

CSAR Service - Management Report

January 2003

This report documents the quality of the CSAR service during the month of January 2003.

A more comprehensive report is provided quarterly, which additionally covers wider aspects of the Service such as information on Training, Application Support and Value-Added services.

This and other such reports are made available through the Web to staff within EPSRC and the other Research Councils, to CfS staff and CSAR Service users. The reports are indexed in a similar way to that which other useful information and news are listed for selection.

1. Introduction

This document gives information on Service Quality and on actual usage of the CSAR Service during the reporting period of January 2003. The information, in particular, covers the availability and usage of the main CSAR Service High Performance Computing (HPC) systems:

- Cray T3E-1200E/776 (Turing)
- SGI Origin2000/128 (Fermat)
- SGI Origin3000/512 (Green)
- SGI Origin300/16 (Wren)

The information is provided in both textual and graphical form, so that it is easier to see trends and variances.

January has seen the workload of the three primary systems at variable levels.

LSF, with CPUsets, is now in full production usage on Fermat and Green, with usage of these systems growing steadily.

2. Service Quality

This section covers overall Customer Performance Assessment Ratings (CPARS), HPC System availability and usage, Service Quality Tokens and other information concerning issues, progress and plans for the CSAR Service.

2.1 CPARS

Table 1 gives the measure by which the quality of the CSAR Service is judged. It identifies the metrics and performance targets, with colour coding so that different levels of achievement against targets can be readily identified. Unsatisfactory actual performance will trigger corrective action.

CSAR Service - Service Quality Report - Performance Targets

Service Quality Measure	Performance Targets					
	White	Blue	Green	Yellow	Orange	Red
HPC Services Availability						
Availability in Core Time (% of time)	> 99.9%	> 99.5%	> 99.2%	> 98.5%	> 95%	95% or less
Availability out of Core Time (% of time)	> 99.8%	> 99.5%	> 99.2%	> 98.5%	> 95%	95% or less
Number of Failures in month	0	1	2 to 3	4	5	> 5
Mean Time between failures in 52 week rolling period (hours)	>750	>500	>300	>200	>150	otherwise
Fujitsu Service Availability						
Availability in Core Time (% of time)	> 99.9%	> 99.5%	> 99.2%	> 98.5%	> 95%	95% or less
Availability out of Core Time (% of time)	> 99.8%	> 99.5%	> 99.2%	> 98.5%	> 95%	95% or less
Help Desk						
Non In-depth Queries - Max Time to resolve 50% of all queries	< 1/4	< 1/2	< 1	< 2	< 4	4 or more
Non In-depth Queries - Max Time to resolve 95% of all queries	< 1/2	< 1	< 2	< 3	< 5	5 or more
Administrative Queries - Max Time to resolve 95% of all queries	< 1/2	< 1	< 2	< 3	< 5	5 or more
Help Desk Telephone - % of calls answered within 2 minutes	>98%	> 95%	> 90%	> 85%	> 80%	80% or less
Others						
Normal Media Exchange Requests - average response time	< 1/2	< 1	< 2	< 3	< 5	5 or more
New User Registration Time (working days)	< 1/2	< 1	< 2	< 3	< 4	otherwise
Management Report Delivery Times (working days)	< 1	< 5	< 10	< 12	< 15	otherwise
System Maintenance - no. of sessions taken per system in the month	0	1	2	3	4	otherwise

Table 1

Table 2 gives actual performance information for the period of January 1st to 31st inclusive.

Overall, the CPARS Performance Achievement in January was satisfactory (see Table 3); i.e. Green measured against the CPARS performance targets. The Fujitsu availability figures are included in Table 2, but not Table 3 as they have zero weighting in CPARS terms.

CSAR Service - Service Quality Report - Actual Performance Achievement

Service Quality Measure	2002/3											
	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan
HPC Services Availability												
Availability in Core Time (% of time)	99.73%	99.70%	96.17%	96.08%	97.66%	99.2%	99.75%	98.75%	99.77%	99.25%	99.21%	99.46%
Availability out of Core Time (% of time)	99.85%	99.97%	97.75%	99.90%	99%	100%	100%	99.42%	99.52%	99.57%	100%	99.89%
Number of Failures in month	1	2	2	1	4	0	1	2	1	1	0	3
Mean Time between failures in 52 week rolling period (hours)	324	313	302	324	313	365	381	381	398	417	515	487
Fujitsu Service Availability												
Availability in Core Time (% of time)	100%	100%	96.89%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Availability out of Core Time (% of time)	100%	100%	98.92%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Help Desk												
Non In-depth Queries - Max Time to resolve 50% of all queries	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Non In-depth Queries - Max Time to resolve 95% of all queries	<2	<1	<1	<2	<5	<2	<2	<1	<2	<2	<2	<0.5
Administrative Queries - Max Time to resolve 95% of all queries	<1	<2	<2	<3	<5	<2	<0.5	<2	<0.5	<0.5	<0.5	<1
Help Desk Telephone - % of calls answered within 2 minutes	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Others												
Normal Media Exchange Requests - average response time	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
New User Registration Time (working days)	0	0	0	0	0	0	0	0	0	0	0	0
Management Report Delivery Times (working days)	10	10	10	10	10	10	10	10	10	10	10	10
System Maintenance - no. of sessions taken per system in the month	2	2	2	2	2	2	2	2	2	2	2	2

Table 2

Notes:

- HPC Services Availability has been calculated using the following formulae, based on the relative NPB performance of Turing, Fermat and Green at installation:

$$\text{Turing availability} \times 143/(143+40+233) + [\text{Fermat availability} \times 40/(143+40+233) + \text{Green availability} \times 233/(143+40+233)]$$
- Mean Time between failures for Service Credits is formally calculated based on a rolling 12 month period.

Table 3 gives Service Credit values for the month of January. These will be accounted on a quarterly basis, formally from the Go-Live Date. The values are calculated according to agreed Service Credit Ratings and Weightings.

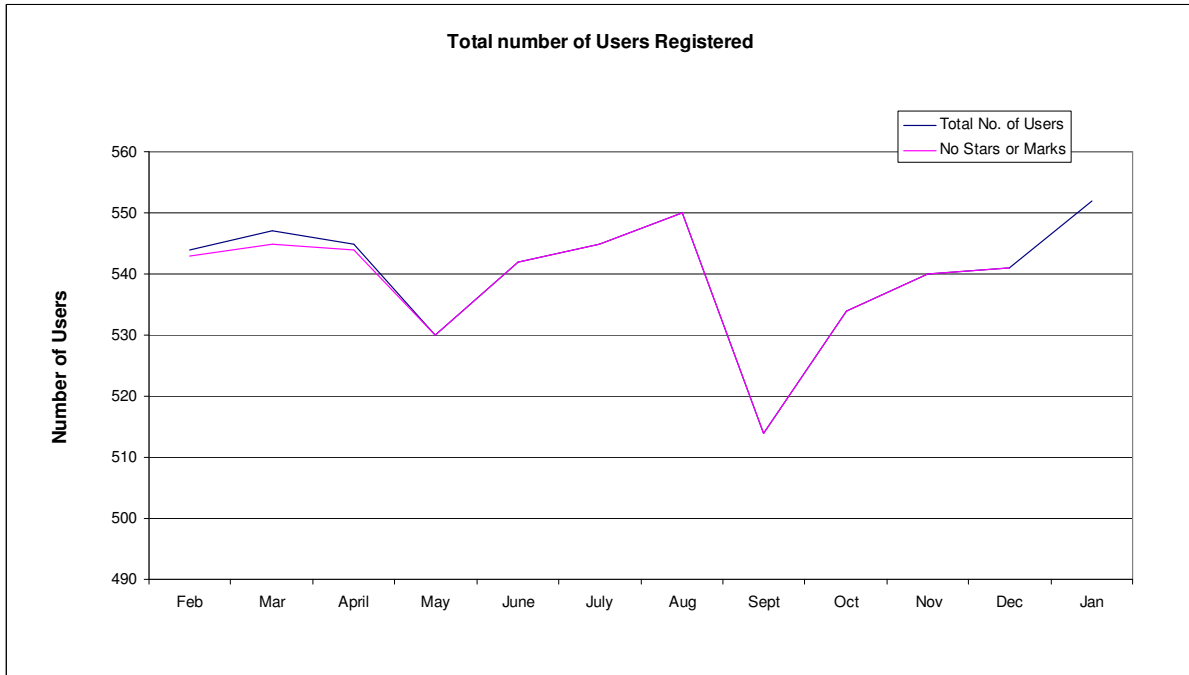
CSAR Service - Service Quality Report - Service Credits

Service Quality Measure	2002/3											
	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan
HPC Services Availability												
Availability in Core Time (% of time)	-0.039	-0.039	0.078	0.078	0.078	0	-0.039	0.039	-0.039	0	0	0
Availability out of Core Time (% of time)	-0.047	-0.047	0.039	-0.047	0.000	-0.047	-0.047	0	-0.039	-0.039	-0.047	-0.047
Number of Failures in month	-0.008	0	0	-0.008	0.000	-0.009	-0.008	0	-0.008	-0.008	-0.009	0
Mean Time between failures in 52 week rolling period (hours)	0	0	0	0	0	0	0	0	0	0	-0.008	0
Help Desk												
Non In-depth Queries - Max Time to resolve 50% of all queries	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019
Non In-depth Queries - Max Time to resolve 95% of all queries	0	-0.016	-0.016	0	0.031	0	0	-0.016	0	0	0	-0.019
Administrative Queries - Max Time to resolve 95% of all queries	-0.016	0	0	0.016	0.031	0	-0.019	0	-0.019	-0.019	-0.019	-0.016
Help Desk Telephone - % of calls answered within 2 minutes	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004
Others												
Normal Media Exchange Requests - average response time	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
New User Registration Time (working days)	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019	-0.019
Management Report Delivery Times (working days)	0	0	0	0	0	0	0	0	0	0	0	0
System Maintenance - no. of sessions taken per system in the month	0	0	0	0	0	0	0	0	0	0	0	0
Monthly Total & overall Service Quality Rating for each period:	-0.08	-0.07	0.03	0.00	0.05	-0.05	-0.08	-0.01	-0.07	-0.05	-0.06	-0.06

Table 3

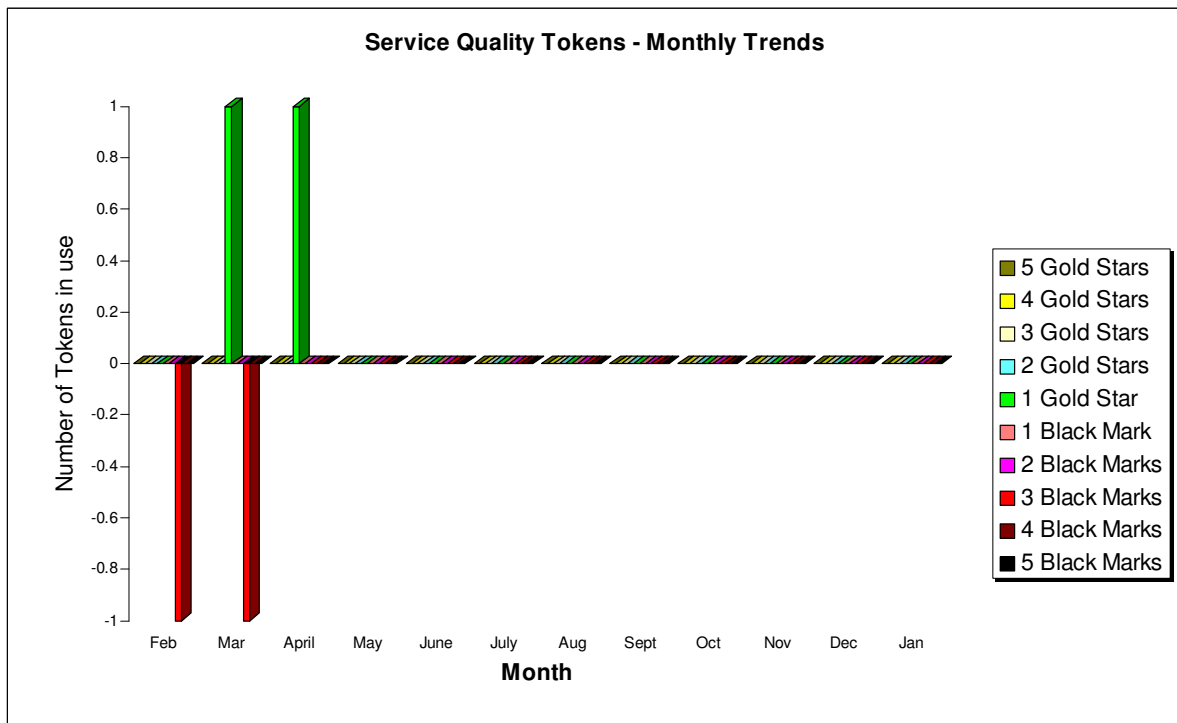
2.2 Service Quality Tokens

The position at the end of January 2003 is that none of the 552 users had awarded either black marks or gold stars to the service.



The graph above shows the total number of registered users on the CSAR Service and the number of users holding a neutral view of the service.

The graph below illustrates the monthly usage trend of quality tokens:



The current status of the Stendahl tokens is that there are no black marks or gold stars allocated to the service.

2.3 Throughput Target against Baseline

The baseline is shown in GFLOP-Years for consistency with the other information contained within this report.

The Baseline Target for throughput was achieved this month. The actual usage figure was 128% of Baseline capacity.

Job Throughput Against Baseline CSAR Service Provision

Period: 1st to 31st January 2003

	Baseline Capacity for Period (GFLOP Years)	Actual Usage in Period (GFLOP Years)	Actual % Utilisation c/w Baseline during Period
1. Has CIS failed to deliver Baseline MPP Computing Capacity for EPSRC?	12.17	15.62	128.3%
2. Have Users submitted work demanding > 110% of the Baseline during period?	12.17	17.2	Job Demand above 110% of Baseline during Period (Yes/No)? Yes
3. Are there User Jobs outstanding at the end of the period over 4 days old?		Number of Jobs at least 4 days old at end Period 3	Number of Jobs at least 4 days old at end Period is not zero (Yes/No)? Yes
4. Have Users submitted work demands above 90% of the Baseline during period?		Minimum Job Time Demands as % of Baseline during Period 61%	Minimum Job Time Demand above 90% of Baseline during Period (Yes/No)? No
5. Majority of Job Queues contained jobs from Users for more than 97% during period?	4	Average % of time each queue contained jobs in the Period 79%	Average % of time each queue contained jobs in the Period is > 97%? No

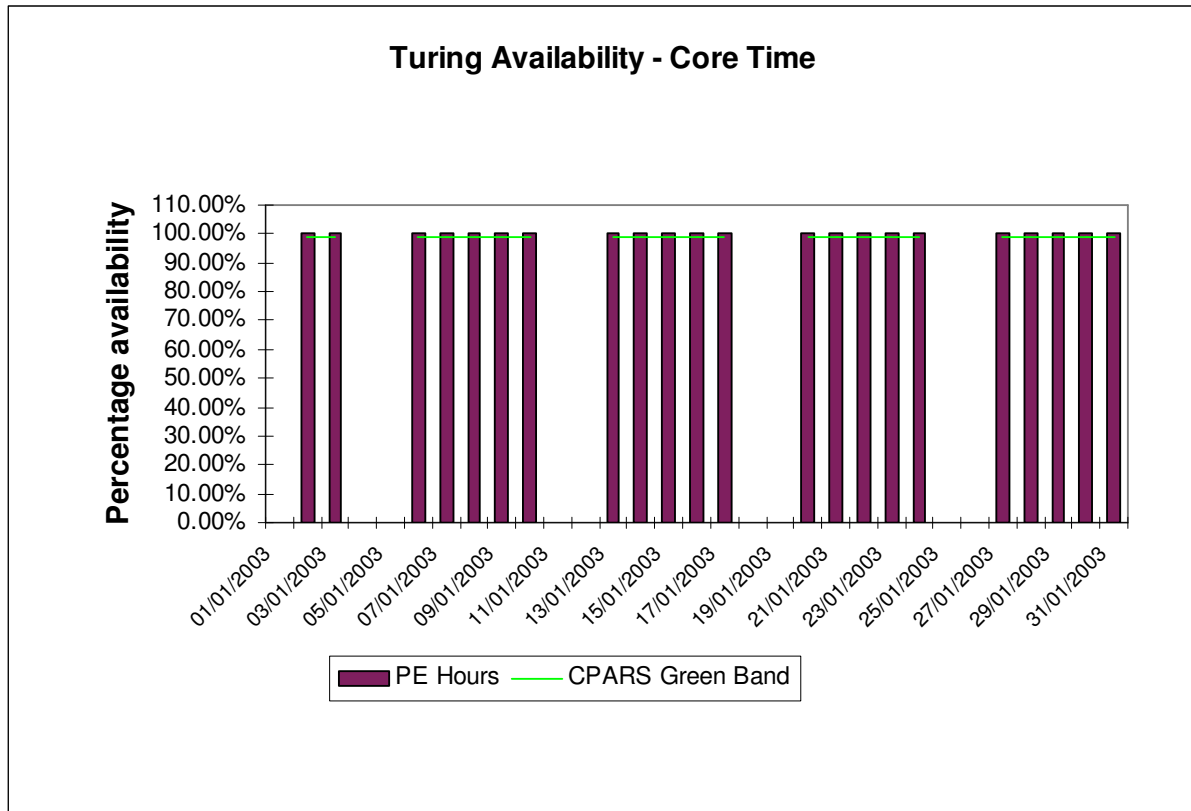
3. System Availability

Service availability each reporting period is calculated as a percentage of actual availability time over theoretical maximum time, after accounting for planned breaks in service for preventative maintenance.

