



# **IMPLEMENTING MICROSOFT WINDOWS SERVER 2019 ON HPE APOLLO 4200 GEN10 SERVER**



# CONTENTS

Executive summary.....	3
Solution components.....	3
HPE Apollo 4200 Gen10 server.....	3
Microsoft Windows Server 2019.....	4
Windows Server editions.....	5
Windows Server diagnostic data (telemetry).....	5
Supported HPE servers.....	5
Supported HPE storage.....	6
Installing Windows Server 2019.....	8
Windows Server 2019 mitigations for Meltdown and Spectre.....	8
Service Pack for ProLiant 2019.09.0.....	9
Remote deployment.....	9
Local deployment.....	10
Installing the Service Pack for ProLiant 2019.09.0 on Windows Server Core.....	11
Installing the Service Pack for ProLiant 2019.09.0 on Windows Server with Desktop (UI).....	11
Summary.....	11
Appendix A: Questions, known issues, and work arounds.....	12
Resources and additional links.....	13



## EXECUTIVE SUMMARY

It is Hewlett Packard Enterprise's goal to support best-in-class solutions based on Microsoft® Windows Server® 2019 operating systems. Hewlett Packard Enterprise provides a full set of drivers and value-added software to enable the support of this new Microsoft operating system on HPE-certified hardware.

**Target audience:** This technical white paper is intended for IT administrators, Microsoft administrators and architects, storage administrators, solution architects, and anyone interested in learning how HPE Apollo servers can be deployed with Windows Server 2019.

## SOLUTION COMPONENTS

### HPE Apollo 4200 Gen10 server

HPE Apollo 4200 Gen10 servers offer an architecture optimized for Big Data Analytics, Software-Defined Storage, backup and archive, and other data-storage-intensive workloads. Its unique, easily serviceable 2U design saves data center space with up to 28 Large Form Factor (LFF) or 54 Small Form Factor (SFF) hot-plug drives. It delivers accelerated performance with a superior bandwidth and balanced architecture, Intel® Xeon® processors, and NVMe connected SSDs. The focus on security extends from FIPS 140-2 Level 1 validated storage controllers down to the system silicon level, taking full advantage of Hewlett Packard Enterprise innovations in firmware protection, malware detection, and recovery.

FIGURE 1 shows the HPE Apollo 4200 Gen10 LFF server.



**FIGURE 1.** Fully populated HPE Apollo 4200 Gen10 server with LFF drives



FIGURE 2 shows a top view of the HPE Apollo 4200 Gen10 server with the cover removed.



FIGURE 2. HPE Apollo 4200 Gen10 server with dual processors and fully populated RAM

### Microsoft Windows Server 2019

From the Microsoft Windows Server home page:

*“Windows Server 2019 is built on the strong foundation of Windows Server 2016—which continues to see great momentum in customer adoption. Windows Server 2016 is the fastest adopted version of Windows Server, ever! We’ve been busy since its launch at Ignite 2016 drawing insights from your feedback and product telemetry to make this release even better.”*

*“We also spent a lot of time with customers to understand the future challenges and where the industry is going. Four themes were consistent—hybrid, security, application platform, and hyperconverged infrastructure. We bring numerous innovations on these four themes in Windows Server 2019.”*

TABLE 1. Windows Server 2019 minimum server hardware recommendations\*

<b>Processor</b>	<ul style="list-style-type: none"> <li>• 1.4 GHz x64</li> <li>• Compatible with x64 instruction set</li> <li>• Supports NX and DEP</li> <li>• CMPXCHG16b, LAHF/SAHF, PreFetchW</li> <li>• Supports Second Level Address Translation (EPT or NPT)</li> </ul>
<b>Bus</b>	<ul style="list-style-type: none"> <li>• PCI Express</li> </ul>
<b>RAM</b>	<ul style="list-style-type: none"> <li>• Memory: ECC or better, 512 MB minimum, 2 GB recommended for Server with Desktop Experience installation option</li> </ul>
<b>Storage</b>	<ul style="list-style-type: none"> <li>• Controller and HBA—PCI Express, bootable FC, FCoE, iSCSI, SAS, SATA</li> <li>• Size—60 GB</li> </ul>
<b>Network</b>	<ul style="list-style-type: none"> <li>• 1 Gbps</li> <li>• PCI Express</li> <li>• PXE support</li> <li>• Optionally, KDNNet support</li> </ul>
<b>TPM</b>	<ul style="list-style-type: none"> <li>• 1.2 and 2.0 are supported by Microsoft. Hewlett Packard Enterprise recommends only TPM 2.0</li> </ul>
<b>BIOS or UEFI</b>	<ul style="list-style-type: none"> <li>• UEFI 2.3.1c-based system and firmware that supports secure boot</li> </ul>
<b>Graphics</b>	<ul style="list-style-type: none"> <li>• Capable of Super VGA 1024x768, 32-bit</li> </ul>

