

Supermicro Hammerspace Ready Nodes

Hammerspace Data Platform Software On Certified Supermicro Server

Supermicro and Hammerspace are on a mission to accelerate AI Anywhere. Our data plane unifies your data estate into one global namespace and automates data movement to GPUs & AI models. With metadata-indexed discovery and a standards-based approach, Hammerspace eliminates vendor lock-in and accelerates AI workloads that need access to data across sites, clouds, and existing storage silos from any vendor.

Supermicro has partnered with Hammerspace to deliver Hammerspace Ready Nodes – Hammerspace Data Platform solutions based on Supermicro server hardware. Hammerspace Ready Nodes deliver the power of Hammerspace on pre-qualified hardware that is optimized for price-performance, with the convenience of a simplified purchasing model.

Ready Node Types and Options

Hammerspace can be configured to address a broad range of performance and capacity needs, including the extreme levels of performance required in AI and HPC workloads. Metadata and data servers are scaled independently using the node types shown below.

Customers may also include simple Linux Storage Servers (LSSs) in any Hammerspace configuration, using their choice of hardware. Any physical or virtual Linux server with attached storage exported via NFSv3 may be used as an LSS.

Hammerspace can also directly utilize existing storage systems, wherever they reside. File and object metadata are brought into the Hammerspace Global File System using a unique data-in-place metadata Assimilation process – no data migration required.

Node Types	Metadata Nodes	Data Nodes	
Description	Anvil Metadata Nodes	Data Services (DSX) Nodes	EC-Groups Nodes
Function	Runs Hammerspace Anvil metadata services	Provide client-side access to data on any storage via standard NFS, SMB, & S3 protocols, with scale-out flexibility. Provide automated cross-platform data services for data placement, data protection, file copy management, workflow automation and more, with linear scalability	Used to scale performance and capacity using erasure code-protected NVMe Flash and/or HDD-based storage

Metadata Node Specifications

Hammerspace Anvil metadata nodes can be deployed using these pre-qualified Supermicro configurations, as software on customer-provided bare-metal servers, as VMs, or in the cloud.

Metadata Node Specification	Model	
	A405	A610
Use Case	Single and Multi-Site Deployments	Massive/Global Multi-Site Deployments
Server SKU	SYS-122H-TN	
Form Factor	1U	
Qty. Required	2x: Standard HA, 3x: 3-Zone HA	
Max File Count	Metadata Capacity-Based	
Metadata Drive Count	2, 4, 6, 8, 10, 12 (Mirrored)	
Metadata Drive Size	3.2TB, 6.4TB, 12.8TB	
Metadata Drive Type	Mixed-Use NVMe Flash	
Boot / OS Drive	2x M.2 960GB (Mirrored, VROC)	2x M.2 1.92TB (Mirrored, VROC)
CPU	2x 24-Core Intel 6527P 3.0GHz	2x 32-Core Intel 6737P 2.9GHz
RAM	512GB	1024GB
NIC (Management)	Dual-Port 10GbE RJ45	
NIC (Metadata)	1x Mellanox 100GbE 2x QSFP56, 1x Mellanox 100GbE 2x QSFP112, or 1x Mellanox 400GbE 1x OSFP VPI	

Data Services (DSX) Node Specifications

Hammerspace DSX nodes can be deployed using these pre-qualified Supermicro configurations, as software on customer-provided bare-metal servers, as VMs, or in the cloud. When DSX nodes are used solely for data orchestration, no internal data storage is required.

DSX Node Specification	Model	
	D100	D200
Use Case	Single and Multi-Site Deployments	Massive/Global Multi-Site Deployments
Server SKU	SYS-122H-TN	SYS-222H-TN
Form Factor	1U	2U
Qty. Required	Minimum 3x D100 or D200 Recommended	
Data Capacity Raw	0-737 TB	0-1475 TB
Data Capacity Mirrored	0-368 TB	0-737 TB
Data Drive Count	0-12	0-24
Data Drive Size	3.84 TB, 7.68 TB, 15.36 TB, 30.72 TB, 61.44 TB, 122.88TB	
Data Drive Type	Read-Intensive NVMe Flash	
Boot / OS Drive	2x M.2 1.92TB (Mirrored, VROC)	
CPU	2x 24-Core Intel 6527P 3.0GHz	
RAM	1024GB	
NIC (Management)	Dual-Port 10GbE RJ45	
NIC (Metadata)	2x Mellanox 200GbE 2xQSFP112 or 2x Mellanox 400GbE 1xOSFP VPI	

EC-Group Node Specifications

Hammerspace EC-Group configurations may be flash or HDD-based and consist of controller nodes with optional internal NVMe storage and optional HDD-based JBODs.

EC-Group Controller Nodes

EC-Group Controller Node Specification	Model	
	ECG1	ECG2
Function	EC-Group Controller w/Optional NVMe Storage	
Server SKU	SYS-122H-TN	SYS-222H-TN
Form Factor	1U	2U
Qty. Required	4 or More ECG1 or ECG2	
EC Options	4+2, 1 or 2 Failure Resilient, 8+2, 1 or 2 Failure Resilient	
Data Capacity Raw ea.	16-676 TB	16-1413 TB
Data Capacity EC ea.	10-514 TB	10-1074 TB
Data Drive Count	2-11	2-23
Data Drive Size	3.84 TB, 7.68 TB, 15.36 TB, 30.72 TB, 61.44 TB, 122.88TB	
Data Drive Type	Read-Intensive NVMe Flash	
Boot / OS Drive	2x M.2 1.92TB (Mirrored, VROC)	
CPU	2x 32-Core Intel 6737P 2.9GHz	
RAM	1024GB	
NIC (Management)	Dual-Port 10GbE RJ45	
NIC (Metadata)	2x Mellanox 200GbE 2xQSFP112 or 2x Mellanox 400GbE 1xOSFP VPI	
JBOD Connectivity	1x SAS 12Gb/s PCIe 4.0 8-Port HBA	2x SAS 12Gb/s PCIe 4.0 8-Port HBA

