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LAB**CREATING A VIRTUAL MACHINE & CLONING IT
USING TEMPLATE**

by

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- **Cloud Computing Bible: Barrie Sosinky – 1st Edition, Wiley India Pvt. Ltd.**
- **Cloud Computing: Fundamentals, Industry Approach & Trends by Rishabh Sharma, Wiley**
- **Cloud Computing: Principles & Paradigms by Raj Kumar Buyya, James Broberg, Andrzej Goscinski, Wiley**

CONTENT

HOL (Hands-on Lab) – Virtualization 101

Lab Code: **HOL-2210-01-SDC**

- Creating a Virtual Machine
- Installing a OS in Virtual Machine



TYPE – I HYPERVISOR

Creating a Virtual Machine

The image illustrates the process of creating a virtual machine using a Type I Hypervisor (VMware vSphere). It is divided into three main sections:

- Desktop Environment:** A Windows desktop with icons for Recycle Bin, Google Chrome (highlighted with a red box), and README.txt.
- Browser Window:** A screenshot of the vSphere Web Client interface. The address bar shows `esx-03a.corp.local/ui/#/host/monitor`. The page title is "VMware ESXi". The login form includes a username field (example@domain.local), a password field (labeled with a red box and '1'), a checkbox for "Use Windows session authentication" (checked and highlighted with a red box), and a "LOGIN" button (labeled with a red box and '2').
- vSphere Client Interface:** A screenshot of the vSphere Client application. The "Menu" dropdown (labeled with a red box and '1') is open, showing various options. The "Global Inventory Lists" option (labeled with a red box and '2') is highlighted. The interface also shows a tree view of the environment, including vcsa-01a.corp.local, RegionA01, and various hosts and templates.

TYPE – I HYPERVISOR

Creating a Virtual Machine

The screenshot displays the vSphere Client interface with three numbered steps indicating the process of creating a virtual machine:

- Step 1:** In the left-hand 'Global Inventory Lists' pane, the 'Virtual Machines' option is highlighted with a red box and a circled '1'.
- Step 2:** In the 'Virtual Machines' list on the right, the 'Windows10' entry is highlighted with a red box and a circled '2'. The 'Summary' tab for this VM is also highlighted with a red box and a circled '2'.
- Step 3:** In the 'VM Hardware' section at the bottom, the 'Add' button (represented by a blue plus icon in a red box) is highlighted with a red box and a circled '3'.

The 'Summary' tab for the 'Windows10' VM shows the following details:

- Guest OS: Microsoft Windows 10 (64-bit)
- Compatibility: ESXi 6.5 and later (VM version 13)
- VMware Tools: Running, version:11297 (Current)
- DNS Name: Windows10.corp.local
- IP Addresses: 192.168.120.53
- Host: esx-02a.corp.local

The 'VM Hardware' section lists the following components:

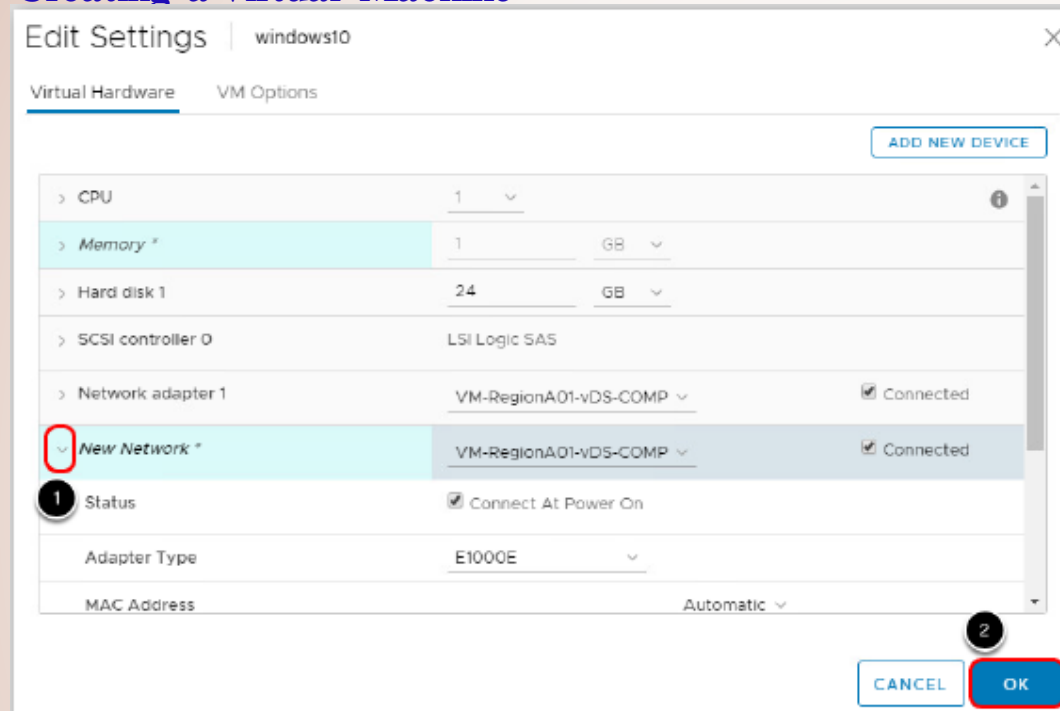
Component	Configuration
CPU	1 CPU(s)
Memory	2 GB, 0.12 GB memory active
Hard disk 1	25 GB
Network adapter 1	VM-RegionA01-vDS-COMP (connected)
CD/DVD drive 1	Disconnected