**\*NOTE**

HPE Apollo 4200 Gen10 servers that have been certified for Windows Server 2019 meet or exceed these requirements.



## Windows Server editions

Windows Server 2019 is available in both Datacenter and Standard editions. The default installation is Server Core, but a full Desktop Experience can be optionally installed, and user guidance is provided in this paper for both. The releases in the new Semi-Annual Channel cadence are only available in Server Core (no GUI).

### NOTE

You cannot convert between Windows Server 2019 installations of Server Core and Server with Desktop Experience. A change requires a complete reinstallation.

For more information, see [docs.microsoft.com/en-us/windows-server/windows-server](https://docs.microsoft.com/en-us/windows-server/windows-server) and [Windows Server Semi-Annual Channel overview](#).

## Windows Server diagnostic data (telemetry)

To continuously improve the quality of Windows Server, Microsoft encourages customers to provide feedback and diagnostic data. This diagnostic data is distinct from functional data, and Microsoft avoids collecting personal information wherever possible. Microsoft has published a guide that discusses how your privacy is protected and how you can choose the diagnostic data shared with Microsoft, which enables you to make informed decisions about how to configure diagnostic data in your organization:

[docs.microsoft.com/en-us/windows/configuration/Configure\\_Windows\\_diagnostic\\_data\\_in\\_your\\_organization](https://docs.microsoft.com/en-us/windows/configuration/Configure_Windows_diagnostic_data_in_your_organization).

In Windows Server 2019, you can control diagnostic data streams by launching **Settings** and entering “feedback” in the **Search** box, or by using Group Policy, as explained in the *Configure Windows diagnostic data in your organization* guide (link mentioned previously).

HPE customers can benefit from the improvements made by Microsoft via the analysis of diagnostic data from Windows Server. Hewlett Packard Enterprise encourages customers to enable telemetry to improve customer support.

## Supported HPE servers

Hewlett Packard Enterprise and Microsoft recommend running the latest Windows Server operating system on supported HPE Apollo 4200 Gen10 servers to take advantage of the latest hardware and software solutions available. While older servers can still run new Windows Server operating systems, they might not support many of the new features and will not offer the best customer experience and optimized Microsoft solution.

**TABLE 2** represents the HPE Apollo 4200 Gen10 servers that are supported and certified with the Microsoft Windows Server 2019 operating system. If your server is **not** on this list, it is **not** supported by Hewlett Packard Enterprise with Windows Server 2019. Please make sure that your supported server is updated to the minimum system ROM version in order to properly run Windows Server 2019.

For detailed information about the certification for the HPE Apollo 4200 Gen10 server (also known as HPE ProLiant XL420 Gen10 server), including the updated firmware release information and hardware configuration, see the following link in the *Windows Server Catalog* website: [windowsservercatalog.com/item.aspx?itemId=f2f3fddb-aeaa-0293-f1ae-57ed9e382730&bCatID=1333](https://windowsservercatalog.com/item.aspx?itemId=f2f3fddb-aeaa-0293-f1ae-57ed9e382730&bCatID=1333).

For detailed information about the certification for the HPE Apollo 4500\4510 Gen10 server (also known as HPE ProLiant XL450 Gen10 server), including the updated firmware release information and hardware configuration, see the following link in the *Windows Server Catalog* website: [windowsservercatalog.com/item.aspx?itemId=8bdc1544-24e4-b49e-6c15-52d8851b3748&bCatID=1333](https://windowsservercatalog.com/item.aspx?itemId=8bdc1544-24e4-b49e-6c15-52d8851b3748&bCatID=1333).

