

VM ware - I

Virtualization refers to the act of creating a virtual machine or version of something including virtual computers and virtual hardware platforms.

Storage devices & Computer network resources - Commonly it refers to running multiple OS On a Computer System

Software → Hypervisor.

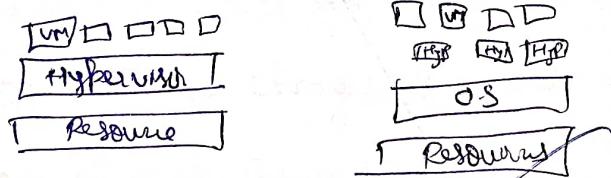
Cloud Computing

Set of Principles & approaches to deliver Compute, network & storage infrastructure resources, Services Platform & application to users on-demand across any network.

Hypervisors:

Paravirtualization - Platform for running virtual machines

Types → Base metal



ESXi - Elastic Sky x Integrated

HOL-2111-01-SDC

Hypervisual

Region A01

e8x>01a

esx-02a

Region A02

e8x-01b

$$ex \approx 0.2b$$

Steps

Create VM

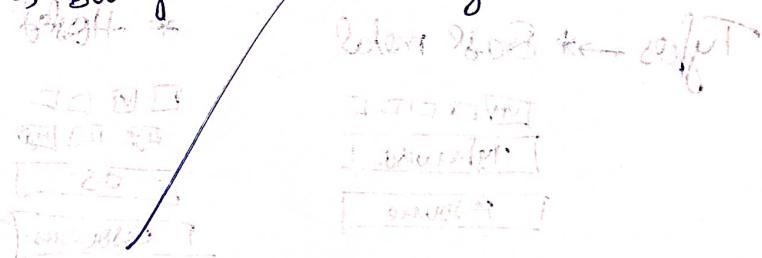
1) Create VM

- 1) Click on Hyper-V to start configuration
- 2) New virtual machine creation wizard will open
- 3) Select a creation type
- 4) Select a name of folder
- 5) Select a Computer resource
- 6) Select a guest OS
- 7) Customize hardware
- 8) Ready to complete
- 9) Power On / Power Off

For edit setting

When VM is On \rightarrow settings can be changed

VM is OFF \rightarrow settings can be changed.



$$1 \text{ CPU} \times 1 \text{ GHz} = 1 \times 23$$

$$1024 \times 10 = 10240 \text{ MB}$$

$$10240 \times 23 = 235520 \text{ MB}$$

$$10240 \times 80 = 81920 \text{ MB}$$

$$10240 \times 25 = 25600 \text{ MB}$$

$$10240 \times 23 + 10240 \times 80 + 10240 \times 25 = 235520 + 81920 + 25600 = 342,940 \text{ MB}$$

Disk Provisioning

- (Default)
- Thick Provision lazy zeroed (old data will be kept even if deleted)
 - Thick Provision eager zeroed (old data will be erased after deletion)
 - Thin Provision (usage of allotted space is early) (Best option)

Expt-1

- 1) Create a VM named Stu-Term-201 with the following configuration
 - ESXi Compatibility 5.5f later
 - Guest O.S Red hat Enterprise Linux (64 Bit)
 - 1 Core of CPU, 1024 MB of memory, 10 GB of hard disk (4GB)
 - Power On VM

Questions

Answer → 1) guest OS provides option to memory.

- a) change the CPU to 2 core while VM is running. Mention Status
Answer Core can't be changed since the VM is Power On.

- b) change the memory to 2048 MB while VM is running. Mention Status
Answer Memory can't be changed since the VM is Power On.

- c) Name the default disk Provisioning type
Answer Thick Provision lazy zeroed

- d) Name the best Provisioning type? why
Answer Thin Provision, because the storage can also be used by other VM when ever it is required.

- e) change the CPU to 2 Core while VM is running. Mention Status
Answer Core can't be changed because the VM is On

- f) change the memory to 2GB while VM is running.

