



## Ada Departmental Supercomputer

### Shared Memory GPU Cluster

The Ada Departmental Supercomputer is designed to provide near top 500 class supercomputing capabilities at your office or lab.

We marry our DSMP Linux kernel extension with four state-of-the-art server blades that contain 160 AMD EPYC processor cores, twelve high-end AMD MI25 GPUs and 2 TB of globally shared memory. The server blades are connected by 100 Gbs Mellanox Infiniband. The Ada departmental supercomputer delivers 150 TFLOPS of single precision performance capable of operating on large computational models.

Ada is a true symmetric multi-processing (SMP) computer with a large shared memory and a single operating system image based on the Centos 7.4 Linux. The performance of Ada is equivalent to supercomputers costing millions of dollars. Its large shared memory and multiple GPUs can support the training of highly complex AI and machine learning models. It can handle some of the largest engineering simulations utilizing fluid dynamics, finite element analysis and coupled models. It is an excellent resource for molecular dynamics and drug discovery. With Ada you can execute your most demanding computationally intensive tasks in your office or lab, without waiting for slower, less powerful cloud resources.

Symmetric Computing's Ada™ delivers supercomputing performance to business, industry, academia and government with greater speed, convenience and less cost. Now every researcher can have personal access to a supercomputer.

<b>System Specifications</b>	
<b>Processors:</b>	5 AMD EPYC™ 7601 Processors (160 cores) 12 AMD Radeon Instinct™ MI25 GPUs
<b>Global Memory:</b>	2 TB 2666 MHz DDR4
<b>Compute Node Memory:</b>	64 GB 2666 MHz DDR4 (each)
<b>Storage:</b>	512 GB on-board M.2 OS SSD 6x 2.5" U.2, 18 x 2.5" SATA/SAS hot-swap SSD/HDD bays (Head node) Additional 8x 2.5" SSD hot-swap bays on each compute node
<b>Interconnect:</b>	6x ConnectX-5 VPI 100 Gb/s InfiniBand Dual Port PCIe Gen 3 Host Bus Adapters (No InfiniBand switch is needed)
<b>I/O:</b>	2x 1 Gb/s BASE-T LAN ports 2x USB 3.0 1 x VGA 1 x Dedicated management port
<b>Environment:</b>	2x 1200 W redundant PSUs (Head node) 6x 1600 W redundant PSUs (Compute nodes)
<b>AC Input:</b>	8x 110/208 V / 15 A, 50-60Hz (7.2 KW max)
<b>Dimensions:</b>	8U Standard 19 inch Rack Mountable 87 x 438 x 710 mm (Host) 87 x 438 x 735 mm (Each Compute)
<b>Gross Weight:</b>	89 Kg

Features	Benefits
----------	----------

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Powerful Dedicated GPU Supercomputing</li> <li>• Large Single Shared Memory</li> <li>• Single Software Image</li> </ul> | <ul style="list-style-type: none"> <li>√ <i>Faster projects. Dedicated power when your project needs it.</i></li> <li>√ <i>Ideal for large memory applications</i></li> <li>√ <i>Simple and scalable SMP multi-threaded programming. No complicated cluster tailoring.</i></li> </ul> |
|--|---|

**Software Specifications**

- Linux OS(Centos 7.4)
- DSMP™ Distributed Symmetric Multi-Processing™
- OpenMP, Pthreads, POSIX, SysV IPC

DSMP™ enables Symmetric Multi-Processing on the Ada — A single system image with 2 TB single shared memory across 4 server blades with 160 AMD EPYC™ cores and twelve AMD Radeon Instinct™ MI25 GPUs.

Information contained in this document is subject to change without notice and is presented without express or implied warranty. Distributed Symmetric Multi-Processing, DSMP, Ada, Departmental Supercomputer are trademarks of Symmetric Computing. All other trademarks are the property of their respective owners. Copyright 2018 Symmetric Computing Company. All rights reserved.