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- [OpenShift](#) □

OpenShift

SSH Issue

```
[root@bastion ansible]# openshift-install create manifests --dir /
root/openshift/config/
? SSH Public Key [Use arrows to move, type to filter, ? for more
help]
> /root/.ssh/id_rsa.pub
<none>
```

Files for installation

[pre-installation.tar](#)

[roles](#)

Installation Steps:

Firstly, get the packages tar file

```
scp .\pre-installation.tar root@10.1.10.230:/root/
```

(download the pre-installation.tar file from the notion or from the link above)

Then we will get the following files

```
ls /root
```

```
01-packages.sh 03-check-rootpermit.sh 05-ansible-directory.sh anaconda-ks.cfg 02-vim-config.sh 04-ansible-
config.sh 06-ssh-key.sh pre-installation.tar
```

run all the above scripts first

Then we will get ansible installed. We need to move all of the ansible files inside the new 'ansible' directory that we will create manually

```
mv group_vars playbook roles ansible.cfg inventory ansible
```

We need to include the following in the /etc/hosts of the Bastion VM

```
<bastion-IP> api.ocp.spelix2.com  
<bastion-IP> api-ocp-spelix2-com
```

Then we need the ocp.yaml file under,

```
vim ansible/playbook/ocp.yaml  
  
- name: Install HAProxy  
  hosts: localhost  
  roles:  
    - { role: install-haproxy, tags: ['haproxy'] }  
  vars_files:  
    - ../group_vars/all.yaml  
  
- name: Install DNS  
  hosts: localhost  
  roles:  
    - { role: install-dns, tags: ['dns'] }  
  vars_files:  
    - ../group_vars/all.yaml  
  
- name: Install TFTPBOOT  
  hosts: localhost  
  roles:  
    - { role: install-tftpboot, tags: ['tftp'] }  
  vars_files:  
    - ../group_vars/all.yaml  
  
- name: Install DHCP  
  hosts: localhost  
  roles:  
    - { role: install-dhcp, tags: ['dhcp'] }  
  vars_files:  
    - ../group_vars/all.yaml
```

```
- name: Install web server (httpd)
hosts: localhost
roles:
  - { role: install-httpd, tags: ['httpd'] }
vars_files:
  - ../group_vars/all.yaml

- name: Configuration Firewall (if you have two networks, it must be done)
hosts: localhost
roles:
  - { role: config-firewall, tags: ['firewall'] }
vars_files:
  - ../group_vars/all.yaml

- name: Download installation files
hosts: localhost
roles:
  - { role: download-files, tags: ['download'] }
vars_files:
  - ../group_vars/all.yaml

- name: Create OCP Directory
hosts: localhost
roles:
  - { role: create-ocp-directory, tags: ['ocp-dir'] }
vars_files:
  - ../group_vars/all.yaml

- name: Create OCP install-config.yaml
hosts: localhost
roles:
  - { role: create-ocp-config, tags: ['ocp-config'] }
vars_files:
  - ../group_vars/all.yaml
```