Creating a Virtual Machine



TYPE – I HYPERVISOR

Creating a Virtual Machine

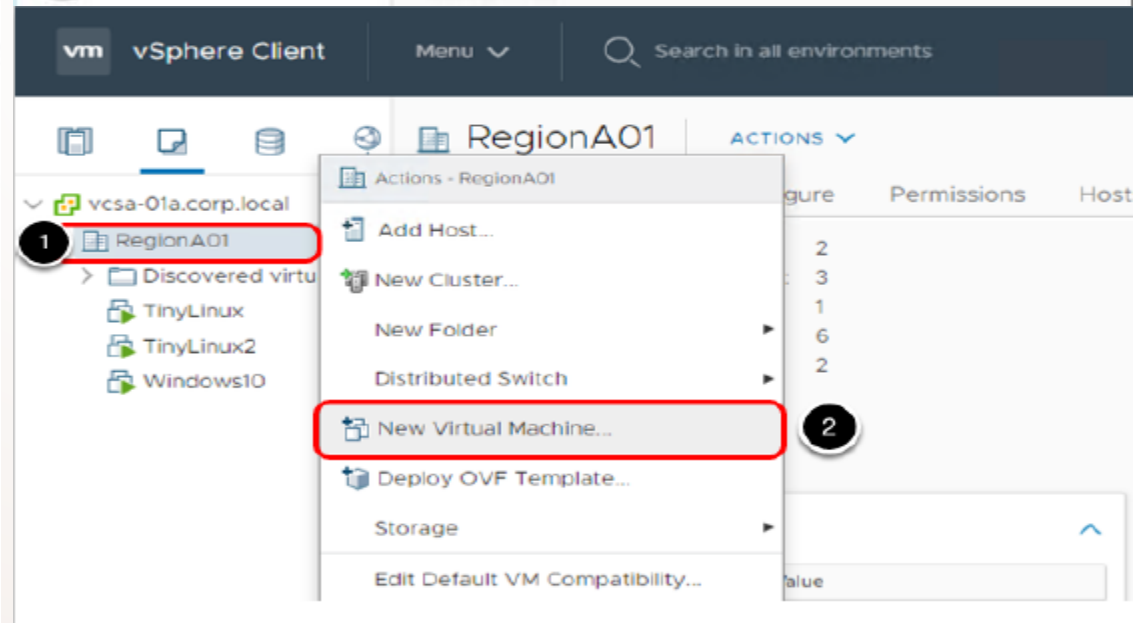
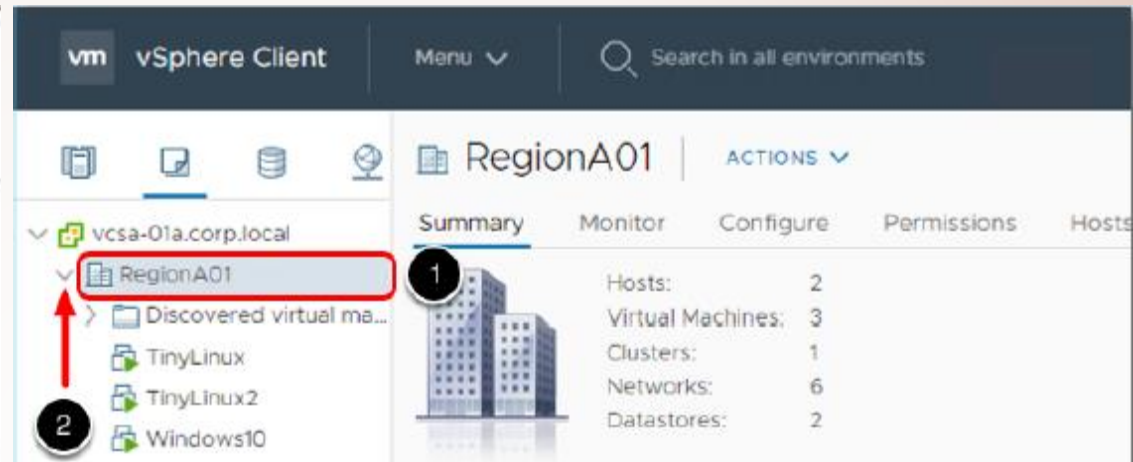
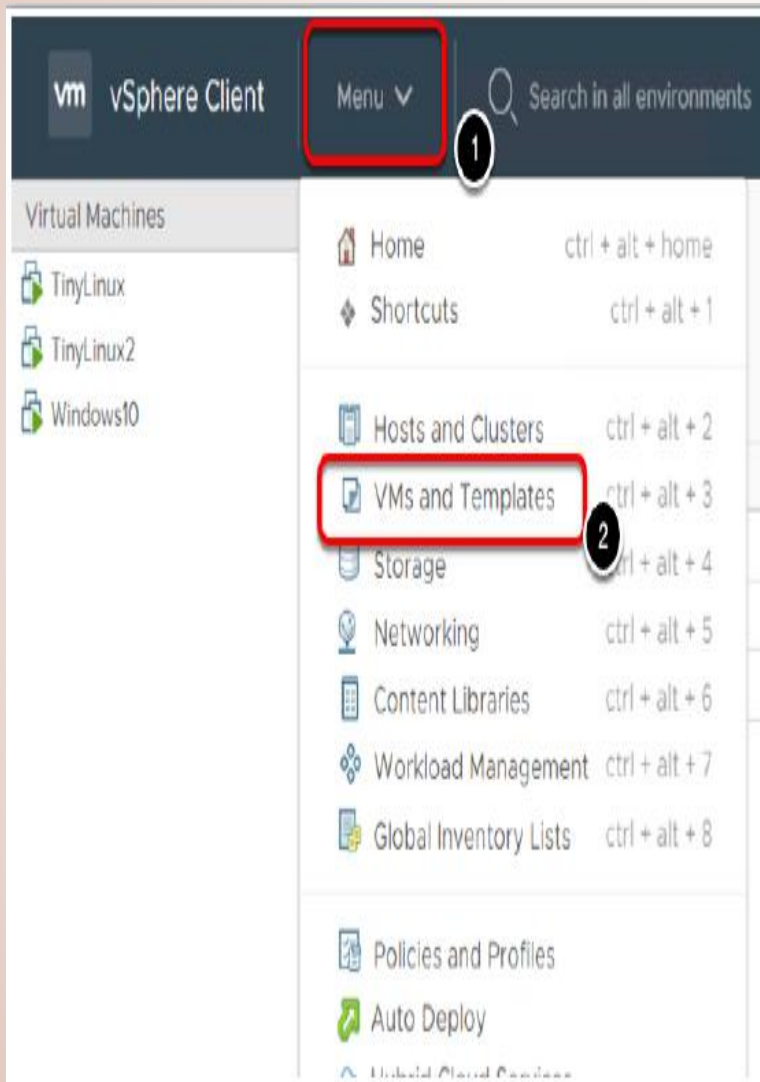


Recent Tasks		Alarms						
Task Name	Target	Status	Details	Initiator	Queued For	Start Time	Completion Time	Server
Reconfigure virtual machine	Windows10	Completed	Reconfiguring Virtual Machine on destination host	CORP\Administrator	9 ms	12/22/2020, 9:20:28 AM	12/22/2020, 9:20:31 AM	vcsa-01a.cpg.local



TYPE – I HYPERVISOR

Creating a Virtual Machine



TYPE – I HYPERVISOR

Creating a Virtual Machine

New Virtual Machine

✓ 1 Select a creation type

2 Select a name and folder

3 Select a compute resource

4 Select storage

5 Select compatibility

6 Select a guest OS

7 Customize hardware

8 Ready to complete

Select a creation type

How would you like to create a virtual machine?

Create a new virtual machine

Deploy from template

Clone an existing virtual machine

Clone virtual machine to template

Clone template to template

Convert template to virtual machine

This option guides you through creating a new virtual machine. You will be able to customize processors, memory, network connections, and storage. You will need to install a guest operating system after creation.

1

CANCEL BACK NEXT

New Virtual Machine

✓ 1 Select a creation type

2 Select a name and folder

3 Select a compute resource

4 Select storage

5 Select compatibility

6 Select a guest OS

7 Customize hardware

8 Ready to complete

Select a name and folder

Specify a unique name and target location.

Virtual machine name: web-srv01 1

Select a location for the virtual machine.

✓ vcsa-01a.corp.local

RegionA01 2

CANCEL BACK NEXT

New Virtual Machine

✓ 1 Select a creation type

✓ 2 Select a name and folder

3 Select a compute resource

4 Select storage

5 Select compatibility

6 Select a guest OS

7 Customize hardware

8 Ready to complete

Select a compute resource

Select the destination compute resource for this operation

RegionA01

RegionA01-COMP01

1 vcsa-01a.corp.local

2 vcsa-02a.corp.local

Compatibility

✓ Compatibility checks succeeded.

CANCEL BACK 2 NEXT

New Virtual Machine

✓ 1 Select a creation type

✓ 2 Select a name and folder

✓ 3 Select a compute resource

4 Select storage

5 Select compatibility

6 Select a guest OS

7 Customize hardware

8 Ready to complete

Select storage

Select the storage for the configuration and disk files

Encrypt this virtual machine (Requires Key Management Service)

VM Storage Policy: Datastore Default

Name	Capacity	Provisioned	Free	Type	Cluster
1 ds-locals01	43.75 GB	31.57 GB	18.35 GB	VMFS 6	
ds-unl01	5.78 GB	96 KB	5.78 GB	NFS v3	

Compatibility

CANCEL BACK 2 NEXT

TYPE – I HYPERVISOR

Creating a Virtual Machine

New Virtual Machine

- 1 Select a creation type
- 2 Select a name and folder
- 3 Select a compute resource
- 4 Select storage
- 5 Select compatibility
- 6 Select a guest OS
- 7 Customize hardware
- 8 Ready to complete

Select compatibility for this virtual machine depending on the hosts in your environment.

The host or cluster supports more than one VMware virtual machine version. Select a compatibility for the virtual machine.

Compatible with: **ESXi 7.0 and later** (1)

This virtual machine uses hardware version 17, which provides the best performance and latest features available in ESXi 7.0.

CANCEL BACK NEXT (2)

New Virtual Machine

- 1 Select a creation type
- 2 Select a name and folder
- 3 Select a compute resource
- 4 Select storage
- 5 Select compatibility
- 6 Select a guest OS
- 7 Customize hardware
- 8 Ready to complete

Select a guest OS

Choose the guest OS that will be installed on the virtual machine.

Identifying the guest operating system here allows the wizard to provide the appropriate defaults for the operating system installation.

Guest OS Family: **Linux** (1)

Guest OS Version: **VMware Photon OS (64-bit)** (2)

Compatibility: ESXi 7.0 and later (VM version 17) (3)

CANCEL BACK NEXT

New Virtual Machine

- 1 Select a creation type
- 2 Select a name and folder
- 3 Select a compute resource
- 4 Select storage
- 5 Select compatibility
- 6 Select a guest OS
- 7 Customize hardware
- 8 Ready to complete

Customize hardware

Configure the virtual machine hardware.

Virtual Hardware VM Options

ADD NEW DEVICE

CPU	1	
Memory	2	GB
New Hard disk *	16	GB
New SCSI controller *	VMware Paravirtual	
New Network *	VM Network	<input checked="" type="checkbox"/> Connect...
New CD/DVD Drive *	Client Device	<input type="checkbox"/> Connect...

Compatibility: ESXi 6.7 and later (VM version 14) (1)

CANCEL BACK NEXT

New Virtual Machine

- 1 Select a creation type
- 2 Select a name and folder
- 3 Select a compute resource
- 4 Select storage
- 5 Select compatibility
- 6 Select a guest OS
- 7 Customize hardware
- 8 Ready to complete

Ready to complete

Click Finish to start creation.

