Unit - 1

Installing Windows Server : Prepare an installation plan, Prepare the server hardware, Set up the server hardware, Install an operating system

Systems Administrator

- A system administrator is a professional who maintains computer systems, servers, and networks of their clients.

- They are required to understand the specific requirement of their clients and accordingly recommend or suggest computer systems designs for them.

Systems Administrator Job Roles and Responsibilities

- Systems administrators are **responsible for managing** the server and network hardware lifecycles, documentation, and security.
- The sysadmin may also **advise the business on emerging technologies** and may have a role in capacity planning.
- The primary skill of a systems administrator is **problem-solving**.
- Sysadmins typically have a **variety of skills and work** with a wide range of technologies.

Common Sysadmin Responsibilities

- Installing, configuring, and managing server hardware, applications, and network components
- Managing the server lifecycle
- Monitoring server performance
- Providing capacity planning and growth
- Managing user and group accounts for access control
- Troubleshooting

Common Sysadmin Responsibilities

- Working with other information technology (IT) teams, possibly including the service desk, developers, desktop support
- Accepting escalated service desk tickets
- Managing different technologies, such as databases, virtualization, cloud, backups, disaster recovery
- Managing network services, such as web, email, name resolution, Internet protocol (IP) address configuration
- Providing documentation
- Advising the business on security policies, and implementing those policies

Servers Versus Workstations

- **Workstations** are usually assigned to **end users**.
  - These devices do not tend to have **redundant hardware** and often do not have high-performance capabilities.
  - Workstations also typically have a **client OS** installed.
  - These OSs are **optimized** for a single user

- **Server** hardware is designed for high performance and redundancy.
  - Often, a server includes **multiple** network interface cards (NICs), power supplies, and HDDs.
  - The server may **also have** a great deal of random access memory (RAM) and multiple powerful central processing units (CPUs).
  - The server's **form factor** may be measured in 1.75 inch (44.45 mm) units that permit it to be installed into standardized server racks.
  - The server will be 19" wide and one or more units high. Servers typically have a **server OS** installed.

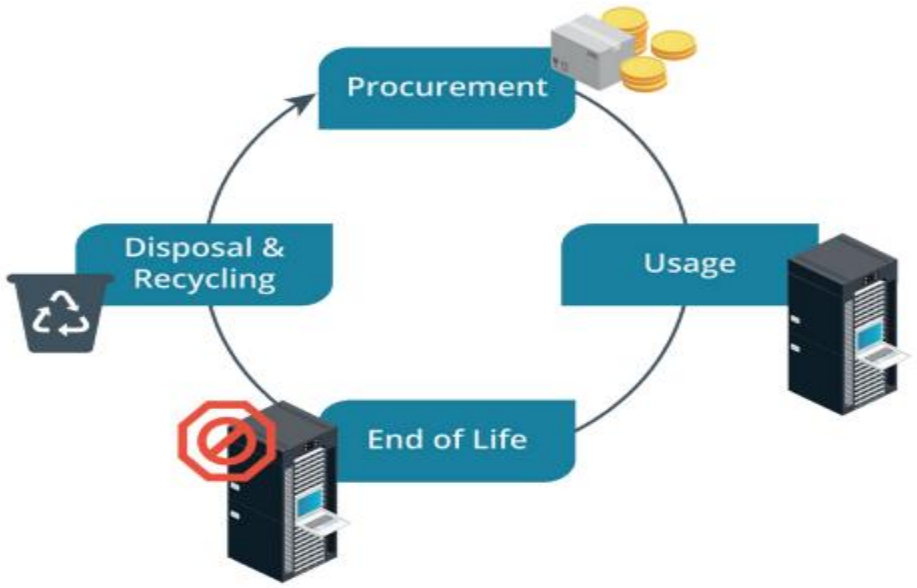
Servers Versus Workstations

Workstation Characteristics	Server Characteristics
Assigned to end user	Secured in a server room
No redundant hardware	Redundant hardware
No high-performance hardware	High-performance hardware
Client OS optimized for a single user	Server operating system optimized for multiple users
Applications optimized for a single user	Applications optimized for multiple users
Elegant graphical user interface	Limited or no graphical user interface
Desktop or laptop form factor	Rack-mounted form factor
Microsoft Windows 10	Microsoft Windows Server 2019
Ubuntu Desktop Linux	Red Hat Enterprise Linux 8 (RHEL 8)
MacOS	

Server Lifecycle

- Server administrators are responsible for the lifecycle of the server.

- The term "lifecycle" normally specifies four phases: procurement, usage, end of life, and disposal/recycling.



The Four Major Subsystems

- Computer systems are specified based on the **four major subsystems**, which are also useful measurements for the system's performance.

- The **four subsystems** are the following:
  - **Processor**—the CPU represents the amount of processing power the system has available.
  - **Memory**—the RAM represents storage capacity available to the CPU for quick access to data.

The Four Major Subsystems

- **Storage**—the storage drives represent storage capacity and access speeds available for the OS and user data.
- **Network**—the capacity for sending and receiving information across the network.

Prepare the server hardware, Set up the server hardware

- Servers are available in a tower form factor, much like a standard workstation, or in a rack-mounted form factor.

- They could also be deployed as **blades**.

Prepare the server hardware, Set up the server hardware

- **Tower Form Factor:** A server with a tower form factor fits easily into space not normally designed for large servers.
  - This is useful in *small offices* or other settings where a traditional NOC is not available.
  - Tower servers are arranged on *shelves or tables*, where they are easily accessed.
  - Tower form factors are *less space efficient* than rack-mounted servers, however.
  - Towers consume *space vertically*.

Server in the tower form factor, very similar in size and appearance to a typical workstation.

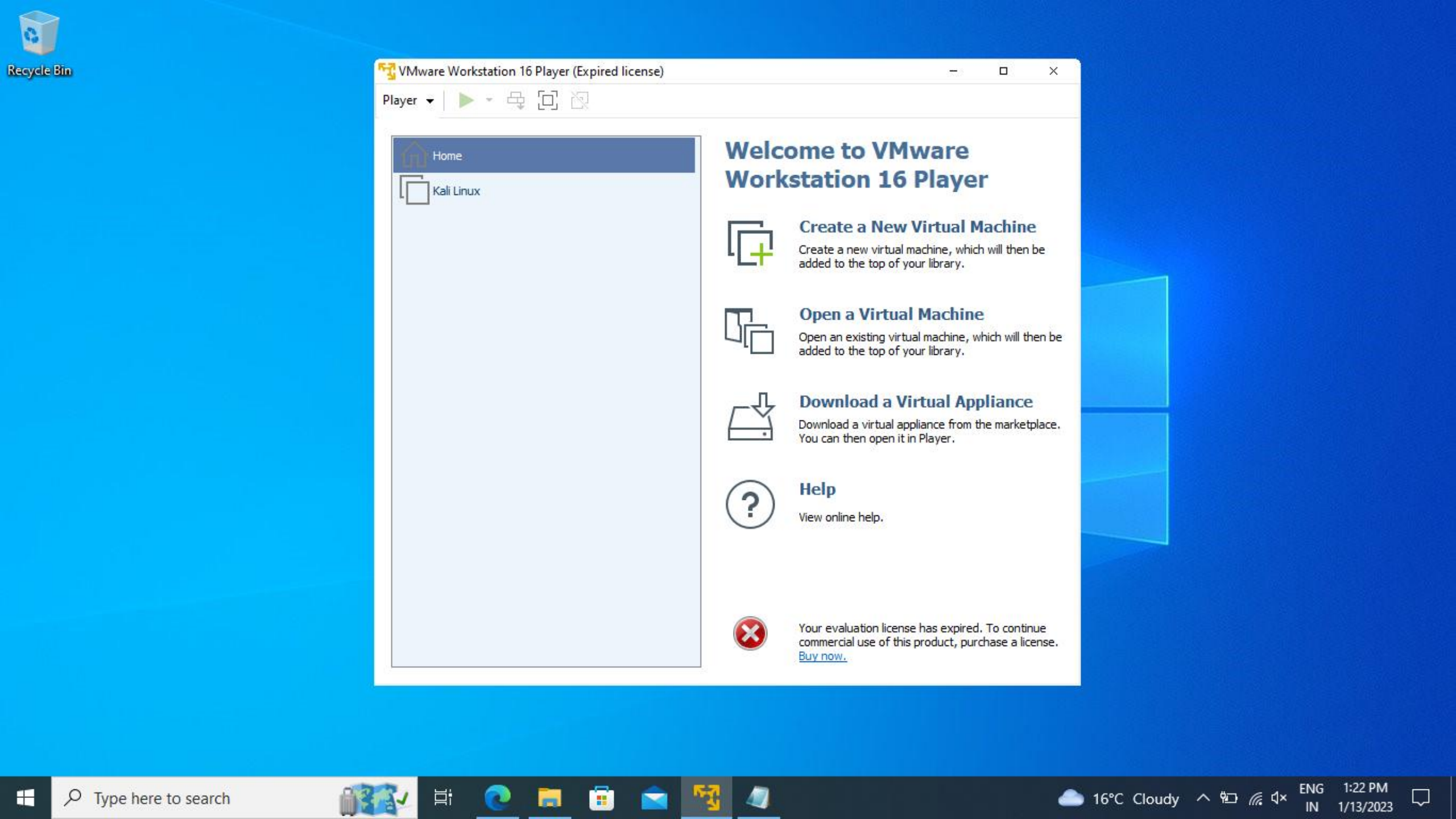
Prepare the server hardware, Set up the server hardware

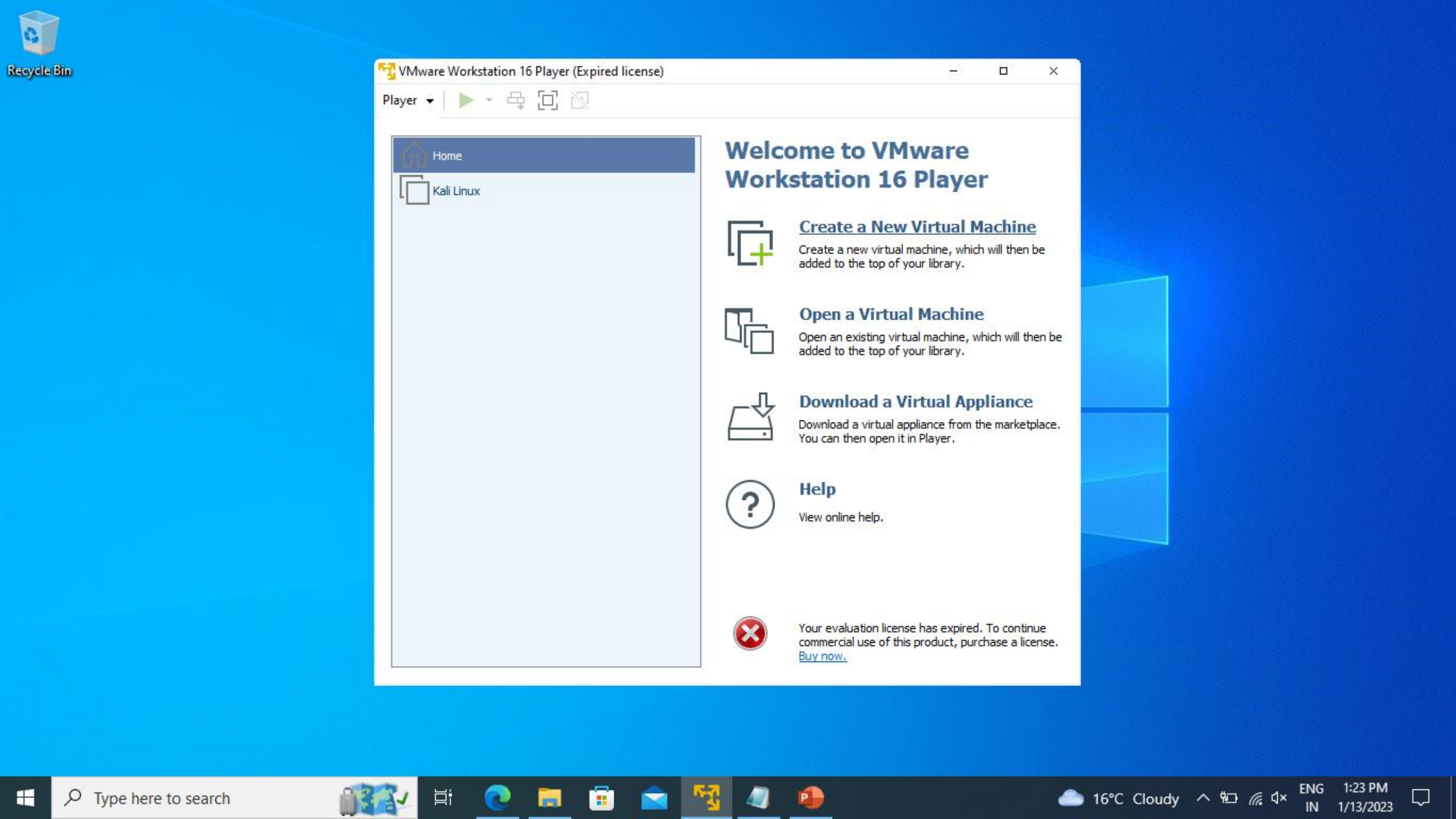
- Blade Form Factor: Servers may also be deployed as blades.
  - Multiple blade servers are *installed* in a single chassis, or blade enclosure.
  - Each blade has its *own* CPU, memory, and storage connections, but all share redundant power supplies, cooling, and other components.
  - The blades themselves are *hot swappable* in the event of a failure.
  - Blades and blade enclosures are particularly *useful* for web servers, virtualization servers, and clustering.

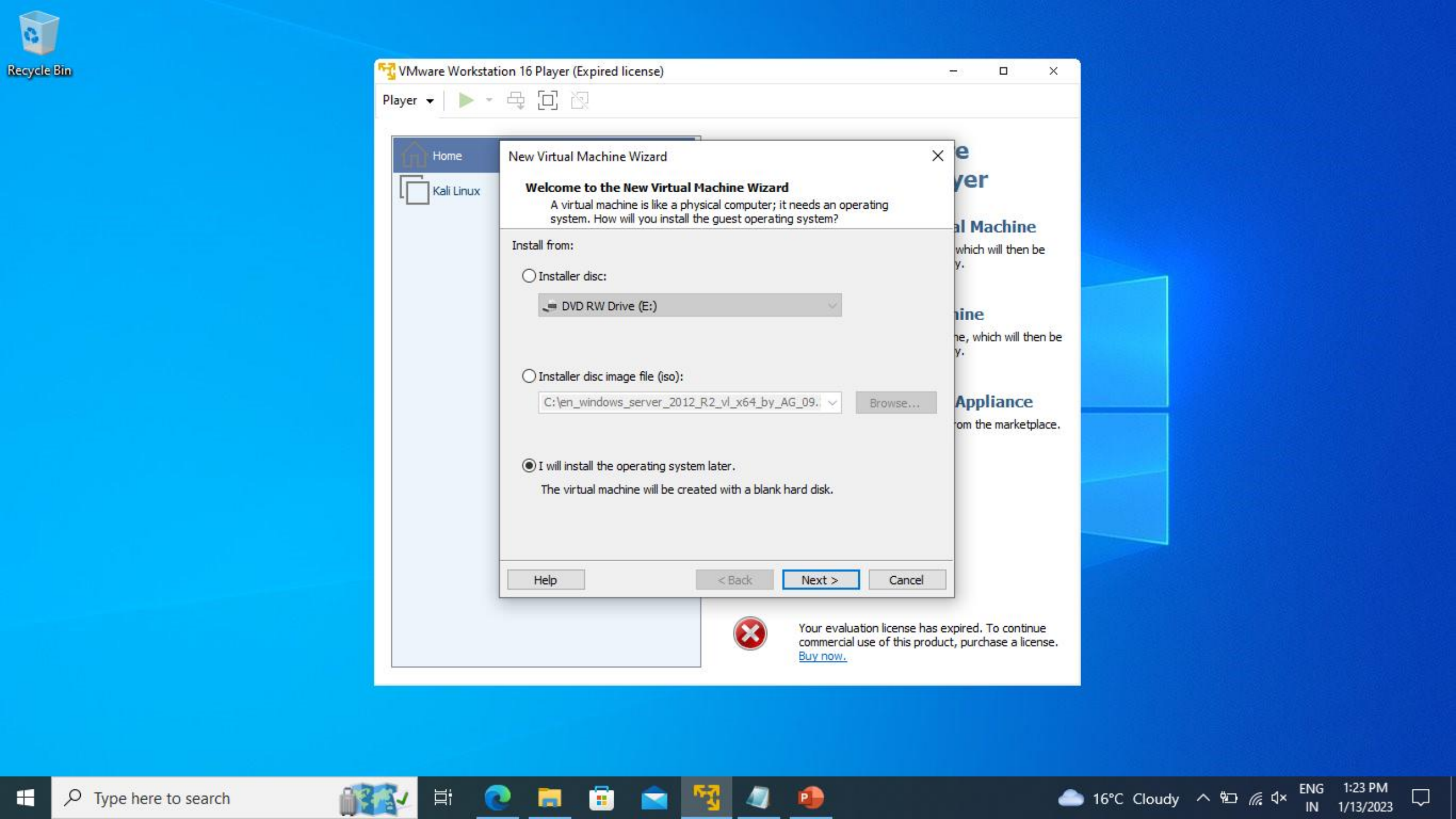
Server in the blade form factor, installed within a chassis. (Image by Mikhail Starodubov © 123RF.com)

