**NMB MICROFINANCE BITTIYA SANSTHA LIMITED**

**POKHARA-29, KASKI**

**Specification for Firewall Devices and Power Backup**

**Router and Firewall Devices:**

**For Branches: (50 Units)**

1. *Hardware appliance & modular architecture for scalability and should be a single box configuration for ease of management.*
2. *Should have a dedicated console port and USB port for storage of configuration/image.*
3. *Router shall support auto failover in link connectivity*
4. *Should have at least 5 Nos. 10/100/1000 Mbps Routable Ethernet interfaces.*
5. *Should support debugging capabilities to assist in problem resolution*
6. *Should have hardware assisted VPN acceleration.*
7. *Router should support minimum 10Mbps real world WAN bandwidth with all the services enabled on the router*
8. *Should have other IP Services like GRE tunneling, ACLs, IPSEC VPNs, NAT services*
9. *Should support Firewall features (transparent and bridging).*
10. *Routers should have Class-based queuing*
11. *Routers should have marking, policing and shaping.*
12. *Routers should support Voice traffic optimization with features like WRED, Modular QoS or equivalent and RSVP.*
13. *Routers should have IPV6 compliance from day one*
14. *Routers should IPv6 transport packets between IPv6-only and IPv4-only endpoints, ICMPv6, IPv6 DHCP.*
15. *Support for the following IP v6 features : RIP NG , OSPF v3 , BGP Support for V6, IP V6 Dual Stack, NAT 64NAT 64/Suitable Network address translation/tunneling for IPv6, IP v6 Policy based Routing, and IP v6 QoS, SNMP V3 over IPv6 or equivalent features.*
16. *Router should support protocols like IPv4, IPv6, VRRP, Static Routes, RIPv1, RIPv2, OSPF, IS-IS, BGP, MBGP, BFD, Policy based routing, IPv4 and IPv6 tunneling from day 1*
17. *The router should be capable of WAN protocols like PPP, Multilink PPP, etc.*
18. *Dynamic Host Control Protocol (DHCP) server/relay/client*
19. *Dynamic DNS Support*
20. *Support for 802.1q VLANs, Demilitarized Zone (DMZ)*
21. *Should have IGMP v1/v2/v3, PIM-DM, PIMSM, Source Specific Multicast (SSM)*
22. *Routers should have Configuration rollback*
23. *Should support network traffic accounting, usage-based network billing, network planning, security, Denial of Service (DoS) monitoring capabilities and network monitoring.*
24. *Should have extensive support for SLA monitoring for metrics like delay, latency, jitter, packet loss, RTP-Based VoIP traffic, CRTP..*
25. *Routers should support Software upgrades as and when necessary*
26. *Routers should have SNMPv2 and SNMPv3*
27. *Routers should have AAA authentication using RADIUS and TACACS*
28. *Routers should have Packet Filters like: Standard ACL, Extended ACL, Time range ACL‟s etc.*
29. *Router should support advanced application inspection and control*
30. *Routers should have Tunnels (GRE, IPSec)*
31. *The router should support IPSec Framework for Secured Data transfer Key Exchange : Internet Key Exchange (IKE), IKEv2, Pre-Shared Keys (PSK), Public Key Infrastructure PKI (X.509), RSA encrypted nonces/ RSA Signatures etc, IPSec Data Encapsulation AH and ESP or equivalent function.*
32. *NAT transparency, Firewall support for clients*
33. *IPSec 3DES termination/initiation, IPSec passthrough*
34. *Routers should have DES, 3DES, AES (256 bit) encryption, Authentication Algorithm: SHA1 and SHA2, Group: Diffie-Hellman (DH) Group 1, 2, 5*
35. *Routers should have generation of SNMP traps and syslog*
36. *Routers should have Network address translation (NAT) and PAT*
37. *Extensive debugs on all protocols*
38. *Shall have Secure Shell for secure connectivity*
39. *Should have out of band management through console and an external modem for remote management*
40. *Management should support: SSH, Simple Network Management Protocol (SNMP), CLI/Web based HTTP management, RADIUS*
41. *Attach solution document containing detailed bill of material (make, model, OS details version, date of release, date of release of next version, end of sale & support date, product development path, etc.)*

**For HO (1 Unit)**

In addition to above features, firewall devices at the HO end should have below features:

Anti-malware protection , Anti-spam protection , Antivirus analysis , Application filtering, Content filtering , Firewall protection , High Availability, Intrusion Prevention System (IPS) , IPSec Virtual Private Network (VPN) , URL filtering, Application Control Throughput, Threat Protection Throughput, CAPWAP Throughput

