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ANISH ADNANI
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Page No. 1
Date

EXPERIMENT 4

Aim: Implementation of Bare metal virtualization using XEN

Theory:

What is XEN?

The XEN hypervisor, the most powerful open source industry standard for virtualization, it offers powerful, efficient and secure feature set for virtualization of x86 and other CPU architecture. It supports a wide range of guest OS including windows, Linux, Solaris and various versions of BSD OS.

In XEN systems, the XEN hypervisor is the lowest- and most privileged S/W layer. This layer supports one or more guest OS scheduled on physical terminology domain is executed automatically. When hypervisor boots & receives special privileges and direct access to all physical H/W by default. The system administrator can log into dom0 in order to manage any additional guest OS called user domains in XEN terminology

* Bare metal hypervisor

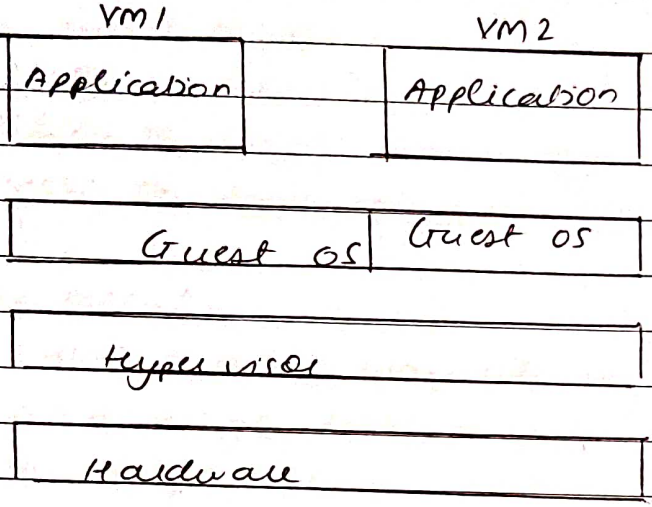
- A Bare metal hypervisor or a type 1 hypervisor is virtualization S/W that is installed on H/W directly.

- At its core, the hypervisor is the host or OS

- It is structural to allow for virtualization of underlying H/W components to function as if they

Teacher's Sign.: _____

have direct access to h/w.



Type I hypervisor

- The hypervisor enables computer to operate its OS from its core physical structure and H/W
- From this position, the hypervisor can give a physical host the ability to operate many virtual units
- It allows for the opportunity to how many clients on same server
- Each client will experience a circulation of its own dedicated server
- The Hyper-V, systems Xenserver respectively represent majority of hypervisor.

Features

- Consolidation
- Increased utilization

Teacher's Sign.: _____

- Rapid provisioning
- Dynamic fault tolerance against s/w failures
- H/w fault tolerance
- Ability to securely operate virtual os
- Ability to support legacy s/w as well as new os instances on same computer

* Bare metal

It is just another way of saying 'dedicated server' This is a single tenant environment with direct access to underlying h/w technology without any hypervisor overhead Bare metal on support many kinds of os on top of its core performance

The term bare metal refers to direct access to h/w. It includes the ability to leverage all of its specific features which would not be accessible with type 1 or 2 hypervisor.

* Benefits of Bare metal hypervisor

- Backup & protection
- Improved H/W utilization
- Improved ability
- Adequate security
- QOS
- Flexible deployment
- Cost effective for Data Transfer

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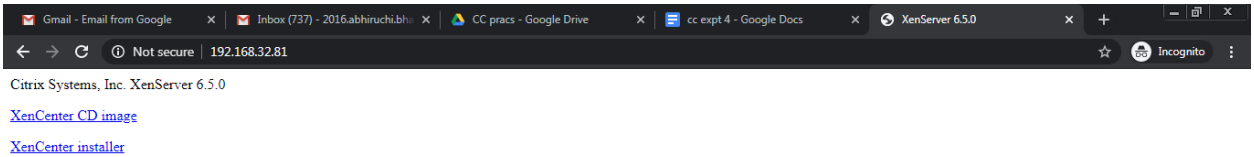
Conclusion:

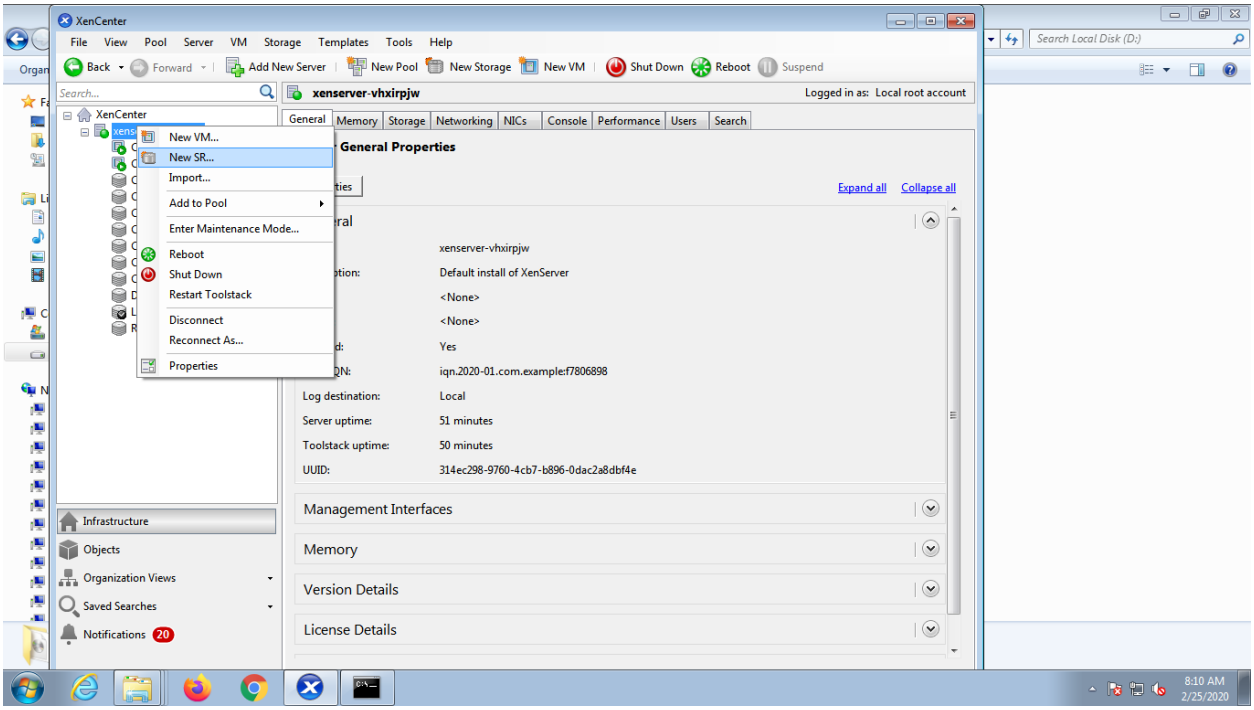
Implementation of Bare metal Utilization is successfully done using XEN server.

