



नेपाल सरकार
भौतिक पूर्वाधार तथा यातयात मन्त्रालय

सडक विभाग
योजना तथा अनुगमन महाशाखा
(HMIS-ICT शाखा)



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बबरमहल, काठमाडौं।

मिति :- २०८२/०४/१४

प.सं. :- ०८२/८३

च.नं. :- HMIS/ICT/०५

विषय: लागत अनुमान तयार गर्ने प्रयोजनका लागि बजारभाउ उपलब्ध गराउने सम्बन्धमा ।

श्री जो जससंग सम्बन्धित छ ।

यस विभागको लागि आवश्यक “Enterprise Network Firewall with License” * ३ थान तथा “Server” * १ थान खरिदको लागि लागत अनुमान तयार गर्नुपर्ने भएकोले सोको लागि बजारभाउ आवश्यक रहेको हुँदा यसै सूचना साथ संलग्न प्राविधिक स्पेशिफिकेशन भएका उपकरणहरूको बजारभाउ १० दिन भित्र उपलब्ध गराई सहयोग गरिदिनुहुन सम्बन्धित सबैलाई अनुरोध गरिन्छ ।

(सुप्रितम राज श्रेष्ठ)

कम्प्युटर इन्जिनियर


Government of Nepal
Ministry of Physical Infrastructure and Transport
Department of Roads
Babarmahal, Kathmandu

Technical Specification for Enterprise Firewall * 3 with License

FY: 2082-83

| S. No. | Technical Description, Specifications, and Standards for Enterprise Firewall | |
|--------|--|---|
| | Particulars | Requirements |
| 1. | Brand | (To be mentioned by the bidder) |
| 2. | Model | (To be mentioned by the bidder) The proposed model should not be declared as End of Sales / End of Support |
| 3. | Industry Compliance | OEM must be listed in: <ul style="list-style-type: none"> • Leader or Challenger quadrant in the latest Gartner Magic Quadrant or • Leader or Strong Performer in latest Forrester Report for Enterprise Network Firewall |
| 4. | Connectivity | Min. 8 x 1 GbE Ports (RJ45/SFP) Min. 2 x 10 GbE Ports (RJ45/SFP/SFP+) 1 Management Port 1 Console Port 1 USB Port |
| 5. | Concurrent Sessions | Min. 2 million |
| 6. | New Connections/Second | Min. 100 K |
| 7. | Firewall Throughput | Minimum 30 Gbps |
| 8. | IPS Throughput | Minimum 4 Gbps |
| 9. | NGFW Throughput | Minimum 2.5 Gbps |
| 10. | Threat Protection Throughput (FW + AVC + IPS + Antivirus + Anti Malware) | Min. 2.5 Gbps |
| 11. | IPSec VPN Throughput | Minimum 12 Gbps |
| 12. | Features | <ol style="list-style-type: none"> Operational Modes: The system must support both Transparent (bridge) mode, ensuring minimal disruption to the existing network infrastructure, and NAT/Route mode. VPN Capabilities: The solution must support IPSEC and SSL VPN functionality. Licensing for at least 100 SSL VPN clients must be included from day one. Traffic Shaping: Advanced traffic shaping and quality of service (QoS) functionalities must be integral to the proposed system. Next-Generation Firewall Features The firewall must support configurable actions for TCP session management. Multi-Factor Authentication (MFA) The system must either have inbuilt support or able to integrate with third-party multi-factor authentication platforms. Real-Time Monitoring and Dashboard |

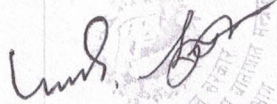
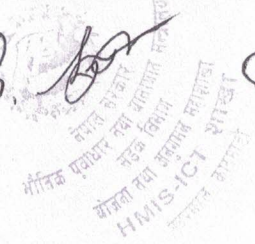
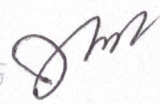

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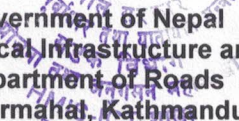


