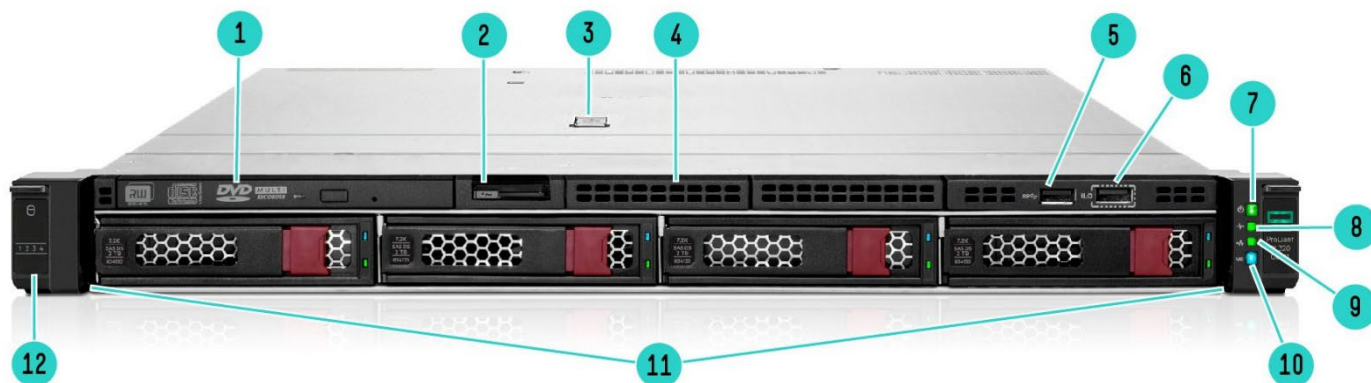


Overview

HPE ProLiant DX320 Gen11

Do you need to efficiently expand or refresh your IT infrastructure to propel the business? Adaptable to diverse workloads and environments, the compact 1U 1P HPE ProLiant DX320 Gen11 delivers enhanced performance with the right balance of expandability and density. Designed for supreme versatility and resiliency while backed by a comprehensive warranty, the HPE ProLiant DX320 Gen11 is ideal for IT infrastructure, either physical, virtual, or containerized.

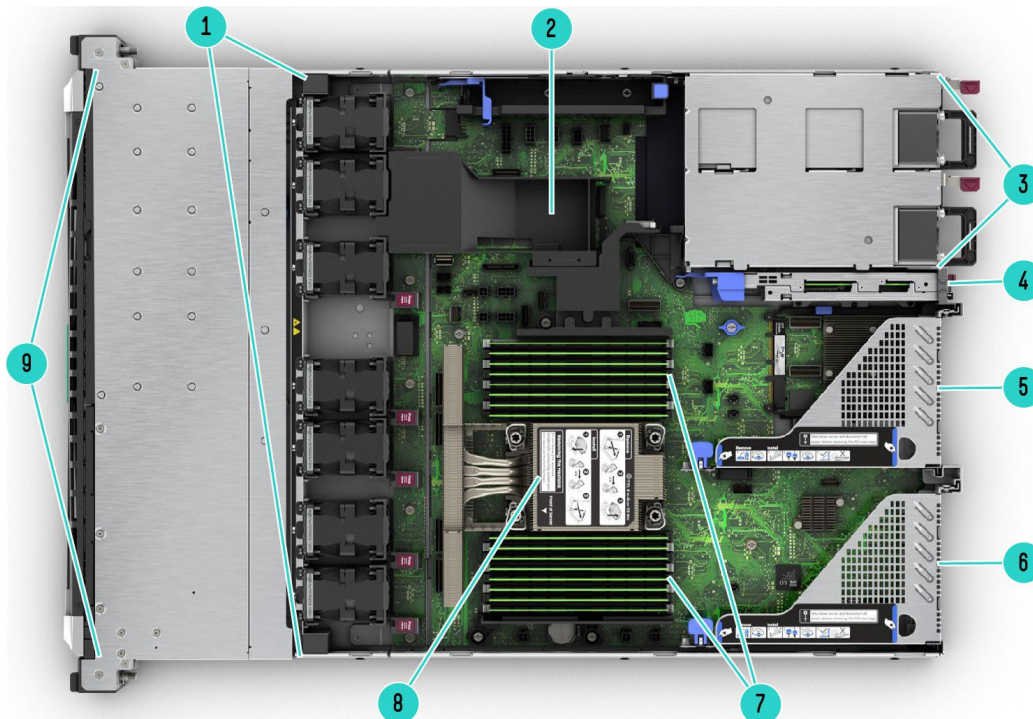
The HPE ProLiant DX320 Gen11 supports the 4th Generation Intel® Xeon® Scalable Processors with up to 32 cores, plus 4800 MT/s HPE DDR5 Smart Memory up to 2.0 TB. Introducing PCIe Gen5 and Intel® Software Guard Extensions (SGX) support on the single socket segment, the HPE ProLiant DX320 Gen11 delivers premium compute, memory, I/O, and security capabilities for customers focused on performance at 1P economics. DX320 Gen11 is an excellent choice for daily business and workloads in Data Management, Virtualization, Content Delivery Network (CDN), Intelligent Video Analytics (IVA), General Compute, Data Collection, Software Defined Storage, Software Defined Compute, Cold Storage, Compute Storage, Edge AI, and Virtual Desktop Infrastructure (VDI).



4 LFF Front View – 4 LFF and SAS drives shown

- | | | | |
|----|---|-----|--|
| 1. | Optical Drive (optional - shown) | 7. | Power On / Standby button and system power LED |
| 2. | Serial number/iLO information pull tab | 8. | Health LED |
| 3. | Quick removal access panel | 9. | NIC Status |
| 4. | Option Display Port & USB 2.0 port bundle kit (blank shown) | 10. | Unit ID Button/LED |
| 5. | USB 3.2 Gen1 port | 11. | SAS/SATA drive bays |
| 6. | iLO Service Port | 12. | Drive support label |

Overview

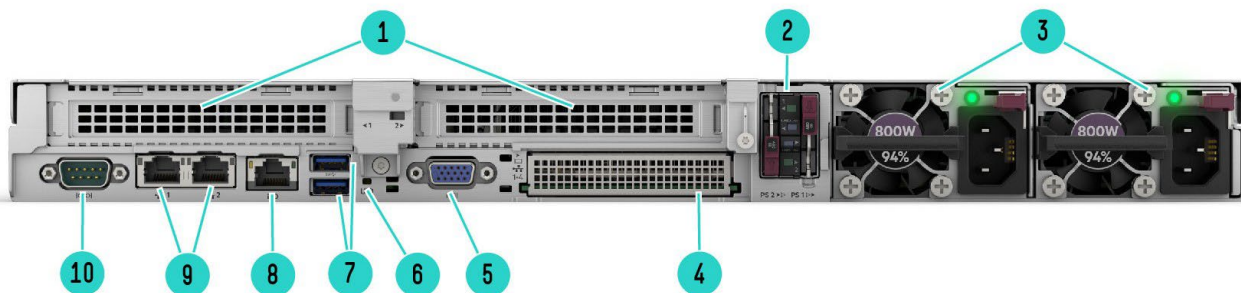


Internal View – Standard for all DX320 Gen11

- | | |
|--|--|
| 1. Up to 7 Hot Plug Fans | 5. Slot-1 PCIe5 x16 FHHL (Primary Riser) |
| 2. Two (2) M.2 module connectors (under the air baffle- not visible) | 6. Slot-2 PCIe5 x16 FHHL (Secondary Riser) |
| 3. Redundant Power Supply (1 & 2 as shown) | 7. 16 DDR5 DIMM slots (shown) |
| 4. HPE NS204i-u NVMe Hot Plug Boot Optimized Storage Device | 8. Heat Sink |
| | 9. Drive Cage |

Notes:

- Internal USB 3.0 port is not marked.
- Hot pluggable M.2 HW RIAD option module (not shown).



