

**CREATING A  
HYPERLEDGER COMPOSER  
PLAYGROUND VM  
*SPRING TRIMESTER 2022***

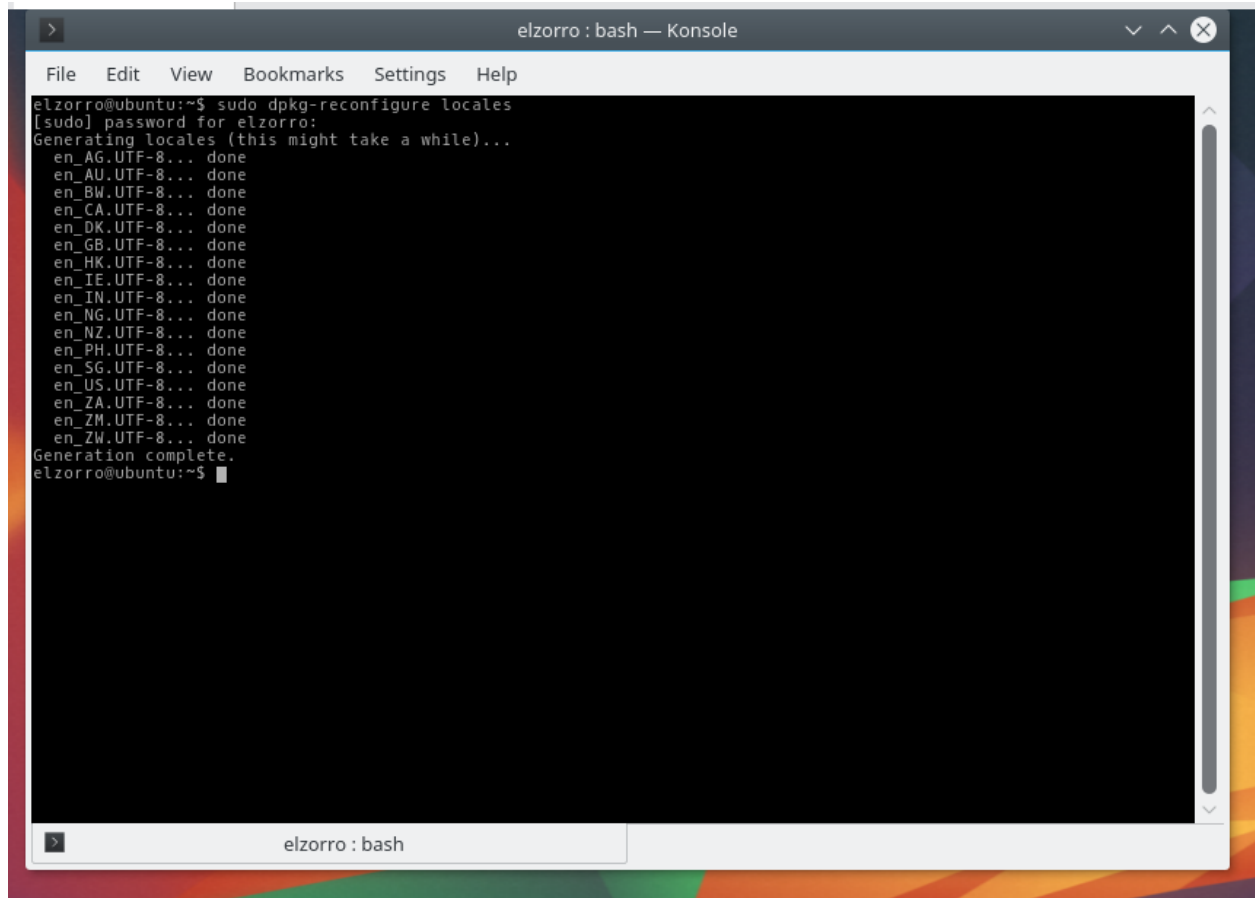
**By**  
***NIKHIL PATEL***

**OBJECTIVE** : We configure IBM hyperledger-composer and install dependencies in this lab. We established a new account called "playground," gave it sudo privileges to run hyperledger-composer, and then used curl to install bootstrap.sh version 1.4.4. Finally, we start the hyperledger-composer server and open it in Firefox by typing localhost:8080/login into the address bar.

