



Pak-Austria Fachhochschule: Institute of Applied Sciences & Technology, Haripur

KHYBER PAKHTUNKHWA

REQUEST FOR PROPOSAL (RFP)

FOR

“Development, Configuration, Implementation and Commissioning of Hyper Converged Infrastructure (HCI) for PAFIAST Applications”

Submission of Bids: Thursday the Aug 22, 2024 @ 12:00 noon

Opening of Bids: Thursday the Aug 22, 2024 @ 12:30 pm

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Section 1. Letter of Invitation

The Pak-Austria Fachhochschule: Institute of Applied Sciences & Technology (PAF- IAST), Haripur invites sealed bids from interested reputed firms/ companies for the “**Development, Configuration, Implementation and Commissioning of Hyper Converged Infrastructure (HCI) with 5 Servers for PAFIAST Applications**”.

The bidder must be registered with SECP/ Registrar and duly recognized in Pakistan, and be registered with FBR for Tax purposes; possess Manufacturer’s status or Distributor/ Dealer status with authorization from Manufacturer/ Principal specific for this tender, with sufficient financial, technical and human resources to take up the task assigned and complete the same within prescribed time limit on the finalization of contract with PAF-IAST.

Tender document containing instructions to bidders covering definitions, introduction/ background of the project, scope of work, general terms and conditions, and special terms, procedure for submission of bids, opening of bid, evaluation criteria, technical specifications, functional requirements and other related information, can be obtained against a written request on company’s letterhead, from Pak-Austria Fachhochschule: Institute of Applied Sciences & Technology, Haripur – Pakistan. Cost of the document is Rs. 2000/- Non-refundable (Stationery charges). Tender document can also be downloaded from <http://www.pafiast.edu.pk/> free of cost, however, interested bidders will be required to submit the Tender Fee in shape of Demand draft/ Pay Order of Rs. 2000/- in the name of Rector, PAF-IAST Haripur, along with the Bid, in order to participate in tender process.

Bidder(s) interested in participating in the tender process are advised to submit their Bid Proposal(s), along with the Earnest Money amounting 2% of their Bid Value in the shape of CDR, in accordance with the instructions in this tender document. Bid Proposal(s) must reach PAFIAST, Haripur by **Thursday** the 22 of Aug, 2024 by 1200 hrs. Any late Bid(s) shall not be accepted and returned unopened. Accepted Bids will be opened on the same day at 1230 hrs., in presence of bidders who chose to attend. In case of sudden holiday on bid opening day, bids will be opened on next working day. The Tender shall be executed in accordance with KPPRA Rule 6 (2)(b) “Single Stage, Two Envelope Procedure”.

This advertisement is also available on PAF: IAST and KPPRA websites <http://www.paf-iast.edu.pk/> & <http://www.kppra.org.pk>.

Project Director

Pak-Austria Fachhochschule: Institute of Applied Sciences & Technology (PAF-IAST)

Haripur – Khyber Pakhtunkhwa

Phone:0995-931708 E-Mail: procurement@paf-iast.edu.pk

Section 2. Instruction to Bidders (ITB)

A. GENERAL TERMS		
1. Introduction	1.1	Bidders shall adhere to all the requirements of this ITB, including any amendments made in writing by PAF-IAST. This ITB will be governed under Clause 6 (2)(b) “Single Stage, Two Envelope Procedure” of Khyber Pakhtunkhwa Public Procurement Rules, 2014, as amended from time to time and instructions of the Government of Khyber Pakhtunkhwa received during the completion of the project.
	1.2	Any Bid submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of the Bid by PAF-IAST. The Institute is under no obligation to award a contract to any Bidder as a result of this ITB.
	1.3	PAF-IAST reserves the right to cancel the procurement process at any stage without any liability of any kind for PAF-IAST, upon notice to the bidders or publication of cancellation notice on PAF- IAST website.
2. Fraud & Corruption, Gifts and Hospitality	2.1	PAF-IAST strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of PAF-IAST vendors and requires all bidders/ vendors observe the highest standard of ethics during the procurement process and contract implementation.
	2.2	Bidders/ vendors shall not offer gifts or hospitality of any kind to PAF-IAST staff members including recreational trips to sporting or cultural events, theme parks or offers of holidays, transportation, or invitations to extravagant lunches or dinners.
	2.3	In pursuance of this policy, PAF-IAST:
	(a)	Shall reject a bid if it determines that the bidder is or has been engaged in any corrupt or fraudulent practices in competing for the tender in question;
	(b)	Shall declare a bidder ineligible, either indefinitely or for a stated period, to be awarded a contract if at any time it determines that the bidder is or has been engaged in any corrupt or fraudulent practices in competing for, or in executing any contract; or counseling or canvassing staff or elected representatives; or engaging in collusion with other bidders.
3. Eligibility	3.1	A Bidder should not be suspended, debarred, or otherwise identified as ineligible by any Government/ Semi-government/ or any other international Organization. Bidders are therefore required to disclose to PAF-IAST whether they are subject to any sanction or temporary suspension imposed by these organizations.
	3.2	It is the Bidder’s responsibility to ensure that its employees, sub-contractors, service providers, suppliers and/ or their employees meet the eligibility requirements as established by PAF-IAST.
4. General Terms	4.1	The Bidder should be registered with Sales Tax and Income Tax Department.

- 4.2 The Bidder should have not been blacklisted by any Government/ semi Government organization.
- 4.3 There should be no litigation against the bidder/ firm.

B. PREPARATION OF BIDS

5. General Considerations	<p>5.1 In preparing the Bid, the Bidder is expected to examine the ITB in detail. Material deficiencies in providing the information requested in the ITB may result in rejection of the Bid.</p> <p>5.2 The Bidder will not be permitted to take advantage of any errors or omissions in the ITB. Should such errors or omissions be discovered, the Bidder must notify the procurement office, PAF-IAST accordingly.</p>
6. Cost of Preparation of Bid	6.1 The Bidder shall bear all costs related to the preparation and/ or submission of the Bid, regardless of whether its Bid is selected or not. PAF-IAST shall not be responsible or liable for those costs, regardless of the conduct or outcome of the procurement process.
7. Language	7.1 The Bid, as well as any, and all related correspondence exchanged by the Bidder and PAF- IAST, shall be written in the language(s) specified in the BDS.
8. Documents Comprising the Bid	<p>8.1 The Bid shall comprise of the following documents and related forms of which details are provided in the BDS. All pages of the Bid shall be signed, stamped and properly paginated.</p> <p>a) Returnable Forms as referred in Section 6 shall be properly filled in Ink or Typed. Forms filled in using a pencil shall not be considered and substantiate the annulment of the Bid Proposal.</p> <p>b) Documents Establishing the Eligibility and Qualifications of the Bidder;</p> <p>c) Bid covering Technical Specifications in detail, and covering Price Schedule;</p> <p>d) Bid Security, if required by BDS;</p> <p>e) Any attachments and/ or appendices to the Bid.</p>
9. Documents Establishing the Eligibility and Qualifications	9.1 The Bidder shall furnish documentary evidence of its status as an eligible and qualified supplier, using the Forms provided under Section 6 and providing documents required in those forms. In order to award a contract to a Bidder, its qualifications must be documented to PAF-IAST's satisfaction.
10. Technical Bid Format and Content	<p>10.1 The Bidder is required to submit a Bid using the Standard Forms and templates provided in Section 6 of the ITB.</p> <p>10.2 Samples of items, when required as per Section 5, shall be provided within the time specified and unless otherwise specified by the Purchaser, at no expense to the Institute. If not destroyed by testing, samples will be returned at Bidder's request and expense, unless otherwise specified.</p> <p>10.3 When applicable and required in Section 5, the Bidder shall describe the necessary training program available for the maintenance and operation of the equipment offered as well as the cost to the Institute. Unless otherwise specified, such training as well as training materials shall be provided in the language of the Bid as specified in the BDS.</p> <p>10.4 When applicable and required in Section 5, the Bidder shall certify the availability of spare parts for a period of at least five (5) years from date of delivery, or as otherwise specified in this ITB.</p>
11. Price Schedule	11.1 The Price Schedule shall be prepared using the Forms provided in Section 6 of the ITB and taking into consideration the requirements in the ITB.

	<p>11.2 Any requirement described in this ITB but not priced in the Price Schedule, shall be assumed to have been included in the prices of other activities or items, as well as in the final total price.</p>
12. Bid Security	<p>12.1 A Bid Security shall be provided in the amount and form indicated in the BDS. The Bid Security shall be valid for the duration as referred in BDS.</p> <p>12.2 The Bid Security shall be included along with the Bid. If Bid Security not found in the Bid, the Bid shall be rejected.</p> <p>12.3 If the Bid Security amount or its validity period is found to be less than what is required, PAF-IASST shall reject the Bid.</p> <p>12.4 In the event an electronic submission is allowed in the BDS, Bidders shall include a copy of the Bid Security in their bid and the original of the Bid Security must be sent via courier or hand delivery as per the instructions in BDS.</p> <p>12.5 The Bid Security will be forfeited by PAF-IASST, and the Bid rejected, in the event of any, or combination, of the following conditions:</p> <ul style="list-style-type: none"> a) If the Bidder withdraws its offer during the period of the Bid Validity specified in the BDS, or; b) In the event the successful Bidder fails: <ul style="list-style-type: none"> i. to sign the Contract after PAF-IASST has issued an award; or ii. to furnish the Performance Security, insurances, or other documents that PAF-IASST may require as a condition precedent to the effectivity of the contract that may be awarded to the Bidder.
13. Currencies	<p>13.1 All prices shall be quoted in the currency indicated in the BDS. Where prices are quoted in different currencies, for the purposes of comparison:</p> <ul style="list-style-type: none"> a) PAF-IASST will convert the currency quoted into the currency indicated in BDS, in accordance with the prevailing Inter Bank rate of exchange on the last day of submission of Bids; and b) In the event that PAF-IASST selects a Bid for award that is quoted in a currency different from the preferred currency in the BDS, PAF-IASST shall reserve the right to award the contract in the currency of PAF-IASST's preference, using the conversion method specified above.
14. Joint Venture, Consortium or Association	<p>14.1 If the Bidder is a group of legal entities that will form or have formed a Joint Venture (JV), Consortium or Association for the Bid, they shall confirm in their Bid that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the JV, Consortium or Association jointly and severally, which shall be evidenced by an intent letter or an Agreement among the legal entities duly notarized, and submitted with the Bid; and (ii) if they are awarded the contract, the contract shall be entered into, by and between PAF-IASST and the designated lead entity, who shall be acting for and on behalf of all the member entities comprising the joint venture.</p> <p>14.2 After the Deadline for Submission of Bid, the lead entity identified to represent the JV, Consortium or Association Or any change in the constitution of the JV, Consortium or Association shall not be altered without the prior written consent of PAF-IASST/ Procurement Committee.</p>