Rear View – Standard for all DX320 Gen11

- | | |
|--|----------------------------------|
| 1. Slot-1 & 2 PCIe5 x16 FHHL (Primary and Secondary Riser) | 6. UID Indicator LED |
| 2. HPE NS204i-u NVMe Hot Plug Boot Optimized Storage Device (optional – shown) | 7. Two (2) USB 3.2 Gen1 ports |
| 3. Hot-plug Power Supply 1 and 2 (1 +1 Redundancy) | 8. Dedicated iLO management port |
| 4. OCP 3.0 Slot: x16 PCIe 5.0 | 9. Embedded 1x2 network port |
| 5. Video (VGA) port | 10. Serial port (optional) |

Overview

Platform Information

Form Factor

- 1U rack

Chassis Types

- 4 LFF

System Fans

- High-Performance Fan Kit – Standard on HPE ProLiant DX320 Gen11
-



Standard Features

Processors – One of the following.

The 2nd digit of the processor model number "x4xx" is used to denote the processor generation (i.e., 4=4th generation Intel Scalable Series Processors)

For more information regarding Intel Xeon processors, please see the following <http://www.intel.com/xeon>.

This table covers the public Intel offering only.

Processor Suffix	Description	Offering
H	DB and Analytics	Highest core counts. Database and Analytics usages benefit from DSA and IAA accelerators.
M	Media Transcode	Optimized around AVX frequencies to deliver better performance/watt around Media, AI, and HPC workloads.
N	Network/5G/Edge (High TPT / Low Latency)	Designed for NFV and networking workloads, such as L3 forwarding, 5G UPF, OVS DPDK, VPP FIB router, VPP IPsec, web server/NGINX, vEPC, vBNG, and vCMTS.
S	Storage and HCI	Optimized for Storage UMA use cases with increased UPI Bandwidth for vs. Mainline SKUs.
P	Cloud - IAAS	Designed for cloud IaaS environments to deliver higher frequencies at constrained TDPs.
Q	Liquid Cooling	Liquid-cooled processors with higher frequency and performance at the same TDP.
U	1 Socket Optimized	Optimized for targeted platforms adequately served by the cores, memory bandwidth, and IO capacity available from a single processor
V	Cloud - SAAS	Optimized for orchestration efficiency that delivers higher core counts and VMs per rack.
Y	Speed Select	Intel® SST-PP increases the base frequency when fewer cores are enabled. Allows greater flexibility, deployment options, and platform longevity.

5th Generation Intel® Xeon® Scalable Processor Family (Platinum)

Intel Xeon Models	Base Speed (GHz)	Cores	L3 Cache (MB)	Power (W)	UPI Links	DDR5 (MT/s)	SGX Enclave Size (GB)
Platinum 8581V Processor	2.0	60	300	270	0	4800	128

Notes: Processors with TDP greater than 185W require High Performance Heatsink (P52756-B21) and High-Performance Fan Kit (P48908-B21).

Intel® Speed Select enabled processors: 8581V.



Standard Features

5th Generation Intel® Xeon® Scalable Processor Family (Gold 6)

Intel Xeon Models	Base Speed (GHz)	Cores	L3 Cache (MB)	Power (W)	UPI Links	DDR5 (MT/s)	SGX Enclave Size (GB)
Gold 6526Y Processor	2.8	16	37.5	195	3	5200	128
Gold 6530 Processor	2.1	32	160	270	3	4800	128
Gold 6534 Processor	3.9	8	22.5	195	3	4800	128
Gold 6538N Processor	2.1	32	60.0	205	3	5200	128
Gold 6538Y+ Processor	2.2	32	60.0	225	3	5200	128
Gold 6542Y Processor	3.9	24	60.0	250	3	5200	128
Gold 6544Y Processor	3.6	16	45.0	270	3	5200	128
Gold 6548N Processor	2.8	32	60.0	250	3	5200	128
Gold 6548Y+ Processor	2.5	32	60.0	250	3	5200	128
Gold 6554S Processor	2.2	36	180	270	4	5200	128

5th Generation Intel® Xeon® Scalable Processor Family (Gold 5)

Intel Xeon Models	Base Speed (GHz)	Cores	L3 Cache (MB)	Power (W)	UPI Links	DDR5 (MT/s)	SGX Enclave Size (GB)
Gold 5512U Processor	2.1	28	52.5	185	0	4800	128
Gold 5515+ Processor	3.2	8	22.5	165	3	4800	128
Gold 5520+ Processor	2.2	28	52.5	205	3	4800	128

5th Generation Intel® Xeon® Scalable Processor Family (Silver)

Intel Xeon Models	Base Speed (GHz)	Cores	L3 Cache (MB)	Power (W)	UPI Links	DDR5 (MT/s)	SGX Enclave Size (GB)
Silver 4509Y Processor	2.6	8	22.5	125	2	4400	64
Silver 4510 Processor	2.4	12	30.0	150	2	4000	64
Silver 4514Y Processor	2.0	16	30.0	150	2	4400	64
Silver 4516Y+ Processor	2.2	24	45.0	185	2	4400	64

4th Generation Intel® Xeon® Scalable Processor Family (Gold)

Intel Xeon Models	Base Speed (GHz)	Cores	L3 Cache (MB)	Power (W)	UPI Links	DDR5 (MT/s)	SGX Enclave Size (GB)
Gold 6426Y Processor	2.1	32	60	270	3	4400	128
Gold 6442Y Processor	2.0	32	60	250	0	4800	128
Gold 6448Y Processor	2.2	32	60	270	4	4800	128
Gold 6434 Processor	3.7	8	22.5	195	3	4800	128
Gold 6444Y Processor	3.6	15	45	270	3	4800	128
Gold 6430 Processor	2.1	32	60	270	3	4400	128
Gold 6438Y+ Processor	2.0	32	60	205	3	4800	128
Gold 6414U Processor	2.0	32	60	250	0	4800	128
Gold 6438N Processor	2.0	32	60	205	3	4800	128
Gold 6421N Processor	1.8	32	69	185	0	4400	128
Gold 6454S Processor	2.2	32	60	270	4	4800	128
Gold 5415+ Processor	2.9	8	22.5	150	3	4400	128
Gold 5418Y Processor	2.0	24	45	185	3	4400	128
Gold 5420+ Processor	2.0	28	52.5	205	3	4400	128
Gold 5412U Processor	2.1	24	45	185	0	4400	128



Standard Features

Intel Xeon Models	Base Speed (GHz)	Cores	L3 Cache (MB)	Power (W)	UPI Links	DDR5 (MT/s)	SGX Enclave Size (GB)
Gold 5411N Processor	1.9	24	45	165	0	4400	128
Gold 5418N Processor	1.8	24	45	-	3	4000	128
Gold 5416S Processor	2.0	16	30	150	3	4400	128

4th Generation Intel® Xeon® Scalable Processor Family (Gold)

Intel Xeon Models	Base Speed (GHz)	Cores	L3 Cache (MB)	Power (W)	UPI Links	DDR5 (MT/s)	SGX Enclave Size (GB)
Silver 4410Y Processor	2.0	12	30	150	2	4000	128
Silver 4416+ Processor	2.0	20	37.5	165	2	4000	128

Notes: Processors with TDP equal to or greater than 185 through 270W require Max Performance Heatsink. 8 Channel DDR5 @ up to 4800 MT/s depending on processor type.

Chipset

Intel C741 Chipset

Notes: For more information regarding Intel® chipsets, please see the following URL:

<https://www.intel.com/content/www/us/en/products/chipsets/server-chipsets.html>

System Management Chipset

HPE iLO 6ASIC

Notes: Read and learn more in the [iLO QuickSpecs](#).

Memory

Type	HPE DDR5 Smart Memory Registered (RDIMM)
DIMM Slots Available	16 DIMM Slots, 8 channels, 2 DIMMs per channel
Maximum capacity (RDIMM)	2.04 TB 16 x 128 GB RDIMM @ 4800 MT/s

Notes: The maximum memory speed is limited by the processor selection.

Memory Protection

Advanced ECC

Advanced ECC uses -device data correction to detect and correct single and all multibit errors within a single DRAM chip.

Online Spare

Memory online spare mode detects a degrading rank and switches operation to the spare rank.

Notes: For more information, see our [Memory RAS feature technical whitepaper](#).



Standard Features

Expansion Slots

Expansion Slots #	Technology	Bus Width	Connector Width	Slot Form Factor
1 (Primary Riser)	PCIe 5.0	x16	x16	FHHL

Expansion Slots #	Technology	Bus Width	Connector Width	Slot Form Factor
2 (Secondary Riser)	PCIe5.0	x16	x16	FHHL

Expansion Slots #	Technology	Bus Width	Connector Width
3 (OCP 3.0) with Wake on LAN (WoL) and iLO sideband (shared NIC) capability	PCIe5.0	x16	x16

Notes: Slot-1, by default, is with the riser.

