

# WARP 38002-H "HybridMatrix" Ultra-Dense Unified Storage

## Features & Benefits

- Ultra dense; 7.2PB/rack
- Up to 60 high-capacity HDDs per enclosure
- Up to 192TB SSD
- Up to 1.5TB RAM per controller
- 1M IOPS per controller
- Enterprise reliability, availability, & serviceability
- Industry-standard monitoring and management tools

## WARPnas:

- Dual WARPnas controllers
- CIFS, NFS, iSCSI, FTP
- Interface options:
  - 1/10/40GbE ports
  - 40/56/100Gb IB ports
  - 100Gb Omnipath
- Snapshots, de-duplication, replication, & more

The **WARP 38002-H** storage appliance is a unified file+block network-attached storage system designed for performance with high scalability and resiliency with no I/O compromise, and supports a wide range of existing and emerging workloads.

It is ideally suited for mixed performance applications, which combine read- or write-intensive data onto the same system which hosts less active data. Available in several hardware configurations, the system is customizable to optimize the appliance for diverse customer workloads. When configured for maximum scalability, it can hold as much as 7.2PB raw in a single rack. That's over 5.4PB usable space, with double parity protection, plus up to 192TB of SSD cache for transparent IO acceleration.

Truly turnkey, all software is pre-loaded and pre-configured at the factory, so only site-specific parameters need to be configured by the customer. Simply rack the appliance, cable it, and go. In fact, customers purchasing large configurations can order the system pre-racked and cabled in a WARP Mechanics supplied cabinet.

WARP Mechanics uses reliable OEM-grade storage hardware and SAS drive modules, with best in class open storage software. Then, you have a single point of contact for total system support by WARP Mechanics and its resellers.

Running powerful WARPnas software, the redundant intelligent controllers support protocols such as NFS, CIFS/SMB, iSCSI, and FTP, plus numerous features for monitoring and reporting, mirroring and replication for disaster recovery and remote site backups, thin provisioning, upgradability to pNFS or Lustre to provide a global

namespace, Ceph for object storage, and more.

The WARPnas file system supports advanced features such as thin provisioning, de-duplication, block-level checksums, copy-on-write, snapshots, replication, and more.

- Optimized for high-capacity mixed performance workloads
- Pay as you grow starting from 48TB + 2TB cache
- Maximum 5.4PB+ usable with RAID6 (~7.2PB raw) per rack
- Maximum 192TB high-performance SSD
- Supports NFS, SMB, iSCSI target mode, and FTP
- Turnkey deployment
- Enterprise support and service
- Simple but powerful GUI and CLI management
- Advanced data integrity protections
- Replication with WAN optimization



Whether you deploy it as a stand-alone storage system, or part of a comprehensive WARP Mechanics data center architecture, the WARP 38002-H provides unmatched density and performance.

