Topics in Computing Lab Assignment 3 : Openstack

Objective:

OpenStack is a cloud operating system that controls large pools of compute, storage, and networking resources throughout a datacenter, all managed and provisioned through APIs with common authentication mechanisms.

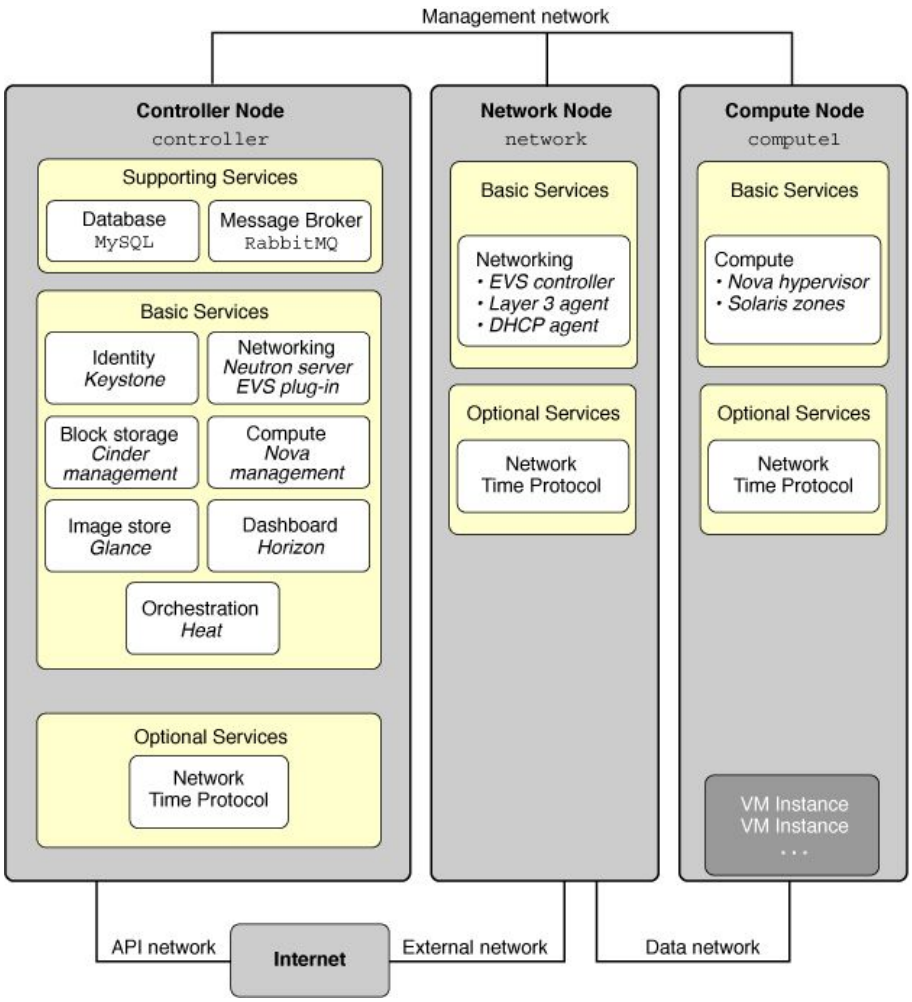
Controller node:
This is the node in which all openstack services run. The Controller node supplies API, scheduling, and other shared services for the cloud.
Services installed:

- mysql
- rabbitmq
- keystone
- cinder
- glance
- neutron
- nova

Network node:
The Network node provides virtual networking and networking services to Nova instances using the Neutron Layer 3 and DHCP network services.

Compute node:
The Compute node is where the VM instances (Nova compute instances) are installed.
Services installed:

- nova-compute
- ntp



Implementation:

1. Installation of Openstack:

Used Devstack to deploy a complete Openstack environment by following the guide provided on:
https://computingforgeeks.com/openstack-deployment-on-ubuntu-with-devstack/

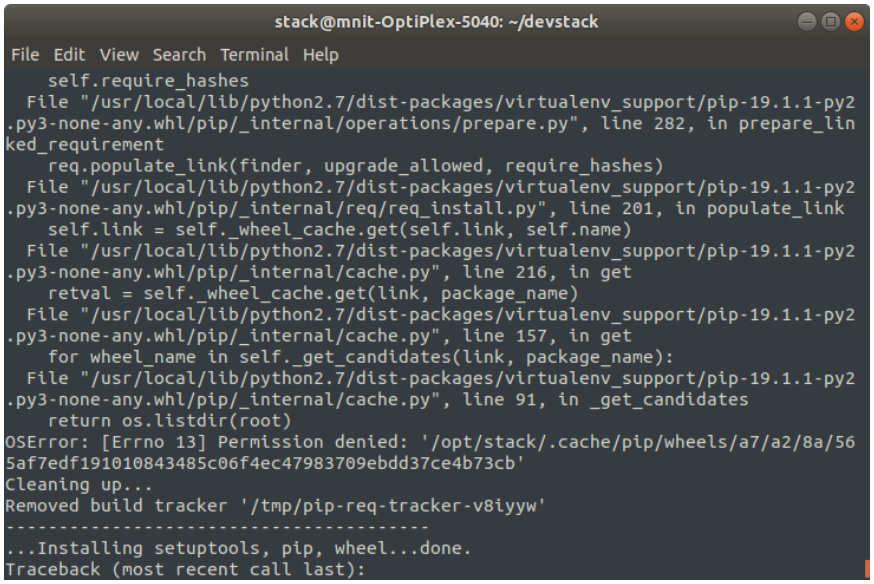
3 systems were required for the assignment - system for controller node, compute node and network node. However the system requirements for the installation led us to try to install in 6 systems but only succeed in installing on 2 systems.

