

HPC ALL IN ONE SUPER COMPUTER



HPC All in One



Overview

AXL AIO is a ready-to-use HPC System pre-loaded with all required system software and applications from selected scientific domains. The system is designed to be an enabling tool for research organizations as well as academic institutions that are on the verge of adopting HPC culture and skill sets generation.

HPC is designed to run complex workloads utilizing good compute power, GPU support and network options. It can handle various demanding applications and workloads, like high-performance computing (HPC) applications, cloud and edge computing, data warehouses, e-commerce, databases, and communication.

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Salient Features

HPC AIO comes with a unbound performance feature with supercomputer in a box.

- HPC system in a table top model.
- Powered with minimum of 2 multicore CPUs each with at least 10 cores along with either one or two number of many core or GPU accelerator cards.
- Phenomenal solution for academic, scientific and research institutions that are on the verge of adopting high performance computing culture.
- Equipped with C-DAC's indigenously developed software technologies for HPC applications in academic and scientific domains.
- Easy to deploy solution with minimal datacentre infrastructure.
- Pre-loaded with parallel programming development environment.
- 2 TF and above computing power.
- Customizable as per the user hardware and software requirement.
- Scalable model.
- Pre-loaded with Accelerator (GPGPU/MIC) enabled parallel applications and development tools
- Access to C-DAC PARAM Yuva II at National Param Supercomputing Facility for computations on a larger scale as per the NPSF usage policy.
- Support for C-DAC's Reconfigurable Computing System technology to speed up applications through hardware.
- Resource for parallel programming training and workshops.
- Affordable computing environment for the faculty, students – both undergraduate and post graduate, PhD scholars.

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Specification Table

| Features | Technical Specifications |
|---------------------|--|
| Processor | <ul style="list-style-type: none">- Dual Socket, 2nd Generation Intel® Xeon® Scalable Processors- TDP up to 165 W- 2 UPI up to 10.4GT/s |
| Memory | <ul style="list-style-type: none">- 20 DDR4 DIMM slots- Supports LRDIMM / RDIMM, speeds up to 2933 MT/s, 1.28TB max- Up to 8 NVDIMMs, 192 GB Max,- Supports registered ECC DDR4 DIMMs only |
| Storage | <ul style="list-style-type: none">- Front drive bays : Up to 2 X 2.5" NVMe/SATA SSD max 60TB,- HWRAID support with Intel Virtual RAID on CPU (VROC) |
| Network and I/O | <ul style="list-style-type: none">- Front ports: 2x10GbE, 1x1 1GbE BMC management Interface, 1xUSB 3.0- Rear ports: 1 X OCP NIC3.0 up to 100Gbps (field replaceable)- Riser Options with 2 PCIe Gen3 x16 slots with GPU / Accelerator / Trinetra support (high speed interconnect) |
| Accelerator options | Up to two 300W GPUs |
| Health Monitor | <ul style="list-style-type: none">- CPU voltage, temperature and error signals monitoring- Event logging based on sensor thresholds and CPU events- CPU, GPU, chassis temperature monitoring |

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|------------|--|
| Management | <ul style="list-style-type: none">- IPMI 2.0- Intel Node Manager- OpenBMC via BMC 1G management interface- Redfish/Rest Interface- Standard IPMI client tools like IPMI tool- ACPI Power Management |
|------------|--|

Target Applications

- Academics
- Scientific Reseach
- Defence
- Real Time Signal Processing
- Virtual Reality (VR) Simulations for Combat Training
- Hardware/Product Simulations
- CFD Simulations for Aerodynamics & Hydrodynamics
- Strategic Data Analytics for Threat Management



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|----------------|---|
| Supported OS | Red Hat® Enterprise Linux/CentOS, Ubuntu server LTS, Windows 10 Pro |
| Security | -TPM2.0, SecureBoot, Cryptographically signed firmware |
| Dimensions | Height: 1U- 1.73" [44mm] 2U- 3.46" [88 mm] Width: 16.91" [430mm] Depth: 35.47" [901mm] |
| Power Supplies | 220/240 V AC Input supply. +12V PSU (with built in server configuration) with 2400 W |
| Configurations | Industry graded Supercomputer, with Server Configuration. Built in 2U Rudra server. Ready to use HPC Desktop System. |
| Ports | USB 3.0 Port X 5 RJ45 LAN Ports X 2 Serial Port X 1 BMC - RJ45 PORT X 1 HDMI PORT X 2 |
| GPU | In-Built GPU X 2 Nvidia Quardro P1000 Nvidia A30 Supported GPU's (tested) Nvidia A100, Nvidia RTX 4500 /Nvidia RTX4000 ADA/ RTX4500 ADA/ RTX5000 ADA/Nvidia A800 |
| User Screen | 32 Inch In-Built Display for the Ready to use HPC Desktop System Experience |



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