



INVITATION TO BID

For the Supply of Compute and Storage Area Network(SAN)

Sealed bids are invited from well reputed tier 1/tier 2 dealers/suppliers/distributors/partners registered with Sales Tax and Income Tax Department and who are on Active Taxpayers List of the Federal Board of Revenue (FBR) and having valid certificate from Original Equipment Manufacturers (OEM) with minimum three years of relevant experience in respective lots described below:

Lot No:	Description of the Hardware	Quantity
Rack Mount Servers with Gold Processors		
Lot A	Supply of Dual Socket Server with Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or above 512 GB RAM with 2 X 240 GB SSD/M2 Boot Drives or higher for OS, 2X960GB SSD RI for Caching of vSAN or higher, 7x3.84TB SSD SAS all flash usable storage. Must be vSAN ready nodes, with three years Support/SLA and manufacturer warranty.	7
	Supply of Dual Socket Server with Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more with 512 GB RAM, 2 x 240 GB SSD/M2 Boot Drives or higher for OS, 2 x 960 GB SSD RI for caching of vSAN or higher, 7 x 2.4TB 10K RPM SAS, must be vSAN ready nodes, with three years Support/SLA and manufacturer warranty.	11
	Supply of Dual Socket Server with Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more with 512 GB RAM, 2 X 960 GB SSD/M2 Boot Drives or higher for OS, 9x3.84TB SSD SAS all flash usable storage. With three years Support/SLA and manufacturer warranty.	6
	Supply of Dual Socket Server with Intel® Xeon® Gold 2.3G, 20C/40T or more with 128 GB RAM, 2 X 240 GB SSD/M2 Boot Drives or higher for OS, 8 X 2.4TB 10K RPM SAS 12Gbps. with three years Support/SLA and manufacturer warranty.	3
Lot B	Supply of Dual Socket Server with Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more, 512 GB RAM, with 2 X 480 GB SSD Boot Drives/M2 Drives or higher for OS. With three years Support/SLA and manufacturer warranty.	24
	Supply of Dual Socket Server with Intel® Xeon® Gold 2.3G, 20C/40T or more, 128 GB RAM, 2 X 240 GB SSD/M2 Boot Drives or higher for OS, 8 X 2.4TB 10K RPM SAS 12Gbps. with three years Support/SLA and manufacturer warranty.	3
Storage Area Network (SAN)		
Lot C	Entry level native all flash (SSD/NVME) SAN with 100TB/above usable space- After RAID-5 or better and before enabling deduplication and compression or 200TB/above effective capacity after deduplication and compression.	1
Lot D	Enterprise level native all flash (SSD/NVME) SAN with 200TB or above usable space- After RAID-5 or better and before enabling deduplication and compression or 350TB/above effective capacity after deduplication and compression.	1
Lot E	Enterprise level native all flash (SSD/NVME) SAN with 200TB or above usable space- After RAID-5 or better and before enabling deduplication and compression or 350TB/above effective capacity after deduplication and compression along with 2 X 16/32Gbps NVM-e ready SAN switches, with 24 ports enabled, with patch-cords 10Metre and SFPs.	1
SAN Switches		
Lot F	16/32Gbps NVM-e ready SAN switches, with 24 ports enabled, with patch-cords 10Metre and SFPs	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/- (nonrefundable Pay order 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 **16th February, 2022** at 11:00 AM. Technical Bids will be opened the same day at 11:30 AM. This advertisement is also available on PPRA website at www.ppra.org.pk.

Sikandar Abbas
Deputy Director (ICT-III)

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Government of Pakistan
PAKISTAN TELECOMMUNICATION AUTHORITY
HEADQUARTERS F-5/1, ISLAMABAD.
[https// www.pta.gov.pk](https://www.pta.gov.pk)

BIDDING DOCUMENTS

Sealed bids are invited from well reputed tier 1/tier 2 dealers/suppliers/distributors/partners registered with Sales Tax and Income Tax Department(s) *and who are on Active Taxpayers List of the Federal Board of Revenue (FBR) and having valid certificate from Original Equipment Manufacturers (OEM) with minimum three (03) years of relevant experience in respective lots as described below:*

Lot.No.	Description of the Hardware	Quantity
Rack Mount Servers with Gold Processors		
Lot A	Supply of Dual Socket Server with Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or above 512 GB RAM with 2 X 240 GB SSD/M2 Boot Drives or higher for OS, 2X960GB SSD RI for Caching of vSAN or higher, 7x3.84TB SSD SAS all flash usable storage. Must be vSAN ready nodes, with three years Support/SLA and manufacturer warranty.	7
	Supply of Dual Socket Server with Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more with 512 GB RAM, 2 x 240 GB SSD/M2 Boot Drives or higher for OS, 2 x 960 GB SSD RI for caching of vSAN or higher, 7 x 2.4TB 10K RPM SAS, must be vSAN ready nodes, with three years Support/SLA and manufacturer warranty.	11
	Supply of Dual Socket Server with Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more with 512 GB RAM, 2 X 960 GB SSD/M2 Boot Drives or higher for OS, 9x3.84TB SSD SAS all flash usable storage. With three years Support/SLA and manufacturer warranty.	6
	Supply of Dual Socket Server with Intel® Xeon® Gold 2.3G, 20C/40T or more with 128 GB RAM, 2 X 240 GB SSD/M2 Boot Drives or higher for OS, 8 X 2.4TB 10K RPM SAS 12Gbps. with three years Support/SLA and manufacturer warranty.	3
Rack Mount Servers with Gold Processors		
Lot B	Supply of Dual Socket Server with Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more, 512 GB RAM, with 2 X 480 GB SSD Boot Drives/M2 Drives or higher for OS. With three years Support/SLA and manufacturer warranty.	24

	Supply of Dual Socket Server with Intel® Xeon® Gold 2.3G, 20C/40T or more, 128 GB RAM, with 2 X 240 GB SSD/M2 Boot Drives or higher for OS, 8 X 2.4TB 10K RPM SAS 12Gbps. with three years Support/SLA and manufacturer warranty.	3
Storage Area Network (SAN) (100TB Usable)		
Lot C	Entry level native all flash (SSD/NVME) SAN with 100TB/above usable space- After RAID-5 or better and before enabling deduplication and compression or 200TB/above effective capacity after deduplication and compression.	1
Storage Area Network (SAN) (200TB Usable)		
Lot D	Enterprise level native all flash (SSD/NVME) SAN with 200TB or above usable space- After RAID-5 or better and before enabling deduplication and compression or 350TB/above effective capacity after deduplication and compression.	1
Storage Area Network (SAN) (200TB Usable with 2 x SAN Switches)		
Lot E	Enterprise level native all flash (SSD/NVME) SAN with 200TB or above usable space- After RAID-5 or better and before enabling deduplication and compression or 350TB/above effective capacity after deduplication and compression along with 2 X 16/32Gbps NVM-e ready SAN switches, with 24 ports enabled, with patch-cords 10Metre and SFPs	1
Lot F	SAN Switches	
	16/32Gbps NVM-e ready SAN switches, with 24 ports enabled, with patch-cords 10Metre and SFPs.	2

Detailed specifications of above-mentioned Hardware are provided at **Annex-C** of this document.

Notice of the bids issued on PTA's/PPRA's websites is part of these bid documents.

Terms and Conditions

1. GENERAL INFORMATION:

- a. The bids, duly completed in all respects and prepared in accordance with the instructions in these bidding documents, will be received on or before **2022** up to **11:00 AM**.
- b. Technical bids will be opened by Technical Evaluation Committee, at Pakistan Telecommunication Authority (PTA) Headquarters (HQs) F-5/1, Islamabad on the same day at 11:30 AM, in presence of bidder's representative, who may choose to attend.
- c. Bids should be sent at the address of Deputy Director (ICT) PTA, HQs F-5/1, Islamabad.
- d. A bidder shall be selected after an open, competitive and transparent bidding process in accordance with Public Procurement Regulatory Authority (PPRA) Ordinance, 2002, and Rules, Regulations and Guidelines made thereunder.
- e. Single Stage, Two Envelopes procedure as per Rule 36 (b) read with Rule 37 (a) of the Public Procurement Rules, 2004, as amended in 2020 (the "Rules") shall be opted.
- f. **Bidders can participate for all lots or any number of lots as per their area of expertise and shall submit separate bid(s) for each lot as Lot-A and/or Lot-B etc. The bids in each lot will be evaluated separately.**
- g. Bid shall comprise of single package containing two separate sealed envelopes.
- h. Each envelope shall contain separately the "Financial Proposal" and the "Technical Proposal"
- i. The envelopes shall be marked as "FINANCIAL PROPOSAL" and "TECHNICAL PROPOSAL" in bold and legible letters to avoid confusion.
- j. Initially, only the envelope marked "TECHNICAL PROPOSAL" shall be opened;
- k. The envelope marked as "FINANCIAL PROPOSAL" shall be retained in the custody of PTA without being opened.
- l. The technical proposals shall be evaluated as per clause 3 of this document without reference to the price and reject any proposal which does not conform to the specified requirements.
- m. The financial proposals of bidders found technically non responsive shall be returned unopened to the respective bidders;
- n. After the evaluation and approval of the technical proposals, the financial proposals of the technically accepted bids /technically qualified bidders will be opened at a time, date and venue announced and communicated to bidders in advance.