Steps followed:

1. Update the Ubuntu system
2. Add user Stack
3. Download Devstack and configure local.conf
4. Start Openstack Deployment with devstack by using the command - ./stack.sh
   DevStack installed:
   - Keystone – Identity Service
   - Glance – Image Service
   - Nova – Compute Service
   - Placement – Placement API
   - Cinder – Block Storage Service
   - Neutron – Network Service
   - Horizon – Openstack Dashboard

Errors occuring during the installation (using ./stack.sh)

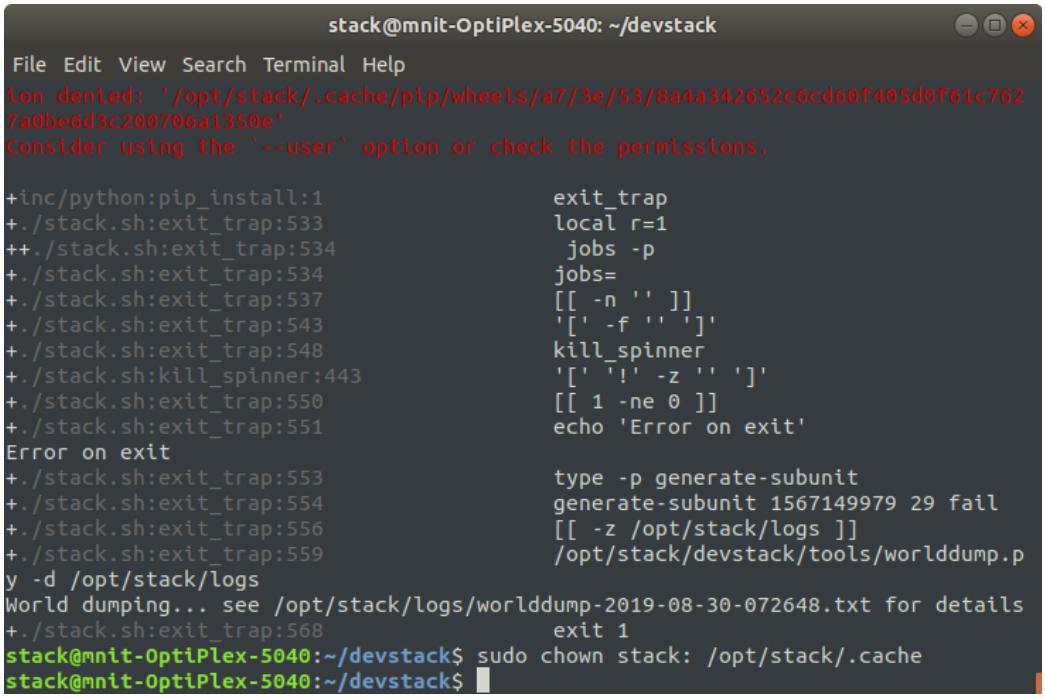
1. **Permission denied to access and use pip**



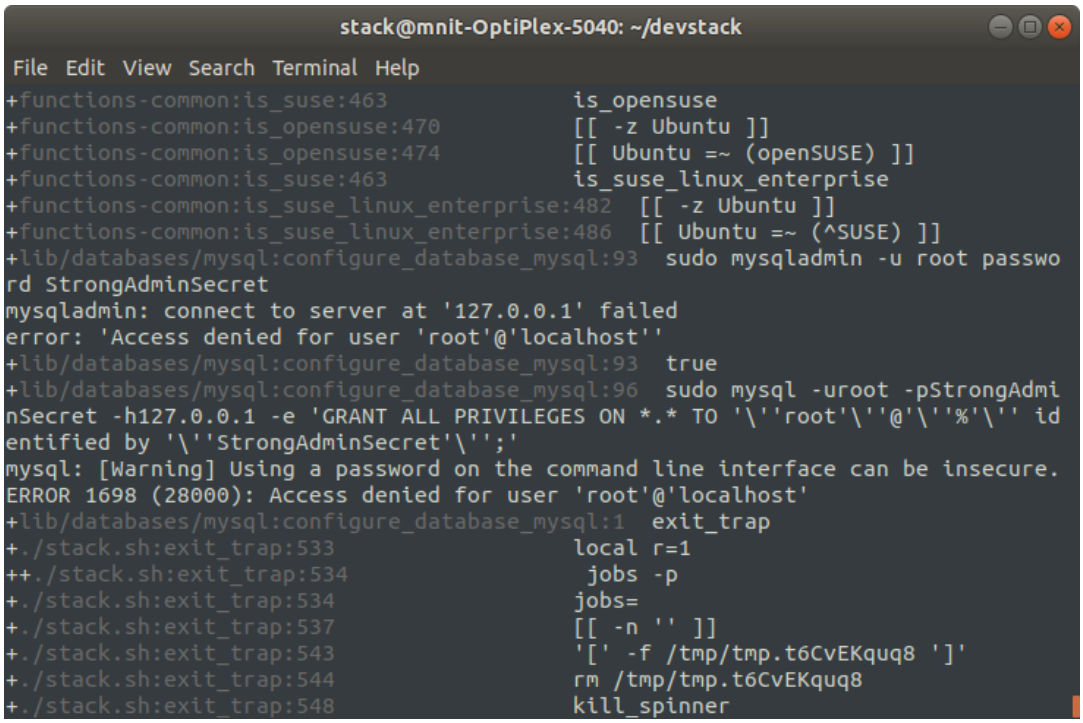
Solution:

