Trio High Performance Server

Large Shared-Memory Many-Core Computing

The Trio™ Departmental Mainframe is designed to provide enterprise computing capabilities at your office or lab. With 384 cores (768 threads) of compute power, 6 or 9TB of global shared memory and 576TB of storage the Trio can handle your most demanding applications, especially those requiring large memory and storage such as in-memory database applications.

The Trio is a rack mountable system consisting of three 2U state-of-the-art server blades packed with 6 AMD EPYC™ 7713 processors and 12 TB of DDR4 RAM. Our DSMP™ technology along with 200 Gb/s InfiniBand, transforms these three server blades into a single high performance server that allows all 384 cores to access a large shared memory and global file system. The Trio includes a fast 4TB NVMe global filesystem and a distributed computing environment with Python servers on each compute node accessible from the head node.

The performance of the Trio competes with large SMP mainframe class computers. This makes it ideal for in-memory database applications such as SAP-HANA. The Trio can execute large in-memory applications at substantially less cost than a mainframe.

Symmetric Computing's Trio™ delivers mainframe performance to business, industry, academia and governments at an unprecedented price point.

System Specifications

Processors:	6 EPYC™ 7713 Processors (64-core 2.2/3.67GHz AMD) 384 cores / 768 threads
Memory:	12TB 3200 MHz DDR4 ECC (6 or 9TB globally shared)
Storage:	4 TB on-board M.2 NVME SSD head node 1 TB on-board M.2 NVME SSD worker node 36x 3.5" SATA/SAS hot-swappable SSD/HDDs
Node Interconnect:	6x ConnectX-6VPI 200 Gb/s InfiniBand Dual Port 200 Gbps InfiniBand PCIe Gen 4 Host Bus Adapters (No InfiniBand switch is needed)
I/O:	2x 1 GbE LAN ports 1 management LAN port 2x USB 3.0 Ports 1 VGA Port
Power:	2x Redundant 2000W PSU (each node) 6x 110/208 VAC, 15 Amp, 50-60HZ
Dimensions:	Standard 19 inch Rack Mountable Height — 6U

Features	Benefits
• Powerful Computing	√ *Faster projects. Dedicated power when your project needs it.*
• Large Single Shared Memory	√ *Ideal for large memory applications*
• Single Software Image	√ *Simple and scalable SMP multi-threaded programming.*
• Only 6U Rack Space	√ *Fits easily into your existing racks*

Software Specifications

- Linux OS (SUSE 15)
- DSMP™ Distributed Symmetric Multi-Processing™
- RPYC Python Distributed Computing Environment
- OpenMP, Pthreads, MPI, POSIX
- Slurm Workload Manager

Distributed Symmetric Multi-Processing™ enables Symmetric Multi-Processing on a Trio™ High Performance Server — A single system image with a 6TB globally shared memory and 384 AMD EPYC™ cores.