Managing VMware ESX Hosts in VMM Overview

Updated: May 13, 2016

Applies To: System Center 2012 SP1 - Virtual Machine Manager, System Center 2012 R2 Virtual Machine Manager, System Center 2012 - Virtual Machine Manager

Virtual Machine Manager (VMM) enables you to deploy and manage virtual machines and services across multiple hypervisor platforms, including VMware ESX and ESXi hosts. In VMM, support for ESX is optimized for virtual machine and service management. VMM enables you to manage and provide resources from multiple hypervisors and make the resources available to private cloud deployments, all from a common user interface and common command-line interface (CLI).

VMM integrates directly with VMware vCenter Server. Through the VMM console, you can manage the day-to-day operations of VMware ESX hosts and host clusters, such as the discovery and management of ESX hosts, and the ability to create, manage, store, place and deploy virtual machines on ESX hosts. However, we expect you to perform more advanced fabric management through vCenter Server, such as the configuration of port groups, standard and distributed virtual switches (or "vSwitches"), vMotion and Storage vMotion. By integrating with vCenter Server to manage ESX hosts, VMM can recognize and support these VMware features.

Key Differences in VMware ESX Management from VMM 2008 R2

The following list summarizes the key differences in VMware ESX management from VMM 2008 R2.

- When you add a vCenter Server, VMM no longer imports, merges and synchronizes the VMware tree structure with VMM. Instead, after you add a vCenter Server, you can add selected ESX servers and hosts to any VMM host group. Therefore, there are fewer issues with synchronization.
- When you import a VMware template to the VMM library, the .vmdk file is no longer copied to the library. Instead, VMM only copies the metadata that is associated with the template. The .vmdk file remains in the ESX datastore. Because of this relationship, you can deploy virtual machines by using the template much more quickly. Also, when you import a VMware template, VMM no longer deletes the source template. It is important to realize that there is now a dependency on the VMware template on the vCenter Server.

    - If you delete the template in vCenter Server, the VMM template will go into a missing state.
    - In vCenter Server, you can convert the template to a virtual machine, make changes, and then convert it back to a template. Because the ID of the template is the same, VMM will mark the template as OK instead of Missing.

  Another behavioral change in VMM is that when you delete a VMware template from the VMM library, it is no longer deleted from the VMware datastore.

- VMM uses HTTPS for all file transfers between ESX hosts and the VMM library. VMM no longer supports Secure File Transfer Protocol (SFTP) for file transfers.
- VMM now supports VMware distributed virtual switch functionality. You must configure distributed virtual switches through vCenter Server.
- Because VMM no longer supports SFTP for file transfers, you do not have to enable root Secure Shell (SSH) access to ESX hosts. Starting with System Center 2012 – Virtual Machine Manager, the use of a virtual machine delegate is not supported.
- VMM no longer automatically creates port groups on ESX hosts for network equivalency. For example, if you deploy a new virtual machine to an ESX host cluster, and you select a virtual network that is not available on all nodes of the cluster, VMM will not automatically create a port group. You must perform all port group configuration in vCenter Server.

VMware Support

For information about the supported versions of vCenter Server and ESX/ESXi hosts, see as follows.

- For System Center 2012 – Virtual Machine Manager or for System Center 2012 SP1 see: System Requirements: VMware ESX Hosts in System Center 2012 and in System Center 2012 SP1.
- For System Center 2012 R2 Virtual Machine Manager see: Preparing your environment for System Center 2012 R2 Virtual Machine Manager.

Supported Features

The following tables shows the VMM and VMware features that are supported when VMM manages ESX hosts through vCenter Server.

Feature	Notes
VMM command	The VMM command shell is common across all hypervisors.

Feature	Notes
shell	
Placement	VMM offers virtual machine placement based on host ratings during the creation, deployment, and migration of VMware virtual machines. This includes concurrent virtual machine deployment during service deployment.
Services	You can deploy VMM services to ESX hosts. **Note:** VMM services use a different model than VMware vApp. Therefore, the two methods can coexist. However, you cannot use VMM to deploy vApps.
Private clouds	You can make ESX host resources available to a private cloud by creating private clouds from host groups where ESX hosts reside, or by creating a private cloud from a VMware resource pool. You can configure quotas for the private cloud and for self-service user roles that apply to the private cloud. **Note:** VMM does not integrate with VMware vCloud.
Dynamic Optimization and Power Optimization	You can use the new Dynamic Optimization features with ESX hosts. For example, VMM can load balance virtual machines on ESX host clusters by using Live Migration. Through Power Optimization, you can configure VMM to turn ESX hosts on and off for power management. **Note:** For power optimization, you can use the Dynamic Optimization feature in VMM or the VMware Dynamic Resource Scheduler.
Migration	Supported VMware transfer types include the following: - Live Migration between hosts within cluster (uses vMotion) - Live Storage Migration (uses Storage vMotion) Supported VMM transfer types include the following: - Network migration to and from the library **Note:** VMware thin provision disks become thick when a disk is migrated to the VMM library. - Network migration between hosts
Maintenance mode	You can place an ESX host that is managed by VMM in and out of maintenance mode by using the VMM console.
Library	You can organize and store VMware virtual machines, .vmdk (VMDK) files, and VMware templates in the VMM library. VMM supports creating new virtual machines from templates and converting stored VMware virtual machines to Hyper-V. **Important:** If you want to use VMDK files that were created in VMware Server or VMware Workstation, note that VMM does not support older VMDK disk types. Supported VMDK disk types include the following: • Regular VMDK files: VMFS and monolithicFlat • VMDK files that are used to access physical disks: vmfsPassthroughRawDeviceMap • Snapshots: vmfssparse

