



Deploy the Management Center Virtual On Hyper-V

Microsoft Hyper-V is Microsoft's hardware virtualization platform, also termed as a *hypervisor*. Hyper-V enables administrators to make better use of hardware by using the same physical server to run multiple virtual machines.

Virtual machines provide more flexibility, save cost, and are a more efficient way to use hardware than running only one operating system on physical hardware.

This chapter contains the following sections:

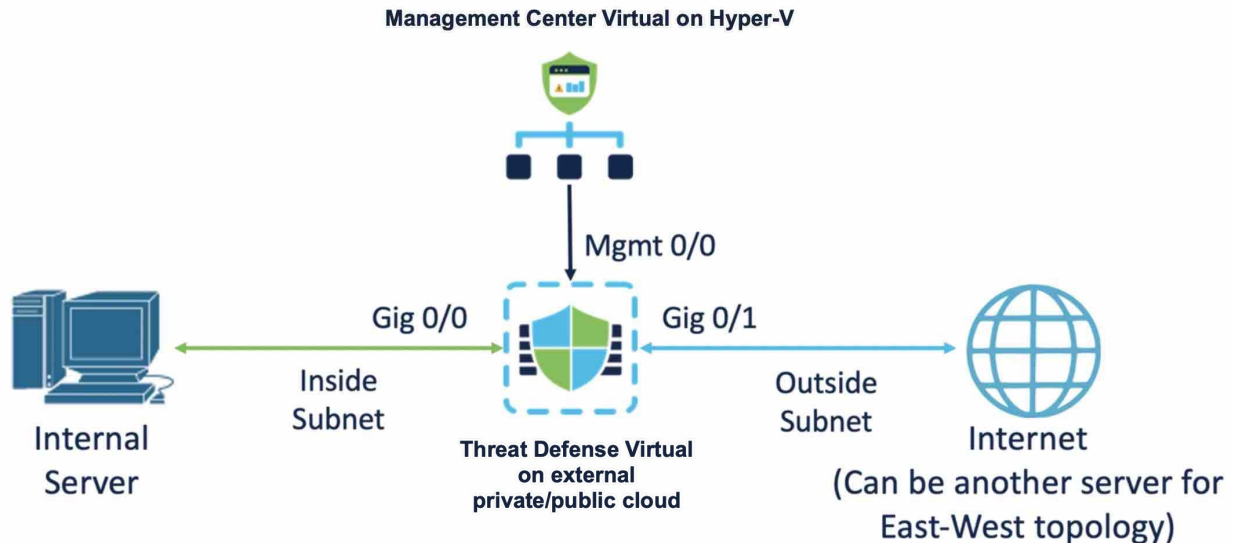
- [Overview, on page 1](#)
- [Sample Topology of Management Center Virtual on Hyper-V, on page 2](#)
- [Supported Windows Server for Management Center Virtual, on page 2](#)
- [Guidelines and Limitations for Management Center Virtual on Hyper-V, on page 2](#)
- [Licenses for Deployment of Management Center Virtual on Hyper-V, on page 3](#)
- [Prerequisites for Deployment of Management Center Virtual on Hyper-V, on page 3](#)
- [Deploy the Management Center Virtual, on page 3](#)
- [Verify the Deployment, on page 5](#)
- [Access First Boot Logs, on page 6](#)
- [Shut Down Management Center Virtual, on page 6](#)
- [Reboot Management Center Virtual, on page 7](#)
- [Delete Management Center Virtual, on page 7](#)
- [Troubleshooting, on page 7](#)

Overview

Management Center Virtual is deployed on Hyper-V by using a VHD image available on Cisco.com. Basic VM control features such as Console Access, Stop/Restart, IPv4, and IPv6 support for management interface are supported. The initial configuration is done using a day-0 configuration script. High availability is supported.

Sample Topology of Management Center Virtual on Hyper-V

In this sample topology, Management Center Virtual is connected to the management port of the threat defense virtual deployed on an external private or public cloud. The Threat Defense Virtual is connected to both the internet and an internal server. The internet can also be another server in an east-west traffic flow topology.



