Overview

HPE OS Boot Devices

HPE NS204i OS Boot Devices come in different form factors and are a dedicated hardware RAID 1 solution fo
plane from their OS plane. The NS204i meets the certification requirements of VMware and Microsoft Storage
server compatibility matrix for each of the different form factors. Server platforms support a single NS204i OS
This RAID optimized SSD flash based solution utilizes the Windows, Linux, or VMware NVMe inbox drivers for
OS Boot Device does not consume any drive bay, thus making all of the bays available for data storage.

The HPE NS204i-u is a universal installation hot plug OS Boot Device that includes two 480GB M.2 NVMe SS
PCIe slot, and auto-creates RAID1 volume.

The HPE NS204i-p and the NS204i-d (SY480 Gen10 Plus) OS Boot Devices includes two 480GB M.2 NVMe S
must be added to the NS204i-r riser and the NS204i-t Boot Controller. The NS204i boot device enables custo
dedicated RAID 1.

HPE NS204i presents itself to your management interface as a single directly connected NVMe drive, not a RA
hardware OS boot device, only RAID 1 mode is supported and it will not operate in any other RAID mode. HPE
need to configure or manage the device. Always ensure you are running the latest iLO version and update ser
become available.

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

NS204i-p Gen10+

NS204i-d
(Synergy 480 Gen10 Plus Compute)
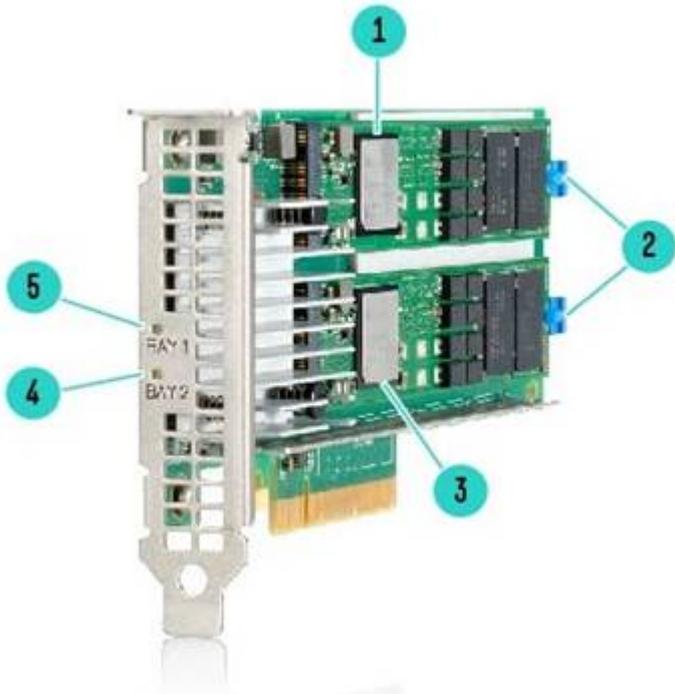
Overview

HPE NS204i-u Gen11 Boot Device

1. Drive carrier 1
2. Universal Installation
3. Bay 1 Fault LED

4. Bay 2 Fault LED
5. Drive carrier 2

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

HPE NS204i-p Gen10+ Boot Device, half height

Overview

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

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

Key Features

- Automatic RAID 1 creation
- Hardware RAID 1 with automatic drive rebuild
- (2) 480 GB NVMe M.2 SSDs included with the NS204i-p and NS204i-d (SY480 Gen10 Plus option) controllers
- (2) On-board M.2 drive bays
- Utilizes native OS NVMe drivers - no custom driver needed
- Full HPE iLO integration for Redfish, Alerts, GUI
- Supports Intel Gen10 and Intel and AMD Gen10 Plus platforms (see support matrix for details)

Models

HPE NS204i-u Gen11 NVMe Hot Plug Boot Optimized Storage Device

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

HPE NS204i-d Gen10 Plus NVMe PCIe3 x4 M.2 OS Boot Device

HPE ProLiant DL36X Gen10 Plus x16/x8 PCIe M.2 NS204i-r Riser Kit

HPE NS204i-t Gen10 Plus x2 Lanes NVMe PCIe 3 x8 Boot Controller

M.2 Drive - Required for NS204i-r Riser

HPE 480GB NVMe Gen3 Mainstream Performance Read Intensive M.2 Multi Vendor SSD

XXXXXX-X21 is SKU designation formed by a common six digit part number and a -X21 suffix that identifies a SI server family lines. Refer to the table below to find the SKU suffix that applies to the specific server product line		
-B21	**-H21**	**-**
COMPUTE Server Line	**SPECIALIZED COMPUTE Server Line**	**S**
HPE Cloudline CL2100/CL2200/CL2800/CL3100/CL4100/ CL5200/CL5800 Servers HPE Composable Cloud for ProLiant DL HPE ProLiant BL460c/BL660c Servers HPE ProLiant DL20/DL160/DL180 Servers HPE ProLiant DL325/DL360/DL380/DL385/DL560/DL580 Servers HPE ProLiant DX360/DX380 Servers HPE ProLiant MicroServer HPE ProLiant for Microsoft Azure Stack HPE ProLiant ML30/ML110/ML350 Servers HPE Synergy 480/660 Systems HPE ProLiant DX170r/DX190r, DX2000 Servers HPE ProLiant DX560 Gen10 server HPE ProLiant DX4200 Gen10 server	HPE Apollo 35/40/70 Systems HPE Apollo 2000/6000 Servers HPE XL170r/XL190r/XL270d (Apollo 6500) Gen10 Server for BlueData Software HPE Converged System 300/500/700/750 HPE Edgeline Systems and Servers HPE Integrity BL860c i6/BL870c i6/BL890c i6 Server Blades HPE Integrity MC990 X Server HPE Integrity rx2800 i6 Server HPE Integrity Superdome HPE SGI 8600 System HPE Solutions for SAP HANA (TDI)	H H B H H H E H S H H H 1

