18x2

INVITATION TO BID
For the Supply of Ethernet LAN Switches and Branch level firewall

PTA invites sealed bids from the Tier-1 / Tier -2 level dealership / reseller registered with Income Tax and Sales Tax Departments and who are on Active Tax Payer List of Federal Board of Revenue for supply of following IT Equipment and with Software:

S.No.	Description	Quantity
	SEPARATE HARDWARE REQUIED (FIREWALL)	
A	Branch Office Level, Next Generation Firewall System NGFS, 7.4 Gbps Firewall Throughput with enterprise license 3 years with 3 years free updates and support, Deep packet inspection, SSL VPN, Cloud based sand boxing with cloud storage 50 Gb or above, with Fabric integration etc.	2
	SEPARATE HARDWARE REQUIRED (Ethernet Switches)	
B	**Data Center Fiber Switches (48 Port with 40/100 GB uplinks)**	2
	48p 10/25G SFP+ and 6p 100G QSFP28	2
	SNTC-8X5XNBD with 48p	2
	Base -OS Software Rel 7.0(3)I6(1)	2
	3K/9K Fixed Accessory Kit	2
	2K/3K/9K Single Fan, port side exhaust airflow	8
	9300 1200W, 200-277AC,240-380DC, Dual airflow PSU	4
	10GBASE-SR SFP Module	16
	1000BASE-T SFP	16
	HVAC power cable for C14, 2 meters	4
	100GBASE-CR4 Passive Copper Cable, 2m	4
	License PAK Expansion	2
	(POE+) Switch 48 Port mGig, 4x10G Uplink, IP services	2
	SOLN SUPP 8X5XNBD	2
	UNIVERSAL	2
	1100W AC Config 1 Power Supply	2
	715W AC Config 1 Secondary Power Supply	2
	United Kingdom AC Type A Power Cable	4
	Type 2 Stacking Blank	2
	10GBASE-SR SFP Module	8
	10GBASE-CU SFP+ Cable 5 Meter	24
	40GBASE-CR4 Passive Copper Cable, 5m	2

Bidding documents, containing detailed terms and conditions, method of procurement, procedure for submission of bids, bid security, bid validity, opening of bid, evaluation criteria, clarification / rejection of bids, performance guarantee etc. are available for the interested bidders at the office of the undersigned. Price of the bidding documents is Rs.500/- {Cash/Pay order nonrefundable in favor of PTA}. Bidding documents can also be downloaded from **(www.pta.gov.pk)** free of cost.

The bids, prepared in accordance with the instructions in the bidding documents, must reach at PTA Headquarters F-5/1, Islamabad on or before **28th September 2017** by **10:30 AM**. Technical Bids will be opened the same day at **11:00 AM**. This advertisement is also available on PPRA website at **(www.ppra.org.pk)**.

Ahmed Bakhat Masood
Deputy Director (ICT-III)
Phone: 051-2878134, Fax Number: 051-2878134
Email address: ahmedbakhat@pta.gov.pk

PID(I)

BIDDING DOCUMENTS

Sealed bids are invited from well reputed and authorized dealers having Tier-1 / Tier -2 level dealership, Partner/Reseller, registered with Sales Tax and Income Tax Department, having at least 5 years of relevant business experience for the procurement of following items.

