Hewlett Packard Enterprise

HPE VMware Upgrade Pack 1.4.1.1 Release Notes

June 2021

Legal and notice information

Document History:

Released	Description
June 2021	VUP 1.4.1.1

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Overview

The HPE VMware Upgrade Pack (VUP) 1.4.1.1 is a subset of the Service Pack for ProLiant that only supports ESXi 7.0 U1 on Gen10 and newer servers.

The HPE VMware Upgrade Pack (VUP) 1.4.1.1 is a comprehensive systems software and firmware update solution, which is delivered as a single ISO image. This solution uses Smart Update Manager (SUM) as the deployment tool and is tested on HPE ProLiant Gen10 and newer servers as defined in the Server Support Matrix.

VUP 1.4.1.1 replaces VUP 1.4.1.

The HPE VUP can be used as an SPP with HPE VMware Life Cycle Manager (vLCM) Plug-in Hardware Support Modules (HSM).

- HPE iLO Amplifier Pack HSM
- HPE OneView HSM

For a full list of HPE VUP Documentation, please review the HPE VUP Documentation.

Documentation	Description
Release Notes	Release notes for this HPE VUP, containing important notes and known issues.
Component Release Notes	Release Notes for each component contained in this HPE VUP, containing Fixes, Enhancements and important notes for each component contained in the HPE VUP.
Server Support Matrix	Matrix of HPE servers supported on each VMware OS release.

Summary of Changes

Important Notes

Includes updated bootloader to address the UEFI Secure Boot Evasion Vulnerabilities. For more information see: https://www.hpe.com/us/en/services/security-vulnerability.html.

The difference between 1.4.1.1 and 1.4.1 is the replacement of the offline version of the iLO firmware update component to match the firmware version of iLO firmware in the online firmware update component.

When using HPE OneView prior to version 5.00.00 and the HPE VUP 1.1A or later, an error may be seen during FW update of iLO5. For additional information, please review CA a00094676en_us.

The HPE VUP does not contain Synergy specific components. Information on the Synergy custom SPP is available at:

- HPE Synergy Software Releases - Overview
- VMware OS Support Tool for HPE Synergy

HPE StoreOnce Customers – Installation of the HPE VUP can cause problems on StoreOnce systems. Please go to the HPE Support Center to find the appropriate StoreOnce update.

NOTE: Products sold prior to the November 1, 2015 separation of Hewlett-Packard Company into Hewlett Packard Enterprise Company and HP Inc. may have older product names and model numbers that differ from current models.

Enhancements

The 2021.05.0 SPP Production release contains components supporting the ProLiant, Apollo and Blades Gen9, Gen10 and Gen10 Plus server platforms and options. This HPE VUP is a maintenance release based on the 2021.05.0 SPP and contains updated firmware, software and driver support for:

- VMware ESXi 7.0 U1 for Gen10 and newer servers

Online firmware update for Marvell adapters supported by the qlfe3, qlfe3i, qcnic, qlfe3f, qedf and qedi drivers and Intel adapters supported by the igbn, ixgben and i40en drivers requires the drivers included in the VUP 1.4.1.1 and the May 2021 HPE Custom Image for ESXi 7.0 U1 (701.0.0.10.7.0) or newer.

For a complete list of components on the ISO, see the HPE VUP Contents Report on the ISO or the HPE VUP Documentation.

Support Removed

- None

Supported Operating Systems

The following operating systems are supported for system software and firmware:

- VMware ESXi 7.0 U1

For more information on HPE Operating Systems and Virtualization Software Support for ProLiant Servers, please visit our OS Support Site.

Prerequisites

Component Prerequisites

To determine prerequisite information, check the individual components.

SUM Prerequisites

The most current prerequisites for SUM can be found at the SUM documentation page https://www.hpe.com/servers/hpsum/documentation.

Limitations

Known Limitations

The following is a select list of known issues and limitations relating to the smart components and SUM version delivered with this HPE VUP.

Integrated Lights-Out (iLO) Repository update for components updateable by the Unified Extensible Firmware Interface (UEFI) do not install, if the "Reboot" Parameter in Smart Update Manager (SUM) is set to "Never." See this Customer Advisory for more details.

While performing iLO5 updates on Linux OS, the user may see multiple Windows firmware components listed for installation. This is expected behavior.