The latest HPE ProLiant system ROMs are available in the HPE Service Pack for ProLiant 2019.09.0.

The latest version Service Pack for ProLiant (SPP) can always be found in the following link: [https://techlibrary.hpe.com/us/en/enterprise/servers/products/service\\_pack/spp/index.aspx](https://techlibrary.hpe.com/us/en/enterprise/servers/products/service_pack/spp/index.aspx)

**TABLE 2.** HPE ProLiant and HPE Apollo 4000 Gen10 servers ROM supported by Windows Server 2019

HPE ProLiant Gen10 server	ROM family	Minimum ROM version
HPE DL20	U43	1.20_02-02-2019
HPE ML30	U44	1.20_02-02-2019
HPE DL160	U31	2.04_04-18-2019
HPE DL180	U31	2.04_04-18-2019
HPE DL360	U32	2.00_02-02-2019
HPE DL380	U30	2.00_02-02-2019
HPE DL385	A40	1.40_01-25-2019



HPE ProLiant Gen10 server	ROM family	Minimum ROM version
HPE DL325	A41	1.40_01-25-2019
HPE DL560	U34	2.00_02-02-2019
HPE DL580	U34	2.00_02-02-2019
HPE ML110	U33	2.00_02-02-2019
HPE ML350	U41	2.00_02-02-2019
HPE BL460c	I41	2.00_02-02-2019
HPE Synergy 480	I42	2.00_02-02-2019
HPE Synergy 660	I43	2.00_02-02-2019
HPE Apollo XL170r	U38	2.00_02-02-2019
HPE Apollo XL190r	U38	2.00_02-02-2019
HPE Apollo XL270d	U45	2.64_10-17-2018
HPE Apollo XL230k	U37	2.00_02-02-2019
Apollo 4200/XL420	U39	2.00_02-02-2019
Apollo 4500/XL450	U40	2.00_02-02-2019

**TABLE 3.** Supported HPE Smart Array controllers

E208i-a	P408i-a	P816i-a
E208i-p	P408i-p	P824i-P
E208e-p	P408e-p	S100i

**NOTE**

HPE Gen10 Smart Array controllers can be installed during Windows Server OS installation using the inbox driver SMARTSAMD . sys, but then it should be upgraded to the Smart Array driver SMARTPQI . sys, which is included in the Service Pack for ProLiant 2019.09.0.

If booting from the embedded HPE Smart Array S100i SR Gen10 Software RAID, you will need to provide the driver during Windows Server 2019 OS installation. The driver SMARTDQA . sys can be found in the Service Pack for ProLiant 2019.09.0 inside package c:\p036435 . exe. Extract the component to a folder or USB drive, and use HPE iLO (Integrated Lights Out) Remote Console to supply it during Windows setup.

**Supported HPE storage**

This section lists the HPE external storage that is supported with Microsoft Windows Server 2019 and HPE servers.

**TABLE 4.** Supported HPE Primera 600 storage

HPE Primera models	HPE Primera OS Version
HPE Primera A630	4.0
HPE Primera A650	4.0
HPE Primera A670	4.0
HPE Primera C630	4.0
HPE Primera C650	4.0
HPE Primera C670	4.0

**TABLE 5.** Supported HPE Nimble Storage external arrays

HPE Nimble Storage SF Series (5.0x)
HPE Nimble Storage AF Series (5.0x)
HPE Nimble Storage CS Series (5.0x)
HPE Nimble Storage HF Series (5.0x)



**TABLE 6.** Supported HPE 3PAR StoreServ storage

HPE 3PAR StoreServ series	HPE 3PAR OS version <sup>1, 2</sup>
HPE 3PAR StoreServ 7000 series	3.3.1
HPE 3PAR StoreServ 8000 series	3.3.1
HPE 3PAR StoreServ 10000 series	3.3.1
HPE 3PAR StoreServ 9000 series	3.3.1
HPE 3PAR StoreServ 20000 series	3.3.1

**TABLE 7.** Supported HPE MSA external storage arrays\*

HPE MSA storage
HPE MSA 1050 supported using VE270 and later
HPE MSA 2050 supported using VL270 and later
HPE MSA 2052 supported using VL270 and later

\*SPOCK should be consulted for the latest interoperability information (requires account login).

