Practical No.2

Aim :- Implement XEN for server virtualization.

XEN SERVER

Xen is a hypervisor using a microkernel design, providing services that allow multiple computer operating systems to execute on the same computer hardware concurrently.

The University of Cambridge Computer Laboratory developed the first versions of Xen. The Xen community develops and maintains Xen as free and open-source software, subject to the requirements of the GNU General Public License (GPL), version 2. Xen is currently available for the IA-32, x86-64 and ARM instruction sets

Xen runs in a more privileged CPU state than any other software on the machine.

Responsibilities of the hypervisor include memory management and CPU scheduling of all virtual machines ("domains"), and for launching the most privileged domain ("dom0") - the only virtual machine which by default has direct access to hardware. From the dom0 the hypervisor can be managed and unprivileged domains ("domU") can be launched.

The dom0 domain is typically a version of Linux, or BSD. User domains may either be traditional operating systems, such as Microsoft Windows under which privileged instructions are provided by hardware virtualization instructions (if the host processor supports x86 virtualization, e.g., Intel VT-x and AMD-V), or *para-virtualized* operating system whereby the operating system is aware that it is running inside a virtual machine, and so makes hypercalls directly, rather than issuing privileged instructions.

Xen boots from a bootloader such as GNU GRUB, and then usually loads a paravirtualized host operating system into the host domain (dom0).

STEP 1: Open the VMware Workstation 10. Go to the File menu. Click on New Virtual Machine option.



STEP 2: Click on "Typical" option button & click on Next.



STEP 3: Select the option button "Installer disc image file (iso)" & click on Next.

New Virtual Machine Wiza	ard	×
Guest Operating Sys A virtual machine is system. How will yo	stem Installation s like a physical computer; it needs ou install the guest operating syst	an operating em?
Install from:		
🔘 Installer <u>d</u> isc:		
🔮 DVD RW Drive (F	=:)	-
 Installer disc image fil 	ile (iso):	
:\VMware-VMvisor-In	nstaller-5.1.0-799733.x86_64.iso	▼ Browse
🔱 VMware ESXi 5 d	letected.	
I will install the opera	iting system later.	
The virtual machine v	will be created with a blank hard di	isk.
Hele		

STEP 4: Select the Guest operating system as Other & confirm the version should be Other 64-bit. Then click on Next.

New Virtual Machine Wizard	×
Select a Guest Operating System Which operating system will be installed on this virtual machine?	
Guest operating system	
○ Microsoft <u>Wi</u> ndows	
© <u>L</u> inux	
🔘 Nov <u>e</u> ll NetWare	
○ Solaris	
O VMware ESX	
<u>Other</u>	
Version	
MS-DOS	•
Help < <u>B</u> ack <u>N</u> ext > Ca	ncel

New Virtual Machine Wizard			×
Select a Guest Operating Sys Which operating system will	stem be installed on t	this virtual machine	e?
Guest operating system			
Microsoft <u>W</u> indows			
🔘 Linux			
Novell NetWare			
© <u>S</u> olaris			
VMware ESX			
<u>O</u> ther			
Version			
MS-DOS			-
eComStation2			P.
eComStation			
FreeBSD 64-bit			
MS-DOS			
Other			
Other 64-bit			
Help	< <u>B</u> ack	<u>N</u> ext >	Cancel

New Virtual Machine Wizard		x
Select a Guest Operating Which operating system	y System n will be installed on this virtual machine?	
Guest operating system		
Microsoft <u>W</u> indows		
© Linux		
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O VMware ESX		
Other		
Version		
Other 64-bit		•
Help	< Back Next > Ca	ancel

STEP 5: Give the Virtual machine name as Citrix XEN Server & click on the browse for the location & create one separate directory for Citrix XEN Server in your folder & specify the path over here. Then click on Next.

New Virtual Machine Wizard	×
Name the Virtual Machine What name would you like to use for this virtual machine?	
<u>V</u> irtual machine name:	
Citrix KEN Server	
Location:	
C:\Users\MSCIT-8\Documents\Virtual Machines\Citrix XEN Serve	Browse
The default location can be changed at Edit > Preferences.	Cancel

STEP 6: You have to specify the size of virtual hard-disk used for Citrix XEN Server. By default it is 80 GB. Click on Next.

New Virtual Machine Wizard
Specify Disk Capacity How large do you want this disk to be?
The virtual machine's hard disk is stored as one or more files on the host computer's physical disk. These file(s) start small and become larger as you add applications, files, and data to your virtual machine.
Maximum disk <u>s</u> ize (GB): 80 🚔
Recommended size for Other 64-bit: 8 GB
 Store virtual disk as a single file Split virtual disk into multiple files Splitting the disk makes it easier to move the virtual machine to another computer but may reduce performance with very large disks.
Help < <u>B</u> ack <u>N</u> ext > Cancel

STEP 7: Then it will display the whole hardware information for Citrix XEN Server. Click on Customize Hardware button.

e virtual machine w	vill be created with the following settings:
ame:	citrix xen server1
ocation:	C:\Users\MSCIT-13\Documents\Virtual Machines\citri
ersion:	Workstation 10.0
perating System:	Other 64-bit
ard Disk:	80 GB
emory:	1912 MB
etwork Adapter:	NAT
ther Devices:	CD/DVD, Sound Card
perating System: ard Disk: iemory: etwork Adapter: other Devices:	Other 64-bit 80 GB 1912 MB NAT CD/DVD, Sound Card

STEP 8: The virtual machine settings will display, by default, memory 256 MB; Select the memory option & from the slider at the right side, make the memory as 2 GB. Then click on Close.