- o. PTA Application/Server Farm is expanding continuously. Keeping in view of the requirement the supplied Server/storage box should correlate the requirement performance and must provide the guaranteed performance as written in these bidding documents. In case the box under performs during the contract period, the selected bidder will be obligated to change the box to achieve required performance on free of charge (FOC) basis.
- p. Bidder shall quote only single option for each lot, bids with multiple options will be rejected without any right of appeal.
- q. Bidder must be registered with FBR for Income and Sales tax and will provide NTN and Sales Tax registration certificates, as per the applicable government regulation, in the proposal.
- r. The Bidders name must be on Active Taxpayers List (ATL) of FBR for Income tax and sales tax as on the date of bid submission and onward throughout the period of Contract/Support/SLA in compliance of the Eligible Bidders (Tax Compliance) Regulations, 2015.
- s. The Bidder shall provide an undertaking that the Bidder itself or its partner have not been declared black listed by any Government/Semi-Government institutions.
- t. **PTA** shall not entertain incomplete or partial bids.
- u. Proposals shall be submitted in English language as per Rule 6 of the PP Rules in vogue.
- v. All prices mentioned in the Financial Proposal shall be in Pak Rupees (PKR).
- w. Each page of the Technical and Financial Proposal shall be signed by an authorized representative of the Bidder. The representative's authorization shall be confirmed by power of attorney accompanying the proposal.
- x. For clarification on any item of this document, the bidder may send a written request, up till five (05) days before the proposal submission date and all clarifications will be communicated to the registered Bidders through e-mail
- y. PTA may reject all bids or proposals at any time prior to the acceptance of a bid or proposal. PTA shall, upon request, communicate to any bidder who submitted a bid or proposal, the grounds for its rejection of all bids or proposals, but is not required to justify those grounds as per Rule 33 of the Rules.
- z. Annex-A, Annex-B, Annex-C (I-VI) and Annex-D (I-VI) i.e. for each lot against which bids are submitted 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 (I-VI) consists of technical Evaluation of the product of respective lot and bidder(s) may quote higher specs, however, quoting lower specs shall disqualify the bidder.
- iv. Annex-D (I-VI), comprises of financial bid format against each lot, to be followed by all bidders, the bidder should quote its rates clearly, in the financial proposal in both figures and words without any ambiguity. Financial bid should be quoted on the given financial bid forms at Annex-D (I-VI), otherwise bid shall be rejected.
- v. The bidder must be current dealers/suppliers/distributors/partners of the principal manufacturer.
- vi. **Technical and Financial evaluation of each lot shall be evaluated separately, and are independent of each other.**
- vii. License renewals including SLA/Support, Warranty and Software Services of SAN, SWITCHES & SERVERS may be renewed on same terms and conditions as mentioned in these bidding documents for next three years (After/ beyond the expiry of three years' warranty, support/SLA etc.), as per PPRA rules.
- viii. Draft agreement is also part of these Bidding documents.

2. **BIDDER's INFORMATION**

Bidders shall submit of following documents /information with relevant authorities;

In case of Company

1. Incorporation certificate from Security and Exchange Commission of Pakistan (SECP).
2. Valid NTN and STN Certificates

In case of Firm

1. Form-C issued by registrar of Firms
2. Valid NTN and STN Certificates

Address

Telephone No

Fax No

3. EVALUATION CRITERIA

- a. The bidder should quote its rates (in PKR) clearly in the Financial Proposal in both figures and words.
- b. Technical bids shall be opened and evaluated for each lot by technical evaluation committee in view of Annex-A, Annex-B and Annex-C. Bidders, meeting the mandatory requirements as per Annex-A, obtaining at least 70% in Annex-B and meeting the technical specifications as per Annex-C, shall be eligible for the participation in financial bid opening.
- c. Financial bids of technically qualified bidders (bidders compliant of Annex-A, Annex-B and Annex-C (I-VI) shall be opened and evaluated by procurement committee of PTA i.e. PC-I.
- d. Contract will be awarded to most advantageous bidder i.e. meeting the qualification criteria provided in these bidding documents **in each lot separately**. 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.
- e. Definition of the terms set forth below for the purposes of this Bidding Documents, shall be as follows:
 - I. "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
 - II. "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
 - III. "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
 - IV. "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
 - V. "obstructive practice" is deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede PTA investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation.

4. Bid Security

- a. Bid security for each Lot shall be attached separately with respective Technical Proposal as detailed below: -

<u>Lot No.</u>	<u>Amount of Bid Security</u>
<u>A</u>	<u>PKR 3 million</u>
<u>B</u>	<u>PKR 3 million</u>
<u>C</u>	<u>PKR 1 million</u>
<u>D</u>	<u>PKR 1 million</u>
<u>E</u>	<u>PKR 1 million</u>
<u>F</u>	<u>PKR 0.2 million</u>

- b. Bid Security will be in the shape of pay order / bank draft in favor of Pakistan Telecommunication Authority.
- c. Bid Security of unsuccessful bidder(s) will be returned after award of supply order/ Contract to successful bidder(s).
- d. Bid security shall be forfeited in favor of PTA if the Contractor/Successful bidder(s) refuse to sign the Contract or fails/unable to deliver the Software /Hardware with in stipulated time frame.
- e. In case of cancelation of Supply Order/Contract due to default of the Contractor the Bid security shall be forfeited in favor of PTA.

5. Performance Guarantee:

- a. Performance Guarantee equal to 10% of total contract value amount shall be submitted at the time of the signing of contract, Performance Guarantee will be kept against warranty and support and will only be released after completion of warranty period and on issuance of performance certificate from two ICT officers one of which should be the responsible Officer and the other should be officer in charge.
- b. Performance Guarantee will be forfeited in favor of PTA if the above-mentioned officers reported hardware/software or any type of warranty/support issues related to the **SAN &SERVERS SWITCHES**.
- c. Bid Security of the successful bidder will be adjusted against the Performance Guarantee. Remaining amount of Performance Guarantee shall be submitted in shape of bank guarantee in favor of Pakistan Telecommunication Authority, Headquarters, Sector F-5/1, Islamabad.

6. PRICES

- a. The bidder should quote its rates clearly in Pak Rupees in the Financial Proposal in both figures and words as per format attached at Annex-D.
- b. The rates quoted shall remain valid for 120 days from the date of opening of Technical Bids.
- c. No currency exchange rate will be applicable and bids with a condition of currency exchange rate applicability will be rejected without any right of appeal.
- d. Bid(s) shall be inclusive of all applicable taxes i.e. GST etc.
- e. PTA will bear no transportation/carriage charges.

7. PAYMENT PROCEDURE

- a. No advance payment shall be made against the supply of software and Hardware mentioned in this bidding document.
- b. Payment is subject to successful installation, configuration, testing and commissioning of the SAN & SERVERS SWITCHES and payment shall be made on provision of invoice/bill, after delivery of the equipment /software at PTA Headquarters and issuance of satisfactory performance certificate by ICT directorate and physical inspection verification certificate issued by PC-I.
- c. Payment shall be subject to withholding of applicable taxes as per government rules.
- d. Payment will be linked with active taxpayer status of the bidder and no payment will be made until the bidder appears on ATL (Active Taxpayer List) of FBR (Federal Board of Revenue).
- e. Payment will be released after verification of Hardware its warranty details from the principle manufacturer via official website, email or letter etc., if deemed necessary.

8. HARDWARE/SOFTWARE

- a. The supply of software / hardware should be arranged through legal channels by clearing all duties/taxes (if any) levied by the Govt.