S.No.	Description	Quantity
	SEPARATE HARDWARE REQUIED (FIREWALL)	
A	**Branch Office Level**, Next Generation Firewall System NGFS, **7.4 Gbps Firewall** Throughput with enterprise license 3 years with 3 years free updates and support, Deep packet inspection, SSL VPN, Cloud based sand boxing with cloud storage 50 Gb or above, with Fabric integration etc	2
	SEPARATE HARDWARE REQUIRED (Ethernet Switches)	
B	**Data Center Fiber Switches (48 Port with 40/100 Gb uplinks)**	2
	48p 10/25G SFP+ and 6p 100G QSFP28	2
	SNTC-8X5XNBD with 48p	2
	Base -OS Software Rel 7.0(3)I6(1) or latest	2
	3K/9K Fixed Accessory Kit	2
	2K/3K/9K Single Fan, port side exhaust airflow	8
	9300 1200W, 200-277AC,240-380DC, Dual airflow PSU	4
	10GBASE-SR SFP Module	16
	1000BASE-T SFP	16
	HVAC power cable for C14, 2 meters	4
	100GBASE-CR4 Passive Copper Cable, 2m	4
	License PAK Expansion	2
	(POE+) Switch 48 Port mGig, 4x10G Uplink, IP services	2
	SOLN SUPP 8X5XNBD	2
	UNIVERSAL	2
	1100W AC Config 1 Power Supply	2
	715W AC Config 1 Secondary Power Supply	2
	United Kingdom AC Type A Power Cable	4
	Type 2 Stacking Blank	2
	10GBASE-SR SFP Module	8
	10GBASE-CU SFP+ Cable 5 Meter	24
	40GBASE-CR4 Passive Copper Cable, 5m	2

Detailed specifications of above-mentioned items are provided at Annex-C of this document. Notice of the bids issued on PTA's/PPRA's websites is part of the bidding document.

Key Terms and Conditions

1. **GENERAL INFORMATION:**

a. Bidding documents duly completed in all respect will be received on or before **28th September, 2017** up to 1030 AM. The submission and evaluation of bids will be carried out under the *"Single Stage Two Envelop Procedure"*. Technical bids will be opened by Technical Evaluation Committee, at PTA HQs on the same day at 1100 AM, in presence of bidder's representative, who may choose to attend.

b. Bid will comprise of single package containing two separate sealed envelopes. One envelop will contain the **"**Technical Proposal" and the second envelop will contain the **"Financial** Proposal". Technically qualified bidders will be informed the date, time and venue for the opening of financial bids. Financial bids of technically disqualified bidders will be returned un-opened.

c. Bids should be sent at the address of Deputy Director (ICT-II) Pakistan Telecommunication Authority (PTA), Headquarters F-5/1, Islamabad.

d. Bidder can quote for any one, or both of the IT equipment mentioned above, depending on relevant dealership in each IT equipment. i.e. a vendor can participate for Firewall or for Switches or a Vendor can participate for both Firewall and Switch.

e. Annex-A, Annex-B, Annex-C and Annex-D are integral part of technical and financial proposals, which may be read/filled carefully, signed and stamped by the bidders. Further, details of the annexures are mentioned below:

   i.   Annex-A consists of mandatory requirements for bidder(s)

   ii. Annex-B consists of technical capabilities of bidder(s), which has total 100 marks, whereas minimum qualifying marks are 70%

   iii. Annex-C consists of technical evaluation of the product and bidder(s) may quote higher specs, however, quoting lower specs shall disqualify the bidder

   iv. Annex-D, comprises of financial bid format, to be followed by all bidders, the bidder should quote its rates clearly for each item or any of the item, in the financial proposal in both figures and words without any ambiguity.

2. BIDDER's INFORMATION

a. Name of Firm   _____

b. Date of establishment of business

    (documentary proof of registration etc.)   _____

c. Address   _____

d. Telephone No   _____ Fax No. _____

e. GST Reg. No   _____

f. National Tax No   _____

3. EVALUATION CRITERIA

a. Technical bids shall be opened and evaluated by technical evaluation committee in view of Annex-A, Annex- B and Annex-C. Bidder, obtaining at least 70% out of 100 marks, shall be eligible for the participation in financial bid opening.

b. Financial bids shall be opened and evaluated by procurement committee of PTA i.e. PC-I as the case may be, on the basis of criteria given in Annex-D.

c. Item A and B are completely independent of each other and the bidder should quote its rates clearly in the financial proposal in both figures and words against **each item separately**. Technical and Financial evaluation of the items will be independent of each other.

d. Work will be awarded to **financially lowest bidder against each item**.

e. If two or more bidders quote equal lowest price in financial proposals, then the work will be awarded to the one having higher technical marks, in technical evaluation.

f. Both Fiber and POE+ switches should be of same manufacturer.

