Hammerspace Software:

Automating Unstructured Data Orchestration Across Silos

DATA SHEET

Hammerspace is a software-defined data orchestration system that provides unified file access via a high-performance Parallel Global File System that can span different storage types from any vendor, as well as across geographic locations, public and private clouds, and cloud regions. Designed to make data a global resource across distributed or otherwise incompatible storage platforms from any vendor, Hammerspace presents a cross-platform global namespace where users and applications can have direct multi-protocol access to all files on any storage anywhere.

Hammerspace takes the complexity out of managing multi-vendor storage silos or multi-site or hybrid cloud data environments, providing metadata-driven automation to orchestrate data in the background across local, remote and cloud storage silos without disruption to users. This is not like solutions that shuffle file copies across silos. With Hammerspace, all users and applications access the same file metadata regardless of where the files are today or move to tomorrow, without the need to manage file copies between silos or locations.

Local Data Access. To Any Data Anywhere, from Everywhere.

In this way, Hammerspace provides users and applications with the experience of local file access to the same files across existing storage silos, as though all the data everywhere had been aggregated onto a local NAS. This includes data that may be stored on any storage type from any vendor, including one or multiple cloud and cloud regions. The Hammerspace scale-out architecture provides low latency performance needed for read/write operations, even for extreme high-performance applications, enabling customers to better leverage their current storage investments even while accomodating future growth.

Hammerspace Data Orchestration Provides:

- Cross-platform automation of data services for data protection & file orchestration across any on-prem or cloud storage from any vendor, completely transparent to users.
- High-performance read/write access for any user or application anywhere to data on any on-premises or cloud storage platform in a shared global namespace.
- Support for Burst-to-Cloud and other distributed use cases needing to dynamically bridge on-premises and cloud storage and compute resources.
- Standards-based, enables seamless integration with existing applications and workflows on existing storage. No agents, or client software needed.
- Collaboration for a distributed workforce, across multiple locations, distributed data storage silos and disparate application environments

Bluegfx

HAMMERSPACE

Burst For Compute

To extend on-premises compute resources to dynamically burst data to cloud for processing.

Hybrid Cloud

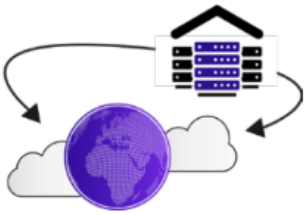
To extend on-premises storage environments seamlessly to cloud in a global namespace.

Multi-Datacenter

To bridge the distance gap between multiple data centers to globally access and manage all resources anywhere.

Distributed Workforce

To support distributed users and applications who need the flexibility of local NAS access to data that may be anywhere.



Multi-Cloud

To bridge multiple Cloud providers and Cloud regions with a parallel global file system.

Single Datacenter

To eliminate incompatible silos within a single datacenter and automate data services across all storage types.

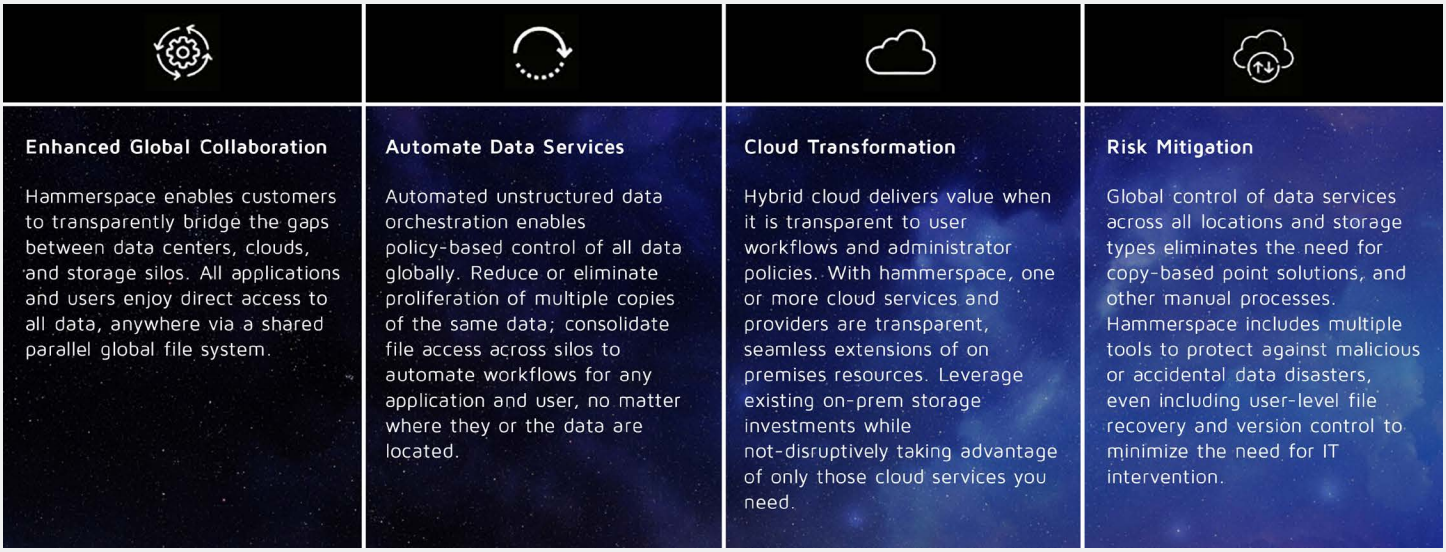
Spans Multiple Silos, Data centers & Clouds Anywhere in the World.

