Artifact Description / Article Evaluation (AD/AE) Appendix Form

SC19 submitting authors must complete this form to describe all computational artifacts their results rely on: software, data, and/or hardware. If your paper used no computational artifacts, respond "No" to the first question and you're done.

Please familiarize yourself with the SC Reproducibility Initiative by reading the webpage at:
— https://sc18.supercomputing.org/submit/sc-reproducibility-initiative/

Find author resources at:
— https://github.com/SC-Tech-Program

*Required

1. **Are there computational artifacts such as datasets, software, or hardware associated with this paper?** *
   Mark only one oval.

   ( ) Yes — continue to form

   ( ) No — end form (auto-generate Appendix).

2. **Summarize the experiments reported in the paper and how they were run. (Example: "We ran the NAS Parallel Benchmarks v3.3.1 on NERSC's Cori supercomputer with both Cray's version of MPICH 3.2.1 and with our SuperPGAS communication layer (v0.2), as described in the paper.").** *

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Artifacts Available (AA)

This section of the form determines eligibility for the Artifacts Available badge. Three outcomes are possible for your paper: (1) it is eligible for both the AA badge and the Student Cluster Competition Reproducibility Challenge; (2) it is eligible for the AA badge, but not the Reproducibility Challenge; (3) it is ineligible for both the badge and the challenge.

AA badge —"This badge is applied to papers in which associated artifacts have been made permanently available for retrieval. Author-created artifacts relevant to this paper have been placed on a publically accessible archival repository. A DOI or link to this repository along with a unique identifier for the object is provided."
https://www.acm.org/publications/policies/artifact-review-badging

3. **Software Artifact Availability: see https://opensource.org/licenses/alphabetical** *

   Mark only one oval.

   ◯ All author-created software artifacts are maintained in a public repository under an OSI-approved license.

   ◯ Some author-created software artifacts are NOT maintained in a public repository or are NOT available under an OSI-approved license.

   ◯ There are no author-created software artifacts.

4. **Hardware Artifact Availability: see https://www.oshwa.org/definition/** *

   Mark only one oval.

   ◯ All author-created hardware artifacts are available and comply with the Open Source Hardware Definition.

   ◯ Some author-created hardware artifacts are NOT available or do NOT comply with the Open Source Hardware Definition.

   ◯ There are no author-created hardware artifacts.

5. **Data Artifact Availability** *

   Mark only one oval.

   ◯ All author-created data artifacts are maintained in a public repository with a stable identifier, such as a DOI.

   ◯ Some author-created data artifacts are NOT maintained in a public repository or do NOT have a stable identifier, such as a DOI.

   ◯ There are no author-created data artifacts.

6. **Proprietary Artifacts: see http://www.linfo.org/proprietary.html** *

   Mark only one oval.

   ◯ None of the associated artifacts, author-created or otherwise, are proprietary.

   ◯ No author-created artifacts are proprietary. There are associated proprietary artifacts that are not created by the authors.

   ◯ Some author-created artifacts are proprietary.

7. **List of URLs and/or DOIs where artifacts are available (this information will be unavailable to reviewers, but will be available to the AD/AE Appendices Committee).** *

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8. **Do you wish your paper to be considered for the Student Cluster Competition Reproducibility Challenge in SC20?** *

Mark only one oval.

- ◯ Yes
- ◯ No

Baseline experimental setup, and modifications made for the paper

Fill in whatever is relevant to your paper and leave the rest blank.

9. **Relevant hardware details, e.g., system names, makes, models, and key components such as CPUs, accelerators, and filesystems.**

_____

10. **Operating systems and versions (e.g., "Ubuntu 17.10 running Linux kernel 4.13.0")**

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11. **Compilers and versions (e.g., "Clang++ v6.0")**

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12. **Applications and versions (e.g., "NAMD v2.13" or "SPEC CPU2017")**

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13. **Libraries and versions (e.g., "OpenMPI v3.1.0")**

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14. **Key algorithms (e.g., "conjugate gradient")**

_____

15. **Input datasets and versions (e.g., "Berkeley Segmentation Dataset: Test Image #296059 [color]")**

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16. **Modifications made for the paper: describe how the hardware and software listed in the previous section was improved or otherwise altered.**

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17. **Output from scripts that gathers execution environment information — see example scripts at https://github.com/SC-Tech-Program**

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Artifact Evaluation

Discuss the steps taken to help ensure the computational artifacts and results are trustworthy.

Describe controls your team put in place, statistics gathered, or other measures to make the measurements and analyses robust to variability and unknowns in the system. E.g., validation of accuracy and precision of timings, use of manufactured solutions or spectral properties, accounting for aleatoric and epistemic uncertainties, sensitivity of results to initial conditions, sensitivity to parameters and computational environment. Did you perform verification and validation studies?

18. **Are you completing an Artifact Evaluation (AE) Appendix?** *
    Mark only one oval.

    ( ) Yes — continue to next section.

    ( ) No — end form (auto-generate Appendix)

19. **Artifacts Evaluation — Describe if and how you: (a) performed verification and validation studies; (b) validated the accuracy and precision of timings; (c) used manufactured solutions or spectral properties; (d) accounted for aleatoric and epistemic uncertainties; (e) quantified the sensitivity of your results to initial conditions and/or parameters of the computational environment. Also describe controls, statistics, or other steps taken to make the measurements and analyses robust to variability and unknowns in the system.**

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