

GOVERNMENT OF YEMEN
HIGH AUTHORITY FOR TENDER CONTROL
PROCUREMENT MANAGEMENT
INFORMATION SYSTEM (PMIS) PROJECT

PMIS DATA CENTER
COMPUTER EQUIPMENTS
TECHNICAL SPECIFICATIONS

1. introduction :

This document define the technical specification for equipments required to build data center to operate the Procurement management information system, in the following the minimum requirement and specification , so High authority for tender control request from specialized companies to submit their offers to supply , installation , and applying required services for implement PMIS data center. For deities about PMIS Solution refer to attached doc "**PMIS data center computer equipments solution overview**".

HATC divide Data center equipments into three lots in this tender as follow :

Lot one : include

- Data center server infrastructure solution as defined below .
- SAN solution as defined below
- Backup and recovery solution as defined below.
- Data center network infrastructure solution as defined below

Lot 2 : include

- Data center site security solution

Lot 3 :include

- PMIS PC's & peripherals

2. Datacenter Server Infrastructure Solution

2.1 Key Objectives

The aim of this part is to request a unified Data Centre computing system solution that comprises blade servers, adapters, and fabric interconnects, and extenders that are integrated under a common embedded management system.

The design consists of the following components:

- 1 x Internal Application.
- 1 x Database Servers.
- 1 x Test and Training Application Server
- 1 x Test and Training Database Server
- 2 x servers rack
- 2 x rack mountable UPS

Computing System General Technical Requirements

Requirement
Manageability The system should support the following : <ul style="list-style-type: none">• Integrated systems management processor• Increase scalability without adding complexity• The server system, the network access layer and the storage access layer should be completely manageable from a single point of management• Integrated software-based KVM console

- Integrated remote media mounting system
- The server system should support service profiles and service profile mobility for high availability and more efficient resource management
- The server solution must support hot swappable blades and must be able to manage several blade chassis via redundant switches.
- The server system should support low power and cooling requirements.

Scalability

The system should support the following :

- The Blade server solution must be scalable and future proof
- Should be able to add and manage up to 16 chassis and manage them as a single entity without the need for extra hardware/software.
- The provided chasses should support all kinds and form factors of blades (half, full)
- The computing system must be equipped to support expansion modules that can be used to increase the number of 10-Gigabit Ethernet, and FCoE ports or connect to fiber channel sANs with 1/2/4/8-Gbps Fibre channel.
- Must be able to support multiple virtual network connections per adaptor and Qos functions

Computing System Detailed Technical Requirements

Item	1- : Blade Chassis	Quantity	1
REQUIREMENTS			
<p>Should support the following :</p> <ul style="list-style-type: none"> • Eight half width servers or four full width servers • Fits standard 19-inch square-hole rack • 2 I/O modules each one has 4x 10 Gigabit Ethernet external (Fibre Channel over Ethernet [FCoE] capable) • Supports up to 2x 40 Gigabit Ethernet for every blade server slot when available • Four 2500W, 208V (220V outside United States) single-phase, hot-swappable, redundant power supplies, 50 to 60 Hz • 8x Redundant and hot-swappable Fan Modules included • Requires no configuration; chassis are automatically recognized and configured by management software. • Hot-pluggable blade servers and fabric extenders and efficient front-to-back airflow <p>Allows up to 8 half-width or 4 full-width blade servers, or any combination thereof, for maximum flexibility.</p>			

Item	2- Fabric Interconnect Switches	Quantity	2
REQUIREMENTS			
<p>Should Support the following:</p> <ul style="list-style-type: none"> • Redundant and highly available solution • 1 rack unit (RU). • 20x 10G/FCOE fix ports, one expansion module (8-Port 1/2/4-Gbps native fiber channel or 4-Port fiber channel plus 4-Port 10 gigabit Ethernet module or 6-Port 100 gigabit Ethernet module or and 6-Port 1/2/4/8-Gbps native fiber channel). • Provides a reliable, robust foundation for unifying LAN and SAN traffic on a single transport • Throughput up to 1.04 Tbps. • Hot-swappable field-replaceable power supplies, fan modules, and expansion modules, 1+1 power redundancy. • Should support 1Gbps/10Gbps, 10GBASE-SR SFP+, 10GBASE-LR SFP+, 10GBASE-FET SFP+, GE SFP SX-MM ,LH-SM ,4Gbps Fibre Channel SFP, 8-Gbps Fibre Channel SFP. <p>Should provide both network connectivity and management capabilities for the system.</p>			

