



**Hewlett Packard**  
Enterprise

# **HPE ProLiant Storage and Network Controller Guidelines for Oracle Linux, Oracle VM and UEK4 Products**

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## Purpose

This paper serves as a technical reference for determining the tested firmware versions for Hewlett Packard Enterprise (HPE) storage and HPE network controllers with Oracle Linux®, Oracle VM and the Unbreakable Enterprise Kernel (UEK).

The focus of this paper will be ProLiant servers that support Oracle’s Unbreakable Enterprise Kernel 4 (UEK4) and above. Please refer to the earlier release of this paper available from [hpe.com/info/ol](http://hpe.com/info/ol) for guidelines with older ProLiant servers and options. Please review the list of supported servers at [hpe.com/servers/olcert](http://hpe.com/servers/olcert) and the technical exceptions guidelines at [hpe.com/servers/olcert/min](http://hpe.com/servers/olcert/min) for further details.

## Overview

The servers used during test were configured with the latest System ROM (BIOS) that was available for the platform at the time. While there is no specific connection between firmware versions and Oracle Linux, HPE recommends deploying the current release of the appropriate System ROM for the best experience.

For convenience, the HPE Service Pack for ProLiant (SPP) is a single download source of HPE-supplied system and option firmware. To download the SPP, visit [hpe.com/servers/spp/download](http://hpe.com/servers/spp/download). For SPP installation instructions, see the documentation link on the HPE Service Pack for ProLiant page at [hpe.com/servers/spp](http://hpe.com/servers/spp).

### Important note:

Hewlett Packard Enterprise only supports the use of in distribution drivers with Oracle Linux, Oracle VM and UEK update releases. Customers should not download any driver packages from the SPP to update Oracle Linux, Oracle VM or UEK installations. HPE only supports the SPP for firmware updates to these products.

## Oracle Linux

### HPE ProLiant Storage and Network controller options for Oracle Linux 7.x Products

Below are the UEK4 kernel versions supported on Oracle Linux 6.x products. These kernel versions were used to test the storage and network controllers listed below.

### Important note:

Hewlett Packard Enterprise only supports the use of in distribution drivers with Oracle Linux, Oracle VM and UEK update releases. All controllers tested below used the driver located on the source media for their respective Oracle product. Out of distribution drivers are not supported with Oracle Linux, Oracle VM or UEK.

**Table 1.** Oracle Linux 7.x tested Kernel versions

Operating system	Kernel version
Oracle Linux 7.1 (Compatible Kernel)	3.10.0-229
Oracle Linux 7.1 (Unbreakable Enterprise Kernel)	3.8.13-55.1.6
Oracle Linux 7.2 (Compatible Kernel)	3.10.0-327.el7
Oracle Linux 7.2 (Unbreakable Enterprise Kernel)	3.8.13-98.7.1.el7uek

**Table 2.** Oracle Linux 7.x versions tested with HPE Storage Controllers

Storage Controllers	Tested firmware version		Firmware source	
	Oracle Linux 7.1	Oracle Linux 7.2	Oracle Linux 7.1	Oracle Linux 7.2
<b>Smart array controllers</b>				
HPE Smart Array P212 Controller	6.62	6.64	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P220i Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P230i controller	2.40	2.80	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P244br 12GB 2-port Int SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P246br 12GB 4-port Int SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P410i Controller	6.62	6.64	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P420i Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P420 6GB 2-port Int SAS Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P421 6GB 2-port Ext SAS Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P430 12GB 1-port Int SAS Controller	2.40	2.80	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P411/256 Controller	6.62	6.64	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P431 12GB 2-port Ext. SAS Controller	2.40	2.80	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P440 12GB 1-port Int SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P440 2GB 1-port Int SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P440ar 2GB 1-port Int SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P441 12GB 2-port Ext SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P711m 6GB 4-port Ext Mezzanine SAS Controller	6.62	6.64	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P741m 12GB 4-port Ext Mezzanine SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P822 6Gb 2-port Int/4-port Ext SAS Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P830 12GB 2-port Int PCIe x8 SAS Controller	2.40	2.80	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P721m Controller	6.64	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P731m Controller	2.62	2.80	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P812 Controller	6.62	6.64	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P822 Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P840 12GB 2-port Int SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P840ar 2GB 2-port Internal SAS Controller	N/A	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P841 12GB 4-port Ext SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>