As root run:

Chown stack: /opt/stack to give permission of the whole directory where pip is temporarily stored to the user stack



2. Access denied to Mysql server



Solution:
Grant privileges manually to **Root**

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All solutions I found were much more complex than necessary and none worked for me. Here is the solution that solved my problem. No need to restart mysqld or start it with special privileges.

```
sudo mysql

ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'root';
```

With a single query we are changing the **auth_plugin** to **mysql_native_password** and setting the root password to **root** *(feel free to change it in the query)*

Now you should be able to login with root. More information can be found in mysql documentation

*(exit mysql console with **Ctrl + D** or by typing **exit**)*

share improve this answer

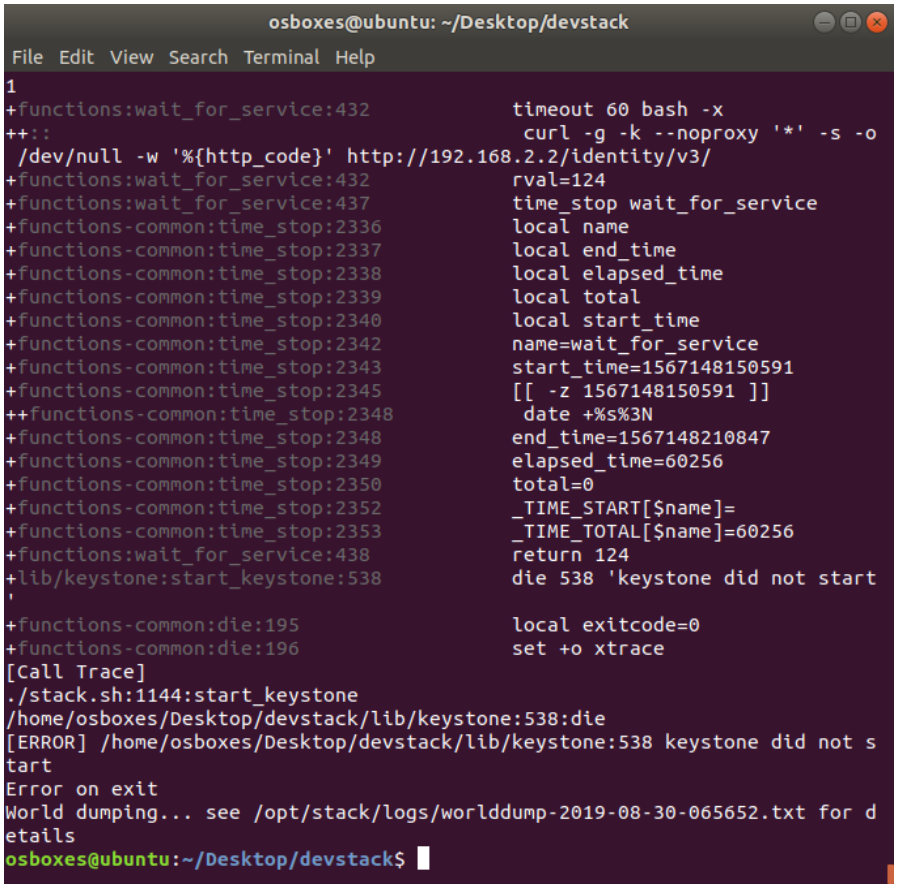
edited Feb 28 '18 at 18:06

answered Oct 24 '17 at 10:50

user1878906

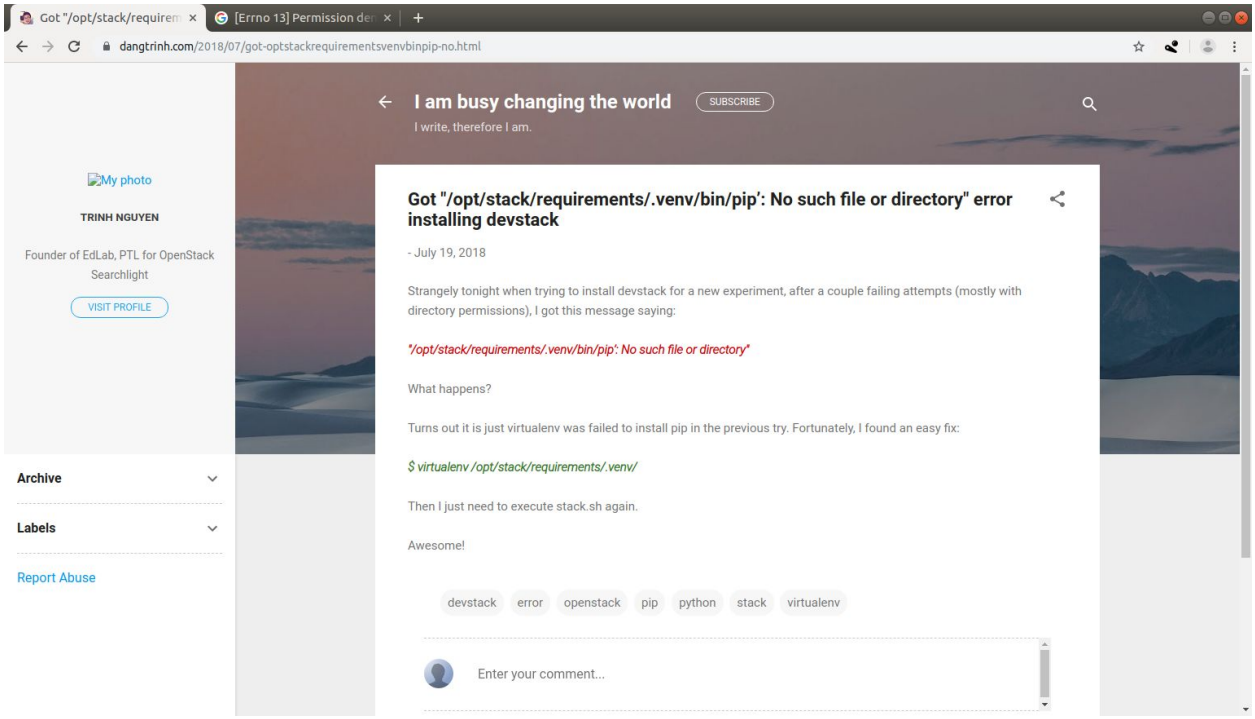
4,238 ● 1 ● 8 ● 18

3. Keystone service not starting / Cinder service not starting / Neutron service not starting /devstack service not starting



Solution:
Run commands:
./unstack.sh
./clean.sh
./stack.sh

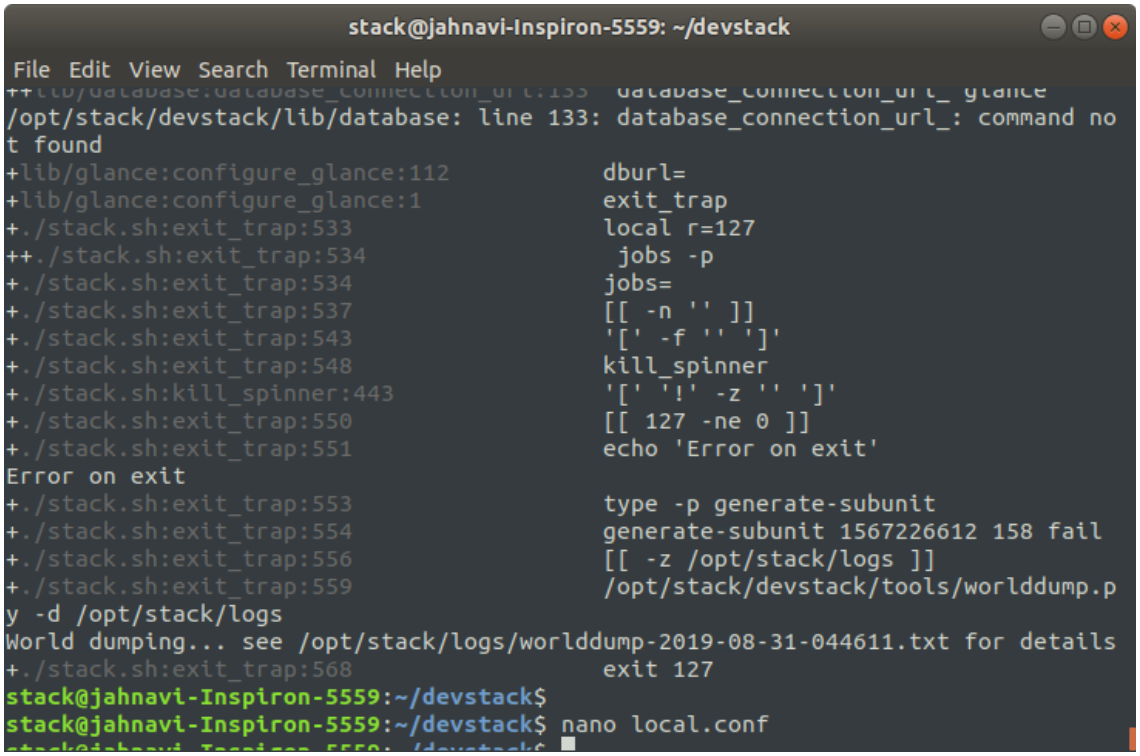
4. /opt/stack/requirements/.venv/bin/pip does not exist
Solution:



Run:

