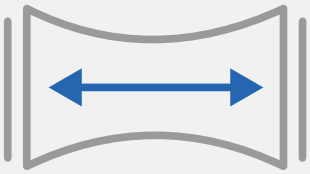
ethos technology

Solution Overview & Data Sheet



Elastic

Scale to petabytes of data

Start with as few as three nodes and scale to thousands. Add capacity if and when needed. Embrace the economics of industry-standard x86 infrastructure to build your storage.

Simple

Provides block, file, and object storage

Collapse monolithic, disparate storage solutions into a single, modern platform. Streamline and automate provisioning. Bring the simplicity of public clouds to your datacentre.

Flexible

Meets rapidly changing data and application requirements

Collapse monolithic, disparate storage solutions into a single, modern platform. Streamline and automate provisioning. Bring the simplicity of public clouds to your datacentre.

HEDVIG

The EthoScale Storage System

– Powered by HEDVIG

Software-defined storage is a key pillar of the software-defined data centre. It enables organizations to better manage the explosive growth of data and deliver greater provisioning flexibility while also lowering costs. The Hedvig Distributed Storage Platform, a modern, software-based storage solution, combined with EthoScale servers delivers these benefits for enterprise compute environments running at any scale.

EthoScale & Hedvig – software-defined storage for modern business

Modern business requires new levels of speed and agility to meet the demands of a dynamic, fast changing marketplace. The most successful companies rise to the challenge by investing in technology that enables rapid response to business opportunity. The software-defined data centre (SDDC) is now the bedrock of modern IT, delivering the flexibility needed for rapidly changing data, application, and user requirements. Together Ethos and Hedvig deliver a cost-optimized software-defined storage solution that gives enterprises the ability to quickly meet new requirements and more effectively manage storage growth. The combination of Hedvig software and EthoScale hardware provides a highly scalable, resilient, elastic storage system with the simplicity of cloud, and a complete set of enterprise capabilities. Whether you need to optimize storage for traditional applications, build a storage foundation for service-oriented architectures and on-demand IT, or both, Ethos and Hedvig can help.

Ethos and Hedvig provide your business with key advantages including:

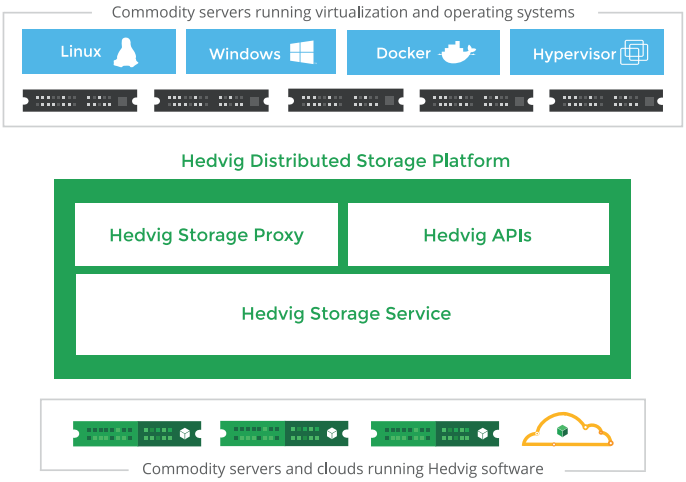
- Provision storage with the speed and simplicity of the cloud
- Dynamically expand capacity and performance
- Cut costs – Lower storage TCO up to 60%
- Eliminate the headaches of traditional storage operations and maintenance

EthoScale – Powered by the Hedvig Distributed Storage Platform

The Hedvig Distributed Storage Platform is a highly scalable software-based solution designed to transform how you deliver storage to your enterprise. Hedvig software deploys on-premises and in public clouds, creating an implicitly hybrid storage system. Its patented distributed systems engine powers elastic, flexible storage with the capabilities you expect from an enterprise-class solution. Hedvig provides a single, unified storage solution with support for block, file, and object protocols that predictably and dynamically scales storage performance and capacity with EthoScale Servers.

