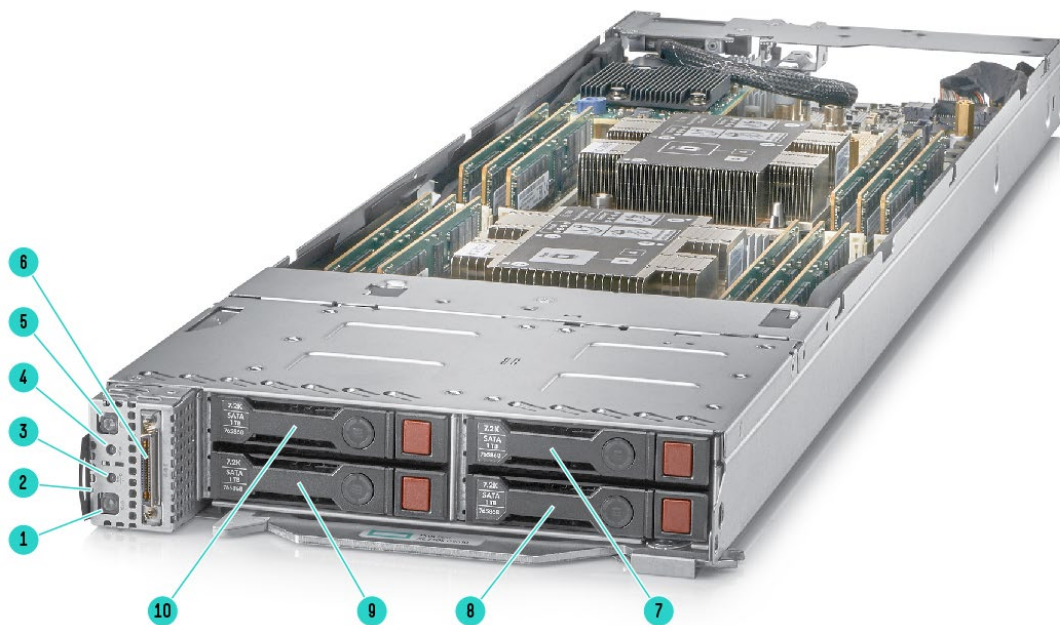


Overview

HPE ProLiant XL230k Gen10 Server

The HPE ProLiant XL230k Gen10 Server delivers extreme compute performance using leading edge technology needed to handle complex HPC workloads. This server leverages the latest select Intel's Xeon Gold and Platinum series processors with support for DDR4 2933 MT/s HPE SmartMemory.

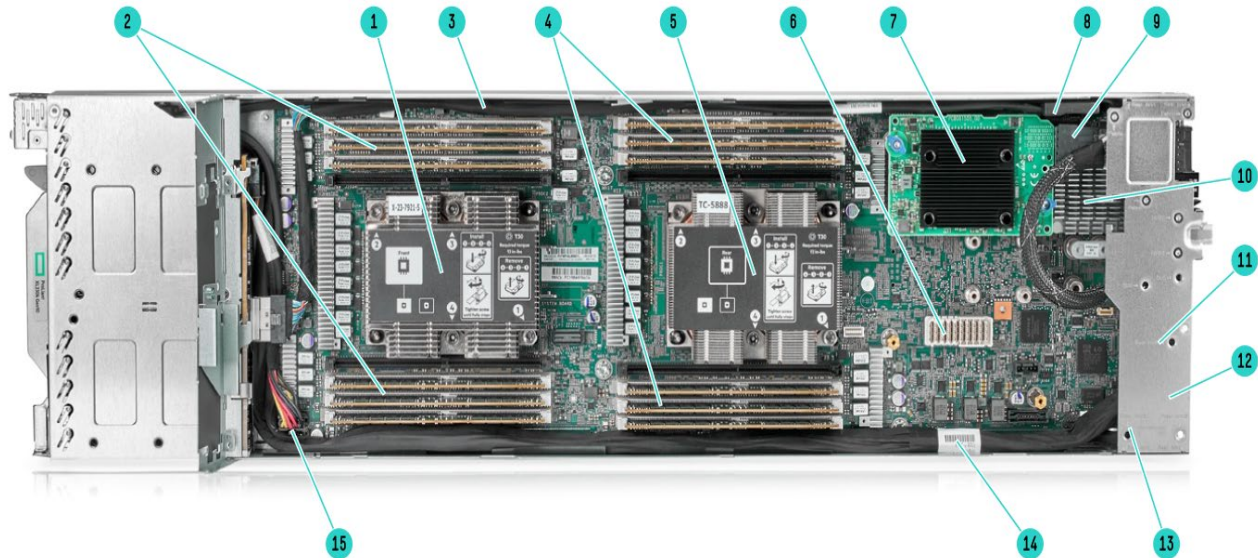
The new modular, fully integrated, and highly flexible HPE Apollo k6000 Chassis accommodates up to 24 XL230k server trays, ethernet and high speed fabric switches to address various HPC workload needs. The Apollo k6000 System is a performance optimized, air-cooled solution. This solution offers outstanding configuration flexibility, redundant power, simplified administration and rack-scale efficiency that lowers the total cost of ownership needed for mass scale HPC deployments.



Front View

Item	Description	Item	Description
1.	UID LED/Button	6.	SUV Connector
2.	Serial label pull tab	7.	Drive bay 3
3.	NIC LED	8.	Drive bay 4
4.	Health LED	9.	Drive bay 2
5.	Power On/Standby button and system power LED	10.	Drive bay 1

Overview



Top View

Item Description

1. Processor 2
2. Processor 2 DIMM slots
3. NVMe riser connector
4. Processor 1 DIMM slots
5. Processor 1
6. Mezzanine B connector
7. Mezzanine A connector
8. SATA cable connector

Item Description

9. Mezz A egress cable
10. Chipset
11. Front panel SUV cable connector (under the bracket)
12. Front panel LED cable connector (under the bracket)
13. System battery (under the bracket)
14. PCIe riser connector
15. Drive backplane power connector

Notes: For proper cooling, do not operate the server without the access panel, air baffles, expansion slot covers, or blanks installed.