Graphics

Integrated Video Standard

- Video modes up to 1920 x 1200@60Hz (32 bpp)
- 16MB Video Memory

Maximum Storage

Storage	Capacity	Configuration
Hot Plug LFF SAS HDD	216.0 TB	4x 20 TB
Hot Plug LFF SAS SSD	19.2 TB	4 x 15360 TB

Notes: Onboard

Wondermiddel	960 GB	2 x 480 GB
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Internal Storage Devices

- **Hard Drives**
None ship standard

Storage Controllers

NVMe Boot Devices

- HPE DX NS204i-u NVMe Hot Plug Boot Optimized Storage Device (P60454-B21)

Performance RAID Controllers

- HPE MR216i-o Gen11 x16 Lanes without Cache OCP SPDM Storage Controller

Power Supply

- HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
Notes: Available with 94% efficiency.
- HPE 1000W Flex Slot Titanium Hot Plug Low Halogen Power Supply Kit
Notes: Available with 96% efficiency.
- HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit
Notes:
 - Available with 94% efficiency.
 - 1600W Power supplies only support high line voltage (200 VAC to 240 VAC).



Standard Features

HPE Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, tool-less installation into HPE ProLiant Gen10 Plus Performance Servers. Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

All pre-configured servers ship with a standard 6-foot IEC C-13/C-14 jumper cord (A0K02A). This jumper cord is also included with each standard AC power supply option kit. Please check the [ProLiant Power Cables](#) web page if a different power cord is required.

To review the power requirements for your selected system, please use the [HPE Power Advisor Tool](#).

For information on power specifications and technical content, visit [HPE Server power supplies](#).

Interfaces

Serial	1 port - Optional
Video	1 Front - Display port (optional) 1 Rear - VGA port (standard on all models) Notes: If both ports are used simultaneously, they will display the same image.
Network Ports	None. Choice of OCP or standup card, supporting a wide arrange of NIC adapters
HPE iLO Remote Mgmt Port	1 GbE Dedicated
Front iLO Service Port	1 standard
USB	4 standard on all models: 1 front(USB 3.2 Gen1), 2 rear (USB 3.2 Gen1), 1 internal (USB 2.0) +1 optional USB 2.0 front in 4LFF & 8SFF Notes: USB 3.2 Gen1 is referred to as USB 3.0 in some marketing documents.

Operating Systems and Virtualization Software Support for HPE Servers

HPE servers are designed for seamless integration with partner Operating Systems and Virtualization Software. By collaborating closely with our partners, we ensure that their products are optimized, certified, and fully supported within your HPE server environment.

Access the certified and supported servers for each of the OS and Virtualization software: [HPE Servers Support & Certification Matrices](#).

- Nutanix Acropolis Operating System (AOS) Version 5.10.5 and higher Nutanix Acropolis Hypervisor (AHV) Version 2017030.279 and higher

HPE Server UEFI/Legacy ROM

Unified Extensible Firmware Interface (UEFI) is an industry-standard that provides better manageability and more secured configuration than the legacy ROM while interacting with your server at boot time. HPE ProLiant Gen11 servers have a UEFI Class 2 implementation to support UEFI Mode.

Notes: The UEFI System Utilities tool is analogous to the HPE ROM-Based Setup Utility (RBSU) of legacy BIOS. For more information, please visit <http://www.hpe.com/servers/uefi>.

UEFI enables numerous new capabilities specific to HPE ProLiant servers, such as:

- Secure Boot and Secure Start enabled for enhanced security
- Embedded UEFI Shell
- Operating system-specific functionality
- Mass Configuration Deployment Tool using iLO RESTful API that is Redfish API Conformant
- Support for > 2.2 TB (using GPT) boot drives
- PXE boot support for IPv6 networks
- USB 3.0 Stack
- Workload Profiles for simple performance optimization



Standard Features

UEFI Boot Mode only:

- TPM 2.0 Support
- iSCSI Software Initiator Support.
- NVMe Boot Support
- HTTP/HTTPS Boot support as a PXE alternative.
- Platform Trust Technology (PTT) can be enabled.
- Boot support for option cards that only support a UEFI option ROM

Notes: For UEFI Boot Mode, the boot environment and OS image installations should be configured properly to support UEFI.

Industry Standard Compliance

- ACPI 6.3 Compliant
 - PCIe 5.0 Compliant
 - Wake on LAN (WoL) Support
 - Microsoft® Logo certifications
 - PXE Support
 - VGA
 - Display Port
 - **Notes:** This support is on the optional Universal Media Bay.
 - USB 3.2 Gen1 Compliant
 - USB 2.0 Compliant (via Universal Media Bay)
 - **Notes:** This support is on the optional Universal Media Bay.
 - SMBIOS 3.2
 - Redfish API
 - IPMI 2.0
 - Secure Digital 4.0
 - TPM 2.0 Support
 - Advanced Encryption Standard (AES)
 - Triple Data Encryption Standard (3DES)
 - SNMP v3
 - TLS 1.2
 - DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP)
 - Active Directory v1.0
 - ASHRAE A3/A4
 - **Notes:** For additional technical and thermal details regarding ambient temperature, humidity, and feature support, please visit <http://www.hpe.com/servers/ashrae>
 - UEFI (Unified Extensible Firmware Interface Forum) 2.7
-



Standard Features

Embedded Management

HPE Integrated Lights-Out (HPE iLO)

Monitor your servers for ongoing management, service alerting, reporting, and remote management with HPE iLO.

Learn more at <http://www.hpe.com/info/ilo>.

UEFI

Configure and boot your servers securely with industry-standard Unified Extensible Firmware Interface (UEFI).

Learn more at <http://www.hpe.com/servers/uefi>.

Security

- UEFI Secure Boot and Secure Start support
- Tamper-free updates – components digitally signed and verified
- Immutable Silicon Root of Trust
- Ability to rollback firmware
- FIPS 140-2 validation
- Secure erase of NAND/User data
- Common Criteria certification
- Configurable for PCI DSS compliance
- Embedded TPM (Trusted Platform Module) 2.0. Excluded for shipments to China.
- Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser
- Support for Commercial National Security Algorithms (CNSA)
- Chassis Intrusion detection option
- Secure Recovery – recover critical firmware to a known good state on detection of compromised firmware

Warranty

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of Hewlett Packard Enterprise Authorized Channel Partners resellers. Hardware diagnostic support and repair are available for three years from the date of purchase. Support for software and initial setup is available for 90 days from the date of purchase. Enhancements to warranty services are available through HPE Services operational services or customized service agreements. Hard drives have either a one-year or three-year warranty; refer to the specific hard drive QuickSpecs for details.

Notes: Server Warranty includes 3-Year Parts, 3-Year Labor, and 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have Hewlett Packard Enterprise replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:

<https://www.hpe.com/support/ProLiantServers-Warranties>

Optional Features

Server Management

HPE iLO Advanced - Included

HPE iLO Advanced licenses offer smart remote functionality for all HPE ProLiant servers without compromise. The license includes the full integrated remote console, virtual keyboard, video, and mouse (KVM), multi-user collaboration, console record and replay, and GUI-based and scripted virtual media and virtual folders. You can also activate the enhanced security and power management functionality.



Service and Support

HPE Services

No matter where you are in your digital transformation journey, you can count on HPE Services to deliver the expertise you need when, where and how you need it. From planning to deployment, ongoing operations and beyond, our experts can help you realize your digital ambitions.

<https://www.hpe.com/services>

Consulting Services

No matter where you are in your journey to hybrid cloud, experts can help you map out your next steps. From determining what workloads should live where, to handling governance and compliance, to managing costs, our experts can help you optimize your operations.

<https://www.hpe.com/services/consulting>

HPE Managed Services

HPE runs your IT operations, providing 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.

[HPE Managed Services | HPE](#)

Operational services

Optimize your entire IT environment and drive innovation. Manage day-to-day IT operational tasks while freeing up valuable time and resources. Meet service-level targets and business objectives with features designed to drive better business outcomes.