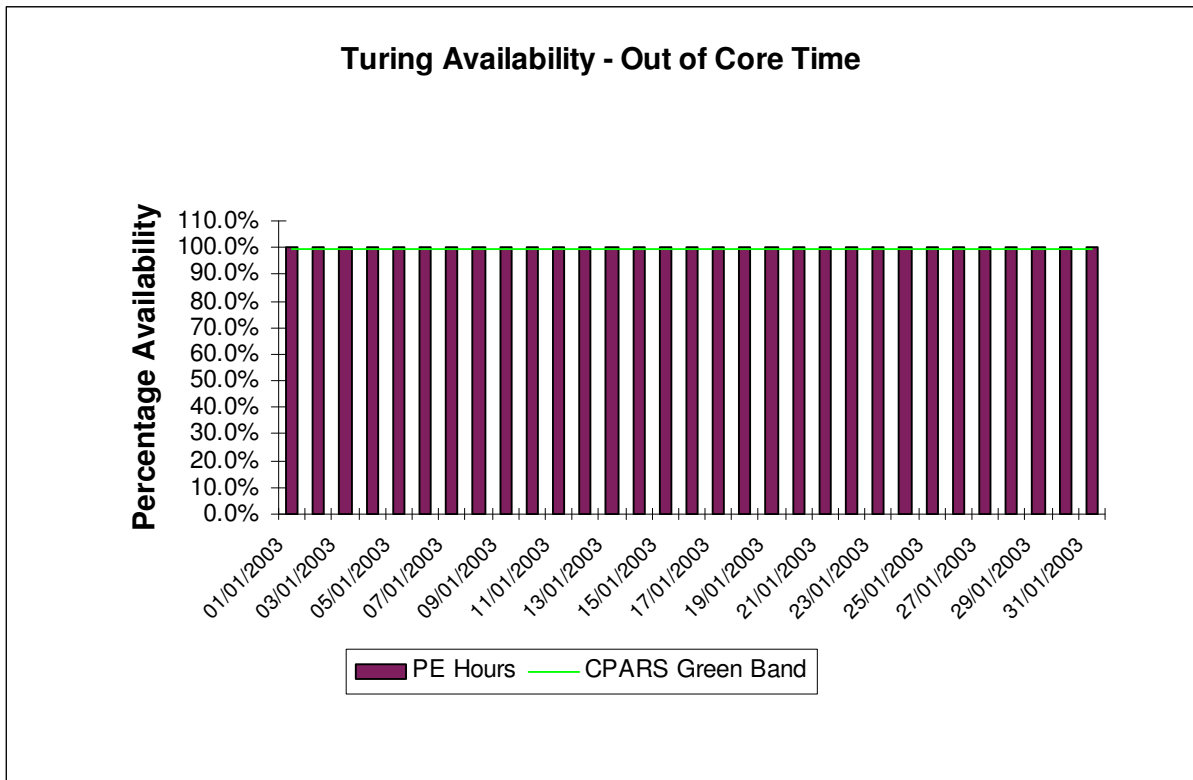
3.1 Cray T3E-1200E System (Turing)

The following graphs show the availability of Turing both in core time and out of core time respectively during the period of 1st to 31st January.

Turing availability for January:



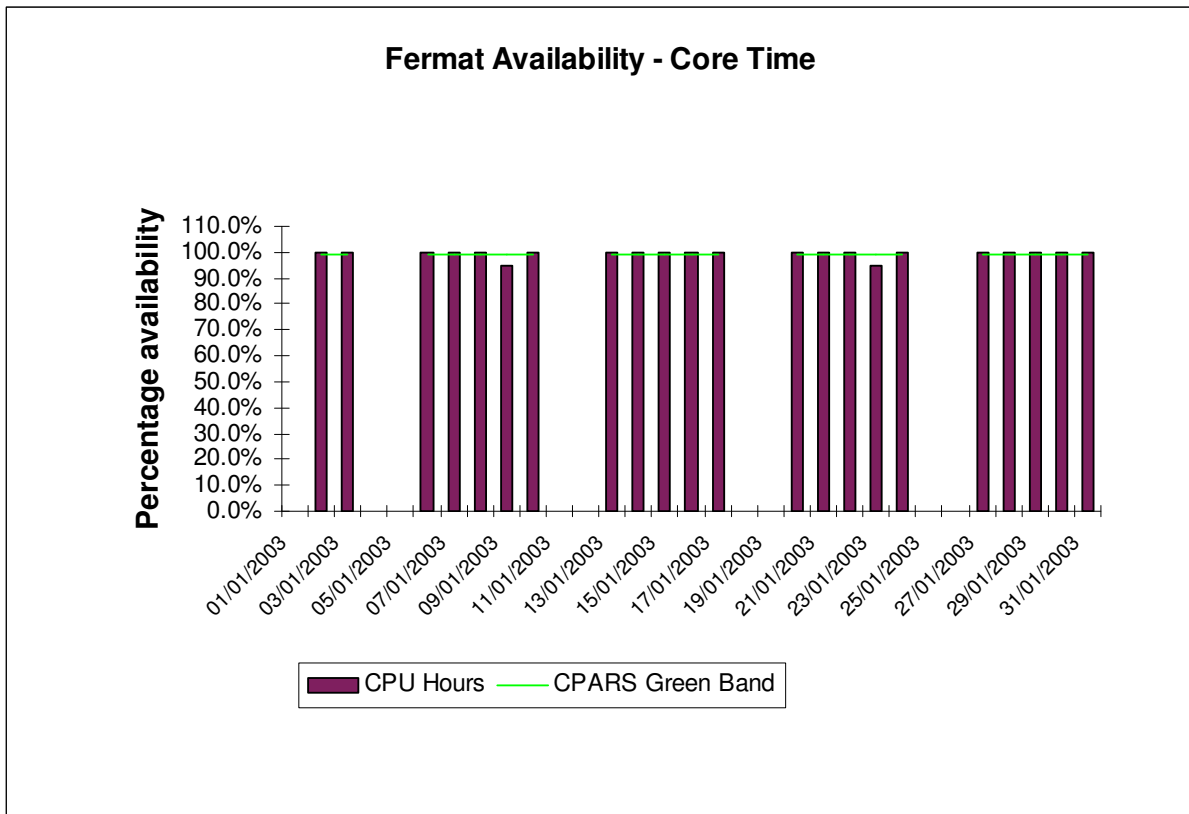
Availability of Turing in core time during January was excellent, with no outages.



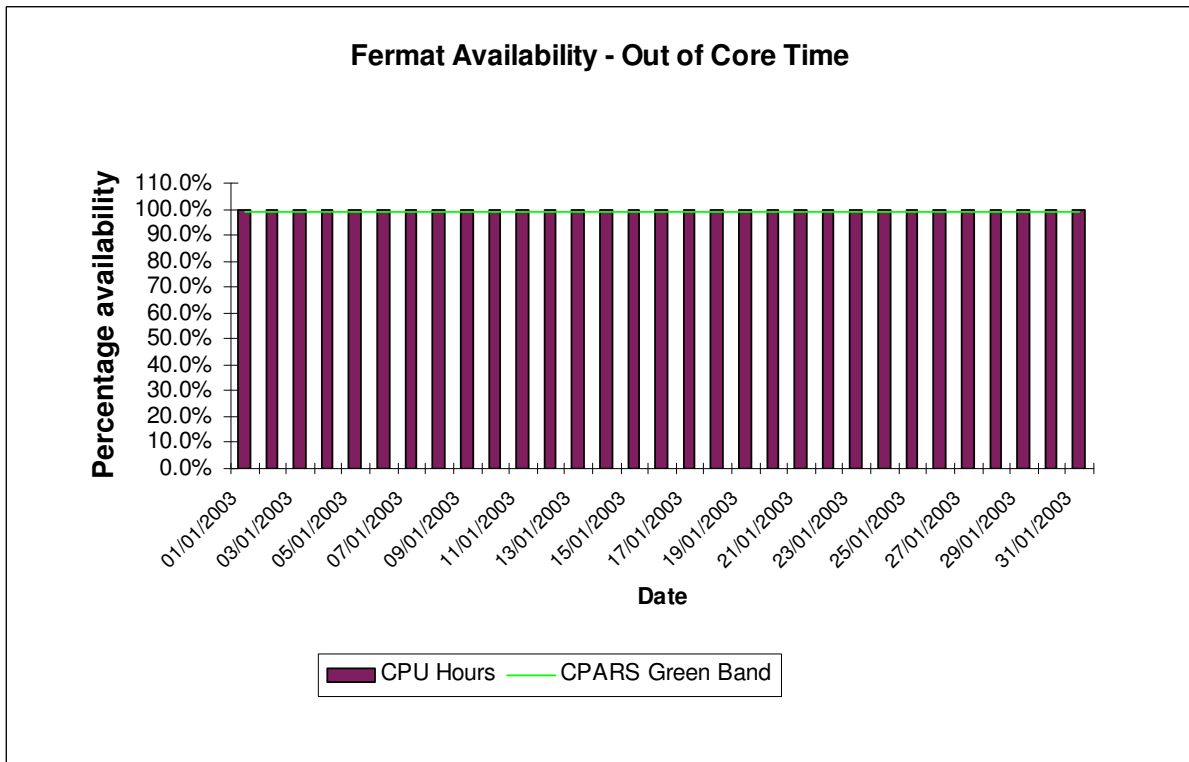
Availability of Turing out of core time during January was excellent, with no outages.

3.2 SGI Origin2000 System (Fermat)

The following graphs show the availability of Fermat both in core time and out of core time respectively.



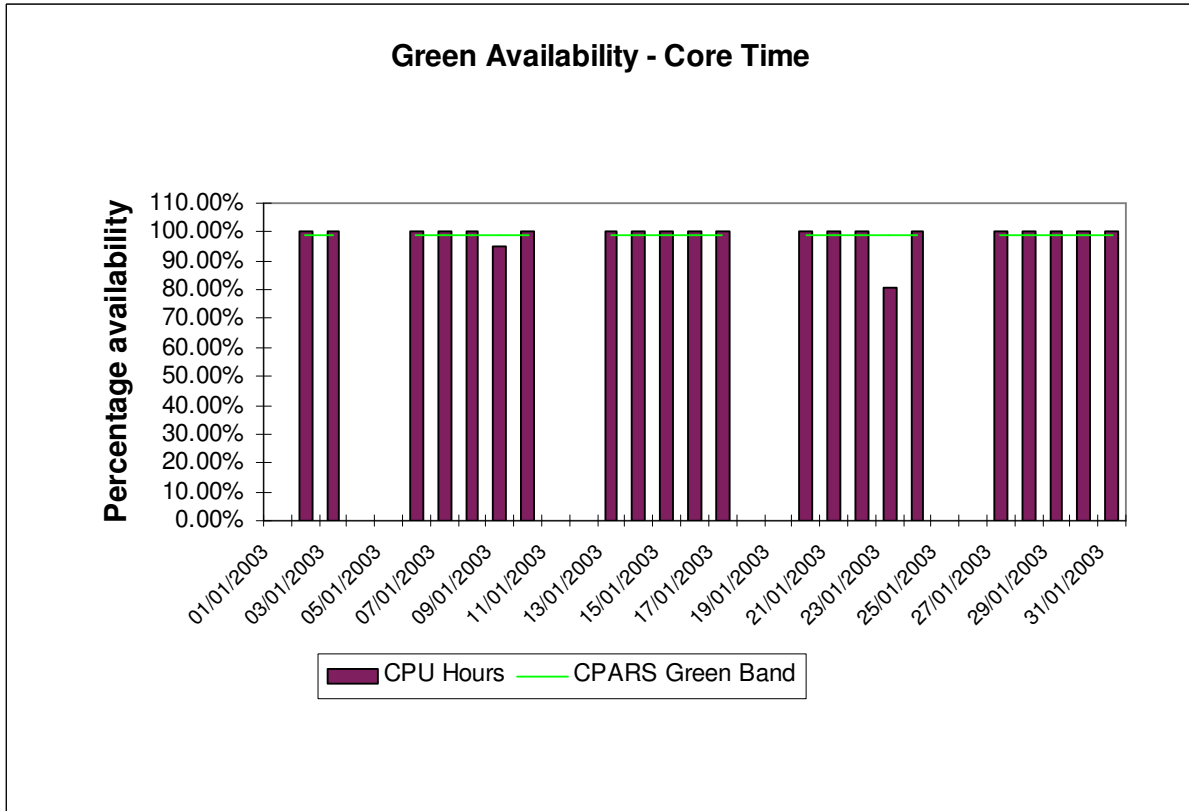
Availability of Fermat in core time during January was good, with two short outages.



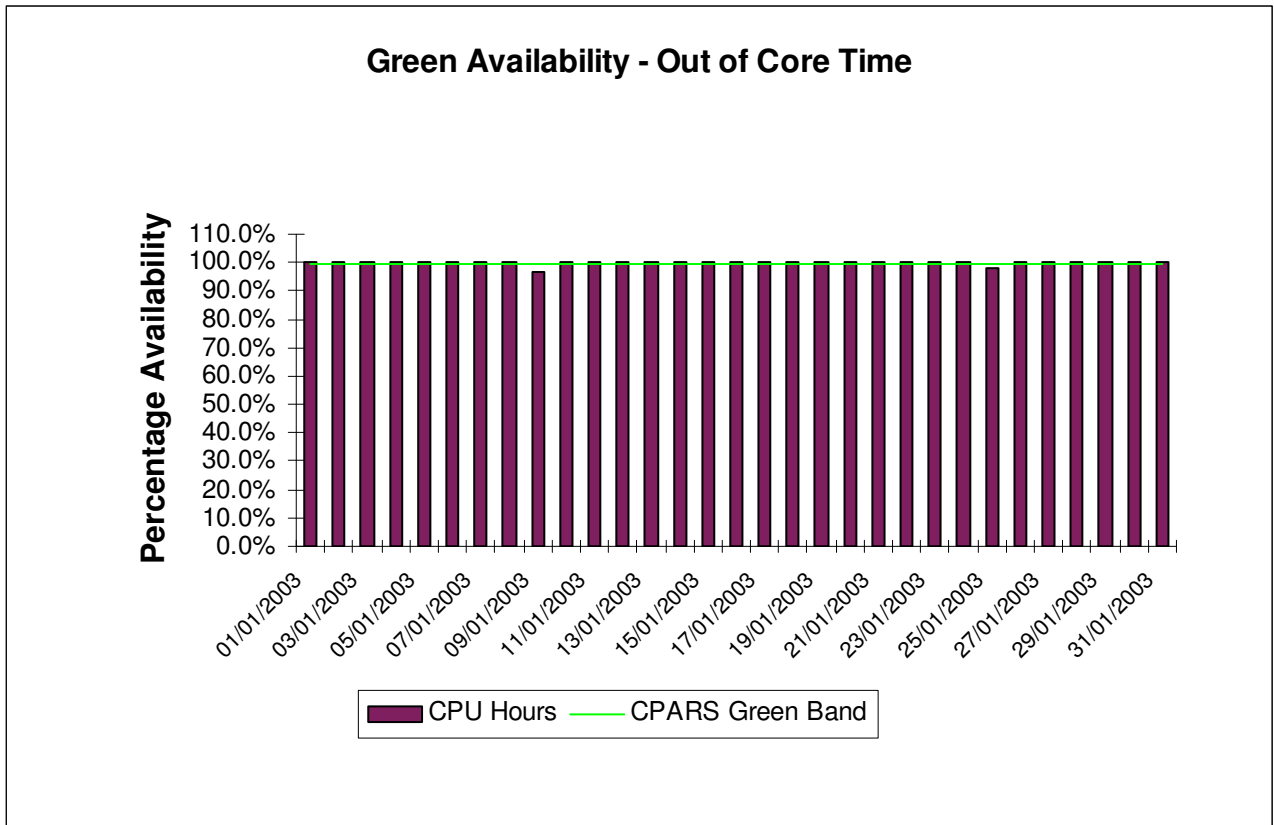
Availability of Fermat out of core time during January was excellent, with no outages.

3.3 SGI Origin3000 System (Green)

The following graphs show the availability of Green both in core time and out of core time respectively.



Availability of Green in core time during January was good, with outages on the 9th and 23rd.



Availability of Green out of core time during January was very good, with two short outages.

4. HPC Services Usage

Usage information is given in tabular form, in Appendices, and in graphical format. The system usage information for the period of January 1st to 31st is provided by Project/User Group, totalled by Research Council and overall. This covers:

- CPU usage
 - Turing: 426,471 PE Hours
 - Fermat (Batch): 13,663 CPU Hours
 - Fermat (Interactive): 726.41 CPU Hours
 - Wren (Batch): 0.43 CPU Hours
 - Wren (Interactive): 67.84 CPU Hours
 - Green: 91,202 CPU Hours
- Fujitsu CPU usage
 - Fuji: 3,572 CPU Hours
- User Disk allocation
 - Turing: 69.91 GB Years
 - Fermat: 101.89 GB Years
 - SAN HV: 11.07 GB Years
- HSM/tape usage
 - 3,573 GB Years

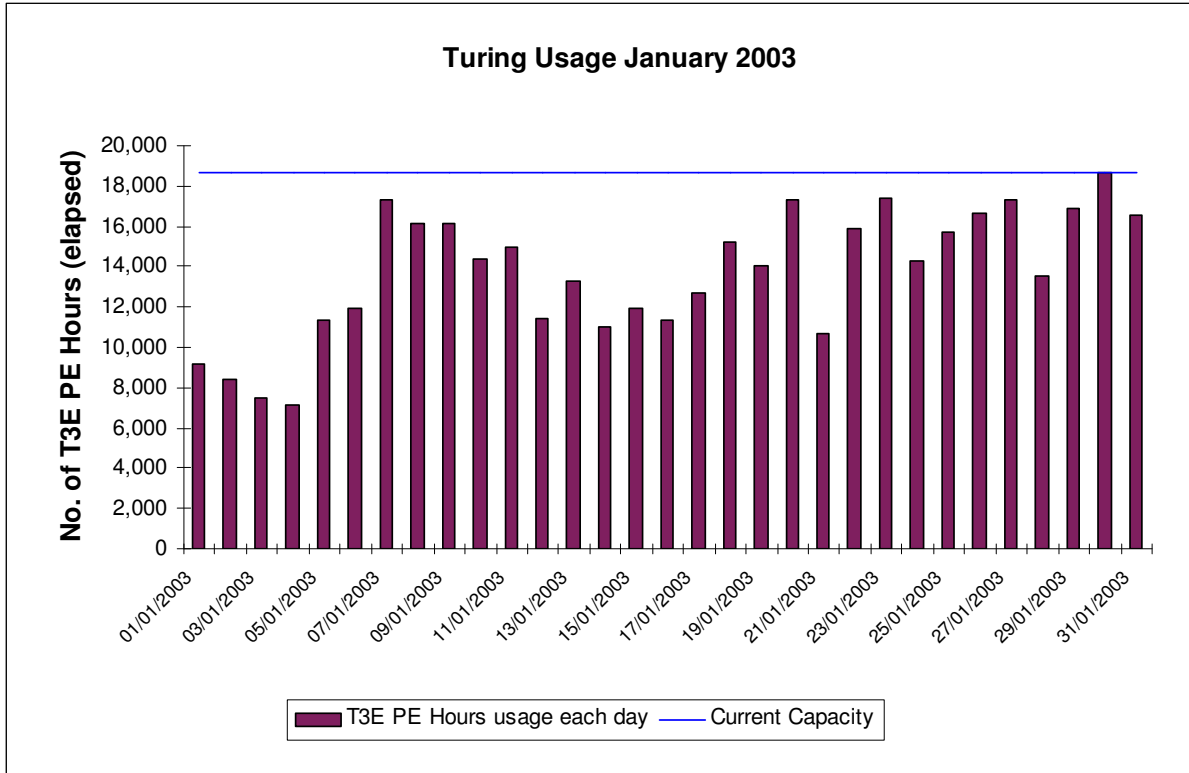
In addition, the following graphs are provided to illustrate usage per month, historically:

- a) MPP/SMP (T3E/Origin) Usage by month, showing usage each month of CPU (GFLOP-Years as per NPB), split by Research Council and by system. The Baseline and the overall Capacity are shown by overlaid horizontal lines.
- b) SMP (Origin) Usage by month, showing usage each month in CPU Hours, split by Research Council and giving the equivalent GFLOP-Years as per NPB. The Baseline Capacity is shown by an overlaid horizontal line.
- c) High Performance Disk (T3E) allocated for User Data by month, showing the allocated space each month in GBytes, split by Research Council. The Baseline Capacity (1 Terabyte) is shown by an overlaid horizontal line.
- d) Medium Performance Disk (Origin) allocated for User Data by month, showing the allocated space each month in GBytes, split by Research Council. The Baseline Capacity (1.5 Terabytes) is shown by an overlaid horizontal line.
- e) HSM/Tape Usage (T3E) by month, showing the volumes held each in GBytes, split by Research Council. The Baseline Capacity (16 Terabytes) available will be shown by an overlaid horizontal line.

