



سرکار
پنجاب

آئی جی سٹیٹس سرکار پنجاب لاہور

پرنسپل ایف ڈی سرکار:

22PU-2023-G-16

پرنسپل ایف ڈی سرکار:

(IUL)22-PU/22/2023/360

ایڈووکیٹ سرکار:

27 دسمبر 2023

دیسٹریکٹ جج ایف ڈی ایف ڈی ایف ڈی
ڈپٹی، ایف ڈی ایف ڈی

1- မိုးဝေ

မိုးဝေ

မိုးဝေ		မိုးဝေ	
မိုးဝေ	မိုးဝေ/မိုးဝေ	1	(-)
မိုးဝေ	မိုးဝေ		
မိုးဝေ	မိုးဝေ		
မိုးဝေ	မိုးဝေ		
မိုးဝေ	မိုးဝေ	9	(-)
မိုးဝေ	မိုးဝေ	10	(-)
မိုးဝေ	မိုးဝေ	10	(-)
မိုးဝေ	မိုးဝေ	19	(-)
မိုးဝေ	မိုးဝေ	21	(-)
မိုးဝေ	မိုးဝေ	29	(-)

<p>۱۰۰ سولار جي ڏانهن: ۱۰۰ ڏوڏو ڏوڏو خبرو 60 (مستعملو) ڏوڏو.</p>	<p>(ر)</p>	<p>29</p>
<p>مستعملو ۽ خبرو ڏوڏو ڏوڏو ڏوڏو ڏوڏو: 5% (مستعملو ڏوڏو ڏوڏو)</p>	<p>(ر)</p>	<p>30</p>

© 2023

© 2023

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14

© 2023

(a)

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15

© 2023

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(c)

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(d)

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18

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(a)

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האשרות הנתונות.

(א) תשלום המעסיק לתשלום העובד על כל ימי הפיקוח שחלבו עובד אשר יחזיק מעמד למעלה מ-30 ימים בתוך שנה, וכן תשלום המעסיק לתשלום העובד על כל ימי הפיקוח שחלבו עובד אשר יחזיק מעמד למעלה מ-90 ימים בתוך שנה.

(ב) תשלום המעסיק לתשלום העובד על כל ימי הפיקוח שחלבו עובד אשר יחזיק מעמד למעלה מ-90 ימים בתוך שנה, וכן תשלום המעסיק לתשלום העובד על כל ימי הפיקוח שחלבו עובד אשר יחזיק מעמד למעלה מ-180 ימים בתוך שנה.

(ג) תשלום המעסיק לתשלום העובד על כל ימי הפיקוח שחלבו עובד אשר יחזיק מעמד למעלה מ-180 ימים בתוך שנה, וכן תשלום המעסיק לתשלום העובד על כל ימי הפיקוח שחלבו עובד אשר יחזיק מעמד למעלה מ-270 ימים בתוך שנה.

31. (א) גובה המעסיק לתשלום העובד יחולק ל-7 ימים. (ב) גובה המעסיק לתשלום העובד יחולק ל-7 ימים.

(א) גובה המעסיק לתשלום העובד יחולק ל-250,000/- ימים. (ב) גובה המעסיק לתשלום העובד יחולק ל-250,000/- ימים.

(א) גובה המעסיק לתשלום העובד יחולק ל-45 ימים. (ב) גובה המעסיק לתשלום העובד יחולק ל-45 ימים.

(א) גובה המעסיק לתשלום העובד יחולק ל-7 ימים. (ב) גובה המעסיק לתשלום העובד יחולק ל-7 ימים.

(א) גובה המעסיק לתשלום העובד יחולק ל-8 ימים. (ב) גובה המעסיק לתשלום העובד יחולק ל-8 ימים.

(א) גובה המעסיק לתשלום העובד יחולק ל-15% ימים. (ב) גובה המעסיק לתשלום העובד יחולק ל-15% ימים.

3- شروط

شروط/أحكام/إجراءات/مواصفات/مواصفات

Supply, Installation, Configuration and Migration of Core Switch, Distribution Switch, Central UPS and Environment Monitoring System

1. TECHNICAL REQUIREMENT AND SCOPE OF WORKS

LOT 1 and LOT 2 will be evaluated separately.

Bidders are required to fill the Bidder's specification form and if any information in the specification form are missing or does not meet the requirement specified by the Ministry of Education, the Bidder's proposed bid document will be disqualified.

#	Minimum Requirements	Quantity
LOT 1	Network Switches - Supply, Installation, Configuration, Migration, Documentation and Training	
1.1	Core Switch	02 Bundle
1.1.1	Brand (Switches should be of Fortinet brand)	
1.1.2	Model (Vendor MUST specify the switch model)	
1.1.3	Network Interfaces: 24 x 1 GE/10 GE SFP+ ports and 2x 100 GE QSFP28 ports	
1.1.4	The device shall support minimum 880Gbps switching capacity	
1.1.5	The device shall support minimum 1030Mpps throughput	
1.1.6	The device shall have minimum 64K MAC address storage	
1.1.7	The device shall support up to 24k routing table	
1.1.8	The device shall have minimum 8MB packet buffers	
1.1.9	The device shall have minimum 8GB DRAM	
1.1.10	The device shall support the following Layer 2 Features and Protocols: IEEE 802.1AX LAG, IEEE802.1D STP, IEEE802.1Q VLAN, IEEE 802.1s MSTP, IEEE 802.1w RSTP, IEEE 802.3ad LACP, STP BPDU Guard, STP Root Guard, Jumbo frames	
1.1.11	The device shall have and include any required license for the following Layer 3 Features and Protocols: BFD, DHCP Relay, DHCP Server, OSPFv2, RIPv2, VRRP, BGP, ISIS, ECMP	
1.1.12	The device shall have the following Security and visibility Features: ACL, Dynamic ARP inspection, IEEE 802.1ab LLDP, IEEE 802.1X Authentication, RADIUS Accounting, sFlow	
1.1.13	The device shall support MCLAG high availability	
1.1.14	The device shall have the following management features: Dual firmware, HTTP/HTTPS, IPv4 management, packet capture, RMON, SNMP v1/v2c/v3, Sntp, TFTP, SPAN, CLI, Web GUI, Syslog, Telnet/SSH	
1.1.15	The device shall have front to back air flow	
1.1.16	The device shall have redundant hot swappable AC power supply unit	
1.1.17	Form factor: 1 RU, rack mounting accessories should be included	
1.1.18	6 x 10GE SFP+ SR transceiver module shall be included. The transceiver shall be from the same OEM.	
1.1.19	6 x Duplex LC-LC, 5m, MM, OM5 fiber optic patch cable shall be included.	
1.1.20	10 x 10GE copper SFP+ RJ45 transceiver module shall be included. The transceiver shall be from the same OEM.	
1.1.21	02 x 10GE SFP+ LR transceiver module. The transceiver shall be from the same OEM.	
1.1.22	02 x 100GE QSFP28 SR transceivers module with 2m fiber optic cable shall be included. The transceiver shall be from the same OEM.	
1.1.23	The proposed device shall support direct security and management integration with the	

