

CS571 – Cloud computing Infrastructure

Week - 2 Homework – 2

Q8. Node.js Time Server on Ubuntu.

Answer:

Setup Environment:

1. Install ubuntu on VirtualBox

How to install Ubuntu on VirtualBox [here](#)

2. Install Node.js in Ubuntu OS in VirtualBox

Open the VirtualBox and run Ubuntu guest Operating System

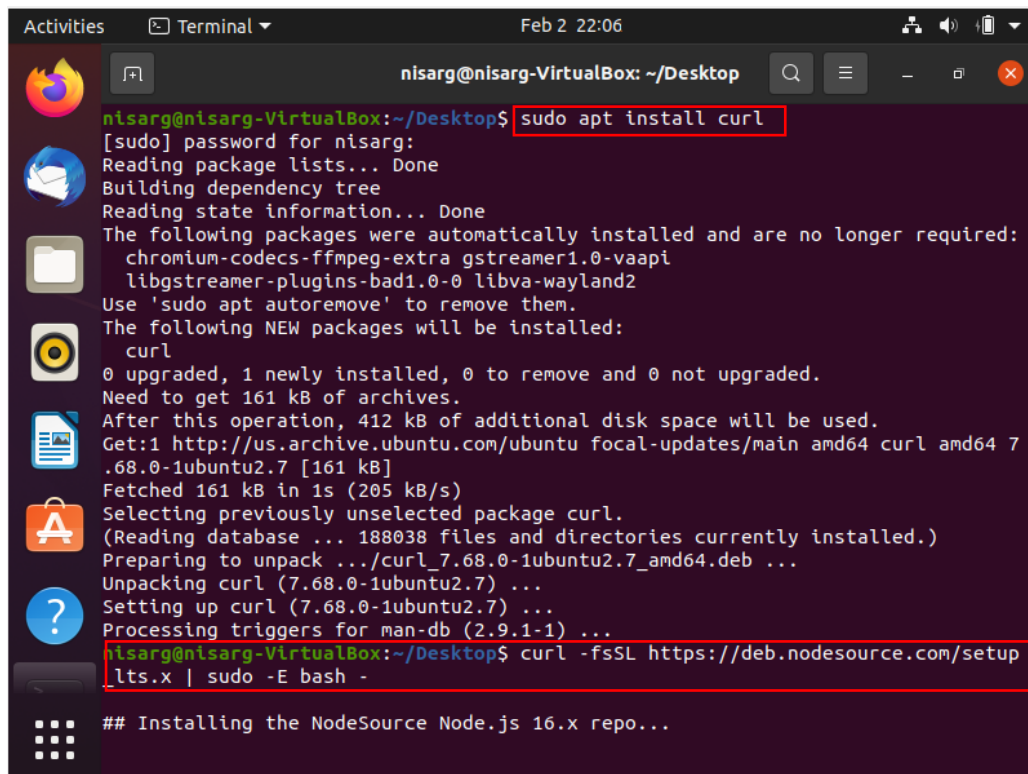
Open the Ubuntu terminal

3. Install Node.js with Ubuntu terminal by running curl

`sudo apt install curl`

`curl -fsSL https://deb.nodesource.com/setup_16.x | sudo -E bash -`

`sudo apt-get install -y nodejs`



```
Activities  Terminal  Feb 2 22:06
nisarg@nisarg-VirtualBox: ~/Desktop
nisarg@nisarg-VirtualBox:~/Desktop$ sudo apt install curl
[sudo] password for nisarg:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi
  libgstreamer-plugins-bad1.0-0 libva-wayland2
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  curl
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 161 kB of archives.
After this operation, 412 kB of additional disk space will be used.
Get:1 http://us.archive.ubuntu.com/ubuntu focal-updates/main amd64 curl amd64 7
.68.0-1ubuntu2.7 [161 kB]
Fetched 161 kB in 1s (205 kB/s)
Selecting previously unselected package curl.
(Reading database ... 188038 files and directories currently installed.)
Preparing to unpack .../curl_7.68.0-1ubuntu2.7_amd64.deb ...
Unpacking curl (7.68.0-1ubuntu2.7) ...
Setting up curl (7.68.0-1ubuntu2.7) ...
Processing triggers for man-db (2.9.1-1) ...
nisarg@nisarg-VirtualBox:~/Desktop$ curl -fsSL https://deb.nodesource.com/setup
16.x | sudo -E bash -
## Installing the NodeSource Node.js 16.x repo...
```

```
Activities Terminal Feb 2 22:07
nisarg@nisarg-VirtualBox: ~/Desktop
nisarg@nisarg-VirtualBox:~/Desktop$ sudo apt-get install -y nodejs
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  chromium-codecs-ffmpeg-extra gstreamer1.0-vaapi
  libgstreamer-plugins-bad1.0-0 libva-wayland2
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  nodejs
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 25.8 MB of archives.
After this operation, 120 MB of additional disk space will be used.
Get:1 https://deb.nodesource.com/node_16.x focal/main amd64 nodejs amd64 16.13.
2-deb-1nodesource1 [25.8 MB]
Fetched 25.8 MB in 1s (23.4 MB/s)
Selecting previously unselected package nodejs.
(Reading database ... 188045 files and directories currently installed.)
Preparing to unpack .../nodejs_16.13.2-deb-1nodesource1_amd64.deb ...
Unpacking nodejs (16.13.2-deb-1nodesource1) ...
Setting up nodejs (16.13.2-deb-1nodesource1) ...
Processing triggers for man-db (2.9.1-1) ...
```