Unlike solutions that try to manage storage silos and distributed environments by shuffling file copies from one place to another, Hammerspace's unique innovation is the creation of a high performance Parallel Global File System that can span all storage types, from any vendor, and across one or more locations and clouds.

Hammerspace automatically assimilates file metadata from data in place, with no need to migrate data off of existing storage. In this way, within minutes users and applications even in very large environments can mount the global file system to get cross-platform access via standard SMB and NFS file protocols to all of their data globally, spanning all existing and new storage types and locations. No client software is needed for users or applications to directly access their files, with file system views identical to what they are used to.

The result is global that file metadata is truly shared across all users/applications and locations, and is no longer trapped at the infrastructure level in proprietary vendor silos. In this way the silos between different storage platforms and locations disappear.

Why Customers Choose Hammerspace



Customers using Hammerspace establish their own cross-platform global data environment leveraging existing and/or new storage infrastructure from any vendor. In this way they can now provide global multi-protocol access to data on any storage type in any location simultaneously via NFS 3, pNFS 4.2, and SMB standard file protocols. In addition, Hammerspace supports Container/Kubernetes Persistent Volumes for both block and file through a CSI plugin. Deployable on bare-metal servers, virtual machines, and in the cloud, Hammerspace leverages standards-based access so existing workflows can immediately take advantage of global, cross-platform file access, without the need for proprietary client software or other limitations. To users it looks like a standard NAS, except that now they have global access to data across any storage type and location.

Persistent Local Data Access with Global Cross-Platform Control

For users and their applications, all data is visible and persistent on their desktop in the same file and folder structures they are used to, with no need to alter their workflows. Data orchestrationmovement between silos for tiering, migrations or other IT needs is completely transparent to users as a background operation, who simply see their data where they expect it on their desktop or in their applications without interruption. New features enable users to tag files and/or directories with custom metadata, or even recover previous versions of files directly from their existing desktop applications.

