

Monash Campus Grid News

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Monash Sun Grid connects with eduroam

The central Monash University high performance computing (*Monash Sun Grid* – [MSG](#)) and *Large Research Data Store* ([LaRDS](#)) facilities are piloting connection using [eduroam](#).

Research collaborators no longer need to obtain local user IDs from Monash to use these services. They use their normal username and password from their home institution. This means that they do not have to remember yet more usernames and passwords, and can continue to use the services regardless of whether they are at Monash, their home institution or elsewhere.

Individual system administrators still assign user access rights in the normal way, as regards who can access what files and what groups people are members of, etc.

For further information please refer to:

- <http://www.monash.edu.au/eresearch/news/lards-eduroam.pdf>

Monash Sun Grid hits 1000 CPU cores

The current round of upgrades is nearing completion. When complete, the *Monash Sun Grid* ([MSG](#)) will comprise over 1000 CPU cores, will have over 3 TB of main memory and deliver over 9 Tflop/s of computational capacity, while delivering a power conversion efficiency of over 200 Mflop/W, over 5x better than 12 months ago. The *MSG* also provides access to the Monash *Large Research Data Store* ([LaRDS](#)) facility's 400 TB of disk storage and 2.4 PB of near-line robot tape library archive store.

The [Monash Campus Grid](#) now provides 5 grades of computational capacity:

- MSG interactive login
- MSG standard batch-mode cores
- MSG high memory batch-mode cores
- MSG tightly-coupled batch-mode cores for SMP/MPI jobs
- [Monash Green SPONGE](#) – harvesting spare CPU capacity available on desktop PCs.

The additional *MSG* capacity is already proving very popular – see for example the June load figures (Figure 1 below) captured while the facility was in the process of being upgraded.

For further information please refer to:

- <http://www.monash.edu.au/eresearch/services/mcg/msg.html>
- <http://www.monash.edu.au/eresearch/activities/msghistory.html>

GPUs soon to be delivered

We have received word from the supplier that our order for 20 [nVidia Tesla](#) special purpose GPU processing engines are getting close to our shores. When added as co-processors to a selection of our existing *MSG* nodes, these will provide 4800 GPU ALU cores, producing between 2 Tflop/s (of double-precision) and 20 Tflop/s (of single-precision) additional computing capacity, for those applications that suit adaptation for parallel processing on the GPU architecture. This will be delivered at a power efficiency up to a further 25x better than our existing CPU technology, viz: up to 5 Gflop/s per watt, cf our existing 1000 cores for *MSG* CPUs which deliver 9 Tflop/s at around 200 Mflop/s per watt). A number of major HPC computational software packages have recently been adapted to exploit the power of GPUs.

For further information please refer to:

- <http://www.monash.edu.au/eresearch/services/mcg/msg.html>

MSG-1 and Brecca HPC clusters decommissioned – a GreenIT initiative

The first generation *MSG-1* cluster (64 CPU cores of Sun V20z) and the VPAC Brecca HPC (which spent the last 2 years of its life at Monash) were both finally decommissioned in July 2009. *MSG-1* has provided over 4 years of active service to Monash researchers across most faculties. They have been replaced by new generation hardware which achieves a 15 fold improvement in power efficiency, saving around 43 of the 47 kW of electricity (plus a similar amount again of cooling cost) that was previously consumed by the older systems.

For further information please refer to:

- <http://www.monash.edu.au/eresearch/services/mcg/msg-greenit.html>

Figure 1 – Monash Sun Grid expansion in capacity and load June 2009

