سؤالات و پاسخ‌ها در رابطه به پروژه تهیه و تدارک مرکز تبادله انترنت افغانستان

در این گزارش پاسخ سوالات مطرح‌شده در جلسه مورخ 1405/1/18 در رابطه به پروژه تهیه و تدارک مرکز تبادله انترنت افغانستان که مطابق موارد مطرح‌شده به‌طور دقیق تهیه گردیده است

NIXA Project – Final Questions & Answers

Q1:
Is it required to procure Dell hardware(Server R770) through an authorized distributor with Service Tag and warranty in Afghanistan (MCIT) or can open-market systems be used?
A: Must be procured through an authorized Dell distributor with valid Service Tag, warranty in Afghanistan, and registered under MCIT. Open-market systems are not acceptable.

Q2:
Is Dell hardware(Server R770) required to have Service Tag and warranty registered in Afghanistan (MCIT)?
A: Yes, all Dell hardware must have a valid Service Tag, warranty in Afghanistan, and MCIT registration. Non-registered systems are not allowed.

Q3:
Is Fortinet firewall required to be from authorized channel with warranty in Afghanistan and MCIT registration?
A: Yes, must be purchased through an authorized Fortinet partner, with warranty in Afghanistan and licenses registered under MCIT.

Q4:
Is Certum SSL Certificate acceptable?
A: Yes, Wildcard SSL, 2 quantity, 5 years.

Q5:
Web service requirement for Odoo DMS?
A: Nginx (open source) with vendor providing installation, implementation, and configuration; using FortiADC 420F Load Balancer; supports Odoo Enterprise based on organization.

Q6:
Is Odoo DMS on-premise or cloud?
A: On-premise deployment on organization infrastructure.

Q7:
Is Ubuntu Server LTS licensed by MCIT?
A: No license required (Ubuntu LTS is open source and free).

Q8:
IS load balancer vs F5?
A: FortiADC 420F Load Balancer is proposed as the primary solution for this project due to its high performance, security integration, and suitability for enterprise environment.

Q9:
Server R770 availability and replacement?
A: Dell PowerEdge R770 servers are available and confirmed for use in this project. The Dell PowerEdge R760 is not recommended as a replacement option at this stage due to project requirements and current architectural considerations.

Q10:
Dell PowerVault ME5224 availability?
A: Available via authorized Dell partner with Service Tag and Afghanistan (MCIT) warranty.

Q11:
MAF letter requirement?
A: This is not mandatory; however it is required that the item be included in the bid and supplied through the manufacturer or an authorized distributor.

Q12:
Number of servers required?
A: 4 servers (Dell R770 or equivalent).

Q13:
Load balancer support clarification?
A: Must define FortiADC 420F Load Balancer, support, warranty, and subscription in proposal.

Q14:
License requirements?
A: SSL Wildcard (2 × 5 years), Fortinet subscriptions, Load balancer licenses (if required), Odoo (Enterprise/Community based on organization), Ubuntu LTS (free).

Q14:
Is the Dell Pro Max 16 required to be procured from a Dell authorized distributor?

A: Dell Pro Max 16 (MC16250) does not require procurement through an authorized channel; it can be sourced from the open market, provided that the required specifications are met.

Hardware Modifications and Replacements in Projects

1. **All existing R770 servers (database, replica, and three main application servers) have been replaced with four new PowerEdge R770 servers with the following configuration:(Total 4 physical server)**

- Chassis Configuration: 2.5" Chassis with up to 16 SAS4/SATA Drives, Smart Flow, Front PERC 12 (H365i)
- Processor: Intel® Xeon® 6 Performance 6760P 2.2G, 64C/128T, 24GT/s, 320M Cache, Turbo, (330W) DDR5-6400

