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**Subject: Question and Answer Set 3
Trinity and NERSC-8 Computing Platforms Project
LA-UR-13-25273**

Greetings:

Interested parties are advised of the following questions or concerns that have been submitted to the Trinity and NERSC-8 Project team and to the accompanying Project responses below:

Question/Issue 1

What is the more precise meaning of “On-site System Delivery and Build Complete” for Trinity by Q3CY15 and NERSC 8 by Q4CY15 as referenced on page 6 within the Trinity-NERSC-8-Draft technical requirements document?

Project Response 1

These dates indicate when the systems are to be completely delivered and bootable. The actual subcontract schedules will be negotiated, but Offerors should propose based on the schedule within the Technical Requirements Document.

Question/Issue 2

Capacity benchmarks – In the Trinity and NERSC-8 Draft Technical Requirements document, paragraphs 3.5.4 and 3.5.5, it states these benchmarks are to be used AT ACCEPTANCE. Does this mean Offerors do not need to provide information on the Capacity benchmarks for the proposal?

Project Response 2

3.5.4 and 3.5.5 are the Capability Improvement requirements, not Capacity. Offerors do not have to provide Capability Improvement results for individual applications at RFP response time, but they do have to state what improvement factor they will achieve. The Capability Improvement will be measured at acceptance.

Please refer to the following website for more information:

[Trinity / NERSC-8 Capability Improvement](#)

Question/Issue 3

Contradiction in IOR Run instructions; The ‘How to Run’ section states that changes may only be made to the following four parameters when running IOR; [testFile, hintsFileName, collective, segmentCount].

However, the **Required Runs** section states:

The vendor shall determine the transfer size to be used in the tests.

Please clarify.

Project Response 3

An error existed in the wording of the IOR instructions. The second paragraph under Required Runs should read: "The vendor shall determine the file size to be used in the tests." See the description of file size in the "How to Run" section. This change will be updated in the instructions on the benchmarking website.

[Trinity / NERSC-8 Benchmark Information Site](#)

Question/Issue 4

The benchmark instructions and benchmark results template indicate that the small benchmarks must run on one node. But the instructions within the benchmark codes require numbers of MPI ranks which are not practical on a single node – for example, 96 MPI ranks for AMG, 64 for GTC.

Please clarify how the small benchmarks are to be run, for 1) MPI-Only and 2) MPI+X.

Project Response 4

The number of MPI ranks reported in the run rules and the spreadsheet correspond to how the baseline data was collected on NERSC's Hopper platform. The number of MPI ranks for the Trinity/NERSC8 projections can be varied to suit the proposed architecture. The intent is to report the best performance using the optimal decomposition. This applies to all problem sizes, MPI-only and MPI+X reporting. If the small problem does not fit on the proposed node due to memory limitations, 2 or more nodes may be used. The large problem shall be weak scaled based on the node count used for the small problem. For example, using Hopper the large problem for the miniFE used 512 times more nodes than the small problem (2048/4).

Question/Issue 5

In the June 13 update to the SNAP benchmark information (located [at this link](#)), several details of the problem description have changed significantly from the previous version. The new README requires a weakly scaling results for both the small and large cases. The examples used to describe scaling the physical grid (nx, ny, nz) and process grid (npey, npez) are straightforward, i.e. multiply the grid dimensions by 2 in a round robin fashion when increasing the MPI task count by 2 (at least for factors of 2 counts). However, for the large case, the 'ichunk' parameter is also changed with increasing task count, but it is not clear how this parameter should be changed for intermediate values not shown (e.g. 32-1024, 4096-16384 tasks). Currently, the assumption is the ichunk parameter should be doubled from previous value when nx = 64, or 256, e.g. ichunk=16 for 64 <= nx < 256, and 256 <= nx. Please clarify how one should modify the ichunk parameter or if it is a tuning parameter subject to vendor's discretion.

Project Response 5

The intent for providing weak scaling examples is to show how to vary the parameters, the "small", "large" problems are the only two results required for reporting. You are allowed to change the decomposition to fit your architecture, but for these two problems the number of cells and other parameters that affect the "size" of the problem (e.g. number of groups and number of angles) must stay the same.

We use a 2-D spatial decomposition over the y and z directions. "ichunk" is the number of x-planes swept before communication, and can be considered a tuning parameter, the number we give is just a suggestion. If it is changed, it should be called out specifically.

Question/Issue 6

Are Offerors anticipated to provide storage for home directories as part of the responses? If so, what capacity and performance characteristics are desired for this file system?

Project Response 6

Both the Trinity and NERSC-8 platforms do not require storage to be provided for anything other than the parallel file system, which is nominally used as /scratch. The specified external network requirements are meant to provide connections to ACES and NERSC provided storage using NFS for file systems such as /home.

Question/Issue 7

Will it be sufficient for Offerors to reference specific, controlled documents currently available under existing NDA agreements in proposals, or will the contents of those documents also need to be provided?

Project Response 7

All information necessary to support the Offeror's proposal should be included in the RFP response.

Question/Issue 8

Can portions of Offeror's responses be marked as "Vendor Confidential"?

Project Response 8

Yes. There will be more specific instructions in the RFP when it is issued.

Best Regards,

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