What's New

- Support for Intel's Cascade Lake Processors (CLX-SP)
- PCIe options cards
- New memory size and speed support
- New SSD and drive options



Standard Features

Processors							
Intel Xeon Models	CPU Frequency	Cores	L3 Cache	Power	UPI	DDR4 MT/s	Memory per socket

Platinum Processors

1st Generation Intel Xeon Scalable Processor Family							
Platinum 8180 Processor	2.5 GHz	28	38.50 MB	205W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Platinum 8170 Processor	2.1 GHz	26	35.75 MB	165W	3 @ 10.4 GT/s	2666 MT/s	768 GB

2nd Generation Intel Xeon Scalable Processor Family

Platinum 8260 Processor	2.4 GHz	24	35.75 MB	165W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Platinum 8268 Processor	2.9 GHz	24	35.75 MB	205W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Platinum 8270 Processor	2.7 GHz	26	35.75 MB	205W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Platinum 8276 Processor	2.2 GHz	28	38.50 MB	165W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Platinum 8280 Processor	2.7 GHz	28	38.50 MB	205W	3 @ 10.4 GT/s	2933 MT/s	1 TB

Gold Processors

1st Generation Intel Xeon Scalable Processor Family							
Gold 6154 Processor	3.0 GHz	18	24.00 MB	200W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6152 Processor	2.1 GHz	22	30.25 MB	140W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6150 Processor	2.7 GHz	18	24.75 MB	165W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6148 Processor	2.4 GHz	20	27.50 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6146 Processor	3.2 GHz	12	24.00 MB	165W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6144 Processor	3.5 GHz	8	24.75 MB	145W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6142 Processor	2.6 GHz	16	22.00 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6140 Processor	2.3 GHz	18	24.75 MB	140W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6138 Processor	2.0 GHz	20	27.50 MB	125W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6137 Processor	3.9 GHz	8	24.75 MB	205W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6136 Processor	3.0 GHz	12	24.75 MB	150W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6134 Processor	3.2 GHz	8	24.75 MB	130W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6132 Processor	2.6 GHz	14	19.25 MB	140W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6130 Processor	2.1 GHz	16	22.00 MB	125W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6128 Processor	3.4 GHz	6	19.25 MB	115W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 6126 Processor	2.6 GHz	12	19.25 MB	125W	3 @ 10.4 GT/s	2666 MT/s	768 GB
Gold 5122 Processor	3.6 GHz	4	16.50 MB	105W	2 @ 10.4 GT/s	2400 MT/s	768 GB



Standard Features

2nd Generation Intel Xeon Scalable Processor Family

Gold 6230 Processor	2.1 GHz	20	27.50 MB	125W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6242 Processor	2.8 GHz	16	22.00 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6244 Processor	3.6 GHz	8	24.75 MB	150w	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6246 Processor	3.3 GHz	12	24.75 MB	165W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6248 Processor	2.5 GHz	20	27.50 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6240 Processor	2.6 GHz	18	24.75 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6252 Processor	2.1 GHz	24	35.75 MB	150W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6254 Processor	3.1 GHz	18	24.75 MB	200W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 5222 Processor	3.8 GHz	4	16.50 MB	105W	2 @ 10.4 GT/s	2666 MT/s	1 TB
Gold 6250 Processor	3.9 GHz	8	35.75 MB	185W	3 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6256 Processor	3.6 GHz	12	33 MB	205W	3 @ 10.4 GT/s	2933	1TB
Gold 6258R Processor	2.7 GHz	28	38.5 MB	205W	2 @ 10.4 GT/s	2933	1TB
Gold 6248R Processor	3.0 GHz	24	35.75 MB	205W	2 @ 10.4 GT/s	2933	1TB
Gold 6246R Processor	3.4 GHz	16	35.75 MB	205W	2 @ 10.4 GT/s	2933	1TB
Gold 6242R Processor	3.1 GHz	20	35.75 MB	205W	2 @ 10.4 GT/s	2933	1TB
Gold 6240R Processor	2.4 GHz	24	35.75 MB	165W	2 @ 10.4 GT/s	2933	1TB
Gold 6238R Processor	2.2GHz	28	38.5 MB	165W	2 @ 10.4 GT/s	2933	1TB
Gold 6230R Processor	2.1 GHz	26	35.75 MB	150W	2 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 6226R Processor	2.9 GHz	16	22MB	150W	2 @ 10.4 GT/s	2933 MT/s	1 TB
Gold 5220R Processor	2.2 GHz	24	35.75 MB	150W	2 @ 10.4 GT/s	2667 MT/s	1 TB
Gold 5218R Processor	2.1 GHz	20	27.5 MB	125W	2 @ 10.4 GT/s	2667 MT/s	1 TB

Silver Processors

2nd Generation Intel Xeon Scalable Processor Family

Silver 4214R Processor	2.4 GHz	12	16.5 MB	100W	2 @ 9.6 GT/s	2400 MT/s	1 TB
Silver 4210R Processor	2.4 GHz	10	13.75 MB	100W	2 @ 9.6 GT/s	2400 MT/s	1 TB

Bronze Processors

2nd Generation Intel Xeon Scalable Processor Family

Bronze 3206R Processor	1.9 GHz	8	11 MB	85W	2 @ 9.6 GT/s	2133 MT/s	1 TB
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Notes:

- Bronze & Silver processor support not available in EMEA or Japan.
- If more than 1 processor is selected within the server they must be identical and paired using -B21 and -B22 SKUs for front and rear processor sockets
- Select processors may limit the system's inlet ambient support to 25°C. Please see the table in technical specifications below for Gold 6137, Gold 6250 & Gold 6256
- Gold 5122 processors supports 2666 MT/s DDR4 memory up to 2400 MT/s
- Gold 6137, Gold 6250 and 6256 require the HPE Apollo FIO Airflow HDD removal Kit (882054-B21)
- The Gold 6137, 6144, 6146, 6154, 6244, 6250, 6254, 6256, 6258R, 6248R, 6242R and Platinum 8180, 8268, 8270, 8276, 8280 processors are limited to a maximum of 6 DIMMs per CPU.



