Instructions for Astra Linux Common Edition 2.12 OS installation within VMware vSphere infrastructure

The target audience: engineers

- Creating a Virtual Machine with the New Virtual Machine Wizard.
- VM launch
- OS installation

This article is applicable to:

- Astra Linux Common Edition 2.12.

List of sources used

VMware's Product documentation and Technical Articles were used.

https://docs.vmware.com/en/VMware-vSphere/index.html.

VMware vSphere hypervisor is needed to create a virtual machine.

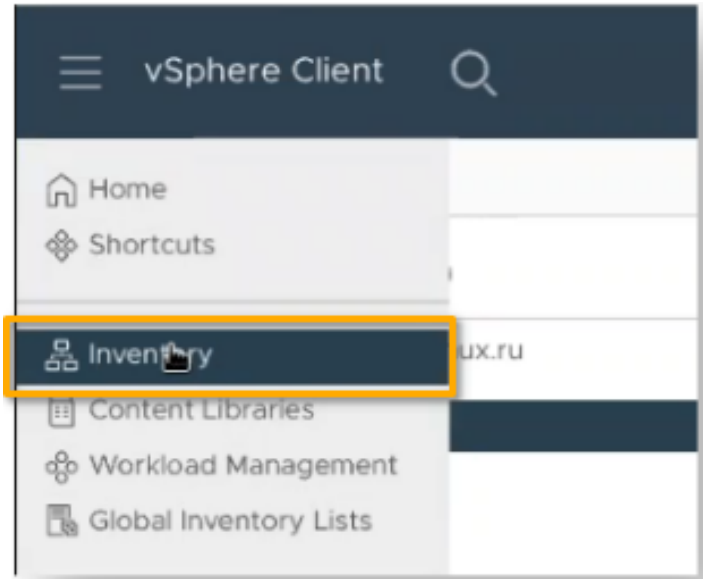
A hypervisor, also known as a virtual machine monitor or VMM, is software that creates and runs virtual machines (VMs). A hypervisor allows one host computer to support multiple guest VMs by virtually sharing its resources, such as memory and processing.

https://www.vmware.com/products/vsphere.html

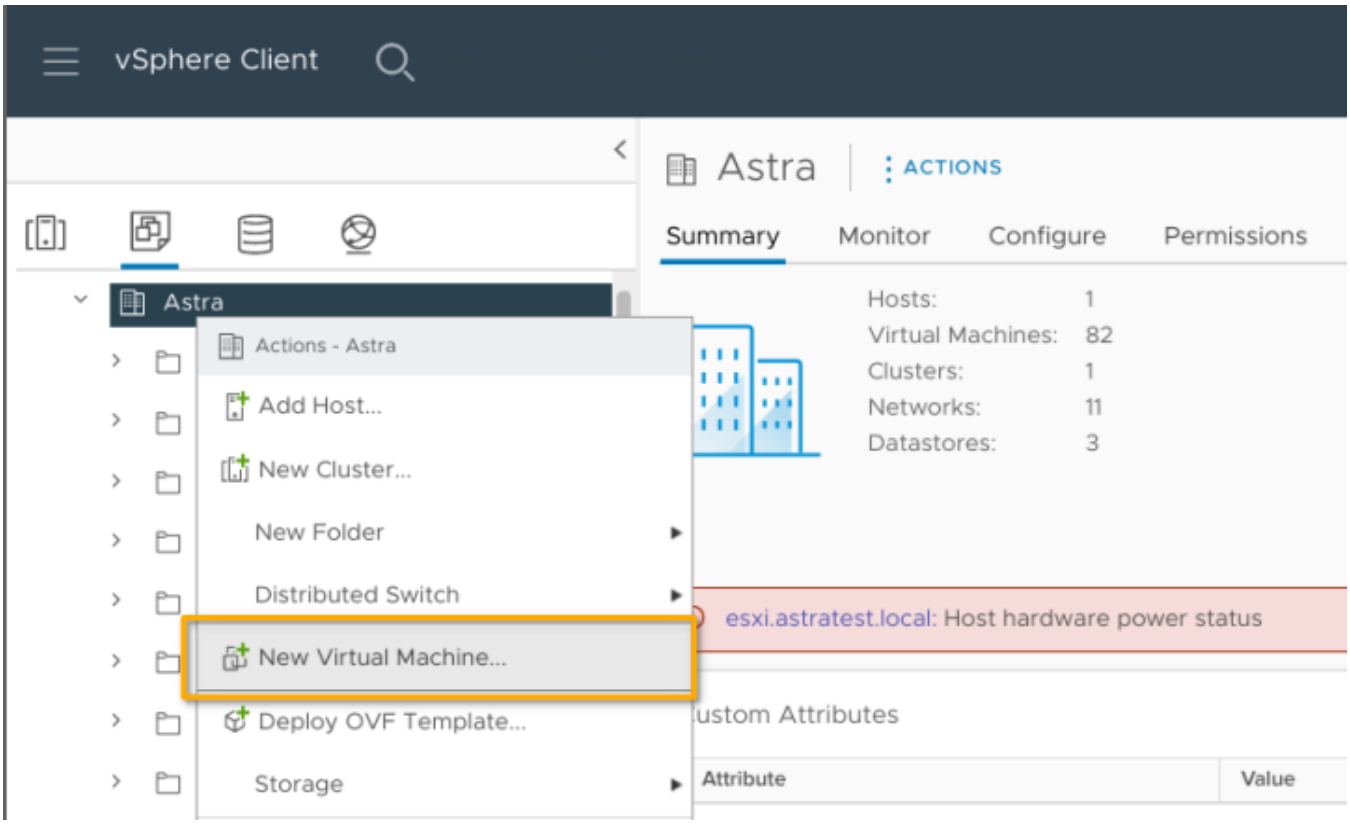
Creating a Virtual Machine with the New Virtual Machine Wizard.