**TABLE 8.** Supported HPE XP external storage arrays\*

HPE XP storage
XP7 supported using 80-06-02 and later
P9500 support using 70-06-xx and later

\*SPOCK should be consulted for the latest interoperability information (requires account login).

For the complete list of supported HPE storage products, see Hewlett Packard Enterprise SPOCK (Single Point of Connectivity Knowledge) for HPE Storage Products at [h20272.www2.hpe.com/SPOCK/index.aspx](https://www2.hpe.com/SPOCK/index.aspx) (requires HPE Passport account).

**TABLE 9.** Supported networking adapters

NIC	Driver
331T, 332T	b57.sys
535T	bnxtnd.sys (inbox)
530SFP+, 530T	evbda.sys, bxnda.sys
521T, 621SFP28	qevbda.sys, qenda.sys
361T, 366T	eli63x64.sys (inbox)
562T	ixi63x64.sys (inbox)
562SFP+	i40ei65.sys (inbox)
640SFP28	m1x5.sys

**TABLE 10.** Supported HPE Fibre Channel (FC) adapters

FC HBA	Driver
SN1200E 1P/2P, SN1600E 1P/2P,	Lpfc.sys
SN1100Q 1P/2P, SN1600Q 1P/2P,	q12300.sys

<sup>1</sup> Windows Server 2019 Support for HPE 3PAR OS version 3.2.2—see SPOCK for details.

<sup>2</sup> Includes support for Boot from SAN and Direct Connect.



**TABLE 11.** Supported HPE converged network adapters (FCoE, iSCSI)

CNA adapter	Driver
650FLB/M, CN1200E, CN1200E-T, 556FLR SFP+	brcmfcoe.sys/be2iscsi.sys
534FLB, 534M, 534FLR, 536FLB, 630M, 630FLB, CN1100R-T, CN1100R, 533FLR-T, 536FLR-T,	bxfcOE.sys/bxois.sys
CN1300r, CN1200r-t, 622flr-	qefcoe.sys/qeois.sys

For the complete list of supported adapter products, be sure to check the *HPE Apollo 4200 Gen10 Server Quickspec* page for the most updated information: [h20195.www2.hp.com/v2/gethtml.aspx?docname=a00056091enw](https://h20195.www2.hp.com/v2/gethtml.aspx?docname=a00056091enw)

**HPE Agentless Management Service (AMS)**

HPE Agentless Management Service (AMS) provides iLO with OS-level management information and Active Health System events.

AMS version 1.44.0.0 added support for WS2019 on all HPE Gen10 servers (including HPE ProLiant and HPE Apollo).

Specifically, the cpqHoOsType MIB enumeration value 57 was defined as a new OS type for WS2019, and this value would be provided to iLO 5 for correctly identifying the current OS installed as WS2019.

AMS version 1.44.0.0 is contained and installed from cp039663.exe, which can be found on the Service Pack for ProLiant 2019.09.0.

**INSTALLING WINDOWS SERVER 2019**

When deploying Windows Server 2019, customers have a choice of Server Core or the full Desktop version for both Standard and Datacenter editions. (Another edition, Windows Server Essentials, is for small business and not covered here.) Just as in previous versions of Windows Server, the installation can be performed from DVD media or using the iLO Virtual Media. Boot controller drivers for Smart Array controllers listed above are provided in-box, and any other drivers can be provided using iLO Virtual Media during the Setup procedure.

For this version of Windows Server 2019, Microsoft now supports [certain upgrade scenarios](#) and customers are strongly advised to test before deploying, such as by upgrading virtual machines after a full backup. Hewlett Packard Enterprise has validated the upgrade from WS2016 to Windows Server 2019 for the operating system (not applications), and with a consistent driver model the process should be straightforward. However, it is up to the customer to validate before proceeding. The following sections also provide information on updating drivers and software with the Service Pack for ProLiant 2019.09.0 (SPP).

**NOTE**

After installation, Windows Server 2019 will require a Servicing Stack Update before additional updates can be applied. This can be obtained directly from the Microsoft Update Catalog or via Windows Update. Note that updates via the SConfig tool will fail without it. For the *Latest Servicing Stack Updates*, see [portal.msrc.microsoft.com/en-us/security-guidance/advisory/ADV990001](https://portal.msrc.microsoft.com/en-us/security-guidance/advisory/ADV990001).

