

# Summer Internship 2013

## MOOC PROTOTYPE

### EDX-PLATFORM INSTALLATION

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#### **Task :**

To integrate and run edx-platform in our systems.

#### **Task Accomplished :**

We were able to run edx studio following the below steps :

- **Downloading and beginning :**

- Download the repository from:  
*<https://github.com/edx/edx-platform>*
- Make a directory (preferably in /home/<username>/ directory) naming 'edx\_all' (used in this documentation (one can choose its own name)).
- Extract the repository tar file in this directory.  
Let's change the name of the extracted folder to "edx-platform"
- Create three folders in this (edx\_all) directory and name them as :  
*db*  
*data*  
*log*
- To check these folder's rights:  
type (in shell):  
*ls -l*
- Give user rights to them(if not :  
*chmod uog+rx db*  
*chmod uog+rx data*  
*chmod uog+rx log*
- Now, in '/home/<username>/' directory 'edx\_all' directory looks like :  
*/db*  
*/data*  
*/log*  
*/edx-platform*

Proxy people:

-----

(Only for those who are working in proxy environment) :

While following the any of the below steps, if any of the errors like : "HTTP 403 authentication failed", or "connection failed:Cannot authenticate"... etc, occurs then it is an proxy authentication problem, to solve this :

Type in shell :

```
env | grep proxy
```

If output is :

```
http_proxy=http://<proxy>:<port no>
ftp_proxy=ftp://<proxy>:<port no>
ALL_PROXY=socks://<proxy>:<port no>
all_proxy=socks://<proxy>:<port no>
socks_proxy=socks://<proxy>:<port no>
https_proxy=https://<proxy>:<port no>
no_proxy=localhost,
```

then add authentication to our env :

Type in shell :

```
export http_proxy=http://<username>:<password>@<proxy>:<port no>
export https_proxy=https://<username>:<password>@<proxy>:<port no>
(Remember : password must not have characters like '@' or ':')
```

Assumption : Here , we make an assumption that one has python2.7 installed on its linux platform. (if not, type ( in shell) : `sudo apt-get install python2.7`)

- **Virtual Environment** :

- Edx platform assumes that we have set an virtual environment, where we will run our project. Lets do it by following typing in shell :

```
sudo apt-get install python-setuptools
sudo apt-get install python-virtualenv
```

```
sudo pip install virtualenvwrapper
sudo pip install virtualenv
```

- *Errors that may occur :*

1. First two commands should not have any problem, but if any problem like "Could not locate package" occurs, then follow the below solution.

*Solution :*

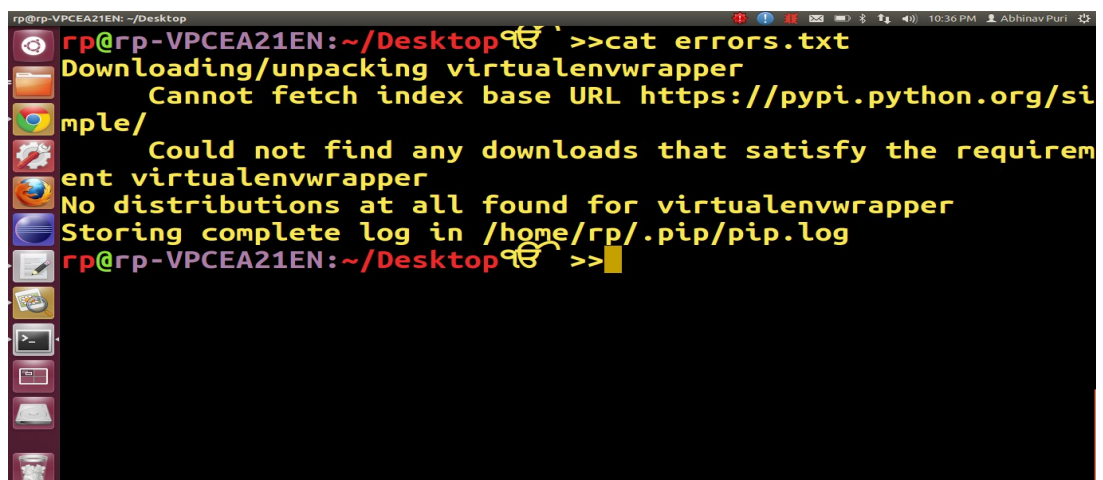
If you have not set environment proxy ::  
Refer to proxy people topic of this documentation.

