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Enterprise

# Best practices for updating VMware-based HPE ProLiant server firmware and drivers

Using the SPP and the HPE SDR to update  
VMware-based ProLiant Systems

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## Abstract

This paper describes alternatives available for maintaining HPE firmware, driver, and system software components on HPE ProLiant servers and HPE ProLiant server blades in a VMware® environment. We recommend the following best practices for maintaining these components:

- To update HPE firmware components on VMware vSphere® 5 and newer systems, use the Service Pack for ProLiant (SPP). With the SPP, you can use either Smart Update Manager (SUM) or HPE OneView for VMware® vCenter™ to perform updates. The SPP is available at [hpe.com/info/spp](http://hpe.com/info/spp).
- Service Pack for ProLiant (SPP) version 2014.09.0 and newer supports install/update of driver components. With the SPP, you can use Smart Update Manager (SUM) or HPE OneView for vCenter to perform driver install/update. The SPP is available at [hpe.com/info/spp](http://hpe.com/info/spp).
- To update HPE system software components, use either the VMware Update Manager (VUM) or the VMware ESXCLI commands using the software bundles from the HPE Online Depot in the Software Delivery Repository (SDR). The HPE Online Depot is available at [vibsdepot.hpe.com](http://vibsdepot.hpe.com).

The VMware FW and Software Recipe document specifies the versions of firmware, drivers, and software that are recommended for use with VMware vSphere OS releases in conjunction with the Service Pack for ProLiant (SPP). This document is available at [vibsdepot.hpe.com](http://vibsdepot.hpe.com).

## Service Pack for ProLiant (SPP)

The SPP provides HPE ProLiant server and HPE BladeSystem firmware, driver, and system software components for most operating systems. For VMware environments, the SPP provides firmware and, starting with SPP version 2014.09.0, installation and update of driver components. For VMware environments, the SPP does not provide HPE system software components.

For each SPP release, we perform integration testing of all supported components to address inter—dependencies. SPP support is for one calendar year based on SPP release date. The VMware OS support may not align with the SPP support period for each release. Check the SPP Release Notes for details on the list of supported OS versions. The SPP Release Notes are available at [hpe.com/info/spp/docs](http://hpe.com/info/spp/docs).

## SPP VMware components

SPP version 2014.09.0 and later contains two types of components for the VMware environment, smart components to update FW and driver components to install/update drivers. Not all drivers available for VMware are included as driver components in the SPP. Only drivers recommended in the VMware FW and Software Recipe document on VMware vSphere 5 and newer systems are included.

HPE system software components for VMware environments are not contained in the SPP. To deploy HPE system software components, use VUM or VMware ESXCLI commands with the software bundles from the HPE Online Depot.

HPE Online Depot provides system software and driver components. For details, see the “[HPE Online Depot in the Software Delivery Repository \(SDR\)](#)” section of this paper.

To install other drivers and software not included in the SPP or the HPE Online Depot, use VUM or the VMware ESXCLI commands with the VMware software bundles obtained from other sources.

## SPP VMware smart components

With SPP version 2014.02.0 and later, you can perform online updates of most firmware on HPE ProLiant G7 and newer servers, blade servers, and server options in a VMware environment. Online updates allow you to use VMware-based smart components while the VMware operating system is running. Typically, you need to reboot the server only once in online mode.

If you cannot find a specific VMware online firmware smart component in the SPP, it means that the particular online smart component is not available and you must use the SPP in offline mode to do the update. Offline mode boots the server into a special environment and uses offline firmware smart components. Offline mode requires more than one reboot during the update. Hot fixes that are not yet included in the SPP are identified in the VMware FW and Software Recipe. Hot fixes and other off-cycle releases of smart components need to be applied in addition to the smart components in the SPP.

## SPP VMware driver components

With SPP version 2014.09.0 and later, you can perform install/updates of drivers recommended in the VMware FW and Software Recipe in a VMware environment. SPP VMware driver components are a zip that contains SPP information and the released VMware driver bundles available on the [HPE Online Depot](#) and [vmware.com](#).

If you cannot find a specific SPP VMware driver component in the SPP, it means that the particular component is not available. In this case, you must obtain the VMware driver bundle from another source and use VUM or the VMware ESXCLI commands to install it.

Hot fixes that are not yet included in the SPP are identified in the VMware FW and Software Recipe. Hot fixes and other off-cycle releases of driver components need to be applied in addition to the components in the SPP.

To see the full list of SPP VMware driver components for the VMware OS releases, see the SPP Release Notes and Supplement Release Notes at: [hpe.com/info/spp/docs](http://hpe.com/info/spp/docs).

## Driver and online firmware update requirements

To perform driver and online firmware updates, your VMware environment must meet the following requirements:

- There must be a network connection between the system running SUM or HPE OneView for vCenter and the VMware® ESXi™ host receiving the updates.
- SUM and HPE OneView for vCenter must have login credentials with read and write permissions.
- Each component may have additional requirements on drivers or other software to be installed on the ESXi host.

The HPE Custom image contains all the necessary drivers and software.

To perform online firmware updates, your VMware environment must also meet the following requirements:

- The HPE CIM Providers (HPE Insight Management WBEM Providers) must be running on the ESXi host. HPE CIM Providers (HPE Insight Management WBEM Providers) are available in the following deliverables:
  - The HPE Custom image, which is available at [hpe.com/info/esxidownload](http://hpe.com/info/esxidownload)
  - The HPE ESXi Offline Bundle, which is available at [hpe.com/info/esxidownload](http://hpe.com/info/esxidownload) or from the HPE Online Depot at [vibsdepot.hpe.com](http://vibsdepot.hpe.com)

## Driver and online firmware deployment options

The SPP driver and online firmware smart components for the VMware OS can be deployed using either SUM or HPE OneView for vCenter.