**Windows Server 2019 mitigations for Meltdown and Spectre**

Windows Server 2019 includes mitigations for Meltdown and Spectre vulnerabilities (Meltdown and Spectre). However, the patches are not enabled by default and require the following registry keys. (This is necessary to pass validation with the Speculation Control Validation PowerShell Script.)

```

“HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management” /v
FeatureSettingsOverride /t REG_DWORD /d 8 /f
“HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management” /v
FeatureSettingsOverrideMask /t REG_DWORD /d 3 /f
    
```

See [support.microsoft.com/en-us/help/4072698/windows-server-speculative-execution-side-channel-vulnerabilities-prot](https://support.microsoft.com/en-us/help/4072698/windows-server-speculative-execution-side-channel-vulnerabilities-prot) for more information.

For more information on Spectre/Meltdown mitigation, see the following:

- [HPE support communication—customer bulletin](#)
- [ADV180002 | Guidance to mitigate speculative execution side-channel vulnerabilities \(Security Advisory\)](#)
- [Speculation Control Validation PowerShell Script](#)





---

**NOTE**

Additional vulnerabilities might be discovered and additional guidance could need to be followed in addition to the above.

---

**Service Pack for ProLiant 2019.09.0**

This section describes the installation instructions for the Service Pack for ProLiant 2019.09.0 on both Server Core and Desktop Experience versions. The Service Pack for ProLiant 2019.09.0 is available by entitlement. The SPP provides the necessary drivers for Windows Server 2019 versions on supported HPE ProLiant servers and is available from:

[h17007.www1.hpe.com/us/en/enterprise/servers/products/service\\_pack/spp/index.aspx](http://h17007.www1.hpe.com/us/en/enterprise/servers/products/service_pack/spp/index.aspx).

The SPP can be deployed using Smart Update Manager (SUM) version 8.4.5. SUM has a browser-based GUI, as well as scriptable, interactive command line and file-driven interfaces. For more information on SUM, see [hpe.com/us/en/product-catalog/detail/pip.5182020.html](http://hpe.com/us/en/product-catalog/detail/pip.5182020.html).

SUM is embedded inside Service Pack for ProLiant and can be launched simply by running `launch_sum.bat` under Windows OS or `launch_sum.sh` in Linux OS from the DVD image root directory.

The SPP can be deployed via the following scenarios:

- Remote deployment
- Local deployment

---

**CAUTION**

When a TPM is installed and enabled on the server, data access is locked if the user fails to follow the proper procedure for updating the system or option firmware. Microsoft recommends temporarily disabling Windows BitLocker prior to updating any system firmware. After the firmware flash is complete, the server should be rebooted and BitLocker can be re-enabled.

---

**Remote deployment**

The procedures for remote deployment are the same for both Windows Server Core and Windows Server with Desktop (UI), because it is performed remotely.

1. Copy the files from the Smart Update Manager (SUM) to your local host.
2. Run `smartupdate.bat` (Windows).
3. You might need to add a security certificate exception or bypass the browser warning that the self-signed certificate does not validate security.

Procedure to add Baseline:

1. On the SUM home screen, click **Baseline Library**.
2. On the **Baseline Library** screen, click **Add Baseline**.

---

**NOTE**

If you want to clear the **Add Baseline** screen, click **Start Over**.

---

SUM opens the **Add Baseline** screen.

3. Select **Browse** and use the folder where you extracted the Service Pack for ProLiant 2019.09.0.
4. Click **Add**. SUM should return a "Baseline successfully added" message.
5. Under the Smart Update Manager drop-down menu, click **Nodes** (under **Options**).

Procedure to add servers as remote nodes and install the SPP:

1. From the **Nodes** screen, click **Add Node**.
2. Select **Add a single node or known range of nodes**.
3. Enter the IP address or range.
4. Enter a description for the node.
5. In the **Type of node to add** field, select the node type, which should be **Windows**.



---

**TIP**

Selecting the correct node type often helps SUM complete adding the node faster.

---

6. Select the Service Pack for ProLiant 2019.09.0 bundle as a baseline here. If the SPP has not been added, select **+Add Baseline** and browse to the location where you extracted the SPP.
7. Select a group from the list (optional).