USER VIEW

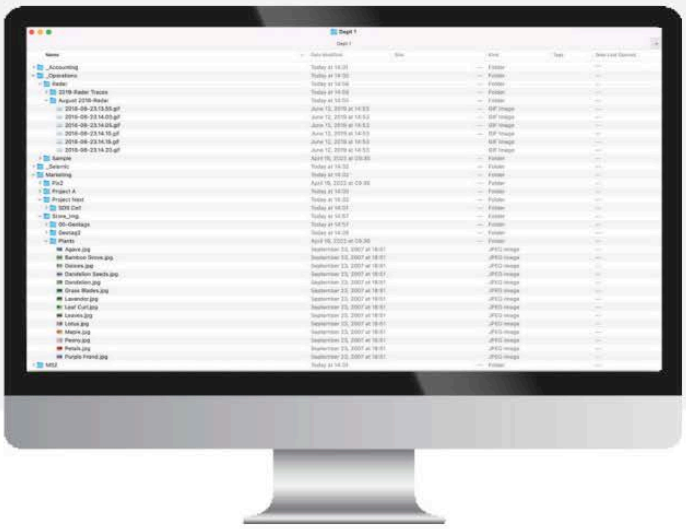
Users Have Local Access to All Data

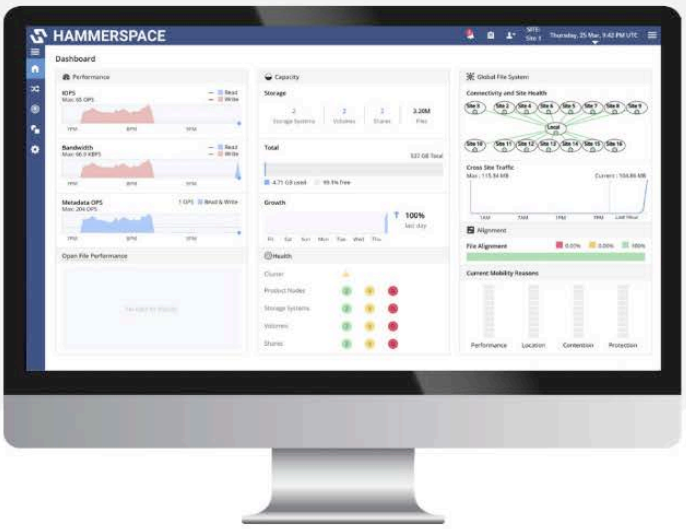
All users anywhere see the same data, whether on-prem, remote, or in the cloud, in the same folder structures they're used to. Not file copies, but the same files!

ADMINISTRATOR VIEW

Users Have Local Access to All Data

Admins manage storage resources and data policies globally across all storage locations, with powerful service level objectives! triggered by multiple metadata types.





From an administrator's perspective, however, control of data services can now be implemented globally with file-granular level data orchestration across all storage types and locations. With unprecedented control, admins can establish objective-based policies to automate multiple classes of data services to reduce or eliminate the need to integrate specialized point solutions for automated data orchestration, data movement, data tiering, data protection, ransomware protection, etc.

From this single pane of glass all data movement and services may be automated as background operations, without interruption to users or their applications.

Powerful Automated Data Services

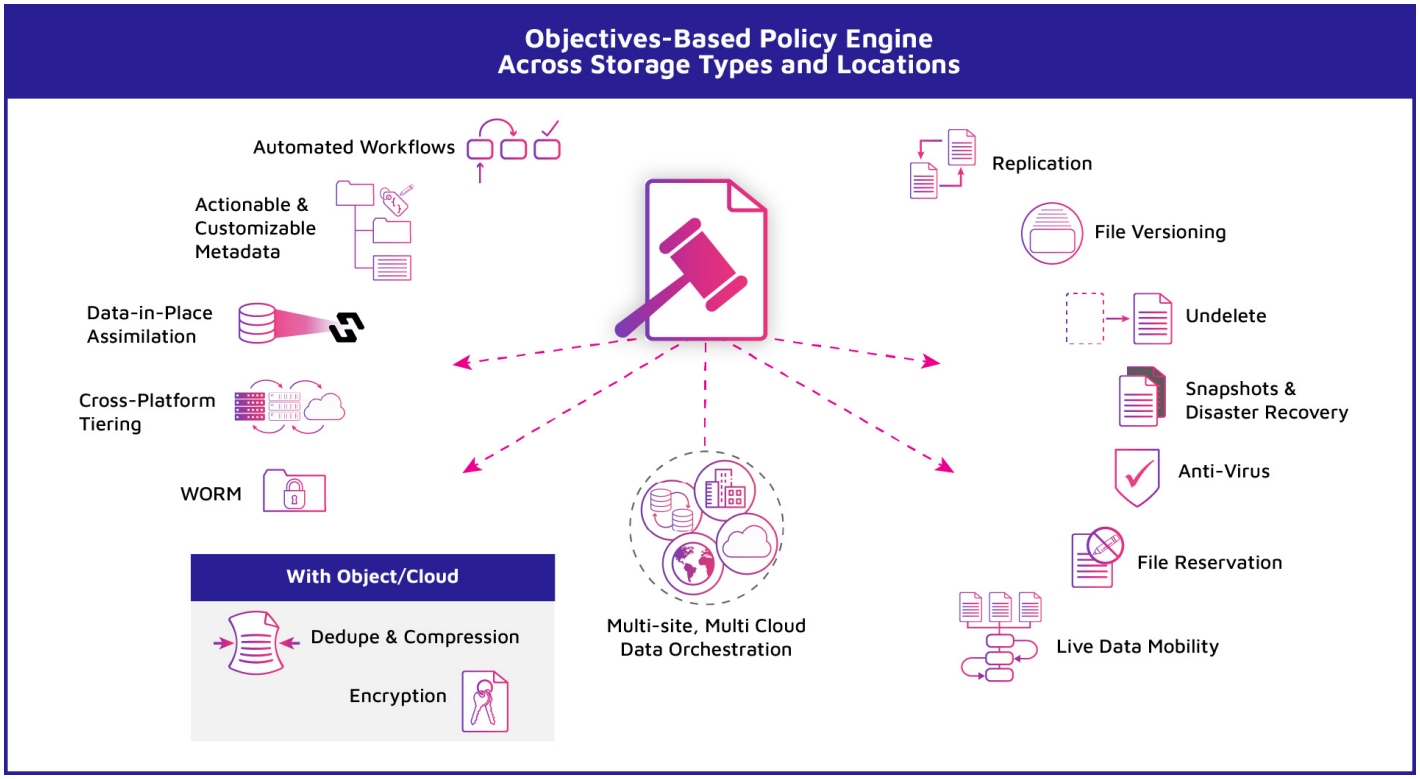
Hammerspace leverages the power of multiple metadata types to enable extreme granularity in establishing objective-based policies that align with business needs.

