# QuickSpecs

## Overview

*Skyward Telecom*

## HPE Hard Disk Drives

HPE Hard Disk Drives (HDDs) are engineered to deliver optimum performance, reliability, compatibility, and data security across HPE server and storage platforms making them the preferred choice for workloads ranging from small businesses to large enterprise.

### Performance
- HPE HDDs are tuned and tested with on-going quality monitoring throughout their lifecycle
- HPE optimizes HDD firmware for predictable and consistent HDD performance
- Full portfolio of high-performance Mission Critical and high-capacity Business Critical drive solutions

### Reliability
- Hewlett Packard Enterprise's industry-leading rigorous testing and qualification program, backed by 2.4 million test hours
- Pre-failure Alerts with HPE Smart Array Controller, Systems Insight Manager, and HPE Smart firmware
- 3x faster firmware and software updates with HPE Service Pack for ProLiant (HPE SPP)
- Best-in-class supply assurance program reduces downtime due to product delays

### Compatibility
- Simplify HDD planning and standardize HDDs across HPE server and storage solutions
- Common HDD carriers mean re-purposing drives in other servers is a snap

### Security
- HPE Digitally Signed Firmware helps prevent against malicious attacks
- HPE Smart Array SR Secure Encryption is a FIPS 140-2 Level 1 validated enterprise class controller-based encryption solution for data-at-rest on all SAS/SATA drives
- HPE Smart Carriers report drive activity and health
- Self-Encrypting Drives (SEDs) provide hardware-based data encryption. All data that is committed to the media is encrypted with either a 128-bit or 256-bit key.

HPE HDDs are available for three types of workloads: Enterprise high-performance (Mission Critical), Midline high-capacity (Business Critical) and Entry-level storage solutions.

| HPE HDD portfolio: Proven performance for every workload | | | | |
|---|---|---|---|---|
| **Class** | **Mission Critical (Enterprise)** | | **Business Critical (Midline)** | **Entry**\* |
| **Workload** | **High** | | **Medium** | **Low** |
| **Usage** | **Mission-critical, high I/O:** Email, enterprise resource planning (ERP), customer relationship management (CRM) | | **Business Critical, High capacity, high availability storage:** Backup, archive, reference | Low I/O: Boot and backup |
| **Interface** | SAS 12Gb | | SAS 12Gb SATA 6Gb | SATA 6Gb |
| **RPM** | 15000 | 10000 | 7200 | 7200 |
| **Form factor** | SFF & LFF | SFF | SFF & LFF | LFF |
| **Capacities** | Up to 900GB | Up to 2.4TB | Up to 20TB | Up to 4TB |
| **Warranty** | 3 years | 3 years | 1 year | 1 year |
| **Notes:** \* Supported on select HPE ProLiant servers only. | | | | |

**Hewlett Packard Enterprise**

# Overview

## What's New

- Introducing the market-leading 20TB SAS/SATA HDD which is offering the highest capacity available for more petabyte per rack.
  - P53552-B21 HPE 20TB SAS 12G Business Critical 7.2K LFF SC 1-year Warranty Helium 512e ISE Multi Vendor HDD
  - P53553-B21 HPE 20TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD
  - P53554-B21 HPE 20TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty Helium 512e ISE Multi Vendor HDD
  - P53555-B21 HPE 20TB SATA 6G Business Critical 7.2K LFF SC 1-year Warranty Helium 512e ISE Multi Vendor HDD

- Introducing 10TB air-filled SAS/SATA HDD which provide lower $/GB in the same capacity, replacing the old Helium-filled 10TB.
  - P53556-B21 HPE 10TB SAS 12G Business Critical 7.2K LFF LP 1-year Warranty 512e ISE Multi Vendor HDD
  - P53557-B21 HPE 10TB SATA 6G Business Critical 7.2K LFF LP 1-year Warranty 512e ISE Multi Vendor HDD
  - P53558-B21 HPE 10TB SAS 12G Business Critical 7.2K LFF SC 1-year Warranty 512e ISE Multi Vendor HDD
  - P53559-B21 HPE 10TB SATA 6G Business Critical 7.2K LFF SC 1-year Warranty 512e ISE Multi Vendor HDD