## **PROCEDURE** :

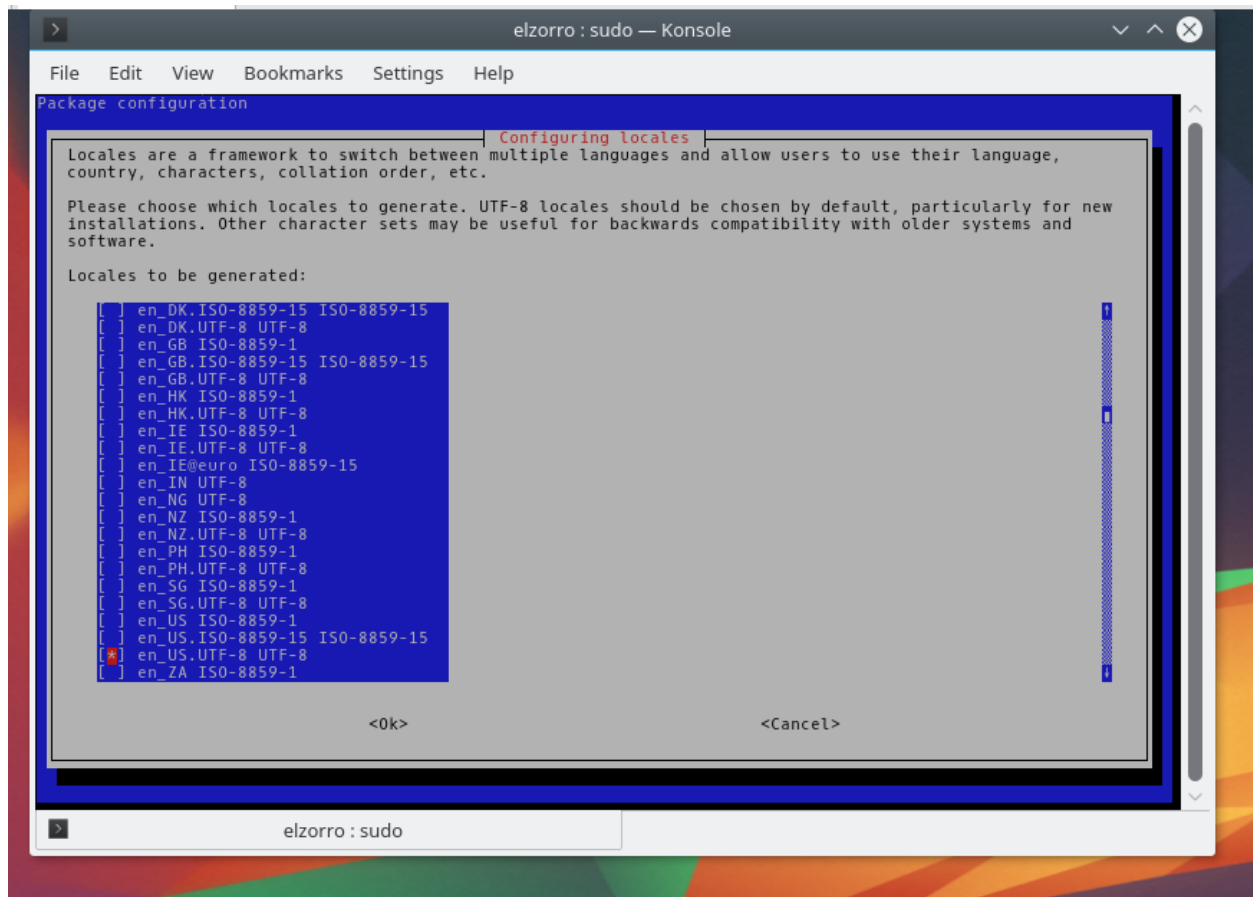
**STEP 1:** Open the terminal and enter :

***sudo dpkg-reconfigure locales***

A screenshot of a terminal window titled 'elzorro : bash — Konsole'. The terminal shows the command 'sudo dpkg-reconfigure locales' being executed. It prompts for a password, then displays 'Generating locales (this might take a while)...'. A list of locales follows, each marked as 'done': en\_AG.UTF-8, en\_AU.UTF-8, en\_BW.UTF-8, en\_CA.UTF-8, en\_DK.UTF-8, en\_GB.UTF-8, en\_HK.UTF-8, en\_IE.UTF-8, en\_IN.UTF-8, en\_NG.UTF-8, en\_NZ.UTF-8, en\_PH.UTF-8, en\_SG.UTF-8, en\_US.UTF-8, en\_ZA.UTF-8, en\_ZH.UTF-8, and en\_ZW.UTF-8. The process concludes with 'Generation complete.' and the prompt returns to 'elzorro@ubuntu:~\$'.