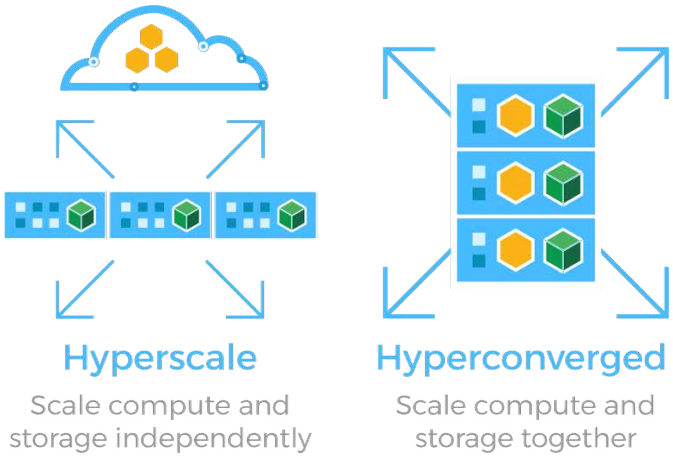
The core components of the Hedvig Distributed Storage Platform are:

- Hedvig Storage Service: Forms a scale-out storage cluster with EthoScale Servers, aggregating spinning disk and flash storage resources into a virtualized storage tier.
- Hedvig Storage Proxy: Enables OS, hypervisor, and application access to the storage cluster via industry-standard protocols and provides client-side services including caching and deduplication.
- Hedvig APIs: Enable REST and RPC-based access to all Hedvig storage features for software-developers who wish to automate provisioning and management with self-service portals, applications, and clouds.



Hyperscale and Hyperconverged

Hedvig software can be configured in two modes, hyperscale, where storage capacity is scaled independently from application compute resources, and hyperconverged*, where storage and application compute are bundled and scaled together. With Hedvig, a single storage system can incorporate both hyperscale and hyperconverged resources affording the freedom to choose deployment options that best fit the requirements of your workload.



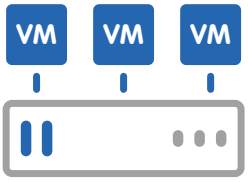
Once deployed, you simply provision virtual disks – each customizable by protocol, capacity, protection, and a range of storage services for a perfect fit with your applications.

*The EthoScale Storage System has been designed for hyperscale deployments. Platforms specifically tailored for hyperconverged deployments are available from Ethos Technology; please contact your Account Manager for details.

Use Cases

Together, Hedvig and Ethos enable a more effective storage solution for traditional applications while also delivering an optimal platform for new, modern applications.

Traditional Workloads

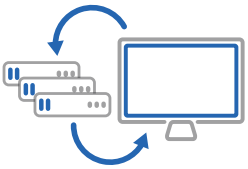


Server Virtualisation

Hedvig software supports the widest breadth of hypervisors, operating systems, containers, and clouds. Hedvig and EthoScale provide a single, scale-out storage platform that supports a consistent, high-performance workflow for provisioning storage in large, highly virtualised environments.

Backup

Hedvig scales dynamically with EthoScale servers to provide an efficient platform for backup, archiving, business continuity, and disaster recovery. Built-in hybrid cloud support and storage efficiency features streamline on and off-site data protection with the ideal economics and flexibility for long-term secondary data retention.



VDI

Hedvig delivers fine-grained control of storage services to meet the unique demands of hosted virtual desktops. The software takes advantage of the latest high-performance flash storage options and the cost economics of EthoScale to ensure the success of your VDI project.

New Workloads

Production Clouds

Hedvig's cloud-like storage provisioning delivers simplicity for infrastructure-as-a-service (IaaS). It plugs seamlessly into cloud orchestration and service catalog tools like OpenStack, and supports container technologies like Docker deployed with microservices environments.

Test/Dev Clouds

Hedvig offers unparalleled simplicity and flexibility for storage provisioning in test/dev environments. By providing point-and-click provisioning with granular virtual disk policy selection as well as instant cloning, Hedvig makes it easy to deploy storage for development followed by a seamless move to production.