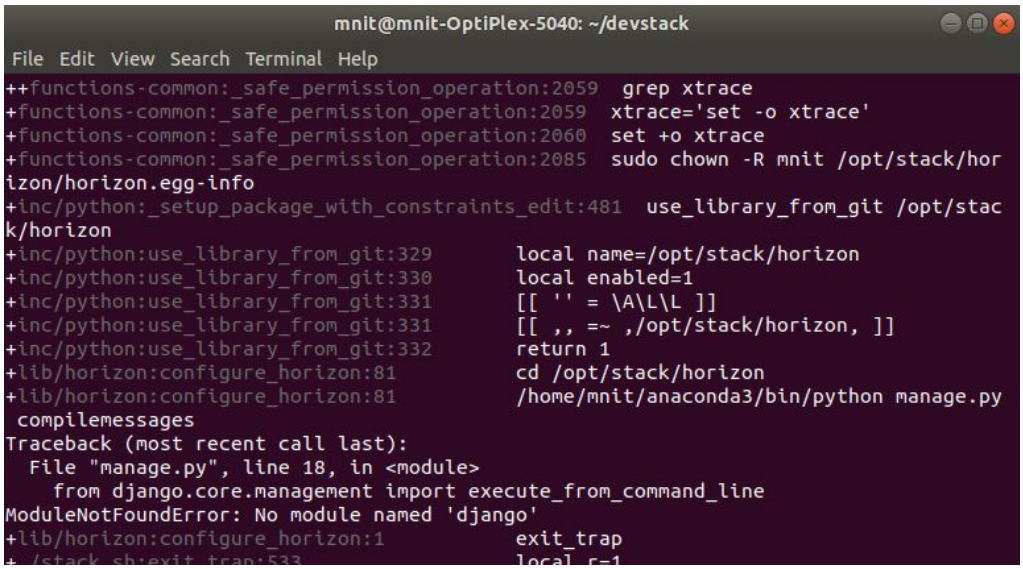
- **Virtualenv /opt/stack/requirements/.venv**
- **Chown stack: /opt/stack**