https://docs.vmware.com/en/VMware-vSphere/7.0/com.vmware.vsphere.vm_admin.doc/GUID-AE8AFBF1-75D1-4172-988C-378C35C9FAF2.html

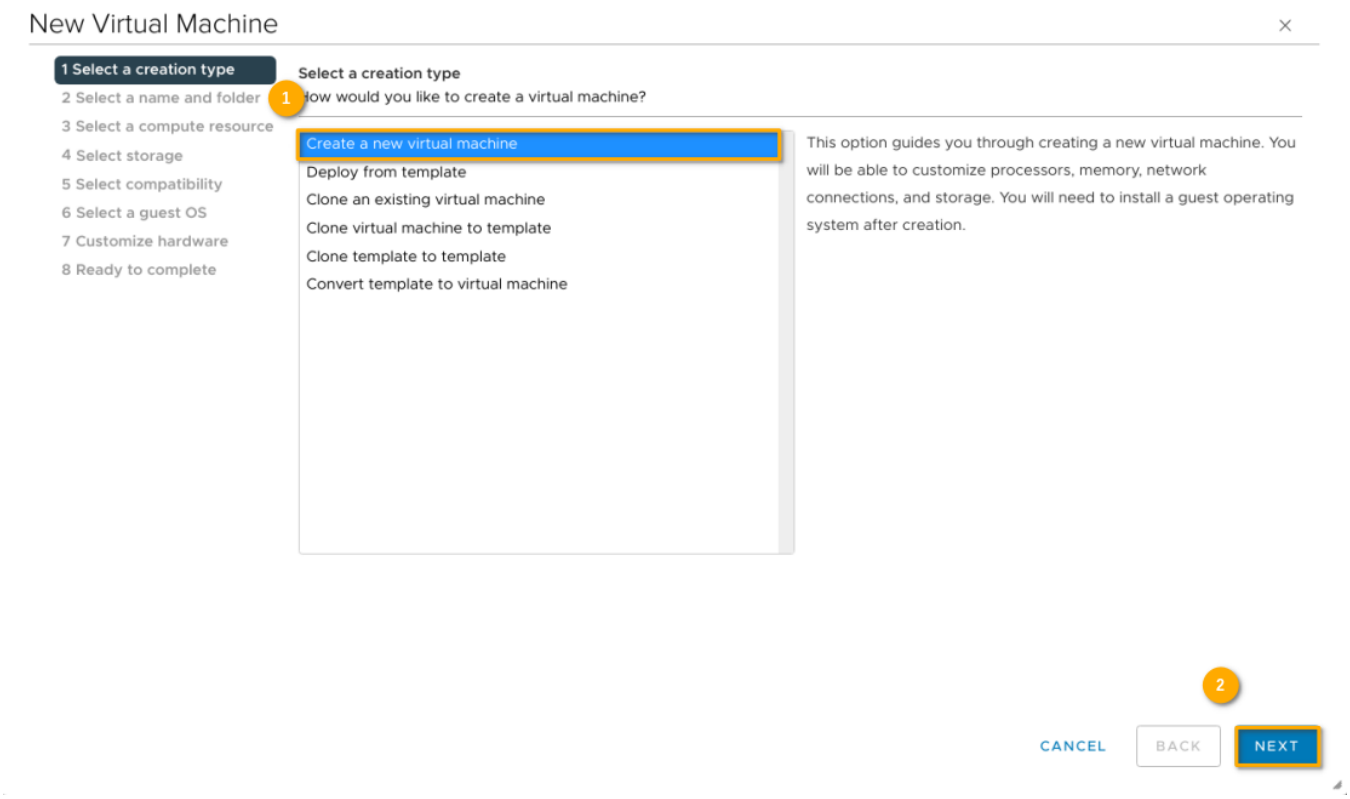
To create a new VM launch vSphere Client, select **Inventory** in the **Main Menu**.



