Build your own Cisco UC Lab in vmware Workstation

Release date: 08/Feb/2022

Abdul Jaseem. V.P

Solution Architect

(Former Technical Consulting Engineer at Cisco TAC)

CCIE Collaboration #59174, CCNP Collaboration,
CCNP DC, CCNP DevNet, CCNP Ent., VCP DCV,
Azure Admin, AWS SAA, CKA, ACE MCNA

LinkedIn

How to Build Your Own Home UC Lab in vmware Workstation

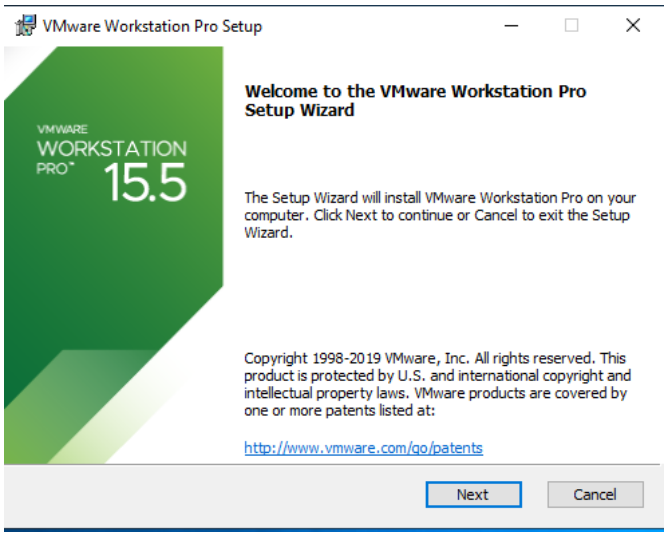
- The complete UC lab you can set up on your laptop / workstation if you have enough RAM
- Even without large amount of RAM, you can still setup a miniature lab for practice
- You need to have vmware Workstation to build the lab, download and install vmware workstation

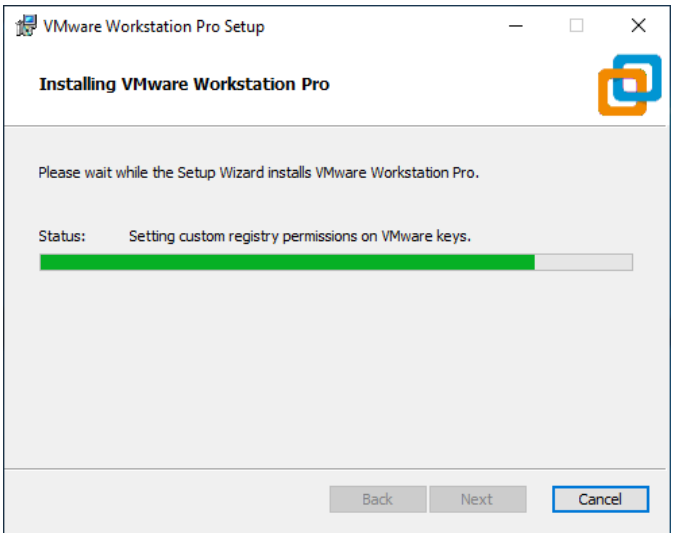
Step 1: Enable virtualization Intel VT-X from BIOS

- This step differs for each laptop / desktop manufacture
- You should find a way to enable Intel VT-X from BIOS. Google to find the way to enable it based on you manufacture

Step 2: Install vmware Workstation

- Installation is pretty straight forward, just Next, Next, Finish

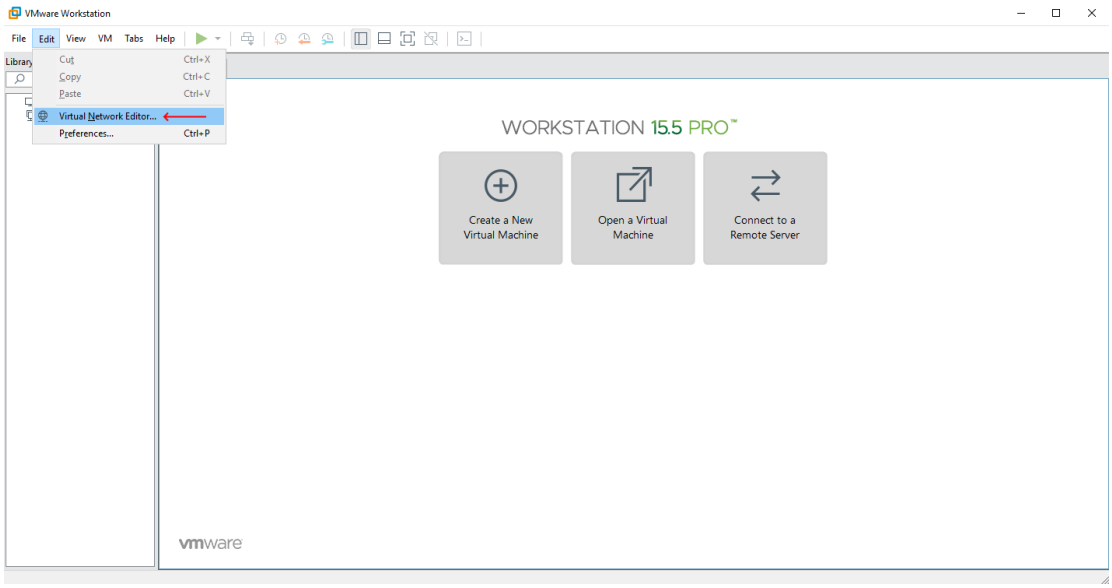




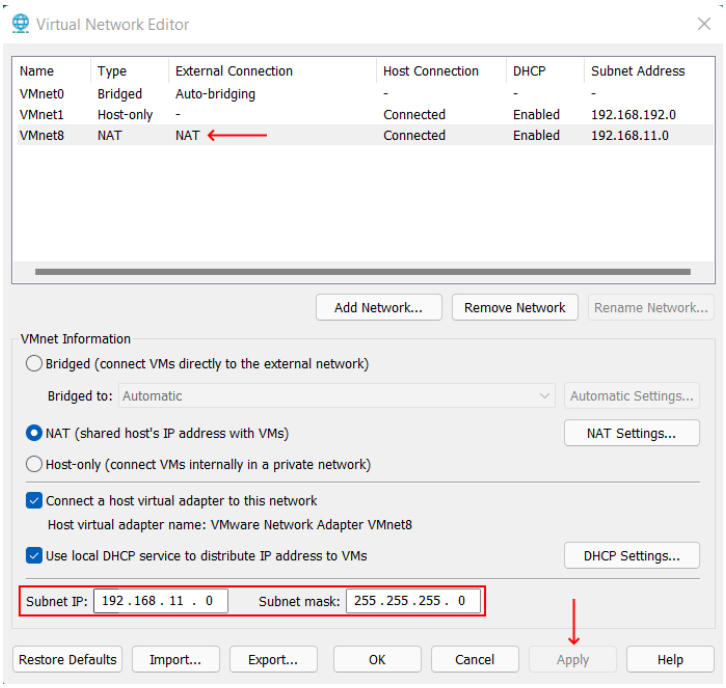
Step 3: Identify vmware NAT Network Settings