Standard Features

Chipset

Intel® C622 Chipset (Intel EY82C622 PCH)

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

<http://www.intel.com/products/server/chipsets/>

HPE iLO 5 ASIC

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

Memory

Type	HPE SmartMemory DDR4 Load Reduced (LRDIMM), or Registered (RDIMM)
DIMM Slots Available	12 DIMM Slots available
Maximum DIMMs capacity (per server tray)	1.5 TB

Notes:

- HPE memory from previous generation servers is not supported with the HPE ProLiant XL230k Gen10 Server.
- For additional information, please see the HPE SmartMemory QuickSpecs at: <https://www.hpe.com/h20195/v2/GetPDF.aspx/c04355083.pdf>
- LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.
- For DIMM population, please see Memory Population Table at: <http://www.hpe.com/docs/memory-population-rules> or the Online Memory Configuration Tool at: <http://h22195.www2.hpe.com/MemoryTool/Home/Legal>

Memory Protection

Advanced ECC

Detects and corrects multi-bit memory errors. Advanced ECC can detect and correct up to 4-bit memory errors if all failed bits are on the same 4-bit DRAM device on the DIMM, thus enabling continued memory operation.

Online Spare with Advanced ECC Support

Provides protection against persistent DRAM failure. A rank that is starting to degrade making it more likely to receive a fatal/uncorrectable memory error is automatically removed from operation, swapping operation to the spare, thus resulting in less system downtime.

Memory Mirroring with Advanced ECC Support

Provides protection against uncorrectable memory errors that would otherwise result in system failure. In this mode, the system maintains two copies of all data. If an uncorrectable memory error occurs, the system automatically retrieves the good data from the mirrored (redundant) copy.

Use this option to select from the available Memory Mirroring modes.

- Full Mirror - reserves 50% of the total available memory for mirroring.
- Partial Mirror (20% above 4GB) - reserves 20% of the total available Memory above 4GB for Mirroring.
- Partial Mirror (10% above 4GB) - reserves 10% of the total available Memory above 4GB for Mirroring.
- Partial Mirror (Memory below 4GB) - depending on the memory configuration, sets up 2GB or 3GB of lower memory below 4GB for Mirroring.
- Partial Mirror (OS Configured) - sets up the system to configure Partial Mirroring at OS level.

HPE Fast Fault Tolerance

Fault Tolerant Advanced Double Device Data Correction (ADDDC) enables the system to correct memory errors and continue to operate in cases of multiple DRAM device failures on a DIMM. This provides protection against uncorrectable memory errors beyond what is available with Advanced ECC.



Standard Features

Expansion Slots

Expansion Slot #	Technology	BusWidth*	Form Factor / Physical connector
Internal PCIe	PCIe 3.0	x8	Low profile x16
External PCIe	PCIe 3.0	x16	Low profile x16
Internal/External	PCIe 3.0	x8/x8	Low profile x16/x16

Notes:

- External PCIe riser requires ordering the HPE Apollo Server Tray IO Mod Opt kit 868858-B21
- Internal Mezzanine B slot will be unavailable with above PCIe options.
- *Indicates the number of electrical lanes running to the connector.

Storage Controllers

Notes: HPE S100i 6G SATA FIO cable SKU 866784-B21 is required for front SATA drive support

Essential RAID

- HPE Smart Array E208i-p SR Gen10 Controller

Notes: The Smart Array E208i-p requires cable kit SKU 866786-B21

- HPE Smart Array E208e-p SR Gen10 Controller

Notes: The Smart Array E208e-p controllers supports external JBODs and requires external PCIe riser kit

Performance RAID

HPE Smart Array P408i-p SR Gen10 Controller

Notes:

- The Smart Array P408i-p above requires cable kit SKU 866786-B21
- The Smart Array P408i-p controller requires HPE XL230k 12W Smart Storage Battery

Storage Controller Cable Kits

- HPE Smart Array E208i-/P408i-p SAS Cable
- HPE Smart Array S100i 6G SATA FIO Cable

Other Storage Controller Options

HPE XL230k 12W Smart Storage Battery Kit

Maximum Internal Storage		
Drive	Capacity	Configuration
Hot Plug SFF SAS HDD	8 TB	4 x 2 TB
Hot Plug SFF SATA HDD	8 TB	4 x 2 TB
Hot Plug SFF SSD	15.36 TB	4 x 3.84 TB
M.2 internal	1.92 TB	2 x 960 GB
uFF	3.84 TB	4 x (2 uFFx 480 GB)
NVMe SFF	25.6TB	4 x 6.4 TB
Interfaces		
KVM	Serial USB Video Port (SUV) P/N: 676277-B21 HPE 36pin SUV Dongle Cord Kit	
USB Ports	1 internal USB 3.0 and 2 external USB 2.0 via SUV	
HPE iLO Remote Management Network Port	Aggregated via HPE Apollo k6000 Chassis Controller or Apollo Platform Manager	
Health LED	1	
Power	1	
UID	1	



Standard Features

Operating Systems and Virtualization Software Support for ProLiant Servers

Microsoft Windows Server

- Windows 2012 R2 Standard, Datacenter, Essentials & Hyper-V
- Windows Server 2016 Standard Datacenter & Hyper-V Server
- Windows server 1709 (Server Core Only) Standard & Datacenter

Red Hat Enterprise Linux (RHEL) 7

- RHEL 7.6 (64 bit) (includes KVM)
- RHEL 6.9
- RHEL 7.3 w/errata kernel 3.10.0-514.6.1.el7

SUSE Linux Enterprise Server (SLES) 11.4 or beyond

- SLES 11 SP4 w/kISO
- SLES 12 SP2
- SLES 12 SP3 (64 bit) (includes KVM)
- SLES 15 (64 bit) (includes KVM)

VMware ESX

- ESXi 6.0 U3
- ESXi 6.5 & 6.5 U1 (with custom image) - 3.29
- vSphere 6.5 U2
- VSphere 6.7

Community OSes: Supported 90 days POST launch

- CentOS 6.9/7.3/7.4/7.6

Notes:

- Only 64-bit versions of these operating systems are supported.
- Latest release of supported OS required for Cascade Lake (CLX-SP).
- For more information on the HPE Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from Hewlett Packard Enterprise, please visit our OS Support Site at: <http://www.hpe.com/info/ossupport> and our driver download page: <http://www.hpe.com/support>

Industry Standard Compliance

- ACPI 6.1 Compliant
- PCIe 3.0 Compliant
- WOL Support
- Microsoft® Logo certifications
- PXE Support
- USB 3.0 Compliant (internal); USB 2.0 Compliant (external ports via SUV)
- SMBIOS 3.1
- UEFI 2.6
- Redfish API

Power Specifications

To review typical system power ratings use the HPE Power Advisor which is available via the online tool located at URL: <http://www.hpe.com/info/poweradvisor/online> or <http://www.hpe.com/info/poweradvisor>.