Then we need to include all.yaml

```
vim ansible/group_vars/all.yaml
```



```
VTVNV0U1T1RFMIUSXdOelk0WINKOS52Q01sTnlXNVpyMjBiNXRyTm1UazNDQmZITnZ3SERuQXh2SVNUSDJnTm1
wT3pOSUppa29RUnFJMjZtcFF0QzktelFXSUvYzkV0clM0ZmgxTnBPVm5nRGEtTnlT3V0RG5FU3VUOXIJZ3B2VDRxM
FFBVWhFdGdTei1aMk9oN3BXOVZzbWpxUjJwb2lJNzZhMUFjc1p2X3IHVDZaOXE5Um1HWGRpV0VFaG5WUUI2Vmxv
bDRxQS14aDjJOE9LMkc2LVR6VnNjSndzc09kVndjcWltX2JhRm5pV1JsS2lZNFpFQ3NCUjJmMzHR3ZaSnBET3ZCndI
SEtuUFlwTS10WmtkTXVkeV9ZSWlxZ2ctbUg3ajR0dXhHRTdPck00bERjZk55R1BERGM4OHdZZExzMTNxS3NieVNuV
mxmMjFRMFM0RDRiRWI0OUtCalZsR0p6alJ5YTFOSThLYk8za2hkdjhIT3hGLVZ1cXRocUjkV0NYcTVDYXF3ZIZ6T2ZPT
nB1Zlc1VjJ0VmtwbFIFWmlhejczSjdpeEc2dHBrNnQyWWYtYmUzSjNRdHA0Q1pyX0hOVmkzZVBGRHMzX3JpbnA0UU
s3LV9KwG16cHdkUGtLLWZYZ3UwSFZwZmlGM3ZYaTNmR204Q2t6MXBWUlpjR1dveTYzUmxZd210ZTAwZjVT280
RV9Tb1BpZFFReERGUDVtUWF3RDc5ZU53eDVKd1hDYWNVTXNMeFFNNGpSYjNiT0lqUXY5amo1QUNpQzjYSENRZD
ZKZzJhekxQWWNIWEJpRnRISEhwY2Q4YI9zRkt0d1lZrjM4UGN6cFJFNzdodGp6NExEdGwzRFdmS0p6dnRPU0dIQ1pP
dmJPLWpKOGQRQWHBfUzhza25JNl93Nm1wajkxMm5GVFFKemwwY00yWQ==","email":"wajiwos16@gmail.com"},"
registry.redhat.io":{"auth":{"fHVoYy1wb29sLTZlZiN2U1YjE4LWVlMlRlNDhkYy1hZTY1LWU1ZDFhMGI0ZGI3MTpleUpo
YkdjaU9pSINVeIV4TWIKOS5leUp6ZFdJaU9pSXdZelU0TldjMFpqQm1NekUwTjJZME9HVTVNV0U1T1RFMIUSXdOelk0
WINKOS52Q01sTnlXNVpyMjBiNXRyTm1UazNDQmZITnZ3SERuQXh2SVNUSDJnTm1wT3pOSUppa29RUnFJMjZtcFF0
QzktelFXSUvYzkV0clM0ZmgxTnBPVm5nRGEtTnlT3V0RG5FU3VUOXIJZ3B2VDRxMFFBVWhFdGdTei1aMk9oN3BXO
VZzbWpxUjJwb2lJNzZhMUFjc1p2X3IHVDZaOXE5Um1HWGRpV0VFaG5WUUI2VmxvbDRxQS14aDjJOE9LMkc2LVR6V
nNjSndzc09kVndjcWltX2JhRm5pV1JsS2lZNFpFQ3NCUjJmMzHR3ZaSnBET3ZCndISEtuUFlwTS10WmtkTXVkeV9ZS
WlxZ2ctbUg3ajR0dXhHRTdPck00bERjZk55R1BERGM4OHdZZExzMTNxS3NieVNuVmxmMjFRMFM0RDRiRWI0OUtC
alZsR0p6alJ5YTFOSThLYk8za2hkdjhIT3hGLVZ1cXRocUjkV0NYcTVDYXF3ZIZ6T2ZPTnB1Zlc1VjJ0VmtwbFIFWmlhej
zSjdpeEc2dHBrNnQyWWYtYmUzSjNRdHA0Q1pyX0hOVmkzZVBGRHMzX3JpbnA0UUus3LV9KwG16cHdkUGtLLWZYZ
3UwSFZwZmlGM3ZYaTNmR204Q2t6MXBWUlpjR1dveTYzUmxZd210ZTAwZjVT280RV9Tb1BpZFFReERGUDVtUWF
3RDc5ZU53eDVKd1hDYWNVTXNMeFFNNGpSYjNiT0lqUXY5amo1QUNpQzjYSENRZDZKZzJhekxQWWNIWEJpRnRISE
hwY2Q4YI9zRkt0d1lZrjM4UGN6cFJFNzdodGp6NExEdGwzRFdmS0p6dnRPU0dIQ1pPdmJPLWpKOGQRQWHBfUzhza2
5JNl93Nm1wajkxMm5GVFFKemwwY00yWQ==","email":"wajiwos16@gmail.com"}}}'
```

```
# openshift pull secret file: <https://console.redhat.com/openshift/install/metal/user-provisioned>
```

```
helper:
```

```
