HPCx Quarterly Report
October-December 2003

1 Executive Summary

- During this quarter, utilisation of the service has again increased to an average of 83% on the capability region.
- The job size using the most time remains 128 CPUs but the next largest was 1024 CPUs! More than 35% of the time was used on capability jobs.
- We expect demand to remain high during the first half of 2004 and that the Phase 2 machine will fill up reasonably quickly.
- We have now agreed to increase the maximum number of concurrent research groups to 30, as EPSRC have agreed to fund an additional post for 2004. The maximum may increase again to 35, if additional funding is forthcoming.
- There was a cluster of failures during October but since then the system has been remarkably stable. Overall, the MTBF and serviceability figures exceeded the Full Service Levels.
- The first part of the 'Early Access' Phase 2 system has now successfully passed its implementation tests. We now have a total of 8 Regatta H+ compute frames connected with a pre-General Availability HPS (High Performance Switch, previously referred to as 'Federation').
- We have agreed a phased transition plan to a full Phase 2 system, which will minimise the total amount of down-time. EPSRC have agreed to meet £50K of associated costs.
- We have now developed a proposal for archiving access, which we believe meets users needs; this was announced at the User Group meeting and received a favourable response. We are aiming for beta test access for users during January with full roll-out later in 1Q04.

- The TeraGyroid project was successfully demonstrated at SC2003 and won the HPC Challenge Award for Most Innovative Data-Intensive Application.

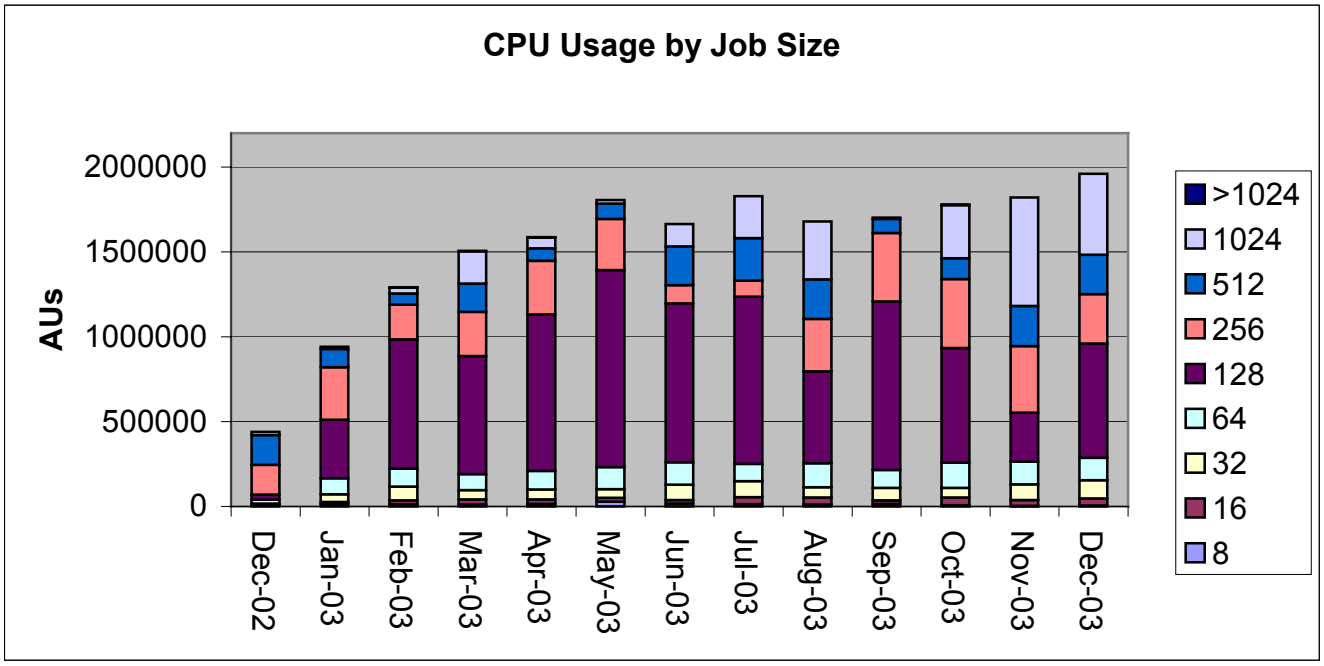
- The First HPCx Annual Seminar was held at Daresbury on 10 December, immediately preceding the Machine Evaluation Workshop. The Annual Seminar was well attended and had high quality speakers on a good variety of topics. A successful User Group meeting was held following the seminar.

- The Terascaling team produced a paper looking at the efficiency on HPCx of ten user application codes from a variety of different scientific areas. This paper focused on serial efficiency as the limiting factor on overall achieved efficiency. This suite of codes demonstrated efficiencies of 10% to 20%.

- We have recently developed a Performance Optimisation course to help users maximise the efficiency of their codes. The first run of this was held at Daresbury on the day before the Annual Seminar. This run went very well and attracted around a dozen HPCx users.

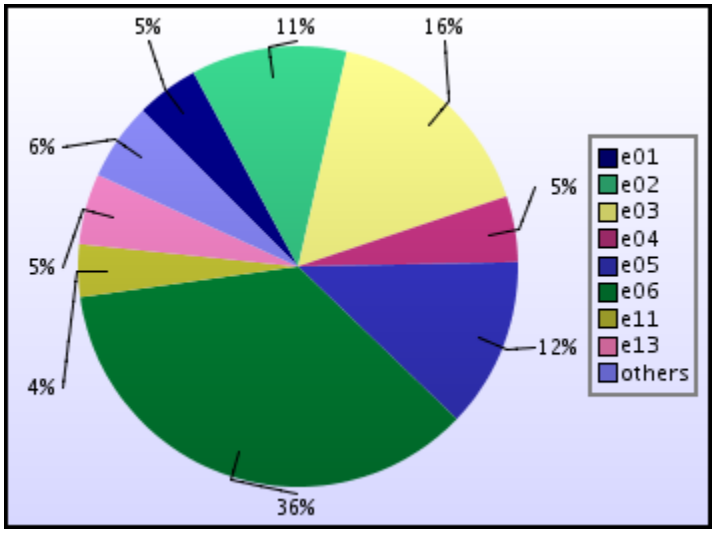
2 Utilisation

2.1 By Job Size



During this quarter, utilisation by jobs of at least 256 CPUs has increased to 56% of the total and capability utilisation has increased to more than 36%.

2.2 By Consortium



3 Summary of Performance Metrics

Metric	*TSL*	*FSL*	*October*	*November*	*December*
Technology serviceability	80%	99.2%	98.2%	99.9%	100.0%
Technology MTBF (hours)	200	300	209	1464	∞
Number of AV FTEs	7.5	10	11.2	13.0	10.8
Number of training days per month	30/12	40/12	40/10	49/11	50/12
Non in-depth queries resolved within 3 days	85%	97%	100.0%	100.0%	100.0%
Number of A&M FTEs	3.75	5.75	7.9	6.5	5.4
A&M serviceability	80%	100%	98.8%	99.9%	99.7%

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.