Once you complete the installation, open vmware Workstation

Go to Edit >> Virtual Network Editor



- Select the VMnet8 (NAT) and check the IP Subnet

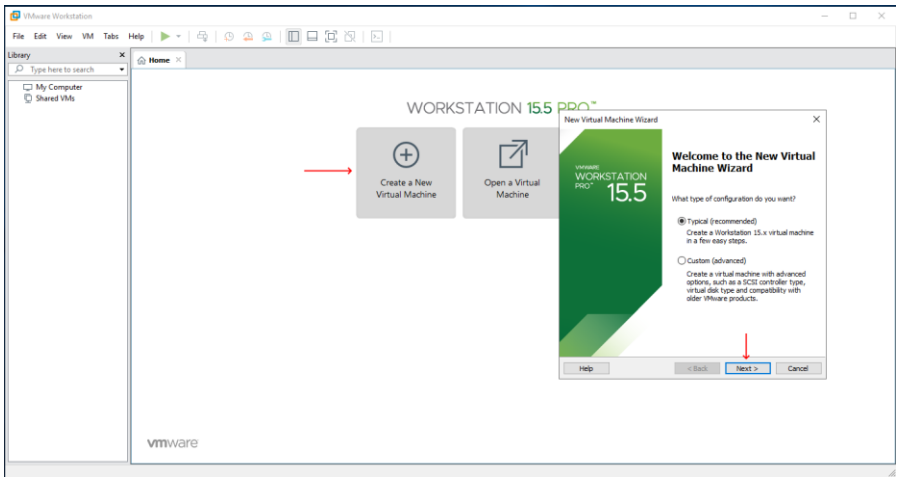


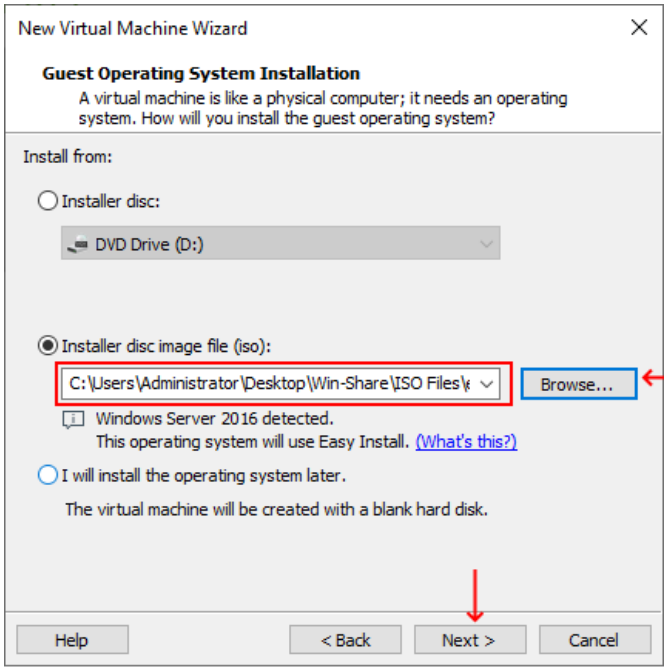
- Here my NAT Network is 192.168.192.0 and Subnet Mask is 255.255.255.0, hence below IP configurations can be used for UC Servers

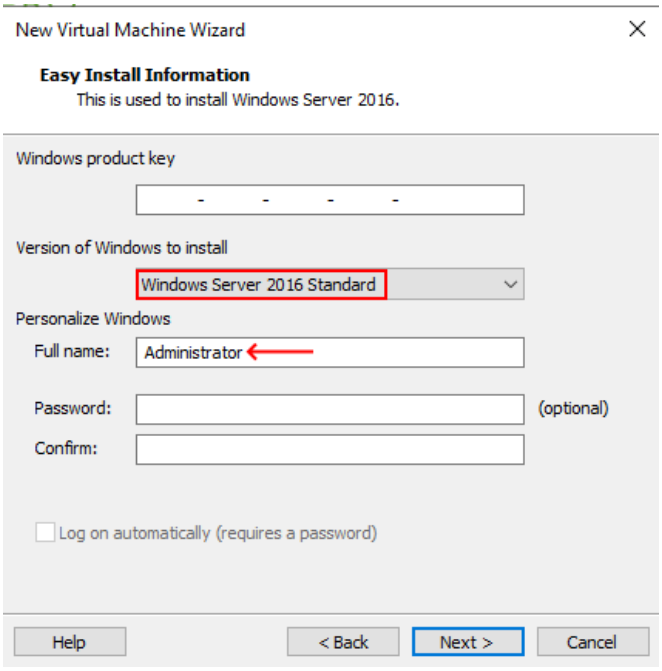
Network	192.168.11.X / 24
Subnet Mask	255.255.255.0
Starting IP Address	192.168.11.3
Ending IP Address	192.168.11.254
Default Gateway	192.168.11.2
NTP	216.239.35.8

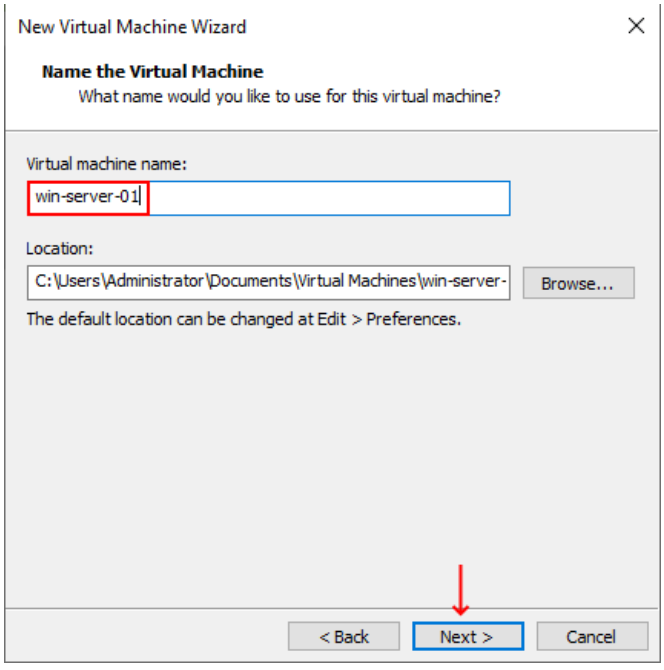
- While installing UC Servers, make sure you are connected to Internet since we use Public NTP that is available over internet
- Now you can deploy Windows Server for AD and DNS purpose and then UC Servers can be deployed
- For CUCM installation, DNS server is optional, you can install without DNS Server as well but for UCCX installation, DNS is mandatory
- Here you don't need local any NTP Server, we have used public NTP

