



**Hewlett Packard**  
Enterprise

# **Managing Mixed Environments with HPE SCOM Management Packs**

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## Overview

HPE OneView for Microsoft System Center is a fully integrated product that unifies the management of physical and virtual IT environments, including servers, storage, enclosures, networking, and software. It combines an integrated set of Hewlett Packard Enterprise extensions with Microsoft System Center to bring native manageability of HPE hardware to Microsoft System Center environments.

HPE OneView for Microsoft System Center can be used in a wide range of environments, including those with multiple operating systems and multiple generations of HPE products. This guide provides a quick reference to using the HPE management components for Microsoft System Center Operations Manager (SCOM) in various configurations.

This guide is intended for use by system integrators and network administrators who are familiar with HPE-branded server and storage system products and Microsoft System Center.

This document is not intended to be a detailed support matrix. Please refer to the “Additional information” section at the end of this document for link to user guides, support matrices, and other documentation.

To learn more about HPE OneView for Microsoft System Center, please visit <http://www.hpe.com/products/ovsc>.

## HPE Management Packs Overview

The HPE management packs for SCOM provide health monitoring of HPE ProLiant and Synergy servers, HPE storage, blade enclosures, and HPE Virtual Connect. State, diagram, and alert views are provided in the SCOM console that provide in depth and summary information for managed devices. Each HPE management pack provides health management for different components.

### HPE OneView Management Pack

The HPE OneView Management Pack monitors health of HPE devices managed by HPE OneView.

- It manages HPE ProLiant and Synergy servers, BladeSystem enclosures, HPE Virtual Connect, and HPE 3PAR storage arrays that are being managed by HPE OneView (see support matrix for details)
- It supports ProLiant servers and BladeSystem enclosures with either HPE OneView Standard licenses (monitored mode) or HPE OneView Advanced licenses (managed mode). The HPE OneView Management Pack is the preferred management pack to use whenever possible. It must be used for HPE Virtual Connect devices that are managed by HPE OneView.
- It must be used for managing HPE Synergy and Gen10 servers
- It does not support HPE BladeSystem C3000 enclosures
- It does not require the use of the HPE Device Monitor Service (DMS)

### HPE ProLiant Server Management Pack

The HPE ProLiant Server Management Pack monitors the health of HPE ProLiant servers running Windows Server.

- It manages using either HPE SNMP agents or HPE WBEM providers
- It supports ProLiant Gen9 and earlier servers
- It can support multiple versions of Windows Server (see support matrix for details)
- It does not require the use of the HPE Device Monitor Service (DMS)
- It does not support HPE Synergy and Gen10 servers

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#### Note

This management pack has been frozen and is only available in HPE OneView for Microsoft System Center 8.2.1 or earlier.

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### HPE ProLiant Linux Management Pack

The HPE ProLiant Linux Management Pack monitors the health of HPE ProLiant servers running Linux.

- It manages using HPE SNMP agents

- It supports ProLiant Gen9 and earlier servers
  - It can support multiple versions of Linux (see support matrix for details)
  - It requires the use of the HPE Device Monitor Service (DMS)
  - It does not support HPE Synergy and Gen10 servers
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**Note**

This management pack has been frozen and is only available in HPE OneView for Microsoft System Center 8.2.1 or earlier.

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**HPE ProLiant VMware Management Pack**

The HPE ProLiant VMware Management Pack monitors the health of HPE ProLiant servers running VMware ESX.

- It manages using HPE SNMP agents
  - It supports ProLiant Gen9 and earlier servers
  - It can support multiple versions of VMware ESX (see support matrix for details)
  - It does not support ProLiant servers running VMware ESXi
  - It requires the use of the HPE Device Monitor Service (DMS)
  - It does not support HPE Synergy and Gen10 servers
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**Note**

This management pack has been frozen and is only available in HPE OneView for Microsoft System Center 8.2.1 or earlier.

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**HPE ProLiant Agentless Management Pack**

The HPE ProLiant Agentless Management Pack monitors the health of HPE ProLiant Gen8 and Gen9 servers via the iLO4 management processor.

- It does not require HPE SNMP agents or HPE WBEM providers
  - It is supported on ProLiant Gen8 and Gen9 servers only
  - It can support any operating system (see support matrix for details)
  - It requires the use of the HPE Device Monitor Service (DMS)
  - Installing the Agentless Management Service (AMS), an optional component provides additional operating system level information
  - It does not support HPE Synergy and Gen10 servers
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**Note**

This management pack has been frozen and is only available in HPE OneView for Microsoft System Center 8.2.1 or earlier.

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**HPE BladeSystem Management Pack**

The HPE BladeSystem Management Pack monitors the health of HPE BladeSystem enclosures.