4.1 Cray T3E-1200E System (Turing)

The following graph shows the usage of Turing during each day of January 2003. Note that there is some variance on a day-to-day basis as the accounts record job times, and thus CPU usage figures, at the time of job completion which could be the second actual day for large jobs. At present, there is a 24 hour limit on jobs so that they are check-pointed, and computational time lost due to any failure is well managed. Higher limits can be set for individual jobs on request.

Turing usage for January:



The above usage graph for the Turing system shows that the overall workload was high.

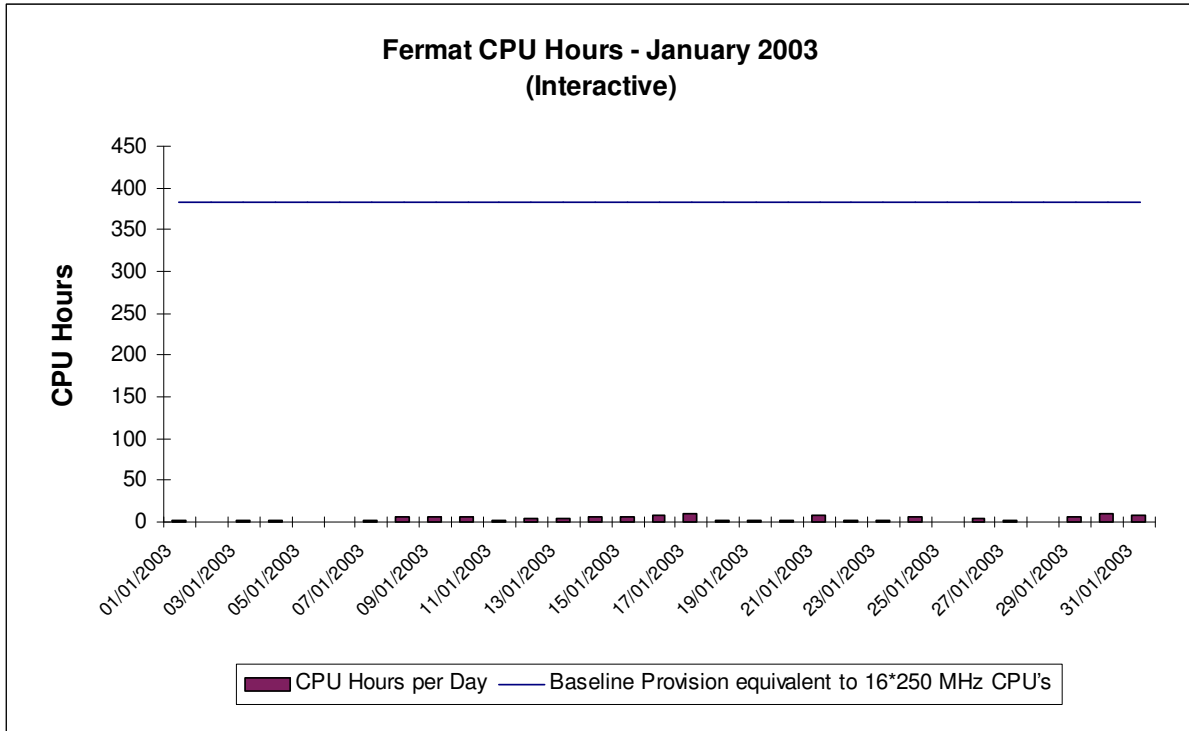
The graph also indicates the workload reached 100% of maximum theoretical capacity some parts of the month.

Fine tuning of the CfS scheduling system will continue to ensure minimal wasting of PE resource, in order to fit in a number of different sized jobs (e.g. 32, 64, 128, 256) thus facilitating maximised job throughput.

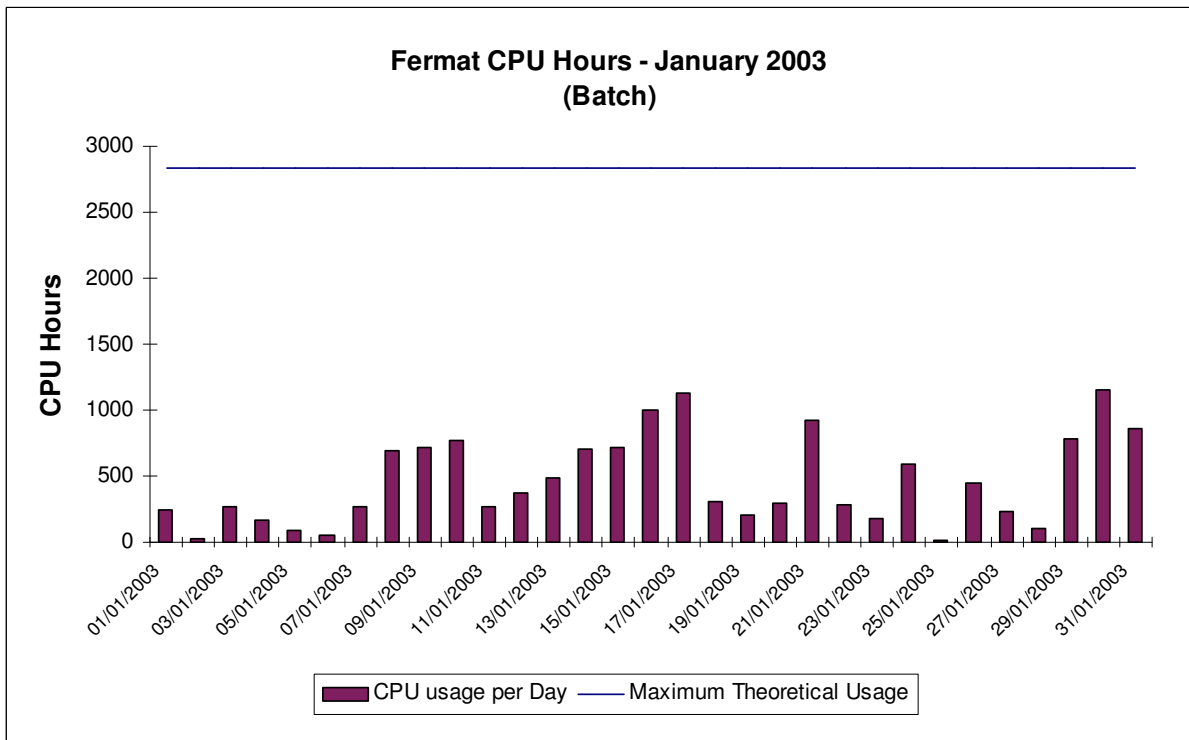
In particular, Turing will continue to start large jobs above 256 PEs, including 512 PEs, when they are queued subject to the overall workload.

4.2 SGI Origin2000 System (Fermat)

The usage of the Origin system was low. The groups most heavily using the Fermat system are CSE002 (Wander), CSE009 (Slater), and CSN001 (De Cuevas).

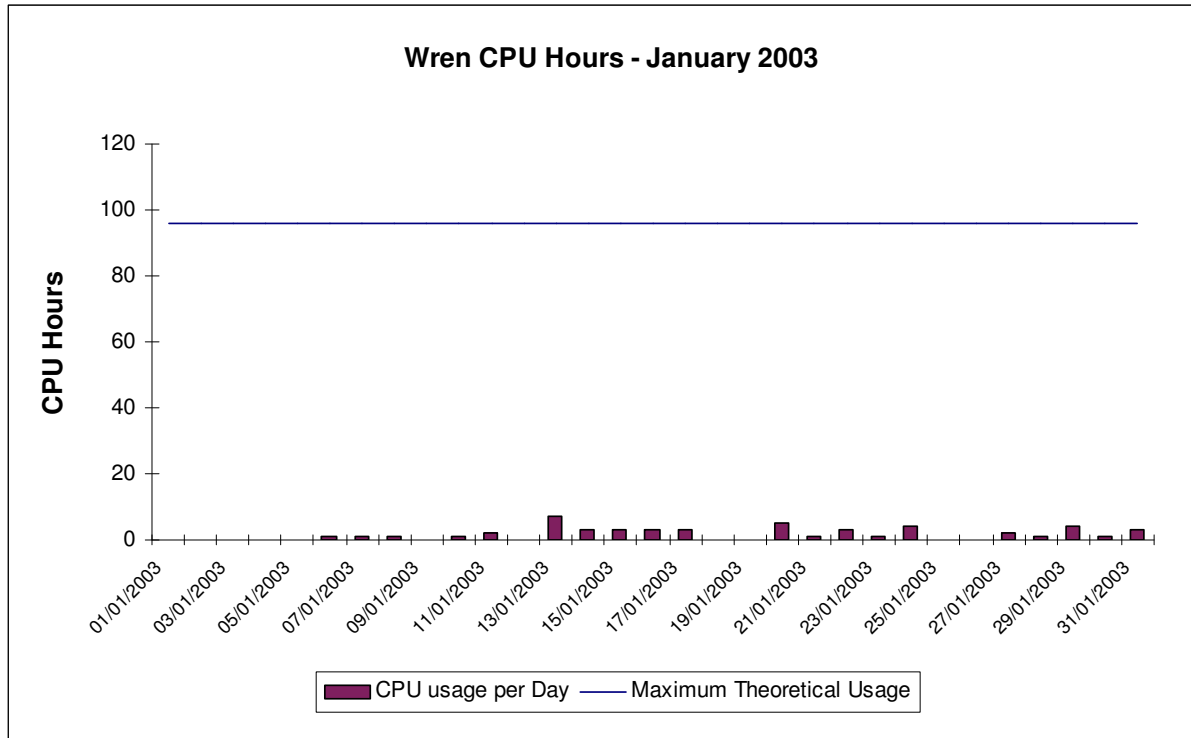


The graph above shows the interactive usage of the Origin 2000 (Fermat).



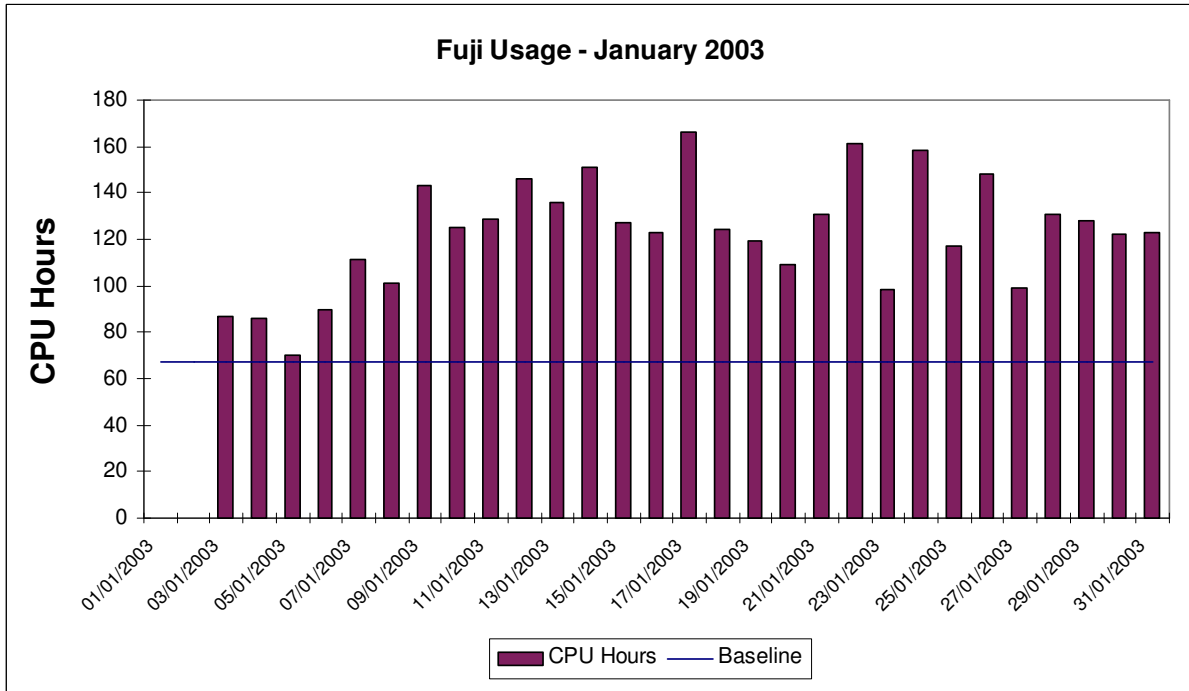
The above graph to a different scale shows the variable batch utilisation of the Origin 128.

4.3 SGI Origin300 System (Wren)



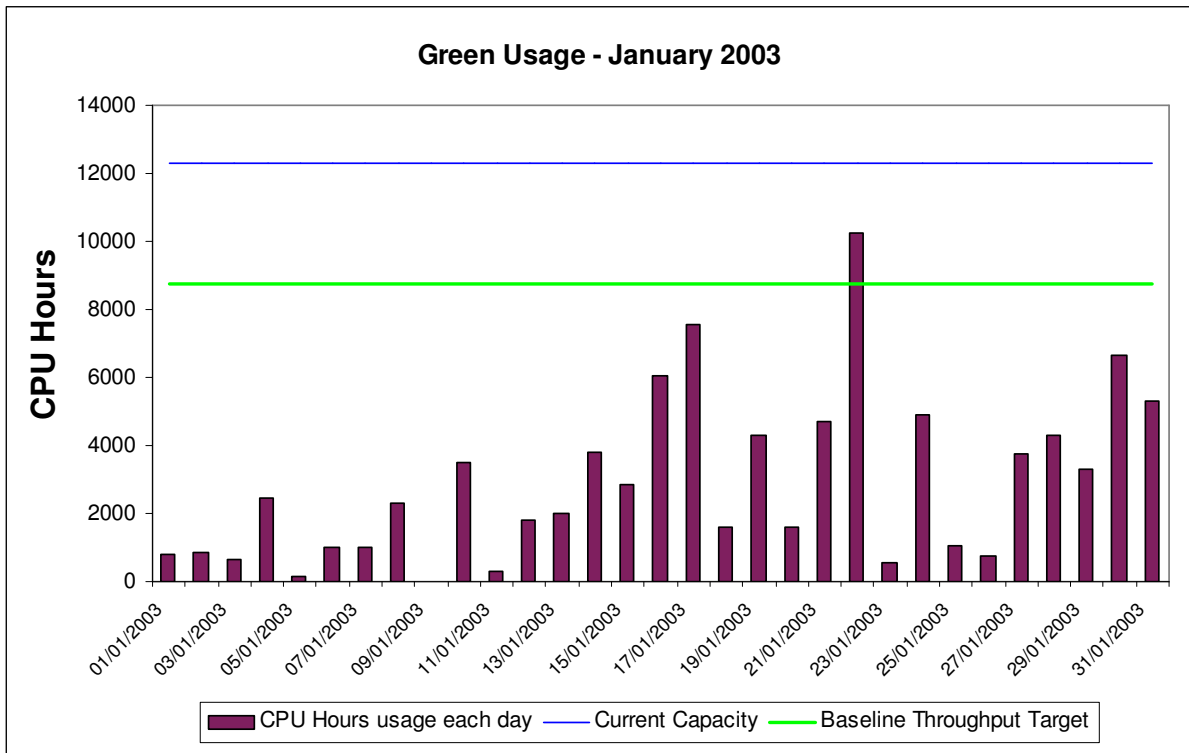
The above graph shows the utilisation of the new SGI system Wren for the month of January. Wren will take over as the interactive machine from Fermat from the end of February, with just a small number of CPUs available for batch compilation jobs.

4.4 Fujitsu VPP 300/8 System (Fuji)



Fuji utilisation was again variable over the month with the overall position resulting in usage above baseline.

