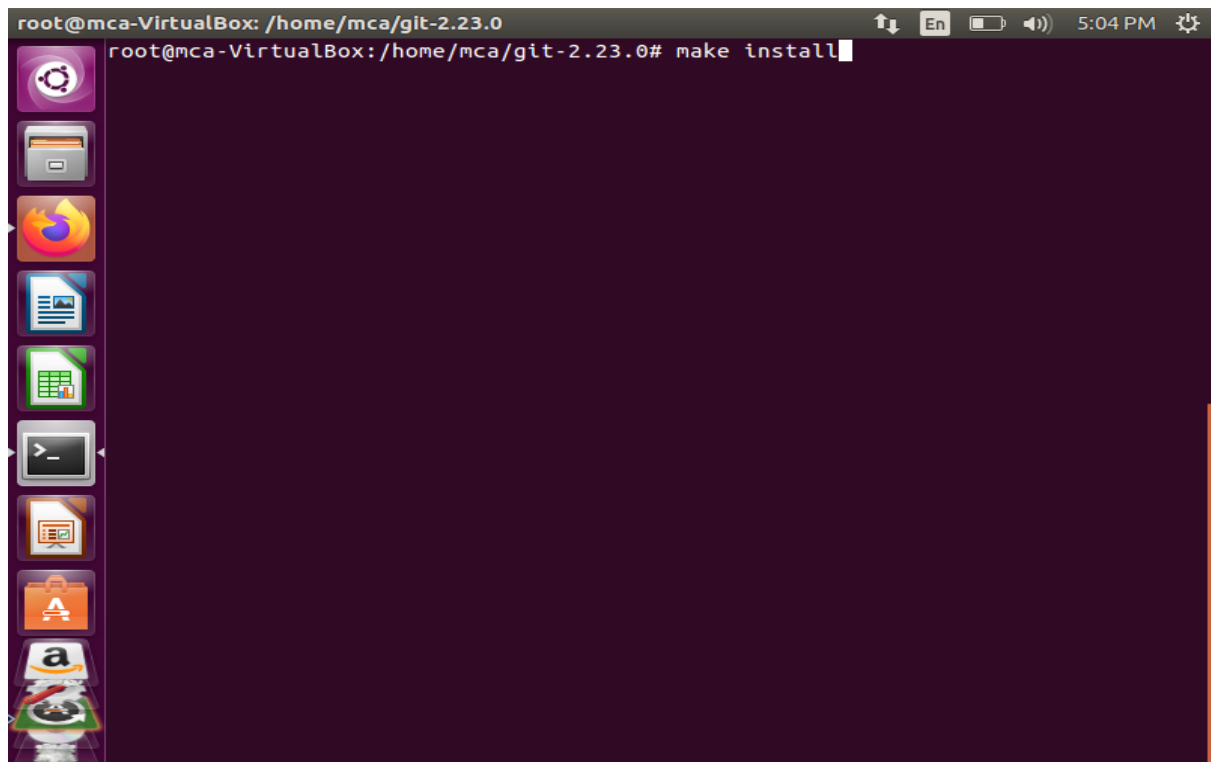
- After that, we'll build the source code:

`make all`



- Now after the binaries are all built, install git:

```
make install
```

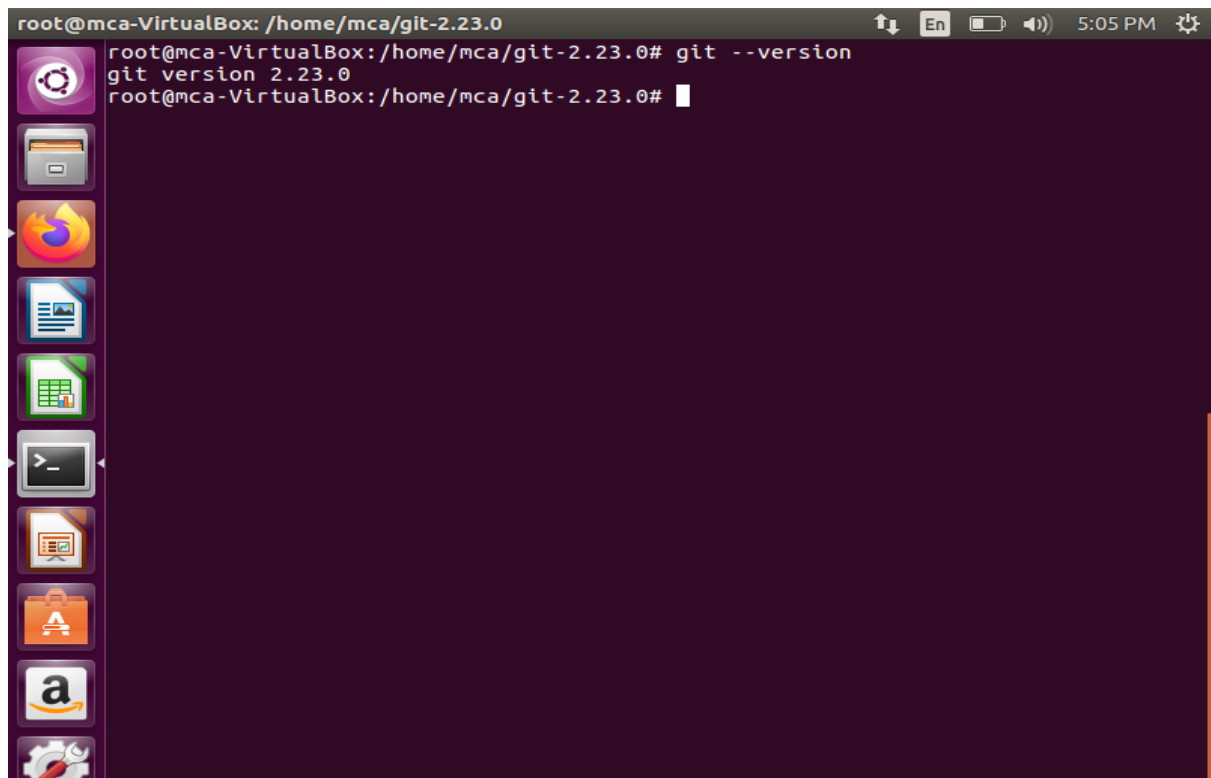


A terminal window titled 'root@mca-VirtualBox: /home/mca/git-2.23.0' with a dark purple background. The terminal shows the command 'make install' being executed. On the left side of the terminal, there is a vertical dock with several application icons: a purple icon with a circular arrow, a folder icon, the Firefox logo, a document icon, a spreadsheet icon, a terminal icon, a presentation icon, a shopping bag icon, an Amazon logo, and a gear icon. The top of the terminal window has a status bar with icons for window management, language (En), battery, and time (5:04 PM).

```
root@mca-VirtualBox: /home/mca/git-2.23.0
root@mca-VirtualBox: /home/mca/git-2.23.0# make install
```

- Verify that git is working with version 2.23.0:

```
git --version
```



A terminal window titled 'root@mca-VirtualBox: /home/mca/git-2.23.0' with a dark purple background. The terminal shows the command 'git --version' being executed, which returns 'git version 2.23.0'. The same vertical dock with application icons is visible on the left. The status bar at the top shows the time as 5:05 PM.

```
root@mca-VirtualBox: /home/mca/git-2.23.0
root@mca-VirtualBox: /home/mca/git-2.23.0# git --version
git version 2.23.0
root@mca-VirtualBox: /home/mca/git-2.23.0#
```