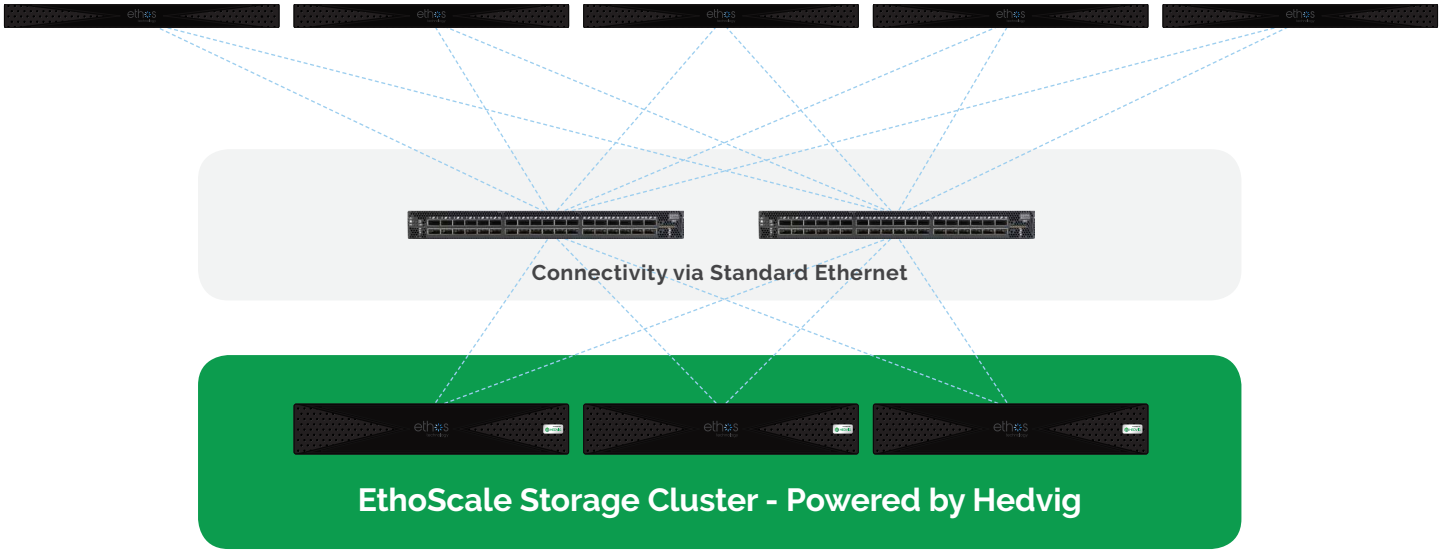
Big Data

Hedvig and EthoScale provide the ideal storage platform for big data. The flexible storage architecture is a perfect match for the elastic nature of Hadoop and NoSQL. Hedvig's tunable replication, built-in compression and deduplication enable organizations to virtualize big data applications and build a highly efficient "data lake" atop a single, unified storage solution.

Example Deployment Architecture

The EthoScale Storage System supports multiple deployment options. Clusters can be built to fulfil the requirements of the workloads they're servicing and scaled one node at a time. A single cluster can contain servers from multiple hardware families and generations; Hedvig software licenses can be repurposed as hardware platforms are refreshed, protecting investment for the long term.

Compute Hosts With SSD Cache (Optional)



Connectivity is via standard 10Gbe (or faster) Ethernet.

The Storage Proxy provides a client-side caching ability that delivers read caching by taking advantage of local SSDs or PCIe devices and also reduces I/O across the cluster by deduplicating all data before transmitting over network links.

The Storage Service provides granular, per Virtual Disk policy configuration including disk residence: Virtual Disks configured for HDD will auto-tier placing 'hot-data' on the highest performing media. Virtual Disks configured for Flash will be pinned to SSD assets; essentially creating an all-flash array for that specific V-Disk.

The EthoScale Storage System - Powered by Hedvig, combines unique scalability on commodity infrastructure, improved provisioning, and enterprise-class features that work at scale.

The Hedvig Distributed Storage Platform is the only system built with true distributed systems DNA; it provides the industry's first storage solution that is:

- **Elastic:** Cuts storage costs with an elastic, commodity storage cluster.
- **Simple:** Reduces storage operations, completing tasks in minutes, not days.
- **Flexible:** Collapses disparate storage solutions into a single unified platform.

EthoScale is a great fit for environments where explosive growth in data is affecting a company's bottom line – in terms of the cost-per-bit to store the data as well as the operational overhead of managing the storage infrastructure. It is also an ideal solution for companies deploying private and hybrid clouds where time-to-market and innovation are key requirements.