4. EARNEST MONEY

g. Earnest money will be 3% of the bid amount and will be in the shape of pay order / demand draft in favor of Pakistan Telecommunication Authority, Headquarters, Sector F-5/1, Islamabad Earnest money **shall be attached with the financial proposal otherwise proposal** will not be accepted.

h. **Bids without earnest money will be rejected without any right of appeal.**

i. **Earnest money of successful bidder will be retained till warranty period**. However, earnest money of unsuccessful bidders will be returned after award of supply order to successful bidder.

j. In case of cancelation of Supply Order due to default of the supplier, the earnest money shall be forfeited in favor of PTA.

5. **PRICES:**

   a. **The bidder should quote its rates clearly in Pak Rupees** inclusive of all applicable taxes i.e. GST etc. **in the financial proposal and amount in both figures and words as per format attached at Annex-D**

   b. The rates quoted shall remain valid for 90 days from the date of opening of Technical Proposal, and, any raise in dollar/foreign currency against Pakistani rupees should not be applicable, and, any increase in price shall be borne by the Bidder.

   c. PTA will not bear transportation/carriage charges.

6. **PAYMENT PROCEDURE**

   a. No advance payment shall be made against the supply of equipment / software mentioned in the bidding document.

   b. Payment shall be made on provision of invoice/bill, after delivery of the equipment /software at PTA Headquarters and issuance of satisfactory completion/stock verification/physical inspection certificate by PC-I.

   c. Payment shall be subject to withholding of applicable taxes as per government rules and verification of active tax payer status of the vendor.

7. **EQUIPMENT / SOFTWARE**

   a. IT equipment should be new, not used or refurbished. The components of the equipment should be assembled by the manufacturer and shall be verifiable at principal manufacturer website.

   b. IT equipment / software should be arranged through the legal channels by clearing all customs/duties/taxes (if any) levied by Govt..

8. **DELIVERY PERIOD**

   a. Delivery of items shall be made within eight (8) weeks time after issuance of supply order.

   b. Vendor will be responsible for the safe supply of equipment / software at PTA H/Qs Islamabad with the provision of warranty / support as mentioned in the bidding agreement.

9. **AUTHORIZED DEALERPARTNER**

Bidder shall be an authorized dealer//partner, having Tier 1 or Tier 2 partnership / dealership, Reseller of the quoted brand. Current Certificate of dealership / partnership from principle manufacturer is required in the name of the authorized dealer / partner of the manufacturer.

10. WARRANTY

a. Vendor will be responsible for the provision of free at least onsite warranty / support with labor and parts as per detail below;

    i. Firewall: Three years or manufacturer warranty period

                     Whichever is higher.

    ii. Ethernet switches: One year or manufacturer warranty period whichever is higher.

b. The warranty period will be considered from the date of actual date of delivery of IT equipment as written on invoice

c. Configuration, installation and implementation will be the responsibility of the vendor; however, ICT directorate will help to make deployment rationale.

11. PENALTY

a) If the supplier fails to supply equipment within due time of eight weeks, mentioned in this document and supply order, then a penalty of 1% per week will be charged up to maximum period of four weeks. (Days less than six will be considered as one week). Thereafter, supply order will be cancelled and earnest money will be forfeited. However, the next lowest bidder will be asked to supply equipment on matching the lowest winning price and subject to submission of earnest money (if released earlier) and willingness for the shipment within eight (08) weeks, with extended time of four (04) weeks with 1% fine mentioned above.

b) In case 2nd lowest bidder also failed to ship the equipment, work order shall be canceled and deposited earnest money shall be forfeited.

c) A penalty of **1% of the earnest money per day** will be charged if the faulty hardware replacement time exceeds the time mentioned, in the certificate provided as per Annex-B- part B-(3), during the warranty period.