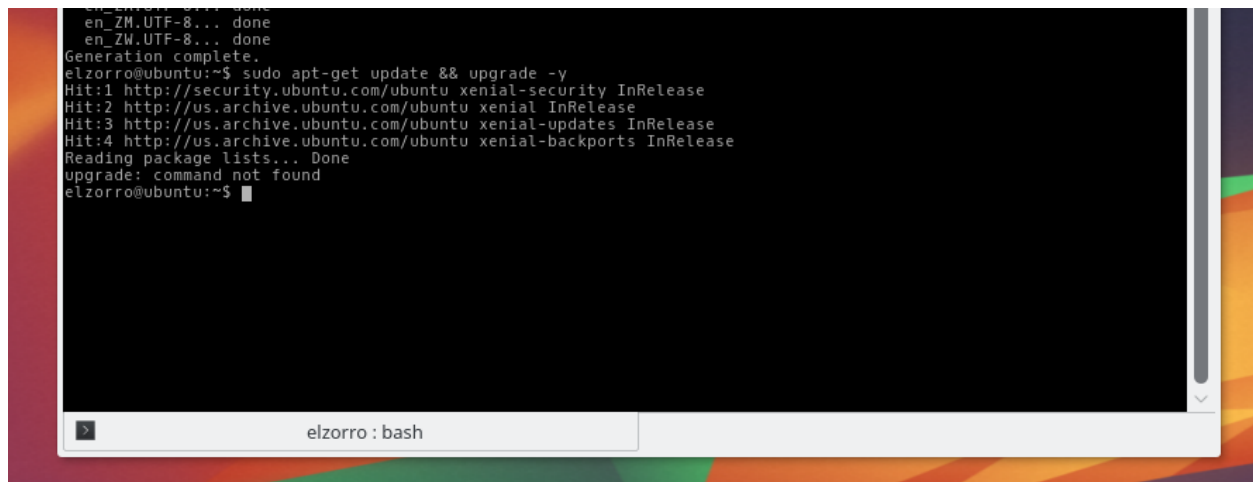
```
elzorro@ubuntu:~$ sudo dpkg-reconfigure locales
[sudo] password for elzorro:
Generating locales (this might take a while)...
en_AG.UTF-8... done
en_AU.UTF-8... done
en_BW.UTF-8... done
en_CA.UTF-8... done
en_DK.UTF-8... done
en_GB.UTF-8... done
en_HK.UTF-8... done
en_IE.UTF-8... done
en_IN.UTF-8... done
en_NG.UTF-8... done
en_NZ.UTF-8... done
en_PH.UTF-8... done
en_SG.UTF-8... done
en_US.UTF-8... done
en_ZA.UTF-8... done
en_ZH.UTF-8... done
en_ZW.UTF-8... done
Generation complete.
elzorro@ubuntu:~$
```

Then, select **en\_US UTF-8**.