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| **FACT SHEET FOR APPLIANCE DEVICE** | **MINIMUM MANDATORY REQUIREMENT** |
| 1. Scope
 | Supply and deliver NGFW with least 1-year software and hardware maintenance.  |
| 1. Hardware Architecture
 | 1. Appliance should have 14x1GE or higher integrated data ports.
2. Appliance should support internal storage of 480 GB SSD.
3. Shall support HA in Active/Active, Clustering and Active/Passive
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| 1. Performance & Scalability
 | 1. Should support at least 7.0 Gbps of Appliance throughput with 64 byte of UDP packets
2. 350 Mbps of NGFW throughput (IPS and Application enabled)
3. Should support TCP concurrent connections up to 2 Million
4. TCP new connection per second should be at least 30000
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| 1. Appliance Features
 | 1. Appliance should support creating access-rules with IPv4 & IPv6 objects simultaneously
2. Appliance should support operating in routed & transparent mode.
3. In transparent mode Appliance should support arp-inspection to prevent spoofing at Layer-2
4. Appliance should support DOS protection
5. Appliance should support static nat, pat, dynamic nat, pat & destination based nat
6. Appliance should support Nat66 (IPv6-to-IPv6), Nat 64 (IPv6-to-IPv4) & Nat46 (IPv4-to-IPv6) functionality
7. Should support security policies based on security group names in source or destination fields or both
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| 1. Next Generation capabilities
 | 1. The solution must be capable of passively gathering information about session flows for all monitored hosts, including start/end time, ports, and services
2. The solution must provide a detailed, interactive graphical summary that includes data on applications, application statistics, connections, intrusions events, hosts, servers, users, file-types, and malwares.
3. Uses the global footprint of security deployments for more comprehensive network protection.
4. The solution must be capable of detecting and blocking IPv4 and IPv6 attacks.
5. Solution should be able to block the attack on the basis of Geo location
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| 1. Management
 | 1. The management platform must be accessible via a web-based interface.
2. Appliance should support the functionality of Auto-Update to check for latest software versions & download the same.
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| 1. Other Features
 | 1. 24\*7\*365 local support for one year.
2. Threat Protection subscription for one year.
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| 1. Delivery
 | 1. Delivery of all components and its peripherals shall be within 21 days upon receiving PO.
2. Implementation and testing of all components shall be within 21 calendar days upon receiving the device by NMB. UAT Sign off shall be provided after the implementation.
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| 1. Training and Documentation
 | 1. The Vendor shall conduct training to IT Department on Appliance Basic and Advance Usage at no additional cost to the NMB within 10 days after the implementation
2. The Vendor shall provide the documentation of the delivered Next Generation Appliance to the IT Department within 3 weeks from the receipt of PO.
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| 1. Payment
 | 1. Payment shall be made after the Sign Off of UAT form.
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| 1. Others
 | 1. Bid Document shall clearly specify URL and datasheet links for complied specifications.
2. Bank reserves the right to qualify or dis-qualify any of the providers without giving any reasons.
3. Software and Hardware prices shall be mentioned separately
4. System must detect and block new, unknown malware and targeted attacks found in email attachments, downloaded files and URLs to files within emails.
5. System shall uncover threats like zipped/compressed files hidden in SSL and TLS encrypted communications.
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Note: Firewall and Router should have been deployed in commercial banks of Nepal

**Power Backup:**

**Capacity 5+ KVA**

**INPUT**

* Nominal Voltage : 200 V to 240 Volt Single phase
* Voltage Range : 100~300 Vac (Full load)
* Current Harmonic Distortion : <5% (Full Load)
* Power factor : >0.99 (Full Load)
* Frequency : 50Hz ±10%

**OUTPUT**

* Voltage : 220+- 1 %
* Voltage Harmonic Distortion : ≤ 2% (Linear Load)
* Voltage Regulation : ±1% (Static), ±2%(Typical)
* Frequency : 50Hz ±10%
* Overload Capacity : 110% = 10+ min, 150%= 1+ min
* Crest Factor : 3:1

**Others**

* Output overload/short-circuit Charger current limit Battery low voltage/deep discharge
* Automatic float com boost charger
* True, On Line Double Conversion
* Wave form Pure Sinewave
* Efficiency 95 %
* LCD Display + Led
* Input output isolation transformer
* Inverter Utility Load is continuously on inverter
* Charging Current 10% AH capacity of battery
* Exide Battery 12 volt 150 amp
* Battery stand
* Dc cable
* Parallalability Optional
* SNMP Card optional