	<p>14.3 The lead entity and the member entities of the JV, Consortium or Association shall abide by the provisions of Clause 15 herein in respect of submitting only one Bid.</p> <p>14.4 The description of the organization of the JV, Consortium or Association must clearly define the expected role of each of the entities in the joint venture in delivering the requirements of the ITB, both in the Bid and the JV, Consortium or Association Agreement or Intent Letter. If allowed in this Tender document/ RFP, all entities that comprise the JV, Consortium or Association shall be</p>
	<p>cumulatively subject to the eligibility and technical qualification assessment by PAF-IAST as defined in Section 4: Evaluation Criteria.</p> <p>14.5 A JV, Consortium or Association in presenting its track record and experience should clearly differentiate between:</p> <ul style="list-style-type: none"> a) Those that were undertaken together by the JV, Consortium or Association; and b) Those that were undertaken by the individual entities of the JV, Consortium or Association. <p>14.6 Previous contracts completed by individual experts working privately but who are permanently or were temporarily associated with any of the member firms cannot be claimed as the experience of the JV, Consortium or Association or those of its members, but should only be claimed by the individual experts themselves in their presentation of their individual credentials.</p>
15. Only One Bid	<p>15.1 The Bidder (including the individual members of any Joint Venture) shall submit only one Bid, either in its own name or as part of a Joint Venture.</p> <p>15.2 Bids submitted by two (2) or more Bidders shall all be rejected if they are found to have any of the following:</p> <ul style="list-style-type: none"> a) they have at least one controlling partner, director or shareholder in common; or b) any one of them receive or have received any direct or indirect subsidy from the other/s; or c) they have the same legal representative for purposes of this ITB; or d) they are subcontractors to each other's Bid, or a subcontractor to one Bid also submits another Bid under its name as lead Bidder; or some key personnel proposed to be in the team of one Bidder participates in more than one Bid received for this ITB process. This condition relating to the personnel, does not apply to subcontractors being included in more than one Bid.
16. Bid Validity Period	<p>16.1 Bids shall remain valid for the period specified in the BDS, commencing on the Deadline for Submission of Bids. A Bid valid for a shorter period may be rejected by PAF-IAST and rendered non-responsive.</p> <p>16.2 During the Bid validity period, the Bidder shall maintain its original Bid without any change, including the availability of the Key Personnel.</p>

<p>17. Extension of Bid Validity Period</p>	<p>17.1 In exceptional circumstances, prior to the expiration of the Bid validity period, PAF-IAST may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing and shall be considered integral to the Bid.</p> <p>17.2 If the Bidder agrees to extend the validity of its Bid, it shall be done without any change to the original Bid.</p> <p>17.3 The Bidder has the right to refuse to extend the validity of its Bid, in which case, the Bid shall not be further evaluated.</p>
<p>18. Clarification on ITB (from the Bidders)</p>	<p>18.1 Bidders may request clarifications on any of the ITB documents no later than the date indicated in the BDS. Any request for clarification must be sent in writing in the manner indicated in the BDS. If inquiries are sent other than specified channel, even if they are sent to a PAF-IAST staff member, PAF-IAST shall have no obligation to respond or confirm that the query was officially received.</p> <p>18.2 PAF-IAST will provide the responses to clarifications through the method specified in the BDS.</p> <p>18.3 PAF-IAST shall endeavor to provide responses to clarifications in an expeditious manner, but any delay in such response shall not cause an obligation on the part of PAF-IAST to extend the submission date of the Bids, unless PAF-IAST deems that such an extension is justified and necessary.</p>
<p>19. Amendment in ITB</p>	<p>19.1 At any time prior to the deadline of Bid submission, PAF-IAST may for any reason, such as in response to a clarification requested by a Bidder, modify the ITB in the form of an amendment to the ITB. Amendments will be made available to all prospective bidders.</p> <p>19.2 If the amendment is substantial, PAF-IAST may extend the Deadline for submission of Bid to give the Bidders reasonable time to incorporate the amendment into their Bids.</p>
<p>20. Alternative Bids</p>	<p>20.1 Unless otherwise specified in the BDS, alternative Bids shall not be considered. If submission of alternative Bid is allowed by BDS, a Bidder may submit an alternative Bid, but only if it also submits a Bid conforming to the ITB requirements. Where the conditions for its acceptance are met, or justifications are clearly established, PAF-IAST reserves the right to award a contract based on an alternative Bid.</p> <p>20.2 If multiple/ alternative bids are being submitted, they must be clearly marked as "Main Bid" and "Alternative Bid"</p>
<p>21. Pre-Bid Conference</p>	<p>21.1 When appropriate, a pre-bid conference may be conducted at the date, time and location specified in the BDS. All Bidders are encouraged to attend. Nonattendance, however, shall not result in disqualification of an interested Bidder. Minutes of the Bidder's conference will be disseminated on the procurement website and/ or shared by email as specified in the BDS. No verbal statement made during the conference shall modify the terms and conditions of the ITB, unless specifically incorporated in the Minutes of the Bidder's Conference or issued/ posted as an amendment to ITB.</p>

C. SUBMISSION AND OPENING OF BIDS

<p>22. Bid Proposal Submission</p>	<p>22.1 The Bidder shall submit a duly signed and numbered all pages of the complete Bid in an Envelope sealed and marked as per ITB 22.6, and in accordance with KPPRA Rule 6 (2)(b).</p> <p>22.2 The Outer Envelope should contain Two (02) separate sealed envelopes, one of which comprising the Forms (A – F) and supporting documents in accordance with requirements in the BDS, shall be marked as “Technical Proposal”. Whereas, the other envelope containing the Form G: Price Schedule Form shall be marked as “Financial Proposal”.</p> <p>22.3 The Bid Security as referred in BDS must be placed in the “Financial Proposal” but in a duly sealed envelope and marked as “Bid Security”. However, an affidavit be placed in “Technical Proposal” confirming that the “Bid Security” is enclosed in “Financial Proposal”. Bid security envelop will be opened with financial proposal of Technically qualified bidders.</p> <p>22.4 Bid can be delivered by courier/ hand delivered as specified in the BDS.</p>
	<p>22.5 The Bid shall be signed by the Bidder or person(s) duly authorized to commit the Bidder. The authorization shall be communicated through a document evidencing such authorization issued by the legal representative of the bidding entity, or a Power of Attorney, accompanying the Bid. There should not be errors and/ or over-writings. Corrections (if any) should be made clearly and initialed with dates.</p> <p>22.6 Bidders must be aware that the mere act of submission of a Bid, in and of itself, implies that the Bidder fully accepts the General Contract Terms and Conditions.</p> <p>22.7 Hard copy submission by courier allowed or as specified in the BDS shall be governed as follows:</p> <p>a) The signed Bid shall be marked “Original”, and its copies marked “Copy” as appropriate. The number of copies is indicated in the BDS. All copies shall be made from the signed original only. If there are discrepancies between the original and the copies, the original shall prevail.</p> <p>(b) The Bid Proposals must be sealed and submitted in an envelope, which shall:</p> <ol style="list-style-type: none"> i. Bear the name of the Bidder; ii. Be addressed to PAF - IAST as specified in the BDS; and iii. Bear a warning not to open before the time and date for Bid opening as specified in the BDS. <p>If the envelope with the Bid is not sealed and marked as required, PAF-IAST shall assume no responsibility for the misplacement, loss, or premature opening of the Bid.</p>
<p>23. Deadline for Submission of Bids and Late Bids</p>	<p>23.1 Complete Bids must be received by PAF-IAST in the manner, and no later than the date and time, specified in the BDS. PAF-IAST shall only recognize the actual date and time that the bid was received by PAF-IAST.</p> <p>23.2 PAF-IAST shall not consider any Bid that is received after the deadline for the submission of Bids.</p>

24. Withdrawal, Substitution, and Modification of Bids	<p>24.1 A Bidder may withdraw, substitute or modify its Bid after it has been submitted at any time prior to the deadline for submission.</p> <p>24.2 A bidder may withdraw, substitute or modify its Bid by sending a written notice to PAF- IAST, duly signed by an authorized representative, including a Power of Attorney. The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be submitted in the same manner as specified for submission of Bids, by clearly marking them as "WITHDRAWAL" "SUBSTITUTION," or "MODIFICATION"</p> <p>24.3 Bids requested to be withdrawn shall be returned unopened to the Bidders, except if the bid is withdrawn after the bid has been opened.</p>
25. Bid Opening	<p>25.1 The Procurement Committee of PAF- IAST will open the Bid in the presence of Bidders' representative(s) who choose to attend.</p> <p>25.2 The Bidders' names, modifications, withdrawals, the condition of the envelope labels/ seals, the number of folders/ files and all other such other details as PAF- IAST may consider appropriate, will be announced at the opening. No Bid shall be rejected at the opening stage, except for late submissions, in which case, the Bid shall be returned unopened to the Bidders.</p> <p>25.3 In case of public holiday on bid opening day, bids will be opened on next working day.</p>

D. EVALUATION OF BIDS

26. Confidentiality	<p>26.1 Information relating to the examination, evaluation, and comparison of Bids, and the recommendation of contract award, shall not be disclosed to Bidders, even after publication of the contract award.</p> <p>26.2 Any effort by a Bidder to influence PAF-IAST in the examination, evaluation and comparison of the Bids or contract award decisions may, at PAF-IAST's decision, result in the rejection of its Bid and may subsequently be subject to consequences.</p>
27. Preliminary Examination	<p>27.1 PAF-IAST shall examine the Bids to determine whether they are complete with respect to minimum documentary requirements, whether the documents have been properly signed, and whether the Bids are generally in order, among other indicators that may be used at this stage. PAF-IAST reserves the right to reject any Bid at this stage.</p>

<p>28. Evaluation of Eligibility and Technical Qualification</p>	<p>28.1 Eligibility and Technical Qualification of the Bidder will be evaluated against the Minimum Eligibility/ Qualification requirements specified in the Section 4: Evaluation Criteria.</p> <p>28.2 In general terms, Bidders that meet the following criteria may be considered qualified:</p> <ul style="list-style-type: none"> a) They are not included in the list of blacklisted or barred companies published on KPPRA website, federal or any provincial government department; b) They have a good financial standing and have access to adequate financial resources to perform the contract and all existing commercial commitments, c) They have the necessary experience, technical expertise, production capacity, quality certifications, quality assurance procedures and other resources applicable to the supply of goods and/ or services required; d) They are capable to comply fully with the General Terms and Conditions of Contract; e) They do not have a consistent history of court/ arbitral award decisions against the Bidder; and f) They have a record of timely and satisfactory performance with their clients.
<p>29. Evaluation of Bid Proposals</p>	<p>29.1 The evaluation team shall review and evaluate the Bids based on their responsiveness to the schedule of requirements and Technical Specifications and other documentation provided, applying the procedure indicated in the BDS and other ITB documents. When necessary, and if stated in the BDS, PAF- IAST may invite technically responsive bidders for a presentation related to their Bids. The conditions for the presentation shall be provided in the bid document where required.</p>
<p>30. Due diligence</p>	<p>30.1 PAF- IAST reserves the right to undertake a due diligence exercise, aimed at determining to its satisfaction, the validity of the information provided by the Bidder. Such exercise shall be fully documented and may include, but need not be limited to, all or any combination of the following:</p> <ul style="list-style-type: none"> a) Verification of accuracy, correctness and authenticity of information provided by the Bidder; b) Validation of extent of compliance to the ITB requirements and evaluation criteria based on what has so far been found by the evaluation team; c) Inquiry and reference checking with Government entities with jurisdiction on the Bidder, or with previous clients, or any other entity that may have done business with the Bidder; d) Inquiry and reference checking with previous clients on the performance on on-going or completed contracts, including physical inspections of
	<ul style="list-style-type: none"> previous works, as deemed necessary; e) Physical inspection of the Bidder's offices, branches or other places where business transpires, with or without notice to the Bidder; f) Other means that PAF-IAST may deem appropriate, at any stage within the selection process, prior to declaring the Bidder as Qualified.
<p>31. Clarification of Bids</p>	<p>31.1 To assist in the examination, evaluation and comparison of Bids, PAF- IAST may, at its discretion, request any Bidder for a clarification of its Bid.</p>

