



# HPE Nimble Storage Adaptive Flash Arrays

## Disk Storage Systems



### What's new

- HPE Nimble Storage HF40C array and HF60C array provide higher effective capacity for workloads not requiring deduplication.
- Inline variable block deduplication and compression for increased data reduction.
- Performance up to 65% or more faster than previous HPE Nimble Storage Adaptive arrays. [5]
- Up to 200% or more price-performance

### Overview

Struggling to find cost effective flash storage for your primary, secondary, and backup/DR workloads? The HPE Nimble Storage Adaptive Flash Arrays are like having two flash arrays in one. The array is truly adaptive – designed for both primary and secondary flash workloads. It is a hybrid flash array for mixed, primary workloads where cost-efficient flash performance is important. It can also serve as a secondary flash array for backup and disaster recover (DR) while allowing you to put your backup data to work. The flash-enhanced architecture is combined with HPE InfoSight predictive analytics for fast, reliable access to data and 99.9999% guaranteed availability [1]. Radically simple to

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improvement than previous HPE Nimble Storage Adaptive Flash arrays. [6]

- Secondary flash storage functionality for backup and disaster recovery (DR) workloads.

deploy and use, the arrays are cloud-ready – providing data mobility to the cloud through HPE Cloud Volumes. Your storage investment made today will support you well into the future, thanks to our technology and business-model innovations.

## Features

### Predictive Analytics

The HPE Nimble Storage Adaptive Flash arrays automatically predicts and resolves 86% of problems before you even know there is an issue. [2]

Transforms the support experience through predictive automation and Level 3-only support.

Holistic view across the infrastructure stack and resolves problems beyond just storage.

Simplifies planning with prescriptive forecasts into capacity, performance, and bandwidth requirements.

Makes infrastructure smarter and more reliable by learning from the installed base.

### Radical Simplicity

HPE Nimble Storage Adaptive Flash Arrays are simple to deploy configure and manage.

Deploy flash on-premise, or in the public cloud through common data services across the HPE Nimble Storage family.

Seamlessly migrate data between all-flash, hybrid-flash, and multi-cloud storage.

Our timeless storage is your assurance of business value, no worries today, no worries tomorrow.

Radically easy to integrate with many ecosystems and has deep integration with VMware®, Microsoft® applications, Oracle®, Veeam, and others.

### Flash Performance for Mixed and Mainstream Workloads

HPE Nimble Storage Adaptive Flash Arrays have speed and efficiency for mixed workloads with sub-millisecond response and greater efficiency than other hybrid arrays. [4]

Write to cost-optimized disk at flash speeds through write serialization.

Dynamic flash caching accelerates reads even as workloads change in real time.

Assigns and changes the service level of any volume at the click of a button ("Auto Flash", "All Flash", or "Minimal Flash").

Always-on data reduction delivers up to 5X space savings without performance penalty. [3]

### Put Your Backup Data to Work

HPE Nimble Storage Adaptive Flash Arrays have secondary storage that does real work: flash performance lets you use your backup data for development/test, QA, analytics, and more.

Reduces the need for full backups since native application-consistent snapshots and replication plus integration with leading backup software. Speeds synthetic full backups from hours to minutes.

99.9999% (six-nines) guaranteed availability. Triple+ Parity RAID tolerates 3 simultaneous drive failures plus additional protection through intra-drive parity.

Application-granular, FIPS-certified encryption provides secure over-the-wire protection. Enhanced data shredding is built-in.

Built-in application-consistent snapshots and replication. Integration with leading backup software. Deep integration with Veeam availability software.

