HPCx Quarterly Report
July - September 2004

1 Executive Summary

- We have now agreed with EPSRC to increase the maximum number of concurrent consortia on HPCx to 40. As part of this agreement, there will be three additional science support posts funded from 2005 to 2008, which should allow us to continue to provide high quality support for all users.

- After installation of the improved HPS microcode, we repeated the implementation tests benchmark runs and reported these to EPSRC. The HPS latency was reduced from 10 microseconds to around 6 microseconds and half of the user benchmark codes saw improvements in excess of 10%.

- Utilisation has remained at around 75% since the upgrade to Phase 2 with around one-third of this being on capability jobs; we expect this position to continue throughout the rest of the year. As well as major users from Materials and Chemistry, there is significant capability usage from Engineering, Atomic & Molecular Physics and from the Terascaling team, as we work to ensure that a wide range of applications codes can effectively exploit large numbers of processors

- During this quarter, good performance improvements have been reported for SIESTA, VASP, NWChem and H2MOL. We have also begun working on the CENTORI fusion code and have made available two CFD codes for the UKAAC consortium.

- Another 4 technical reports have been published during this quarter taking our annual total to 13. Given our target of 12, we are clearly well ahead of schedule.

- The Software Engineering team has used a significant amount of effort this year on general terascaling techniques on HPCx-class systems. As well as direct benefits to specific codes, this work has formed the basis of our “Improved Performance Scaling” course; a version of this course has been accepted as a tutorial at SC2004.

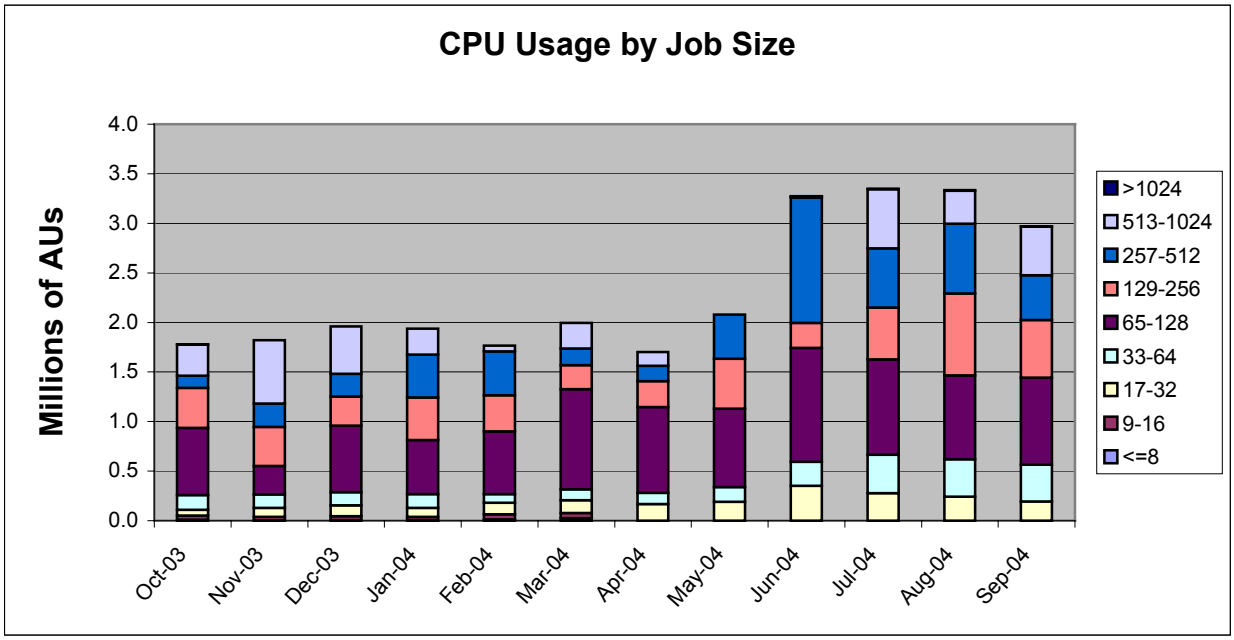
- IBM held a workshop in Manchester to allow users to input into IBM's priorities for system software; this will now be repeated annually.

- HPCx are represented on the steering committee investigating possible experiments with the US Teragrid sites following on from the very successful Teragyroid demonstrator.

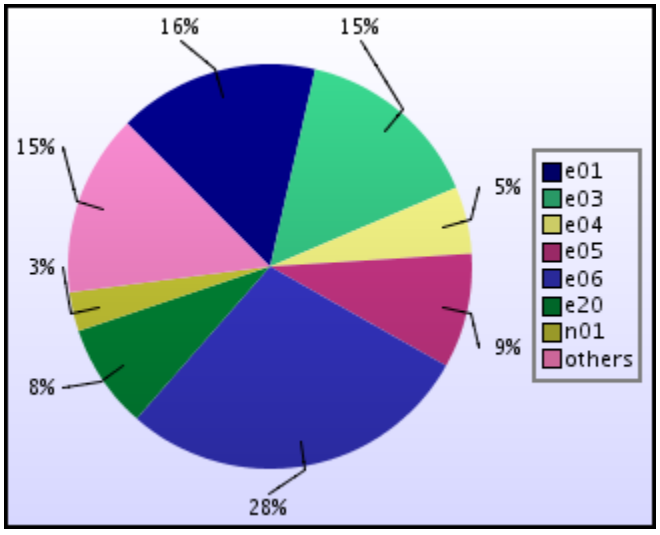
- As a result of the Life Sciences outreach activity, BBSRC usage of HPCx is now increasing and a number of groups are beginning to report interesting results.

2 Utilisation

2.1 By Job Size



2.2 By Consortium



3 Performance Metrics

Metric	*TSL*	*FSL*	*July*	*August*	*September*
Technology serviceability	80%	99.2%	99.8%	99.7%	99.9%
Technology MTBF (hours)	200	300	732	732	732
Number of AV FTEs	7.5	10	14.7	11.2	13.2
Number of training days per month	22.5/12	30/12	23/7	23/8	23/9
Non in-depth queries resolved within 3 days	85%	97%	100.0%	100.0%	99.0%
Number of A&M FTEs	3.75	5.75	6.2	6.0	6.3
A&M serviceability	80%	99.6%	98.8%	100.0%	99.4%

Colour	*Meaning*
	Exceeds FSL
	Between TSL and FSL
	Below TSL

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