	<p>31.2 PAF- IAST’s request for clarification and the response shall be in writing and no change in the prices or substance of the Bid shall be sought, offered, or permitted, except to provide clarification, and confirm the correction of any arithmetic errors discovered by PAF-IAST in the evaluation of the Bids in accordance with the ITB.</p> <p>31.3 Any unsolicited clarification submitted by a Bidder in respect to its Bid, which is not a response to a request by PAF-IAST, may not be considered during the review and evaluation of the Bids.</p>
<p>32. Responsiveness of Bid</p>	<p>32.1 PAF-IAST’s determination of a Bid’s responsiveness will be based on the contents of the bid itself. A substantially responsive Bid is one that conforms to all the terms, conditions, specifications and other requirements of the ITB without material deviation, reservation, or omission.</p> <p>32.2 If a bid is not substantially responsive, it may be rejected by PAF-IAST and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission.</p>
<p>33. Right to Accept, Reject, Any or All Bids</p>	<p>33.1 PAF-IAST reserves the right to accept or reject any proposal in response to the ITB, to render any or all of the proposals as non-responsive, and to reject all Proposals in response to the ITB at any time prior to award of contract, while assigning the reason(s) thereof.</p> <p>33.2 PAF- IAST shall not be obliged to award the contract to the lowest priced offer.</p>
<p>34. Nonconformities, Repairable Errors and Omissions</p>	<p>34.1 Provided that a Bid is substantially responsive, PAF-IAST may waive any nonconformities or omissions in the Bid that, in the opinion of PAF-IAST, do not constitute a material deviation.</p> <p>34.2 PAF-IAST may request the Bidder to submit the necessary information or documentation, within a reasonable period, to rectify nonmaterial nonconformities or omissions in the Bid related to documentation requirements. Such omission shall not be related to any aspect of the price. Failure of the Bidder to comply with the request may result in the rejection of its Bid.</p> <p>34.3 For the Price Schedule that are submitted, PAF-IAST shall check and correct arithmetical errors as follows:</p> <ul style="list-style-type: none"> a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of PAF-IAST there is an obvious misplacement of the decimal point in the unit price; in which case, the line item total as quoted shall govern and the unit price shall be corrected; b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an
	<p style="text-align: center;">arithmetical error, in which case the amount in figures shall prevail.</p> <p>34.4 If the Bidder does not accept the correction of errors made by PAF- IAST, its Bid shall be rejected.</p>

35. Bidder Grievance	35.1 PAF- IAST's grievance readdress procedure provides an opportunity for appeal to those bidders or firms not awarded a contract through a competitive procurement process. In the event that a Bidder believes that it was not treated fairly, the Bidder may lodge a complaint to the PAF-IAST's Grievance Readdress Committee.
E. AWARD OF CONTRACT	
36. Evaluation	<p>36.1 PAF-IAST will conduct the evaluation solely based on response to this tender received from the firms.</p> <p>36.2 Evaluation shall be undertaken in the following steps:</p> <ol style="list-style-type: none"> a) Preliminary Examination including Technical Specifications and other compliances b) Arithmetical check and ranking of bidders who passed preliminary examination by price. c) Evaluation of prices <p>36.3 Price comparison shall be based on the landed price, including taxes, duties, transportation, insurance and the total cost of ownership (including spare parts, consumption, installation, commissioning, training, special packaging, etc., where applicable)</p>
37. Integrity Pact	37.1 Bidders will also be required to submit a signed Integrity Pact on a stamp paper of appropriate value as part of their response. The text of Integrity Pact is available at Annex – I.
38. Award Criteria	<p>38.1 Prior to expiration of the period of Proposal validity, PAF-IAST shall award the contract to the Bidder that is found to be responsive to the requirements of the Technical Specifications and has offered the lowest price.</p> <p>38.2 PAF-IAST shall not be obliged to award the contract to the lowest priced offer, if the response is found deficient to the Technical Specifications and other compliances.</p> <p>38.3 In case of tie in Financial Bid Value, the Contract will be awarded to the bidder having closest match to the Technical Specifications.</p>
39. Contract Signing	<p>39.1 After the approval of any Work Award, a Contract Agreement on the stamp paper of appropriate value, shall be executed by PAF-IAST with Selected Bidder (i.e. Contractor) within 07 days from the date of issuance of Lol (Letter of Intent)/ Work Order).</p> <p>39.2 Failure to signing of Contract Agreement by the selected Bidder/ Firm with PAF-IAST within the stipulated time may constitute sufficient grounds for the annulment of the award, and forfeiture of the Bid Security, if any, and on which event, PAF- IAST may award the Contract to the Second highest rated or call for new Proposals.</p>
40. Right to Vary quantity at the Time of Award	40.1 At the time of award of Contract, PAF-IAST reserves the right to vary the quantity of goods and/ or services, without any change in the unit price or other terms and conditions.
41. Sample draft Contract	41.1 A sample draft Contract to be signed, containing applicable General Terms and Conditions can be found at Annex – II.

42. Performance Security	42.1 A performance security, if required in the BDS, shall be provided in the amount specified in BDS, well prior to the Contract signing by both parties. Where a performance security is required, the receipt of the performance security by PAF-IAST shall be a condition for rendering the contract effective.
43. Bank Guarantee for Advanced Payment	43.1 No Payment will be released in advance.
44. Liquidated Damages	<p>44.1 PAF-IAST shall apply Liquidated Damages for the damages and/ or risks caused to PAF-IAST resulting from the Contractor's delays or breach of its obligations as per Contract.</p> <p>a) In case of delay, the Procurement Committee, PAF-IAST reserves the right to impose a penalty not exceeding 10% of the total amount of the Contract Value at the rate as referred in the Sample Contract at Annexure – II.</p> <p>b) If the Contractor fails to complete work as per PAF-IAST requirement, the Rector, PAF-IAST reserves the right to reject it altogether or impose a penalty not exceeding 50% of the total amount of the Contract.</p> <p>c) If the Contractor fails to provide supplies/ services as per PAF-IAST requirements, PAF-IAST may forfeit his earnest money as well as Performance Security, and the work will be done at the risk and cost of Contractor.</p> <p>d) In case of any dispute, matter will be referred to Rector, PAF-IAST whose decision will be binding on both the parties.</p>
45. Force Majeure	45.1 "Force Majeure" means an event which is beyond the reasonable control of a party and which makes a party's performance of its obligations under the Purchase Order/ Work Order/ Contract impossible or so impractical as to be considered impossible under the circumstances, and includes, but is not limited to, War, Riots, Storm, Flood or other industrial actions (except where such strikes, lockouts or other industrial issues are within the power of the party invoking Force Majeure), confiscation or any other action by Government agencies. In all disputes between the parties as to matters arising pursuant to this Purchase Order/ Work Order/ Contract, the dispute will be referred to Project Director, PAF-IAST whose decision will be final.
46. Delivery of Goods	46.1 Contractor will be required to deliver the goods as per the Delivery Schedule referred in BDS without claiming any additional cost to the PAF-IAST at the designated site(s) and in quantities as referred in the Contract.
47. Payment Provisions	<p>47.1 Payment will be made only upon PAF- IAST's acceptance of the goods and/ or services performed. The terms of payment shall be within thirty (30) days, after receipt of invoice, and certification of acceptance of goods and/ or services issued by the proper authority in PAF: IAST. Payment will be affected by bank transfer in the currency of the contract.</p> <p>47.2 The Contractor shall provide all necessary supporting documents along with GST invoice, delivery challan and any other relevant documents as required by the PAF- IAST.</p>

Section 3. Bid Data Sheet

The following data for the goods and/ or services to be procured shall complement, supplement, or amend the provisions in the Invitation to Bid. In the case of a conflict between the Instructions to Bidders, the Bid Data Sheet, and other annexes or references attached to the Bid Data Sheet, the provisions in the Bid Data Sheet shall prevail.

BDS No.	Ref. to Section.2	Data	Specific Instructions / Requirements
1.		Background	<p>Pak-Austria Fachhochschule: Institute of Applied Sciences and Technology (PAF: IAST) is novel in its content and holistic in approach. The project concept is based on the slogan of “Skilling Pakistan” to create a high-quality technical education infrastructure. This unique educational institution in Pakistan will closely collaborate with several institutions in Austria and China and award multiple foreign degrees. This is a historic and visionary initiative as it is probably the first time that an institution will be established in Pakistan with many foreign universities giving degrees to students who study in it.</p>
2.		Objective	<p>The main objective of this Tender is to develop, configure, implement hyper converged infrastructure (HCI) based mini cloud in its Tier-III compliant Data Center by maintaining the all standards for its on-going and future online applications to host on the same HCI Infrastructure. Whereas the HCI Cloud is designed in scalable model so that as per the requirement the same may be enhanced for which the bidder must be vigilant in terms of any equipment/software lifetime from its manufacturer along with all updates inclusive to the financial bid. Nonetheless but also the training of local available resource both national and international training centers of manufacturers may also be considered to make the solution be self-maintainable in every aspects.</p>
3.		Scope of Work	<p style="text-align: center;">Development, Configuration, Implementation and Commissioning of Hyper Converged Infrastructure (HCI) for PAFIAST Applications</p> <p>The required items as referred in Section – 5 have been sought as development of mini-cloud in PAFIAST’s own Tier-III Compliant Data Center from a reputed Firms/ Companies. The supplier is expected to provide a complete solution verifiable from the OEM and for the sake of same Manufacturer Authorization Letter must be accompanied in the technical bid, clearly mentioning the validity of quoted solution and its verification by the Principal. The time specified for providing the access to the service, in the tender form shall be deemed to be the essence of the contract and the Successful Bidder shall arrange within the specified period.</p> <p>The scope of work under this tender has been envisioned as follow;</p> <ul style="list-style-type: none"> • PAFIAST is in the process of procuring HCI solution for its in-house ICT applications and services on a turnkey basis. • The Bidder is responsible for the supply, Installation, Configuration, Implementation and Commissioning of HCI servers for PAF-IAST applications.

			<ul style="list-style-type: none"> • The Bidder is responsible for the complete installation and configuration of the HCI hypervisor / software as per the requirements of PAFIAST. • The dashboard of the hypervisor must be user friendly to configure and run the VM as per PAFIAST requirements, along with statistical analysis reports. • The Bidder is responsible for ensuring seamless integration with the existing network, services, hardware, and applications installed/running within the PAFIAST. • The bidder is responsible for ensuring proper power and cooling requirements are met, whereas currently PAFIAST has 7 Racks of Huawei Fusion Module FM800 Data Center (The bidder can survey the site if required) • The bidder is responsible to Update firmware and BIOS to the latest versions till the completion of standard warranty period. • The bidder is responsible for the license installation of both hardware and the software. • The Bidder is responsible for the successful migration of PAF-IAST VMs from its Huawei cloud to the new HCI environment. • The bidder is responsible for providing all the necessary items i.e fiber patch cords, power cables, SFPs etc along with the solution. • The bidder is responsible for conducting thorough testing to ensure the servers and software operate within specified parameters. • The bidder is responsible to Identify and rectify any issues discovered during the testing phase. The fault must be addressed w.r.t the SLA matrix in the RFP. • The bidder is responsible for obtaining the provisional acceptance certificate for each PAFIAST application to be deployed on new HCI. • The bidder is responsible for providing comprehensive documentation for all configurations and the settings. • The bidder is responsible for providing Include network diagrams, server configurations, and application integration details. • The bidder is responsible for arranging Principal based training for nominated members of PAFIAST Team on HCI solution Installation, Configuration and Management with proper documentation. • The bidder is responsible for the migration of VMs from (Fusion Cloud) to new HCI platform ensuring CIA triad (Confidentiality, Integrity, and Availability) and vice versa along with the ToT to the PAFIAST team. • The bidder is responsible for taking care of all the licenses. • If there is any hidden license involved, it will be the responsibility of the bidder too. • Bidder must submit the financial quote by mentioning the component wise cost for each of the component in this solution. • Bidder may be asked to give the demo of their HCI solution inside the PAFIAST or to plan the visit to their one of the client which will be selected by the Client from their client list.
4.		Procurement Method	KPPRA Rule 6(2)(b)
5.	7	Language of the Bid	English
6.	22, 23, 27	Submitting Bids for Parts or subparts of the Schedule of Requirements (partial bids)	The Procurement Committee shall consider the Bids on TurnKey-Basis (i.e. all items required in each component and any other item(s) necessary to meet the scope of work) as referred in Section – 5. Any item not quoted shall have reasonable grounds to reject the Bid, until and unless justified.