- Memory Configuration: Performance Optimized
- Memory Type & Speed: 6400MT/s RDIMMs
- Memory Installed: 32GB RDIMM, 6400MT/s, Dual Rank × 16
- RAID Configuration: C7, Unconfigured RAID for HDDs or SSDs (Mixed Drive Types Allowed)
- RAID Controller: PERC H365i Controller, Front, DCMHS
- Storage: 960GB SSD SATA Read Intensive 6Gbps 2.5in Hot-plug AG Drive, 1 DWPD × 6
- BIOS Settings: Power Saving Dell Active Power Controller
- System Configuration: UEFI BIOS Boot Mode with GPT Partition
- Fans: PowerEdge 2U High Performance Platinum Fan
- Power Supply: Dual, 1+1 Redundant, Hot-Plug Power Supply, 1400W -48VDC
- Power Cords: No Power Cord × 1
- PCIe Riser: Riser Config 11-1, Rear 3x16 FH (Gen5), 2x16 LP (Gen5), 1x8/1x16 OCP (Gen5), 2nd OCP x8
- Motherboard: PowerEdge R770 Motherboard for RTS1.2, DAO
- Network Adapter 1: Broadcom 5719 Quad Port 1GbE Base-T Adapter, OCP 3.0 NIC ×1
- Network Adapter 2: Broadcom 57504 Quad Port 10/25GbE SFP28 Adapter, OCP 3.0 NIC ×1
- Additional Network: Broadcom 57412 Dual Port 10GbE BASE-T Adapter ×3
- Bezel: PowerEdge 2U Standard Bezel
- Boot Storage: No BOSS card, Rear Blank
- Optics: 25GbE SFP28 LR Transceiver, SMF Duplex, LC
- Management: iDRAC10 Core 17G
- Connectivity: Dell Connectivity Client Enabled
- Security: Dell Secure Onboarding Enabled
- KVM: Blank Left Ear Module
- BMC Password: iDRAC Legacy Password for OCP cards
- Rack Rails: 2U Combo Drop-In/Stab-In Rails with Strain Relief Bar
- Support: Basic Next Business Day, 36 Months

2. The existing PowerEdge R770 load balancer has been replaced with FortiADC 420F configured as follows:

FortiADC 420F is an enterprise Application Delivery Controller designed for high-performance load balancing and application security. It is a 1U rack mount device compatible with standard 19-inch server racks. The system is powered by a multi-core network processing ASIC-based CPU and includes 32 GB ECC RAM with 120 GB SSD storage. It supports AC 100–240V power input with redundant power supply capability. The device consumes approximately 68W of power and uses a front-to-back airflow cooling system. Its physical weight is around 6.4 kg.

In terms of performance, FortiADC 420F delivers up to 20 Gbps L4/L7 throughput and 10 Gbps SSL throughput. It supports up to 25 million concurrent connections, 700,000 new connections per second, and approximately 2.1 million HTTP requests per second, making it suitable for enterprise workloads such as Odoo ERP systems.

The network interface includes 4 × 10G SFP+ ports, 4 × 1G SFP ports, and 4 × 1G RJ45 Ethernet ports. It also provides 2 management interfaces (Console and Admin) for administration and monitoring.

FortiADC supports Layer 4 and Layer 7 load balancing using HTTP, HTTPS, and TCP protocols. It includes SSL offloading, Web Application Firewall (WAF), and DDoS protection features. High availability is supported through Active–Standby and Active–Active modes with automatic failover capability and session persistence. It also provides REST API support for automation and integration.

For management and monitoring, the device offers a web-based GUI over HTTPS, SSH CLI access, SNMP monitoring, and Syslog integration. It supports authentication methods such as LDAP, RADIUS, and SAML, and routing protocols including OSPF and BGP.

Environmentally, the system operates between 0°C and 40°C and supports standard 19-inch 1U rack installation.

Licensing includes a 3-year FortiCare support subscription, a base FortiADC license, and a security bundle covering WAF and DDoS protection. SSL acceleration is included in hardware, and no separate HA license is required.