**STEP 2** : After step 1 is done then execute :

***sudo apt-get update***  
***sudo apt-get upgrade***



**STEP 3:** Go to the terminal, execute :

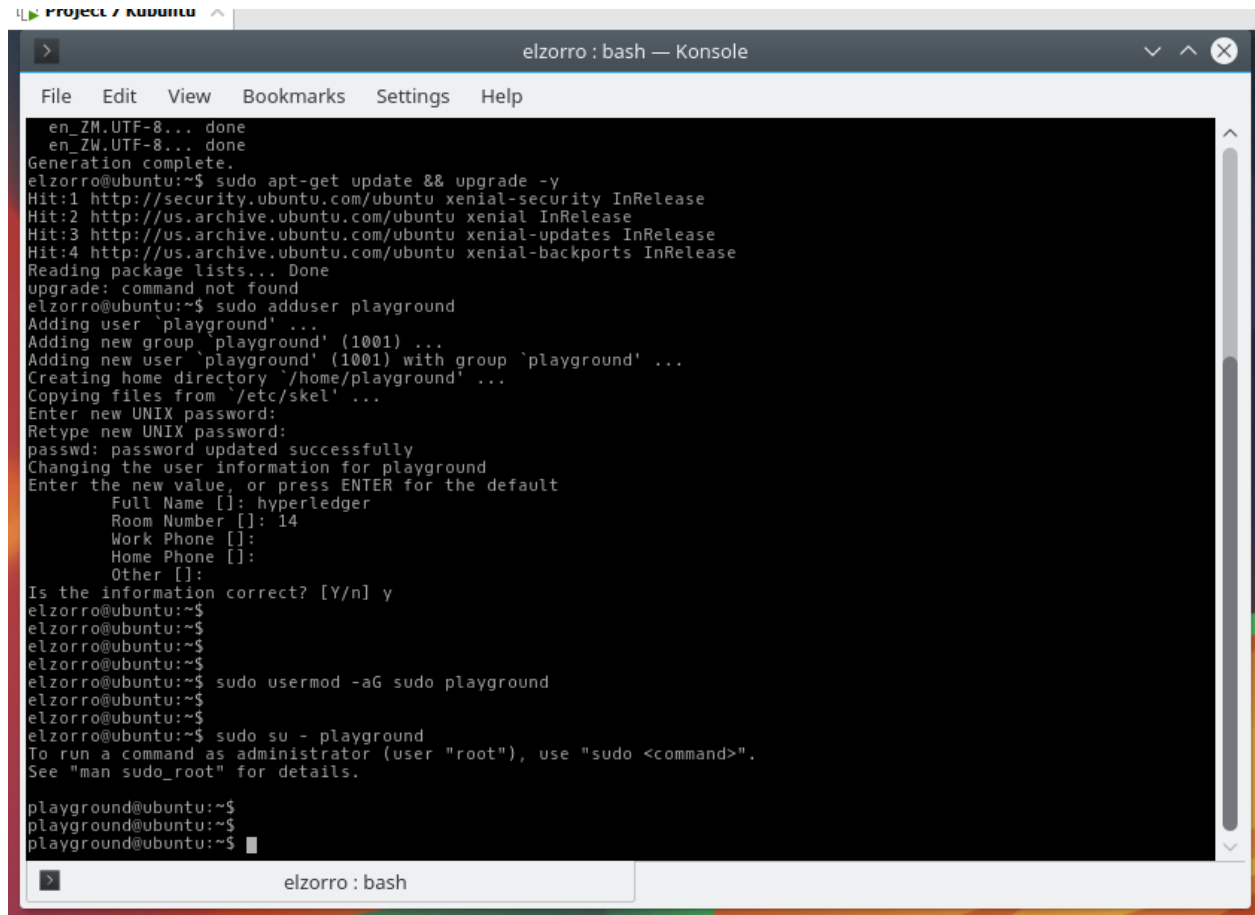
***sudo adduser playground***

**STEP 4:** Now we will set a permission for new “playground” user account, execute :

***sudo usermod -aG sudo playground***

**STEP 5:** Now login as playground, we will now use this account to do installation, execute :

***sudo su - playground***



```
en_ZM.UTF-8... done
en_ZW.UTF-8... done
Generation complete.
elzorro@ubuntu:~$ sudo apt-get update && upgrade -y
Hit:1 http://security.ubuntu.com/ubuntu xenial-security InRelease
Hit:2 http://us.archive.ubuntu.com/ubuntu xenial InRelease
Hit:3 http://us.archive.ubuntu.com/ubuntu xenial-updates InRelease
Hit:4 http://us.archive.ubuntu.com/ubuntu xenial-backports InRelease
Reading package lists... Done
upgrade: command not found
elzorro@ubuntu:~$ sudo adduser playground
Adding user `playground' ...
Adding new group `playground' (1001) ...
Adding new user `playground' (1001) with group `playground' ...
Creating home directory `/home/playground' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for playground
Enter the new value, or press ENTER for the default
    Full Name []: hyperledger
    Room Number []: 14
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
elzorro@ubuntu:~$
elzorro@ubuntu:~$
elzorro@ubuntu:~$
elzorro@ubuntu:~$
elzorro@ubuntu:~$ sudo usermod -aG sudo playground
elzorro@ubuntu:~$
elzorro@ubuntu:~$
elzorro@ubuntu:~$ sudo su - playground
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

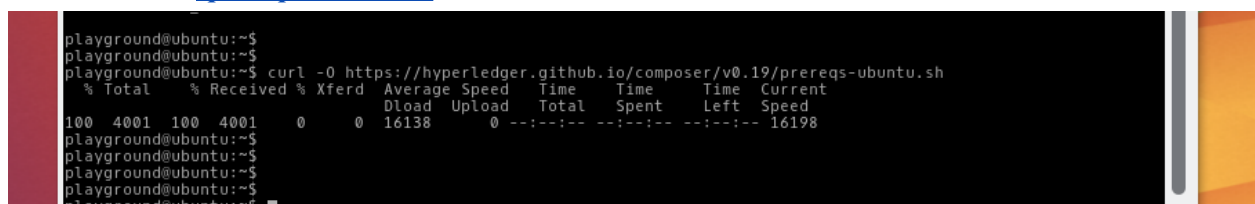
playground@ubuntu:~$
playground@ubuntu:~$
playground@ubuntu:~$
```