<b>Smart Host Bus Adapters</b>					
HPE H240 12GB 2-port Int Smart Host Bus Adapter	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE H240ar 12GB 2-port Int Smart Host Bus Adapter	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE H241 12GB 2-port Ext Smart Host Bus Adapter	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE H244br 12GB 2-port Int Smart Host Bus Adapter	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>	
<b>SAS Controllers</b>					
HPE P222 6GB 1-port Int/1-port Ext SAS Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE P430 12GB 1-port Internal SAS Controller	2.40	2.80	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>	

**Table 3.** Oracle Linux 7.x Tested Network Adapters

Network adapters	Tested firmware version		Firmware source	
	Oracle Linux 7.1	Oracle Linux 7.2	Oracle Linux 7.1	Oracle Linux 7.2
<b>Broadcom Adapters</b>				
HPE Ethernet 1Gb 2-port 330i Adapter	1.61	1.64	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1G 4-port 331FLR Adapter	1.38	1.45	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 4-port 331i Adapter	1.38	1.45	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 4-port 331T Adapter	1.38	1.45	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 2-port 332i Adapter	1.34	1.37	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 2-port 332T Adapter	1.34	1.37	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 530FLB Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Flex-10 10Gb 2-port 530M Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 530SFP+ Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 530T Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE NC532m Dual Port 10GbE Multifunction BL-c Adapter	6.2.28	6.2.28	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 533FLR-T Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 534FLB Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 534M Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
<b>Emulex Adapters</b>				
HPE Flex-10 10Gb 2-port 552M Adapter	10.2.477.10	10.7.110.31	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Flex-10 10Gb 2-port 552SFP Adapter	10.2.477.10	10.7.110.31	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 554FLB Adapter	10.2.477.10	10.7.110.31	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 554M Adapter	10.2.477.10	10.7.110.31	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter	10.2477.10	10.7.110.34	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 556FLR-T Adapter	10.2477.10	10.7.110.34	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 557SFP+ Adapter	10.2477.10	10.7.110.34	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 650FLB Adapter	10.2477.10	10.7.110.34	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 20Gb 2-port 650M Adapter	10.2477.10	10.7.110.34	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
<b>Intel® Adapters</b>				
HPE NC112T PCI Express Gigabit Server Adapter	1.8.0	1.8.0	<a href="#">SPP 2014.09.0</a>	<a href="#">SPP 2014.09.0</a>
HPE NC365T 4-port Ethernet Server Adapter	3.19.0	3.19.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2015.04.0</a>
HPE Ethernet 1 Gb 4-port 366FLR Adapter	1.949.0	80000DCF, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 4-port 366M Adapter	1.949.0	80000DA9, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 4-port 366T Adapter	1.949.0	80000DC6, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 560FLB Adapter	1.949.0	80000872, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	1.949.0	80000838, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 560M Adapter	1.949.0	8000083D, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 560 SFP+ Adapter	1.949.0	80000835, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 561FLR-T Adapter	1.949.0	800005B6, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 561T Adapter	1.949.0	800005B7, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10 Gb 2-port 562FLR-SFP+ Adapter	N/A	80001EC9, 1.1200.0	N/A	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	N/A	80001EC8, 1.1200.0	N/A	<a href="#">SPP 2016.04.0</a>
<b>Mellanox Adapters</b>				
HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	N/A	2.35.5100	N/A	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 546SFP+ Adapter	N/A	2.35.5100	N/A	<a href="#">SPP 2016.04.0</a>
<b>NetXen Adapters</b>				
HPE NC375i PCI Express Quad Port Gigabit Server Adapter	4.0.596	4.0.596	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2015.04.0</a>
HPE NC375T PCI Express Quad Port Gigabit Server Adapter	4.0.596	4.0.596	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2015.04.0</a>
<b>QLogic Adapters</b>				
HPE NC523SFP 10Gb 2-port Server Adapter	4.18.04	4.20.1	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 526FLR-SFP+ Adapter	4.18.04	4.20.1	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 536FLB Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 20Gb 2-port 630M Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 20Gb 2-port 630FLB Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>

