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## Software update of SIMATIC Virtualization as a Service (SIVaaS) systems

<https://support.industry.siemens.com/cs/ww/en/view/109478951>

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# 1 Introduction

This document contains information on the software update of a virtualization system implemented with "SIMATIC Virtualization as a Service".

The software update is carried out in the following steps:

- Update of thin clients
  - Adjustment of settings
  - VMware vSphere Client
  - Client Integration Plugin
  - ILO Remote Console
- Virtualization server update
  - Firmware
  - VMware vSphere ESXi (Hypervisor)
- Updating of the virtual machine software.

## Validity

This document applies to the following products:

"SIMATIC Virtualization as a Service" as of V1.0

## 2 Creating a backup

### Backup of the virtual machines

Before starting the upgrade, make a complete backup of your data. The current state of a virtual machine can be exported to the OVF format.

You can find information about this in the manual on the supplied data medium

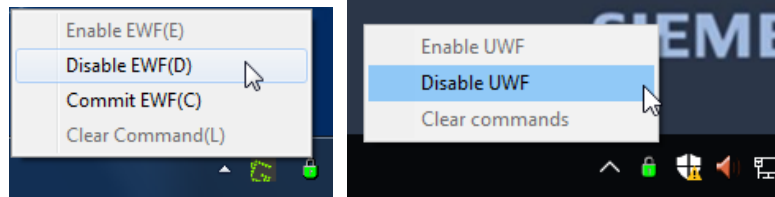
## 3 Updating the Thin Clients

### 3.1 Disabling the write protection

In order to preserve any changes made to the system settings after the restart, the write protection of the thin clients must be deactivated. This requires administrator rights

To deactivate the Thin Client write protection, proceed as follows:

1. Log on as Administrator.
2. Right-click on the "lock" icon in the system tray and select "Disable EWF (D)" (EWF = Enhanced Write Filter) or "Disable UWF" (UWF = Unified Write Filter). This deactivates the write protection of the HP Thin Client.

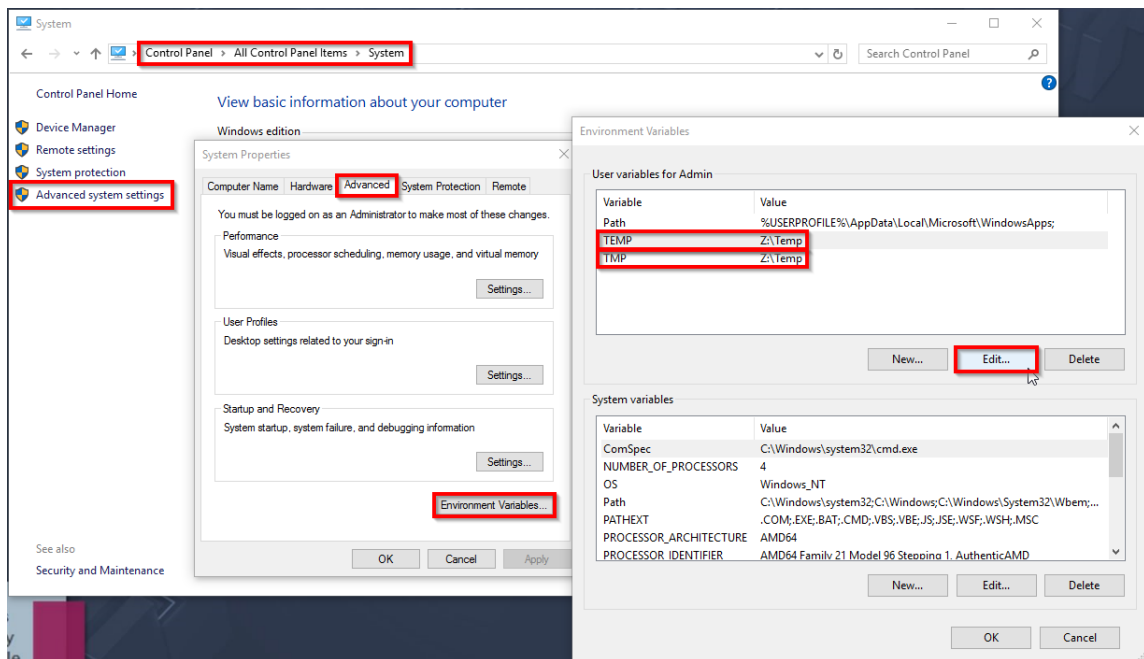


## 3.2 Changing the swap directory

The swap directory (TEMP or TMP) is set up on a RAM disk whose size is insufficient for unpacking the VMware vSphere Client software during installation. For this reason, the directories for the installation must be placed on the C partition.

Proceed as follows to change the directories for the installation:

1. Open the "Environment Variables" dialog via "Control Panel > System > Advanced System > Environment Variables".
2. Click on the "Edit" button and change the paths as follows:
  - Z:\TEMP > C:\TEMP
  - Z:\TMP > C:\TMP