**STEP 6:** Now we will install the prerequisites by using github.

***curl -O <https://hyperledger.github.io/composer/v0.19/prereqs-ubuntu.sh>***

***chmod u+x prereqs-ubuntu.sh***

***./prereqs-ubuntu.sh***

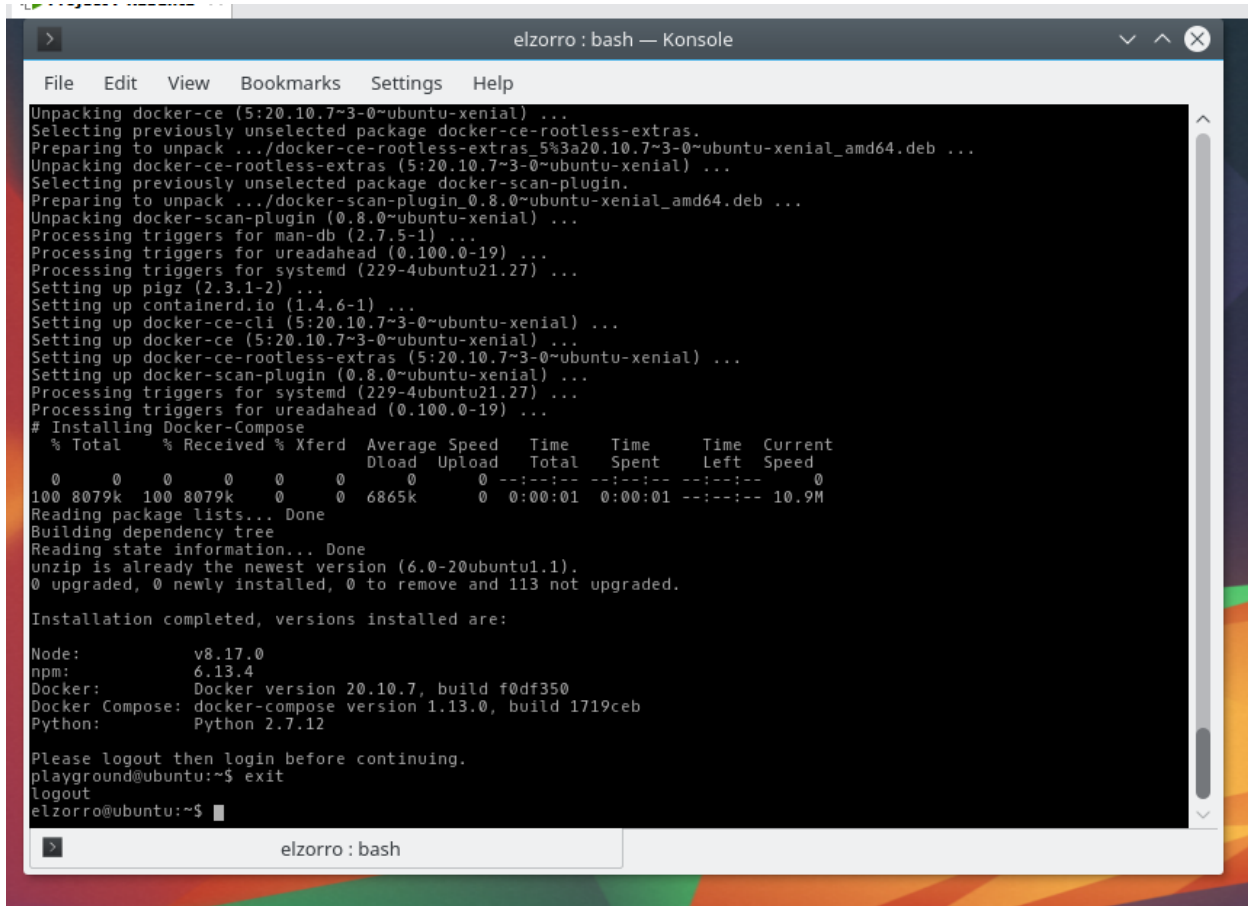


```
playground@ubuntu:~$
playground@ubuntu:~$
playground@ubuntu:~$ curl -O https://hyperledger.github.io/composer/v0.19/prereqs-ubuntu.sh
% Total % Received % Xferd Average Speed Time Time Time Current
% Total % Received % Xferd Average Speed Time Time Time Current
100 4001 100 4001 0 0 16138 0 --:--:-- --:--:-- --:--:-- 16198
playground@ubuntu:~$
playground@ubuntu:~$
playground@ubuntu:~$
playground@ubuntu:~$
```