Supported Windows Server for Management Center Virtual

Management Center Virtual 25 is supported on Windows Server 2019 Standard Edition. The minimum resource requirements for the Management Center Virtual are given below:

- CPU: 4 vCPUs
- RAM: 28 GB (recommended 32 GB)
- Disk storage: 250 GB
- Minimum number of interfaces: 1

Guidelines and Limitations for Management Center Virtual on Hyper-V

- Management Center Virtual deployed on Hyper-V can be used to manage threat defense virtual clusters that are deployed on other public or private clouds. However, to manage threat defense virtual clusters deployed on public cloud, you must manually register the cluster with Management Center Virtual. See [Add the Cluster to the Management Center \(Manual Deployment\)](#).
- Cloning is not supported.

Licenses for Deployment of Management Center Virtual on Hyper-V

The following license types are supported:

- BYOL
 - Smart License
 - Specific License Reservation (SLR)
 - Universal Permanent License Registration (PLR)
- Evaluation License

Prerequisites for Deployment of Management Center Virtual on Hyper-V

- Microsoft Windows Server with Hyper-V role and Hyper-V Manager installed. See [Get started with Hyper-V on Windows Server](#).
- Download the Management Center Virtual compressed VHD image from Cisco.com.
- BYOL license
- New virtual switch (vSwitch) and virtual machine (VM)

Deploy the Management Center Virtual

Perform the procedures given below to deploy the Management Center Virtual on Hyper-V.

Download Management Center Virtual VHD Image

Download the Management Center Virtual compressed VHD image from the Cisco Download Software page to your local machine:

1. Navigate to **Products > Security > Firewalls > Firewall Management > Secure Firewall Management Center Virtual**
2. Click **Firepower Management Center Software** and download the required VHD image. For example, Cisco_Secure_FW_Mgmt_Center_Virtual_Azure-7.4.0-xxxx.vhd.tar.

Prepare Day 0 Configuration File

You must prepare a Day-0 configuration file before you launch the Management Center Virtual. This file is a text file that contains the initial configuration data that gets applied when a VM is deployed. This initial configuration is placed into a text file named **day0-config** on your local machine, and is converted to a day0.iso file that is mounted and read on first boot.



Note The day0.iso file must be available during first boot.

Specify the following parameters in the Day-0 configuration file:

- The End User License Agreement (EULA) acceptance.
- A host name for the system.
- A new administrator password for the admin account.
- Network settings that allow the appliance to communicate on your management network.



Note We have used Linux in the following example, but there are similar utilities for Windows.

Step 1 Enter the CLI configuration for Management Center Virtual in a text file called **day0-config**. Add the network settings and information about managing Management Center Virtual.

```
{
"EULA": "accept",
"Hostname": "virtual731265",
"AdminPassword": "r2M$9^Uk69##",
"DNS1": "208.67.222.222",
"DNS2": "208.67.222.222",
"IPv4Mode": "Manual",
"IPv4Addr": "10.10.0.92",
"IPv4Mask": "255.255.255.224",
"IPv4Gw": "10.10.0.65",
"IPv6Mode": "Manual",
"IPv6Addr": "2001:420:5440:2010:600:0:45:45",
"IPv6Mask": "112",
"IPv6Gw": "2001:420:5440:2010:600:0:45:1"
}
```

Step 2 Generate the virtual CD-ROM by converting the text file to an ISO file:

```
/usr/bin/genisoimage -r -o day0.iso day0-config
```

or

```
/usr/bin/mkisofs -r -o day0.iso day0-config
```

Create a New Virtual Switch

Perform this procedure to create a new virtual switch (vSwitch).

-
- Step 1** On the Hyper-V Manager **Actions** tab, click **Virtual Switch Manager**.
- Step 2** Click **Virtual Switches > New virtual network switch**.
- Step 3** In the **Create virtual switch** window, select **External**.
- Step 4** Click **Create Virtual Switch**.
- Step 5** In the **Virtual Switch Properties** window, enter a **Name** for the virtual switch.
- Step 6** Create an external or internal vSwitch.
- To create an external vSwitch, select **External network** and the required physical adaptor from the drop-down list.
 - To create an internal vSwitch, select **Internal network** or **Private network**.
- Step 7** Under **VLAN ID**, check the check box next to **Enable virtual LAN identification for management operating system**.
- Step 8** Click **OK**.
-

Create a New Virtual Machine

Perform this procedure to create a new VM.

