NEW HORIZON COLLEGE OF ENGINEERING
(Autonomous Institution affiliated to VTU, Belagavi)
Accredited by NAAC with Grade 'A'
Department of Information Science and Engineering

Course: Virtualisation Essentials with VMware

Code : NHOP02

Hands-on Laboratory Experiments

1. Create a Virtual Machine named **Stu_Dev_Team_01** with following configuration,
   - ESXi Compatibility: 5.5 & later
   - Guest OS: Red Hat Enterprise Linux (64 Bit)
   - 1 core of CPU, 1024 MB of Memory, 10 GB of Hard Disk.
   - Change default disk provision to Best Disk Provisioning.
   - Power ON Virtual Machine

   Answer the following queries:
   a) Change the CPU to **2 Core** while VM is running. Mention the status
   b) Change the Memory to **2048 GB** while VM is running. Mention the status
   c) Name the default Disk Provisioning type?
   d) Name the best Disk Provisioning type? Why

   Create a new VM named **Stu_Dev_Team_02** and **enable Memory Hot Plug**.

   Answer the following queries:
   e) Change the CPU for 2 Core while VM is running. Mention the status
   f) Change the Memory to 2048 GB while VM is running. Mention the status

2. Create a Virtual Machine named **Stu_Testing_Team_1** with following configuration,
   - ESXi Compatibility: 6.0 & later
   - Guest OS: Ubuntu Linux (64 Bit)
   - 2 core of CPU, 2048 MB of Memory, 08 GB of Hard Disk.
   - Change default disk provision to Thick Provision Eager Zero.
   - Power ON Virtual Machine after creation
   - Suspend the Virtual Machine

   Answer the following queries:
   a) Change the CPU for 2 Core while VM is suspended. Mention the status
   b) Change the Memory to 2048 GB while VM is suspended. Mention the status

   Create a new VM named **Stu_Dev_Testing_2** and **enable CPU Hot Plug** & power on the virtual machince

   Answer the following queries:
   c) Change the CPU for 2 Core while VM is running. Mention the status
   d) Change the Memory to 2048 GB while VM is running. Mention the status

3. Create a Virtual Machine named **Stu_Debug_Team_01** with following configuration,

- ESXi Compatibility: 5.5 & later
- Guest OS: Red Hat Enterprise Linux (64 Bit)
- 2 core of CPU, 2048 MB of Memory, 10 GB of Hard Disk.
- Change default disk provision to Thin Provisioning.
- Goto **VMOption** and **limit no. of simultaneous sessions to 03**
- Power ON Virtual Machine

Answer the following queries:

a) Name the default Disk Provisioning type?
b) Name the best Disk Provisioning type? Why
c) Demonstrate **limit no. of simultaneous sessions.**

Create a **clone** named **Clone_Stu_Debug_Team_01**

Answer the following queries:

d) Changing Disk provision type to **Thick Provision Lazy Zero** is possible while creating **clone**? Demonstrate.
e) **Enabling CPU & Memory Hot Plug** is possible while creating **clone**? Demonstrate.

4. Create a Virtual Machine named **Stu_Market_Team_1** with following configuration,

- ESXi Compatibility: 6.0 & later
- Guest OS: Ubuntu Linux (64 Bit)
- 2 core of CPU, 2048 MB of Memory, 08 GB of Hard Disk.
- Change default disk provision to Thick Provision Eager Zero.
- Power ON Virtual Machine.

Answer the following queries:

a) Name the default Disk Provisioning type?
b) Name the best Disk Provisioning type? Why.
c) Demonstrate **limit no. of simultaneous sessions to 02.**

Create a **template** named **Template_Stu_Market_Team_01**

Answer the following queries:

d) **Enabling CPU & Memory Hot Plug** is possible while creating **template**? Explain
e) Change the Memory to 2048 GB while VM is running. Mention the status

5. Create a Virtual Machine named **Stu_Testing_Team** with following configuration,

- ESXi Compatibility: 6.0 & later
- Guest OS: Red Hat Enterprise Linux (64 Bit)
- 2 core of CPU, 2048 MB of Memory, 08 GB of Hard Disk.
- Power ON Virtual Machine after creation

Create **clone** and update the VM with following changes & **check the status**:

a) Clone name: **Stu_Testing_Team_Clone01**
b) Change virtual disk format to **Thick Provision Eager Zero**

c) Change the CPU for 1 Core while VM is running. Mention the status
d) Change the Memory to 1024 GB while VM is running. Mention the status
e) Change the Memory to 3072 GB while VM is running. Mention the status
f) Change the hard disk to 04 GB. Mention the status
g) Change the hard disk to 10 GB . Mention the status