	existing Fortinet Fortigate Firewall	
1.1.24	Installation and Configuration as per specification 4	
1.1.25	Warranty: 1-Year Parts and Service with 24x7 comprehensive Support, Hardware Replacement, Firmware Upgrades	
1.1.26	Technical Support: 1-Year 24x7 on-site technical support services and labor	
1.2	48 Port Full PoE Distribution Switch	08 Bundle
1.2.1	Brand (Switches should be of Fortinet brand)	
1.2.2	Model (Vendor MUST specify the switch model)	
1.2.3	Network Interfaces: 48x GE RJ45 PoE (802.3af/at) and 4x 10GE SFP+	
1.2.4	The proposed device shall have minimum 740W PoE power budget	
1.2.5	The proposed device shall support minimum 176Gbps switching capacity	
1.2.6	The proposed device shall support minimum 260Mpps throughput	
1.2.7	The proposed device shall support upto 4K VLANs	
1.2.8	The proposed device shall have minimum 2MB packet buffers	
1.2.9	The proposed device shall have minimum 512MB DRAM	
1.2.10	The device shall support the following Layer 2 Features and Protocols: IEEE 802.1AX LAG, IEEE802.1D STP, IEEE802.1Q VLAN, IEEE 802.1s MSTP, IEEE 802.1w RSTP, IEEE 802.3ad LACP, STP BPDU Guard, STP Root Guard, Jumbo frames	
1.2.11	The device shall have and include any required license for the following Layer 3 Features and Protocols: BFD, DHCP Relay, Static Routing	
1.2.12	The device shall have the following Security and visibility Features: ACL, IEEE 802.1X Authentication, RADIUS Accounting, sFlow	
1.2.13	The device shall have the following management features: Dual firmware, HTTP/HTTPS, IPv4 management, Web GUI, Telnet/SSH	
1.2.14	Form factor: 1 RU, rack mounting accessories should be included	
1.2.15	2 x 10GE SFP+ SR transceiver module shall be included. The transceiver shall be from the same OEM.	
1.2.16	2 x Duplex LC-LC, 5m, MM, OM5 fiber optic patch cable shall be included.	
1.2.17	The proposed device shall support direct security and management integration with the existing Fortinet Fortigate Firewall	
1.2.18	The device shall support integrating it directly into the existing Fortinet Security Fabric	
1.2.19	Installation and Configuration as per specification 4	
1.2.20	Warranty: 1-Year Parts and Service Advanced Hardware Replacement, Firmware and General Upgrades	
1.2.21	Technical Support: 1-Year 24x7 on-site technical support services and labor	
1.3	24 Port Full PoE Distribution Switch	02 Bundle
1.3.1	Brand (Switches should be of Fortinet brand)	
1.3.2	Model (Vendor MUST specify the switch model)	
1.3.3	Network Interfaces: 24x GE RJ45 PoE (802.3af/at) and 4x 10GE SFP+	
1.3.4	The proposed device shall have minimum 370W PoE power budget	
1.3.5	The proposed device shall support minimum 128Gbps switching capacity	
1.3.6	The proposed device shall support minimum 190Mpps throughput	
1.3.7	The proposed device shall support upto 4K VLANs	
1.3.8	The proposed device shall have minimum 2MB packet buffers	
1.3.9	The proposed device shall have minimum 512MB DRAM	
1.3.10	he device shall support the following Layer 2 Features and Protocols: IEEE 802.1AX LAG, IEEE802.1D STP, IEEE802.1Q VLAN, IEEE 802.1s MSTP, IEEE 802.1w RSTP, IEEE 802.3ad LACP, STP BPDU Guard, STP Root Guard, Jumbo frames	
1.3.11	The device shall have and include any required license for the following Layer 3 Features and Protocols: BFD, DHCP Relay, Static Routing	
1.3.12	The device shall have the following Security and visibility Features: ACL, IEEE 802.1X Authentication, RADIUS Accounting, sFlow	
1.3.13	The device shall have the following management features: Dual firmware, HTTP/HTTPS, IPv4 management, Web GUI, Telnet/SSH	
1.3.14	Form factor: 1 RU, rack mounting accessories should be included	
1.3.15	2 x 10GE SFP+ SR transceiver module shall be included. The transceiver shall be from the same OEM.	

