



Administered by University of Maine System
Office of Strategic Procurement
Request for Bid (RFB)

HPC Parallel Cluster

RFB #2023-031

Issued Date: September 26, 2022

Response Deadline Date/Time: October 3, 2022, on or before
11:59 p.m. EST

Response Submission Information:

Submitted electronically to UMSResponses@maine.edu
Email Subject Line – RC: HPC Parallel Cluster - RFB#2023-031

Response Contact Information:

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1.0 INTRODUCTION

1.1 Definitions, Background, Purpose and Specifications

1.1.1 Definitions

The University of Maine System will hereinafter be referred to as the "University." Respondents to the document shall be referred to as "Respondent(s)" or "Respondent".

The Respondent to whom the Agreement is awarded shall be referred to as the "Contractor."

The University of Maine System and other components of the University shall be referred to as "Multi-Institution".

1.1.2 Background

Overview

Established in 1968, the University of Maine System (UMS) unites six distinctive public universities, comprising 10 campuses and numerous centers, in the common purpose of providing quality higher education while delivering on its traditional tripartite mission of teaching, research, and public service.

A comprehensive public institution of higher education, UMS serves more than 30,000 students annually and is supported by the efforts of more than 2,000 full-time and part-time faculty, more than 3,000 regular full-time and part-time staff, and a complement of part-time temporary (adjunct) faculty.

Reaching more than 500,000 people annually through educational and cultural offerings, the University of Maine System also benefits from more than two-thirds of its alumni population residing within the state; more than 123,000 individuals.

The System consists of six universities: The University of Maine (UMaine), including its regional campus the University of Maine at Machias (UMM); the University of Maine at Augusta (UMA); the University of Maine at Farmington (UMF); the University of Maine at Fort Kent (UMFK), the University of Maine at Presque Isle (UMPI); and the University of Southern Maine (USM). The System also includes the University of Maine School of Law and the University of Maine Graduate and Professional Center.

1.1.3 Purpose

The Advanced Computing Group of the University of Maine System is seeking to add storage and compute nodes to the existing High Performance Computing (HPC) system. The hardware will be incorporated into the existing XCAT (eXtreme Cluster Administration Toolkit) environment with the SLURM Workload Manager. No software is required. The goal is to purchase a set of storage and compute nodes.

This document provides instructions for submitting responses, the procedure and criteria by which the Respondent(s) will be selected, and the Agreement terms which will govern the relationship between the University and the awarded Respondent(s).

Respondents should review **1.1.4 Specifications / Scope of Work** of this document to see the full Scope of Services/Products required.

The University is committed to providing increased access and opportunity to diverse businesses include and not limited to: Lesbian, Gay, Bisexual and Transgender Business Enterprise (LGBTQ+BE); Minority Business Enterprise (MBE); Service-Disabled Veteran Business Enterprise (SDVBE); Small Business Enterprise (SBE); veteran-owned; service-disabled veteran-owned; HUBZone; small disadvantaged business; women-owned; minority-owned; Veteran Business Enterprise (VBE); and Women's Business Enterprise (WBE).

Though this document is primarily for University of Maine, all campuses in the University of Maine System must be afforded the use of this solution, with all the same terms and conditions applicable to the various University locations.

1.1.4 Specifications / Scope of Work

The reference specs for these are:

- overall performance
- cost
- efficient allocation of memory
- efficient allocation of high-speed networking equipment
- superb technical support and maintenance

The system that these nodes will be expanding on consists of:

- Supermicro compute nodes
- AMD and Intel CPU's
- Infiniband networking
- Gigabit management network
- IPMI 2.0 management capabilities (both side-band and out-of-band) including remote console

The successful response will need to fit into this environment seamlessly. The proposed systems are not required to be based on Supermicro equipment. Minimum requirements for the system include:

Compute Nodes:

- Latest generation high core count Intel or AMD CPUs with 2 CPUs per node
- minimum of 2.5 GB of RAM per core with pricing included for multiple memory sizes
- Infiniband HDR100 ports (at least one, Mellanox preferred)
- Gigabit Ethernet port(s) (RJ45 preferred)
- IPMI 2.0 management BMC compatible with ipmtool and XCAT. Higher consideration will be for those that have remote console capabilities. Higher consideration will be for those that have both side-band and out-of-band IPMI capabilities.
- 1.6 TB local disk NVMe drive for scratch space
- Pricing add-on for two Nvidia A40 GPUs. This can be a separate configuration if needed
- 1+1 redundant power supplies

- Minimum of 3 years warranty/maintenance with advanced replacement for hardware shipping with return labels. 5 years is preferred

Storage Nodes:

