



## InovaMesh Hyper-V VM Gen2

### Quick Guide

The instructions in this quick guide apply to the installation, usage, and uninstallation of an InovaMesh OpenWRT Gen2 UEFI virtual machine (VM) on laptops, PCs, and workstations running Windows 10 and Windows 11 versions that support Microsoft Hyper-V. For compatibility details, please refer to the following article: <https://learn.microsoft.com/en-us/windows-server/virtualization/hyper-v/plan/should-i-create-a-generation-1-or-2-virtual-machine-in-hyper-v>.

### Install the VM and use it

1. Extract the contents of the **vIM\_PS\_Gen2.zip** file into a folder, for example, C:\temp\hvm, and list its contents. In PowerShell, you can perform these actions with the following commands:

```
Expand-Archive -Path "C:\path\to\vIM_PS_Gen2.zip" -DestinationPath  
"C:\temp\hvm"  
Get-ChildItem -Path "C:\temp\hvm"
```

These commands extract the ZIP file's contents to the specified folder and then list the files within that folder.

Mode	LastWriteTime	Length	Name
----	-----	-----	----
-----	11/18/2023 12:56 PM	98304	hvManagement.exe
-a---	4/30/2025 11:40 AM	306184192	InovaMesh_disk0.vhdx
-----	11/20/2023 10:56 AM	103936	vIMSet.exe
-----	11/28/2023 6:09 AM	109568	vmManagement.exe
-----	11/18/2023 12:58 PM	119296	vsManagement.exe

All commands must be executed in PowerShell with administrator privileges (Admin Terminal) from the designated folder.

2. Install Hyper-V if it is not already installed, as shown in the example.

```

PS C:\Temp\hvm> .\hvManagement.exe
hvManagement v1.0
Feature Hyper-V Disabled
Feature PiattaformaHyper-V Disabled
Feature StrumentidigestioneHyper-V Disabled
Feature ModuloHyper-VperWindowsPowerShell Disabled
Feature HypervisorHyper-V Disabled
Feature ServiziHyper-V Disabled
Feature StrumentidigestioneHyper-Vconinterfacciagrafica Disabled
Hyper-V 7 features disabled out of 7
Hyper-V disabled, enable (yes|no) ?: yes
Enabling Hyper-V ..
Restart the computer now to complete the operation?
[Y] Yes [N] No:Y

```

The operation takes a few minutes and requires restarting Windows. Ensure that there are no ongoing or pending Windows updates that could interfere with the installation of Hyper-V.

### 3. Add the LAN Virtual Switch .

```

PS C:\Temp\hvm> .\vsManagement.exe add LAN
vsManagement v1.1
Creating Virtual Switch LAN ..
VMSwitch (Name = 'LAN') [Id = '205cb358-81d1-409a-878e-570f1d963b36']
PS C:\Temp\hvm>

```

### 4. List the available adapters and select the appropriate one for the WAN. In this example, the Broadcom 802.11ac WiFi adapter is used.

```

PS C:\Temp\hvm> .\vsManagement.exe
vsManagement v1.1
Configured virtual switches
vSwitch:"Default Switch" Shared with host:True Interface:N/A
vSwitch:"LAN" Shared with host:True Interface:N/A

Available network adapters
"Intel(R) Ethernet Connection (3) I218-LM" MAC:34-E6-D7-73-F3-CB
(Ethernet)
"Broadcom 802.11ac Network Adapter" MAC:34-68-95-ED-7D-2D (Wi-Fi)
"Bluetooth Device (Personal Area Network)" MAC:34-68-95-ED-7D-2E
(Connessione di rete Bluetooth)

```

### 5. Add the WAN Virtual Switch using the adapter identified in the previous step.

```

PS C:\Temp\hvm> .\vsManagement.exe add WAN "Broadcom 802.11ac Network Adapter"
vsManagement v1.1
Creating Virtual Switch WAN on network adapter "Broadcom 802.11ac Network Adapter" ..
VMSwitch (Name = 'WAN') [Id = '0fd415b4-77b6-495b-a887-be22c4c9235b']

