

Deploy Dell EMC OpenManage Enterprise Virtual Appliance on Different Hypervisors

This Dell EMC technical white paper describes the process of deploying Dell EMC OpenManage Enterprise as a virtual appliance on hypervisors such as VMware, Microsoft Hyper-V, and KVM.



Abstract

This technical white paper discusses the procedure to deploy Dell EMC OpenManage Enterprise on the following hypervisors: VMware, Hyper-V, and KVM. The Do's and Dont's in deploying are also discussed. Where available, links to the relevant videos are also provided.

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Terminology

Table 1	List of terminologies used in this technical white paper
EULA	End
GUI	Graphical User Interface
NIC	Network Interface Card
NPAPI	Netscape Plugin Application Programming Interface
OS	Operating System
OVF	Open Virtual Machine Format
VHD file	Virtual Hard Disk file
EULA	End User License Agreement

Executive summary

Dell EMC OpenManage Enterprise is designed to be deployed as a virtual appliance for a variety of supported hypervisors (VMware, Hyper-V, and KVM). In general, it can be used in environments that support loading the VMDK or VHD formats, as long as you have the minimum system resources required (4 virtual CPUs and 16 GB of RAM).



Figure 1 Supported hypervisors for Dell EMC OpenManage Enterprise

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You can also view the following videos to get more information about using the unmatched features of Dell EMC OpenManage Enterprise Graphical User Interface (GUI):

- Dell EMC OpenManage Enterprise Systems Management Console (02:02 m)
- Dell EMC OpenManage Enterprise (01:44 m)

1 Installation notes for deploying OpenManage Enterprise

- OpenManage Enterprise is deployed as a virtual appliance, compared to OpenManage Essentials, which is installed into an environment already running Microsoft Windows.
 - All operating system maintenance is performed by OpenManage Enterprise, including even the network configuration.
 - A single network adapter is officially supported—using more than one is not supported in the current Dell EMC OpenManage Enterprise at the time of release of this technical white paper.
 - Ensure that all necessary subnets are routable to the interface given to the OpenManage Enterprise appliance.
- The OpenManage Enterprise appliance is not functional until you have accessed the TUI (Text User Interface) and set the administrator password.
- During first boot, by default, OpenManage Enterprise directs to a static IP—this must be changed to match network configurations appropriate to the customers' environment.

1.1 Do's for deploying OpenManage Enterprise

- Allocate memory and virtual CPUs to increase performance. OpenManage Enterprise is configured to utilize additional resources added to the VM to increase performance.
- Locate OpenManage Enterprise on a hypervisor with local or fast storage. Faster storage supports receiving and processing a larger number of incoming events.
- Ensure ports are opened between OpenManage Enterprise and the devices you want to manage.

1.2 Don'ts for deploying OpenManage Enterprise

- Add additional network adapters. OpenManage Enterprise currently supports only a single virtual NIC.
- Leave unnecessary VM snapshots that result in performance degradation.
- Decrease memory to less than 16 GBs or the number of CPUs to less than four.

2 Deploy Dell EMC OpenManage Enterprise on Microsoft Hyper-V (Windows Server 2016 or Windows 10)



Figure 2 Steps to deploy OpenManage Enterprise on Microsoft Hyper-V

1. From the Actions menu, select Import Virtual Machine.



Figure 3 Select Import Virtual Machine on the Microsoft Hyper-V GUI

2. In the Import Virtual Machine dialog box, select Copy the virtual machine (create a new unique ID).

Import Virtual Machine				
Choose Imp	ort Type			
Before You Begin	Choose the type of import to perform:			
Select Virtual Machine	Register the virtual machine in-place (use the existing unique ID) Resters the virtual machine (use the existing unique ID)			
Choose Import Type	Conv the virtual machine (create a new unique ID)			
Summary				
	< Previous Next > Finish Cancel			

Figure 4 Copy the virtual machine by creating a new unique ID

3. Click Finish. Wait till the VM is imported (deployed).

4. Open VM configuration and ensure that the network adapter is connected to a valid network. Failing to do this can result in a fatal condition of the VM.



Figure 5 Ensure that the network adapter is connected to a valid network

5. Start the VM.

6. Complete the tasks in Common tasks after starting the VM on OpenManage Enterpise.

2.1 Deploy Dell EMC OpenManage Enterprise on Microsoft Hyper-V

2.1.1 Manually create VM under Hyper-V (required for Windows Server 2012 / Windows 8 and earlier)

- 1. Extract the openmanage_enterprise_vhd_format_3.0.zip file, and then move or copy the enclosed VHD file into the appropriate location on your system where you want to store the Dell EMC OpenManage Enterprise virtual drive (VD).
- 2. Start Hyper-V Manager.
- 3. Click Action \rightarrow New \rightarrow Virtual Machine.

