**Blue Waters Petascale Semester Curriculum v1.0**

**Unit 3: Using a Cluster**

**Lesson 6: Scaling on a Cluster 1**

**Sample Assessment**

*Developed by Linh B. Ngo for the Shodor Education Foundation, Inc.*

Assessments in this lesson are geared toward understanding speedup, Amdahl’s Law, and Gustafson’s Law. Assessments can be issued under the form of providing the parallel or serial portion of a program and asking students to calculate potential speed up given a certain number of additional processors.

Another way to frame the question is that assuming a research wants their program to run X times faster (speedup), and they know the serial proportion of this program, is it possible to add more resources to do this, and how many.



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*Browse and search the full curriculum at*[*http://shodor.org/petascale/materials/semester-curriculum*](http://shodor.org/petascale/materials/semester-curriculum)

*We welcome your improvements! You can submit your proposed changes to this material and the rest of the curriculum in our GitHub repository at*[*https://github.com/shodor-education/petascale-semester-curriculum*](https://github.com/shodor-education/petascale-semester-curriculum)

*We want to hear from you! Please let us know your experiences using this material by sending email to* [*petascale@shodor.org*](mailto:petascale@shodor.org)