Feature	Notes
	If you want to copy a VMDK file that uses an unsupported disk type to the VMM library, you must use VMware conversion tools such as VMware Virtual Disk Manager to update the disk type to a supported type.
Templates	Supports the creation of templates using .vmdk files that are stored in the library. In this case, all physical files are stored in the VMM library. You can also import templates that are stored on ESX hosts. When you import a template from vCenter Server, VMM only imports template metadata. The .vmdk file is not copied to the VMM library.
Networking	VMM supports both standard and distributed vSwitches and port groups. Be aware that you must perform all vSwitch and port group configuration by using vCenter Server. VMM recognizes and uses existing configured vSwitches and port groups for virtual machine deployment. The new VMM networking management features are supported on ESX hosts, such as the assignment of logical networks, and the assignment of static IP addresses and MAC addresses to Windows-based virtual machines that are running on ESX hosts. **Important:** VMM does not automatically create port groups on VMware ESX hosts. Therefore, for logical networks to work correctly for managed ESX hosts, you must use VMware vCenter Server to configure port groups with the necessary VLANs that correspond to the logical network sites.
Storage	VMM supports and recognizes VMware Paravirtual SCSI (PVSCSI) storage adapters. For example, when you use VMM to create a new virtual machine on an ESX host, you can add a SCSI adapter of type "VMware Paravirtual." **Note:** VMM does not support VMware virtual machines with virtual hard disks that are connected to an integrated drive electronics (IDE) bus. VMM supports VMware thin provision virtual hard disks through the dynamic disk type. Note the following behavior: - If you create and deploy a virtual machine to an ESX host that is configured to use a dynamic disk, the disk is created as a thin provisioned disk. - If a virtual machine uses a thin provisioned disk that was created out of band, VMM displays the disk as a dynamic disk. - If you save a thin provision virtual hard disk to the library, VMM converts the disk to a fixed thick disk. If you then create a virtual machine from the virtual hard disk that is on the library, and deploy it to an ESX host, the disk remains a thick fixed disk. VMM supports the hot add and hot removal of virtual hard disks on VMware virtual machines. **Note:** The new VMM storage automation features are not supported for ESX hosts. All storage must be added to ESX hosts outside VMM.

Feature	Notes
Conversion	Converting a VMware-based virtual machine to a Hyper-V based virtual machine is supported by using the virtual to virtual (V2V) process. Note that VMM does not support VMware virtual machines with virtual hard disks that are connected to an integrated drive electronics (IDE) bus. Therefore, you cannot perform a V2V conversion of a VMware virtual machine that is on an IDE bus. **Note:** You can also perform V2V conversions with Microsoft Virtual Machine Converter (MVMC). For more information, see Microsoft Virtual Machine Converter 3.0.
Performance and Resource Optimization (PRO)	Monitoring and alerting for ESX hosts is possible through VMM with the integration of Operations Manager and PRO.

Additional Support Information

- VMM supports up to 255 GB of RAM for virtual machines that are deployed on ESX/ESXi 4.0 hosts (if you are using System Center 2012 R2VMM Update Rollup 7 or later, this limit also applies to virtual machines on ESXi 5.5 hosts).
- VMM supports up to 8 virtual CPUs (vCPUs) for virtual machines that are deployed on ESX/ESXi 4.0 hosts (if you are using System Center 2012 R2VMM Update Rollup 7 or later, this limit also applies to virtual machines on ESXi 5.5 hosts).
- VMM recognizes VMware fault tolerant virtual machines. In the VMM console, VMM shows only the virtual machine that is designated as the primary on the vCenter Server. If there is a failure, VMM recognizes the new primary.
- Update management through VMM is not supported for ESX hosts. You must use your existing solution to update VMware ESX hosts.
- The conversion of a bare-metal computer to a virtual machine host, and cluster creation through VMM is not supported for ESX hosts.
- The Dynamic Memory feature is not supported on ESX hosts. Dynamic Memory is only supported on Hyper-V hosts that are running an operating system that supports Dynamic Memory.

In This Section

Follow these procedures to manage VMware ESX hosts through VMM.

Procedure	Description
How to Add a VMware vCenter Server to VMM	Describes how to add a VMware vCenter server to VMM management.
How to Add VMware ESX Hosts	Describes how to add ESX and ESXi hosts to VMM

Procedure	Description
to VMM	management.
How to Configure Network Settings on a VMware ESX Host in VMM	Describes how to configure ESX host network settings to support the new logical network feature in VMM.
How to Configure Host BMC Settings in VMM	Describes how to configure Baseboard Management Controller (BMC) settings on a host to support power management through VMM.
How to Import VMware Templates into VMM	Describes how to import a VMware template to the VMM library.
How to Use VMM to Convert VMware Virtual Machines to Hyper-V (V2V)	Describes how to convert a VMware virtual machine to a Hyper-V virtual machine through the virtual-to-virtual (V2V) machine conversion process.

Show: ☑ Inherited ☑ Protected