### 3.3 Downloading the installation file to update the "VMware vSphere Client" application

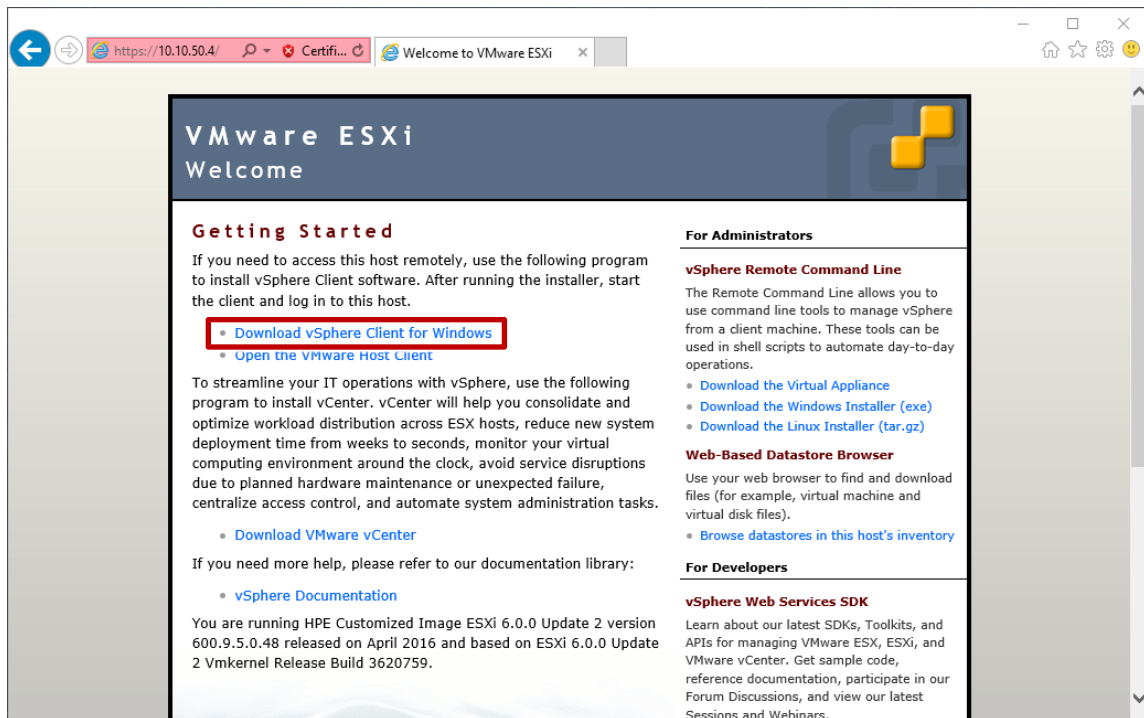
To download a recent installation file of the VMware vSphere Client application, follow these steps:

1. Open Internet Explorer and enter the IP address of your ESXi server as the destination.
2. Confirm that you acknowledge the certificate of the server. The server's welcome page is displayed.
3. Select "Download vSphere Client for Windows" to download the installation file.

#### Note

The version of the VMware vSphere Client application must be the same as the installed ESXi version.

4. If the thin client does not have an Internet connection, you can copy the link and download the installation file from another device connected to the Internet.



### 3.4 Installing the "VMware vSphere Client application"

1. Run the application installation file.  
The destination folder for the installation must be an uncompressed folder on the C:\ partition. To do this, as suggested by the system, create a new folder under "C:\Program Files (x86)\VMware\Infrastructure" and remove the compression from the folder properties.
2. Follow the instructions of the installation wizard.

### 3.5 Installation of the "Client Integration Plugin"

For a description of how to install the Client Integration Plugin, see:

[https://docs.vmware.com/en/VMware-vSphere/6.0/com.vmware.vsphere.vm\\_admin.doc/GUID-3FC8F86B-7F4A-450C-9D1F-0275E403F71C.html](https://docs.vmware.com/en/VMware-vSphere/6.0/com.vmware.vsphere.vm_admin.doc/GUID-3FC8F86B-7F4A-450C-9D1F-0275E403F71C.html)

### 3.6 Installation or update of the application "Integrated Remote Console"

If you want to use HPE iLO to administer the server, we recommend that you install the HP Lights-Out Console.

[http://h20564.www2.hp.com/hpsc/swd/public/detail?swItemId=MTX\\_4f842ceb31cf48d392e22705a8](http://h20564.www2.hp.com/hpsc/swd/public/detail?swItemId=MTX_4f842ceb31cf48d392e22705a8)

### 3.7 Resetting to the defaults

After installation, the swap directories must, as described in section 3.2, be placed back in the Z:\ partition.

Proceed analogously to the steps described in section 3.2.

### 3.8 Activate write protection

After the installation is finished and the swap directories are reset, the changes to the system are completed.

3. To enable write protection, follow the procedure in section **Fehler! Verweisquelle konnte nicht gefunden werden.** and in this case, select the option "EWF(E)"/"Enable UWF".
4. Then restart the Thin Client



# 4 Virtualization server update

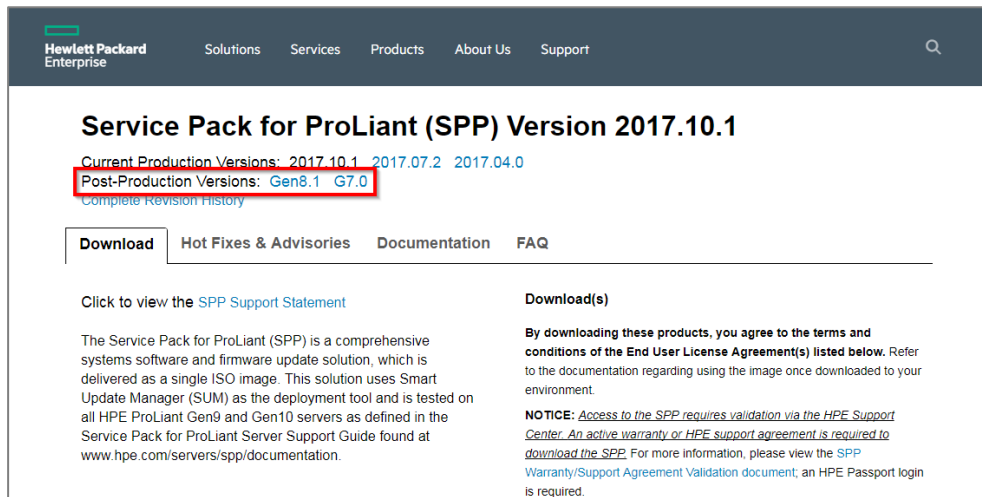
## 4.1 Updating the firmware

### Introduction

The firmware of the virtualization server should be kept up to date. The following section describes how to obtain and install the latest firmware.

### Downloading the installation file to update the firmware

1. To update the firmware, you need the latest "HP Service Pack for ProLiant". To download this, click on the following link:  
[http://h17007.www1.hp.com/us/en/enterprise/servers/products/service\\_pack/spp/index.aspx](http://h17007.www1.hp.com/us/en/enterprise/servers/products/service_pack/spp/index.aspx)  
 The download page of the HP Service Pack for ProLiant (SPP) opens.
2. If your server belongs to generation 8, click on the corresponding post-production version at the top of the download page.