**Notes:** A **-**B21 suffix may be replaced with -H21 and -K21 to support across different server family lines. Please refer to the appropriate Server QuickSpecs for full compatibility details

## Firmware Updates

Digitally Signed Firmware – Prevent unauthorized access to your data with the expansion of integrated HPE Digitally Signed Firmware (DS) on new drives; providing the security and assurance that drive firmware comes from a trusted source and protects against malicious attacks.

For advanced data protection and encryption, customers should consider HPE Smart Array Controllers with HPE Smart Array Secure SR Encryption. It is a controller-based data encryption solution for HPE servers that protect data-at-rest on any bulk attached storage. This solution meets stringent compliance regulations such as HIPAA and Sarbanes-Oxley.

# Standard Features

## Models

| Category | Interface | Form Factor | Format | Capacity | HDD Carrier | | |
|---|---|---|---|---|---|---|---|
| | | | | | **Smart Carrier SKU** | **Low Profile SKU** | **Basic Carrier SKU** |
| **Mission Critical (15K rpm)** | **SAS 12G** | LFF | 512n | 300GB | P04693-B21 (SCC) | | |
| | | | | 600GB | P04695-B21 (SCC) | P40431-B21 (LPCC) | |
| | | | | 900GB | - | | |
| | | SFF | | 300GB | 870753-B21 | | P28028-B21 |
| | | | | 600GB | 870757-B21 | | |
| | | | | 900GB | 870759-B21 | | P40432-B21 |
| **Mission Critical (10K rpm)** | | | 512n | 300GB | 872475-B21 | | P40430-B21 |
| | | | | 600GB | 872477-B21 | | |
| | | | | 1.2TB | 872479-B21 | | P28586-B21 |
| | | SFF | 512e | 1.8TB | 872481-B21 | | |
| | | | | 2.4TB | 881457-B21 | | P28352-B21 |
| **Mission Critical (10K rpm) Self-Encrypting Drives (SED)** | | SFF | 512n | 1.2TB | | | P28622-B21 |
| | | SFF | 512e | 2.4TB | | | P28618-B21 |

## Standard Features

| Category | Interface | Form Factor | Format | Capacity | HDD Carrier | | |
|---|---|---|---|---|---|---|---|
| | | | | | **Smart Carrier SKU** | **Low Profile SKU** | **Basic Carrier SKU** |
| Business Critical (7.2K rpm) | SAS 12G | LFF | 512n | 2TB | 872485-B21 | 833926-B21 | |
| | | | | 4TB | 872487-B21 | 833928-B21 | |
| | | LFF | 512e | 6TB | 861754-B21 | 861746-B21 | |
| | | | | 8TB | 819201-B21 | 834031-B21 | |
| | | | | 10TB | P53558-B21 | P53556-B21 | |
| | | | | 10TB | 857644-B21 [He] | P09149-B21 [He] | |
| | | | | 12TB | 881779-B21 [He] | 881781-B21 [He] | |
| | | | | 14TB | P09153-B21 [He] | P09155-B21 [He] | |
| | | | | 16TB | P23863-B21 [He] | P23608-B21 [He] | |
| | | | | 18TB | P37664-B21 [He] | P37669-B21 [He] | |
| | | | | 20TB | P53552-B21 [He] | P53553-B21 [He] | |
| | | SFF | 512n | 1TB | 832514-B21 | | |
| | | | 512e | 2TB | 765466-B21 | | P28505-B21 |
| | SATA 6G | LFF | 512n | 1TB | 861691-B21 | 861686-B21 | |
| | | | | 2TB | 872489-B21 | 861681-B21 | |
| | | | | 4TB | 872491-B21 | 861683-B21 | |
| | | | 512e | 6TB | 861750-B21 | 861742-B21 | |
| | | | | 8TB | 819203-B21 | 834028-B21 | |
| | | | | 10TB | P53559-B21 | P53557-B21 | |
| | | | | 10TB | 857648-B21 [He] | P09161-B21 [He] | |
| | | | | 12TB | 881785-B21 [He] | 881787-B21 [He] | |
| | | | | 14TB | P09163-B21 [He] | P09165-B21 [He] | |
| | | | | 16TB | P23857-B21 [He] | P23449-B21 [He] | |
| | | | | 18TB | P37673-B21 [He] | P37678-B21 [He] | |
| | | | | 20TB | P53555-B21 [He] | P53554-B21 [He] | |
| | | SFF | | 2TB | 765455-B21 | | P28500-B21 |
| | | | 512n | 1TB | 655710-B21 | | P28610-B21 |