9. DELIVERY/COMPLETION PERIOD

- a. All components of the Software/Hardware shall be delivered within sixteen (16) weeks' time after issuance of supply order.

- b. Configuration, installation and implementation will be the sole responsibility of the Contractor, however technical engineers from ICT directorate will be available to make the process rational.
- c. Completion time of the projects as per Contract shall be four (04) weeks after delivery at H/Qs F-5/1, Islamabad with provision of support/training mentioned in **section 11**.

10. DEALER/SUPPLIER/PARTNER

Bidder shall be a dealer/supplier/distributor/partner of their respective Software/Hardware manufacturer.

11. WARRANTY/SUPPORT/TRAINING

- a. For Supply and Installation of SAN, Servers, Switches and all other components: Successful bidder will be responsible for three years' warranty and onsite support (24X7-Support/SLA).
- b. Successful bidders of Lots C, D and E will be responsible for Trainings of three to five ICT officers Free of Cost from authorized training center. The successful bidder shall provide the necessary trainings prior to product delivery and will give the participants complete overview of the solution, help them become familiar with its capabilities, and allow them to practice using the solution with day to day operations.
- c. Warranty/Replacement certificate both on **Non-Judicial Stamp Paper** and vendor letter head for three years.

12. PENALTY

- a) If the Contractor fails to deliver within due time as per clause 8(a) above, then a penalty of 01% per week of the total value of contract will be charged up to a maximum of four (04) weeks (Days less than six and more than four will be considered as one week). Thereafter, contract may stand cancelled and Performance Guarantee will be forfeited/encashed in favor of PTA along with initiation of blacklisting procedure as per Rule 19 of PP Rules, 2004.
- b) If the Contractor fails to install/configure provided hardware/software within due time mentioned in clause 8(b&c) of this document, then a penalty of 01% per week of the

contract will be charged up to a maximum of six (06) weeks (Days less than six and more than four will be considered as one week). Thereafter, contract may be terminated and performance guarantee will be forfeited/ encashed in favor of PTA together with initiation of blacklisting procedure as per Rule 19 of PP Rules, 2004. .

- c) If the Contractor fails to provide warranty / support as per certificate provided as per Annex-B (clause 3/4) of the bidding document, then a penalty of 01% per week of the performance guarantee will be charged.
- d) In case of non-satisfactory performance by the Contractor during the warranty period, PTA reserve the right to forfeit/ encash the performance guarantee in favor of PTA.
- e) If the Contractor fails to install, configure, deploy and test the system or unable to provide (i) Warranty (ii) Support and any other technical requirements identified by PTA ICT team then the penalty decided by PTA Authority will be applicable to the bidder as per Agreement.
- f) In case penalty is charged as per any of the above clause(s) (a to c) and contract is still in effect then the contractor shall be liable to recoup the amount of performance guarantee (in full) in the first instance.

13. DISQUALIFICATION

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

- a. Technical bid is submitted without the required Bid security.
- 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 and bidder is not in Active Payer List of FBR for both Income Tax and Sales Tax.
- e. Service center of the quoted brand is not in Islamabad/Rawalpindi.
- f. Bidder do not have "Valid" certificate from manufacturer.
- g. Bidder quoted multiple options, referring **section 1**.
- h. Affidavit on Non-**Judicial Stamp Paper** to the effect that the Company/firm has not been black listed by any government/semi government/autonomous body or company.

- i. Warranty/Replacement certificate both on **Non-Judicial Stamp Paper** and Contractor's Company/Firm letter head for three (03) years.

14. RIGHTS RESERVED

Pakistan Telecommunication Authority Islamabad reserves the rights to cancel the bid, accept or reject any bid as per PP Rules, 2004.

CHECKLIST

- | | | |
|-----------|--|----------|
| a. | Bid security in shape of bank draft/pay order.
(cheques are not acceptable) | (Yes/No) |
| b. | Relevant documents are attached as per Annexures | (Yes/No) |
| c. | List of such projects handled with copies of supply order. | (Yes/No) |
| d. | Affidavit on non-judicial stamp paper for not been black listed. | (Yes/No) |
| e. | Specification and other requirements are met. | (Yes/No) |
| f. | Service Centre of the quoted brand is in Islamabad/Rawalpindi | (Yes/No) |

Sikandar Abbas
Deputy Director (ICT)

General Evaluation Criteria

Annex-A

Part A) Mandatory Requirements *	
1	Company/Firm/Bidder has to produce Sales Tax and Income Tax Registration.
2	Minimum three (03) years of relevant experience.
3	Bidder must provide valid registration from SECP / Registrar of the Firms.
4	Sales and Service Center of the vendor/Contractor/Bidder must be in Islamabad / Rawalpindi.
5	Contractor status should be "Active" in Tax Payers List of FBR for both income tax and sales tax.
6	Affidavit on Non-Judicial stamp Paper to the effect that the firm has not been black listed by any government/semi government/autonomous body or company.
7	Non-quoting International Branded items for any of the above hardware item will lead to disqualification.
8	Company/Firm/Bidder has to produce valid Authorization Letter and Tier I/II partner Certificate of the principal/manufacturer for Pakistan
9	Minimum three relevant supply orders along with completion certificates covering applied category
10	The bidder will submit an undertaking that provided hardware will not be end of service life (EOSL) for at least five (5) years after supply of the equipment.

Bidders not fulfilling the above-mentioned Mandatory requirements will stand disqualified

Technical Capabilities of Bidder

Annex-B

Part B) General Evaluation*				
Sr. #	Attributes	Max. Score	Points Earned	Criteria
1	Detail of Offices	10		Company/Firm/Bidder has sales and services offices at four (4) provincial headquarters (p.h.q). Two and half (2.5) points for each p.h.q.
2	Spare Parts Availability	10		Company/Firm/Bidder has Spare Parts of the quoted model Depot/facility at Islamabad / Rawalpindi.
3	Hardware Replacement time for faulty parts under warranty equipment/parts (Certificate has to be produced) (Clause 11(c) referred)	15	15	Replacement on the same day
			10	Next Business Day (NBD)
			0	In case Contractor is not providing certificate same day/Next Day Replacement
4	Total strength of relevant Technical Staff at Rawalpindi / Islamabad (List shall be attached with name, designation, qualification, certifications and related experience).	10	10	Company/Firm/Bidder has ten (10) or more relevant technical staff in Islamabad / Rawalpindi.
			5	Company/Firm/Bidder has seven (07) or more up to nine (09) relevant technical staff in Islamabad / Rawalpindi
			2	Company/Firm/Bidder has five (5) or more up-to six (6) relevant technical staff in Islamabad / Rawalpindi
5	Company/Firm Experience (minimum three Years' experience required) in Pakistan.	15		(5) Points will be given for each year of experience, beyond 3 years of mandatory requirement. Max marks 15.
6	Projects completed of similar nature (documentary proof be provided i.e. Supply Orders/ work completion certificates etc.)	25		Five points will be awarded for each project of same nature on provision of supply order completion certificate <ul style="list-style-type: none"> For Lot A, B each supply order must contain at least (05) Servers.
7	Demo/Presentation for proof of concept. Complete Solution presentation.	15	15	Presentation shall be arranged for proof of concept of the all features including but not limited to Scalability, modularity, compatibility with other brands, reliability, Solution deployment and migration planning etc.
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.				



TECHNICAL EVALUATION

Annex-C(I)

(To be included in Technical Proposal)

Detailed Specifications of Server with XEON PROCESSOR, 24 Cores, 512GB RAM and with 2 X 240 GB SSD Boot Drives		
Quantity: 7		
Sr.	Feature	Technical Requirements
1.	PROCESSOR	Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more.
2.	2nd PROCESSOR	Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more.
3.	RAM	512GB DDR4 Memory 2933 MT/s or higher, 24 DDR4 DIMM slots (With 8 spare slots or more for future upgradation), ECC Memory or better.64 GB and above
4	BOOT DRIVE	2 X 240 GB SSD/M2 Boot Drives (KYHD)
5.	HARD DRIVE	2 x 960GB SSD cache (KYHD) 7x3.84TB SSD SAS Read Intensive 12Gbps all flash space per server. (KYHD)
6.	RAID CONTROLLER	By Pass module for RAID vSAN certified
7.	SERVER MANAGEMENT CARD	Enterprise level Remote Management Software with dedicated 1G LAN port.
8.	RAIL	Sliding rail with cable management arm.
9.	POWER SUPPLY	Redundant Dual Energy Efficient Power Supply, Redundant (1+1).
10.	SLOTS	Standard USB, PCI and storage slots.
11	vSAN ready nodes	Server should be vSAN ready node
12.	NETORK ADAPTER 10G	02 X Dual Port 10 GB Network adaptor card optical with 4xSFP+ Server Adapter Ethernet PCIe Network Interface Card.
13	NETWORK ADAPTER 1G ETHERNET	1 x 4 Port 1GB Ethernet adapter per server
14	NETWORK ADAPTOR 10G	02 X Single port 10 GB Network adaptor card optical with 2X SFP+ Server Adapter Ethernet PCIe Network Interface Card.
15.	HOST BUS ADAPTER	None
16.	CHASIS	Rack mounted 2U server
17.	CERTIFICATION	Proposed Server should be TPM 2.0 Certified.
18.	OPERATING SYSTEM	None
19.	WARRANTY	Three years onsite warranty or manufacturer warranty, whichever is greater.