<https://www.hpe.com/services/operational>

HPE Complete Care Service

HPE Complete Care Service is a modular, edge-to-cloud IT environment service designed to help optimize your entire IT environment and achieve agreed upon IT outcomes and business goals through a personalized experience. All delivered by an assigned team of HPE Services experts. HPE Complete Care Service 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/completecure>

HPE Tech Care Service

HPE Tech Care Service is the operational support service experience for HPE products. The service 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 Tech Care Service delivers a customer-centric, AI driven, and digitally enabled customer experience to move your business forward. HPE Tech Care Service 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.

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

Service and Support

HPE Lifecycle Services

HPE Lifecycle Services provide a variety of options to help maintain your HPE systems and solutions at all stages of the product lifecycle. A few popular examples include:

- Lifecycle Install and Startup Services: Various levels for physical installation and power on, remote access setup, installation and startup, and enhanced installation services with the operating system.
- HPE Firmware Update Analysis Service: Recommendations for firmware revision levels for selected HPE products, taking into account the relevant revision dependencies within your IT environment.
- HPE Firmware Update Implementation Service: Implementation of firmware updates for selected HPE server, storage, and solution products, taking into account the relevant revision dependencies within your IT environment.
- Implementation assistance services: Highly trained technical service specialists to assist you with a variety of activities, ranging from design, implementation, and platform deployment to consolidation, migration, project management, and onsite technical forums.
- HPE Service Credits: Access to prepaid services for flexibility to choose from a variety of specialized service activities, including assessments, performance maintenance reviews, firmware management, professional services, and operational best practices.

Notes: To review the list of Lifecycle Services available for your product go to:

<https://www.hpe.com/services/lifecycle>

For a list of the most frequently purchased services using service credits, see the [HPE Service Credits Menu](#)

Other Related Services from HPE Services:

HPE Education Services

Training and certification designed for IT and business professionals across all industries. Broad catalogue of course offerings to expand skills and proficiencies in topics ranging from cloud and cybersecurity to AI and DevOps. Create learning paths to expand proficiency in a specific subject. Schedule training in a way that works best for your business with flexible continuous learning options.

<https://www.hpe.com/services/training>

Defective Media Retention

An option available with HPE Complete Care Service and HPE Tech Care Service and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

Consult your HPE Sales Representative or Authorized Channel Partner of choice for any additional questions and services options.

Parts and Materials

HPE 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.

How to Purchase Services

Services are sold by Hewlett Packard Enterprise and Hewlett Packard Enterprise Authorized Service Partners:

- Services for customers purchasing from HPE or an enterprise reseller are quoted using HPE order configuration tools.
- Customers purchasing from a commercial reseller can find services at <https://ssc.hpe.com/portal/site/ssc/>



Service and Support

AI Powered and Digitally Enabled Support Experience

Achieve faster time to resolution with access to product-specific resources and expertise through a digital and data driven customer experience

Sign into the HPE Support Center experience, featuring streamlined self-serve case creation and management capabilities with inline knowledge recommendations. You will also find personalized task alerts and powerful troubleshooting support through an intelligent virtual agent with seamless transition when needed to a live support agent.

<https://support.hpe.com/hpesc/public/home/signin>

Consume IT On Your Terms

HPE GreenLake edge-to-cloud platform 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 edge-to-cloud platform 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

To learn more about HPE Services, please contact your Hewlett Packard Enterprise sales representative or Hewlett Packard Enterprise Authorized Channel Partner. Contact information for a representative in your area can be found at "Contact HPE"

<https://www.hpe.com/us/en/contact-hpe.html>

For more information

<http://www.hpe.com/services>



Configuration Information

This section lists some of the steps required to configure a Factory Integrated Model. To ensure valid configurations are ordered, Hewlett Packard Enterprise recommends using an HPE-approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.

- Factory Integrated Models must start with a CTO Server.
- FIO indicates that this option is only available as a factory installable option.
- Some options may not be integrated at the factory. Contact your local sales representative for additional information

Step 1: Base Configuration

CTO Server	HPE DX320 Gen11 4 LFF CTO Server
SKU Number	P52765-B21
Processor	Not included as standard
DIMM Slots	16-DIMM slots
Storage Controller	HPE DX MR216i-o controller standard
PCIe	PCIe 5.0: 2 slots (x 16 FHHL) 1x OCP 3.0 in PCIe 5.0 (x16)
Drive Cage – included	4 SAS/SATA LFF
Network Controller	Two (2) Embedded 1 GbE networking port Choice of either OCP 3.0 or select standup network adapters for primary networking selection plus additional/optional standup network adapters
Fans	(7) High-Performance Fans - Standard
Management	HPE iLO Advanced (standard),
USB	Front: One (1) USB 3.2 Gen1 + iLO service port Rear: Two (2) USB 3.2 Gen1 ports Internal: One (1) USB 2.0 port
Security	Embedded TPM 2.0 (Trusted Platform Module) Notes: Disabled on shipments to China
Rail Kit	Optional Easy Install rails and CMA
Form Factor	1U Rack
Warranty	3-year parts, 3-year labor, 3-year onsite support with next business day response.

Notes:

- HPE DX ProLiant platforms are a Server Appliance: and Energy Star except.
- Server Appliance:
- A computer server that is bundled with a pre-installed OS and application
- software that is used to perform a dedicated function or set of tightly coupled functions.
- Server appliances deliver services through one or more networks (e.g., IP or SAN), and are
- typically managed through a web or command line interface. Server appliance hardware and
- software configurations are customized by the vendor to perform a specific task (e.g., name
- services, firewall services, authentication services, encryption services, and voice-over-IP
- (VoIP) services), and are not intended to execute user-supplied software.

Step 2: Choose Options

Step 2a: Choose Processor

Processor Option Kits (Required Processor)

Notes:

- All SKUs below ship with one processor only.
- All skus include High Performance Heatsink and High Performance Fan.