7.	20	Alternative Bids	Not Allowed.
8.	21	Pre-Bid conference	Not Applicable
9.	16	Bid Validity Period	90 days (extendable as per the willingness of bidder)
10.	13	Bid Security/ Earnest Money (Refundable)	<u>Required in the amount of: 2% of the Bid Value.</u> In case of options, earnest money shall be based on the maximum quoted price amongst the options. <u>Acceptable Forms of Bid Security:</u> Denominated in Pak Rupees duly issued by a Pakistani Bank or branch of a Foreign Bank, in the form of CDR in favor of the Project Director, PAF-IAST
11.	42	Liquidated Damages	Will be imposed as follows: Percentage of contract price per day of delay: as referred in Draft Contract Sample in Annexure – II.
12.	40	Performance Security	Within one week of issuance of Lol/ Purchase Order and well prior to the signing of Contract, as 10% of the Contract value for the duration of Warranty period referred in RFP.
13.	12	Currency of Bid	Pakistani Rupees (PKR)
14.	31	Deadline for submitting requests for clarifications/ questions	3 days before the submission deadline
15.	31	Contact Details for submitting clarifications/ questions	Focal Person in PAFIAST: Syed Ali Raza Manager IT (HoD) ali.raza@paf-iaست.edu.pk Ph: 0995-931400 Adil Rasheed Assistant Manager (Networks) Adil.rasheed@paf-iaست.edu.pk
16.	18, 19, and 21	Manner of Disseminating Supplemental Information to the ITB and responses/ clarifications to queries	Direct communication to prospective Bidders by email and/ or Posting on the PAF: IAST website: procurement@paf-iaست.edu.pk http://www.paf-iaست.edu.pk/
17.	23	Deadline for Submission	Thursday 22 Aug, 2024 on or before 12:00 noon (PST)

18.	22	Number of Set(s) of Bid	Technical Proposal(s) - One (01) Original - One (01) Copy - Soft copy of Technical Proposal in a USB Flash Drive Financial Proposal(s) - One (01) Original		
19.	22	Allowable Manner of Submitting Bids	<input checked="" type="checkbox"/> Courier/ Hand Delivery only		
20.	22	Bid Submission Address	<input checked="" type="checkbox"/> <u>By Courier/ Hand Delivery</u> Convener Procurement Committee, PAF- IAST, Mang, Haripur		
21.	22	Electronic submission (email) requirements	Not Allowed		
22.	25	Date, time and venue for the opening of bid	Date and Time: Thursday 22 Aug, 2024 at 12:30 PM Venue: Conference Room, PAF-IAST, Mang, Haripur		
23.	27, 36	Evaluation Method	Eligible and qualified bids meeting the PAF- IAST requirements and technically responsive as stipulated in this ITB		
24.		Evaluation Method for the Award of Contract	Lowest priced technically responsive.		
25.		Expected date for commencement of Contract	Oct 2024		
26.		Maximum expected duration of Contract	6 month		
27.	35	PAF: IAST will award the contract to:	One Bidder Only		
28.	39	Type and Contract Terms and conditions that will apply	PAF-IAST General Terms and Conditions for Contracts for Goods and/ or Services as per Sample at Annex – II.		
29.	46	Delivery, configuration and Testing / Training.	Delivery	Configuration	Testing/Training
			12-14 weeks	2-4 weeks	2 weeks
30.	47	Payment Schedule	Payment on Delivery of Hardware Solution: 50% Payment on Configuration: 25% Payment on Testing/ Training: 25%		
			Note: All payments are subject to 10% deduction as security against the warranty and support services. Payment against the Additional Services (if opted by PAF-IAST at its sole discretion) shall be paid after provisioning of respective additional service(s).		

Section 4. Evaluation Criteria

Preliminary Examination Criteria

Bids will be examined to determine whether they are complete and submitted in accordance with ITB requirements as per below criteria on a Yes/ No basis:

- Appropriate signatures & Power of Attorney
- Minimum Bid documents provided
- Bid Validity & Bid Security submitted as per ITB requirements with compliant validity period

Minimum Eligibility Criteria

Eligibility will be evaluated on a Pass/ Fail basis. If the Bid is submitted as a Joint Venture, there should be no more than two (02) companies in the Joint Venture and **both companies should meet the minimum criteria Technical qualification will be evaluated on Score basis**. Scores against each of the parameters in Section I, II & III will be according to documents provided by the Bidder, whereas scores in Section IV will be awarded by Technical Committee in response to Bidder's presentation.

ELIGIBILITY			
S. #	Subject	Criteria	Reference Returnable Form(s)
1.	Bidder's Status	Participating as <input type="checkbox"/> Individual Company <input type="checkbox"/> JV/ Consortium	Form B: JV/ Consortium Information Form
2.	Legal Status	Bidder is a legally registered entity in Pakistan. Bidder (Lead Bidder) is/ are also registered with FBR for Income Tax and Sales Tax. Bidder/ JV partner(s) must be Active Taxpayers and Listed.	Form C: Bidder Information Form
3.	Location of Offices	Bidder (Lead Bidder) has declared office in Islamabad/ Rawalpindi/ Peshawar/ Abbottabad for at least last Three (03) years.	Form C: Bidder Information Form
4.	Quoted Product Strength and Rating	Quoted product should have large implementation footprints globally.	Form C: Bidder Information Form
5.	Company in Operation	Bidder (Lead Bidder) is in operation for at least Three (03) years.	Form C: Bidder Information Form
6.	Financial Strength	Average annual turnover over last 3 years Rs. 250 million or equivalent in USD from IT only as per the published Audited Report. <i>(For JV/ Consortium/ Association, all Parties cumulatively should meet requirement).</i>	Form D: Qualification Form

7.	Relevant Experience	Min. No. of Projects successfully Completed or In-hand, of similar nature/ value/ complexity in last 3 years. At least Two (02) projects involving the subject project within Pakistan <i>(For JV/Consortium/ Association, all Parties cumulatively should meet requirement).</i>	Form D: Qualification Form Form E: Technical Proposal Form
8.	Eligibility	Bidder(s) is not suspended, nor debarred, nor otherwise identified as ineligible by any Government/ Semi-government/ Autonomous organization in Pakistan, in accordance with ITB clause 3. Non-Blacklisting certificate must be provided.	Form A: Bid Submission Form
9.	Bankruptcy	Bidder(s) has not declared bankruptcy, is not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against the vendor that could impair its operations in the foreseeable future.	Form A: Bid Submission Form
10.	Technical Specification Compliance	Quoted Solution should have 100% Compliance towards required features and functionalities as referred in Section 5 from any manufacturer with their license to do business in Pakistan. Verifiable documents need to be provided in Technical bid.	Form F: Specifications Compliance Form
11.	Certificate and Licenses	Bidder(s) related: i. Certificate of Registration of the business ii. Certificate of Registration with FBR for both Income Tax and Sales Tax iii. Principal's authorization letter only from OEM. iv. Successful Implementation/ Completion Letters or Emails or Purchase/ Work Order(s)/ Agreement from the institutions/ organizations where the IT Services/ software solution(s), was or being implemented. v. Supporting photos/ snapshots, data sheets, documents depicting usage scenarios of the quoted solution.	Form C: Bidder Information Form

QUALIFICATION

S. #	Attribute	Description	Max. Score	Criteria	Returnable Form(s)
Section – I: General Corporate Profile			15		
12.	Bidder's Human Resource Strength	Number of full-time employees (documentary proof required)	8	10+ employees with at least 70% Network Development and Management & Consulting staff	Form C: Bidder Information Form
			6	5 – 10 employees with at least 70% Network Development and Management & Consulting staff	
			4	2 – 4 employees with at least 70% Network Development and Management & Consulting staff	
13.	Financial Standing	Annual Turnover averaged over last 3 years	7	2+ x Financial Strength	Form D: Qualification Form
			4	2 x Financial Strength	
			2	1.5 x Financial Strength	

Section – II: Business Profile		20			
14.	Relevant Experience	Project(s) of similar nature, value and complexity completed or in-hand (documentary proof required)	15	Min. No. of Projects + 7	Form D: Qualification Form
			12	Min. No. of Projects + 4	
			8	Min. No. of Projects + 2	
15.	Education Sector Experience	Project(s) delivered to education institutions in Pakistan (documentary proof required)	5	1 point for each project successfully delivered up to Max. Score	Form D: Qualification Form
Section – III: Product Strength(s) and Compliance with Functional & Technical Specifications		40			
16.	Featured in Third Party Evaluation Report	Quoted product is ranked or rated in Gartner/ Forester/ IDC/ GetApp/International-University/Academia Linkages	20	Listed in the most recently published Third Party Evaluation Report under Leaders Category	Form E: Project Proposal Form
17.	Compliance to Technical & Functional Specifications	Features offered Out-of-Box by the Quoted product corresponding to Technical & Functional requirements of each component(s) as stipulated in Section 5.	20	No. of parameters complied by Bid in consideration/ Total No. of parameters * Max. Score	Form F: Project Proposal Form
Section – IV: Presentation/Demo on Quoted Solution		25			
18.	Project Management Approach	Approach towards planning and implementing the project.	10	To be assigned by the Technical Committee	Form E: Project Proposal Form
19.	Salient and Value-Added Features	Key features of the quoted solution and value addition which can be brought in by the bidder or Principal.	10	To be assigned by the Technical Committee	Form E: Project Proposal Form
20.	Project Understanding	Demonstration of approach to understand and complete the project	5	To be assigned by the Technical Committee	Form E: Project Proposal Form
Grand Total			100		
	Technical Evaluation	Bids shall be evaluated on both Eligibility and Technical Qualification Criteria. Bidders meeting the Eligibility Criteria and able to secure 80 percent in technical qualification shall be declared as Technically Qualified Bidders for the next step, i.e. Opening of Financial Bid.			