Notes: Power Specification and Technical Content for supported power supplies can be found at:

<https://www.hpe.com/info/qs>

Graphics

Integrated video standard

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



Standard Features

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 Gen10 servers have a UEFI Class 2 implementation and support both UEFI Mode (default) and Legacy BIOS 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
- Operating system specific functionality
- Support for > 2.2 TB (using GPT) boot drives
- USB 3.0 Stack
- Embedded UEFI Shell
- Mass Configuration Deployment Tool using iLO RESTful API.
- PXE boot support for IPv6 networks
- Boot support for option cards that only support a UEFI option ROM
- Network Stack configurations
- Workload Profiles for simple performance optimization

Notes:

- For UEFI Boot Mode, boot environment and OS image installations should be configured properly to support UEFI.
- UEFI FIO Setting (758959-B22) can be selected to configure the system in Legacy mode in the factory for your HPE ProLiant XL230k Gen10 Server.

Form Factor

The ProLiant XL230k Gen10 Server is a single-slot tray for the HPE Apollo k6000 Chassis

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>

iLO RESTful API

iLO RESTful API is Redfish API conformance and offers simplified server management automation such as configuration and maintenance tasks based on modern industry standards. Learn more at <http://www.hpe.com/info/restfulapi>

Active Health System

The HPE Active Health System (AHS) is an essential component of iLO management portfolio that provides continuous, proactive health monitoring of HPE servers. Learn more at <http://www.hpe.com/servers/ahsv>

Active Health System Viewer

Use the Active Health System Viewer, a web-based portal, to easily read AHS logs and speed problem resolution with HPE self-repair recommendations. Learn more at <http://www.hpe.com/servers/ahsv>

Smart Update Manager

Keep your servers up to date with HPE's Smart Update solution by using Smart Update Manager (SUM) to optimize the firmware and driver updates of the Service Pack for ProLiant (SPP).



Standard Features

Server Utilities

iLO Amplifier Pack

Designed for large enterprise and service provider environments with hundreds of HPE servers, the iLO Amplifier Pack is a free, downloadable open virtual application (OVA) that delivers the power to discover, inventory and update Gen8, Gen9 and Gen10 HPE servers at unmatched speed and scale. Use with an iLO Advanced License to unlock full capabilities.

<http://www.hpe.com/servers/iLOamplifierpack>

HPE iLO Mobile Application

Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. <http://www.hpe.com/info/ilo/mobileapp>

RESTful Interface Tool

RESTful Interface tool (iLOREST) is a single scripting tool to provision using iLO RESTful API to discover and deploy servers at scale. <http://www.hpe.com/info/resttool>

Scripting tools

Provision 1 to many servers using your own scripts to discover and deploy with Scripting Toolkit (STK) for Windows and Linux or Scripting Tools for Windows PowerShell. <http://www.hpe.com/servers/powershell>

HPE OneView Standard

HPE OneView Standard can be used for inventory, health monitoring, alerting, and reporting without additional fees. It can monitor multiple HPE Servers generations. The user interface is similar to the HPE OneView Advanced version, but the software-defined functionality is not available. <http://www.hpe.com/info/oneview>

HPE Systems Insight Manager (HPE SIM)

Ideal for environments already using HPE SIM, it allows you to monitor the health of your HPE ProLiant Servers and HPE Integrity Servers. Also provides you with basic support for non-HPE servers. HPE SIM also integrates with Smart Update Manager to provide quick and seamless firmware updates. www.hpe.com/info/hpesim

Server Management Software Licenses

HPE iLO Advanced

HPE iLO Advanced licenses offer smart remote functionality without compromise, for all HPE ProLiant servers. 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.

HPE iLO Advanced Premium Security Edition

HPE iLO Advanced Premium Security Edition for iLO 5 includes iLO Advanced License plus high-end security modes, unique security capabilities, like Automatic FW recovery; Runtime FW verification, and Secure erase. <http://www.hpe.com/servers/ilopremium>

HPE iLO Scale-Out

HPE iLO Scale-Out is the preferred license built for web hosting, cloud service providers, and high performance computing data centers, managing massive scale out environments. This license offers sophisticated scripting tools that provides remote access through Text Console via SSH, Dynamic power capping, Email-based Alerting and proactive notifications.

<https://www.hpe.com/us/en/servers/integrated-lights-out-ilo.html>

HPE OneView Advanced

HPE OneView brings a new level of automation to infrastructure management by taking a template driven approach to provisioning, updating, and integrating compute, storage, and networking infrastructure. It provides full-featured licenses which can be purchased for managing Gen8 Gen9 and Gen10 servers. <http://www.hpe.com/info/oneview>



Standard Features

HPE Performance Cluster Manager

The HPE Performance Cluster Manager delivers a fully integrated system management solution for Linux®-based high-performance computing (HPC) clusters scaling up to 100,000 nodes. The software enables fast system setup from bare-metal, comprehensive hardware monitoring and management, image management and software updates as well as power management. The HPE Performance Cluster Manager reduces the time and resources spent administering HPC systems - lowering total cost of ownership, increasing productivity and providing a better return on hardware investments.