12. DISQUALIFICATIONS

Proposals will be liable to be rejected if any deviation is found from the instructions as laid down in the bid document i.e.

a. Financial bid is submitted without the required earnest money.

b. Offers are received after specified date and time.

c. Specification and other requirements are not properly adhered to or different from those given in the bidding documents.

d. GST and NTN certificates are not attached.

e. <u>**Vendor is not in Active Tax Payer List of FBR.**</u>

f. Service centre is not in Islamabad/Rawalpindi.

g. Supplier is not an authorized dealer/partner/reseller and warranty provider of the principal manufacturer for Pakistan as per section 9 of this document.

h. Any inferior product / spec / requirement that mentioned at Annex-C.

i. A bidder should quote only one brand, multiple options should lead to disqualification.

13. <u>AFFIDAVIT</u>

Affidavit on **Judicial Paper** to the effect that the firm has not been black listed by any government/semi government/autonomous body or company.

14. <u>RIGHTS RESERVED</u>

Pakistan Telecommunication Authority Islamabad reserves the rights to cancel the bid, accept or reject any bid as per PPRA Rules.

<u>CHECKLIST</u>

a. Earnest money in shape of bank draft/pay order. (Yes/No)
(cheques are not acceptable)

b. Relevant documents for Annex A-C(Yes/No)

c. List of such projects handled with copies of supply order. (Yes/No)

d. List of clients with telephone numbers and addresses. (Yes/No)

e. List of employees including technical staff for this project. (Yes/No)

f. Affidavit on legal paper for not being black listed. (Yes/No)

g. Copies of authorized dealership/partnership etc. of the (Yes/No)
principal manufacturer for Pakistan.

h. Specification and other requirements are met (Yes/No)

i. Service center is at Islamabad/Rawalpindi (Yes/No)

Deputy Director (ICT-II)

General Evaluation Part-A Annex-A

	Part A) Mandatory Requirement *
1	Firm has to produce Sales Tax and Income Tax Registration.
2	Vendor should be in Active Tax Payer List of FBR.
3	Firm has to produce Authorization dealer, partner, etc Certificate of the principal/manufacturer for Pakistan as per section 9 of this bidding document. Tier 1 and Tier 2 partners only. (Current Partners Only)
4	Firm shall be authorized warranty provider on behalf of manufacturer. Documentary proof required.
5	Minimum Five years of relevant experience of the vendor and fifteen years continuous for principle manufacturer in Pakistan
6	Sales and Service Centers at Islamabad / Rawalpindi
7	Submission of affidavit on **Judicial Paper** to the effect that the firm has not been black listed by any government/semi government/autonomous body or company.

Technical Capabilities of Bidder Part-B

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Annex-B

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Part B)	General Evaluation*			
Sr. #	**Attributes**	**Max. Score**	**Points Earned**	**Criteria**
1	Detail of Offices	10		Firm has sales and services offices at four (4) provincial headquarters with proof of authorized service provider from principal manufacturer. Two and half (2.5) points for each provincial capital head quarter.
2	Spare Parts Availability	10		Firm has Spare Parts of the quoted model Depot/facility at Islamabad / Rawalpindi.
3	Replacement time for faulty under warranty equipment/parts **(Certificate has to be produced)** (Clause 11(c) referred)	25	25	1-3 working days
			15	4-7 working days
			05	7-14 working days
4	Total strength of relevant Technical Staff at **Rawalpindi / Islamabad**(List shall be attached with name, designation, qualification and related experience).	10	10	Firm has ten (10) or more relevant technical staff in Islamabad / Rawalpindi.
			7	Firm has more than seven (7) or more up to nine (9) relevant technical staff in Islamabad / Rawalpindi
			5	Firm has five (5) or more up to six(6) relevant technical staff in Islamabad / Rawalpindi
5	Firm Experience (minimum Five years' experience required)	20		(4) points will be given for each year of experience, beyond 5 years of mandatory requirement.
6	Projects completed of similar nature (documentary proof be provided i.e. Supply Orders etc.)	25		Five points will be awarded for each project of same nature on provision of supply order/certificate i. Supply of 4 Core Switches or more and Supply of 4 or more Layer2/Layer 3 POE+ switches in single supply order. (Max Five Supply Orders in both categories) ii. Supply 4 or more Firewalls in single supply order (Max Five)
Sub Total		**100**		