1										
File	Actio	on Viev	v Help							
	New Import Virtual Machine		•	Virtual Machine Hard Disk						
		Hyper-V	Settings			Floppy Disk				
Virtual Switch Manager Virtual SAN Manager Edit Disk Inspect Disk				*		State	СР			
	-	Stop Sen Remove Refresh Help	vice Server							
						1				

Figure 6 Creating a new VM on Microsoft Hyper-V

- 4. In the **Specify Name and Location Screen** dialog box, select the VM name and storage location appropriately for your environment.
- 5. Click Next.

6. In the **Specify Generation** dialog box, select **Generation 1**. Currently, the Dell EMC OpenManage Enterprise does not support Generation 2.

8e	New Virtual Machine Wizard	x			
Specify Ge	neration				
Before You Begin	Choose the generation of this virtual machine.				
Specify Name and Location Specify Generation	 Generation 1 This virtual machine generation provides the same virtual hardware to the virtual machine as in previous versions of Hyper-V. 				
Configure Networking Connect Virtual Hard Disk Installation Options Summary	 Generation 2 This virtual machine generation provides support for features such as Secure Boot, SCSI boot, a PXE boot using a standard network adapter. Guest operating systems must be running at least Windows Server 2012 or 64-bit versions of Windows 8. Once a virtual machine has been created, you cannot change its generation. 	and			
	< Previous Next > Finish Cancel				

Figure 7 Specify the VM generation while creating a VM

7. Click Next.

8. In the **Assign Memory** dialog box, ensure that at least 16384 MB is assigned. Dynamic memory can be enabled, but for best performance, it is recommended to leave the option disabled.

8	New Virtual Machine Wizard	x
Assign Mem	lory	
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk Installation Options Summary	Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 3 MB through 61478 MB. To improve performance, specify more than the minimum amount recomment for the operating system. Startup memory: 16384 MB Use Dynamic Memory for this virtual machine. When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.	32 ided
	< Previous Next > Finish Cancel	1

Figure 8 Specify memory for the VM

- 9. Click Finish.
- 10. Ensure that the network adapter is connected to a network.

2.1.2 Ensure that the network adapter is connected to a network

1. On the networking configuration page, it is important to ensure that the network adapter is connected to a network. Dell EMC OpenManage Enterprise will not function properly if it is set to "Not Connected" at the first boot, and will require redeployment if this scenario occurs.

Ъ.	New Virtual Machine Wizard
Configure Ne	etworking
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking Connect Virtual Hard Disk Installation Options Summary	Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected.
	< Previous Next > Finish Cancel

Figure 9 Connect network adapter to a network

2. In the **Connect Virtual Hard Disk** dialog box, select **Use an existing virtual hard disk**, and then browse through to the VHD file you copied at the beginning of this procedure.

New Virtual Machine Wizard				
Connect Vi	rtual Hard Disk			
Before You Begin Specify Name and Location Specify Generation Assign Memory Configure Networking	A virtual machine requires storage so that you can install an operating system. You can specify the storage now or configure it later by modifying the virtual machine's properties. C Create a virtual hard disk Use this option to create a VHDX dynamically expanding virtual hard disk.	:		
Connect Virtual Hard Disk Summary	Vew Virtual Machine. Vnox Location: C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\ Size: 127 GB (Maximum: 64 TB) Use an existing virtual hard disk Use this option to attach an existing virtual hard disk, either VHD or VHDX format.			
	Location: C: \HyperV\openmanage_enterprise_vhd_format\openmanage_ent Browse O Attach a virtual hard disk later Use this option to skip this step now and attach an existing virtual hard disk later.			
	< Previous Next > Finish Cance	!		

Figure 10 Use an existing hard drive to install an OS

- 3. Follow the on-screen instructions to complete the deployment process.
- 4. After completion, open the settings of the newly created VM.

