[Initial Ubuntu Server Setup for Beginners](https://www.tecmint.com/initial-ubuntu-server-setup-guide/)

[50 Linux Commands](https://www.thegeekstuff.com/2010/11/50-linux-commands/)

[50 Unix Linux Sysadmin Tutorials](https://www.thegeekstuff.com/2010/12/50-unix-linux-sysadmin-tutorials/)

**Install NodeJS**

Install nodejs using NVM

First to install NVM using the following command:

$ curl -o- https://raw.githubusercontent.com/creationix/nvm/v0.33.11/install.sh | bash

Need to restart the terminal to use NVM

$ nvm --version

Will display NVM vesion if installed correctly

Now need to install node js using command like below

$ nvm install node

Will install latest nodejs veriosn

If want to install a particular version say v9.2.0

Command will be live this:

$ nvm install 9.2.0

$nvm ls

Will display all installed nodejs version

To switch between nodejs version

$nvm use 9.2.0

To run nodejs use

$ node

To check nodejs version

$ node -v

Ref :

1. <https://linuxize.com/post/how-to-install-node-js-on-ubuntu-18.04/>

**Install python**

Python 3 remains preinstalled in ubuntu 18.04 server.  
If not install use

$ sudo apt install python3

Need to install pip3

$ sudo apt install python3-pip

Check if pip installed by using

$ pip3 -V

To install package use

$ pip3 install <package name>

Need to install virtual enviroment. Use

$ pip3 install virtualenv

Create a virtual env at you project dir

$ cd /your-product-dir

Then

$ virtualenv venv

$ ls

Will display a venv folder

Now need to activate our new virtual env by using

$ source venv/bin/activate

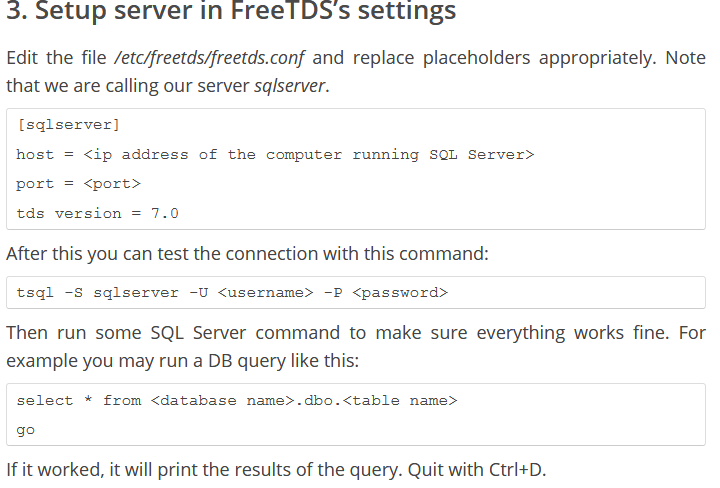
Now we are ready to use python for this application

$ deactivate

Ref:

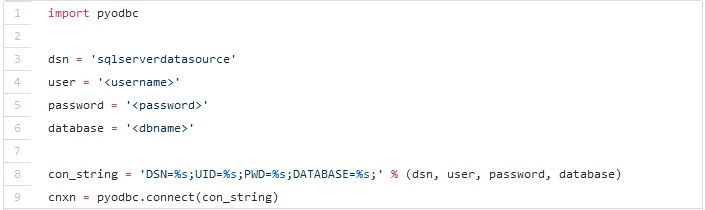
1. <https://www.digitalocean.com/community/tutorials/how-to-install-python-3-and-set-up-a-programming-environment-on-ubuntu-18-04-quickstart>
2. <https://linuxhostsupport.com/blog/how-to-install-virtual-environment-on-ubuntu-16-04/>
3. <https://www.guru99.com/how-to-install-java-on-ubuntu.html>

**SQL Server Connection**

sudo apt-get install unixodbc unixodbc-dev freetds-dev tdsodbc

(venv) $ pip3 install pyodbc

**Python Code:**



Ref. <https://tryolabs.com/blog/2012/06/25/connecting-sql-server-database-python-under-ubuntu/>

**Install JAVA & set JAVA\_HOME env variable**

$ java

Will display all java pacakges available if Java is not installed.

$ sudo apt install <java-package-name-from-the-list>

Or download zip from web

Check if installation os okay

$ java -version

Get java installation path the following command

$ update-alternatives --config java

Open env file using

$ sudo nano /etc/environment

Add the below line

JAVA\_HOME= “/java/installed/path”

Save and exit

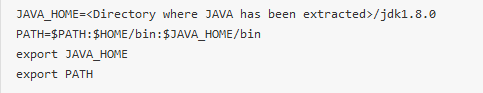
To refresh env variables use

$ source /etc/environment

JAVA\_HOME is set now. To check

$ echo $JAVA\_HOME

If zip downloaded. Unzip it somewhere and set the path in /etc/environment file and in /etc/profile file as well. As the bellow lines at the end of /etc/profile file



**ElasticSearch**

**Using Debian Package:**

Download elasticsearch specific verion .deb file from elasticserch official site and install using

$ sudo dpkg -i elasiticseasrch-6.2.1.deb

Elasticsearch can’t be run as root user.