name: "bastion" #hostname for your helper node
ipaddr: "192.168.228.1" #current IP address of the helper
networkifacename: "ens224" #interface of the helper node,ACTUAL name of the interface, NOT the
NetworkManager name
dns:
domain: "spelix2.com" #DNS server domain. Should match baseDomain inside the install-
config.yaml file.
clusterid: "ocp" #needs to match what you will for metadata.name inside the install-config.yaml
file
forwarder1: "192.168.228.1" #DNS forwarder
forwarder2: "8.8.8.8" #second DNS forwarder
lb_ipaddr: "{{ helper.ipaddr }}" #Load balancer IP, it is optional, the default value is helper.ipaddr
```

```
dhcp:
```

```

router: "192.168.228.1"           #default gateway of the network assigned to the masters/workers
bcast: "192.168.228.255"        #broadcast address for your network
netmask: "255.255.255.0"        #netmask that gets assigned to your masters/workers
poolstart: "192.168.228.200"    #First address in your dhcp address pool
poolend: "192.168.228.220"     #Last address in your dhcp address pool
ipid: "192.168.228.0"          #ip network id for the range
netmaskid: "255.255.255.0"     #networkmask id for the range.
ntp: "192.168.228.1"           #ntp server address
dns: ""                         #domain name server, it is optional, the default value is set to helper.ipaddr

bootstrap:
  name: "bootstrap"            #hostname (WITHOUT the fqdn) of the bootstrap node
  ipaddr: "192.168.228.200"    #IP address that you want set for bootstrap node
  macaddr: "00:50:56:bd:e3:eb" #The mac address for dhcp reservation

masters:
- name: "master01"             #hostname (WITHOUT the fqdn) of the master node (x of 3)
  ipaddr: "192.168.228.201"    #The IP address (x of 3) that you want set
  macaddr: "00:50:56:bd:bb:e6" #The mac address for dhcp reservation
- name: "master02"
  ipaddr: "192.168.228.202"
  macaddr: "00:50:56:bd:9b:7b"
- name: "master03"
  ipaddr: "192.168.228.203"
  macaddr: "00:50:56:bd:ee:19"

workers:
- name: "worker01"             #hostname (WITHOUT the fqdn) of the worker node you want to set
  ipaddr: "192.168.228.211"    #The IP address that you want set (1st node)
  macaddr: "00:50:56:bd:23:b7" #The mac address for dhcp reservation (1st node)
- name: "worker02"
  ipaddr: "192.168.228.212"
  macaddr: "00:50:56:bd:f7:9c"
- name: "worker03"
  ipaddr: "192.168.228.213"
  macaddr: "00:50:56:bd:77:69"