Performance Cluster Manager

QuickSpecs: <https://h20195.www2.hp.com/v2/getdocument.aspx?docname=a00044858enw>

Security

- UEFI Secure Boot and Secure Start support
 - Immutable Silicon Root of Trust
 - Support for Commercial National Security Algorithms (CNSA)
 - iLO Security Modes including a New iLO Advance Premium Security License
 - Granular control over iLO interfaces
 - Common Access Card (CAC) 2-factor Authentication
 - Tamper-free updates – components digitally signed and verified
 - Secure Recovery – recover critical firmware to known good state on detection of compromised firmware
 - TPM (Trusted Platform Module) 1.2 option
 - TPM (Trusted Platform Module) 2.0 option Bezel Locking Kit
 - Intrusion Security Kit option
-

Ethernet Options

- HPE Ethernet 10Gb 2-port 568i Adapter (integrated)
 - HPE Ethernet 10/25Gb 2p 631SFP28 Adapter
 - HPE Ethernet 10Gb 2p 535T Adapter
 - HPE Ethernet 10Gb 2p 562T Adapter
 - HPE Ethernet 1Gb 4-port 366T Adapter
 - HPE Ethernet 10/25Gb 2P 640SFP28 Adapter
 - HPE Ethernet 1Gb 4-port 331T Adapter
 - HPE Ethernet 4x25Gb 1p 620QSFP28 Adapter
 - HPE Ethernet 1Gb 2P 361T Adapter
 - HPE Ethernet 1Gb 2P 332T Adapter
 - HPE Ethernet 10Gb 2-port 562SFP+ Adapter
-

High Speed Fabric Option

- HPE Apollo IB EDR 100GB 840z FIO Adapter
 - HPE Apollo IB EDR 100GB 841z FIO Adapter
 - HPE IB EDR/EN 100GB 1P 840QSFP28 Adapter
 - HPE IB EDR/EN 100GB 2P 840QSFP28 Adapter
 - HPE 100Gb 1p OPA 860z FIO Adapter
-



Service and Support

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 reimaged 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.

<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/complecare>



Service and Support

Warranty

This product is covered by a global limited warranty and supported by HPE Services and a worldwide network of HPE Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HPE Pointnext 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, 3-year on-site 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:

<http://www.hpe.com/support/ProLiantServers-warranties>

Warranty and Services - Options

Notes: HPE ProLiant XL230k Gen10 Servers are covered under the HPE Service Contract applied to the HPE ProLiant Server. No separate HPE support services need to be purchased.

Warranty and Support Services will extend to include HPE options configured with your server or storage device. The price of support service is not impacted by configuration details. HPE sourced options that are compatible with your product will be covered under your server support at the same level of coverage allowing you to upgrade freely. Installation for HPE options is available as needed. To keep support costs low for everyone, some high value options will require additional support. Additional support is only required on select high value workload accelerators, fibre switches, InfiniBand and UPS batteries over 12KVA. See the specific high value options that require additional support:

<https://psnow.ext.hpe.com/#/tiles/search/search?t=4AA4-6535ENW>

Get connected to Hewlett Packard Enterprise to improve your support experience

Connect your devices

Unlock all of the benefits of your technology investment by connecting your products to Hewlett Packard Enterprise. Reduce down time and improve diagnostic accuracy with a single consolidated view of your environment. By connecting, you will receive 24x7 monitoring, 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. Learn more about getting connected at <http://www.hpe.com/services/getconnected>

Other Related Services

HPE Server Hardware Installation

Provides for the basic hardware installation of HPE branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner.

HPE Installation and Startup Service

Provides for the installation of your HPE hardware according to product specifications including options as well as installation of the operating system. The HPE service delivery technician will connect the product to a LAN as appropriate and enable remote support to allow for automatic case creation for hardware failures.

<https://psnow.ext.hpe.com/doc/a00017555enw?from=app>



Service and Support

DC for Hyperscale

Complete Care for Hyperscale is available for Service Providers and HPC customers who use a scale out approach to computing with a high volume homogenous infrastructure and resilient architecture can take advantage of this environment support tailored to their operating model. <https://h20195.www2.hpe.com/V2/GetDocument.aspx?docname=4AA4-4708ENW>

HPE Factory Express for Servers and storage

HPE Factory Express offers configuration, customization, integration and deployment services for HPE servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HPE products supported through Factory Express include a wide array of servers and storage: HPE Integrity, HPE ProLiant, HPE Apollo, HPE ProLiant Server Blades, HPE BladeSystem, HPE 9000 servers, as well as the HPE MSAXxxx, HPE 3PAR suite, HPE XP, rackable tape libraries and configurable network switches.

HPE Technology Services Support Credits

Offer flexible services and technical skills to meet your changing IT demands. With a menu of service that is tailored to suit your needs, you get additional resources and specialist skills to help you maintain peak performance of your IT. Offered as annual credits, you can plan your budgets while proactively responding to your dynamic business.

HPE Education Services

Keep your IT staff trained making sure they have the right skills to deliver on your business outcomes. Book a class today and learn how to get the most from your technology investment. <http://www.hpe.com/ww/learn>

HPE Support Center

The HPE Support Center is a personalized online support portal with access to information, tools and experts to support HPE business products. Submit support cases online, chat with HPE experts, access support resources or collaborate with peers.

Learn more at <http://www.hpe.com/support/hpesc>

HPE's 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 HPE warranty, HPE Support Service or HPE contractual support agreement.

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

For more information visit <http://www.hpe.com/services>

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.



Configuration Information

HPE Apollo k6000 Chassis

<https://www.hpe.com/h20195/v2/gethtml.aspx?docname=c04293373>

Step 2: Choose Required Options (only one from each category unless otherwise noted)

HPE Legacy FIO Mode Setting	758959-B22
HPE Smart Memory Fast Fault Tolerance FIO Setting	875293-B21
HPE 200GB Logical Size FIO Setting	436007-B21

HPE Memory

Registered DIMMs (RDIMMs) – DDR4-2666

HPE 8GB (1x8GB) Single Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815097-H21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815098-H21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	835955-H21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2666 CAS-19-19-19 Registered Smart Memory Kit	815100-H21

Registered DIMMs (RDIMMs) – DDR4-2933

HPE 8GB (1x8GB) Single Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00918-H21
HPE 16GB (1x16GB) Single Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00920-H21
HPE 16GB (1x16GB) Dual Rank x8 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00922-H21
HPE 32GB (1x32GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00924-H21
HPE 64GB (1x64GB) Dual Rank x4 DDR4-2933 CAS-21-21-21 Registered Smart Memory Kit	P00930-H21

Load Reduced DIMMs (LRDIMMs) – DDR4-2666

HPE 128GB (1x128GB) Quad Rank x4 DDR4-2933 CAS-21-21-21 Load Reduced Smart Memory Kit	P11040-H21
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Notes:

- CLX-SP processors require 2933 MT/s DIMMS
- Minimum 1 DIMMs are required per processor; up to 6 DIMMs per processor.
- If Fabric is installed, minimum of 32GB is required.
- A maximum of 12 DIMMs are supported per XL230k server tray (or 6 DIMMs max per processor).
- LRDIMM and RDIMM are distinct memory technologies and cannot be mixed within a server.
- HPE 128GB LRDIMM cannot be mixed with 64GB LRDIMM.
- HPE memory from previous generation servers is not supported with this server. HPE SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen10. For additional information, please see the HPE Server Memory Options Population Rules:

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

HPE Storage Controllers

Essential RAID Controller

HPE Smart Array E208i-p SR Gen10 (8 Internal Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804394-B21
HPE Smart Array E208e-p SR Gen10 (8 External Lanes/No Cache) 12G SAS PCIe Plug-in Controller	804398-B21

Notes: The Essential RAID controllers are only supported with PCIe IO Riser card.