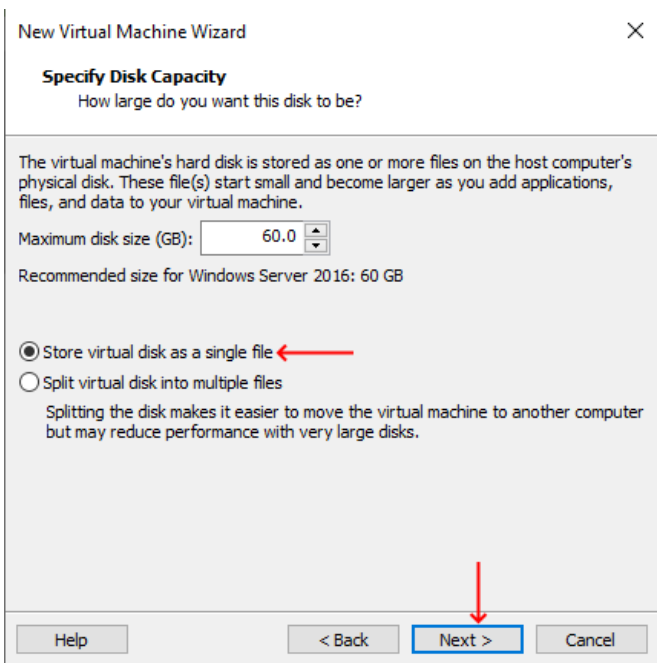
Step 4: Install Windows Server

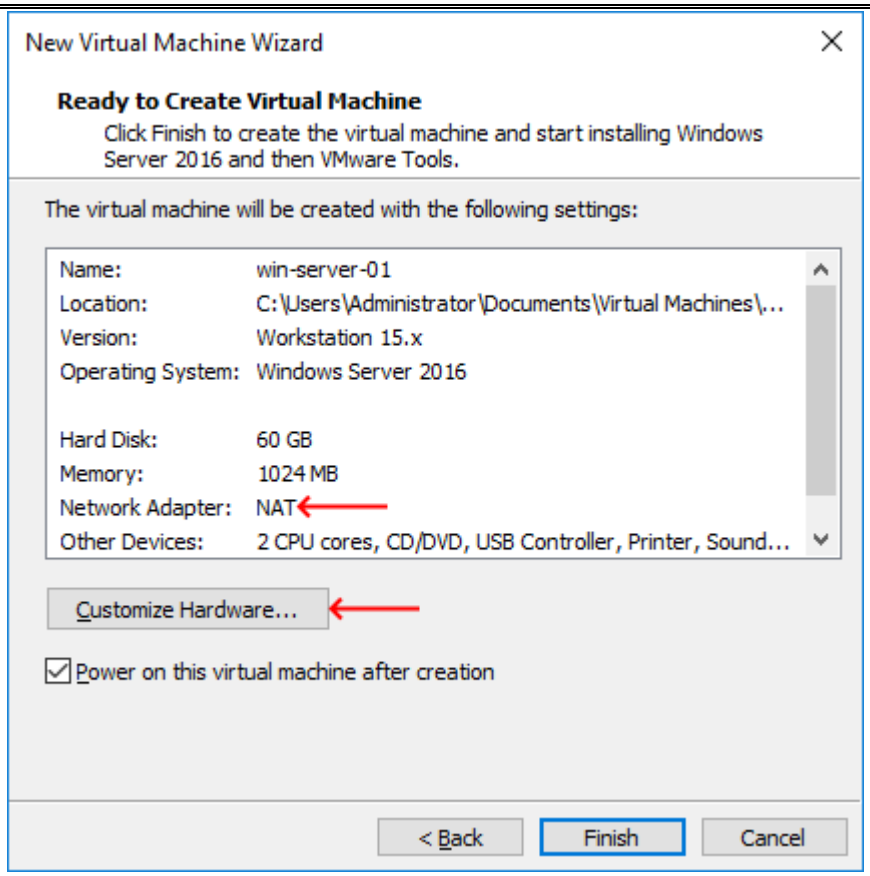


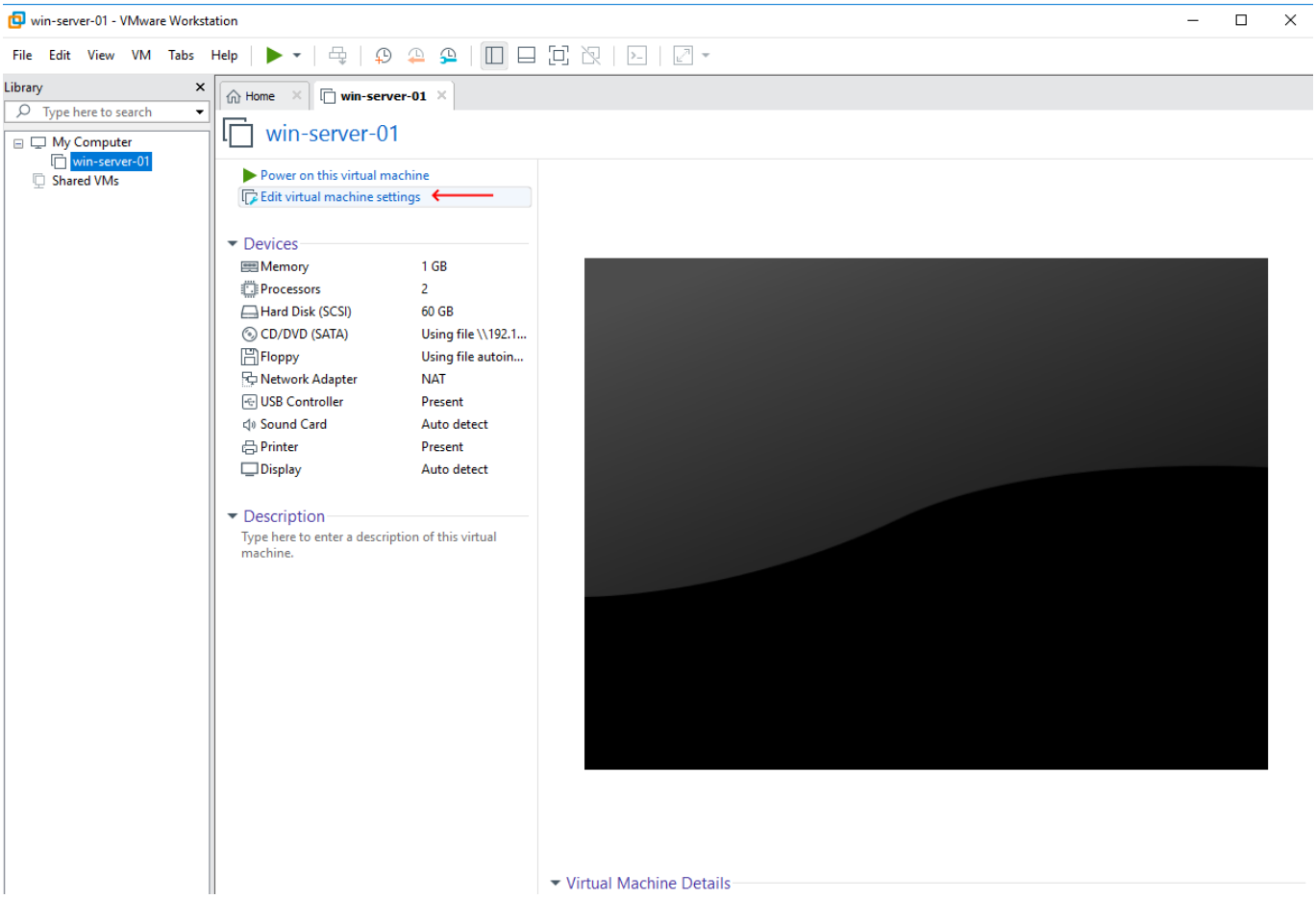


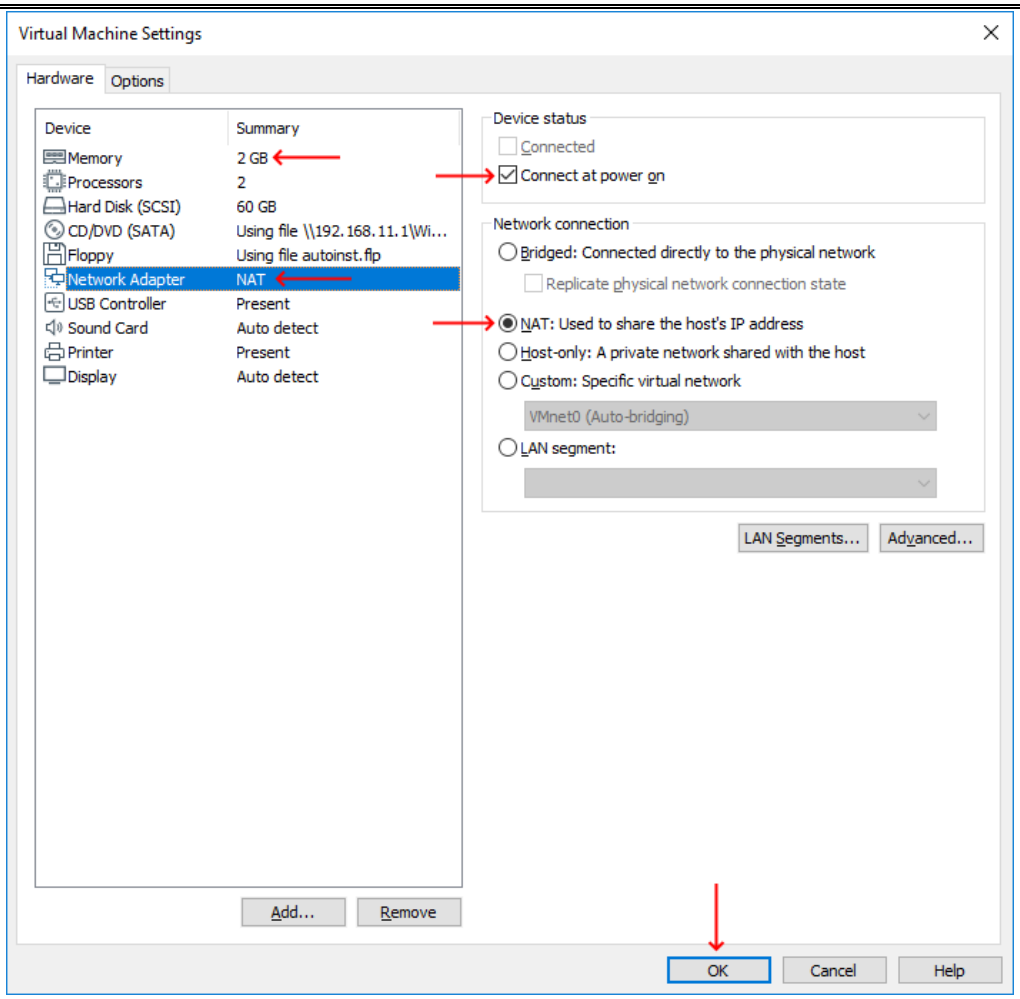


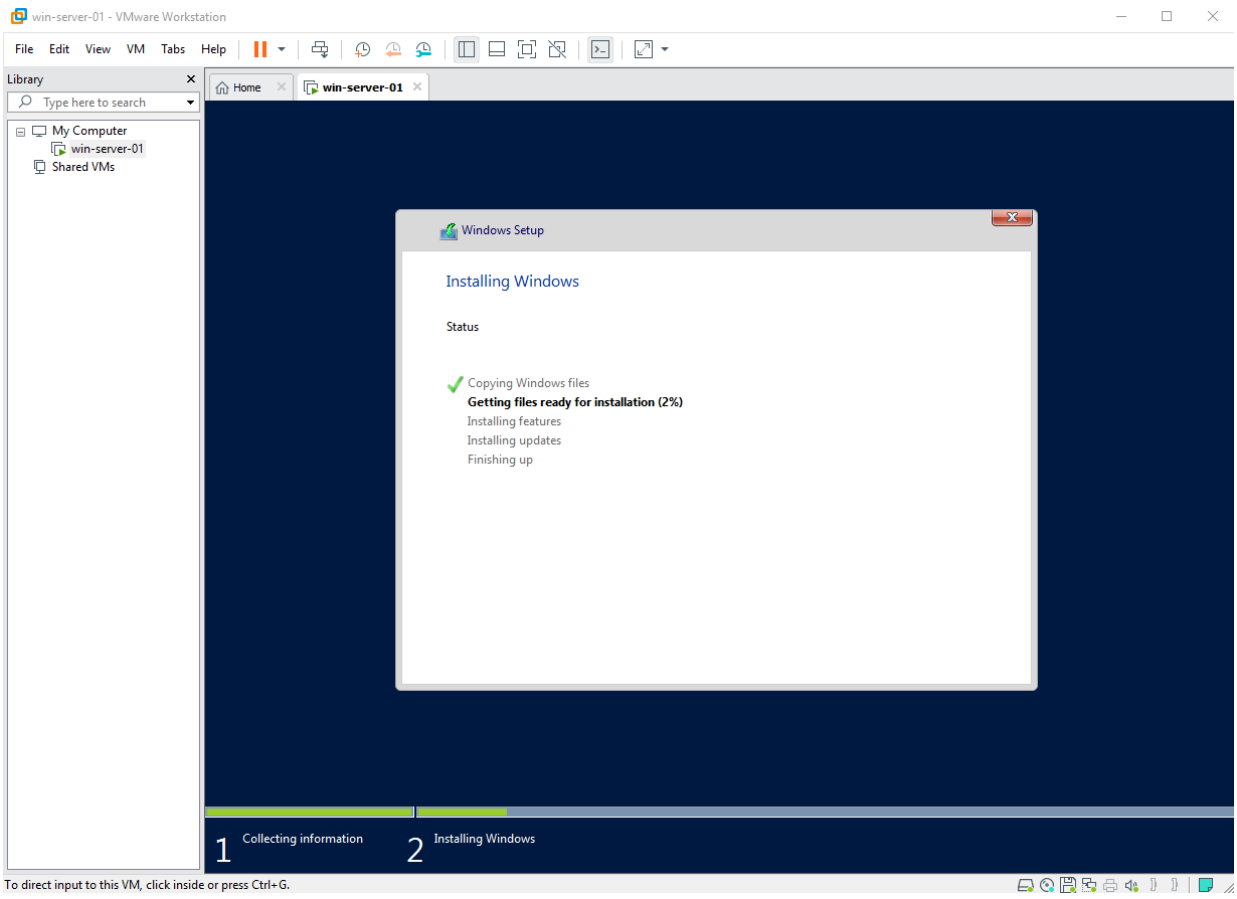





New Virtual Machine Wizard
Ready to Create Virtual Machine
Click Finish to create the virtual machine and start installing Windows Server 2016 and then VMware Tools.
The virtual machine will be created with the following settings:
Name: win-server-01
Location: C:\Users\Administrator\Documents\Virtual Machines\...
Version: Workstation 15.x
Operating System: Windows Server 2016
Hard Disk: 60 GB
Memory: 1024 MB
Network Adapter: NAT
Other Devices: 2 CPU cores, CD/DVD, USB Controller, Printer, Sound...
Customize Hardware...
Power on this virtual machine after creation
< Back
Finish
Cancel


win-server-01 - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
My Computer
win-server-01
Shared VMs
Home
win-server-01
win-server-01
Power on this virtual machine
Edit virtual machine settings
Devices
Memory 1 GB
Processors 2
Hard Disk (SCSI) 60 GB
CD/DVD (SATA) Using file \\192.1...
Floppy Using file autoin...
Network Adapter NAT
USB Controller Present
Sound Card Auto detect
Printer Present
Display Auto detect
Description
Type here to enter a description of this virtual machine.
Virtual Machine Details