Select one of the following:

- Use current credentials (requires existing trust relationship with the node). This option is for Windows nodes only.
- Enter administrator credentials: Enter the user name and password for a user with administrator privileges on the node. Windows users can use domain/user name if the user has administrator permission.

Click **Add**. In the **Added Nodes** section, SUM displays the nodes you selected.

Performing node inventory

1. From the **Nodes** screen, highlight the node and then select **Actions -> Inventory**.
2. SUM displays the baseline associated with the node. If you want to reassign the baseline that SUM will use for inventory, select either a baseline or an additional package, or both. For HPE ProLiant Gen10 servers, you can select a saved install set as a baseline in the **Inventory** or **Edit** page.
3. Click **Inventory**. SUM displays errors to resolve before you can deploy updates.

Deploying a node procedure

1. From the **Nodes** screen, select a node to update, and then select **Actions -> Review/Deploy**.
2. Click the **Installation Options** tab to change options, if necessary. You might need to select the **Ignore Warnings** checkbox if a TPM is detected. Be sure to follow the instructions provided if it says to suspend BitLocker before performing firmware updates.
3. Select the **Reboot Options** tab to set options, if desired.
4. *For HPE Gen10 iLO 5 Windows:* Click the HPE iLO **Repository Options** tab to manage the HPE iLO Repository.
5. Select the components from the **Baseline** and **Associated Packages** tabs where you want to change any deployment selections (the 2019.09.0 SPP bundle should be ready to deploy).
6. Click **Deploy**. SUM verifies any changes that you made are valid and then begins deploying components.
7. In the **General** section of the **Nodes** screen, click **View log** for the node, and then click **View log** for the component you installed to view the details of the installation.

## Local deployment

Depending on your environment, it might be necessary to perform the following optional configuration tasks: disable the firewall (temporarily), enable Remote Management, and add the SNMP service and SNMP WMI Provider Windows features—with the help of these commands in PowerShell:

```
> netsh advfirewall set currentprofile state off
> netsh advfirewall set allprofiles settings remotemanagement enable
> Add-WindowsFeature SNMP-Service
> Add-WindowsFeature SNMP-WMI-Provider
```



## Installing the Service Pack for ProLiant 2019.09.0 on Windows Server Core

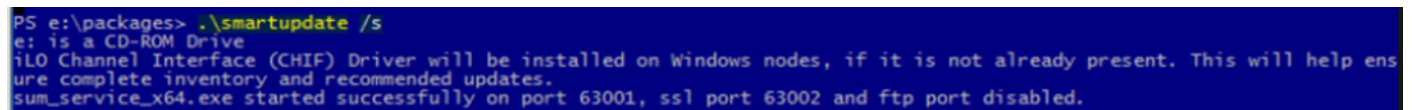
Because Windows Server Core does not contain a full UI and a browser, it is necessary to update HPE drivers and software using SUM from the command line. Windows Server Core provides only a command prompt for the user that is logged in. SUM can be run from this command prompt using the `smartupdate.bat` file located in the SUM folder.

To apply Smart Updates to Server Core (without UI interaction) using CMD or Windows PowerShell:

1. Download and mount the SPP .ISO file.
2. Run `smartupdate.bat` from the Packages folder, for example

```
smartupdate /s
```

FIGURE 3 shows an example using Windows PowerShell.



```
PS e:\packages> .\smartupdate /s
e: is a CD-ROM Drive
iLO Channel Interface (CHIF) Driver will be installed on Windows nodes, if it is not already present. This will help ensure complete inventory and recommended updates.
sum_service_x64.exe started successfully on port 63001, ssl port 63002 and ftp port disabled.
```

FIGURE 3. Running “.\smartupdate /s” from the Packages folder to install the SPP

---

### NOTE

This process might take up to 30 minutes to complete.

A common error message is a **failed dependency**, which can be due to the presence of a TPM module in the server. If this is the case, it is necessary to run the `smartupdate` in two commands:

- `.\smartupdate /s /tpmbypass /romonly`
- `.\smartupdate /s /tpmbypass /softwareonly`

---

For detailed instructions on using this command line option, see the *Smart Update Manager CLI Guide* at: [support.hpe.com/hpsc/doc/public/display?docId=a00040554en\\_us](http://support.hpe.com/hpsc/doc/public/display?docId=a00040554en_us).