1.3.16	2 x Duplex LC-LC, 5m, MM, OM5 fiber optic patch cable shall be included.	
1.3.17	The proposed device shall support direct security and management integration with the existing Fortinet Fortigate Firewall	
1.3.18	The device shall support integrating it directly into the existing Fortinet Security Fabric	
1.3.19	Installation and Configuration as per specification 3	
1.3.20	Warranty: 1-Year Parts and Service Advanced Hardware Replacement, Firmware and General Upgrades	
1.3.21	Technical Support: 1-Year 24x7 on-site technical support services and labor	
1.4	Network Switches - Installation, Configuration, Migration, Documentation and Training	
1.4.1	<p><u>Project Team</u> To ensure successful implementation, the project delivery team must consist of OEM certified personnel who will be onsite for the duration of the installation, configuration, and migration work. The team should include:</p> <ul style="list-style-type: none"> • Project Manager: responsible for overseeing the entire project and ensuring that all aspects of the project are completed within the timeline and budget. • Network Professional: responsible for configuring the switches and integrating it with the existing FortiGate firewall, as well as verifying the proper functioning of the integrated solution. • VMware Professional: responsible for configuring, integration and migration of VMware management networks, and VM networks. • Security Specialist: responsible for ensuring the integrated solution meets the necessary security requirements, including configuring access control, implementing secure communication protocols, and ensuring that the solution adheres to industry best practices. <p>All members of the project delivery team must be OEM certified personnel and possess relevant industry certifications such as Fortinet NSE (Network Security Expert), and VMware Data Center Certification. They must have experience working with the proposed switch, FortiGate firewall, VMware Datacenter products. The onsite presence of the project delivery team is essential to ensure timely troubleshooting and problem resolution. They will be responsible for providing ongoing support and maintenance until the handover of the integrated solution to the Ministry of Education (MoE).</p>	
1.4.2	<p><u>Planning</u></p> <ul style="list-style-type: none"> • Review the existing network infrastructure and topology. • Determine the required number of Switches and their placement in the network. • Identify any potential issues or challenges that may arise during the integration. <p><u>Integration with FortiGate Firewall</u></p> <ul style="list-style-type: none"> • Integrate with the existing FortiGate firewall. • Configure the FortiGate firewall to recognize and manage the core switches and edge switches • Configure VLANs, port settings, and any other necessary configurations. <p><u>Configuration</u></p> <ul style="list-style-type: none"> • Configure the Switches to work seamlessly with the FortiGate firewall. • Configure VLANs, port settings, and any other necessary configurations. <p><u>Integration with Existing Network Topology</u></p> <ul style="list-style-type: none"> • Integrate the new solution with the existing network infrastructure. • Configure the new solution to support any necessary protocols or applications. <p><u>Testing and Verification</u></p> <ul style="list-style-type: none"> • Conduct testing to ensure that the integrated solution meets the performance and security requirements. • Verify that the integrated solution is operating correctly and efficiently. • Prepare test results and verification reports. <p><u>Documentation, Training and Handover</u></p> <ul style="list-style-type: none"> • Provide training to minimum 3 IT staff of the MoE on the configuration and operation of the integrated solution. <p>Handover the integrated solution to the network team with all necessary documentation (documentation should include all switch related configurations such as VLANs, port filtering, etc).</p>	

#	Minimum Requirements	Quantity
LOT 2	UPS and Server Room Environment Monitoring System - Supply, Installation, Configuration, Migration, Documentation and Training	
1.1	Primary Site Redundant UPS	01 Bundle
1.1.1	01 Nos x APC Symmetra LX 16kVA Scalable to 16kVA N+1 Rack-mount, 220/230/240V <ul style="list-style-type: none"> • 04 Nos x APC Symmetra LS Battery Module SYBT5 • 04 Nos x APC Symmetra LX 4kVA Power Module • 01 Nos x Intelligence module • 01 Nos x Network management card 2 with environmental monitoring • 01 Nos x APC Symmetra LX Communications Card • 01 Nos x APC Symmetra LX 4-post rack-mounting rails 	
1.1.2	02 Nos x APC Easy PDU, Metered, ZeroU, 16A, 230V, (18)C13 & (3)C19	
1.1.3	40 Nos x APC 1U 19" Black Modular Toolless Blanking Panel	
1.1.4	Installation and Configuration as per specification 7	
1.1.5	Warranty: 1-Year hardware repair or replacement warranty including on-site support	
1.1.6	Technical Support: 1-Year 8x5 on-site technical support services and labor	
1.2	Server Room Environment Monitoring System	01 Bundle
1.2.1	Brand (Vendor MUST specify the brand)	
1.2.2	Model (Vendor MUST specify the model)	
1.2.3	01 x Large Enterprise Environment Monitoring System with Redundant AC Power	
1.2.4	01 x Integrated Temp/Humidity Sensor, PoE	
1.2.5	02 x Temperature/Humidity/Dew Point Sensor	
1.2.6	01 x Smoke Detector with Built-In Fixed-Temperature Heat Sensor	
1.2.7	01 x Adaptive Dual Microwave/PIR Motion Detector	
1.2.8	01 x Ultra-HD Wired Day/Night Outdoor Bullet IP Camera with PoE	
1.2.9	01 x Liquid Detection Sensor, Plenum Rope-Style (10x10ft)	
1.2.10	01 x USB 4G Modem (compatible with local Telecom providers)	
1.2.11	1 x AC Voltage Detector with Relay & IEC C14 Socket	
1.2.12	1 x AC Voltage Detector with Relay & IEC C14 Socket	
1.2.13	Warranty: 1-Year Parts and Service with on-site support	
1.2.14	Technical Support: 1-Year 24x7 on-site technical support services and labor	
1.3	APC UPS and Environment Monitoring System- Installation, Configuration, Migration, Documentation and Training	
1.3.1	<p><u>Project Team</u></p> <p>To ensure successful implementation, the project delivery team must consist of OEM certified personnel who will be onsite for the duration of the installation, configuration, and migration work. The team should include:</p> <ol style="list-style-type: none"> 1. Project Manager - responsible for overall project management and coordination. 2. Site Surveyor - responsible for site survey, electrical and civil works. 3. Installation Professional - responsible for unpacking, assembling, and installing the APC Symmetra and Environment Monitoring System. <ul style="list-style-type: none"> • 01 Nos x APC Symmetra LX 4-post rack-mounting rails <p>All members of the project delivery team must be OEM certified Personnel and possess relevant industry certifications. The onsite presence of the project delivery team is essential to ensure timely troubleshooting and problem resolution. They will be responsible for providing ongoing support and maintenance until the handover of the system to the MoE.</p>	
1.3.2	Install and configure an APC Symmetra LX 16kVA UPS system and Environment monitoring system, including all the electrical work required for a successful installation. It also includes the rack mounting of the UPS and the recabling of all existing data center equipment and PDUs. Additionally, the project will involve configuring, alerting and monitoring to ensure the system is operating optimally. Existing APC UPS and Environment Monitoring System at Primary Site need to be moved, installed and configured at the Disaster Recovery (DR) site. Existing APC UPS at DR Site need to be moved and installed at the Primary site.	

