

**المواصفات الفنية الخاصة بالمناقصة العامة**

**رقم المناقصة : (٢٠١٠/٩٠)**

**الخاصة بشراء وتوريد وتركيب وتشغيل سرفرات**

**وبرمجيات مشروع الموقع الاحتياطي مع التدريب**

**المؤسسة العامة للاتصالات السلكية واللاسلكية**

**الإدارة العامة للمشتريات والمخازن**

**إدارة المشتريات - قسم العقود والمناقصات**

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## Blade Server Specification

### 1. BLADE CHASSIS:

- 1.1. Blade chassis shall be 19" Electronic Industries Alliance Standard Width rack mountable and provide appropriate rack mount kit.
- 1.2. Blade chassis shall support at least ten height unit (1U) hot swappable Blades.
- 1.3. Blade chassis shall be shipped with all cables and parts required to attach all included peripherals to other blade chassis as required for normal operation (e.g. power cords, keyboard / mouse cables, video cables, network and internal disk cables).
- 1.4. Blade chassis shall provide a device capable of reading a DVD-ROM disc or provide an alternate way of installing operating system and application software and performing firmware upgrades. This device shall be dynamically re-configurable and assignable to any one of the blades in the chassis for the purpose of transferring data to and from the DVD-ROM disc to and from the blade.
- 1.5. The Blade Chassis power supply shall operate at a nominal input voltage of 200VAC to 240VAC and with a power rating that supports a fully loaded system running at a 100% duty-cycle 24 hours a day, 365 days a year. A fully loaded system is defined by this specification as:
  - 1.5.1. All expansion slots and ports are populated with devices certified for operation in said system by the system Vendor.
  - 1.5.2. The aforementioned power requirement is to be fulfilled without modification to said system, peripherals or power supply. The aforementioned requirement(s) apply equally to systems with a single power supply configuration, as well as a system with an online fail-over power supply configuration. Failure to meet these requirements, to the letter, will avoid any contract.
- 1.6. Blade chassis shall be configured with redundant power functionality to mitigate risk of internal power loss.
- 1.7. Blade chassis shall be configured to provide full power to all blade slots whether the blade slots are populated at time of initial acquisition or not.

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- 1.8. Blade chassis shall be configured with the necessary modules and/or controllers to enable specified blade functionality.
- 1.9. Blade chassis shall be configured to provide full redundant cooling to all blade slots whether the blade slots are populated at the time of initial acquisition or not.
- 1.10. Blade chassis shall be configured to provide KVM capability from an external keyboard, video monitor and mouse to all blades installed in the chassis – one blade at a time.
- 1.11. Blade chassis shall provide a redundant chassis and blade management capability through any one or a combination of firmware, software and hardware. Chassis and blade management shall be accomplished through a web interface.
- 1.12. Blade chassis and blade management capability shall monitor the chassis and blades for failure for report to an administrator and for logging to an event log.
- 1.13. Blade chassis and blade management shall provide a capability for firmware upgrades.
- 1.14. Blade chassis and blade management shall provide a capability for configuring all configurable hardware (e.g. modules or controllers) in the blade chassis and all configurable hardware in all installed blades.
- 1.15. Blade chassis shall support all Wake-on-Lan (WoL) and Preboot-eXecution Environment (PXE) enabled products.
- 1.16. Blade chassis shall provide a redundant Ethernet switch module with at least (1x 10GB, 4x 1GB) External ports and internal full-duplex Gigabyte ports one connected to each of the blade servers.

2. **BLADE:**

- 2.1. Each blade shall have two (2) CPUs.
- 2.2. The Blade CPUs shall be Intel Xeon Processor (X5500 or X5600) series 2.80GHz 8MB Cache 1333MHz or better.
- 2.3. The blade shall be WoL and PXE capable.
- 2.4. The blade shall be hot swappable.

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**3. BLADE MEMORY:**

- 3.1. Blade shall contain a minimum Random Access Memory of 16GB DDR3 1333MHz and can be expanded to at least 32GB without requiring replacing the initial memory.
- 3.2. Blade Random Access Memory (RAM) shall include an error correcting (ECC) feature.

**4. BLADE NETWORK:**

- 4.1. Each blade shall provide dual integrated network controllers with IPsec, 10/100/1000 Mbps Ethernet bandwidth, auto-negotiating, load balancing, and fail over capabilities.

**5. BLADE MEDIA INTERNAL/EXTERNAL STORAGE:**

- 5.1. The blade server shall support all capabilities of Tier-1 manufactured fiber-channel host bus adapters to accommodate Tier-1 manufactured SANs (Storage Area Networks) or NAS (Network Attached Storage) devices.
- 5.2. The blade shall have two (2) internal 300GB 15K 6Gbps SAS 2.5" hot-swappable disks to support software mirroring.

**6. GRAPHICS / MONITOR:**

- 6.1. The video monitor shall be at least 17" flat, 1U rack mount with keyboard and mouse.

**7. BLADE OPERATING SYSTEM:**

- 7.1. Each Blade shall be offered with version of Microsoft Windows Server 2008 R2 Enterprise compatible with the offered blade hardware.
- 7.2. All offered Blades shall be certified through the Microsoft HCL to execute Windows Server 2008 R2 Enterprise operating system

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7.3. Blades shall have the option of being pre-loaded with the least cost Windows Server 2008 R2 Enterprise operating system software available as dictated by the Government.

**8. VERTUALIZATION SOFTWARE:**

8.1. Server virtualization software must provide sufficient virtual servers to support blade servers.

8.2. Software must provide tools to migrate existing servers to virtualized environment.

8.3. Software must allow for server load balancing.

8.4. Software must allow for movement of virtual servers from one server to another with minimal service interruption.

8.5. Software should support clustering, storage VMotion and dynamic resources.

8.6. Software must include virtual server monitoring, central management and provision tools.

8.7. Software should include integration to Microsoft System Centre

8.8. Software must include template based virtual server creation.

8.9. Software must be able to support multiple virtual server operating systems, including Windows 2003 and Windows 2008.

8.10. Server virtualization software should be the latest version.

8.11. Server virtualization software must be provided with the support for one year.

**9. RACK:**

9.1. Rack shall be at least 42U with capabilities of installing the Blade chassis.

9.2. Rack shall be shipped with all accessories and parts required for normal operation (e.g. power PDU, fans, cables management kit).

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**10. INSTALLATION:**

- 10.1. Must provide installation and commissioning of all hardware and software.
- 10.2. Must provide configuration of monitoring software.

**11. DOCUMENTATION:**

- 11.1. Must provide documentation for all hardware and software installations as built, this includes schematics, flow chart, supporting information, custom configurations and specific system features.

**12. TRAINING:**

- 12.1. The successful bidder(s) will provide complete training to PTC staff (3, in an authorized center) on the specifics virtualization (Install, Configure, Manage, and Troubleshooting) and hardware (Blade Server Configuration and Troubleshooting).
- 12.2. It would be desirable to involve PTC staff in the installation and configuration of all software and installation of virtualization environment.

**13. Warranty:**

- 13.1. All hardware components associated with this contract shall have 3 years warranty that shall go into effect at the time of installation by the Government. By definition, "all hardware" consists of the blade chassis and the blades therein and its internal components (cards, disk drives, power supply, etc.), monitor, keyboard, and cables.
- 13.2. The warranty shall provide 24 x 7 phone and web technical support for vendor supplied hardware and software, utilities and drivers.
- 13.3. The warranty shall provide next business day on-site parts and labor maintenance performed by factory trained, authorized technicians for three full years.

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