बिर्तामोड नगरपालिका
नगर कार्यपालिकाको कार्यालय
बिर्तामोड, झापा
१ नं. प्रदेश, नेपाल

SPECIFICATION

Minimum Required Specification for Firewall Appliance:

Recommended Brand: Sophos/Cisco/Juniper

S.No.	Specification
1	Must have a 64-bit hardware platform & based on Multi-Core Architecture.
2	Proposed solution or OEM should have presence in Gartner's Magic Quadrant for Network Firewalls
3	The proposed solution should support High Availability Active-Active/Active-Passive mode
4	Next-Gen Firewall appliance should have minimum preinstalled 8*1 Gig copper ports, 2*1 GbE SFP*,flexible to use any port as LAN, WAN, or DMZ ports.
5	Multicore Processor based Identity based Firewall,limit on surfing quota & surfing time, based on per user & group.
6	Due to intense load of network traffic we would require minimum of 8 GB of RAM/Memory or higher to perform during peak traffic volumes
7	Firewall Should have below minimum performance
8	**a.** Firewall throughput 30,000 Mbps
9	**b.** Threat Protection throughput 1,200 Mbps
10	**c.** 6.5 million Concurrent sessions
11	**d.** IPS throughput 5,500 Mbps
12	**e.** 134,000 New Sessions/second
13	**f.** Firewall IMIX throughput 15,000 Mbps
14	120 GB SSD or higher with local storage for logging, reporting, In absence of local storage vendor can suggest external logging solution with storage capacity of 500 GB and above.
15	Should supports routing: static, default, multicast (PIM-SM) and dynamic (RIP, BGP, OSPF) and DoS and DDoS attacks and portscan blocking
16	Proposed solution should have features like restricting network traffic from specific Country or Continent basis in every firewall rule.
17	Proposed solution should have Advanced Threat Protection capability to Detect and block network traffic attempting to contact command and control servers using multi-layered DNS, AFC, and firewall.
18	Web protection feature should have URL Filter database with millions of sites across 80+ categories and file type filtering by mime-type, extension and active content types (e.g. Activex, applets, cookies, etc.)

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19	Proposed firewall should have control over application traffic based on category/individual application, characteristics, technology and risk level.
20	Gateway level Intrusion Prevention (IPS) should have high-performance with IPS deep packet inspection engine with selective IPS patterns for maximum performance and protection, should have 5000+ signatures and also provision to create custom IPS signatures
21	Should support Site-to-site VPN, Remote access VPN using pre-shared key & Certificate based, L2TP VPN, PPTP VPN, SSL VPN, IPsec on multiple operating system platforms with base license on firewall ie., without the need additional licenses for VPN client or firewall firmware image.
22	Firewall should support clientless VPN using HTML5 & self-service portal supporting RDP, HTTP, HTTPS, SSH, Telnet and VNC for Clientless VPN users.
23	Firewall must automatically/manually download important security patch updates like Anti virus & IPS signatures on the scheduled intervals to stay up to date. Auto update to latest hot fixes during virus outbreak all this without rebooting appliance.
24	Proposed firewall should email detailed reports of Web, App, AV, IPS, ATP, IP/Users & other compliance reports. Alerts have to be sent over email along with configuration backup on scheduled intervals like daily, weekly, monthly.
25	Firewall should support local Authentication and remote authentication servers like Active Directory, eDirectory, RADIUS, LDAP and TACACS+. Should also include options for Client authentication agents for Windows, Mac OS X.
26	The solution should support Internal/External 2FA (Two-Factor Authentication) Hardware/software for minimum 200 User from day one (Software should support Android and iOS platform).
27	The firewall solution Should support API for 3rd party integration option to add, update, delete configuration, Update policy for IPS, Webfilter, Application filter and has option to manage interface and route.
28	Firewall Should support Transparent(Single Sign On), proxy authentication (NTLM) or client authentication.
29	Firewall should support on-box reporting as cost effective solution using it's locally available storage, with minimum firewall resource utilized (CPU & Memory) during logging & reporting. Should have Pre-defined dashboards for Traffic, Security, and User behaviour analysis report. Granular Web & Application usage reporting, Network & Threats (IPS, TP), VPN,Compliance report.
30	One Year Subscription license for Firewall, Advanced Threat Protection (ATP), Intrusion Prevention System (IPS), Anti-malware, Web and App visibility, control, and protection,24x7 support, security and software updates.