Configuration Information

5th Generation Intel Xeon-Platinum

Intel Xeon-Platinum 8581V 2.0GHz 60-core 270W Processor for HPE P67109-B21

5th Generation Intel Xeon-Gold 6

Intel Xeon-Gold 6526Y 2.8GHz 16-core 195W Processor for HPE P67080-B21

Intel Xeon-Gold 6542Y 2.9GHz 24-core 250W Processor for HPE P67081-B21

Intel Xeon-Gold 6548Y+ 2.5GHz 32-core 250W Processor for HPE P67082-B21

Intel Xeon-Gold 6534 3.9GHz 8-core 195W Processor for HPE P67083-B21

Intel Xeon-Gold 6544Y 3.6GHz 16-core 270W Processor for HPE P67084-B21

Intel Xeon-Gold 6530 2.1GHz 32-core 270W Processor for HPE P67095-B21

Intel Xeon-Gold 6538Y+ 2.2GHz 32-core 225W Processor for HPE P67096-B21

Intel Xeon-Gold 6538N 2.1GHz 32-core 205W Processor for HPE P67104-B21

Intel Xeon-Gold 6548N 2.8GHz 32-core 250W Processor for HPE P67105-B21

Intel Xeon-Gold 6554S 2.2GHz 36-core 270W Processor for HPE P67110-B21

5th Generation Intel Xeon-Gold 5

Intel Xeon-Gold 5515+ 3.2GHz 8-core 165W Processor for HPE P67079-B21

Intel Xeon-Gold 5520+ 2.2GHz 28-core 205W Processor for HPE P67094-B21

Intel Xeon-Gold 5512U 2.1GHz 28-core 185W Processor for HPE P67101-B21

5th Generation Intel Xeon-Silver

Intel Xeon-Silver 4509Y 2.6GHz 8-core 125W Processor for HPE P67090-B21

Intel Xeon-Silver 4510 2.4GHz 12-core 150W Processor for HPE P67091-B21

Intel Xeon-Silver 4514Y 2.0GHz 16-core 150W Processor for HPE P67092-B21

Intel Xeon-Silver 4516Y+ 2.2GHz 24-core 185W Processor for HPE P67093-B21

4th Generation Intel Xeon-Gold 6

Intel Xeon-Gold 6430 2.1GHz 32-core 270W Processor for HPE P49614-B21

Intel Xeon-Gold 6414U 2.0GHz 32-core 250W Processor for HPE P49619-B21

Intel Xeon-Gold 6454S 2.2GHz 32-core 270W Processor for HPE P49654-B21

Intel Xeon-Gold 6434 3.7GHz 8-core 195W FIO Processor for HPE DX P62409-B21

Intel Xeon-Gold 6444Y 3.6GHz 16-core 270W FIO Processor for HPE DX P62410-B21

Intel Xeon-Gold 6430 2.1GHz 32-core 270W FIO Processor for HPE DX P62397-B21

Intel Xeon-Gold 6438Y+ 2.0GHz 32-core 205W FIO Processor for HPE DX P62416-B21

Intel Xeon-Gold 6414U 2.0GHz 32-core 250W FIO Processor for HPE DX P62400-B21

Intel Xeon-Gold 6438N 2.0GHz 32-core 205W FIO Processor for HPE DX P62420-B21

Intel Xeon-Gold 6421N 1.8GHz 32-core 185W FIO Processor for HPE DX P62423-B21

Intel Xeon-Gold 6454S 2.2GHz 32-core 270W FIO Processor for HPE DX P62404-B21

4th Generation Intel Xeon-Gold 5

Intel Xeon-Gold 5415+ 2.9GHz 8-core 150W FIO Processor for HPE DX P62405-B21

Intel Xeon-Gold 5418Y 2.0GHz 24-core 185W FIO Processor for HPE DX P62414-B21

Intel Xeon-Gold 5420+ 2.0GHz 28-core 205W FIO Processor for HPE DX P62415-B21

Intel Xeon-Gold 5412U 2.1GHz 24-core 185W FIO Processor for HPE DX P62419-B21

Intel Xeon-Gold 6438N 2.0GHz 32-core 205W FIO Processor for HPE DX P62420-B21

Intel Xeon-Gold 5418N 1.8GHz 24-core 165W FIO Processor for HPE DX P62422-B21

Intel Xeon-Gold 5416S 2.0GHz 16-core 150W Processor for HPE DX P62426-B21



Configuration Information

4th Generation Intel Xeon-Silver

Intel Xeon-Silver 4410Y 2.0GHz 12-core 150W FIO Processor for HPE DX

P62412-B21

Intel Xeon-Silver 4416+ 2.0GHz 20-core 165W FIO Processor for HPE DX

P62413-B21

Step 2b: Choose Memory Options

Please select one or more memory DIMMs from below.

For the new Gen11 memory population rule whitepaper and optimal memory performance guidelines, please go to:

<http://www.hpe.com/docs/memory-population-rules>

For the Gen11 memory speed table, please go to: <https://www.hpe.com/docs/memory-speed-table>

For memory Reliability, Accessibility, and Serviceability (RAS) features whitepaper like Gen11 Fast Fault Tolerance and legacy mirrored memory feature, etc., please go to: <http://www.hpe.com/docs/memory-ras-feature>.

Notes:

- HPE Server Memory compatibility for a specific server platform may vary or be limited within a server platform depending upon the specific configuration being requested. Because each server environment and requirements can vary, memory compatibility is based not only upon the server family but may also be affected by the amount and type of additional hardware options installed within a specific server configuration. For this reason, some HPE memory DIMMs may be qualified for an HPE server model or family and yet occasionally not be supported with some configurations within that server family.
- Memory DIMMs must be selected in quantities 1, 2, 4, 6, 8, 12, or 16.
- The maximum memory speed and capacity are a function of the memory type, memory configuration, and processor model.

For additional information, please see the [HPE DDR5 Smart Memory QuickSpecs](#)

Registered DIMMs DDR5 (RDIMMs)

HPE 16GB (1x16GB) Single Rank x8 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit

P64705-B21

HPE 32GB (1x32GB) Dual Rank x8 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit

P64706-B21

HPE 64GB (1x64GB) Dual Rank x4 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit

P64707-B21

HPE 96GB (1x96GB) Dual Rank x4 DDR5-5600 CAS-46-45-45 EC8 Registered Smart Memory Kit

P64708-B21

HPE 128GB (1x128GB) Quad Rank x4 DDR5-5600 CAS-52-45-45 EC8 Registered 3DS Smart Memory Kit

P64709-B21

HPE DX 16GB (1x16GB) Single Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart FIO Memory Kit

P62601-B21

HPE DX 32GB (1x32GB) Dual Rank x8 DDR5-4800 CAS-40-39-39 EC8 Registered Smart FIO Memory Kit

P62603-B21

HPE DX 64GB (1x64GB) Dual Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered Smart FIO Memory Kit

P62604-B21

HPE DX 128GB (1x128GB) Quad Rank x4 DDR5-4800 CAS-40-39-39 EC8 Registered 3DS Smart FIO Memory Kit

P62605-B21

Notes:

- Only HPE DDR5 5600 MT/s SKUs can be selected with 5th Generation Intel processors. 4800 MT/s memory SKUs offer a transfer rate of 4800 MT/s at 1 DIMM per channel and 4400 MT/s at 2 DIMMs per channel
- Mixing of 3DS memory and non-3DS memory is not supported

Memory Blank Kit

HPE DDR4 DIMM Blank Kit

P07818-B21

Step 2c: Choose Power Supplies

Please select one or two power supplies from below.

Notes: Mixing of 2 different power supplies is NOT supported.



Configuration Information

HPE Flex Slot Power Supplies

HPE DX 1000W Flex Slot Titanium Hot Plug FIO Power Supply Kit	P44807-B21
HPE DX 800W Flex Slot Platinum Hot Plug Low Halogen FIO Power Supply Kit	P18223-B21

Notes: Only supports high line voltage (200 VAC to 240 VAC).

Step 2d: Choose backplane

No optional backplanes are available for the existing LFF CTO configurations.

Step 3: Choose Additional Factory Integratable Options (FIO)

One of the following from each list may be selected if desired at the time of factory integration	
HPE iLO Common Password FIO Setting	P08040-B21

Notes:

- Replaces iLO default randomized password with an HPE-defined common password. HPE highly recommends changing this password immediately after the initial onboarding process.
- Customers who want to choose their own custom iLO default password should use the HPE Factory Express Integration Services

Step 4: Choose Additional Options for Factory Integration from the Core and Additional Options sections below



Core Options

HPE Hard Disk Drives

Midline - 12G SAS - LFF Drives

HPE DX 20TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e ISE FIO HDD	P60324-B21
HPE DX 16TB SAS 12G Business Critical 7.2K LFF (3.5in) LP 1yr Wty 512e ISE FIO HDD	P35152-B21
HPE DX 12TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty HE 512e Digitally Signed Firmware FIO HDD	P17966-B21
HPE DX 8TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty 512e Digitally Signed Firmware FIO HDD	P17965-B21
HPE DX 4TB SAS 12G Midline 7.2K LFF (3.5in) LP 1yr Wty Digitally Signed Firmware FIO HDD	P17963-B21

SSD Selection

For SSD selection guidance, please visit <https://ssd.hpe.com/>

Read Intensive - 24G SAS - LFF –Solid State Drives

HPE DX 3.84TB SAS 24G Read Intensive LFF LPC PM1653 FIO SSD	P56762-B21
HPE DX 7.68TB SAS 24G Read Intensive LFF LPC Multi Vendor FIO SSD	P56766-B21
HPE DX 15.36TB SAS 24G Read Intensive LFF LPC Multi Vendor FIO SSD	P56768-B21
HPE DX 3.84TB SAS Read Intensive LFF LPC Multi Vendor SSD	P75479-B21
HPE DX 3.84TB SAS Read Intensive LFF LPC Multi Vendor FIO SSD	P75476-B21

Mixed Use - 6G SATA - LFF –Solid State Drives

HPE DX 1.92TB SATA 6G Mixed Use LFF LPC S4620 FIO SSD	P56738-B21
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Mixed Use - 24G SAS - LFF –Solid State Drives

HPE DX 3.2TB SAS 24G Mixed Use LFF LPC Multi Vendor FIO SSD	P57597-B21
HPE DX 6.4TB SAS 24G Mixed Use LFF LPC Multi Vendor FIO SSD	P57609-B21