If still problem comes, then ::  
Sometimes sudo forget environment proxy ,  
Type (in shell):  
`sudo -s`  
(This command makes you use shell as a root user)  
Now, in this root session, again check environment proxy as  
in proxy people topic and do as given in that topic.

After doing as above,  
Type :

```
apt-get install python-setuptools
apt-get install python-virtualenv
exit          (to exit from root session)
```

2. Third and Fourth command may give you error like :



```
rp@rp-VPCEA21EN: ~/Desktop >> cat errors.txt
Downloading/unpacking virtualenvwrapper
  Cannot fetch index base URL https://pypi.python.org/si
mple/
  Could not find any downloads that satisfy the requirem
ent virtualenvwrapper
No distributions at all found for virtualenvwrapper
Storing complete log in /home/rp/.pip/pip.log
rp@rp-VPCEA21EN: ~/Desktop >>
```

*Solution :*

Refer Remark #1 (pip issues).

3. Another type of error that may occur in third command :

```
No local packages or download links found for stevedore
error : could not find suitable distribution for
Requirement.parse('stevedore')
```

Solution:

Type in shell :

```
sudo pip install stevedore.
```

```
sudo pip install virtualenv
```

- **Using Virtual Environment :**

- After previous steps, the following things must get automatically added to your system :

```
/home/<username>/virtualenvs
```

```
/usr/local/bin/virtualenvwrapper.sh
```

- Add them to ~/.bashrc as:

Type (in shell) :

```
sudo nano ~/.bashrc
```

(this opens .bashrc file)

Append following lines to this file and save them and exit:

```
export WORKON_HOME=$HOME/.virtualenvs
```

```
source /usr/local/bin/virtualenvwrapper.sh
```

```
export PYTHON_DIR=$HOME/.virtualenvs
```

- Now, close all the terminals, re-open them for changes to get affected.

Type in shell:

```
mkvirtualenv -a "$WORKON_HOME" edx-platform
```

- Installing pre.txt :

(Remember : One should never use sudo commands in virtualenvs)

- As soon as you used mkvirtualenv command, on successful execution, you will be working on edx-platform virtual environment. To come out of it, Type : deactivate and to go back in it, Type : workon edx-platform.

(You will be in /.virtualenv directory when you are working in edx-platform virtual environment.)

Type in shell :

`workon edx-platform`

`cd`

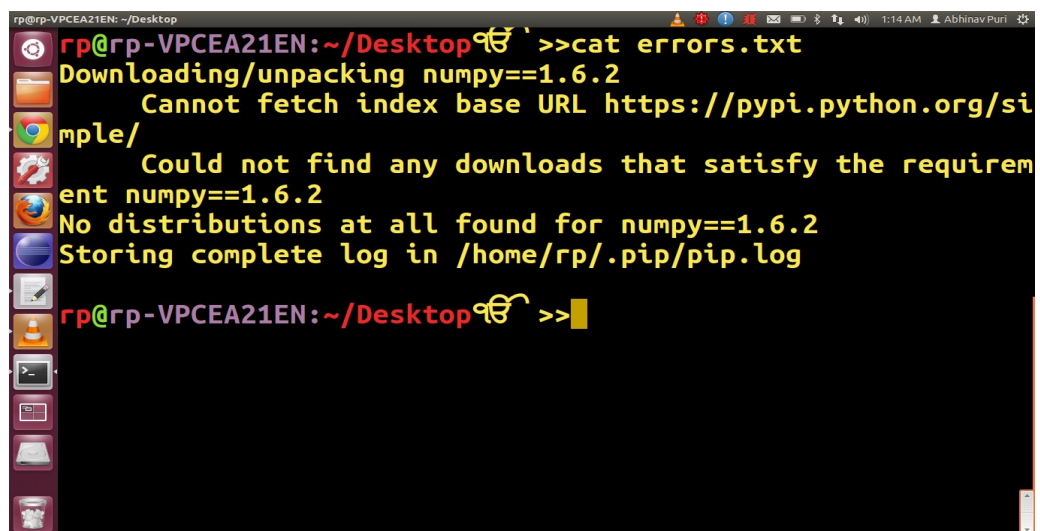
`cd /home/<username>/edx_all/edx-platform`