Annex-C above is compulsory

NOTE: Specifications equivalent as mentioned above or higher/latest will be acceptable. Brand, model and part number etc. must be mentioned in bid.

TECHNICAL EVALUATION

Detailed Specifications of Server with XEON PROCESSOR, 24 Cores, 512GB RAM and with 2 X 240 GB SSD Boot Drives

Quantity: 11

Sr.	Feature	Technical Requirements
1.	PROCESSOR	Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more.
2.	2nd PROCESSOR	Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more.
3.	RAM	512GB DDR4 Memory 2933 MT/s or higher, 24 DDR4 DIMM slots (With 8 spare slots or more for future up-gradation), ECC Memory or better.64 GB and above
4.	BOOT DRIVES	2 X 240 GB SSD/M.2 Boot Drives per server (KYHD)
5.	HARD DRIVE	2 x 960GB SSD cache (KYHD) 7x2.4TB 10K SAS (KYHD)
6.	RAID CONTROLLER	By Pass module for RAID vSAN certified
7.	SERVER MANAGEMENT CARD	Enterprise level Remote Management Software with dedicated 1G LAN port.
8.	RAIL	Sliding rail with cable management arm.
9.	POWER SUPPLY	Redundant Dual Energy Efficient Power Supply, Redundant (1+1).
10.	SLOTS	Standard USB, PCI and storage slots.
11.	vSAN ready nodes	Server should be vSAN ready node
12.	NETORK ADAPTER 10G	02 X Dual Port 10 GB Network adaptor card optical with 4xSFP+ Server Adapter Ethernet PCIe Network Interface Card.
13.	NETWORK ADAPTER 1G ETHERNET	1 x 4 Port 1GB Ethernet adapter
14.	NETWORK ADAPTER 10G	02 X Single port 10 GB Network adapter card optical with 2X SFP+ Server Adapter Ethernet PCIe Network Interface Card.
15.	HOST BUS ADAPTER	None
16.	CHASIS	Rack mounted 2U server
17.	CERTIFICATION	Proposed Server should be TPM 2.0 Certified.
18.	OPERATING SYSTEM	None
19.	WARRANTY	Three years onsite warranty or manufacturer warranty, whichever is greater.

Annex-C above is compulsory

NOTE: Specifications equivalent as mentioned above or higher/latest will be acceptable. Brand, model and

TECHNICAL EVALUATION

Detailed Specifications of Server with XEON PROCESSOR, 24 Cores, 512GB RAM and with 2 X 240 GB SSD Boot Drives		
Quantity: 6		
Sr.	Feature	Technical Requirements
1.	PROCESSOR	Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more.
2.	2 nd PROCESSOR	Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more.
3.	RAM	512GB DDR4 Memory 2933 MT/s or higher, 24 DDR4 DIMM slots (With 8 spare slots or more for future up-gradation), ECC Memory or better.64 GB and above
4.	BOOT DRIVES	2 X 960 GB SSD/M2 Boot Drives (KYHD)
5.	HARD DRIVE	9x3.84TB SSD SAS Read Intensive 12Gbps all flash space per server. (KYHD)
6.	RAID CONTROLLER	Integrated RAID controller or higher, must support RAID 6/10.
7.	SERVER MANAGEMENT CARD	Enterprise level Remote Management Software with dedicated 1G LAN port.
8.	RAIL	Sliding rail with cable management arm.
9.	POWER SUPPLY	Redundant Dual Energy Efficient Power Supply, Redundant (1+1).
10.	SLOTS	Standard USB, PCI and storage slots.
11.	NETORK ADAPTER 10G	02 X Dual Port 10 GB Network adaptor card optical with 4xSFP+ Server Adapter Ethernet PCIe Network Interface Card.
12.	NETWORK ADAPTER 1G ETHERNET	1 x 4 Port 1GB Ethernet adapter
13.	NETWORK ADAPTOR 10G	02 X Single port 10 GB Network adaptor card optical with 2X SFP+ Server Adapter Ethernet PCIe Network Interface Card.
14.	HOST BUS ADAPTER	None
15.	CHASIS	Rack mounted 2U server
16.	CERTIFICATION	Proposed Server should be TPM 2.0 Certified.
17.	OPERATING SYSTEM	None
18.	WARRANTY	Three years onsite warranty or manufacturer warranty, whichever is greater.

Annex-C above is compulsory
NOTE: Specifications equivalent as mentioned above or higher/latest will be acceptable. Brand, model and part number etc. must be mentioned in bid.

TECHNICAL EVALUATION

Detailed Specifications of Server with XEON PROCESSOR, 20 Cores, 128GB RAM and with 2 X 240 GB SSD Boot Drives		
Quantity: 3		
Sr.	Feature	Technical Requirements
1.	PROCESSOR	Intel Xeon Gold Processor 2.3 GHz or better, 20 Cores 40 Threads per Core, 27 MB or above cache, Turbo.
2.	2 nd PROCESSOR	Intel Xeon Gold Processor 2.3 GHz or better, 20 Cores 40 Threads per Core, 27 MB or above cache, Turbo.
3.	RAM	128GB DDR4 Memory 2933MT/s or higher, 24 DDR4 DIMM slots (With 8 spare slots or more for future up-gradation), ECC Memory or better. 64 GB and above
4.	BOOT DRIVES	2 X 240 GB SSD/M2 Boot Drives per server (KYHD)
5.	HARD DRIVE	8 X 2.4TB 10K RPM SAS 12Gbps 512e 2.5 in, Hot-plug Hard drives (KYHD)
6.	RAID CONTROLLER	Integrated RAID controller or higher, must support RAID 6/10.
7.	SERVER MANAGEMENT CARD	Enterprise level Remote Management Software with dedicated 1G LAN port.
8.	RAIL	Sliding rail with cable management arm.
9.	POWER SUPPLY	Redundant Dual Energy Efficient Power Supply, Redundant (1+1).
10.	SLOTS	Standard USB, PCI and storage slots.
11.	NETWORK ADAPTER 1G ETHERNET	1 x 4 Port 1GB Ethernet adapter
12.	NETWORK ADAPTOR 10G	02 X Single port 10 GB Network adaptor card optical with 2X SFP+ Server Adapter Ethernet PCIe Network Interface Card.
13.	HOST BUS ADAPTER	None
14.	CHASIS	Rack mounted 2U server
15.	CERTIFICATION	Proposed Server should be TPM 2.0 Certified.
16.	OPERATING SYSTEM	None
17.	WARRANTY	Three years onsite warranty or manufacturer warranty, whichever is greater.

Annex-C above is compulsory
NOTE: Specifications equivalent as mentioned above or higher/latest will be acceptable. Brand, model and part number etc. must be mentioned in bid.

Any inferior Specifications will be rejected

Multiple options are not allowed; vendor should quote only one option. Quoting multiple option will lead to disqualification.

Higher Specifications are allowed however, quoting lower specifications will lead to disqualification.