Need to follow the below steps:

Steps:

1. Change owership of all ES related files to root using example cmd below.

$ sudo chown elasticsearch:elasticsearch -R /usr/share/elasticsearch

$ sudo chown elasticsearch:elasticsearch -R /var/log/elasticsearch

$ sudo chown elasticsearch:elasticsearch -R /var/lib/elasticsearch

$ sudo chown elasticsearch:elasticsearch -R /etc/default/elasticsearch

$ sudo chown elasticsearch:elasticsearch -R /etc/elasticsearch

1. Open /etc/default/elasticsearch file and do the following things
   1. JAVA\_HOME=your/java/home/path
   2. add the following entries at the end
      1. START\_DAEMON=true
      2. ES\_USER=elasticsearch
      3. ES\_GROUP=elasticsearch
2. Now enable elasticsearch service and start
   1. $ sudo systemctl enable elasticsearch
   2. $ sudo systemctl start elasticsearch
   3. $ sudo systemctl status elasticsearch
3. Test elasticsearch by using curl. Say your host ip is 192.168.5.194 and ES running on port 9200
   1. $ curl -X GET ‘192.168.5.194:9200’

DONE!!

Important link : <https://stackoverflow.com/a/48390311/1445978>

Important elasticsearch.yml entry. This is required for single node production. Otherwise you cannot set non-loopback address at network.host configuration.

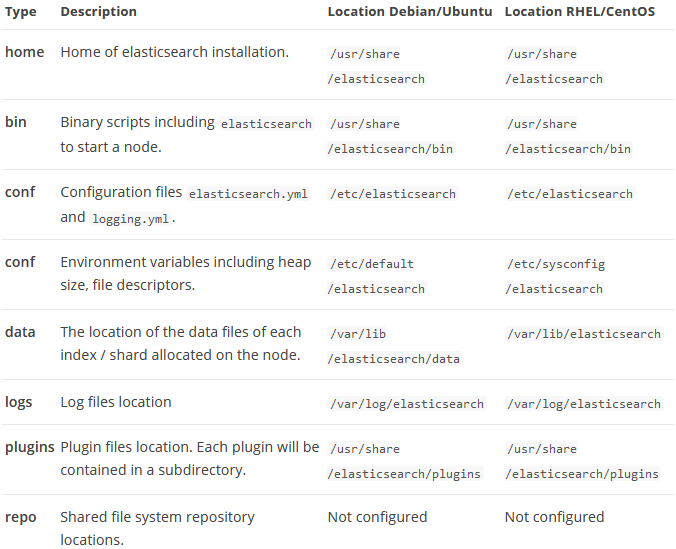
discovery.type: single-node

Increase virtual memory for production :

sysctl -w vm.max\_map\_count=262144

<https://www.elastic.co/guide/en/elasticsearch/reference/current/vm-max-map-count.html>

Debian directory layout for Elasticsearch:



For installation guide follow the digitalocean link below.

Ref.

1. <https://www.digitalocean.com/community/tutorials/how-to-install-and-configure-elasticsearch-on-ubuntu-16-04>
2. <https://www.elastic.co/guide/en/elasticsearch/reference/2.3/setup-dir-layout.html>
3. <https://stackoverflow.com/a/48390311/1445978>
4. <https://www.elastic.co/guide/en/elasticsearch/reference/master/bootstrap-checks.html>
5. <https://www.elastic.co/guide/en/elasticsearch/reference/6.2/zip-targz.html#setup-installation-daemon>

**Using GZIP package**

Download zip package and unzip. Change owership of file to non-root user.

ES Service : <https://www.elastic.co/guide/en/elasticsearch/reference/master/zip-targz.html#setup-installation-daemon>

Start elasticsearch as daemon

$ ./bin/elasticsearch -d -p pid

Stop elasticsearch

$ kill `cat pid`

Create a systemd service and enable it to run elasticsearch on startup before that create a bash script with above mentioned start commad and link that bash script with the systemd service. Follow this link

<https://askubuntu.com/a/719157/367545>

**Monitoring Linux**

1. [Performance Monitor](https://www.tecmint.com/command-line-tools-to-monitor-linux-performance/)
2. [Process Management](https://www.howtogeek.com/107217/how-to-manage-processes-from-the-linux-terminal-10-commands-you-need-to-know/)
3. [Service Management](https://www.techrepublic.com/article/how-to-start-stop-and-restart-services-in-linux/)
4. [Service Management](https://www.linux.com/learn/managing-services-linux-systemd)

**Apt**

To list all installed packages

$ sudo apt list --installed | less

Look a specific package say apache

$ sudo apt list --installed | grep -i apache

Another alternative to list all installed packages

$ sudo dpkg -l

Uninstall a package and remove all related files

$ sudo apt purge <package-name>

Ref. <https://www.rosehosting.com/blog/list-all-installed-packages-with-apt-on-ubuntu/>

**User management**

Add user

$ sudo useradd <username>

$ sudo useradd -g <groupname> <username>

Assign password

$ sudo passwd <username>

Add more secondary groups

$ sudo usermod -a -G <group1>,<group2> <username>

-g means primary group. Can only be one.

