

Creating a Hyper-V VM

Build a virtual machine with the wizard and with PowerShell, step by step.

01 What it is

Creating a VM means defining its generation, memory, network connection and virtual disk, then attaching an installation ISO. You can do it with the New Virtual Machine wizard or a few PowerShell commands.

02 Why it matters in a UAE IT job

Building VMs quickly and consistently is a daily task for a junior sysadmin. Knowing both the wizard and PowerShell shows you can move from clicking to automating.

Test machines, lab domain controllers and new servers all start this way.

03 Key terms

Term	Meaning
Generation	Choose 2 for modern Windows and Linux, 1 only for older systems.
Startup memory	The RAM given to the VM at boot. Dynamic Memory can adjust it later.
VHDX	The virtual disk file format used by Hyper-V.
ISO	A disc image used to install an operating system.
Virtual switch	The virtual network device that connects the VM to a network.
Secure Boot	Firmware protection enabled by default on Generation 2. Some Linux templates need a different setting.
Naming standard	A consistent pattern such as LAB-DC01 that makes VMs easy to find.

04 How it works

Decide the VM's role first, then size it: a small lab server may need 2 vCPUs, 4 GB RAM and 60 GB disk. The wizard asks for name and location, generation, memory, network and disk. Finally you attach the ISO, start the VM and install the operating system. In PowerShell, New-VM creates it and Set-VMDvdDrive or Add-VMDvdDrive attaches the ISO.



Plan the size before opening the wizard.

05 Hands-on lab

Goal: create a Generation 2 VM named LAB-SRV01 with PowerShell. Use an evaluation ISO placed in a folder such as D:\ISO and a virtual switch that already exists (see the virtual switches lesson).

Step 1. Create the VM with 4 GB startup memory and a new 60 GB disk.

```
New-VM -Name LAB-SRV01 -Generation 2 -MemoryStartupBytes 4GB -NewVHDPATH
D:\VMs\LAB-SRV01.vhdx -NewVHDSIZEBytes 60GB -SwitchName LabSwitch
```

```
Administrator: Windows PowerShell - [ ] x

PS C:\Users\LabAdmin> New-VM -Name LAB-SRV01 -Generation 2 -MemoryStartupBytes 4GB -NewVHDPATH D:\VMs\LAB-SRV01.vhdx
-NewVHDSIZEBytes 60GB -SwitchName LabSwitch
Name      State CPUUsage(%) MemoryAssigned(M) Uptime      Status      Version
-----
LAB-SRV01 Off    0          0              00:00:00 Operating normally 12.0
PS C:\Users\LabAdmin> _
```

Example output from the fictional lab (names and IPs are made up). Yours should look similar.

Step 2. Give the VM two virtual processors.

```
Set-VMProcessor -VMName LAB-SRV01 -Count 2
```

```
Administrator: Windows PowerShell - [ ] x

PS C:\Users\LabAdmin> Set-VMProcessor -VMName LAB-SRV01 -Count 2
PS C:\Users\LabAdmin> _
```

Example output from the fictional lab (names and IPs are made up). Yours should look similar.

Step 3. Attach the ISO.

```
Add-VMdvdDrive -VMName LAB-SRV01 -Path D:\ISO\server-eval.iso
```

```
Administrator: Windows PowerShell - [ ] x

PS C:\Users\LabAdmin> Add-VMdvdDrive -VMName LAB-SRV01 -Path D:\ISO\server-eval.iso
PS C:\Users\LabAdmin> _
```

Example output from the fictional lab (names and IPs are made up). Yours should look similar.

Step 4. Make the DVD the first boot device.

```
Set-VMFirmware -VMName LAB-SRV01 -FirstBootDevice (Get-VMdvdDrive -VMName
LAB-SRV01)
```

```
Administrator: Windows PowerShell - [ ] x

PS C:\Users\LabAdmin> Set-VMFirmware -VMName LAB-SRV01 -FirstBootDevice (Get-VMdvdDrive -VMName LAB-SRV01)
PS C:\Users\LabAdmin> _
```

Example output from the fictional lab (names and IPs are made up). Yours should look similar.

Step 5. Start the VM and connect to it.

```
Start-VM LAB-SRV01; vmconnect localhost LAB-SRV01
```

LAB-SRV01 on LAB-HOST01 - Virtual Machine Connection

Windows Setup

Language to install: English (United States)

Time and currency format: English (United Arab Emirates)

Keyboard or input method: US

Next

Illustrative mockup of this screen (fictional names). Your screen may look slightly different.

Step 6. After the install, confirm the VM state and uptime.

```
Get-VM LAB-SRV01 | Select Name, State, Uptime
```

Administrator: Windows PowerShell

```
PS C:\Users\LabAdmin> Get-VM LAB-SRV01 | Select Name, State, Uptime
Name      State      Uptime
-----
LAB-SRV01 Running 00:41:07
PS C:\Users\LabAdmin> _
```

Example output from the fictional lab (names and IPs are made up). Yours should look similar.

06 Common mistakes

- Choosing Generation 1 by habit for a modern OS.
- Giving a lab server 16 GB RAM on a laptop with 16 GB total.
- Putting every disk on the system drive and filling it up.
- Forgetting to attach the VM to a virtual switch, so it has no network.
- Pressing a key too late and booting from an empty disk instead of the ISO.

07 Five interview questions

1. How do you create a VM in Hyper-V?

Use the New Virtual Machine wizard or New-VM in PowerShell. Pick generation, memory, network and disk, then attach an ISO and install the OS.

2. Which generation would you choose and why?

Generation 2 for modern systems, because it supports UEFI, Secure Boot and faster boot and devices.

3. What does Set-VMProcessor do?

It sets virtual processor options such as the number of vCPUs.

4. How do you give the VM network access?

Connect its network adapter to a virtual switch.

5. Why use naming standards?

They make VMs easy to find, group and automate, especially in larger environments.

08 Check yourself

1. Which cmdlet creates a VM?

- a) Make-VM
- b) New-VM
- c) Build-Server

2. Which file type is the virtual disk?

- a) DOCX
- b) MP3
- c) VHDX

3. Which generation is preferred for new OSes?

- a) Generation 2
- b) Generation 1
- c) Generation 0

4. What gives the VM network access?

- a) A USB stick
- b) A printer
- c) A virtual switch

5. What do you attach to install the OS?

- a) A PDF
- b) An ISO
- c) A JPEG

Answer key: 1-b, 2-c, 3-a, 4-c, 5-b

Take the full free skill quiz at uaeitguy.com/quiz. Next lesson: Hyper-V VM settings.