Item	3- Database Server –Blade Type-1	Quantity	1
REQUIREMENTS			

Processors	
Number of sockets	Two
Number of Cores	Six
Processor type	Intel Xeon 5600 series
Clock Speed	2660 MHz (min)
Cache	12 MB L3 Cache
Memory	
Memory Type	DDR3 - RDIMM -1333 MHz
Memory Size	24GB
Memory upgradability	Up to 192GB
Storage	

Internal Storage Type	2.5-inch SAS 10K rpm SSF, RAID 0,1 supported
Internal Storage Size	2X146 GB
External Storage Support	SAN , NAS
I/O	
Mezzanine Adapter	2x10-Gbps FCoE ports
Operating System	
Supported OS	Linux Redhat 5E x64 and x86

Item	4- : Application Server –Blade Type-2	Quantity	1
REQUIREMENTS			

Processors	
Number of sockets	Two
Number of Cores	Quad
Processor type	Intel Xeon 5600 series
Clock Speed	2400 MHz (min)
Cache	12 MB L3 Cache
Memory	
Memory Type	DDR3 - RDIMM -1333 MHz
Memory Size	16 GB
Memory upgradability	Up to 192GB
Storage	
Internal Storage Type	2.5-inch SAS 10K rpm SSF, RAID 0,1 supported
Internal Storage Size	2X146 GB
External Storage Support	SAN , NAS
I/O	
Mezzanine Adapter	2x10-Gbps FCoE ports
Operating System	
Supported OS	Linux Redhat 5E x64 and x86

Item	5- : APP and DB Test and Training –Blade Type-3	Quantity	2
REQUIREMENTS			

Processors	
Number of sockets	Two
Number of Cores	Quad
Processor type	Intel Xeon 5500 series
Clock Speed	2530 MHz (min)
Cache	8 MB L3 Cache
Memory	
Memory Type	DDR3 - RDIMM -1333 MHz
Memory Size	12 GB
Memory upgradability	Up to 192 GB
Storage	
Internal Storage Type	2.5-inch SAS 10K rpm SSF, RAID 0,1 supported
Internal Storage Size	2X146 GB
External Storage Support	SAN , NAS
I/O	
Mezzanine Adapter	2x10-Gbps FCoE ports
Operating System	
Supported OS	Linux Redhat 5E x64 and x86

Item	6- SERVERS RACK	Quantity	2
REQUIREMENTS			
<ul style="list-style-type: none"> • Rack size must be 42U 600mm (W) x 1100mm (D) . • Both the front and the back door shall be with small holes . • Both front door and back door shall be with lock . • Rack shall contain 10/16A PDU (power distribution unit), a PDU should have 10 power sockets at least, and every PDU should be connected to UPS outlet directly. • Rack shall be caged nut screws - 100 sets • Rack shall has castor wheel & adjustable feet - 1 set . • Rack shall be black in color . 			
Accessories :			

- Mountable LCD high quality Monitor 19" .
- Mountable Monitor Shelf .
- 8 Port KVM high quality switch .
- 8 KVM high quality Compound Cable (Mouse/Keyboard/Monitor)
- Keyboard and mouse .
- 24 ports patch panel .
- 1 cable management .

contain 1 (at least) cooling Fan.

Item	7- Rack mountable UPS	Quantity	2
REQUIREMENTS			
<ul style="list-style-type: none"> • Shall provide internal Battery Enclosure Type • Shall provide On-line or Backup UPS Technology • Shall support AC 200-240 Input Voltage • Shall support 1-phase Input Wiring • Shall support 50/60 Hz Frequency • Shall provide Hardwire as Input Connector • Shall be Power Provider of 8 kW / 10000 VA • Shall contain any Circuit Protection (i.e. Circuit breaker....etc) • Run Time shall be(at least)5min at full load and 15min at half load. <p>External Battery :</p> <ul style="list-style-type: none"> • allow run-time for half load at least (4) four hours. • .contain 1 (at least) cooling Fan. 			

