Center for High Energy Physics

Indian Institute of Science

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25th January 2017.

Ref. No.: HEP/C/st/16-17.

Subject: Clarifications regarding the Request For Proposal for a GPU cluster.

Dear Madam/Sir,

Kindly find below a list of clarifications in connection with the Request For Proposal (Ref. No. HEP/C/st/16-17) regarding a GPU cluster of 45 Teraflops or higher. It is hoped that these clarifications shall suffice to clear up some of the issues that had been raised in connection with the original RFP. Nevertheless, further clarifications may be sought until the end of this Friday. Please also note that the last date for submission of bids has now been revised to **3rd February 2017**.

Yours sincerely,

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Important Dates:

Clarifications regarding the RFP:	25 January 2017.
Last date for inquiries:	27 January 2017.
Last date for submissions:	3 February 2017.

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Clarifications regarding the configuration:

Below, we reproduce the configuration specifications mentioned in the RFP, with the clarifications highlighted in yellow:

1. **GPU:** The GPUs should be Pascal 100 GPUs of the PCIe type (not the Nvlink type) with 16 GB of memory (not 12 GB).

2. **CPU:** Dual CPU configuration where the CPU is of type Intel Xeon E5-2640v4 (10 cores, 2.4 GHz, 25M cache, 8GT/s) or higher. A higher configuration may be supplied in case it offers advantages while still remaining competitive in terms of the price.

3. **GPU/CPU ratio:** No particular GPU/CPU ratio is needed. Bidder is free to choose the densest GPU solution available.

4. **CPU Memory:** At least 24 GB CPU memory per GPU.

5. **Internal Storage:** 16 TB raw storage (4 x 4 TB SATA HDDs). RAID is not mandatory. The storage can be distributed throughout the cluster.

6. **Master node:** No clustering required, therefore no need for separate master node. If more than two nodes are required to achieve 45+ TeraFlops, then they just need to be interconnected by a non-managed Gigabit switch.

7. **Management network:** No need of management switch/network. A non managed Gigabit switch, if required, with ports sufficient to interconnect the nodes.

8. **Software:** In addition to the hardware specifications, the vendor must also install the following: Open-source Linux operating system, NVIDIA CUDA toolkit, drivers & SDK and open source MPI, libraries and compilers, apart from any other software that is necessary for the smooth installation, running and maintenance of the cluster.

9. Redundant Platinum Level (94%) power supplies.

10. Rack-mounted Rail Kit, if necessary.

On the next page, we will provide some clarifications regarding the General Specifications and the Eligibility Criteria. The following clarifications should be regarded as replacing the corresponding sections in the original RFP.

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Clarifications Regarding General Specifications and Eligibility Criteria:

General Specifications:

1.   Both the hardware and software components should be from an Original Equipment Manufacturer (OEM) and it is preferable that they should be from the same OEM.
2.   All equipment must be compatible with Indian Electrical Standards/Codes.
3.   The vendor must carry out the installation, commissioning and cabling of all the hardware as well as software components.
4.   The vendor must provide a three-year 24x7 comprehensive on-site warranty of all the installed hardware as well as a comprehensive on-site warranty for maintenance of software and cluster management. The cost of this should be included in quoting the final price, but should be mentioned under a separate heading in the Commercial Bid.
5.   The vendor must provide a Manufacturing Authorization Form (certificate from the OEM for quoting the requirement).
6.   Additionally, the vendor must provide three references where they have carried out installations of above 10 TFlops in the past three years. The Purchase Committee shall independently obtain inputs from the provided referees before arriving at a final decision.
7.   The bids should have the option for further negotiations.

Eligibility Criteria:

1.   The bidding vendor (bidder) should be registered with the IISc Vendor List.
2.   The bidder should have carried out at least three HPC installations of over 10 TFlops in India during the past three years. References and purchase order copies of previous installations are required.
3.   The bidder should have installation/service center base in Bangalore for such units and a fully equipped service center. Kindly provide details of Karnataka Registration and Office Address.
4.   Bidder has to quote exactly as per mentioned specifications for entire solution, partial offers will not be accepted.

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