

Game lets geeks compete to build virtual supercomputer

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Purdue University has created a game designed to teach how to build and operate a supercomputer. Called "Rack-A-Node," the game lets players design a supercomputer and then try to keep it operating as science jobs are submitted. (Purdue University image/Michele Rund)

(PhysOrg.com) -- For those ready to get their geek on, Purdue University has created the computer game for you. Rack-A-Node is an online video game that lets those über-geeks who love both science and technology try their hand at designing and operating a simulated research supercomputer.

"There's a group of people who are into both science and computing," says Kyle Bowen, informatics manager for Information Technology at Purdue. "The characters on the television show 'Big Bang Theory' would spend hours playing Rack-A-Node."

The online game can be found at www.rcac.purdue.edu/rackanode/

Players build a cluster supercomputer using a variety of computing types to run science experiments. A player begins with a small supercomputer and receives science jobs to process. If these jobs are successful, the player receives funding needed to build an even bigger supercomputer.

The game requires the player to optimize the supercomputer to deal with waves of science jobs that are submitted.

"Like the game 'rock, paper, scissors,' certain tools perform better against certain challenges," Bowen says. "In Rack-A-Node, the player has to optimize the supercomputer for the type of science being performed."

For example, the game begins with a chemistry job that requires a lot of memory, then a climate-modeling job, which is a high throughput task that needs faster network communication. Later, a 3-D science animation-rendering job requires multiple nodes to process. The game also includes jobs from life sciences, pharmacy, physics and engineering.

"Supercomputing is not the most accessible of topics. It can be difficult to understand," Bowen says. "We worked with a research scientist in Information Technology at Purdue to make sure the game is fairly realistic but still fun to play."

The game was built to highlight Purdue's student team participating in the Cluster Challenge at the SC '08 supercomputer conference on Nov. 15-21 in Austin, Texas. University teams compete in the challenge to see who can build the best supercomputer in a day.

In this year's Cluster Challenge, the students will work with constraints on the amount of electricity they can use. Purdue's team has partnered

with SiCortex, a manufacturer of low-energy supercomputers. This summer Purdue was the first university to install a low-energy SiCortex supercomputer.

"Rack-A-Node is a game that captures the essence of the supercomputer challenge," Bowen says.

Provided by Purdue University

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