These will be used to expand our existing Ceph cluster so need to meet the following as closely as possible in order to match the other nodes in the system:

- Latest generation Intel or AMD CPUs with at least 24 cores at 2.5 Ghz
- Pricing for 128 and 256 GB of RAM
- Infiniband HDR100 ports (at least one, Mellanox preferred)
- Gigabit Ethernet port(s) (RJ45 preferred)
- IPMI 2.0 management BMC compatible with ipmtool and XCAT. Higher consideration will be for those that have remote console capabilities. Higher consideration will be for those that have both side-band and out-of-band IPMI capabilities.
- 24 SAS Spinning disks in the range of 16 and 20 TB. Pricing options that include different sized disks is preferred
- 4 x 480 GB SSDs or 2 x 960 GB NVMe drives with power loss protection for BlueStore DB/WAL
- 2 x Data Center 240 GB SSDs or NVMe drives CephFS Metadata Pool
- Slots for at least six more SSD or NVMe drives for future creation of a higher speed pool
- 1+1 (or N+N) redundant power supplies
- Minimum of 3 years warranty/maintenance with advanced replacement for hardware shipping with return labels. 5 years is preferred

Software: No software is required although pricing for OS installation and customization is requested as an add-on.

Expandability

After the initial purchase, it is the goal of the University to continue to grow this resource. Thus it is desirable that the specified platform will remain available for a reasonable length of time following the purchase, i.e., close-outs or end-of-production units are less desirable. The incremental cost per computing node will be considered, as will the number of nodes that can be added before additional costs (such as a larger network switch) are incurred.

Considerations

The primary considerations for this project are cost and performance. Cost includes, but is not limited to, purchase price per computational core, maintenance contracts, licensing costs (if applicable), administrative effort, and perceived lifetime of the device. When costs are equal or similar, preference will be given to lower recurring costs although quality of support will be factored in too. Performance is a subjective measure based on a range of anticipated use cases.

1.2 General Information

1.2.1 Communication with the University

It is the responsibility of the Respondent to inquire about any requirement of this document that is not understood. Responses to inquiries, if they change or clarify the document in a substantial manner, will be forwarded by addenda to all parties that have received a copy of the document. Addenda will also be posted on our web site, www.maine.edu/strategic/upcoming_bids.php

It is the responsibility of all Respondents to check the web site before submitting a response to ensure that they have all pertinent documents. The University will not be bound by oral responses to inquiries or written responses other than addenda.

Inquiries must be made using the **Response Contact Information** provided on the cover sheet of this document. Refer to table in **Section 1.3.1 Timeline of Key Events** for deadline requirements.

1.2.2 Confidentiality

The University must adhere to the provisions of the Maine Freedom of Access Act (FOAA), 1 MRSA §401 et seq. As a condition of submitting a response under this section, a respondent must accept that, to the extent required by the Maine FOAA, responses to this solicitation, and any ensuing Agreemental documents, are considered public records and therefore are subject to freedom of access requests.

The information contained in responses submitted for the University's consideration will be held in confidence until all evaluations are concluded and a Respondent selected (the successful Respondent). At that time the University will issue award notice letters to all participating Respondents and all Respondents' responses may be made available to participating Respondents upon request. Such request must be made by submitting a written request to the individual noted in the Response Contact Information shown on the cover sheet of this document, with a copy of the request provided to the other Respondents. Such requests are public records.

After the protest period has passed and the Agreement is fully executed, responses will be available for public inspection upon request.

Pricing and other information that is an integral part of the offer cannot be considered confidential after an award has been made. The University will honor requests for confidentiality for information that meets the definition of "trade secret" under Maine law. Clearly mark any portion of your submitted materials which are entitled to "trade secret" exemption from disclosure under Maine's Freedom of Access Act. Failure to so identify as trade secret will authorize the University to conclude that no portions are so exempt; and that your entity will defend, indemnify and hold harmless the University in any and all legal actions that seek to compel the University to disclose under Maine's Freedom of Access Act some or all of your submitted materials and/or Agreement, if any, executed between the University and your entity.

1.2.3 Costs of Preparation

Respondent assumes all costs of preparation of the response and any presentations necessary to the response process.

1.2.4 Authorization

Any Agreement for services that will, or may, result in the expenditure by the University of \$50,000 or more must be approved in writing by the Office of Strategic Procurement, Chief Procurement Officer and it is not approved, valid or effective until such written approval is granted.

1.2.5 Multi-Institutional

The University of Maine System, Office of Strategic Procurement reserves the right to authorize other University Institutions to use the Agreement(s) resulting from this document, if it is deemed to be beneficial for the University to do so.