**STEP 7:** Now log out of “playground” and log back in to proceed.

*Exit*

*sudo su – playground*



```
elzorro : bash — Konsole
File Edit View Bookmarks Settings Help
Unpacking docker-ce (5:20.10.7~3-0~ubuntu-xenial) ...
Selecting previously unselected package docker-ce-rootless-extras.
Preparing to unpack .../docker-ce-rootless-extras_5%3a20.10.7~3-0~ubuntu-xenial_amd64.deb ...
Unpacking docker-ce-rootless-extras (5:20.10.7~3-0~ubuntu-xenial) ...
Selecting previously unselected package docker-scan-plugin.
Preparing to unpack .../docker-scan-plugin_0.8.0~ubuntu-xenial_amd64.deb ...
Unpacking docker-scan-plugin (0.8.0~ubuntu-xenial) ...
Processing triggers for man-db (2.7.5-1) ...
Processing triggers for ureadahead (0.100.0-19) ...
Processing triggers for systemd (229-4ubuntu21.27) ...
Setting up pigz (2.3.1-2) ...
Setting up containerd.io (1.4.6-1) ...
Setting up docker-ce-cli (5:20.10.7~3-0~ubuntu-xenial) ...
Setting up docker-ce (5:20.10.7~3-0~ubuntu-xenial) ...
Setting up docker-ce-rootless-extras (5:20.10.7~3-0~ubuntu-xenial) ...
Setting up docker-scan-plugin (0.8.0~ubuntu-xenial) ...
Processing triggers for systemd (229-4ubuntu21.27) ...
Processing triggers for ureadahead (0.100.0-19) ...
# Installing Docker-Compose
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total   Spent    Left   Speed
  0     0    0     0    0     0      0  0 --:--:-- --:--:-- --:--:--    0
100 8079k 100 8079k    0     0 6865k      0  0:00:01  0:00:01 --:--:-- 10.9M
Reading package lists... Done
Building dependency tree
Reading state information... Done
unzip is already the newest version (6.0-20ubuntu1.1).
0 upgraded, 0 newly installed, 0 to remove and 113 not upgraded.

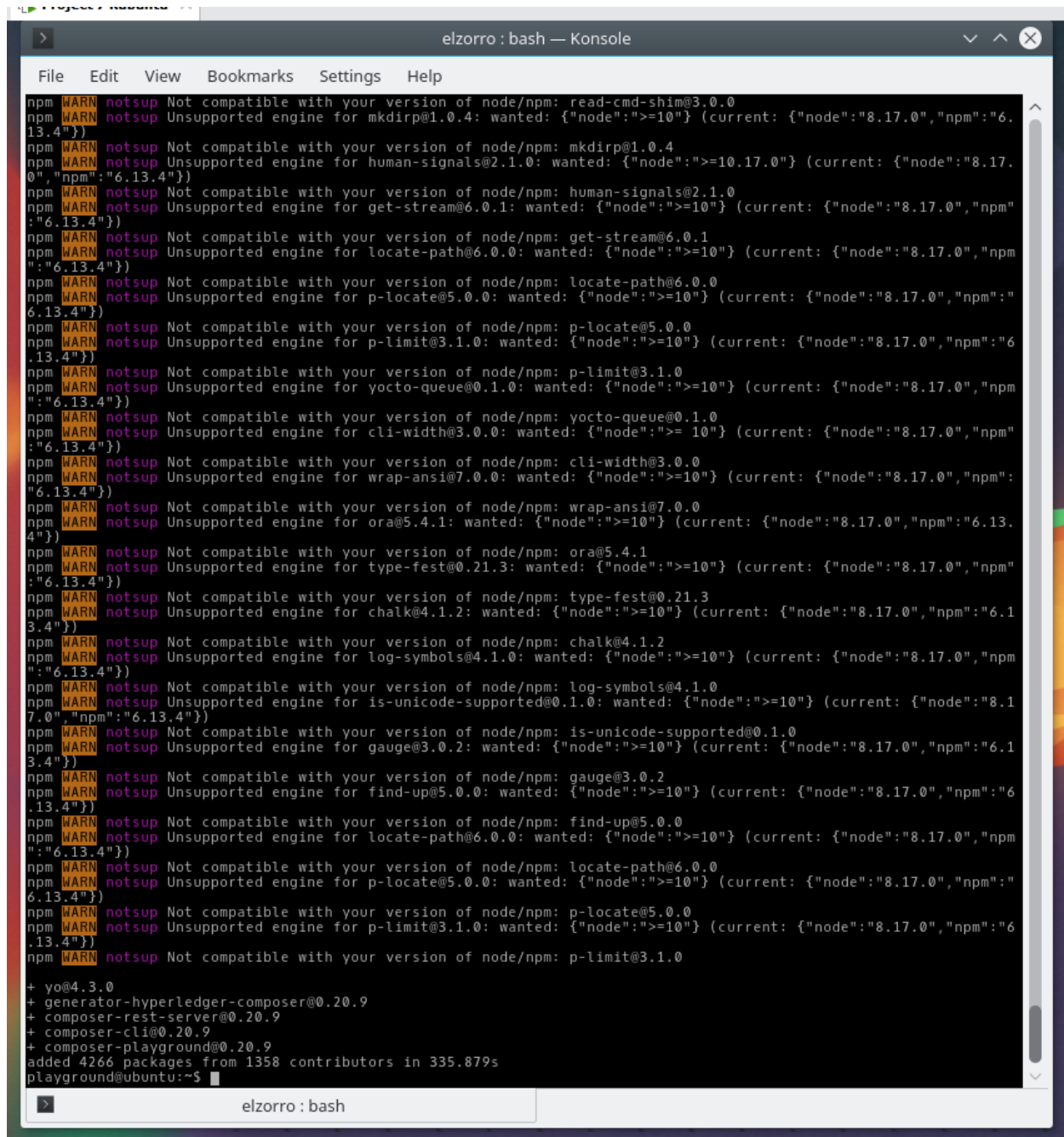
Installation completed, versions installed are:

Node:      v8.17.0
npm:       6.13.4
Docker:    Docker version 20.10.7, build f0df350
Docker Compose: docker-compose version 1.13.0, build 1719ceb
Python:    Python 2.7.12

Please logout then login before continuing.
playground@ubuntu:~$ exit
logout
elzorro@ubuntu:~$
```