`pip install -r requirements/edx/pre.txt`

(this install numpy==1.6.2 in your system)

- *Errors that may occur :*

1. Numpy error :

A screenshot of a terminal window with a dark background and light-colored text. The terminal shows a user prompt 'rp@rp-VPCEA21EN: ~/Desktop' followed by the command '>>cat errors.txt'. The output of the command is displayed in yellow text: 'Downloading/unpacking numpy==1.6.2', 'Cannot fetch index base URL https://pypi.python.org/si', 'mple/', 'Could not find any downloads that satisfy the requirem', 'ent numpy==1.6.2', 'No distributions at all found for numpy==1.6.2', and 'Storing complete log in /home/rp/.pip/pip.log'. The terminal then shows the prompt again: 'rp@rp-VPCEA21EN: ~/Desktop >>'.

```
rp@rp-VPCEA21EN: ~/Desktop >>cat errors.txt
Downloading/unpacking numpy==1.6.2
Cannot fetch index base URL https://pypi.python.org/si
mple/
Could not find any downloads that satisfy the requirem
ent numpy==1.6.2
No distributions at all found for numpy==1.6.2
Storing complete log in /home/rp/.pip/pip.log
rp@rp-VPCEA21EN: ~/Desktop >>
```

Solution:

If you have not set environment proxy ::

Refer to proxy people topic of this documentation.

If still problem comes, then ::

Add proxy switch to pip, Type :

`pip -proxy = http://<username> : <password> @`

`<proxy>: <port no> install -r requirements/edx/pre.txt`

2. Error could be due to not using sudo (since, we can't use sudo in virtualenvs) similar to :

```
dpkg: error: requested operation requires superuser privilege
W: Could not open file '/usr/lib/term.log' - OpenLog (13: Permission denied)
```

Solution:

In such a case, check out which file cannot be opened, as in above case /usr/lib/term.log can't be opened, for this case, Type :

```
chown <username>:<username> -R /usr/lib/
(this gives permission to whole directory to be edited).
```

Now, it will work :

```
pip --proxy = http://<username> : <password> @
<proxy>: <port no> install -r requirements/edx/pre.txt
```

- **Installing base.txt :**

- Type in shell :  

```
workon edx-platform    # Skip this if you are already in it.
cd
cd /home/<username>/edx_all/edx-platform
```
- Make changes to requirements/edx/github.txt file :

Add '+https' for third party git repositories as shown below :

File looks like (before changes):

# Third-party:

```
-e git://github.com/edx/django-staticfiles.git@6d2504e5c8#egg=django-staticfiles
```

```
-e git://github.com/edx/django-pipeline.git#egg=django-pipeline
-e git://github.com/edx/django-wiki.git@e2e84558#egg=django-wiki
-e git :// github.com / dementrock / pystache_custom.git @
    776973740bdaad83a3b029f96e415a7d1e8bec2f#egg=pystache_custom-dev
-e git :// github.com / eventbrite / zendesk.git @
    d53fe0e81b623f084e91776bcf6369f8b7b63879#egg=zendesk
```

After changes, file looks like :

# Third-party:

```
-e git+https://github.com/edx/django-staticfiles.git@6d2504e5c8#egg=django-
staticfiles
-e git+https://github.com/edx/django-pipeline.git#egg=django-pipeline
-e git+https://github.com/edx/django-wiki.git@e2e84558#egg=django-wiki
-e git+https :// github.com/ dementrock/ pystache_custom.git @
    776973740bdaad83a3b029f96e415a7d1e8bec2f#egg=pystache_custom-dev
-e git+https :// github.com/ eventbrite/ zendesk.git @
    d53fe0e81b623f084e91776bcf6369f8b7b63879#egg=zendesk
```

Now again type in shell :

*pip install -r requirements/edx/base.txt*  
(this install many python packages & clone important git repositories in your system)