3. In the "SPP ISO Image" section, click the "Service Pack for ProLiant" link to request the entire service pack.



The description of the service pack (SSP) is displayed.

4. Click on "Obtain software".

**Drivers & software**

Drivers & software SGI product documentation and software downloads are currently being migrated, please visit the [SGI portal](#) for your SGI documentation and software needs during this migration period.

**Service Pack for ProLiant**

By downloading, you agree to the terms and conditions of the [Hewlett Packard Enterprise Software License Agreement](#).

**Note:** Some software requires a valid warranty, current Hewlett Packard Enterprise support contract, or a license fee.

Type: Application (Entitlement Required) - System Management  
Version: 2017.10.1(31 Oct 2017)  
Operating System(s): SUSE Linux Enterprise Server 11 (AMD64/EM64T)  
Red Hat Enterprise Linux 6 Server (x86-64)  
SUSE Linux Enterprise Server 12  
Red Hat Enterprise Linux 7 Server  
Microsoft Windows Server 2012  
Microsoft Windows Server 2012 Essentials  
Microsoft Windows Server 2012 R2  
VMware vSphere 6.0  
Microsoft Windows Server 2016  
VMware vSphere 6.5

**Obtain software**

Description Enhancements Installation Instructions Release Notes Fixes Important Revision History

5. Click on the link "Sign-in now".  
The log-in dialog is opened.

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**Sign in**

Sign in using HPE Passport ?

Required \*

User ID \*

Your user ID may be your email. Forgot User ID

Password \*

Forgot Password

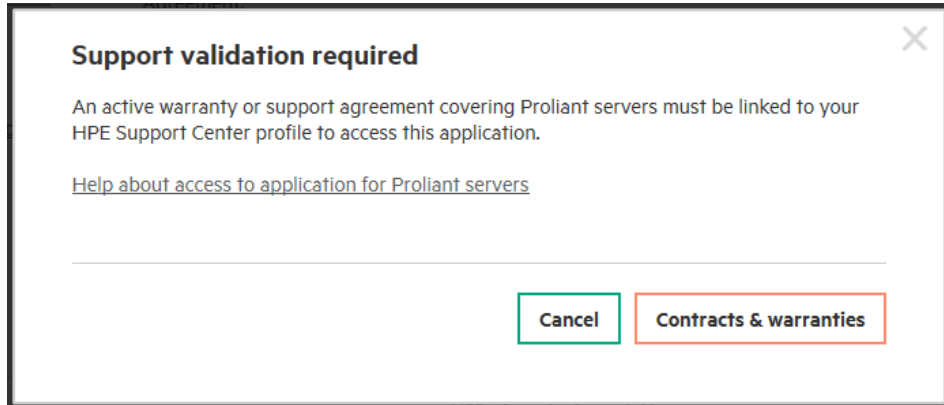
Remember me on this computer

[Create an account](#) [Sign in](#)

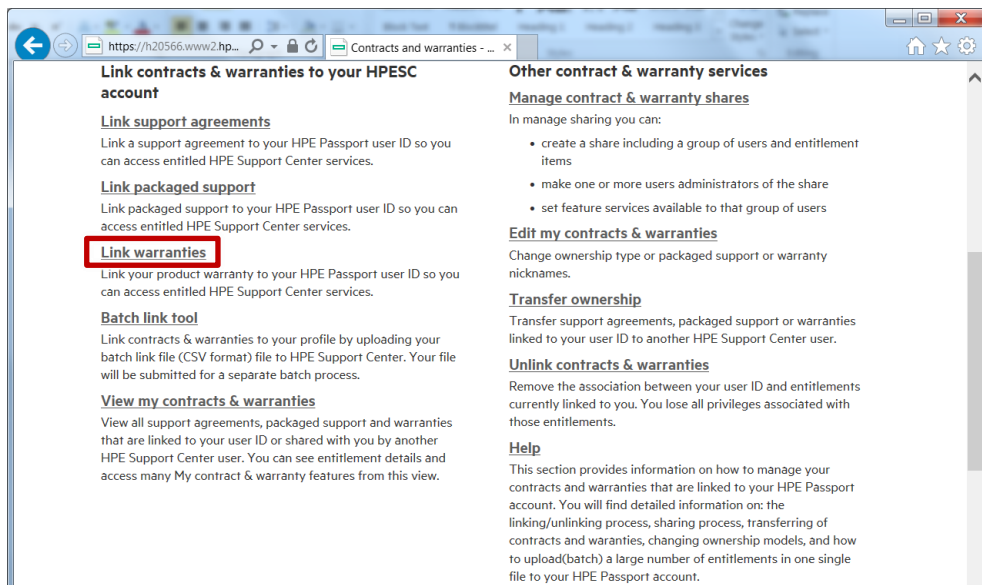
[HPE Passport is secure ?](#)

6. If you are not yet registered with HP, click "Create an account" and create a user account. This is necessary to download and manage the installation file.
7. If you have an HP user account, log in to the HP website accordingly. To prove that you have permission to download the installation file, you must enter your virtualization server in your HP user account.

- Repeat steps 1 and 2 (if necessary). Click on "Obtain software" again. Confirm the dialog by clicking on "Contracts & warranties".



- Click on "Link warranties".



## 4 Virtualization server update

10. Enter the serial number and product number of your virtualization server and confirm the entry.

The product number of the generation 9 server is 719064-B21. The product number of the generation 8 server is 653200-B21.