- It manages the shared infrastructure in the blade enclosures (e.g. fans, power supplies). It does not manage the health of the blade servers in the enclosure (use one of the server management packs for that)
- It is not dependent on the operating systems running on the servers in the enclosure
- It supports BladeSystem C3000 and C7000 enclosures (see support matrix for details)

- It does not support HPE Synergy enclosures
- It requires the use of the HPE Device Monitor Service (DMS)

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**Note**

This management pack has been frozen and is only available in HPE OneView for Microsoft System Center 8.2.1 or earlier.

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## HPE Virtual Connect Management Pack

The HPE Virtual Connect Management Pack monitors the health of HPE Virtual Connect components.

- It manages the logical and physical HPE Virtual Connect components
- It is not dependent on the operating systems running on the servers in the enclosure
- It supports a wide variety of HPE Virtual Connect devices (see support matrix for details)
- It cannot manage HPE Virtual Connect devices that are managed by HPE OneView
- It requires the use of the HPE Device Monitor Service (DMS)

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**Note**

This management pack has been frozen and is only available in HPE OneView for Microsoft System Center 8.2.1 or earlier.

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## HPE Storage Management Pack

The HPE Storage Management Pack monitors health of HPE storage devices.

- It manages HPE Storage products that are not being managed by HPE OneView
- It supports a wide variety of HPE Storage products (see support matrix for details)
- It does not require the use of the HPE Device Monitor Service (DMS)
- It does not require HPE OneView

## Proxy Models

For devices that are not managed directly by SCOM, a proxy model must be used to act as an intermediary between the managed device and SCOM. HPE uses two proxy models – the HPE Device Monitor and SCOM resource pools.

## HPE Device Monitor

The HPE Device Monitor complements and extends System Center Operations Manager (SCOM) by adding monitoring of enclosures and other HPE hardware. It is a Windows service that can be installed on any server or virtual machine (VM) running Windows Server that is managed by SCOM.

The HPE Device Monitor is used with the following HPE management packs:

- HPE BladeSystem Management Pack
- HPE Virtual Connect Management Pack
- HPE ProLiant Linux Management Pack
- HPE ProLiant VMware Management Pack
- HPE ProLiant Agentless Management Pack

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**Note**

The HPE Device Monitor replaces the previous HPE BladeSystem Enclosure Monitor Manager and HPE BladeSystem Enclosure Monitor Service. If you have existing HPE BladeSystem enclosures that are being monitored by the HPE BladeSystem Enclosure

Monitor Service, you can migrate your existing configuration information to use the new HPE Device Monitor. The HPE Device Monitor has been frozen and is only available in HPE OneView for Microsoft System Center 8.2.1 or earlier.

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There are two basic requirements for configuring the HPE Device Monitor Service (DMS).

- Register each managed device (e.g. blade enclosure, agentless server) with an instance of the DMS. This can be done using the HPE Device Monitor Console application or via HPE provided PowerShell cmdlets
- On each managed device, configure the SNMP Trap Destination to point to the server running the DMS

Once the device has been registered with the DMS, the respective management pack will discover each managed device according to the discovery interval (default is 4 hours).

## SCOM Resource Pools

Resource pools are a native SCOM feature that allow multiple SCOM management servers to be pooled together to act as a proxy for managed devices.

SCOM resource pools are used with the following HPE management pack:

- HPE OneView Management Pack

HPE OneView appliances are registered in the SCOM console using the HPE OneView Configuration Dashboard, which is installed automatically as part of the HPE OneView Management Pack.

## Comparison between DMS and Resource Pools

There are several key advantages to using resource pools compared to the HPE Device Monitor. Resource pools have built in scalability and high availability. SCOM will automatically distribute device management across members of the resource pool. If a SCOM management server in a resource pool fails, the devices it was managing are automatically failed over to other members in the resource pool. The HPE Device Monitor does not have built in scalability or high availability. It is possible to have multiple instances of the DMS, but each instance, and the individual managed devices, must be managed manually. Some level of high availability can be achieved by running the DMS in a VM that is part of a failover cluster, but the DMS itself is not a cluster aware service.

It is possible to install the DMS in a virtual machine that is part of a highly available failover cluster to protect DMS from host failure. The DMS is not cluster aware and should not be run as a clustered service. Virtual Machine snapshots can be taken after any devices are added or changed in the DMS. These can be used to restore the full DMS instance. You can also install the DMS in a virtual machine that is part of Hyper-V replica. Another advantage of using SCOM resource pools with the HPE OneView Management Pack is in managing and discovering devices. With the DMS, each device (such as a server, enclosure, or Virtual Connect domain) must be registered individually with the DMS. This can be simplified by using a CSV file and PowerShell scripts, but is still a manual process. With the HPE OneView Management Pack, only the instance of the HPE OneView appliance needs to be registered using the HPE OneView Configuration Dashboard. Once that is done, all devices that are being managed by HPE OneView will be discovered and managed automatically – there is no need to register each one individually.

