

Installation of OpenStack-PackStack in CentOS

- Note down the host IP address of the machine. Using the command `'ip addr'` note 2nd IP address which is the Host IP of the machine. If the IP address is not visible, then it shows that the Internet is not connected.

```
2: eno16777984: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP qlen 1000
    link/ether 00:50:56:96:0f:be brd ff:ff:ff:ff:ff:ff
    inet 10.51.128.33/25 brd 10.51.128.127 scope global dynamic eno16777984
        valid_lft 18554sec preferred_lft 18554sec
    inet6 fe80::250:56ff:fe96:fbe/64 scope link
        valid_lft forever preferred_lft forever
```

- Note down the release version and architecture of the CentOS version using the commands `'cat /etc/redhat-release'` and `'uname -a'`.

```
[root@cloud ~]# cat /etc/redhat-release
CentOS Linux release 7.2.1511 (Core)
[root@cloud ~]# uname -a
Linux cloud.centos.lan 3.10.0-327.el7.x86_64 #1 SMP Thu Nov 19 22:10:57 UTC 2015 x86_64 x86_64 x86_64 GNU/Linux
```

- The name after the `uname -a` gives the host name of the machine. With these hosts edit the hosts file. Use the command `'vi /etc/hosts'` and add the IP and host name.

```
127.0.0.1    CentOS7.india.tcs.com localhost.localdomain localhost4 localhost4.localdomain4 CentOS7
::1         localhost localhost.localdomain localhost6 localhost6.localdomain6
10.51.128.33 cloud.centos.lan
```

- Now run `'yum -y update'` command to update the packages to the latest versions. If any dependencies resolution issues showed, skip it.
- OpenStack Networking service won't run until the NetworkManager of the CentOS is disabled. Use the following commands to disable the NetworkManager temporarily.

```
'systemctl status NetworkManager'
'systemctl stop NetworkManager'
'systemctl disable NetworkManager'
'systemctl status firewalld'
```

Caution: Never use these commands

```
'systemctl stop postfix firewalld NetworkManager'
'systemctl disable postfix firewalld NetworkManager'
'systemctl mask NetworkManager'
'yum remove postfix NetworkManager NetworkManager-libnm'
```

These command not only remove the NetworkManager but also the GNOME GUI and only terminal will be available after that. We gave this command and our GUI gone. We again reinstalled the CentOS and started from the start.

- Linux has its own security policies called Security-Enhanced Linux(SELinux). We need the disable this to install OpenStack software. This is like disabling Windows Defender in windows for installation of few software.

Use the following commands

```
`setenforce 0`
```

```
`vi /etc/sysconfig/selinux`
```

and edit SELINUX=disabled from enforcing.

```
# This file controls the state of SELinux on the system.
# SELINUX= can take one of these three values:
#   enforcing - SELinux security policy is enforced.
#   permissive - SELinux prints warnings instead of enforcing.
#   disabled - No SELinux policy is loaded.
SELINUX=disabled
# SELINUXTYPE= can take one of three two values:
#   targeted - Targeted processes are protected,
#   minimum - Modification of targeted policy. Only selected processes are protected.
#   mls - Multi Level Security protection.
SELINUXTYPE=targeted
```

- All the system settings are configured. Next to download the OpenStack the packages from the following link.

<https://repos.fedorapeople.org/repos/openstack/openstack-queens/rdo-release-queens-0.noarch.rpm>

Use the command

```
`yum -y install https://repos.fedorapeople.org/repos/openstack/openstack-queens/rdo-release-queens-0.noarch.rpm`
```

- Next install OpenStack-PackStack by using this command

```
`yum -y install openstack-packstack`
```

OpenStack-PackStack is collection of all the services. Packstack is a utility that uses Puppet modules to deploy various parts of OpenStack on multiple pre-installed servers over SSH automatically. For enterprise deployment, it is advisable to deploy each required services separately.

- After the successful installation of packstack. A new answer file has to be created. Use the following command to generate an answer file. An answer file is a script file which holds the information about the services which are going to be installed, the Configuration IP's, the usernames and passwords of various services.

Use the following the command to generate the answer file.

```
`packstack --gen-answer-file=openstacktest-answere-file.txt`
```

- Edit the following contents in that answer-file

```
CONFIG_SSH_KEY = /root/.ssh/id_rsa.pub
```

```
CONFIG_DEFAULT_PASSWORD=xxxxxxx
```

CONFIG_MARIADB_INSTALL=y,CONFIG_GLANCE_INSTALL=y like this give the following

```
CINDER=n, MANILA=n, NOVA=y, NEUTRON=y, HORIZON=y, SWIFT=y,
CEILOMETER=n, AODH=n, PANKO=y, SAHARA=n, TROVE=n, IRONIC=n,
CLIENT=y, HEAT=n, NAGIOS=n.
```

```
CONFIG_CONTROLLER_NODE=(host ip)
```

```
CONFIG_MARIADB_USER=root
```

```
CONFIG_MARIADB_PW=xxxxxx
CONFIG_KEYSTONE_DB_PW=xxxxxx
CONFIG_KEYSTONE_ADMIN_EMAIL=xxxx@yyyy
CONFIG_KEYSTONE_ADMIN_USERNAME=admin
CONFIG_KEYSTONE_ADMIN_PW=xxxxxx
CONFIG_KEYSTONE_DEMO_PW=xxxxxx
CONFIG_PROVISION_DEMO=n
Search any string using /string and `n` for next.
```

```
[root@CEntOS4 cent]# vi openstack-answer.txt
[general]

# Path to a public key to install on servers. If a usable key has not
# been installed on the remote servers, the user is prompted for a
# password and this key is installed so the password will not be
# required again.
CONFIG_SSH_KEY=/root/.ssh/id_rsa.pub

# Default password to be used everywhere (overridden by passwords set
# for individual services or users).
CONFIG_DEFAULT_PASSWORD=

# The amount of service workers/threads to use for each service.
# Useful to tweak when you have memory constraints. Defaults to the
# amount of cores on the system.
CONFIG_SERVICE_WORKERS=${::processorcount}

# Specify 'y' to install MariaDB. ['y', 'n']
CONFIG_MARIADB_INSTALL=y

# Specify 'y' to install OpenStack Image Service (glance). ['y', 'n']
CONFIG_GLANCE_INSTALL=y
```

Save the file and exit (:wq!)