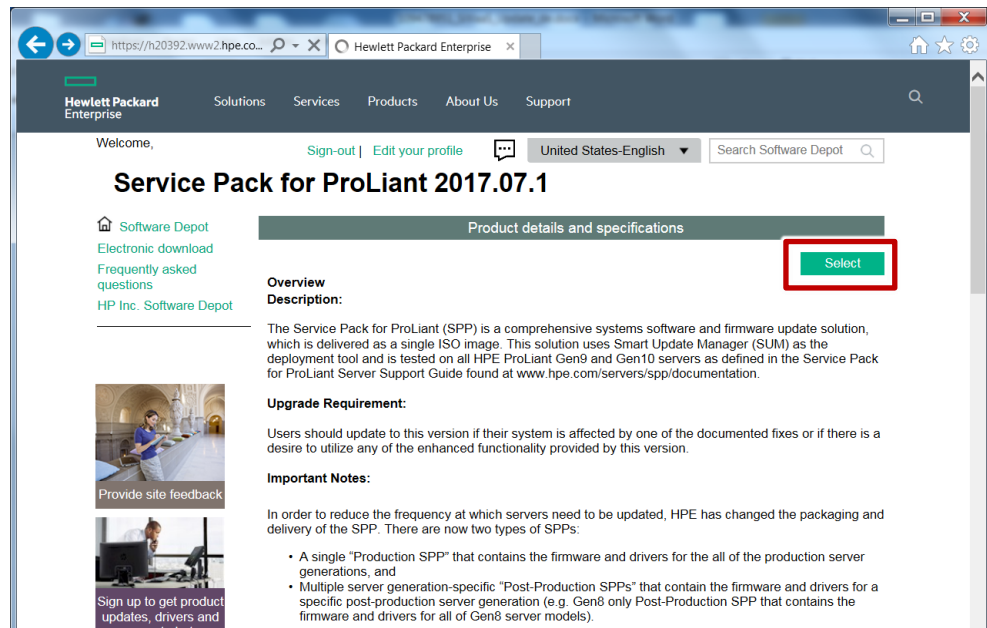
Item	Product serial number *	Product number *	Product location	Assign nickname	Ownership type *
1.	CZ3602W15M	719064-B21	Germany	SiVaaS	Multiple
2.			United States		Single
3.			United States		Single
4.			United States		Single
5.			United States		Single
6.			United States		Single
7.			United States		Single
8.			United States		Single
9.			United States		Single
10.			United States		Single

[Add more warranties](#)

Your guarantee agreement will be linked to your user account.

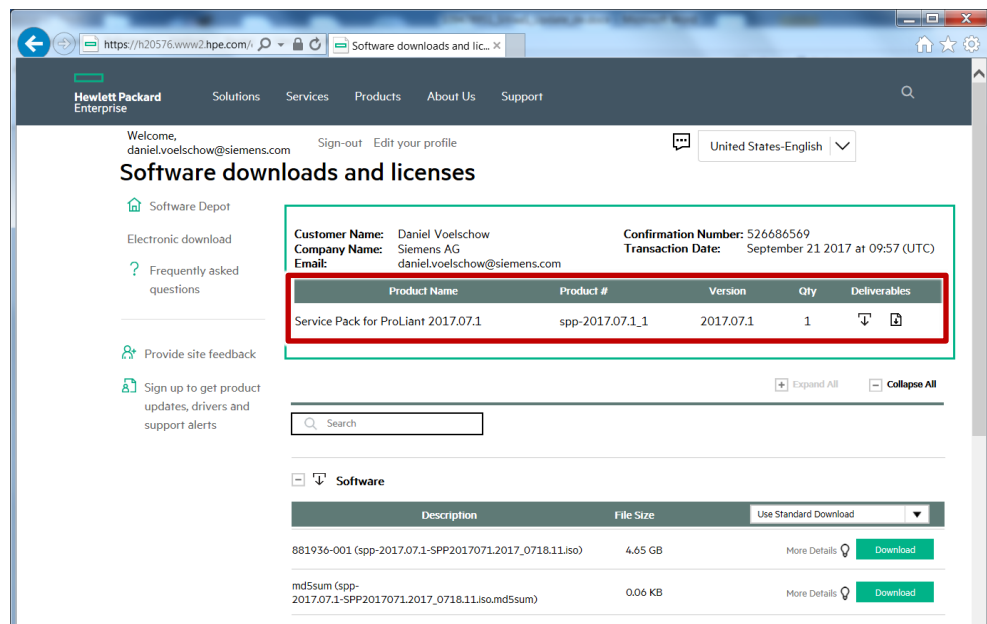
11. Repeat steps 1. to 3.  
Since you are already logged in and your virtualization server is known, you will be taken to the "Product details & specifications" page. On this page you will find prerequisites, improvements to previous versions and instructions for updating.