3. SAN Solution

3.1 The offered SAN Storage must have at least the following features and specifications while assuring the following points:

- Performance
- Latest Technology
- Management
- Security
- Capacity
- Scalability
- Ease of Use
- High Availability
- Interoperability with existing setup

3.2 Standard High Availability Features:

- Must be the latest model/generation and not end of technology or end of life.
- High Availability features:
 - 100% fully redundant hot swap components with No Single Point of Failure
 - Five 9's availability (provide report)
 - supports multi-core CPUs.
 - Redundant Hot swap Controllers.
 - Redundant Hot swap Power supplies and cooling fans.
 - Redundant Hot Swap Hard Disk Drives
 - Online (Non-disruptive) Software upgrade.
 - Online (Non-disruptive) Hardware Changes.
 - Mirrored Cache
 - Redundant Data Paths.
 - Storage system shall Support call home service functionality as well as remote
 - diagnostic capability
 - In box upgrade to higher models within the family with data in place.(Zero Data Loss)
 - Supports automated storage tiering for improved performance and lower total cost of ownership.
 - Supports replication to disaster recovery site (for optional or future scenario –PMIS to confirm-)
 - Has single graphical user interface for managing the SAN, operational tasks, local protection and remote protection (local and remote protection is optional –PMIS to confirm-)

3.3 Technology & Architecture

- 16 GB Memory per array
- Support RAID 0/1/10/3/5/6
- 24 total ports per array
- 6Gb/s SAS back-end per array with redundancy
- Minimum upgradable to 125 drives
- Support FC/iSCSI/FCoE protocols

3.4 Capacity & drive technology:

Total capacity of 3TB usable using 300GB 15Krpm SAS hard disk drives

3.5 Management & Security

- Storage system shall have Virtualization aware Storage-based Management software with unlimited capacity, accessible via web-browser. Administrator can create host-toarray Communication Bridge and script/automate common storage management tasks.
- Storage system management shall have Software Security via SSL, user identification and Access Control.
- Storage shall support over provisioning applications in order to reduce physical storage capacity requirements. Vendor should include all software and licenses to support it.
- Intelligent high performance multi path management and utilization software supporting Hosts connected to SAN (to be offered)
- Storage system shall support both "Pointer-Based Snapshot" and "Full-Volumes" copies (clones). (Please specify the number of snapshots and clones that can be taken for a single LUN).
- Snaps & Clones with the ability of integrating this feature with Virtual provisioning (to be offered)
- Fully automated in-box LUN movement between storage tiers. (Optional).
- Storage system shall have the ability to expand an existing LUN online through striping or concatenation, this shall increase performance capabilities by allowing volume to span a large number of drives and enable better capacity utilization by non-disruptively expanding capacity anywhere in the array. Vendor shall include any software needed to achieve this functionality
- Storage system shall support optimize performance based on policy management:
 - Set performance goals for critical applications.

- Set limits on lower priority applications.
 - Schedule policies to run at different intervals.
- Storage system Shall have Heterogeneous host support and array based LUN masking including ESX, W2K, Win2003, Win2008, HP UX, Sun Solaris, IBM AIX, and Linux (Vendor shall provide guaranteed interoperability support matrix).

3.6 Connectivity (2 switches for high availability per site)

- Fiber Channel Ports: 8 basic configuration and can be upgraded to 24 active ports.
- Scalability: Full fabric architecture with 239 connected switches
- Performance: auto-sensing: 1, 2, 4, and 8 Gbps
- Aggregation bandwidth: 192Gbps: 24 ports x 8Gbps (data rate)

4. Backup and Recovery Solution

Item	Backup and Recovery Solution	Quantity	1
REQUIREMENTS			
<p>The proposed system should deliver at least the below</p> <ul style="list-style-type: none"> – Fast Inline Deduplication — efficient and economic method of deduplication, significantly reduces the raw disk capacity needed in the system since only deduplicated data is written to disk. <ul style="list-style-type: none"> ○ 10-30x average data reduction • Fast Time to Disaster Recovery Readiness — as part of the inline deduplication process, the system does not need to wait to absorb the entire data set before it can begin replicating to the remote site. Data is available for recovery at a DR site faster than with other deduplication products or by physically transporting tapes on trucks. <ul style="list-style-type: none"> ○ Should Support leading backup and archive applications from EMC, HP, Symantec, IBM, Microsoft, CommVault, BakBone, CA, Atempo and others. ○ Should Support leading enterprise applications including Oracle, SAP, DB2, SQL, Exchange, VMware, and SharePoint ○ Simultaneous use of VTL, NAS and Symantec OpenStorage • Multi-site, Cost-Efficient Disaster Recovery — delivers up to 99% bandwidth reduction, provides flexible replication topologies, multi-site tape consolidation and replication • Ultra-safe Storage for Reliable Recovery — Should have a Data Invulnerability Architecture which provides continuous recovery verification, fault detection and healing plus dual-disk parity RAID-6. • Operational Simplicity — Should lower administrative costs, provide power, cooling and space efficiencies for environmentally friendly operations, reduces hardware footprints and supports any combination of backup and archive applications in a single system. 			