1.2.6 Cost Response Form Quantities

The quantities shown on the cost response form are approximate only. The Contractor shall cover the actual needs of the University throughout the term of the Agreement regardless of whether they are more or less than the quantities shown.

1.2.7 Employees

The Contractor shall employ only competent and satisfactory personnel and shall provide a sufficient number of employees to perform the required services efficiently and in a manner satisfactory to the University. If the Agreement Administrator or designee, notifies the Contractor in writing that any person employed on this Agreement is incompetent, disorderly, or otherwise unsatisfactory, such person shall not again be employed in the execution of this Agreement without the prior written consent of the Agreement Administrator.

1.2.8 Environment Compliance

In the event that the resulting Agreement involves the generation, transportation, handling, disposal, and/or other operations or activities in relation to toxic, hazardous, radioactive, or otherwise dangerous gases, vapors, fumes, acids, alkali's, chemicals, wastes or contaminants and/or other substance, material or condition, the Contractor agrees to indemnify save harmless and defend the University from and against all liabilities, claims, damages, forfeitures, suits, and the costs and expenses incident thereto (including costs of defense, settlement and reasonable attorney's fees) which the University may hereafter incur as a result of death or bodily injuries or damage to any property, contamination of or adverse effects of the environment or any violation of state or federal regulations or laws (including without limitation the Resources Conservation and Recovery Act, the Hazardous Material Transportation Act or the Superfund Amendment and Reauthorization Act, as the same now exists or may hereafter be amended) or order based on or arising in whole or in part from the Contractor's performance under the Agreement, provided, however the Contractor shall not indemnify the University for any liabilities, claims, damages, (as set forth above) caused by or arising out of the sole negligence of the University, or arising out of any area of responsibility not attributable to Contractor.

1.2.9 Specification Protest Process and Remedies:

If a Respondent feels that the specifications are written in a way that limits competition, a specification protest may be sent to the Office of Strategic Procurement to the email address provided on the cover page of this document. Specification Protests will be responded to within five (5) business days of receipt. Determination of protest validity is at the sole discretion of the University. The due date of the proposal may be changed if necessary to allow consideration of the protest and issuance of any necessary addenda. Specification protests shall be presented to the University in writing as soon as identified, but no less than five (5) business days prior to the Deadline for Proposal Submission noted in Section 1.3.1. No protest against the award due to the specifications shall be considered after this deadline. Protests shall include the reason for the protest and any proposed changes to the specifications.

1.2.10 Pricing

All prices provided using **Appendix C** for specific bid instructions/requirements.

1.2.11 Evaluation Criteria

Award will be made to the low respondent provided that all other requirements are satisfactorily met, including receipt of bid as outlined in **Appendix C**.

The University will NOT seek a best and final offer (BAFO) from any Respondent in this procurement process. All Respondents are expected to provide their best value pricing with the submission of their response. Respondents will NOT be given another opportunity to modify pricing once submitted.

1.3 General Submission Provisions

1.3.1 Eligibility to Submit Responses

Public entities, private for-profit companies, and non-profit companies and institutions are invited to submit a response to this document.

1.3.2 Debarment

Respondents must complete and submit the “Debarment, Performance and Non-Collusion Certification Form provided in Appendix B. Failure to provide this certification may result in the disqualification of the Respondent’s proposal, at the University’s discretion.

Submission of a signed response in response to this solicitation is certification that your firm (or any subcontractor) is not currently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal department or agency. Submission is also agreement that the University will be notified of any change in this status.

1.3.3 Response Understanding

By submitting a response, the Respondent agrees and assures that the specifications are adequate, and the Respondent accepts the terms and conditions herein. Any exceptions should be noted in your response.

1.3.4 Response Validity

Unless specified otherwise, all responses shall be valid for ninety (90) days from the due date of the response.

1.3.5 Non-Response Submission

The University will not consider non-responsive submissions, i.e., those with material deficiencies, omissions, errors or inconsistencies or that otherwise do not follow instructions. The University in its sole discretion will determine what is Non-Responsive.

2.0 EVALUATION AND AWARD PROCESS

2.1 Evaluation Criteria

2.1.1 Scoring Weights

Award will be made to the low bidder provided that all other requirements are satisfactorily met, as outlined in Section 1.1.4 of this document

The University will NOT seek a best and final offer (BAFO) from any Respondent in this procurement process. All Respondents are expected to provide their best value pricing with the submission of their response. Respondents will NOT be given another opportunity to modify pricing once submitted.

2.2 Award

While the University prefers a single solution that is scalable to meet the needs of both large and small institutions, it reserves the right to award Agreement(s) to one or multiple Respondents, which may include awards to Respondents for a geographical area, if such award is in the best interest of the University.