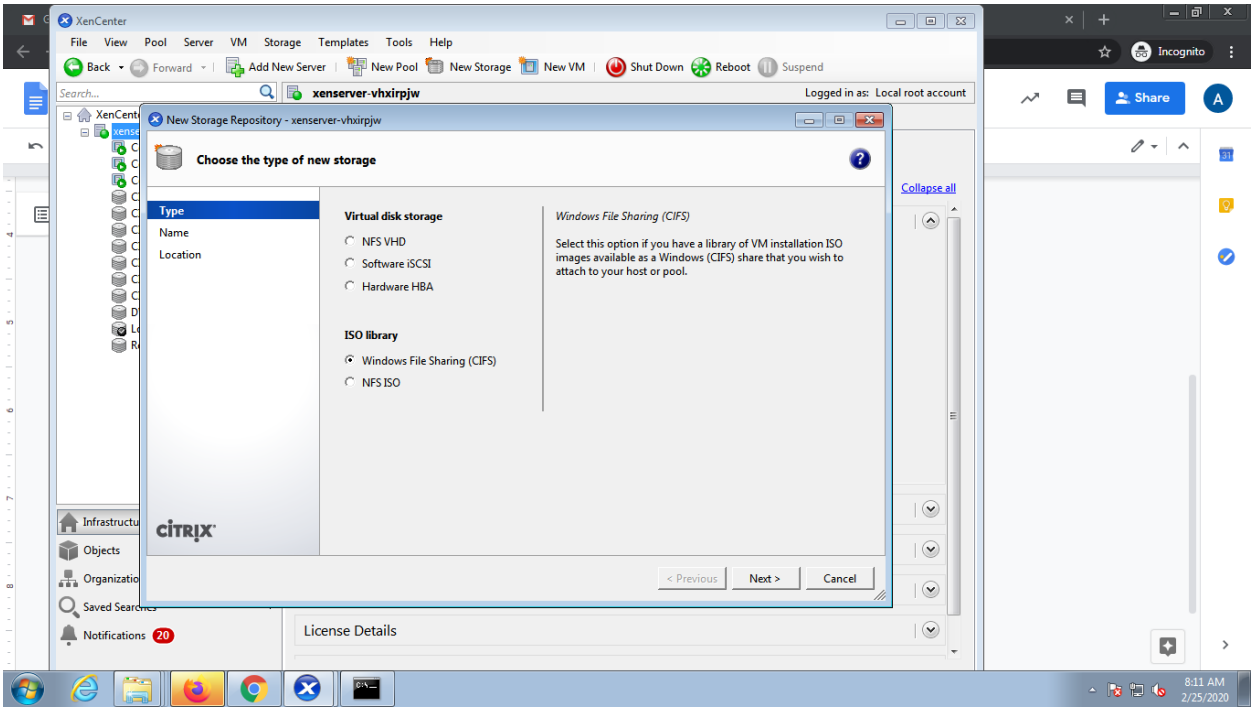


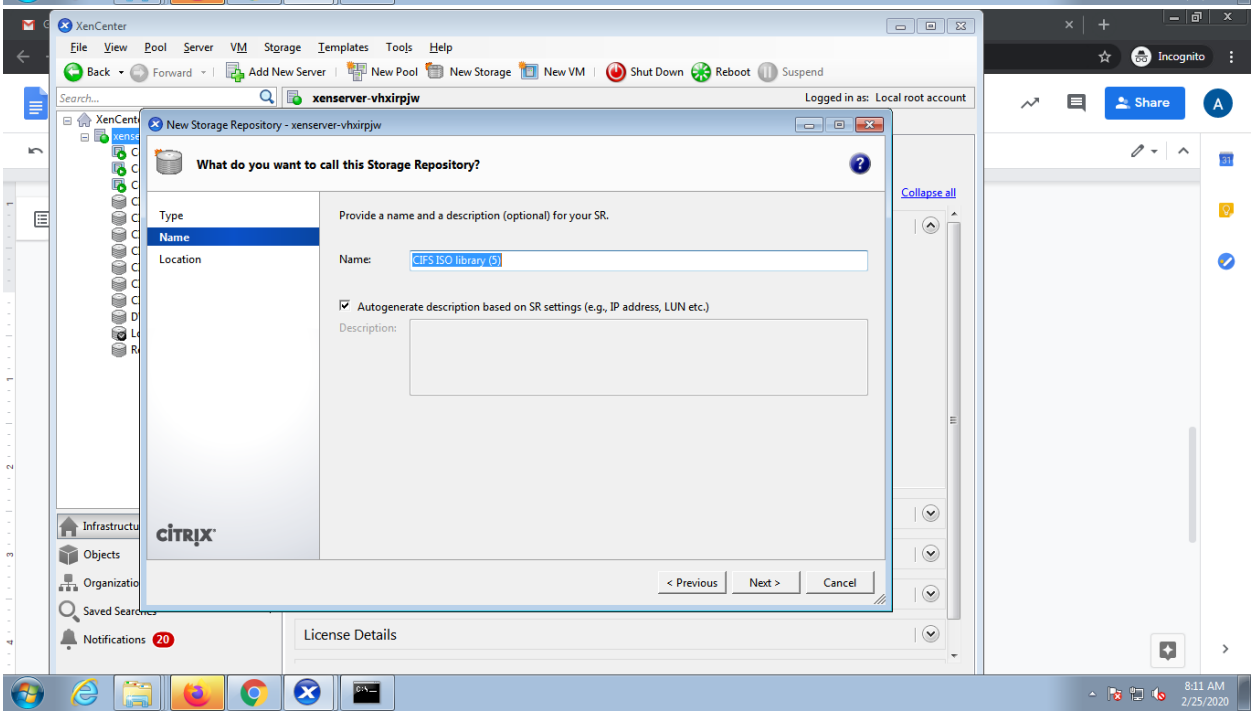
Citrix Systems, Inc. XenServer 6.5.0

XenCenter CD image

XenCenter installer




XenCenter
File View Pool Server VM Storage Templates Tools Help
Back Forward Add New Server New Pool New Storage New VM Shut Down Reboot Suspend
xenserver-vhxirpjw
Logged in as: Local root account
New Storage Repository - xenserver-vhxirpjw
Choose the type of new storage
Type
Name
Location
Virtual disk storage
NFS VHD
Software iSCSI
Hardware HBA
ISO library
Windows File Sharing (CIFS)
NFS ISO
Windows File Sharing (CIFS)
Select this option if you have a library of VM installation ISO images available as a Windows (CIFS) share that you wish to attach to your host or pool.
CITRIX
< Previous
Next >
Cancel
Collapse all
License Details
Notifications 20
Share
Incognito
8:11 AM
2/25/2020