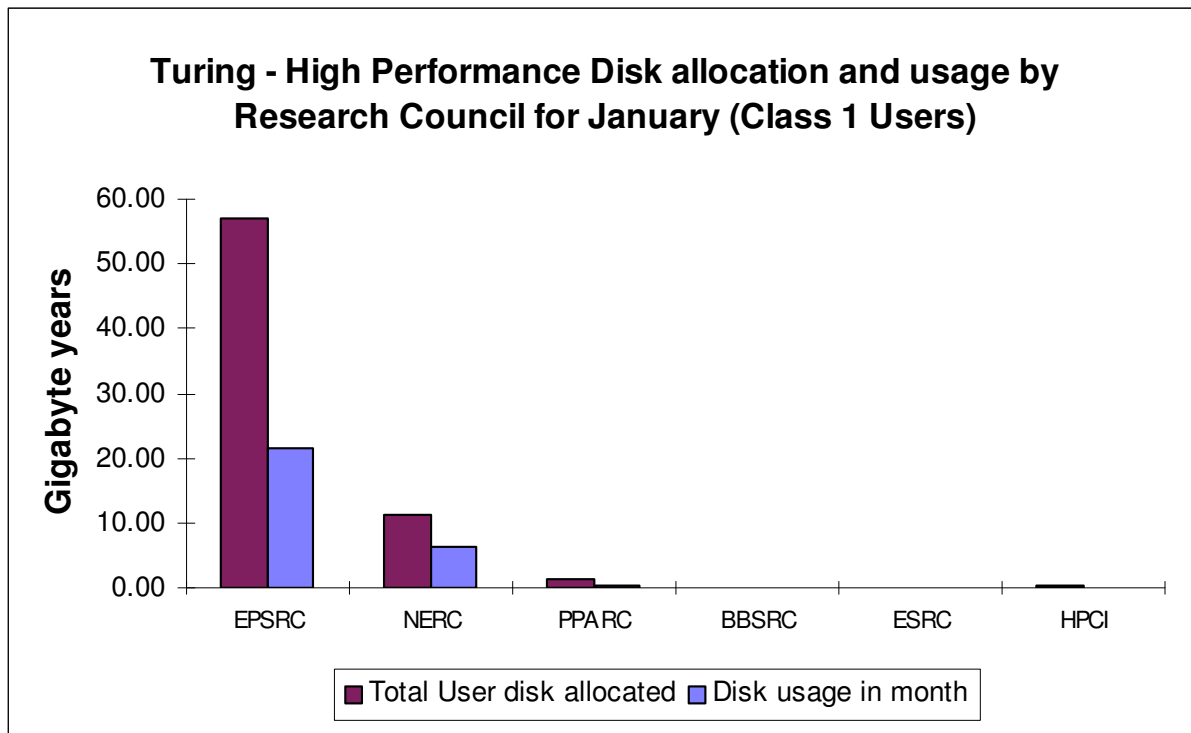
4.5 SGI Origin3000 System (Green)



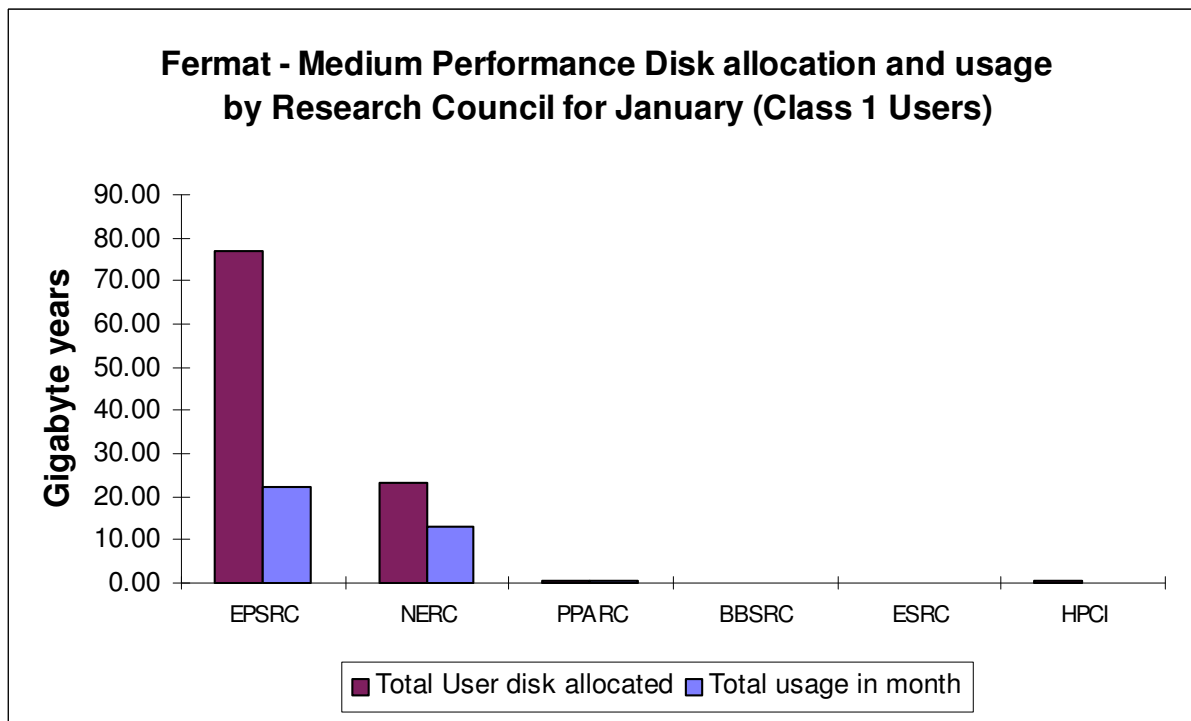
The above graph shows the utilisation of Green for the month of January.

4.6 Disk/HSM Usage Chart

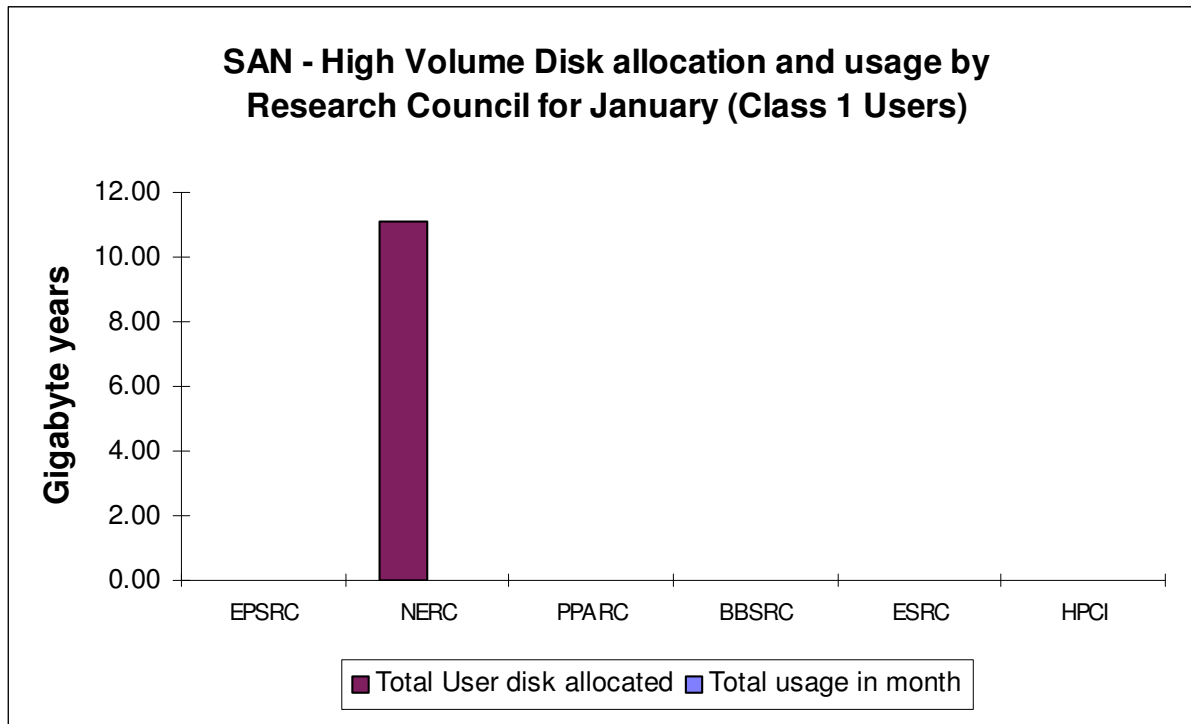
The graphs below show current disk and HSM allocations and usage.



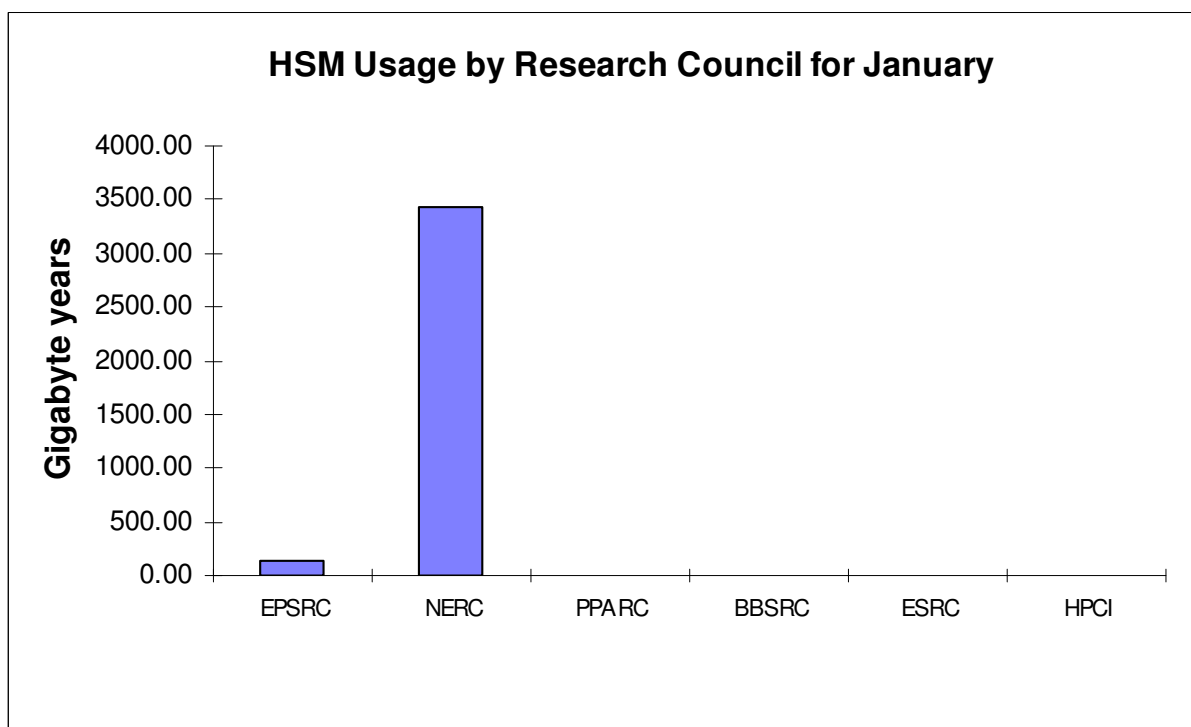
The preceding graph shows actual usage on average against the current allocation of disk on the Turing system.



The above graph shows the disk allocations against usage on average of the disk on Fermat.

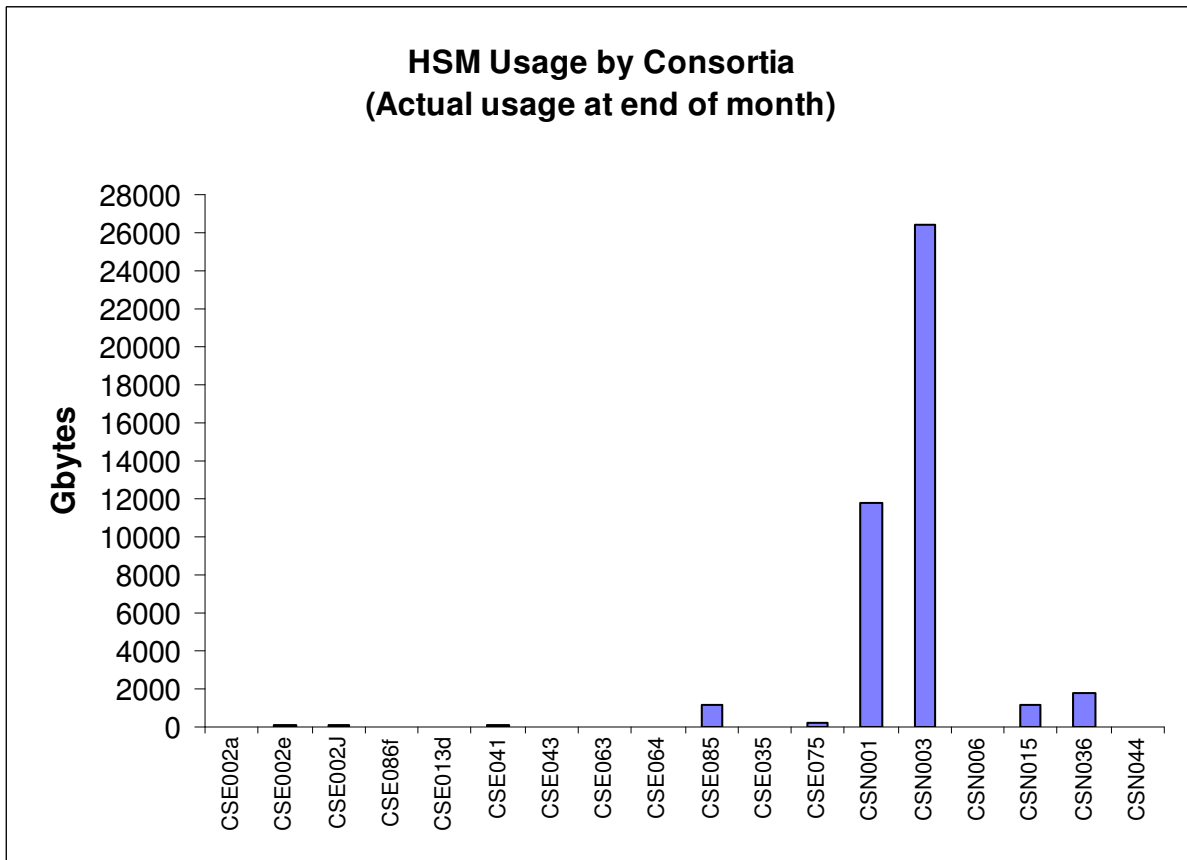


The above graph shows the disk allocation against usage on average of the new SAN High Volume (HV) disk.

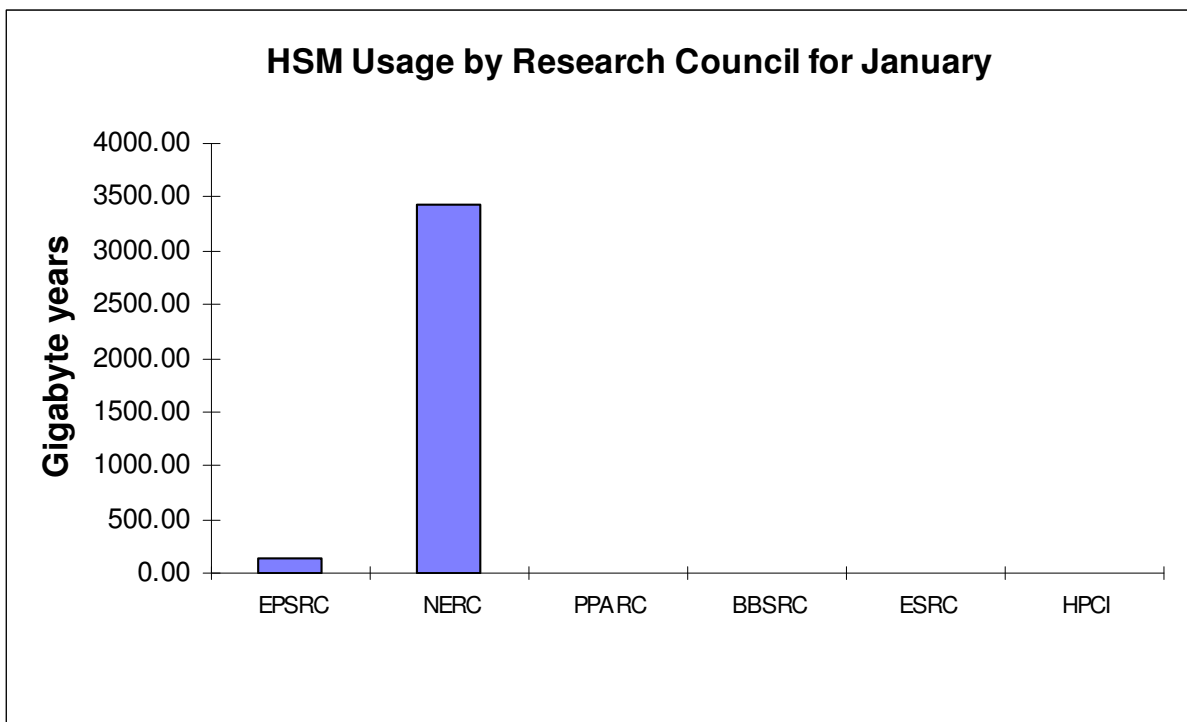


The above graph shows the total usage of the HSM facility by Research Council.

The next two graphs give actual usage of HSM by Consortia and by Research Council.

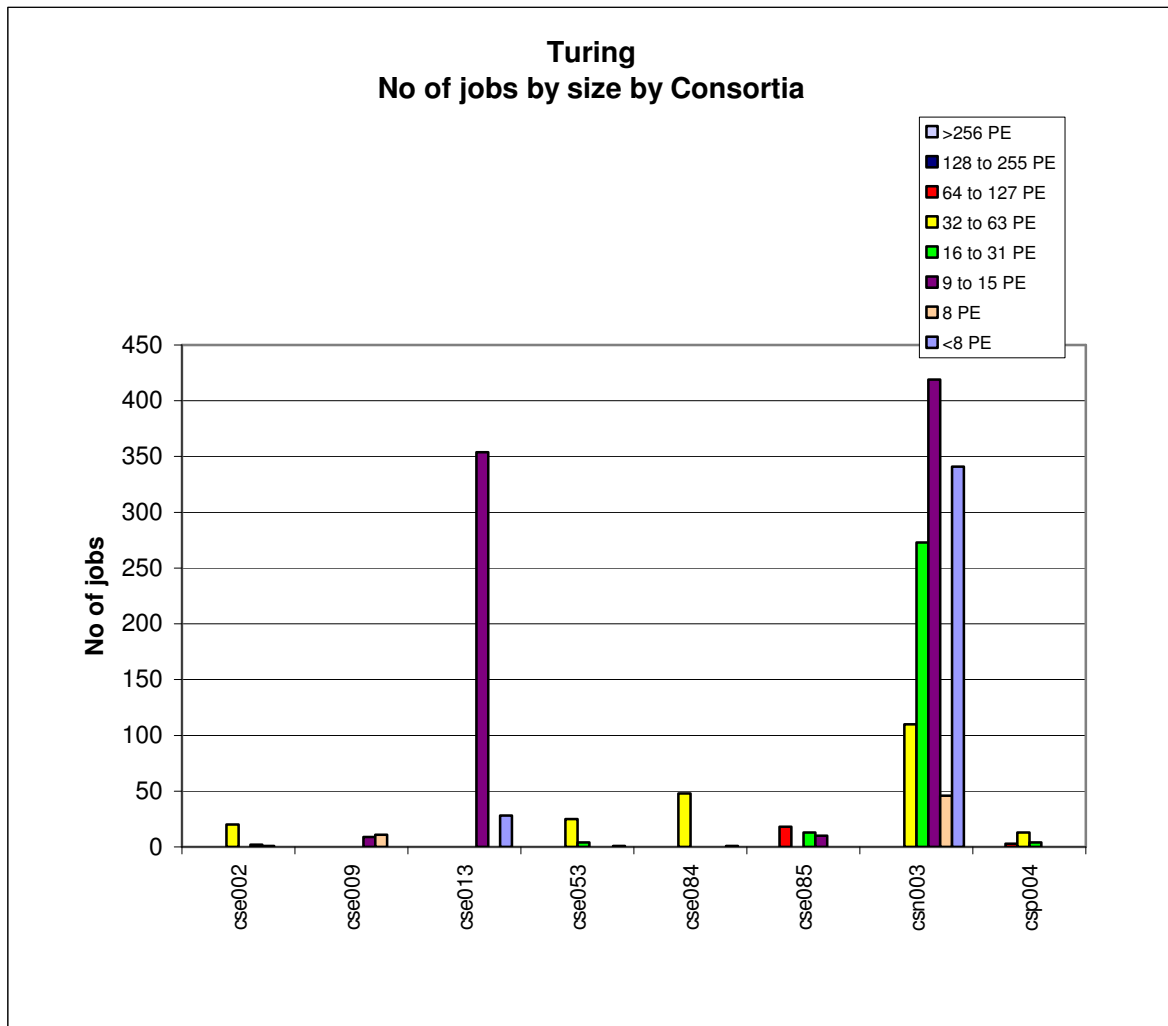


CSE085 (Sandham), CSN001 (De Cuevas), CSN003 (O'Neill), CSN015 (Proctor) & CSN036 (Woolf) were the major users of HSM resource.