The University reserves the right to waive minor irregularities, which may include contacting the Respondent to resolve the irregularity. Scholarships, donations, or gifts to the University, will not be considered in the evaluation of responses. The University reserves the right to reject any or all responses, in whole or in part, and is not necessarily bound to accept the lowest cost response if that response is contrary to the best interests of the University. The University may cancel this request or reject any or all responses in whole or in part. Should the University determine in its sole discretion that only one Respondent is fully qualified, or that one Respondent is clearly more qualified than any other under consideration, an Agreement may be awarded to that Respondent without further action.

2.3 Negotiations

The University reserves the right to negotiate with the successful Respondent to finalize a Agreement. Such negotiations may not significantly vary the content, nature or requirements of the proposal or the University's Request for Proposals to an extent that may affect the price of goods or services requested. The University reserves the right to terminate Agreement negotiations with a selected respondent who submits a proposed Agreement significantly different from the response they submitted in response to the advertised RFB. In the event that an acceptable Agreement cannot be negotiated with the highest ranked Respondent, the University may withdraw its award and negotiate with the next-highest ranked Respondent, and so on, until an acceptable Agreement has been finalized. Alternatively, the University may cancel the RFB, at its sole discretion.

2.4 Award Protest

Respondents may appeal the award decision by submitting a written protest to the University of Maine System's Chief General Services Officer within five (5) business days of the date of the award notice, with a copy of the protest to the successful Respondent. The protest must contain a statement of the basis for the challenge. The protest must contain a statement of the basis for the challenge. Further information regarding the appeal process can be found at

http://staticweb.maine.edu/wp-content/uploads/2015/07/APL_VII-A_20150630-FINAL.pdf?565a1d

If this RFB results in the creation of a pre-qualified or pre-approved list of vendors, then the appeal procedures mentioned above are available upon the original determination of that vendor list, but not during subsequent competitive procedures involving only the pre-qualified or pre-approved list participants.

3.0 RESPONSE FORMAT REQUIREMENTS

3.1 General Format Instructions

3.1.1 Electronic Submissions

Documents submitted as part of the electronic response are to be prepared on standard electronic formats of 8-1/2" x 11" and of PDF file type. Submissions requiring additional supporting information, such as, foldouts containing charts, spreadsheets, and oversize exhibits are permissible and must be submitted as Appendices, clearly numbered and referencing the Section in which they provide supporting information.

For clarity, the Respondent's name should appear on every document page, including Appendices. Each Appendix must reference the section or subsection number to which it corresponds.

3.1.2 Respondents Responsibility

It is the responsibility of the Respondent to provide all information requested in the document package at the time of submission. Failure to provide information requested in this document may, at the discretion of the University's evaluation review team, result in a lower rating for the incomplete sections and may result in the response being disqualified for consideration. Include any forms provided in the application package or reproduce those forms as closely as possible. All information should be presented in the same order and format as described in this document.

3.1.3 Brief Response

Respondents are asked to be brief and to respond to each question listed in the "Response to Questions" section of this document. Number each response in the response to correspond to the relevant question in this document.

3.1.4 Additional Attachments Prohibited

The Respondent may not provide additional attachments beyond those specified in the document for the purpose of extending their response. Any material exceeding the response limit will not be considered in rating the response and will not be returned. Respondents shall not include brochures or other promotional material with their response. Additional materials will not be considered part of the response and will not be evaluated.

3.2 Response Format Instructions

This section contains instructions for Respondents to use in preparing their response. The Respondent's submission must follow the outline used below, including the numbering of section and sub-section headings. Failure to use the outline specified in this section or to respond to all questions and instructions throughout this document may result in the response being disqualified as non-responsive or receiving a reduced score.

The University and its evaluation team for this document have sole discretion to determine whether a variance from the document specifications should result in either disqualification or reduction in scoring of a response.

Re-phrasing of the content provided in this document will, at best, be considered minimally responsive. The University seeks detailed yet succinct responses that demonstrate the Respondent's experience and ability to perform the requirements specified throughout this document.

3.2.1 Response Submission

A SIGNED copy of this bid document must be submitted to the Office of Strategic Procurement as follows:

1. Completion of **Appendix A** – University of Maine System Response Cover Page. **Appendix A** must be SIGNED as part of the submission.
2. Completion of **Appendix B** – Debarment, Performance and Non-Collusion Certification. **Appendix B** must be SIGNED as part of the submission.
3. Bid submission will be submitted electronically to the Email provided in the Contact section of the cover page of this document.
4. Electronic submission must be received by the required Response Deadline/Time reflected on the cover page of this document.
The **BID SUBMISSION PACKAGE** provided may be used by the Respondent to satisfy the Bid Submission requirement.