

## Technical Specifications

Minimum requirements/specifications		
Item 1	Ethernet Switch (Type 1)	Quantity
1.	<p>Type: Gigabit Ethernet</p> <p>Ports:</p> <ul style="list-style-type: none"> <li>- 24 x RJ-45 10/100/1000 ports; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only;</li> <li>- 2 x SFP 100/1000 Mbps transceiver slots</li> </ul> <p>Management interface: yes</p> <p>Performance:</p> <ul style="list-style-type: none"> <li>- Throughput – at least <del>20</del> 15 million pps</li> <li>- Switching capacity – at least <del>24</del> 48 Gbps</li> <li>- MAC address table – at least <del>8000</del> 4,000 entries <b>must be supported</b></li> </ul> <p>Characteristics:</p> <ul style="list-style-type: none"> <li>- Quality of Service (QoS): Traffic prioritization (IEEE 802.1p), IEEE 802.1p prioritization with DSCP, Broadcast control</li> <li>- Layer 2 switching: VLAN support and tagging IEEE 802.1Q,</li> <li>- Resiliency and high availability: IEEE 802.1D Spanning Tree Protocol (STP) and IEEE 802.1W Rapid Spanning Tree Protocol (RSTP)</li> <li>- Security: Secure Sockets Layer (SSL), Automatic denial-of-service protection, Management password</li> <li>- Management: Simple/Secure management, SNMPv1, SNMPv2, Dual flash image, Port mirroring, LLDP</li> </ul>	6 pcs
2.	Rack mount ready (EIA-standard)	
3.	Voltage: 210-240 V AC	
4.	Warranty – 3 years	
Item 2	Ethernet Switch (Type 2)	Quantity
1.	<p>Type: Gigabit Ethernet stackable</p> <p>Ports:</p> <ul style="list-style-type: none"> <li>- 48 x RJ-45 autosensing 10/100/1000 PoE+ ports; Media Type: Auto MDIX; Duplex: 10BASE-T/100BASE-TX: half or full; 1000BASE-T: full only</li> <li>- 2 x 10 Gb SFP+ transceiver slots</li> </ul> <p>Management interface: yes</p> <p>Performance:</p> <ul style="list-style-type: none"> <li>- Throughput – <del>132</del> 100 million pps</li> </ul>	2 pcs

	<ul style="list-style-type: none"> <li>- Switching capacity – <del>at least 320</del> 136 Gbps</li> <li>- MAC address table – at least <del>32,000</del> 8,000 entries <b>must be supported</b></li> </ul> <p>Characteristics:</p> <ul style="list-style-type: none"> <li>- Supports OpenFlow</li> <li>- Quality of Service (QoS): Advanced classifier-based QoS, Layer 4 prioritization, Traffic prioritization, Bandwidth shaping, Class of Service (CoS)</li> <li>- Management: Port mirroring and RSPAN, Remote configuration and maintenance using Telnet, sFlow v5, LLDP, UDLD, Friendly port names, Dual flash images, Multiple configuration files, CLI, SNMP v1/v2/v3, RMON,</li> <li>- Connectivity: IEEE 802.3az, IEEE 802.3af, IEEE 802.3at, <del>Prestandard PoE support</del>, Jumbo frames, Auto-MDIX, IPv6</li> <li>- Resiliency and high availability: Stackable, Redundant management and power, IEEE 802.1s, IEEE 802.3ad, Hot-swappable modules, Uplink Failure Detection</li> <li>- Layer 2 switching: VLAN support and tagging IEEE 802.1Q, IEEE 802.1v , GARP VLAN Registration Protocol, IEEE 802.1ad Q-in-Q, MAC-based VLAN, RPVST+</li> <li>- Layer 3 routing: Static IP routing</li> <li>- Security: Port isolation, port security, and sticky MAC, User privilege management and password protection, Binding of the IP address, MAC address, interface, and VLAN, AAA authentication, RADIUS authentication, SSH v2.0,</li> <li>- Convergence: IGMP v1/v2/v3 snooping and IGMP fast leave, <del>PoE allocations</del>, Auto VLAN configuration for voice</li> </ul>	
2.	Rack mount ready (EIA-standard)	
3.	Voltage: 210-240 V AC	
4.	Warranty – 3 years	
<b>Item 3</b>	<b>Router/Firewall (Type 1)</b>	<b>Quantity</b>
1.	<p>Type: Router/Firewall</p> <p>Ports:</p> <ul style="list-style-type: none"> <li>- 8 x GbE RJ45 Port</li> <li>- 1 x SFP port</li> <li>- Console port</li> </ul> <p>Performance:</p> <ul style="list-style-type: none"> <li>- <del>Firewall</del> <b>Router</b> Throughput – at least 1.2Gbps for UDP packets</li> <li>- <del>Firewall</del> <b>Router</b> Throughput (Packets Per Second) – at least 5 Mpps</li> <li>- <del>Concurrent sessions (TCP)</del> at least 250,000</li> <li>- <del>New sessions/Sec (TCP)</del> at least 8,000</li> <li>- Firewall Policies – at least 5,000</li> <li>- IPSec VPN Throughput (512 byte packet) – at least 100 Mbps</li> <li>- Site-to-Site IPSec VPN Tunnel – at least 200</li> </ul>	5 pcs