4. Verify that the Node.js and npm version

```
nisarg@nisarg-VirtualBox:~/Desktop$ node --version
v16.13.2
nisarg@nisarg-VirtualBox:~/Desktop$ npm --version
8.1.2
```

5. Install nvm (Node Version Manager)

Curl -o- <https://raw.githubusercontent.com/nvm-sh/nvm/v0.39.1/install.sh> | bash

```
Activities Terminal Feb 2 22:10
nisarg@nisarg-VirtualBox: ~/Desktop
8.1.2
nisarg@nisarg-VirtualBox:~/Desktop$ curl -o- https://raw.githubusercontent.com/
nvm-sh/nvm/v0.39.1/install.sh | bash
% Total % Received % Xferd Average Speed Time Time Time Current
Dload Upload Total Spent Left Speed
100 15037 100 15037 0 0 46844 0 --:--:-- --:--:-- --:--:-- 46844
=> Downloading nvm as script to '/home/nisarg/.nvm'

=> Appending nvm source string to /home/nisarg/.bashrc
=> Appending bash_completion source string to /home/nisarg/.bashrc
=> You currently have modules installed globally with `npm`. These will no
=> longer be linked to the active version of Node when you install a new node
=> with `nvm`; and they may (depending on how you construct your `$PATH`)
=> override the binaries of modules installed with `nvm`:

/usr/lib
└─ corepack@0.10.0
=> If you wish to uninstall them at a later point (or re-install them under you
r
=> `nvm` Nodes), you can remove them from the system Node as follows:

$ nvm use system
$ npm uninstall -g a_module

=> Close and reopen your terminal to start using nvm or run the following to us
e it now:

export NVM_DIR="$HOME/.nvm"
[ -s "$NVM_DIR/nvm.sh" ] && \. "$NVM_DIR/nvm.sh" # This loads nvm
```

6. Now create the new file of timeserver.js with following program

```
const http = require('http');

function addZero(i) {
  return (i < 10 ? '0' : '') + i
}

function now () {
  var date = new Date()
  return date.getFullYear() + '-'
    + addZero(date.getMonth() + 1) + '-'
    + addZero(date.getDate()) + ' '
    + addZero(date.getHours()) + ':'
    + addZero(date.getMinutes())
}

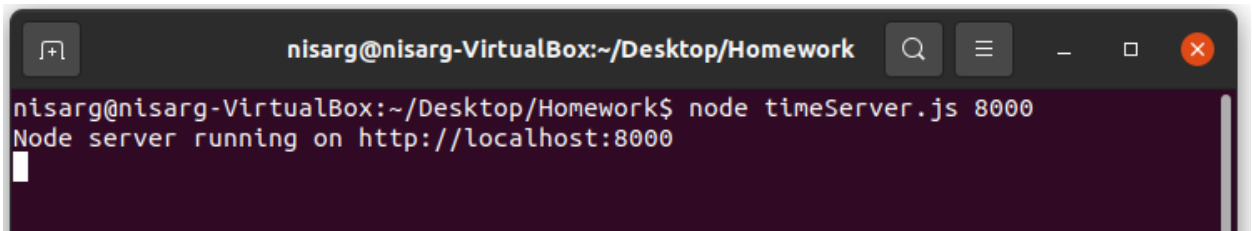
// Create an instance of the http server to handle HTTP requests
let server = http.createServer((req, res) => {
  // Set a response type of plain text for the response
  res.writeHead(200, {'Content-Type': 'text/plain'});

  // Send back a response and end the connection
  res.end(now()+'\n');
});

// Listening on the port provided on the command line
server.listen(Number(process.argv[2]))
console.log('Node server running on http://localhost:'+ process.argv[2]);
```

7. Open Ubuntu terminal and enter following command

```
node time_server.js 8000
```



```
nisarg@nisarg-VirtualBox:~/Desktop/Homework$ node timeServer.js 8000
Node server running on http://localhost:8000
```

8. Open search engine and go to <http://localhost:8000>, you should see the following output