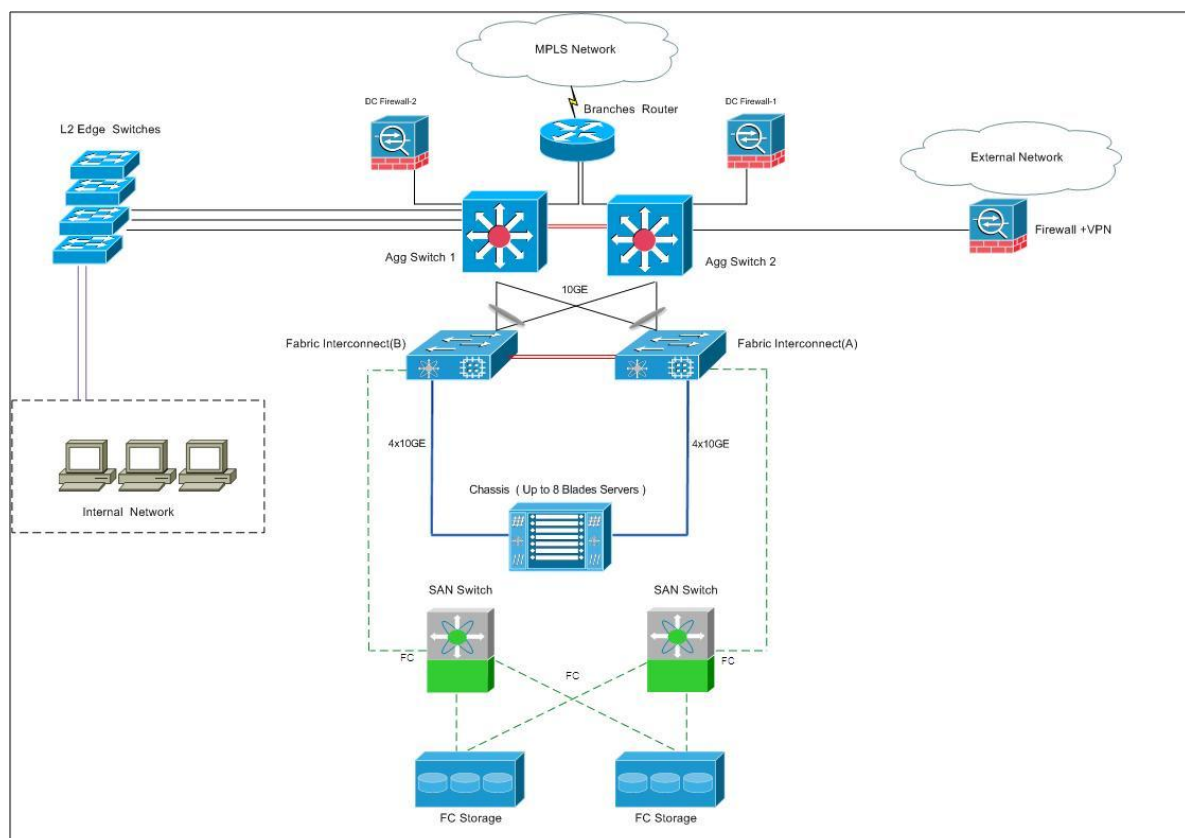
5. Datacenter Network Infrastructure Solution

The aim of this part is to request a solution which will provide the best return on investment by implementing a highly scalable, flexible, resilient, secure, and available network infrastructure.

The design consists of the following components:

- 2X Aggregation Switches.
- 4X Access and Edge Layer Switches
- 2X Datacenter Firewalls.
- 1X edge firewall.
- 1 WAN router
- 1 ADSL router

PMIS Data Center Design



Network infrastructure Detailed Technical Requirements

Requirement
<p>Data Center Network Design</p> <p>The Bidder is required to engineer and deliver a high performance, highly available and highly scalable data center network that is consistent with the Data Center Network Architecture.</p> <p>The solution should be highly available by from all sides with no major single point of failure. Redundancy should be considered on the hardware and software levels (chasses, Links, power supplies, Fan, fabric modules, servers</p>

and switches).