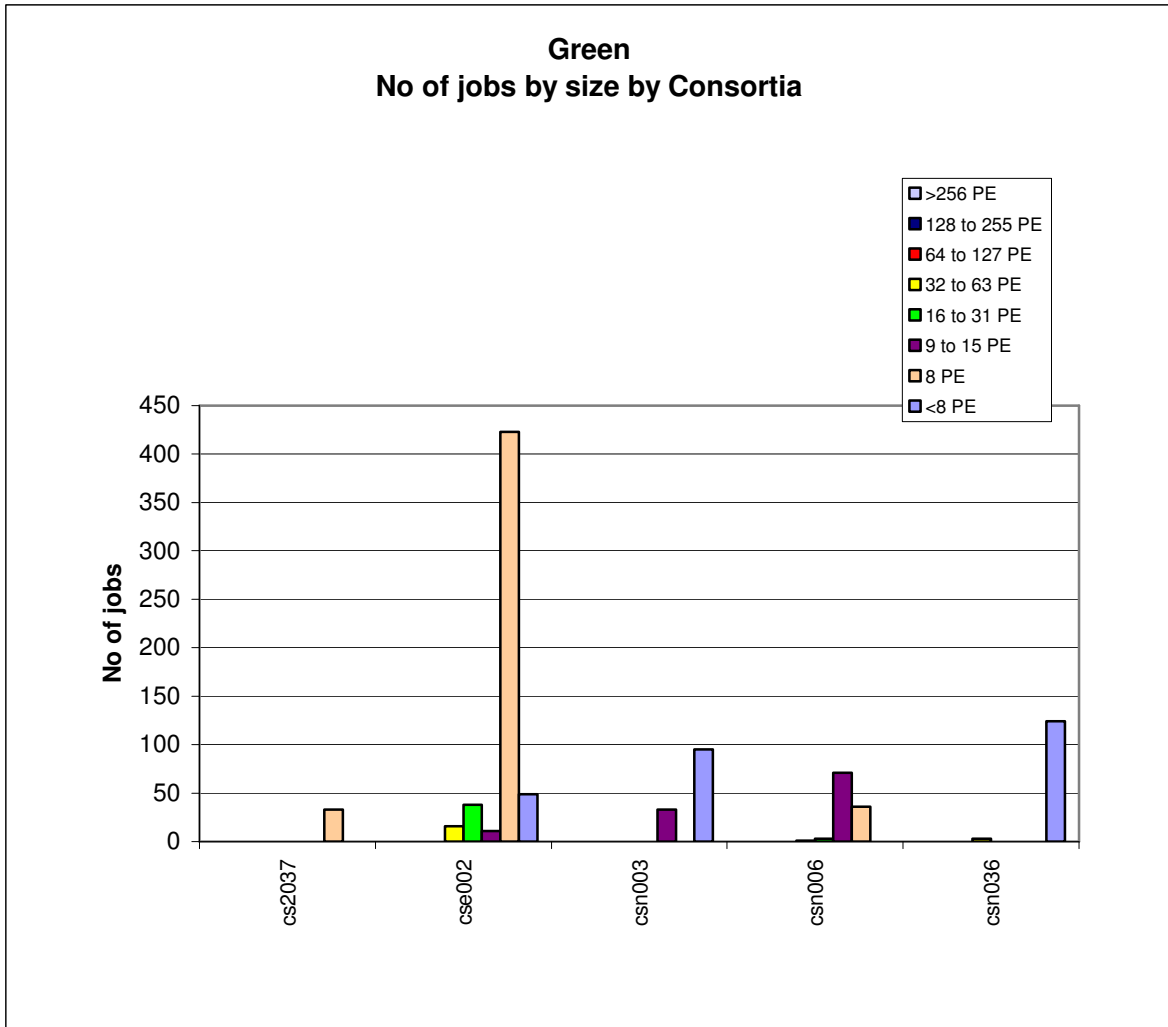
4.7 Processor Usage and Job Statistics Charts

Job statistics for Turing:



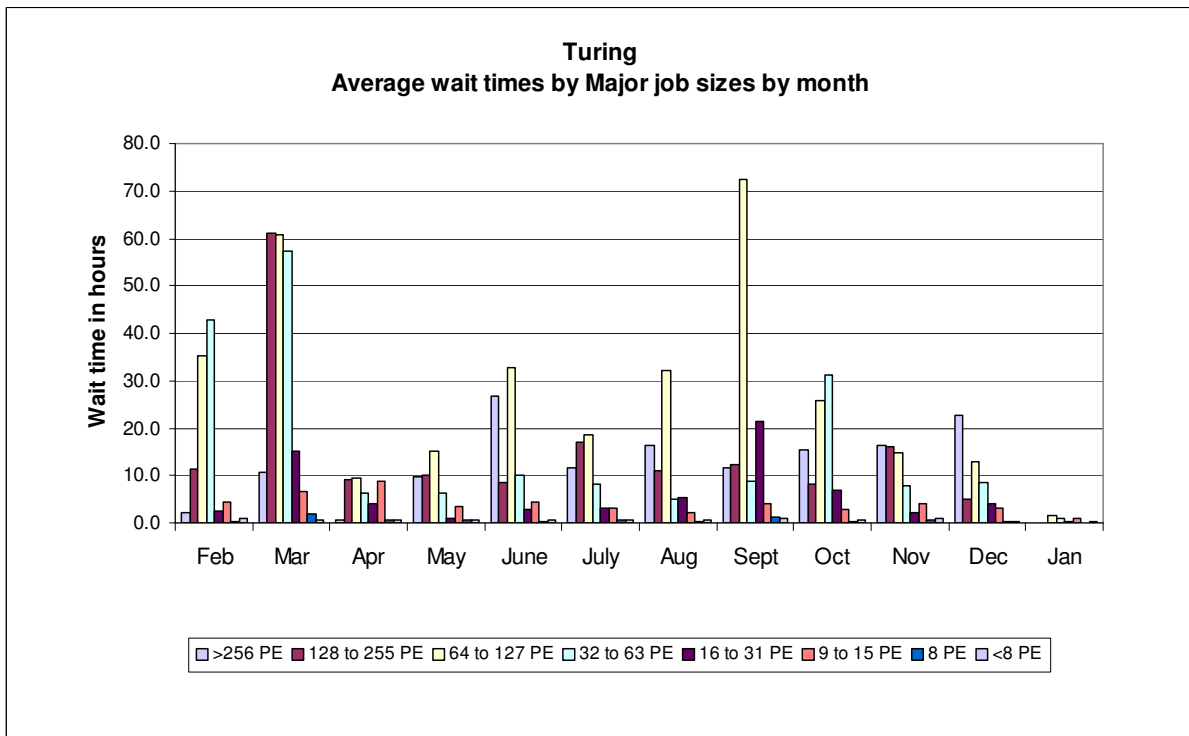
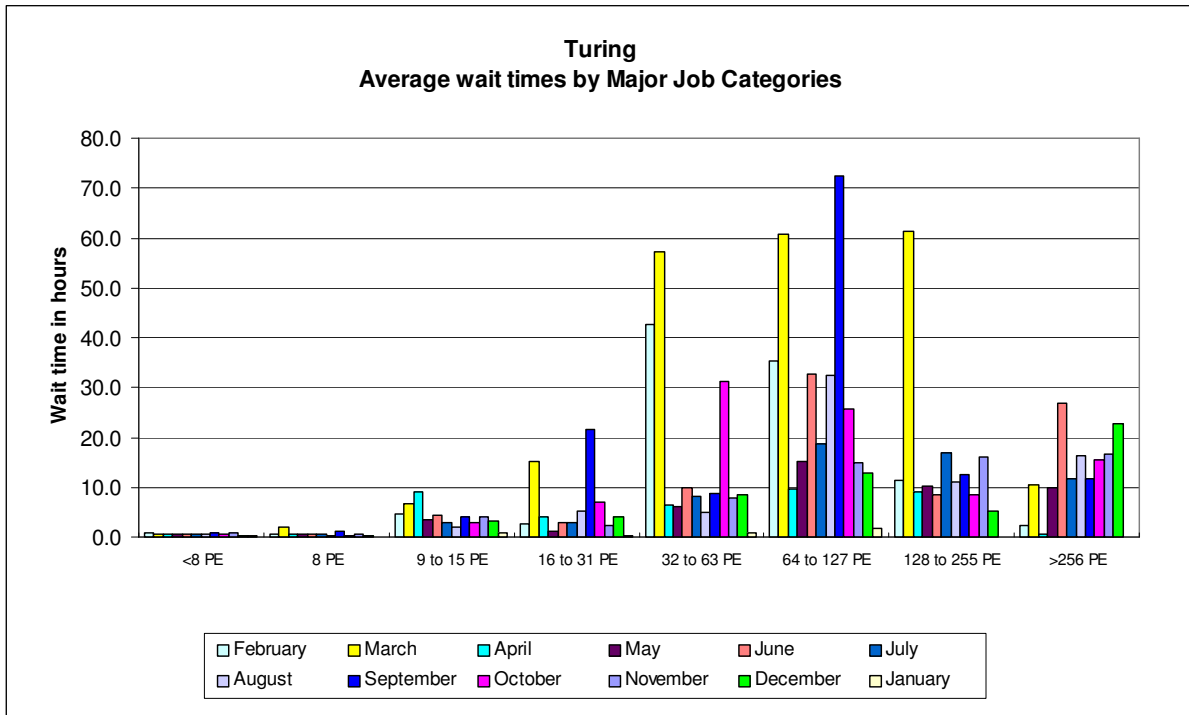
The above graph shows the number of jobs of the major sizes run in the period 1st to 31st January 2003.

Job statistics for Green:



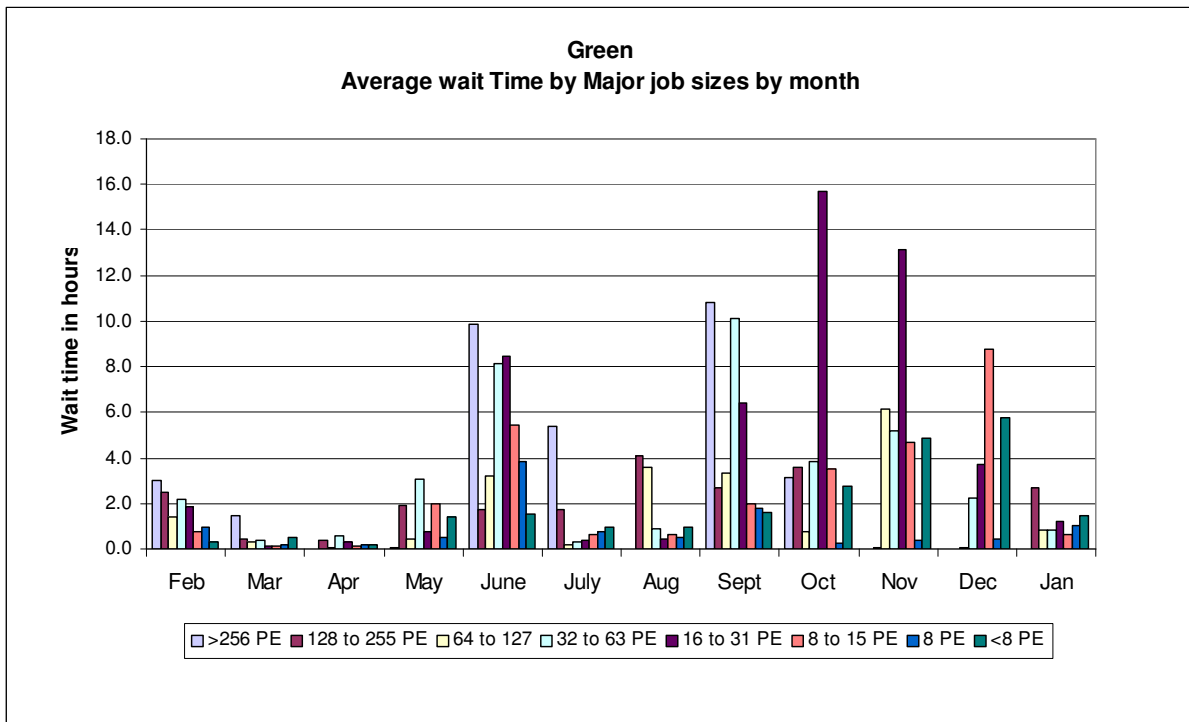
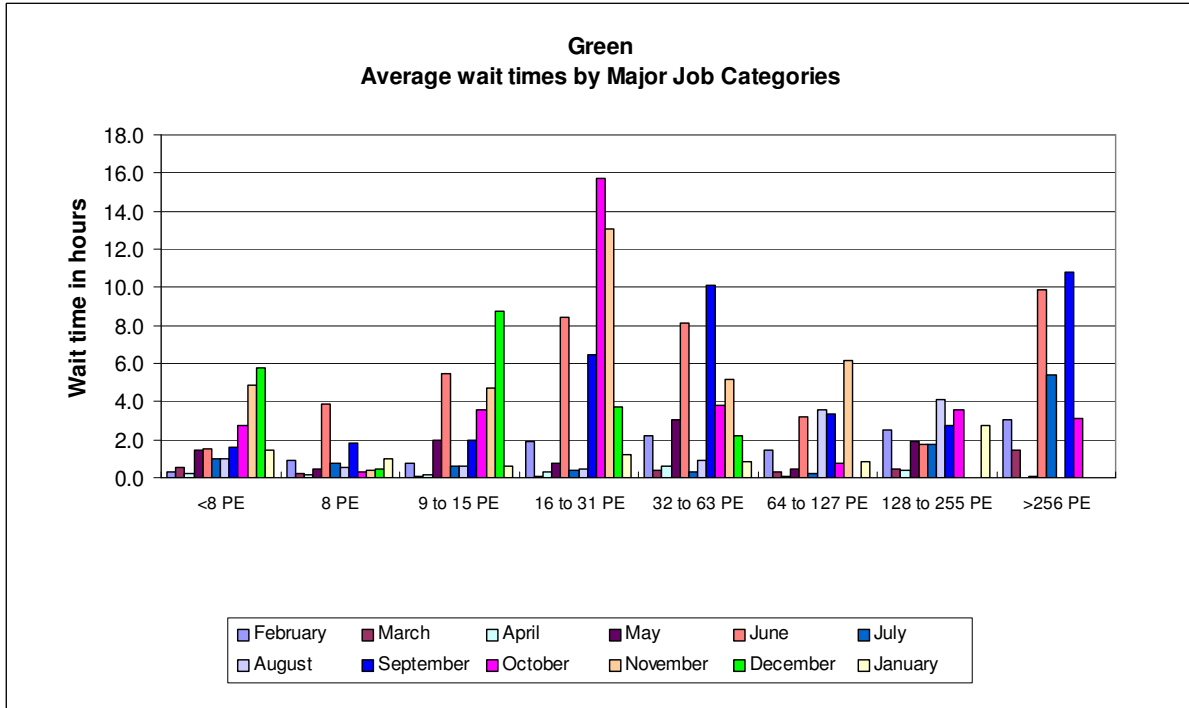
The above graph shows the number of jobs of the major sizes run in the period 1st to 31st January 2003.

The next graph shows the wait times in minutes on Turing for the major categories of jobs.