# WARP Mechanics® 38002-H "HybridMatrix"

## Ultra-Dense Unified Storage

### Technical Specifications



**WARP  
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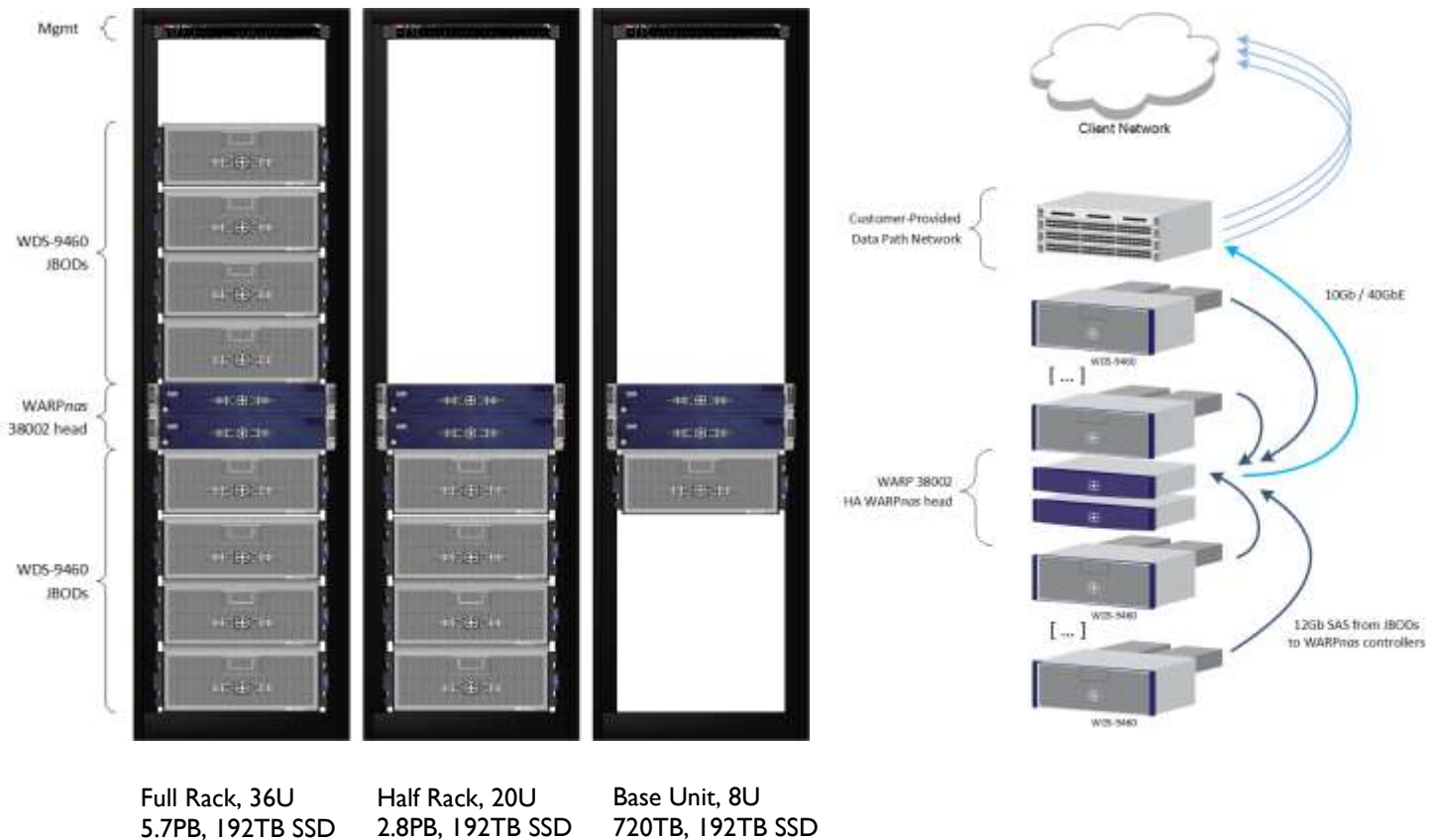
The appliance is constructed using WARP Mechanics hardware platforms, a variety of WARP-tuned and certified HDD and SSD modules, WARP software, and fully-embedded partner software.

The WARP 38002-H intelligent controllers leverage widely deployed, industry-standard hardware with the latest components such as CPU, memory, and IO bus. Each appliance includes up to two controllers. With each expansion enclosure attached, another 720TB of HDD storage capacity is added. Each 38002-H head can be outfitted with multiple network interface types for the intended environment, such as 1Gb/10Gb/40Gb Ethernet, or 40/56Gb Infiniband, or 100Gbps EDR or Omni-Path.

A customer can start with a single 38002-H head, using only a portion of its drive slots. The starting point is just a few TB of main storage. Yet it can grow to over six petabytes without architectural changes or even downtime. Simply scale vertically by adding more JBODs connected to the head.

It is also possible to scale outward by adding controller heads for additional performance *and* capacity. Plus, the exact same head units may also be deployed in parallel using a WARP-certified filesystem such as Lustre or Ceph. This can produce a scale-out storage solution delivering more than a Terabyte per second (>100Terabits/s).

This system can be combined with the other WARP Mechanics appliances such as the MemoryMatrix and StorageMatrix systems. Using tiering software, data can be migrated between the systems as its business value changes over time.



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