Reference No. (PR No. 1000018275)　　　　　　　RFx No. 6100000870

TECHNICAL SPECIFICATIONS

HPC cluster with one master and five compute nodes, and necessary Infiniband Switch, rack, and UPS

1. **Master node (quantity 1 no) with the following specifications**

    1.1. Processor: 2x Intel Xeon S-4210R (10C/20T, 2.4GHz, 13.75M, 100W) (Total 20 Cores)
    1.2. Chipset: Intel® C621 chipset
    1.3. RAM: 4x 16 GB (Total 64 GB) DDR4-2933 ECC RDIMM (Max 12 DIMM Slots)
    1.4. HDDs: 4x 8 TB (Total RAW 32 TB) SATA Ent. 7200 RPM 3.5" HDD
    1.5. SSD: 1x 480 GB SSD 2.5"
    1.6. RAID: SAS Gen-3 (12 Gbps) H/W Controller for RAID 0, 1, 5, 6, 10, 50 and 60
    1.7. NIC: 2x 1G Ethernet LAN ports (1x Port shared with IPMI)
    1.8. Management: IPMI 2.0 with virtual media over LAN and KVM-over-LAN Support
    1.9. Exp. Slots: 4x PCI-E 3.0 x16, 3x PCI-E 3.0 x8
    1.10. VGA: ASPEED AST 2500 BMC (onboard)
    1.11. Ports: 4x USB 3.0 (rear), 1x VGA
    1.12. Interconnect: 1x Infiniband (IB-EDR) 100 Gbps HBA + Cable of suitable length
    1.13. Chassis: 2U Rack mountable (8x 3.5" Hot-Swap SAS3/SATA3 drive bays)
    1.14. P. Supply: 740W High-Efficiency Platinum Level 80 PLUS Certified Power Supplies
    1.15. OS: Open Source Linux
    1.16. Warranty: 3 Years Comprehensive On-site Warranty

2. **Compute Nodes (quantity no. 5) with the following specifications:**

    2.1. Processor: 2x Intel Xeon G-6226R (16C/32T, 2.9GHz, 22M, 150W) (Total 32 Cores)
    2.2. Chipset: Intel® C621 chipset
    2.3. RAM :12x 32 GB (Total 384 GB) DDR4-2933 ECC RDIMM (Max 16 DIMM Slots)
    2.4. SSD: 1x 960 GB 2.5" SSD (Total 3x 3.5" HDD bays per hot-swap node)
    2.5. RAID: Onboard SATA Controller for RAID 0,1 and 10
    2.6. NIC: 2x 1G Ethernet LAN ports (via SIOM)
    2.7. Management: IPMI 2.0 with virtual media over LAN and KVM-over-LAN Support
    2.8. Exp. Slots: 2x PCI-E 3.0 x16 (LP)
    2.9. VGA: ASPEED AST 2500 BMC (onboard)
    2.10. Interconnect: 1x Infiniband (IB-EDR) 100 Gbps HBA + Cable of suitable length
    2.11. Ports: 2x USB 3.0 (rear), 1x VGA, 1x RJ-45 Management

2.12. Chassis: 2U Rack mountable (4 hot-swappable server nodes in a single 2U Chassis)
2.13. P. Supply: 2200W Redundant Titanium Level 80 PLUS Certified Power Supplies
2.14. OS: OpenSource Linux
2.15. Warranty: 3 Years Comprehensive On-site Warranty

Please describe the software packages and compilers provided with the system*

3. **Switches:**
   3.1. Primary Interconnect (IB-EDR 100Gbps Infiniband): - Description: 36-Ports Externally Managed IB-EDR 100 Gbps Switch
   3.2. Warranty: - 3 Years On-site
   3.3. Secondary Interconnect (Gigabit Ethernet) (Quantity required: 2): - Description: 48-Ports Gigabit Ethernet Switch using Dlink DGS-1210-52
   3.4. Warranty: - 3 Years On-site

4. **UPS**
   4.1. Please quote for UPS and batteries pack necessary for 60-minute backup at full load. Please specify calculations of power consumption.
   4.2. Please ensure that it can back up of 1 master + 5 compute nodes for 60 minutes at full load

5. **Server Rack with PDU**
   5.1. 42U Server Rack (800x1000 mm) with 2 PDU's each with sufficient Ports

6. **Warranty:** On-site warranty of 3 years must be provided for all components.

7. **AMC:** Annual maintenance contract (AMC) for additional 2 years subsequent to the warranty period should be quoted. Bidder should also include full description of services to be provided during the AMC period.

Additional terms and conditions:

1. Dealer should provide original equipment manufacturer (OEM) certificate.
2. Kindly provide list of purchase orders and experience of supplying and maintaining similar products at other places.
3. Demonstrate compatibility of all the components.
4. Installation and commissioning of the HPC cluster including relevant operating system and the necessary libraries for parallel computing must be ensured by the vendor in consultation with technical staff of the laboratory.
5. For awarding the purchase order,
    a. the overall Cost should include Installation/commission and initial operator training. On-site application training and application start- up kits/consumables must be supplied by bidder.
    b. cost of Annual maintenance contract (AMC) for additional 2 years subsequent to the warranty period should be quoted. Bidder should also include full description of services to be provided during the AMC period.