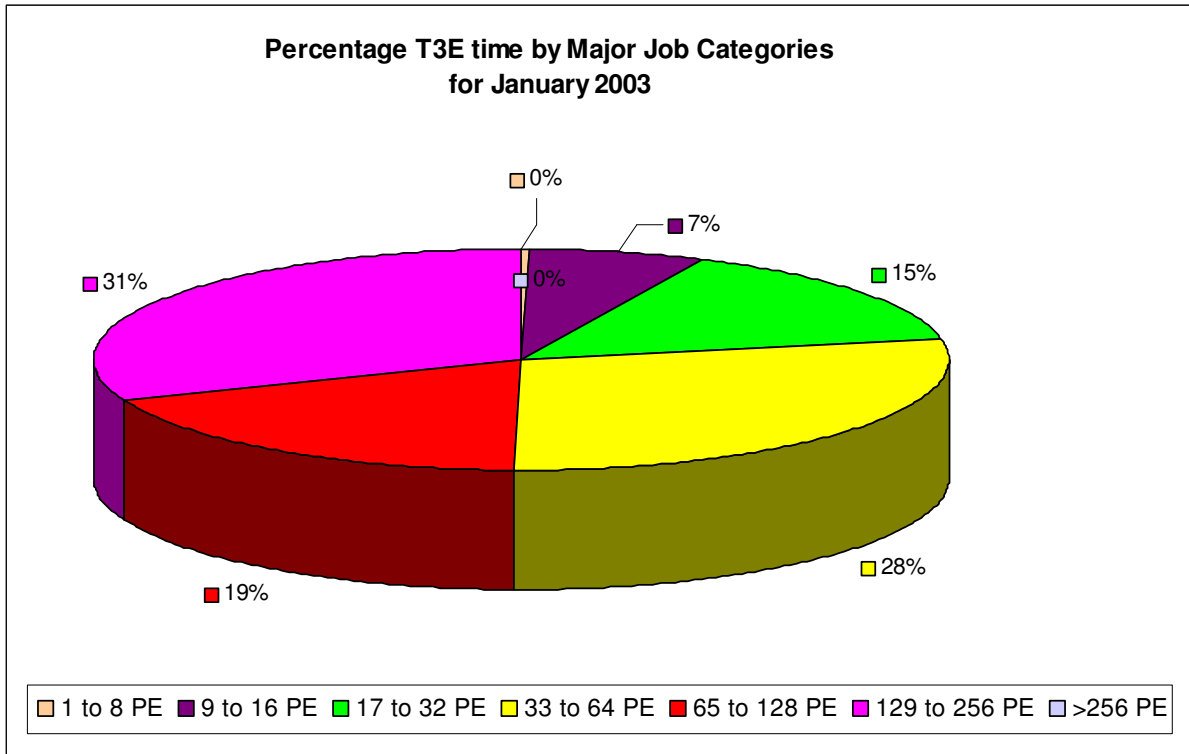


The chart above shows the average wait time trend on Turing over the last 12 months.

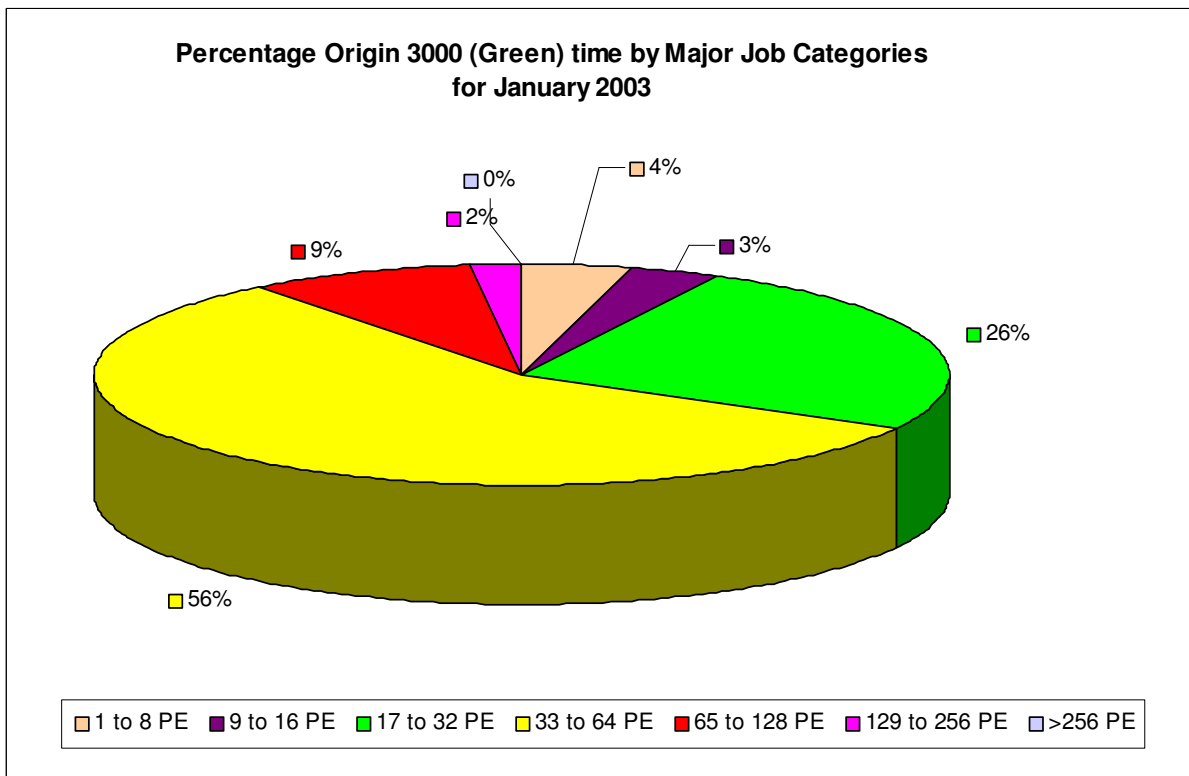
The next graph shows the wait times in minutes on Green for the major categories of jobs:



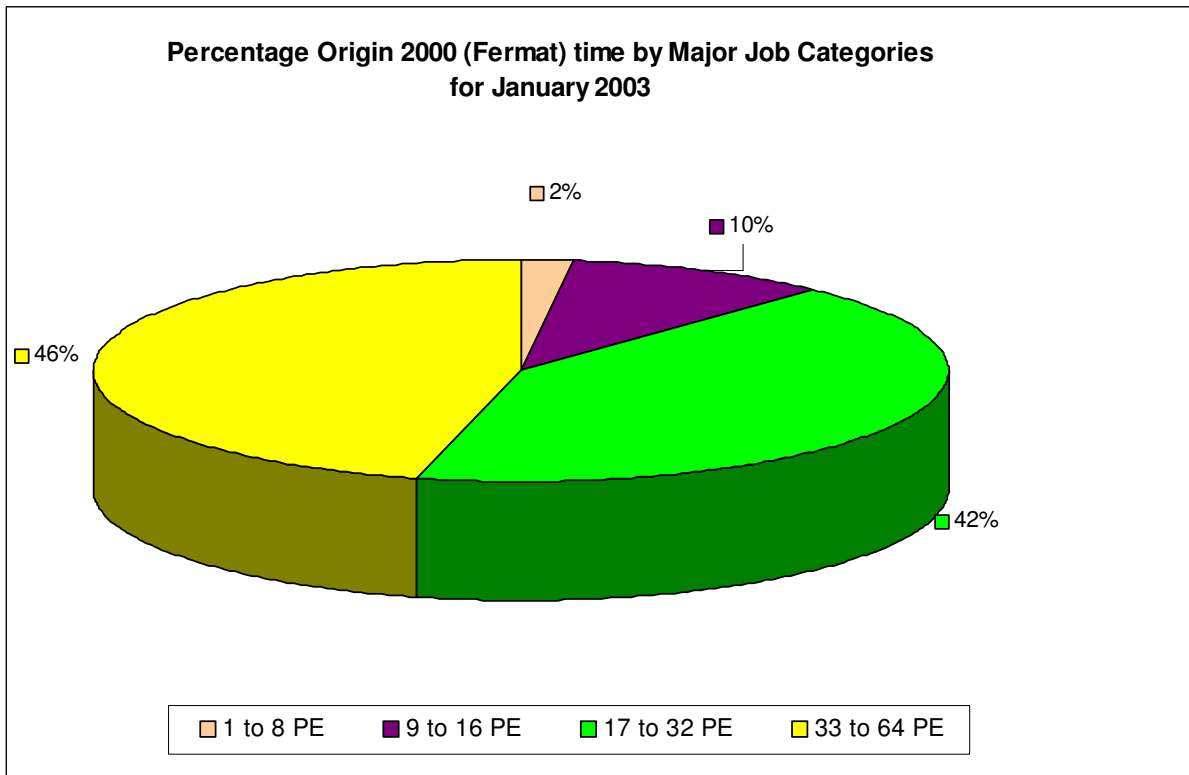
The chart above shows the average wait time trend on Green for January.



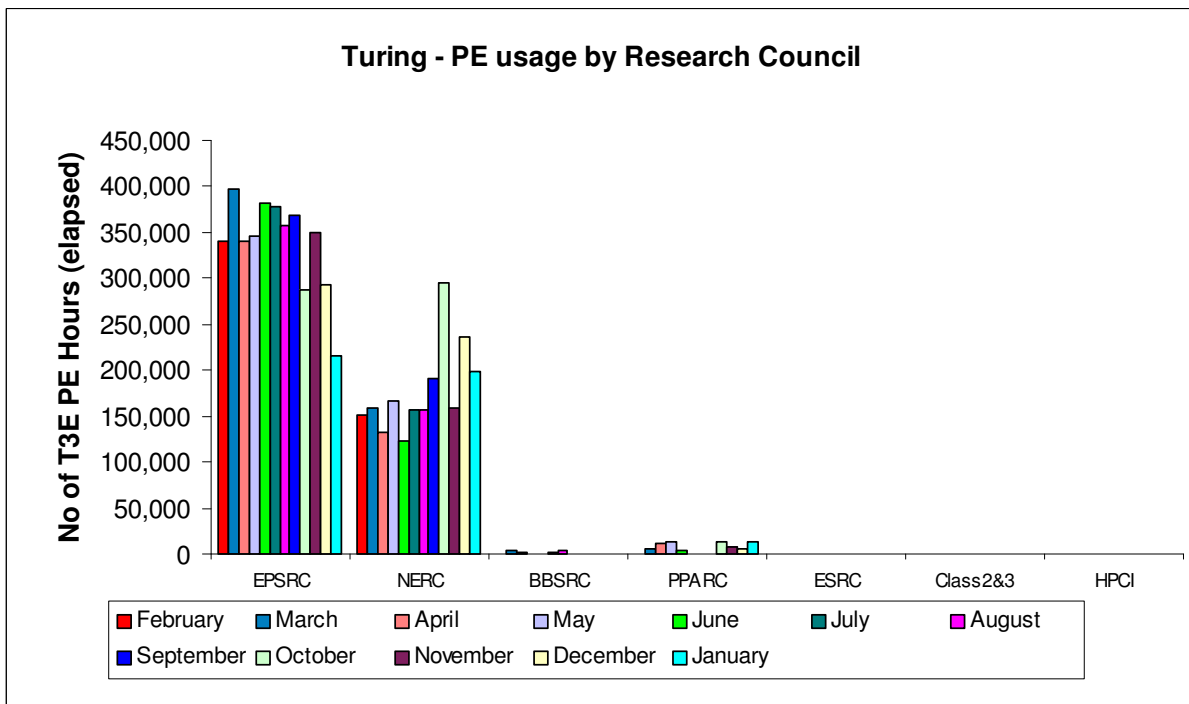
The workload on Turing for January was evenly spread across the range of PEs.



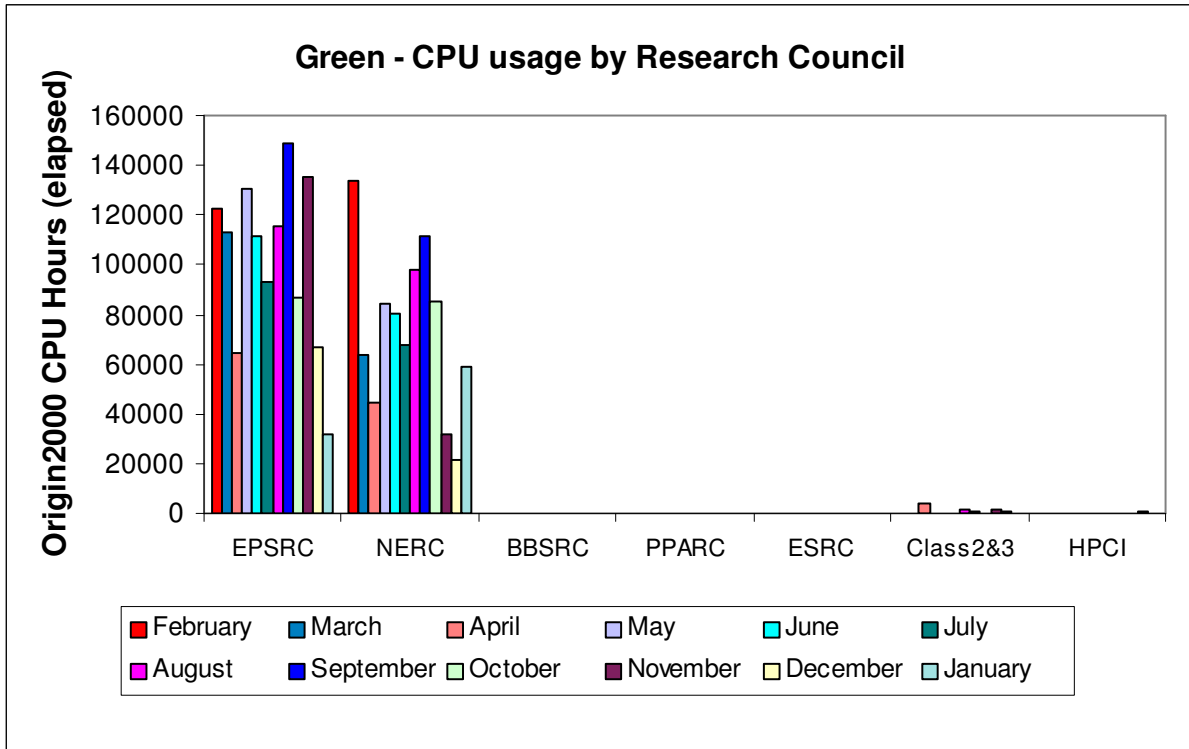
The workload on Green was also evenly spread with less in the high ranges than usual.



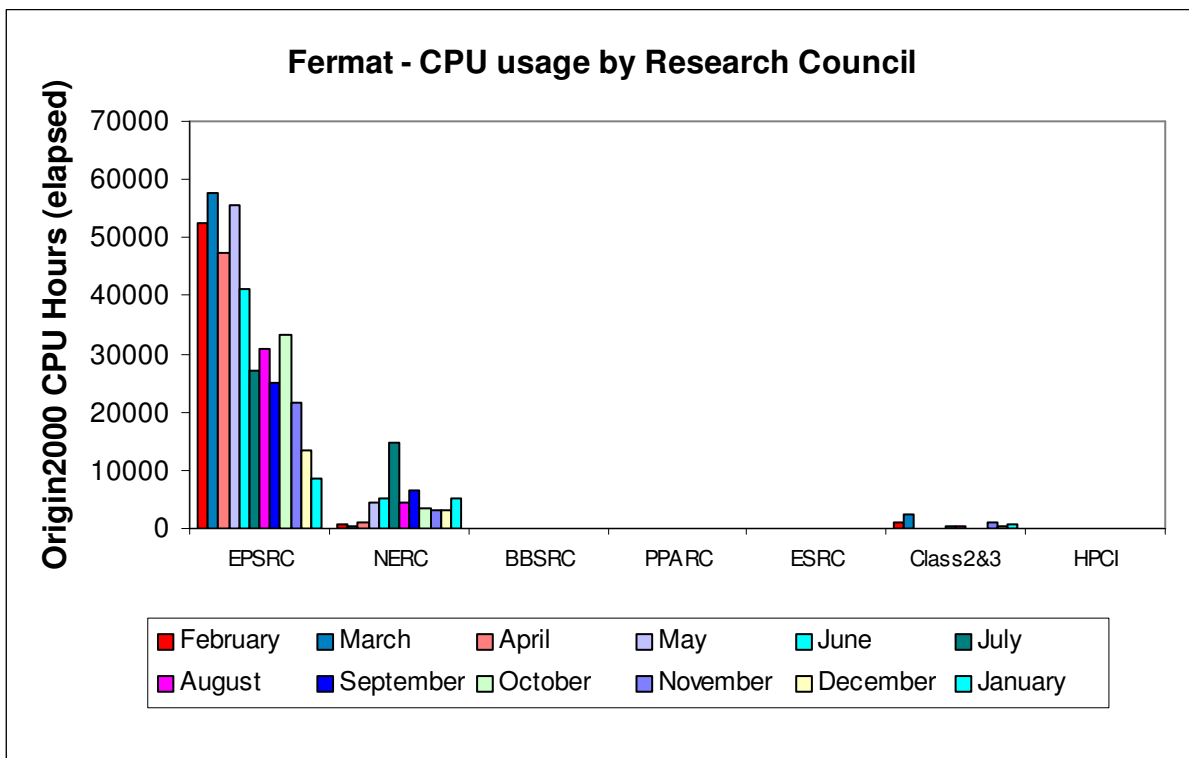
The greatest concentration of work across Fermat for January was in the 17 to 32 PE range.



Turing PE usage is shown by Research Council during the past 12 months of service in the above chart.



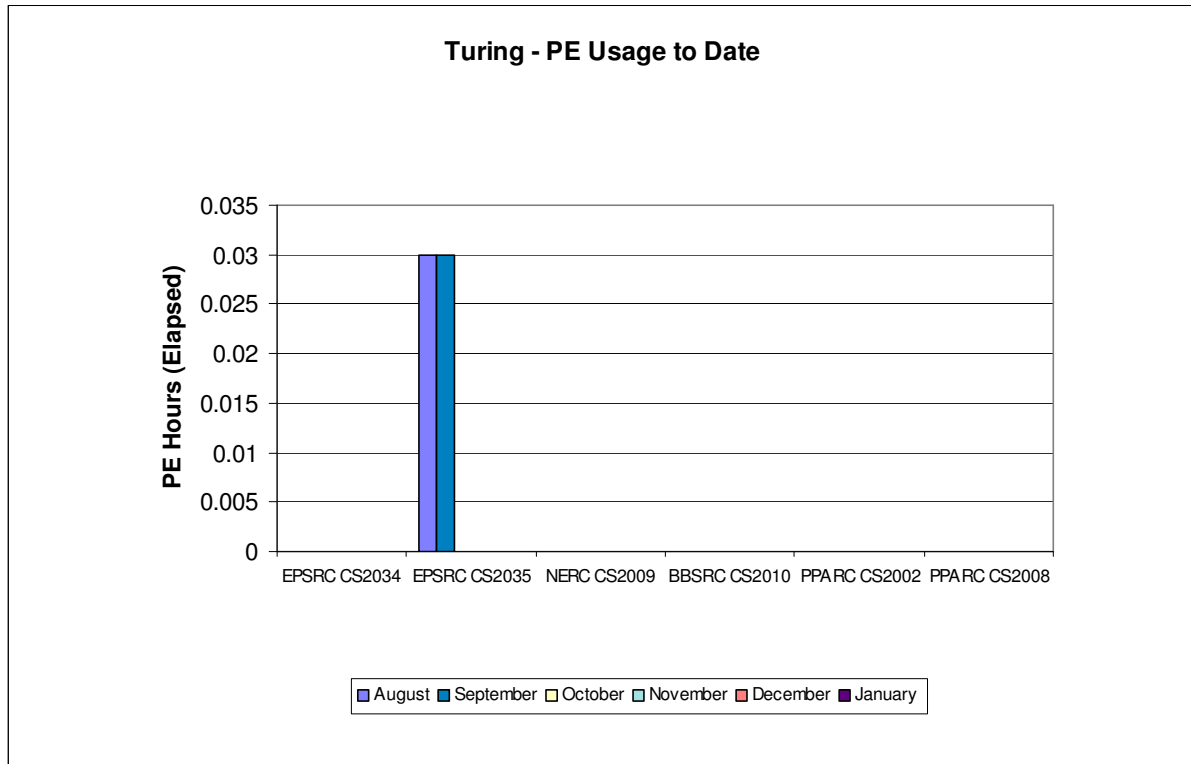
The above chart shows Green CPU usage by Research Council during the past 12 months of service.