XenCenter
File View Pool Server VM Storage Templates Tools Help
Back Forward Add New Server New Pool New Storage New VM Shut Down Reboot Suspend
xenserver-vhxirpjw
Logged in as: Local root account
New Storage Repository - xenserver-vhxirpjw
What do you want to call this Storage Repository?
Type
Name
Location
Provide a name and a description (optional) for your SR.
Name:
CIFS ISO library (5)
Autogenerate description based on SR settings (e.g., IP address, LUN etc.)
Description:
CITRIX
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Cancel
Collapse all
License Details
Notifications 20
Share
Incognito
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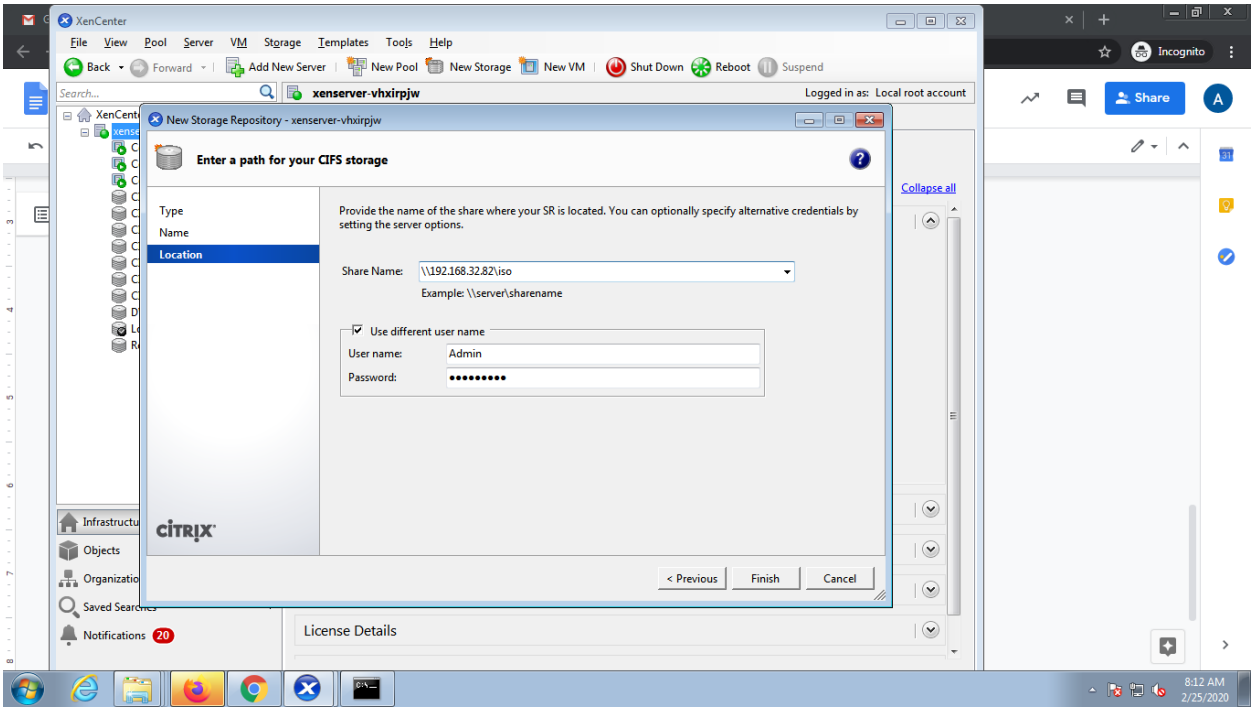
XenCenter
File View Pool Server VM Storage Templates Tools Help
Back Forward Add New Server New Pool New Storage New VM Shut Down Reboot Suspend
Search...
xenserver-vhxirpjw
Logged in as: Local root account
New Storage Repository - xenserver-vhxirpjw
Enter a path for your CIFS storage
Type
Name
Location
Provide the name of the share where your SR is located. You can optionally specify alternative credentials by setting the server options.
Share Name: \\192.168.32.82\iso
Example: \\server\sharename
Use different user name
User name: Admin
Password: ••••••••
CITRIX
< Previous
Finish
Cancel
Collapse all
Infrastructure
Objects
Organization
Saved Searches
Notifications 20
License Details
Incognito
Share
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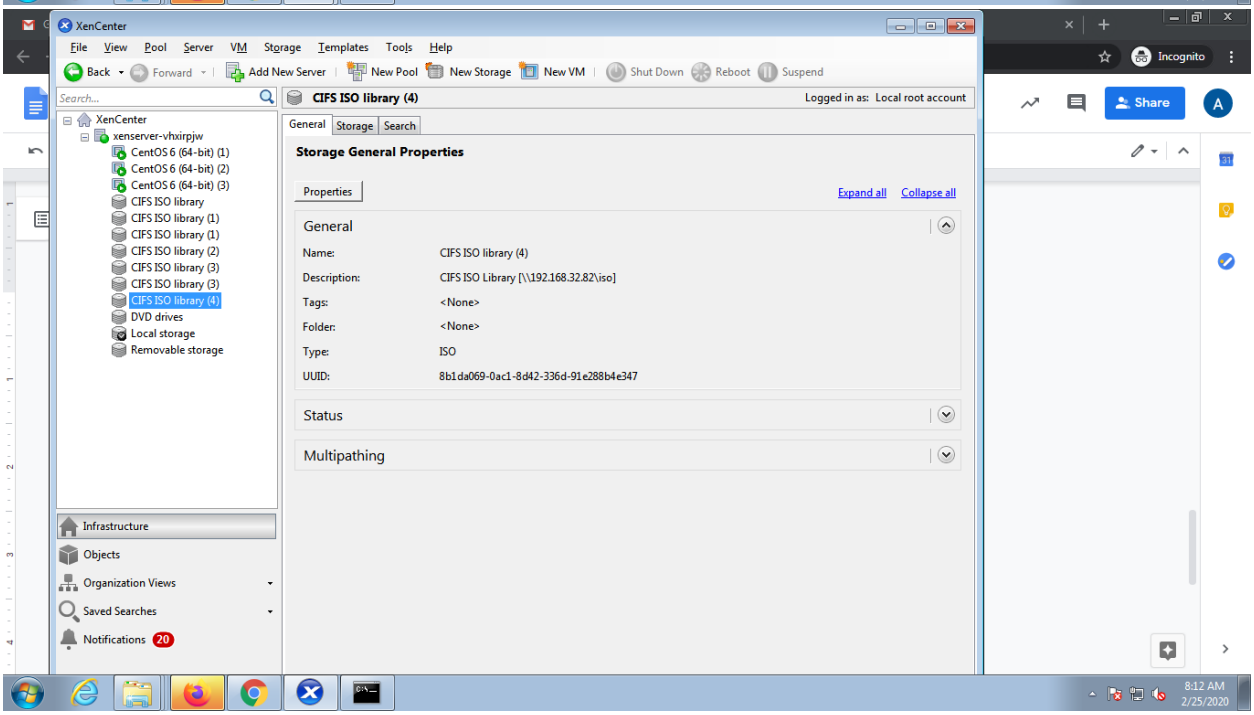
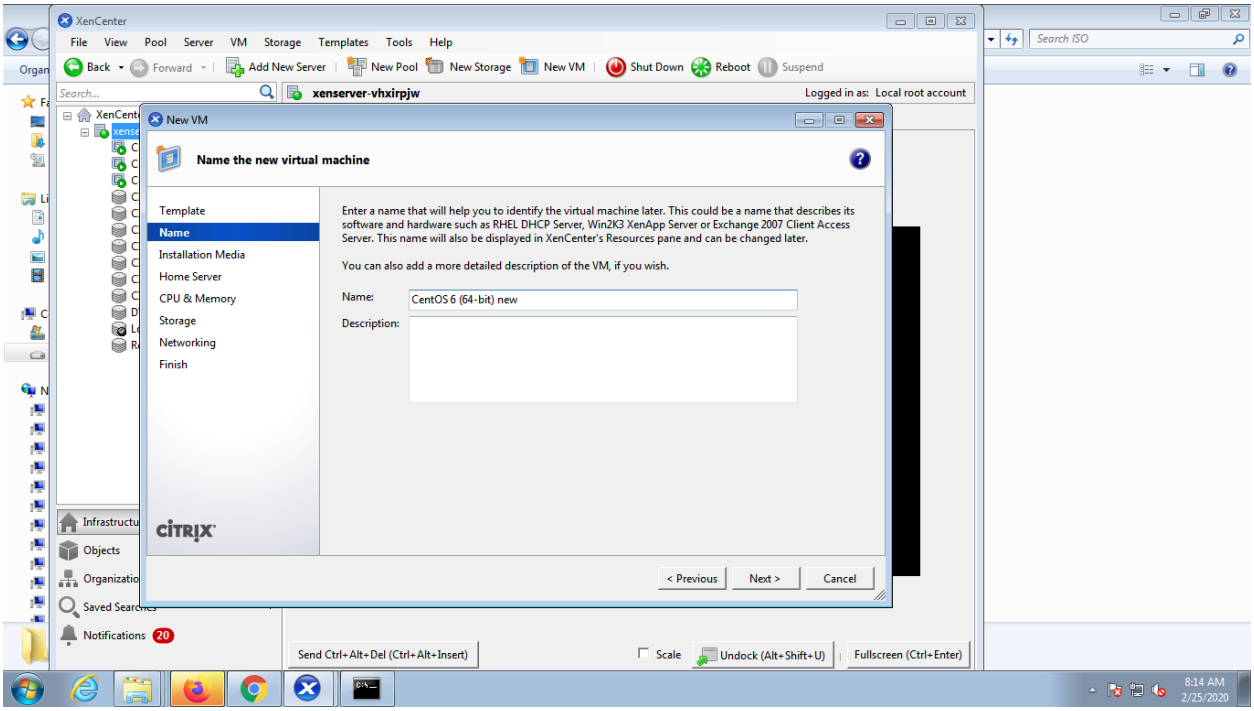
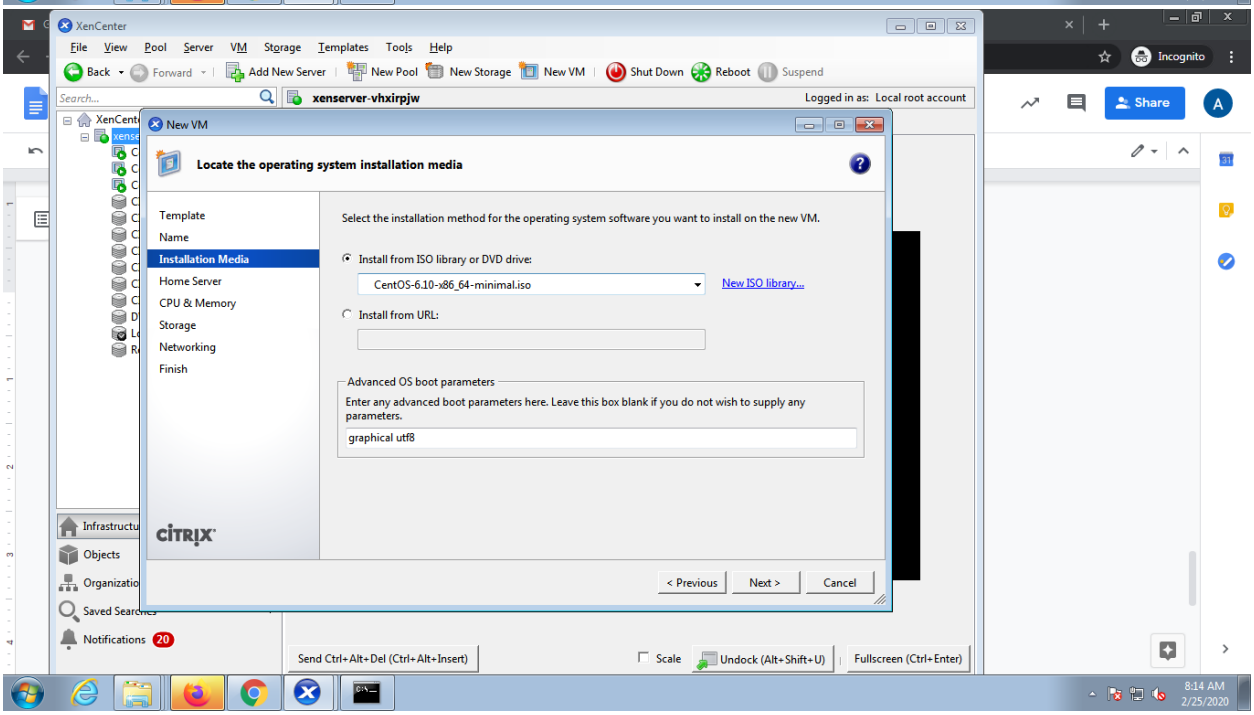
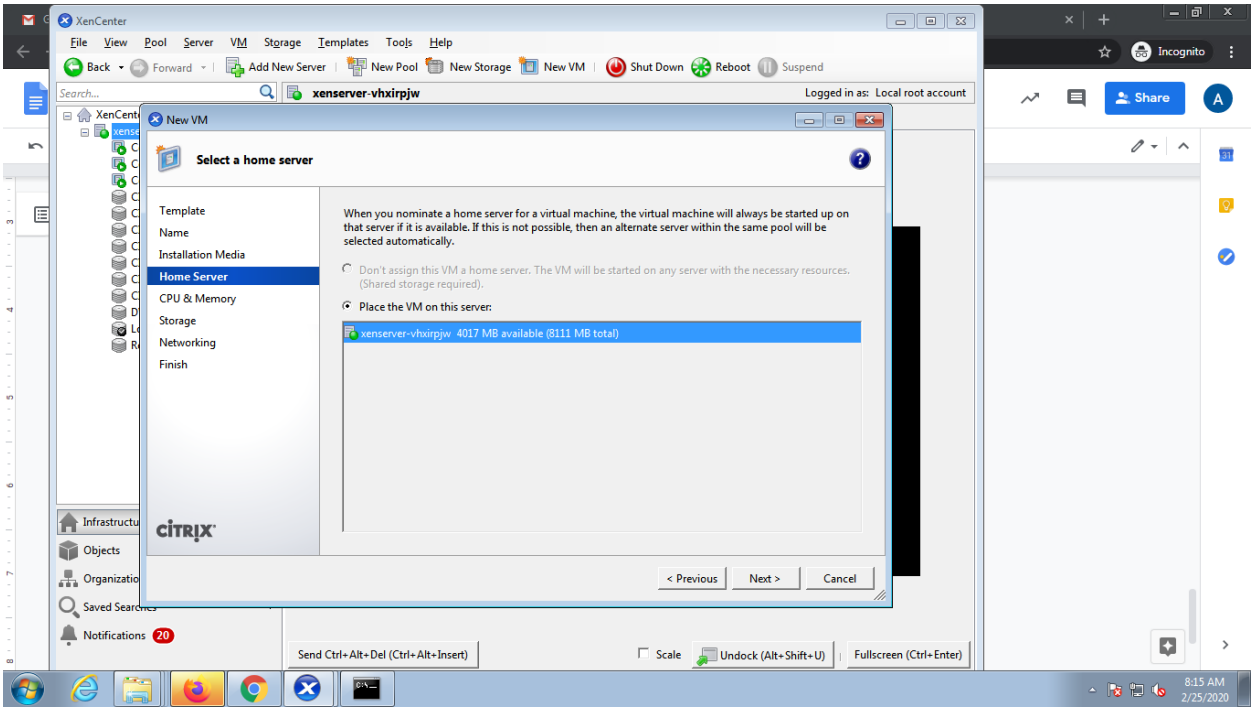
2/25/2020