	Financial Evaluation	<p>Detailed analysis of the price schedule based on requirements listed in Section 5 and quoted for by the bidders in Form F.</p> <p>Price comparison shall be based on the total cost of ownership over 3 years, including software license cost, solution installation and configuration cost, mandatory and optional Integration costs, and training costs.</p> <p>Comparison with budget/ internal estimates. Tender will be awarded on least-cost basis to highest ranked bidder.</p>
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Section 5a: Technical Specifications of the Required Goods

BOQ: HCI Solution

1. Hardware Requirements

Servers Requirements		Required CPU Generation
CHASSIS	2U server	4th / 5th Gen based HCI Servers and Software
DRIVE BAYS	2 x 2U Front 8SFF Drive Backplane Module	
MAKE & MODEL	Latest generation model of the quoted brand. The principle should support quoted model up to 5 years.	
PROCESSOR	Up to 4 th Generation Intel Xeon / Gold dual Processor (Scalable), 32 cores per processor or Higher.	
CHIPSET	Latest Intel® series chipset or equivalent	
MEMORY	384 GB Installed memory per server (Scalable upto 3TB maximum per server)	
SYSTEM DISK	2 x 480GB 6G SATA 2.5in RI SSD or Higher with Raid 1 Support for OS Installation	
STORAGE	7 x 7.68TB Installed PCIe*Gen4 X4 NVMe U.2 2.5in RI SSD Module (at minimum 40TB useable Storage for the whole solution that must be scalable in future)	
RISER CARD	Installed Riser card should support minimum 3 PCIe slots	
ETHERNET	1 x 4-Port 1GE Copper Interface OCP3.0 Ethernet Adapter or Higher	
	2 x 2-Port 10GE Fiber Interface Ethernet Adapter With 10GSFP+ Optical Transceiver Module (850nm,300m, LC)	
HBA CARD	1 x 2-port 16Gb PCIe Fibre Channel Host Bus Adapter (with Two FC SFP+ Transceivers)	
RAID CONTROLLER	1 x LSI 9560-8i 12GB 1 Port SAS RAID Controller Module (Supporting 8 SAS Ports,4GB Cache, PCIe)	
POWER SUPPLIES & FANS	Hot Plug Power Supplies with Full Redundancy	
	Up to 6 Hot Plug Fans with Full Redundancy	
RACK MOUNT RAIL	Complete Rail Kit for Rack Mounting including Cable Management Arm	
SECURITY BEZEL	Front Security Bezel should be installed	
DIMENSIONS	2U Rack Mount Server	
ACCESSORIES	Should include all cables and connectors for connecting all the proposed system components and making them operationally usable.	
OS SUPPORT	(Microsoft Windows Server, All Linux/ Ubuntu Flavor and Version), VMware ESXi (all version) etc.	
MANAGEMENT SOFTWARE	Embedded Server Management Software as per standard requirement with all licenses	
HCISOFTWARE	All the HCI software licenses should be configured based on CPU quantity with features for Management, Virtualization, Storage and vFW function within HCI should be part of HCI Software to protect HCI Infrastructure	
SUPPORTED VIRTUALIZATON	Latest VMware ESXi and Microsoft Hyper-V, Fusion Cloud, Fusion Access etc	
WARRANTY	3 Years 5x9 NBD 24x7 support & services with warranty including replacement of parts along with HCI Software	

**Include following software and license with 3 years 5x9 NBD Support of below mentioned HCI Node:
Required HCI Licenses for 5 servers, with 2 CPU sockets in each server**

HCI software must contain a single console for automation, service provisioning, troubleshooting & management.

1. Hardware Requirements

2. General Requirements

3. Virtualization Management

4. Virtualization Hypervisor

5. Storage virtualization

8. Network Virtualization

2. General Requirements:

a. The hyper-converged software and servers are required to be of the same brand.

b. The HCI computing virtualization software, storage virtualization software, and network virtualization are required to be of the same brand and pre-installed on quoted servers by Principle/OEM to ensure functional reliability, compatibility, and safety and completely self-developed. The integration of third-party software is not accepted to ensure functional reliability and safety. Website proof should be provided for verification.

c. The HCI Principle should be Cloud Native Computing Foundation (CNCF) Members Gold or Platinum level to guarantee its Cloud native performance.

d. The computing and storage software in HCI is required to be deployed on bare metal, and the hyper-converged platform can be built without installing a storage controller on the virtual machine to guarantee the best performance. (Hypervisor layer on server)

e. The quoted brand principle must be registered with SECP in Pakistan at least for last 4 year.

f. The quoted brand principle must have minimum 5 implementation references in large scale Government projects based on HCI deployments.

g. The quoted brand should have minimum 2 HCI deployment references in education sector in North Region including Islamabad.

h. The quoted OEM should have its own dedicated deployment team in Pakistan, and all deployment should be done by OEM engineers.

i. The bidding product is selected as Intel® Select Solutions for Open Cloud, and the official website proof is provided.

2. Virtualization Management:

a. Proposed Solution must provide High Availability / Redundancy for Virtualization Management Platform.

b. Supports the installation of hyper-converged software on general x86 and arm architecture servers, supports mainstream ARM platforms such as Kunpeng, and can be mixed with the original X86 system for deployment and unified management.

c. Proposed Solution must Support Management for Existing Virtual Machines on VMware.

d. Virtualization management system nodes provide active and standby redundancy to ensure the availability of the platform.

e. The virtualization platform has a built-in virtualization system health evaluation model based on multi-dimensional performance monitoring indicators and alarms and other information, supports the health evaluation of the virtualization system and the host, and can intuitively display the health of the system and the host.

f. Proposed Solution must support to create and manage local Users with Role Based Access and Permission Control.

g. Support different roles on different nodes. The host role can be designated as storage type, computing type, and hyper-converged type. The three types of hosts in the same cluster can be combined arbitrarily to meet various application scenarios of users and help to deal with unbalanced use of user resources better.

h. The solution able to support draw topology and power on the VMs and Virtual Switch based on the draw diagram in the HCI Management GUI. This is for IT administrator easy to maintain the HCI cluster. Please provide the sample as proof.

i. The visual real-time monitoring center: provides a unified visual monitoring and management center for the failure of HCI of the overall software and hardware, reduces the operation and maintenance difficulty and workload. The visual real-time monitoring center can provide hardware reliability (including CPU, memory, disk, physical network card and raid card), system reliability (including cluster host, distributed storage, cluster network configuration status and cluster resource overload state), service reliability (including SRM, cluster reliability HA, application HA, computing resource DRS, virtual machine operation status and virtual machine backup) these three-levels real-time monitoring and hierarchical

j. Monitor the hardware platform including power supply, fan, temperature sensor, CPU, memory, hard disk and other hardware platform information of HCI.

k. Proposed Solution must provide Web Browser based Management Console.
l. Proposed Solution must provide complete visibility and centralized management / control of the Virtualization Platform
m. Proposed Solution must provide capability to scale up to 128 nodes or better. Screenshot proof is mandatory to share.
n. Support use one click to analyze the usage of historical resources of virtual machine, host, and support for planning and decision-making.
o. Support use one click to analyze invalid image files on back-end storage, and provide one-click clean and free storage space capabilities.
q. Support resource capacity prediction service, built-in time series model, management platform to automatically realize data prediction, provide users with easy-to-use data prediction service, the service supports display the data of CPU, memory and storage capacity resource usage in real-time. Based on AI Machine learning algorithms, predict and analyze early warning timepoints to help users do resource expansion, cost budgets, etc., and improve business reliability. Please provide the sample as proof.
r. Supports one click to restore the virtual machine to the specified restore point state. Please submit sample as proof.
s. The solution must able to detect with one click of idle virtual machine for not used more than certain period of time. Please provide supporting document as reference
t. The solution able to support draw topology and power on the VMs and Virtual Switch based on the draw diagram in the HCI Management GUI. This is for IT administrator easy to maintain the HCI cluster. Please provide the sample as proof.
3. <u>Virtualization Hypervisor:</u>
a) Proposed Solution must provide Proposed Solution should be highly redundant providing capability for the VMs to restart on another node in case of any Node failure in the Cluster.
b) Proposed Solution must provide VM Snapshot capability to revert back to previous point in time in case a failure or system error occurs.
c) Proposed Solution must provide VM Clone capability for creating cloned instances from source VM for testing or any other purposes.
d) Provides virtual machine snapshot function, supports setting manual and periodic snapshots to save virtual machine disk files and memory status information to image files.
e) Supports clustering of multiple physical servers, and can perform dynamic resource scheduling based on CPU, memory, network traffic, storage capacity, disk IO and other resource utilization.
f) Supports setting read and write limits for virtual machine disk IOPS and I / O rates.
g) Support virtual machine inbound, outbound, and inbound-outbound security access control functions, and can set access rules based on IP, MAC, port number, time period, etc.
h) Virtualization software has a built-in backup module, which enables full, incremental, and differential backup of virtual machines without the need to install backup software separately. It has no impact on business operations during backup, and supports scheduled backup (day, week, and month) settings. Backup strategy can be refined to minutes.
i) Provides the dynamic load balancing function of virtual machine storage. The storage characteristics are used to determine the optimal location of virtual machine data when it is created and used. Non-disruptive automatic migration based on performance parameters and capacity of storage volume IO and IOPS can be eliminated to eliminate Storage risk
j) Proposed Solution must provide VM vMotion/live migration capability to live migrate VMs to any nodes in the Cluster without any downtime.
k) Proposed Solution must provide the capability to automatically hot-add resources including vCPUs and Memory real-time based on VM contention.
l) Proposed Solution must provide automated Resource Scheduling and Load Balancing capability for balanced performance on all nodes across the cluster.
m) Proposed Solution must provide Distributed Switch capability to configure and administer switching for the entire Cluster.
n) Supports flexible configuration of resource expansion and contraction strategies and can dynamically clone or delete virtual machines based on virtual machine CPU, memory, connection number, storage capacity, disk IO and other parameters to meet the requirements of "use more virtual machine to provide services and use less virtual machines to provide services according to the business. The entire process does not require manual intervention. At the same time, it supports unified load monitoring and load status display of the business virtual machine set (a minimum of 5 User certificate of use).
o) Provides application-level HA functions, which can automatically detect and automatically repair application failures in the virtual machine without installing an agent inside the virtual machine, including but not limited to Apache Tomcat, JDK, Apache HTTP Server, MySQL, SQL Server, Applications such as SharePoint, and support user-defined scripts for application status monitoring.
p) Proposed Solution must provide Hardware Health Check capability to Monitor CPU, Memory, Network Interface Card, Hard Drive and RAID Controller etc.