```

Recheck all the values (IP address, MAC, pull secret, sshkey, domain name and then continue)

Then we need all of the installation files (download from the above link)

```

# From Windows Powershell we have a 'roles' folder with all of the installation files
scp -r .\roles\ root@10.1.10.230:/root/ansible/

```

root@10.1.10.230's password:

```
main.yaml          100% 1874  328.4KB/s  00:00
main.yaml          100%  169   33.7KB/s  00:00
install-config.yaml.j2      100%  583  114.0KB/s  00:00
main.yaml          100%  155   15.2KB/s  00:00
main.yaml          100% 1793  350.2KB/s  00:00
default.j2        100% 1484  159.1KB/s  00:00
main.yaml          100%  285   28.3KB/s  00:00
dhcpd.conf.j2      100% 1894  189.7KB/s  00:00
main.yaml          100% 1397  133.5KB/s  00:00
dns.tar            100%  11KB 734.8KB/s  00:00
named.conf.j2      100% 1728  168.9KB/s  00:00
named.rfc1912.zones.j2     100% 1856  378.1KB/s  00:00
ocp.zones.j2       100% 2507  240.8KB/s  00:00
reverse.rev.j2     100% 1372  134.0KB/s  00:00
main.yaml          100%  274   26.8KB/s  00:00
haproxy.cfg.j2     100% 4691  466.7KB/s  00:00
main.yaml          100%  280   54.7KB/s  00:00
httpd.conf.j2      100%  12KB 783.3KB/s  00:00
ldlinux.c32        100% 113KB  5.5MB/s  00:00
libutil.c32        100%  22KB  2.2MB/s  00:00
menu.c32           100%  26KB  2.5MB/s  00:00
pxelinux.0         100%  41KB  2.7MB/s  00:00
tftp.tar           100% 207KB 10.1MB/s  00:00
main.yaml          100%  564   53.7KB/s  00:00
```