Lot B:

TECHNICAL EVALUATION

Annex-C(II)

(To be included in Technical Proposal)

Detailed Specifications of Server with XEON PROCESSOR, 24 Cores, 512GB RAM and with 2 X 480 GB SSD Boot Drives		
Quantity: 24		
Sr.	Feature	Technical Requirements
1.	PROCESSOR	Intel® Xeon® Gold 2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more.
2.	2 nd PROCESSOR	Intel® Xeon® Gold2.4G, 24C/48T, 10.4GT/s, 35.75 M Cache or more.
3.	RAM	512GB DDR4 Memory 2933 MT/s or higher, 24 DDR4 DIMM slots (With 8 spare slots or more for future up-gradation), ECC Memory or better. 64 GB and above
4.	HARD DRIVE	16 bays or higher for 2.5in drives, 2 x 480 GB or above SSD internal boot drives. (KYHD)
5.	RAID CONTROLLER	Integrated RAID Controller or higher, 02GB NV Cache or better, must support RAID 6/10.
6.	SERVER MANAGEMENT CARD	Enterprise level Remote Management Software with dedicated 1G LAN port.
7.	RAIL	Sliding rail with cable management arm.
8.	POWER SUPPLY	Redundant Dual Energy Efficient Power Supply, Redundant (1+1).
9.	SLOTS	Standard USB, PCI and storage slots.
10.	NETORK ADAPTER 10G	02 X Dual Port 10 GB Network adaptor card optical with 4xSFP+ Server Adapter Ethernet PCIe Network Interface Card.
11.	HOST BUS ADAPTER	2 X Single Port 16GB/s HBA Cards for SAN connectivity. Cables LC-LC cables 5 meter.
12.	NETWORK ADAPTER 1G ETHERNET	1 x 4 Port 1GB Ethernet adapter
13.	CHASIS	Rack mounted 2U server
14.	CERTIFICATION	Proposed Server should be TPM 2.0 Certified.
15.	OPERATING SYSTEM	None
16.	WARRANTY	Three years onsite warranty or manufacturer warranty, whichever is greater.

Annex-C above is compulsory
NOTE: Specifications equivalent as mentioned above or higher/latest will be acceptable. Brand, model and part number etc. must be mentioned in bid.

TECHNICAL EVALUATION

Detailed Specifications of Server with XEON PROCESSOR, 20 Cores, 128GB RAM and with 2 X 240 GB SSD Boot Drives

Quantity: 3

Sr.	Feature	Technical Requirements
1.	PROCESSOR	Intel Xeon Gold Processor 2.3 GHz or better, 20 Cores 40 Threads per Core, 27 MB or above cache, Turbo.
2.	2 nd PROCESSOR	Intel Xeon Gold Processor 2.3 GHz or better, 20 Cores 40 Threads per Core, 27 MB or above cache, Turbo.
3.	RAM	128GB DDR4 Memory 2933MT/s or higher, 24 DDR4 DIMM slots (With 8 spare slots or more for future up-gradation), ECC Memory or better.64 GB and above
4.	BOOT DRIVES	2 X 240 GB SSD/M2 Boot Drives per server (KYHD)
5.	HARD DRIVE	8 X 2.4TB 10K RPM SAS 12Gbps 512e 2.5 in, Hot-plug Hard drives (KYHD)
6.	RAID CONTROLLER	Integrated RAID controller or higher, must support RAID 6/10.
7.	SERVER MANAGEMENT CARD	Enterprise level Remote Management Software with dedicated 1G LAN port.
8.	RAIL	Sliding rail with cable management arm.
9.	POWER SUPPLY	Redundant Dual Energy Efficient Power Supply, Redundant (1+1).
10.	SLOTS	Standard USB, PCI and storage slots.
11.	NETWORK ADAPTER 1G ETHERNET	1 x 4 Port 1GB Ethernet adapter
12.	NETWORK ADAPTOR 10G	02 X Single port 10 GB Network adaptor card optical with 2X SFP+ Server Adapter Ethernet PCIe Network Interface Card.
13.	HOST BUS ADAPTER	None
14.	CHASIS	Rack mounted 2U server
15.	CERTIFICATION	Proposed Server should be TPM 2.0 Certified.
16.	OPERATING SYSTEM	None
17.	WARRANTY	Three years onsite warranty or manufacturer warranty, whichever is greater.

Annex-C above is compulsory

NOTE: Specifications equivalent as mentioned above or higher/latest will be acceptable. Brand, model and part number etc. must be mentioned in bid.

Any inferior Specifications will be rejected

Multiple options are not allowed; vendor should quote only one option. Quoting multiple option will lead to disqualification.

Higher Specifications are allowed however, quoting lower specifications will lead to disqualification.

TECHNICAL EVALUATION

Annex-C(III)

(To be included in Technical Proposal)

Lot C:

ALL FLASH NVMe Storage (100TB usable/200TB effective), Qty = 1	
Items	Item Description
HARDWARE	
ARCHITECTURE	The proposed array should have dual active-active controllers with NSPoF architecture & 99.999% availability. Proposed storage should also support NDU software upgrade.
NO SINGLE POINT OF FAILURE	The proposed array should be with No Single Point of Failure (SPOF). All the components should be redundant and hot swappable including Redundancy is available for controllers, cache, interface modules, disks, power modules, fans, and other components to avoid single point of failure. All assembly unit can be replaced online without any business interruption.
DRAM CACHE	The total system level-1 cache capacity must be ≥ 128 GB, and the level-1 cache capacity of any single controller must be ≥ 64 GB.
IOPS	Minimum 40K IOPS.
REQUIRED CAPACITY	The proposed array must be proposed and configured with all flash SSD or better (Non-SATA ports) based 100TB of usable capacity (KYHD) After RAID-5 or better and before de-duplication/Compression or 200TB effective capacity (KYHD), with two hot spares or as per manufacturer's best practices. Must support de-duplication/Compression and must include licenses for deduplication & compression. The proposed array solution must be scalable to 500TB capacity. (KYHD)
VAULTING	The storage system should offer protection measures against component and power failures and uses advanced technologies to minimize risks of disk failures and data loss. Built-in backup battery units (BBUs) supply power to controller enclosures in the event of unexpected power failures. The storage system should write cache data to disks to prevent data loss.
MULTIPROTOCOL SUPPORT	The proposed array should support 16G/32G FC, 10GE iSCSI connectivity.
FRONT END PORTS	The proposed array should provide at least 2 x 4 x 10Gb optical Ports with SFPs.
NVMe/SSD FLASH DISKS	The proposed array must be dual ported native NVMe/SSD disks. All Flash disks should support two independent I/O channels with automatic failover and fault isolation.
RAID level & Disk Failure Protection	The system must support RAID 5 or better.
DATA EFFICIENCY	The proposed array should support inline compression and deduplication of application data for space efficiency with a stable latency no more than 1ms.
PLATFORM SUPPORT	The proposed system should support popular operating system platforms such as Linux, Windows, HP-UX, Oracle Linux and Solaris, IBM AIX etc.
VIRTUALIZED ENVIRONMENT	The proposed array must support Hypervisor like VMware vSphere, Proxmox, Windows Hyper-V and KVM.

	The offered solution should integrate with VMware vRealize Operations for collecting, monitoring and managing data of the offered storage. Documentary proof will be required from Software OEM.
NON-DISRUPTIVE MIGRATION	The proposed array should provide the capability to seamlessly migrate data from existing/other vendor's array without service interruption.
Warranty	3 Years comprehensive warranty from principal/OEM for complete SAN solution including SAN Switches and Storage with 24 x 7 x 4Hrs response time
SOFTWARE	
Replication license required for complete capacity	
SNAPSHOTS & THIN PROVISIONING	The proposed array must include licenses to provide snapshots, must include instant activation of point-in-time copies for read/write access of LUNs and also is able to thin provision the LUNs.
CLONE	The proposed array should support storage clone features.
QUALITY OF SERVICE	The proposed array should include licenses to support QoS feature to limit the amount of IO (IOPS) or bandwidth (MB/s) a particular application can drive on the array. This feature should allow the administrator to prioritize each workload as per its importance to the organization
STORAGE MANAGEMENT SOFTWARE	The proposed array should be supplied with Storage management software capable of generating customized reports, real time monitoring, historical performance data for analysis and trending, capacity utilization monitoring

Any inferior Specifications will be rejected

Multiple options are not allowed; vendor should quote only one option. Quoting multiple option will lead to disqualification.

Higher Specifications are allowed however, quoting lower specifications will lead to disqualification.