Virtual machine name	web-srv01
Folder	RegionA01
Host	esx-01a.corp.local
Datastore	ds-iscsi01
Guest OS name	VMware Photon OS (64-bit)
Virtualization Based Security	Disabled
CPU(s)	1
Memory	2 GB
NICs	1
NIC 1 network	VM Network
NIC 1 type	VMXNET 3
SCSI controller 1	VMware Paravirtual
Create hard disk 1	New virtual disk
Capacity	16 GB
Datastore	ds-iscsi01

Virtual device node

CANCEL BACK FINISH (1)

TYPE – I HYPERVISOR

Creating a Virtual Machine

The image shows the vSphere Client interface with two overlapping windows illustrating the steps to create a virtual machine.

Left Window (Main View): Displays the 'web-serv01' virtual machine. The 'Summary' tab is active, showing the VM is 'Powered Off'. The left sidebar shows the inventory tree with 'web-serv01' highlighted. Below the main view, the 'Edit Settings' window is open, showing the 'Virtual Hardware' tab. The 'CD/DVD drive 1' is set to 'Client Device', and the 'Content Library ISO File' is selected in the dropdown menu.

Right Window (Actions Menu): Shows the 'Actions - web-serv01' menu. The 'web-serv01' VM is highlighted in the left sidebar. The 'Edit Settings...' option is circled in red and labeled with a '2'.

Annotations: A red circle highlights 'web-serv01' in the left sidebar of both windows. A black circle with the number '1' is placed near the 'web-serv01' VM in the right window's sidebar.

TYPE – I HYPERVISOR

Creating a Virtual Machine

Choose an ISO image to mount

Name	Content Library	Description	Size	Last Modified Date
photon-2.0-304b817	HOL-Library	VMware PhotonOS 2.0 GA	2.21 GB	Nov 25, 2020 8:41 PM

1

2

CANCEL OK

Hard disk 1 16 GB

SCSI controller 0 VMware Paravirtual

Network adapter 1 VM Network ☒ Connect...

CD/DVD drive 1 * Content Library ISO File ☒ Connect...

Video card Specify custom settings

VMCI device Device on the virtual machine PCI bus that provides support for the virtual machine communication interface

CATA controller 0 ALIC

2

CANCEL OK

web-serv01

Summary Monitor Configure Permissions Datastores Networks

Powered Off

Guest OS: VMware Photon OS (64-bit)
Compatibility: ESXi 7.0 and later (VM version 17)
VMware Tools: Not running, not installed
More info

DNS Name:
IP Addresses:
Host: esx-01a.corp.local

Launch Web Console
Launch Remote Console

1

web-serv01

Summary Monitor Configure Permissions Datastores Networks

Powered On

Guest OS: VMware Photon OS (64-bit)
Compatibility: ESXi 7.0 and later (VM version 17)
VMware Tools: Not running, not installed
More info