*Minimum qualifying marks are 70% in above table whereas Annex "C" shall be compulsory. **All supporting Documents to be attached for all relevant pages of Annex-B.**

	Detailed Specifications of Data Center and POE+ Switch		
S. No.	**Feature**	**Requirements**	**Qty**
A. Data Center Switch			
1	SDN	The core switch should support SDN architecture with option to configure the components from centralized SDN controller	
2	Programmability	The core switch should be able to support programmability with XML, Netconfig, Cheff / Puppet, etc along with OpenStack integration.	
3	Layer 3 support	The proposed switch should operate at Layer 3.	
4	Interfaces	Should support 48 SFPs x 1 /10 GE server termination with uplink of 6x100GE QSFP28 interfaces.	
5	Cooling	Should support front to back cooling compatible with data center hot-aisle and cold-aisle designs	
6	Redundant Power Supply	The proposed switch should have redundant AC power supplies (1+1).	
7	Redundancy	Proposed Switch should support N:1 fan module redundancy	
8	Architecture	The proposed switch should have lossless architecture	2
9	Layer-3 entries	The switch must support 64-way equal cost multipath layer3 entries.	
10	Fans	Should have hot-pluggable fan modules to provide highly reliable front-to-back cooling	
11	Cabling	Should support in-rack or adjacent-rack cabling	
12	Power Supply	Hot-swappable field-replaceable power supplies, fan modules, and expansion modules	
13	Port Channel	The switch must support Active Active L2 port-channel for servers/access switches	
14	Layer-2 hardware Forwarding	The layer 2 hardware forwarding provided by the proposed switch should be at least 3.6 Tbps capacity with 2.6bpps packet forwarding throughput	
	MAC table	The proposed switch should support minimum 250k MAC address table entries.	
15	Vlan support	Support for up to 4096 VLANs per switch	
16	IP routes	The proposed switch should support minimum of 850k IP routes	
17	Throughput	The proposed switch should provide line-rate traffic throughput on all the interfaces	
18	IEEE Standards	The switch should at least support the below standards:	

			a.	IEEE 802.1Qbb PFC (per-priority pause frame support)
			b.	IEEE 802.1Qaz Enhanced Transmission Selection
			c.	IEEE 802.1D Spanning Tree Protocol
			d.	IEEE 802.1p CoS Prioritization
			e.	IEEE 802.1Q VLAN
			f.	IEEE 802.1s
			g.	IEEE 802.1w
			h.	IEEE 802.1x
			i.	IEEE 802.1AB (LLDP)
			j.	IEEE 802.3ad
			k.	IEEE 802.3ae
			l.	RMON I
			m.	SNMPv1, SNMPv2c, and SNMPv3
19	**Layer-2 Feature**		a.	Layer 2 switch ports and VLAN trunks
			b.	IEEE 802.1Q VLAN encapsulation
			c.	Rapid Per-VLAN Spanning Tree Plus (PVRST+)
			d.	Multiple Spanning Tree Protocol (MSTP) (IEEE 802.1s): 64 instances
			e.	Spanning Tree PortFast and PortFast Guard
			f.	Spanning Tree UplinkFast and BackboneFast
			g.	Spanning Tree Root Guard
			h.	Spanning Tree Bridge Assurance
			i.	NIC teaming
			j.	Internet Group Management Protocol
			k.	(IGMP) Versions 1, 2, and 3 snooping
			l.	IGMP snooping querier
			m.	Ether-Channel technology
			n.	Link Aggregation Control Protocol(LACP): IEEE 802.3ad
			o.	Advanced Port-Channel hashing based on Layer 2, 3, and 4 information
			p.	Jumbo frames on all ports (up to 9216 bytes)
			q.	Pause frames (IEEE 802.3x)
			r.	Storm control (unicast, multicast, and broadcast)
			s.	Private VLANs
			t.	Private VLAN over trunks
20	**QOS Features support**		a.	Layer 2 IEEE 802.1p (CoS)
			b.	8 hardware queues per port
			c.	Per-port QoS configuration
			d.	CoS trust
			e.	Port-based CoS assignment
			f.	Modular QoS CLI (MQC) compliance
			g.	Color-aware aggregate policing
			h.	Policed drop
			i.	Per-port virtual output queuing
			j.	CoS-based egress queuing
			k.	Egress strict-priority queuing
			l.	Egress port-based scheduling: Weighted Round-Robin (WRR)