	<p>Project Deliverables: The following are the deliverables of this project:</p> <ol style="list-style-type: none"> 1. A fully installed and configured APC Symmetra UPS system, rack mounted and connected to all necessary equipment and PDUs. 2. Move and install existing APC Symmetra LX UPS to DR Site 3. Move and install existing 2 x APC UPSs at DR Site to Primary Site 4. Move and install existing APC Environment Monitoring System at Primary Site to DR Site 5. A fully installed and configured Environment Monitoring System at the Primary Site 6. A complete set of documentation, including installation, configuration and operation manuals 7. Provide training to minimum 3 IT staff of the MoE on how to operate and maintain the system <p>Project Tasks: The project tasks shall include, but not limited to:</p> <ol style="list-style-type: none"> 1. Site Survey: Conduct a site survey to determine the best location for the APC Symmetra LX 16kVA installation and ensure proper rack space for the unit. 2. DR Site Electrical Work: Install and connect a dedicated circuit breaker, ELCB, and an isolation switch for the system. (Note: Primary Site server room already has dedicated breakers installed) 3. Unpacking and Assembling: Unpack the APC Symmetra LX 16kVA and assemble it as per the manufacturer's guidelines. 4. Rack Mounting and re-cabling: Mount the APC Symmetra LX 16kVA in the appropriate rack space and re-cable all existing data center equipment and PDUs as necessary 5. Configuration: Configure the APC Symmetra LX 16kVA system according to the MoE's requirement 6. Move and install existing APC Symmetra LX UPS at the Primary Site to DR Site 7. Rack mounting and re-cabling for APC Symmetra LX UPS in DR Site 8. DR Site Electrical Work: Install and connect a dedicated circuit breaker, ELCB, and an isolation switch for the system 9. Alerting and Monitoring: Configure alerting and monitoring systems to ensure optimal system performance. Alerting and monitoring shall be configured for both sites 10. Testing: Conduct comprehensive testing of the APC Symmetra and Environment Monitoring System to ensure its functionality 11. Documentation: Provide a complete set of documentation, including installation, configuration and operation manuals. 12. Training and Handover: Provide training to minimum 3 IT staff of the MoE on how to operate and maintain the system 	
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#	General Technical Requirements
1	<p>Minimum Service Level requirements:</p> <ol style="list-style-type: none"> a) The support service vendor should provide the contact number of a single point of contact to facilitate immediate contact from the MoE and he or she shall be responsible to liaise with all vendors for rectification of faults within the Next Business Day. b) Defective equipment shall be replaced by the bidder at his own cost including the cost of transport if any; c) The support service vendor shall provide all normal toolkit and test equipment needed for the maintenance of the hardware to their engineers. d) System maintenance and support services will include the following activities. <ul style="list-style-type: none"> ✓ 24 x 7 on-line Support. ✓ Patch updating and major / minor software version upgrading support. ✓ Phone/ Email support must be provided during the support period. ✓ Issue resolution / Onsite Visits within 1 hour of hardware failures reported. ✓ Local support plan must be maintained by the Bidder for the maintenance period. e) After installation and deployment of each component, the support service vendor is required to provide

	written confirmation to the MoE that the part/ component installation and configuration have been completed.
2	<p>Maintenance Support Services including on-site Technical Support:</p> <ul style="list-style-type: none"> On-site hardware repair/replace and maintenance support service should be delivered by an experienced OEM Certified person/ personnel On-site diagnostics and repair service should be delivered by an experienced OEM Certified person/ personnel Service summary report shall be provided after each work performed including recommendations for optimal performance Maintenance Support Person should check and ensure the systems are with the most recent firmware version During each maintenance visit, field service professionals should run tests to verify the systems are functioning correctly in all operational modes Replacements of parts; labour; travels & accommodation and components should be included as per applicable warranty of the relevant system The support service vendor shall maintain critical parts locally in Male' to provide after sale support It is mandatory that the support service vendor should maintain the required support technical team as deemed as suited based on the requirements and milestones. The support service vendor MUST have full time Certified Professional(s)/ Person(s) under its payroll. <p><u>Primary required certificates of the professional(s) – LOT 1:</u></p> <ul style="list-style-type: none"> Fortinet NSE (Network Security Expert) VMware Certified <p><u>Primary required certificates of the professional(s) – LOT 2:</u></p> <ul style="list-style-type: none"> APC Certified <p><u>The vendor shall submit the following documents:</u></p> <ul style="list-style-type: none"> Certifications copy of the relevant training ID card or Passport Copy of the certified person/ personnel

2. Price Form

LOT 1: Network Switches - Supply, Installation, Configuration, Migration, Documentation and Training

#	Item Description	Quantity	Unit Price (MVR)	Extended Price (MVR)
1.1	Core Switch	2 Bundle		
1.2	48 Port Full PoE Distribution Switch	8 Bundle		
1.3	24 Port Full PoE Distribution Switch	2 Bundle		
			Sub Total	
			GST 8%	
			Net Total	

LOT 2: UPS and Server Room Environment Monitoring System - Supply, Installation, Configuration, Migration, Documentation and Training