So not only file age and type can be used to trigger file actions, but also user-defined custom metadata can be applied to associate certain files with projects or cost centers. This enables customers to set objective-based policies that granularly align file actions to specific data value.

With the introduction of the new Hammerspace Metadata Plugin, users can now add custom metadata tags directly from their Windows desktops with a click of their mouse. Such tags can automatically trigger file actions, automate workflows, align data to cost centers and more uses based upon business rules, regardless of which storage platform the data is on at the moment or moves to later.

Hammerspace also includes automatic custom metadata inheritance through the directory hierarchy. This solves the problem of relying on users to remember to tag things correctly, and provides unprecedented automatic data-centric control of digital assets across all storage types and locations.

These global data services include the ability to set objectives about which storage and location the data should be on now, and where and when it should move, how it should be protected, and much more… Again, all transparent to users, who simply see all files on their desktop as though everything were in a single local NAS share.

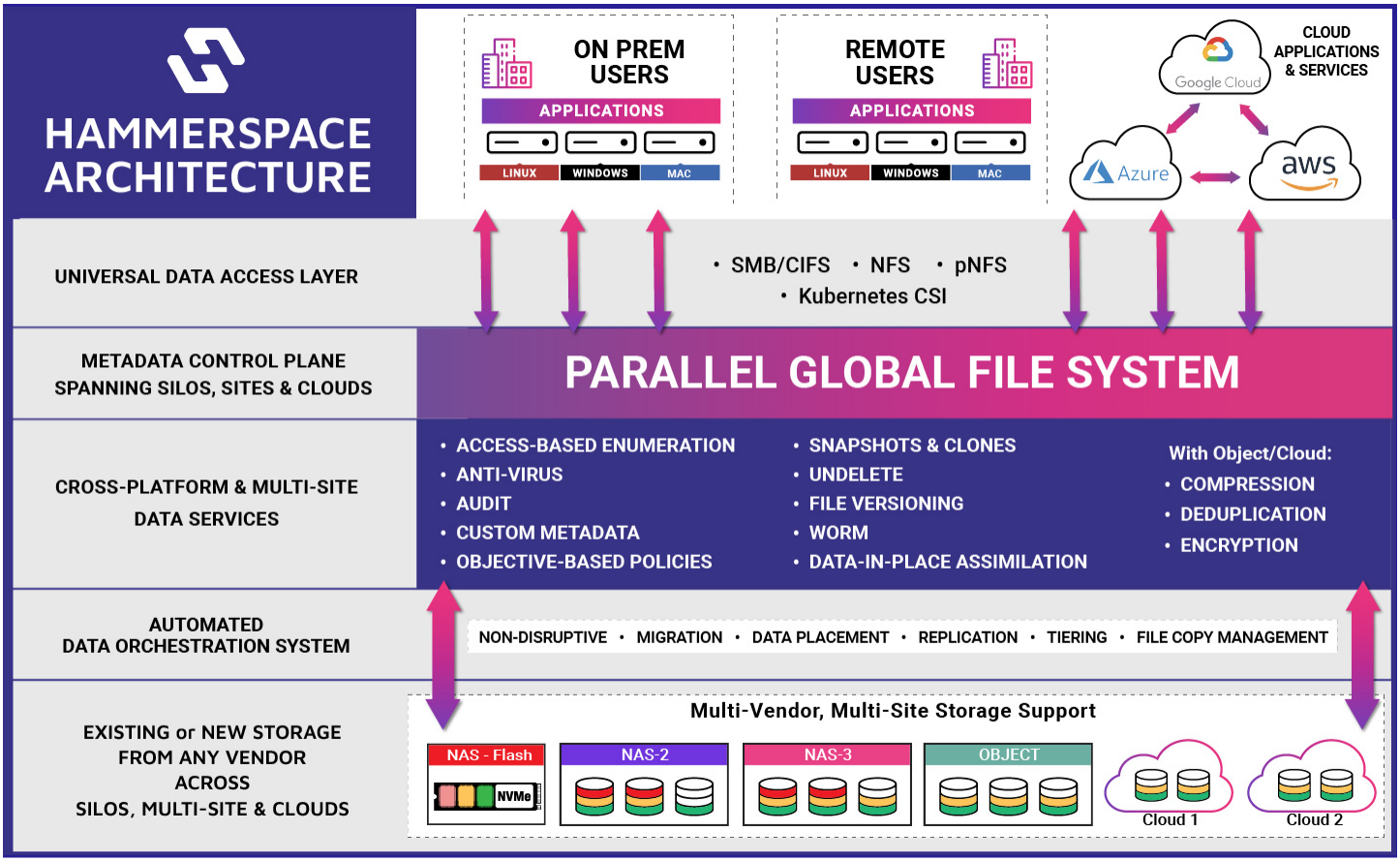


Benefits of a Global Data Environment with Hammerspace

- Reduce or defer purchasing new storage by seamlessly extending file system access across stranded capacity in on-prem storage, and/or extending to the cloud or across multiple locations. Completely transparent to users.

- Automate data orchestration and data protection services across incompatible storage silos, locations and the Cloud, to reduce IT complexity and the need to integrate narrowly focused point solutions, like caches, gateways, data movers, etc.
- Maintain a predictable performance experience across all sites no matter where your data is by localizing only hot data on-demand and/or through workflow automation, without interruption to users.

- Mitigate risk with powerful cross-platform data protection and ransomware protection tools, including file versioning, undelete, global snapshots, encryption, WORM, file copy management and more.



Hammerspace is deployed as a fully integrated software solution built upon open standards, which includes all components within a single installer that are necessary for deployment on bare metal servers, VMs or in the Cloud- based compute environments. No external software dependencies are required, including the Linux OS.