Answer Memory can be changed from 1GB to 2GB

Steps

Create a new VM

1) Select a Creation type

2) Select name → Stu-Dev-Team-01 (Region A01)

3) Compute resource - (esx-01a)

4) Select storage - (esx-01a) (Thin Provisioning) (Memory 4 GB)

5) Select Compatibility - (5.5 & later)

6) Select Guest OS (Linux → Red Hat Enterprise) (64 Bit)

7) Customize hardware → CPU

(edit) Allocate 8 GB RAM, Memory - 1024 MB

hard disk - 24 GB

Disk Provision → Thin Provision.

Under memory → Enable memory hot plug

8) Ready to Complete → Finish & Power On

→ To enable memory hot plug → Under memory hot plug

In step-7 under memory → enable memory hot plug

→ To enable CPU hot plug → Under CPU hot plug

In step-7 enable CPU hot plug

→ For Disk Provision → Under Disk Provision

In step-7 Under new hard disk → Disk Provision

→ Under new hard disk → Disk Provision

In step-7 Under new hard disk → Disk Provision

→ Under new hard disk → Disk Provision

→ Under new hard disk → Disk Provision

Ques-2

Create a virtual machine named STU-testing - Team 1 (steps)

- Esxi Compatibility 6.0 or later
- Guest OS : Ubuntu Linux (64bit) Ram 128 MB
- 2 Core of CPU, 2048 MB of memory, 8GB Hard disk
- Disk Bus & On → Thick Provision eager zero
- Power ON Virtual machine
- Suspend the virtual machine

Question

- change the CPU for 2 core while VM is suspended
- change the memory to 3GB while VM is suspended

Create a new VM STU-Dev-Testing 2 ; enable CPU hot plug & Power On VM

Question

- change the CPU for 2 core while VM is running
- change the memory to 3GB while VM is running

Answer

- Core can't be changed while VM is suspended
- Memory can be changed from 2GB to 3GB
- CPU Core Compatiblity changed
- Memory can't be changed from 2GB to 3GB while VM is On

Steps

- 1) Select or creation type
- 2) Select name → STU-testing - Ram - 1 (Region B01)
- 3) Unfotute resource → (esx-01b)
- 4) Select storage → (esx-01b)
- 5) Select Compatibility → (6.0 or later)
- 6) Select Guest os (Linux → Ubuntu 64bit)
- 7) Customize hardware → Disk Bus & On → Thick Provision eager zero
- 8) Ready to complete

Brft-3 (Simultaneous Session)

Create a virtual machine named Stu-Debug-Team-01

- ESXi Compatibility: 5.5 later
- Guest OS: Linux Red Hat enterprise (64bit)
- 2 Core of CPU, 2GB memory, 10GB hard disk
- Change the default disk Provision type then Provisioning
- Go to VM Options & limit no. of simultaneous sessions to 03
- Power On

Questions

a) Name the default disk Provision type

→ Thick Provision lazy zero

b) Name of best disk Provision type & why

→ Thin Provisioning, because memory can be used by other VM whenever required.

c) Demonstrate the limit no. of simultaneous sessions.

Steps

New VM (Create a new VM)

→ Name & folder → Stu-debug-team-01

→ Select Compute resource → esxi-01-Com (selected)

→ Select Storage → Region 01 (selected)

→ Compatibility → esxi 5.5 & later

→ Guest OS → Linux red hat enterprise (64bit)

→ Customize hardware → CPU-2 (1024 MB per vCPU)

Memory 2GB (1024 MB)

hard disk → 4GB (10240 MB)

Disk Provision → Thin Provisioning (10240 MB)

VM Opt → simultaneous session = 3 (10240 MB)

→ Ready to Compose → Finish (10240 MB)

Creation & Clone for a virtual machine

Copy of an existing virtual machine (VMT) from existing VMTs

Clone can be created in both Power On & Off mode

Clone → Clone to template

Clone to Virtual machine (✓)

Clone as template to Library

IV NO QUEST

Questions (Part-1)

a) Changing disk BusType from thick Provision to thick Provision lazy zero is possible while Creating clone? Demonstrate

→ No it is not possible

c) Enabling CPU & memory hot plug is possible while Creating clone?

