CLARIFICATIONS AND RESPONSES IN THE PRE-BID MEETING HELD ON 23RD OCTOBER 2013 IN OUR BOARD ROOM FOR THE PROCUREMENT OF INTEL E7-SERIES OF DECA CORE PROCESSOR BASED SERVERS

File No : PUR/IMP/026/13

Description of Item : INTEL E7-SERIES OF DECA CORE PROCESSOR BASED SERVERS

Answers to Queries

M/S.WIPRO

#	Questions	Wipro Suggestions	Advantages	NIIST Response
1	Is it all 5 servers will be part of a single HPC Cluster?	All the Servers can be integrated in a single cluster with MPI (Message passing interface) to communicate with each other for parallel computing	Requested all 5 servers can integrate to run the bigger jobs and will help proper utilization of all servers if we make a part of single HPC cluster	We require individual server. However, slots should be available for supporting Gigabit, Infiniband and fibber channel protocols.
2	What is the interconnect NIIST looking with in the 5 Nodes?	Infiniband(IB) Switch : for Primary interconnect and Ethernet Switch is for secondary interconnect	IB interconnect comes with 56Gbps bandwidth, this will help to run the parallel Jobs fast. Ethernet Interconnect will be useful for servers management, monitoring and administration	No interconnect is required.
3	Operating System(OS)	Centos/ Redhat Enterprise Linux	RHEL/Centos: Maximum of all HPC clusters are deploying with Centos/ RHEL, because operating system kernel and GCC were tested with multiple platforms, applications and these both OS are very good stable comparatively Ubuntu	Latest Ubuntu linux is preferred. Also the servers should be certified for Red hat, Ubuntu and Windows.
4	Is NIIST will opt for a Workload Scheduler to be installed on the system?	SLURM	For any HPC setup Scheduler is the most important component, scheduler schedules the jobs based on the user requirement. Generally jobs will execute First in First Out method. With the help of scheduler 100% we can utilize the cluster. Proposed scheduler SLURM is world most popular and opensouece free Command line based scheduler	No scheduler is needed
5	Will NIIST will opt forJob Submission Portal?	Job submission Portal	This is Graphical web based interface portal connects with SLURM scheduler. This portal will have customized web pages to submit the jobs, monitor and accounting the utilization of servers w.r.t users or application based	No job submission portal is needed.
6	What are the Compilers NIIST will prefer to be installed on the system?	GCC. MPICH2, OpenMPI parallel and Intelxe studio compilers	This complier will help jobs to run fast as much as possible	Only the default options are required.

7	What is the Cluster Suite NIIST will prefer to be installed?	ROCKS	This Cluster suite will help to deploy the cluster with less time, monitor and manage the cluster, proposed ROCKS cluster suite is well know and widely used in all cluster, ROCKS is open source cluster suite	No cluster suite is required.
8	What is the Monitoring Tool preferred by NIIST?	Ganglia	Ganglia monitors CPU, memory, network and Harddisk utilization and represent in Graphs. This information stores years together, with this we can measure cluster utilization day wise, moth wise and year wise. Ganglia is a opensource, very light weight toll and widely used open source tool	Monitoring tool is not required.