q) Provides application-level HA functions, which can automatically detect and automatically repair application failures in the virtual machine without installing an agent inside the virtual machine, including but not limited to Apache Tomcat, JDK, Apache HTTP Server, MySQL, SQL Server, Applications such as SharePoint, and support user-defined scripts for
r. Support batch modification of virtual machine configuration parameters, including: I / O priority, startup priority, whether to migrate automatically, CPU scheduling priority, CPU number, memory size, automatic startup, enable VNC
s. Support setting different virtual machine disk cache modes according to business requirements, including direct read and write, primary cache, secondary cache, etc.
t. Support virtual machine migration history record function. The record contains information such as migrated operator, migration method, source host, destination host, start time, and migration time. It is easy to trace back the migration path
u. Support virtual machine desktop preview function, the current desktop status of the virtual machine can be seen on the virtualization management platform without logging in to the virtual machine.
v. Support docking RBD (virtual machine directly docking with RBD to process data storage I/O, virtual machine directly docking RBD can avoid I/O performance loss caused by ocfs2 file system and ISCSI protocol. Compared with ocfs2 path, data random read and write performance Increased by more than 4 times, the number of specifications has also been greatly increased.) Provide official website screenshot proof.
4. <u>Storage Virtualization:</u>
a) Proposed Solution must provide SSD based Read Caching and Write Buffer capability to improve the performance of the I/O.
b) Proposed Solution must provide Automated Data Rebuilding capability to restore redundancy in case of any Disk or Node Failure.
c) One node can support virtualization and 3 types of storage functions (block, file, object) at the same time. At least 3 node clusters can provide virtualization, distributed block, object, and file storage services at the same time. Among them, object and file services must be provided on the host machine, and the same brand as the self-developed hyper-convergence and cannot be provided in the form of an application running on a virtual machine.
d) File storage support protocols include: FTP, CIFS, NFS, HTTP; Provides a variety of NAS value-added service functions, including: authority management, snapshot management (WORM), shared directory management, etc.; NAS services can adopt multi-service nodes for high availability and support load balancing.
e) Object storage, compatible with S3 and other interfaces, supporting management through HTTP or cli
f) The Striped data multi copy mechanism is adopted to ensure the data reliability. The storage software divides the physical hard disk into chunks of 4MB size to save the data. The redundancy mode of RAID1 is not allowed. Independent hot spare is not needed in the storage node.
g) Supports 2~5 copies, and can be selected arbitrarily
h) Three nodes support the deployment of three copies. It is not allowed to add additional hard disks (groups), capacity, or nodes to satisfy the replication strategy. Make full use of the resources of each disk and each node.
i) Flexible requirements for redundancy strategy: A group of hard disk pools (groups) can support both 2-copy and 3-copy strategies to maximize the use of disk capacity. There is no need to use additional disk groups to carry two different strategies, which greatly reduces customer costs. In addition, support for "online" adjustment of virtual machine disk redundancy strategy greatly facilitates operation and maintenance and avoids interruption of business.
j) Data balance requirements: It is required to automatically balance the data when it is placed, and it is not allowed to delay the balance or choose another balance time and strategy. This can ensure the smooth operation of customer services, otherwise it will take up bandwidth and affect the business by finding another time to balance it.
k) Support the erasure code feature, support the erasure code protection from N + 1 to N + 4, and support the failure of any 4 nodes without data loss and system shutdown
l) Support storage QoS policy, specify service priority according to business pressure; support volume QoS, data recovery QoS, support setting data recovery policy with hard disk pool as granularity.
m) Supports disk replacement wizard, provides a graphical and wizard-based interface, supports hot-swappable replacement of hard disks, and brings more efficient maintainability
m. One node can support virtualization and 3 types of storage functions (block, file, object) at the same time. At least 3 node clusters can provide virtualization, distributed block, object, and file storage services at the same time. Among them, object and file services must be provided on the host machine, and the same brand as the self-developed hyper-convergence, and cannot be provided in the form of an application running on a virtual machine. A screenshot proof of the
5. <u>Network Virtualization:</u>
a) Supports setting the virtual machine network priority level. When the bandwidth of the physical network card is congested, it can ensure that high-priority key services can be allocated as much network I/O resources as possible.

- | |
|---|
| b) Support to specify the IP address and port number of the NetFlow collector, and the traffic flowing through the vSwitch will be sent to the specified NetFlow collector. Support to define flows according to the five-tuple of business traffic IPv4 packets (source IP address, destination IP address, source port number, destination port number, protocol number). |
| c) Support port mirroring, copy the messages of the designated port to the port connected to the data monitoring device, so that users can use the data monitoring device to analyze these copied messages for network monitoring and troubleshooting. |
| d) Support NIC pass-through. Through the IOMMU technology, the physical network card is transparently transmitted to a virtual machine on the host, the virtual machine monopolizes the physical network card, and fully owns the physical network card resources and performance. |
| e) Supports the creation of network policy templates and uses network policy templates that span multiple virtual ports to simplify port configuration. The template defines a set of network policy attributes, including VLAN, QoS, ACL, network priority, etc |

Note:

1. The Bidder shall indicate in their offer,
 - a. detailed specifications of their offered product(s)/ solution(s),
 - b. standard and optional features,
2. The Unit Price, Total Bid Price, and Warranty & Support Service Price of the quoted items shall be indicated as per the given format in Form – G.

Section 5b: Special Terms and Conditions

Standard

- Since client has to run the sensitive and high-available applications on HCI solution therefore Bidder(s) shall submit their proposed Solution Design duly vetted/ endorsed by the Principal(s) through a letter stating so that any application/server running on this HCI is compliance to the following parameters.

Bidder must comply to the points below while quoting the solution;

1. Security
2. Availability
3. Control and Monitoring
4. Scalability
5. Performance
6. Support Service

Operational Guide & User Manuals

- Detailed HCI solution documentation should be available depicting the standard and customized configurations made in the system.
- Comprehensive operational guide for Power/ Admin Users should be available.

Training

- Training at various level explaining the solution/service configuration and usage, formal training session for users with relevant functionality and day to day usage of application must be carried out for all the features in principal authorize training center.
- Suppliers are advised to provide details on formal training for each of the feature(s) covering aspects as mentioned below, but not limited to, as required in Form – E (Section 3).

Section 6: Returnable Bidding Forms / Checklist

This section serves as a checklist for preparation of your Bid. Please complete the Returnable Bidding Forms in accordance with the instructions in the forms and return them as part of your Bid submission. No alteration to format of forms shall be permitted and no substitution shall be accepted.

Before submitting your Bid, please ensure compliance with the Bid Submission instructions of the BDS 22.

Bid Proposal:

Have you duly completed all the Returnable Bidding Forms?	
✦ Form A: Bid Submission Form	<input type="checkbox"/>
✦ Form B: Joint Venture/ Consortium/ Association Information Form	<input type="checkbox"/>
✦ Form C: Bidder Information Form	<input type="checkbox"/>
✦ Form D: Qualification Form	<input type="checkbox"/>
✦ Form E: Bid Proposal Form	<input type="checkbox"/>
✦ Form F: Specifications Compliance Form	<input type="checkbox"/>
✦ Form G: Price Schedule Form	<input type="checkbox"/>
Have you provided the required documents to establish compliance with the evaluation criteria in Section 4?	<input type="checkbox"/>

Form A: Bid Submission Form

(To be Submitted in an envelope duly sealed and marked as Technical Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	PAF-IAST/IT/Mini-Cloud/2024		

We, the undersigned, submit our Bid for the award of contract to supply the goods and related services required for [Insert Title of goods and services] in accordance with your Invitation to Bid No. [Insert ITB Reference Number]. We hereby submit our Bid, which includes this Bid proposal.

We hereby declare that our firm, its affiliates or subsidiaries or employees, including any JV/ Consortium/ Association members or subcontractors or suppliers for any part of the contract:

- a) is not under procurement prohibition by any of the Government/ Semi-government/ Autonomous organization;
- b) have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any Organization in Pakistan;
- c) have not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against us that could impair our operations in the foreseeable future;
- d) undertake not to engage in proscribed practices, including but not limited to corruption, fraud, coercion, collusion, obstruction, or any other unethical practice, with the PAF: IAST, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the PAF: IAST.

We declare that all the information and statements made in this Bid are true and we accept that any misinterpretation or misrepresentation contained in this Bid may lead to our disqualification and/ or sanctioning by the PAF-IAST.

We offer to supply the goods and related services in conformity with the Bidding documents, including the PAF-IAST General Conditions of Contract and in accordance with the Schedule of Requirements and Specifications.

Our Bid shall be valid and remain binding upon us for the period specified in the Bid Data Sheet.

We understand and recognize that you are not bound to accept any Bid you receive.

I, the undersigned, certify that I am duly authorized by [Insert Name of Bidder] to sign this Bid and bind it should PAF- IAST accept this Bid.

Name: _____

Title: _____

Date: _____

Signature: _____

[Stamp with official stamp of the Bidder]

Form B: Joint Venture/ Consortium/ Association Information Form

(To be Submitted in an envelope duly sealed and marked as Technical Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	PAF-IAS/IT/ Mini-Cloud/2024		

To be completed and returned with your Bid if the Bid is submitted as a Joint Venture/ Consortium/ Association.

No	Name of Partner and contact information <i>(address, telephone numbers, fax numbers, e-mail address)</i>	Proposed proportion of responsibilities (in %) and type of goods and/or services to be performed
1	[Complete]	[Complete]
2	[Complete]	[Complete]
3	[Complete]	[Complete]

Name of leading partner (with authority to bind the JV, Consortium, Association during the ITB process and, in the event a Contract is awarded, during contract execution)	[Complete]
--	------------

We have attached a copy of the below referenced document signed by every partner, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture:

Letter of intent to form a joint venture **OR** JV/Consortium/Association agreement

We hereby confirm that if the contract is awarded, all parties of the Joint Venture/Consortium/Association shall be jointly and severally liable to PAF: IAST for the fulfillment of the provisions of the Contract.

Name of partner: _____ Name of partner: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

Name of partner: _____ Name of partner: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

Form C: Bidder Information Form

(To be Submitted in an envelope duly sealed and marked as Technical Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	<input type="text" value="Select date"/>
ITB reference:	PAF-IAST/IT/ Mini-Cloud/2024		

Legal name of Bidder	[Complete]
Legal address & Branch Offices	[Complete]
SECP Registration No.	[Complete]
National Tax Number (NTN)	[Complete]
Sales Tax Number (STRN)	[Complete]
Year of registration	[Complete]
Location of Office(s)	[Complete]
Principal(s) Office Address in Pakistan	
Warehouse Address in Pakistan	
Bidder's Authorized Representative Information	Name and Title: [Complete] Telephone numbers: [Complete] Email: [Complete]
Are you a PAF – IAST registered vendor?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, [insert PAF- IAST vendor number]
Countries of operation	[Complete]
No. of full-time employees	[Complete]
No. of Technical Staff	[Complete]
Quality Assurance Certification (e.g. ISO 9000 or Equivalent) (If yes, provide a Copy of the valid Certificate):	[Complete]

<p>Does your Company hold any accreditation such as ISO 14001 or ISO 14064 or equivalent related to the environment? <i>(If yes, provide a Copy of the valid Certificate):</i></p>	<p>[Complete]</p>
<p>Does your Company have a written Statement of its Environmental Policy? <i>(If yes, provide a Copy)</i></p>	<p>[Complete]</p>
<p>Does your organization demonstrates significant commitment to sustainability through some other means, for example internal company policy documents on women empowerment, renewable energies, education, vocational trainings, social responsibility towards people with Special needs, or membership of trade institutions promoting such issues</p>	<p>[Complete]</p>
<p>Contact person that PAF: IAST may contact for requests for clarifications during Bid evaluation (Only Lead Bidder)</p>	<p>Name and Title: [Complete] Telephone numbers: [Complete] Email: [Complete]</p>
<p>Please attach the following documents:</p>	<ol style="list-style-type: none"> 1. Company Profile, which should not exceed fifteen (15) pages, including printed brochures and product catalogues relevant to the goods and/ or services being procured. 2. Proposed timetable for delivery configuration and Training/Testing plan for the required and quoted items to PAF – IAST after the award of Contract. 3. Certificate of Registration of the business. 4. Certificate of Registration with FBR 5. Principals’ Authorization Letter in favor of Bidder to participate in this Tender. 6. A proof document that Quoted product is ranked or rated in Gartner/ Forester/ IDC/ GetApp/International-Client/University-Collaboration 7. A proofing document confirming supply of same or similar product, of this magnitude to various clients/ customers in Pakistan. 8. Proven records of no less than the required Projects of similar nature/ value/ complexity in which delivery and services were extended. 9. A proofing document for online support services for acquired number of exams remain available for 3 years. 10. Full detailed description of the specifications of the proposed items in addition to catalogues clearly showing the proposed specifications responding to the requirements. 11. Supporting photos of the proposed. 12. Latest Audited Financial Statements (Income Statement and Balance Sheet) including Auditor’s Report for the past (3 years).

Note: To be filled in by each partner in case Bid is submitted as a JV/ Consortium/ Association

Form D: Qualification Form

(To be submitted in an envelope duly sealed and marked as Technical Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	<input type="text" value="Select date"/>
ITB reference:	PAF-IAST/IT/ Mini-Cloud/2024/		

If JV/ Consortium/ Association, to be completed by each partner.

Previous Relevant Experience

Please list all Projects successfully completed in the last 3 years, covering following aspects; a) Scope of the projects/ assignments.