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Minimum Required Specification of Branch Router:

Recommended Brand: Sophos/Cisco/Juniper (But must be same as main Firewall)

S.N.	Minimum Specification
1	**ARCHITECTURE (Hardware & System Performance)**
1.1	UTM device should be appliance based and desktop/rack mountable
1.2	UTM appliance should have minimum with 4 Copper 10/100/1000 RJ-45. Flexible to use any port as LAN, WAN, or DMZ ports
1.3	UTM appliance should have at least One Console Port (RJ-45), Two USB Port and one Micro USB port
1.4	UTM appliance should have minimum of 4 GB of RAM and at least 12 GB or higher inbuilt Storage for logging and reporting.
1.5	Firewall Should have minimum performance as given below
a.	Firewall throughput 3.5 Gbps or higher
b.	Threat Protection Throughput 250 Mbps or higher
c.	1.6 million Concurrent sessions or higher
d.	IPS throughput 1 Gbps or higher
e.	New Connections/second 35,000 or higher
f.	NGFW Throughput 600 Mbps.
g.	IPsec VPN throughput 2,500 Mbps
1.6	UTM appliance should support unlimited Users/Nodes License.
1.7	UTM appliance should be IPv6 ready.
2	**FEATURES**
2.1	Proposed solution or OEM should be part of Gartner's Leaders / Challengers / Visionaries in Magic Quadrant for Network Firewalls
2.2	UTM appliance should have Multicore Processor based UTM, Identity based Firewall, limit on surfing quota & surfing time, based on per user & group
2.3	UTM appliance should supports routing: static, default, multicast (PIM-SM) and dynamic (RIP, BGP, OSPF) and DoS and DDoS attacks and port scan blocking
2.4	Firewall should support local Authentication and remote authentication servers like Active Directory, eDirectory, RADIUS, LDAP and TACACS+. Should also include options for Client authentication agents for Windows, Mac OS X.
2.5	The solution should support Internal/External 2FA (Two-Factor Authentication) Hardware/software for minimum 200 User from day one (Software should support Android and iOS platform).
2.6	Should support Transparent (Single Sign On), proxy authentication (NTLM) or client authentication.
2.7	UTM appliance should have Bandwidth Management feature.

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2.8	UTM appliance should have Feature of real time monitoring.
3	**ADMINISTRATION AND GENERAL CONFIGURATION**
3.1	UTM appliance should support administration via secured communication over HTTPS from GUI, SSH and Telnet from console.
4	**FIREWALL**
4.1	UTM appliance should have well-known certifications like: CB, CE, FCC, RCM, UL, BIS, EAL4+ and ICSA, NSS Lab, Checkmark for Firewall
4.2	UTM appliance must have a 64-bit hardware platform & based on Multi-Core Architecture with the Fast Path Packet Optimization for excellent throughput for all your key processes.
4.3	UTM appliance should be standalone appliance with hardened operating system (OS) and embedded software.
5	**CERTIFCATE and AUTHORIZATION**
5.1	Bidder should be Authorized System Integrator of the quoted product. (Manufacturer Authorization Certificate from the principal specific to the tender should be enclosed with the bid).