System Level Redundancy

The proposed network configuration must have no major single point of failure and be based on a highly available configuration. It is anticipated that a minimum of 2 instances of each major component of the architecture will be required to meet this requirement. Other redundancy areas to be taken into consideration include, but are not limited to:

- Power supplies
- Cooling fans
- Connectivity failures
- Switch failure

Network Management Services

The proposed network configuration must support a central managed through a unified and coherent management console that is fully integrated with the datacenter configuration management solution.

Must be able to do health monitoring with real-time alarms and key traffic performance indicators.

Must support powerful industry-standard SOAP/XML API and ability to integrate with network-aware 3rd party applications.

Item	Aggregation Switches	Quantity	2
REQUIREMENTS			
<p>Redundant and highly available solution.</p> <p>Should have 24 10/100/1000 Gbps and minimum two 10GBASE-SR X2 interfaces.</p> <p>Should have minimum 65 mpps forwarding rate.</p> <p>Should support redundant power supply.</p> <p>Should support stacking and equipped with all necessary cables.</p> <p>Should support RIP, OSPF, EIGRP and BGP routing protocols.</p> <p>Should support up to 4000 MAC.</p> <p>Should have minimum 256MB of RAM and 64M of flash.</p> <p>Should support up to 1000 VLANs</p> <p>Should support the following:</p> <p>Link aggregation protocol</p> <p>Qos and VoIP features to support IP communications</p> <p>Integrated advanced security features including ACLs, identity-based network services and Network Admission Control (NAC), port-level security, and identity-based network services.</p> <p>VLANs, VTP, STP, NAT, Network security includes access control lists (ACLs), authentication.</p> <p>Remote access authentication SSHv2, telnet.</p> <p>Http authentication support.</p> <p>AAA and TACACS authentication modes or equivalent.</p> <p>Anti-Spoofing support.</p> <p>Should provide superior Layer 2 threat defense capabilities for mitigating man-in-the-middle attacks (such as MAC, IP, and ARP spoofing).</p> <p>DHCP Snooping and port security features.</p> <p>Md5 encryption support or equivalent.</p> <p>Should be equipped with all the necessary cables and interfaces..</p>			

Item	Access and Edge Layer Switches	Quantity	2
REQUIREMENTS			
<p>24 Ethernet 10/100 ports and 2 dual-purpose uplinks (each dual-purpose uplink port has 1 10/100/1000 Ethernet port and 1 SFP-based Gigabit Ethernet port, 1 port active)</p> <p>Forwarding Bandwidth should be minimum 20 Gbps; forwarding rate should be minimum 38 mpps.</p> <p>Flash memory should be 32 MB, DRAM should be 64 MB.</p> <p>Should support jumbo frames.</p> <p>Should support 8000 unicast MAC addresses</p> <p>Should support TACACS+ and RADIUS authentication.</p> <p>Should support DHCP snooping and port security features.</p> <p>Should support multiple authentication mechanisms including 802.1X, MAC Authentication Bypass and web authentication using a single, consistent configuration.</p> <p>Should support IEEE 802.1s/w Rapid Spanning Tree Protocol (RSTP) and Multiple Spanning Tree Protocol (MSTP), per-VLAN Rapid Spanning Tree (PVRST+) and 802.1p Class of Service (CoS).</p> <p>Should support up to 255 VLANs.</p> <p>Should be managed through console, and remote management.</p>			

Item	DataCenter Network Edge Firewalls	Quantity	2
REQUIREMENTS			
<p>Should support advanced application-layer security and content security defenses.</p> <p>Firewall throughput should be up to 450 Mbps</p> <p>VPN throughput should be Up to 255 Mbps.</p> <p>Concurrent session should be up to 280,000</p> <p>IPSec VPN peers up to 750 peers.</p> <p>Interfaces 4 Gigabit Ethernet ports and 1 Fast Ethernet port.</p> <p>Should support 150 virtual Interfaces (VLANs) interfaces</p> <p>Should Supports virtual partitions.</p> <p>Should support Active/Active, Active/Standby deployment.</p> <p>Should support 12,000 New connections/Second</p> <p>Should have 512M RAM and 64M flash</p> <p>Should support IPS system</p> <p>Should be equipped with a control security services module.</p> <p>Should support antivirus anti-spyware anti-spam anti-phishing E-mail content filtering full URL filtering capability with categories, scheduling and caching as security gateway up to 500 users.</p> <p>Should be able to integrate with Security monitoring, analysis, and response System.</p> <p>Should support CLI and GUI remote management.</p>			