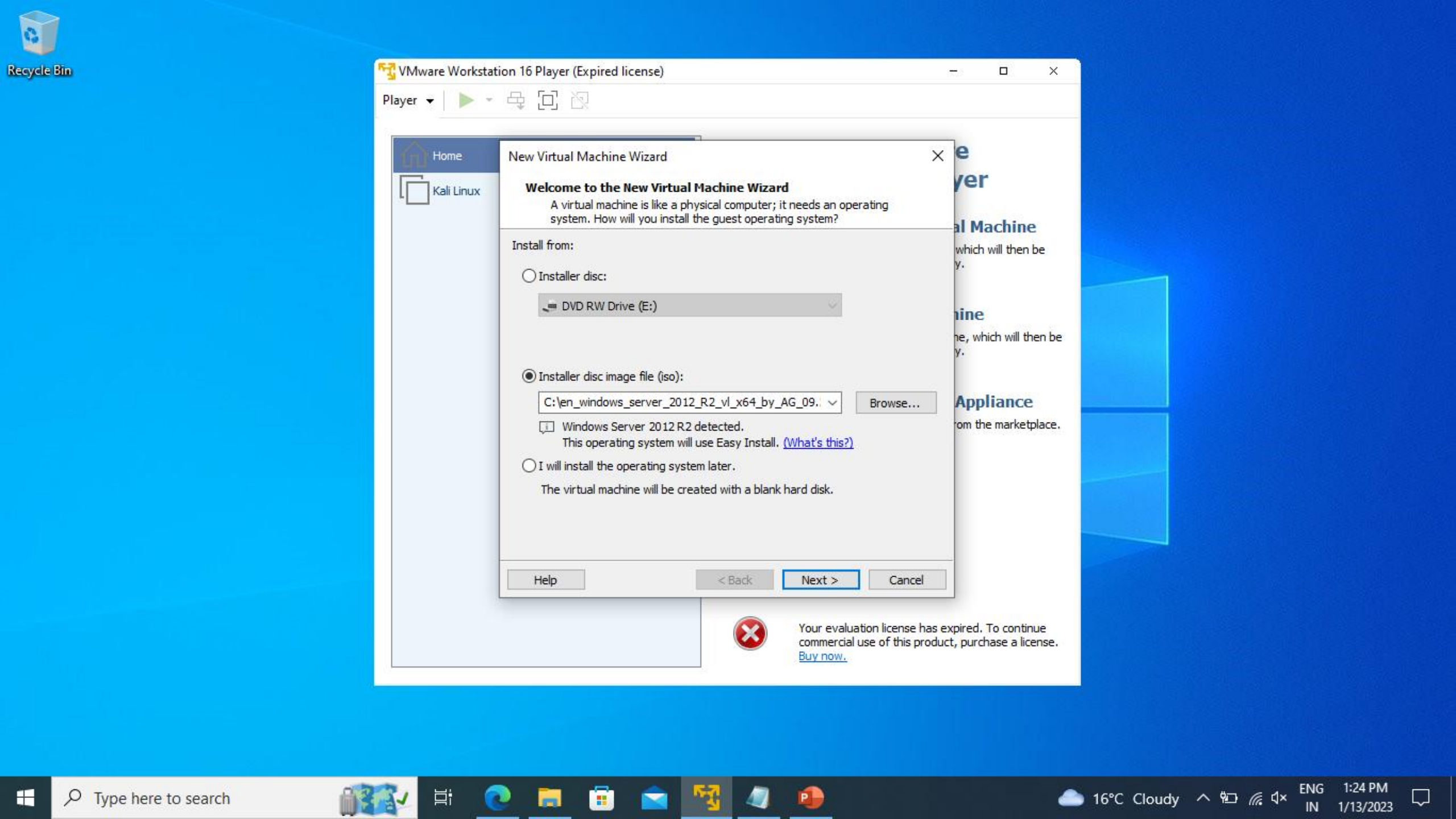
Server rack holding multiple components. (Image © 123RF.com)

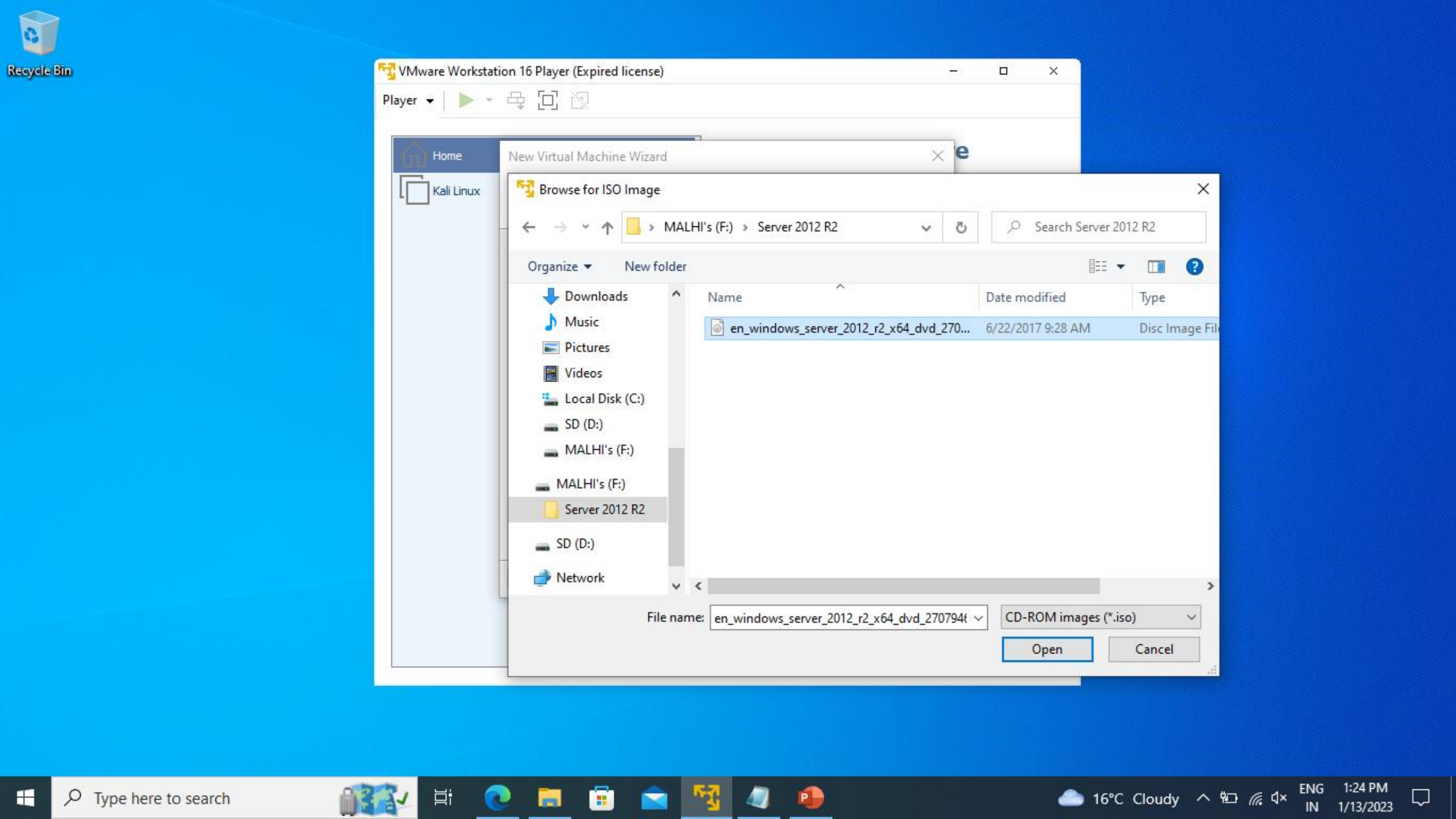
Installation of Windows Server 2012 R2 in VMWare

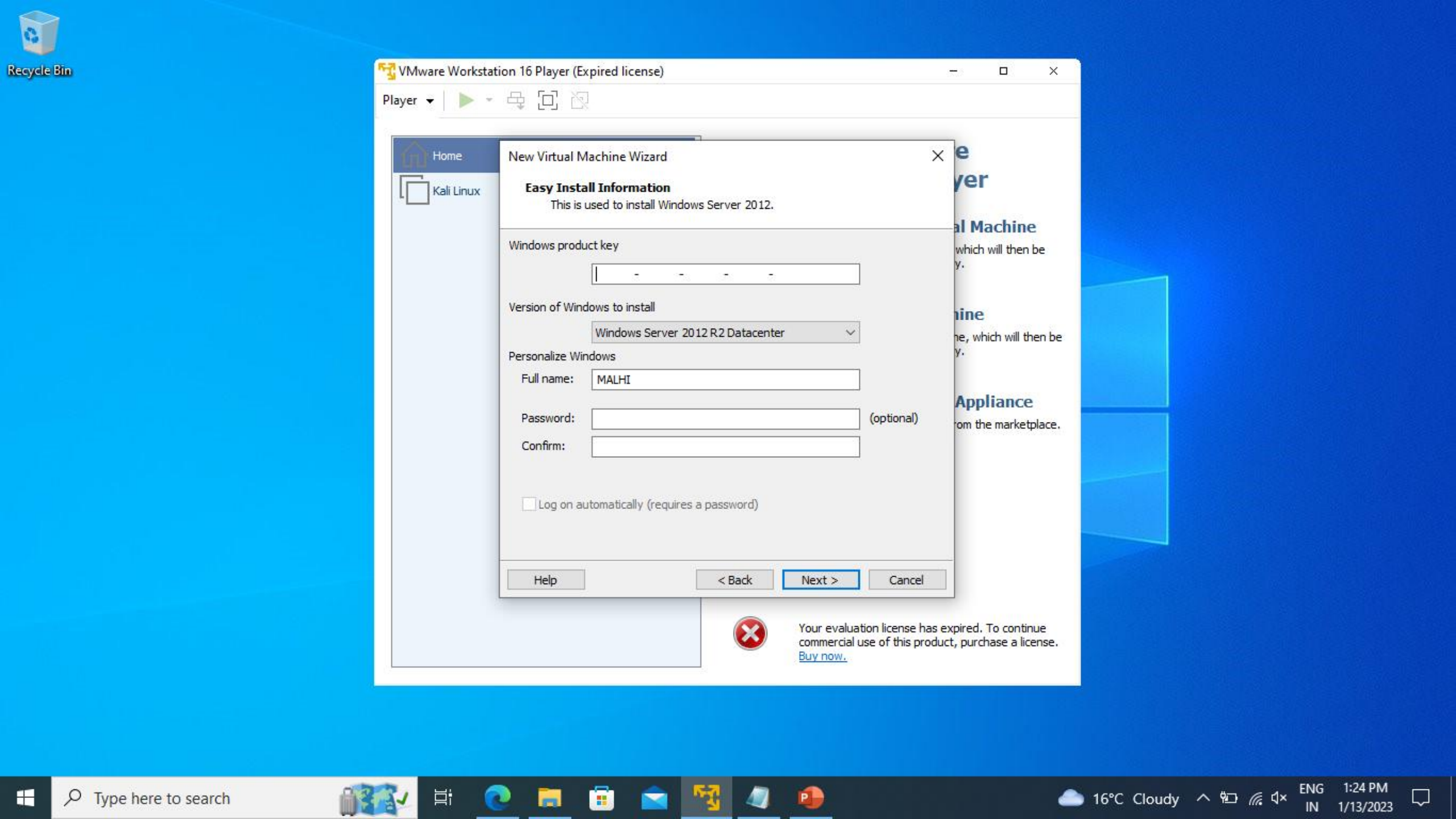

Recycle Bin
VMware Workstation 16 Player (Expired license)
Player
Home
Kali Linux
Welcome to VMware Workstation 16 Player
Create a New Virtual Machine
Create a new virtual machine, which will then be added to the top of your library.
Open a Virtual Machine
Open an existing virtual machine, which will then be added to the top of your library.
Download a Virtual Appliance
Download a virtual appliance from the marketplace. You can then open it in Player.
Help
View online help.
Your evaluation license has expired. To continue commercial use of this product, purchase a license.
Buy now.
Type here to search
16°C Cloudy
ENG
IN
1:22 PM
1/13/2023

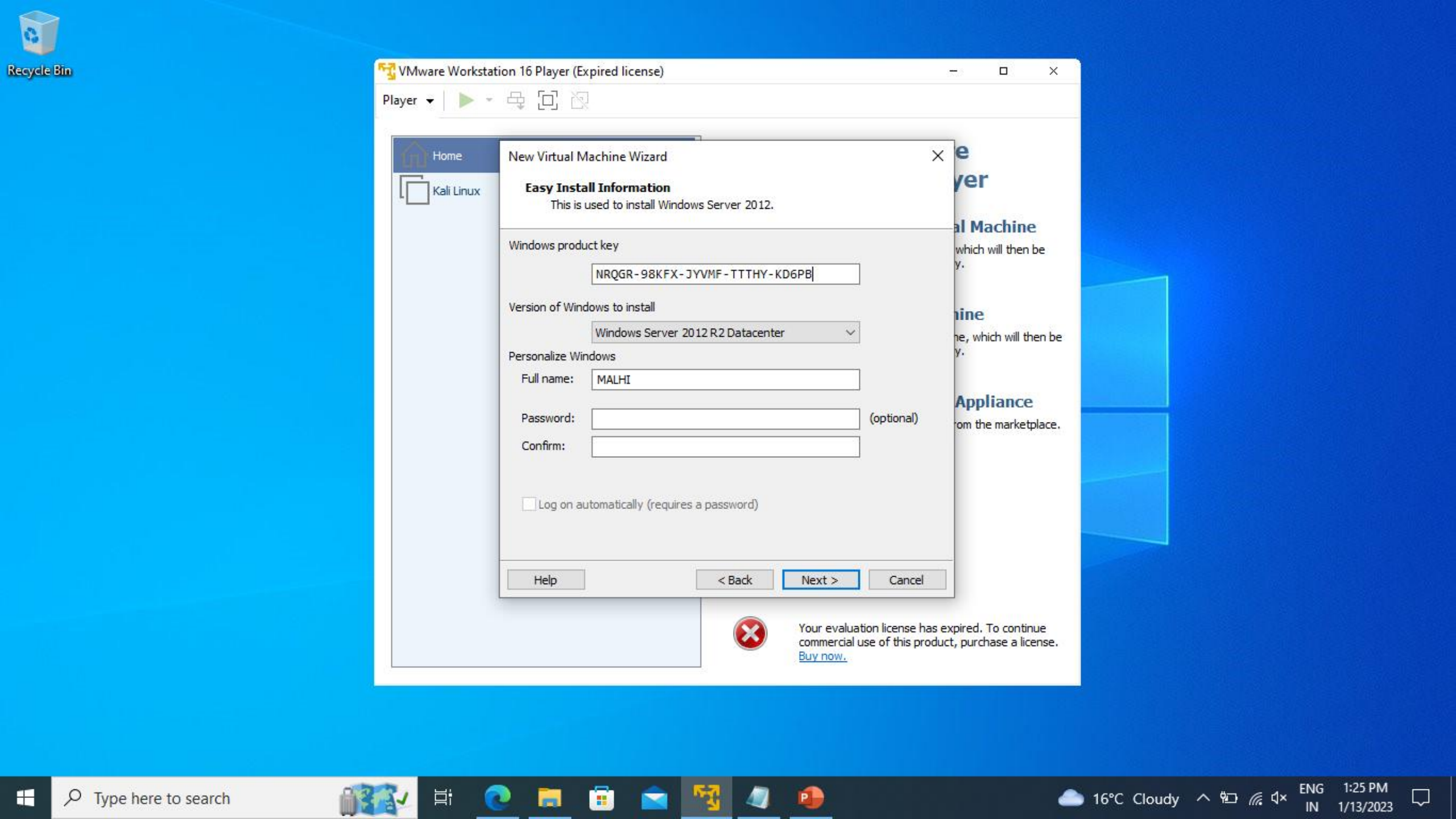

Recycle Bin
VMware Workstation 16 Player (Expired license)
Player
Home
Kali Linux
Welcome to VMware Workstation 16 Player
Create a New Virtual Machine
Create a new virtual machine, which will then be added to the top of your library.
Open a Virtual Machine
Open an existing virtual machine, which will then be added to the top of your library.
Download a Virtual Appliance
Download a virtual appliance from the marketplace. You can then open it in Player.
Help
View online help.
Your evaluation license has expired. To continue commercial use of this product, purchase a license.
Buy now.
Type here to search
16°C Cloudy
ENG
IN
1:23 PM
1/13/2023

