Technical Specifications for High Performance Computing (HPC) System

System Attribute		Specification
Main Node With High Speed Connectivity	Processor	AMD Ryzen9 3950X - 16 core
	Memory	32GB 3200 MHz DDR4
	No. of Processors	One
	Storage	4TB HDD 7200 rpm x 4 (RAID 5)
		LSI 9260-8i RAID Card
	Motherboard	B450 Motherboard
	Cabinet Type	Full Tower / Mid Tower / Rack mountable / Blade enclosure
	Power Supply	850W SMPS min.
	Processor Cooling	ML120 Liquid Cooling
	GPU Card	GeForce GT 710 2GB
	Network Card	Intel Omni Path (OPA) host fabric adapters and cables, which are compatible with Intel Omni Path switch supporting 100 Gbit/s, should be provided.
Compute Nodes With High Speed Connectivity	Processor	AMD Ryzen9 3950X - 16 core
	Memory	32GB (per node) 3200 MHz DDR4
	No. of Processors per Node	One
	Storage	512 GB SATA SSD or m2. SSD (per node)
	Motherboard	B450 Motherboard
	Cabinet Type	Full Tower / Mid Tower / Rack mountable / Blade enclosure
	Power Supply	650W SMPS min. (per node)
	Processor Cooling	ML120 Liquid Cooling
	GPU Card	GeForce GT 710 2GB Per node
	Network Card	Intel Omni Path (OPA) host fabric adapters and cables, which are compatible with Intel Omni Path switch supporting 100 Gbit/s, should be provided.
Main Node with LAN CAT6 Connectivity	Processor	AMD Ryzen9 3950X - 16 core
	Memory	32GB 3200 MHz DDR4
	No. of Processors	One
	Storage	LSI 9260-8i RAID Card + 4TB HDD 7200 rpm x 4 (RAID 5)
	Motherboard	B450 Motherboard
	Cabinet Type	Full Tower / Mid Tower / Rack mountable / Blade enclosure
	Power Supply	850W SMPS min.
	Processor Cooling	ML120 Liquid Cooling
	GPU Card	GeForce GT 710 2GB
Compute Nodes with LAN	Processor	AMD Ryzen9 3950X - 16 core

CAT6 Connectivity	Memory	32GB (per node) 3200 MHz DDR4
	No. of Processors per Node	One
	Storage	512 GB SATA SSD or m2. SSD (per node)
	Motherboard	B450 Motherboard
	Cabinet Type	Full Tower / Mid Tower / Rack mountable / Blade enclosure
	Power Supply	650W SMPS min. (per node)
	Processor Cooling	ML120 Liquid Cooling
	GPU Card	GeForce GT 710 2GB Per node
GPU Nodes with LAN CAT6 Connectivity	Processor	AMD Ryzen9 3950X - 16 core
	Memory	32GB (per node) 3200 MHz DDR4
	No. of Processors per Node	One
	Storage	512 m2. SSD + 4 TB 7200 rpm (per node)
	Motherboard	B450 Motherboard
	Cabinet Type	Full Tower / Mid Tower / Rack mountable / Blade enclosure
	Power Supply	850W SMPS min. (per node)
	Processor Cooling	ML120 Liquid Cooling
	GPU Card	3 Nos. of RTX 2080 Super 8GB & 1 Nos of AMD Radeon VII
	No. of nodes	3 Nodes with NVidia and 1 node with Radeon VII (Total 4 GPU Nodes)
24 port D-Limn Gigabit port (unmanaged)		One
Network Switch		Minimum 24 Port Intel Omnipath (OPA) switch with 100 Gbit/s Required number of OPA host fabric adapters and OPA cables should be provided.
CAT6 Cable		15 Nos.
Omnipath OPA Cable		12 Nos.

Services Level Agreement (SLA) and Warranty

1. The Supplier warrants that all the goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

2. Comprehensive warranty for 5 years, vendor will have to undertake comprehensive maintenance of the entire hardware, hardware components, equipment, software support and accessories supplied by the vendor at the place of installation of the equipment.

3. The defects, if any, during the guarantee/warranty period are to be rectified free of charge by arranging free replacement wherever necessary. It should be completed within 2 working days for individual server and next working day for central components like power supply, networking and storage after the intimation of fault.

4. Training for general system administration with adequate documentation including tasks such as user/node management, installation/upgrade, queuing system management and file system management.

5. The vendor must submit the name of the service engineers employed by them who are competent to service the HPC installation along with their contact details in India. Working knowledge of basic HPC setup viz. Job firing, Cluster setup etc., need to be provided to IIT Bombay HPC system administration team.

General terms and conditions:
Bidders are advised to read following clauses carefully. Submitting your solution implies that you agree to act as per the terms and condition mentioned bellow.

1. IIT Bombay reserves the right to decide to decrease node count/storage disks – based on budget availability.

2. Once delivered to onsite, the installation, commissioning and acceptance testing period will be within 2-3 weeks from the date of delivery of equipment. Warranty period is to be counted from the date when the installation is completed and warranty begins for the bidder who is successful in getting the order.

3. The installation of all the hardware setup will be executed by technical person provided by vendor.

4. All the hardwares should be serviced by vendor for the given warranty period provided by OEM on different parts.

5. Any item not specifically mentioned in the specification but is required for successful implementation of the HPC solution (in the opinion of the vendor) must be included in the quote.

6. Entire installation should be done at the proposed site only. Request for remote access and installation/fine tuning will not be entertained during installation period.