Item	DataCenter Firewalls	Quantity	2
REQUIREMENTS			
<p>Should support advanced application-layer security and content security defenses. Firewall throughput should be up to 650 Mbps VPN throughput should be Up to 325 Mbps. Concurrent session should be up to 400,000 IPSec VPN peers up to 5000 peers. Interfaces 4 Gigabit Ethernet ports and 1 Fast Ethernet port. Should support 200 virtual Interfaces (VLANS) interfaces Should Supports virtual partitions. Should support Active/Active, Active/Standby deployment. Should support 25,000 New connections/Second Should support IPS system Should have 1GB RAM and 64M flash Should support CLI and GUI remote management.</p>			

Item	DataCenter WAN Router	Quantity	1
REQUIREMENTS			
<p>Should delivers highly secure data, voice, video, and application services. should have 3 Integrated 10/100/1000 Ethernet ports with 1 port capable of RJ-45 or SFP connectivity Should have 2 service module slots. Should have 4 enhanced high-speed WAN Interface card (EHWIC) slots. Should have 4 onboard digital signal processor slots. Should have embedded hardware-accelerated VPN (IPSec/SSL) encryption. Should have integrated threat control using IOS Firewall. Should support high-speed WAN environments with concurrent services enabled up to 350 Mbps. Should support remote management protocol SNMP 3, SSH-2 hardware compression, hardware encryption, VPN support, MPLS support, , Quality of Service (Qos), Dynamic Multipoint VPN (DMVPN) should support Integrated threat control (building firewall, zone-based firewall, IOS IPS, content filtering) should support Identity management using authentication, authorization, and accounting (AAA) and public key infrastructure Analog and digital voice call support Should have 1G of RAM DDR2 and 256 MB of flash. Should have two External USB 2.0 slots. Should support redundant power supply. Web interface management, command line interface management support IPv6 enabled. Consol/mgmt port support</p>			

Item	ADSL Router	Quantity	1
REQUIREMENTS			
<p>Should support the following:</p> <p>4 x GB Ethernet ports for network connection.</p> <p>802.11x (wireless).</p> <p>Embedded IP Security with Security Sockets Layer (IPSec/SSL)</p> <p>ACL Firewall features support</p> <p>Web interface management</p> <p>IPv6 enabled.</p>			

6. Data center site security Solution

The aim of this part is to provide required environment which help , prevent and secure data center room also provide the best return on investment. The design consists of the following components:

- 2 x Split Air Conditioners .
- 1 x CCTV monitoring System .
- 1 x Fire Prevention system .
- 1 x Entrance System .

Item	Split Air Conditioner (AC)	Quantity	2
REQUIREMENTS			
<ul style="list-style-type: none"> • Shall be designed for the thermal management of computer or network server rooms. • Shall be Split Wall Mounted (indoor unit and outdoor unit). • Shall has power consumption is of 3 tons . • Shall has digital management controller . • Shall has Remote Control , Air Swing , Auto Restart , Timers • Shall provide Thermostatic Control • Shall be provide refrigerant-based cooling system . • Must have automatic controller for automatic interchange (between the two ACs) . • The brand should be High Quality brands . • Offer should include all equipments required with full installation 			

Item	CCTV monitoring System	Quantity	1
REQUIREMENTS			
<ul style="list-style-type: none"> • 3 x bullet and 1 x Dome Security Cameras • Shall has the following technical feature : <ul style="list-style-type: none"> ➢ Weatherproof Cameras for indoor/outdoor use ➢ Infrared Cameras see at least 30 meter in the dark ➢ Uses h.264 video compression. ➢ Embedded operating system. ➢ 120 frames per second recording ➢ Network Interface: 1X 10/100/1000 RJ-45 ➢ Support Simultaneously live viewing ➢ support recording, playback, backup, network and copy. ➢ Power supply box to connect all cameras. • Support TCP/IP, so that every camera can be monitored everywhere within Intranet using the web browsers. • Support sensitive Recording (This new tech save a big amount of recording capacity space that's because the camera start recording when a movement accrue) . • Shall support 30 days of recording. • Provided Professional 8 Channel System DVR w/ 1 TB Hard Drive . • Shall support Security control for camera monitoring (If anybody wants to monitor the cameras, authentication is required. Different roles should have different rights to access different camera, the privileges can be configured by administrator) • Offer should include all equipments required with full installation • Site survey is required . 			

