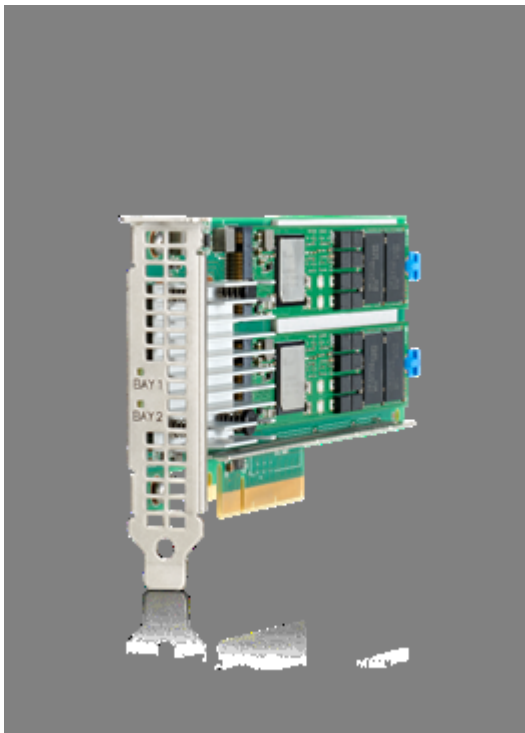Overview

## HPE OS Boot Devices

HPE NS204i-p OS Boot Device is a dedicated hardware RAID 1 solution for those that wish to separate their data plane from their OS plane. It meets the certification requirements of VMware and Microsoft Storage Spaces Direct. HPE Gen 10 and some Gen10 Plus server platforms support a single NS204i-p OS Boot Device installed in one PCIe slot.

This RAID optimized SSD flash based solution utilizes the Windows, Linux, or VMware NVMe driver for easy set up and reliability. Because this is a PCIe add-in card all your drive slots are available for data storage.

The HPE NS204i-p OS Boot Device is a PCIe add in card that includes two 480GB M.2 NVMe SSDs. This enables customers to mirror their OS through dedicated RAID 1. The PCIe card ships with both a half-height bracket and a full-height bracket. You choose the correct bracket based on your server configuration.

HPE NS204i-p presents itself to your management interface as a single directly connected NVMe drive, not a RAID controller. As the NS204i-p is a hardware OS boot device, only RAID 1 mode is supported and it will not operate in any other RAID mode. HPE NS204i-p is "plug-and-play" with no need to configure or manage the device. Always ensure you are running the latest iLO version and update server BIOS, FW and drivers when they become available.

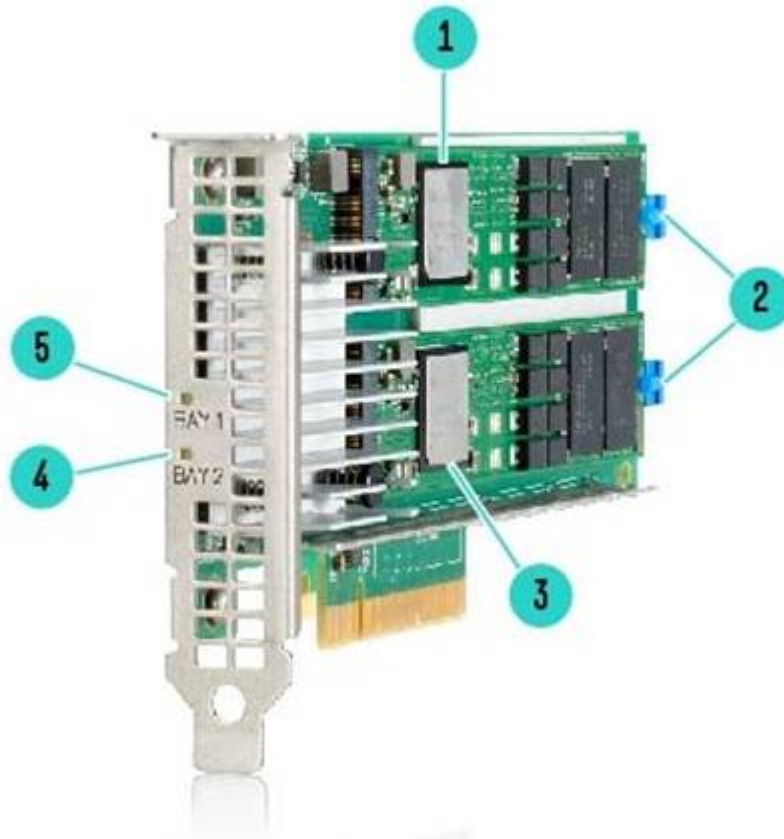**Notes: In some documentation and GUIs, the NS204i-p may be referred to as a controller or a device.**