## General Guidelines

The following set of guidelines will help in deciding how to manage a mixed environment.

### Prevent duplicate monitoring

It is possible that a single device could be managed by multiple management packs. This will result in duplicate events and inventory. Make sure that each device is managed only by a single management pack. All of the HPE management packs can be used in the same SCOM environment simultaneously. However, care must be taken to ensure that duplicate monitoring does not occur, and also that it is understood which device is being managed by which management pack.

### ProLiant Servers

Duplicate monitoring of servers can occur when more than one of the following management packs are being used to monitor server health – HPE ProLiant Server Management Pack (for Windows), HPE ProLiant Agentless Management Pack, or HPE OneView Management Pack. When a ProLiant Gen8 or Gen9 server is running Windows Server, and has the HPE SNMP agents or HPE WBEM providers installed, the HPE ProLiant Server Management Pack (for Windows) will automatically find that server and manage it. If the server has also been registered with the DMS for agentless monitoring, then the HPE ProLiant Agentless Management Pack will also

pick it up. If the server may also be picked up by the HPE OneView Management Pack. If agentless monitoring is desired for that server, create an override for the HPE ProLiant Server Management Pack that excludes the server from discovery, or remove the HPE SNMP agents or WBEM providers.

This situation could also occur with the ProLiant Linux or ProLiant VMware Management Packs. In this case, the server would have been entered twice in the DMS, once for Linux or VMware, and again for agentless. Remove one of the entries for the server in the DMS to prevent this.

When using the HPE OneView Management Pack to monitor server health, there is no way to filter out individual servers. All servers being monitored by an HPE OneView instance will be seen in the HPE OneView Management Pack. To filter out servers running Windows Server, in the HPE ProLiant Server Management Pack (for Windows) create overrides for each of the servers to exclude them from discovery.

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**Note**

The HPE ProLiant Server Management Pack (for Windows) is the only supported way to manage HPE ProLiant G5 or earlier servers.

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**BladeSystem Enclosures**

Duplicate monitoring of blade enclosures could occur when using the HPE BladeSystem Management Pack and the HPE OneView Management Pack. An enclosure would have an entry in the DMS for the HPE BladeSystem Management Pack, but if the enclosure is also managed by HPE OneView, then the HPE OneView Management Pack will also pick it up. Remove the entry for the enclosure in the DMS for the HPE BladeSystem Management Pack to resolve this.

**HPE 3PAR Storage**

Duplicate monitoring of HPE 3PAR Storage arrays could occur when using the HPE Storage Management Pack and the HPE OneView Management Pack. The HPE Storage Management Pack communicates directly with the 3PAR arrays, while the HPE OneView Management Pack receives information from an HPE OneView instance that is managing the 3PAR arrays. Use only one of the management packs for monitoring 3PAR arrays (this can be done by selecting only the management packs you wish to use when importing them into SCOM during installation).

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**Note**

The HPE OneView Management Pack can coexist with the legacy HPE ProLiant Server, HPE ProLiant Linux, HPE Virtual Connect, HPE BladeSystem, and HPE Storage Management Packs. This means that these management packs can manage servers, blade enclosures, HPE Virtual Connect, and HPE Storage that are not being managed by HPE OneView. This may be useful when transitioning to HPE OneView and not all of the servers, blade enclosures, Virtual Connect, or 3PAR arrays have been migrated.

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**Which Management Pack to Use**

The following general guidelines can help decide which management packs to use:

**HPE OneView Management Pack**

- HPE servers (G6 to Gen10), HPE Synergy, BladeSystem enclosures, HPE Virtual Connect, and HPE 3PAR storage arrays that are being managed by HPE OneView
- The HPE OneView Management Pack is the recommended management pack to use whenever possible
- It must be used for managing HPE Synergy and Gen10 servers
- BladeSystem C3000 enclosures are not supported

**HPE ProLiant Server Management Pack**

- Servers running Windows Server (2003/2008/2012/2016)
- It supports HPE ProLiant servers up to Gen9

**HPE ProLiant Linux Management Pack.**

- Servers running Red Hat or SUSE Linux

- It supports HPE ProLiant servers up to Gen9

**HPE ProLiant VMware Management Pack**

- Servers running VMware ESX (not supported with VMware ESXi)
- It supports HPE ProLiant servers up to Gen9