→ Yes, it is possible to enable both the options

steps:

Right click on the existing VM should work in this case

→ Clone → Create clone to VM

→ Select name of folder

→ Select a Complete source

→ Select storage objects (local to Oswald and Local LUN)

→ Select clone option → Clone to Virtual machine

→ Customize guest OS

→ Customize hardware

↳ Enable memory & CPU hot plug

↳ by changing disk BusType

→ Ready to Complete.

Ques: Create a VM named Stu-testing-team with the following configuration.

→ OS Compatibility 6.4 later

→ Guest OS : Red Hat Enterprise Linux (64 bit)

→ 2 Core of CPU, 2GB memory, 8GB hard drive

→ Power On VM

Create clone & update the VM with following changes & check status.

a) Clone name Stu - testing - team - clone (is protected) status off

b) Change virtual disk format of that Partition, eager zero

→ This can't be done

c) Change the CPU for 1 Core while VM is running.

→ This can't be done, because we can't degrade the value

d) change the memory to 1024 MB

→ This can't be done, because we can't degrade the value.

e) change the memory to 3GB

→ This can be done Only when memory hot plug is On

f) change the hard disk to 4GB

→ This can't be done, because we can't degrade the value

g) change the hard disk to 10GB

→ This can be done

Steps :-

→ VM name

→ Compute resource

→ Select storage

→ Select Compatibility

→ Guest OS → Red Hat Linux 64 bit

→ Customize hardware

→ Ready to Complete.

cloning → Create Clone to VM

- name
- Compute resource
- select storage
- Clone option
- Customize guest OS
- Customize hardware
- Ready to Complete

Template creation
↳ Power OFF

Expt 6

Template → Blue Period

Create a virtual machine named Situ-Market-Team-1 with following:

- CPU Compatibility : b & later
- Guest OS : Ubuntu Linux (64 Bit)
- 2 Core of CPU, 2048 MB of memory, 8G B hard disk
- Change default disk Provision to thick Provision Roger zero.
- Power ON virtual machine

Question

a) Name the default disk Provision type?

→ Thick Provision lazy zero

b) Name the best disk Provision type? why?

→ Thin Provision, because the storage can also be used by other VM when ever it is required.

c) Displays limit no of simultaneous sessions to OR

Create a template named Template-sh-market-Team-01

Question

d) Enabling CPU & memory hot plug is possible while creating template

→ NO

e) Change the memory to 3GB while VM is running

→ NO

steps

- Create a new VM with name & folder
- Select Compatibility
- Guest OS
- Customizing Hardware
- Change the disk provision to Roger zero
- Ready to Complete.
 - Do simultaneous session

click On Create template In Power OFF Condition

A new template is created with existing VM

Ques 7

Create a VM named stu-debug-Team-01 in esx-22.corp.local with following configuration

- Guest Compatibility : 6.0 or later
- Guest OS : windows server 2008 R2 (64bit)
- 1 Core of CPU, 1024 MB of memory, 0.6G B hard disk
- Power ON VM

Question

- Changing CPU to 2 Core is Possible? → NO
- Changing memory to 2GB is Possible? → NO

Further Create a fresh VM named stu-debug-Team-02 with

following settings

- Same VM Configuration as stu-debug-Team-01
- Enable CPU hot plug
- Enable Memory hot plug

Question

- Changing CPU to 2 Core is Possible? → NO
- Changing memory to 2GB is Possible? → Yes

Answer

Ans: We can't change VM config after creation.