#	Item Description	Quantity	Unit Price (MVR)	Extended Price (MVR)
1.1	Primary Site Redundant UPS	01 Bundle		
1.2	Server Room Environment Monitoring System	01 Bundle		
			Sub Total	
			GST 8%	
			Net Total	

4 - ترميم

مؤتمري نومبر 2023				
1. مؤتمري نومبر 2023				
#	مؤتمري نومبر	مؤتمري نومبر	مؤتمري نومبر	مؤتمري نومبر
1	31 تا 2023			
	30 نومبر 2023			
	31 نومبر 2023			
	مؤتمري نومبر			
	مؤتمري نومبر			
مؤتمري نومبر				
2. مؤتمري نومبر 2021				
	2021			
	2020			
	مؤتمري نومبر			
	مؤتمري نومبر			

مؤتمري نومبر:

1. مؤتمري نومبر 2023
2. مؤتمري نومبر 2021
3. مؤتمري نومبر 2020
4. مؤتمري نومبر 2019

بَيِّنَاتُ قَوْمٍ - 5

سَوْرَتُ اِنْشَادِهَا فِي تِلْكَ السُّبُوْحَةِ اَلْبَتَّةَ اَلْمُبِيْنَةُ اَلْحَقِيْقَةُ

اَلْمُبَدَّءُ اَلْمَبْرُءُ	اَلْمَبْرُءُ اَلْمَبْدُءُ اَلْمَبْرُءُ اَلْمَبْرُءُ	اَلْمَبْرُءُ اَلْمَبْرُءُ
70	70 √ $\frac{\text{اَلْمَبْرُءُ اَلْمَبْرُءُ اَلْمَبْرُءُ}}{\text{اَلْمَبْرُءُ اَلْمَبْرُءُ اَلْمَبْرُءُ}}$	اَلْمَبْرُءُ
10	10 × $\frac{\text{اَلْمَبْرُءُ اَلْمَبْرُءُ}}{\text{اَلْمَبْرُءُ اَلْمَبْرُءُ}}$	اَلْمَبْرُءُ اَلْمَبْرُءُ
10	10 √ $\frac{\text{اَلْمَبْرُءُ اَلْمَبْرُءُ}}{\text{اَلْمَبْرُءُ اَلْمَبْرُءُ}}$	اَلْمَبْرُءُ
10	اَلْمَبْرُءُ اَلْمَبْرُءُ اَلْمَبْرُءُ 2 اَلْمَبْرُءُ	اَلْمَبْرُءُ
100		بَيِّنَاتُ

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Form of Bid Security

WHEREAS,[name of Bidder] (hereinafter called “the Bidder”) has submitted his Bid for the Tender no.....issued by the Ministry of Education onfor Supplying/Purchasing of [name of Contract] (hereinafter called “the Bid”).

KNOW ALL PEOPLE by these presents that We [name of Bank] of [name of country] having our registered office at (hereinafter called “the Bank”) are bound unto[name of Purchaser] (hereinafter called “the Purchaser”) in the sum of *..... for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents.

SEALED with the Common Seal of the said Bank thisday of20.....

THE CONDITIONS of this obligation are:

- (1) If, after Bid opening, the Bidder withdraws his Bid during the period of Bid validity specified in the Form of Bid;
- or
- (2) If the Bidder having been notified of the acceptance of his Bid by the Purchaser during the period of Bid validity:
 - (a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or
 - (b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders; or
 - (c) does not accept the correction of the Bid Price pursuant to Clause 27,

* The Bidder should insert the amount of the Guarantee in words and figures denominated in Maldivian Rufiyaa. This figure should be the same as shown in Clause 16.1 of the Instructions to Bidders.

we undertake to pay to the Purchaser up to the above amount upon receipt of his first written demand, without the Purchaser’s having to substantiate his demand, provided that in his demand the Purchaser will note that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date days after the deadline for submission of bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Purchaser, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE..... SIGNATURE OF THE BANK

WITNESS SEAL

[signature, name, and address]

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Form of Performance Guarantee

To:
[name & address of Purchaser]
.....
.....

WHEREAS [name and address of Supplier] (hereinafter called "the Supplier") has undertaken, in pursuance of Contract No. dated to execute [name of Contract and brief description of Works] (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Supplier shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Supplier such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Supplier, up to a total of *..... [amount of Guarantee] [amount in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of [amount of Guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

*An amount is to be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract, in Maldivian Rufiyaa.

We hereby waive the necessity of your demanding the said debt from the Supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the Supplier shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any such change, addition, or modification.

This Guarantee shall be valid until the date of issue of the Defects Correction Certificate.

SIGNATURE AND SEAL OF THE GUARANTOR

Name of Bank

Address

.....

.....

Date

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Form of Bank Guarantee for Advance Payment

To:
[name & address of Purchaser]
.....
.....

[name of Contract]

Gentlemen:

In accordance with the provisions of the Conditions of Contract, of the above-mentioned Contract,[name and address of Supplier] (hereinafter called “the Supplier”) shall deposit with [name of Purchaser] a Bank Guarantee to guarantee his proper and faithful performance under the said Clause of the Contract in an amount of[amount of Guarantee][amount in words].

We, the [Bank or Financial Institution], as instructed by the Supplier, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to [name of Purchaser] on his first demand without whatsoever right of objection on our part and without his first claim to the Supplier, in the amount not exceeding * [amount of Guarantee] [amount in words].

We further agree that no change or addition to or other modification of the terms of the Contract or of Works to be performed there under or of any of the Contract documents which may be made between[name of Purchaser] and the Supplier, shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any such change, addition, or modification.

* An amount is to be inserted by the Bank or Financial Institution representing the amount of the Advance Payment, in Maldivian Rufiyaa.

This Guarantee shall remain valid and in full effect from the date of the advance payment under the Contract until[name of Purchaser] receives full repayment of the same amount from the Supplier.