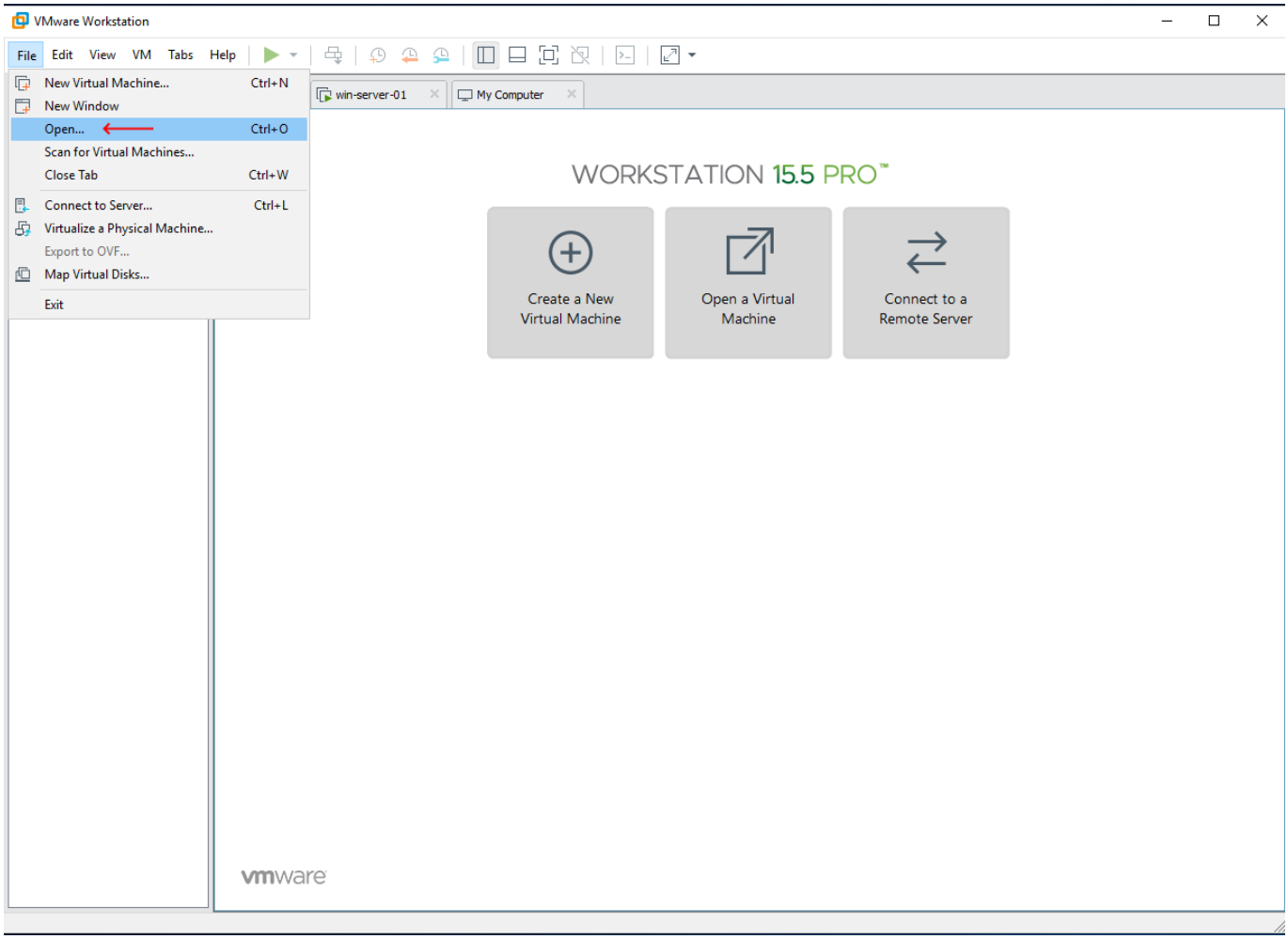

Virtual Machine Settings
Hardware
Options
Device
Summary
Memory
2 GB
Processors
2
Hard Disk (SCSI)
60 GB
CD/DVD (SATA)
Using file \\192.168.11.1\Wi...
Floppy
Using file autoinst.flp
Network Adapter
NAT
USB Controller
Present
Sound Card
Auto detect
Printer
Present
Display
Auto detect
Add...
Remove
Device status
Connected
Connect at power on
Network connection
Bridged: Connected directly to the physical network
Replicate physical network connection state
NAT: Used to share the host's IP address
Host-only: A private network shared with the host
Custom: Specific virtual network
VMnet0 (Auto-bridging)
LAN segment:
LAN Segments...
Advanced...
OK
Cancel
Help

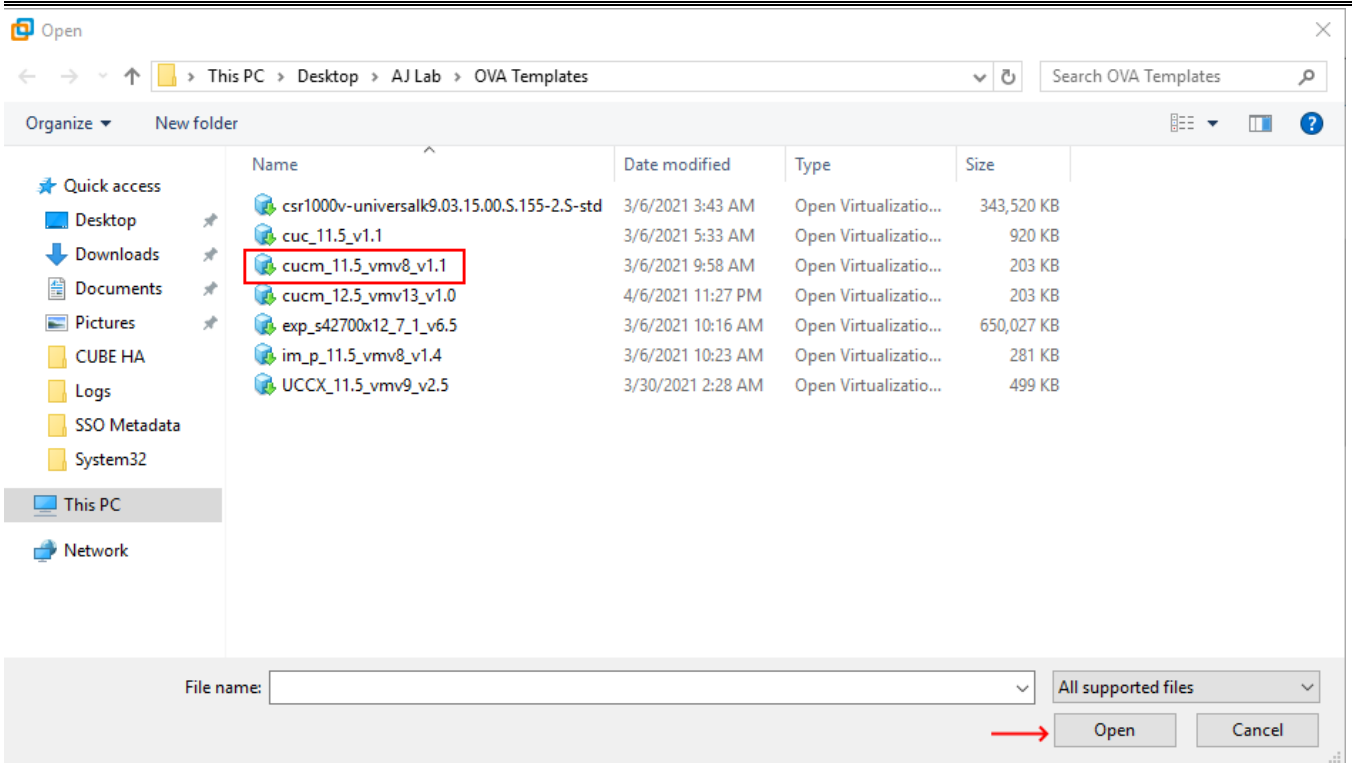

win-server-01 - VMware Workstation
File
Edit
View
VM
Tabs
Help
Library
Type here to search
My Computer
win-server-01
Shared VMs
Home
win-server-01
Windows Setup
Installing Windows
Status
Copying Windows files
Getting files ready for installation (2%)
Installing features
Installing updates
Finishing up
1
Collecting information
2
Installing Windows
To direct input to this VM, click inside or press Ctrl+G.

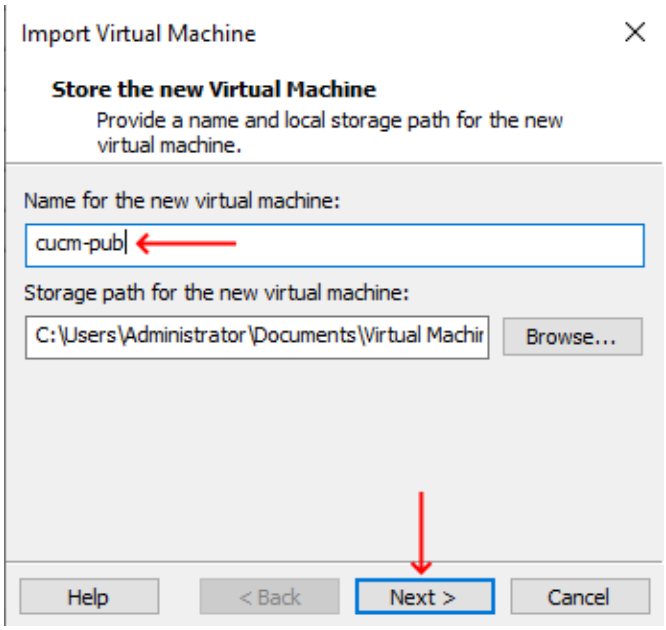
- Once windows installation completed, set a static IP address for it with default gateway 192.168.192.2
- Make sure you are able to access internet from the Windows Machine
- Setup AD and DNS on the windows server and add UC Server DNS A Records before installing CUCM

