

عطاء رقم 2018/ل/12

توريد وتركيب وتشغيل شبكات

مواصفات الأجهزة والمعدات الخاصة بمشروع البحث العلمي والمعنون بـ

"Towards improved networks security campus at Mutah University"

## 1. Servers:Qty (2)

<b>Processors</b>	Intel Xeon Silver with Min. (2.1Ghz/16 Cores/11M Cache). Single and Dual CPU is acceptable.
<b>Installed memory</b>	- 256 GB (DDR4) Registered RAM, - Min. half of the slots must be empty for future expansion.
<b>Storage</b>	- 3x 1TB (Minimum) Hot-plug 10K RPM SAS 12Gbps HDD. - 2x 240GB SSD Read Intensive Disk.
<b>HW RAID</b>	Support (RAID 0, 1, 10, 5, 50, 6). Support SAS, SATA, and SSD HDD.
<b>Optical Drive</b>	DVD+/-RW SATA.
<b>Networking</b>	- Dual port (1Gb) Ethernet Card. - Dual port (8/10Gb) Fiber HBA Card, Loaded with 2 SFPs.
<b>Form Factor chassis</b>	2U Rack Mount, or less. With all required mount kit, tools, and components.
<b>Power Supply &amp; Cooling</b>	Dual, Hot-plug and Redundant Power Supply.
<b>I/O Ports</b>	- Min. 1 USB 2.0 on the front panel. - Min. 1 USB 3.0 on the front panel. - Min. 2 USB 3.0 on the rear panel. - VGA video card.
<b>Warranty</b>	Min. 3 Years with vendor support
<b>OS Support</b>	OS is not required, but Server must Support the following: - Ubuntu, Red Hat (Enterprise) and SUSE (Enterprise) Linux. - Microsoft Windows Server with Hyper-V. - VMware ESXi.
<b>Others</b>	Embedded management included, with remote management Ethernet (1Gb) dedicated port.

## 2. Active Directory Management Solution: Qty (1)

- Single and Bulk users, groups and computers management.
- Web access management and passwords management.
- Help desk delegation.
- AD Automation, cleansing, and reporting (including logon reports).
- Support Office 365 Management and reporting.
- Professional training for two persons must be included.
- Supported by the vendor.

\* Note: Mu'tah University has more than 20000 accounts in a single domain with only five admins.

### 3. Network and Servers Monitoring Solution:

- Auto-discovery for routers, switches, servers, printers, and all other networked devices.
- Real-time critical network metrics including packet loss, errors, and discards
- Proactive Monitoring of WAN Links to ensure high network availability.
- Real-time server performance monitoring.
- Service, storage, memory, process, and URL Monitoring.
- Hyper-V and Custom SNMP/WMI monitoring.
- Graphs and customizable reports for CPU, Memory and Disk utilization.
- Monitor the health of device hardware.
- Send alerts based on a set of thresholds.
- Forward, receive, and monitor Syslog and traps.
- Identify performance issues caused by hardware errors.
- Monitor hardware metrics like power, temperature, and voltage.
- Optimize resource allocation and capacity planning.
- Compatible with all well-known brands of all servers, network and security devices both SNMP and Non-SNMP supporting devices.
- Supported by the vendor.
- Professional training for two persons must be included.

\* Note: Mu'tah University has:

- 1- Number of devices to Monitor
  - Edge Switch: 320
  - Core Switch: 2
  - Aggregation Switch: 20
  - Firewall: 2
  - UPS: 25
  - Servers: 60
- 2- Two uplinks (main and backup links).
- 3- On-premises firewalls:
  - Juniper SRX 3400
  - FortiGate 1200 D

## 4. UPS

### 4.1. UPS Cabinet: Qty (18)

- 6U, Wall Mounted.
- Size (WXD) must be suitable for UPS to fit in.
- Glassdoor.
- Removable steel side panels.
- Two Fans included.

### 4.2. 2KVA UPS: Qty (18)

<b>Rating (KVA / Kw)</b>	2 KVA
<b>Battery (v/Ah)</b>	12v 7ah
<b>Backup timehalf load</b>	Min. 20 Minutes
<b>Input Voltage</b>	220-240VAC
<b>Input Power Factor</b>	>98%
<b>Input Freq.</b>	- 50/60 Hz - Support overload & short circuit protection.
<b>Output Freq.</b>	50/60 Hz (AutoDetect)
<b>Output Voltage</b>	220-240VAC
<b>Networking</b>	- Ethernet card with RJ45 Port - Support SNMP Protocol. - Compatible with 3 <sup>rd</sup> party Management software.
<b>Chase</b>	Rack type model, with rack mount kit.
<b>Brand</b>	Europe, Japan, Turkish or the USA.
<b>Training</b>	Professional training for 2 persons must be included.
<b>Installation</b>	Installation and configuration must be included.
<b>Warranty</b>	Min. 3 Years with vendor support