XenCenter
File View Pool Server VM Storage Templates Tools Help
Back Forward Add New Server New Pool New Storage New VM Shut Down Reboot Suspend
Search...
CIFS ISO library (4)
Logged in as: Local root account
XenCenter
xenserver-vhxirpjw
CentOS 6 (64-bit) (1)
CentOS 6 (64-bit) (2)
CentOS 6 (64-bit) (3)
CIFS ISO library
CIFS ISO library (1)
CIFS ISO library (1)
CIFS ISO library (2)
CIFS ISO library (3)
CIFS ISO library (3)
CIFS ISO library (4)
DVD drives
Local storage
Removable storage
General
Storage
Search
Storage General Properties
Properties
Expand all
Collapse all
General
Name: CIFS ISO library (4)
Description: CIFS ISO Library [\\192.168.32.82\iso]
Tags: <None>
Folder: <None>
Type: ISO
UUID: 8b1da069-0ac1-8d42-336d-91e288b4e347
Status
Multipathing
Infrastructure
Objects
Organization Views
Saved Searches
Notifications 20
Incognito
Share
8:12 AM
2/25/2020


XenCenter
File View Pool Server VM Storage Templates Tools Help
Back Forward Add New Server New Pool New Storage New VM Shut Down Reboot Suspend
xenserver-vhxirpjw
Logged in as: Local root account
New VM
Name the new virtual machine
Template
Name
Installation Media
Home Server
CPU & Memory
Storage
Networking
Finish
Enter a name that will help you to identify the virtual machine later. This could be a name that describes its software and hardware such as RHEL DHCP Server, Win2K3 XenApp Server or Exchange 2007 Client Access Server. This name will also be displayed in XenCenter's Resources pane and can be changed later.
You can also add a more detailed description of the VM, if you wish.
Name:
CentOS 6 (64-bit) new
Description:
CITRIX
< Previous
Next >
Cancel
Notifications 20
Send Ctrl+Alt+Del (Ctrl+Alt+Insert)
Scale
Undock (Alt+Shift+U)
Fullscreen (Ctrl+Enter)
8:14 AM
2/25/2020


XenCenter
File View Pool Server VM Storage Templates Tools Help
Back Forward Add New Server New Pool New Storage New VM Shut Down Reboot Suspend
xenserver-vhxirpjw
Logged in as: Local root account
New VM
Locate the operating system installation media
Template
Name
Installation Media
Home Server
CPU & Memory
Storage
Networking
Finish
Select the installation method for the operating system software you want to install on the new VM.
Install from ISO library or DVD drive:
CentOS-6.10-x86_64-minimal.iso
New ISO library...
Install from URL:
Advanced OS boot parameters
Enter any advanced boot parameters here. Leave this box blank if you do not wish to supply any parameters.
graphical utf8
CITRIX
< Previous
Next >
Cancel
Notifications 20
Send Ctrl+Alt+Del (Ctrl+Alt+Insert)
Scale
Undock (Alt+Shift+U)
Fullscreen (Ctrl+Enter)
Incognito
Share
8:14 AM
2/25/2020