Technical Specifications

EthoScaleCM – Capacity Storage

The EthoScaleCM Storage Servers are built to provide capacity storage utilising a unique, space efficient form factor. The innovative hardware design supports up to twelve 3.5" hard disk drives and four 2.5" solid state disk drives in a single rack unit. A starting cluster of three EthoScaleCM server nodes provides up to 288TB of raw storage capacity; the high density architecture easily supports a multi Petabyte cluster in a single 42U rack, scaling to multiple racks as storage needs dictate.

Nodes can be added to a cluster one at a time supporting an incremental, pay-as-you-grow approach.

The EthoScaleCM; 1 Node, 1RU

Server Model	EthoScaleCM-12 / 24	EthoScaleCM-36 / 48	EthoScaleCM-72 / 96
CPU	Dual E5-2600v4 series CPU - 10 cores per processor	Dual E5-2600v4 series CPU - 10 cores per processor	Dual E5-2600v4 series CPU - 10 cores per processor
Memory	128GB DDR4	128GB DDR4	128GB DDR4
Network	2 x 10GbE Production	2 x 10GbE Production	2 x 10GbE Production
	1 x 1GbE OoB Management	1 x 1GbE OoB Management	1 x 1GbE OoB Management
	Additional Connectivity Options	Additional Connectivity Options	Additional Connectivity Options
OS Disk	32GB SATA-DOM	32GB SATA-DOM	32GB SATA-DOM
Disks for Metadata & Cache	4x400GB SATA SSD	4x800GB SATA SSD	4x1.2TB SATA SSD
Disks for Data	12x1TB / 12x2TB	12x3TB / 12x4TB	12x6TB / 12x8TB
Dimensions	W x H x D (mm) 448.2 x 43.2 x 881 - (inch) 17.6 x 1.7 x 35)		
Weight (Max Configuration)	~28.5 Kg ~62.8lb		
Form Factor	1U Rack Mount, 1 Node		
System Cooling	(6) 40x56 dual rotor fan		
Operating Environment	Operating temperature: 5˚C to 35˚C (41˚F to 95˚F) Non-operating temperature: -40˚C to 65˚C (-40˚F to 149˚F) Operating relative humidity: 50% to 85%RH Non-operating relative humidity: 20% to 90%RH		
Power Supply	700W Platinum PSU, 1+1 redundant power supplies, 100 - 240V AC		

Technical Specifications

EthoScalePM – Performance Optimised Capacity Storage

The EthoScalePM Storage Servers are built to provide performance optimised capacity storage. Each server node supports up to twelve 3.5" hard disk drives and two 2.5" PCIe (NVMe) solid state disk drives in a two rack unit form factor; the PCIe SSDs provide a high speed metadata store and cache. A starting cluster of EthoScalePM three server nodes provides up to 216TB of raw storage capacity.

A cluster can be expanded one node at a time and scaled to thousands of nodes in a single cluster.

The EthoScalePM; 1 Node, 2RU

Server Model	EthoScalePM-12 /24 /36	EthoScalePM-48 / 72
CPU	Dual E5-2600v4 series CPU - 12 cores per processor	Dual E5-2600v4 series CPU - 12 cores per processor
Memory	256GB DDR4	256GB DDR4
Network	2 x 10GbE Production	2 x 10GbE Production
	1 x 1GbE OoB Management	1 x 1GbE OoB Management
	Additional Connectivity Options	Additional Connectivity Options
OS Disk	2x128GB SATA-DOM	2x128GB SATA-DOM
Disks for Metadata & Cache	2x1TB NVMe SSD	2x2TB NVMe SSD
Disks for Data	12x1TB / 12x2TB / 12x3TB	12x4TB / 12x6TB
Dimensions	W x H x D (mm) 447 x 87.5 x 745 - (inch) 17.6 x 3.44 x 29.33)	
Weight (Max Configuration)	24.92 (kg) 54.94 (lbs)	
Form Factor	2U Rack Mount, 1 Node	
System Cooling	(4) dual rotor fans (7+1 redundant)	
Operating Environment	Operating temperature: 5˚C to 40˚C (41˚F to 104˚F) Non-operating temperature: -40˚C to 65˚C (-40˚F to 149˚F) Operating relative humidity: 20% to 85%RH. Non-operating relative humidity: 10% to 90%RH	
Power Supply	800W Platinum PSU, 1+1 redundant power supplies, 100 - 240V AC	

