CORRIGENDUM - III

Ref: GT/RFT/IMP/050/2017-18 Dt.16/01/2018.

COMMERCIAL:

Due Date:

Last date for the Submission of “Tender bids” extended up to 20th February 2018, at 15:00 hrs.”

Delivery Period & Installation:

Item – A: Delivery must be completed within 8 weeks from the date of receipt of Purchase Order and the Installation must be completed within 3 weeks after supply of the items.

Item B & C: Delivery must be completed within 8 weeks from the date of receipt of Purchase Order and the Installation must be completed within 2 weeks after supply of the items.

TECHNICAL:

1. Implementation of ITEM A

The vendor to ensure that the hardware and software components are compatible with each other, and provide necessary cables/wires and any other accessories necessary for connecting/mounting the supplied components. The vendor will be responsible for installation, configuration and integration of the new solution with the already existing HPC solution for which the upgrade is asked. The vendor will be provided with all necessary help from IIA and the existing solution provider for the integration of the complete solution interconnecting all the components above (software and hardware) including but not limited to the existing Cluster Manager with Workload Management Software and ensure commissioning before handing over the system to IIA.
READ AS:

The vendor to ensure that the hardware and software components are compatible with each other, and provide necessary cables/wires and any other accessories necessary for connecting/mounting the supplied components. The vendor will be responsible for installation, configuration and integration of the new solution with the already existing HPC solution for which upgrade is asked the details of which are attached. The vendor has to provide the Professional Version Cluster manager with Workload Management Software which has to support for both existing and the proposed new hardware. The vendor has to give the support for the Cluster manager and Workload Manager for 5 Years, the features for which are explicitly shared as separate document.

2. Implementation of ITEM B & C

a) The vendor shall install and configure all required hardware and open source software suites, including but not limited to racking and stacking, cluster networking, configuring all nodes, installation of OS, open source compilers and applications, configuration of environment variables and license utility configuration to ensure that the system is ready for installation of end user application.

b) The vendor to ensure that the hardware and software components are compatible with each other, and provide necessary cables/wires and any other accessories necessary for connecting/mounting the supplied components.

3. Additional

a) In case the vendors are not able to quote for/provide processors specified for ITEM A, they can bid for an equivalent latest technology, all other clauses including support remaining the same.

b) i. In case any individual component/item/entire unit under warranty goes faulty and the vendor is unable to replace the same because of lack of availability due to the products/spare parts not being manufactured any more by OEM (due to reasons attributable to advancement in technology, innovation, new product launch, etc.), the vendor/OEM has to provide IIA with an upgraded product at no additional cost.

ii. In case of a technology/part/product upgrade, the vendor has to ensure that the upgraded technology/part/product is compatible with the present system and the system is operational without any issues.

iii. The clause should be agreed in writing by the vendor/OEM

4. Bidder/OEM Eligibility

ITEM A

a) The clause “The bidder should have set up at least 3 or more numbers of HPCs in the last three years with minimum peak speed of 50 Tera Flops or more.” should be read as “In the last three years, the bidder should have set up at least 2 or more numbers of HPCs with a Peak Performance of more than 100 TF OR 3 or more numbers of HPCs with minimum peak speed of 50 TF.

ITEM B AND C
a) In the last three years, the bidder should have set up at least 1 or more numbers of HPCs with a Peak Performance of more than 30 TF

<table>
<thead>
<tr>
<th>Workload Management Software with Portal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>GUI(Web) based Job Submission</td>
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<tr>
<td>Personalized Job lists and Job status information.</td>
</tr>
<tr>
<td>E mail notifications</td>
</tr>
<tr>
<td>Portal</td>
</tr>
<tr>
<td>Credential specific access and submission</td>
</tr>
<tr>
<td>Management of Jobs</td>
</tr>
<tr>
<td>GUI based Submission</td>
</tr>
</tbody>
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Flexible Authentication

Portal Integration with existing LDAP or NIS Authentication system of organization or Cluster. Full user management including add/modify user and group, disable user, modify user shell, expire date, group memberships. Account request, password reset.

Monitoring

Real time Resource monitoring of cluster. As well as individual GUI. Job monitoring by users. And viewing historical data of cluster resource usage. Usages in Pie and Bar chart and tabular form, export excel, download as pdf. Admin interface to communicate email and alerts to users.

Reporting

Generate reports on Cluster usage.

Job scheduler should have all features to support application level checkpointing and restart capabilities.

The queue configuration and scheduling policy will be shared with the integrator at the time of installation.

Others

Bidder should integrate and test user applications with batch submission script to facilitate seamless usage of the HPC system. Application will be specified to the integrator at the time of installation.

Any jobs submitted without using job scheduler should be killed automatically.

Application level check-pointing to be enabled with job scheduler.

HARDWARE AND SOFTWARE DETAILS OF EXISTING HPC AT IIA

1. All software details including version installed at IIA for the 8+1 Node HPC cluster

   Operating System: Cent OS 7.4 with up to date patch
   Cluster Management Software: Samooh version 1.4
   Job Scheduler: Slurm 17.02.7
   Intel Parallel Studio XE cluster edition Linux floating academic 2 seat and Other Software requested by IIAP.

2. Driver Details of OMNI Path: The driver version came with Cent OS 7.4

3. Cluster Management & Workload Scheduler:

   a) Cluster management: Samooh
   b) Workload Schedule: Slurm 17.02.7 customized according to IIAP needs and integrate with Samooh, it designed in Python with MySQL backend. Its features are described bellow
4. Hardware details:

Master node: HPE DL380 Gen9 1
2x Intel Xeon E5-2630 v4
64GB 2400 DDR4
2x4TB 7.2K
1x100Gb Omnipath
Compute Nodes: HPE DL380 Gen9 8
2x Intel Xeon E5-2683 v4
128GB 2400 DDR4
2x1TB 7.2K
1x100Gb Omnipath
Storage Nodes: HPE DL380 Gen9 1
2x Intel Xeon E5-2683 v4
64GB 2400 DDR4
2x1TB 7.2K
12x4TB 7.2K
1x100Gb Omnipath
Omnipath SW: Intel Omnipath 100G SW 24 Port 1
Cluster Management SW: Aruba 2620 24 port 1
Samooh CMS features:

Interface:
GUI, WEB and CLI base interface to manage and monitoring the cluster nodes and service nodes. Mobile browser support, Multiple service node support with Load Balancing and High Availability. LDAP, KERBOSE and AD authentication support.

Provisioning:
Automatic node and services provisioning with multiple Linux distribution and version support in compute nodes, Node grouping based on RACK and IRU and Custom defined. Bring up/down nodes based of groups, Profile based node provisioning, Auto detect new nodes, IB, FC and GigE Networking, Network multi-path and bonding and etc. Application and settings changes in nodes, IPMI, VNC console integration

Managed Services:
DNS, DHCP, E-MAIL, TFTP, NFS, RSYNC, NIS, LDAP, SYSLOG, Puppet. Load balance the service with multiple service nodes.

Job Scheduler Portal:
Supports PBS Pro, TORQUE, SLRUM. Web based view of used and available nodes, job templates, job submission, deletion, hold and release and etc.

Monitoring and Reports:
Active report of nodes cpu, memory and network usage and free resources. Weekly, monthly and yearly reports of node health and Job accounting reports.

Alerts:
Email alert for all events. HA alerts, job alerts, Node failure and component failure alerts, Storage alerts and customizable alerts.

Stores & Purchase Officer
Indian Institute of Astrophysics