- b) Activities performed for the successful completion of the project.
- c) Support Services Contracts in hand with SLA for the supplied goods.

List only those assignments for which the Bidder was legally contracted or sub-contracted by the Client as a company or was one of the Consortium/ JV partners. Assignments completed by the Bidder's individual experts working privately or through other firms cannot be claimed as the relevant experience of the Bidder, or that of the Bidder's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Bidder should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by PAF- IAST.

Project name & Country of Assignment	Client & Reference Contact Details	Contract Value	Period of activity and status	Types of activities undertaken

Bidders may also attach their own Project Data Sheets with more details for assignments above.

History of Non-Performing Contracts

<input type="checkbox"/> Non-performing contracts did not occur during the last 3 years			
<input type="checkbox"/> Contract(s) not performed in the last 3 years			
Year	Non- performed portion of contract	Contract Identification	Total Contract Amount (current value in US\$)
		Name of Client: Address of Client: Reason(s) for non-performance:	

Financial Standing

Annual Turnover for the last 3 years	Year	PKR
	Year	PKR
	Year	PKR
Latest Credit Rating (if any), indicate the source		

Financial information (in PKR equivalent)	Historic information for the last 3 years		
	Year 1	Year 2	Year 3
	<i>Information from Balance Sheet</i>		
Total Assets (TA)			
Total Liabilities (TL)			
Current Assets (CA)			
Current Liabilities (CL)			
	<i>Information from Income Statement</i>		
Total / Gross Revenue (TR)			
Profits Before Taxes (PBT)			
Net Profit			
Current Ratio			

Attached are copies of the audited financial statements (balance sheets, including all related notes, and income statements) for the years required above complying with the following condition:

- Must reflect the financial situation of the Bidder or party to a JV, and not sister or parent companies;
- Historic financial statements must be audited by a certified public accountant;
- Historic financial statements must correspond to accounting periods already completed and audited. No statements for partial periods shall be accepted.

Tax Payment Standing

Annual Tax Paid by the Bidder

Annual Turnover for the last 3 years	Year	PKR
	Year	PKR
	Year	PKR

Annual Tax Paid by the Principal in Pakistan (if applicable)

Annual Turnover for the last 3 years	Year	PKR
	Year	PKR
	Year	PKR

Form E: Technical Proposal Form

(To be submitted in an envelope duly sealed and marked as Technical Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	<input type="text" value="Select date"/>
ITB reference:	PAF-IAST/IT/ Mini-Cloud/2024		

The Bidder's Bid should be organized to follow this format of the Technical Bid Proposal. Where the bidder is presented with a requirement or asked to use a specific approach, the bidder must not only state its acceptance, but also describe how it intends to comply with the requirements. Where a descriptive response is requested, failure to provide the same may be viewed as non-responsive.

SECTION 1: Qualification, capacity and expertise

- 1.1 Bidder's general organizational capability: management structure, financial stability and project financing capacity, project management controls, extent of work to be subcontracted (if so, provide details).
- 1.2 Bidder's relevance of specialized knowledge and experience on similar engagements done in the region/ country. Bidder should submit a detailed description of the projects executed (quantities, value, beneficiary)
- 1.3 Manufacturer's strengths covering the regional/ global market presence, hi-tech products portfolio, manufacturing capacity, R&D activities resulting in national and international patents, quality control and assurance practices, and international certifications in relevant areas.

SECTION 2: Management Structure and Key Personnel

- 2.1 Describe the overall management approach toward planning and implementing the project. Include an organization chart for the management of project describing relationship of key positions and designations.
- 2.2 Provide CVs for key personnel that will be provided to support the implementation of this project using the format below. CVs should demonstrate qualifications in areas relevant to scope of goods and/or services.

Format for CV of Proposed Key Personnel

Name of Personnel	[Insert]
Position	[Insert]
Nationality	[Insert]
Language proficiency	[Insert]
Education/ Qualifications	<i>[Summarize college/university and other specialized education of personnel member, giving names of schools, dates attended, and degrees/qualifications obtained.]</i> [Insert]
Professional certifications	<i>[Provide details of professional certifications relevant to the scope of goods and/or services]</i> ✦ Name of institution: [Insert] ✦ Date of certification: [Insert]
Employment Record/ Experience	<i>[List all positions held by personnel (starting with present position, list in reverse order), giving dates, names of employing organization, title of position and location of employment.]</i> [Insert]

I, the undersigned, certify that to the best of my knowledge and belief, the data provided above correctly describes my qualifications, my experiences, and other relevant information about myself.

Signature of Personnel

Date (Day/Month/Year)

SECTION 3: Scope of Supply, Technical Specifications and Training(s)

This section should demonstrate the Bidder's responsiveness to the specification by identifying the specific components proposed, addressing the requirements, as specified, point by point; providing a detailed description of the essential performance characteristics proposed; and demonstrating how the proposed bid meets or exceeds the requirements/specifications. All important aspects should be addressed in sufficient detail.

- 3.1 A detailed description of how the Bidder will deliver the required goods and services(online), keeping in mind the appropriateness to local conditions and project environment. Details how the different service elements shall be organized, controlled and delivered.
- 3.2 Explain whether any work would be subcontracted, to whom, how much percentage of the requirements, the rationale for such, and the roles of the proposed sub-contractors and how everyone will function as a team.
- 3.3 Implementation plan including a Gantt Chart or Project Schedule indicating the detailed sequence of activities that will be undertaken and their corresponding timing.
- 3.4 Details on trainings for the defined features.

SECTION 4: Registration & Certifications

This section should demonstrate the Bidder's responsiveness towards its registration with the relevant national body and international organizations Certifying the bidder's qualifications with respect to Quality and Project Management.

- 4.1 Provide a copy of valid Certificate issued by International Organization for Standardization certifying the bidder's compliance and practices towards quality management principles and standards in their offered products/ solutions and services.
- 4.2 Provide a copy of valid Certificate issued by International Organization for Standardization certifying the bidder's compliance and practices towards information security management principles and standards in their offered products/ solutions and services.

SECTION 5: Support Services

This section should demonstrate the Bidder's responsiveness to the online support services for acquired number of exams remain available for 3 years.

Form F: Technical Specifications Compliance Form

(To be submitted in an envelope duly sealed and marked as Technical Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	<input type="text" value="Select date"/>
ITB reference:	PAF-IAS/IT/ Mini-Cloud/2024		

The Bidder's Bid should be organized to follow this format of the Technical Specification Compliance Form. Where the bidder has claimed the required features or functionalities as available Out-of-the-Box, the Technical Committee may ask the bidder to demonstrate any of such features and/ or functionality during Presentation as part of Technical Evaluation.

1. Hardware Requirements

Servers Requirements		
CHASSIS	2U server	
DRIVE BAYS	2 x 2U Front 8SFF Drive Backplane Module	
MAKE & MODEL	Latest generation model of the quoted brand. The principle should support quoted model up to 5 years.	
PROCESSOR	Up to 4 th Generation Intel Xeon / Gold dual Processor (Scalable), 32 cores per processor or Higher.	
CHIPSET	Latest Intel® series chipset or equivalent	
MEMORY	384 GB Installed memory per server (Scalable upto 3TB maximum per server)	
SYSTEM DISK	2 x 480GB 6G SATA 2.5in RI SSD or Higher with RAID 1 Support for OS Installation	
STORAGE RISER CARD	7 x 7.68TB Installed PCIe*Gen4 X4 NVMe U.2 2.5in RI SSD Module (at minimum 40TB useable Storage for the whole solution that must be scalable in future)	
	Installed Riser card should support minimum 3 PCIe slots	
ETHERNET	1 x 4-Port 1GE Copper Interface OCP3.0 Ethernet Adapter or Higher	
	2 x 2-Port 10GE Fiber Interface Ethernet Adapter With 10GSFP+ Optical Transceiver Module (850nm,300m, LC)	
HBA CARD	1 x 2-port 16Gb PCIe Fibre Channel Host Bus Adapter (with Two FC SFP+ Transceivers)	
RAID CONTROLLER	1 x LSI 9560-8i 12GB 1 Port SAS RAID Controller Module (Supporting 8 SAS Ports,4GB Cache, PCIe)	
POWER SUPPLIES & FANS	Hot Plug Power Supplies with Full Redundancy	
	Up to 6 Hot Plug Fans with Full Redundancy	
RACK MOUNT RAIL	Complete Rail Kit for Rack Mounting including Cable Management Arm	
SECURITY BEZEL	Front Security Bezel should be installed	
DIMENSIONS	2U Rack Mount Server	

ACCESSORIES	Should include all cables and connectors for connecting all the proposed system components and making them operationally usable.	
OS SUPPORT	(Microsoft Windows Server, All Linux/ Ubuntu Flavor and Version), VMware ESXi (all version) etc.	
MANAGEMENT SOFTWARE	Embedded Server Management Software as per standard requirement with all licenses	
HCI SOFTWARE	All the HCI software licenses should be configured based on CPU quantity with features for Management, Virtualization, Storage and vFW function within HCI	
SUPPORTED VIRTUALIZATION	Latest VMware ESXi and Microsoft Hyper-V, Fusion Cloud, Fusion Access etc	
WARRANTY	3 Years 5x9 NBD 24x7 support & services with warranty including replacement of parts along with HCI Software	
Include following software and license with 3 years 5x9 NBD Support of below mentioned HCI Node: Required HCI Licenses for 5 servers, with 2 CPU sockets in each server		
HCI software must contain a single console for automation, service provisioning,		
1. Hardware Requirements		
2. General Requirements		
3. Virtualization Management		
4. Virtualization Hypervisor		
5. Storage virtualization		
8. Network Virtualization		
General Requirements:		
a. The hyper-converged software and servers are required to be of the same brand.		
b. The HCI computing virtualization software, storage virtualization software, and network virtualization are required to be of the same brand and pre-installed on quoted servers by Principle/OEM to ensure functional reliability, compatibility, and safety and completely self-developed. The integration of third-party software is not accepted to ensure functional		
c. The HCI Principle should be Cloud Native Computing Foundation (CNCF) Members Gold or Platinum level to guarantee its Cloud native performance.		
d. The computing and storage software in HCI is required to be deployed on bare metal, and the hyper-converged platform can be built without installing a storage controller		
e. The quoted brand principle must be registered with SECP in Pakistan at least for		
f. The quoted brand principle must have minimum 5 implementation references in large scale Government projects based on HCI deployments.		
g. The quoted brand should have minimum 2 HCI deployment references in education sector in North Region including Islamabad.		
h. The quoted OEM should have it's own dedicated deployment team in Pakistan, and all deployment should be done by OEM engineers.		
The bidding product is selected as Intel® Select Solutions for Open Cloud, and the official website proof is provided.		
2. Virtualization Management:		
a. Proposed Solution must provide High Availability / Redundancy for Virtualization		
b. Supports the installation of hyper-converged software on general x86 and arm architecture servers, supports mainstream ARM platforms such as Kunpeng, and can be mixed with the original X86 system for deployment and unified management.		
c. Proposed Solution must Support Management for Existing Virtual Machines on VMware		
d. Virtualization management system nodes provide active and standby redundancy to ensure the availability of the platform.		