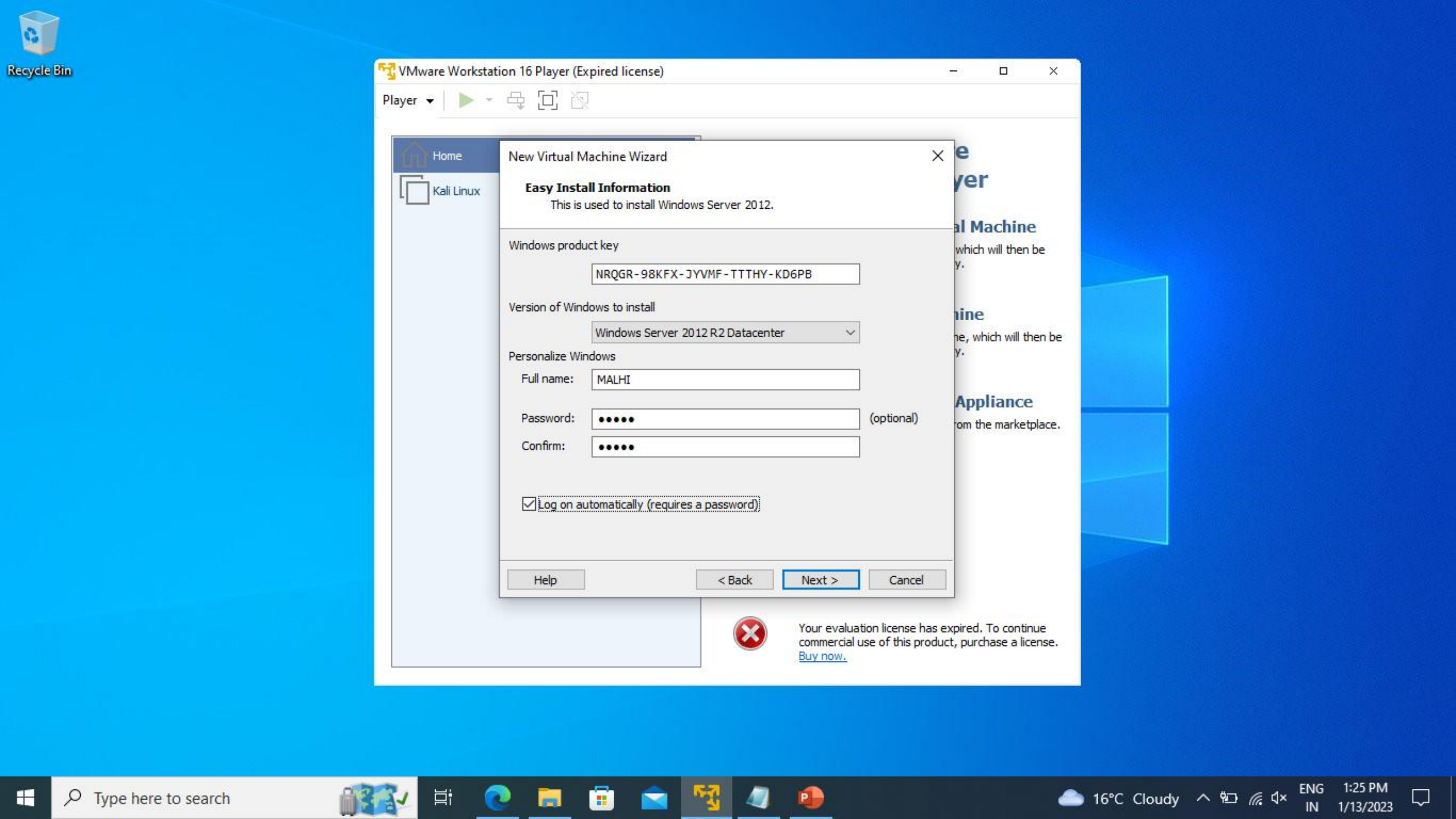

Recycle Bin
VMware Workstation 16 Player (Expired license)
Player
Home
Kali Linux
New Virtual Machine Wizard
Welcome to the New Virtual Machine Wizard
A virtual machine is like a physical computer; it needs an operating system. How will you install the guest operating system?
Install from:
Installer disc:
DVD RW Drive (E:)
Installer disc image file (iso):
C:\en_windows_server_2012_R2_vl_x64_by_AG_09.
Browse...
I will install the operating system later.
The virtual machine will be created with a blank hard disk.
Help
< Back
Next >
Cancel
Your evaluation license has expired. To continue commercial use of this product, purchase a license.
Buy now.
Type here to search
16°C Cloudy
ENG
IN
1:23 PM
1/13/2023

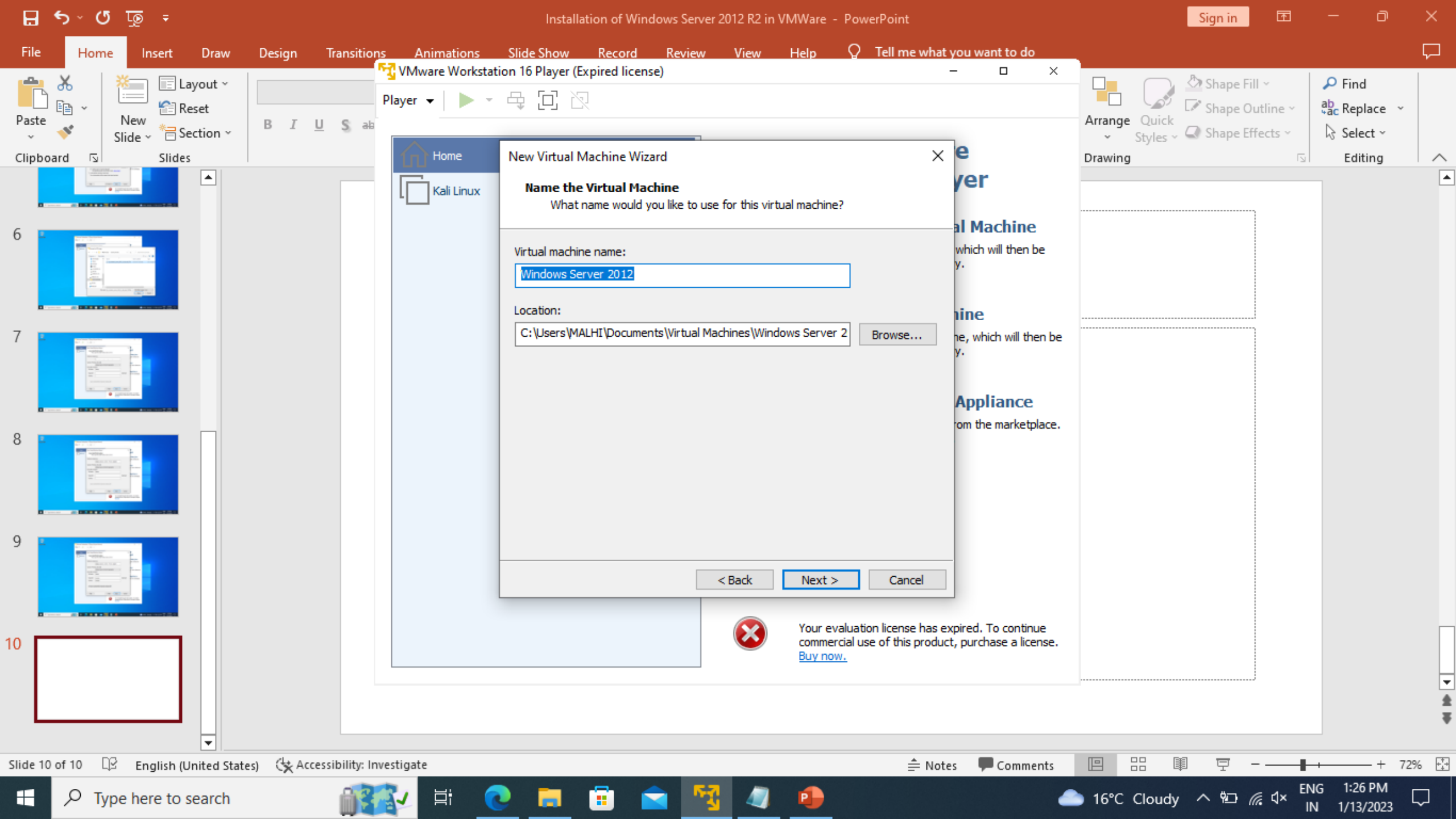

Recycle Bin
VMware Workstation 16 Player (Expired license)
Player
Home
Kali Linux
New Virtual Machine Wizard
Welcome to the New Virtual Machine Wizard
A virtual machine is like a physical computer; it needs an operating system. How will you install the guest operating system?
Install from:
Installer disc:
DVD RW Drive (E:)
Installer disc image file (iso):
C:\en_windows_server_2012_R2_vl_x64_by_AG_09.
Browse...
Windows Server 2012 R2 detected.
This operating system will use Easy Install. (What's this?)
I will install the operating system later.
The virtual machine will be created with a blank hard disk.
Help
< Back
Next >
Cancel
Your evaluation license has expired. To continue commercial use of this product, purchase a license.
Buy now.
Type here to search
16°C Cloudy
ENG
IN
1:24 PM
1/13/2023

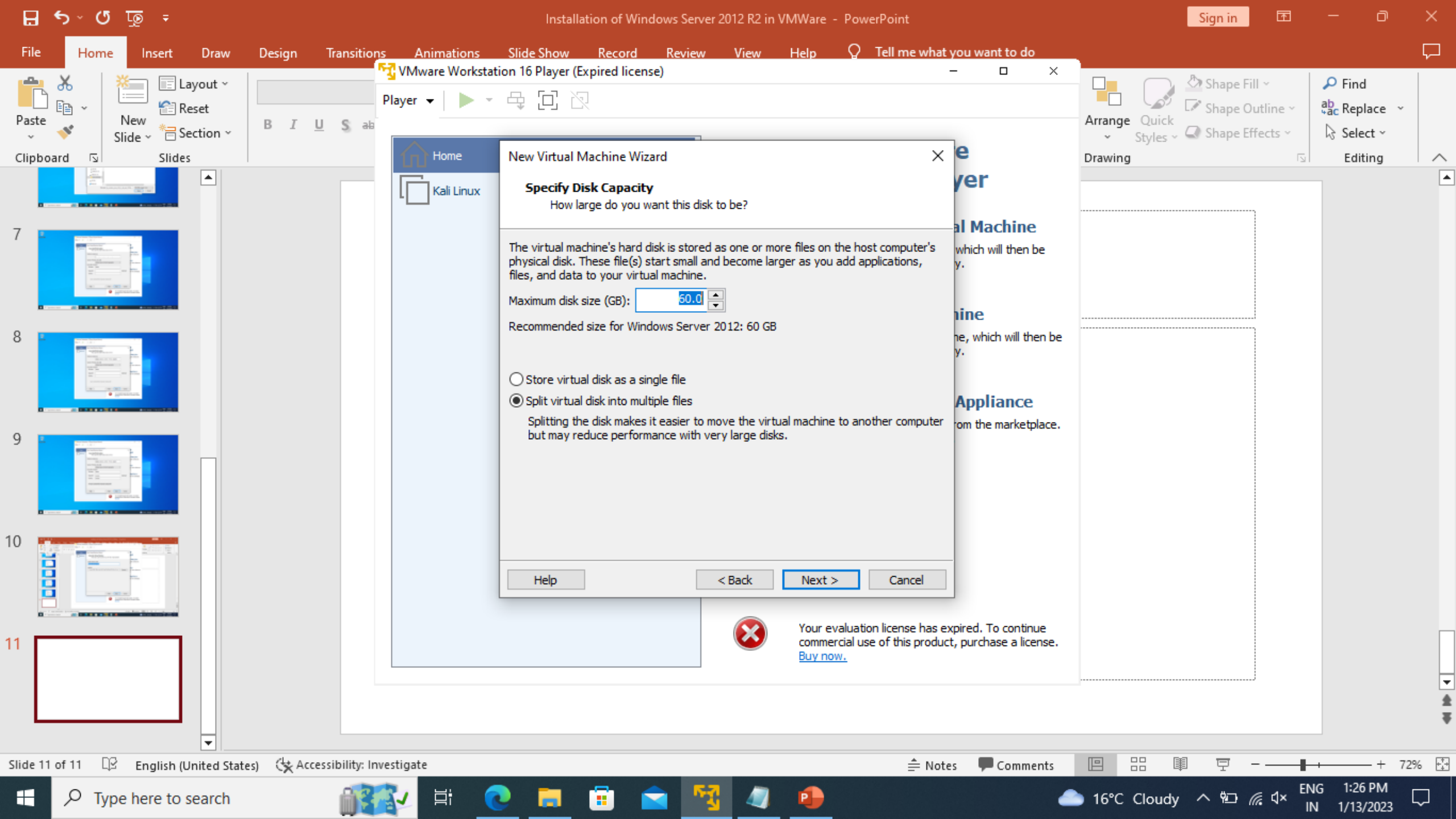

Recycle Bin
VMware Workstation 16 Player (Expired license)
Player
Home
Kali Linux
New Virtual Machine Wizard
Browse for ISO Image
MALHI's (F:) › Server 2012 R2
Search Server 2012 R2
Organize
New folder
Downloads
Music
Pictures
Videos
Local Disk (C:)
SD (D:)
MALHI's (F:)
MALHI's (F:)
Server 2012 R2
SD (D:)
Network
Name
Date modified
Type
en_windows_server_2012_r2_x64_dvd_270...
6/22/2017 9:28 AM
Disc Image Fil
File name:
en_windows_server_2012_r2_x64_dvd_270794(
CD-ROM images (*.iso)
Open
Cancel
Type here to search
16°C Cloudy
ENG
IN
1:24 PM
1/13/2023

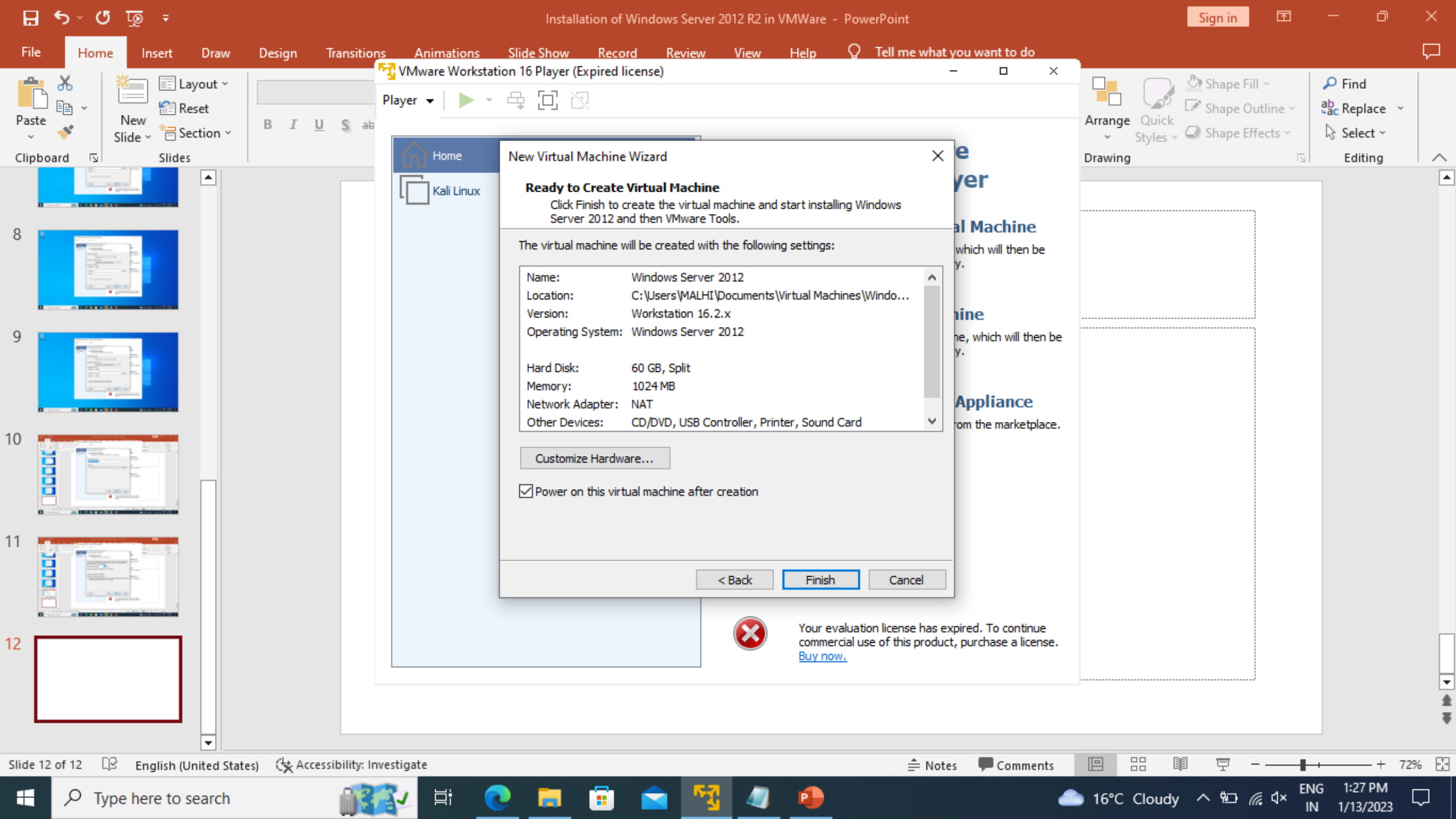

Recycle Bin
VMware Workstation 16 Player (Expired license)
Player
Home
Kali Linux
New Virtual Machine Wizard
Easy Install Information
This is used to install Windows Server 2012.
Windows product key
Version of Windows to install
Windows Server 2012 R2 Datacenter
Personalize Windows
Full name:
MALHI
Password:
(optional)
Confirm:
Log on automatically (requires a password)
Help
< Back
Next >
Cancel
Your evaluation license has expired. To continue commercial use of this product, purchase a license.
Buy now.
Type here to search
16°C Cloudy
ENG
IN
1:24 PM
1/13/2023