```

### 6. Import the InovaMesh Gen2 VM.

```
PS C:\Temp\hvm> .\vmManagement.exe import
vmManagement Gen.2 v2.3
Importing InovaMeshGen2 VM..
InovaMesh_disk0.vhdx copied to folder
\ProgramData\Microsoft\Windows\Virtual Hard Disks\
```

## 7. Start the VM.

```
PS C:\Temp\hvm> .\vIMSet.exe On
vIMSet Gen.2 v2.2
The virtual machine InovaMeshGen2 is now On. Wait 30s for DHCP
assignment.
```

## 8. List the VM's operational parameters and its serial number (S/N).

```
PS C:\Temp\hvm> .\vmManagement.exe
vmManagement Gen.2 v2.3
InovaMeshGen2 state:Running
Processors:4 Memory:512MB
vSwitch:LAN MAC:00155D011601
vSwitch:WAN MAC:00155D011602
Device S/N: 4251001163
```

- Only the first time, it may be necessary for the VM to be activated by the central management system. If so, provide the serial number (S/N) of your VM (4251001163 in this example). Once activated, wait a few minutes, then run the `ipconfig /renew` command. In the future, for all subsequent executions of `vIMSet.exe Off/vIMSet.exe On` (shutdown/startup), this step will no longer be necessary. At the end, the LAN Virtual Switch configuration will be similar to the following.

```
PS C:\Temp\hvm> ipconfig
..
Scheda Ethernet vEthernet (LAN):
    Suffisso DNS specifico per connessione: lan
    Indirizzo IPv6 locale rispetto al collegamento . :
fe80::bffe:b299:57bf:f792%58
    Indirizzo IPv4. . . . . : 192.18.92.247
    Subnet mask . . . . . : 255.255.255.0
    Gateway predefinito . . . . . : 192.18.92.1
```

- Test the mesh functionality by using the ping command to reach a known and active InovaMesh test node.

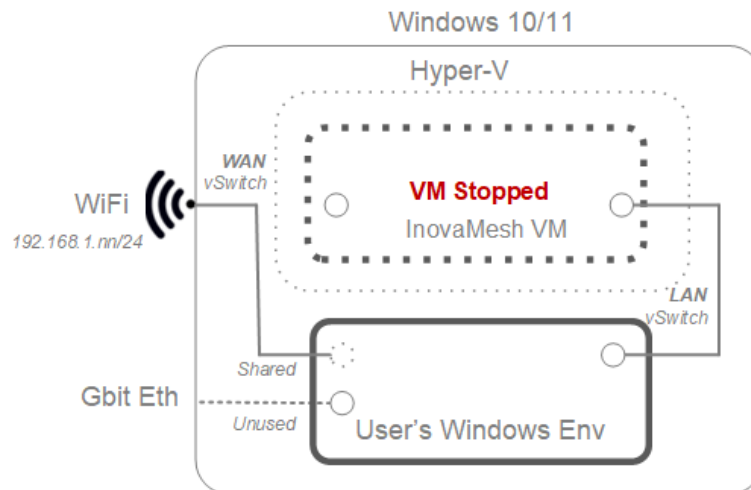
```
PS C:\Temp\hvm> ping 192.18.255.27
Esecuzione di Ping 192.18.255.27 con 32 byte di dati:
Risposta da 192.18.255.27: byte=32 durata=2455ms TTL=63
Risposta da 192.18.255.27: byte=32 durata=78ms TTL=63
Risposta da 192.18.255.27: byte=32 durata=81ms TTL=63
Risposta da 192.18.255.27: byte=32 durata=77ms TTL=63
```

Do not use the indicated address but the one provided by the mesh administrator.