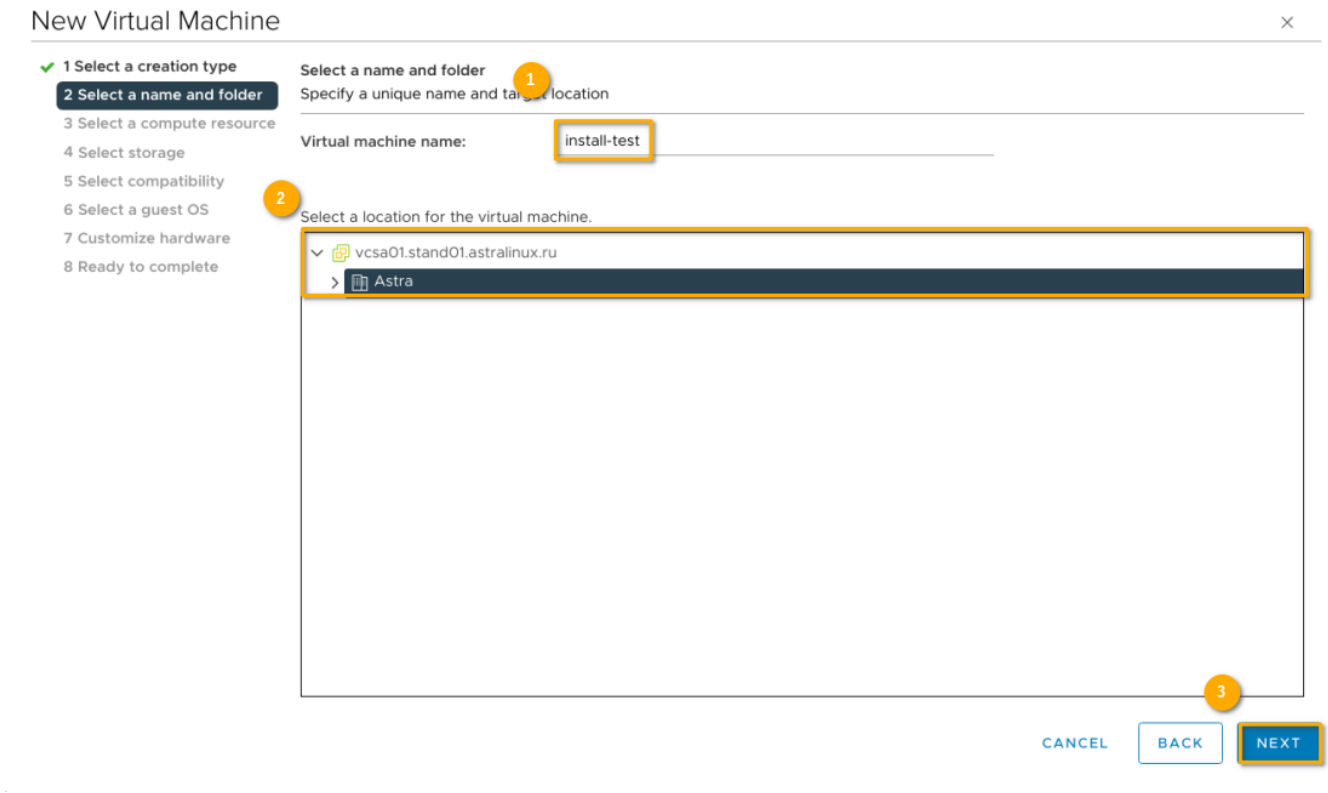
Right-click any inventory object (such as a data center, folder, cluster, resource pool, or host) to assign it a parent object for VM, and then select New Virtual Machine.



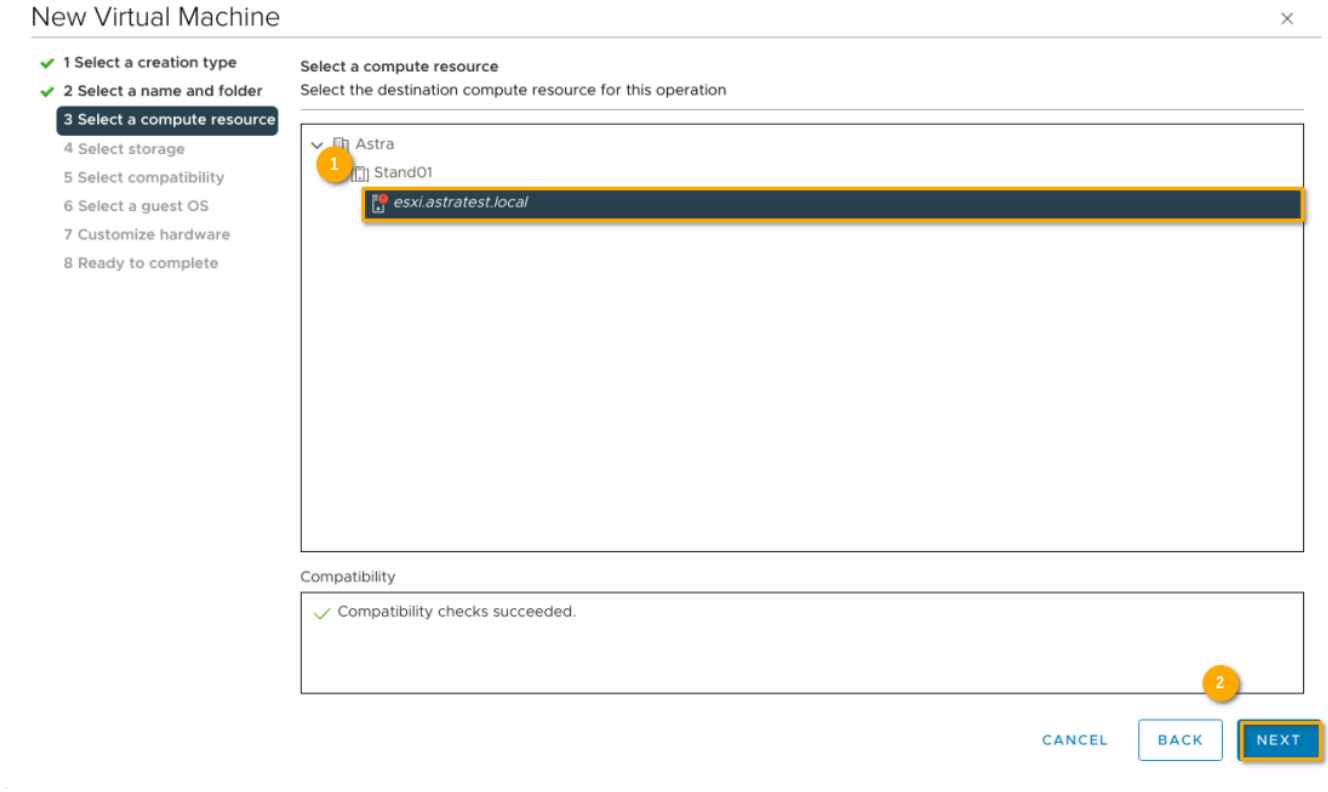
In a **New Virtual Machine** window on the **1 Select a creation type** page, select **Create a new virtual machine** and click **Next**.