**STEP 8:** Now we will install the components required for running hypeledge composer.

***`npm install -g composer-cli composer-rest-server generator-hyperledger-composer yo composer-playground`***



```
elzorro : bash — Konsole
File Edit View Bookmarks Settings Help
npm WARN notsup Not compatible with your version of node/npm: read-cmd-shim@3.0.0
npm WARN notsup Unsupported engine for mkdirp@1.0.4: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: mkdirp@1.0.4
npm WARN notsup Unsupported engine for human-signals@2.1.0: wanted: {"node": ">=10.17.0"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: human-signals@2.1.0
npm WARN notsup Unsupported engine for get-stream@6.0.1: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: get-stream@6.0.1
npm WARN notsup Unsupported engine for locate-path@6.0.0: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: locate-path@6.0.0
npm WARN notsup Unsupported engine for p-locate@5.0.0: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: p-locate@5.0.0
npm WARN notsup Unsupported engine for p-limit@3.1.0: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: p-limit@3.1.0
npm WARN notsup Unsupported engine for yocto-queue@0.1.0: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: yocto-queue@0.1.0
npm WARN notsup Unsupported engine for cli-width@3.0.0: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: cli-width@3.0.0
npm WARN notsup Unsupported engine for wrap-ansi@7.0.0: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: wrap-ansi@7.0.0
npm WARN notsup Unsupported engine for ora@5.4.1: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: ora@5.4.1
npm WARN notsup Unsupported engine for type-fest@0.21.3: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: type-fest@0.21.3
npm WARN notsup Unsupported engine for chalk@4.1.2: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: chalk@4.1.2
npm WARN notsup Unsupported engine for log-symbols@4.1.0: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: log-symbols@4.1.0
npm WARN notsup Unsupported engine for is-unicode-supported@0.1.0: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: is-unicode-supported@0.1.0
npm WARN notsup Unsupported engine for gauge@3.0.2: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: gauge@3.0.2
npm WARN notsup Unsupported engine for find-up@5.0.0: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: find-up@5.0.0
npm WARN notsup Unsupported engine for locate-path@6.0.0: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: locate-path@6.0.0
npm WARN notsup Unsupported engine for p-locate@5.0.0: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: p-locate@5.0.0
npm WARN notsup Unsupported engine for p-limit@3.1.0: wanted: {"node": ">=10"} (current: {"node": "8.17.0", "npm": "6.13.4"})
npm WARN notsup Not compatible with your version of node/npm: p-limit@3.1.0
+ yo@4.3.0
+ generator-hyperledger-composer@0.20.9
+ composer-rest-server@0.20.9
+ composer-cli@0.20.9
+ composer-playground@0.20.9
added 4266 packages from 1358 contributors in 335.879s
playground@ubuntu:~$
```

Now we install the components for Hyperledger Fabric.

*curl*

*-sSL* <https://raw.githubusercontent.com/hyperledger/fabric/master/scripts/bootstrap.sh> |

*bash -s 1.4.4*

```
+ composer-playground@0.20.9
added 4266 packages from 1358 contributors in 335.879s
playground@ubuntu:~$ curl -sSL https://raw.githubusercontent.com/hyperledger/fabric/master/scripts/bootstrap.sh |
bash -s 1.4.4
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
  0     0    0     0    0     0      0      0  --:--:-- --:--:-- --:--:--    0curl: (6) Could not resolve host: x
n--ssl-ln0a
100 6722 100 6722    0     0 29281      0  --:--:-- --:--:-- --:--:-- 29353

Clone hyperledger/fabric-samples repo

==> Cloning hyperledger/fabric-samples repo
Cloning into 'fabric-samples'...
remote: Enumerating objects: 10656, done.
remote: Total 10656 (delta 0), reused 0 (delta 0), pack-reused 10656
Receiving objects: 100% (10656/10656), 19.03 MiB | 10.72 MiB/s, done.
Resolving deltas: 100% (5748/5748), done.
==> Checking out v1.4.4 of hyperledger/fabric-samples

Pull Hyperledger Fabric binaries

==> Downloading version 1.4.4 platform specific fabric binaries
==> Downloading: https://github.com/hyperledger/fabric/releases/download/v1.4.4/hyperledger-fabric-linux-amd64-
1.4.4.tar.gz
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left   Speed
  0     0    0     0    0     0      0      0  --:--:-- --:--:-- --:--:--    0
87 79.6M  87 69.5M    0     0 10.3M      0  0:00:07  0:00:06  0:00:01 11.2M

elzorro : curl
```