HPE ProLiant Storage and Network controller options for Oracle Linux 6.x Products. Below are the UEK4 kernel versions supported on Oracle Linux 6.x products. These kernel versions were used to test the storage and network controllers listed below.

**Important note:**

Hewlett Packard Enterprise only supports the use of in distribution drivers with Oracle Linux, Oracle VM and UEK update releases. All controllers tested below used the driver located on the source media for their respective Oracle product. Out of distribution drivers are not supported with Oracle Linux, Oracle VM or UEK.

**Table 4.** Oracle Linux 6.x Tested Kernel versions

Operating system	Kernel version
Oracle Linux 6.7 (Compatible Kernel)	2.6.32-573.el6
Oracle Linux 6.7 (Unbreakable Enterprise Kernel)	3.8.13-68.3.4.el6uek
Oracle Linux 6.8 (Compatible Kernel)	2.6.32-642
Oracle Linux 6.8 (Unbreakable Enterprise Kernel)	4.1.12-37.4.1

**Table 5.** Oracle Linux 6.x versions tested with HPE Storage Controllers

Storage Controllers	Tested firmware version		Firmware source	
	Oracle Linux 6.7	Oracle Linux 6.8	Oracle Linux 6.7	Oracle Linux 6.8
<b>Smart array controllers</b>				
HPE Smart Array P212 Controller	6.62	6.64	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P220i Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P230i controller	2.40	2.80	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P244br 12GB 2-port Int SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P246br 12GB 4-port Int SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P410i Controller	6.62	6.64	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P420i Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P420 6GB 2-port Int SAS Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P421 6GB 2-port Ext SAS Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P430 12GB 1-port Int SAS Controller	2.40	2.80	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P411/256 Controller	6.62	6.64	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P431 12GB 2-port Ext. SAS Controller	2.40	2.80	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P440 12GB 1-port Int SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P440 2GB 1-port Int SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P440ar 2GB 1-port Int SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P441 12GB 2-port Ext SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P711m 6GB 4-port Ext Mezzanine SAS Controller	6.62	6.64	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P741m 12GB 4-port Ext Mezzanine SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>

HPE Smart Array P822 6Gb 2-port Int/4-port Ext SAS Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P830 12GB 2-port Int PCIe x8 SAS Controller	2.40	2.80	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P721m Controller	6.64	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P731m Controller	2.62	2.80	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P812 Controller	6.62	6.64	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P822 Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P840 12GB 2-port Int SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P840ar 2GB 2-port Internal SAS Controller	N/A	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P841 12GB 4-port Ext SAS Controller	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
<b>Smart Host Bus Adapters</b>				
HPE H240 12GB 2-port Int Smart Host Bus Adapter	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE H240ar 12GB 2-port Int Smart Host Bus Adapter	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE H241 12GB 2-port Ext Smart Host Bus Adapter	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE H244br 12GB 2-port Int Smart Host Bus Adapter	2.14	3.56	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
<b>SAS Controllers</b>				
HPE P222 6GB 1-port Int/1-port Ext SAS Controller	6.34	7.02	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE P430 12GB 1-port Internal SAS Controller	2.62	2.80	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>

**Table 6.** Oracle Linux 6.x versions tested with HPE Network Controllers

Network Controllers	Tested firmware version		Firmware source	
	Oracle Linux 6.7	Oracle Linux 6.8	Oracle Linux 6.7	Oracle Linux 6.8
<b>Broadcom adapters</b>				
HPE Ethernet 1Gb 2-port 330i Adapter	1.61	1.64	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1G 4-port 331FLR Adapter	1.38	1.45	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 4-port 331i Adapter	1.38	1.45	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 4-port 331T Adapter	1.38	1.45	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 2-port 332i Adapter	1.34	1.37	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 2-port 332T Adapter	1.34	1.37	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 530FLB Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Flex-10 10Gb 2-port 530M Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 530SFP+ Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 530T Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>