On the **2 Select a name and folder** page, enter a unique name and select a deployment location. VM's name can contain any characters, numbers, symbols and spaces. Click **Next**.



On the **3 Select a compute resource** page, select the host, cluster, resource pool, or vApp where the VM will run and click **Next**. If creating the VM at the selected location causes compatibility problems, an alarm appears in the Compatibility pane.

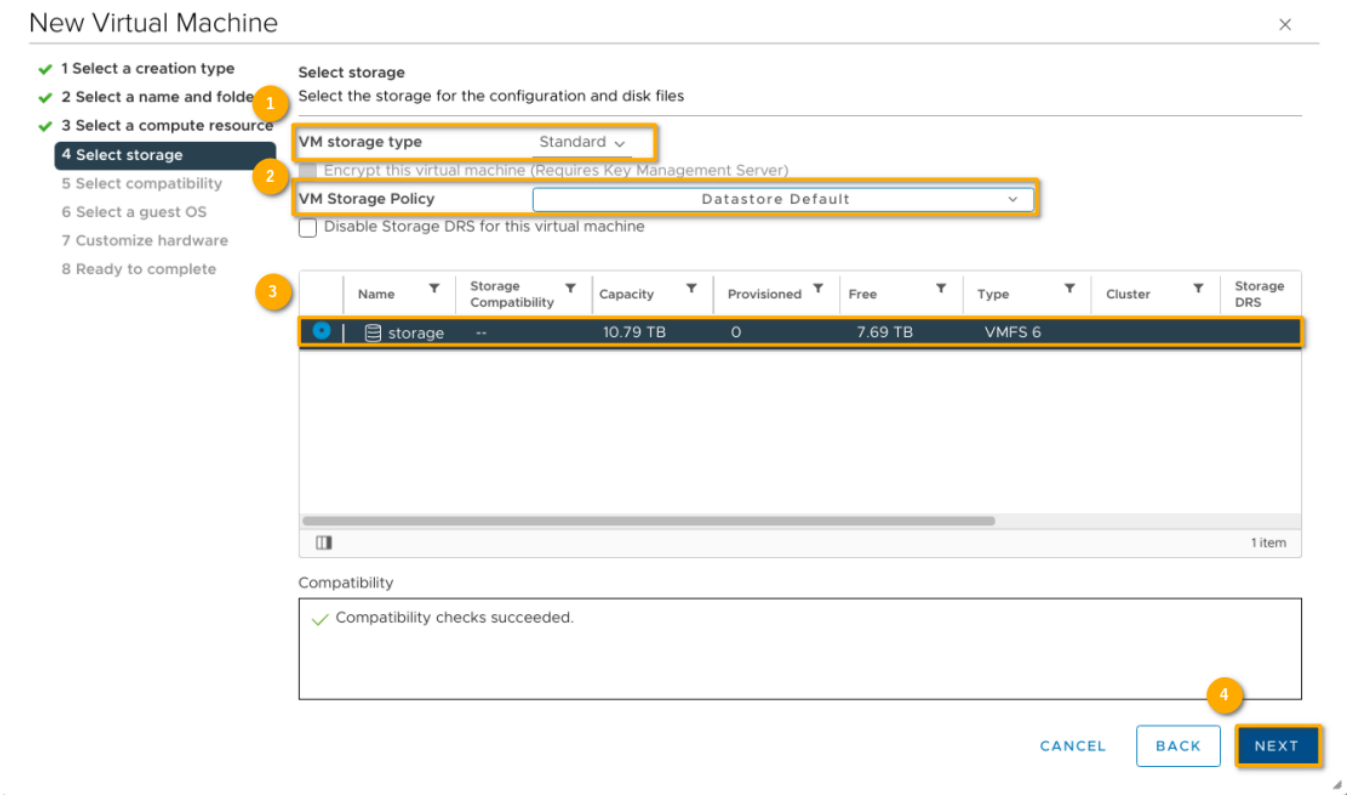


On the **4 Select storage** page, choose next:

