

**Revised Specifications for supply, installation and commissioning of  
Computer Servers with mounting Racks, Monitors and Port Switches  
against Tender No.44(67)2016-Pur/T-168, dated 03/03/2017**

**1. Specification for Master Node- no -1**

	<b>Specification for Master Node</b>
<b>Server:</b>	<b>Two CPU server</b>
<b>Item</b>	<b>Description of Requirement</b>
CPU	Two No's of (Intel® Xeon® Processor E5-2667 v4 25M Cache, 3.20 GHz) Processors
CACHE Memory	25 MB L3 cache
Motherboard	Intel® C612 Series Chipset
Memory	256 GB DDR4 2400 MHz scalable to at least upto 1.54 TB, using DDR4 Load Reduced DIMM (LRDIMM) memory modules with 24 DIMM slots or equivalent
Memory Protection	Advanced ECC with multi-bit error protection and memory online spare mode
HDD Bays	Up to 16 SFF, HDD/SSD expandable up to 24 drives with optional drive cages, The drive carrier should have intuitive icon based display along with LED caution indicator
Optical drive Bay	DVD-RW
Hard disk drive	16 x 1.2 TB 12 G SAS 10K rpm SFF (2.5-inch) Hot pluggable Hard Drives
Controller	PCIe 3.0 based 12Gb/s SAS Raid Controller with RAID 0/1/1+0/5/50/6/60/1 Advanced Data Mirroring/10 Advanced Data Mirroring with 4GB battery backed write cache (onboard or in a PCI Express slot)
Networking features	10Gbps port network adaptor supporting advanced features such as Large Send offload capability, TCP checksum and segmentation, VLAN tagging, MSI-X, Jumbo frames, IEEE 1588, and virtualization features such as VMware NetQueue and Microsoft VMQ.
Interfaces	Serial - 1 USB 3.0 support With Up to 5 total: 1 front, 2 rear, 2 internal (secure)
Bus Slots	Six PCI-Express 3.0 slots, atleast two x16 and four x8 slots
Power Supply	Minimum 94%efficient Hot pluggable Redundant Power Supplies
Fans	Redundant hot-plug system fans
Graphics	1 No. NVIDIA Quadro K1200 Entry 3D Graphic Controller- 4Gb DDR5 meomry (PCI Express 3.0 x 16 Bus Type, 1 DL-DVI(I) & 1 Display port Interfaces, 512 CUDA cores
Industry Standard Compliance	ACPI 2.0b Compliant PCIe 3.0 Compliant PXE Support WOL Support Microsoft® Logo certifications USB 3.0 Support USB 2.0 Support Energy Star UEFI (Unified Extensible Firmware Interface Forum)

Operating Systems and Virtualization Software Support	Microsoft Windows Server Canonical Ubuntu Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware Citrix XenServer
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.
Provisioning	Provisioning: Essential tools, drivers, agents to setup, deploy and maintain the server should be embedded inside the server.
Remote Management	1. System remote management should support for Intelligent Platform Management Interface v.2.0 via IPMI 2.0 with virtual media over LAN and KVM-over-LAN support System should Checks OOB/In-band Support, Asset Information, System Utilization, Sensor Data BIOS Management should Get BIOS Info, Update BIOS FW,Get/Set Default and Current BIOS Settings,Get/Set DMI Information  2. Server should have dedicated 1Gbps remote management port.
Server Management	Monitoring Functions <ul style="list-style-type: none"> <li>• Hardware Monitoring (fan speed, temperature, voltage, chassis intrusion, redundant power failure, power consumption, disk health, and memory health)</li> <li>• Software Monitoring (HTTP, FTP, and SMTP services)</li> </ul>
	Notification Functions <ul style="list-style-type: none"> <li>• Notifications Sent When Host or Service State Changes</li> <li>• Notifications Sent via E-mail and SNMP Traps</li> </ul>
	Configuration Functions <ul style="list-style-type: none"> <li>• Monitored Items</li> <li>• Alert Functions</li> </ul>
	System Information <ul style="list-style-type: none"> <li>• System Information for all critical hardware</li> </ul>
Chassis	2 U Rack Mountable
	USB Keyboard & Mouse