Minimum Required Specification of PoE Switch:

Recommended Brand: Cisco/Juniper/Sophos

S. No	Minimum Specification
1	**Port Requirement**
1.1	Minimum PoE Ethernet Ports :24
1.2	100/100/1000 SFP Ports : 4
2	**Performance Requirement**
2.1	Minimum Switching Capicity : 128 Gbps
2.2	Minimum Forwarding Rate: 40 Mpps
2.3	Minimum DRAM : 512 MB
2.4	Minimum Packet Buffer Memory: 1.5 MB
2.5	Minimum MAC Address Table : 16 K
2.6	Minimum Jumbo Frames: 10 K
2.7	Minimum Heat Dissipation: 700 (Btu/H)
3	**PoE Requirement**
3.1	Should have IEE 802.3af/802.3at
3.2	Should have POE Timer
3.3	Should have at least 410W PoE Power Budget
4	Should be Rack Mountable with Mount Kit

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Minimum Required Specification of CAT6 Cable:

CAT 6 Cable Specification	
S. No	**Product Specification**
1.1	Jacket material:.FR-PVC (Poly Vinyl Chloride), LSZH*(Low Smoke Zero Halogen).
1.2	Insulation material : Polyethylene
1.3	Separator Material: Polyolefin.
1.4	Conductor Type: Bare solid copper.
1.5	Nominal Outer Diameter: 6.0mm (Nominal).
1.6	Conductor Diameter: 23 AWG (0.573mm)
2.0	**Electrical, Mechanical and Envirnmental Specification**
2.1	Characteristics Impedance: 100±6Ω @ 1-600 MHz
2.2	DC Resistance: 72 Ω/Km (max)
2.3	Voltage rating: 72 Vdc (max)
2.4	Dielectric Strength: 1500 V per 60s (min) rms.
2.5	Insulation Resistance: 500MΩ/Km (min) @ 500 Vdc
2.6	Nominal Velocity of Propagation (NVP): 69%
2.7	Delay Skew : 45ns /100mtr
2.8	Pulling Tension: 11Kg / 25Lbs
2.9	Operating Temperature: - 10°C to 75 °C
2.10	Storage Temperature: 0°C to 50 °C
3.0	**Product Complaiance**
3.1	Performance guaranteed upto 600 MHz extended frequency. Performance verified by ETL.
3.2	UL listed as per UL94V-0 rated plastic.
3.3	Compliance as per UL-1666
3.4	RoHS Compliant (lead free).

SPECIFICATIONS OF Server SAS HDD	
Capacity	1.2TB/1200GB
Secure	Yes
TurboBoost	Yes
PERFORMANCE	
Spindle Speed (RPM)	10K
Average Latency (ms)	2.9
Sustained Transfer Rate (Outer to Inner Diameter, MB/s)	241 to 117

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Cache, Multisegmented (MB)	128
CONFIGURATION/RELIABILITY	
Disks	3
Heads	6
Interface	12Gb/s SAS
External Transfer Rate (MB/s)	1200
Nonrecoverable Read Errors per Bits Read	1 per 10e16
Annualized Failure Rate (AFR)	0.44%
TURBO BOOST ENHANCED CACHE FEATURE	
I/O Acceleration and Response Time Optimization	Enabled
NAND Flash Type	eMLC
NAND Flash Size	32GB
Intelligent NAND Endurance Management	Yes
POWER MANAGEMENT	
Typical Op (A) +5V/+12V	0.44/0.42
Typical Operation (W)	7.25
Power Idle (W)	4.26
Performance Efficiency Index (Idle W/GB)	0.0036

Server Protection Software Specification:

Proposed Server Protection solution should have following features:

- Web Security
- Web Control/Category-based URL Blocking
- Peripheral Control
- Application Control
- Application Whitelisting/ Server Lockdown
- Deep Learning Malware Detection
- Anti-malware File Scanning
- Live Protection
- Pre-execution Behavior Analysis (HIPS)
- PUA Blocking
- Intrusion Prevention System
- Data Loss Prevention
- Runtime Behavior Analysis
- Antimalware Scan Interface
- Malicious Traffic Detection
- Exploit Prevention
- Active Adversary Mitigation
- Ransomware File Protection
- Disk and Boot Record Protection
- Man-in-the Browser Protection
- Enhanced Application Lockdown
- Root cause Analysis
- Automated Malware Removal
- Synchronization with Firewall
- Server Specific Policy Management
- Update Cache and Message Relay
- Automatic Scanning Exclusions
- File Integrity Monitoring