| S. No. | Technical Description, Specifications, and Standards for Enterprise Firewall | |
|--------|--|---|
| | Particulars | Requirements |
| | | <p>The solution must feature real-time event monitoring through pre-defined dashboards for SD-WAN, VPN, Wi-Fi, inbound/outbound traffic, applications, and websites.</p> <p>7. Low Latency The firewall must ensure latency does not exceed 4 microseconds under normal operating conditions.</p> <p>8. Intrusion Prevention System (IPS) The IPS must be capable of mitigating Denial of Service (DoS) and Distributed Denial of Service (DDoS) attacks.</p> <p>9. Web Filtering The firewall must include URL filtering based on a real-time categorization database.</p> <p>10. Antivirus and File Control The firewall must provide granular control to block, allow, or monitor traffic using antivirus signatures and file-blocking rules. Policies must be configurable by firewall rules or authenticated user groups.</p> <p>11. Anti-APT Integration The system must integrate bi-directionally with an Anti-Advanced Persistent Threat (APT) solution to enable zero-day malware detection and threat intelligence sharing for attack mitigation. Any required licenses should be present from day one.</p> <p>12. Email Filtering and Anti-Spam The solution should have anti-spam capabilities to detect and block spam emails across IMAP, SMTP or POP3 protocols.</p> <p>13. High Availability The firewall must support high availability configurations, including both Active/Active and Active/Passive modes.</p> <p>14. Redundant Power Supplies The device must include redundant power supplies to ensure uninterrupted operation in the event of power supply failure.</p> |
| 13. | Routing & Networking | <p>1. Routing Capabilities The proposed solution must support static routing, policy-based routing, identity-based routing, multicast routing, and dynamic routing protocols</p> <p>2. ISP Failover and Load Sharing The system must support seamless ISP failover and load sharing to ensure uninterrupted connectivity and optimized bandwidth utilization.</p> <p>3. NAT and Address Translation The solution must support: Dynamic NAT and PAT, NAT46, NAT64, DNS64 and DHCPv6</p> <p>4. SD-WAN Capabilities The system must include comprehensive SD-WAN functionality from the initial deployment. Any necessary licensing must be provided.</p> |

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 सूचना प्रसारण तथा संचार विभाग
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| S. No. | Technical Description, Specifications, and Standards for Enterprise Firewall | |
|--------|--|--|
| | Particulars | Requirements |
| 14. | Management, Monitoring and Usability | <ol style="list-style-type: none"> 1. Centralized management with GUI, CLI, and API support. 2. Real-time monitoring 3. Role-based access control (RBAC) for multi-user environments. 4. Logging and reporting. 5. Automated firmware updates and vulnerability patching. |
| 15. | License | 3 years |
| 16. | Warranty and Support | Minimum 3 years with hardware replacement and 24*7 support |
| 17. | Installation Sites | IDMC Singhadarbar, DOR Babarmahal and DRC Hetauda |


Government of Nepal
Ministry of Physical Infrastructure and Transport
Department of Roads
Babarmahal, Kathmandu
Technical Specification for Server * 1 at DRC

FY: 2082-83

| S.No. | Particulars | Requirements |
|-------|-------------------------------|---|
| 1. | Brand | (To be mentioned by the bidder) |
| 2. | Model | (To be mentioned by the bidder) |
| 3. | Form Factor | 2 U Rack-mountable Server |
| 4. | Processor Sockets | 2 × CPU sockets (dual-socket architecture) |
| 5. | Processor Type | 2 x Intel Xeon Gold 4 th Gen or higher |
| 6. | Processor Specs | Minimum 24 cores per CPU, minimum 2.4 GHz base clock, Hyper-Threading, Turbo Boost and DDR5-5200 RAM support |
| 7. | Memory Slots | Minimum 16 DIMM slots per CPU (Total 32 slots) or better |
| 8. | Memory Type | DDR5 (max speed 5200 M T/s) Dual Rank |
| 9. | Installed Memory | 12 x 64GB RDIMM 5200 MT/s, Dual Rank |
| 10. | Storage Bays | <p style="text-align: center;">Front storage: Up to 24 x 2.5-inch SAS/SATA/NVMe (HDD/SSD) including 8 Universal slots (NVMe Direct) Backplane (Optional) Should support SAS/SATA/NVMe Drives</p> |
| 11. | Storage Control | Integrated or dedicated RAID controllers with support for SAS, SATA, and NVMe drives. |
| 12. | Installed Storage | 12 x 3.84TB SSD SAS RI 24 Gbps 512e 2.5 in Hot-plug 12 x 2.4TB 10K RPM SAS 12Gbps 512e 2.5 in Hot-plug |
| 13. | Network Interfaces | Minimum 2 × 10GbE ports and Min. 2 x 1 GbE ports |
| 14. | Expansion Slots | <ul style="list-style-type: none"> • Minimum 4 × PCIe Gen4 • Support for multiple GPUs/accelerators |
| 15. | Ports | At least 1 x USB 2.0 (Front) 1 x VGA 1 x USB 2.0 (Rear) 1 x RJ-45 |
| 16. | Management | Integrated server management with dedicated management port. Remote management capabilities Support for various management software platforms. |
| 17. | Operating System | Support for major server operating systems and hypervisors |
| 18. | Power Supply | Dual Redundant Hot-Swappable Fans |
| 19. | Cooling | Hot-plug redundant fans. |
| 20. | Warranty & Support | Minimum 3 years with hardware replacement and 24*7 support |