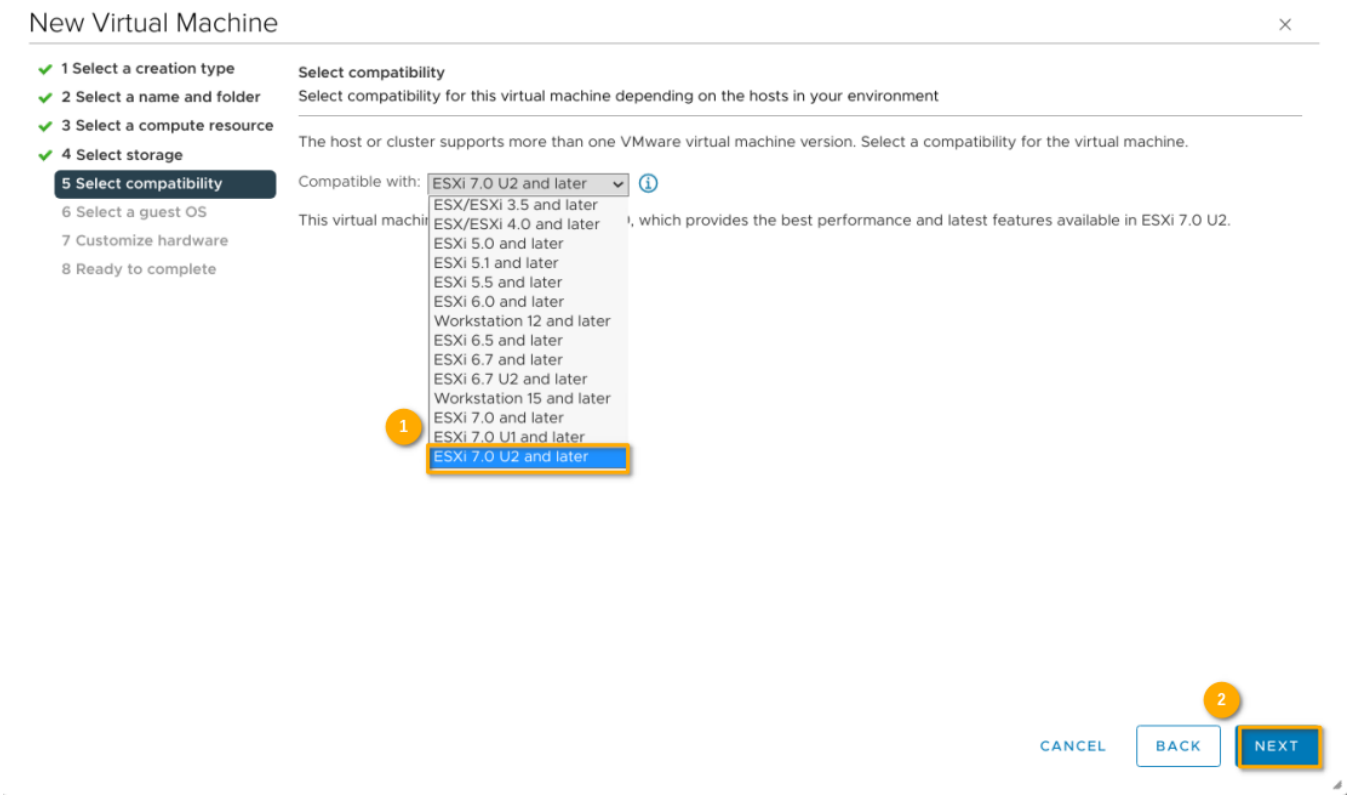
- **VM storage type**, by default – **Standard**

- **VM Storage Policy**, by default – **Datastore Default**.
- a datastore or datastore cluster where VM's files should be stored in

Click **Next**.



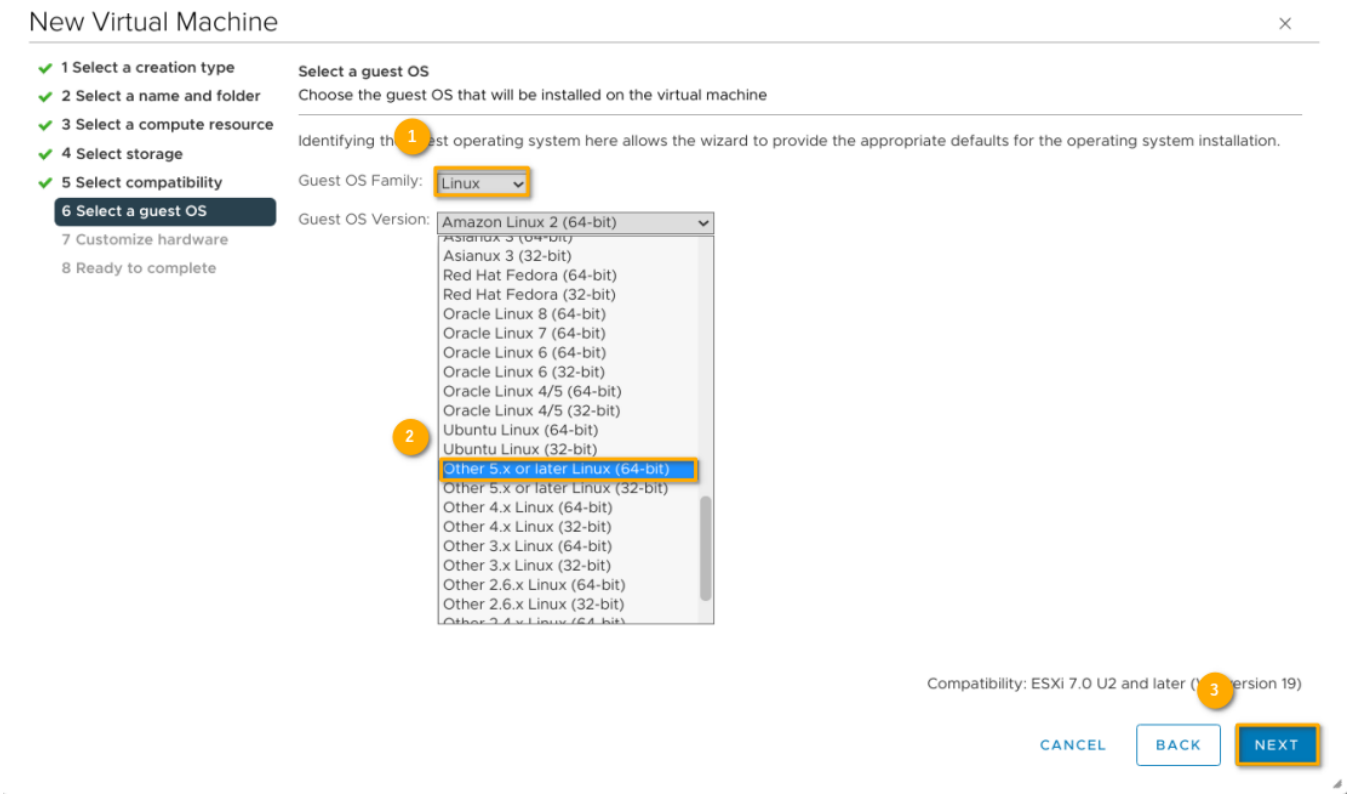
On the 5 Select compatibility page, select the VM compatibility with ESXi host versions and click **Next.** To have an access to latest hardware features, select the latest ESXi host version.