HPE NC532m Dual Port 10GbE Multifunction BL-c Adapter	6.2.28	6.2.28	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 533FLR-T Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 534FLB Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 534M Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>

**Emulex adapters**

HPE Flex-10 10Gb 2-port 552SFP Adapter	10.2.477.10	10.7.110.31	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 554FLB Adapter	10.2.477.10	10.7.110.31	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 554M Adapter	10.2.477.10	10.7.110.31	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter	10.2.477.10	10.7.110.31	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 556FLR-T Adapter	10.2.477.10	10.7.110.34	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 557SFP+ Adapter	10.2.477.10	10.7.110.34	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 650FLB Adapter	10.2.477.10	10.7.110.34	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 20Gb 2-port 650M Adapter	10.2.477.10	10.7.110.34	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>

**Intel adapters**

HPE NC112T PCI Express Gigabit Server Adapter	1.8.0	1.8.0	<a href="#">SPP 2014.09.0</a>	<a href="#">SPP 2014.09.0</a>
HPE NC365T 4-port Ethernet Server Adapter	3.19.0	3.19.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2015.04.0</a>
HPE Ethernet 1 Gb 4-port 366FLR Adapter	1.949.0	80000DCF, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 4-port 366M Adapter	1.949.0	80000DA9, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 4-port 366T Adapter	1.949.0	80000DC6, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 560FLB Adapter	1.949.0	80000872, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	1.949.0	80000838, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 560M Adapter	1.949.0	8000083D, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 560 SFP+ Adapter	1.949.0	80000835, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 561FLR-T Adapter	1.949.0	800005B6, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 561T Adapter	1.949.0	800005B7, 1.1200.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10 Gb 2-port 562FLR-SFP+ Adapter	N/A	80001EC9, 1.1200.0	N/A	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	N/A	80001EC8, 1.1200.0	N/A	<a href="#">SPP 2016.04.0</a>

**Mellanox adapters**

HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	N/A	2.35.5100	N/A	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 546SFP+ Adapter	N/A	2.35.5100	N/A	<a href="#">SPP 2016.04.0</a>

<b>NetXen adapters</b>				
HPE NC375i PCI Express Quad Port Gigabit Server Adapter	4.0.596	4.0.596	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2015.04.0</a>
HPE NC375T PCI Express Quad Port Gigabit Server Adapter	4.0.596	4.0.596	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2015.04.0</a>
<b>QLogic adapters</b>				
HPE NC523SFP 10Gb 2-port Server Adapter	4.18.04	4.20.1	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 526FLR-SFP+ Adapter	4.18.04	4.20.1	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 536FLB Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 20Gb 2-port 630M Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 20Gb 2-port 630FLB Adapter	7.10.72	7.13.23	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2016.04.0</a>

Oracle VM, HPE ProLiant Storage and Network controller options for Oracle VM versions. Below are the UEK4 kernel versions supported on Oracle VM 3.4.x. These kernel versions were used to test the storage and network controllers listed below.

**Important note:**

Hewlett Packard Enterprise only supports the use of in distribution drivers with Oracle Linux, Oracle VM and UEK update releases. All controllers tested below used the driver located on the source media for their respective Oracle product. Out of distribution drivers are not supported with Oracle Linux, Oracle VM or UEK.