5. Database connection error



Solution:
Not found

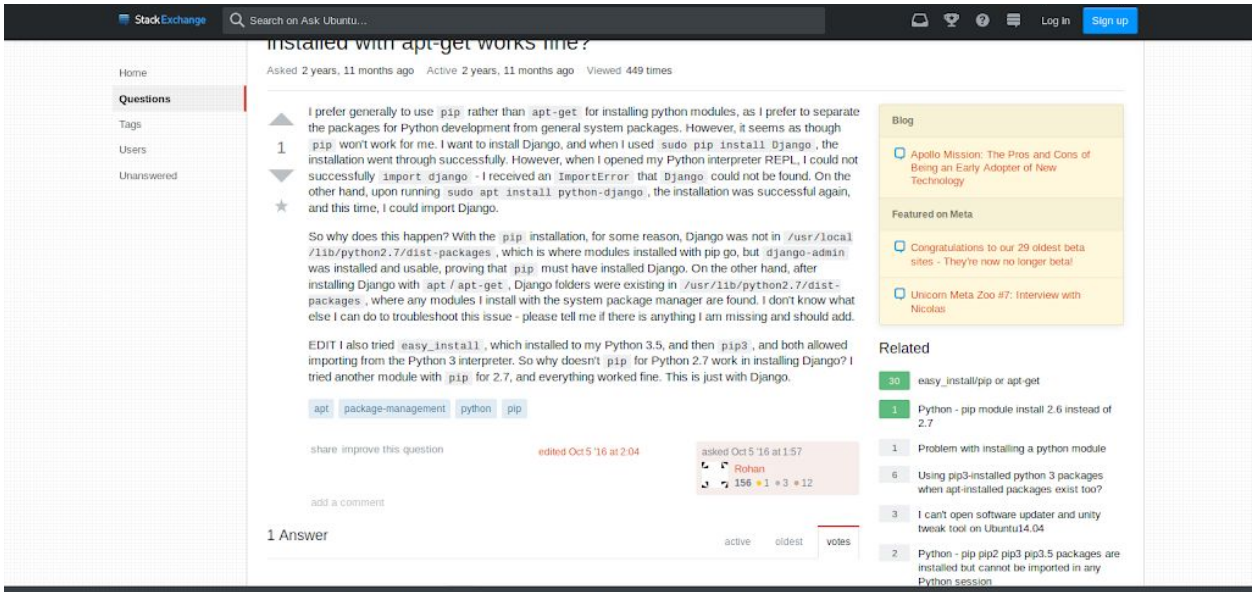
6. Django module not found



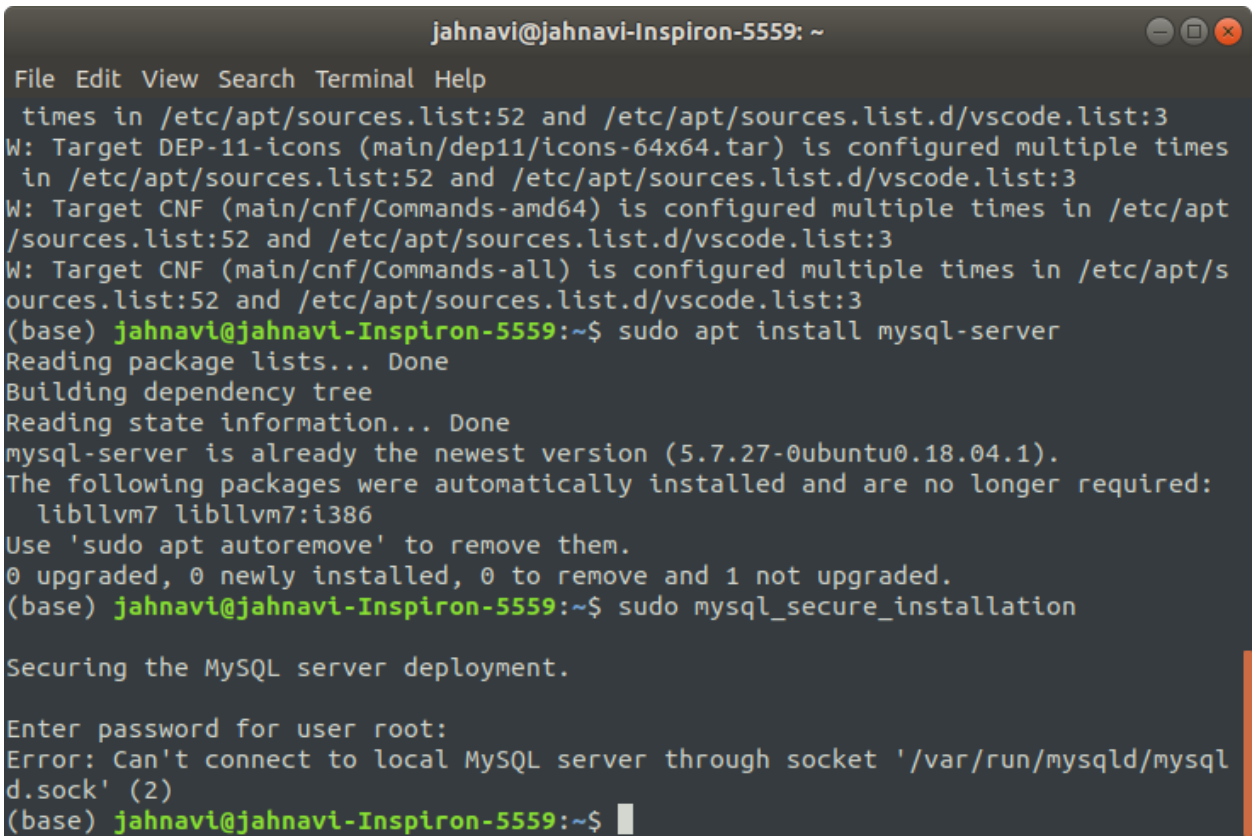
Solution:

Not found

Tried re-installing pip, re-installing django using pip and re-installing django using apt-get



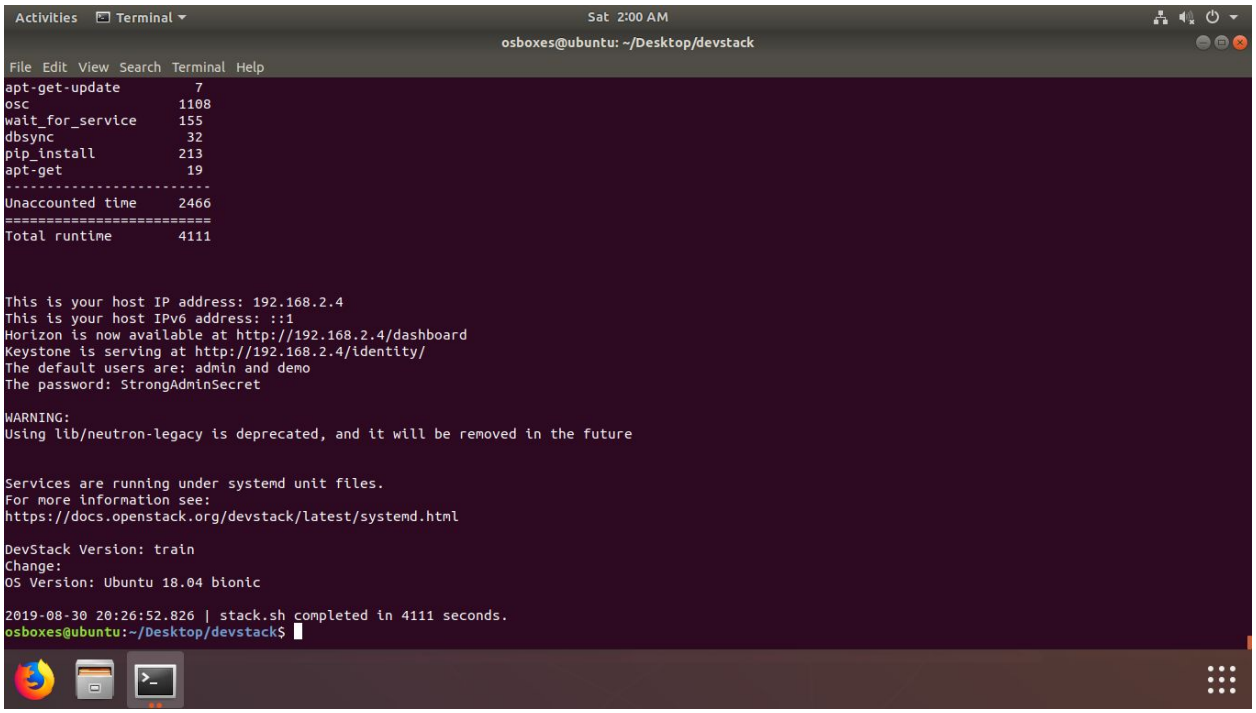
7. Can’t connect to Mysql server using socket /var/run/mysqld/mysqld.sock