12. Click on the "Select" button.



13. On the next page, review and confirm your personal contact information and license agreement.

14. Download the SSP as an ISO file. You will receive the required confirmation number by e-mail.



## 4 Virtualization server update

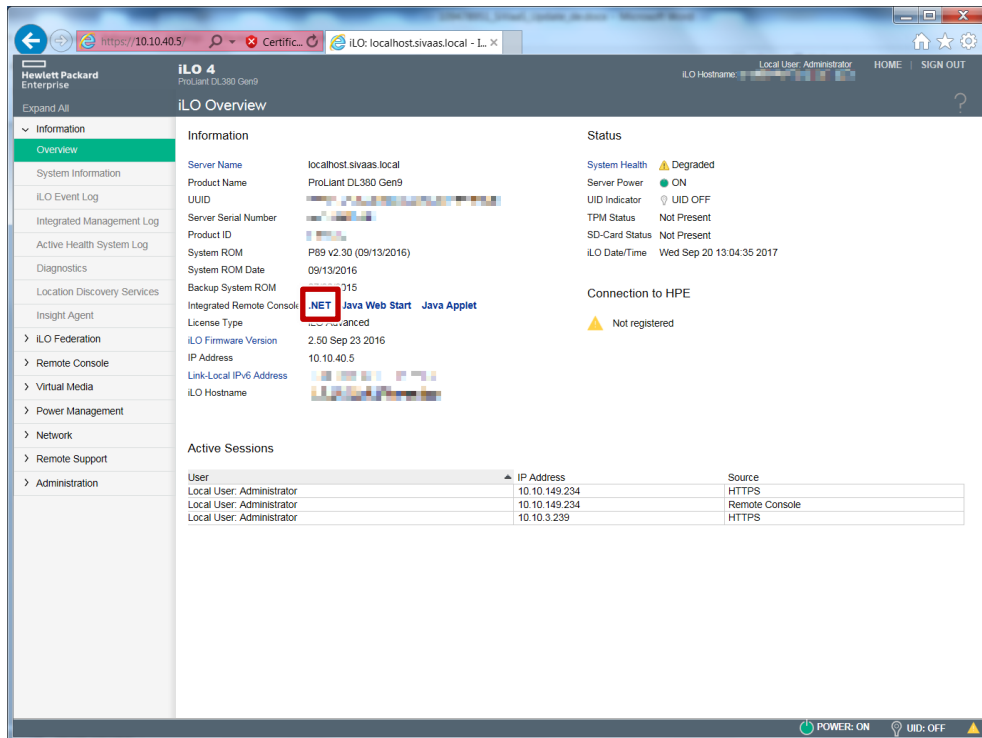
### Installation

#### Note

As an alternative to installing via iLO, you can write the SPP to a USB stick using the HP USB key utility. For a description of the procedure, see the [Hewlett Packard Enterprise Support Center](#). The link to download the tool is listed at the end of the description.

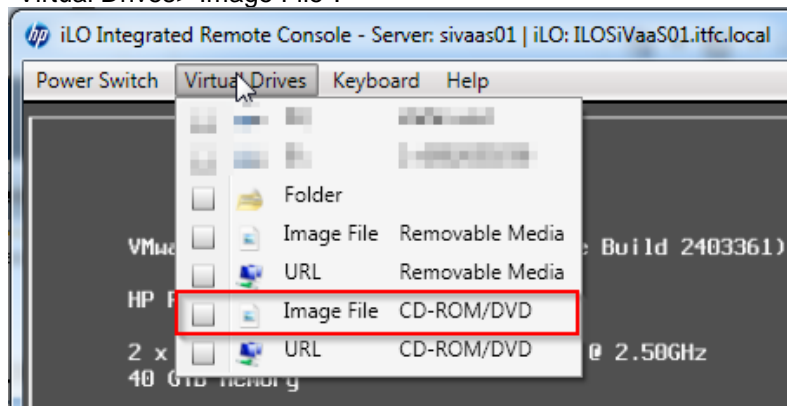
Then plug the USB stick into the server and continue with step 4 of the installation.

1. Open Internet Explorer, enter the IP address of your iLO account and log in to the iLO portal.
2. Start the integrated remote console on a .NET basis.



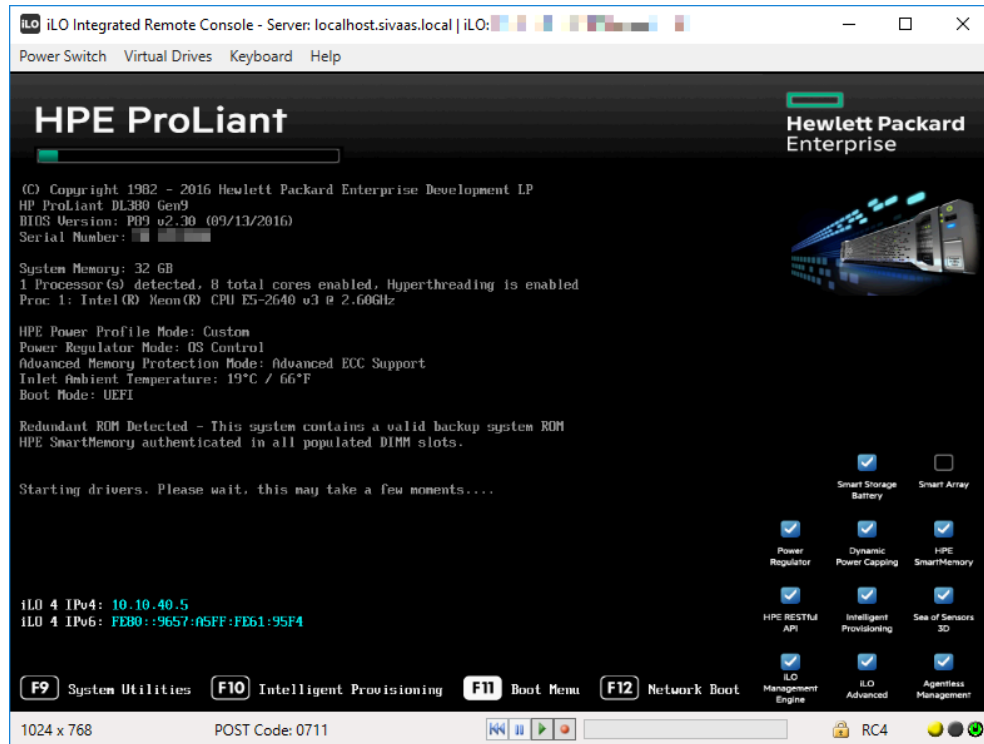
The remote connection to the virtualization server interface is established.