**Table 7.** Oracle VM Tested Kernel versions

<b>Hypervisor</b>	<b>Kernel version</b>
Oracle VM 3.4.1	4.1.12-37.2.1
Oracle VM 3.4.2	4.1.12-61.1.9

**Table 8.** Oracle VM versions tested with HPE Storage Controllers

<b>Storage Controllers</b>	<b>Tested firmware version</b>		<b>Firmware source</b>	
	<b>Oracle VM 3.4.1</b>	<b>Oracle VM 3.4.2</b>	<b>Oracle VM 3.4.1</b>	<b>Oracle VM 3.4.2</b>
<b>Smart array controllers</b>				
HPE Smart Array P212 Controller	6.64	6.64	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P220i Controller	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P230i controller	2.80	2.80	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P244br 12GB 2-port Int SAS Controller	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P246br 12GB 4-port Int SAS Controller	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P410i Controller	6.64	6.64	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P420i Controller	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P420 6GB 2-port Int SAS Controller	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P421 6GB 2-port Ext SAS Controller	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>

HPE Smart Array P430 12GB 1-port Int SAS Controller	2.80	2.80	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P411/256 Controller	6.64	6.64	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P431 12GB 2-port Ext. SAS Controller	2.80	2.80	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P440 12GB 1-port Int SAS Controller	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P440 2GB 1-port Int SAS Controller	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P440ar 2GB 1-port Int SAS Controller	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P441 12GB 2-port Ext SAS Controller	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P711m 6GB 4-port Ext Mezzanine SAS Controller	6.64	6.64	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P741m 12GB 4-port Ext Mezzanine SAS Controller	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P822 6Gb 2-port Int/4-port Ext SAS Controller	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P830 12GB 2-port Int PCIe x8 SAS Controller	2.80	2.80	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P721m Controller	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P731m Controller	2.80	2.80	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P812 Controller	6.64	6.64	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P822 Controller	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P840 12GB 2-port Int SAS Controller	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P840ar 2GB 2-port Internal SAS Controller	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P841 12GB 4-port Ext SAS Controller	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>

**Smart Host Bus Adapters**

HPE H240 12GB 2-port Int Smart Host Bus Adapter	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE H240ar 12GB 2-port Int Smart Host Bus Adapter	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE H241 12GB 2-port Ext Smart Host Bus Adapter	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE H244br 12GB 2-port Int Smart Host Bus Adapter	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>

**SAS Controllers**

HPE P222 6GB 1-port Int/1-port Ext SAS Controller	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE P430 12GB 1-port Internal SAS Controller	2.80	2.80	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>

**Table 9.** Oracle VM versions tested with HPE Network Controllers

Network Controllers	Tested firmware version		Firmware source	
	Oracle VM 3.4.1	Oracle VM 3.4.2	Oracle VM 3.4.1	Oracle VM 3.4.2
<b>Ethernet server controllers</b>				
<b>Broadcom adapters</b>				
HPE Ethernet 1Gb 2-port 330i Adapter	1.64	1.64	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 1G 4-port 331FLR Adapter	1.45	1.45	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 1Gb 4-port 331i Adapter	1.45	1.45	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 1Gb 4-port 331T Adapter	1.45	1.45	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 1Gb 2-port 332i Adapter	1.37	1.37	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 1Gb 2-port 332T Adapter	1.37	1.37	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 530FLB Adapter	7.13.23	7.13.23	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	7.13.23	7.13.23	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Flex-10 10Gb 2-port 530M Adapter	7.13.23	7.13.23	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 530SFP+ Adapter	7.13.23	7.13.23	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 530T Adapter	7.13.23	7.13.23	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE NC532m Dual Port 10GbE Multifunction BL-c Adapter	6.2.28	6.2.28	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 533FLR-T Adapter	7.13.23	7.13.23	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 534FLB Adapter	7.13.23	7.13.23	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	7.13.23	7.13.23	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 534M Adapter	7.13.23	7.13.23	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
<b>Emulex adapters</b>				
HPE Flex-10 10Gb 2-port 552SFP Adapter	10.7.110.31	10.7.110.31	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 554FLB Adapter	10.7.110.31	10.7.110.31	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 554M Adapter	10.7.110.31	10.7.110.31	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter	10.7.110.31	10.7.110.31	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 556FLR-T Adapter	10.7.110.34	10.7.110.34	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 557SFP+ Adapter	10.7.110.34	10.7.110.34	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 650FLB Adapter	10.7.110.34	10.7.110.34	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 20Gb 2-port 650M Adapter	10.7.110.34	10.7.110.34	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
<b>Intel adapters</b>				
HPE NC112T PCI Express Gigabit Server Adapter	1.8.0	1.8.0	<a href="#">SPP 2014090</a>	<a href="#">SPP 2014090</a>
HPE NC365T 4-port Ethernet Server Adapter	3.19.0	3.19.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2015.04.0</a>
HPE Ethernet 1 Gb 4-port 366FLR Adapter	80000DCF, 1.1200.0	80000DCF, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 1Gb 4-port 366M Adapter	80000DA9, 1.1200.0	80000DA9, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>

