Midframe - A Departmental Mainframe *Computer*

The Midframe™ departmental computer is designed to provide enterprise computing capabilities at your office or lab. With up to 11 large memory nodes, supporting 2112 cores of compute power, and up to 2 PB of combined flash and hard disk storage; the Midframe matches the capabilities of large mainframe computers costing millions of dollars.

The Midframe is a rack mountable system consisting of 4 to 11 state-of-the-art server blades each with 2 AMD EPYC 9654 processors. The head node contains 3 TB of memory. The worker nodes contain 1.5 TB of local memory. All worker nodes are directly connected to the head node using 200 Gb/s Infiniband/Ethernet. The Midframe includes a fast 4TB NVMe global filesystem and a distributed computing environment with Python servers on each compute node accessible from the head node. With the optional Distributed Symmetric Multiprocessing (DSMP) technology, a six node configuration supports a 1.5TB shared memory across all nodes, along with global Pthreads. DSMP enables 1152 cores to access a single large shared memory, running up to 2304 threads.

With the Midframe, you can host critical database, scientific and enterprise applications for significantly less cost. It is ideal for in-memory database applications. Both multi-threaded shared memory applications and distributed memory applications are supported. Symmetric Computing's Midframe™ delivers mainframe compute performance to business, industry, academia and government at an unprecedented price point.

Features

- Powerful Many-Core Computing
- Large Memory and Global NVMe file system
- Single Software Image
- Mainframe Replacement

Benefits

√ *Faster projects. Dedicated power when your project needs it.*

√ *Ideal for large memory applications*

√ *Simple and scalable multi-threaded programming.*

√ *Save millions of dollars on enterprise computing infrastructure.*

System Specifications

Processors: AMD EPYC 9654 CPUs (2.4/3.7GHz—96 core) Up to 2112 cores / 4224 threads

Memory: 24 DIMM (4800 MHz DDR5) per node.
Head node options:
- Head node: 3TB
- Worker node: 768GB/1.5TB

Storage: 4TB on-board M.2 NVME SSD each node
Head node: 4x 3,5" NVMe/SATA, 8x 3.5" SATA
Worker node: 12x NVMe/SATA

Node Interconnect: 200 Gb/s InfiniBand/Ethernet Dual Port PCIe Gen 4 Host Bus Adapters

I/O: 2x 1 Gb/s LAN ports, 1x management LAN
2x USB 3.0 Ports
1 VGA Port

Power: 2x Redundant PS 110/208 VAC, 50-60Hz
- Head Node: 2000W
- Worker Node:1600W

Dimensions: 8U-12U Standard 19 inch Rack Mountable

Software Specifications

- Linux OS (SUSE 15)
- RPYC Python Distributed Computing environment
- Pthreads, OpenMP, MPI, POSIX
- Slurm Workload Manager

The optional DSMP™ Linux kernel enables Symmetric Multi-Processing on the Midframe with 1.5TB of global shared memory supporting global Pthreads.

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Gross Weight:	19.5 Kg (43-lbs) per server blade