-
- Step 1** On the Hyper-V Manager, click **Action > New > Virtual Machine**
- Step 2** Click **Next** on the **New Virtual Machine Wizard** dialog box.
- Step 3** Enter a **Name** for the VM and click **Next**.
- Step 4** Choose **Generation 1** and click **Next**.
- Step 5** Specify the amount of **Startup Memory** or RAM, in MB, that has to be allocated for the VM (Minimum is 28672 MB, recommended is 32768 MB)
- Step 6** Choose the required vSwitch **Connection** from the drop-down list.
- Step 7** Choose **Use an existing virtual hard disk** and click **Browse** to choose the downloaded Management Center Virtual VHD image.
- Step 8** Click **Finish** to create the VM.
-

Verify the Deployment

Run the **show version** command on the serial console to ensure that management center virtual is deployed on Hyper-V.

```

rm-Production login: admin
Password:

Copyright 2004–2022, Cisco and/or its affiliates. All rights reserved.
Cisco is a registered trademark of Cisco Systems, Inc.
All other trademarks are property of their respective owners.

Cisco Firepower Extensible Operating System (FX-OS) v82.14.0 (build 205)
Cisco Secure Firewall Management Center for Hyper-V v7.4.0 (build 1493)

> show version
-----[ rm-Production ]-----
Model                : Secure Firewall Management Center for Hyper-V (66) U
Version 7.4.0 (Build 1493)
UUID                 : 3f775634-7f7d-11ed-b8f5-0c0e70c660f3
Rules update version : 2022-01-06-001-urt
LSP version          : lsp-rel-20221214-1542
JDB version          : 361
-----

```

Access First Boot Logs

To access the first boot logs, perform this procedure before turning on the VM that you created on the Hyper-V Manager.

-
- Step 1** On the Hyper-V Manager, select the newly created VM, and click **Settings** in the **Actions** section on the right side of the window.
 - Step 2** In the **Hardware** section, click **COM1** and choose **Named Pipe**.
 - Step 3** Enter a **Pipe name**. For example, **virtual1**. Note the **Named pipe path**.
 - Step 4** Click **Apply** and then click **OK**.
 - Step 5** Click the VM created by you and click **Start** in the **Actions** window on the right side of the window. The **State** of the VM should now change from **Starting** to **Running**.
 - Step 6** You must now connect the named pipe created by you to a serial client, such as **PuTTY**.
 - Step 7** Go to your local host and bring up the **PuTTY** window.
 - Step 8** Enter the **Named pipe path** that you noted down earlier in the **Serial line** field.
For example, `\\.\pipe\virtual1`.
 - Step 9** Click **Open**. You can now see the first boot logs on the **PuTTY** window.
-

Shut Down Management Center Virtual

On the Hyper-V Manager, right-click the VM that you want to shut down, and click **Turn Off**.

Reboot Management Center Virtual

Run the **sudo reboot** command in **expert** mode on the Management Center Virtual CLI to initiate a graceful reboot:

```
Cisco Firepower Extensible Operating System (FX-OS) v82.14.0
(build 205)
Cisco Secure Firewall Management Center for Hyper-V v7.4.0
(build 1493)
> expert
admin@hyperv-automation:~$ sudo reboot
```

Alternatively, you can also go to Hyper-V Manager, right-click the VM that you want to shut down, and click **Turn Off**.

Delete Management Center Virtual

After the VM is shut down, right-click the VM, and click **Delete**.



Note Deleting does not delete the disk attached to the VM. You must manually delete that disk.

Troubleshooting

- Issue - Unable to start VM, could not initialize memory
Scenario - This issue occurs when the disk space is not enough to initialize the VM.
Workaround - Clear up space on the disk where the VHD file is located.
- Issue - Unable to provision or start the VM; failed to open the attachment.
Scenario - This issue occurs when another VM is using the same image as the new VM
Workaround - Delete the old VM.
- Issue - Failed to start the VM, not enough system memory
Scenario - This issue occurs when not enough RAM is available on the host operating system to provision the configured memory to the VM.
Workaround - Ensure that the required RAM is available on the host operating system.
- Issue - Unable to SSH to Management Center Virtual or load the Management Center Virtual UI from an external host.
Workaround - Allow port 22 (SSH), 443 (HTTPS), 80 (HTTP) in inbound and outbound rules in the Windows Firewall.
- Issue - Device is unable to access the internet.
Workaround - If the device is using an external vSwitch, ensure that the gateway of the VLAN is properly configured.