XenCenter
File View Pool Server VM Storage Templates Tools Help
Back Forward Add New Server New Pool New Storage New VM Shut Down Reboot Suspend
xenserver-vhxirpjw
Logged in as: Local root account
New VM
Select a home server
Template
Name
Installation Media
Home Server
CPU & Memory
Storage
Networking
Finish
When you nominate a home server for a virtual machine, the virtual machine will always be started up on that server if it is available. If this is not possible, then an alternate server within the same pool will be selected automatically.
Don't assign this VM a home server. The VM will be started on any server with the necessary resources. (Shared storage required).
Place the VM on this server:
xenserver-vhxirpjw 4017 MB available (8111 MB total)
CITRIX
< Previous
Next >
Cancel
Infrastructure
Objects
Organization
Saved Searches
Notifications 20
Send Ctrl+Alt+Del (Ctrl+Alt+Insert)
Scale
Undock (Alt+Shift+U)
Fullscreen (Ctrl+Enter)
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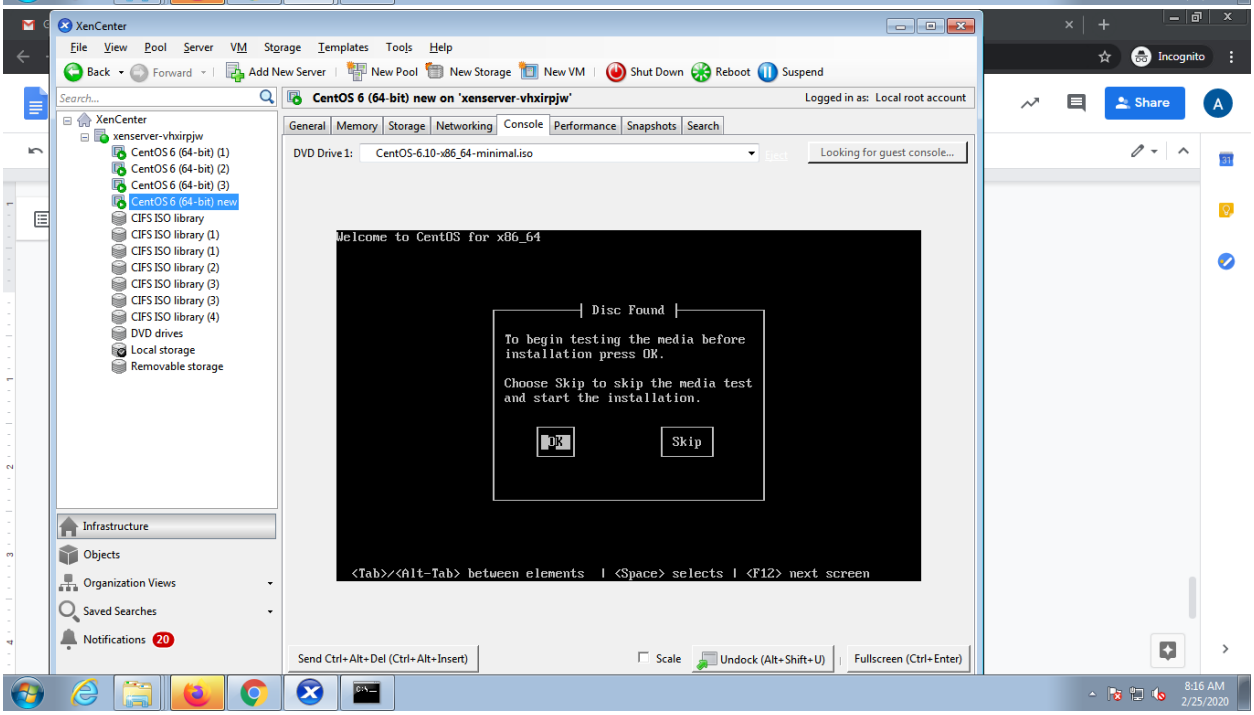
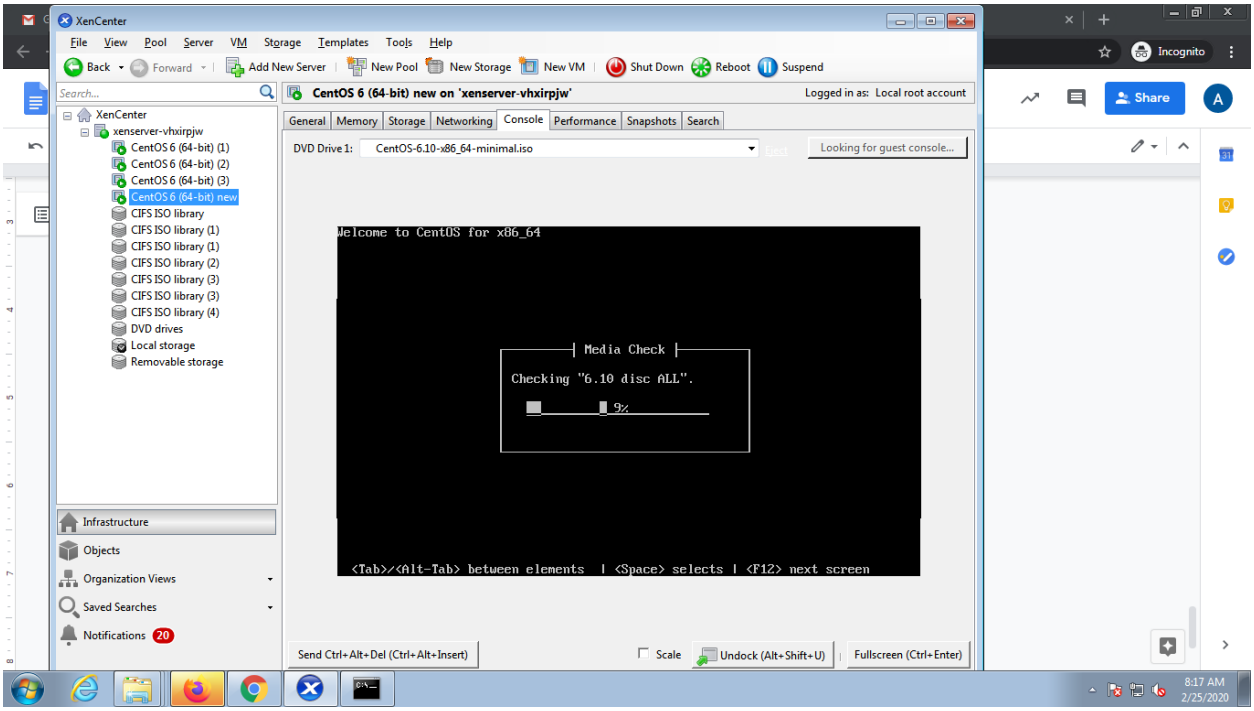

XenCenter
File View Pool Server VM Storage Templates Tools Help
Back Forward Add New Server New Pool New Storage New VM Shut Down Reboot Suspend
CentOS 6 (64-bit) new on 'xenserver-vhxirpjw'
Logged in as: Local root account
XenCenter
xenserver-vhxirpjw
CentOS 6 (64-bit) (1)
CentOS 6 (64-bit) (2)
CentOS 6 (64-bit) (3)
CentOS 6 (64-bit) new
CIFS ISO library
CIFS ISO library (1)
CIFS ISO library (1)
CIFS ISO library (2)
CIFS ISO library (3)
CIFS ISO library (3)
CIFS ISO library (4)
DVD drives
Local storage
Removable storage
General Memory Storage Networking Console Performance Snapshots Search
DVD Drive 1: CentOS-6.10-x86_64-minimal.iso
Eject
Looking for guest console...
Welcome to CentOS for x86_64
Disc Found
To begin testing the media before installation press OK.
Choose Skip to skip the media test and start the installation.
OK
Skip
<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen
Infrastructure
Objects
Organization Views
Saved Searches
Notifications 20
Send Ctrl+Alt+Del (Ctrl+Alt+Insert)
Scale
Undock (Alt+Shift+U)
Fullscreen (Ctrl+Enter)
8:16 AM
2/25/2020