3. Connect the downloaded PLC via the menu command "Virtual Drives> Image File".



## 4 Virtualization server update

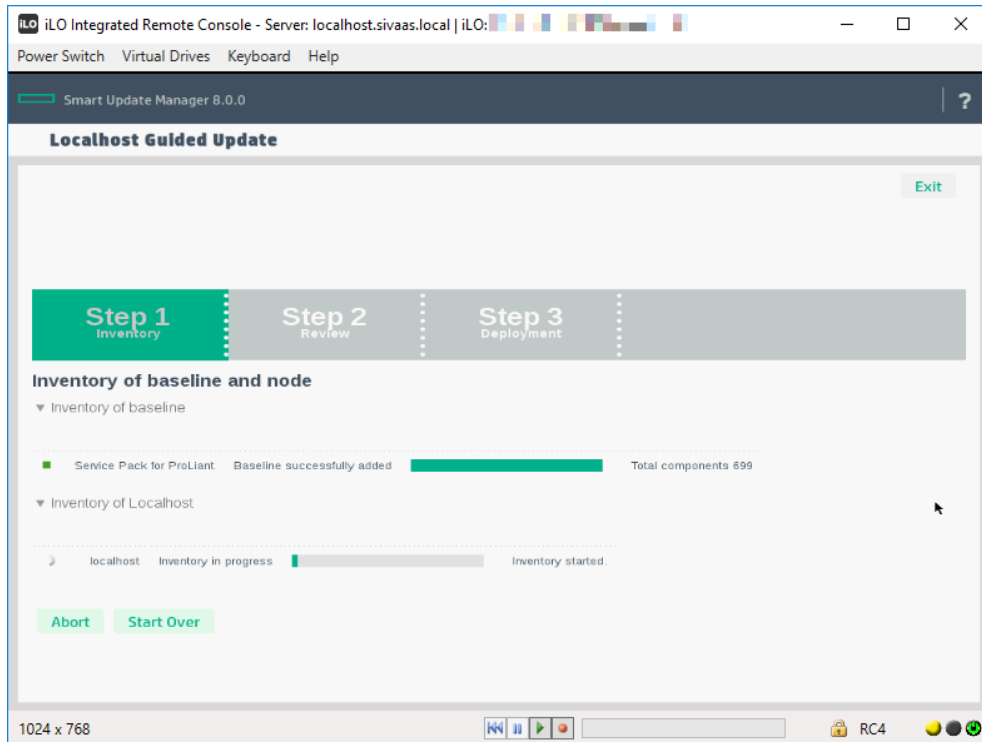
- Once the image file is connected, restart the virtualization server and press the F11 key to bring up the boot menu. Set the option "Start DVD".



## 4 Virtualization server update

The software automatically performs the update for all firmware components of the virtualization server.

The ILO connection may be interrupted when updating the ILO firmware and must be re-established manually.



5. After completion of the installation, restart the virtualization server.



## 4.2 Updating the hypervisor (VMware vSphere ESXi)

This section provides information on upgrading the virtualization server to the latest released version. You can find information on release versions in the "SIMATIC Virtualization as a Service" manual.

For operation on a virtualization server (HP ProLiant), VMware provides a custom installation.

### Downloading the installation file to update the hypervisor

1. To upgrade the VMware vSphere ESXi software of the virtualization server, you need the appropriate installation image file. To download this, click on the following link:  
[https://my.vmware.com/web/vmware/info/slug/datacenter\\_cloud\\_infrastructure/vmware\\_vsphere/6\\_0#custom\\_iso](https://my.vmware.com/web/vmware/info/slug/datacenter_cloud_infrastructure/vmware_vsphere/6_0#custom_iso)

The download page of the software opens.

2. Select the latest version released for your automation software and click on the "Custom ISOs" tab.

#### NOTE

For compatibility information start the compatibility tool:  
<http://www.siemens.com/kompatool>.

In the first step, select the version of the desired automation software in the compatibility tool (e.g. SIMATIC PCS 7 V9.0 SP1) for which you want to query a compatibility statement. In the second step, select the product "SIMATIC Virtualization as a Service" and activate the option "any version". Click on the "Show compatibility" button and download the compatibility list.

Home / VMware vSphere

## Download VMware vSphere

Select Version: 6.0 VMware Software Manager makes it easy to find, select, and download the content needed to install or upgrade a VMware product or suite with the push of a button.

[Download Now](#)

Customers who have purchased VMware vSphere 6.0 can download their relevant installation package from the product download tab below. Looking to upgrade from vSphere 5? Visit the [VMware vSphere Upgrade Center](#).

**Important Note for SDK/CLI Users**  
 vCenter 6.0 U3 is configured to use TLSv1.1 and TLSv1.2 which is a change from the previous 6.0 version and may cause issues with SDK/CLI communication. See [Knowledge Base article 2149213](#).

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Custom ISOs	Release Date
OEM Customized Installer CDs	
Lenovo Custom Image for ESXi 6.0 U3 GA Install CD	2017-12-01 <a href="#">Go to Downloads</a>
Hitachi Custom Image for ESXi 6.0 U3a GA Install CD	2017-11-06 <a href="#">Go to Downloads</a>
HPE Custom Image for VMware ESXi 6.0 U3 Install CD	2017-11-03 <a href="#">Go to Downloads</a>
CISCO Custom Image for ESXi 6.0 U3 Install CD	2017-08-24 <a href="#">Go to Downloads</a>

#### 4 Virtualization server update

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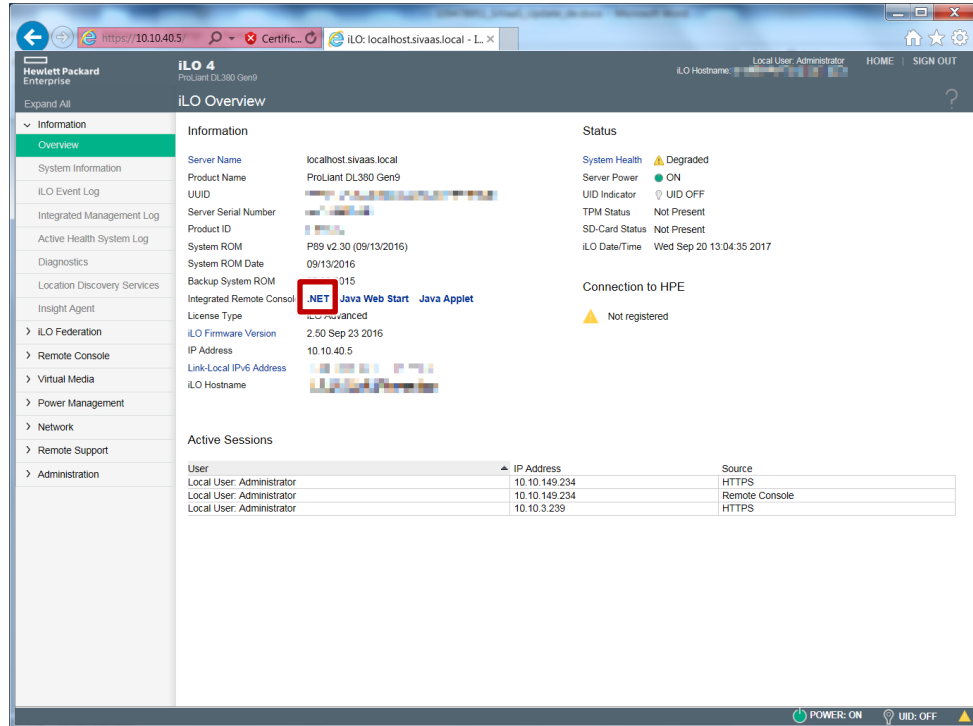
3. Select the last released version (e.g. V6.0 U3) of "HPE Custom Image for ESXi Install CD" as an ISO file from the list and download it.