TECHNICAL EVALUATION

Annex-C(IV)

(To be included in Technical Proposal)

Lot D:

ALL FLASH NVMe Storage (200TB usable/350TB effective), Qty = 1	
Items	Item Description
HARDWARE	
ARCHITECTURE	The proposed array should be all flash unified storage with 2 Active-Active Controllers scale-up and scale-out architecture, LUNs should not belong to any controller. Service loads should be balanced among all controllers. The proposed solution should be able to support 99.9999% availability.
NVMe/SSD	The proposed array should provide end-to-end NVMe/SSD multi-controller architecture, scalable to four or more controllers.
NO SINGLE POINT OF FAILURE	The proposed array should be with No Single Point of Failure (SPOF). All the components should be redundant and hot swappable including Redundancy is available for controllers, cache, interface modules, disks, power modules, fans, and other components to avoid single point of failure. All assembly unit can be replaced online without any business interruption.
DRAM CACHE	The total system level-1 cache capacity must be ≥ 192 GB, and the level-1 cache capacity of any single controller must be ≥ 96 GB.
IOPS	Minimum 100K IOPS with 8K Block size and 70:30 R:W ratio. Principle sizing report must require.
REQUIRED CAPACITY	The proposed array must be proposed and configured with all flash SSD or better (Non-SATA ports) based 200TB of usable capacity (KYHD) After RAID-5 or better and before de-duplication/Compression or 350TB effective capacity (KYHD), with two hot spares or as per manufacturer's best practices. Must support de-duplication/Compression. Must include licenses for deduplication & compression. (KYHD)
CAPACITY DENSITY	The proposed array solution must be scalable to 1PB (KYHD) with 4 controllers capacity.
VAULTING	The storage system should offer protection measures against component and power failures and uses advanced technologies to minimize risks of disk failures and data loss. Built-in backup battery units (BBUs) supply power to controller enclosures in the event of unexpected power failures. The storage system should write cache data to disks to prevent data loss.
MULTIPROTOCOL SUPPORT	The proposed array should support 16G/32G FC, 10GE iSCSI connectivity.
FRONT END PORTS	The proposed array should provide at least 2 x 4 x 16Gb FC Port (HBA) with SFPs. The proposed array should provide at least 2 x 4 x 10Gb optical Ports with SFPs.
NVMe/SSD FLASH DISKS	The proposed array must be dual ported native NVMe/SSD disks. All Flash disks should support two independent I/O channels with automatic failover and fault isolation.
RAID level & Disk Failure Protection	The system must support RAID 5 or better.

DATA EFFICIENCY	The proposed array should support inline compression and deduplication of application data for space efficiency with a stable latency no more than 1ms.
PLATFORM SUPPORT	The proposed system should support popular operating system platforms such as Linux, Windows, HP-UX, Oracle Linux and Solaris, IBM AIX etc.
VIRTUALIZED ENVIRONMENT	The proposed array must support Hypervisor like VMware vSphere, Proxmox, Windows Hyper-V and KVM. The offered solution should integrate with VMware vRealize Operations for collecting, monitoring and managing data of the offered storage. Documentary proof will be required from Software OEM.
NON-DISRUPTIVE MIGRATION	The proposed array should provide the capability to seamless migrate data from existing/other vendor's array without service interruption.
Warranty	3 Years comprehensive warranty from principal/OEM for complete SAN solution including SAN Switches and Storage with 24 x 7 x 4Hrs response time
SOFTWARE	
Replication license required for complete capacity	
SNAPSHOTS & THIN PROVISIONING	The proposed array must include licenses to provide snapshots, must include instant activation of point-in-time copies for read/write access of LUNs and also is able to thin provision the LUNs.
CLONE	The proposed array should support storage clone features.
QUALITY OF SERVICE	The proposed array should include licenses to support QoS feature to limit the amount of IO (IOPS) or bandwidth (MB/s) a particular application can drive on the array. This feature should allow the administrator to priorities each workload as per its importance to the organization
STORAGE MANAGEMENT SOFTWARE	The proposed array should be supplied with Storage management software capable of generating customized reports, real time monitoring, historical performance data for analysis and trending, capacity utilization monitoring

Any inferior Specifications will be rejected

Multiple options are not allowed; vendor should Quote only one option. Quoting multiple option will lead to disqualification.

Higher Specifications are allowed however, quoting lower specifications will lead to disqualification.

Lot E:

ALL FLASH NVMe Storage (200TB usable/350TB effective), Qty = 1	
Items	Item Description
HARDWARE	
ARCHITECTURE	The proposed array should be all flash unified storage with 2 Active-Active Controllers scale-up and scale-out architecture, LUNs should not belong to any controller. Service loads should be balanced among all controllers. The proposed solution should be able to support 99.9999% availability.
NVMe/SSD	The proposed array should provide end-to-end NVMe/SSD multi-controller architecture, scalable to four or more controllers.
NO SINGLE POINT OF FAILURE	The proposed array should be with No Single Point of Failure (SPOF). All the components should be redundant and hot swappable including Redundancy is available for controllers, cache, interface modules, disks, power modules, fans, and other components to avoid single point of failure. All assembly unit can be replaced online without any business interruption.
DRAM CACHE	The total system level-1 cache capacity must be ≥ 192 GB, and the level-1 cache capacity of any single controller must be ≥ 96 GB.
IOPS	Minimum 100K IOPS with 8K Block size and 70:30 R:W ratio. Principle sizing report must require.
REQUIRED CAPACITY	The proposed array must be proposed and configured with all flash SSD or better (Non-SATA ports) based 200TB of usable capacity (KYHD) After RAID-5 or better and before de-duplication/Compression or 350TB effective capacity (KYHD), with two hot spares or as per manufacturer's best practices. Must support de-duplication/Compression. Must include licenses for deduplication & compression. (KYHD)
CAPACITY DENSITY	The proposed array solution must be scalable to 1PB (KYHD) with 4 controllers capacity.
VAULTING	The storage system should offer protection measures against component and power failures and uses advanced technologies to minimize risks of disk failures and data loss. Built-in backup battery units (BBUs) supply power to controller enclosures in the event of unexpected power failures. The storage system should write cache data to disks to prevent data loss.
MULTIPROTOCOL SUPPORT	The proposed array should support 16G/32G FC, 10GE iSCSI connectivity.
FRONT END PORTS	The proposed array should provide at least 2 x 4 x 16Gb FC Port (HBA) with SFPs. The proposed array should provide at least 2 x 4 x 10Gb optical Ports with SFPs.
NVMe/SSD FLASH DISKS	The proposed array must be dual ported native NVMe/SSD disks. All Flash disks should support two independent I/O channels with automatic failover and fault isolation.
RAID level & Disk Failure Protection	The system must support RAID 5 or better.

DATA EFFICIENCY	The proposed array should support inline compression and deduplication of application data for space efficiency with a stable latency no more than 1ms.
PLATFORM SUPPORT	The proposed system should support popular operating system platforms such as Linux, Windows, HP-UX, Oracle Linux and Solaris, IBM AIX etc.
VIRTUALIZED ENVIRONMENT	The proposed array must support Hypervisor like VMware vSphere, Proxmox, Windows Hyper-V and KVM. The offered solution should integrate with VMware vRealize Operations for collecting, monitoring and managing data of the offered storage. Documentary proof will be required from Software OEM.
NON-DISRUPTIVE MIGRATION	The proposed array should provide the capability to seamlessly migrate data from existing/other vendor's array without service interruption.
Warranty	3 Years comprehensive warranty from principal/OEM for complete SAN solution including SAN Switches and Storage with 24 x 7 x 4Hrs response time
SOFTWARE	
Replication license required for complete capacity	
SNAPSHOTS & THIN PROVISIONING	The proposed array must include licenses to provide snapshots, must include instant activation of point-in-time copies for read/write access of LUNs and also is able to thin provision the LUNs.
CLONE	The proposed array should support storage clone features.
QUALITY OF SERVICE	The proposed array should include licenses to support QoS feature to limit the amount of IO (IOPS) or bandwidth (MB/s) a particular application can drive on the array. This feature should allow the administrator to prioritize each workload as per its importance to the organization
STORAGE MANAGEMENT SOFTWARE	The proposed array should be supplied with Storage management software capable of generating customized reports, real time monitoring, historical performance data for analysis and trending, capacity utilization monitoring

Any inferior Specifications will be rejected

Multiple options are not allowed; vendor should quote only one option. Quoting multiple option will lead to disqualification.

Higher Specifications are allowed however, quoting lower specifications will lead to disqualification.