HPE Ethernet 1Gb 4-port 366T Adapter	80000DC6, 1.1200.0	80000DC6, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 560FLB Adapter	80000872, 1.1200.0	80000872, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	80000838, 1.1200.0	80000838, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 560M Adapter	8000083D, 1.1200.0	8000083D, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 560 SFP+ Adapter	80000835, 1.1200.0	80000835, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 561FLR-T Adapter	800005B6, 1.1200.0	800005B6, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 561T Adapter	800005B7, 1.1200.0	800005B7, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10 Gb 2-port 562FLR-SFP+ Adapter	80001EC9, 1.1200.0	80001EC9, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	80001EC8, 1.1200.0	80001EC8, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
<b>Mellanox adapters</b>				
HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	2.35.5100	2.35.5100	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 546SFP+ Adapter	2.35.5100	2.35.5100	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
<b>NetXen adapters</b>				
HPE NC375i PCI Express Quad Port Gigabit Server Adapter	4.0.596	4.0.596	<a href="#">SPP 2015040</a>	<a href="#">SPP 2015040</a>
HPE NC375T PCI Express Quad Port Gigabit Server Adapter	4.0.596	4.0.596	<a href="#">SPP 2015040</a>	<a href="#">SPP 2015040</a>
<b>QLogic adapters</b>				
HPE NC523SFP 10Gb 2-port Server Adapter	4.20.1	4.20.1	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 526FLR-SFP+ Adapter	4.20.1	4.20.1	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 536FLB Adapter	7.13.23	7.13.23	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 20Gb 2-port 630M Adapter	7.13.23	7.13.23	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 20Gb 2-port 630FLB Adapter	7.13.23	7.13.23	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>

Oracle Unbreakable Enterprise Kernel Updates, HPE ProLiant Storage and Network controller options for Oracle Unbreakable Enterprise Kernel versions. Below are the UEK4 kernel updates supported with Oracle Linux and Oracle VM. These kernel versions were tested the storage and network controllers listed below.

**Important note:**

Hewlett Packard Enterprise only supports the use of in distribution drivers with Oracle Linux, Oracle VM and UEK update releases. All controllers tested below used the driver located on the source media for their respective Oracle product. Out of distribution drivers are not supported with Oracle Linux, Oracle VM or UEK.