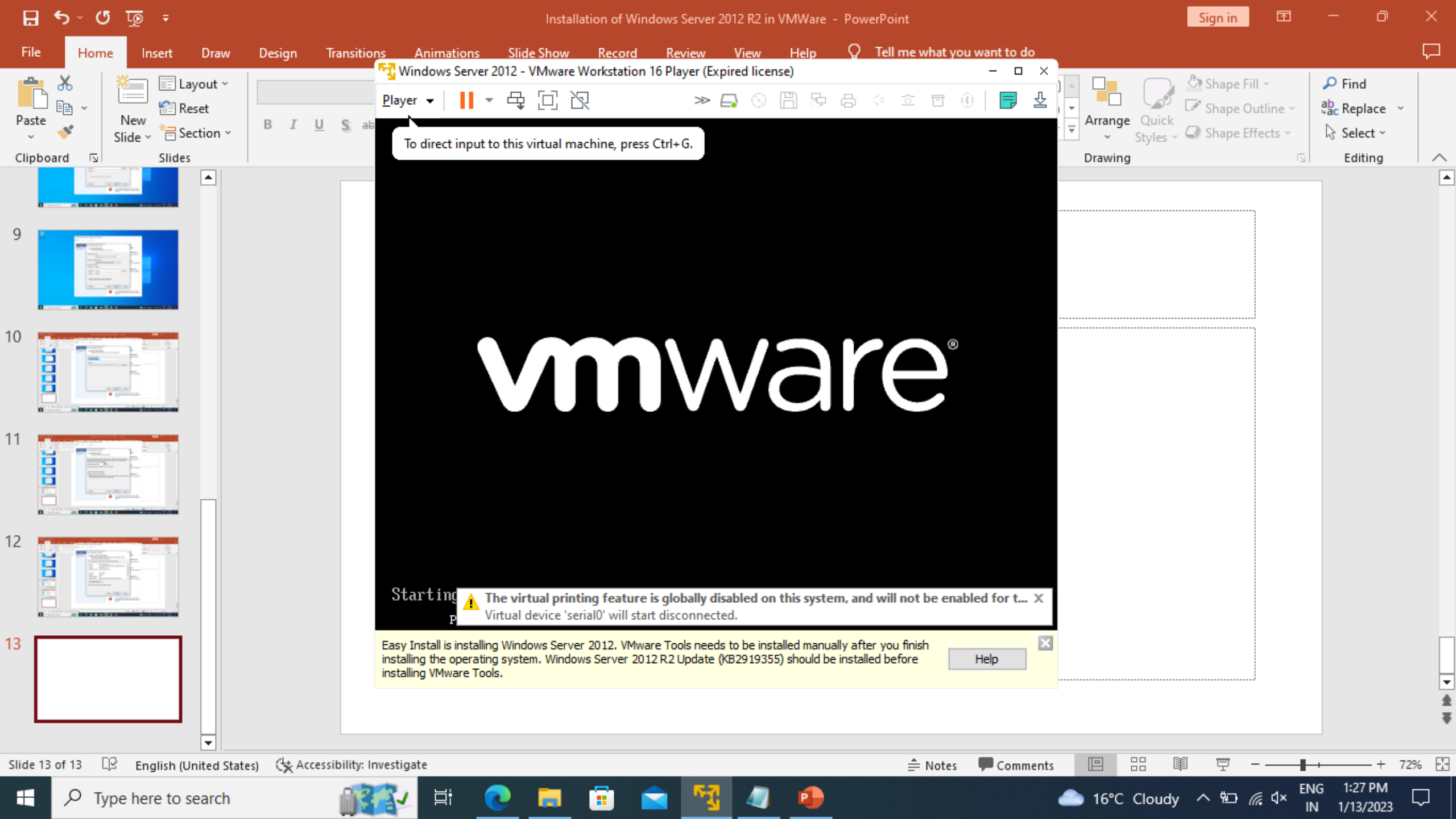

Recycle Bin
VMware Workstation 16 Player (Expired license)
Player
Home
Kali Linux
New Virtual Machine Wizard
Easy Install Information
This is used to install Windows Server 2012.
Windows product key
NRQGR-98KFX-JYVMF-TTTHY-KD6PB
Version of Windows to install
Windows Server 2012 R2 Datacenter
Personalize Windows
Full name:
MALHI
Password:
(optional)
Confirm:
Log on automatically (requires a password)
Help
< Back
Next >
Cancel
Your evaluation license has expired. To continue commercial use of this product, purchase a license.
Buy now.
Type here to search
16°C Cloudy
ENG
IN
1:25 PM
1/13/2023

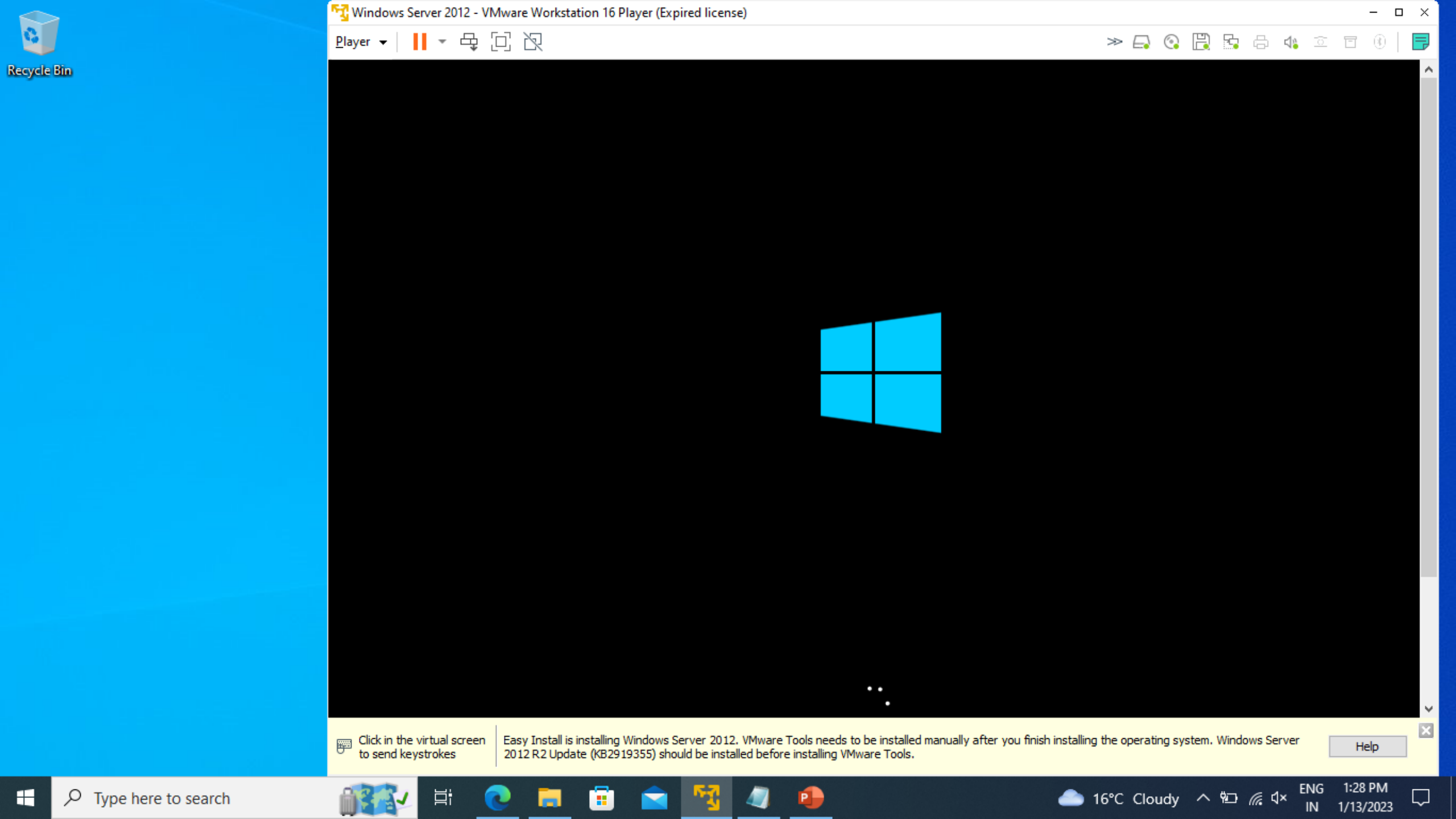

Recycle Bin
VMware Workstation 16 Player (Expired license)
Player
Home
Kali Linux
New Virtual Machine Wizard
Easy Install Information
This is used to install Windows Server 2012.
Windows product key
NRQGR-98KFX-JYVMF-TTTHY-KD6PB
Version of Windows to install
Windows Server 2012 R2 Datacenter
Personalize Windows
Full name:
MALHI
Password:
Confirm:
(optional)
Log on automatically (requires a password)
Help
< Back
Next >
Cancel
Your evaluation license has expired. To continue commercial use of this product, purchase a license.
Buy now.
Type here to search
16°C Cloudy
ENG
IN
1:25 PM
1/13/2023

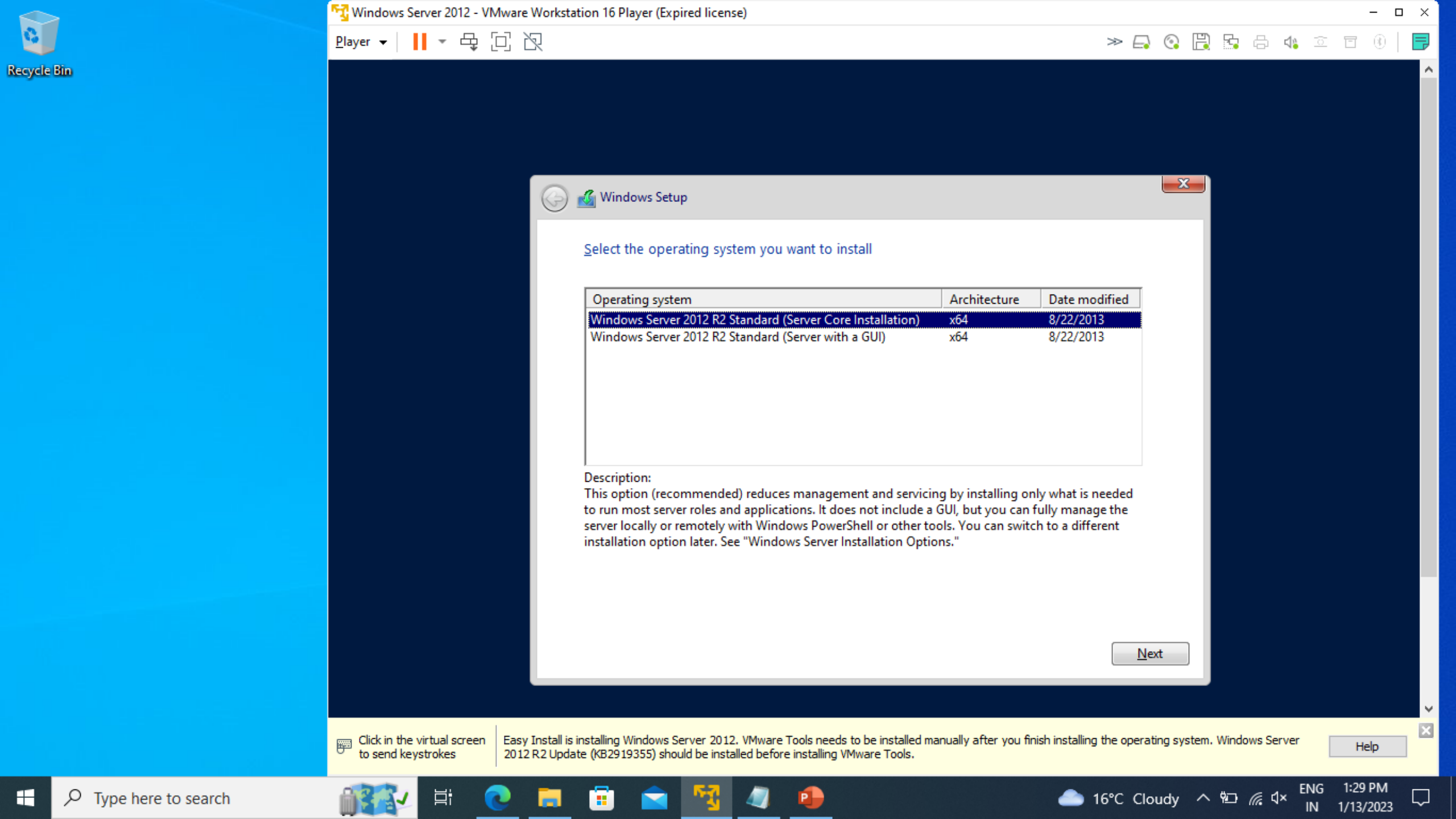

Installation of Windows Server 2012 R2 in VMWare - PowerPoint
Sign in
File
Home
Insert
Draw
Design
Transitions
Animations
Slide Show
Record
Review
View
Help
Tell me what you want to do
Paste
Clipboard
New Slide
Layout
Reset
Section
Slides
Arrange
Quick Styles
Shape Fill
Shape Outline
Shape Effects
Drawing
Find
Replace
Select
Editing
VMware Workstation 16 Player (Expired license)
Player
Home
Kali Linux
New Virtual Machine Wizard
Name the Virtual Machine
What name would you like to use for this virtual machine?
Virtual machine name:
Windows Server 2012
Location:
C:\Users\MALHI\Documents\Virtual Machines\Windows Server 2
Browse...
< Back
Next >
Cancel
Your evaluation license has expired. To continue commercial use of this product, purchase a license.
Buy now.
Slide 10 of 10
English (United States)
Accessibility: Investigate
Notes
Comments
72%
Type here to search
16°C Cloudy
ENG
IN
1:26 PM
1/13/2023


Installation of Windows Server 2012 R2 in VMWare - PowerPoint
Sign in
File
Home
Insert
Draw
Design
Transitions
Animations
Slide Show
Record
Review
View
Help
Tell me what you want to do
Paste
Clipboard
New Slide
Layout
Reset
Section
Slides
Arrange
Quick Styles
Shape Fill
Shape Outline
Shape Effects
Drawing
Find
Replace
Select
Editing
VMware Workstation 16 Player (Expired license)
Player
Home
Kali Linux
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 size (GB):
60.0
Recommended size for Windows Server 2012: 60 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
< Back
Next >
Cancel
Your evaluation license has expired. To continue commercial use of this product, purchase a license.
Buy now.
Slide 11 of 11
English (United States)
Accessibility: Investigate
Notes
Comments
72%
Type here to search
16°C Cloudy
ENG
IN
1:26 PM
1/13/2023