Drivers and/or enablement kits must be installed prior to detecting and updating some hardware and firmware - SUM may need to be run twice for all firmware components to be presented for an installation.

Drivers and/or enablement kits must be installed prior to detecting and updating some hardware and firmware. There are several scenarios when SUM may need to be run twice for all firmware components to be presented for installation. This is due to a requirement that drivers are needed in order for SUM to discover some hardware and thus the needed firmware. After the drivers are installed for the first time and the system rebooted, SUM needs to be run again for all of the firmware components to be presented for installation.

The following HPE Mellanox adapters support InfiniBand mode only:

- HPE Apollo InfiniBand EDR 100Gb 2-port 840z Mezzanine FIO Adapter (HPE Part Number: 843400-B21)
- HPE Apollo InfiniBand EDR 100Gb 2-port 841z Mezzanine Adapter (HPE Part Number: 872723-B21)
- HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter (HPE Part Number: 872725-B21)

Drivers supporting InfiniBand mode of operation are not distributed via the HPE VUP. Mellanox drivers included in HPE VUP support “Ethernet + RoCE” mode only and have to be used only with those adapters supporting Ethernet mode of operation.

Download & Deployment

The HPE VUP can be downloaded from the HPE VUP Download page, which requires HPE Passport login.

To ensure the integrity of your download, HPE recommends verifying your results with the following SHA-256 Checksum values:

```
ab860d5bc24ca3c6d51b48db34f00de1a5fad09c193d6525cba7351286102fef    SPP-VUP1411.2021_0614.9.iso
a2ba107c3e8da4ebfa2a8ddc820b4dbd94ca1e67228db80facf17ec6553720e2    SPP-VUP1411.2021_0614.9.iso.sha2sum
```

HPE VUP Download Page (https://www.hpe.com/global/swpublishing/MTX-64dd56ccb3ef4c8bbd5d51e62f)

The HPE VUP Download page enables downloading through the HPE My License Portal.

Installation

There are two methods for using the VMware Upgrade Pack to update your ProLiant servers: Online mode Remote Update and Offline mode.
Online mode Remote Update- Runs on Windows or Linux hosted Operating System to remotely update client Operating system.

- Interactive mode - Follow the onscreen steps to update firmware components.
  To initiate deployment in interactive mode, run the launch_sum.bat (windows) or launch_sum.sh (Linux) script which is found in the root of the .iso image through client.

Offline mode - Server is booted to the .iso image

- Interactive mode - Follow the onscreen steps to update firmware components.
- Automatic mode - Firmware components will be updated without interaction. Automatic mode will by default run firmware update without any user interaction after sitting 10 seconds at the menu screen when an HPE VUP .iso image is used to boot the server.

Installation Instructions

Follow these steps to install the components found on this HPE VUP:

1. Download the HPE VUP 1.4.1.1 .iso file from the HPE VUP download page: https://www.hpe.com/global/swpublishing/MTX-64dd56ccb3ef4c8bbd5d51e62f
2. Determine how to access the data on the ISO – bootable USB key, mounted ISO, etc. Use the appropriate tool to obtain the ISO in the desired format.
3. Determine how to initiate deployment to the targets using the HPE VUP – Offline mode or Online mode:
   a Online mode - Runs on a Windows® or Linux hosted operating system
   b Offline mode - Server boots from the HPE VUP ISO (Bootable ISO only)
      i Automatic mode - Firmware components update without interaction
      ii Interactive mode - Onscreen instructions guide the user to update firmware components
4. Initiate deployment.

To initiate deployment in **online mode**:

- From the HPE VUP folder:
  - Windows: launch_sum.bat
  - Linux: ./launch_sum

- For VMware hosts, select the host to update as a remote target. Online firmware update on a Gen10 VMware host requires the iSUT for ESXi software to be installed on the VMware host.

- To review the EULA, locate README.html which is found in the root of the ISO.