6. Create a Virtual Machine named **Stu_Debug_Team** with following configuration,

- ESXi Compatibility: 6.0 & later
- Guest OS: Ubuntu Linux (64 bit)
- 1 core of CPU, 1024 MB of Memory, 16 GB of Hard Disk.
- Change default disk provision to Thick Provision Lazy Zero.
- Power ON Virtual Machine

Convert **Stu_Debug_Team** virtual machine into **template.** Using the same template create new the following Virtual Machines

a) Stu_Debug_Team_VM1 , 2 core CPU, 2048 MB of Memory, 17GB harddisk.
b) Stu_Debug_Team_VM2 , 1 core CPU, 3072 MB of Memory, 18GB harddisk.
c) Stu_Debug_Team_VM3 , 3 core CPU, 1024 MB of Memory, 16GB harddisk.
d) Stu_Debug_Team_VM4 , 4 core CPU, 4080 MB of Memory, 20GB harddisk.

7. Create a Virtual Machine named **Stu_Market_Team** in **esx-1a.corp.local** with following configuration,

- ESXi Compatibility: 6.0 & later
- Guest OS: Windows Server 2008 R2 (64 bit)
- 1 core of CPU, 1024 MB of Memory, 06 GB of Hard Disk.
- Change default disk provision to Thin Provision.
- Power ON Virtual Machine

Create OVF template for **Stu_Market_Team.** Deploy the same OVF template at **esx-2a.corp.local.**

Answer the following:

a. What is Template?
b. Mention the differences between clones, template & OVF template.
c. What is Content Library? Mention the types.

8. Create a Virtual Machine named **Stu_Debug_Team_01** in **esx-2a.corp.local** with following configuration,

- ESXi Compatibility: 6.0 & later
- Guest OS: Windows Server 2008 R2 (64 bit)
- 1 core of CPU, 1024 MB of Memory, 06 GB of Hard Disk.
- **Power ON** virtual machine

With the above VM, answer the following queries:

i. Changing CPU to 2 core is possible?

ii. Changing Memory to 2048 GB is possible?

Further create a fresh Virtual Machine named **Stu_Debug_Team_02** with following settings:

- Same VM Configuration as **Stu_Debug_Team_01**
- Enable **CPU Hot Plug**
- Enable **Memory Hot Plug**

With the above **new VM**, answer the following queries:

i. Changing CPU to 2 core is possible? Explain
ii. Changing Memory to 2048 GB is possible? Explain

9. Create a Virtual Machine named **Stu_Results_Display_01** in **esx-1a.corp.local** with following configuration,

- ESXi Compatibility: 6.0 & later
- Guest OS: Windows Server 2008 R2 (64 bit)
- 1 core of CPU, 1024 MB of Memory, 06 GB of Hard Disk.

Show how to **limit the number of simultaneous connections** to VM. Further, limit the session to **03** and demonstrate.

Create another Virtual Machince named **Stu_Results_Display_02** in **esx-2a.corp.local** with same configuration as **Stu_Results_Display_01.** Limit the session to **04** and demonstrate.

Answer the following queries:

1. What is **limit the number of simultaneous connections?**
2. **Why is it required? Explain**

10. Create a Virtual Machine named **Stu_Stocks_Team** with following configuration,

- ESXi Compatibility: 6.0 & later
- Guest OS: Windows Server 2008 R2 (64 bit)
- 1 core of CPU, 1024 MB of Memory, 06 GB of Hard Disk.

Demonstrate **Snapshot** as follows:

a) Create a **four** snapshots for **Stu_Stock_Team** named
   i. **Snap_01_ Stu_Stock_Team**
   ii. **Snap_02_ Stu_Stock_Team**
   iii. **Snap_03_ Stu_Stock_Team**
   iv. **Snap_04_ Stu_Stock_Team** respectively
b) Revert to **Snap_02_ Stu_Stock_Team**
c) Revert to **latest** snapshot**.**
d) Delete snapshot **Snap_01_ Stu_Stock_Team.**

11. Create **eight** virtual machines at **esx-1a.corp.local** with following configurations:

VM Names: VM01, VM02, VM03, VM04, VM05, VM06, VM07, VM08
ESXi Compatibility: 6.0 & later

Guest OS: Red Hat Enterprise (64 bit)
1 core of CPU, 1024 MB of Memory, 05 GB of Hard Disk