- *Errors that may occur :*

### 1. Cloning error ::

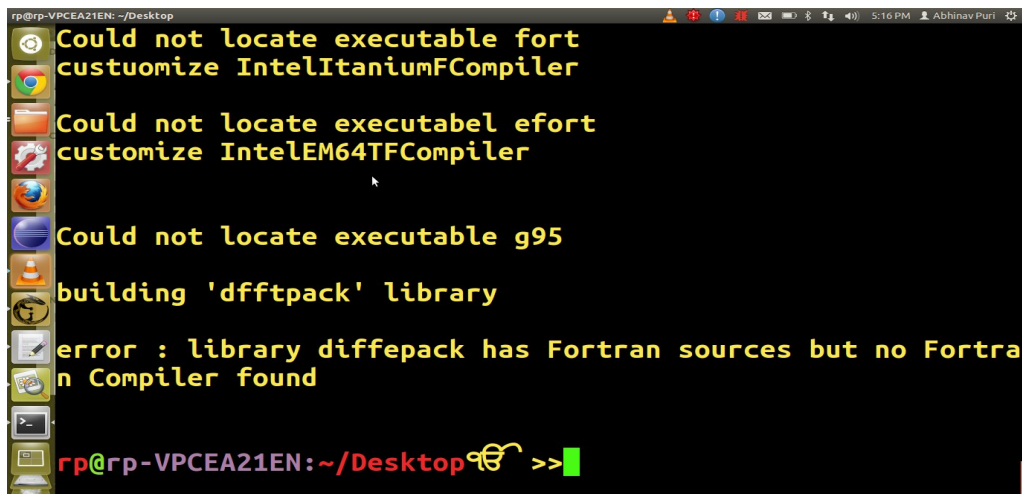
**git cloning problem django-context error line(86)**

*Solution :*

Type in shell :

```
git config --global http.proxy
http://<username>:<password_internet>@<proxy>:<port no>
(Now, again try pip install -r requirements/edx/base.txt, it will
work.)
```

## 2. gFortran error ::

A terminal window with a black background and yellow text. The window title is 'rp@rp-VPCEA21EN: ~/Desktop'. The text in the terminal shows several error messages: 'Could not locate executable fort', 'custuomize IntelItaniumFCompiler', 'Could not locate executabel efort', 'customize IntelEM64TFCompiler', 'Could not locate executable g95', 'building 'dfftack' library', and 'error : library diffepack has Fortran sources but no Fortran Compiler found'. The prompt 'rp@rp-VPCEA21EN:~/Desktop' is followed by a cursor and '>>'.

### Solution:

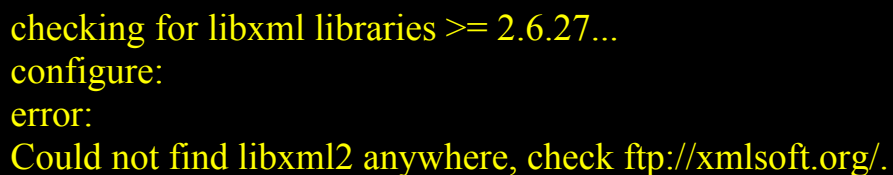
Type is shell :

*apt-get install gfortran.*

(donot use sudo, if permission denied issue comes, refer to installing pre.txt second error solved.)

Now, again go for : *pip install -r requirements/edx/base.txt* (it will work.)

## 3. lxml error ::

A terminal window with a black background and yellow text. The text shows the following error: 'checking for libxml libraries >= 2.6.27...', 'configure:', 'error:', and 'Could not find libxml2 anywhere, check ftp://xmlsoft.org/'.

### Solution :

Type in shell :

*apt-get install libxml2-dev libxslt-dev*

(donot use sudo, if permission denied issue comes, refer to installing pre.txt second error solved.)

Now, again go for : *pip install -r requirements/edx/base.txt* (it will work.)



#### 4. PyGraphviz error ::

```
hellboy@abhilash-Dell: ~/pygraphviz-1.1
Trying dotneato-config
Failed to find dotneato-config

Your Graphviz installation could not be found.

1) You don't have Graphviz installed:
   Install Graphviz (http://graphviz.org)

2) Your Graphviz package might incomplete.
   Install the binary development subpackage (e.g. libgraphviz-dev or similar.)

3) You are using Windows
   There are no PyGraphviz binary packages for Windows but you might be
   able to build it from this source. See
   http://networkx.lanl.gov/pygraphviz/reference/faq.html

If you think your installation is correct you will need to manually
change the include_path and library_path variables in setup.py to
point to the correct locations of your graphviz installation.

The current setting of library_path and include_path is:
library_path=None
include_path=None

Traceback (most recent call last):
  File "setup.py", line 89, in <module>
    raise OSError, "Error locating graphviz."
OSError: Error locating graphviz.
hellboy@abhilash-Dell:~/pygraphviz-1.1$ sudo python setup.py install
```

#### Solution :

Type in shell :

*apt-get install libgraphviz-dev*

*apt-get install graphviz*

(donot use sudo, if permission denied issue comes, refer to installing pre.txt second error solved.)