## Shutting Down and Starting the VM

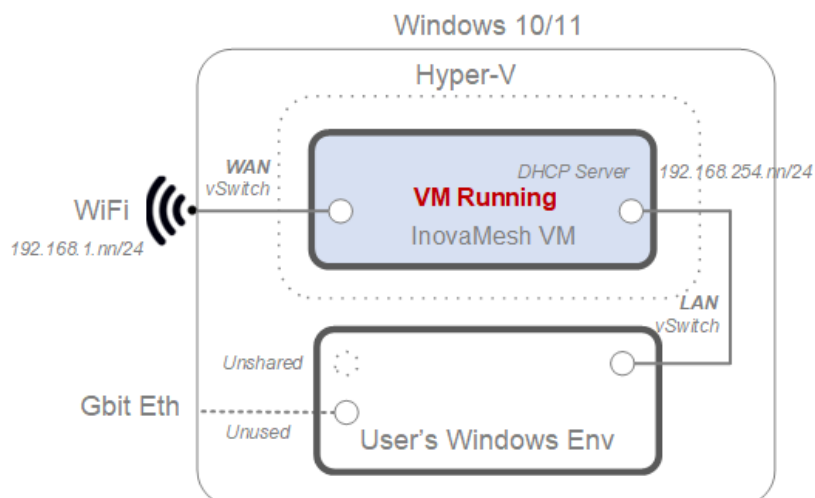
11. To shut down the InovaMesh VM and restore the laptop's normal connectivity.

```
PS C:\Temp\hvm> .\vIMSet.exe Off
vIMSet Gen.2 v2.2
The virtual machine InovaMeshGen2 is now Off. Wait 30s for DHCP
assignment.
```



12. To restart the VM and restore access to the mesh and the InovaMesh security of the laptop.

```
PS C:\Temp\hvm> .\vIMSet.exe On
vIMSet Gen.2 v2.2
The virtual machine InovaMeshGen2 is now On. Wait 30s for DHCP
assignment.
```



The commands **vimSet.exe Off/vimSet.exe On** can be executed an unlimited number of times, ensuring a 30-second wait after each execution to allow the DHCP function to negotiate the address change.

## Uninstalling the VM

### 13. Shut down the VM

```
PS C:\Temp\hvm> .\vimSet.exe Off
vimSet Gen.2 v2.2
The virtual machine InovaMeshGen2 is now Off. Wait 30s for DHCP
assignment.
```

..or, if already turned off, the response is

```
WARNING: The virtual machine InovaMeshGen2 is already in the specified
state.
```

### 14. Delete the VM

```
PS C:\Temp\hvm> .\vmManagement.exe delete
vmManagement Gen.2 v2.3
Deleting InovaMeshGen2 VM..
```

### 15. Delete the LAN Virtual Switch

```
PS C:\Temp\hvm> .\vsManagement.exe delete LAN
vsManagement v1.1
Deleting Virtual Switch LAN ..
```

### 16. Delete the WAN Virtual Switch

```
PS C:\Temp\hvm> .\vsManagement.exe delete WAN
vsManagement v1.1
Deleting Virtual Switch WAN ..
```

### 17. Uninstall MS Hyper-V, if not used for other VMs.

```
PS C:\Temp\hvm> .\hvManagement.exe
hvManagement v1.0
Feature Hyper-V Enabled
Feature PiattaformaHyper-VEnabled
Feature StrumentidigestioneHyper-V Enabled
Feature ModuloHyper-VperWindowsPowerShell Enabled
Feature HypervisorHyper-V Enabled
Feature ServiziHyper-V Enabled
Feature StrumentidigestioneHyper-Vconinterfacciagrafica Enabled
Hyper-V 7 features enabled out of 7
Hyper-V fully enabled, disable (yes|no) ?: yes
Disabling Hyper-V ..
Riavviare ora il computer per completare l'operazione?
[Y] Yes [N] No: Y
```

The operation takes a few minutes and requires restarting Windows.