Performance RAID Controller

HPE Smart Array P408i-p SR Gen10 (8 Internal Lanes/2GB Cache) 12G SAS PCIe Plug-in Controller	830824-B21
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Notes:

- This controller is only supported with PCIe IO Riser card.
- The Smart Array P408i-p requires the HPE 12W Smart Storage Battery SKU P01365-B21.



Configuration Information

Other Storage Controller Options

HPE ProLiant XL230k Gen10 12W Smart Storage Lithium-ion Battery P01365-B21

Notes:

- If Smart Array P408i-p with Smart Storage battery is selected, M.2 option kit is not supported.
- Required for Gold 6137, 6250 and 6256 Processors

HPE Ethernet Options

HPE Ethernet 10/25Gb 2-port SFP28 BCM57414 Adapter	817718-B21
HPE Ethernet 10Gb 2-port BASE-T BCM57416 Adapter	813661-B21
HPE Ethernet 1Gb 4-port BASE-T I350-T4V2 Adapter	811546-B21
HPE Ethernet 10/25Gb 2-port SFP28 MCX4121A-ACUT Adapter	817753-B21
HPE Ethernet 10Gb 2-port SFP+ X710-DA2 Adapter	727055-B21
HPE Ethernet 10Gb 2-port BASE-T X550-AT2 Adapter	817738-B21
HPE Ethernet 1Gb 4-port BASE-T BCM5719 Adapter	647594-B21
HPE Ethernet 10/25Gb 2-port SFP28 QL41401-A2G Adapter	867328-B21
HPE Ethernet 1Gb 2-port BASE-T BCM5720 Adapter	615732-B21
HPE Ethernet 1Gb 2-port BASE-T I350-T2V2 Adapter	652497-B21

Notes:

- Ethernet Options will require External I/O Riser Kit
- HPE Ethernet 4x25Gb will require HPE XL230k x16 Low Profile PCIe External I/O Riser Kit to maximize the bandwidth Converged Network Adapters

Step 3: Choose Additional Factory Integrated Options

Notes: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, Hewlett Packard Enterprise recommends the use of a Hewlett Packard Enterprise approved configurator. Contact your local sales representative for additional information.

HPE Drives

Enterprise - 12G SAS - SFF Drives

HPE 300GB SAS 12G Mission Critical 15K SFF SC 3-year Warranty Multi Vendor HDD	870753-H21
HPE 300GB SAS 12G Mission Critical 10K SFF SC 3-year Warranty Multi Vendor HDD	872475-H21
HPE 600GB SAS 12G Mission Critical 15K SFF SC 3-year Warranty Multi Vendor HDD	870757-H21
HPE 600GB SAS 12G Mission Critical 10K SFF SC 3-year Warranty Multi Vendor HDD	872477-H21
HPE 900GB SAS 12G Mission Critical 15K SFF SC 3-year Warranty Multi Vendor HDD	870759-H21
HPE 1.2TB SAS 12G Mission Critical 10K SFF SC 3-year Warranty Multi Vendor HDD	872479-H21
HPE 1TB SAS 12G Business Critical 7.2K SFF SC 1-year Warranty HDD	832514-H21
HPE 2TB SAS 12G Business Critical 7.2K SFF SC 1-year Warranty 512e HDD	765466-H21
HPE 1.8TB SAS 12G Mission Critical 10K SFF SC 3-year Warranty 512e Multi Vendor HDD	872481-H21



Configuration Information

Solid State Drives

Read Intensive SATA Solid State Drives

HPE 960GB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18424-H21
HPE 240GB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18420-H21
HPE 7.68TB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18430-H21
HPE 480GB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18422-H21
HPE 1.92TB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18426-H21
HPE 3.84TB SATA 6G Read Intensive SFF SC Multi Vendor SSD	P18428-H21

Read Intensive SAS Solid State Drives

HPE 960GB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P36997-H21
HPE 1.92TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P36999-H21
HPE 3.84TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P37001-H21
HPE 7.68TB SAS 12G Read Intensive SFF SC Value SAS Multi Vendor SSD	P37003-H21

Mixed Use SATA Solid State Drives

HPE 480GB SATA 6G Mixed Use SFF SC Multi Vendor SSD	P18432-H21
HPE 960GB SATA 6G Mixed Use SFF SC Multi Vendor SSD	P18434-H21
HPE 3.84TB SATA 6G Mixed Use SFF SC Multi Vendor SSD	P18438-H21
HPE 1.92TB SATA 6G Mixed Use SFF SC Multi Vendor SSD	P18436-H21

Mixed Use SAS Solid State Drives

HPE 2.4TB SAS 12G Mission Critical 10K SFF SC 3-year Warranty 512e Multi Vendor HDD	881457-H21
HPE 960GB SAS 12G Mixed Use SFF SC Value SAS Multi Vendor SSD	P37005-H21
HPE 1.92TB SAS 12G Mixed Use SFF SC Value SAS Multi Vendor SSD	P37011-H21
HPE 3.84TB SAS 12G Mixed Use SFF SC Value SAS Multi Vendor SSD	P37017-H21

Mixed Use NVMe Solid State Drives

HPE 800GB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20094-H21
HPE 1.6TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20096-H21
HPE 3.2TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20098-H21
HPE 6.4TB NVMe Gen4 High Performance Mixed Use SFF SCN U.3 CM6 SSD	P20100-H21

Write Intensive SAS Solid State Drives

HPE 400GB SAS 12G Write Intensive SFF SC PM6 SSD	P26295-H21
HPE 800GB SAS 12G Write Intensive SFF SC PM6 SSD	P26372-H21
HPE 1.6TB SAS 12G Write Intensive SFF SC PM6 SSD	P26376-H21

Notes:

- Hard drives have either a one year or three year warranty.
- The hard drive options are not required when configuring a drive-less Model.
- The E208i-p or P408i-p controller is required when ordering SAS drives.
- NVMe drives require HPE XL230k NVMe Enablement FIO Kit 866723-B21.
- No NVMe drives are supported with single processor system.
- The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

Security Hardware

HPE Trusted Platform Module 2.0 Gen10 Option	864279-B21
HPE Gen10 TPM 1.2 FIO Setting	872108-B21



Configuration Information

HPE Rack Options

HPE USB US Keyboard/Mouse Kit	631341-B21
HPE USB UK Keyboard/Mouse Kit	631344-B21
HPE USB FR Keyboard/Mouse Kit	631346-B21
HPE USB ES Keyboard/Mouse Kit	631348-B21
HPE USB DE Keyboard/Mouse Kit	631358-B21
HPE USB JP Keyboard/Mouse Kit	631360-B21
HPE USB IT Keyboard/Mouse Kit	631362-B21
HPE USB CN Keyboard/Mouse Kit	631364-B21
HPE USB AE Keyboard/Mouse Kit	638212-B21
HPE USB RU Keyboard/Mouse Kit	638214-B21
HPE USB IN Keyboard/Mouse Kit	672097-D63
HPE USB AP/INTL Keyboard/Mouse Kit	672097-373
HPE USB INTL Keyboard/Mouse Kit	672097-B33
HPE USB PT Keyboard/Mouse Kit	672097-133
HPE USB TR Keyboard/Mouse Kit	672097-143
HPE USB CZ Keyboard/Mouse Kit	672097-223
HPE USB FI Keyboard/Mouse Kit	672097-353
HPE USB SE Keyboard/Mouse Kit	672097-103
HPE USB CH Keyboard/Mouse Kit	672097-113
HPE USB KR Keyboard/Mouse Kit	672097-KD3

Notes: Please see the QuickSpecs for Technical Specifications and additional information:

http://h18000.www1.hp.com/products/QuickSpecs/13972_div/13972_div.html



Additional Options

Embedded Management

HPE iLO Advanced

HPE iLO Advanced Electronic License with 1yr Support on iLO Licensed Features	E6U59ABE
HPE iLO Advanced Electronic License with 3yr Support on iLO Licensed Features	E6U64ABE
HPE iLO Advanced 1-server License with 3yr Support on iLO Licensed Features	BD505A
HPE iLO Advanced Flexible Quantity License with 3yr Support on iLO Licensed Features	BD506A
HPE iLO Advanced AKA Tracking License with 3yr Support on iLO Licensed Features	BD507A
HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features	512485-B21
HPE iLO Advanced Flexible Quantity License with 1yr Support on iLO Licensed Features	512486-B21
HPE iLO Advanced AKA Tracking License with 1yr Support on iLO Licensed Features	512487-B21
HPE iLO Common Password FIO Setting	P08040-B21

Converged Infrastructure Management

HPE OneView w/o iLO including 3yr 24x7 Support 1-server LTU	P8B24A
HPE OneView w/o iLO including 3yr 24x7 Support Track 1-server LTU	P8B25A
HPE OneView w/o iLO including 3yr 24x7 Support Flexible Quantity E-LTU	P8B26AAE
HPE OneView w/o iLO including 3yr 24x7 Support 1-server FIO LTU	P8B31A
HPE OneView including 3yr 24x7 Support Flexible Quantity E-LTU	E5Y35AAE
HPE OneView including 3yr 24x7 Support Physical 1-server LTU	E5Y34A
HPE OneView for ProLiant DL Server including 3yr 24x7 Support FIO Bundle Physical 1-server LTU	E5Y43A

USB and SD Options

HPE 36pin Serial/USB/VGA Dongle Cord Kit	676277-B21
HPE 32GB microSD RAID 1 USB Boot Drive	P21868-B21

HPE Support Services

HPE Installation Apollo 6000 Gen10 Chassis Service	H2GA8E
HPE Apollo 6000 Generation 10 Installation and Startup Service	H6SV1E



Memory

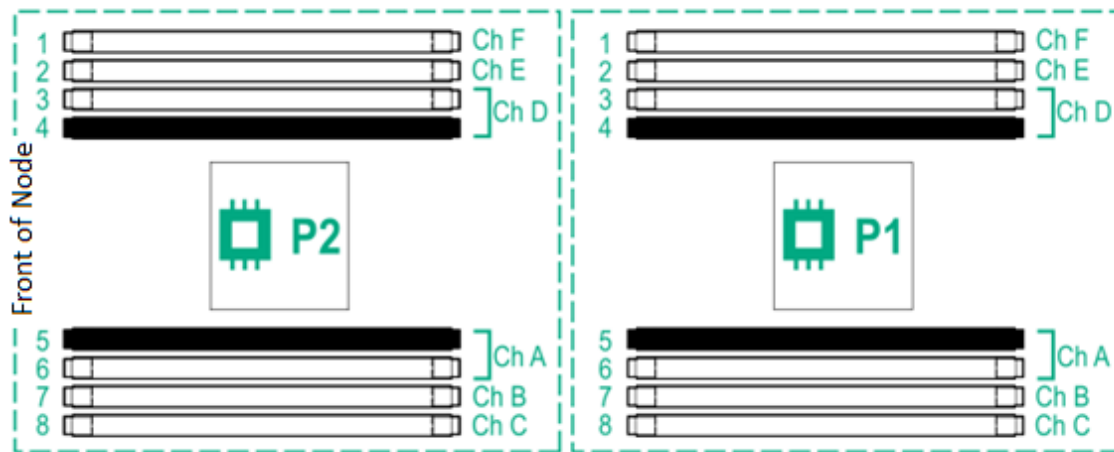
HPE Memory

For detailed memory configuration rules and guidelines, please use the Online DDR4 Memory Configuration Tool:

<http://h22195.www2.hpe.com/MemoryTool/Home/Legal>

Memory Subsystem Architecture

Each Intel® Xeon® Scalable family processor socket contains six memory channels per installed processor with Channels A and D are 2DPC DIMMs per channel for a total of eight (8) DIMMs or a grand total of sixteen (16) DIMMs for the server.