On the **6 Select a guest OS** page specify:

- **Guest OS Family** – **Linux**
- **Guest OS Version** – **Other 4.x or later Linux (64-bit)** or **Other 5.x or later Linux (64-bit)**.

Click **Next**.



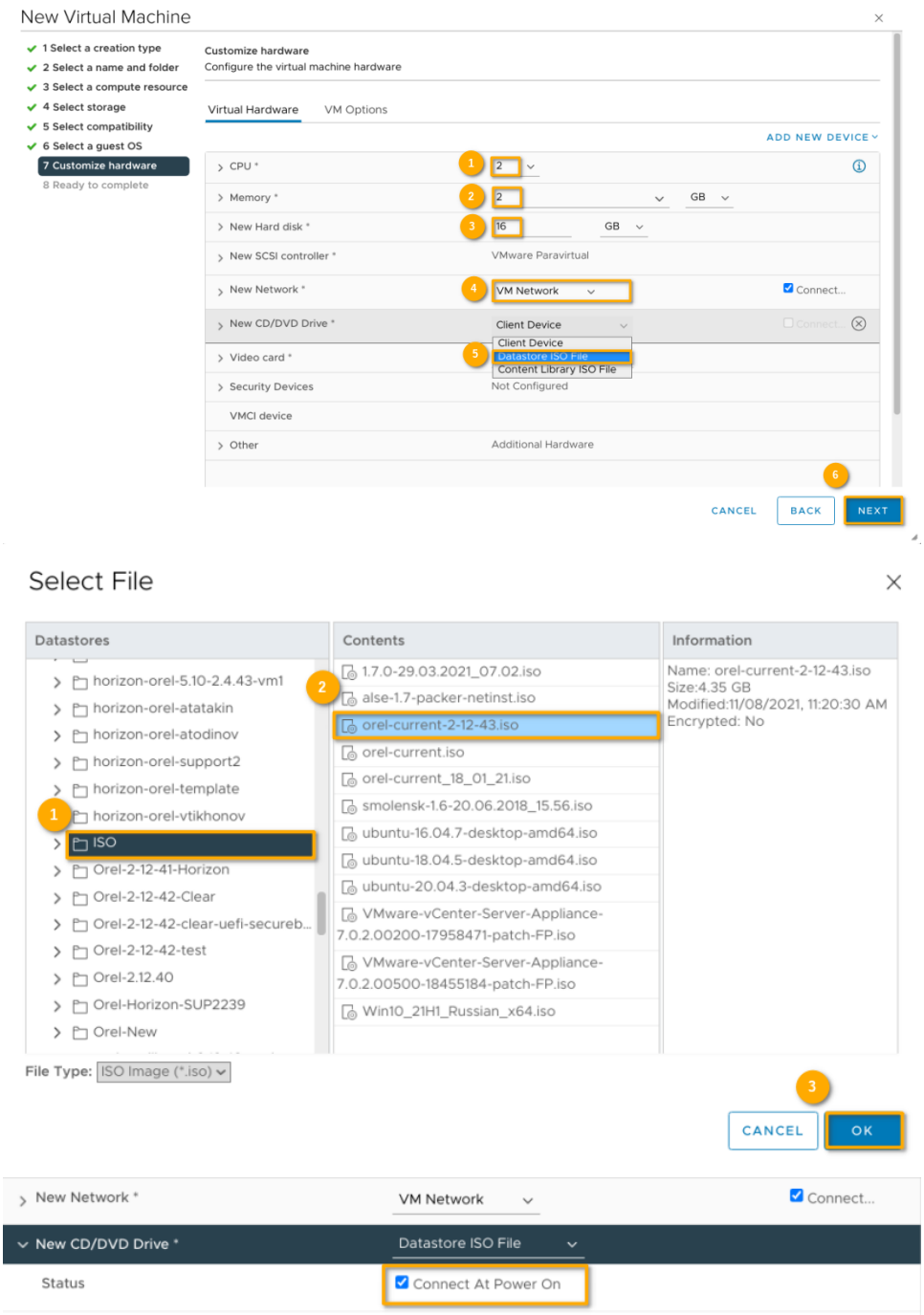
> **Warning!**
>
> Important: Do not change the firmware after OS is installed. Operating system installer partitions the disk in a particular format, depending on the firmware version. If the firmware be changed, it will not be able to boot the guest OS.