XenCenter
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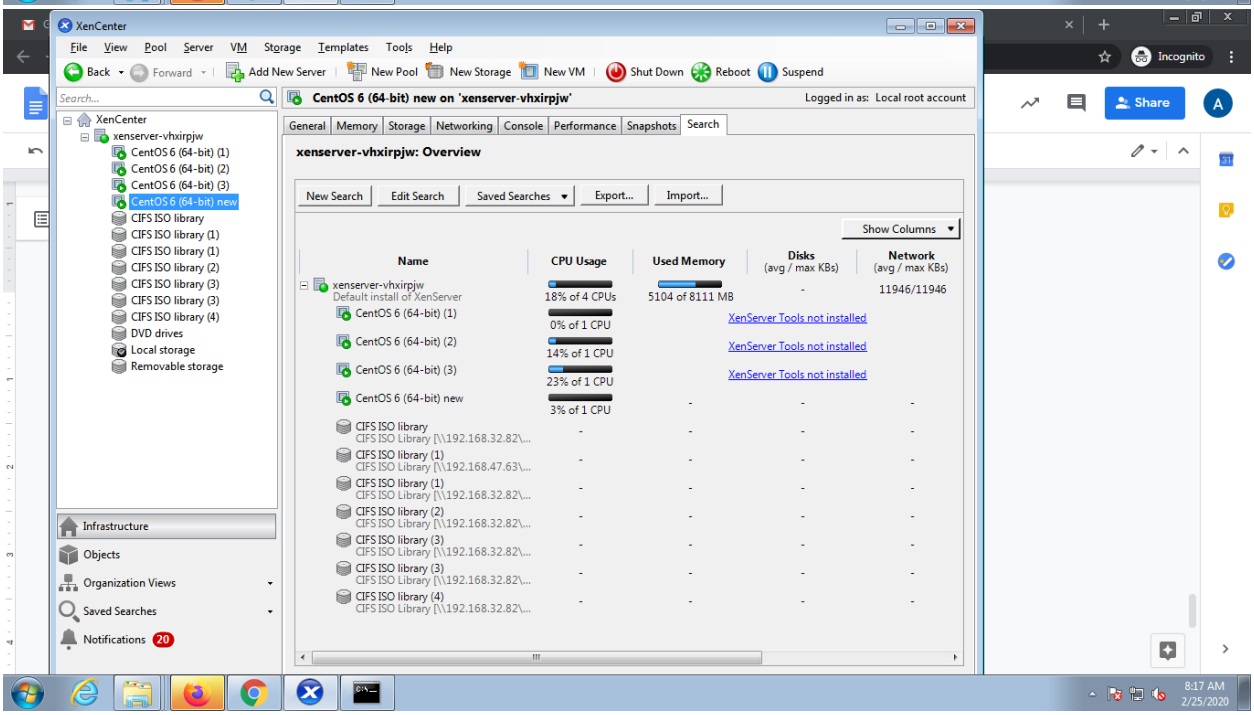
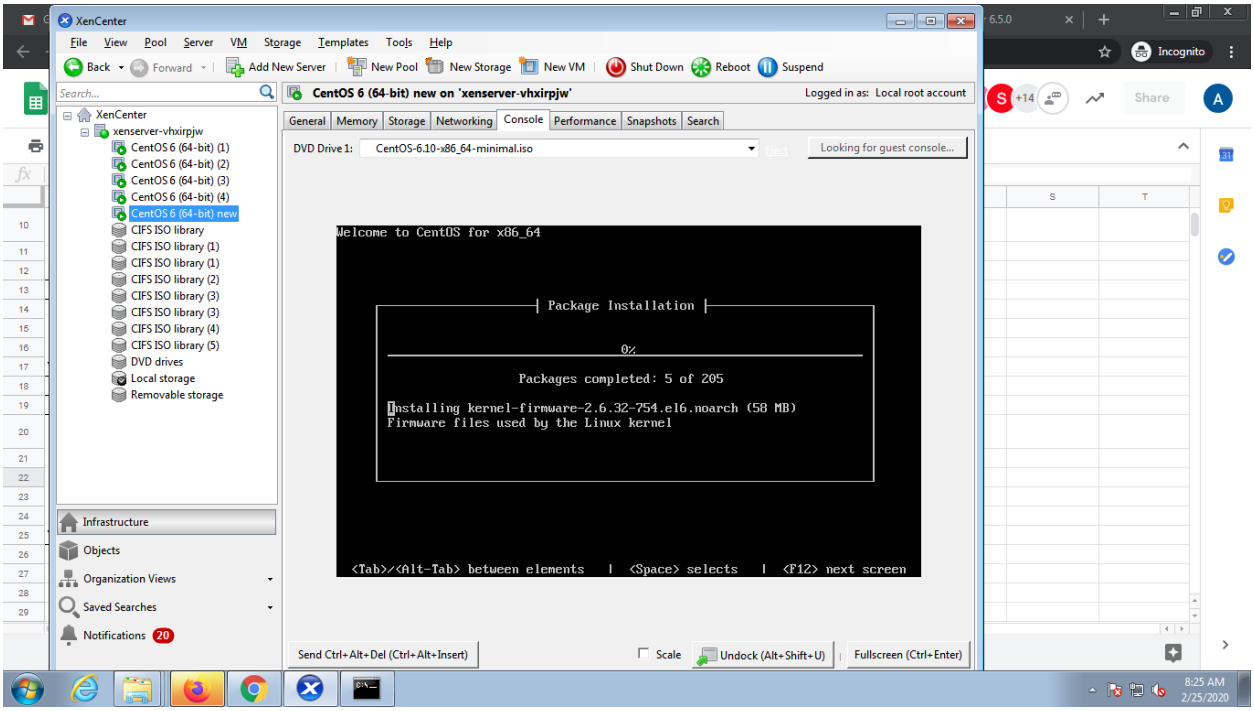
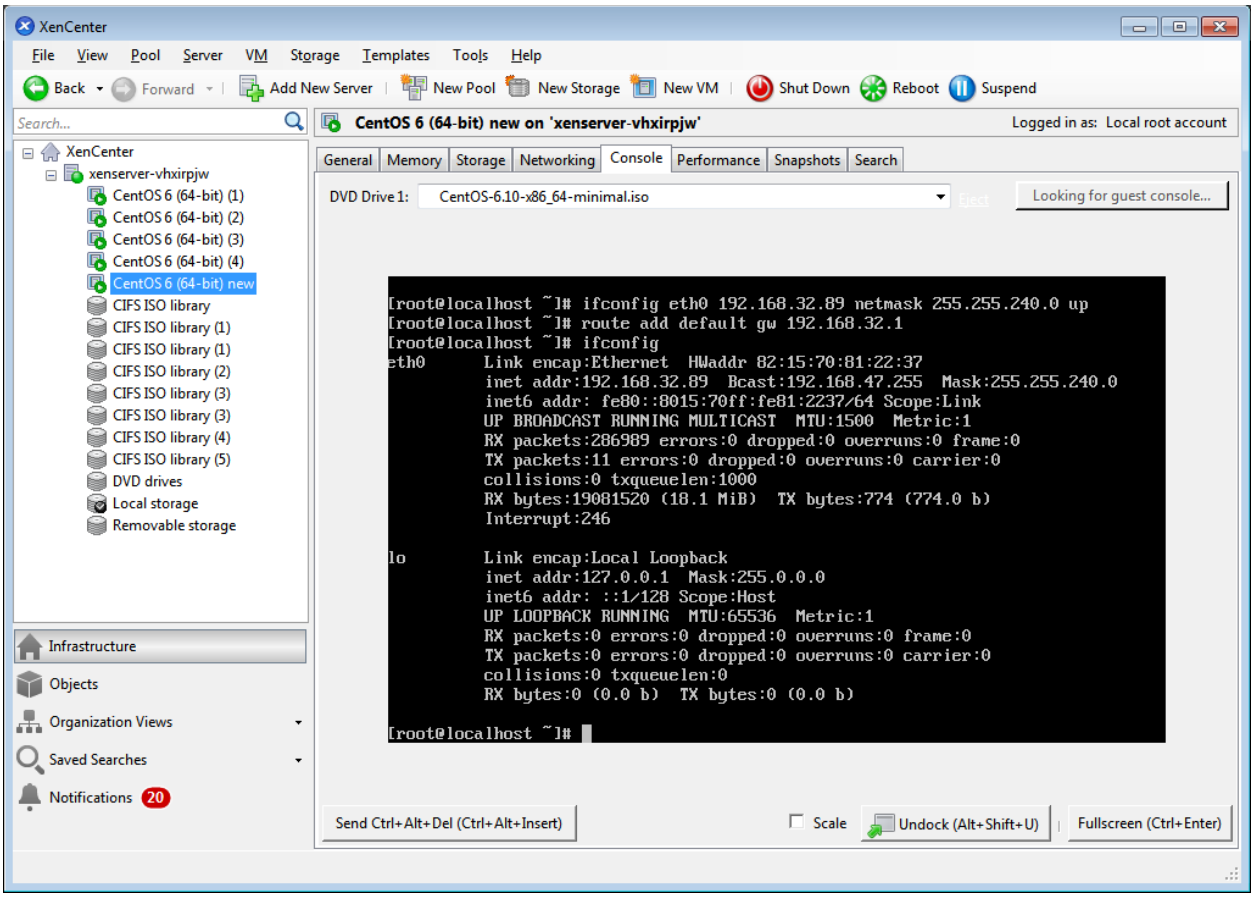
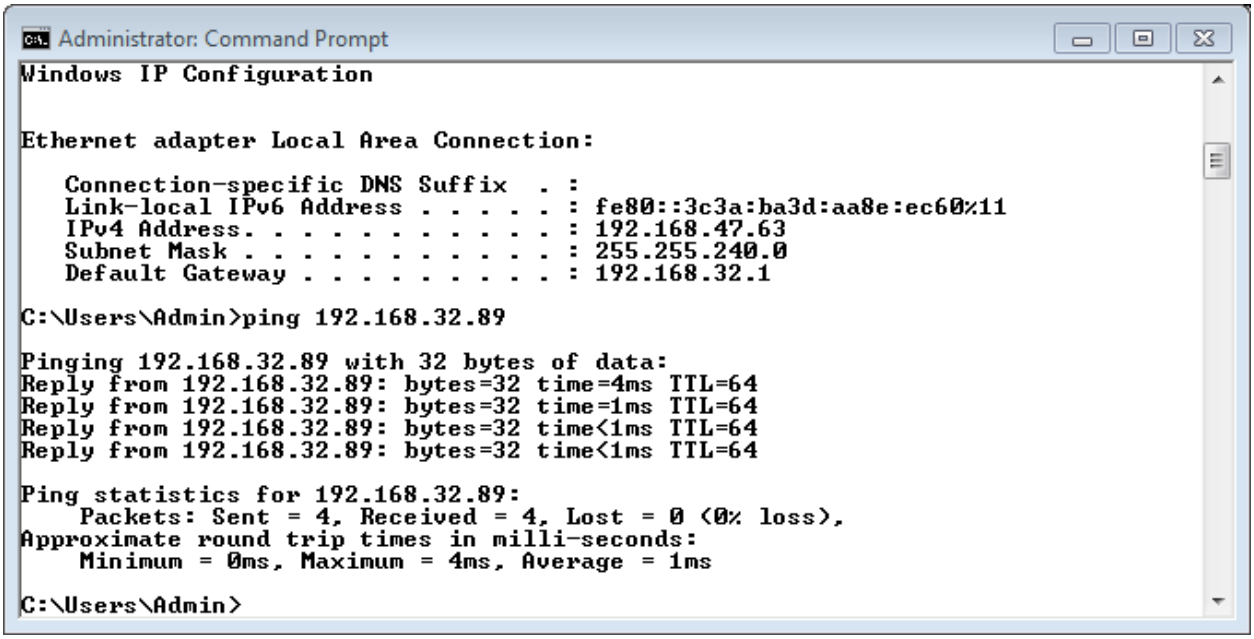
Back Forward Add New Server New Pool New Storage New VM Shut Down Reboot Suspend
CentOS 6 (64-bit) new on 'xenserver-vhxirpjw'
Logged in as: Local root account
General Memory Storage Networking Console Performance Snapshots Search
DVD Drive 1: CentOS-6.10-x86_64-minimal.iso
Looking for guest console...
Welcome to CentOS for x86_64
Media Check
Checking "6.10 disc ALL".
9%
<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen
Send Ctrl+Alt+Del (Ctrl+Alt+Insert)
Scale
Undock (Alt+Shift+U)
Fullscreen (Ctrl+Enter)
Infrastructure
Objects
Organization Views
Saved Searches
Notifications 20
8:17 AM
2/25/2020