General Memory Population Rules and Guidelines

For details on the HPE Server Memory Options Population Rules, visit:

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

For details on the HPE Server Memory Options RAS Features, visit:

<https://www.hpe.com/h20195/V2/Getdocument.aspx?docname=4AA4-3490ENW>

Supported Memory Bandwidth with Intel Xeon Gold and Platinum Series Processor Family

Notes:

- Capacity references are rounded to the common gigabyte (GB) values.
 - o 8GB = 8,192MB
 - o 16GB = 16,384MB
 - o 32GB = 32,768MB
 - o 64GB = 65,536MB
 - o 128GB = 131,072MB
- Memory options part number decoder
 - o The Gold 6137, 6144, 6146, 6154, 6244, 6250, 6254, 6256, 6258R, 6248R, 6242R and Platinum 8180, 8268, 8270, 8276, 8280 processors are limited to a maximum of 12 DIMMs (Channel A and D cannot be used)

<https://h20195.www2.hpe.com/v2/GetDocument.aspx?docname=c04355083>

Technical Specifications

System Unit Specifications		
Server Dimensions (L x W x D)	1.65 x 7.64 x 30.53 in (4.19 x 19.41 x 77.55 cm)	
Shipping Dimensions (L x W x D)	8.78 x 14.72 x 39.33 in (22.30 x 37.39 x 99.90 cm)	
Weight (approximate, maximum) (four hard drives and two processors installed)	15.0 lb (6.80 kg)	
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. 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	10° to 5°C (50° to 41°F) and 35° to 40°C (95° to 104°F)	For approved hardware configurations, the supported system inlet range is to be: 10° to 5°C (50° to 41°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 For approved hardware configurations, the supported system inlet range is to be: 40° to 45°C (104° 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).	Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity (non-condensing)		
Operating	10 to 90%	Relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing. Processor Type Maximum Inlet Temp.
Non-operating	5 to 95%	Relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Temperature Requirement		
Gold 6137	25°C (Max inlet ambient)	
Gold 6250	25°C (Max inlet ambient)	
Gold 6256	25°C (Max inlet ambient)	
Notes: Operating temperature has an altitude derating of 1.8° F (1° C) per 1,000 ft (305 m). No direct sunlight. Upper operating limit is 10,000 ft (3,048 m) or 70KPa/10.1 psia. Upper non-operating limit is 30,000 ft (9,144 m) or 30.3 KPa/4.4 psia. Storage maximum humidity of 95% is based on a maximum temperature of 113° F (45° C). Altitude maximum for storage is 70 KPa.		

Technical Specifications

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

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and measured average bystander position A-Weighted sound pressure levels (LpAm) 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.

Configuration SKU	Entry	Base	Performance
Idle – LWAd	6.9 B	6.9 B	6.9 B
Idle – LpAm	53 dBA	53 dBA	53 dBA
Operating – LWAd	8.1 B	8.6 B	9.0 B
Operating – LpAm	64 dBA	69 dBA	73 dBA

Notes:

- Acoustic levels presented here are generated by the test configurations only. Values are subject to change without notification and are for reference only.
- Performance of system, options, and ancillary equipment will vary depending on the system configuration.
- Levels presented do not account for non-Hewlett Packard Enterprise installed hardware.

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
18-Jul-2022	Version 29	Changed	Modified DIMMs per CPU to 6 per channel, 12 per Server Tray Adjusted maximum system memory to 12x128 GB = 1.5TB Core Options section was updated. Obsolete SKUs were removed.
15-Nov-2021	Version 28	Changed	Service and Support section was updated Obsolete SKUs were removed
07-Dec-2020	Version 27	Changed	Core Options section was updated. Obsolete SKUs were removed.
05-Oct-2020	Version 26	Changed	Core Options section was updated. Obsolete SKUs were removed.
03-Aug-2020	Version 25	Changed	Obsolete SKUs were removed. SKUs were updated.
15-Jun-2020	Version 24	Changed	Configuration Information and Standard Features sections were updated.
01-Jun-2020	Version 23	Changed	Configuration Information section was updated.
06-Apr-2020	Version 22	Changed	Standard Features, Configuration Information and Technical Specifications sections were updated.
24-Feb-2020	Version 21	Changed	Standard Features and Configuration Information sections were updated. Obsolete SKUs were removed
02-Dec-2019	Version 20	Changed	Standard Features, Configuration Information and Technical specifications sections were updated. Obsolete SKUs were removed
07-Oct-2019	Version 19	Changed	Standard Features and Configuration Information sections were updated
05-Aug-2019	Version 18	Changed	Configuration Information section was updated
03-Jun-2019	Version 17	Changed	Standard Features and Configuration Information section was updated. Obsolete SKUs were removed
18-Apr-2019	Version 16	Changed	Obsolete SKUs were removed. SKUs were updated.
02-Apr-2019	Version 15	Changed	Overview, Standard Features and Configuration Information sections were updated, Added CLX, 2933 memory and misc. Obsolete SKUs were removed
04-Feb-2019	Version 14	Changed	Added Gold 6137 support and removed processor restrictions. Standard Features and Configuration Information, sections were updated
03-Dec-2018	Version 13	Changed	SKUs and descriptions were updated in Configuration Information section Obsolete SKUs were removed
01-Oct-2018	Version 12	Changed	SKUs and descriptions were updated in Configuration Information section, Additional Options and Standard Features sections were updated
06-Aug-2018	Version 11	Changed	Overview, Service and Support and SKUs and descriptions in Configuration Information and Additional Options were updated.
07-May-2018	Version 10	Changed	Removed support for Xeon Gold 6137 processor
02-Apr-2018	Version 9	Changed	Update QuickSpecs and the Configuration Information section
05-Feb-2018	Version 8	Changed	Update several sections fo the document
04-Dec-2017	Version 7	Changed	Update SKUs descriptions and overall QuickSpecs
23-Oct-2017	Version 6	Changed	Care Pack naming and Service and Support- Parts and Materials updated.
16-Oct-2017	Version 5	Changed	Update descriptions in the Configuration Information Section
25-Sep-2017	Version 4	Changed	Update QuickSpecs and the Configuration Information section
17-Jul-2017	Version 3	Changed	Update images with callouts and correct errors.
11-Jul-2017	Version 2	Changed	US version created
11-Jul-2017	Version 1	New	New QuickSpecs



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