e.	The virtualization platform has a built-in virtualization system health evaluation model based on multi-dimensional performance monitoring indicators and alarms and other information, supports the health evaluation of the virtualization system and the host, and can intuitively display the health of the system and the host.	
f.	Proposed Solution must support to create and manage local Users with Role Based	
g.	Support different roles on different nodes. The host role can be designated as storage type, computing type, and hyper-converged type. The three types of hosts in the same cluster can be combined arbitrarily to meet various application scenarios of users and	
h.	The solution able to support draw topology and power on the VMs and Virtual Switch based on the draw diagram in the HCI Management GUI. This is for IT administrator easy to maintain the HCI cluster. Please provide the sample as proof.	
i.	The visual real-time monitoring center: provides a unified visual monitoring and management center for the failure of HCI of the overall software and hardware, reduces the operation and maintenance difficulty and workload. The visual real-time monitoring center can provide hardware reliability (including CPU, memory, disk, physical network card and raid card),system reliability (including cluster host, distributed storage, cluster network	
j.	Monitor the hardware platform including power supply, fan, temperature sensor, CPU, memory, hard disk and other hardware platform information of HCI.	
k.	Proposed Solution must provide Web Browser based Management Console.	
l.	Proposed Solution must provide complete visibility and centralized management / control of the Virtualization Platform	
m.	Proposed Solution must provide capability to scale up to 128 nodes or better. Screenshot	
n.	Support use one click to analyze the usage of historical resources of virtual machine, host, and support for planning and decision-making.	
o.	Support use one click to analyze invalid image files on back-end storage, and provide one-click clean and free storage space capabilities.	
q.	Support resource capacity prediction service, built-in time series model, management platform to automatically realize data prediction, provide users with easy-to-use data prediction service, the service supports display the data of CPU, memory and storage capacity resource usage in real-time. Based on AI Machine learning algorithms, predict and <u>analyze early warning timepoints to help users do resource expansion, cost budgets, etc.,</u>	
r.	Supports one click to restore the virtual machine to the specified restore point state. Please submit sample as proof.	
s.	The solution must able to detect with one click of idle virtual machine for not used more than certain period of time. Please provide sample as proof.	
t.	The solution able to support draw topology and power on the VMs and Virtual Swiath based on the draw diagram in the HCI Management GUI. This is for IT administrator easy to	
3.	Virtualization Hypervisor:	
a)	Proposed Solution must provide Proposed Solution should be highly redundant providing capability for the VMs to restart on another node in case of any Node failure in	
b)	Proposed Solution must provide VM Snapshot capability to revert back to previous point in time in case a failure or system error occurs.	
c)	Proposed Solution must provide VM Clone capability for creating cloned instances from source VM for testing or any other purposes.	
d)	Provides virtual machine snapshot function, supports setting manual and periodic snapshots to save virtual machine disk files and memory status information to image files.	
e)	Supports clustering of multiple physical servers, and can perform dynamic resource scheduling based on CPU, memory, network traffic, storage capacity, disk IO and other	
f)	Supports setting read and write limits for virtual machine disk IOPS and I / O rates.	
g)	Support virtual machine inbound, outbound, and inbound-outbound security access control functions, and can set access rules based on IP, MAC, port number, time period, etc.	
h)	Virtualization software has a built-in backup module, which enables full, incremental, and differential backup of virtual machines without the need to install backup software separately. It has no impact on business operations during backup, and supports scheduled	

i) Provides the dynamic load balancing function of virtual machine storage. The storage characteristics are used to determine the optimal location of virtual machine data when it is created and used. Non-disruptive automatic migration based on performance parameters and capacity of storage volume IO and IOPS can be eliminated to eliminate Storage risks.	
j) Proposed Solution must provide VM vMotion/live migration capability to live migrate VMs to any nodes in the Cluster without any downtime.	
k) Proposed Solution must provide the capability to automatically hot-add resources including vCPUs and Memory real-time based on VM contention.	
l) Proposed Solution must provide automated Resource Scheduling and Load Balancing capability for balanced performance on all nodes across the cluster.	
m) Proposed Solution must provide Distributed Switch capability to configure and administer switching for the entire Cluster.	
n) Supports flexible configuration of resource expansion and contraction strategies and can dynamically clone or delete virtual machines based on virtual machine CPU, memory, connection number, storage capacity, disk IO and other parameters to meet the requirements of "use more virtual machine to provide services and use less virtual machines	
o) Provides application-level HA functions, which can automatically detect and automatically repair application failures in the virtual machine without installing an agent inside the virtual machine, including but not limited to Apache Tomcat, JDK, Apache HTTP Server, MySQL,	
p) Proposed Solution must provide Hardware Health Check capability to Monitor CPU, Memory, Network Interface Card, Hard Drive and RAID Controller etc.	
q) Provides application-level HA functions, which can automatically detect and automatically repair application failures in the virtual machine without installing an agent inside the virtual machine, including but not limited to Apache Tomcat, JDK, Apache HTTP Server, MySQL, SQL Server, Applications such as SharePoint, and support user-defined scripts for application	
r. Support batch modification of virtual machine configuration parameters, including: I / O priority, startup priority, whether to migrate automatically, CPU scheduling priority, CPU number, memory size, automatic startup, enable VNC agent, tools automatic upgrade, etc.	
s. Support setting different virtual machine disk cache modes according to business requirements, including direct read and write, primary cache, secondary cache, etc.	
t. Support virtual machine migration history record function. The record contains information such as migrated operator, migration method, source host, destination host, start time, and migration time. It is easy to trace back the migration path of virtual machines.	
u. Support virtual machine desktop preview function, the current desktop status of the virtual machine can be seen on the virtualization management platform without logging in to the virtual machine	
v. Support docking RBD (virtual machine directly docking with RBD to process data storage I/O, virtual machine directly docking RBD can avoid I/O performance loss caused by ocfs2 file system and ISCSI protocol. Compared with ocfs2 path, data random read and write performance Increased by more than 4 times, the number of specifications has also been greatly increased.) Provide official website screenshot proof.	
4. Storage Virtualization:	
a) Proposed Solution must provide SSD based Read Caching and Write Buffer capability to improve the performance of the I/O.	
b) Proposed Solution must provide Automated Data Rebuilding capability to restore redundancy in case of any Disk or Node Failure.	
c) One node can support virtualization and 3 types of storage functions (block, file, object) at the same time. At least 3 node clusters can provide virtualization, distributed block, object, and file storage services at the same time. Among them, object and file services must be	

d)	File storage support protocols include: FTP, CIFS, NFS, HTTP; Provides a variety of NAS value-added service functions, including: authority management, snapshot management (WORM), shared directory management, etc.; NAS services can adopt multi-service nodes for high availability and support load balancing.	
e)	Object storage, compatible with S3 and other interfaces, supporting management	
f)	The Striped data multi copy mechanism is adopted to ensure the data reliability. The storage software divides the physical hard disk into chunks of 4MB size to save the data. The redundancy mode of RAID1 is not allowed.	
g)	Supports 2~5 copies, and can be selected arbitrarily	
h)	Three nodes support the deployment of three copies. It is not allowed to add additional hard disks (groups), capacity, or nodes to satisfy the replication strategy. Make full	
i)	Flexible requirements for redundancy strategy: A group of hard disk pools (groups) can support both 2-copy and 3- copy strategies to maximize the use of disk capacity. There is no need to use additional disk groups to carry two different strategies, which greatly reduces customer costs. In addition, support for "online" adjustment of virtual machine disk redundancy strategy greatly facilitates operation and maintenance and avoids interruption	
j)	Data balance requirements: It is required to automatically balance the data when it is placed, and it is not allowed to delay the balance or choose another balance time and strategy. This can ensure the smooth operation of customer services, otherwise it will take up bandwidth and affect the business by finding another time to balance it.	
k)	Support the erasure code feature, support the erasure code protection from N + 1 to N + 4, and support the failure of any 4 nodes without data loss and system shutdown	
l)	Support storage QoS policy, specify service priority according to business pressure; support volume QoS, data recovery QoS, support setting data recovery policy with hard disk	
m)	Supports disk replacement wizard, provides a graphical and wizard-based interface, supports hot-swappable replacement of hard disks, and brings more efficient maintainability	
m.	One node can support virtualization and 3 types of storage functions(block, file, object) at the same time. At least 3 node clusters can provide virtualization, distributed block, object, and file storage services at the same time. Among them, object and file services must be provided on the host machine, and the same brand as the self-developed hyper-convergence, and cannot be provided in the form of an application running on a virtual machine. A screenshot proof of the function page is required.	
5.	Network Virtualization:	
a)	Supports setting the virtual machine network priority level. When the bandwidth of the physical network card is congested, it can ensure that high-priority key services can be allocated as much network I/O resources as possible.	
b)	Support to specify the IP address and port number of the NetFlow collector, and the traffic flowing through the vSwitch will be sent to the specified NetFlow collector. Support to define flows according to the five-tuple of business traffic IPv4 packets (source IP address,	
c)	Support port mirroring, copy the messages of the designated port to the port connected to the data monitoring device, so that users can use the data monitoring device to analyze these copied messages for network monitoring and troubleshooting.	
d)	Support NIC pass-through. Through the IOMMU technology, the physical network card is transparently transmitted to a virtual machine on the host, the virtual machine monopolizes the physical network card, and fully owns the physical network card resources and performance.	
e)	Supports the creation of network policy templates and uses network policy templates that span multiple virtual ports to simplify port configuration. The template defines a set of network policy attributes, including VLAN, QoS,	

Form G: Price Schedule Form

(To be Submitted in a separate and sealed envelope duly marked as Financial Proposal)

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	PAF-IAST/IT/ Mini-Cloud/2024		

[The Bidder is required to prepare the Price Schedule following the below format. The Price Schedule must include a detailed cost breakdown of all goods and related services to be provided.]

We,

the <<Name of Bidder>>, hereby submit our Financial Bid for the Supply of Items as below. We assure you of our full compliance to the required specifications, delivery schedule and other terms without any deviation and/ or reservations. We reiterate our acceptance to the terms and conditions of the RFP. Our Financial proposal as below is submitted for your kind consideration.

Quoted Items in compliance to the Technical Specifications as referred in Section – 5a and Section – 5b, whether Out-of-the-Box, Customization, or 3rd Party	Quantity (a)	Unit Price [in Rs.] (b)	GST [in Rs.] (c)	Total Price [in Rs.] $d=a*[b+c]$
a.				
b.				
c.				
2. Optional Packages (Must be quoted by bidder. However, ordering will be at discretion of PAF-IAST)				
a.				
b.				
c.				
d.				
e.				
f.				

Extended Warranty & Support Price (at discretion of PAF-IAST)

Annual Product Warranty/ Support including all package.	2 nd Year (in PKR)	3 rd Year (in PKR)

Total Bid Value in Figures (with all taxes & duties for items above): _____

Total Bid Value in words (including all items above): _____

Name & Designation of Authorized Person: _____

Signature: _____ (Please affix company stamp here)

Note: Quoted price must be inclusive of all taxes and duties.

Annex – I: Integrity Pact

The Bidders will be required to submit the below text on stamp paper after filling in the details and duly signed as well as stamped, as part of their Technical Proposal.

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC
PAYABLE BY THE SUPPLIER OF GOODS, SERVICES & WORK IN CONTRACTS WORTH
RS. 20.0 MILLION OR MORE

(To be filled by the bidder as a part of technical proposal)

Contract Number: _____ Dated: _____

Contract Value: _____

Contract Title: _____

_____ hereby declare 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 partner.

Without limiting the generality of the forgoing, _____ represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or 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 nature 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 consultant fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatever from GoP, except that which has been expressly declared pursuant hereto.

_____ 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, representation or warranty.

_____ accept full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts 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, _____ agrees to identify 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 times the sum of any commission, gratification, bribe, finder's fee or kickback given by _____ as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever from GoP.

[Buyer] [Seller / Supplier]

Annex – II: Draft Contract Sample

Available at PAF: IAST website at <http://www.paf-iastr.edu.pk/downloads>