

**Pandit Deendayal Energy Univrsity**  
**School of Technology**  
**Cloud Computing – Lab (20CP322P)**  
**B.Tech-Computer Science & Engineering (Sem-VI)**

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**Configuration and deployment of OpenStack over cloud platform.**

**Aim:**

To Simulate the OpenStack by deploying it in the Cloud Environment

**OpenStack: Open Source Cloud Computing Infrastructure**

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. A dashboard is also available, giving administrators control while empowering their users to provision resources through a web interface. Beyond standard infrastructure-as-a-service functionality, additional components provide orchestration, fault management and service management amongst other services to ensure high availability of user applications.

**Experiment:**

First of all go to <https://portal.azure.com>.

Then, go to a virtual machine and make a new VM which has at least 4 vCPU and 16 vRAM and has CentOS as operating system.

The screenshot shows the Microsoft Azure portal interface. At the top, there's a search bar and a user profile for 'parthnj2001@gmail.com'. Below the header, the 'New-centos' virtual machine is selected. The left sidebar contains navigation options like 'Overview', 'Activity log', 'Access control (IAM)', 'Tags', 'Diagnose and solve problems', 'Settings', 'Networking', 'Connect', 'Disks', 'Size', 'Security', 'Advisor recommendations', 'Extensions + applications', 'Continuous delivery', and 'Availability + scaling'. The main area displays the 'Essentials' tab for the VM, showing details such as Resource group (PARTHNJ2001), Status (Running), Location (Central India), Subscription (Azure for Students), and Subscription ID. It also lists the Operating system (Linux (centos 7.9.2009)), Size (Standard B4ms), Public IP address (20.207.195.105), and Virtual network/subnet (Parthnj2001-vnet/default). Below this, the 'Properties' tab is active, showing a table with VM details: Computer name (New-centos), Health state (-), Operating system (Linux), Publisher (OpenLogic), Offer (CentOS), Plan (7\_9-gen2), and VM generation (V2). To the right, the 'Networking' section shows the Public IP address (New-centos-ip), Private IP address (10.0.0.4), and Virtual network/subnet (Parthnj2001-vnet/default).

When your virtual machine is up and running then ssh to it

```
superplay21@new-centos:~
Microsoft Windows [Version 10.0.19042.1586]
(c) Microsoft Corporation. All rights reserved.

C:\Users\jc_pa>ssh superplay21@20.207.195.105
superplay21@20.207.195.105's password:
Last login: Mon Mar 21 02:31:37 2022 from 136.232.1.166
net_mlx5: cannot load glue library: libibverbs.so.1: cannot open shared object file: No such file or directory
net_mlx5: cannot initialize PMD due to missing run-time dependency on rdma-core libraries (libibverbs, libmlx5)
PMD: net_mlx4: cannot load glue library: libibverbs.so.1: cannot open shared object file: No such file or directory
PMD: net_mlx4: cannot initialize PMD due to missing run-time dependency on rdma-core libraries (libibverbs, libmlx4)
net_mlx5: cannot load glue library: libibverbs.so.1: cannot open shared object file: No such file or directory
net_mlx5: cannot initialize PMD due to missing run-time dependency on rdma-core libraries (libibverbs, libmlx5)
PMD: net_mlx4: cannot load glue library: libibverbs.so.1: cannot open shared object file: No such file or directory
PMD: net_mlx4: cannot initialize PMD due to missing run-time dependency on rdma-core libraries (libibverbs, libmlx4)
[superplay21@new-centos ~]$ ls
[superplay21@new-centos ~]$ pwd
/home/superplay21
[superplay21@new-centos ~]$
```

Now run commands which are given in the lab manual. All commands are as below. Run them all in the VM.