**HPE ProLiant Agentless Management Pack**

- HPE ProLiant Gen8 or Gen9 servers running any OS (e.g. VMware ESXi)

**HPE BladeSystem Management Pack**

- HPE BladeSystem C3000 and C7000 enclosures that are not managed by HPE OneView

**HPE Virtual Connect Management Pack**

- HPE Virtual Connect that is not managed by HPE OneView
- Cannot be used for Virtual Connect managed by HPE OneView

**HPE Storage Management Pack**

- HPE storage devices that are not managed by HPE OneView

**Management Pack Matrices**

**HPE ProLiant G7 and earlier**

HPE Management Pack	Windows Server 2003/2008/2012/2016	VMware ESX (not ESXi)	VMware ESXi	Linux (Red Hat, SUSE)	Uses DMS?
ProLiant Server (Windows) *	Y				
ProLiant Linux *				Y	Y
ProLiant VMware *		Y			Y
HPE OneView (G6/G7 only)	Y	Y		Y	



## HPE ProLiant Gen8 and later

HPE Management Pack	Windows Server 2003/2008/2012/2016	VMware ESX (not ESXi)	VMware ESXi	Linux (Red Hat, SUSE)	Uses DMS?
ProLiant Server (Windows)	Y*				
ProLiant Linux				Y	Y
ProLiant ESX		Y			Y
ProLiant Agentless	Y	Y	Y	Y	Y
HPE OneView	Y	Y	Y*	Y*	

Note\*: HPE Synergy and ProLiant Gen10 servers can only be managed by the HPE OneView Management Pack.

## HPE BladeSystem Enclosures, Storage, and Virtual Connect

HPE Management Pack	HPE OneView Managed	Not HPE OneView Managed	Uses DMS?
BladeSystem (enclosures)	Y	Y**	Y
Virtual Connect		Y**	Y
HPE OneView	Y		
HPE Storage		Y	

Note\*\*: HPE Synergy enclosures and interconnect modules can only be managed by the HPE OneView Management Pack.

## Examples

The following examples show some common configurations.

### Example 1

A combination of Windows and VMware ESXi, blades, Virtual Connect, and not managed by HPE OneView.

- For Windows servers, use the HPE ProLiant Server Management Pack. Alternately use the HPE ProLiant Agentless Management Pack if servers are ProLiant Gen8 or Gen9
- For VMware ESXi servers, use the HPE ProLiant Agentless Management Pack (must be ProLiant Gen8 or Gen9 servers)
- For blade enclosures, use the HPE BladeSystem Management Pack
- For Virtual Connect, use the HPE Virtual Connect Management Pack

### Example 2

A combination of Windows and VMware ESXi, blades, Virtual Connect, and partially managed by HPE OneView (e.g. during migration to HPE OneView).

- For Windows servers, use the HPE ProLiant Server Management Pack. Alternately use the HPE ProLiant Agentless Management Pack if servers are ProLiant Gen8 or Gen9
- For VMware ESXi servers, use the HPE ProLiant Agentless Management Pack (must be ProLiant Gen8 or Gen9 servers)
- Windows and VMware servers that are managed by HPE OneView could also be monitored using the HPE OneView Management Pack. Note that HPE Synergy and ProLiant Gen10 servers must use the HPE OneView Management Pack.
- For blade enclosures not managed by HPE OneView, use the HPE BladeSystem Management Pack

- For blade enclosures managed by HPE OneView, use the HPE OneView Management Pack
- For Virtual Connect not managed by HPE OneView, use the HPE Virtual Connect Management Pack
- For Virtual Connect managed by HPE OneView, use the HPE OneView Management Pack

### **Example 3**

A combination of Windows and VMware ESXi, 3PAR storage, and Synergy servers, enclosures, and interconnects and managed by HPE OneView.

- Use the HPE OneView Management Pack

### **Additional information**

To learn more about HPE OneView for Microsoft System Center, please go to <http://www.hpe.com/products/ovsc>.

User documentation for HPE OneView for Microsoft System Center can be found at <http://www.hpe.com/info/ovsc/docs>.

Detailed support matrix information can be found in the following documents:

- HPE OneView SCOM Integration Kit User Guide
  - For HPE OneView Management Pack
- HPE SCOM Integration Kit User Guide
  - For HPE ProLiant Server, HPE BladeSystem, HPE Virtual Connect, HPE ProLiant Linux, HPE ProLiant VMware, and HPE ProLiant Agentless Management Packs
- HPE Storage Management Pack for System Center User Guide
  - For HPE Storage Management Pack

The HPE OneView SCOM Integration Kit User Guide also contains important information on migrating to the HPE OneView Management Pack.

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