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Playstation goes from games to grid

Now, a Sony PlayStation 3 doesn't just let you pretend to be the Beatles in 'Rock Band' or fight in alien ring-worlds in 'Halo.'

The PS3 is the latest piece of hardware to get on the grid. A mini-cluster of PS3s in Ireland is running software which can screen for new and potentially life-saving drugs.

Eamonn Kenny, portability coordinator for the Enabling Grids for E-science project, and Peter Lavin, a grad student at Trinity College Dublin, have ported the EGEE-supported gLite middleware, specifically the worker node software (performing the majority of the computational work on the Grid) to eight connected PlayStation 3's.

[gLite](#), the middleware which connects 13,000 researchers world-wide to the computing resources of the EGEE grid, is mostly run from multi-core processors produced by Intel.

"We want to prove that the gLite software is robust enough to work on another architecture," says Kenny.

They became interested in doing this upon hearing that other large software ran well on PlayStation 3, a machine with seven Synergistic Processing Elements (SPEs) and a price tag below \$350 (about 250€).

SPE's are microprocessing cells running at 3.2GHz each. One of the seven SPEs is reserved for the PS3 hypervisor, giving a total floating point performance of 218 GFLOPS (meaning about 218×10^9 [Floating point Operations Per Second](#)), or about 33 times faster than an equivalent single Intel processor for specific applications. For comparison's sake, this is about two times faster than an equivalent Intel-based quad core processor running standard benchmarking tools, or six times faster than a quad core for some imaging applications.



Mini-cluster of PS3's at Trinity College Dublin. Image courtesy Eamonn Kenny

In the next few weeks the size of the PS3 cluster at TCD should double. They've been delivered, they just need to be configured. The PS3 cluster will also soon share a file system, allowing MPI applications to run and allowing eHiTS to run in a distributed mode. They may also switch from using [Yellow Dog Linux](#) to [Debian](#) or [Ubuntu](#), as they provide better security updates.

Kenny and Lavin are presenting a poster at the EGEE User Forum in Uppsala.



Playstation: more than just fighting aliens on distant planets. (Click to enlarge.) Scene from Halo 3 courtesy of [wallpaperez.net](#)

More bang for the buck

"Considering the hardware that you are getting, the system is really cheap. These processors are specially geared for parallel computation, as opposed to just plain multi-core technology," says Kenny, who plays games with his kids on his Wii at home.

"The makers are giving people a good deal on the hardware, hoping to make their profits from selling games."

The Station's parallel processing abilities make it well suited to 3D vector calculations, such as the kind used by the [eHiTS Lightning](#) software. (eHiTS, which stands for electronic High-Throughput Screening, is produced by the company SimBioSys.)

They write docking software which automatically evaluates how well candidate molecules, or 'ligands,' fit in to the active sites of larger bio-molecules. This method is frequently used to search for new drugs.

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—Danielle Venton, EGEE. Click [here](#) for more information.

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