Solution:
Logical solution is to re-install mysql. But despite multiple attempts, this failed.

Installation Completed

Managed to install in 2 systems:



2. Setting up Controller node

The guide followed can be found at :
https://docs.openstack.org/newton/install-guide-rdo/nova-controller-install.html

Steps followed:

1.Source the admin credentials to gain access to admin-only CLI commands:

. admin-openrc

2. Create the Compute service credentials:

- Create the nova user:

  $ openstack user create --domain default --password-prompt nova

- Add the admin role to the nova user:

  $ openstack role add --project service --user nova admin

- Create the nova service entity:

$ openstack service create --name nova \ --description "OpenStack Compute" compute

3. Create the Compute API service endpoints:

$ openstack endpoint create --region RegionOne \compute public http://controller:8774/v2.1

4. Edit the /etc/nova/nova.conf file
5. Populate the Compute databases

3. Setting up Compute node

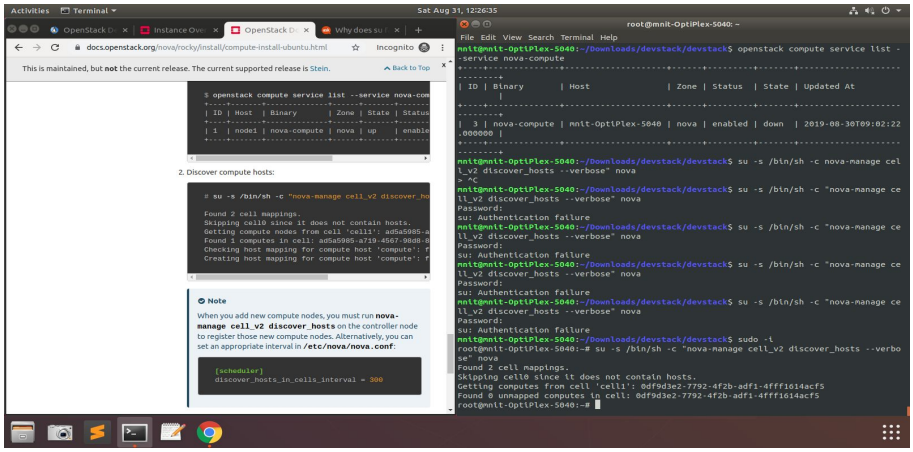
The guide followed can be found at :
https://docs.openstack.org/newton/install-guide-ubuntu/nova-compute-install.html

Steps followed:

1. Edit the /etc/nova/nova.conf file
    - In the [DEFAULT] section, configure RabbitMQ message queue access
    - In the [DEFAULT] and [keystone_authtoken] sections, configure Identity service access
    - In the [DEFAULT] section, configure the my_ip option
    - In the [DEFAULT] section, enable support for the Networking service
    - In the [vnc] section, enable and configure remote console access
    - In the [glance] section, configure the location of the Image service API
    - In the [oslo_concurrency] section, configure the lock path
    - Due to a packaging bug, remove the log-dir option from the [DEFAULT] section
2. Determine whether your compute node supports hardware acceleration for virtual machines
3. Restart the Compute service

Errors during setup of Controller / Compute node

1. Nova su error in setting up compute node (Authentication failure)



Solution:

su asks for the root password. Since Ubuntu doesn't set a root password by default, you can't use it to become root.

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Instead, to become root, use sudo -i with your personal password.