Now, again go for : *pip install -r requirements/edx/base.txt*  
(it will work.)

#### 5. Scipy error ::

```
rp@rp-VPCEA21EN: ~/Desktop
File "/usr/lib/python2.7/dist-packages/numpy/distutils/misc_util.py", line 10, in add_subpackage
  caller_level = 2)
File "/usr/lib/python2.7/dist-packages/numpy/distutils/misc_util.py", line 97, in get_subpackage
  caller_level = caller_level + 1)
File "/usr/lib/python2.7/dist-packages/numpy/distutils/misc_util.py", line 98, in _get_configuration_from
setup_py
  config = setup_module.configuration(*args)
File "scipy/setup.py", line 8, in configuration
  config.add_subpackage('integrate')
File "/usr/lib/python2.7/dist-packages/numpy/distutils/misc_util.py", line 102, in add_subpackage
  caller_level = 2)
File "/usr/lib/python2.7/dist-packages/numpy/distutils/misc_util.py", line 71, in get_subpackage
  caller_level = caller_level + 1)
File "/usr/lib/python2.7/dist-packages/numpy/distutils/misc_util.py", line 8, in _get_configuration_from_s
etup_py
  config = setup_module.configuration(*args)
File "scipy/integrate/setup.py", line 10, in configuration
  blas_opt = get_info('blas_opt', notfound_action=2)
File "/usr/lib/python2.7/dist-packages/numpy/distutils/system_info.py", line 32, in get_info
  return cl().get_info(notfound_action)
File "/usr/lib/python2.7/dist-packages/numpy/distutils/system_info.py", line 47, in get_info
  raise self.notfounderror(self.notfounderror.__doc__)
numpy.distutils.system_info.BlasNotFoundError:
Blas (http://www.netlib.org/blas/) libraries not found.
Directories to search for the libraries can be specified in the
numpy/distutils/site.cfg file (section [blas]) or by setting
the BLAS environment variable.
rp@rp-VPCEA21EN:~/Desktop$ >>
```

Solution :

(make some 'src' folder (again 'src' is just a name used here))

```
mkdir -p ~/src/
```

```
cd ~/src/
```

```
wget http://www.netlib.org/blas/blas.tgz
```

```
tar xzf blas.tgz
```

```
cd BLAS
```

# edit the make.inc file by setting OPTS = -O2 -fPIC and

```
NOOPT = -O0 -fPIC
```

```
ar r libfblas.a *.o
```

```
ranlib libfblas.a
```

```
rm -rf *.o
```

```
export BLAS=~/src/BLAS/libfblas.a
```

(This solves BLAS issues)

```
dir -p ~/src
```

```
cd ~/src/
```

```
wget http://www.netlib.org/lapack/lapack.tgz
```

```
tar xzf lapack.tgzcd lapack-*/
```

```
cp INSTALL/make.inc.gfortran make.inc
```

```
make lapacklib
```

```
make clean
```

```
export LAPACK=~/src/LAPACK/libflapack.a
```

(This solves LAPACK issues)

Now, again go for : *pip install -r requirements/edx/base.txt* (it will work.)

**6. Pip issues ::**

refer to Remark #1 (pip issues)

- **Installing post.txt :**

- Type in shell :

```
workon edx-platform    # Skip this if you are already in it.
```

```
cd
```