Ans: No

Steps

- 1) Creating a new VM
- 2) Name - Stu-Debug-Team-01
- 3) Compatible version - ESXi 02.02.00.00
- 4) Select storage - Region A
- 5) Compatibility esx 6 & later
- 6) Guest OS → windows server 2008 R2 (64bit)
- 7) Customize hardware CPU - 1 vCPU at 2GHz & 1 vCPU at 1GHz
Memory - 1GB
Hard disk - 6GB
- 8) Ready to Complete, Finish

Create a new VM named Stu-Market-Team in ESXi-1a.local

- Create a new VM named Stu-Market-Team in ESXi-1a.local
- ESXi Compatibility 6 & later
 - Guest OS : windows server 2008 R2 (64bit)
 - 1 core of CPU, 1GB memory, 6GB harddisk, 1 vCPU, shared
 - change disk Provision to thin Provision
 - Power ON VM

Create OVF template for Stu-Market-Team deploy the same OVF template at ESXi-2a.local

Questions

- a) What is template

It is a Perfect model copy of a VM from which cloning can be done

Ques-9

- Create a VM named Stu-Results-Display-01 in esxi-1a.lab.local
- Esxi compatibility 6.4 latest
 - Guest OS : windows server 2008 R2 (64 bit)
 - 1Core of CPU, 1024 MB of memory, 6G B harddisk

Limit the no of simultaneous Connections to 3 & demonstrate

Create another VM named Stu-results-display-02 in esxi-2a.lab.local with same configuration as Stu-Results-Display-01. Limit sessions to 4

Question

a) What is limit the no of simultaneous connections?

→ The VM can do the no of specified work for those many times

b) why is it required? Explain

→ Steps to Create OVF template

Right click on template, click on OVF template and select all the options, download all the files and upload them and click on next & finish.

Create a new VM named stu-blocks-team with following configuration

- Processor compatibility level 6.0 (64 bit)
- Guest OS windows server 2008 R2 (64 bit)
- 1 Core CPU, 1 GB memory, 6 GB hard disk

Demonstrate Snapshots

- a) Snap-01 - stu-blocks-team (Power On)
- b) Snap-02 - stu-blocks-team (Power Off)
- c) Snap-03 - _____ (Suspended)
- d) Snap-04 - _____ (Power On)
- 2) Revert to Snap-02 - stu-blocks-team
- 3) Revert to latest snapshot
- 4) Delete Snapshot snap-01 - stu-blocks-team

Steps

- Creating a new VM
- Name stu-blocks-team
- Processor resources - processor compatibility level 6.0 (64 bit)
- Select Storage - Region A01
- Guest OS → windows server 2008 R2 (64 bit)
- Customize hardware
 - CPU - 1GB
 - Memory - 1GB
 - Hard Disk - 6 GB
- Ready to Complete, finish
- Power on, take Snap shot by right clicking, change name as required.
- To start, go to manage and select
- To delete select the snapshot in manage snapshot and delete

V-APP

Expt-11

Create 6 VMs at Esxi-1a Conf. Local with following Config

VMnames: VM01, VM02, VM03, VM04, VM05, VM06

Guest OS: Red hat enterprise (64 bit)

1 Core CPU, 1GB memory, 1GB harddisk

Demonstrate Vapp with following Constraints

- >Create 2 vApps (Vapp-1, Vapp-2)
 - i) Vapp-01 Container must have VM01 --- VM03
 - Power ON Vapp & check status
 - Change the order of Power ON to VM03, VM02, VM01
 - Clone the Vapp-01 named as clone-Vapp-01
 - ii) Vapp-02 should perform the following.
 - Container must have VM04, VM05, VM06
 - Power ON Vapp & check status
 - change the order of Power ON to VM06, VM05, VM04
 - Clone the Vapp-02 named as clone-Vapp-02

Creation of Vapp

Right click on vApp, edit settings, toggle On DRS, Then Create a new vApp with specified name, drop down the required VM's to the vApp, then do the required action, i.e ON(OFF).

To change the order to ON/OFF of VM's, click on Edit settings in group change to required order.

To Create clone, Power off vApp click on clone, and Create from existing vApp & click on finish.