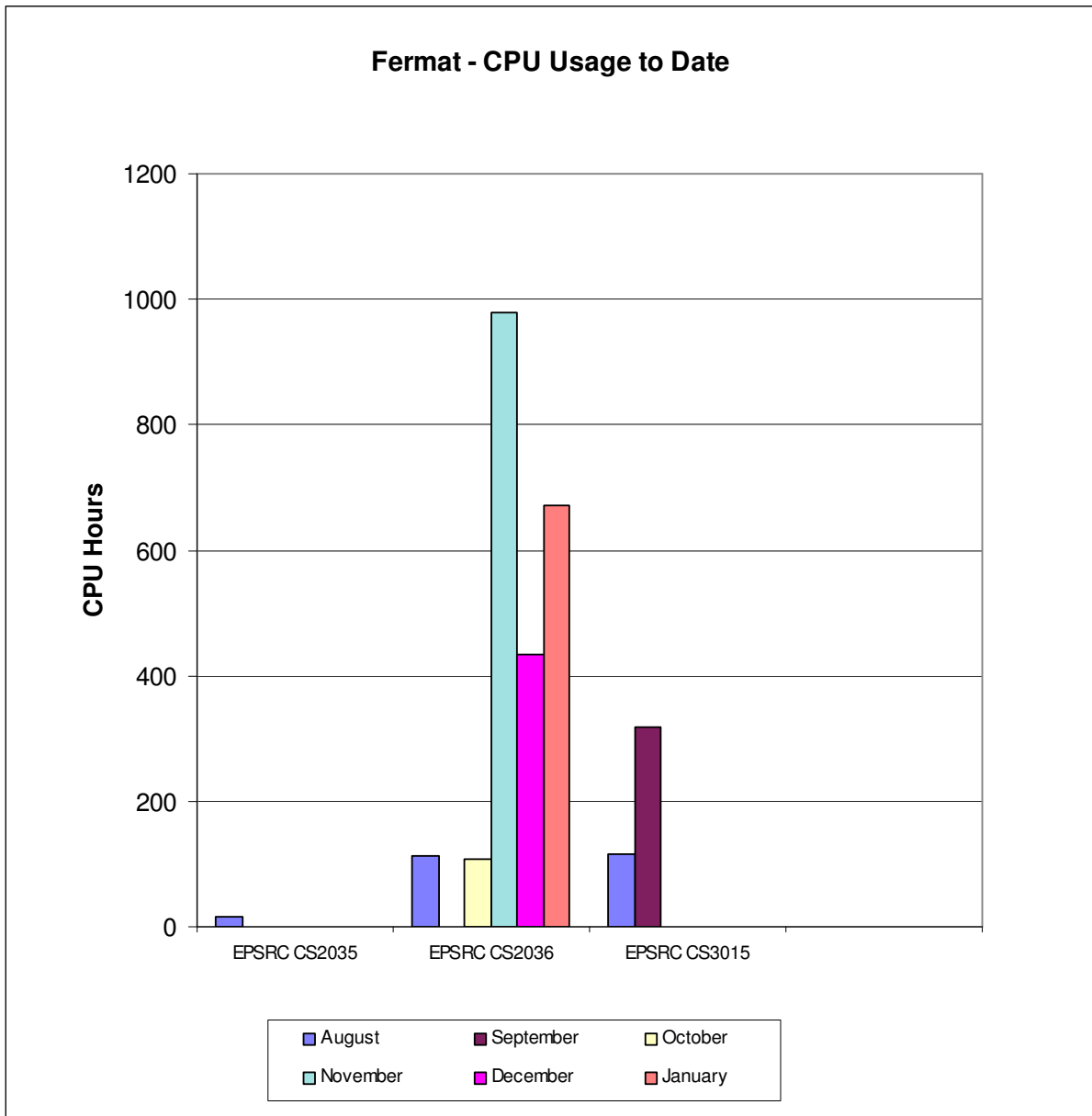
Origin 2000 CPU usage is shown by Research Council during the past 12 months of service in the above chart.

4.8 Class 2 & 3 Usage Charts

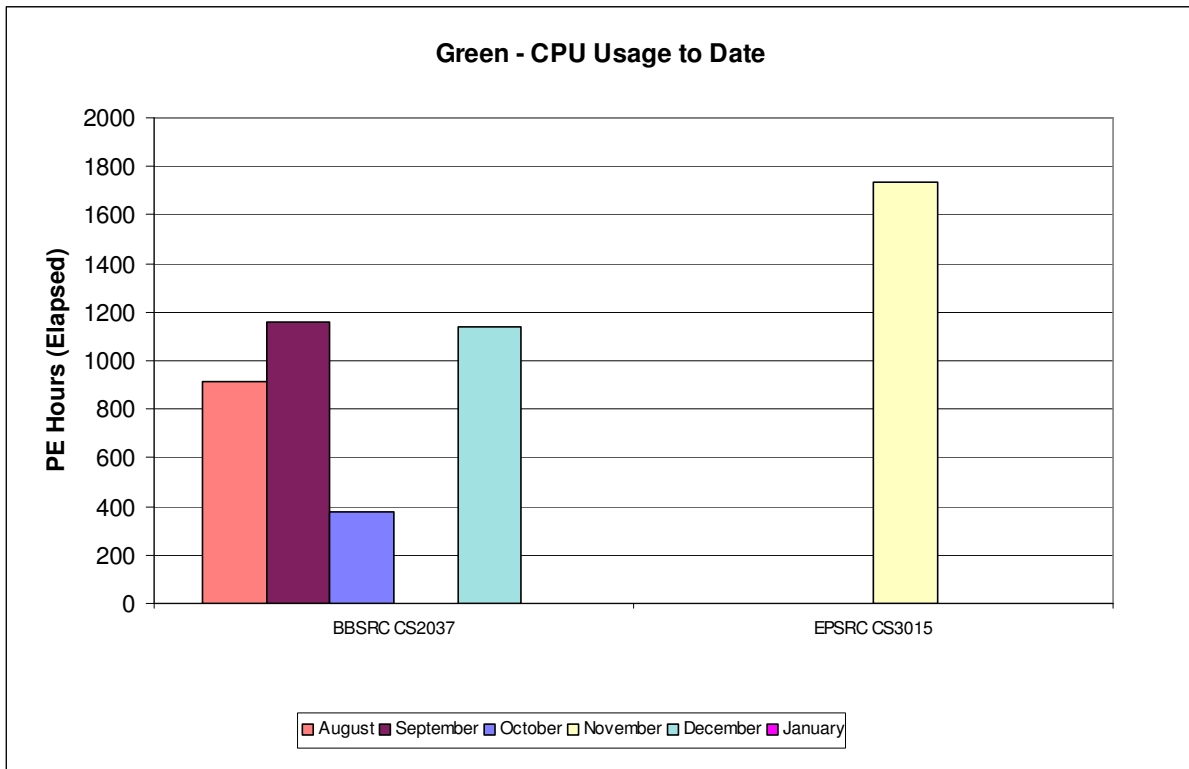
The next series of charts show the usage of the system by the class 2 & class 3 users. The usage is shown by project and identifies the Research Council of the individual projects.



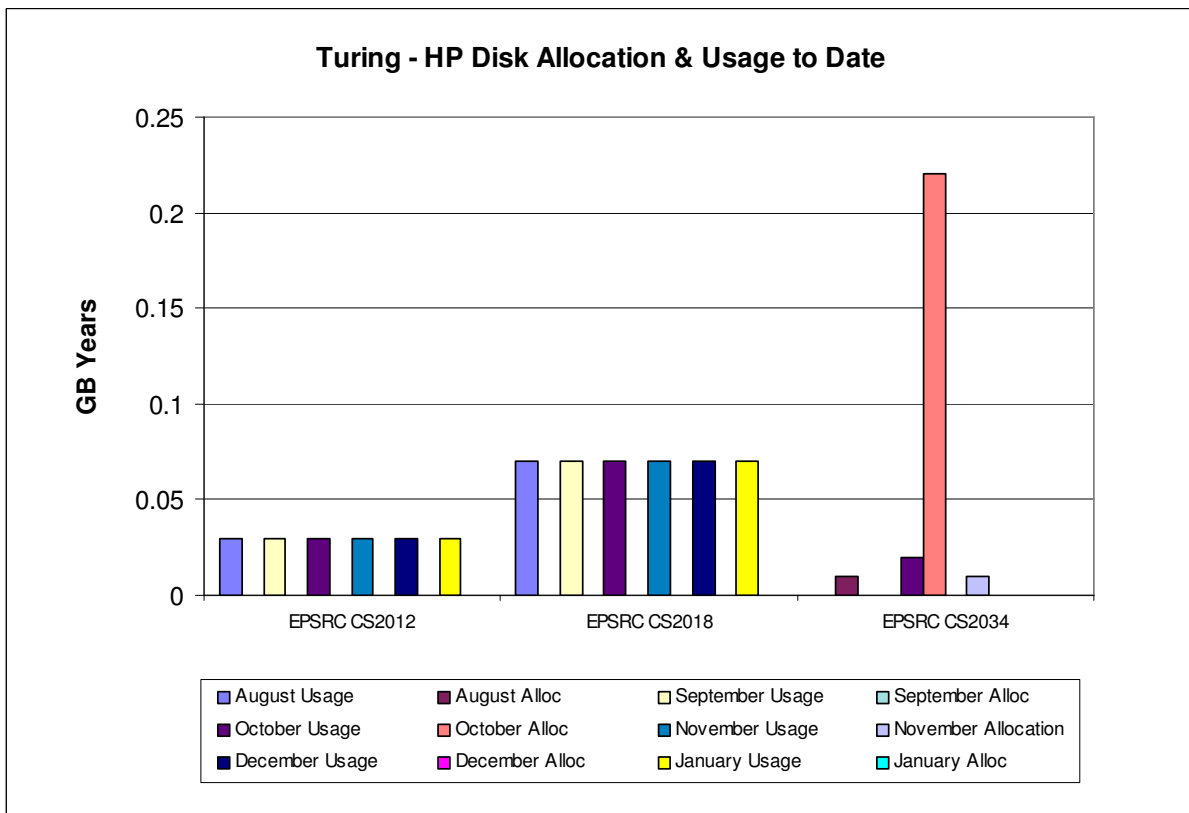
The above chart shows the most significant PE usage of the Turing system by class 2 and class 3 users.



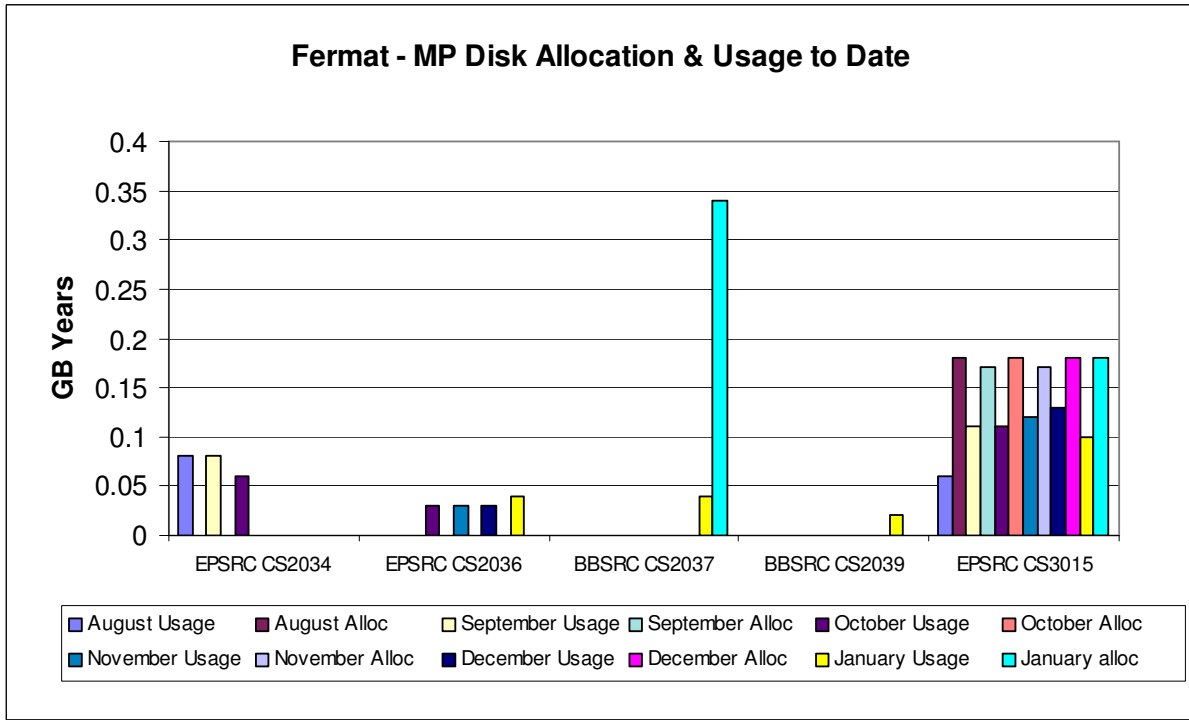
The above chart shows the CPU usage of the Fermat system by class 2 and class 3 users.



The above chart shows the CPU usage of Green by class 2 and class 3 users.



The above chart shows the most significant disk allocations on the Turing system for class 2 and class 3 users.

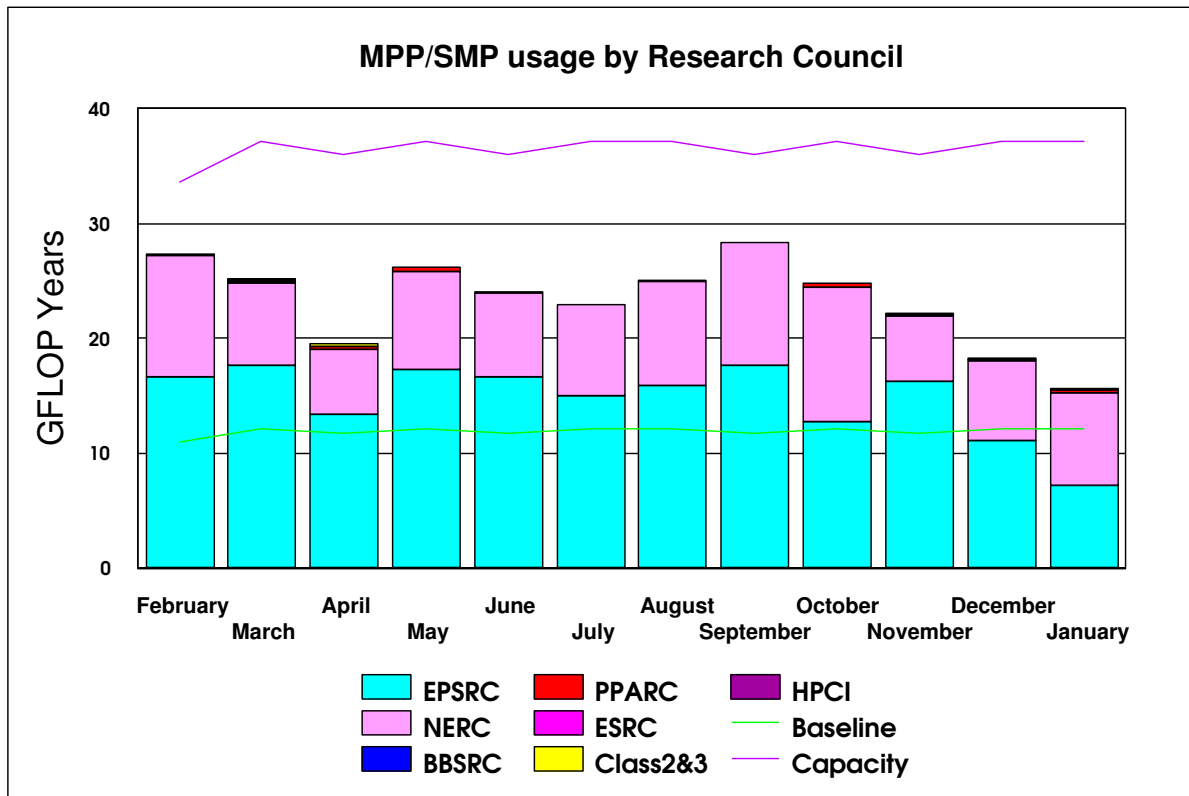


The above chart shows the most significant disk allocations on the Fermat system for class 2 and class 3 users. There is currently no HSM usage by class 2 and class 3 users.

