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

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 openenbula-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>