Device	Summary	Memory
Memory Processors New CD/DVD (Network Adapter Sound Card Display	256 MB 1 Using file G:\MSC-IT SEM 2\cloud NAT Auto detect Auto detect	Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB. Memory for this virtual machine: 2048 → MB 64 GB - 2 GB - 1 GB - 2 GB - 1 GB - 2
	Add Remove	

STEP 9: Click on Finish.

he virtual machine v	vill be created with the following settings:
Name:	citrix xen server1
Location:	C:\Users\MSCIT-13\Documents\Virtual Machines\citri
Version:	Workstation 10.0
Operating System:	Other 64-bit
Hard Disk:	80 GB
Memory:	1912 MB
Network Adapter:	NAT
Other Devices:	CD/DVD, Sound Card



STEP 10: Click on Citrix XEN Server and Power on this virtual machine.



STEP 11: Double click on Citrix XEN Server to install it. It will load the XEN installer.



STEP 12: We begin by choosing the keymap.

Citrix XEN Server - VMware Work	station	- 0 X
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	(Tab)/(Alt-Tab) between elements (F1) Helv screen	
To direct input to this VM, click inside	are reserved to the G	n h A n

STEP 13: Assuming you have backed up your data or are doing an install to a fresh disk (or just don't care about what's on there), we hit OK.



STEP 14: It will display End User License Agreement screen. Hit on Accept EULA.



STEP 15: Here we choose which disk to install to. In a similar way to ESXi, we don't have the option of software RAID, so here we choose a single disk or available hardware RAID volume. Press space to select a drive. Since we are using a NFS datastore on the network to store virtual machines, this is OK. Moving on.



STEP 16: Now we can key down to OK.



STEP 17: We have the install media here so we will use the Local Media option.



STEP 18: If you have to ask what a Supplemental Pack is, you don't have one. Select No. If you select Yes and don't have one don't worry, it won't harm anything.

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Library ×	Alome X 🔂 Wilware ESXI 5 X 🔂 Citrix XEII Server X	
Q. Type here to search ▼ Image: Myc Computer Image: Out for a CN Image: Out for a CN Image: Out for a CN Image	Welcome to XenServer - Version 6.2.8 (#78446с) Gopyright (c) 2813 Citrix Systems, Inc. Supplemental Packs Hould you like to install any Supplemental Packs?	
	<tab>/<alt-tab> between elements ; ; ; ; ; ; ; Help screen</alt-tab></tab>	
To direct input to this VM, click inside	or press Ctrl+G.	

STEP 19: You can Skip verification.



STEP 20: It will display the screen for setting the password for root user. Just enter the password & confirm the password. Then hit on Ok.

Citrix XEN Server - VMware Wor	rkstation	- 0 - X
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Library ×	A Hone X 🗇 Whare ESX 5 X 🛱 Citrix XEN Server X	
Q Type here to search Image: My Computer Image: My Computer Image: DU for ACN Image: DU for ACN (2) Image: Transformed to the second to the	Helcome to XenServer - Version 6.2.8 (#78446c) Copyright (c) 2813 Citrix Systems, Inc. Set Password of at least 6 characters for the root account. (This is the password used when connecting to the XenServer Host from XenCenter.) Password Back DE Back (National State St	
To direct input to this VM, click insid	de or nress Ctrl+G.	👝 🙉 🏗 🏠 📄

STEP 21: The motherboard we are installing to have two Ethernet ports, both of which are supported by XEN Server. Choose the one you wish to use for the management network – you can change this later. Here we get to choose the networking settings for our management network. This is the IP address used for logging in to manage the XEN Server.

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Eile Edit View VM Iabs Help	
Library X Q. Type here to search	
■ My Computer DU for ACN (2) Where ESNS Critic XEN Sever Shared VMs Helcome to XenServer - Version 6.2.8 (#70446c) Copyright (2) 2013 Citrix Systems, Inc. Helcome to XenServer - Version 6.2.8 (#70446c) Copyright (2) 2013 Citrix Systems, Inc. Networking Methods in the face on this host. (•) Automatic configuration (HDEP) (•) Static config	
To direct input to this VM. click inside or press Ctrl+G.	

STEP 22: Next we choose the hostname and the DNS server settings – if you're at home you likely use your gateway IP address.



STEP 23: Pick your country name & then city name.



To direct input to this VM, click inside or press Ctrl+G.



STEP 24: Now choose whether to set your time based on an NTP server or on your manual input.







STEP 26: It will show a progress bar so you can see where the install is up to. Once it has done, if you said you did have supplemental packs you should see.

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To direct input to this VM, click inside	e or press Ctrl+G.	ing 🖓 🖫 🌒 📄						

STEP 27: Hit Ok to reboot.



To direct input to this VM, click inside or press Ctrl+G.



STEP 28: The above is the loading screen for your new XenServer 6.2 install.



STEP 29: Note down IP Address 192.168.232.129.This is the console screen for XenServer 6.2.Installing virtual machine using XenCenter. Open Citrix XenCenter.

Citrix XEN Server - VMware Work	station				
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Shared VMs		Con:	figuration ————		
		Customize System	UMware, Inc. UMware Virtual Platfo	rm	
		Network and Management Interface	XenServer 6.2.0-70446	c I	
		Virtual Machines	Management Network Pa	rameters	
		Disks and Storage Repositories Resource Pool Configuration Hardware and BIOS Information Keyboard and Timezone Remote Service Configuration Backup, Nestore and Update Technical Support Reboot or Shutdown Local Command Shell	Device eth0 IP address 192. Netmask 255. Gateway 192. Press <enter> to disp fingerprints for this</enter>	168.232.129 255.255.0 168.232.2 lay the SSL key host	
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				eScan Corporate f Warning: Download blr	for Windows 🔗 🗴 ocked, as client not present in
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