Then we need to add the localhost as below

```
vim inventory/ocp

[localhost]
127.0.0.1
```

Then inside the ansible directory, we need to use the following to install and check all of the yamls

```
# To list and see the output of installation
ansible-playbook -i inventory/ocp playbook/ocp.yaml --list-tags
```

```
# Installing
ansible-playbook -i inventory/ocp playbook/ocp.yaml --tags <name from the list>

## one command install
ansible-playbook -i inventory/ocp playbook/ocp.yaml
```

After doing all ansible-playbook commands, we need to rename the openshift installer yaml file like the following:

```
mv /root/openshift/config/install-cnfig.yaml /root/openshift/config/install-config.yaml
```

The install-config.yaml file looks like this:

```
apiVersion: v1
baseDomain: spelix2.com
compute:
  - hyperthreading: Enabled
    name: worker
    replicas: 0
controlPlane:
  hyperthreading: Enabled
  name: master
  replicas: 3
metadata:
  name: ocp
networking:
  clusterNetworks:
  - cidr: 10.128.0.0/14
    hostPrefix: 23
  networkType: OVNKubernetes
  serviceNetwork:
  - 172.30.0.0/16
platform:
  none: {}
fips: false
pullSecret:
```

```
'{"auths":{"cloud.openshift.com":{"auth":"b3BlbnNoaWZ0LXJlbGVhc2UtZGV2K29jbV9hY2Nlc3NmMGYzMmNjZjRmMjI5NGFjNWEzOTU4ZWJiZjM5Y2VjZWQ6Q0dVUjRkVTRaNUURMUTiRVJEVIA2VDFOTFBKM1IRMFJISUdaREw5UzBEN  
DhaMDgxUVoxQ0ZQUlhRRkpSNDIKTw==","email":"wajiwos16@gmail.com"},"quay.io":{"auth":"b3BlbnNoaWZ0LXJlbGVhc2UtZGV2K29jbV9hY2Nlc3NmMGYzMmNjZjRmMjI5NGFjNWEzOTU4ZWJiZjM5Y2VjZWQ6Q0dVUjRkVTRaNUURMUTiRVJEVIA2VDFOTFBKM1IRMFJISUdaREw5UzBENDhaMDgxUVoxQ0ZQUlhRRkpSNDIKTw==","email":"wajiwos16@gmail.com"},"registry.connect.redhat.com":{"auth":"fHV0Yy1wb29sLTZiN2U1YjE4LWViMDItNDhkYy1hZTY1LWU1ZDFhMGI0ZGI3MTpleUpoYkdjaU9pSINVeIV4TWIKOS5leUp6ZFdJaU9pSXdZelU0TldjMFpqQm1NekUwTjZME9H  
VTNVN0U1T1RFMIUSXdOelk0WINKOS52Q01sTnlXNVpyMjBiNXRyTm1UazNDQmZITnZ3SERuQXh2SVNUSDJnTm1wT3pOSUppa29RUUnFjMjZtcFF0QzktelFXSUVyZkV0cIM0ZmgxTnBPVn5nRGEtTnlT3V0RG5FU3VUOXIJZ3B2VDRxMFFBVWhFdGdTei1aMk9oN3BXOVZzbWpxUjJwb2JjZzZHMUFjc1p2X3IHVDZaOXE5Um1HWGRpV0VFaG5WUUI2VmxvbDRxQS14aDjJ0E9LMkc2LVR6VnNjSndzc09kVndjcWltX2JhRm5pV1JsS2IZNFpFQ3NCUjJmZHR3ZaSnBET3ZCcndISEtuUFlwTS10WmtkTXVkeV9ZSWlxZ2ctbUg3ajR0dXhHRTdPck00bERjZk55R1BERGM4OHdZZExzMTNxS3NleVNuVmxmMjFRMF0RDRiRWI0O0tCalZsR0p6alj5YTFOSThLYk8za2hkdjhIT3hGLVZ1cXRocUJkV0NYcTVDYXF3ZIZ6T2ZPTnB1Zlc1VjJ0VmtwbFIFWmlhejczSjdpeEc2dHBrNnQyWWYtYmUzSjNRdHA0Q1pyX0hOVmkzZVBGRHMzX3JpbnA0UU  
s3LV9KWG16cHdkUGtLLWZYZ3UwSFZwZmlGM3ZYaTNmR204Q2t6MXBWUlpjR1dveTYzUmxZd210ZTAwZjIVT280RV9Tb1BpZFFReERGUDVtUWF3RDc5ZU53eDVKd1hDYWNVTXNMeFFNNGpSYjNiT0lqUXY5amo1QUNpQzjYSENRZDZKZzJheKxQWWNIWEjPnRnRISEhwY2Q4Yl9zRkt0d1lZRjM4UGN6cFJFNzdodGp6NExEdGwzRFdmS0p6dnRPU0dIQ1pPdmjPLWpKOGQRQWHBfUzhza25JNl93Nm1wajkxMm5GVFFKemwwY00yWQ==","email":"wajiwos16@gmail.com"},"registry.redhat.io":{"auth":"fHV0Yy1wb29sLTZiN2U1YjE4LWViMDItNDhkYy1hZTY1LWU1ZDFhMGI0ZGI3MTpleUpoYkdjaU9pSINVeIV4TWIKOS5leUp6ZFdJaU9pSXdZelU0TldjMFpqQm1NekUwTjZME9HVTNVN0U1T1RFMIUSXdOelk0WINKOS52Q01sTnlXNVpyMjBiNXRyTm1UazNDQmZITnZ3SERuQXh2SVNUSDJnTm1wT3pOSUppa29RUUnFjMjZtcFF0QzktelFXSUVyZkV0cIM0ZmgxTnBPVn5nRGEtTnlT3V0RG5FU3VUOXIJZ3B2VDRxMFFBVWhFdGdTei1aMk9oN3BXOVZzbWpxUjJwb2JjZzZHMUFjc1p2X3IHVDZaOXE5Um1HWGRpV0VFaG5WUUI2VmxvbDRxQS14aDjJ0E9LMkc2LVR6VnNjSndzc09kVndjcWltX2JhRm5pV1JsS2IZNFpFQ3NCUjJmZHR3ZaSnBET3ZCcndISEtuUFlwTS10WmtkTXVkeV9ZSWlxZ2ctbUg3ajR0dXhHRTdPck00bERjZk55R1BERGM4OHdZZExzMTNxS3NleVNuVmxmMjFRMF0RDRiRWI0O0tCalZsR0p6alj5YTFOSThLYk8za2hkdjhIT3hGLVZ1cXRocUJkV0NYcTVDYXF3ZIZ6T2ZPTnB1Zlc1VjJ0VmtwbFIFWmlhejczSjdpeEc2dHBrNnQyWWYtYmUzSjNRdHA0Q1pyX0hOVmkzZVBGRHMzX3JpbnA0UU  
s3LV9KWG16cHdkUGtLLWZYZ3UwSFZwZmlGM3ZYaTNmR204Q2t6MXBWUlpjR1dveTYzUmxZd210ZTAwZjIVT280RV9Tb1BpZFFReERGUDVtUWF3RDc5ZU53eDVKd1hDYWNVTXNMeFFNNGpSYjNiT0lqUXY5amo1QUNpQzjYSENRZDZKZzJheKxQWWNIWEjPnRnRISEhwY2Q4Yl9zRkt0d1lZRjM4UGN6cFJFNzdodGp6NExEdGwzRFdmS0p6dnRPU0dIQ1pPdmjPLWpKOGQRQWHBfUzhza25JNl93Nm1wajkxMm5GVFFKemwwY00yWQ==","email":"wajiwos16@gmail.com"}}}'
```

sshKey: 'ssh-rsa

```
AAAAB3NzaC1yc2EAAAADAQABAAQADMkx7b+ZEpFqHwS0SrCeUXiR8d00ST+f43tEpaLtnVOSE+GwlwmbuaOPqOBM4Efjw8BxiZQ2jX506t6W7zDZ4UK2XbpbklnLbYjXay4gPK7/ZVr6MI6Fn7zwhOFC2sB31bb9RtfYcNeXQ4tChdNy/DZsIrE/rEH3CrCzYiQspKHLYL5ZvNiQo/9eu7cj/MeZTB+TvkvFV9m/GabQtr72q2FdnLdic0B3a4tM42M2WVbMUIP5zFyr8SeDLrTOOP6nygqIvIqfvf8KUIJkNNqwlkchaepZ82FVnnpM81o3n3UohhRRnuHe/LAOiGbQDrXgXWGRan9xdS3i0IV4hwtXKoc/d+a68AgyBQ/j5jANUWtQ2z5cls4nJo4g7d+h4UZ+MOVQvrN+QHJMq2Nb1QmfPi8OAAfIfUldFwcgoDeZ8A0UIIUvMvYE1jcehbCSS9VqCX5wr9jT8oVzf8E7iN2WEbh/nwxX4OGjYQwZo+iXegE7HG44WCaFtYugz5MQjVcxvya4X3kpUOztK89GK5R4LYO9yekBjQcopcSUS6MEj6zbZcb5+yiO/ovelZTCdi/W2THsvQHmeibhb1W896oSTLG8xDbKP7z/V4LjTvBd1DuQ17VO2UaFcUIZirmggTvV0c+HQtdZdKWujalk94esirm2MCJQykPATXxvjiLSG8rfYw== root@bastion'
```

Then

```
cd /root/openshift/config
[root@bastion config]# ls
install-config.yaml
[root@bastion config]# openshift-install create manifests
INFO Consuming Install Config from target directory
WARNING Making control-plane schedulable by setting MastersSchedulable to true for Scheduler cluster settings
INFO Manifests created in: manifests and openshift
[root@bastion config]# ls
manifests openshift
```

Then we need to install ignition files

```
openshift-install create ignition-configs
INFO Consuming Master Machines from target directory
INFO Consuming Openshift Manifests from target directory
INFO Consuming OpenShift Install (Manifests) from target directory
INFO Consuming Worker Machines from target directory
INFO Consuming Common Manifests from target directory
INFO Ignition-Configs created in: . and auth
[root@bastion config]# ls
auth bootstrap.ign master.ign metadata.json worker.ign
```

Then we need to move the .ign files to /var/www/html/ign,

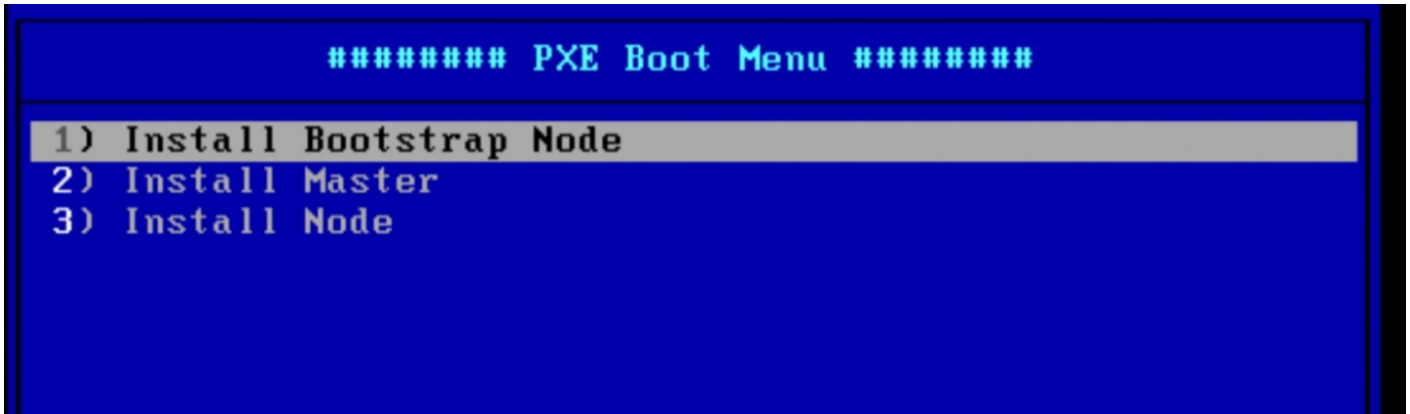
```
ls
auth bootstrap.ign master.ign metadata.json worker.ign
[root@bastion config]# mv /root/openshift/config/worker.ign /var/www/html/ign/
[root@bastion config]# mv /root/openshift/config/master.ign /var/www/html/ign/
[root@bastion config]# mv /root/openshift/config/bootstrap.ign /var/www/html/ign/
[root@bastion config]# ls
auth metadata.json
[root@bastion config]# ls /var/www/html/ign/
bootstrap.ign master.ign worker.ign
```

Then give apache ownership

```
chown -R apache:apache /var/www/html/*
```

After all settings on Bastion is done,

we can turn on the Bootstrap node and install it



Then we need to check if we can ssh to bootstrap node from our bastion

```
ssh core@bootstrap.ocp.spelix.com
```

```
[core@bootstrap ~]$
```

Then we need to turn on our 3 master nodes one by one and select the 'Install Master' option

The same goes for the 3 worker nodes 'Install Node' option to be selected

Then we need to export the KUBECONFIG file to use the 'oc' command

```
export KUBECONFIG=/root/openshift/config/auth/kubeconfig
```

```
source /root/.bashrc
```

```
## or add the above line inside the .bashrc file
```

```
vim /root/.bashrc
```

Then approve the certificates

```
oc get csr -o name | xargs oc adm certificate approve
```

We can check the approve status using the following command

```
oc get csr
```

the values should be 'Approved' instead of 'Pending' so we can use the approve certificates command again if we see any pending

keep checking the certs using the 'oc get csr' command, as it will keep updating new certificates that will be in 'pending' state. We need to approve them as well.

Then if we see the nodes

```
oc get nodes
```

NAME	STATUS	ROLES	AGE	VERSION
master01.ocp.spelix.com	Ready	master,worker	12m	v1.23.5+8471591
master02.ocp.spelix.com	Ready	master,worker	12m	v1.23.5+8471591
master03.ocp.spelix.com	Ready	master,worker	12m	v1.23.5+8471591
worker01.ocp.spelix.com	Ready	worker	78s	v1.23.5+8471591
worker02.ocp.spelix.com	Ready	worker	77s	v1.23.5+8471591
worker03.ocp.spelix.com	Ready	worker	88s	v1.23.5+8471591

Then we need to add the bastion IP and the following hostnames to the windows host file

```
<bastion-ip> api.ocp.cpf.com console-openshift-console.apps.ocp.cpf.com oauth-openshift.apps.ocp.cpf.com  
downloads-openshift-console.apps.ocp.cpf.com alertmanager-main-openshift-monitoring.apps.ocp.cpf.com  
grafana-openshift-monitoring.apps.ocp.cpf.com prometheus-k8s-openshift-monitoring.apps.ocp.cpf.com thanos-  
querier-openshift-monitoring.apps.ocp.cpf.com
```

Then we can change the master nodes to be 'not schedulable'

```
oc patch schedulers.config.openshift.io/cluster --type merge -p '{"spec":{"mastersSchedulable":false}}'
```

The above command should change the status of master nodes to be only master nodes

```
oc get nodes
```

NAME	STATUS	ROLES	AGE	VERSION
master01.ocp.spelix2.com	Ready	master	6h39m	v1.23.5+8471591
master02.ocp.spelix2.com	Ready	master	6h39m	v1.23.5+8471591
master03.ocp.spelix2.com	Ready	master	6h39m	v1.23.5+8471591
worker01.ocp.spelix2.com	Ready	worker	6h27m	v1.23.5+8471591
worker02.ocp.spelix2.com	Ready	worker	6h28m	v1.23.5+8471591
worker03.ocp.spelix2.com	Ready	worker	6h27m	v1.23.5+8471591

After all the above steps, we need to follow the notion page from the Openshift [\[1\] \[2\] \[3\]](#) part as it

Just remember to apply all of the nfs yaml files while doing the nfs part

deployment.yaml

rbac.yaml

class.yaml

test-pod.yaml

test-pvc.yaml