On the **7 Customize hardware** page, configure the VM hardware and options.

> **Note.**
>
> You can leave the defaults and configure VM hardware and options later. Some actions require VM to be powered off for changes to take effect.

Configuring VM Hardware:

- **CPU** – Configuring Virtual CPU allows to add, change, or configure CPU resources to improve VM performance.
- **Memory** – Configuring Virtual Memory allows to add, change, or configure VM memory resources or options to enhance VM performance.
- **New Hard disk*** – Configuring Virtual Disk allows to add large-capacity virtual disks to VMs and add more space to existing disks, even when the VM is running.
- **New SCSI controller*** – This setting allows to tweak SCSI, SATA, and NVMe Storage Controller conditions, limitations, and compatibility. To access virtual disks and SCSI devices, a VM uses storage controllers, which are added by default when you create the VM. You can add additional controllers or change the controller type after VM creation.
- **New Network*** – Configuring VM Network. vSphere networking features provide communication between VMs on the same host, on different hosts, and between other virtual and physical machines. It is possible to select or change an adapter type, a network connection, and network connection if needed at VM startup.
- New CD/DVD Drive* – It is necessary to select the device from which the OS will be installed (please use a Select File form to specify **Datast ore ISO File**). Set the **Connect At Power On** status, to initialize CD/DVD-Drive at VM startup.



- **Security Devices** – Securing VMs with Virtual Trusted Platform Module.
- **Other** – Configuring other VM Device. Not all devices are available to add and configure.

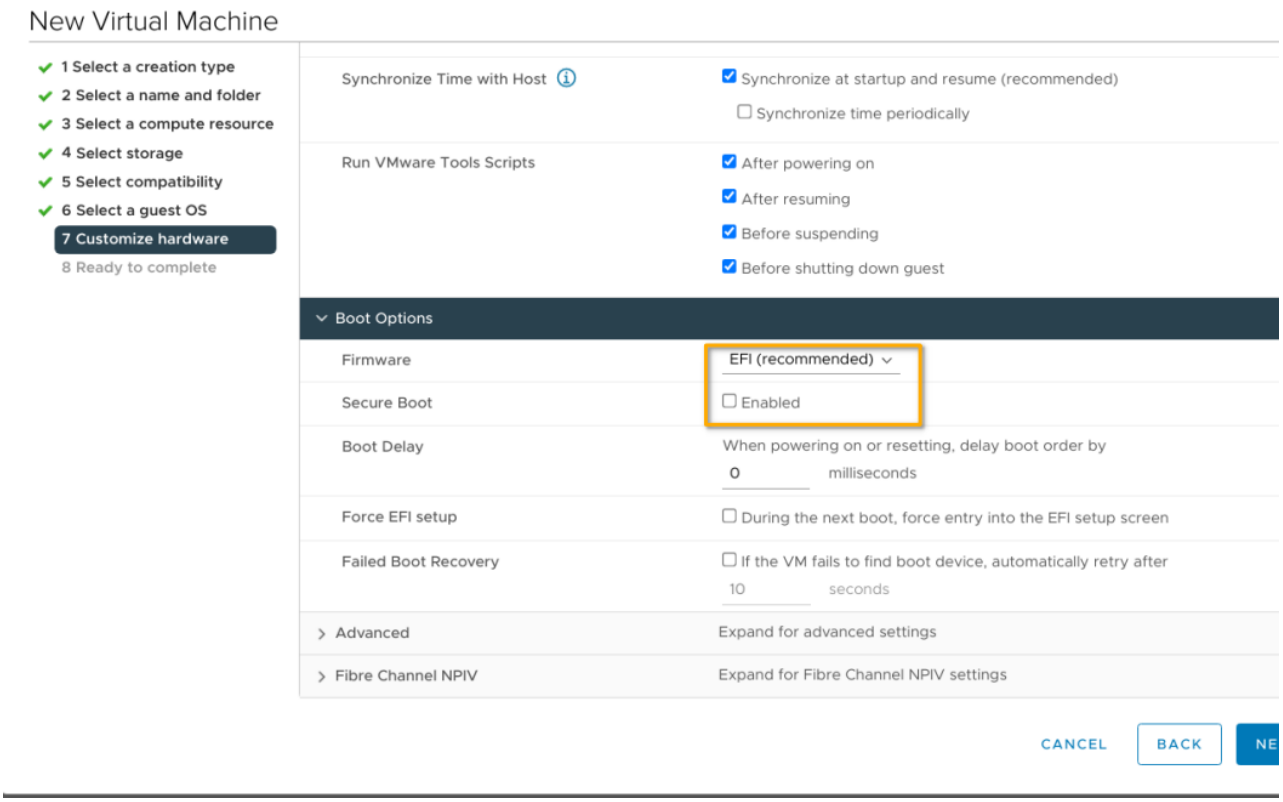
Configuring VM Options:

- General Options – in this section, it's possible to view following settings:
    - VM name
    - VM configuration file location
    - VM working location
    - Guest operating system and OS version

  Currently, it's allowed only to edit the VM name.