Technical Specifications

EthoScaleHM – High Performance Storage

The EthoScaleHM Storage Servers are built to provide a high performance storage capability. Each server node supports up to six 2.5" hard disk drives and four 2.5" PCIe (NVMe) solid state disk drives in a one rack unit form factor. The PCIe SSD configuration of the EthoScaleHM has been designed to provide both a high speed metadata store and cache and also support the provisioning of "all-flash" persistent volumes (aka "pin to flash") to provide dedicated, consistent performance for latency sensitive applications. A starting cluster of three EthoScaleHM server nodes provides up to 45TB of raw storage capacity.

A cluster can be expanded one node at a time and scaled to thousands of nodes in a single cluster.

The EthoScaleHM; 1 Node, 1RU

Server Model	EthoScaleHM-12
CPU	Dual E5-2600v4 series CPU - 12 cores per processor
Memory	256GB DDR4
Network	4 x 10GbE or 2 x 40GbE Production
	1 x 1GbE OoB Management
	Additional Connectivity Options
OS Disk	2x32GB SATA-DOM
Disks for Metadata & Cache	4x1.6TB NVMe SSD
Disks for Data	6x2TB SATA
Dimensions	W x H x D (mm) 438 x 43.2 x 742 - (inch) 17.24 x 1.7 x 29.21)
Weight (Max Configuration)	20.81 (kg) 45.88 (lbs)
Form Factor	1U Rack Mount, 1 Node
System Cooling	(6) dual rotor fans (11+1 redundant)
Operating Environment	Operating temperature: 5˚C to 40˚C (41˚F to 104˚F) Non-operating temperature: -40˚C to 65˚C (-40˚F to 149˚F) Operating relative humidity: 20% to 85%RH. Non-operating relative humidity: 10% to 90%RH
Power Supply	800W Platinum PSU, 1+1 redundant power supplies, 100 - 240V AC

OUR MISSION...

...is to deliver the highest value to our resellers, suppliers, employees and shareholders as the premier technology marketing, distribution and services company throughout the United Kingdom and Europe. The 21st century is sure to bring further innovation; the productisation of technological advances creates new opportunities for companies with capability and vision. Ethos Technology will continue to shape and lead the markets in which it chooses to compete.

OUR VISION IS TO BRING CONVERGED TECHNOLOGIES TO THE UK TO OFFER ALL SIZES OF BUSINESS THE SAME LEVEL OF SERVICES THAT GOOGLE, FACEBOOK AND AMAZON OFFER TO THEIR CUSTOMERS.

Ethos Technology

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EthoScale and Hedvig Summary

The EthoScale Storage System powered by the Hedvig Distributed Storage Platform provides a flexible software-enabled system with the capabilities required to support any application, hypervisor, container, or cloud.
The validated solution provides a single platform powering in-software provisioning of file, block, and object storage with the flexibility to span private and public clouds, creating an elastic, hybrid cluster that can scale to thousands of nodes.

By aggregating and virtualizing EthoScale server and storage resources including flash and spinning disk, the Hedvig software enables a single, elastic storage system that enables today's enterprises to simply and cost-effectively tailor a storage to support any workload.

Resources

Visit the following links for additional product and solution information:

- EthoScale Storage System page:
  http://ethostech.co.uk/solutions/ethosystem/ethoscale
- Hedivig Distributed Storage Platform Product Page:
  http://www.hedviginc.com/product
- Hedvig technical overview white paper:
  http://www.hedviginc.com/resources/product-technical-whitepaper
- Hedvig product demo video:
  http://www.hedviginc.com/resources/video-guided-product-tour

"We have to be ready to deliver higher value against higher expectations. That's where software-defined data centers and storage give us the flexibility to deliver new, innovative services."

Bertram Rutte, CEO and Founder, Dovilo

"We've chosen Hedvig because we like the software-defined model. The cost savings are significant and it offers us a lot of flexibility."

Mike Rinken, Director of Technology, Mazzetti

"The move to software-defined infrastructure has delivered more capacity, performance, continuity, and IT agility than any other IT change over the last two decades. Solutions like Hedvig enable us to remain competitive and adapt to changing customer requirements."

Patrick Elalouf, CIO, Rideau