For more information, see the SUM User Guide and HPE ProLiant Best Practices Implementation Guide. https://www.hpe.com/servers/SUM/documentation

To initiate deployment in **Offline mode**:

- Boot the server to the HPE VUP using one of the supported methods including mounting the ISO or using a bootable USB key.
- Select either Automatic mode or Interactive mode.
  - If Automatic mode is selected, the firmware will be automatically updated on the server without any further interaction.
  - If Interactive mode is selected, follow the instructions on the screen.
- Select the Firmware Update option on the screen to start SUM

Additional Information for using the HPE VUP on VMware Operating Systems

The HPE VUP can deploy drivers and firmware to a Gen10 system running a supported VMware operating system in an online mode. Drivers are also available at Software Delivery Repository - vibsdepot.

Additional Resources

Using a PXE Server to Deploy Components from the full HPE VUP ISO over a network

Follow these steps to use a PXE server to deploy components from the full HPE VUP ISO over a network.

⚠ The files needed to configure the menu system for use with a 'pxe' server can be found in the PXE directory on the full HPE VUP ISO.

Prerequisites

The following is required before proceeding with the configuration:

- The user must have a good working knowledge of PXE and TFTP.
- A network with a DHCP server on it.
- A TFTP server configured on the same network as the DHCP server.
- A network file server hosting the ISO images that can be accessed by a PXE booted system.
- Either PXELINUX (http://syslinux.zytor.com/wiki/index.php/PXELINUX) [For legacy boot mode] or GRUB2 (https://www.gnu.org/software/grub/) [For UEFI and legacy boot mode]

The use of a Linux TFTP server and the TFTP package http://www.kernel.org/pub/software/network/tftp/ is assumed. Other TFTP servers should work similarly.

Setup

Before proceeding with the configuration, ensure that the TFTP server as well as the PXELINUX or GRUB2 configuration are setup and configured properly. ELILO (http://sourceforge.net/projects/elilo/files/) may be used also. GRUB2 is recommended for UEFI boot mode, legacy boot mode, or mixed environments where both legacy and UEFI boot mode support are required.

To set up PXE boot for the HPE VUP:

1. Copy the HPE VUP ISO image to the network file system, and note its location. NFS and Windows® file shares as well as HTTP connections are supported.
2. For this example, the NFS path to the ISO image used is 192.168.0.99/path/to/VUP/image/(VUPfilename).iso. Test the network file system to ensure that it is accessible before proceeding.
3. The /pxe directory of the ISO image will need to be accessed, either by burning the ISO image, mounting the ISO image, or extracting it using a third-party tool.
4. Copy all the files from the /pxe directory of the ISO image to the TFTP server so that they are accessible by the TFTP software. See important instructions and information in the /pxe/README.txt file (for legacy boot mode PXELINUX configuration).

Configuring GRUB2

Follow these steps to configure GRUB2:

1. Run the command grub2-mknetdir --net-directory=DIR where DIR is the root of the TFTP server.
2. Configure DHCP using the helpful output of the grub2-mknetdir command above (arch = 00:07 for UEFI boot mode and arch = 00:00 for legacy boot mode).
3. Edit the grub.cfg files on the TFTP server to set the appropriate paths to the kernel vmlinuz image file and the initial ramdisk initrd.img image file which were copied to the TFTP server from the HPE VUP ISO /pxe directory.

Configuring ELILO

Follow these steps to configure ELILO:

1. Add an EFI folder on the TFTP server which contains bootx64.efi, elilomenu.msg, and elilo.conf.
2. Add details in elilo.conf as it is given for configuring pxelinux.cfg (see below).
3. Change the DHCP configuration as given below:

```
if option arch = 00:07 {
        filename "pxelinux/bootx64.efi";
} else {
        filename "pxelinux.0";
}
```

Configuring PXELINUX

Follow these steps to configure PXELINUX:

1. Using the isolinux.cfg file from the /system/ directory of the ISO as a guide, copy the labeled targets to the PXELINUX configuration file. The entire file does not need to be included:

   label sos

   MENU LABEL Automatic Firmware Update Version 2020.03.0

   kernel vmlinuz

   append initrd=initrd.img media=cdrom root=/dev/ram0 splash quiet hp_fibre cdcache showopts TYPE=AUTOMATIC AUTOPOWEROFFONSUCCESS=no AUTOREBOOTONSUCCESS=yes

   label vsos

   MENU LABEL Interactive Firmware Update Version 2020.03.0

   kernel vmlinuz

   append initrd=initrd.img media=cdrom root=/dev/ram0 splash quiet hp_fibre cdcache showopts TYPE=MANUAL AUTOPOWEROFFONSUCCESS=no

   label sos_poweroff

   MENU HIDE Automatic & POWEROFF Firmware Update Version 2020.03.0

   kernel vmlinuz

   append initrd=initrd.img media=cdrom root=/dev/ram0 splash quiet hp_fibre cdcache showopts TYPE=AUTOMATIC hp_poweroff

   ⚠ The paths to files on the TFTP server are vmlinuz and initrd.img. They must be modified to include any directories or naming conventions that are on the TFTP server.