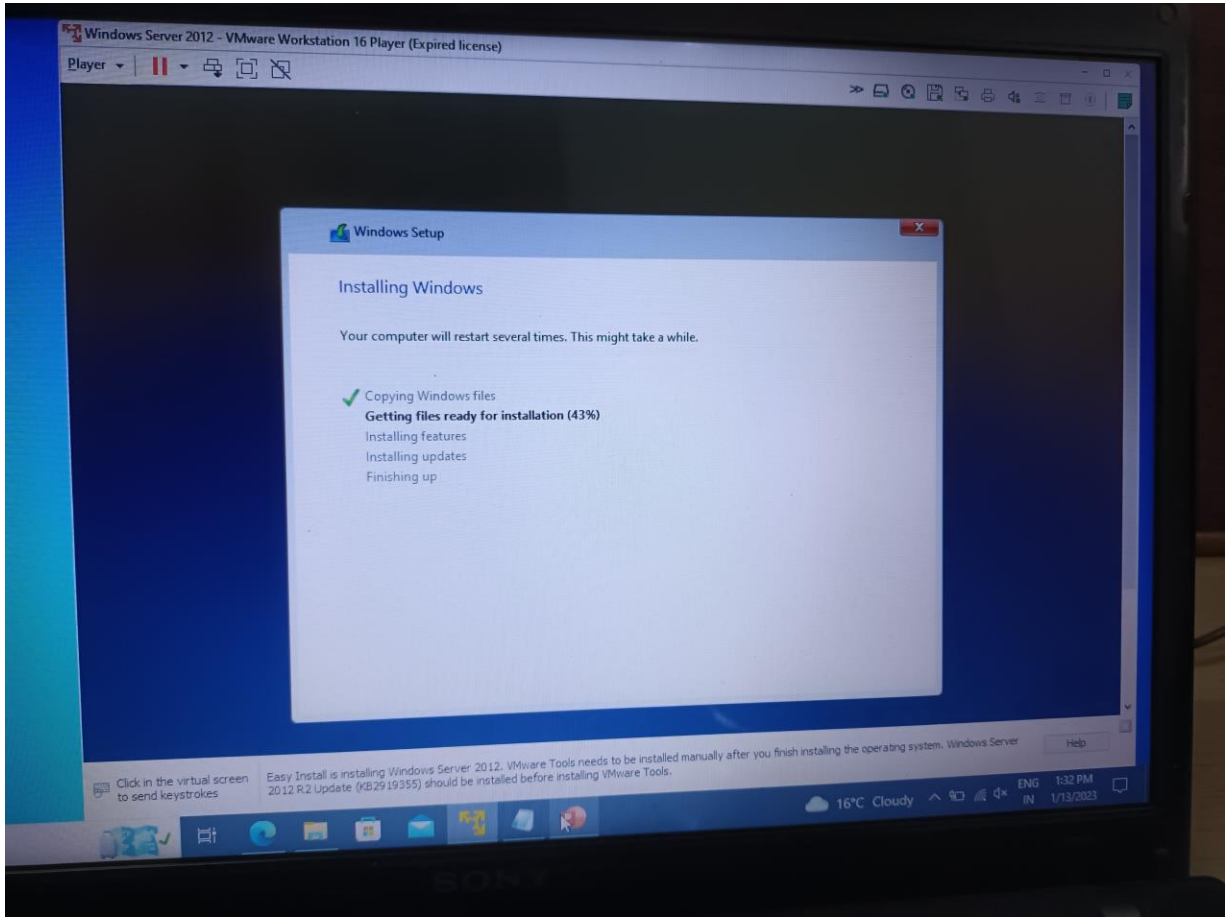

Installation of Windows Server 2012 R2 in VMWare - PowerPoint
Sign in
File
Home
Insert
Draw
Design
Transitions
Animations
Slide Show
Record
Review
View
Help
Tell me what you want to do
Paste
Clipboard
New Slide
Layout
Reset
Section
Slides
Arrange
Quick Styles
Shape Fill
Shape Outline
Shape Effects
Drawing
Find
Replace
Select
Editing
VMware Workstation 16 Player (Expired license)
Player
Home
Kali Linux
New Virtual Machine Wizard
Ready to Create Virtual Machine
Click Finish to create the virtual machine and start installing Windows Server 2012 and then VMware Tools.
The virtual machine will be created with the following settings:
Name: Windows Server 2012
Location: C:\Users\MALHI\Documents\Virtual Machines\Windo...
Version: Workstation 16.2.x
Operating System: Windows Server 2012
Hard Disk: 60 GB, Split
Memory: 1024 MB
Network Adapter: NAT
Other Devices: CD/DVD, USB Controller, Printer, Sound Card
Customize Hardware...
Power on this virtual machine after creation
< Back
Finish
Cancel
Your evaluation license has expired. To continue commercial use of this product, purchase a license.
Buy now.
Slide 12 of 12
English (United States)
Accessibility: Investigate
Notes
Comments
72%
Type here to search
16°C Cloudy
ENG
IN
1:27 PM
1/13/2023

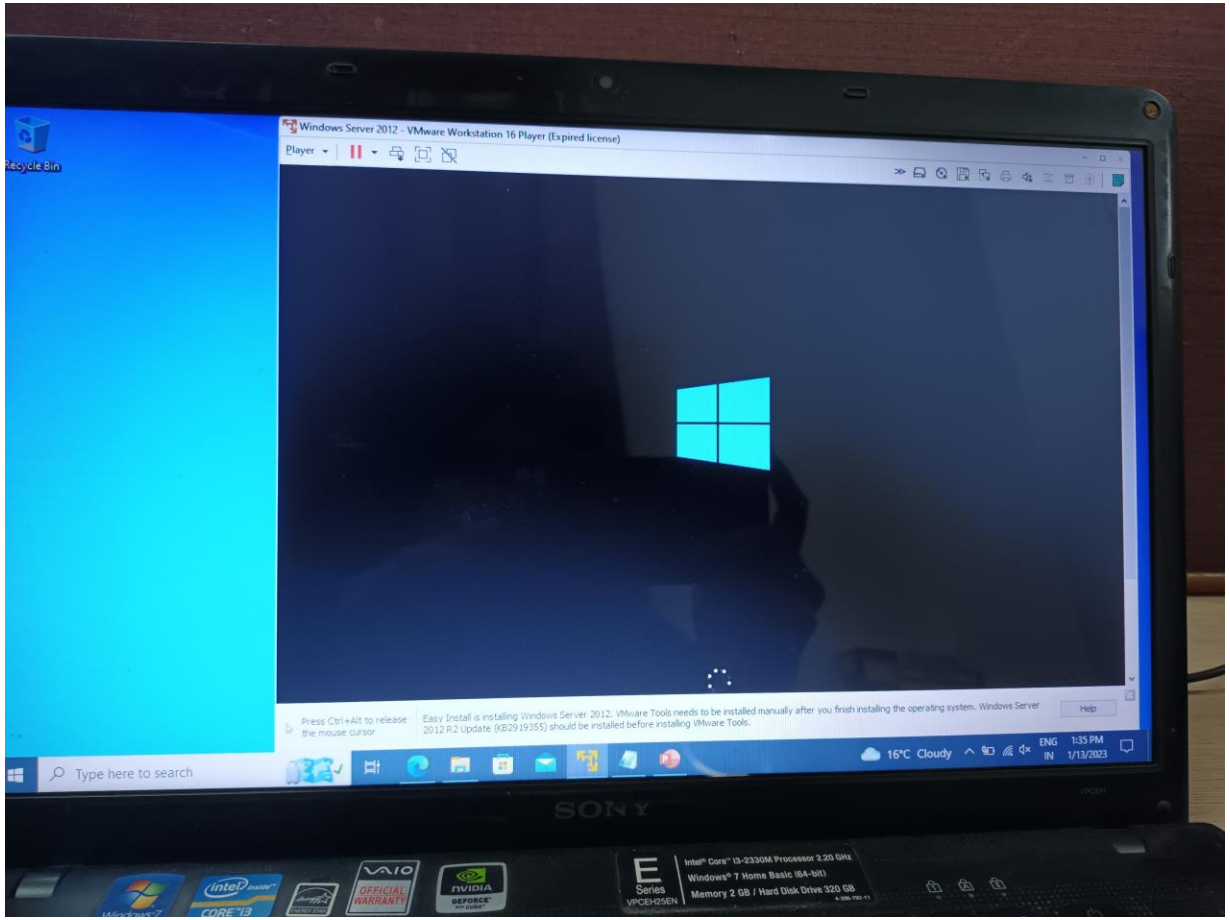

Installation of Windows Server 2012 R2 in VMWare - PowerPoint
Sign in
File
Home
Insert
Draw
Design
Transitions
Animations
Slide Show
Record
Review
View
Help
Tell me what you want to do
Paste
New Slide
Layout
Reset
Section
Clipboard
Slides
Arrange
Quick Styles
Shape Fill
Shape Outline
Shape Effects
Drawing
Find
Replace
Select
Editing
Windows Server 2012 - VMware Workstation 16 Player (Expired license)
Player
To direct input to this virtual machine, press Ctrl+G.
vmware
Starting
The virtual printing feature is globally disabled on this system, and will not be enabled for t...
Virtual device 'serial0' will start disconnected.
Easy Install is installing Windows Server 2012. VMware Tools needs to be installed manually after you finish installing the operating system. Windows Server 2012 R2 Update (KB2919355) should be installed before installing VMware Tools.
Help
9
10
11
12
13
Slide 13 of 13
English (United States)
Accessibility: Investigate
Notes
Comments
72%
Type here to search
16°C Cloudy
ENG
IN
1:27 PM
1/13/2023

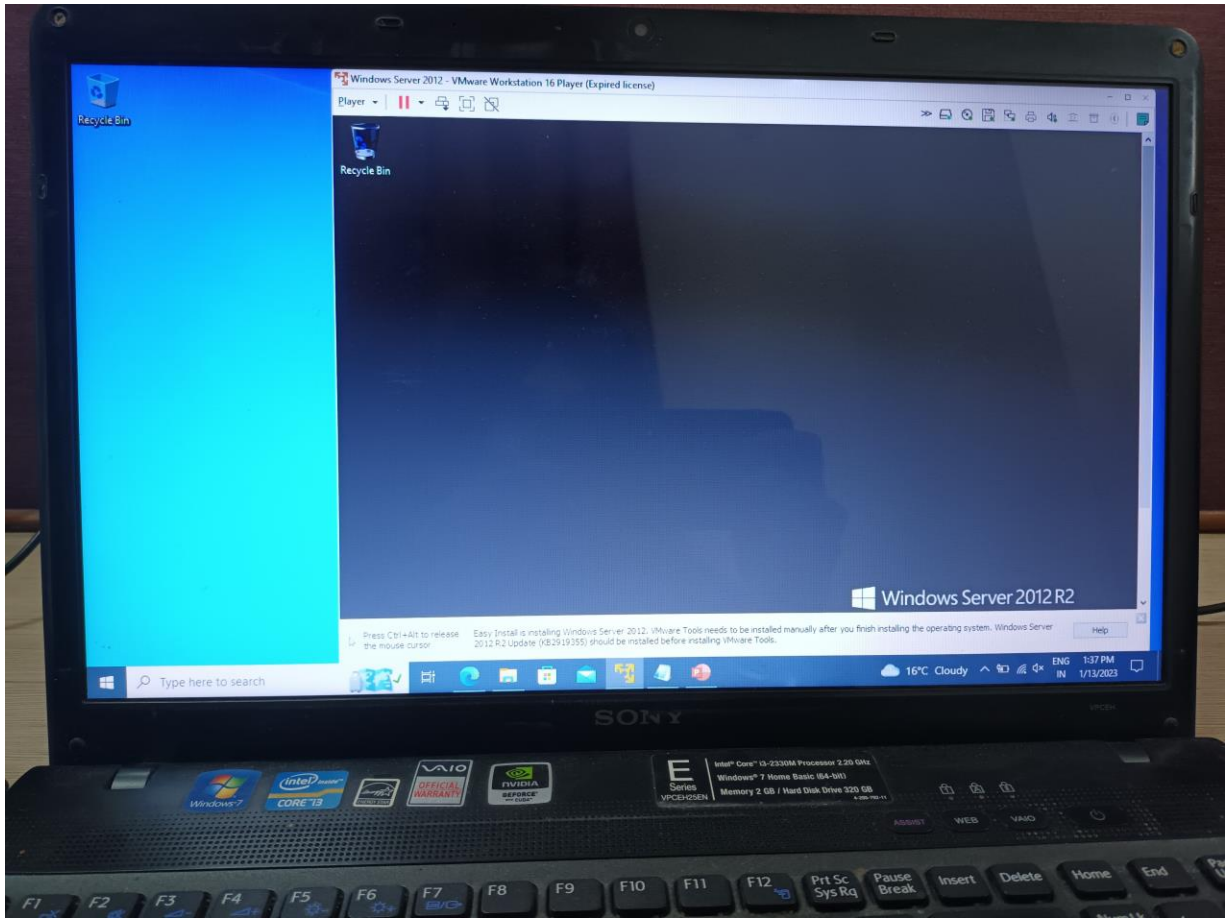

Recycle Bin
Windows Server 2012 - VMware Workstation 16 Player (Expired license)
Player
Click in the virtual screen to send keystrokes
Easy Install is installing Windows Server 2012. VMware Tools needs to be installed manually after you finish installing the operating system. Windows Server 2012 R2 Update (KB2919355) should be installed before installing VMware Tools.
Help
Type here to search
16°C Cloudy
ENG IN
1:28 PM 1/13/2023

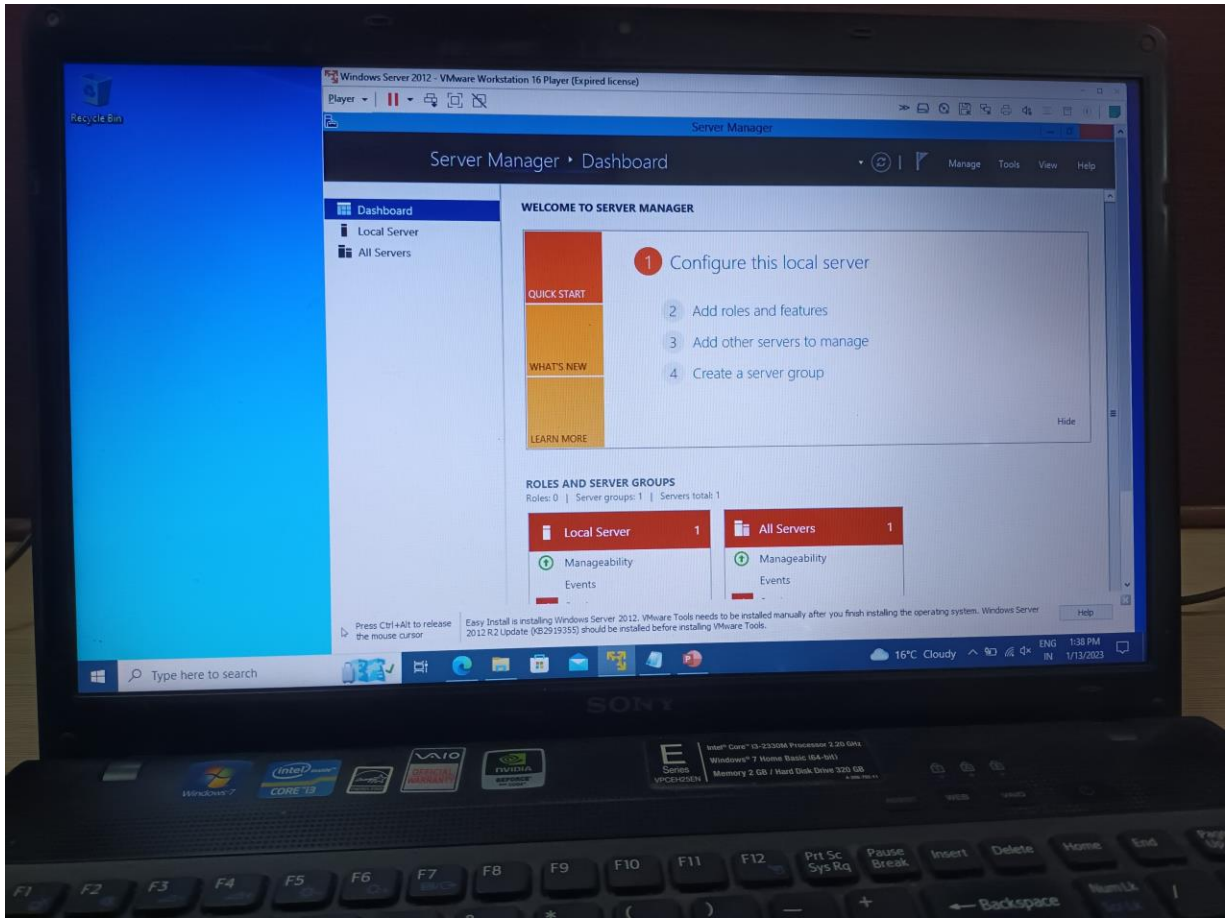

Recycle Bin
Windows Server 2012 - VMware Workstation 16 Player (Expired license)
Player
Windows Setup
Select the operating system you want to install
Operating system
Architecture
Date modified
Windows Server 2012 R2 Standard (Server Core Installation)
x64
8/22/2013
Windows Server 2012 R2 Standard (Server with a GUI)
x64
8/22/2013
Description:
This option (recommended) reduces management and servicing by installing only what is needed to run most server roles and applications. It does not include a GUI, but you can fully manage the server locally or remotely with Windows PowerShell or other tools. You can switch to a different installation option later. See "Windows Server Installation Options."
Next
Click in the virtual screen to send keystrokes
Easy Install is installing Windows Server 2012. VMware Tools needs to be installed manually after you finish installing the operating system. Windows Server 2012 R2 Update (KB2919355) should be installed before installing VMware Tools.
Help
Type here to search
16°C Cloudy
ENG
IN
1:29 PM
1/13/2023