			m. Ingress policing on physical Ethernet and virtual Ethernet interfaces
21	**Management Features support**		a. Switch management using 10/100/1000-Mbps management or console ports b. CLI-based console to provide detailed out-of-band management c. In-band switch management d. Port-based locator and beacon LEDs e. SSHv2 f. Telnet g. Authentication, authorization, and accounting (AAA) h. RADIUS i. Syslog j. Embedded packet analyzer k. SNMP v1, v2, and v3 l. Enhanced SNMP MIB support m. XML (NETCONF) support n. Remote monitoring (RMON) o. Advanced Encryption Standard (AES) for management traffic p. Unified username and passwords across CLI and SNMP q. Switched Port Analyzer (SPAN) on physical, PortChannel, VLAN, and Fibre Channel interfaces r. Ingress and egress packet counters per interface s. Network Time Protocol (NTP) t. Comprehensive bootup diagnostic tests

Detail Specification of POE+ switch Qty = 2

S. No.	Feature	Requirements	
1	**Switch Ports**	The switch should have 48 x Gigabit Ethernet copper ports with line rate forwarding performance. Out of these 24 ports, atleast 12 ports should support 2.5 or 5 Gbps operations on Cat6 cabling	
2	**POE+**	Should have Power over Ethernet Plus (PoE+) support with up to 435W of PoE budget	
3	**SFP+ uplink**	The switch should have 4 x SFP+ 10GE Uplink ports	
4	**Redundant AC power**	The switch should support redundant AC power supplies	
5	**Stacking**	The switch should have dedicated stacking port for managing multiple switches as single switch	2
6	**Layer 3 features**	The switch should have layer3 feature set	
7	**IEEE Standards**	a. IEEE 802.1D Spanning Tree Protocol b. IEEE 802.1p CoS Prioritization c. IEEE 802.1Q VLAN d. IEEE 802.1s e. IEEE 802.1w	

		f. IEEE 802.1x
		g. IEEE 802.1AB (LLDP)
		h. IEEE 802.3ad
		i. IEEE 802.3af
		j. IEEE 802.3ah
		k. (100BASE-X single/multimode fiber only)
		l. IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports
		m. IEEE 802.3 10BASE-T specification
		n. IEEE 802.3u 100BASE-TX specification
		o. IEEE 802.3ab 1000BASE-T specification
		p. IEEE 802.3z 1000BASE-X specification
		q. 100BASE-BX (SFP)
		r. 100BASE-FX (SFP)
		s. 100BASE-LX (SFP)
		t. 1000BASE-BX (SFP)
		u. 1000BASE-SX (SFP)
		v. 1000BASE-LX/LH (SFP)
		w. 1000BASE-ZX (SFP)
		x. 1000BASE-CWDM SFP 1470 nm
		y. 1000BASE-CWDM SFP 1490 nm
		z. 1000BASE-CWDM SFP 1510 nm
		aa. 1000BASE-CWDM SFP 1530 nm
		bb. 1000BASE-CWDM SFP 1550 nm
		cc. 1000BASE-CWDM SFP 1570 nm
		dd. 1000BASE-CWDM SFP 1590 nm
		ee. 1000BASE-CWDM SFP 1610 nm
		ff. RMON I and II standards
		gg. SNMPv1, SNMPv2c, and SNMPv3
8	**LACP**	The switch should support Link Aggregation Control Protocol (LACP) for creating Ethernet channeling with devices that conform to IEEE 802.3ad.
9	**DHCP**	The switch should support Dynamic Host Configuration Protocol (DHCP) auto-configuration of multiple switches through a boot server.
10	**Voice support**	Should support Voice VLAN to keep voice traffic on a separate VLAN for easier administration and troubleshooting.
11	**VTP and DTP**	Should support VLAN Trunking Protocol (VTP) for dynamic VLANs and dynamic trunk configuration across all switches.
12	**RSPAN**	Should have Remote Switch Port Analyzer (RSPAN) to allow administrators to remotely monitor ports in a Layer 2 switch network from any other switch in the same network.
13	**Security Policy**	Should support security and policy enforcement throughout the network
14	**Flexible Authentication**	Should have Flexible authentication that supports multiple authentication mechanisms including 802.1X, MAC Authentication Bypass, and web authentication using a single, consistent configuration.
15	**Monitor mode**	Should support Monitor mode that creates a user-friendly environment for 802.1X operations.
16	**ACLs for policy management**	Should support RADIUS change of authorization and downloadable

