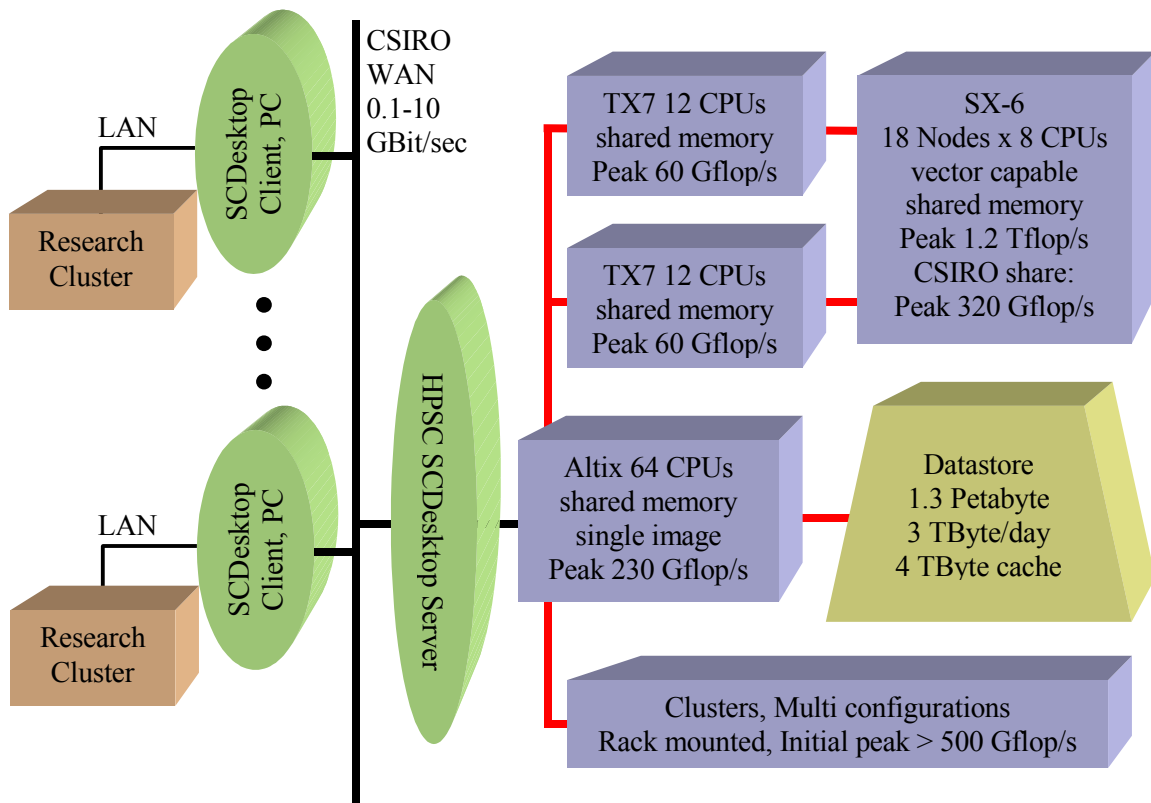


HPSC

High Performance Scientific Computing

Progress on the new HPSC systems

The following configuration will be available by the end of June. Options exist in the next financial year to extend the Altix and Cluster systems in response to demand and based on performance analysis. Other investments are also being canvassed to meet broader needs.

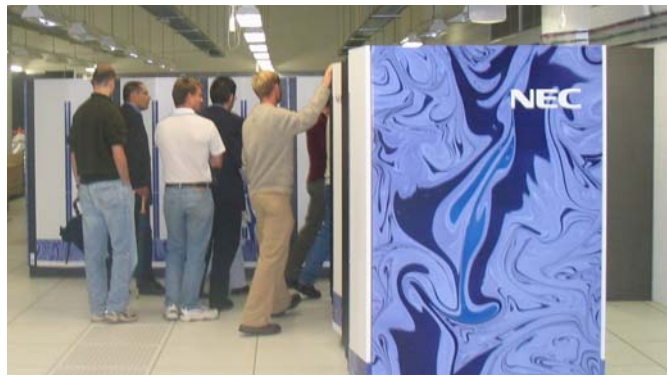


- The Datastore has been fully operational on the new systems for three months since its upgrade and relocation to the new facility, and is currently holding 50 TBytes.
- The SX-6 systems have been operational for five weeks. The 17th of May will see the SX-5 systems decommissioned. However, the SX-5s will be operational through to the end of May to provide a fail-safe during the final stages of SX-6 commissioning.
- The hardware for Altix upgrade to 64 CPUs has been delivered. It is likely that 16 CPUs will be installed this week. The final re-configuration requires physical relocation within the facility to allow for possible growth by a 2nd set of 64 CPUs. The Altix will be fully configured to 64 processors by end of May, and upgraded to 1.3 GHz (peak 333 Gflop/s) in September.
- A cluster purchase is likely in the next 2 weeks. with installation planned for June.

Clusters – Workshop

The HPSC hosted a cluster workshop on 30 March attended by over 20 staff from around CSIRO.

The day's discussion was much appreciated by those attending, and indeed highlighted the problem of the 'sparseness' of HPSC users across the organisation. This sparseness creates a need to be able to share experience and knowledge as well as pool resource to solve common problems.



Some of the main issues and actions arising were as follows.

- Applications perform very differently on different clusters, creating the problem for new cluster purchasers to determine the style of cluster best for their application as well as determining the best processor and interconnect options. The HPSC can provide a first point of contact and the group will work to enable prospective cluster buyers to try their application on different systems to obtain performance data to help define tender requirements.
- Few clusters were found to be running scheduler software. The HPSC will investigate scheduler options and the group will move to install common schedulers where possible.
- As most clusters have few users and few are 100% utilised, the issue of shared access was raised and the problems it creates discussed. As a solution, the HPSC will deploy software similar to seti@home for CSIRO, so that clusters can take tasks from a CSIRO wide work queue set up for problems involving large numbers of repeated or parameterised runs.
- Given the need for the cluster community to communicate, the HPSC will establish a web site describing existing experience in CSIRO with clusters and will sponsor further workshops on both implementing and using clusters.

Dedicated Facilities

The systems provided by the HPSC are for general use which means there is no certain priority or guaranteed quantum of access. Nevertheless, the HPSC can make arrangements for priorities to be increased to allow urgent work to be completed rapidly, taking advantage of the large computational capability available. The HPSC offers to extend its general systems with dedicated divisional or flagship additions managed at low additional cost for those divisions and flagships wishing to fund them. Such additions would be tightly coupled to the overall capacity.

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