XenCenter
File View Pool Server VM Storage Templates Tools Help
Back Forward Add New Server New Pool New Storage New VM Shut Down Reboot Suspend
CentOS 6 (64-bit) new on 'xenserver-vhxirpjw'
Logged in as: Local root account
General Memory Storage Networking Console Performance Snapshots Search
xenserver-vhxirpjw: Overview
New Search
Edit Search
Saved Searches
Export...
Import...
Show Columns
Name
CPU Usage
Used Memory
Disks (avg / max KBs)
Network (avg / max KBs)
xenserver-vhxirpjw
Default install of XenServer
18% of 4 CPUs
5104 of 8111 MB
11946/11946
CentOS 6 (64-bit) (1)
0% of 1 CPU
XenServer Tools not installed
CentOS 6 (64-bit) (2)
14% of 1 CPU
XenServer Tools not installed
CentOS 6 (64-bit) (3)
23% of 1 CPU
XenServer Tools not installed
CentOS 6 (64-bit) new
3% of 1 CPU
CIFS ISO library
CIFS ISO library (1)
CIFS ISO library (1)
CIFS ISO library (2)
CIFS ISO library (3)
CIFS ISO library (3)
CIFS ISO library (4)
Infrastructure
Objects
Organization Views
Saved Searches
Notifications 20
8:17 AM
2/25/2020