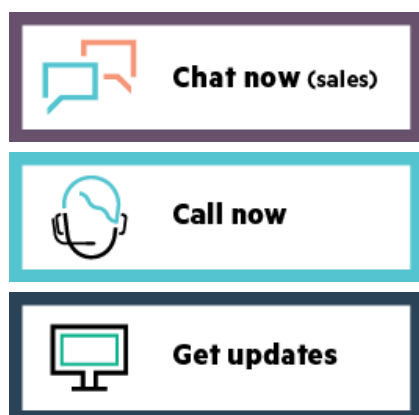
## Technical specifications

## HPE Nimble Storage Adaptive Flash Arrays

<b>Enclosures</b>	(6) Maximum, Expansion Shelves supported
<b>Maximum drives per enclosure</b>	21 HDDs (11 HDDs for HF20H) and Flash Cache per HF-Series base array plus HF-Series Expansion Shelf.
<b>Host interface</b>	Fibre Channel and iSCSI network connectivity
<b>Storage controller</b>	Redundant storage controllers
<b>Availability features</b>	Triple+ Parity RAID for data protection (Triple drive parity plus intra-drive parity). 99.9999% guaranteed availability. Redundant HW/SW design - no single points of failure.
<b>Servers supported</b>	HPE ProLiant rack mount and blades HPE Integrity servers Industry Standard Servers IBM® AIX servers Cisco® UCS Oracle® SPARC, x86 Maximum, depending on model
<b>Compatible operating systems</b>	Microsoft Windows® Server VMware ESXi® SUSE® Linux Enterprise Server (SLES) Red Hat® Enterprise Linux (RHEL) Ubuntu Server Edition LTS Oracle Linux Oracle Solaris® Citrix® XenServer® IBM AIX, HP-UX For the latest information on supported operating systems refer to Single Point of Connectivity Knowledge (SPOCK) for HPE Storage Products (SPOCK): <a href="https://www.hpe.com/storage/spock">https://www.hpe.com/storage/spock</a>
<b>Minimum dimensions (H x W x D)</b>	17.58 x 43.9 x 89 cm
<b>Weight</b>	65 kg (ES3 Expansion Shelf: 52 kg)
<b>Warranty</b>	HPE Nimble Storage arrays come with the following warranties: 1-year, parts-only warranty for hardware components and 90 day software updates for defects. Additionally, HPE will provide phone support for replacing a defective part. Additional support coverage is required for HPE Nimble Storage arrays. NOTE: For hardware warranty claims, defective part must be received before replacement parts are shipped.

**For additional technical information,  
available models and options, please  
reference the QuickSpecs**

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Enterprise**

## **HPE Pointnext**

**HPE Pointnext** leverages our breadth and depth of technical expertise and innovation to help to accelerate digital transformation. A comprehensive portfolio that includes—Advisory, Professional, and Operational Services is designed to help you evolve and grow today and into the future.

### **Operational Services**

- **HPE Flexible Capacity** is a new consumption model to manage on-demand capacity, combining the agility and economics of public cloud with the security and performance of on-premises IT.
- **HPE Datacenter Care** offers a tailored operational support solution built on core deliverables. It includes hardware and software support, a team of experts to help personalize deliverables and share best practices, as well as optional building blocks to address specific IT and business needs.
- **HPE Proactive Care** is an integrated set of hardware and software support including an enhanced call experience with start to finish case management helping resolve incidents quickly and keeping IT reliable and stable.
- **HPE Foundation Care** helps when there is a hardware or software problem offering several response levels dependent on IT and business requirements.

**Advisory Services** includes design, strategy, road map, and other services to help enable the digital transformation journey, tuned to IT and business needs. Advisory Services helps customers on their journey to Hybrid IT, Big Data, and the Intelligent Edge.

**Professional Services** helps integrate the new solution with project management, installation and startup, relocation services, and more. We help mitigate risk to the business so there is no interruption when new technology is being integrated in the existing IT environment.

[1] HPE Six Nines Guarantee: <https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00026086enw>

[2] Based on actual customer data collected by the HPE Nimble Storage Support organization. See also <https://www.hpe.com/h20195/v2/Getdocument.aspx?docname=a00018503ENW>

[3] Response times based on actual customer data collected by the HPE Nimble Storage Support of 3D NAND flash, organization as of March 2017. Efficiency comparisons based on a combination of technologies including write serialization, dynamic flash caching of reads, and the use

[4] The HPE Nimble Storage Operating System (NOS) is built to improve the use of system resources including the CPU and memory. This enables the arrays to provide always-on data reduction without affecting the storage performance that is delivered.

[5] Based on HPE Engineering performance tests versus the previous generation of HPE Nimble Storage Adaptive Flash arrays

[6] Based on a comparison of performance and pricing against previous generation of HPE Nimble Storage Adaptive Flash arrays. Performance based on HPE Engineering performance testing.

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