## 2. Specifications for Compute Nodes- No- 9

Chassis	1 U Rack Mountable
CPU	Two No's of Intel® Xeon® Processor E5-2667 v4 25M Cache, 3.20 GHz) Processors
CPU L3 CACHE Memory	25MB (1 x 25 MB) L3 cache
Motherboard	Intel® C612 Series Chipset
Memory	256 GB DDR4 2400 MHz scalable to at least upto 1.54 TB, using DDR4 Load Reduced DIMM (LRDIMM) memory modules with 24 DIMM slots or equivalent
Memory Protection	Advanced ECC with multi-bit error protection and memory online spare mode
HDD Bays	Up to 16 SFF, HDD/SSD drives with optional drive cages, The drive carrier should have intuitive icon based display along with LED caution indicator
Hard disk drive	2 x 1.2 TB 12 G SAS 10K rpm SFF (2.5-inch) Hot pluggable Hard Drives
Controller	PCIe 3.0 based 12Gb/s SAS Raid Controller with RAID 0/1/1+0/5/50/6/60/1 <b>Advanced Data Mirroring/10 Advanced Data Mirroring</b> with 2GB battery backed write cache (onboard or in a PCI Express slot)
Networking features	10Gbps port network adaptor supporting advanced features such as Large Send offload capability, TCP checksum and segmentation, VLAN tagging, MSI-X, Jumbo frames, IEEE 1588, and virtualization features such as VMware NetQueue and Microsoft VMQ.
Interfaces	Serial - 1 USB 3.0 support With Up to 5 total: 2 rear, 1 front, 2 internal
Bus Slots	Three PCI-Express 3.0 slots, atleast two x16 slots
Power Supply	Redundant platinum Power Supplies
Fans	Redundant hot-plug system fans
Graphics	Integrated Matrox G200 video standard 1280 x 1024 (32 bpp) 1920 x 1200 (16 bpp)
Industry Standard Compliance	ACPI 2.0b Compliant PCIe 3.0 Compliant PXE Support WOL Support Microsoft® Logo certifications USB 3.0 Support Energy Star
Operating Systems and Virtualization Software Support	Microsoft Windows Server Canonical Ubuntu Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware Citrix XenServer
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.
Provisioning	Provisioning: Essential tools, drivers, agents to setup, deploy and maintain the server should be embedded inside the server.

Remote Management	<p>1. System remote management should support for Intelligent Platform Management Interface v.2.0 via IPMI 2.0 with virtual media over LAN and KVM-over-LAN support System should Checks OOB/In-band Support, Asset Information, System Utilization, Sensor Data BIOS Management should Get BIOS Info, Update BIOS FW,Get/Set Default and Current BIOS Settings,Get/Set DMI Information</p> <p>2. Server should have dedicated 1Gbps remote management port.</p>
Server Management	<p>Monitoring Functions</p> <ul style="list-style-type: none"> <li>• Hardware Monitoring (fan speed, temperature, voltage, chassis intrusion, redundant power failure, power consumption, disk health, and memory health)</li> <li>• Software Monitoring (HTTP, FTP, and SMTP services)</li> </ul>
	<p>Notification Functions</p> <ul style="list-style-type: none"> <li>• Notifications Sent When Host or Service State Changes</li> <li>• Notifications Sent via E-mail and SNMP Traps</li> </ul>
	<p>Configuration Functions</p> <ul style="list-style-type: none"> <li>• Monitored Items</li> <li>• Alert Functions</li> </ul>
	<p>Monitoring Functions</p> <ul style="list-style-type: none"> <li>• Hardware Monitoring (fan speed, temperature, voltage, chassis intrusion, redundant power failure, power consumption, disk health, and memory health)</li> <li>• Software Monitoring (HTTP, FTP, and SMTP services)</li> </ul>
	USB Key board & Mouse

### Specifications for Monitors

<b>Monitor</b>	<p><b>24-inch Widescreen LED Backlit Display</b> with the following minimum specifications</p> <ul style="list-style-type: none"> <li>• Panel Type - IPS Gen 2</li> <li>• 24" Wide Viewable Area (diagonal) Aspect Ratio - 16:10</li> <li>• 178° V x H Viewing Angle;</li> <li>• Brightness - 300 cd/m<sup>2</sup></li> <li>• Contrast Ratio - Static: 1000:1; Dynamic: 5,000,000:1</li> <li>• Response rate - 8 ms gray to gray</li> <li>• Standard Resolution @ 60 Hz - 1920 x 1200</li> <li>• Inputs: 1 DisplayPort, 1 DVI-D, 1 VGA (analog)</li> <li>• 4-Port USB Hub</li> <li>• 4 Way Adjustments: Minimum required - Tilt: -5° to +30°; Swivel: 360°; 0-120mm Height; 90° Pivot Rotation</li> </ul>
<b>Warranty</b>	Three Years Comprehensive Onsite Warranty.

### Specification for 12 port 1GB/s Switch

<ul style="list-style-type: none"> <li>• 12 PoE Ports at 1000Mbps (1Gbps) each</li> <li>• 250W Max Power</li> <li>• IEEE 802.3af/at PoE standard</li> <li>• 19 Rack-Mountable</li> <li>• Auto-MDI/MDI-X</li> </ul>
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### Specification for 12 port 10 GB/s Switch

<ul style="list-style-type: none"> <li>• 1U Rack Mount</li> <li>• 10/100/1000</li> <li>• 12 PoE Ports at 1000Mbps (1Gbps) each</li> <li>• 250W Max Power</li> <li>• IEEE 802.3af/at PoE standard</li> <li>• Rack-Mountable</li> <li>• Auto-MDI/MDI-X</li> </ul>
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