share improve this answer

edited Jun 21 '16 at 12:01
terdon ♦
73.4k • 14 • 150 • 234

answered Apr 10 '11 at 7:51
david
2,026 • 13 • 10

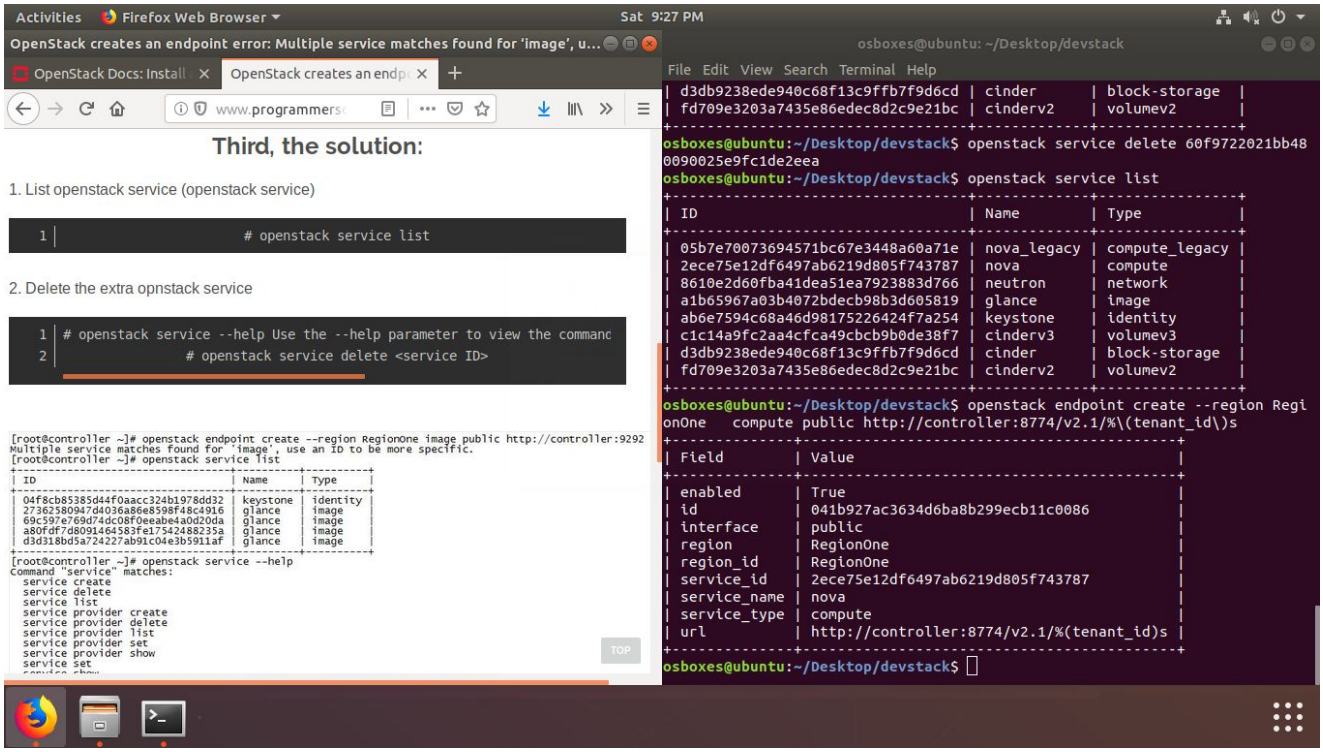
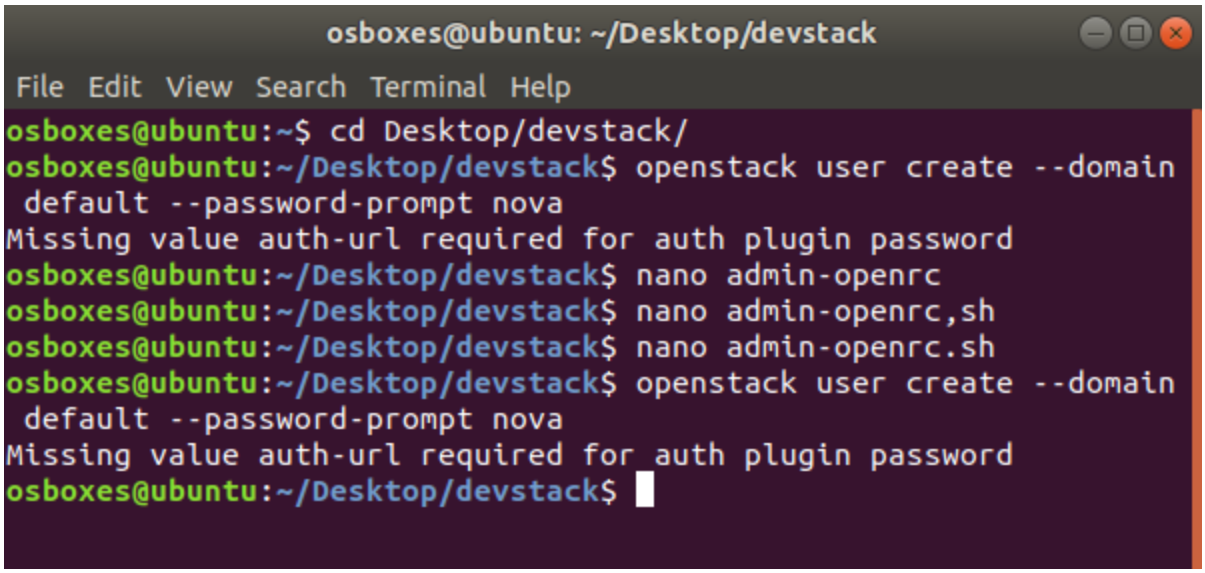
2 I admit I tend to use sudo bash but your incantation makes me want to use su sudo or maybe su su sudo . – Jerry Asher Apr 10 '11 at 9:42

5 sudo su is not the recommended way - use sudo -i instead. – guntbert Mar 2 '14 at 21:30

Try youtube.com/watch?v=axDObUgsuZQ instead, it will help you to solve the authentication failure error on su root – vijay Jun 16 at 5:21

add a comment

2. Unable to create Endpoint : Multiple service matches found (Compute node)



3. Creation of domain (Controller node)