**Note**

Login to the VMware page is required for download. If you are not already registered, create an account and then log in.

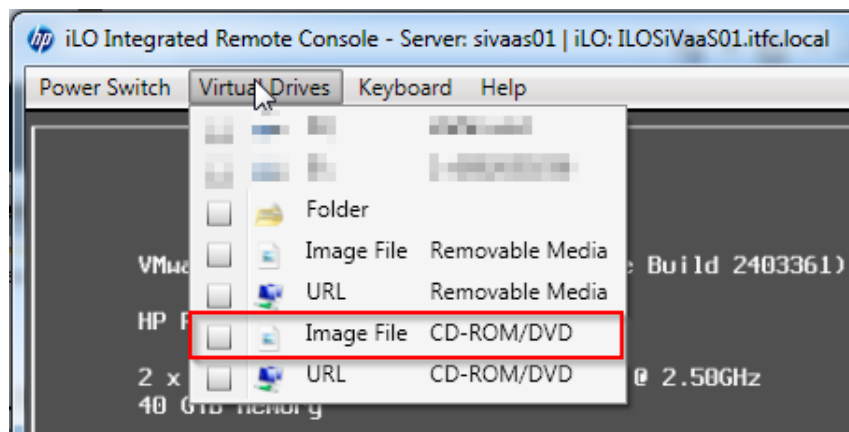
### Installation

1. Open a browser, enter the IP address of your ILO account and log in to the ILO portal.
2. Start the Integrated Remote Console by clicking on ".NET".

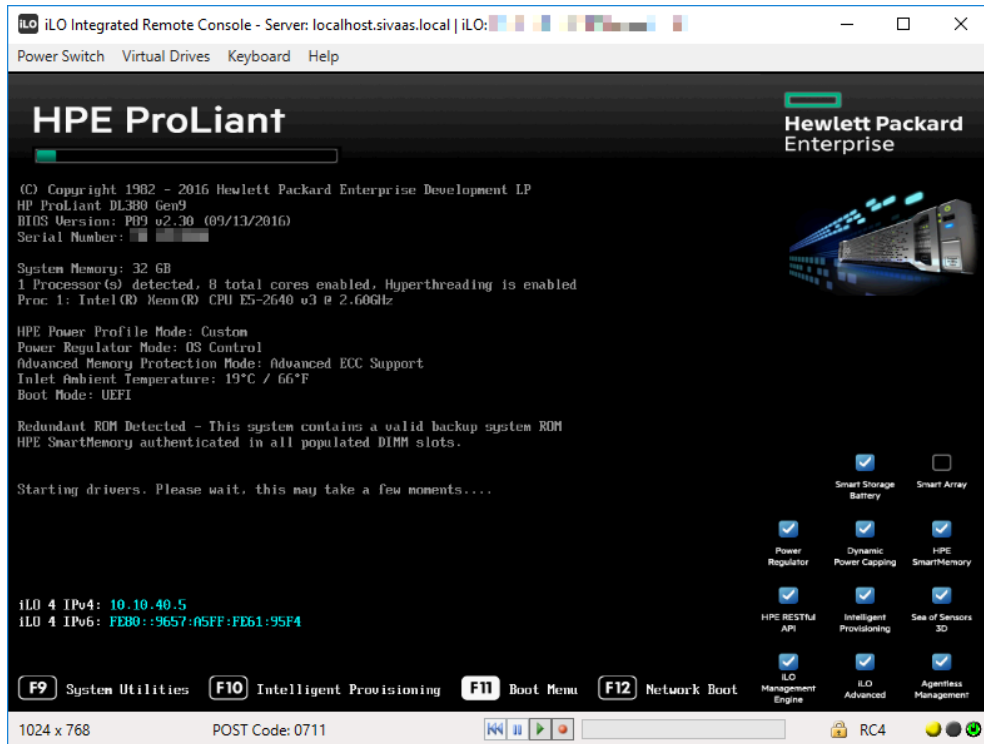


The remote connection to the virtualization server interface is established.

3. Connect the downloaded ISO file via the menu command "Virtual Drives > Image File".



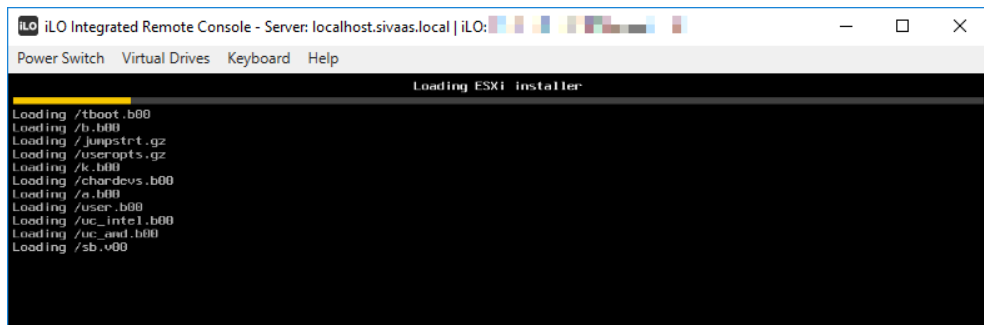
- Once the image file is connected, restart the virtualization server and press the F11 key to bring up the boot menu.