## Installing the Service Pack for ProLiant 2019.09.0 on Windows Server with Desktop (UI)

Follow the instructions mentioned previously in [Installing the Service Pack for ProLiant 2019.09.0 on Windows Server Core](#) for the command line deployment, or perform the `smartupdate` process using a browser—selecting the local host as the node for deployment.

## SUMMARY

This technical white paper highlights how Microsoft Windows Server 2019 can be deployed on the HPE Apollo 4200 Gen10 server. This paper also lists the other certified HPE server platforms supported by Microsoft. In addition to the certified HPE servers, HPE storage is also supported with Microsoft Windows Server 2019.



## APPENDIX A: QUESTIONS, KNOWN ISSUES, AND WORK AROUNDS

**Question:** Do HPE ProLiant/Apollo 4200 servers meet the Microsoft requirements for the highest levels of security within Windows Server 2019?

**Answer:** Yes. All supported HPE ProLiant Gen9 and Gen10 servers have earned the Microsoft Hardware Assurance AQ and meet or exceed the Microsoft security requirements.

**Question:** Can I install to and boot WS2019 from an HPE USB stick or microSD card on HPE Gen10 servers?

**Answer:** No.

**Question:** How do I manage my Windows Server 2019 server?

**Answer:** HPE ProLiant/Apollo 4000 hardware can be managed from the iLO. HPE Agentless Management Service (AMS), which is included in the Service Pack for ProLiant 2019.09.0 and provides iLO with OS-level management information and Active Health System events. Additional management features are included in the recently introduced Windows Admin Center at: [docs.microsoft.com/en-us/windows-server/manage/windows-admin-center/overview](https://docs.microsoft.com/en-us/windows-server/manage/windows-admin-center/overview)

**Question:** What PowerShell modules are available to manage HPE ProLiant/Apollo servers?

**Answer:** All HPE modules that are available are on the PowerShell Gallery and can be installed into PowerShell from there. Use this [PowerShell Gallery query](#) to see a current list of available modules.

**Question:** Where can I find more information about HPE Apollo 4200 Gen10 servers?

**Answer:** [buy.hpe.com/us/en/servers/apollo-systems/apollo-4000-system/apollo-4200-server/hpe-apollo-4200-gen10-server/p/1011147097](https://buy.hpe.com/us/en/servers/apollo-systems/apollo-4000-system/apollo-4200-server/hpe-apollo-4200-gen10-server/p/1011147097)



## RESOURCES AND ADDITIONAL LINKS

HPE Apollo 4200 Gen10 server

[support.hpe.com/hpsc/doc/public/display?docId=emr\\_na-a00061636en\\_us&docLocale=en\\_US](https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00061636en_us&docLocale=en_US)

HPE ProLiant DL servers

[hpe.com/info/proliant-dl-servers](https://hpe.com/info/proliant-dl-servers)

HPE Primera storage

[hpe.com/storage/primera](https://hpe.com/storage/primera)

HPE 3PAR StoreServ storage

[hpe.com/storage/3par](https://hpe.com/storage/3par)

HPE Storage for Microsoft Applications and Infrastructure

[hpe.com/storage/microsoft](https://hpe.com/storage/microsoft)

HPE Primera Microsoft Windows Server Implementation Guide

[https://support.hpe.com/hpsc/doc/public/display?docId=a00088897en\\_us](https://support.hpe.com/hpsc/doc/public/display?docId=a00088897en_us)

## LEARN MORE AT

[HPE Storage](#)

Check if the document is available  
in the language of your choice.



Make the right purchase decision.  
Contact our presales specialists.



Chat



Email



Call



Share now



Get updates

© Copyright 2019 Hewlett Packard Enterprise Development LP. The information contained herein is subject to change without notice. The only warranties for Hewlett Packard Enterprise products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. Hewlett Packard Enterprise shall not be liable for technical or editorial errors or omissions contained herein.

Microsoft, Windows, and Windows Server are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Intel Xeon is a trademark of Intel Corporation in the U.S. and other countries. Linux is the registered trademark of Linus Torvalds in the U.S. and other countries. All third-party marks are property of their respective owners.

a00092446ENW, November 2019