-G means secondary groups

**Service**

Create nodejs service

<https://hackernoon.com/making-node-js-service-always-alive-on-ubuntu-server-e20c9c0808e4>

Custom service creation:

1. <https://medium.com/@benmorel/creating-a-linux-service-with-systemd-611b5c8b91d6>
2. <https://dzone.com/articles/run-your-java-application-as-a-service-on-ubuntu>

**FTP Server (VSFTPD) Configuration**

We will use VSFTPD

Install

$ suod apt install vsftpd

Config file exists in /etc/vsftpd.conf

First keep a backup of the original file by

$ sudo cp /etc/vsftpd.conf /etc/vsftpd.conf.orig

Do the following changes:

1. listen=NO
2. listen\_ipv6=YES
3. anonymous\_enable=NO
4. local\_enable=YES
5. **write\_enable=YES**
6. connect\_from\_port\_20=YES
7. chroot\_local\_user=YES
8. chroot\_list\_enable=YES
9. chroot\_list\_file=/etc/vsftpd.chroot\_list
10. **pam\_service\_name=ftp**
11. ssl\_enable=YES
12. **userlist\_enable=YES**
13. **userlist\_deny=NO**

Now Create user say devasish and set /srv/ftp/devasish dir as home

Create home dir named devasish\_home

$ sudo mkdir /srv/ftp/devasish\_home

Create the user

$ sudo useradd -d /srv/ftp/devasish\_home

Set password

$ sudo passwd devasish

Change write permission of the home dir

$ sudo chmod a-w /srv/ftp/devasish\_home

It will prevent accidental delete of the entire ftp dir. It’s sub dir will be writable.

Now create 2 files in /etc follow below instructions

$ sudo vim /etc/vsftpd.user\_list

Add entry just devasish

If another user created it also needs to be added in this file. **One user at one line**

$ sudo vim /etc/vsftpd.chroot\_list

Add entry of the username devasish

Save and exit

Now restart vsftpd service

$ sudo systemctl restart vsftpd

Now the fpt server can be connected by ftp client like **filezilla**

Set passive port ranges in vsftpd.conf file

pasv\_min\_port=40000

pasv\_max\_port=50000

Firewall setting

$ sudo ufw allow 20/tcp

$ sudo ufw allow 21/tcp

$ sudo ufw allow 990/tcp

$ sudo ufw allow 40000:50000/tcp

$ sudo ufw status

Ref.

1. [IMPORTANT]<https://www.thegeekdiary.com/error-530-permission-denied-when-user-logs-in-to-vsftpd-server-via-ftp/>
2. [IMPORTANT]<https://askubuntu.com/a/413694/367545>
3. <https://help.ubuntu.com/lts/serverguide/ftp-server.html.en>
4. <https://www.emiprotechnologies.com/technical_notes/odoo-technical-notes-59/post/install-and-configure-vsftpd-475>
5. [IMPORTANT FOR FIREWALL SETTING] <https://www.digitalocean.com/community/tutorials/how-to-set-up-vsftpd-for-a-user-s-directory-on-ubuntu-16-04>

Mongo DB

Follow the steps mentioned here:

<https://docs.mongodb.com/manual/tutorial/install-mongodb-on-ubuntu/#install-mongodb-community-edition-using-deb-packages>

**Step 1**

$ sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv 9DA31620334BD75D9DCB49F368818C72E52529D4

**Step 2**

[Ubuntu 16]

$ echo "deb [ arch=amd64,arm64 ] https://repo.mongodb.org/apt/ubuntu xenial/mongodb-org/4.0 multiverse" | sudo tee /etc/apt/sources.list.d/mongodb-org-4.0.list

[Ubuntu 18]

echo "deb [ arch=amd64 ] https://repo.mongodb.org/apt/ubuntu bionic/mongodb-org/4.0 multiverse" | sudo tee /etc/apt/sources.list.d/mongodb-org-4.0.list

**Step 3**

sudo apt-get update

**Step 4**

$ sudo apt-get install -y mongodb-org=4.0.4 mongodb-org-server=4.0.4 mongodb-org-shell=4.0.4 mongodb-org-mongos=4.0.4 mongodb-org-tools=4.0.4

Misc

List all systemd services

$ systemctl list-units