		ACLs for comprehensive policy management.
17	**802.1x**	Should support 802.1X supplicant for extended secure access
18	**Netflow/Sflow**	The switch should support awareness of all application traffic on the network to capture and record specific packet flows. Should support Export of flow data in the NetFlow Version 9 format for analysis

19	**Intelligence Traffic Management**	Should support Intelligent traffic management with flexible mechanisms for marking, classifying, and scheduling traffic at wire speed such as:
		
		     a. Up to eight egress queues per port and strict priority queuing so that the highest priority packets are serviced ahead of all other traffic.
		     b. Shaped Round Robin (SRR) scheduling and Weighted Tail Drop (WTD) congestion avoidance.

20	**Energy Efficiency**	The switch should support IEEE 802.3az or Energy-Efficient Ethernet (EEE)
21	**Energy Consumption**	Should support Energy management by Measuring power consumption of network infrastructure and network-attached devices and enforce rules to reduce energy usage.
22	**Later 2 Capabilities**	The switch should support 390Gbps switching capacity with 290Mpps packet forwarding capacity.
23	**Stacking Bandwidth**	160 Gbps
24	**Audio Video Bridging Support**	Yes at Layer 2 with different (Multi) vendor AV equipment support
25	**Total MAC Entries**	32,000
26	**Total number of IPv4 routes (ARP plus learned routes)**	24,000
27	**FNF entries**	48,000 flow
28	**DRAM and Flash**	4 Gb both
29	**Total routed ports per stack**	208 ports
30	**Forwarding**	230 mpps or above
31	**Wireless Bandwidth**	40 Gbps

Any inferior Specifications of Switches will be rejected

FINANCIAL BID not accompanied with earnest money will be rejected without any right of appeal.

Bidder shall quote only one option, bids with multiple options will be rejected without any right of appeal.