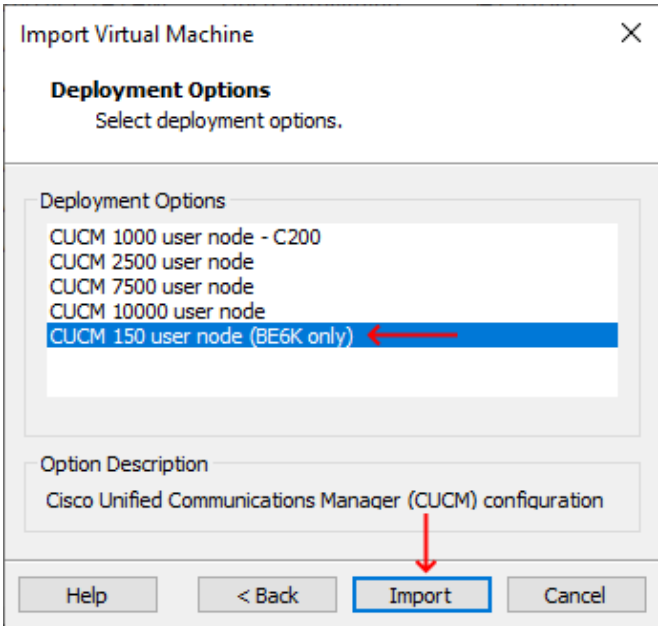
Step 5: Install CUCM

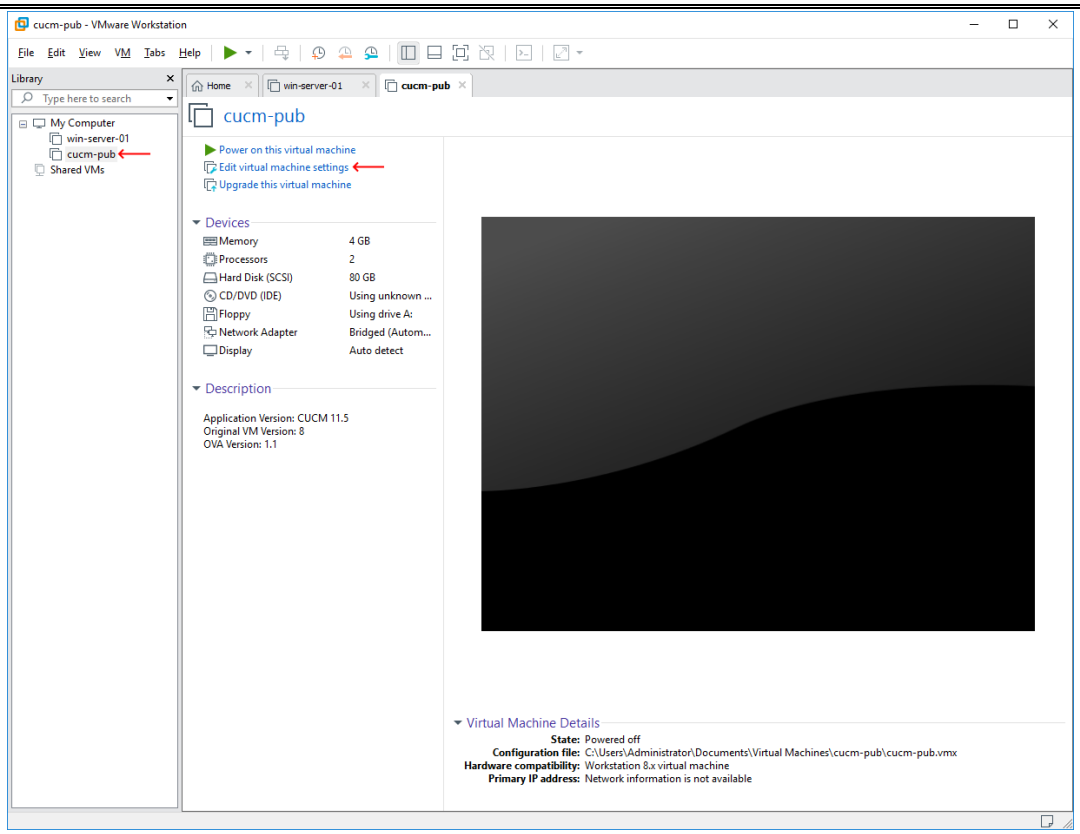
- Download the CUCM OVA
- Open the OVA from vmware Workstation