Item	Fire Prevention solution	Quantity	1
REQUIREMENTS			
<ul style="list-style-type: none"> • Fire prevention should applied on data center room (5x6 m) • Provider should supply server room by Emergency Power Off (EPO) function. • Provider should supply server room by Fire (Heat) detector and smoke detector • Provider should supply server room by outside Light alarm and ringing alarm. • Provider should supply server room roof by sprinkler automated with Fire / Smoke detectors. • Provider should supply two hand held fire extinguisher (inside / outside server room). • Offer should include all equipments required with full installation • Site survey is required . 			

Item	Entrance System	Quantity	1
REQUIREMENTS			
<ul style="list-style-type: none"> • Solution should applied on Server Room Door and PMIS main door • Solution should provided by ID-Card and Password Lock to insure that prevent unauthorized logon . • Offer should include all equipments required with full installation • Site survey is required . 			

7. PMIS PC's and peripherals

- 10 x PMIS Management PCs.
- 10 x PMIS End user PCs.
- 5 x Laptops .
- 1 x Network Leaser A4 color-Printer.
- 1 x Network Leaser A3 B/W-Printer.
- 1 x Network Copier.
- 20 x PC's Standalone UPSs .

Item	PC's for PMIS Management	Quantity	10
REQUIREMENTS			

Processors	Intel® Core™2 Quad / Core™i5
Clock Speed	2.8 GHz or higher
Cache	4 MB L3 or higher
Memory Type	DDR3 - RDIMM -1333 MHz
Memory Size	2×4 GB
Internal Storage Size	1 × 1 TB - SATA (7200 rpm)
Network adaptors	1 x 1 GBE
Power Supply	220 V AC (50/60 Hz)
Minimum I/O slots	1 x PCI-Ex16 / 1 x PCI-Ex / 2 x PCI Full high 6 x Ext USB2.0 / 1 x Int USB2.0
Audio	build in Audio card with front side panel (extra)
Display card	Integrated display card Up to 1GB

OS Supported	All x86 and x64 PCs Operating system (windows /Linux)
Monitor	<ul style="list-style-type: none"> Resolution up to 1280 x 1024 @ 85Hz Square screen Size 19" . Projection Technology Active Matrix TFT Screen Surface Anti-glare, Anti-static Built-in Speakers
Drivers	Included and support windows /Linux

Item	PC's for PMIS end user	Quantity	10
REQUIREMENTS			

Processors	Intel® Core™2 Duo
Clock Speed	2.8 GHz or higher
Cache	4 MB L3 or higher
Memory Type	DDR3 - RDIMM -1333 MHz
Memory Size	1×4 GB
Internal Storage Size	1 × 500 GB - SATA (7200 rpm)
Network adaptors	1 x 1 GBE
Power Supply	220 V AC (50/60 Hz)
Minimum I/O slots	1 x PCI-Ex16 / 1 x PCI-Ex / 2 x PCI Full high 6 x Ext USB2.0 / 1 x Int USB2.0
Audio	build in Audio card with front side panel (extra)
Display card	256 MB (at least)
Monitor	<ul style="list-style-type: none"> Resolution up to 1280 x 1024 @ 85Hz Square screen Size 19" . Projection Technology Active Matrix TFT Screen Surface Anti-glare, Anti-static Built-in Speakers
OS Supported	All x86 and x64 PCs Operating system

Item	PC's Standalone UPS	Quantity	20
REQUIREMENTS			
<ul style="list-style-type: none"> Shall provide On-line or Backup UPS Technology Regulation voltage input (160 -280 V) , output 220 -240V) Shall support 50/60 Hz Frequency Shall support at least 4 output port (3x ups and 1x direct) . Shall be Power Provider of 750W / 1000 VA Run Time shall be(at least) 5 minutes at full load and 15 minutes at half load. 			

Item	Laptop	Quantity	5
REQUIREMENTS			

Processors	Intel® Core™i5, 2.2 GHz or higher
Cache	4 MB L3 or higher
Memory Type	DDR3 - RDIMM -1333 MHz
Memory Size	1×4 GB
Internal Storage Size	1 × 1 TB - SATA (7200 rpm)
Communication	1 x 1 GBE , 1 x Wireless , 1 x Bluetooth , 1 x Modem , 1 x multi Card reader
Minimum I/O slots	1 x Projector connection , 4 x Ext USB2.0 ,
Audio	build in Audio card with Multi speakers
Display	1 GB or higher
Monitor	TFT 13"~14" wide screen (WXGA Resolution)
Accessories	1 x DVD-Multi , , 1 x Web camera 1 x Bag (Good Brand)
Power & Battery	Universal power , 1 x 9 Cells Battery
OS Supported	All x86 and x64 Operating systems Windows®7 License (Business/Pro)

Item	Color laser printer	Quantity	1
REQUIREMENTS			
<ul style="list-style-type: none"> • Printer shall provide 30 ppm printing speed (back/white) or better and 15 ppm (color). • Printer shall provide A4/Letter paper size • Printer shall provide Up to 1200 x 1200 dpi printing resolution or higher • Monthly duty >>>>>>> • Printer shall support "Economic mode" print. • Printer shall provide Duplexer . • Printer shall have both USB2.0 and Ethernet Ports . • Printer cartridge shall be wide-market availability . • Printer shall has at least 1 paper trays. 			

Item	(BLACK /WHITE) laser printer	Quantity	1
REQUIREMENTS			
<ul style="list-style-type: none"> • Printer shall provide 30 ppm printing speed or better. • Printer shall provide A3/A4/Letter paper size • Heavy duty printer • Printer shall provide Up to 1200 x 1200 dpi printing resolution or higher • Printer shall support "Economic mode" print. • Printer shall provide "Both side printing", duplex unit to be included. • Printer shall has both USB2.0 and Ethernet Ports. • Printer cartridge shall be wide-market availability . • Printer shall has at least 2 paper trays. 			

Item	Network -support Copier machine	Quantity	1
REQUIREMENTS			
<ul style="list-style-type: none"> • At least Copy speed provide 40 ppm , First page out maximum in 5 seconds. • Scan speed: up to 40 ppm. • Duplex Automatic Document unit included . • Minimum internal memory 128 MB upgradeable is preferred . • 40 GB Hard disk (at least) • Support A3, A4, A5 and B4 paper size. • Minimum paper Supplies 2 x 250 Sheet Tray , 1 x 500 Sheet Tray and 1 x 100 Sheet Bypass • Sorter unit up to 10 copies included <p>Copying features :</p> <ul style="list-style-type: none"> • Copy and print resolution (at least) 600 x 600 dpi • Auto reduction and enlargement • Auto paper select • Auto tray switching • Inserts and tab copying • Heavy-weight paper • Multiple copies 1 to 999 <p>Network Features :</p> <ul style="list-style-type: none"> • provide web-passed Management application • USB2.0 Port & 10/100 Ethernet Card included. 			

8. Services :

The supplier should include in his offer the following services :

- Installation and configuration for all supplied equipments.
- On job Training (proposal shall be included in offer)
- Maintenance and support (proposal shall be included in offer)
- Well documented for configuration and Security profile.
- Warranty for servers ,SAN , PC's shouldn't be less than 3 years ,and other equipments one year or more .

9. Equipments Quantity

9.1 lot 1

9.1.1 - Servers ,SAN , and Network	
Solution	Qty
Application Servers production	1
Database Servers production	1
Test and Training Application Server	1
Test and Training Database Server	1
Chassis	1
fabric Interconnect + Management	2
Aggregation and Service Switches	2
Access and Edge Layer Switches	4
Datacenter firewalls	2
Edge firewall.	1
WAN router	1
ADSL router	1
42U Racks	2
Rack mountable UPS + Ext Batteries	2

9.1.2 - SAN and Backup	
Solution	Qty
Storage	1

SAN Switches	1
Datadomain	1
Networker	1
PS Services	1
Backup and Recovery Solution	1

Lot 2 :

9.2 - Data Center site Security solution	
Solution	Qty
Air Conditioner ACs	2
CCTV System	1
Fire Protection system	1
Entrance security system	1

Lot 3 :

9.3 - PC'S & Peripherals	
Solution	Qty
H.S PCs	10
L.S PCs	10
Laptops	5
Laser Color Printer	1
Laser B/W Printer	1
Copier	1
PCs UPSs	20