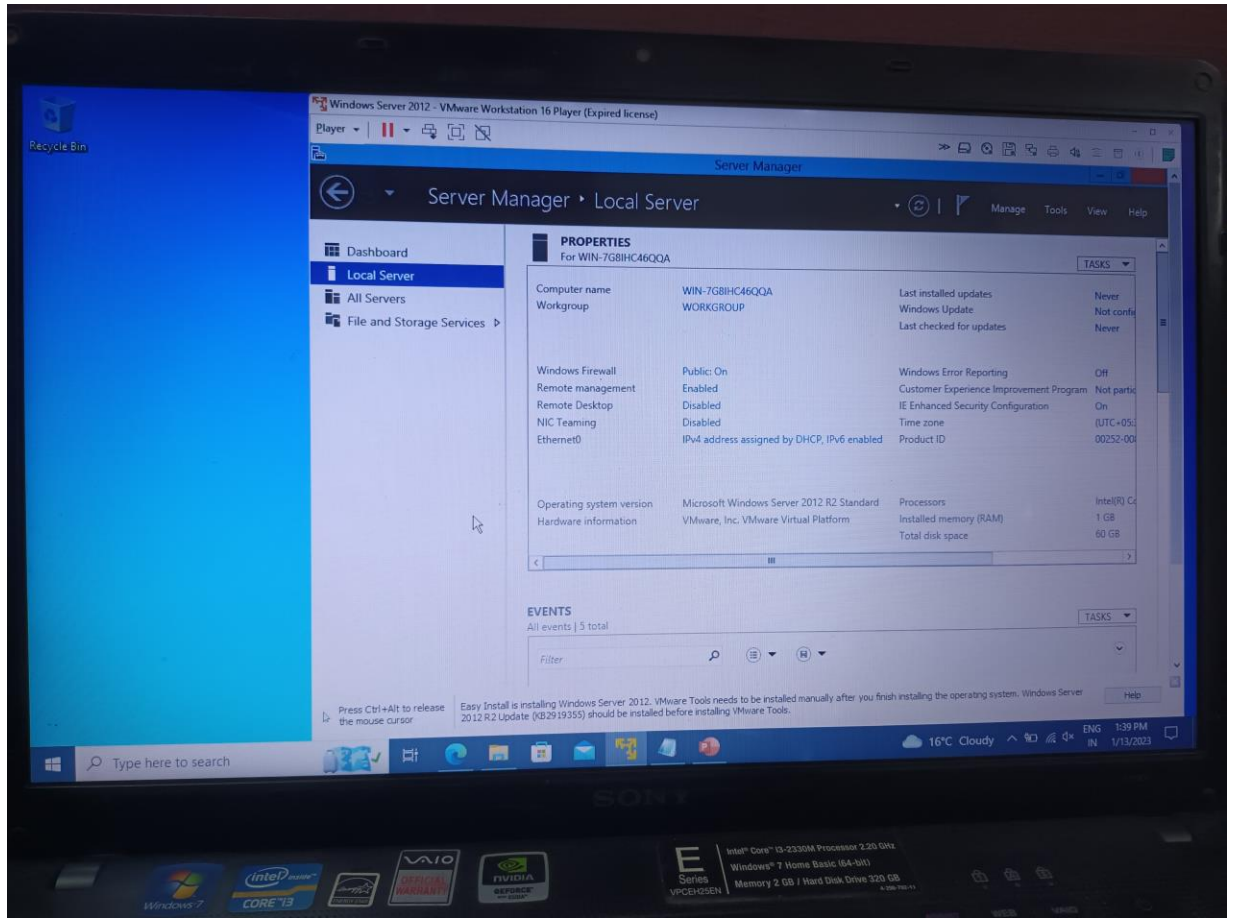
- Select a Server with a GUI option

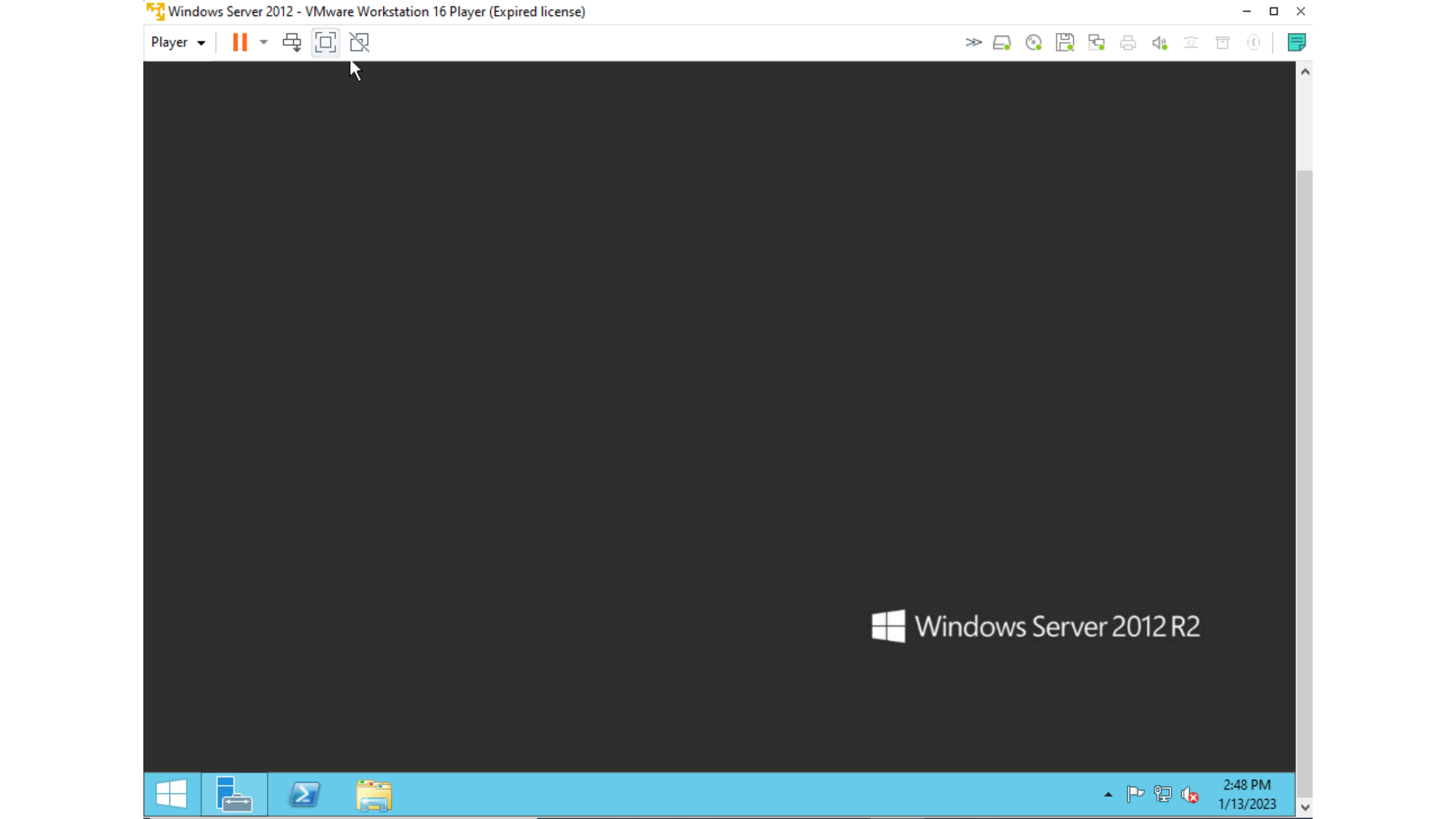

Windows Server 2012 - VMware Workstation 16 Player (Expired license)
Player
Windows Setup
Installing Windows
Your computer will restart several times. This might take a while.
Copying Windows files
Getting files ready for installation (43%)
Installing features
Installing updates
Finishing up
Click in the virtual screen to send keystrokes
Easy Install is installing Windows Server 2012. VMware Tools needs to be installed manually after you finish installing the operating system. Windows Server 2012 R2 Update (KB2919355) should be installed before installing VMware Tools.
Help
16°C Cloudy
ENG
IN
1:32 PM
1/13/2023


Recycle Bin
Windows Server 2012 - VMware Workstation 16 Player (Expired license)
Player
Press Ctrl+Alt to release the mouse cursor
Easy Install is installing Windows Server 2012. VMware Tools needs to be installed manually after you finish installing the operating system. Windows Server 2012 R2 Update (KB2919355) should be installed before installing VMware Tools.
Help
Type here to search
16°C Cloudy
ENG
IN
1:35 PM
1/13/2023
SONY
VAIO
Intel® Core™ i3-2330M Processor 2.20 GHz
Windows® 7 Home Basic (64-bit)
Memory 2 GB / Hard Disk Drive 320 GB
E Series
VPCEH25EN


Recycle Bin
Windows Server 2012 - VMware Workstation 16 Player (Expired license)
Player
Recycle Bin
Windows Server 2012 R2
Press Ctrl+Alt to release the mouse cursor
Easy Install is installing Windows Server 2012. VMware Tools needs to be installed manually after you finish installing the operating system. Windows Server 2012 R2 Update (KB2919355) should be installed before installing VMware Tools.
Help
Type here to search
16°C Cloudy
ENG
IN
1:37 PM
1/13/2023
SONY
VAIO
Windows 7
CORE i3
OFFICIAL WARRANTY
NVIDIA
GEFORCE
E Series
VPCEH25EN
Intel® Core™ i3-2330M Processor 2.20 GHz
Windows® 7 Home Basic (64-bit)
Memory 2 GB / Hard Disk Drive 320 GB
ASSIST
WEB
VAIO
F1
F2
F3
F4
F5
F6
F7
F8
F9
F10
F11
F12
Prt Sc Sys Rq
Pause Break
Insert
Delete
Home
End


Windows Server 2012 - VMware Workstation 16 Player (Expired license)
Player
Recycle Bin
Server Manager
Server Manager • Dashboard
Manage Tools View Help
Dashboard
Local Server
All Servers
WELCOME TO SERVER MANAGER
QUICK START
WHAT'S NEW
LEARN MORE
1 Configure this local server
2 Add roles and features
3 Add other servers to manage
4 Create a server group
Hide
ROLES AND SERVER GROUPS
Roles: 0 | Server groups: 1 | Servers total: 1
Local Server 1
Manageability
Events
All Servers 1
Manageability
Events
Press Ctrl+Alt to release the mouse cursor
Easy Install is installing Windows Server 2012. VMware Tools needs to be installed manually after you finish installing the operating system. Windows Server 2012 R2 Update (KB2919355) should be installed before installing VMware Tools.
Help
Type here to search
16°C Cloudy
ENG IN
1:38 PM 1/13/2023
SONY
VAIO
Windows 7
CORE i3
Backspace


Windows Server 2012 - VMware Workstation 16 Player (Expired license)
Player
Recycle Bin
Server Manager
Server Manager ▸ Local Server
Manage
Tools
View
Help
Dashboard
Local Server
All Servers
File and Storage Services
PROPERTIES
For WIN-7G8IHC46QQA
TASKS
Computer name
WIN-7G8IHC46QQA
Workgroup
WORKGROUP
Last installed updates
Never
Windows Update
Last checked for updates
Never
Windows Firewall
Public: On
Windows Error Reporting
Off
Remote management
Enabled
Customer Experience Improvement Program
Remote Desktop
Disabled
IE Enhanced Security Configuration
On
NIC Teaming
Disabled
Time zone
Ethernet0
IPv4 address assigned by DHCP, IPv6 enabled
Product ID
Operating system version
Microsoft Windows Server 2012 R2 Standard
Processors
Hardware information
VMware, Inc. VMware Virtual Platform
Installed memory (RAM)
1 GB
Total disk space
60 GB
EVENTS
All events | 5 total
TASKS
Filter
Press Ctrl+Alt to release the mouse cursor
Easy Install is installing Windows Server 2012. VMware Tools needs to be installed manually after you finish installing the operating system. Windows Server 2012 R2 Update (KB2919355) should be installed before installing VMware Tools.
Help
Type here to search
16°C Cloudy
ENG
IN
1:39 PM
1/13/2023
SONY
VAIO
NVIDIA
Windows 7
CORE i3
Intel® Core™ i3-2330M Processor 2.20 GHz
Windows® 7 Home Basic (64-bit)
Memory 2 GB / Hard Disk Drive 320 GB


Windows Server 2012 - VMware Workstation 16 Player (Expired license)
Player
Windows Server 2012 R2
2:48 PM
1/13/2023

- **Configuring Network :** Manage network cabling, Configure network interface cards, implement IP addressing and network infrastructure services

Manage network cabling

- Sysadmins may be **responsible for** managing network cabling and connectivity.

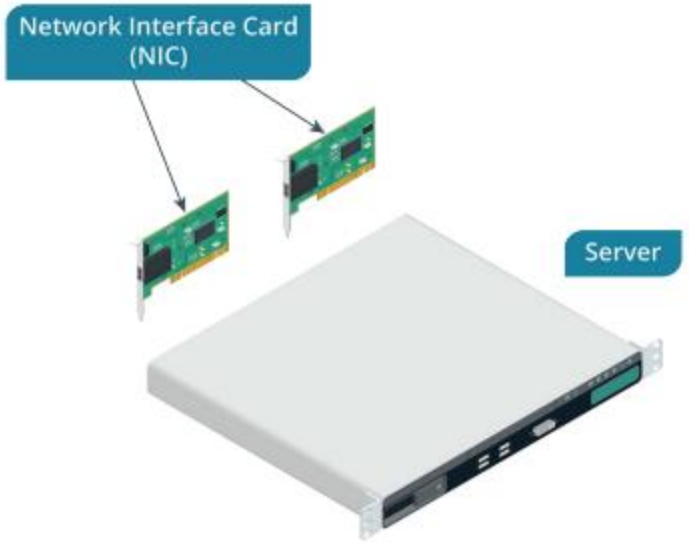
- While some IT departments have a **separate** network team, often, the server admin team still manages some parts of networking.

Manage network cabling

- **Redundant Networking:** Redundant networking refers to eliminating single points of failure in the network infrastructure.
  - Such redundancy is usually implemented in a mesh topology, where there are multiple communications paths through multiple network devices.
  - Redundancy is particularly important for servers.

Manage network cabling

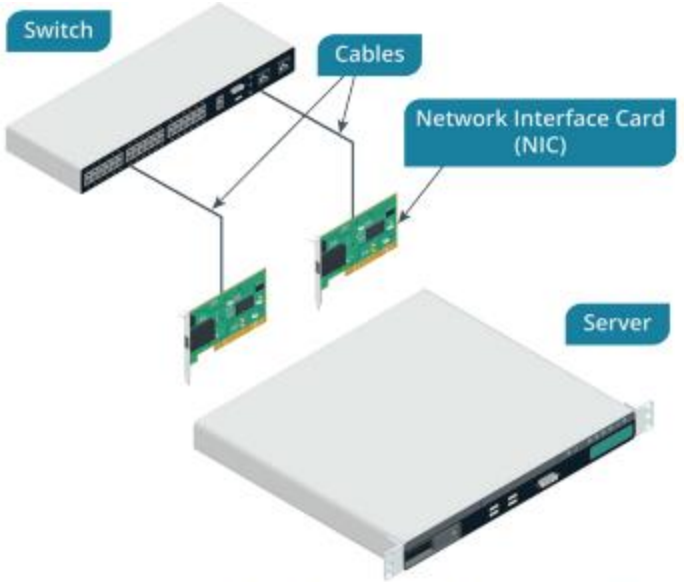
- Server Redundancy: The first area of network redundancy for a server is multiple NICs.
  - Like any other component, NICs can fail, which would take a server with a single NIC offline.
  - For this reason, many servers ship with multiple NICs integrated into the motherboard.