Yours truly,

SIGNATURE AND SEAL:

NAME & ADDRESS OF BANK/INSTITUTION

#	Minimum Requirements	Quantity	Meets? Yes/No/Better	Specification of the proposed item and relevant parts number
LOT 1	Network Switches - Supply, Installation, Configuration, Migration, Documentation and Training			
1.1	Core Switch	02 Bundle		
1.1.1	Brand (Switches should be of Fortinet brand)			
1.1.2	Model (Vendor MUST specify the switch model)			
1.1.3	Network Interfaces: 24 x 1 GE/10 GE SFP+ ports and 2x 100 GE QSFP28 ports			
1.1.4	The device shall support minimum 880Gbps switching capacity			
1.1.5	The device shall support minimum 1030Mpps throughput			
1.1.6	The device shall have minimum 64K MAC address storage			
1.1.7	The device shall support up to 24k routing table			
1.1.8	The device shall have minimum 8MB packet buffers			
1.1.9	The device shall have minimum 8GB DRAM			
1.1.10	The device shall support the following Layer 2 Features and Protocols: IEEE 802.1AX LAG, IEEE802.1D STP, IEEE802.1Q VLAN, IEEE 802.1s MSTP, IEEE 802.1w RSTP, IEEE 802.3ad LACP, STP BPDU Guard, STP Root Guard, Jumbo frames			
1.1.11	The device shall have and include any required license for the following Layer 3 Features and Protocols: BFD, DHCP Relay, DHCP Server, OSPFv2, RIPv2, VRRP, BGP, ISIS, ECMP			
1.1.12	The device shall have the following Security and visibility Features: ACL, Dynamic ARP inspection, IEEE 802.1ab LLDP, IEEE 802.1X Authentication, RADIUS Accounting, sFlow			
1.1.13	The device shall support MCLAG high availability			
1.1.14	The device shall have the following management features: Dual firmware, HTTP/HTTPS, IPv4 management, packet capture, RMON, SNMP v1/v2c/v3, SNTP, TFTP, SPAN, CLI, Web GUI, Syslog, Telnet/SSH			
1.1.15	The device shall have front to back air flow			
1.1.16	The device shall have redundant hot swappable AC power supply unit			
1.1.17	Form factor: 1 RU, rack mounting accessories should be included			

1.1.18	6 x 10GE SFP+ SR transceiver module shall be included. The transceiver shall be from the same OEM.			
1.1.19	6 x Duplex LC-LC, 5m, MM, OM5 fiber optic patch cable shall be included.			
1.1.20	10 x 10GE copper SFP+ RJ45 transceiver module shall be included. The transceiver shall be from the same OEM.			
1.1.21	02 x 10GE SFP+ LR transceiver module. The transceiver shall be from the same OEM.			
1.1.22	02 x 100GE QSFP28 SR transceivers module with 2m fiber optic cable shall be included. The transceiver shall be from the same OEM.			
1.1.23	The proposed device shall support direct security and management integration with the existing Fortinet Fortigate Firewall			
1.1.24	Installation and Configuration as per specification 4			
1.1.25	Warranty: 1-Year Parts and Service with 24x7 comprehensive Support, Hardware Replacement, Firmware Upgrades			
1.1.26	Technical Support: 1-Year 24x7 on-site technical support services and labor			
1.2	48 Port Full PoE Distribution Switch	08 Bundle		
1.2.1	Brand (Switches should be of Fortinet brand)			
1.2.2	Model (Vendor MUST specify the switch model)			
1.2.3	Network Interfaces: 48x GE RJ45 PoE (802.3af/at) and 4x 10GE SFP+			
1.2.4	The proposed device shall have minimum 740W PoE power budget			
1.2.5	The proposed device shall support minimum 176Gbps switching capacity			
1.2.6	The proposed device shall support minimum 260Mpps throughput			
1.2.7	The proposed device shall support upto 4K VLANs			
1.2.8	The proposed device shall have minimum 2MB packet buffers			
1.2.9	The proposed device shall have minimum 512MB DRAM			
1.2.10	The device shall support the following Layer 2 Features and Protocols: IEEE 802.1AX LAG, IEEE802.1D STP, IEEE802.1Q VLAN, IEEE 802.1s MSTP, IEEE 802.1w RSTP, IEEE 802.3ad LACP, STP BPDU Guard, STP Root Guard, Jumbo frames			
1.2.11	The device shall have and include any required license for the following Layer 3 Features and Protocols: BFD, DHCP Relay, Static Routing			
1.2.12	The device shall have the following Security and visibility Features: ACL, IEEE 802.1X Authentication, RADIUS Accounting, sFlow			
1.2.13	The device shall have the following management features: Dual firmware, HTTP/HTTPS, IPv4 management, Web GUI, Telnet/SSH			

1.2.14	Form factor: 1 RU, rack mounting accessories should be included			
1.2.15	2 x 10GE SFP+ SR transceiver module shall be included. The transceiver shall be from the same OEM.			
1.2.16	2 x Duplex LC-LC, 5m, MM, OM5 fiber optic patch cable shall be included.			
1.2.17	The proposed device shall support direct security and management integration with the existing Fortinet Fortigate Firewall			
1.2.18	The device shall support integrating it directly into the existing Fortinet Security Fabric			
1.2.19	Installation and Configuration as per specification 4			
1.2.20	Warranty: 1-Year Parts and Service Advanced Hardware Replacement, Firmware and General Upgrades			
1.2.21	Technical Support: 1-Year 24x7 on-site technical support services and labor			
1.3	24 Port Full PoE Distribution Switch	02	Bundle	
1.3.1	Brand (Switches should be of Fortinet brand)			
1.3.2	Model (Vendor MUST specify the switch model)			
1.3.3	Network Interfaces: 24x GE RJ45 PoE (802.3af/at) and 4x 10GE SFP+			
1.3.4	The proposed device shall have minimum 370W PoE power budget			
1.3.5	The proposed device shall support minimum 128Gbps switching capacity			
1.3.6	The proposed device shall support minimum 190Mpps throughput			
1.3.7	The proposed device shall support upto 4K VLANs			
1.3.8	The proposed device shall have minimum 2MB packet buffers			
1.3.9	The proposed device shall have minimum 512MB DRAM			
1.3.10	he device shall support the following Layer 2 Features and Protocols: IEEE 802.1AX LAG, IEEE802.1D STP, IEEE802.1Q VLAN, IEEE 802.1s MSTP, IEEE 802.1w RSTP, IEEE 802.3ad LACP, STP BPDU Guard, STP Root Guard, Jumbo frames			
1.3.11	The device shall have and include any required license for the following Layer 3 Features and Protocols: BFD, DHCP Relay, Static Routing			
1.3.12	The device shall have the following Security and visibility Features: ACL, IEEE 802.1X Authentication, RADIUS Accounting, sFlow			
1.3.13	The device shall have the following management features: Dual firmware, HTTP/HTTPS, IPv4 management, Web GUI, Telnet/SSH			
1.3.14	Form factor: 1 RU, rack mounting accessories should be included			
1.3.15	2 x 10GE SFP+ SR transceiver module shall be included. The transceiver shall be from the same OEM.			