5. Ensure that a minimum of four virtual processors are specified.

Settings for	or OpenManage Enterprise on WIN-E5TADF4MSDH 📃 🗖 🗙
OpenManage Enterprise	✓ 4 ▶ Q
★ Hardware ▲ ▲ ▲ BIOS Boot from CD ■ Memory 8192 MB ● ■ Processor 4 Virtual processors ● ■	Processor You can modify the number of virtual processors based on the number of processors on the physical computer. You can also modify other resource control settings. Number of virtual processors: 4 Resource control You can use resource controls to balance resources among virtual machines. Virtual machine reserve (percentage): 9 Percent of total system resources: 0 Virtual machine limit (percentage): 100
 SCSI Controller Network Adapter Broadcom BCM57810 NetXtrem COM 1 None COM 2 None Diskette Drive None Management 	■ Percent of total system resources: 12 Relative weight: 100 Image: This virtual machine is configured with the following: Sockets: 2 NUMA nodes per socket: 1 Virtual processors per NUMA node: 16 Memory per NUMA node: 6618 MB
 Name OpenManage Enterprise Integration Services	
	OK <u>C</u> ancel <u>Apply</u>

Figure 11 Ensure the availability of four virtual processors

- 6. Start the VM.
- 7. Go to Common tasks after starting the VM.

3 Deploy Dell EMC OpenManage Enterprise on VMware vSphere

3.1 Prerequisites for deploying OpenManage Enterprise on VMware vSphere

- The vSphere 5.5 or later versions.
- While deploying OpenManage Enterprise on Open Virtualization Format (OVF) specification based hypervisors, it is recommended to use thick provisioning.
- Recommended deploying by using VMWare vSphere Standalone client (Chrome no longer works with vSphere Web Client properly because NPAPI is any longer supported).
- While you can deploy the VMDK manually, we recommend deploying by using the supplied OVF, which will supply minimum requirements for running the Dell EMC OpenManage Enterprise appliance.

3.2 Deploy OpenManage Enterprise by using KVM

- Because of the wide variety of configurations available for deploying Dell EMC OpenManage Enterprise under KVM, explicit instructions is not be provided in this technical white paper.
- Ensure that at least 16 GBs of RAM, four virtual processors, and a single connected NIC is available.
- After starting on the VM, go to <u>Common tasks after starting the VM</u>.

4 Common tasks after starting the VM on OpenManage Enterpise

- 1. Wait for the Dell EMC OpenManage Enterprise EULA to be displayed.
- 2. Read and accept the EULA by using up and down arrows to scroll the text, and the tab key to navigate through the menu items.

Figure 12 OpenManage Enterprise EULA

3. Enter and verify the OpenManage Enterprise appliance local admin password.

4. Configure network settings as appropriate to your environment.



Figure 13 Set network properties for OpenManage Enterprise



Figure 14 Set network IP addresses for OpenManage Enterprise

5. View current settings to obtain actual IP addresses (if DHCP is configured).



Figure 15 View current network status of OpenManage Enterprise

Current	Appliance Status
1101 -	https://100.100.17.22
Annliance Status:	Started
ippituice status.	
IPv4 enabled:	true
DHCP enabled:	true
IPv4 IP Address:	100.100.17.23
Gateway:	100.100.16.1
Subnet Mask:	255.255.252.0
Use DHCP to Obtain DNS Server Address:	true
Preferred DNS server:	100.100.0.20
Alternate DNS server:	100.100.0.22
IPv6 Enabled:	true
Enable Autoconfiguration:	true
IPu6 Address:	2607:f2b1:f087:80:dd26:4acc:493f:ce8d
	2607:f2b1:f087:80:20c:29ff:fe68:6f47
Gateway:	fe80::2607:f2b1:f087:80
Link Local Address:	fe80::20c:29ff:fe68:6f47
Preferred DNS server:	
Alternate DNS server:	
	C UIOSE 2

Figure 16 Status of OpenManage Enterprise appliance

6. Start OpenManage Enterprise in a supported browser.

5 Process map for checking and updating the Dell EMC OpenManage Enterprise version



Conclusion

Deploying Dell EMC OpenManage Enterprise in a virtual environment is a straight forward process, which is supported on a number of popular hypervisors. The deployment model offers a quick way to begin managing assets in your data center from a single console. For topics related to initial server discovery and management, see the Dell EMC OpenManage Enterprise: Server Management Direct from Development document on the support site.



You can also view the following videos to get more information about using the unmatched features of Dell EMC OpenManage Enterprise Graphical User Interface (GUI):

- Dell EMC OpenManage Enterprise Systems Management Console (02:02 m)
- <u>Dell EMC OpenManage Enterprise</u> (01:44 m)

A Technical support and resources

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