M/S.HCL

Serial No.	Tender Specification	Change Requested	Remarks/Reason	NIIST response
Existing Specifications				
1	Processor: 4xIntel 10C E7-family Xeon processors on a single mother board	Each Server should be configured with a minimum of 4xIntel 10C 2.0GHz 24M Cache CPU or higher available in latest series.		Each Server should be configured with a minimum of 4xIntel 10C with minimum 2.4 GHz, 30MB cache CPU.
2	Memory: 256 GB	Should have at least 64 DIMM slots for up to 2TB of memory memory and support for DDR3 registered DIMMs. Server should be supplied with 256 GB of memory. Support for advanced memory redundant technologies like ECC memory mirroring	The detailed specifications ensure that NIIST gets hardware which would allow future scalability. ECC memory mirroring immunes the system from memory errors thereby improving reliability of the system.	Required memory for a server is 256 GB. Also minimum 8 x 32GB DIMM slots for up to minimum 1 TB expandable memory.
3	Hard Drive(s): 8 TB internal storage SAS	The server should offer upto Twelve (12) numbers of hot pluggable SAS, SATA or SSD hard disk drives bay and supplied with 8 TB of usable storage within the server using SATA Drives, on RAID6. The Server RAID controller should support the following configurations RAID 0, 1, 5, 6, and 10 support Should support a write cache of 1 GB for the storage controller Support a flash backed write cache for the storage controller	The detailed specifications ensure that NIIST gets hardware which would allow future scalability. Further RAID Controller is necessary to ensure immunity from Disc Failure. Using RAID6, 8TB of usable storage capacity using SATA drives would be cost effective solution compared to SAS drives. Cache for RAID controller would help in improving Read Write Performance and Flash backed write cache would prevent loss of data in case of power failures.	Server should offer minimum 8 x 900GB SAS disk with minimum 10000 rpm speed. Hence, the total disk space should be minimum 7.2 TB. Also RAID6 installation is required.
4	Operating system:	Should be able to support RHEL, Windows, Vmware.		Latest Ubuntu linux is preferred. Also the

	Ubuntu Linux			servers should be certified for Red hat, Ubuntu and Windows.
Additional Specifications Proposed				
1. Hardware Specifications				
1	Network	Should have an integrated 4 * 1 Gigabit Ethernet for network connectivity	The tender does not specify the Networking capabilities of the Server. The Networking Capabilities are essential for communication. Therefore added the specifications for the same.	We require individual server. However, slots should be available for supporting Gigabit, Infiniband and fibber channel protocols.
		The server should support the technology of 10-Gbps unified network fabric which aggregates both the Ethernet and FC connectivity on a single controller using Low-latency, lossless, 10-Gbps Ethernet and industry-standard Fibre Channel over Ethernet (FCoE) fabric.		
2	PCIe Slots	Each server should offer 7 PCI Express (PCIe) 2.0 slots with ● 2 full-height, half-length, x16 ● 5 half-height, half-length, x8	PCIe slots would allow adding of Compatible adapters that may be used for FC/Infiniband/etc. Connectivity. Hence request these specifications to be included.	We require individual server. However, slots should be available for supporting Gigabit, Infiniband and fibber channel protocols.
3	Management	Should have integrated out of band management port	Server Management is an important part of day to day operations of the server and hence request specifications for the same to be included.	These items are not requested.
		The integrated management controller should support web user interface for server management; remote keyboard, video, and mouse (KVM); virtual media; and administration with Virtual media support for remote KVM and CD and DVD drives as if local.		
		The server should support Intelligent Platform Management Interface (IPMI) 2.0 support for out-of-band management through third-party enterprise management systems		
		The server should support Command-line interface (CLI) for server management		
4	Ports	Upto 3 USB connectors to connect other devices to the server		At lest 3 USB connectors are needed.
		Should have the following ports for server connectivity ● 1 serial port ● 1 VGA video port		At least 1 serial port and 1VGA port is required.