1.3.16	2 x Duplex LC-LC, 5m, MM, OM5 fiber optic patch cable shall be included.			
1.3.17	The proposed device shall support direct security and management integration with the existing Fortinet Fortigate Firewall			
1.3.18	The device shall support integrating it directly into the existing Fortinet Security Fabric			
1.3.19	Installation and Configuration as per specification 3			
1.3.20	Warranty: 1-Year Parts and Service Advanced Hardware Replacement, Firmware and General Upgrades			
1.3.21	Technical Support: 1-Year 24x7 on-site technical support services and labor			
1.4	Network Switches - Installation, Configuration, Migration, Documentation and Training			
1.4.1	<p><u>Project Team</u> To ensure successful implementation, the project delivery team must consist of OEM certified personnel who will be onsite for the duration of the installation, configuration, and migration work. The team should include:</p> <ul style="list-style-type: none"> • Project Manager: responsible for overseeing the entire project and ensuring that all aspects of the project are completed within the timeline and budget. • Network Professional: responsible for configuring the switches and integrating it with the existing FortiGate firewall, as well as verifying the proper functioning of the integrated solution. • VMware Professional: responsible for configuring, integration and migration of VMware management networks, and VM networks. • Security Specialist: responsible for ensuring the integrated solution meets the necessary security requirements, including configuring access control, implementing secure communication protocols, and ensuring that the solution adheres to industry best practices. <p>All members of the project delivery team must be OEM certified personnel and possess relevant industry certifications such as Fortinet NSE (Network Security Expert), and VMware Data Center Certification. They must have experience working with the proposed switch, FortiGate firewall, VMware Datacenter products. The onsite presence of the project delivery team is essential to ensure timely troubleshooting and problem resolution. They will be responsible for providing ongoing support and maintenance until the handover of the integrated solution to the Ministry of Education (MoE).</p>			
1.4.2	<p><u>Planning</u></p> <ul style="list-style-type: none"> • Review the existing network infrastructure and topology. • Determine the required number of Switches and their placement in the network. • Identify any potential issues or challenges that may arise during the integration. <p><u>Integration with FortiGate Firewall</u></p> <ul style="list-style-type: none"> • Integrate with the existing FortiGate firewall. • Configure the FortiGate firewall to recognize and manage the core switches and edge switches • Configure VLANs, port settings, and any other necessary configurations. <p><u>Configuration</u></p> <ul style="list-style-type: none"> • Configure the Switches to work seamlessly with the FortiGate firewall. • Configure VLANs, port settings, and any other necessary configurations. <p><u>Integration with Existing Network Topology</u></p> <ul style="list-style-type: none"> • Integrate the new solution with the existing network infrastructure. • Configure the new solution to support any necessary protocols or applications. <p><u>Testing and Verification</u></p> <ul style="list-style-type: none"> • Conduct testing to ensure that the integrated solution meets the performance and security requirements. • Verify that the integrated solution is operating correctly and efficiently. • Prepare test results and verification reports. <p><u>Documentation, Training and Handover</u></p> <ul style="list-style-type: none"> • Provide training to minimum 3 IT staff of the MoE on the configuration and operation of the integrated solution. <p>Handover the integrated solution to the network team with all necessary documentation (documentation should include all switch related configurations such as VLANs, port filtering, etc).</p>			

#	Minimum Requirements	Quantity	Meets? Yes/No/Better	Specification of relevant
LOT 2	UPS and Server Room Environment Monitoring System - Supply, Installation, Configuration, Migration, Documentation and Training			
1.1	Primary Site Redundant UPS	01 Bundle		
1.1.1	01 Nos x APC Symmetra LX 16kVA Scalable to 16kVA N+1 Rack-mount, 220/230/240V <ul style="list-style-type: none"> • 04 Nos x APC Symmetra LS Battery Module SYBT5 • 04 Nos x APC Symmetra LX 4kVA Power Module • 01 Nos x Intelligence module • 01 Nos x Network management card 2 with environmental monitoring • 01 Nos x APC Symmetra LX Communications Card • 01 Nos x APC Symmetra LX 4-post rack-mounting rails 			
1.1.2	02 Nos x APC Easy PDU, Metered, ZeroU, 16A, 230V, (18)C13 & (3)C19			
1.1.3	40 Nos x APC 1U 19" Black Modular Toolless Blanking Panel			
1.1.4	Installation and Configuration as per specification 7			
1.1.5	Warranty: 1-Year hardware repair or replacement warranty including on-site support			
1.1.6	Technical Support: 1-Year 8x5 on-site technical support services and labor			
1.2	Server Room Environment Monitoring System	01 Bundle		
1.2.1	Brand (Vendor MUST specify the brand)			
1.2.2	Model (Vendor MUST specify the model)			
1.2.3	01 x Large Enterprise Environment Monitoring System with Redundant AC Power			
1.2.4	01 x Integrated Temp/Humidity Sensor, PoE			
1.2.5	02 x Temperature/Humidity/Dew Point Sensor			
1.2.6	01 x Smoke Detector with Built-In Fixed-Temperature Heat Sensor			
1.2.7	01 x Adaptive Dual Microwave/PIR Motion Detector			
1.2.8	01 x Ultra-HD Wired Day/Night Outdoor Bullet IP Camera with PoE			
1.2.9	01 x Liquid Detection Sensor, Plenum Rope-Style (10x10ft)			
1.2.10	01 x USB 4G Modem (compatible with local Telecom providers)			
1.2.11	1 x AC Voltage Detector with Relay & IEC C14 Socket			
1.2.12	1 x AC Voltage Detector with Relay & IEC C14 Socket			
1.2.13	Warranty: 1-Year Parts and Service with on-site support			
1.2.14	Technical Support: 1-Year 24x7 on-site technical support services and labor			
1.3	APC UPS and Environment Monitoring System- Installation, Configuration, Migration, Documentation and Training			
1.3.1	<p><u>Project Team</u> To ensure successful implementation, the project delivery team must consist of OEM certified personnel who will be onsite for the duration of the installation, configuration, and migration work. The team should include:</p> <ol style="list-style-type: none"> 4. Project Manager - responsible for overall project management and coordination. 5. Site Surveyor - responsible for site survey, electrical and civil works. 6. Installation Professional - responsible for unpacking, assembling, and installing the APC Symmetra and Environment Monitoring 			