**With Half-height Bracket**
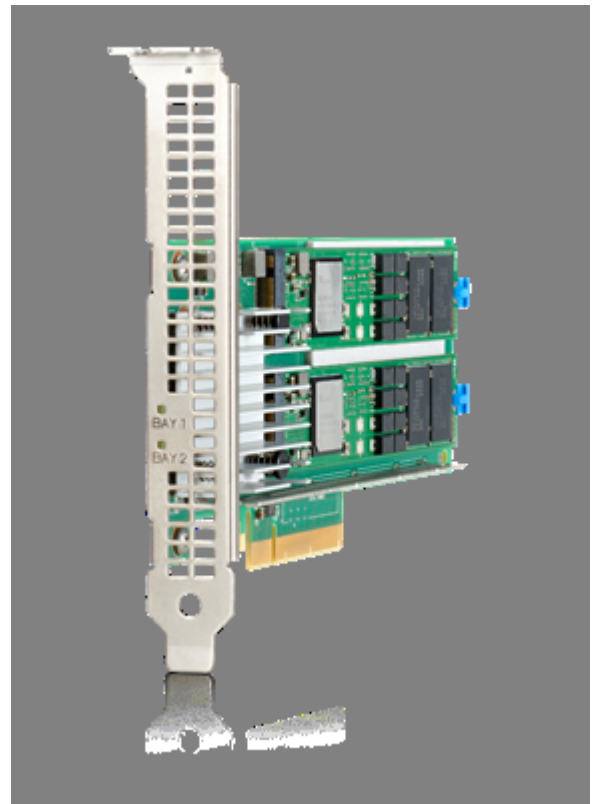


**With Full-height Bracket**

Overview



**HPE NS204i-p Gen10+ Boot Device, half height**

1. Drive bay 1
2. M.2 drive retaining latches
3. Drive bay 2
4. Bay 2 LED
5. Bay 1 LED

| Fault LED Status | |
|---|---|
| **Off** | Normal |
| **Flashing 1Hz** | Drive predictive failure |
| **Amber** | Drive failure |

## Key Features

- Hardware RAID 1 PCIe half-height, half-length (HHHL) card
- Dedicated RAID1 OS Boot device
- (2) 480 GB NVMe M.2 SSDs included
- Utilizes native OS NVMe drivers – no custom driver needed
- Supports Intel Gen10 and Intel and AMD Gen10 Plus platforms (see OS Support matrix for details)

## Models

HPE NS204i-p x2 Lanes NVMe PCIe3 x8 OS Boot Device                    P12965-B21

## Standard Features

Software Updates

Always ensure you are operating with the latest system BIOS, firmware and drivers for your server and OS. Find the latest at hpe.com/driverdownload.
For optimal performance:

- iLO 5 version 2.30 at minimum
- BIOS 2.36 or later

| Minimally Supported Operating Systems | |
| --- | --- |
| **Gen 10** | **Gen10 Plus** |
| Windows 2016 | Windows 2016 |
| Windows 2016 Hype-V | Windows 2016 Hype-V |
| Windows 2016 WS1803 SAC | Windows 2016 WS1803 SAC |
| Windows 2019 | Windows 2019 |
| Windows 2019 Hype-V | Windows 2019 Hype-V |
| Windows 2019 WS1903 SAC | Windows 2019 WS1903 SAC |
| RHEL (64-bit, including KVM) 7.6+Kbase | RHEL (64-bit, including KVM) 7.7 |
| RHEL (64-bit, including KVM) 8.0 | RHEL (64-bit, including KVM) 8.0 |
| SLES12 SP4 (64-bit) | SLES12 SP4 (64-bit) |
| SLES15 (64-bit) | SLES15 SP1 (64-bit) |
| VMware vSphere 6.7 U3 | VMware vSphere 6.7 U3 |
| VMware vSphere 7.0 U1 | VMware vSphere 7.0 U1 |

| Supported Server Platforms | | |
| --- | --- | --- |
| **Description** | **Gen10** | **Gen10 Plus** |
| HPE Apollo 4510 | • | |
| HPE Apollo 4200 | • | |
| HPE ProLiant DL325 | | • |
| HPE ProLiant DL360 | • | |
| HPE ProLiant DL380 | • | |
| HPE ProLiant DL385 | | • |
| HPE ProLiant DL560 | • | |
| HPE ProLiant DL580 | • | |
| HPE ProLiant ML110 | • | |
| HPE ProLiant ML350 | • | |

## Warranty
HPE Solid State Drives and Add-In Cards have a standard 3/0/0 warranty; Customer Self Repair (CSR) subject to maximum usage limitations. Maximum usage limit is the maximum amount of data that can be written to the drive. Drives that have reached this limit will not be eligible for warranty coverage.

## Warranty Upgrade Options
- Response - Upgrade on-site response from next business day to same day 4 hours.
- Coverage - Extend hours of coverage from 9 hours x 5 days to 24 hours x 7 days.
- Duration - Select duration of coverage for a period of 1, 3, or 5 years.
- Warranty upgrade options can come in the form of HPE Pointnext operational, which are sold at the HPE System level to which this product attaches.

## Service and Support

HPE Technology Services for Industry Standard Servers

HPE Technology Services delivers confidence, reduces risk and helps customers realize agility and stability powered by a rich portfolio of consulting and support services designed to add value to our core products and solutions connect to Hewlett Packard Enterprise to help prevent problems and solve issues faster. Our support technology lets you to tap into the knowledge of millions of devices and thousands of experts to stay informed and in control, anywhere, any time.

Protect your business beyond warranty with HPE Support Services

HPE support services offer complete care and support expertise with committed response choices that are designed to meet your IT and business needs.

Notes: **HPE Solid State Drives are supported as a part of the HPE Server Infrastructure. No separate Support Services are needed to be purchased.**

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Connect your devices to HPE

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Achieve up to 77%[1] reduction in down time, near 100%[2] diagnostic accuracy and a single consolidated view of your environment. By connecting, you will receive 24x7monitoring, pre-failure alerts, automatic call logging, and automatic parts dispatch. HPE Proactive Care Service and HPE Datacenter Care Service customers will also benefit from proactive activities to help prevent issues and increase optimization.
All of these benefits are already available to you with your server storage and networking products, securely connected to HPE support.
Notes:

[1]**IDC Whitepaper**

[2]**HPE CSC Reports 2014-2015**

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HPE Support Center

Personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with Hewlett Packard Enterprise experts, access support resources or collaborate with peers. Learn more **HPE Support Center**

HPE Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.

HPE Insight Remote Support and HPE Support Center are available at no additional cost with a Hewlett Packard Enterprise warranty, HPE Support Services or HPE contractual support agreement.

Notes: *****HPE Support Center Mobile App above is subject to local availability.**

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Parts and materials

Hewlett Packard Enterprise will provide HPE-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements.
Parts and components that have reached their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual, product quick-specs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

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## Service and Support

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction.