**Table 10.** Oracle Unbreakable Enterprise Kernel Tested Update Versions

Kernel	Kernel version
UEK4	4.1.12-32
UEK4 U1	4.1.12-37.2.1
UEK4 U2	4.1.12-61.1.6

**Table 11.** Oracle Unbreakable Enterprise Kernel tested with HPE Storage Controllers

Storage Controllers	Tested firmware version			Firmware source			
	Smart array controllers	UEK4	UEK4 U1	UEK4 U2	UEK4	UEK4 U1	UEK4 U2
<b>Smart array controllers</b>							
HPE Smart Array P212 Controller	6.64	6.64	6.64	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P220i Controller	7.02	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P230i controller	2.80	2.80	2.80	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P244br 12GB 2-port Int SAS Controller	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P246br 12GB 4-port Int SAS Controller	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P410i Controller	6.64	6.64	6.64	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P420i Controller	7.02	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P420 6GB 2-port Int SAS Controller	7.02	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P421 6GB 2-port Ext SAS Controller	7.02	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P430 12GB 1-port Int SAS Controller	2.80	2.80	2.80	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P411/256 Controller	6.64	6.64	6.64	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P431 12GB 2-port Ext. SAS Controller	2.80	2.80	2.80	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P440 12GB 1-port Int SAS Controller	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P440 2GB 1-port Int SAS Controller	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P440ar 2GB 1-port Int SAS Controller	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P441 12GB 2-port Ext SAS Controller	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P711m 6GB 4-port Ext Mezzanine SAS Controller	6.64	6.64	6.64	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P741m 12GB 4-port Ext Mezzanine SAS Controller	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P822 6Gb 2-port Int/4-port Ext SAS Controller	7.02	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P830 12GB 2-port Int PCIe x8 SAS Controller	2.80	2.80	2.80	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P721m Controller	7.02	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P731m Controller	2.80	2.80	2.80	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P812 Controller	6.64	6.64	6.64	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P822 Controller	7.02	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	
HPE Smart Array P840 12GB 2-port Int SAS Controller	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	

HPE Smart Array P840ar 2GB 2-port Internal SAS Controller	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Smart Array P841 12GB 4-port Ext SAS Controller	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
<b>Smart Host Bus Adapters</b>						
HPE H240 12GB 2-port Int Smart Host Bus Adapter	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE H240ar 12GB 2-port Int Smart Host Bus Adapter	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE H241 12GB 2-port Ext Smart Host Bus Adapter	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE H244br 12GB 2-port Int Smart Host Bus Adapter	3.56	3.56	3.56	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
<b>SAS Controllers</b>						
HPE P222 6GB 1-port Int/1-port Ext SAS Controller	7.02	7.02	7.02	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE P430 12GB 1-port Internal SAS Controller	2.80	2.80	2.80	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>

**Table 12.** Oracle Unbreakable Enterprise Kernel tested with HPE Network Controllers

Network Controllers	Tested firmware version			Firmware source		
	UEK4	UEK4 U1	UEK4 U2	UEK4	UEK4 U1	UEK4 U2
<b>Broadcom adapters</b>						
HPE Ethernet 1Gb 2-port 330i Adapter	1.64	1.64	1.64	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1G 4-port 331FLR Adapter	1.45	1.45	1.45	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 4-port 331i Adapter	1.45	1.45	1.45	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 4-port 331T Adapter	1.45	1.45	1.45	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 2-port 332i Adapter	1.37	1.37	1.37	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 1Gb 2-port 332T Adapter	1.37	1.37	1.37	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 530FLB Adapter	7.13.23	7.13.23	7.13.23	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	7.13.23	7.13.23	7.13.23	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Flex-10 10Gb 2-port 530M Adapter	7.13.23	7.13.23	7.13.23	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 530SFP+ Adapter	7.13.23	7.13.23	7.13.23	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE Ethernet 10Gb 2-port 530T Adapter	7.13.23	7.13.23	7.13.23	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE NC532m Dual Port 10GbE Multifunction BL-c Adapter	6.2.28	6.2.28	6.2.28	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 533FLR-T Adapter	7.13.23	7.13.23	7.13.23	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 534FLB Adapter	7.13.23	7.13.23	7.13.23	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	7.13.23	7.13.23	7.13.23	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>
HPE FlexFabric 10Gb 2-port 534M Adapter	7.13.23	7.13.23	7.13.23	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>	<a href="#">SPP 2016.04.0</a>

