```
#check your CentOS release
cat /etc/redhat-release

#populate your /etc/environment file with below locale settings
vi /etc/environment
LANG=en_US.utf-8
LC_ALL=en_US.utf-8

#if you are not familiar with vi editor; you can press "i" to start editing a file and press "esc" and
then ":wq" to save file and quit vi editor.

#check the status of firewalld service. Stop and disable it if enabled
systemctl status firewalld
systemctl stop firewalld
systemctl disable firewalld

#check the status of NetworkManager service. Stop and disable it if enabled
systemctl status NetworkManager
systemctl stop NetworkManager
systemctl disable NetworkManager

#enable and start network service
systemctl enable network
systemctl start network

#replace "enp0s3" with your interface name and check it's current settings
cat /etc/sysconfig/network-scripts/ifcfg-enp0s3

#disable selinux from it's config file /etc/selinux/config
vi /etc/selinux/config
SELINUX=disabled

#reboot your system
reboot

#after the reboot check the status of selinux, it should be disabled
getenforce

#On CentOS install the latest release of openstack package
sudo yum install -y centos-release-openstack-stein

Sudo yum install yum-utils

sudo yum-config-manager --enable openstack-stein


#this updates your current packages
sudo yum update -y

#install packstack installer
sudo yum install -y openstack-packstack

#to check the IP addresses on your machine
ip address show
```

#run the packstack installer with below parameters
packstack --allinone --provision-demo=n --os-neutron-ovs-bridge-mappings=extnet:br-ex --os-neutron-ml2-mechanism-drivers=openvswitch --os-neutron-l2-agent=openvswitch --os-neutron-ovs-bridge-interfaces=br-ex:enp0s3 --os-neutron-ml2-type-drivers=vxlan,flat --os-neutron-ml2-tenant-network-types=vxlan

#make sure your ethernet interface settings look like this, you should remove the IP address from the interface
vi /etc/sysconfig/network-scripts/ifcfg-enp0s3
TYPE=OVSPort
NAME=enp0s3
DEVICE=enp0s3
DEVICETYPE=ovs
OVS_BRIDGE=br-ex
ONBOOT=yes

#make sure your external bridge settings look like below
vi /etc/sysconfig/network-scripts/ifcfg-br-ex
DEVICE=br-ex
DEVICETYPE=ovs
TYPE=OVSBridge
BOOTPROTO=static
IPADDR=<your_IP>
NETMASK=<your_mask>
GATEWAY=<your_gateway_IP>
IPV4_FAILURE_FATAL=no
IPV6INIT=no
DNS1=<DNS_Server_IP>
ONBOOT=yes

#restart the network service
service network restart

#this command provides you the openstack admin privileges
source keystonerc_admin

#run this command to create your provider network for your instances so they can communicate #with the outside world
neutron net-create external_network --provider:network_type flat --provider:physical_network extnet --router:external

#this command creates the subnet attached to your provider network. You should be doing the #configuration according to the LAN that your linux machine is connected to
neutron subnet-create --name public_subnet --enable_dhcp=False --allocation-pool start=<IP_pool_first_address>,end=<IP_pool_last_address> --gateway=<linux_gateway_IP> external_network <your_network_in_CIDR>

#example:
neutron subnet-create --name public_subnet --enable_dhcp=False --allocation-pool start=192.168.0.100,end=192.168.0.120 --gateway=192.168.0.1 external_network 192.168.0.0/24