3. **The core switches (Cisco Nexus 9000 series), Cisco Catalyst 9200-48T switches, Cisco 10G SFP+ SR modules, and fiber cables have been removed, and a PowerVault ME5224 storage solution has been introduced into the infrastructure. :**

- Dell PowerVault ME5224 Storage Specifications. General: Model PowerVault ME5224, Form Factor 2U Rack Storage. Controllers: 25Gb iSCSI, 8 Port Dual Controller, ME52xx (2U). Networking & Cables: 25GbE SFP28 to SFP28 DAC Cable, 3m, Quantity 4; 10GbE SFP+ to SFP+ DAC Cable, 3m, Quantity 4; OM4 LC/LC Multi-Mode Fiber Cable, 3m, Optics required, Quantity 8. Storage: 2.4TB SAS SED FIPS 12Gbps 10K RPM 2.5in Hot-plug Drives, Quantity 24; Total Raw Storage 57.6 TB. Power: 580W Redundant Power Supply; Power Cords C13 to C14, 10A, 0.6m, Quantity 4. Hardware & Accessories: Rack Rails 2U; ME Series 2U Bezel. Compliance & Shipping: Regulatory CE Label Marking; Shipping PowerVault ME5x24. Usable Storage by RAID: RAID 0: 57.6 TB (no redundancy); RAID 5: 55.2 TB (1 disk parity); RAID 6: 52.8 TB (2 disk parity, recommended for enterprise workloads like Odoo); RAID 10: 28.8 TB (mirrored, high performance, high redundancy). Recommended Configuration: RAID 6 for safety and performance, providing approximately 52.8 TB usable space.

Part installation and configuration

خدمات نصب، پیکربندی سیستم، تهیه مستندات و آموزش کارمندان

Installation, Configuration & Documentation &

The Contractor shall be responsible for preparing, installing, and configuring a reliable and secure ICT infrastructure specifically to run the Odoo application, while ensuring that all components are properly integrated and operational. The responsibility of the Contractor is strictly limited to infrastructure and platform readiness, and does not include any development, customization, or functional configuration of the Odoo application itself.

To run the Odoo application, the Contractor shall deploy three physical servers based on Dell PowerEdge R770 and configure them in a clustered (stateless) architecture. These servers shall host the Odoo application services and must be configured to operate simultaneously, ensuring load distribution, high availability, and uninterrupted service. Shared SAN storage shall be integrated across all application servers to store Odoo filestore data, attachments, and logs, ensuring consistency across the cluster.

The Contractor shall install all necessary platform dependencies required for Odoo, including Python environment, required libraries, and service configurations, and ensure that Odoo is properly installed and running as a managed service on all three servers. Connection to the centralized database must be configured correctly so that all application nodes interact seamlessly with the backend database.

A dedicated physical server shall be prepared for the PostgreSQL database, where the Contractor shall install, configure, and optimize the database to support Odoo workloads. This includes tuning performance parameters, securing access, and implementing automated backup mechanisms integrated with SAN storage. Backup and restore procedures must be tested to ensure data protection and recovery.

The load balancing layer shall be implemented using FortiADC 420F. The Contractor shall configure a Virtual IP (VIP) to distribute incoming user traffic across the three Odoo application servers. Load balancing methods, health checks, and session persistence (sticky sessions) shall be properly configured to maintain user sessions and ensure stable application performance. SSL termination shall also be configured to secure communication.

In addition, the Contractor shall implement all necessary firewall and network security configurations. Only required ports shall be opened, including HTTP (80) and HTTPS (443) for user access through the load balancer, PostgreSQL (5432) restricted to internal communication between application and database servers, SSH (22) limited to authorized administrators, and SAN-related ports such as NFS or iSCSI. All other ports shall be blocked, and strict access control policies shall be enforced to maintain system security.

The Contractor shall also install Ubuntu Server LTS on all servers, apply system updates, and implement OS hardening measures in line with best practices. Secure user access, SSH configuration, and system monitoring tools shall be properly set up.

Finally, the Contractor shall test the entire infrastructure to ensure it is fully ready for Odoo operation. This includes validating load balancing functionality, application accessibility, database connectivity, storage integration, backup and restore processes, and firewall configurations. The Contractor shall deliver complete documentation and provide training to the Employer's technical team, ensuring they are capable of managing, maintaining, and operating the Odoo infrastructure independently after project completion.