**STEP 9:** Now execute the following command and hit Enter “***DON’T PRESS CTRL+C***”

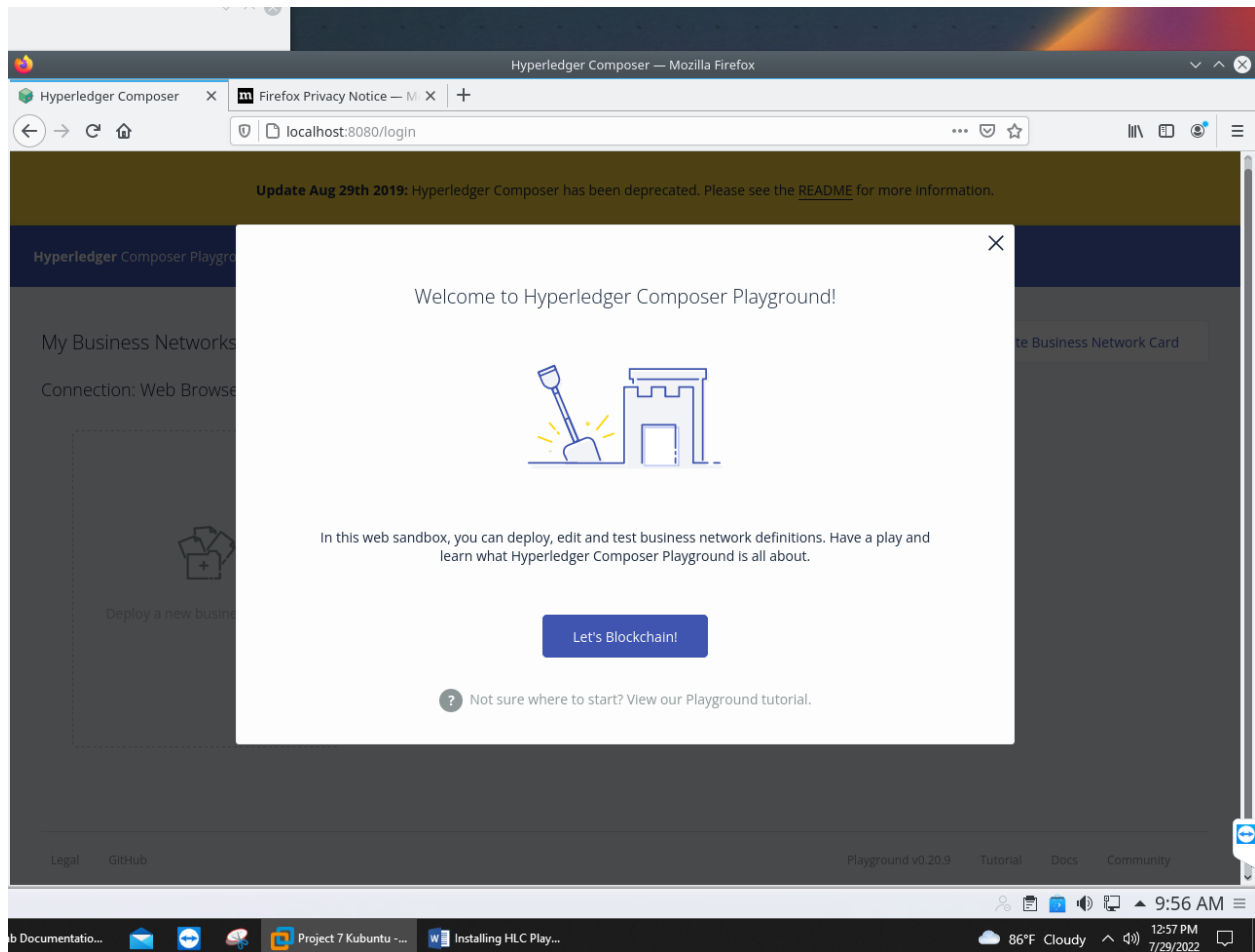
*composer-playground*

```
playground@ubuntu:~$
playground@ubuntu:~$
playground@ubuntu:~$ composer-hyperledger
composer-hyperledger: command not found
playground@ubuntu:~$ composer-playground
2022-07-29T16:55:45.256Z INFO    :LoadModule                :loadModule()                Loading composer-wallet-fil
esystem from /home/playground/.nvm/versions/node/v8.17.0/lib/node_modules/composer-playground/node_modules/compos
er-wallet-filesystem {}$
2022-07-29T16:55:45.282Z INFO    :PlaygroundAPI             :createServer()              Playground API started on p
ort 8080 {}$

elzorro : node
```

**STEP 10:** While the step 9 is going on go to the web browser and enter following command:

***http://<Your IP Address>:8080.or localhost:8080.***



## **CONCLUSION :**

Finally, we installed and configured an IBM Hyperledger-composer with the necessary dependencies such as composer-cli, composer-reset-server, generator-hyperledger-composer, and bootstrap. We download the bootstrap.sh file and run it after granting execute access. The hyperledger-composer server is then started, and we can visit it through the browser by typing localhost:8080/login.