Server with redundant NICs. (Images © 123RF.com)

Manage network cabling

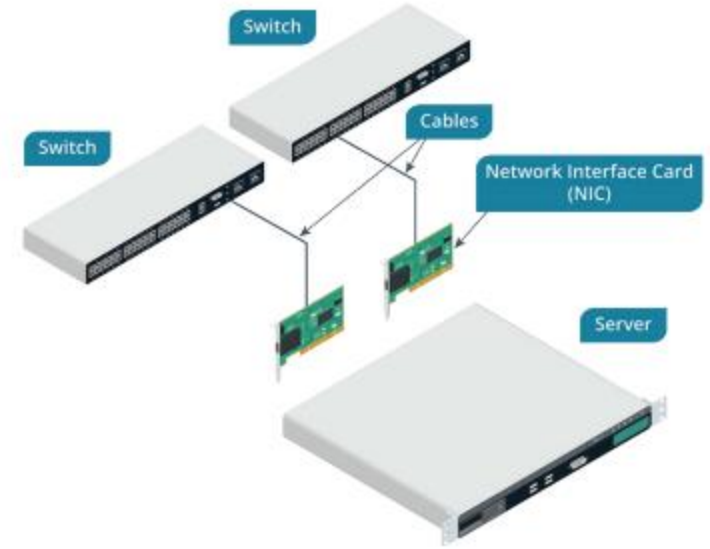
- Media and Switch Redundancy: The next component is **redundant network media**.



Server with redundant NICs plugged into one switch. (Images © 123RF.com)

Manage network cabling

- The other layer of **redundancy is network switching**.



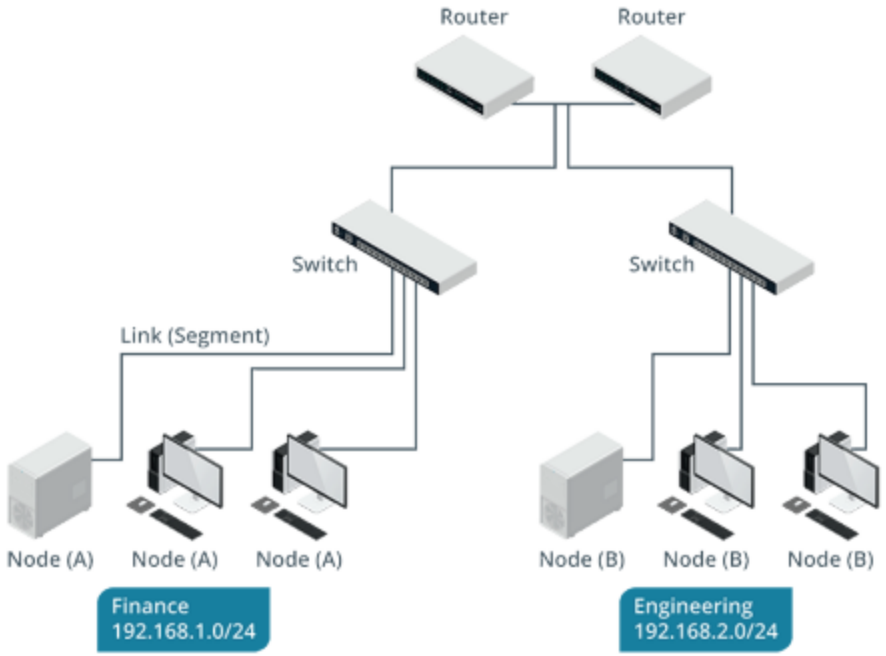
Server with redundant NICs plugged into redundant switches. (Images © 123RF.com)

Manage network cabling

- **Router Redundancy**: Each network segment is connected to other segments **via a router**.
  - If the router **fails**, the network segment is isolated from the rest of the network.
  - A **standby router** may be configured to take over if the primary router goes offline.

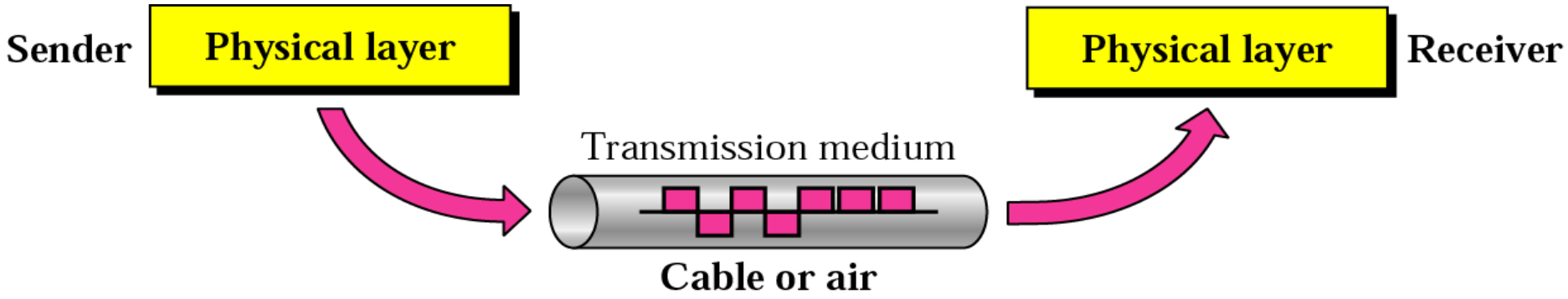
Manage network cabling

- **Router Redundancy:**

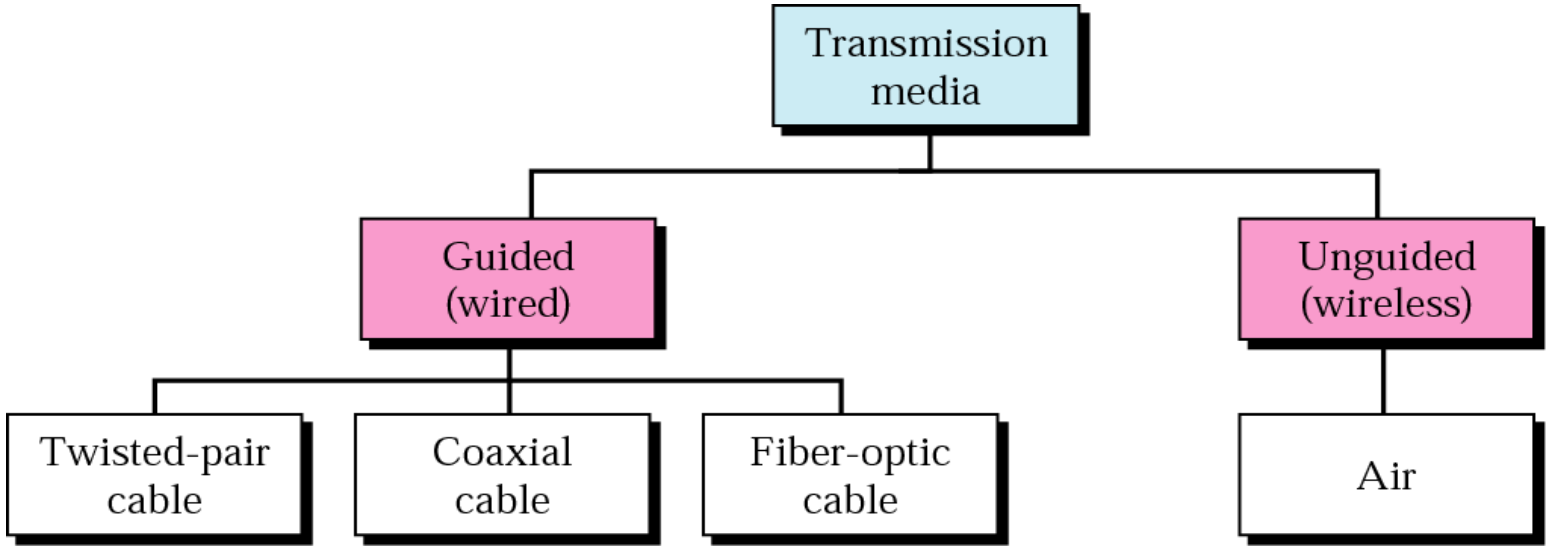


Redundant routers between network segments. (Images © 123RF.com)