### Using SUM

The SPP includes the SUM installation tool.

Benefits of using SUM in the VMware environment include:

- SUM has knowledge of inter-component firmware and driver dependencies. With it, you can deploy drivers and firmware updates to a single server or one-to-many servers and network-based targets.
- SUM gathers information about the installed firmware and drivers, and then suggests actions for installing or updating based on the available SPP components.
- SUM lets you choose which components to update. You can update all components or only those that you select.

SUM deploys drivers and firmware updates to servers running a supported VMware operating system in online-remote mode. In online-remote mode, SUM runs on a supported Linux® or Windows® system and communicates with the server as a network-based (remote) target.

For details and instructions on using SUM, see SUM documentation at [hpe.com/info/smartupdate/docs](http://hpe.com/info/smartupdate/docs).

## Using HPE OneView for vCenter

HPE OneView for vCenter is a single, integrated application for managing ProLiant servers and HPE storage systems running VMware. HPE OneView for vCenter provides firmware inventory and performs driver and online firmware updates for one or more VMware hosts using SUM and the SPP.

For information on how to use HPE OneView for vCenter to gather firmware inventory and perform driver and online firmware updates, see the HPE OneView for vCenter information at [hpe.com/info/ovvcenter](http://hpe.com/info/ovvcenter).

## Using firmware smart components directly

We do not recommend using firmware smart components directly on the ESXi host. To do so requires enablement of the Direct Console User Interface. It also requires an understanding of all the interdependencies between the specific versions of firmware and specific installation order requirements. However, for the very special case of smart components that are not supported with SUM, this method can be used.

If you must use firmware smart components directly on the ESXi host, perform the following steps:

1. Enable the Secure Shell (SSH) on the ESXi host through the Direct Console User Interface (DCUI).
2. Copy the smart component to a local directory on the ESXi host.
3. Log in to the ESXi host.
4. Manually execute the smart component with desired options.

Starting in SPP version 2015.06.00, the firmware smart components are no longer a `cpxxxx.scexe`, they are a `cpxxxx.zip`. Thus, the user can no longer directly execute the component. The user must first unzip the component and then manually execute `cpxxxx.vmexe` on the ESXi host. `cpxxxx.vmexe` has exactly the same options and execution behavior as the previous `cpxxxx.scexe`.

## Using SPP VMware driver components directly

The SPP VMware driver components are contained in a zip file of the released VMware bundle for the driver and SPP information. You can just unzip the SPP VMware driver component to retrieve the released VMware bundle and use it as if you obtained the bundle directly from [vmware.com](http://vmware.com) or the [HPE Online Depot](http://hpe.com).

## HPE Online Depot in the Software Delivery Repository (SDR)

The SDR provides access to various software products for your use. The HPE Online Depot, also known as the vSphere Installation Bundles (VIBs) depot, is the VMware part of the SDR.

In March 2015, the HPE Online Depot was revamped and a new Getting Started page was added to help users get the most out of using the HPE Online Depot.

HPE Online Depot is a web-based repository that hosts individual bundles that provide HPE value-add software, and all the necessary drivers for ProLiant servers. The HPE Online Depot is VUM compliant and works with VUM and the ESXCLI commands to update software and drivers. The HPE Online Depot includes the "HPE ProLiant server and option firmware and driver support recipe" that specifies the versions of firmware and software that are recommended for use with VMware in conjunction with the SPP.

The HPE Online Depot does not contain VMware OS releases or patches and it does not contain all the drivers and software available for VMware. Those are available on [vmware.com](http://vmware.com).

To deploy driver or HPE software updates in VMware environments, use the VUM or VMware ESXCLI commands with the driver and software bundles from the HPE Online Depot.

For information on the bundles in the HPE Online Depot and how to use them to deploy driver and software updates, see the white paper [Deploying and updating VMware vSphere on HPE ProLiant servers](#).

The HPE Online Depot is available at [vibsdepot.hpe.com](http://vibsdepot.hpe.com).

**Resources, contacts, or additional links**

HPE Systems and Server Software Management (HPE Smart Update: Server Firmware and Driver Updates)

[hpe.com/info/smartupdate](http://hpe.com/info/smartupdate)

Service Pack for ProLiant

[hpe.com/info/spp](http://hpe.com/info/spp)

Service Pack for ProLiant Download

[hpe.com/servers/spp/download](http://hpe.com/servers/spp/download)

Service Pack for ProLiant Information Library

[hpe.com/info/spp/docs](http://hpe.com/info/spp/docs)

Smart Update Manager Information Library

[hpe.com/info/smartupdate/docs](http://hpe.com/info/smartupdate/docs)

VMware vSphere on HPE ProLiant Information Library

[hpe.com/info/vmware/proliant-docs](http://hpe.com/info/vmware/proliant-docs)

HPE Online Depot in the Software Delivery Repository

[vibsdepot.hpe.com](http://vibsdepot.hpe.com)

HPE OneView for vCenter

[hpe.com/info/ovvcenter](http://hpe.com/info/ovvcenter)

HPE Virtualization with VMware

[hpe.com/info/vmware/partners](http://hpe.com/info/vmware/partners)



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