Read Intensive - 6G SATA - LFF –Solid State Drives

HPE DX 1.9TB SATA 6G Read Intensive LFF LPC PM893 FIO SSD	P56742-B21
HPE DX 3.84TB SATA 6G Read Intensive LFF LPC PM893 FIO SSD	P56746-B21
HPE DX 1.92TB SATA 6G Read Intensive LFF LPC S4520 FIO SSD	P56752-B21
HPE DX 3.84TB SATA 6G Read Intensive LFF LPC S4520 FIO SSD	P56756-B21
HPE DX 1.92TB SATA 6G Mixed Use LFF LPC S4620 FIO SSD	P56738-B21
HPE DX 1.92TB SATA Read Intensive LFF LPC PM893a SSD	P75494-B21
HPE DX 3.84TB SATA Read Intensive LFF LPC PM893a SSD	P75485-B21

Mixed Use - 6G SATA - LFF –Solid State Drives

HPE DX 1.92TB SATA 6G Mixed Use LFF LPC Samsung PM897a SSD	P75497-B21
HPE DX 1.92TB SATA 6G Mixed Use LFF LPC Samsung PM897a FIO SSD	P75495-B21

Read Intensive - 6G SATA - SFF –Solid State Drives

HPE DX 1.92TB SATA Read Intensive LFF LPC PM893a FIO SSD	P75492-B21
HPE DX 3.84TB SATA Read Intensive LFF LPC PM893a FIO SSD	P75483-B21

Hard Drive Blank Kits

HPE Gen9 LFF HDD Spade Blank Kit	807878-B21
HPE Small Form Factor Hard Drive Blank Kit	666987-B21

HPE Networking

1 Gigabit Ethernet adapters

Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 FIO Adapter for HPE DX	P60341-B21
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10 Gigabit Ethernet adapters

Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T FIO Adapter for HPE DX	P43271-B21
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Core Options

25 Gigabit Ethernet adapters

Broadcom BCM57414 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE DX	P53862-B21
Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 FIO Adapter for HPE DX	P60341-B21
Mellanox MCX631102AS-ADAT Ethernet 10/25Gb 2-port SFP28 FIO Adapter for HPE DX	P60340-B21
Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE	P08443-B21

100 Gigabit Ethernet Adapters

Broadcom BCM57416 Ethernet 10Gb 2-port BASE-T FIO Adapter for HPE DX	P43271-B21
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Notes: Recommended system ambient temperature of 25C.

HPE I/O Expansion Options

Notes:

- Slot 1: The Primary Riser shipping default in the CTO server is a x16 FHHL.
- Slot 2: The Secondary Riser in the CTO server is optional x16 FHHL.

Risers

Part number	Description	Bus width (Gen5 lanes)			
		Primary	Secondary	Slot 1	Slot 2
P52753-B21	HPE DL320 Gen11 x16 FHHL Riser Kit	D	O	x16	x16

Notes:

- D = Default on chassis; O = Optional; N = not supported or slot/connector not present.
- If the Secondary riser is not selected, then the Max PCIe card selection is limited to Qty=1. This is inclusive of all PCIe categories and sub-categories.

HPE Power Supplies

HPE Flexible Slot (Flex Slot) Power Supplies share a common electrical and physical design that allows for hot plug, tool-less installation into HPE ProLiant Servers. Flex Slot power supplies are certified for high-efficiency operation and offer multiple power output options, allowing users to "right-size" a power supply for specific server configurations. This flexibility helps to reduce power waste, lower overall energy costs, and avoid "trapped" power capacity in the data center.

Notes:

- Before making a power supply selection, it is highly recommended that the HPE Power Advisor is run to determine the right size power supply for your server configuration. The HPE Power Advisor is located at:
<https://poweradvisorex.it.hpe.com/?Page=Indexv>
- HPE ProLiant servers ship with an IEC-IEC power cord for rack mounting with Power Distribution Units (PDUs). Visit **HPE Power Cords and Cables** for a full list of optional power cords.
- Mixing of Power supplies is not allowed.
- Flex Slot Platinum Plus power supplies support up to 94% power efficiency and include a C-14 power inlet connector that can support HPE Power Discovery Services (blue connector).

HPE 1000W Flex Slot Titanium Hot Plug Power Supply Kit	P03178-B21
HPE 800W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	P38995-B21
HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	P38997-B21

Notes: Only supports high line voltage (200VAC to 240VAC).

Additional Options

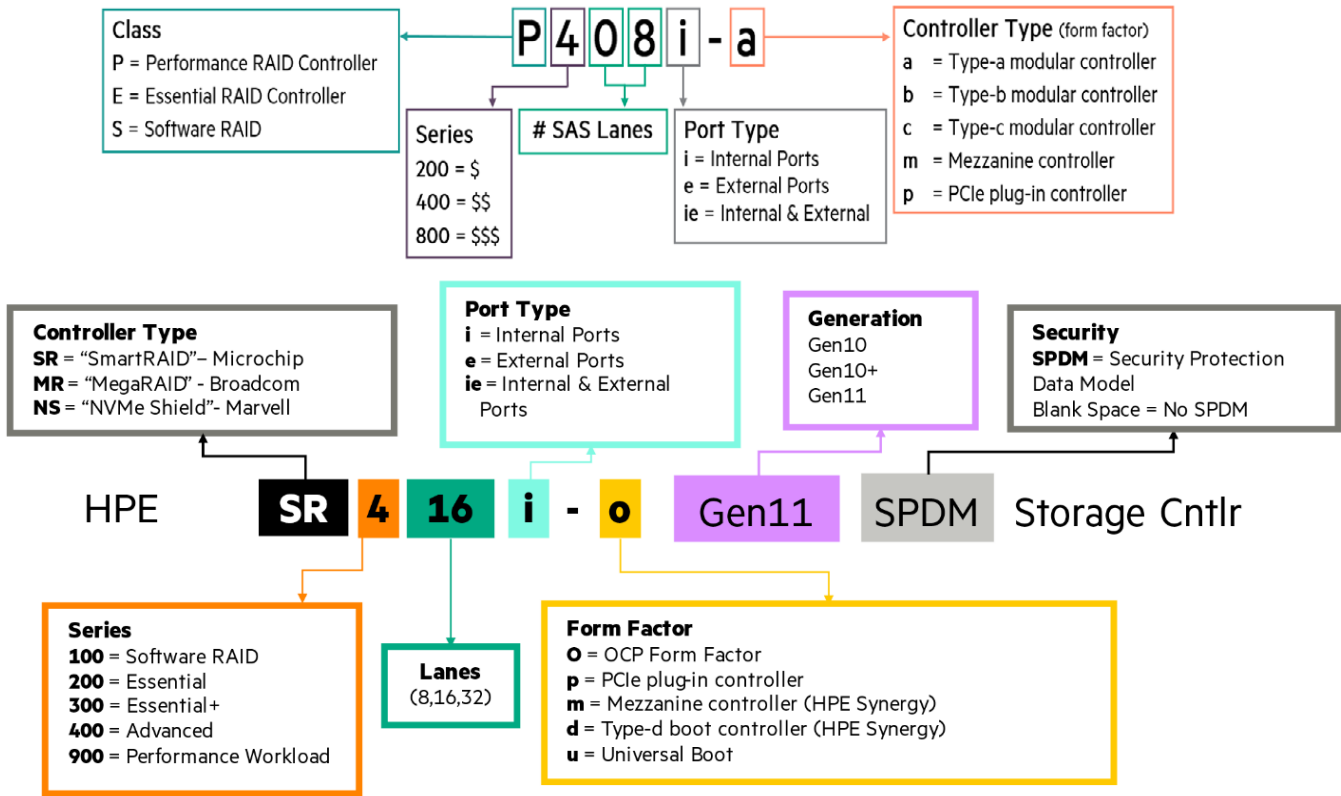
OS Boot Device: Included

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

P60454-B21

HPE Storage Controllers

Storage Controllers



Notes:

- When selecting SR RAID controllers for external storage and MR RAID controllers for internal storage, please be aware these two products use different RAID configuration tools. Therefore, there will be a RAID configuration tool for the SR external controller and another for the MR internal controller.
- Mixing MR (Mega RAID) series internal controllers and SR (Smart RAID) series internal Controllers is not supported.
- For more information on the HPE Gen11 Storage Controller, please refer to the following:
[HPE Compute MR Gen11 Controllers QuickSpecs](#)
[HPE Compute SR Gen11 Controllers QuickSpecs](#)

Essential RAID Controllers

Tri-Mode Controllers

HPE ProLiant DX MR216i-o Gen11 x16 Lanes without Cache OCP SPDM FIO Storage Controller