Hammerspace software is functionally organized in the five capability layers shown in this diagram. Although all are seamlessly integrated in the Hammerspace software stack, each layer organizes capabilities logically to more easily understand key software functionality.

Get Control of Your Data, and Your Storage Infrastructure

Hammerspace revolutionizes data orchestration and storage resource management in a world where data needs to be dynamic, and available anywhere, on any vendor storage type, cloud or region. It enables organizations to use their existing storage resources to create an automated and scalable global data environment to provide global users with the experience of local access to data that may live on any storage type in one or multiple locations.

In this way, Hammerspace provides the immediate benefit of enabling customers to apply an effective 'data-centric' approach to managing and protecting their digital assets across any and all storage platforms and locations.

No longer do businesses need to be burdened by the complexity, disruption, and costs of a siloed 'storage-centric' approach, where data gravity and inertia often traps data in incompatible storage types.

Instead, Hammerspace provides customers the benefits of shared global access across multi-vendor storage silos, locations, and cloud resources. Since the Hammerspace high-performance Parallel Global File System spans all storage types from any vendor, all users everywhere are now able to access their data as though it were all consolidated onto a shared local NAS. This eliminates disruptive migrations, wasted storage capacity, or the need to manage data by copying it from place to place across silos.

To keep up with the reality of decentralization, a new global paradigm was necessary that effectively bridged the gaps between on-premises silos and multiple cloud-based resources. Such a solution required new technology and a revolutionary approach to lift the file system out of proprietary infrastructure layers while enabling customers to get the best utilization of their existing storage investments. It is a revolution as important as when network-attached storage vendors lifted the file system out of the operating system in the 1990s.

Take advantage of local access to any data, on any storage, any datacenter, any cloud service, anywhere.

This is the Hammerspace Innovation