10.03.2021

Department of Chemical Engineering

Corrigendum-2

Tender Reference no: **CH/2021/IOECOE/198/COMPUTING**

Name of the Item: **Setting up a high-performance cluster for scientific computing**

Corrigendum details: **Changes in Technical specification and Extension of Bid Submission Date.**

Changes in Technical specification and Extension of Bid Submission Date:

S No	PREVIOUS SPECIFICATION	REVISED SPECIFICATION
1. Total compute power	**The overall system must support expansion to at least 22 CPU-only compute nodes and 2 GPU nodes** - For additional expansion in future, the vendor must offer at the bid price or below - Bidder must also include the total computing power in TFlops for the overall system.	**- The overall system must support expansion to a maximum of 24 nodes inclusive of a master node. Out of these 24 nodes, there should be a provision to have 2 GPU nodes.** - For additional expansion in future, the vendor must offer at the bid price or below - Bidder must also include the total computing power in TFlops unit for the overall system.
2. Storage Node	- At least 60 TB NAS in total for usable file system provided in the storage node - At least RAID 5 across the total storage. - It would be split as 60% of scratch area and 40% of home storage both available in all nodes with an I/O bandwidth of 25 GBPS **-** Backup up of 40% of home with a NAS Storage of 10TB; with Necessary auto backup/restore control - processor: **Intel Xeon Silver 4XXX series or above** with at least 10 cores per socket and at least 4 GB RAM for main memory in a balanced configuration per core with 2666 MHz or more - Two processors per node	- At least 80 TB NAS in total for usable file system provided in the storage node. Up to 20 TB of this storage can be used for backup. - At least RAID 5 across the total storage. - Bidder should perform the splitting of the storage into scratch area and home storage based on the requirement of IITM. **-** Backup of a part of home with a NAS Storage of 20TB; with necessary auto backup/restore control - processor: **Intel Xeon**

		Silver 4XXX series or above with at least 10 cores per socket and at least 4 GB RAM for main memory in a balanced configuration per core with 2666 MHz or more - Two processors per node
3. Interconnect	• Intel or Mellanox Infiniband switch with at least 100 Gbps bandwidth that can support future extension to double the size of the present cluster and adequate number of IB adapters for the cluster quoted. • Adequate redundancy to avoid single- point failure in the interconnect should be provided. All switches should have redundant power supplies • At least 1 G network card	• Intel or Mellanox Infiniband switch with at least 100 Gbps bandwidth that can support future extension to double the size of the present cluster and adequate number of IB adapters for the cluster quoted. (We plan to expand the cluster over the next 2/3 year up to a maximum size of 24 nodes including master and compute nodes) • All switches should have redundant power supplies. • At least 1 G network card
4. Compilers libraries and tools	• Support for the complete software suite including all the software currently supported on the Aqua cluster at IITM (OpenFOAM, Comsol, Mathematica, Gaussian, Ansys/fluent, Namd, Lammps, Gromacs, Amber, Accelerys, Matlab, VASP, Quantum Espresso, CPMD, CP2K) along with various compilers (such as GNU GCC collection, intel, java compilers). • Also, GPU Computing and AI related software/SDK such as CUDA V9.x, 10.x, 11.x, Tensorflow/Pytorch/FastAi/XGBoost, CUDNN v7.x.	• Support for the complete software suite including all the software currently supported on the Aqua cluster at IITM (OpenFOAM, Comsol, Mathematica, Gaussian, Ansys/fluent, Namd, Lammps, Gromacs, Amber, Accelerys, Matlab, VASP, Quantum Espresso, CPMD, CP2K) along with various

| | | Modules environment package for managing software environments. | compilers (such as GNU GCC collection, intel, java compilers). |
| | | | • Modules environment package for managing software environments. |

Extension of Bid Submission Date:

The due date for the submission of bids has been extended to 19/03/2021 @ 3 PM & the technical bid opening is 19/03/2021 @ 4 PM

Tender Inviting Authority:

The Senior Manager, Project Purchase,
I.I.T. Madras, Sardar Patel Road, IC & SR Building, 2nd floor,
Chennai – 600 036.