P60334-B21

RAID Settings

HPE RAID 0 Drive 1 FIO Setting	339777-B21
HPE RAID 1 Drive 1 FIO Setting	339778-B21
HPE RAID 5 Drive 1 FIO Setting	339779-B21
HPE Raid 5 w/SP Drive 1 FIO Setting	339780-B21
HPE RAID FIO Advanced Data Guarding Option	339781-B21



Additional Options

Notes:

- General RAID rules:
 - o Only a single set of RAID will be offered and will only be applied to all applicable drives installed in a server.
 - o RAID requires the selection of a Smart Array controller and a specific number of matching drives. (i.e., same part number)
 - o If RAID is selected, and only SAS or SATA, or NVMe drives are configured, then all drives must be the same part number. (i.e., matching drives)
 - o If RAID is selected and both SAS and SATA drives are configured, only the SAS drives will be used in the RAID set. (SAS drives must be the same part number; SATA drives can vary in part numbers)
 - o If RAID is selected and NVMe, SAS, and SATA drives are configured, then only the NVMe drives will be used in the RAID set. (NVMe drives must be the same part number; SAS & SATA drives can vary in part numbers)
 - o RAID must be selected if both Factory Installed OS and Smart Array controller (embedded or otherwise) are present.
 - o (vii) RAID 0 requires at least 1 drive.
 - o RAID 1 requires at least 2 or even number of drives.
 - o RAID 1 with Spare requires at least 3 drives
 - o RAID 5 requires at least 3 drives.
 - o RAID 5 with Spare requires at least 4 drives.
 - o RAID 6 requires at least 4 drives.
- If SR932i-p/ SR416i-o/ MR416i-p/ MR416i-o/ MR408i-o is the Primary controller, then all RAID levels are allowed.
- If MR216i-o/MR216i-p/ Standard VROC is the primary controller, then only the following RAID levels are allowed: 0, 1
- If Premium VROC is the primary controller, then the following RAID levels are allowed: 0, 1, 5.
- If Direct Attach is the Primary controller, then RAID is NOT allowed.
- If RAID is selected in a configuration with VROC and internal controller, then Customer Defined RAID Setting (389692-B21) must be selected.
- HPE Recommends using the below standard RAID Settings,
 - o 339777-B21 HPE RAID 0 Drive 1 FIO Setting
 - o 339778-B21 HPE RAID 1 Drive 1 FIO Setting
 - o 339779-B21 HPE RAID 5 Drive 1 FIO Setting
 - o 339780-B21 HPE RAID 5 w/SP Drive 1 FIO Setting

HPE Customer Defined RAID Setting Service

389692-B21

Notes:

- The following RAID rules do not apply:
 - o Max of 1 RAID level per server.
 - o All integrated hard drives must match
 - o Minimum drive quantity requirement for each RAID level.
 - o RAID level must be selected if Factory Installed OS is present and Smart Array SAS controller (embedded or otherwise) is the primary controller.
- At least 1 hard drive must be on order.
- Preinstalled OS must be on order.
- A Customer Intent Document (CID) must be supplied if this part number is ordered.
- This Customer Intent Document should include all details about the desired RAID custom configuration (This includes Drive part numbers and quantities, RAID levels desired, which drives should be applied to each RAID level, and if a preinstalled OS has been ordered - which RAID set it should be installed on).



Additional Options

Embedded Management

HPE iLO Common Password FIO Setting

HPE iLO Common Password FIO Setting

P08040-B21

Notes:

- Replaces iLO default randomized password with an HPE-defined common password. HPE highly recommends changing this password immediately after the initial onboarding process.
- Customers who want to choose their own custom iLO default password should use the HPE Factory Express Integration Services.

HPE iLO Advanced: Included

HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features

BD505A

Software Skus

Nutanix AOS Pre-installed FIO Software for HPE

R6T15A

HPE Security

HPE iLO Common Password FIO Setting

P08040-B21

Notes:

- Replaces iLO default randomized password with an HPE-defined common password. HPE highly recommends changing this password immediately after the initial onboarding process.
- Customers who want to choose their own custom iLO default password should use the HPE Factory Express Integration Services.

HPE ProLiant Gen11 1U Common Bezel Kit

P50450-B21

HPE ProLiant DL320 Gen11 Intrusion Detection Cable Kit

P55417-B21

Easy Install Rail Kits

Easy Install rail kits contain telescoping rails, which allow for in-rack serviceability.

To assist in installing the server into the rack, an optional installation tool is available by contacting your local services representative.

Notes:

- Hewlett Packard Enterprise recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and the number of people to use for any installation.
- HPE rail kits are designed to work with HPE racks in compliance with industry standard EIA-310-E. In the event a customer elects to purchase a third-party rack for use with an HPE rail kit, any such use is at customer's own risk. HPE makes no express or implied warranties with respect to such third-party racks and specifically disclaims any implied warranties of merchantability and fitness for a particular purpose. Furthermore, HPE has no obligation and assumes no liability for the materials, design, specifications, installation, safety, and compatibility of any such third-party racks with any rail kits, including HPE rail kits.

HPE ProLiant DX3XX Gen11 1U FIO Cable Management Arm for Rail Kit

P60633-B21

HPE ProLiant DX3XX Gen11 Easy Install FIO Rail 2 Kit

P60221-B21

Notes: Supported only with 4LFF CTO Server.

HPE Support Service

Installation Services

HPE Install ProLiant DL320 Service

U4490E

Tech Care

HPE 3 Year Tech Care Essential DL320 Gen11 HW Service

H93M2E

HPE 3 Year Tech Care Essential wDMR DL320 Gen11 HW Service

H93M3E

HPE 5 Year Tech Care Essential DL320 Gen11 HW Service

H93P6E

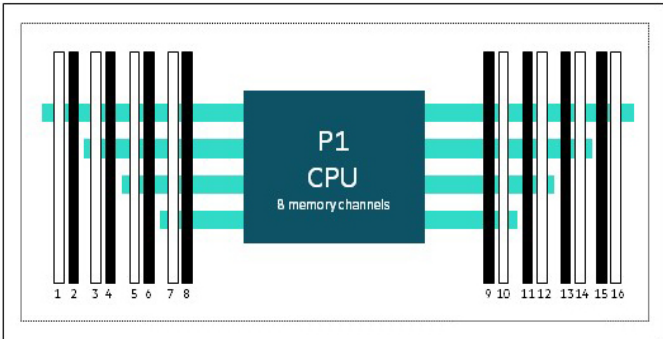
HPE 5 Year Tech Care Essential wDMR DL320 Gen11 HW Service

H93P7E



Memory

Memory Population guidelines



HPE ProLiant DL320 Gen10 Plus

HPE ProLiant Gen10 Plus 16 slot per CPU DIMM population order																
DIMM population order																
DIMM slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 DIMM										10						
2 DIMMs ¹			3							10						
4 DIMMs ¹			3				7			10				14		
6 DIMMs			3		5		7			10				14		16
8 DIMMs ^{1,2}	1		3		5		7			10		12		14		16
12 DIMMs	1	2	3		5	6	7			10	11	12		14	15	16
16 DIMMs ^{1,2}	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Notes:

- Cells without entries represent configurations not supported, and if populated, the server may result in non-optimal memory performance or other unexpected behavior.
- ¹ Support Hemi (hemisphere mode).
- ² Support Software Guard Extensions (SGX).

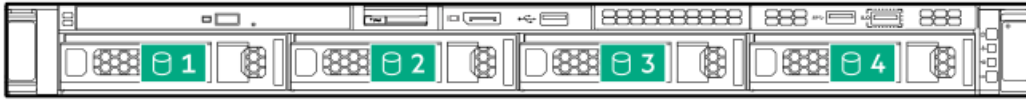
General Memory Population Rules and Guidelines

- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two-processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors.
- When two processors are installed, balance the DIMMs across the two processors.
- White DIMM slots denote the first slot to be populated in a channel.
- Mixing of DIMM types (UDIMM, RDIMM, and LRDIMM) is not supported.
- The maximum memory speed is a function of the memory type, memory configuration, and processor model.
- The maximum memory capacity is a function of the number of DIMM slots on the platform, the largest DIMM capacity qualified on the platform, and the number and model of installed processors qualified on the platform.
- For details on the HPE Server Memory Options Population Rules, visit: <http://www.hpe.com/docs/memory-population-rules>
- To realize the performance memory capabilities listed in this document, HPE DDR5 Smart Memory is required. For additional information, please see the [HPE DDR5 Smart Memory QuickSpecs](#).