- **VMware Remote Console Options** – VM lock settings and simultaneous connections settings.
- **Encription** – VM encryption settings.
- Power management – VM suspend behavior.
- VMware Tools – VMware Tools scripts. It is possible to set up automatic VMware Tools update, automatic time synchronization between VM /guest and hypervisor at startup or resume, and periodical time synchronization .

- **Boot Options** – VM boot options. By default, the Firmware field is set to EFI. Secure Boot option needs to be disabled because it's not supported by FPP (Full Product Package) Astra Linux Common Edition 2.12..



- **Advanced** – advanced VM options:
    - Acceleration and logging settings
    - Debugging and statistics
    - Swap file location
    - Latency sensitivity
- Fiber Channen NPIV – allows to change the virtual node and port World Wide Names (WWNs).

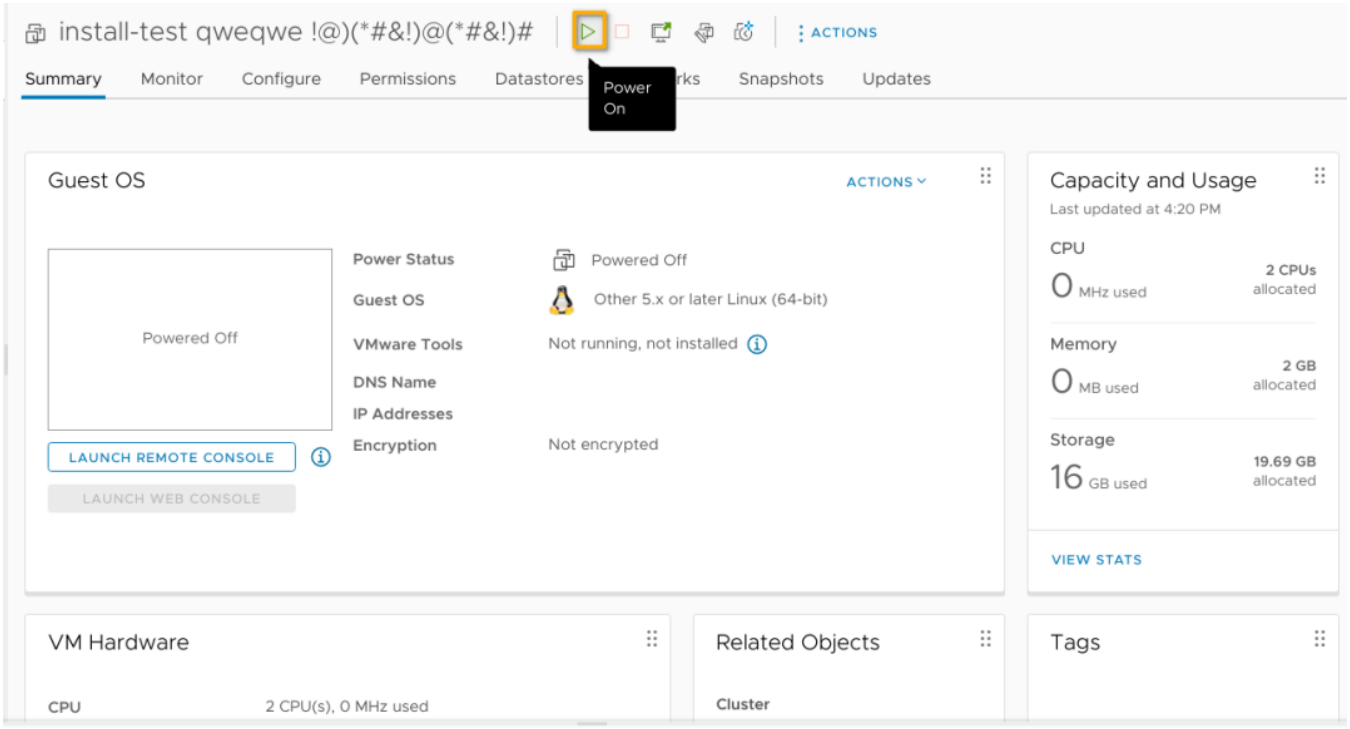
> You can view or change VM settings within vSphere client. Not every setting is available for either VM, defaults are preferable for some of them. Read more here.

After completing hardware and VM settings, click **Next**.

On the **8 Ready to complete** page, review details and click **Finish**. Creation and configuration complete.

VM launch

In the vSphere Client, select the VM and start it by clicking the **Power On** button ▷ at the top of the window. Wherein the **Power Status** parameter will be displayed as **Powered On**.



OS installation

Select the VM to install OS, and launch console with the **Launch Console** button . In the OS launch window, specify an installation mode and then follow the standard instructions (PDF to download – here). Setup and Maintenance Instructions for Astra Linux Common Edition 2.12. – here.

After OS installed and configured, VMware Tools should be installed by entering following string in a Fly terminal (**<Alt+T>**)

```
apt install open-vm-tools open-vm-tools-desktop
```

VMware Tools improves the interaction between VM and hypervisor, increases the performance of VM's operating system.

Please note that VMware Tools set is only available for Astra Linux Common Edition 2.12.43 and later.

Correct OS and VMware Tools installation and launch are indicated by the **Running** state and **VMware Tools** version displayed.