

**Leveraging ICT for Growth, Employment and Governance Project  
Bangladesh Computer Council (BCC)  
Information and Communication Technology Division  
Ministry of Posts, Telecommunications and Information Technology  
ICT Tower, Plot # E-14/X, Agargaon, Dhaka-1207  
Bangladesh**

**Terms of Reference  
For  
Data Center (DC) Hardware Engineer  
(Contract Package # AF-S40F)  
(Credit # 5911-BD)**

**July 2018**

**Terms of Reference (TOR)**  
**For**  
**Data Center (DC) Hardware Engineer**  
**(Contract Package #AF-S40 F)**

**1. Objective of the Assignment**

The objective of the assignment is to recruit a Data Center Hardware Engineer for operations and maintenance of Data Center Servers, Storage, and Network. The recruited engineers will be accountable for implementing effective IT infrastructure solutions and responsible for planning, designing, and supporting deployment efforts in the following areas: systems administration, installation, and maintenance of servers, storage and networking equipments.

**2. Scope of Services**

The Data Center (DC) Hardware Engineer will be responsible for the following:

- Support networking environment by aiding in device configuration; directing installation; assisting in defining, documenting, and enforcing system standards
- Provision/retire new devices/OS via upgrades/downgrades/Cascade
- Responsible for managing vendors/resources for cabinet installations, cabling
- Diagnose/troubleshoot OS across various platforms
- Identify and troubleshoot hardware failures on servers to include the replacement of failed hardware components
- Provide capacity planning around the data center footprint and ensure capacity for the future
- Coordinate the installation of new equipment and properly manage fixed assets
- Coordinate with facilities to ensure proper power and cooling is provided to all IT devices across the datacenters
- Ensure the Configuration Management & DCIM Database is always current for the Data Center IT equipment
- Routinely review ticket queue, prioritize and address the tickets in a timely manner
- Coordinate change management as required
- Guide, educate IT staff on the best practices related to the policies and processes of datacenter
- Oversee and schedule maintenance on all datacenter infrastructure
- Recommend, document, and oversee policies and procedures to meet industry best data center practices
- Provide weekly/monthly and adhoc reports to the stake holders as required
- Maintain the on-call schedule coordinating absence and vacations for DC support
- Provide support and implement, upgrade and troubleshoot complex LAN/WAN solutions
- Deliver best-practice network designs and implementations producing reliable, available and scalable hardware solutions
- Perform preventive maintenance of servers and storage
- Ensure that all required application and/or firmware patches are applied in servers and they are running in the optimized environment
- Verify servers regularly for available disk space, memory utilization, warnings and errors
- Monitor backup runs and ensure DR procedures are tested
- Perform account management activities

- Perform analysis, diagnosis and fault isolation of existing hardware issues
- Support deployment and sustainment of network equipment (routers and switches), server and storage
- Perform technical documentation review, technical and operational networking support, and review of contractor and vendor documentation.
- Troubleshoot network issues; provide subject matter expertise on TCP/IP routing and subnetting of local and wide area networks, MPLS, IPsec, VPNs.
- Perform functional analysis, requirements specification and allocation and interface definition studies to translate operational requirements into hardware and software specifications.
- Apply industry best practices in IT Security, Systems Engineering, and Integration and Testing.
- Work with system integrators on Use Case development and execution
- Ensure that all system functional requirements are successfully acquired, validated, and tested.
- Provide support for generation, review, approval, and implementation of change modification proposals for accuracy, completeness, and remediation
- Provide detailed knowledge of systems engineering in support of IT system definition, integration, test, maintenance, and security certification and accreditation
- Provide general system engineering tasks including: review of integration test plans, procedures and data; support special studies to define alternative interface/integration approaches
- Implementing, operate, and maintain large scale enterprise IT/Network Topologies/Security systems (Routing, MPLS, VPNs, SSL/TLS, Firewalls, IPS/IDS, Proxies) and testing/implementing security patches
- Follow documented daily procedures and policies; monitoring tools and response guidelines, escalation and notification processes; and Trouble/Ticket management processes and guidelines
- Work on a 24x7 on-call rotation schedule

### **3. Education and Experience**

- Minimum Bachelor's degree in Computer Engineering/Computer Science (or similar)
- Minimum 03 (three) years' work experience in Data Center and Network operations.
- Good team, organizational and planning skills, as well as stringent time management skills to balance dynamic workloads in a complex and dynamic environment.
- Knowledge of Linux or Unix systems administration is a must
- Must have exposure to hardware architectures and experience in troubleshooting
- Experience with system management tools and client/server environments
- Basic troubleshooting experience on Cisco, Brocade, Huawei network configuration and issues
- Understanding of basics on networks security; past experience with Cisco/Huawei Firewall/IPS is a plus
- Good understanding of load balancing and GSLB concepts
- Highly driven, self-managed individual who demonstrates initiative and proactively seeks solutions to problems

- Greatly developed problem analysis and critical thinking experience
- Must have excellent verbal and written communication skills
- Must also hold at least one of the following certifications: Cisco Certified Network Associate (CCNA), Cisco Certified Network Professional (CCNP), Brocade Certified Network Engineer (BCNE), Juniper Networks Certified Associate (JNCIA), Huawei Certified Network Associate (HCNA), and other certifications from Microsoft, Linux, IBM, Oracle, SUN, VMware, etc.
- Demonstrated network engineering experience and troubleshooting skills with routing and MPLS VPN technologies.
- Demonstrated knowledge of leading edge networking technologies, devices, and products including Cisco/Huawei routers, Next Generation Firewall/IPS, Cisco/Huawei/Brocade switches, and VPN devices.
- Demonstrated knowledge of leading edge server technologies, devices, and products including Windows and Linux Server.
- Knowledge of security and network management technologies, devices and products including SIEM,, Network Monitoring System, and web proxies,
- Understanding of SOA and virtualization technologies such as VMware, ESX/vCenter/vSphere, NAS/SAN, and Blade.
- Must be able to perform work involving the exploration of subject area, definition of scope, and selection of problem investigation areas.
- Must be able to apply intensive and diverse knowledge to problems and make independent decisions
- Must have demonstrated knowledge of large scale IT networks and network boundary devices, to include experience in network boundary upgrade planning and sustainment.

#### **4. Reporting Arrangements**

The Data Center Hardware Engineer will assist and report to the Project Director, under the general supervision and guidance of the e-Government Team Leader and Technical Specialist(s).

#### **5. Duration of the Assignment:**

The duration of the assignment will be about 10 (ten) months and may extend subject to satisfactory performance of the Consultants & Project Extension.

#### **6. Facilities to be provided by the Client:**

Project will provide appropriate office space and other associated (data, information, furniture, stationeries, etc.) necessary to carry out the assignment.

#### **7. Reporting requirements/deliverable:**

The Data Center Hardware Engineer will need the following reporting requirements/deliverables, but not limited to:

- Monthly work plan and progress report;
- Yearly Report;
- Any other Report, as required.