Warranty / Service Coverage

For ProLiant servers and storage systems, the service on the main product covers HPE-branded hardware options not designated by Hewlett Packard Enterprise as requiring separate coverage, that are qualified for the server, purchased at the same time or afterward and internal to the enclosure. These items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been reached.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by Hewlett Packard Enterprise due to malfunction. It does not apply Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by Hewlett Packard Enterprise as consumable parts and/or that have reached maximum supported lifetime and/or the maximum usage limits as set forth in the manufacturer's operating manual, the product QuickSpecs, or the technical data sheet are not eligible for the defective media retention service feature option.

Subject to: Maximum supported lifetime: This is a period in years set to equal the warranty for the specific drive. After this period no further service coverage will be available for the drive. Maximum usage limit: This is the maximum amount of data that can be written to the drive. Drives that have reached this limit will not be eligible for services coverage.

**Additional Notes Regarding Usage and Wear:**

- DWPD (Drive-Writes-Per Day) ->Full drive writes per day for 5 years. Based on 100% Random Writes (KiB).
- HPE Enterprise SSDs deliver: Full data path error detection, surprise power loss protection and Smart SSD Wear Gauge support.

For more information

To learn more on services for HPE ESSN Options, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Or visit:

- **https://www.hpe.com/us/en/product-catalog/servers/proliant-servers.html** or
- **https://www.hpe.com/us/en/integrated-systems/bladesystem.html**

Supporting Helpful Links

- **http://www.hpe.com/info/rackandpower**
- **http://www.hpe.com/info/poweradvisor**
- **https://www.hpe.com/us/en/storage/entry-level.html**

**Also**

Take control of your data - A guide to understanding storage technologies.

- **http://www.hpe.com/h20195/V2/getpdf.aspx/4AA4-7667ENW.pdf?ver=1.0**

Technical Specifications

| HPE NS204i-p | |
|---|---|
| **Function** | OS boot only |
| **Form Factor** | PCIe HHHL card |
| **RAID Mode** | Preconfigured hardware RAID 1 |
| **SSD** | 480GB, read intensive, enterprise-class with Power Loss Protection (PLP) |
| **SSD form factor** | 22110 |
| **Drive writes per day (dwpd)** | 0.5 |
| **PCIe Support** | Gen 3 |
| **PCIe Host Interface** | x8 physical, x4 electrical |
| **Physical Drives Required** | 2 |
| **NVMe RAID** | Supported, hardware RAID 1 only |
| **Boot Mode** | UEFI |
| **Security** | FW RoT |
| **Platform support** | HPE Intel Gen10 and Intel and AMD Gen10 Plus (see Platform Support matrix for details) |
| **What's in the box** | (1) PCIe HHHL card, (2) NVMe M.2 SSDs, full height bracket, half height bracket, installation instructions |
| **Driver and Firmware** | Uses native OS NVMe drivers. No separate driver required. |
| **OS supported** | VMware, Linux, Windows  See Support table for details. |
| **HPE OneView support** | Visible, not managable |
| **Storage Management Software support** | Visible, not managable |
| **Compliance** | RoHS, Lot 9 |
| **Warranty** | 3 years, parts only. Does not include SSD wear out. |

Environment friendly Products and Approach End-of life Management and Recycling

Hewlett Packard Enterprise offers end-of-life **product return, trade-in, and recycling programs,** in many geographic areas, for our products. Products returned to Hewlett Packard Enterprise will be recycled, recovered or disposed of in a responsible manner.
The EU WEEE Directive (2012/19/EU) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the **Hewlett Packard Enterprise web site.** These instructions may be used by recyclers and other WEEE treatment facilities as well as Hewlett Packard Enterprise OEM customers who integrate and re-sell Hewlett Packard Enterprise equipment.

## Summary of Changes

| Date | Version History | Action | Description of Change |
|------|-----------------|--------|------------------------|
| 09-Nov-2020 | Version 2 | Changed | Technical Specifications was updated |
| 28-Sep-2020 | Version 1 | New | New QuickSpecs |

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