<b>Emulex adapters</b>						
HPE Flex-10 10Gb 2-port 552SFP Adapter	10.7.110.31	10.7.110.31	10.7.110.31	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 554FLB Adapter	10.7.110.31	10.7.110.31	10.7.110.31	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 554M Adapter	10.7.110.31	10.7.110.31	10.7.110.31	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter	10.7.110.31	10.7.110.31	10.7.110.31	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 10Gb 2-port 556FLR-T Adapter	10.7.110.34	10.7.110.34	10.7.110.34	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 557SFP+ Adapter	10.7.110.34	10.7.110.34	10.7.110.34	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 650FLB Adapter	10.7.110.34	10.7.110.34	10.7.110.34	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE FlexFabric 20Gb 2-port 650M Adapter	10.7.110.34	10.7.110.34	10.7.110.34	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
<b>Intel adapters</b>						
HPE NC112T PCI Express Gigabit Server Adapter	1.8.0	1.8.0	1.8.0	<a href="#">SPP 2014090</a>	<a href="#">SPP 2014090</a>	<a href="#">SPP 2014090</a>
HPE NC365T 4-port Ethernet Server Adapter	3.19.0	3.19.0	3.19.0	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2015.04.0</a>	<a href="#">SPP 2015.04.0</a>
HPE Ethernet 1 Gb 4-port 366FLR Adapter	80000DCF, 1.1200.0	80000DCF, 1.1200.0	80000DCF, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 1Gb 4-port 366M Adapter	80000DA9, 1.1200.0	80000DA9, 1.1200.0	80000DA9, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 1Gb 4-port 366T Adapter	80000DC6, 1.1200.0	80000DC6, 1.1200.0	80000DC6, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 560FLB Adapter	80000872, 1.1200.0	80000872, 1.1200.0	80000872, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	80000838, 1.1200.0	80000838, 1.1200.0	80000838, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 560M Adapter	8000083D, 1.1200.0	8000083D, 1.1200.0	8000083D, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 560 SFP+ Adapter	80000835, 1.1200.0	80000835, 1.1200.0	80000835, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 561FLR-T Adapter	800005B6, 1.1200.0	800005B6, 1.1200.0	800005B6, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 561T Adapter	800005B7, 1.1200.0	800005B7, 1.1200.0	800005B7, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10 Gb 2-port 562FLR-SFP+ Adapter	80001EC9, 1.1200.0	80001EC9, 1.1200.0	80001EC9, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	80001EC8, 1.1200.0	80001EC8, 1.1200.0	80001EC8, 1.1200.0	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
<b>Mellanox adapters</b>						
HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	2.35.5100	2.35.5100	2.35.5100	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>
HPE Ethernet 10Gb 2-port 546SFP+ Adapter	2.35.5100	2.35.5100	2.35.5100	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>	<a href="#">SPP 2016040</a>



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**NetXen adapters**

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HPE NC375i PCI Express Quad Port Gigabit Server Adapter	4.0.596	4.0.596	4.0.596	<a href="#">SPP_2015040</a>	<a href="#">SPP_2015040</a>	<a href="#">SPP_2015040</a>
HPE NC375T PCI Express Quad Port Gigabit Server Adapter	4.0.596	4.0.596	4.0.596	<a href="#">SPP_2015040</a>	<a href="#">SPP_2015040</a>	<a href="#">SPP_2015040</a>

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**QLogic adapters**

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HPE NC523SFP 10Gb 2-port Server Adapter	4.20.1	4.20.1	4.20.1	<a href="#">SPP_2016040</a>	<a href="#">SPP_2016040</a>	<a href="#">SPP_2016040</a>
HPE FlexFabric 10Gb 2-port 526FLR-SFP+ Adapter	4.20.1	4.20.1	4.20.1	<a href="#">SPP_2016040</a>	<a href="#">SPP_2016040</a>	<a href="#">SPP_2016040</a>
HPE FlexFabric 10Gb 2-port 536FLB Adapter	7.13.23	7.13.23	7.13.23	<a href="#">SPP_2016040</a>	<a href="#">SPP_2016040</a>	<a href="#">SPP_2016040</a>
HPE FlexFabric 20Gb 2-port 630M Adapter	7.13.23	7.13.23	7.13.23	<a href="#">SPP_2016040</a>	<a href="#">SPP_2016040</a>	<a href="#">SPP_2016040</a>
HPE FlexFabric 20Gb 2-port 630FLB Adapter	7.13.23	7.13.23	7.13.23	<a href="#">SPP_2016040</a>	<a href="#">SPP_2016040</a>	<a href="#">SPP_2016040</a>

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4AA6-8830ENW, December 2016