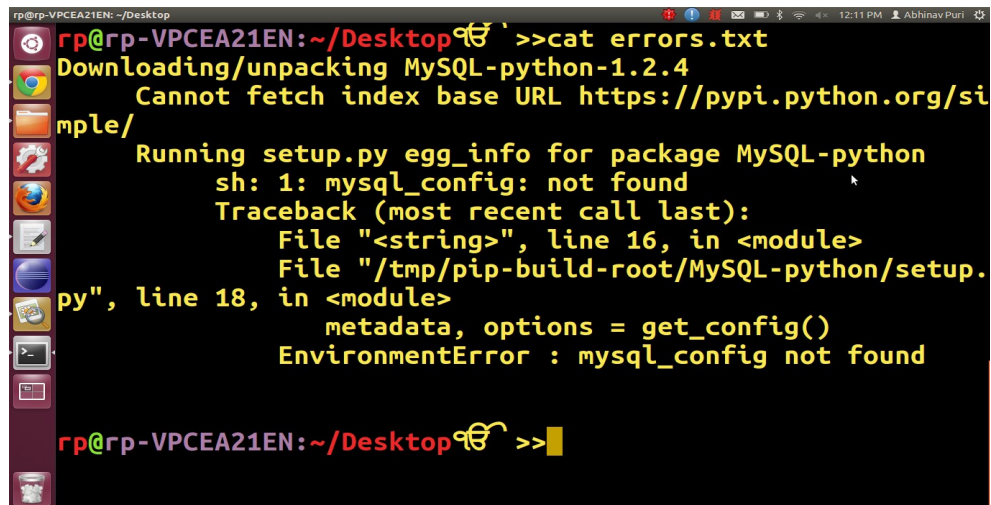
```
cd /home/<username>/edx_all/edx-platform
```

```
pip install -r requirements/edx/post.txt
```

(this install MySQL-python==1.2.4 in your system)

- *Errors that may occur :*

### 1. MySQL- python error ::



```

rp@rp-VPCEA21EN: ~/Desktop >> cat errors.txt
Downloading/unpacking MySQL-python-1.2.4
  Cannot fetch index base URL https://pypi.python.org/si
mple/
  Running setup.py egg_info for package MySQL-python
    sh: 1: mysql_config: not found
    Traceback (most recent call last):
      File "<string>", line 16, in <module>
      File "/tmp/pip-build-root/MySQL-python/setup.
py", line 18, in <module>
        metadata, options = get_config()
    EnvironmentError : mysql_config not found

rp@rp-VPCEA21EN: ~/Desktop >>

```

### Solution :

Type :

*sudo apt-get install libmysqlclient-dev*

(Now, again run *pip install -r requirements/edx/post.txt*, it will work.)

### • The Bundler :

- Type in shell :  
*workon edx-platform*     # Skip this if you are already in it.  
*cd*  
*cd /home/<username>/edx\_all/edx-platform*
- Now, ruby installation is required :  
*apt-get install ruby1.9.3*  
*apt-get install rails*  
 (any error in this installation, refer to 2nd error of pre.txt)  
*gem install bundler*  
*bundle install*  
 (this install gems from Gemfiles in your system)

- *Errors that may occur :*
  1. gem installation error ::

```
GET http://rubygems.org/
403 Forbidden
or
bad response Proxy Authentication Required 407 Forbidden
```

*Solution :*

Type in shell:

```
export HTTP_PROXY=http://user:pass@proxy:port
gem install --http-proxy=$HTTP_PROXY <gem name>
```

2. Bundle installation error ::

```
ruby: bad interpreter : No such file or directory
```

*Solution :*

Type in shell :

```
sudo nano ~/.bashrc
```

Append following lines :

```
export PATH="$PATH:/usr/bin:/usr/local/bin/"
```

(Now, again try bundle install, it will work.)