Overview

D
lis

Standard Features

Software Updates
Always ensure you are operating with the latest iLO, system BIOS, and controller firmware for your server and OS.
For optimal performance:

- iLO 5 2.30 or later
- BIOS 2.36 or later for Gen10 Servers

Operating System Support

- **Microsoft Windows Server**
- **Red Hat Enterprise Linux (RHEL)**
- **SUSE Linux Enterprise Server (SLES)**
- **VMware ESXi**

Notes: HPE controllers are supported by the server operating system. Please also see the server operating system compatibility. For more information on HPE's server operating systems and virtualization software, please visit:

http://www.hpe.com/info/ossupport

Service and Support

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.

HPE Pointnext - Service and Support
Get the most from your HPE Products. Get the expertise you need at every step of your IT journey **with HPE Pointnext Services**. We help you lower your risks and overall costs using automation and methodologies that have been tested and refined by HPE experts through thousands of deployments globally. HPE Pointnext **Advisory Services**, focus on your business outcomes and goals, partnering with you to design your transformation and build a roadmap tuned to your unique challenges.
Our **Professional** and **Operational Services** can be leveraged to speed up time-to-production, boost performance and accelerate your business. HPE Pointnext specializes in flawless and on-time implementation, on-budget execution, and creative configurations that get the most out of software and hardware alike.

Consume IT on your terms
HPE GreenLake brings the cloud experience directly to your apps and data wherever they are-the edge, colocations, or your data center. It delivers cloud services for on-premises IT infrastructure specifically tailored to your most demanding workloads. With a pay-per-use, scalable, point-and-click self-service experience that is managed for you, HPE GreenLake accelerates digital transformation in a distributed, edge-to-cloud world.

- Get faster time to market
- Save on TCO, align costs to business
- Scale quickly, meet unpredictable demand
- Simplify IT operations across your data centers and clouds

Managed services to run your IT operations
HPE GreenLake Management Services provides services that monitor, operate, and optimize your infrastructure and applications, delivered consistently and globally to give you unified control and let you focus on innovation.

Recommended Services
HPE Pointnext Tech Care.
HPE Pointnext Tech Care is the new operational service experience for HPE products. Tech Care goes beyond traditional support by providing access to product specific experts, an AI driven digital experience, and general technical guidance to not only reduce risk but constantly search for ways to do things better. HPE Pointnext Tech Care has been reimagined from the ground up to support a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Pointnext Tech Care is available in three response levels. Basic, which provides 9x5 business hour availability and a 2 hour response time. Essential which provides a 15 minute response time 24x7 for most enterprise level customers, and Critical which includes a 6 hour repair commitment where available and outage management response for severity 1 incidents.

Service and Support

https://www.hpe.com/services/techcare

HPE Pointnext Complete Care

HPE Pointnext Complete Care is a modular, edge-to-cloud IT environment service that provides a holistic approach to optimizing your entire IT environment and achieving agreed upon IT outcomes and business goals through a personalized and customer-centric experience. All delivered by an assigned team of HPE Pointnext Services experts. HPE Pointnext Complete Care provides

- A complete coverage approach -- edge to cloud
- An assigned HPE team
- Modular and fully personalized engagement
- Enhanced Incident Management experience with priority access
- Digitally enabled and AI driven customer experience

https://www.hpe.com/services/completecare

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 Tech Care Service and HPE Complete 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

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 QuickSpecs, or the technical product data sheet will not be provided, repaired, or replaced as part of these services.

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

Service and Support

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.

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	
Function	OS boot only
Form Factor	PCIe HHHL card, mezzanine or 1U riser
RAID Mode	Preconfigured hardware RAID 1
SSD	480GB, read intensive, enterprise-class with Power Loss Protection (PLP). SSDs must be added to the NS204i-r riser and NS204i-t boot controller
SSD form factor	22110
Drive writes per day (dwpd)	0.5
PCIe Support	Gen 3
PCIe Host Interface	NS204i-p: 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	NS204i-p: (1) PCIe HHHL card, (2) NVMe M.2 SSDs, full height bracket, half height bracket, installation instructions NS204i-d: (1) Boot Controller SY480 Gen10 Plus, (2) NVMe M.2 SSDs, installation instructions NS204i-r: (1) DL36x Gen10 Plus riser, installation instructions - SSDs not included NS204i-t: (1) Apollo boot controller, installation instructions - SSDs not included
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 managablemanageable
Storage Management Software support	Visible, not managablemanageable
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.
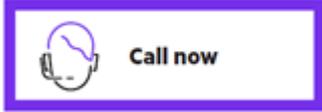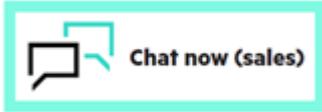
Summary of Changes

Date	Version History	Action	Description of Change
05-Sep-2023	Version 8	Changed	Standard Features & Overview Sections were updated
05-Jun-2023	Version 7	Changed	Overview, Standard Features and Service and Support sections were updated.
10-Nov-2022	Version 6	Changed	Models & Service and Support Sections were updated
06-Sep-2022	Version 5	Changed	Models Section was updated
06-Dec-2021	Version 4	Changed	Added NS204i-r, NS204i-d, and NS204i-t products
15-Nov-2021	Version 3	Changed	Models & Service and Support Sections were updated
09-Nov-2020	Version 2	Changed	Technical Specifications was updated
28-Sep-2020	Version 1	New	New QuickSpecs

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