- Execute the answer-file by using the following command
`packstack --answer-file=openstack-answer-file.txt`
All the services will be installed.
- Instead of installation, it may throw some proxy errors. The following steps are to resolve those errors.
- HTTP Error 407 – Proxy Authentication error
The TCS proxy credentials have to be given in proper files.

```
[root@CEntOS4 cent]# packstack --answer-file=openstack-answer.txt
Welcome to the Packstack setup utility

The installation log file is available at: /var/tmp/packstack/20180706-150345-G6DUHV/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 [ ERROR ]

ERROR : Failed to run remote script, stdout: Loaded plugins: fastestmirror, langpacks
Could not retrieve mirrorlist http://mirrorlist.centos.org/?release=7&arch=x86_64&repo=os&infra=stock error was
14: HTTP Error 407 - Proxy Authentication Required
```

- First, In /etc/yum.conf the proxy URL, proxy username and proxy password should be mentioned as showed here.

```
[main]
cachedir=/var/cache/yum/$basearch/$releasever
keepcache=0
debuglevel=2
logfile=/var/log/yum.log
exactarch=1
obsoletes=1
gpgcheck=1
plugins=1
installonly_limit=5
bugtracker_url=http://bugs.centos.org/set_project.php?project_id=23&ref=http://bugs.centos.d
distroverpkg=centos-release
# The proxy server - proxy server:port number
proxy=http://proxy.tcs.com:8080
# The account details for yum connections
proxy_username=India\11111111
proxy_password=1111111111111111

# This is the default, if you make this bigger yum won't see if the metadata
# is newer on the remote and so you'll "gain" the bandwidth of not having to
```

- Next set the proxy environment in /etc/environment

```
export http_proxy=http://11111111:11111111@proxy.tcs.com:8080
export https_proxy=http://11111111:11111111@proxy.tcs.com:8080
```

- Next set the proxy in /etc/profile

```
if [ "${-#*i}" != "$-" ]; then
    . "$i"
else
    . "$i" >/dev/null
fi
fi
done
unset i
unset -f pathmunge
export http_proxy=http://11111111:11111111@proxy.tcs.com:8080
export https_proxy=http://11111111:11111111@proxy.tcs.com:8080
```

- After all these steps check whether the proxy is set or not. Use the command ``echo $http_proxy``. If it results as these `http://(username):(password)@proxy.tcs.com:8080`. Then the proxy is set. If it didn't result anything, then enter commands to manually set the proxy.
``export http_proxy=http://(username):(password)@proxy.tcs.com:8080``
``export https_proxy=http://(username):(password)@proxy.tcs.com:8080``
 Now the proxy will be set.
- Again give the command ``packstack --answer-file=openstack-answere-file.txt``

```
[root@CEntOS4 /]# wget http://mirrorlist.centos.org/?release=7&arch=x86_64&repo=os&infra=stock
[1] 27602
[2] 27603
[3] 27604
[2]- Done arch=x86_64
[3]+ Done repo=os
[root@CEntOS4 /]# --2018-07-06 15:46:32-- http://mirrorlist.centos.org/?release=7
Resolving proxy.tcs.com (proxy.tcs.com)... 172.20.181.145
Connecting to proxy.tcs.com (proxy.tcs.com)|172.20.181.145|:8080... connected.
Proxy request sent, awaiting response... 200 OK
Length: 12 [text/html]
Saving to: 'index.html?release=7'

100%[=====]
2018-07-06 15:46:38 (1.36 MB/s) - 'index.html?release=7' saved [12/12]
```

If it throws again the same error then `wget` the link and again give the same command.

PS: `wget` helps a lot whenever you get error 403 Forbidden. Copy that link and paste in browser. If the link is not restricted by TCS network, then in terminal give `wget (link)` and run the same previous command.

- The installation of the packstack will take up to 60-120 minutes with this output. The installation time depends upon the specification of the machine.

```
Preparing Neutron L2 Agent entries [ DONE ]
Preparing Neutron DHCP Agent entries [ DONE ]
Preparing Neutron Metering Agent entries [ DONE ]
Checking if NetworkManager is enabled and running [ DONE ]
Preparing OpenStack Client entries [ DONE ]
Preparing Horizon entries [ DONE ]
Preparing Swift builder entries [ DONE ]
Preparing Swift proxy entries [ DONE ]
Preparing Swift storage entries [ DONE ]
Preparing Gnocchi entries [ DONE ]
Preparing Redis entries [ DONE ]
Preparing Ceilometer entries [ DONE ]
Preparing Aodh entries [ DONE ]
Preparing Puppet manifests [ DONE ]
Copying Puppet modules and manifests [ DONE ]
Applying 10.51.128.28 controller.pp [ | ]
Testing if puppet apply is finished: 10.51.128.28 controller.pp [ | ]
```