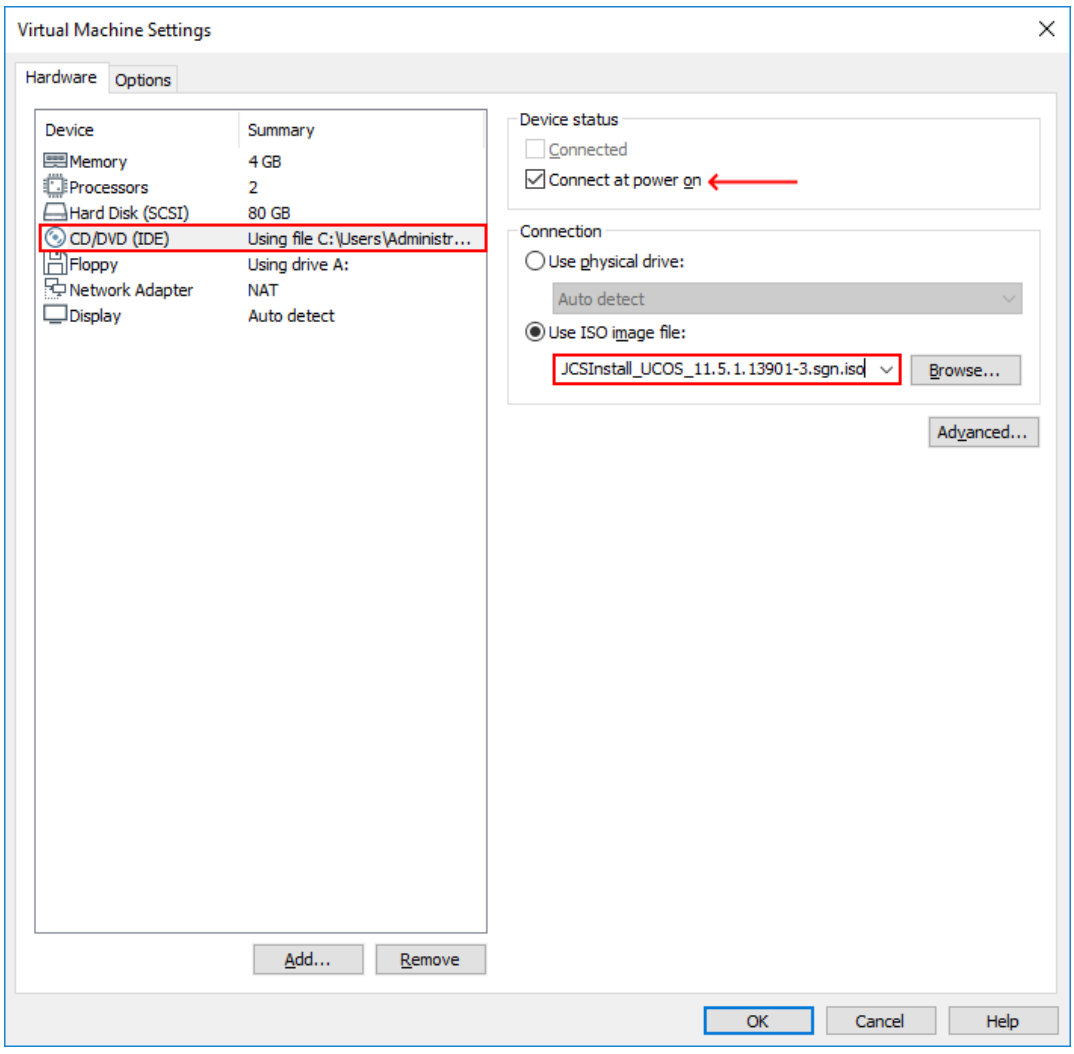


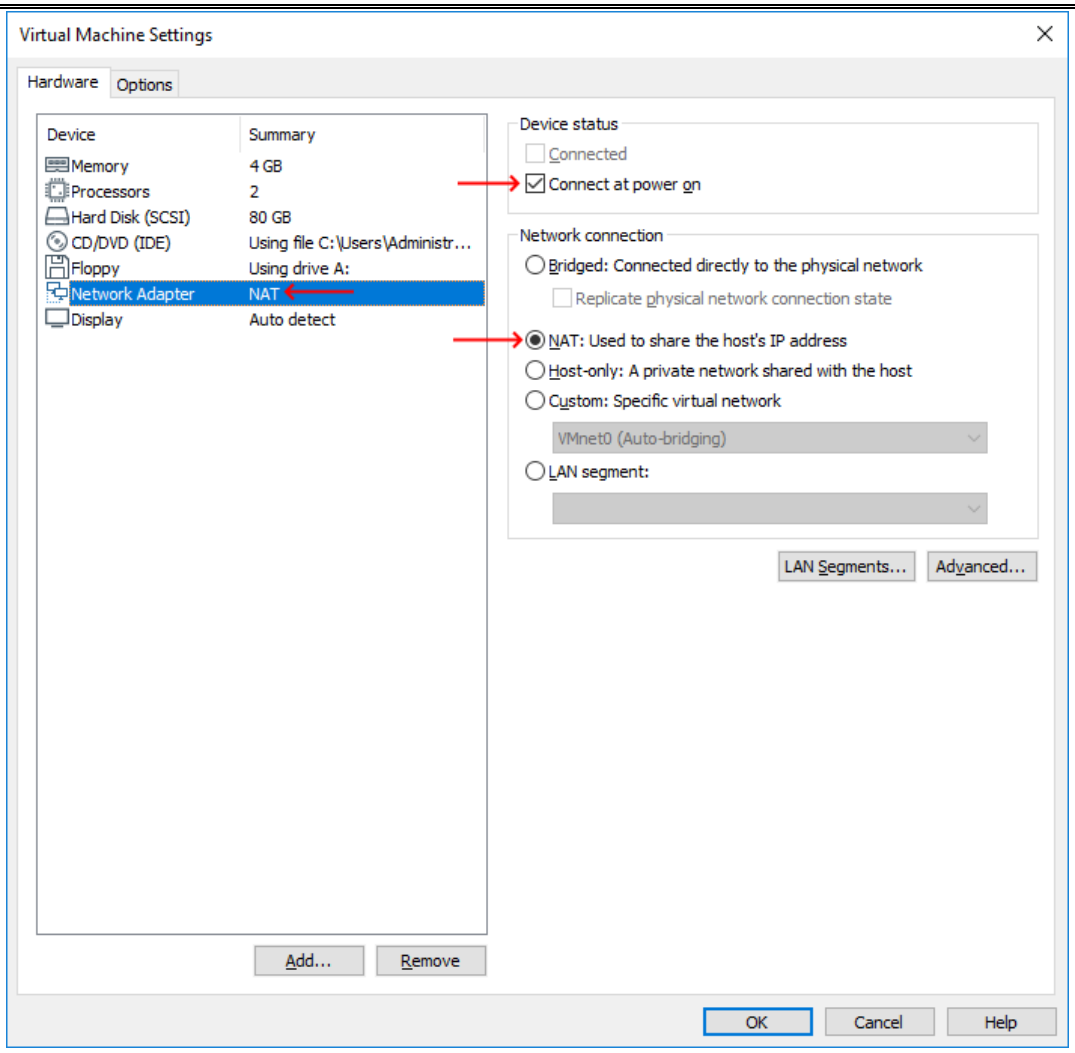

Open
This PC › Desktop › AJ Lab › OVA Templates
Search OVA Templates
Organize
New folder
Quick access
Desktop
Downloads
Documents
Pictures
CUBE HA
Logs
SSO Metadata
System32
This PC
Network
Name
Date modified
Type
Size
csr1000v-universalk9.03.15.00.S.155-2.S-std 3/6/2021 3:43 AM Open Virtualizatio... 343,520 KB
cuc_11.5_v1.1 3/6/2021 5:33 AM Open Virtualizatio... 920 KB
cucm_11.5_vmv8_v1.1 3/6/2021 9:58 AM Open Virtualizatio... 203 KB
cucm_12.5_vmv13_v1.0 4/6/2021 11:27 PM Open Virtualizatio... 203 KB
exp_s42700x12_7_1_v6.5 3/6/2021 10:16 AM Open Virtualizatio... 650,027 KB
im_p_11.5_vmv8_v1.4 3/6/2021 10:23 AM Open Virtualizatio... 281 KB
UCCX_11.5_vmv9_v2.5 3/30/2021 2:28 AM Open Virtualizatio... 499 KB
File name:
All supported files
Open
Cancel

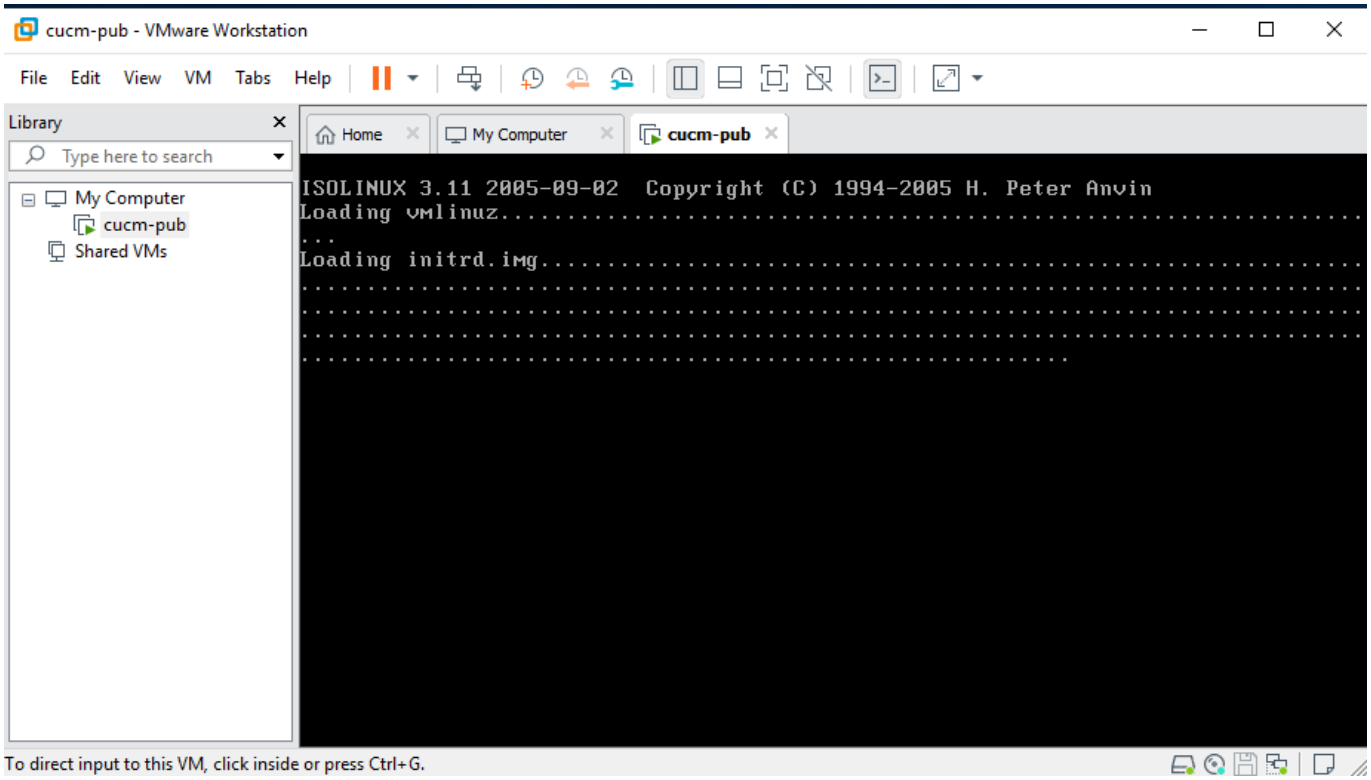

Import Virtual Machine
Store the new Virtual Machine
Provide a name and local storage path for the new virtual machine.
Name for the new virtual machine:
cucm-pub
Storage path for the new virtual machine:
C:\Users\Administrator\Documents\Virtual Machir
Browse...
Help
< Back
Next >
Cancel