Authorized Signature of bidder with seal stamp

S. No.	FEATURES	Requirements
	==**Detailed Specifications Next Generation Firewall System**==	
	Quantity : 1	
1.	**IP v4 THROUGHPUT**	7.4 Gbps
2.	**FIREWALL LATENCY**	3 us
3.	**FIREWALL THROUGHPUT PPS**	6.6 Mbps
4.	**IP SEC VPN THROUGHPUT**	4Gbps
5.	**APPLICATION CONTROL THROUGHPUT**	800 mbps
6.	**CONCURRENT SESSIONS (TCP)**	2.0 million
7.	**NEW SESSIONS/SECOND (TCP)**	30,000
8.	**SSL INSPECTION THROUGHPUT**	350 mbps
9.	**IPSEC VPN TUNNELS (Gateway to Gateway)**	2000
10.	**SSL VPN THROUGHPUT**	250 Mbps
11.	**CONCURRENT SSL VPN USERS**	300 Max
12.	**IPS THROUGHPUT**	1.9 Gbps
13.	**NGFW THROUGHPUT**	360 Mbps
14.	**CAPWAP THROUGHPUT**	1.5 Gbps
15.	**VIRTUAL DOMAIN**	10
16.	**DEPLOYMENT MODES SUPPORT**	Virtual Wire, Tap/SPAN Layer 2, Layer 3 mode.
17.	**FIREWALL POLICIES**	10,000
18.	**BACKDOOR,ESPONAGE OR ANY OTHER SECURITY RISK**	The Firewall System Shall be Free of any Backdoor, Any Unauthorized SSH, remote access or any other form of access to any Intelligence Agency, Government organization of Foreign Origin. Factory Installation of any other tool leading to unauthorized access shall result in the Black listing of the principle manufacturer and shall result in the initiation of actions in accordance with rules and laws defined as such.
19.	**PORTS**	14 x GE RJ45 ports, 2 X GE RJ 45 ports,2 X GE RJ 45 or SFP shared ports, 1 X USB port, 1 X console port.
20.	**PROTOCOLS**	DHCP, Act as DNS Server, Dynamic routing, QOS, WAN Optimization, High Availability, NAT/Route, Interfaces as LAN, WAN, DMZ,SSH,SSL Decryption, Static and Dynamic NAT, any other requirement detailed by PTA, etc
21.	**VPN**	Should Support Both L2TP,IPSec and SSL VPN Technologies. Standards-based IPSec VPN connectivity, combined with application visibility and control, protects communications between two Different Networks devices and/or another vendor's IPSec VPN device. Firewalls Shall support IKEv1 and IKEv2 with either IPv4 or IPv6 to ensure maximum compatibility.
22	**WARRANTY**	Three Years For Hardware or Manufacturer warranty whichever is greater, Three years all bundled Security Subscriptions with Free Professional level Support with cloud storage of 50 GB or above.
23	**Fabric Integration**	Must support Fabric Integration

Any inferior specifications of the Firewall will be rejected

FINANCIAL BID not accompanied with earnest money will be rejected without any right of appeal

Bidder shall quote only one option, bids with multiple options will be rejected without any right of appeal

Authorized Signature of bidder with seal stamp

Date _____

Company Name _____

Required Specification	Quoted Specification (With Brand Name)	Unit Price *Inclusive of GST*	Qty	Total Price Inclusive of GST
SEPARATE HARDWARE REQUIED (FIREWALL)				
Branch Office Level, Next Generation Firewall System NGFS, **7.4 Gbps Firewall** Throughput or better, Deep packet inspection, SSL VPN, Cloud based sand boxing with cloud storage 50 Gb or above, with Fabric integration etc			**2**	

    Amount in words: (Rupees--)

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Date _____

Company Name _____

SEPARATE HARDWARE REQUIRED (Ethernet Switches)	Quoted Specification (With Brand Name)	Unit Price *Inclusive of GST*	Qty	Total Price Inclusive of GST
Data Center Fiber Switches (48 Port with 40/100 GB uplinks)			2	
48p 10/25G SFP+ and 6p 100G QSFP28			2	
SNTC-8X5XNBD with 48p			2	
Base -OS Software Rel 7.0(3)I6(1) or above			2	
3K/9K Fixed Accessory Kit			2	
2K/3K/9K Single Fan, port side exhaust airflow			8	
9300 1200W, 200-277AC,240-380DC, Dual airflow PSU			4	
10GBASE-SR SFP Module			16	
1000BASE-T SFP			16	
HVAC power cable for C14, 2 meters			4	
100GBASE-CR4 Passive Copper Cable, 2m			4	
License PAK Expansion			2	
(POE+) Switch 48 Port mGig, 4x10G Uplink, IP services			2	
SOLN SUPP 8X5XNBD			2	
UNIVERSAL			2	
1100W AC Config 1 Power Supply			2	
715W AC Config 1 Secondary Power Supply			2	
United Kingdom AC Type A Power Cable			4	
Type 2 Stacking Blank			2	
10GBASE-SR SFP Module			8	
10GBASE-CU SFP+ Cable 5 Meter			24	
40GBASE-CR4 Passive Copper Cable, 5m			2	

Amount in words: (Rupees--)

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