TECHNICAL EVALUATION**Annex-C(V)**

(To be included in Technical Proposal)

SAN SWITCHES QTY = 2	
SAN Switch	16/32Gbps NVMe ready SAN switches
Fiber Channel Ports	24 Ports Switch, all ports enabled (Compatible with servers in Lot A & Lot B)
Media Type/ Transceivers	24 x 32 Gb/s hot-pluggable SFP+, LC connector
Licenses	Include all required licenses such as ISL trunking Frame-based trunking Licenses
Accessories	Redundant, hot-pluggable components and non-disruptive software upgrades, Patch cords
Enclosure	Front-to-back airflow; power from back
Warranty	3 Years support from principal/OEM for complete SAN solution including SAN Switches and Storage with 24 x 7 x 4Hrs response time

Any inferior Specifications will be rejected

Multiple options are not allowed; vendor should quote only one option. Quoting multiple option will lead to disqualification.

Higher Specifications are allowed however, quoting lower specifications will lead to disqualification.

TECHNICAL EVALUATION**Annex-C(VI)**

(To be included in Technical Proposal)

SAN SWITCHES QTY = 2	
SAN Switch	16/32Gbps NVMe ready SAN switches
Fiber Channel Ports	24 Ports Switch, all ports enabled (Compatible with servers in Lot A & Lot B)
Media Type/ Transceivers	24 x 32 Gb/s hot-pluggable SFP+, LC connector
Licenses	Include all required licenses such as ISL trunking Frame-based trunking Licenses
Accessories	Redundant, hot-pluggable components and non-disruptive software upgrades, Patch cords
Enclosure	Front-to-back airflow; power from back
Warranty	3 Years support from principal/OEM for complete SAN solution including SAN Switches and Storage with 24 x 7 x 4Hrs response time

Any inferior Specifications will be rejected

Multiple options are not allowed; vendor should quote only one option. Quoting multiple option will lead to disqualification.

Higher Specifications are allowed however, quoting lower specifications will lead to disqualification.

Financial Proposal

Annex-D(I)

Financial Proposal (Bid Format) Lot A (with 3 years' warranty)

Date _____

Company Name _____

Required Specification	Quoted Specification (With Brand Name)	Unit Price Inclusive of Applicable Taxe	Qty	Total Price Inclusive of Applicable Taxe
<u>HARDWARE</u>				
Servers (Dual Socket, 512GB RAM, 2x240GB SSD, 2x960GB SSD for caching, 7x3.84TB all flash SSDs, VSAN Ready)			7	
Servers (Dual Socket, 512GB RAM, 2x240GB SSD, 2x960GB SSD for Caching, 7x2.4TB 10RPM SAS, VSAN Ready)			11	
Servers (Dual Socket, 512GB RAM, 2x480GB SSD, 9x3.84TB all flash SSDs)			6	
Servers (Dual Socket, 128GB RAM, 2x240GB SSD, 8x2.4TB 10RPM SAS)			3	
GRAND TOTAL				

Amount in words: (Rupees.....)

Any inferior specifications will be rejected

Authorized Signature of bidder with seal & stamp

Financial Proposal

Annex-D(II)

Financial Proposal (Bid Format) Lot B (with 3 years' warranty)

Date _____

Company Name _____

Required Specification	Quoted Specification (With Brand Name)	Unit Price Inclusive of Applicable Taxes	Qty	Total Price Inclusive of Applicable Taxes
<u>HARDWARE</u>				
Servers (Dual Socket, 512GB RAM, 2x480GB SSD)			24	
Servers (Dual Socket, 128GB RAM, 2x240GB SSD, 8x2.4TB 10RPM SAS)			3	
GRAND TOTAL				

Amount in words: (Rupees.....)

Any inferior specifications will be rejected

Authorized Signature of bidder with seal & stamp

Financial Proposal

Annex-D(III)

Financial Proposal (Bid Format) Lot C (with 3 years' warranty)

Date _____

Company Name _____

Required Specification	Quoted Specification (With Brand Name)	Unit Price Inclusive of Applicable Taxes	Qty	Total Price Inclusive of Applicable Taxes
<u>HARDWARE</u>				
Entry level native all flash (SSD/NVME) SAN with 100TB/above usable space- After RAID-5 or better and before enabling deduplication and compression or 200TB/above effective capacity after deduplication and compression			1	
GRAND TOTAL				

Amount in words: (Rupees.....)

Any inferior specifications will be rejected

Authorized Signature of bidder with seal & stamp

Financial Proposal

Annex-D(IV)

Financial Proposal (Bid Format) Lot D (with 3 years' warranty)

Date _____

Company Name _____

Required Specification	Quoted Specification (With Brand Name)	Unit Price Inclusive of Applicable Taxes	Qty	Total Price Inclusive of Applicable Taxes
<u>HARDWARE</u>				
Enterprise level native all flash (SSD/NVME) SAN with 200TB or above usable space- After RAID-5 or better and before enabling deduplication and compression or 350TB/above effective capacity after deduplication and compression			1	
GRAND TOTAL				

Amount in words: (Rupees.....)

Any inferior specifications will be rejected

Authorized Signature of bidder with seal & stamp

Financial Proposal

Annex-D(V)

Financial Proposal (Bid Format) Lot E (with 3 years' warranty)

Date _____

Company Name _____

Required Specification	Quoted Specification (With Brand Name)	Unit Price Inclusive of Applicable Taxes	Qty	Total Price Inclusive of Applicable Taxes
<u>HARDWARE</u>				
Enterprise level native all flash (SSD/NVME) SAN with 200TB or above usable space- After RAID-5 or better and before enabling deduplication and compression or 350TB/above effective capacity after deduplication and compression along with 2 X 16/32Gbps NVM-e ready SAN switches, with 24 ports enabled, with patch-cords 10Metre and SFPs			1	
GRAND TOTAL				

Amount in words: (Rupees.....)

Any inferior specifications will be rejected

FINANCIAL PROPOSAL not accompanied with Bid security will be rejected without any right of appeal.

Authorized Signature of bidder with seal & stamp

Financial Proposal

Annex-D(VI)

Financial Proposal (Bid Format) Lot F (with 3 years' warranty)

Date _____

Company Name _____

Required Specification	Quoted Specification (With Brand Name)	Unit Price <i>Inclusive of Applicable Taxes</i>	Qty	Total Price Inclusive of Applicable Taxes
<u>HARDWARE</u>				
16/32Gbps NVM-e ready SAN switches, with 24 ports enabled, with patch-cords 10Metre and SFPs.			2	
GRAND TOTAL				

Amount in words: (Rupees.....)

Any inferior specifications will be rejected

Authorized Signature of bidder with seal & stamp

AGREEMENT

(To be executed on Rs.100/- Judicial paper)

THIS Supply & Installation Service Agreement (the "Agreement") is made on this day _____ 2021;

By and Between

Pakistan Telecommunication Authority, a statutory body established under Pakistan Telecommunication (Re-organization) Act, 1996, having its principle office at PTA H/Q, F-5/1, Islamabad (hereinafter referred to as "**Client**" which expression shall where the context admits include its administrators and assigns) of the One Part

And

M/s _____

through Mr.....

bearing CNIC.....

having place of business at.....

(hereinafter referred to as "**the Contractor**," which expression shall where the context so allows include his/its successors-in-interest, executors, administrators, heirs and permitted assigns) of the **Other Part**

(If when and where applicable the Party of the One Part and Party of Other Part shall hereinafter be collectively referred to as 'Parties' and individually as 'Party' as the context of this Agreement requires).

WHEREAS;

- A. Client is desirous of procuring & installation of **Storage area network (SAN), Rack mounted Servers, Switches** for its HQs Building at F-5/1, Islamabad and have them **delivered/supplied and installed and subsequently maintained** by the Contractor in accordance with the terms of this Agreement;
- B. The Contractor is a _____ (*details of incorporation*) being engaged in the business of supplying electrical, electronic equipment and has agreed to **supply, deliver, install/configure and thereafter provide maintenance services (hereinafter collectively to be referred as Services)** of the **SAN, SERVERS, SWITCHES** (at Client HQs Building on the terms and subject to the conditions as set forth hereunder.
- C. The Contractor represents that;
 - i. It has the relevant expertise and holds valid and subsisting licenses/permissions, authorizations/approvals required from the Government of Pakistan and;

- ii. It has the requisite expertise and resources to provide top quality of requisite Services of **SAN, SWITCHES & SERVERS** as per Annexure-C&D of Bid document to the Client in accordance with highest industry standards and satisfaction of the Client. The Contractor undertakes that the Services shall be provided only through the staff/labour/workforce that has the requisite expertise and experience in this regard.

