Specifications for GPU Cluster

1. Master Node Qty: 1

Processor : 2 x Intel® Xeon® E5-2640v3 or better processors (8-core, 2.6GHz)

GPUs : 2 x Nvidia Tesla K20C GPU Compute Boards
Must be capable of supporting 4 x Tesla K20C GPU Compute Boards
All the slots meant for Tesla should be PCIe x16 Gen3 double-width
We have 2 Tesla K20C compute boards available with us which have to be installed by the vendor in this system. Addition of these boards should not void the warranty.

Memory : 64GB DDR4 ECC RDIMM, 16 DIMM slots

RAID : Hardware RAID with 512MB or larger cache, must support RAID5 & RAID6

HDDs : 8 x 3000GB, 7200RPM or better, Enterprise Grade HDDs connected to RAID controller mentioned above. All the HDDs must be hot-pluggable

NIC : 2 x Gigabit Ethernet or better

Management : IPMI 2.0 or better, with dedicated LAN & KVM over LAN support

Exp. Slot(s) : At-least one free PCIe x8 Gen3 expansion slot free after populating 4 Tesla boards and one RAID controller.

Form Factor : 4U rack-mountable with sliding rails

P. Supply : 1+1 redundant, hot-plug, 80PLUS Platinum or better
Must be capable of supporting the system with 4GPUs at full-load

2. Compute Node(s) Qty: 2

Processor : 2 x Intel® Xeon® E5-2640v3 or better processors (8-core, 2.6GHz)

GPUs : 4 x Nvidia Tesla K20C GPU Compute Boards
All the slots meant for Tesla should be PCIe x16 Gen3 double-width

Memory : 64GB DDR4 ECC RDIMM, 16 DIMM slots

RAID : Support for RAID 0, 1 & 10

HDDs : 2 x 1000GB, 7200RPM or better, Enterprise Grade HDDs connected to RAID controller mentioned above. All the HDDs must be hot-pluggable

NIC : 2 x Gigabit Ethernet or better

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Management : IPMI 2.0 or better, with dedicated LAN & KVM over LAN support

Exp. Slot(s) : At-least one free PCIe x8 Gen3 expansion slot free after populating 4 Tesla boards and one RAID controller.

Form Factor : 4U rack-mountable with sliding rails

P. Supply : 1+1 redundant, hot-plug, 80PLUS Platinum or better

Must be capable of supporting the system with 4GPUs at full-load

Other : Model used for Master Node and Compute Nodes must be same

3. Interconnect Qty: 1 set

FDR (56Gbps) InfiniBand setup consisting of 1 x 12-port InfiniBand switch, 5 x Single-port InfiniBand HCAs and 5 x InfiniBand Cables of suitable length.

Also, 24-port Gigabit Ethernet Switch, with 5 x Cat6 patch cables of suitable length.

4. Netgear ReadyNAS 104 NAS with 4 x 5TB Enterprise SATA HDDs

5. Peripherials: 27-inch IPS color monitor (Resolution 1920x1080 or better) and Hp Laserjet Pro Color M176n Multifunction color laserjet printer or better.

All connecting cables, including hdmi to mini displayport (for Macbook Pro), hdmi to VGA, hdmi to dvi and adapter to connect multiple monitors to a single CPU should also be supplied.

The Tenderer has to install the InfiniBand cards in the systems quoted above (and in 2 systems which we already have) and configure all the 5 systems together as a high-performance-compute-cluster based on Linux OS. It is the responsibility of the vendor to completely install all the required libraries, workload management solution, cluster monitoring tools and other required software using free open-source software.