| Category | Interface | Form Factor | Format | Capacity | HDD Carrier |
|---|---|---|---|---|---|
| | | | | | **Non Hot Plug Carrier SKU** |
| Entry (7.2K) | SATA 6G | LFF | 512e | 1TB | 843266-B21 [*] |
| | | | 512n | 1TB | 801882-B21 |
| | | | | 4TB | 801888-B21 |

**Notes:**
- [He] Helium Drive.
- [*] Also known as "Desktop Drive", this drive has Generic Firmware (Non-HPE)
- A -B21 suffix may be replaced with -H21 and -K21 to support across different server family lines. Please refer to the appropriate Server QuickSpecs for full compatibility details.

## Standard Features

### What is HPE Hard disk drive?
Hewlett Packard Enterprise drives are tuned to deliver optimum performance for HPE Servers. They undergo an intense qualification process to eliminate firmware and O/S incompatibilities. HPE drive firmware is designed to maximize both functionality and compatibility with HPE ProLiant Rack and Tower Servers, Apollo family, Blade and Synergy Platforms.

### Drive Quality and Performance
While selecting the drives in our HPE portfolio, only those drives with a performance level suitable for an enterprise environment are selected through the Hewlett Packard Enterprise qualification process and are labeled "best-in-class."

### Pre-Failure Alert
When used in conjunction with a SMART Array Controller and Systems Insight Manager, the SMART capable firmware in HPE hard drives enables extensive fault prediction capabilities. If potential problems develop in one of the drives, the Smart Array Controller, Systems Insight Manager and/or SMART hard disk drive lets you know in advance so you can have the drive replaced, before it fails, under warranty

**Notes:** All drives are protected by a Pre-Failure Alert when used with a HPE Smart Array controller and Systems Insight Manager, allowing hard drives to be replaced before failure under warranty. In addition, all drives are covered by a one or three-year limited on-site warranty period for the system in which they are installed. The drive warranty is automatically uplifted when used in a server or MSA for which a HPE Pointnext service contract is purchased. Please see the Support Services section below for additional services.

### Smart Carriers
HPE Hard Drives with smart carriers are designed to provide an interface to communicate critical status and management information. System status LED icons and a spinning activity ring reflecting the data-writing process notify users of the current system status. A blue LED located behind the handle can be activated remotely to guide users to a specific drive tray, while a do-not-remove icon positioned on the tray's eject button lights up to warn users when the removal of the drive would cause data loss.

### Helium Drives
Although hard drives are sealed, they have air inside. Air can create turbulence-induced risk vibrations which can limit the storage density of HDDs. Newer helium-filled drives virtually eliminate turbulence because helium is 1/7th as dense as air. This lower density allows the read/write mechanism to spin more easily and precisely, with less drag. Less internal turbulence means the drive platters can be closer together, allowing more platters and increasing the capacity potential in the same space. Less turbulence also means helium drives tend to use less power, and run cooler and quieter.

### Support Matrix
Please see the following URL for the latest list of supported servers and enclosures:
**https://www.skywardtel.com/**

### Warranty
Enterprise hard drives have a 3 year limited warranty regardless of the warranty period for the system in which they are installed. Midline hard drives have a 1 year limited warranty regardless of the warranty period for the system in which they are installed.