Notes: The maximum memory speed is a function of the memory type, memory configuration, and processor model. For details on the HPE Server Memory speed, visit: <https://www.hpe.com/docs/server-memory>



Storage



4 LFF device bay numbering

Technical Specifications

System Unit

Dimensions (Height x Width x Depth)

4 LFF Drives

- 4.28 x 43.46 x 66.46 cm
1.69 x 17.11 x 26.16 in

Weight (approximate)

- **13.20 kg (29.10 lb)**
 - **4 LFF minimum:** One drive, one DIMM, one PCIe card, one processor, one heatsink, one power supply, five fans, and two fan blanks.
- **17.70 kg (39.02 lb)**
 - **4 LFF maximum:** Four drives, sixteen DIMMs, and two PCIe standup cards. One processor, one heatsink, two power supplies, and seven fans.

Input Requirements (per power supply)

Rated Input Voltage

- 1800-2200W (Titanium):
- 1600W (-48 VDC):
- 1600W (Platinum):
- 1000W (Titanium):
- 800W (Platinum):
- 500W (Platinum): 100-240 VAC

BTU Rating

Maximum

- For 1600W (Platinum) Power Supply: 5918 BTU/hr (at 200 VAC), 5891 BTU/hr (at 230 VAC)
- For 1600W (48VDC) Power Supply: 6026 BTU/hr (at -40 VDC), 6000 BTU/hr (at -48 VDC), 5989 BTU/hr (at -72 VDC)
- For 1000W (Titanium) Power Supply: 3764 BTU/hr (at 100 VAC), 3629 BTU/hr (at 200 VAC)
- For 800W (Platinum) Power Supply: 3067 BTU/hr (at 100 VAC), 2958 BTU/hr (at 200 VAC), 2949 BTU/hr (at 240 VAC) for China only
- For 500W (Platinum) Power Supply: 1999 BTU/hr (at 100 VAC), 1912 BTU/hr (at 200 VAC), 1904 BTU/hr (at 240 VAC) for China only

Power Supply Output (per power supply)

Rated Steady-State Power

- For 1600W (Platinum) Power Supply: 1600 W (at 200 VAC to 240 VAC input), 1600 W (at 240 VDC input)
- For 1600W (48VDC) Power Supply: 1600 W (at -40 VDC to -72 VDC)
- For 1000W (Titanium) Power Supply: 1000 W (at 100 VAC to 127 VAC), 1000 W (at 200 VAC to 240 VAC input)
- For 800W (Platinum) Power Supply: 800 W (at 100 VAC to 127 VAC input), 800 W (at 100 VAC to 240 VAC input), 800 W (at 240 VDC input for China only)
- 3067 BTU/hr (at 100 VAC), 2958 BTU/hr (at 200 VAC), and 2949 BTU/hr (at 240 VAC), China only



Technical Specifications

Maximum Peak Power

- For 1600W (Platinum) Power Supply: 1600 W (at 200 VAC to 240 VAC input), 1600 W (at 240 VDC input)
- For 1600W (48VDC) Power Supply: 1600 W (at -40 VDC to -72 VDC)
- For 1000W (Titanium) Power Supply: 1000 W (at 100 VAC to 127 VAC), 1000 W (at 200 VAC to 240 VAC input)
- For 800W (Platinum) Power Supply: 800 W (at 100 VAC to 127 VAC input), 800 W (at 100 VAC to 240 VAC input), 800 W (at 240 VDC input for China only)

System Inlet Temperature

- **Standard Operating Support**
10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. The maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed.
System performance during standard operating support may be reduced if operating with a fan fault or above 30°C (86°F).
- **Extended Ambient Operating Support**
For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: <http://www.hpe.com/servers/ashrae>
40°C to 45°C (104°F to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the URL: <http://www.hpe.com/servers/ashrae>
System performance may be reduced if operating in the extended ambient operating range or with a fan fault.
- **Non-operating**
-30° to 60°C (-22° to 140°F). The maximum rate of change is 20°C/hr (36°F/hr).

Relative humidity (non-condensing)

- **Operating**
8% to 90% - Relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
- **Non-operating**
5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.

Altitude

- **Operating**
3050 m (10,000 ft). This value may be limited by the type and number of options installed. The maximum allowable altitude change rate is 457 m/min (1500 ft/min).
- **Non-operating**
9144 m (30,000 ft). The maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Emissions Classification (EMC)

To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center:

https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=c03471072

Technical Specifications

Acoustic Noise

Listed are the declared mean A-Weighted sound power levels (LWA,m), declared average bystander position A-Weighted sound pressure levels (LpAm), and the statistical adder for verification, Kv, is a quantity to be added to the declared mean A-weighted sound power

level, LWA,m when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels. Please have your HPE representative provide information from the HPE EMESC website for further technical details regarding the configurations listed below.

Test case	Entry 1 (BTO) 4LFF	Entry 2 (BTO) SFF	Mid Range (BTO) SFF	Performance (BTO) SFF
Idle				
LWA,m	4.7 B	4.7 B	4.9 B	4.9 B
LpAm	36 dBA	35 dBA	37 dBA	37 dBA
Kv	0.4 B	0.4 B	0.4 B	0.4 B
Operating				
LWA,m	5.3 B	4.9 B	5.1 B	5.2 B
LpAm	39 dBA	36 dBA	38 dBA	40 dBA
Kv	0.4 B	0.4 B	0.4 B	0.4 B

Notes:

- The Acoustics levels presented here are generated by the test configuration only. Acoustics levels will vary depending on system configuration. Values are subject to change without notification and are for reference only.
- The declared mean A-weighted sound power level, LWA,m, is computed as the arithmetic average of the measured.
- A-weighted sound power levels for a randomly selected sample rounded to the nearest 0,1 B.
- The declared mean A-weighted emission sound pressure level, LpA,m, is computed as the arithmetic average of the measured A-weighted emission sound pressure levels at the bystander positions for a randomly selected sample, rounded to the nearest 1 dB.
- The statistical adder for verification, Kv, is a quantity to be added to the declared mean A-weighted sound power level, LWA,m, such that there will be a 95 % probability of acceptance when using the verification procedures of ISO 9296 if no more than 6,5 % of the batch of new equipment, has A-weighted sound power levels greater than (LWA,m + Kv).
- The quantity, LWA,c (formerly called LWAd), can be computed from the sum of LWA,m, and Kv.
- All measurements were made to conform to ISO 7779 / ECMA-74 and declared to conform to ISO 9296 / ECMA-109.
- B, dB, abbreviations for bels and decibels, respectively, where 1 B = 10 dB.
- The results in this declaration apply only to the model numbers listed above when operating and tested according to the indicated modes and standards. A system with additional configuration components or increased operating functionality may increase the noise emission values.
- The system under abnormal conditions may increase the noise level, and persons in the vicinity of the product [cabinet] for extended periods should consider wearing hearing protection or using other means to reduce noise exposure.

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 (2002/95/EC) requires manufacturers to provide treatment information for each product type used by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard Enterprise website. 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.

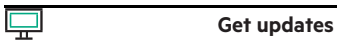
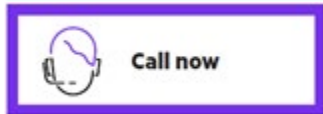
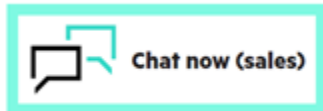
Summary of Changes

Date	Version History	Action	Description of Change
27-May-2025	Version 6	Changed	Core Options and Additional Options sections were updated. Added: 25 Gigabit Ethernet adapters SKU and Nutanix AOS Pre-installed FIO Software for HPE SKU.
21-Oct-2024	Version 5	Changed	Configuration Information and Core Options sections were updated.
07-Oct-2024	Version 4	Changed	Standard Feature section was updated. (Processors).
26-Sep-2024	Version 3	Changed	OS Certification information updated. (Standard Features)
18-Mar-2024	Version 2	Changed	Standard Features and additional Options sections were updated.
05-June-2023	Version 1	New	New QuickSpecs.



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