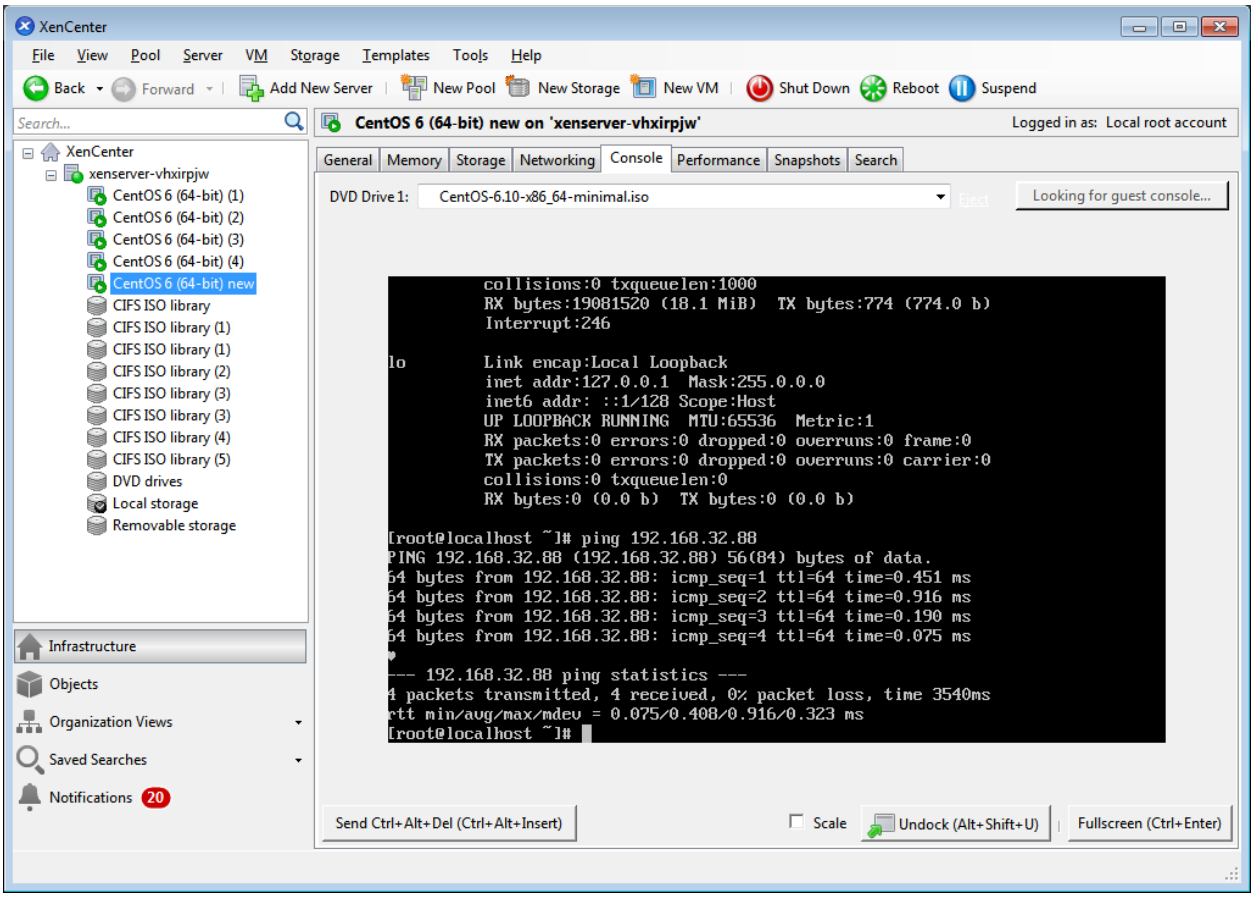


Setting ip, gateway, subnet and pinging from windows

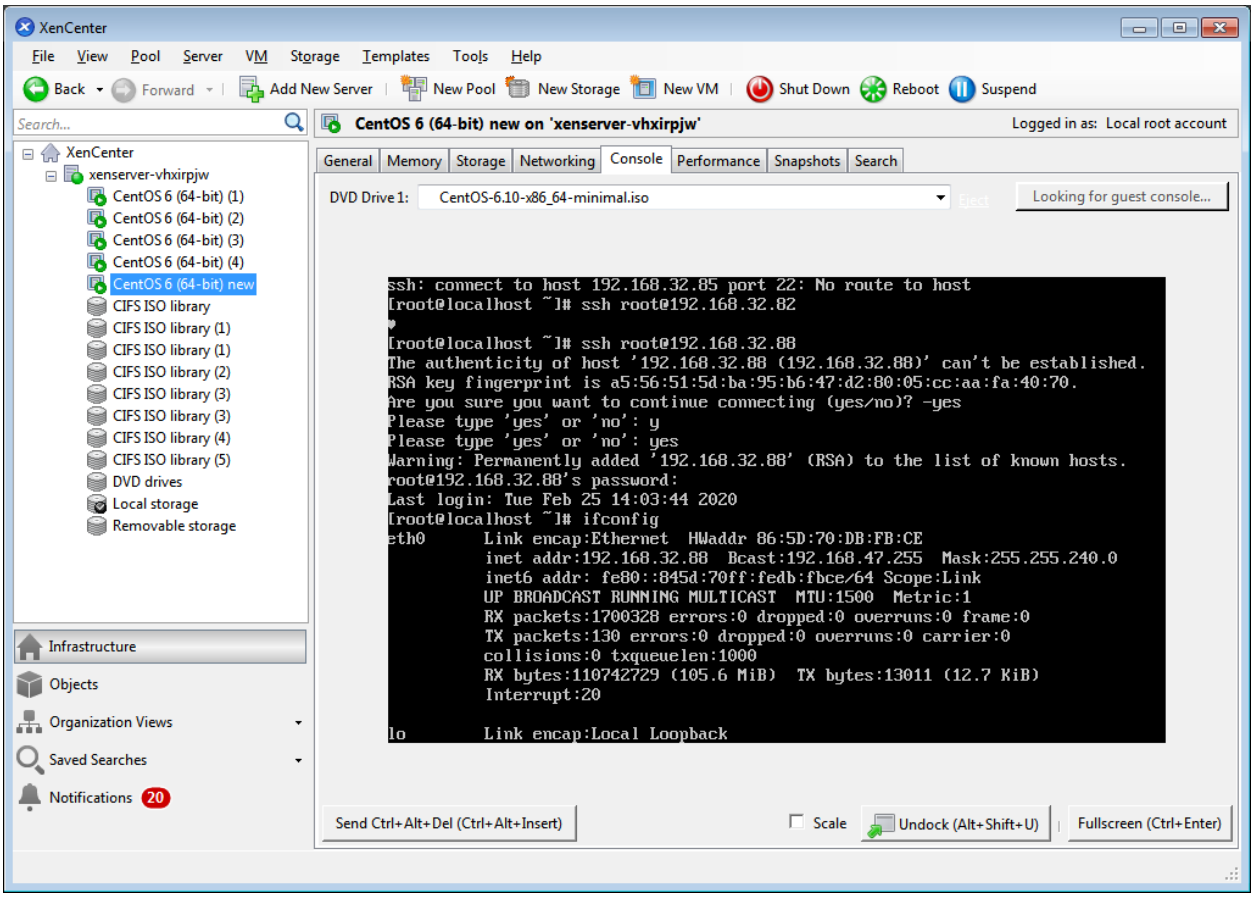




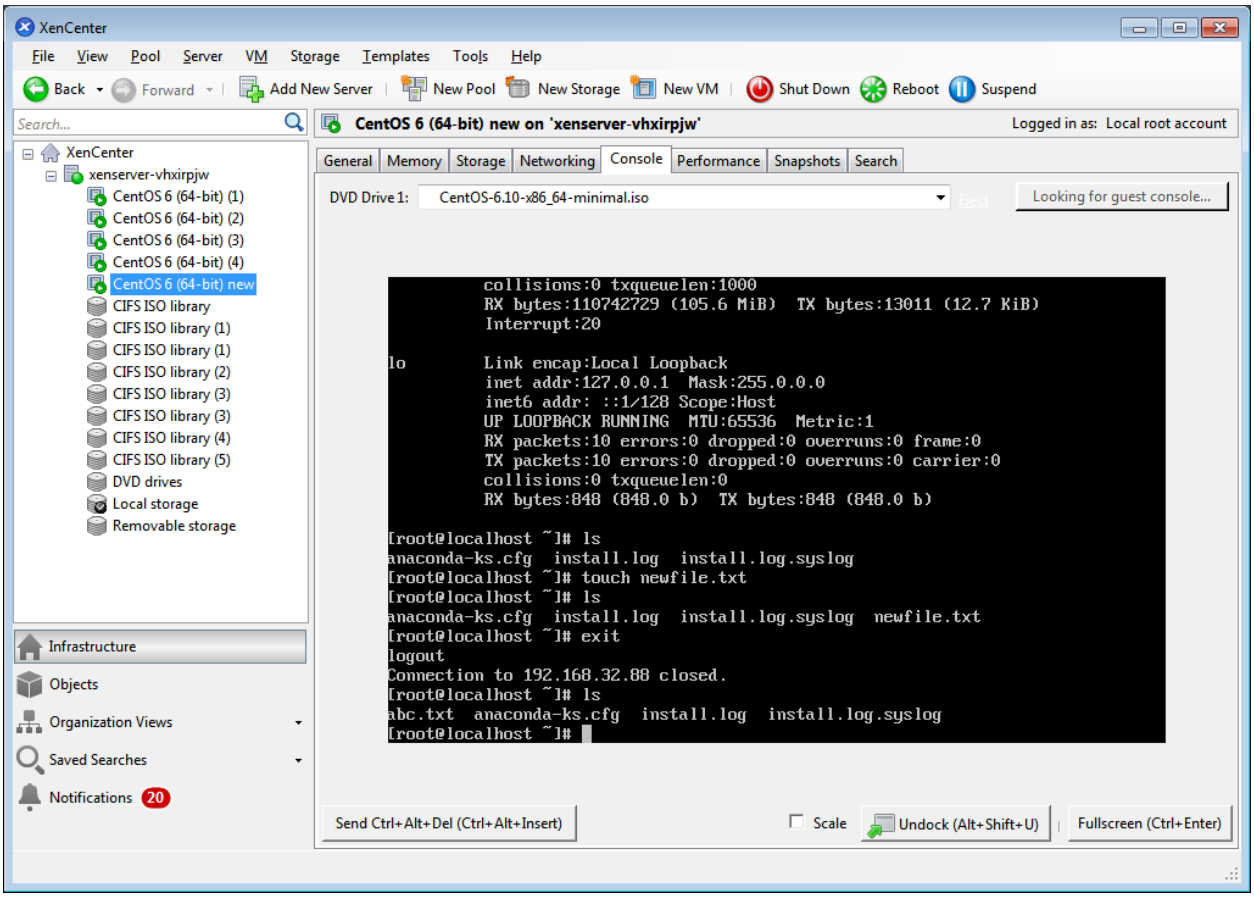
Pinging vms



Ssh between vms



New file created by other pc




```
root@localhost:~
admin-11@admin11-OptiPlex-3020:~$ ssh root@192.168.32.88
The authenticity of host '192.168.32.88 (192.168.32.88)' can't be established.
RSA key fingerprint is SHA256:p01PYqeICW8dXfyLLGuED1lc3J8CVycqHQdFSjzLaWw.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.32.88' (RSA) to the list of known hosts.
root@192.168.32.88's password:
Last login: Tue Feb 25 14:24:04 2020 from 192.168.32.89
[root@localhost ~]# ls
anaconda-ks.cfg  install.log  install.log.syslog  newfile.txt
[root@localhost ~]#
```

```
[root@localhost ~]# exit
logout
Connection to 192.168.32.88 closed.
```