Procurement and Contracting Services

Request for Proposals
For
High Performance Computing 2020 Refresh

ADDENDUM # 4
RFP L201904

Please mark all proposal submission Envelopes with the following information

Sealed RFP # L201904
Due on May 2, 2019 no later than 2:00pm MST
Environmentals (Section 5.9)

Q1. We understand that the maximum power plug spec you can provide is a 250V 60A 460C9W. But what power is coming from the circuit into that plug? Is it 208V, providing a maximum of 17.3kW, or is it something else? It would be helpful to know precisely how much power we can get into a rack.
Section 5.9.2 specifies a maximum of 30kW per rack.

Q2. We believe that two power drops per rack would be allowed. Is that correct? If not, what is the maximum number of power drops that could be provided to a rack?
You can specify as many PDU connections as required provided the total rack power does not exceed 30kW per rack, as specified in Section 5.9.2.

Q3. What is the maximum depth a rack may be (including any extension as described above)?
Responses should not exceed 52” of rack depth including any rear door heat exchangers but excluding front doors or decorative panels.

Q4. Regarding on-chip cooling: One of our on-chip cooling systems has a heat exchanger which either bolts to the back of a rack (extending the effective depth of the rack a few inches) or resides within the rack itself. Is such an extension of the rack depth by 10” acceptable?
As stated above in Q3, as long as total rack depth does not exceed 52” including the heat exchanger but excluding front doors or decorative panels, then yes.

Q5. Section 5.9.4 on p. 30 reference a max width of 19” for the racks. These are the interior dimensions though. Are racks with 750mm (29.5”) exterior width acceptable?
Yes.

Storage (Section 5.11)

Q6. Under section 5.11.1, specifications for performance requirements state the following requirements:
- 200k mixed IOPS at a 4:1 read to write ratio @ 4k block size with a peak IOPS at 400k IOPS.

Under section 5.11.3.1, expected performance metrics for proposed systems, the following statement is made:
- “Proposals featuring caching solutions should provide both cached and non-cached metrics.”

That being established, is the expectation that a hybrid / caching solution would meet the 200k IOPS in a non-cached configuration?
As variations on this question keep arising, it seems there is concern about meeting the acceptance test criteria. As such, we will add the following constraint pertinent to section 5.11.4.2: Acceptance tests will be run with no more than 200T of randomly-generated test
data in a variety of file sizes. Proposed solutions should configure themselves to meet performance requirements under those conditions as well as provide no less than 2PB of total capacity. No special efforts will be made to defeat or disable caching or tiering mechanisms during the test period.

Q7. Addendum #2 states that there are a variety of file sizes but the average files size is “less than 4KB.” The starting size of the storage is 2PB. If there is 1PB of real data that would equate to 250 billion files. Can you provide:
- Clarification: is the average file size is less than 4KB?
- How many files will reside on the initial 2PB of storage?
The most common value is less than 4K. We currently have 250M files consuming about 1.3PB.

Pricing
Q8. If the University is unable to secure a ~$1M storage solution that accommodates 400K iops and 2PBs of capacity, is there a fallback plan to compromise on either the performance to something like 200K iops for 2PBs or 400K iops for some smaller capacity like 1PB with a second system supporting lesser performance for the other 1PB?
It is possible the RFP will not produce any acceptable solutions for any of the sections. If this RFP process fails to yield an appropriate solution for our needs in any of the three areas, we will edit the RFP requirements to address the issues to the best of our ability and hold another RFP at a later date.

Q9. Can you clarify Section 4.12 on p. 18: Is the equipment purchased through this RFP tax exempt?
Your response pricing should not include sales tax and the dollar values specified in Section 3.9.8 can be considered pre-tax values. As noted in Section 4.12, there is a state exemption in Arizona for purchases qualifying under a legislative definition of “research or development”.
During the best and final offer process, the chosen vendors may be required to provide pricing for final configurations that include both taxed and untaxed equipment as separate invoices.

Q10. Is there any way to respond to the RFP without agreeing to the $500/day penalty as noted in Section 5.11.4.3?
Vendors have the ability to take exception in their response to the RFP. Please see Section 3.9.7 for more information.

Ethernet (Section 5.12)
Q11. About the 40gbps connectivity, there are two connectivity options on the NetApp side. We can use copper cables with QSFP+ (NetApp P/N X-QSFP-H40G-CU3M-R6), or we could use optical connectivity and that, on the NetApp, side would use an MPO cable (NetApp P/N X66200-5). What is preferred?
- If your product operates with industry standard cabling, the University will provide cabling for all network connectivity once all section awards have been decided such that the type, length
and count of network connections is known. You do not need to provide pricing for cabling if this is the case.

- If your product requires proprietary cabling, provide pricing for either of the following in 15m lengths, with final lengths to be determined during the best and final offer process:
  - active optical AIO cabling with either 40GbE QSFP+ or 128GbE QSFP28 on one end
  - fibre optic cabling with appropriate optics for either 40GbE QSFP+ or 128GbE QSFP28

Testing
Q12. At the meeting on April 4th it was stated that each of the three components – compute, storage, and network – would have the acceptance testing done independently. Can you verify the following: If a vendor is chosen for any one of the three components – compute, storage, and network – that component will be tested independent of any other vendors equipment chosen as a result of this RFP.
Correct. Acceptance testing for each section will not depend on the other sections.

END OF ADDENDUM