	<ul style="list-style-type: none"> <li>- Client-to-Site IPSec VPN Tunnels – at least 1,000</li> <li><del>— Number of licensed clients — at least 200</del></li> </ul>	
2.	Voltage: 210-240 V AC	
3.	Warranty – 3 years	
<b>Item 4</b>	<b>Router/Firewall (Type 2)</b>	<b>Quantity</b>
1.	<p>Type: Router/Firewall</p> <p>Ports:</p> <ul style="list-style-type: none"> <li>- 8 x GbE RJ45 port</li> <li>- 2 x 10GbE SFP+ Port</li> <li>- 1 x management interface</li> </ul> <p>Performance:</p> <ul style="list-style-type: none"> <li>- <del>Firewall Router</del> Throughput – at least <del>28</del> <b>12</b> Gbps for UDP packets</li> <li>- <del>Firewall Router</del> Throughput (Packets Per Second) – at least <del>41</del> <b>15</b> Mpps</li> <li><del>— Concurrent sessions (TCP) — at least 1 Million</del></li> <li><del>— New session/Sec (TCP) — at least 50,000</del></li> <li>- Firewall Policies – at least <del>10,000</del> <b>8,000</b></li> <li>- IPSec VPN Throughput (512 byte packet) – at least 1 Gbps</li> <li>- Site-to-Site IPSec VPN Tunnel – at least <del>2,000</del> <b>1,000</b></li> <li>- Client-to-Site IPSec VPN Tunnels – at least <del>5,000</del> <b>2,000</b></li> <li><del>— Unlimited number of clients</del></li> <li>- High Availability supported configurations - <del>Active / Active, Active / Passive, Clustering</del> <b>VRRP</b></li> <li>- <del>Routing Protocols supported – RIP, OSPF, BGP</del></li> </ul>	2 pcs
2.	Voltage: 210-240 V AC	
3.	Warranty – 3 years	
<b>Item 5</b>	<b>9U Rack</b>	<b>5 pcs</b>
<b>Item 6</b>	<b>Patch panel 24 ports RJ-45</b>	<b>6 pcs</b>
<b>Item 7</b>	<b>Document Scanner <i>similar to Fujitsu Scan Snap iX500</i></b>	<b>10 pcs</b>
	<ul style="list-style-type: none"> <li>- Automatic Document Feeder (ADF) 50 Sheets</li> <li>- Duplex scanning</li> <li>- Color scanning</li> <li>- Scan to: searchable PDF</li> <li>- Optical resolution: 600 x 600 dpi</li> <li>- Document size: A4</li> <li>- Scanning speed: at least 20 ppm</li> <li>- Interface: USB 3.0</li> <li>- Warranty: 3 years</li> </ul>	
<b>Item 8</b>	<b>Services: installation and configuration of equipment</b> <b>Locations (tentative): Chisinau – 2 locations; Balti – 1 location; Cahul – 1 location; Comrat – 1 location; Briceni – 1 location</b>	