## 5. Edge Switches: Qty (65)

<b>Interfaces</b>	24 RJ-45, Support PoE+ on 24 ports (Min. 720 Watt). At least 4x10G SFP+ interfaces.
<b>Performance</b>	Switch Capacity: not less than 125Gbps Throughput: not less than 95 Mbps MAC Addresses: not less than 15000
<b>Power</b>	AC Input
<b>Features</b>	Support both IPv4 & IPv6. Layer 3 switch (Static route & RIP) and support OSPF in the future. Support QoS and SSH. Support Web GUI Management. Fabric ready Switch. Support software-defined network (SDN).
<b>Management</b>	Management Software that supports bulk configuration, backup, and restores.
<b>Training</b>	Professional training for 2 persons must be included. - Switches installation and configuration. - Management Software. * if the training for both is the same, the total number will be 2 persons only.
<b>Licenses</b>	All required licenses during warranty time must be included.
<b>Warranty</b>	Min. 5 Years with vendor support

## 6. Passive Components

### 6.1. Cabinet: Qty (20)

- 12U, 600x600, Wall Mounted
- Glassdoor, Removable steel side panels.
- 2 Fans included
- 1 x 6 way PDU (220v, 13A)

### 6.2. Patch cord "1 Meter": Qty (1000)

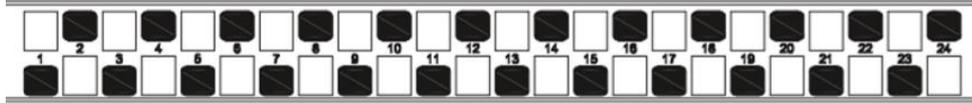
- U/UTP 4 pairs Cat 6, LSZH.
- 250 MHz Frequency.
- Comply with ISO 11801 or TIA/EIA-568
- Molded boots, Provide flexibility.

### 6.3. Cable Organizer (Cord Guide): Qty (65)

- 1U, Metal, Box type

#### 6.4. UTP Patch panel: Qty (65)

- 24 x RJ45 female Cat 6 (**fully loaded**), unshielded.
- Comply with ISO 11801 or TIA/EIA-568 Cat6.
- Staggered-port design to provide more space between ports.
- Below image is for design clarification only.



#### 6.5. Cabling

- Companies are welcome to do a sitesurvey.
- The quantity of this item is subject to change.
- Prices must be clear to make the increment or decrement calculatable.
- Termination of all current connections ( $\approx 900$ ) in Patch panel side (only).
- Cables organization and labeling on both sides all current connections that have been terminated( $\approx 900$ ).
- Uplink installation between Edge switches to Aggregation switches, with total (65) uplinks and max. 10m length for each (cables are not required).
- Cables organization and Labeling on both sides for all uplinks (65).
- Testing using Fluke for all connections as following:
  - o All connections must be tested from end-to-end
  - o Testing reports must be provided.
  - o Calibrating of Fluke must be from the mother company.
  - o Testing results must comply with at least the minimum standards for tested components.

#### General information:

- This tender is not funded by any donor.
- All installation and configuration will be inside Mutah University main campus.
- Tender main items can be parted between companies, but not sub items.

**General terms & conditions:**

- The proposal should include the following:
  - o Commitment to providing "as built drawing", administrator guide, and project documentation.
  - o Commitment to providing vendor-to-client support account for online ticketing and support.
  - o Unit price must not include any tax, The tax must be added to the total of each item.
  - o Detailed PoQ for all Items must be part of the technical proposal.
  - o Detailed compliance sheet must be part of the technical proposal.
  - o Prices for training and installation should be separated and clear.
  - o Prices for support and warranty should be clear for the first five years.
- The bidder must be:
  - o Authorized distributor, partner or reseller by vendors for all components included in the project.
  - o An official document of authorization or partnership must be included within the proposal. Otherwise the offer will be excluded.
  - o Familiar with similar projects, and have a reference list for similar projects.
- If the bidder is not a partner or authorized by the vendor for one or more but not all items which he will provide, The subcontractor is accepted only if subcontractor meets the following conditions:
  - o Subcontractor must be authorized distributor, partner or reseller for components he will provide.
  - o Familiar with similar projects, and have a reference list for similar projects.
  - o An official document of authorization or partnership must be included within the proposal. Otherwise the offer will be excluded.
  - o The bidder must provide a draft copy of the contract between him and the subcontractor that explain the scope of work for each party, the support, and the warranty.
  - o The content of the provided draft must not be appended, modified or deleted. And the signed genuine contract between bidder and the subcontractor will be part of the handover of this project.
- For all required training, each training must be conducted for two persons prior to the deployment.
- University will not allow the implementation of any item before or during training for those items that the company will provide.
- All training material for the provided courses must be included.
- At least one of Mutah University staff will participate in the installation and configuration process.
- All item's warranty must be supported by the vendor.
- Vendor of switches must be recognized as "Challenger" or "Leader" as per last Gartner Quadrant report for the "Wired and Wireless LAN Access Infrastructure" or "Data Center Networking".