5	Others	Supports hot swappable redundant fans & Supports hot swappable redundant power supplies	Hot Swappable & Redundant Power Supplies and Fans build the RAS (Reliability, Availability and Serviceability features) of the Server being procured. These ensure, in case of failure, the down time of the hardware is minimal and effort required to get the hardware running again is minimal.	Hot swappable redundant fans & hot swappable redundant power supplies are required.
6	Environmental	Operating Temperature support from 50 to 95°F (10 to 35°C) and Non-operating Temperature from -40 to 149°F (-40 to 65°C)		Suitable operating temperature support is expected.
		Operating Humidity from 5 to 93% noncondensing		
		Operating Altitude from 0 to 10,000 ft (0 to 3000m) and Nonoperating Altitude upto 40,000 ft (12,000m)		
7	Rack not included in requirement	42U Standard Server Rack for housing the Hardware with required PDU's and accessories	Rack is essential & an industry standard practice for housing the hardware and running it smoothly.	Rack is not required
2. Clustering Services				
1	Clustering not included as a scope of work	Request NIIST to consider one of the following options:- 1. GigE based Cluster 2. QDR Infiniband based Cluster	NIIST can cluster the servers at a very nominal cost to improve the performance of the system & allow better manageability. Converting the Servers to a Cluster would be a fraction of Cost of the entire system. 1. GigE based Cluster:- The additional Items required are: 1x24P GigE Switch & CAT6 Patch Cables. The additional cost for the clustering hardware would be approximately 25K INR(Excluding Taxes & Clustering Services) 2. QDR IB based Cluster:- The additional Items required are (Considering clustering of 5xServers): 1x8P QDR IB Switch, 5xQDR IB HCA's & 5xQDR IB Cables. The additional cost for clustering hardware would be 270K INR(Excluding Taxes & Clustering Services)	Clustering is not needed.
3. PQ Criteria: Bidder Eligibility				
1	No specifications regarding this point in the existing Tender	The bids must be submitted by OEMs or OEM supported single vendors only with authorization certificates from the OEMs. An OEM should be allowed to put only one response, either directly or through a SI/Vendor.	This would ensure that NIIST gets bid response from qualified and experienced SI's, thereby protecting the investment by NIIST on the System being procured. This also ensures NIIST gets best possible services and support levels.	Authorization from the principal company should be submitted
		The vendor should also be an authorized partner of OEMs of all major components in the proposed solution		

		The bid can be submitted only by a vendor who has an experience of installation & commissioning of Similar/HPC facilities and should have been in the business for more than five years as on 31.03.2013.		
		The vendor should be a private/ public limited company registered under the Companies Act, 1956 or a registered firm. The company/firm should be existence for more than 5 years.		
		The vendor should have a valid ISO 9001:2000 & ISO 27001 certification.		
		The vendor should submit valid certification from all the OEMs (whose products are being quoted) confirming the following: 1. Confirm that the products / technologies / components / services quoted are not at end of life. 2. Undertake that the support including the spares, patches for the quoted products shall be available for next 5 years. 3. Software Update / Patches for the Entire Project Duration has been taken		
		Bidder should have a turnover of more than 10 crore.		

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2	Memory: 256 GB	Should have at least 64 DIMM slots for up to 2TB of memory memory and support for DDR3 registered DIMMs. Server should be supplied with 256 GB of memory.	The detailed specifications ensure that NIIST gets hardware which would allow future scalability. ECC memory mirroring immunes the system from memory errors thereby improving reliability of the system.	Required memory for a server is 256 GB. Also minimum 8 x 32GB DIMM slots for up to minimum 1 TB expandable memory

3	Hard Drive(s): 8 TB internal storage SAS	The server should offer upto Twelve (12) numbers of hot pluggable SAS, SATA or SSD hard disk drives bay and supplied with 8 TB of usable storage within the server using SATA Drives, on RAID6.	The detailed specifications ensure that NIIST gets hardware which would allow future scalability. Further RAID Controller is necessary to ensure immunity from Disc Failure. Using RAID6, 8TB of usable storage capacity using SATA drives would be cost effective solution compared to SAS drives. Cache for RAID controller would help in improving Read Write Performance and Flash backed write cache would prevent loss of data in case of power failures.	Server should offer minimum 8 x 900GB SAS disk with minimum 10000 rpm speed. Hence, the total disk space should be minimum 7.2 TB. Also RAID6 installation is required.
		The Server RAID controller should support the following configurations RAID 0, 1, 5, 6, and 10 support		
		Support a flash backed write cache for the storage controller		
4	Operating system: Ubuntu Linux	Should be able to support Ubuntu, RHEL, Windows, Vmware.		Latest Ubuntu linux is preferred. Also the servers should be certified for Red hat, Ubuntu and Windows.
2	PCIe Slots	Each server should offer 7 PCI Express (PCIe) 2.0 slots with ● 2 full-height, half-length, x16 ● 5 half-height, half-length, x8	PCIe slots would allow adding of Compatible adapters that may be used for FC/Infiniband/etc. Connectivity. Hence request these specifications to be included.	We require individual server. However, slots should be available for supporting Gigabit, Infiniband and fibber channel protocols.
5	Others	Supports hot swappable redundant fans & Supports hot swappable redundant power supplies	Hot Swappable & Redundant Power Supplies and Fans build the RAS (Reliability, Availability and Serviceability features) of the Server being procured. These ensure, in case of failure, the down time of the hardware is minimal and effort required to get the hardware running again is minimal.	Hot swappable redundant fans & hot swappable redundant power supplies are required.