- **The NPM :**

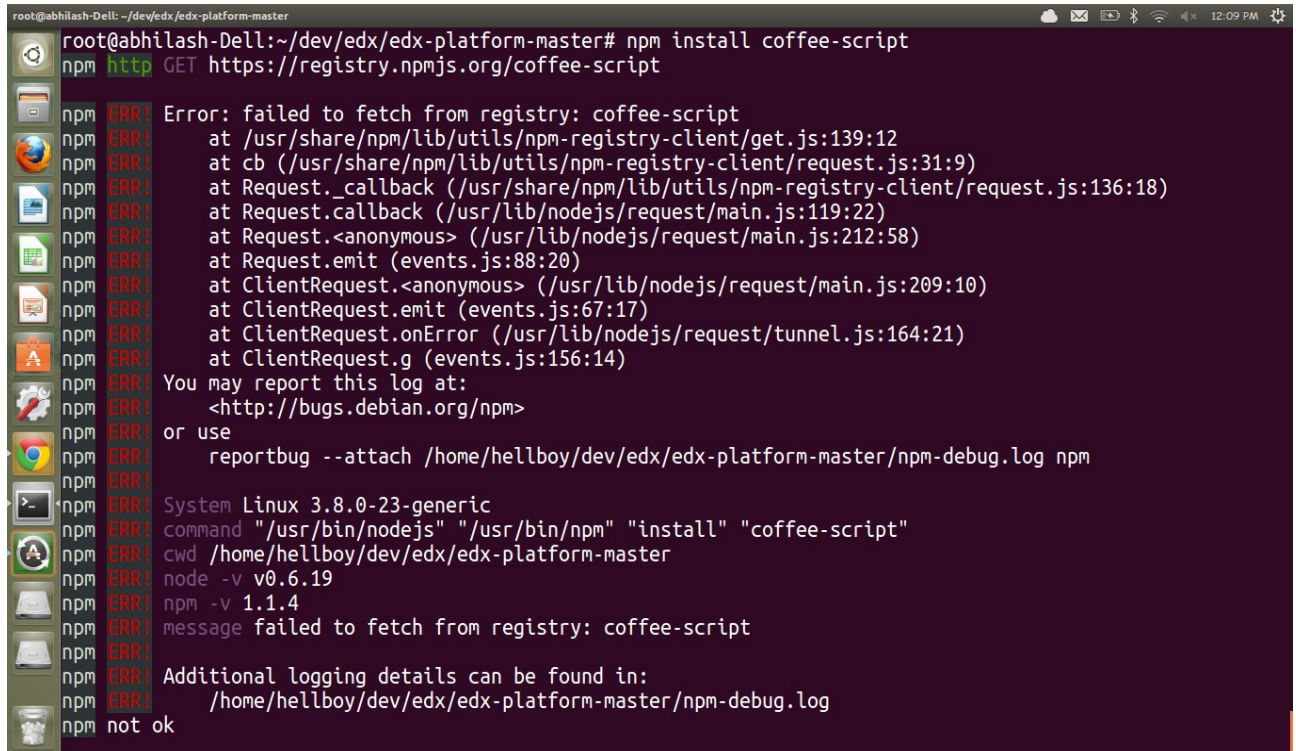
- Type in shell :

```
workon edx-platform    # Skip this if you are already in it.
cd
cd /home/<username>/edx_all/edx-platform
npm install
```

(this install from package.json file in your system)

- *Errors that may occur :*

### 1. NPM error :



```

root@abhilash-Dell: ~/dev/edx/edx-platform-master
root@abhilash-Dell:~/dev/edx/edx-platform-master# npm install coffee-script
npm http GET https://registry.npmjs.org/coffee-script
npm ERR! Error: failed to fetch from registry: coffee-script
npm ERR!   at /usr/share/npm/lib/utils/npm-registry-client/get.js:139:12
npm ERR!   at cb (/usr/share/npm/lib/utils/npm-registry-client/request.js:31:9)
npm ERR!   at Request._callback (/usr/share/npm/lib/utils/npm-registry-client/request.js:136:18)
npm ERR!   at Request.callback (/usr/lib/nodejs/request/main.js:119:22)
npm ERR!   at Request.<anonymous> (/usr/lib/nodejs/request/main.js:212:58)
npm ERR!   at Request.emit (events.js:88:20)
npm ERR!   at ClientRequest.<anonymous> (/usr/lib/nodejs/request/main.js:209:10)
npm ERR!   at ClientRequest.emit (events.js:67:17)
npm ERR!   at ClientRequest.onError (/usr/lib/nodejs/request/tunnel.js:164:21)
npm ERR!   at ClientRequest.g (events.js:156:14)
npm ERR! You may report this log at:
npm ERR!   <http://bugs.debian.org/npm>
npm ERR! or use
npm ERR!   reportbug --attach /home/hellboy/dev/edx/edx-platform-master/npm-debug.log npm
npm ERR! System Linux 3.8.0-23-generic
npm ERR! command "/usr/bin/nodejs" "/usr/bin/npm" "install" "coffee-script"
npm ERR! cwd /home/hellboy/dev/edx/edx-platform-master
npm ERR! node -v v0.6.19
npm ERR! npm -v 1.1.4
npm ERR! message failed to fetch from registry: coffee-script
npm ERR! Additional logging details can be found in:
npm ERR!   /home/hellboy/dev/edx/edx-platform-master/npm-debug.log
npm not ok

```

### Solution :

Type in shell :

```

npm config set strict-ssl false
npm config set registry "http://registry.npmjs.org/"
npm --proxy http://<username>:<password>@<porxy>:<port>
no> install

```

- **Mongo DB :**

- Download debian package for mongodb for its official site :  
*<http://www.mongodb.org/downloads>*
- Type following command :  
*sudo mkdir -p /data/db*  
( this gives the database space for mongodb)
- In dashboard, search for the Startup applications.  
Open this application, press add and locate the mongod executable file in the bin folder of the extracted mongodb tar file.