	<p>System.</p> <ul style="list-style-type: none"> • 01 Nos x APC Symmetra LX 4-post rack-mounting rails <p>All members of the project delivery team must be OEM certified Personnel and possess relevant industry certifications. The onsite presence of the project delivery team is essential to ensure timely troubleshooting and problem resolution. They will be responsible for providing ongoing support and maintenance until the handover of the system to the MoE.</p>			
<p>1.3.2</p>	<p>Install and configure an APC Symmetra LX 16kVA UPS system and Environment monitoring system, including all the electrical work required for a successful installation. It also includes the rack mounting of the UPS and the recabling of all existing data center equipment and PDUs. Additionally, the project will involve configuring, alerting and monitoring to ensure the system is operating optimally. Existing APC UPS and Environment Monitoring System at Primary Site need to be moved, installed and configured at the Disaster Recovery (DR) site. Existing APC UPS at DR Site need to be moved and installed at the Primary site.</p> <p><u>Project Deliverables:</u> The following are the deliverables of this project:</p> <ol style="list-style-type: none"> 8. A fully installed and configured APC Symmetra UPS system, rack mounted and connected to all necessary equipment and PDUs. 9. Move and install existing APC Symmetra LX UPS to DR Site 10. Move and install existing 2 x APC UPSs at DR Site to Primary Site 11. Move and install existing APC Environment Monitoring System at Primary Site to DR Site 12. A fully installed and configured Environment Monitoring System at the Primary Site 13. A complete set of documentation, including installation, configuration and operation manuals 14. Provide training to minimum 3 IT staff of the MoE on how to operate and maintain the system <p><u>Project Tasks:</u> The project tasks shall include, but not limited to:</p> <ol style="list-style-type: none"> 13. Site Survey: Conduct a site survey to determine the best location for the APC Symmetra LX 16kVA installation and ensure proper rack space for the unit. 14. DR Site Electrical Work: Install and connect a dedicated circuit breaker, ELCB, and an isolation switch for the system. (Note: Primary Site server room already has dedicated breakers installed) 15. Unpacking and Assembling: Unpack the APC Symmetra LX 16kVA and assemble it as per the manufacturer's guidelines. 16. Rack Mounting and re-cabling: Mount the APC Symmetra LX 16kVA in the appropriate rack space and re-cable all existing data center equipment and PDUs as necessary 17. Configuration: Configure the APC Symmetra LX 16kVA system according to the MoE's requirement 18. Move and install existing APC Symmetra LX UPS at the Primary Site to DR Site 19. Rack mounting and re-cabling for APC Symmetra LX UPS in DR Site 20. DR Site Electrical Work: Install and connect a dedicated circuit breaker, ELCB, and an isolation switch for the system 			

	<p>21. Alerting and Monitoring: Configure alerting and monitoring systems to ensure optimal system performance. Alerting and monitoring shall be configured for both sites</p> <p>22. Testing: Conduct comprehensive testing of the APC Symmetra and Environment Monitoring System to ensure its functionality</p> <p>23. Documentation: Provide a complete set of documentation, including installation, configuration and operation manuals.</p> <p>24. Training and Handover: Provide training to minimum 3 IT staff of the MoE on how to operate and maintain the system</p>			
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10 -

Team members Information

Team members Information

List all Members in the team as per requirement in section 7

(Team Members Curriculum Vitae and supporting documents should be submitted along with the proposal and this form should be signed and stamped by Tenderer).

Team member Name	Contact No	ID Card No	Qualifications

Primary required certificates of the professional(s) – LOT 1:

- Fortinet NSE (Network Security Expert)
- VMware Certified

Primary required certificates of the professional(s) – LOT 2:

- APC Certified

The vendor shall submit the following documents:

- Certifications copy of the relevant training
- ID card or Passport Copy of the certified person/ personnel

Curriculum Vitae

- Name:**
- Education** [Indicate college/university and other specialized education of staff member, giving names of institutions, degrees obtained, and dates of obtainment]:
- Other Training**
- Languages** [For each language indicate proficiency: good, fair, or poor in speaking, reading, and writing]:
- Experience/ employment record** [Starting with present position, list in reverse order every employment held since graduation, giving for each employment (see format here below): dates of employment, name of employing organization, positions held.]

From [Month/Year] – To [Month/Year]:

Employer:

Positions held:
- Summary of projects/assignments undertaken/ role**

Name of project/ assignment:

Experience classification: General / specific

Scope of project/ assignment:

Role/ Position undertaken:

Period of assignment: