

HPCx Quarterly Report

April – June 2005

1 Introduction

This report covers the period from 1 April 2005 at 0800 to 1 July 2005 at 0800.

The next section summarises the main points of the service for this quarter. Section 3 gives details of the usage of the service, including failures, serviceability, CPU usage, helpdesk statistics and service quality tokens. A summary table of the key performance metrics is given in the final section. The Appendices define the incident severity levels and list the current HPCx projects.

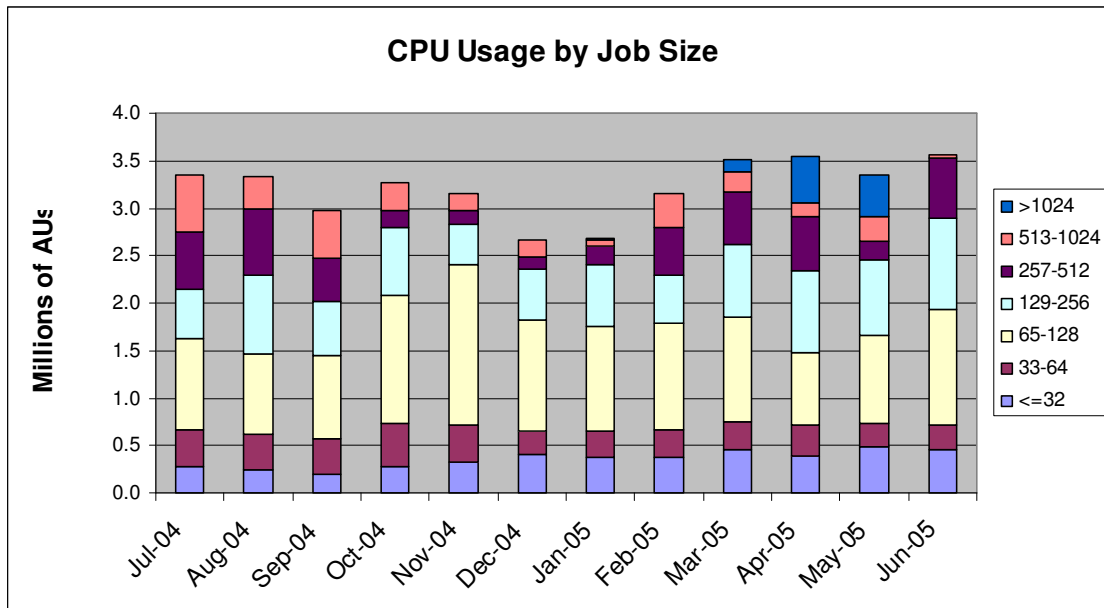
2 Executive Summary

- The Annual Plan, which was approved by STAC (Scientific and Technical Advisory Committee), should be finalised after August's Oversight Committee meeting.
- This quarter has continued to build on the successful start to 2005. Utilisation was higher than it had been for more than a year and both April and June delivered record numbers of Allocation Units.
- The system's reliability has continued to be remarkable --- there have been no hardware failures during 2005.
- EPCC successfully hosted the joint ScicomP/SP-XXL meeting from 30 May to 3 June. There were well over 100 attendees and presentations were given by representatives of the Software Engineering and Terascaling teams as well as from the HPCx user community.
- We held a Life Sciences workshop at RAL on 18 May that was attended by representatives of most of the Life Sciences consortia on HPCx.
- As the Integrative Biology consortium asked us to run courses at RAL, we followed the workshop with two co-located HPCx courses on 19-20 May. We have arranged to run 12 days of training during the next quarter, when the MSc is quiet, including 4 days at Leeds.

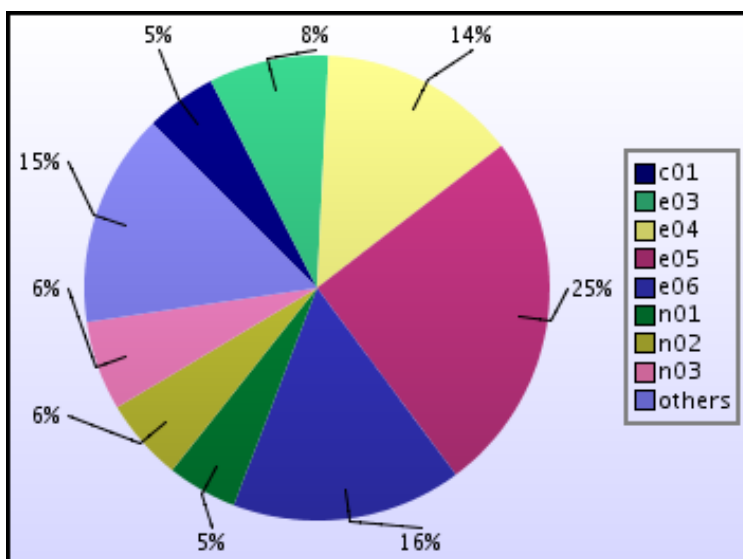
- The launch of the Advanced Computing Facility in Edinburgh was an opportunity to promote both HPCx and the use of HPC for scientific research to a more general audience. We are also adding further scientific highlights to the HPCx web site.
- The Terascaling team have continued the programme of consortia visits to increase our understanding of the scientific drivers and requirements. Nine such visits have now taken place.
- Two of the top 10 most heavily used codes on HPCx, DL_POLY and CASINO, achieved Gold star ratings during this quarter.
- Initial investigations of IBM's new major Fortran compiler release, xlf version 9, have been positive. We are now making this available for a period of user testing before making it the default production version.
- The Software Engineering team have been investigating RDMA, which provides significant improvements to communication performance for large messages. A technical report has been written which explains how to activate the RDMA feature and benchmarks its impact.
- Preparations are underway for the SPICE project's experiment at SC2005. This is a more ambitious follow-on to Teragyroid and will require improvements both to our port-forwarding software and to MPICH-G2.

3 Utilisation

3.1 By Job Size



3.2 By Consortium



4 Summary of Performance Metrics

<i>Metric</i>	<i>TSL</i>	<i>FSL</i>	<i>April</i>	<i>May</i>	<i>June</i>
Technology serviceability	80%	99.2%	100.0%	100.0%	100.0%
Technology MTBF (hours)	200	300	∞	∞	∞
Number of AV FTEs	7.5	10	15.4	15.5	17.6
Number of training days per month	22.5/12	30/12	6/4	9/5	9/6
Non in-depth queries resolved within 3 days	85%	97%	98.3%	100.0%	96.3%
Number of A&M FTEs	3.75	5.75	6.1	5.8	6.4
A&M serviceability	80%	99.6%	100.0%	98.3%	100.0%

<i>Colour</i>	<i>Meaning</i>
	Exceeds FSL
	Between TSL and FSL
	Below TSL

Note 1: The number of training days is reported as a running total since the start of the year.

Note 2: The above table includes the revised FSL targets for *training days* and *A&M serviceability*, which have been agreed with EPSRC.