- `sudo systemctl disable firewalld`
- `sudo systemctl stop firewalld`
- `sudo systemctl disable NetworkManager`
- `sudo systemctl stop NetworkManager`
- `sudo systemctl enable network`
- `sudo systemctl start network`
- `sudo yum install -y https://rdoproject.org/repos/rdo-release.rpm`
- `sudo yum update -y`
- `sudo yum install -y openstack-packstack`
- `sudo packstack --allinone`

```

superplay21@new-centos:~$ sudo packstack --allinone
[sudo] password for superplay21:
Welcome to the Packstack setup utility

The installation log file is available at: /var/tmp/packstack/20220321-031330-DHw50a/openstack-setup.log

Installing:
Clean Up [ DONE ]
Discovering ip protocol version [ DONE ]
Setting up ssh keys [ DONE ]
Preparing servers [ DONE ]
Pre installing Puppet and discovering hosts' details [ DONE ]
Preparing pre-install entries [ DONE ]
Setting up CACERT [ DONE ]
Preparing AMQP entries [ DONE ]
Preparing MariaDB entries [ DONE ]
Fixing Keystone LDAP config parameters to be undef if empty [ DONE ]
Preparing Keystone entries [ DONE ]
Preparing Glance entries [ DONE ]
Checking if the Cinder server has a cinder-volumes vg [ DONE ]
Preparing Cinder entries [ DONE ]
Preparing Nova API entries [ DONE ]
Creating ssh keys for Nova migration [ DONE ]
Gathering ssh host keys for Nova migration [ DONE ]
Preparing Nova Compute entries [ DONE ]
Preparing Nova Scheduler entries [ DONE ]
Preparing Nova VNC Proxy entries [ DONE ]
Preparing OpenStack Network-related Nova entries [ DONE ]
Preparing Nova Common entries [ DONE ]
Preparing Neutron API entries [ DONE ]
Preparing Neutron L3 entries [ DONE ]
Preparing Neutron L2 Agent entries [ DONE ]

```

When the above command successfully run then switch to root user to view login info . for the run the following commands.

`Su root cd/root`

`Cat keystoneadmin`

After this you can see all info related to login to openstack

```
superplay21@New-centos:~
Microsoft Windows [Version 10.0.18362.1440]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\jc_pa>ssh superplay21@20.219.192.20

C:\Users\jc_pa>ssh superplay21@20.219.192.200
superplay21@20.219.192.200's password:
Last login: Wed Mar 16 05:44:50 2022 from 49.34.253.116
net_mlx5: cannot load glue library: libibverbs.so.1: cannot open shared object file: No such file or directory
net_mlx5: cannot initialize PMD due to missing run-time dependency on rdma-core libraries (libibverbs, libmlx5)
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PMD: net_mlx4: cannot initialize PMD due to missing run-time dependency on rdma-core libraries (libibverbs, libmlx4)
[superplay21@New-centos ~]$ cd /
[superplay21@New-centos ~]$ ls\
> ^C
[superplay21@New-centos ~]$ ls
bin boot dev etc home lib lib64 media mnt opt proc root run sbin srv sys tmp usr var
[superplay21@New-centos ~]$ sudo passwd
[sudo] password for superplay21:
Sorry, try again.
[sudo] password for superplay21:
Changing password for user root.
New password:
BAD PASSWORD: The password contains less than 1 uppercase letters
Retype new password:
passwd: all authentication tokens updated successfully.
[superplay21@New-centos ~]$ sudo cd root
[superplay21@New-centos ~]$ cd root\
>
-bash: cd: root: Permission denied
[superplay21@New-centos ~]$ sudo cd root
[superplay21@New-centos ~]$ ls
bin boot dev etc home lib lib64 media mnt opt proc root run sbin srv sys tmp usr var
[superplay21@New-centos ~]$ su
Password:
net_mlx5: cannot load glue library: libibverbs.so.1: cannot open shared object file: No such file or directory
net_mlx5: cannot initialize PMD due to missing run-time dependency on rdma-core libraries (libibverbs, libmlx5)
PMD: net_mlx4: cannot load glue library: libibverbs.so.1: cannot open shared object file: No such file or directory
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PMD: net_mlx4: cannot load glue library: libibverbs.so.1: cannot open shared object file: No such file or directory
PMD: net_mlx4: cannot initialize PMD due to missing run-time dependency on rdma-core libraries (libibverbs, libmlx4)
[superplay21@New-centos ~]$ cd root
[superplay21@New-centos ~]$ ls
anaconda-ks.cfg packstack-answers-20220315-055515.txt packstack-answers-20220316-045020.txt
```

Now go to <https://localhost/dashboard> from VM to login to openstack