

SSN COLLEGE OF ENGINEERING
Department of Computer Science and Engineering
CS6712 Grid and Cloud Computing Laboratory

Assignment -8 : Creation of Virtual Machine Template, Installing C Compiler and Attaching Virtual Block

Assigned Date: 07.08.2017.

Due Date: 22.08.2017 & 18.08.2017

In OpenNebula FrontEnd VM do the following.

I. Listing all types of virtual resources.

```
oneadmin@localhost]$ onehost list
oneadmin@localhost]$ onevnet list
oneadmin@localhost]$ oneimage list
oneadmin@localhost]$ onetemplate list
oneadmin@localhost]$ onevm list
oneadmin@localhost]$ oneuser list
oneadmin@localhost]$ onegroup list
```

Creating a host

```
oneadmin@localhost]$ onehost create localhost -i kvm -v kvm -n dummy
oneadmin@localhost]$ onehost list
```

Creating a Virtual Network

```
]$ cd /var/lib/one
]$ ls -l
]$ cat mynetwork.one
NAME = "private"
BRIDGE = br0
AR = [
    TYPE = IP4,
    IP = 192.168.0.100,
    SIZE = 100
]
oneadmin@localhost]$ onevnet create mynetwork.one
oneadmin@localhost]$ onevnet list
```

Creating a Virtual Disk Images

[www.opennebula.org / marketplace](http://www.opennebula.org/marketplace)

Download the latest CentOS 6.5 with KVM

Copy the link location

```
oneadmin@localhost]$ oneimage create --name "CentOS-6.5_x86_64" --path
"URL of Centos image location" --driver qcow2 --datastore default
oneadmin@localhost]$ oneimagelist
```

II. Creating a Virtual Machine (VM) Template

```
oneadmin@localhost]$ onetemplate create --name "CentOS-6.5" --cpu 1
--vcpu 1 --memory 512 --arch x86_64 --disk "centos-6.5-x86_64" --nic
"private" --vnc --ssh
oneadmin@localhost]$ onetemplate list
```

III. Update the VM template with SSH_PUBLIC_KEY using "**oneuser**" command.

```
]$ cat /var/lib/one/.ssh/id_rsa.pub
```

Copy the SSH_PUBLIC_KEY

```
]$ EDITOR = vi oneuser update oneadmin
```

```
TOKEN_PASSWORD = "b7....."
```

```
SSH_PUBLIC_KEY = "paste the copied key"
```

// If it shows error do it as root user.

In Opennebula-sunstone dashboard

Click on to settings - > right side, click public key and paste SSH_PUBLIC_KEY in the textbox.

Now you can login into CentOS VM without password.

IV. Create a VM for CentOS 6.5 (64-bit) from the above created CentOS6.5 (64-bit) template.

```
oneadmin@localhost]$ onetemplate instantiate "Centos-6.5" --name "CentOS-6.5
Virtual Machine (64-Bit)"
```

```
oneadmin@localhost]$ onevm list
```

```
root@localhost]# gcc
```

To update password for root user

```
]# passwd
```

Changing password for root user.

Password:

Retype password:

Go to opennebula-sunstone server dashboard

Click on to CentOS-6.5 VM and open VNC at right top

Login as root user.

V. Configure the local software repository using **YUM Package Manager**.

```
]# cd /etc/yum.repos.d
```

```
]# ls -l
```

```
]# nano CentOS-Base.repo
```

```
]# vi CentOS-Base.repo
```

<add the centos download url in [base] section>

```
]# yum clean all
```

```
]# yum makecache
```

VI. Install a C compiler (gcc) in CentOS6.5 (64-bit) VM and run a sample C program in VM.

```
]# yum install gcc -y
```

```
]# rpm -qi gcc
Login as normal user
]$ vi hello.c
Write a sample hello world program in C
]$ gcc hello.c -o hello
]$ ls -l
]$ ./hello
Check the output.
```

VII. Create a Virtual Block (DATABLOCK) using “*oneimage*” command.

```
]# fdisk -l /dev/sda
]$ fdisk -l /dev/sdb
PowerOff VM
oneadmin@localhost]$ onevm poweroff <vm-id>
oneadmin@localhost]$ onevm list

Creating Virtual disk block
oneadmin@localhost]$ oneimage create -d 1 - - name data - - type DATABLOCK
- -size 20G - -fstype ext4
```

VIII. Attach the created Virtual Block to CentOS6.5 (64-bit) VM using the below command.

```
oneadmin@localhost]$ onevm disk-attach <vm-id> --image <virtual block
name>
PowerON VM
oneadmin@localhost]$ onevm resume <vm-id>
oneadmin@localhost]$ onevm list
```

IX. Detach the attached Virtual Block in the above step from CentOS6.5 (64-bit) VM using below command.

```
]# fdisk -l /dev/sda
]$ fdisk -l /dev/sdb
PowerOff VM
oneadmin@localhost]$ onevm poweroff <vm-id>
oneadmin@localhost]$ onevm list
```

Detach the datablock

```
oneadmin@localhost]$ onevm disk-detach <vm-id> <vm disk id>
```

PowerON VM

```
oneadmin@localhost]$ onevm resume <vm-id>
oneadmin@localhost]$ onevm list
```

X. Resizing the capacity of CPU & Memory (Scaling Up or Scaling Down) of Centos6.5 (64-bit) VM using following command

PowerOff VM

```
oneadmin@localhost]$ onevm poweroff <vm-id>
```

```
oneadmin@localhost]$ onevm list
```

Resize the capacity of CPU and Memory in a VM

```
oneadmin@localhost]$ onevm resize <vm-id> --cpu <capacity> --memory  
<capacity>
```

```
oneadmin@localhost]$ onevm resume <vm-id>
```

```
oneadmin@localhost]$ onevm list
```

```
oneadmin@localhost]$ onevm show <vm-id>
```