(The above step opens mongod and creates the database server each time one opens ubuntu.)

- check for the running server :

open in your browser :

*http://localhost:27017*

output :

*" You are trying to access MongoDB on the native driver port. For http diagnostic access, add 1000 to the port number "*

- **Running the script :**

- Since, we have already install prerequisites for our edx-platform, we can skip running some parts of script 'create-dev-env.sh' present in 'edx-platform/scripts/create-dev-env.sh'.

There is 100th line in this script :

*"### START*

*... "*

- Just comment (or delete) lines starting from this 100th line till line 447th which is :

*"# building correct version of distribute from source*

*... "*

- Also comment (or delete) lines starting from this 482th line till line 496th which are :

*output "Installing edX pre-requirements"*

*pip install -r \$BASE/edx-platform/requirements/edx/pre.txt*

*output "Installing edX requirements"*

*# Install prereqs*

*cd \$BASE/edx-platform*

*rvm use "\$RUBY\_VER@edx-platform"*

*rake install\_prereqs*

*# Final dependecy*

*output "Finishing Touches"*

*cd \$BASE*

*pip install argcomplete*

*cd \$BASE/edx-platform*

*bundle install*



- After commenting, save this script and then run it.  
Type in shell (in directory : 'edx-platform/scripts/'):   
`./create-dev-env.sh`

(This should run completely and integrate the whole edx-platform in your system.)

- *Errors that may occur :*

### 1. Virtual Environment distribution package error ::

```

rp@rp-VPCEA21EN: ~/Downloads/edx-platform-master/edx-platform
distribute==0.6.28
rp@rp-VPCEA21EN:~/Downloads/edx-platform-master/edx-platform>>>./scripts/creat
e-dev-env.sh
Installing python virtualenv
New python executable in edx-platform/bin/python
Installing distribute.....
.....done.
Installing pip.....done.
Setting project for edx-platform to /home/rp/.virtualenvs
Building Distribute
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
   100    1478   100    1478    0     0   8711      0 --:--:-- --:--:-- --:--:-- 18948
gzip: stdin: not in gzip format
tar: Child returned status 1
tar: Error is not recoverable: exiting now

!! ERROR !!

The last command did not complete successfully,
For more details or trying running the
script again with the -v flag.

Output of the script is recorded in
rp@rp-VPCEA21EN:~/Downloads/edx-platform-master/edx-platform>>>

```

*Solution :*  
refer to Remark #2 (curl issues).

### • Run the project :

- To run Studio, run:

`$ rake cms`

- To run the LMS, run:

`$ rake lms[cms.dev]`

Studio runs on port 8001, while LMS runs on port 8000, so you can run both of these commands simultaneously, using two different terminal windows. To view Studio, visit 127.0.0.1:8001 in your web browser; to view the LMS, visit 127.0.0.1:8000.

There's also an older version of the LMS that saves its information in XML files in the data directory, instead of in Mongo. To run this older version, run:

*\$ rake lms*

---

### **Reference Remarks :**

- Remark #1 (pip issues) :

If you have not set environment proxy ::

Refer to proxy people topic of this documentation.

If still problem comes, then ::

(NOT TO BE USED WHEN IN VIRUTAL ENVIRONMENTS)

Sometimes sudo forget environment proxy ,

Type (in shell):

*sudo -s*

(This command makes you use shell as a root user)

Now, in this root session, again check environment proxy as in proxy people topic and do as given in that topic.

After doing as above, type your pip command. (It should work.)

If still problem comes, then ::

Add proxy switch to pip, Type :

*sudo pip --proxy=http://<username>:<password>@<proxy>:<port no> install <package\_name>*

If still problem prevails ::

Download <package\_name> from pypi.org and then extract the downloaded tar file.

In terminal reach to the extracted folder's destination and type :

*sudo python setup.py install.*

(It has to work.)



- Remark #2 (curl issues) :

If curl is not able to download properly :

*sudo nano ~/.curlrc*

*Add the line :*

*proxy=http://<username>:<password>@<proxy>:<port no>*

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