EC-Group JBODs

EC-Group JBOD Specification	Model	
	ECG-JBOD60	ECG-JBOD90
Function	Optional HDD-Based EC-Group Capacity	
Server SKU	CSE-947SE2C-R1K66JBOD	CSE-947HE2C-R2K05JBOD*
Form Factor	4U	
Qty. Required	1:1 Relation to Qty. of ECG Controller Nodes	
EC Options	4+2, 1 or 2 Failure Resilient, 8+2, 1 or 2 Failure Resilient	
Data Capacity Raw ea.	240-1440 TB	240-2160 TB
Data Capacity EC ea.	160-1094TB	160-1642TB
Data Drive Count	20-60	20-90
Metadata Drive Size	12 TB, 16 TB, 20 TB, 24 TB	
Data Drive Type	SAS HDD	
Connectivity	12Gb/s SAS	

* ECG-JBOD90 measures 43.3" (1099mm) deep – requires an extended depth rack

Example Ready Node Configurations

The configurations in this section are examples showing several possible ways to deploy Hammerspace Ready Nodes. Many other configurations and combinations are possible that incorporate existing legacy storage and/or net-new storage. This enables Hammerspace to meet performance and capacity requirements at any scale. Contact Hammerspace-PM@supermicro.com for a custom Ready Node configuration tailored to your requirements.

Example: Mirrored Configurations

These examples use DSX nodes with embedded NVMe flash to provide high-performance storage and add Hammerspace data management and data orchestration features to existing or new storage environments



	Flash w/1U DSX	Flash w/2U DSX
Ideal For...	Enterprise Single / Multi-Site	Global Enterprise Multi-Site
Rack Units	5U	8U
Nodes	2x A405 + 3x D100	2x A610 + 3x D200
Capacity Examples	Raw: 1.1 PB Mirrored: 553 TB	Raw: 2.2 PB Mirrored: 1.1 PB

Example: EC-Group Configuration

This example combines DSX nodes containing embedded NVMe flash with EC-Group HDD arrays. This enables adding both high-performance and high-efficiency storage to new or existing environments, along with Hammerspace data management and data orchestration capabilities.



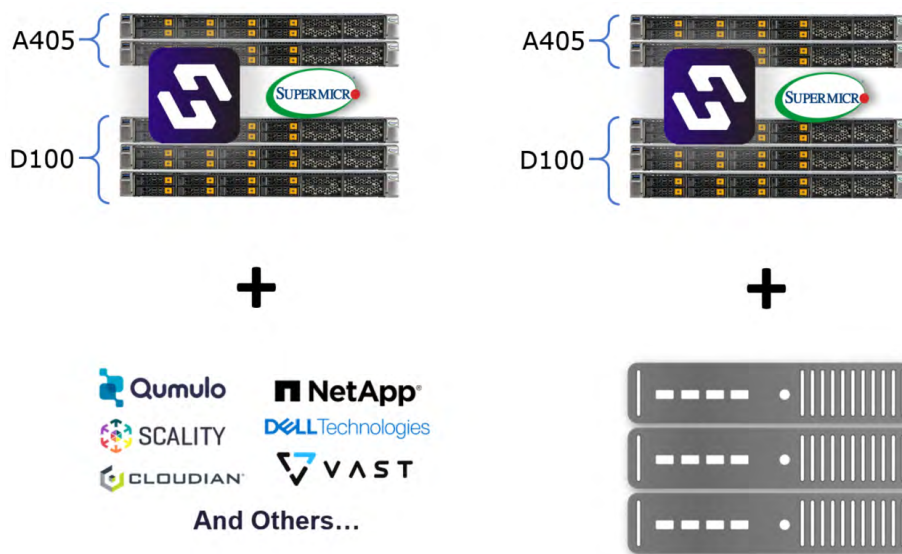
	EC-Groups (HDD)
Ideal For...	High-Efficiency Storage Environments
Rack Units	25U
Nodes	2x A405 + 3x D100 + 4x ECG1 + 4x ECG-JBOD60
Capacity Examples	DSX: 1.1PB Flash EC-Groups: 3.8PB HDD

Example: Customer-Supplied Storage Configurations

Hammerspace is software, and it works with any new or pre-existing storage from any vendor. These examples show how to bring Hammerspace data management and data orchestration features to existing storage environments, including deploying Hammerspace with Linux storage servers to create a high-performance parallel file system for AI and other performance-intensive use cases.

Using Hammerspace with existing storage has many benefits, including:

- Extending the useful life of the existing assets, keeping them out of the landfill longer
- Reducing the carrying cost of older storage by moving to hardware-only support
- Increasing the performance of existing storage using parallelism and intelligent routing
- Eliminating data migration disruption – migrate at your own pace, transparently



	HS + Existing Storage	HS + Net New Storage
Ideal For...	Adding Hammerspace Functionality to Legacy Storage Environments	New Hammerspace High-Performance Parallel File System for AI
Additional Rack Units	5U	5U + Linux Storage Servers (LSS)
Nodes	2x A405 + 3x D100 + Legacy Storage	2x A405 + 3x D100 + Customer-Supplied LSSs
Capacity Examples	Existing Storage	No Limit
Performance	Existing Storage +	No Limit