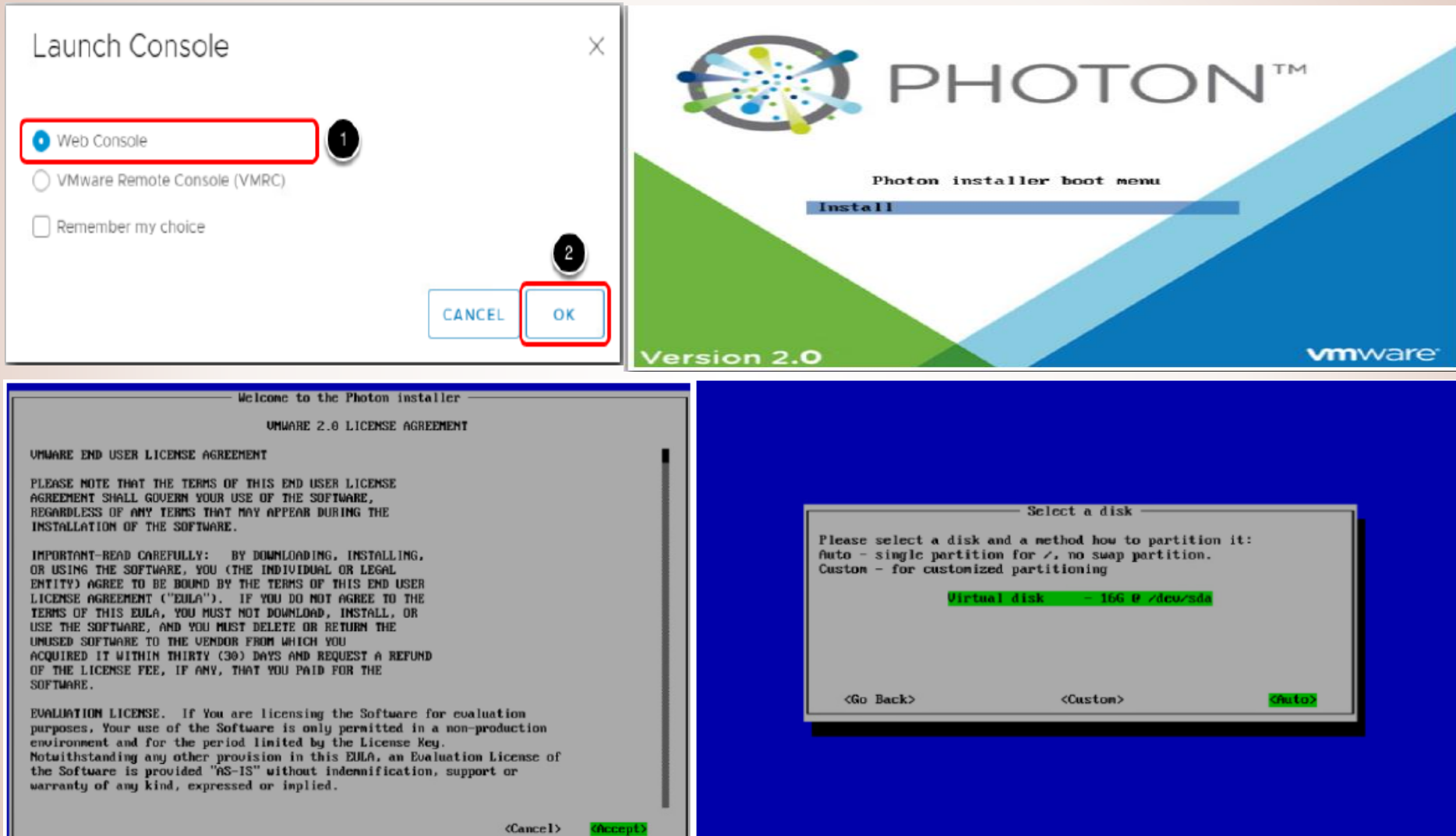
DNS Name:
IP Addresses:
Host: esx-01a.corp.local

Launch Web Console
Launch Remote Console

1

TYPE – I HYPERVISOR

Creating a Virtual Machine



TYPE – I HYPERVISOR

Creating a Virtual Machine

Confirm

This will erase the disk.
Are you sure?

Select Installation

☒ 1. Photon Minimal
☐ 2. Photon Full
☐ 3. Photon OSTree Server

Select Linux kernel to install

The installer has detected that you are installing
Photon OS on a VMware hypervisor.
Which type of Linux kernel would you like to install?

☒ 1. ~~Kernel optimized for VMware~~
☒ 2. Generic

Choose the hostname for your system

Hostname:

web-srv01

Set up root password

Root password:

Confirm root password

Confirm Root password:

TYPE – I HYPERVISOR

Creating a Virtual Machine

The image is a composite of three screenshots illustrating the process of creating a virtual machine in vSphere.

Top Left Screenshot: A terminal window titled "Installing Photon" showing the successful installation of Photon OS. The text reads: "Congratulations, Photon has been installed in 21 secs. Press any key to continue to boot..."

Top Right Screenshot: A vSphere Client browser window showing the vSphere inventory. A red arrow points to the "web-serv01" VM, which is circled with a "1". The URL bar shows "https://vcsa-01a.corp.local/ui/#?".

Bottom Left Screenshot: The vSphere Client interface showing the "web-serv01" VM selected in the inventory. A red box highlights the "web-serv01" VM, and a "2" is next to the "Edit Settings..." option in the context menu.

Bottom Right Screenshot: The vSphere VM configuration wizard for "web-serv01". The "Virtual Hardware" tab is selected. The configuration shows: 1 CPU, 2 GB Memory, 16 GB Hard disk 1, VMware Paravirtual SCSI controller 0, VM Network Network adapter 1, and Content Library ISO File for CD/DVD drive 1*. A red box highlights the "Connected" checkbox for the CD/DVD drive, and a "2" is next to the "OK" button.