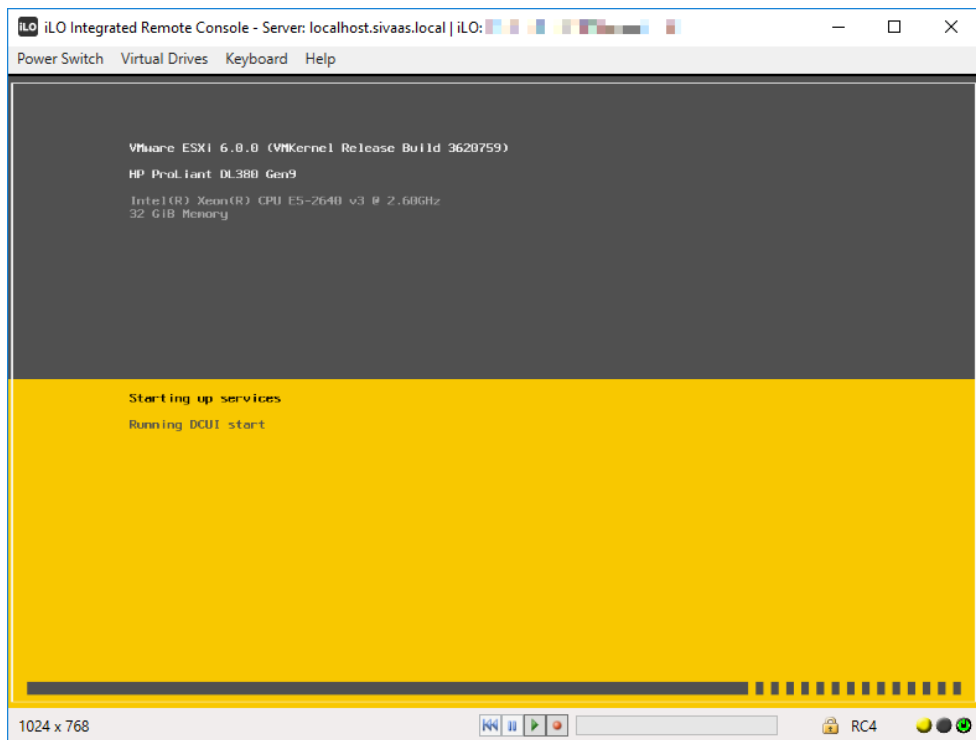
- As a boot option, select the HPE iLO Virtual USB CD/DVD drive.



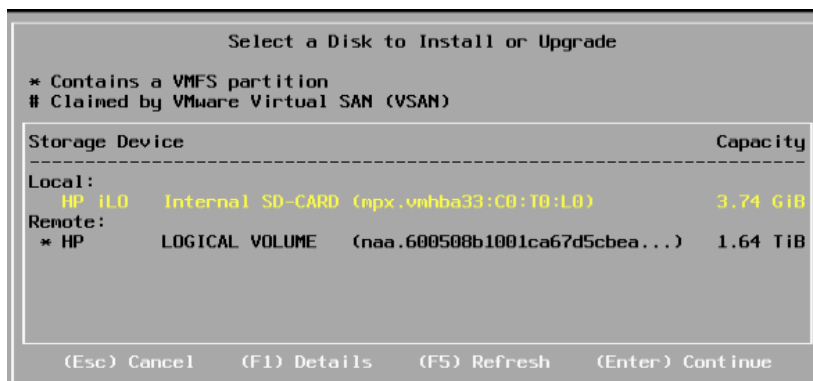
6. Select the ESXi installation file and press Enter.



The installation is started.



7. Follow the wizard and select the internal SD card as installation target.



8. Select the "Upgrade" option as installation type.



9. After completion of the installation, restart the virtualization server.

## 5 Updating of the virtual machine software

### 5.1 Updating of PCS 7

#### 5.1.1 General procedure for the PCS 7 upgrade

The PCS 7 software is updated according to the manuals for the PCS 7 software update/upgrade.

<https://support.industry.siemens.com/cs/ww/en/view/39980937>

#### 5.1.2 Importing the PCS 7 installation into the virtual environment

Since you have the PCS 7 software as a DVD, the contents of the DVDs must be transferred to the virtual environment before installation. For this, the installation files should be stored on the data partition of the virtual machine.

#### **Copy contents of the installation DVDs to the internal hard disk of a virtual machine (VM)**

The partition D:\ contains a folder with the installation files for the currently installed PCS 7 version for each VM containing PCS 7. When upgrading, remove these installation files and replace them with files from the target version.

1. Connect a data medium containing the PCS 7 DVDs with your VM to be upgraded.
2. Copy the contents of the first DVD to the "DVD\_1" folder and the contents of the second DVD to "DVD\_2".
3. Run the setup from the "DVD\_1" folder and start the PCS 7 update.  
After restarting the PCS 7 installation, the setup will continue automatically. By naming the folders in DVD\_1 and DVD\_2, the setup automatically finds the second DVD.

#### **Alternative method 1: Integrate ISO images via the datastore**

You can create ISO files from the PCS 7 DVDs. These ISO files can be stored on the datastore of the ESXi server and integrated from there via the management console into the respective VM to be installed. A DVD change during the installation is necessary here.

#### **Alternative method 2: Connect installation DVDs to the management console via an external drive**

If you are using a management console that has an external DVD drive, you can perform the installation from the DVDs. The DVD can be passed to the VM via the "VMware vSphere Client" application and works the same way as a classic PCS 7 installation on the hardware computers.

## 5.2 Updating the VMware Tools

For information on how to update or install VMware Tools, see the VMware Knowledge Base at the following link:

<https://kb.vmware.com/s/article/1018377>



## 6 Compatibility

Information about the compatibility between the components of SIMATIC virtualization as a Service and the SIMATIC PCS 7 versions is available in the [compatibility tool](#).