Transmission Media Types



Classes of transmission media



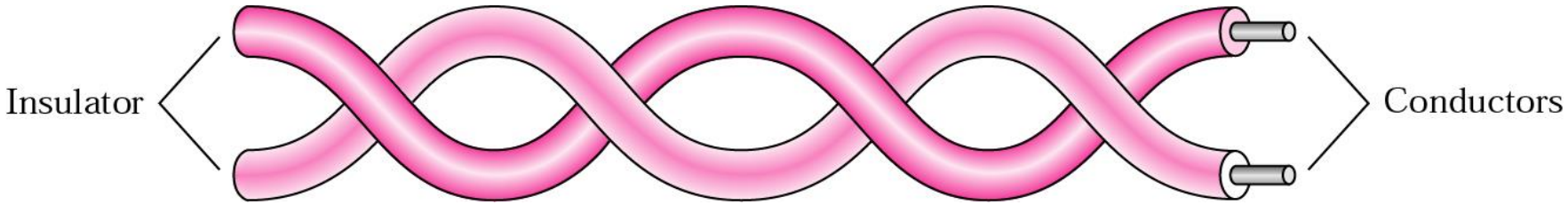
Guided Media

Twisted-Pair Cable

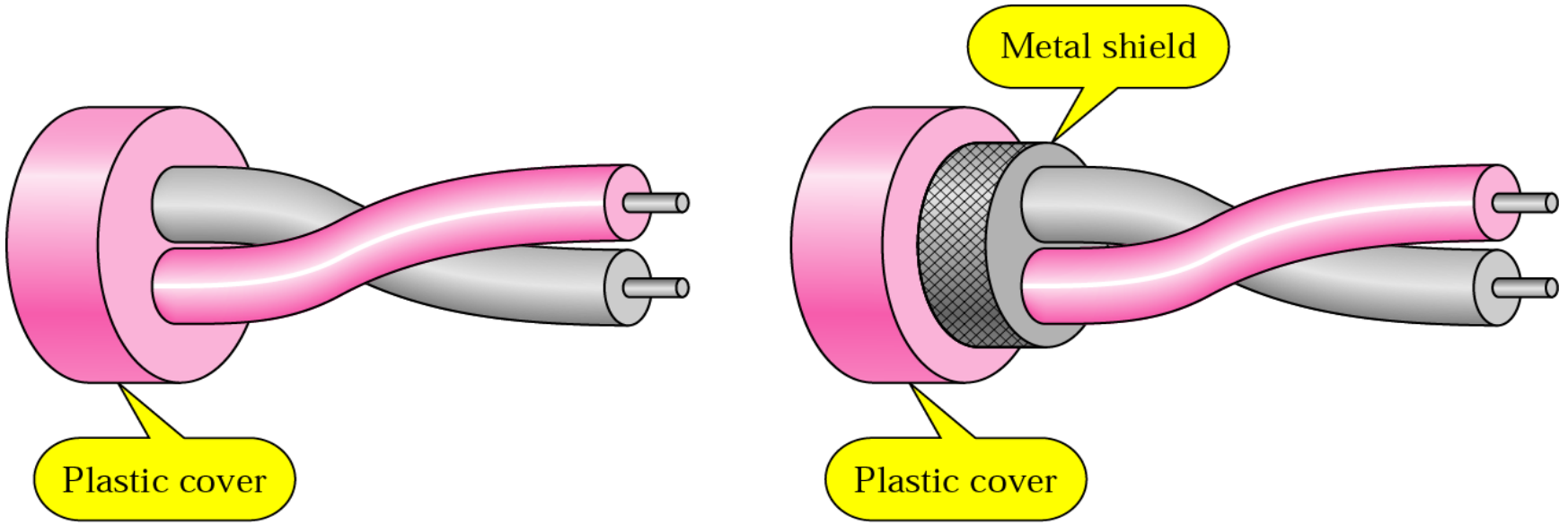
Coaxial Cable

Fiber-Optic Cable

Twisted-pair cable



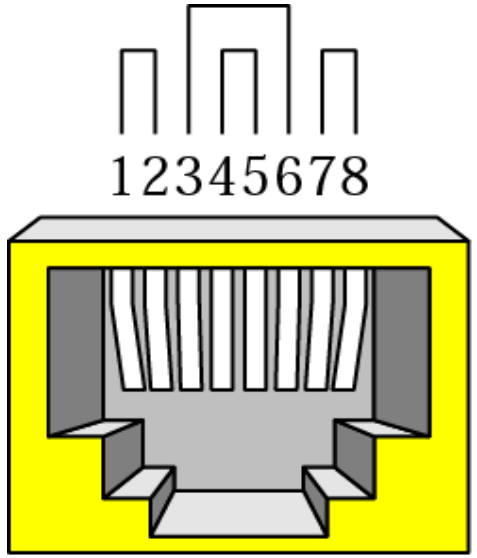
UTP and STP



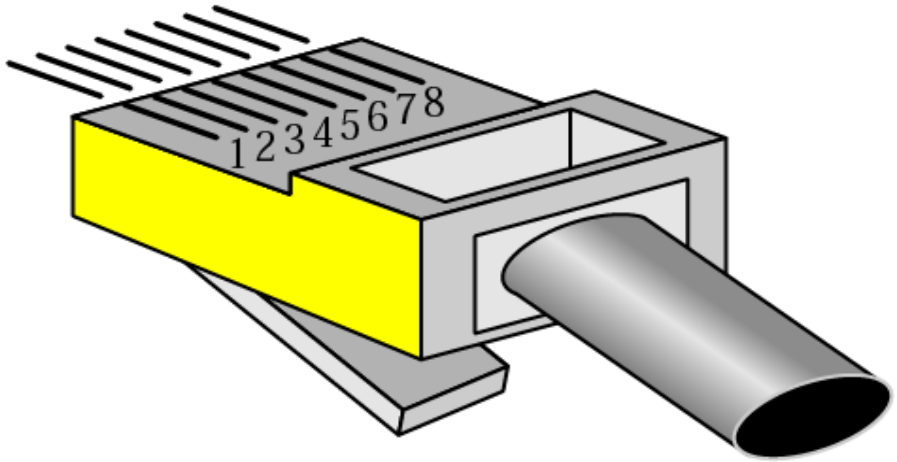
a. UTP

b. STP

UTP connector

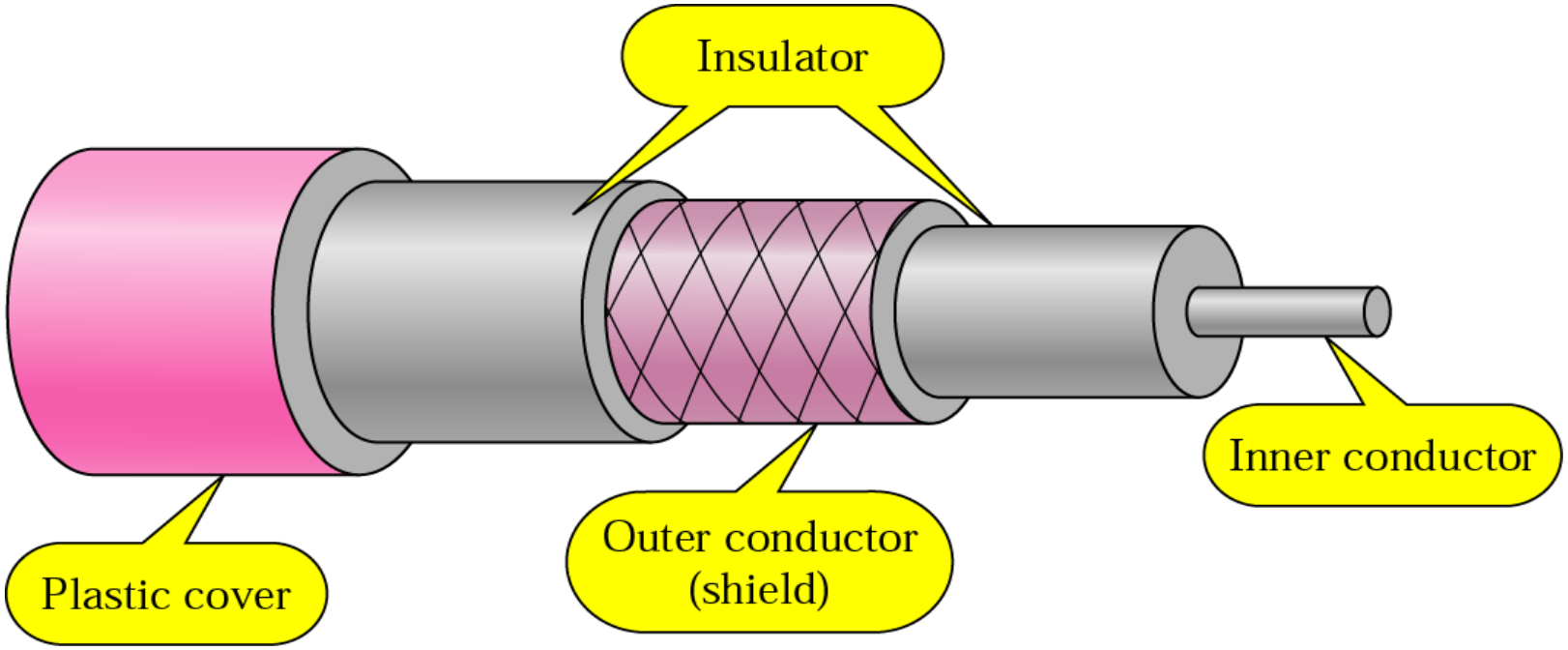


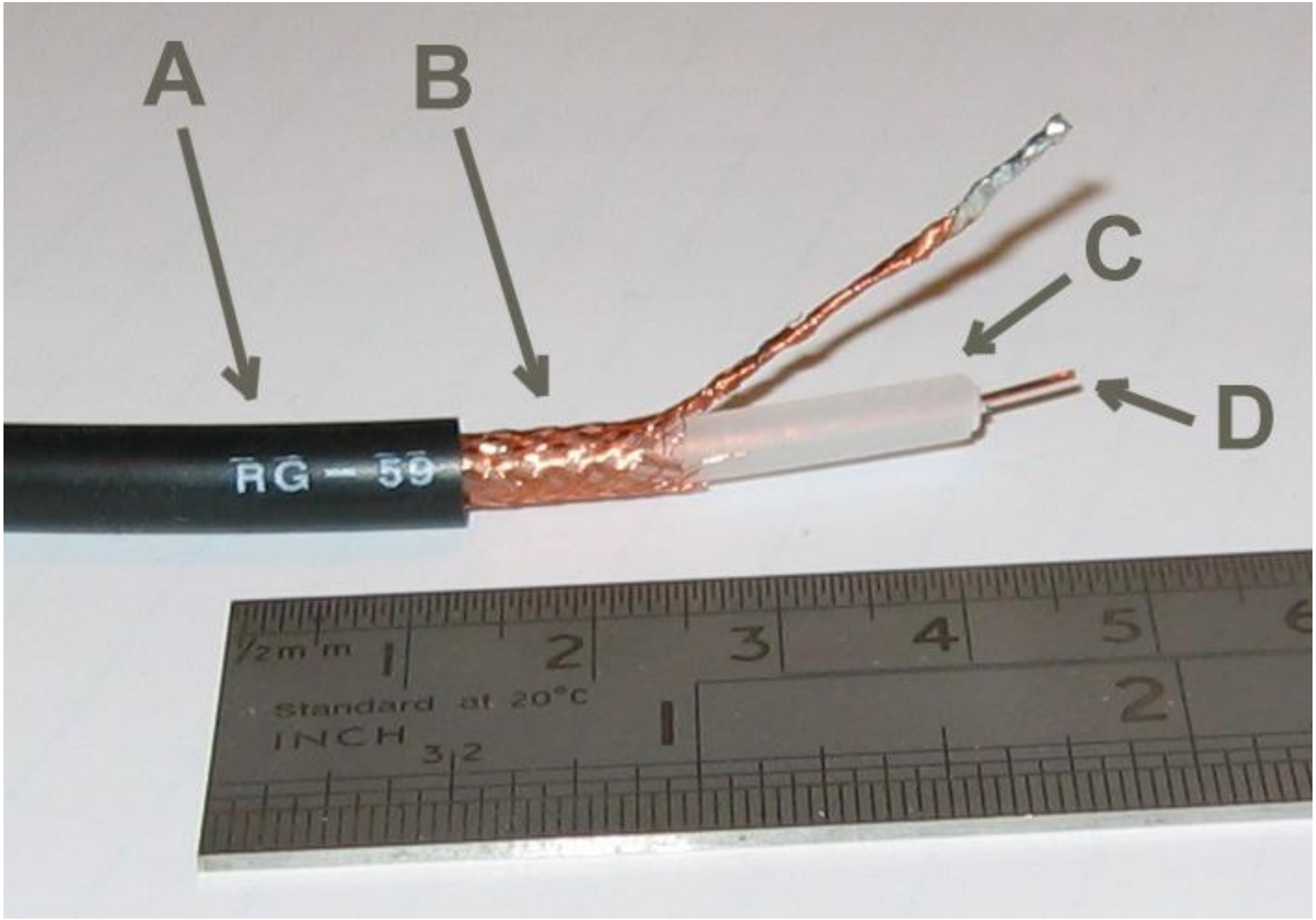
RJ-45 Female



RJ-45 Male

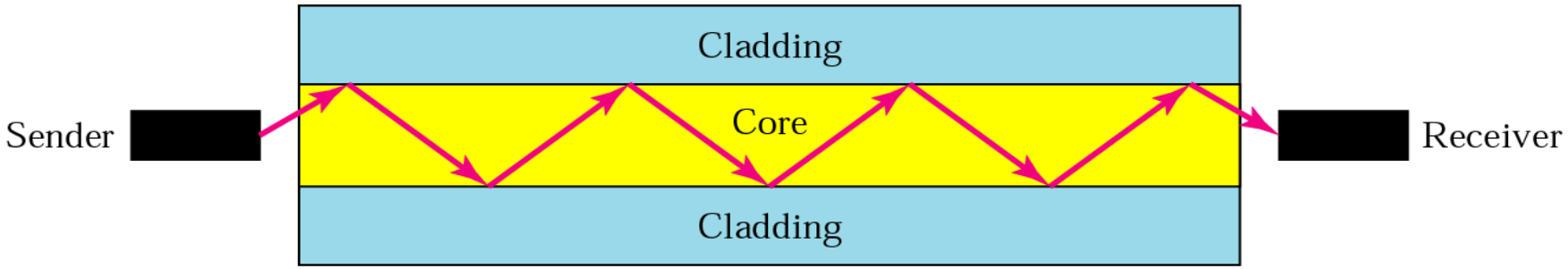
Coaxial cable



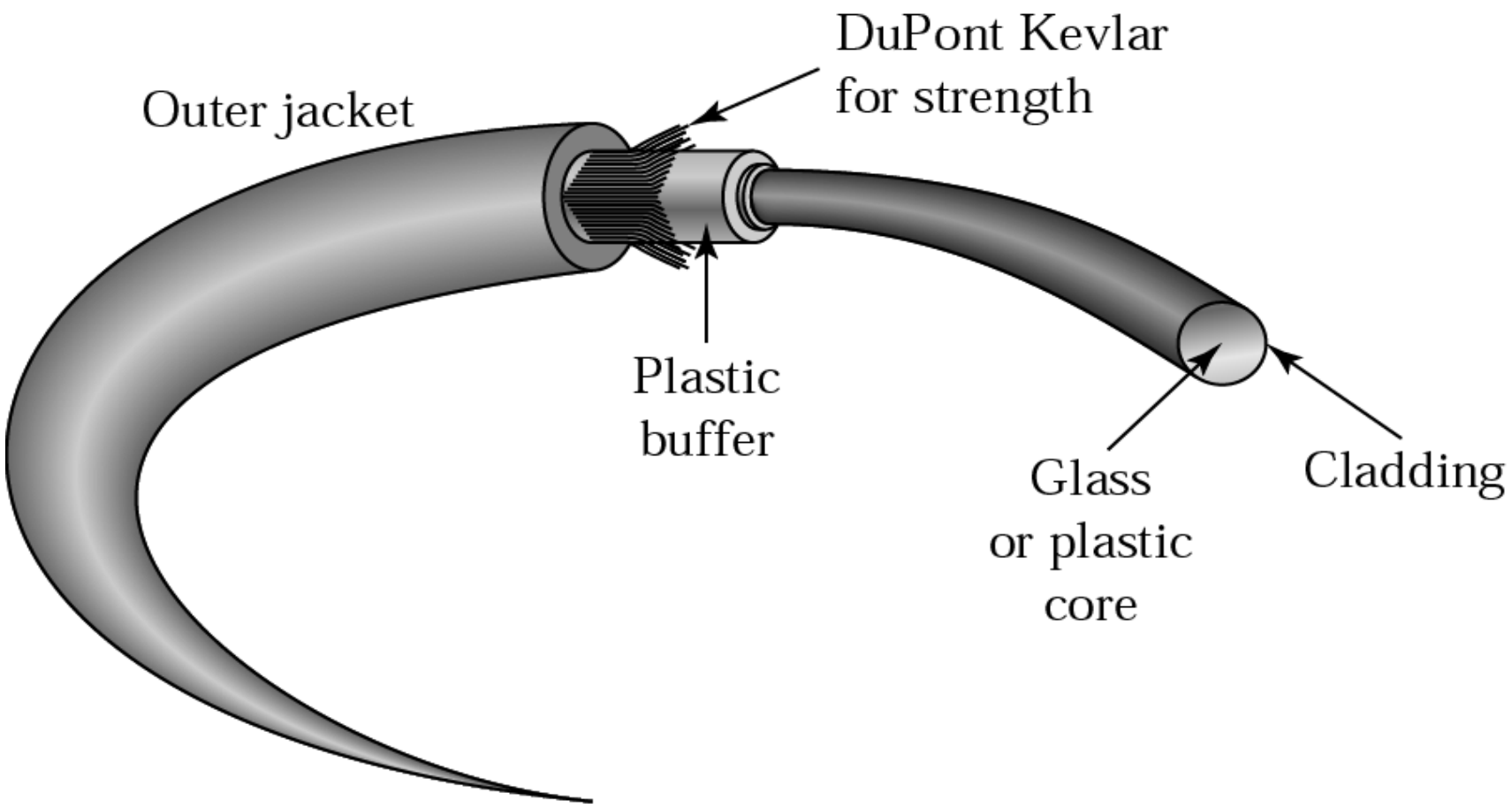

A
B
C
D
RG - 59
standard at 20°C
INCH

A section of RG-59 cable with its end stripped.
A: outer plastic sheath
B: copper braid shield
C: inner dielectric insulator
D: copper-plated core (sometimes solid core)

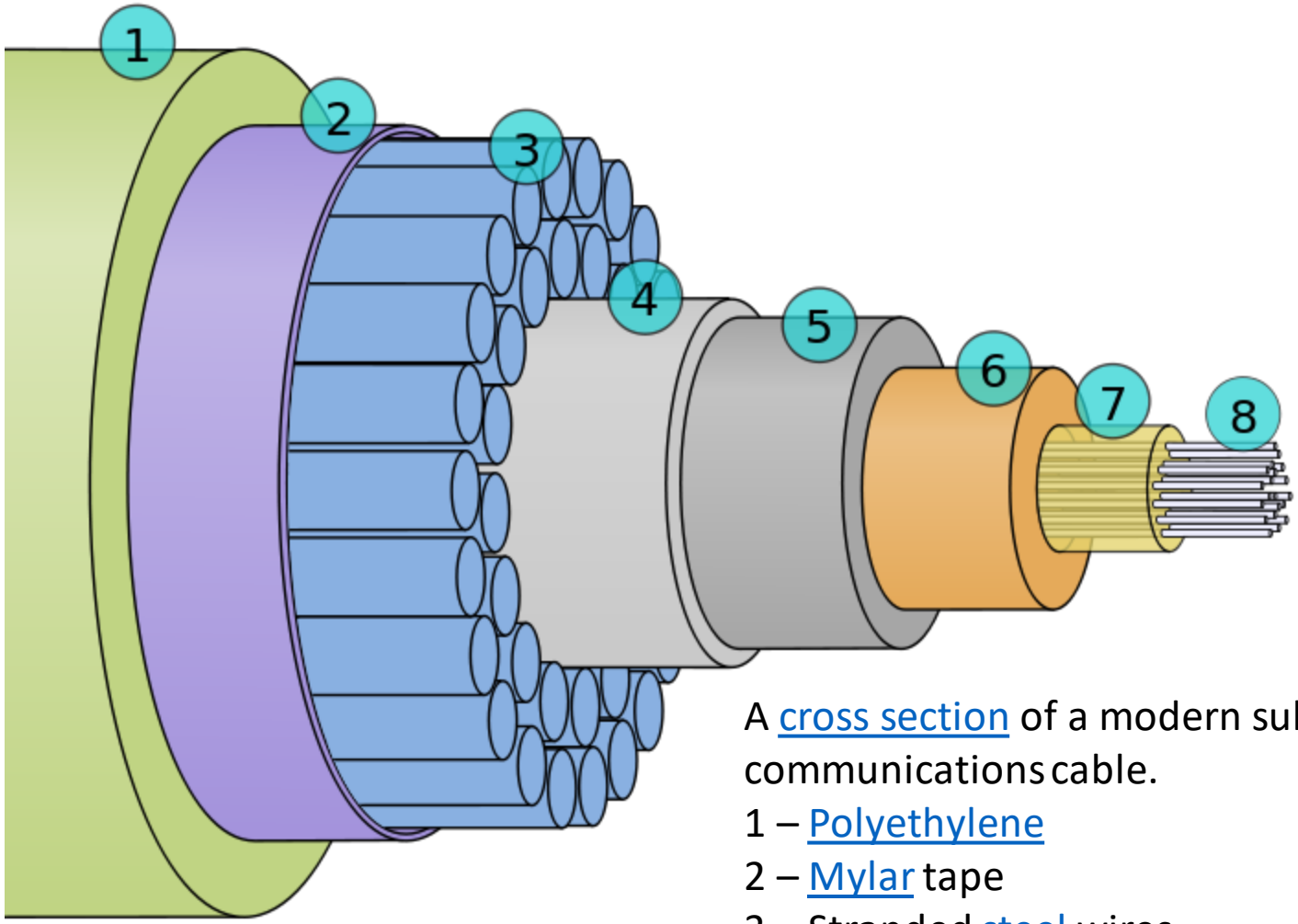
Optical fiber



Fiber construction



DuPont Kevlar is a para-aramid (aromatic polyamide) fiber that comes in different forms, each suited to a specific set of consumer and industrial applications.



A cross section of a modern submarine communications cable.

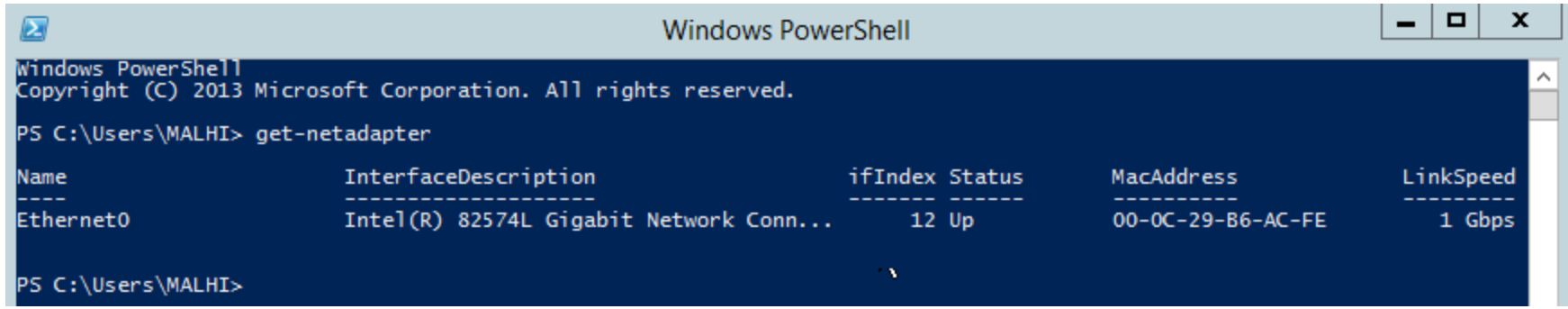
1 – Polyethylene
2 – Mylar tape
3 – Stranded steel wires
4 – Aluminium water barrier
5 – Polycarbonate
6 – Copper or aluminium tube
7 – Petroleum jelly
8 – Optical fibers

Configure network interface cards, implement IP addressing

- First method: open the network and sharing center
  - Then open change adapter settings
  - Now select the network adapter
  - Right click on respective network adapter and then select the properties
  - Then select (TCP/IPv4) option and click on properties
  - Then new pop up window reflects and fill the recommended IP and other entries

Configure network interface cards, implement IP addressing

- **Second method is:**
- **NIC configuration with get-netadapter**
  - **Open the powershell**
  - **Type the command get-netadapter**
  - **It will** list all wired and wireless NICs on the local system



network infrastructure services

- Network infrastructure refers to the hardware and software that enable network connectivity and communication between users, devices, apps, the internet, and more.

- Network infrastructure can be a mix of hardware devices, software applications, and network services, including:
  - **Hardware infrastructure** typically includes routers, switches, hubs, repeaters, gateways, bridges, and modems.
  - **Software infrastructure** includes monitoring and management tools and operating systems.
  - **Network services** include networking protocols such as TCP, UDP, and IP addressing.

network infrastructure services

- Network Infrastructure Services are customized as per the requirements.

- **Creating a Virtual Environment:** Create virtual servers, Create virtual switches