D. Upon the basis of the representations and warranties of the Contractor contained herein, the Client wishes to appoint the Contractor to provide the Services at Client's HQ Building premises under this Agreement;

NOW THEREFORE, for the consideration provided herein the representation and warranties, covenants, conditions and promises contained herein below and intending to be legally bound, the Client and Contractor hereby agree as follows:

1. Scope of Agreement

Subject to the terms and conditions of this Agreement the Contractor agrees to provide Services as per requirements prescribed under **Bidding Documents and its attached Annexure-A, B and specifically Annexure-C & D;**

2. Agreement Documents

The following documents shall be deemed to form, and be read and construed as integral part of this Agreement:

- a) Invitation to bid
- b) Bidding documents along with its Annexures
- c) Special Stipulations (if any).
- d) Addenda and Corrigenda, if any, issue by the Clients and duly accepted by the Contractor at the signing of the Contract.
- e) Bid security/ Performance Guarantee
- f) Form of Agreement/ Contract Agreement
- g) Clients order to commence the work.
- h) Any Correspondence by the Clients/Contractor mutually accepted by the Client and the Contractor.

3. Term

3.1 Upon signing of this Agreement the Contractor shall be obligated to start the work on specified location by Client within one (01) week after delivery of the SAN, Server & Switches and complete it within projected time of four (04) weeks.

3.2 However, in case of any unavoidable/unforeseen delay (i.e. Force Majeure) incurred either by the Contractor or the Client, necessary timeline extension would be agreed mutually between both parties, however, it has to be communicated to each other during the occurrence of Force Majeure as per clause 11.

4. Termination

4.1 Notwithstanding anything herein contained the Client shall be exclusively entitled to terminate this Agreement

- a. Without advance notice, in case the Contractor is in breach of any of the terms of this Agreement, or in case the Client is not satisfied with the Services.
- b. Without cause, by giving three (03) days advance written notice to the Contractor.
- c. If the Services do not meet the specifications, terms & conditions mentioned in the **Annexure-A, B, C, D of Bidding documents.**

4.2 In case of such termination, the Contractor shall not be paid for any Services actually rendered up to the date of termination and any advance payment by the Client in respect of the Services not performed or in respect of period falling after the effective date of termination shall be refunded by the Contractor, to the Client. The Client, shall not, because of expiration or termination of this Agreement, be liable to the Contractor for any compensation, reimbursement, or damages because of the loss or prospective profit or because of expenditures or commitments incurred in connection with the business of the Contractor.

5. Deliverables

The Services should be of best quality and as per technical specifications mentioned in the Annexure C and D of Bidding documents.

6. Charges

6.1 In consideration of rendition of Services, all amounts paid to the Contractor are inclusive of all taxes, levies, duties, and any other deduction related thereto etc. and are acknowledged by the Supplier to be adequate and sufficient consideration for the rendition of Services.

6.2 All payments to be made by the Client to the Contractor shall be subject to such deductions and withholding as are required by prevailing laws which shall be to the account of the Contractor.

7. Invoice

7.1 The Contractor shall submit its Invoice in accordance with the rates/charges specified in **Annexure-D** of bidding document.

7.2 The Contractor shall be solely responsible for all payments, liabilities and all other obligations of whatsoever nature pertaining to its staff/workers who shall be deputed for the Services at the Client's Building.

7.3 The Contractor undertakes to fully indemnify and hold harmless the Client against any claims, losses, damages, or expenses in relation to injury or death to any persons or loss or damage to property arising out of the performance of supply and installation Services.

7.4 The Contractor and its staff /employees shall be bound to obey safety rules and other regulations prescribed by the Client on its premises. Any losses/damages suffered by the Client due to omission on the part of the Contractor, its staff/employees to abide by this condition shall be the sole liability of the Contractor and it may result in termination of the Agreement by the Client at its sole discretion.

8. Confidentiality

The Contractor its/his staff, workers, employees, personnel, agents or any other person acting for him and/or on his behalf shall hold in confidence and complete confidentiality and all documents and other information supplied to the Contractor and his Employees personnel, agents etc. by or behalf of the Client or which otherwise came/come into its/his/their knowledge and relates to the Client or any of its project.

9. Indemnification

The Contractor shall indemnify and hold harmless the Client, its Chairman, , Member Offices, Employees and other Personnel against any and all claims, damages, liabilities, losses, and expenses, whether direct or indirect, or personal injury or death to persons or damage to property arising out of (i) any negligence or intentional act or omission by the Contractor or his employees, personal , agents, etc. in connection with the Agreement, or (ii) arising out of or in connection with the performance of his obligations under this Agreement.

10. Resolution of Disputes

10.1 All disputes arising under this Agreement, whether during the term of this Agreement or after the termination or expiry of this Agreement shall be referred to (i) Purchase Committee-I (PC-I) of the Client for amicable settlement /resolution of the dispute at first stage. (ii) In case of failure in settlement, at the second stage the case will be referred to the Authority of the Client through Director (ICT). The decision of the Authority to settle the issue amicably will be final and will not be challenged at any forum including court of Law. (iii) In the event of failure of amicable settlement of dispute as above, either party may refer the dispute to Arbitration under the provision of Arbitration Act, 1940 and the rules issued thereunder, at Islamabad, Pakistan.

10.2 No All variations amendments and in or modification to the terms of this Agreement shall be made, except in writing and shall be binding only if duly agreed and signed by both the parties or their duly authorized representatives.

11. Force Majeure Event

11.1 Neither Party shall be held responsible for any loss or damage or failure to perform all or any of its obligations hereunder resulting from a Force Majeure event.

11.2 For the purpose of this Agreement a "Force Majeure Event" shall mean any cause(s) which render(s) a Party wholly or partly unable to perform its obligations under this Agreement and which are neither reasonably within the control of such Party nor the result of the fault or negligence of such Party, and which occur despite all reasonable attempts to avoid, mitigate or remedy, and shall include acts of God, war, riots, civil insurrections, cyclones, hurricanes, floods, fires, explosions, earthquakes, lightning, storms, chemical contamination, epidemics or plagues, acts or campaigns of terrorism or sabotage, blockades or acts of Governmental Authority after the date of this Agreement.

11.3 The Party initially affected by a Force Majeure shall promptly but not later than seven (07) days following the Force Majeure event notify the other of the estimated extent and duration of its inability to perform or delay in performing its obligations ("Force Majeure Notification"). Failure to notify within the afore-said period shall disentitle the Party suffering the Force Majeure from being excused for non-performance for the period for which the delay in notification persists.

11.4 Upon cessation of the effects of the Force Majeure the Party initially affected by a Force Majeure shall promptly notify the other of such cessation.

12. Governing Law

The provisions of this Agreement and the rights and obligations hereunder shall be governed by and construed in accordance with the prevailing laws of Pakistan.

13. Waiver

A party's failure to exercise or delay in exercising any right, power or privilege under this Agreement shall not operate as a waiver; nor shall any single or partial exercise of any right, power or privilege preclude any other or further exercise thereof.

14. Severability

The invalidity or unenforceability of any provisions of this Agreement shall not affect the validity or enforceability of any other provision of this Agreement, which shall remain in full force and effect.

15. Amendment

All addition amendments and variations to this agreement shall be binding only if in writing and signed by the Parties or their duly authorized representatives.

16. INTEGRITY PACT

INTEGRITY PACT DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC.
PAYABLE BY THE CONTRACTORS OF GOODS, SERVICES & WORKS IN CONTRACTS
WORTH RS.10.00 MILLION OR MORE

Contract Number: _____

Dated: _____

Contract Value: _____

Contract Title: _____

[Name of Contractor] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoP) through any corrupt business practice.

Without limiting the generality of the foregoing [Name of Contractor] represents and warrants that it has fully declared the brokerage, commission, fee etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultations fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[Name of Contractor] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representative or warranty.

[Name of Contractor] accepts full responsibility and strict liability for making and false declaration, not making full disclosure, misrepresenting fact or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right interest, privilege or other obligation or benefit obtained or procured as

aforesaid shall, without prejudice to any other right and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, [Name of Contractor] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten time the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Contractor] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.

17. Assignment

This Agreement may not be assigned by either party to other than by mutual agreement between the Parties in writing.

IN WITNESS WHEREOF, the parties hereto set their hands the day, month and year first above written.

For and Behalf of Client.

For and on Behalf of: Supplier

By: _____
Name: _____
Title: _____
Signature: _____
Date: _____

By: _____
Title: _____
Name: _____
Signature: _____
Date: _____

Witnesses

1. _____
Name: _____
CNIC: _____

2. _____
Name: _____
CNIC: _____