Demonstrate **vApps** with following constraints:

a) Create two vApps (vApp_01, vApp_02)
b) **vApp_01 should perform the following**:
    i. vApp_01 container must have VM01, VM02, VM03, VM04
    ii. Power ON vApp & check status.
    iii. Change the order of Power ON to VM04, VM01, VM02, VM03.
    iv. Clone the vApp_01 named as **Clone_vApp_01**
c) **vApp_02 should perform the following**
    i. vApp_02 container must have VM05, VM06, VM07, VM08
    ii. Power ON vApp & check status
    iii. Change the order of Power ON to VM08, VM06, VM07, VM05.
    iv. Update **startup sequence (seconds elapse per vm)** to **25 Seconds**
    v. Clone the vApp_02 named as **Clone_vApp_02**

12. Create **nine** virtual machines at **esx-1a.corp.local** with following configurations:

VM Names: VM01, VM02, VM03, VM04, VM05, VM06,VM07,VM08,VM09
ESXi Compatibility: 6.0 & later
Guest OS: Windows Server 2008 R2 (64 bit)
1 core of CPU, 1024 MB of Memory, 06 GB of Hard Disk

Demonstrate **vApps** with following constraints:

a) Create three vApps (vApp_01, vApp_02, vApp_03)
b) **vApp_01 should perform the following**:
    a. vApp_01 container must have VM01, VM02, VM03
    b. Power ON vApp & check status.
    c. Change the order of Power ON to VM02, VM03, VM031.
    d. Clone the vApp_01 named as **Clone_vApp_01**
c) **vApp_02 should perform the following**
    a. vApp_02 container must have VM04, VM05, VM06
    b. Power ON vApp & check status
    c. Change the order of Power ON to VM06, VM04, VM05.
    d. Update **startup sequence (seconds elapse per vm)** to **0 Seconds**
    e. Clone the vApp_02 named as **Clone_vApp_02**
d) **vApp_03 should perform the following**
    a. vApp_03 container must have VM07,VM08,VM09
    b. Power ON vApp & check status
    c. Change the order of Power ON to VM09, VM07, VM08.
    d. Create **new** Virtual Machine named **VM10** at **vApp_03**
    e. Create clone named **Clone_VM10** from **VM10(vApp_03)** at **vApp_01**

13. Create three virtual machines at **esx-1a.corp.local** with following configurations:
VM Names: VM-01, VM-02, VM-03
ESXi Compatibility: 6.0 & later
Guest OS: Red Hat Enterprise (64 bit)
1 core of CPU, 1024 MB of Memory, 05 GB of Hard Disk
Create four virtual machines at **esx-2a.corp.local** with following configurations:
VM Names: VM-04, VM-05, VM-05
ESXi Compatibility: 6.0 & later
Guest OS: Red Hat Enterprise (64 bit)
1 core of CPU, 1024 MB of Memory, 05 GB of Hard Disk
Demonstrate the following **Migration Types:**

a) Cold Migration
b) vSphere vMotion

14. Create three virtual machines at **esx-1a.corp.local** with following configurations:
Name: VM-01, VM-02, VM-03
ESXi Compatibility: 6.0 & later
Guest OS: Red Hat Enterprise (64 bit)
1 core of CPU, 1024 MB of Memory, 05 GB of Hard Disk
Create four virtual machines at **esx-2a.corp.local** with following configurations:
Name: VM-04, VM-05, VM-05
ESXi Compatibility: 6.0 & later
Guest OS: Red Hat Enterprise (64 bit)
1 core of CPU, 1024 MB of Memory, 05 GB of Hard Disk
Demonstrate the following **Migration Types:**

a) Suspended Migration
b) vSphere Storage vMotion

15. Create three virtual machines at **esx-1a.corp.local** with following configurations:
Name: VM-01, VM-02, VM-03
ESXi Compatibility: 6.0 & later
Guest OS: Red Hat Enterprise (64 bit)
1 core of CPU, 1024 MB of Memory, 05 GB of Hard Disk
Create four virtual machines at **esx-2a.corp.local** with following configurations:
Name: VM-04, VM-05, VM-05
ESXi Compatibility: 6.0 & later
Guest OS: Red Hat Enterprise (64 bit)
1 core of CPU, 1024 MB of Memory, 05 GB of Hard Disk
Demonstrate the following **Migration Types:**

a) Cold Migration
b) Suspended Migration
c) vSphere vMotion
d) vSphere Storage vMotion
e) Shared Nothing vSphere vMotion.