M/S.SMARTSOFT

Asked tender Specifiaction	Our suggestion	NIIST response
Processor: 4 X INTEL 10 CORE E7-family Xeon processors on a single mother board	4 X Intel Xeon E7 -4870 -2.40GHZ, 130Watts, 30MB cache , 10 cores, Cores and 6.4 GT/s QPI Speed	Each Server should be configured with a minimum of 4xIntel 10C with minimum 2.4 GHz, 30MB cache CPU.
Memory: 256 GB	Total 256Gb (32Gb X 8), Total 64 DIMM Slots (**max expandable to 2TB**)	Required memory for a server is 256 GB. Also minimum 8 x 32GB DIMM slots for up to minimum 1 TB expandable memory.
Hard Drive(s): 8 TB internal storage SAS	12 X 900GB 2.5" SAS 15K RPM with RAID 6 (**minimum 4 slots left empty for expansion**)	Server should offer minimum 8 x 900GB SAS disk with minimum 10000 rpm speed. Hence, the total disk space should be minimum 7.2 TB.

		Also RAID6 installation is required.
Operating system: Ubuntu Linux	Pre installed latest version Ubuntu (**Machine should be Linux and windows certfied**)	Latest Ubuntu linux is preferred. Also the servers should be certified for Red hat, Ubuntu and Windows.
Graphics: A suitable one, minimum requirement	Integrated grahics only	Required minimum graphics option.
WARRANTY: 3 years onsite	**5Years onsite warranty**	Minimum 3 years onsite warranty
Expansion Slots	Min: 7 pci slots for adding expansion cards.	Optional
Power supply	Redundant power supplies to be provided.	Required

M/S.TATAELXSI

With reference to your Tender no. PUR/IMP/026/13 and pre-bid meeting on 24/10/13, we would request to bring changes with respect to HDD. As stated in tender as “8 TB internal storages SAS”, we request you to change it to “1 TB SFF NLSAS x 8 “. Kindly oblige for the same.

NIIST Response

Server should offer minimum 8 x 900GB SAS disk with minimum 10000 rpm speed. Hence, the total disk space should be minimum 7.2 TB.

Also RAID6 installation is required.

On the basis of all the suggestions and queries, the following consolidated responses applicable to the technical specifications of Intel E7-series of deca core processor based servers are finalised.

Processor: 4xIntel 10C E7-series of processor with minimum 2.4 GHz speed, 30MB cache.

RAM: 256 GB. Also minimum 8 x 32GB DIMM slots and provision for up to minimum 1TB expandable memory.

Disk space: Minimum 8 x 900GB SAS disk with minimum 10000 rpm speed. Hence, the total disk space should not be less than 7.2 TB. RAID6 installation is required.

Network: Slots should be available for supporting Gigabit, Infiniband and fibber channel protocols.

Operating system: Latest Ubuntu linux is preferred. Also the servers should be certified for Red hat, Ubuntu and Windows.

USB ports: Al least 3

Other ports: At least 1 serial port and 1VGA port

Fans: Hot swappable redundant fans

Power supply: Hot swappable redundant power supplies

Graphics: Minimum requirement.

Other items: Clustering is not required. Rack is not needed.

The tender specification stands amended to the extent as given above.

Stores & Purchase Officer