2. Replace “media=cdrom” with “media=net” on the append line
3. Specify the ISO image path. For the PXE booted server to find the ISO Image, add the ISO Image path to the append line in the PXELINUX configuration file. Add the following arguments:

   iso1=nfs://192.168.0.99/path/to/VUP/image/(VUPfilename).iso

   iso1mnt=/mnt/bootdevice

The iso1 parameter helps the PXE booted HPE VUP locate the ISO image. The iso1mnt parameter tells the PXE booted HPE VUP where the iso1 image must be mounted.

The final configuration file must be similar to the following example:

label sos

MENU LABEL Automatic Firmware Update Version 2020.03.0

kernel vmlinuz

append initrd=initrd.img media=net root=/dev/ram0 splash quiet hp_fibre showopts TYPE=AUTOMATIC AUTOPOWEROFFONSUCCESS=no AUTOREBOOTONSUCCESS=yes iso1=nfs://192.168.0.99:/path/to/VUP/image/(VUPfilename).iso

iso1mnt=/mnt/bootdevice

label vsos

MENU LABEL Interactive Firmware Update Version 2020.03.0

kernel vmlinuz

append initrd=initrd.img media=net root=/dev/ram0 splash quiet hp_fibre showopts TYPE=MANUAL AUTOPOWEROFFONSUCCESS=no iso1=nfs:// 192.168.0.99:/path/to/VUP/image/(VUPfilename).iso

iso1mnt=/mnt/bootdevice

label sos_poweroff

MENU HIDE Automatic & POWEROFF Firmware Update Version 2020.03.0

kernel vmlinuz

append initrd=initrd.img media=net root=/dev/ram0 splash quiet hp_fibre showopts TYPE=AUTOMATIC hp_poweroff iso1=nfs://192.168.0.99:/path/to/VUP/image/(VUPfilename).iso

iso1mnt=/mnt/bootdevice

Additional ISO images can be added by specifying the additional iso# and iso#mnt arguments, for example, iso2=/path/to/iso2.iso iso2mnt=/mnt/iso2.

Supported network file system protocols

The following network file system protocols are supported for use with PXE booting:

NFS:

iso1=nfs://192.168.0.99/path/to/VUP/image/(VUPfilename).iso

iso*1mnt=/mnt/bootdevice*

NFS volumes are mounted with the following options:

- -o ro
- nolock

The mount options can be explicitly set with the iso#opts parameter

iso1opts="rsize=32768,ro,nolock"

Windows® operating systems:

iso1=cifs://192.168.0.99/share/path/to/VUP/image/ (VUPfilename).iso

iso1mnt=/mnt/bootdevice

Windows® operating systems with login credentials:

iso1=cifs://user:password@192.168.0.99/share/path/to/VUP/image/(VUPfilename).iso
iso1mnt=/mnt/bootdevice

HTTP:

iso1=http://192.168.0.99/path/to/VUP/image/(VUPfilename).iso

iso1mnt=/mnt/bootdevice

Once these steps have been completed, the HPE VUP components are ready to be deployed using the PXE boot functionality.

Common Abbreviations

Abbreviations	Name
AMS	Agentless Management Service
CNA	Converged Network Adapter
CNU	Converged Network Utility
HBA	Host Bus Adapter
iLO	Integrated Lights-Out
MSB	Maintenance Supplement Bundle
OA	Onboard Administrator
RHEL	Red Hat Enterprise Linux
SIM	Systems Insight Manager
SLES	SUSE Linux Enterprise Server
SPP	Service Pack for ProLiant
SUT	Smart Update Tool
SUM	Smart Update Manager
UEFI	Unified Extensible Firmware Interface
vLCM	VMware LifeCycle Manager
VUM	VMware Upgrade Manager
VUP	VMware Upgrade Pack