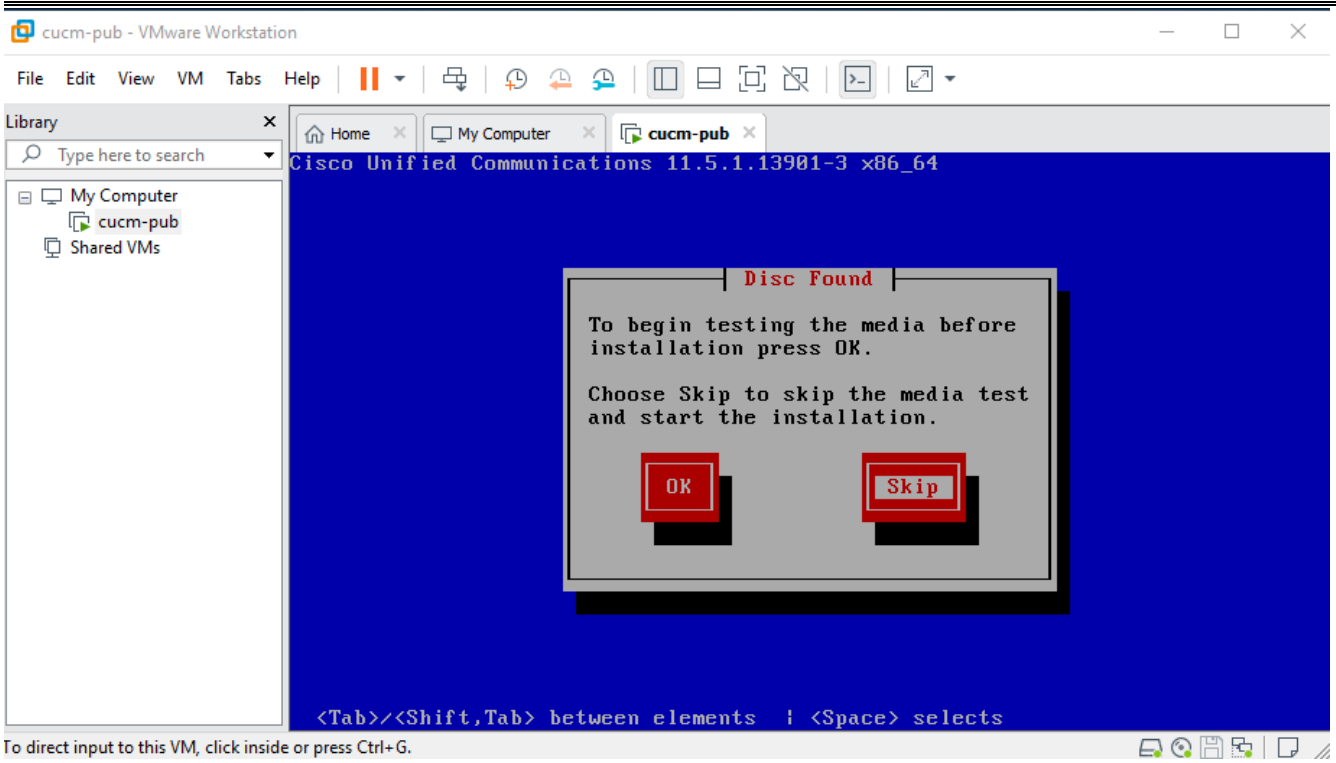

Import Virtual Machine
Deployment Options
Select deployment options.
Deployment Options
CUCM 1000 user node - C200
CUCM 2500 user node
CUCM 7500 user node
CUCM 10000 user node
CUCM 150 user node (BE6K only)
Option Description
Cisco Unified Communications Manager (CUCM) configuration
Help
< Back
Import
Cancel

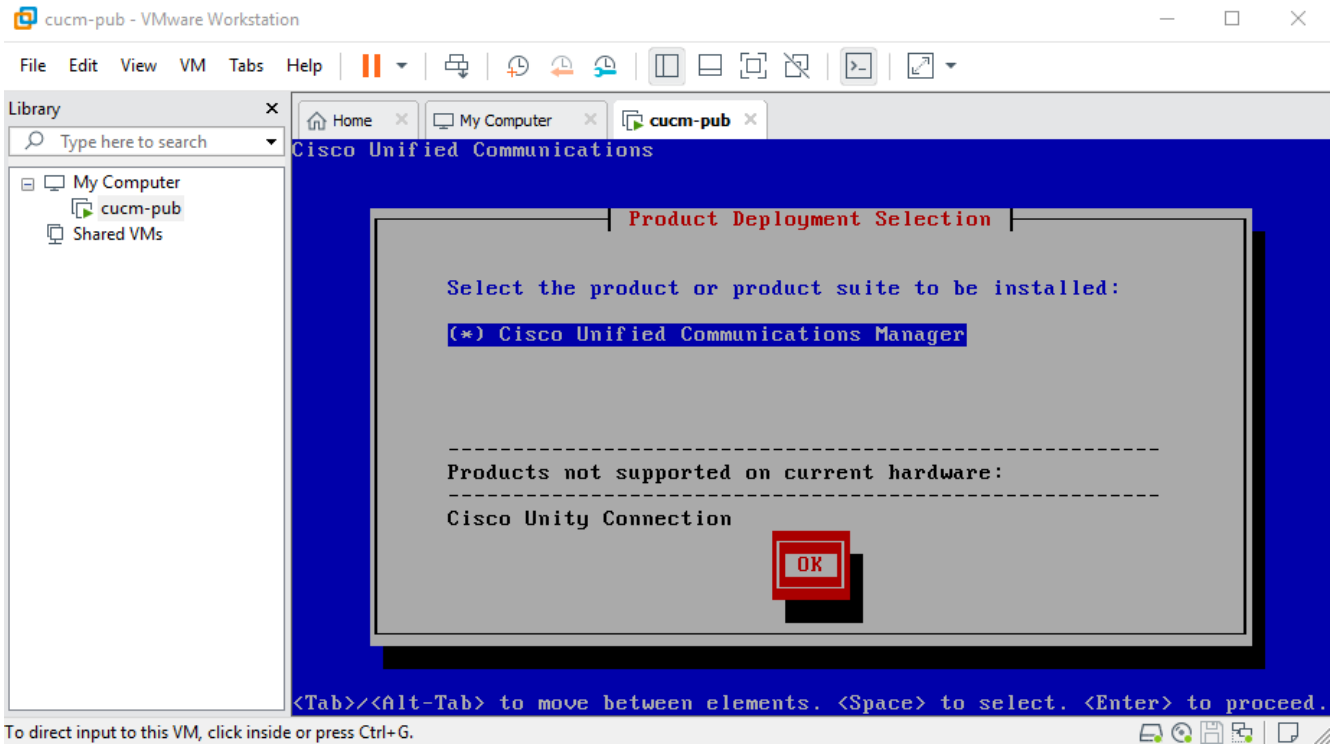

cucm-pub - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
My Computer
win-server-01
cucm-pub
Shared VMs
Home
win-server-01
cucm-pub
cucm-pub
Power on this virtual machine
Edit virtual machine settings
Upgrade this virtual machine
Devices
Memory 4 GB
Processors 2
Hard Disk (SCSI) 80 GB
CD/DVD (IDE) Using unknown ...
Floppy Using drive A:
Network Adapter Bridged (Autom...
Display Auto detect
Description
Application Version: CUCM 11.5
Original VM Version: 8
OVA Version: 1.1
Virtual Machine Details
State: Powered off
Configuration file: C:\Users\Administrator\Documents\Virtual Machines\cucm-pub\cucm-pub.vmx
Hardware compatibility: Workstation 8.x virtual machine
Primary IP address: Network information is not available


Virtual Machine Settings
Hardware
Options
Device
Summary
Memory 4 GB
Processors 2
Hard Disk (SCSI) 80 GB
CD/DVD (IDE) Using file C:\Users\Administr...
Floppy Using drive A:
Network Adapter NAT
Display Auto detect
Add...
Remove
Device status
Connected
Connect at power on
Connection
Use physical drive:
Auto detect
Use ISO image file:
JCSInstall_UCOS_11.5.1.13901-3.sgn.iso
Browse...
Advanced...
OK
Cancel
Help


Virtual Machine Settings
Hardware
Options
Device
Summary
Memory
4 GB
Processors
2
Hard Disk (SCSI)
80 GB
CD/DVD (IDE)
Using file C:\Users\Administr...
Floppy
Using drive A:
Network Adapter
NAT
Display
Auto detect
Add...
Remove
Device status
Connected
Connect at power on
Network connection
Bridged: Connected directly to the physical network
Replicate physical network connection state
NAT: Used to share the host's IP address
Host-only: A private network shared with the host
Custom: Specific virtual network
VMnet0 (Auto-bridging)
LAN segment:
LAN Segments...
Advanced...
OK
Cancel
Help


cucm-pub - VMware Workstation
File
Edit
View
VM
Tabs
Help
Library
Type here to search
My Computer
cucm-pub
Shared VMs
Home
My Computer
cucm-pub
ISOLINUX 3.11 2005-09-02 Copyright (C) 1994-2005 H. Peter Anvin
Loading vmlinuz.....
...
Loading initrd.img.....
To direct input to this VM, click inside or press Ctrl+G.





- You can continue the installation, with below Network Settings

IP Address	192.168.11.X
Subnet Mask	255.255.255.0
Default Gateway	192.168.11.2
NTP	216.239.35.8
DNS Server	Windows Server IP

- It is important to select Network Adapter as NAT