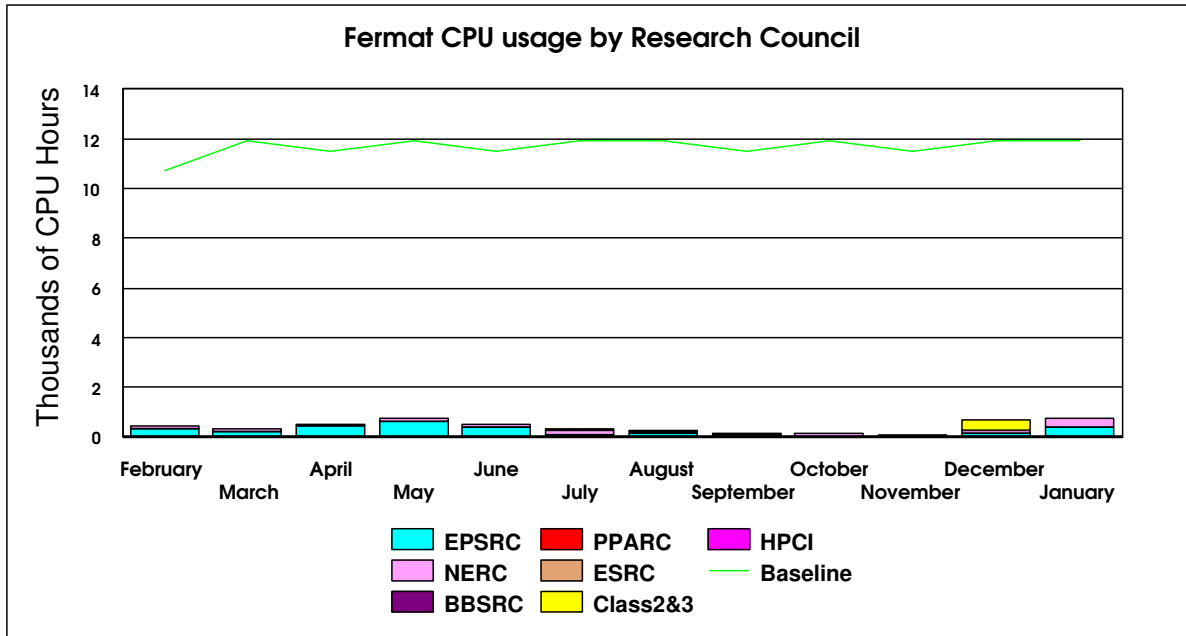
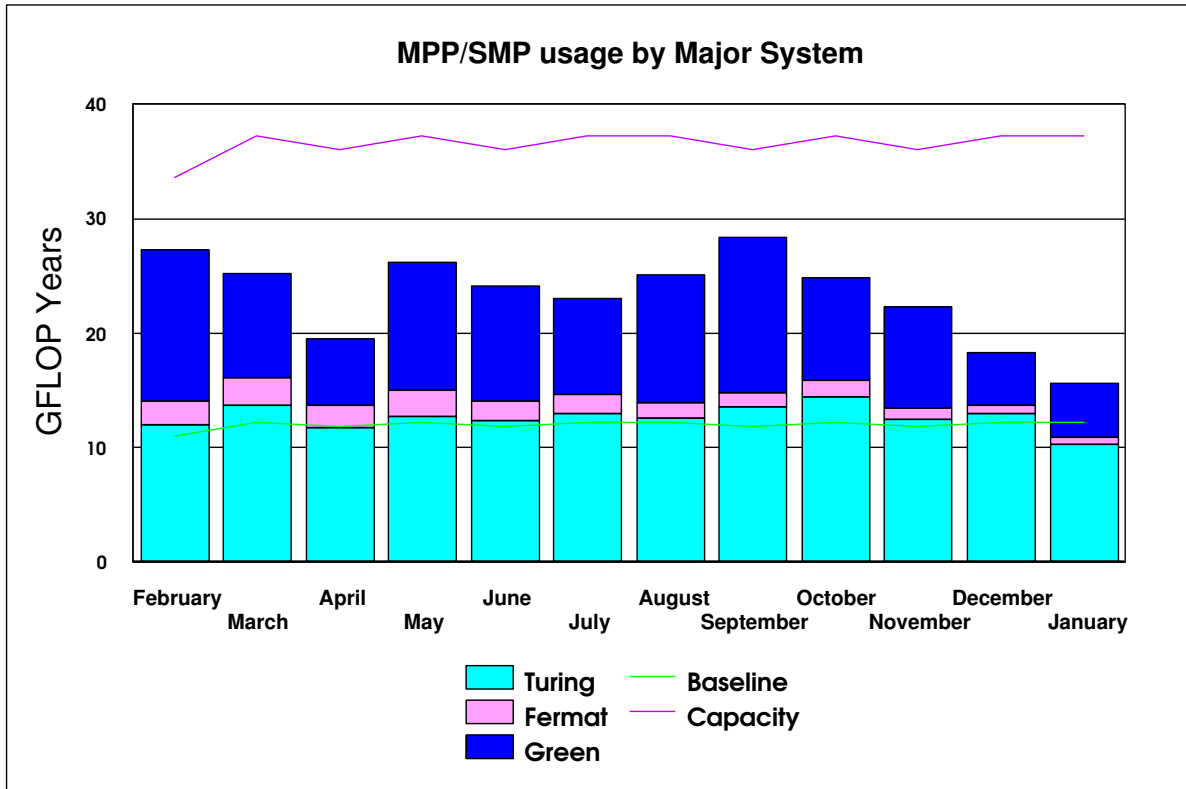
4.9 Charts of Historical Usage

In all the Usage Charts, the baseline varies dependant on the number of days in each month, within a 365-day year.

The graph below shows the GFLOP Year utilisation on Turing and Fermat by Research Council for the previous 12 months.

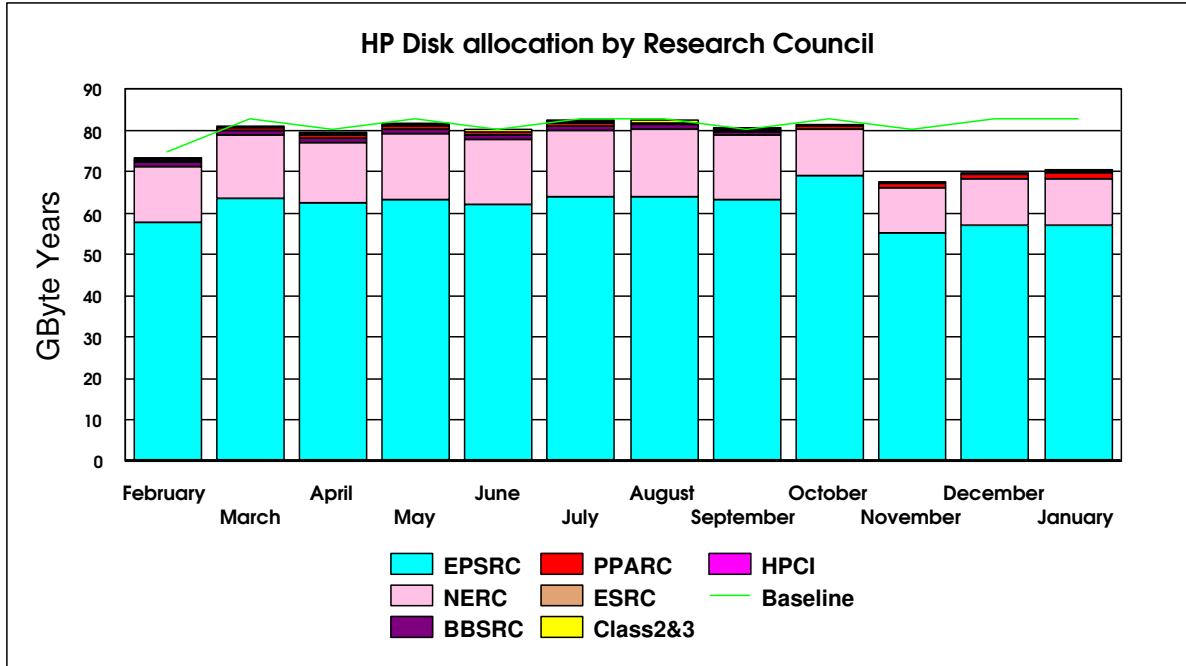


The graph below shows the historic SMP/MPP usage on the major systems.

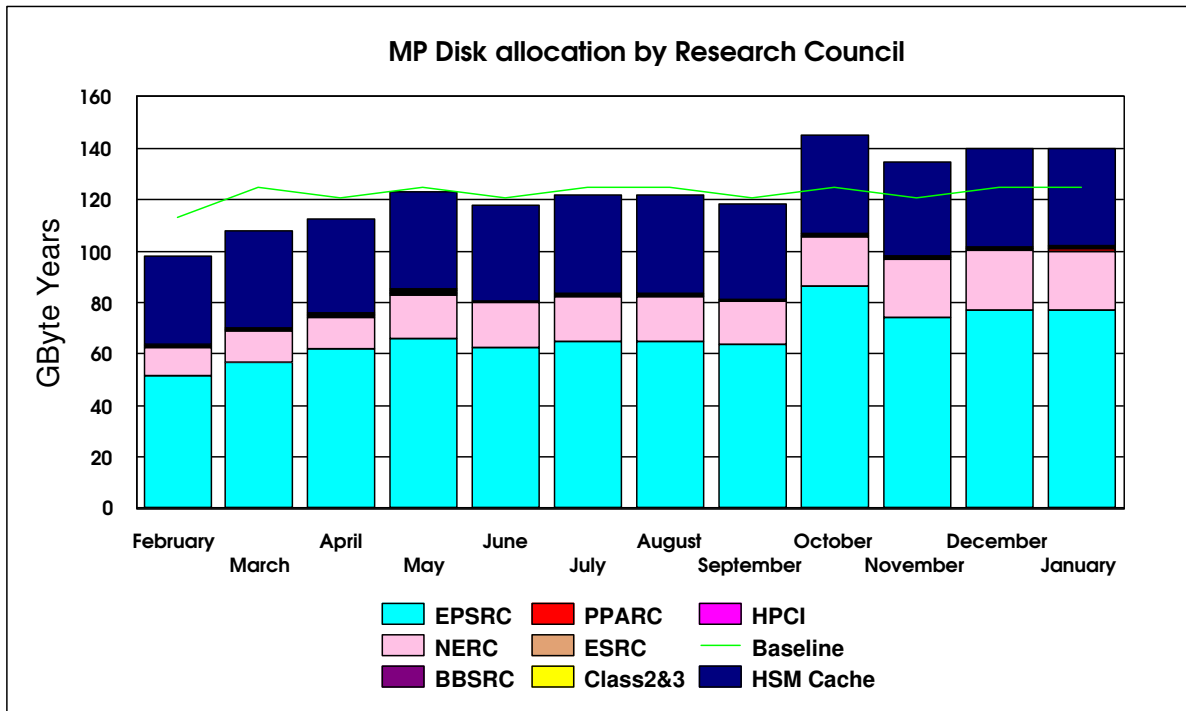


The above graph shows the historic interactive usage of the 'Baseline' Fermat system (equivalent to 16@250Mhz CPUs)

The next series of graphs illustrates the usage of the disk and HSM resources of the system.

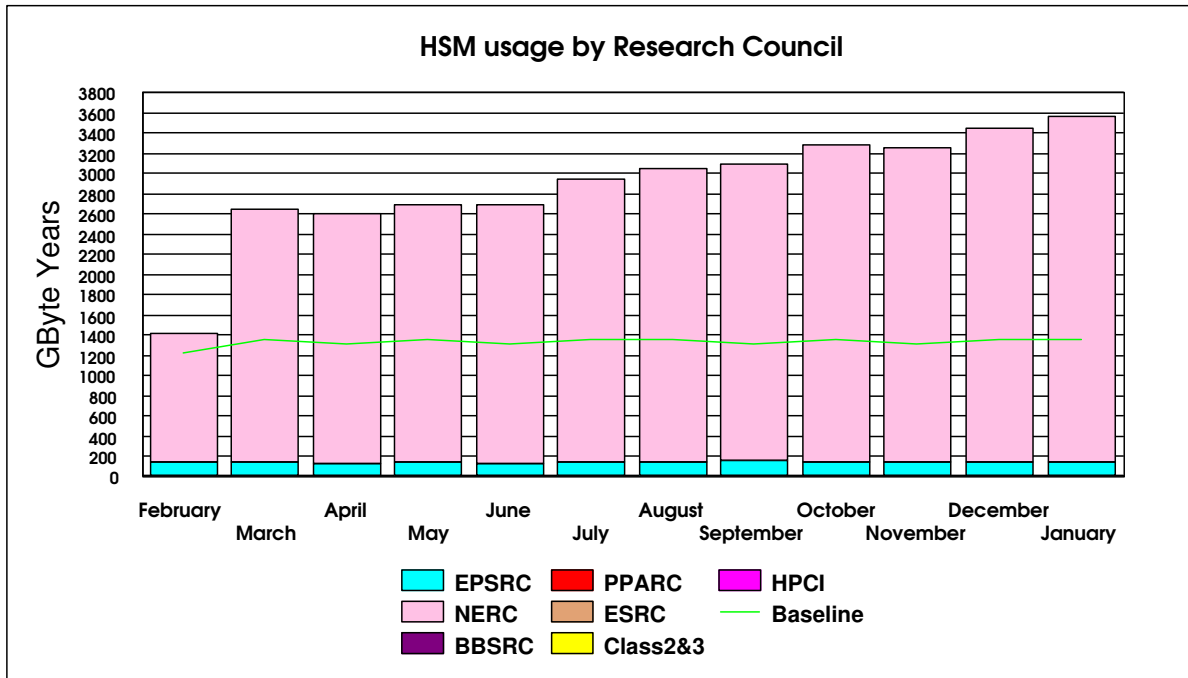


The preceding graph illustrates the historic allocation of the High Performance Disk on Turing.

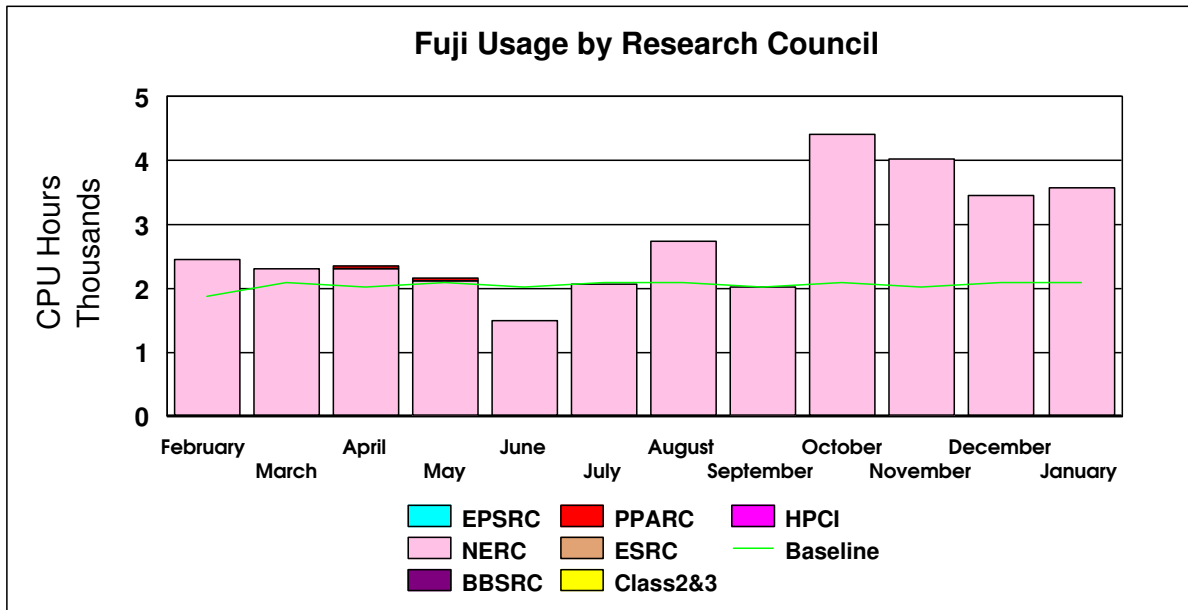


The graph above illustrates the historic allocation of the Medium Performance Disk on Fermat.

The graph below shows the historic HSM usage by Research Council funded projects, now above Baseline at 41 Terabytes. The primary usage is for NERC.



The next chart shows the historic usage of the Fuji system.



The Fujitsu system usage was well above baseline again this month.

4.9 Guest System Usage Charts

There is currently no Guest System usage.

5. Service Status, Issues and Plans

5.1 Status

The service was not fully utilised in January, although usage still exceeded baseline.

During the month there was a fairly balanced spread of work across all major systems. The month saw the usage of Green climbing towards full utilisation.

5.2 Issues

There are no issues to report this month.

5.3 Plans

Interactive provision on Fermat is to be removed at the end of February, with Wren taking over as the primary interactive system. Fermat will then become a dedicated batch system.

NERC have given notification that the Fujitsu VPP 300/8 system Fuji is to be removed at the end of March.

6. Conclusion

January 2003 saw the overall CPARS rating at Green with the baseline being exceeded by 28.3%.

Continued management attention will be given to maximise the throughput of the Service, whilst balancing as fairly as practicable the shares between Projects and jobs of the varying sizes.

Appendix 1 contains the accounts for January 2003

Appendix 2 contains the Percentage shares by Consortium for January 2003

Appendix 3 contains the Percentage shares by Research Council for January 2003

Appendix 4 contains the Training, Applications and Optimisation support figures to the end of January 2003

Appendix 5 contains a breakdown of resource usage by Consortia to the end of January 2003.

Appendix 6 contains a reference table of the Consortia name, the subject area and the PI name.

The summary accounts for the month of January 2003 can be found at the URL below

<http://www.csar.cfs.ac.uk/admin/accounts/summary.shtml>

Appendix 2

Percentage PE time per consortia for Turing in January 2003		Percentage CPU time per consortia for Fermat in January 2003	
Consortia	% Machine Time	Consortia	% Machine Time
CSE002	0.58	CSE002	21.14
CSE021	0.00	CSE021	0.00
CSE023	0.00	CSE023	0.00
CSE025	0.00	CSE025	0.00
CSE030	0.00	CSE030	0.00
CSE055	0.00	CSE055	0.00
CSE057	0.00	CSE057	0.00
CSE084	6.08	CSE084	0.00
CSE086	0.97	CSE086	0.44
CSE004	0.00	CSE004	0.00
CSE013	14.79	CSE013	17.59
CSE014	0.00	CSE014	0.00
CSE016	0.00	CSE016	0.00
CSE027	0.00	CSE027	0.00
CSE040	0.00	CSE040	0.00
CSE041	0.00	CSE041	0.00
CSE043	0.00	CSE043	0.00
CSE050	0.00	CSE050	0.00
CSE052	0.00	CSE052	0.00
CSE053	1.17	CSE053	0.00
CSE056	0.00	CSE056	0.00
CSE063	2.63	CSE063	1.16
CSE064	0.61	CSE064	8.58
CSE085	21.70	CSE085	0.00
CSE008	0.00	CSE008	0.00
CSE009	0.37	CSE009	9.94
CSE024	0.00	CSE024	0.00
CSE033	0.00	CSE033	0.00
CSE035	0.18	CSE035	0.00
CSE060	0.00	CSE060	0.00
CSE020	0.00	CSE020	0.00
CSE066	0.12	CSE066	0.00
CSE075	1.10	CSE075	0.01
CSE076	0.02	CSE076	0.00
CSE034	0.00	CSE034	0.00
CSE036	0.00	CSE036	0.02
CS3016	0.00	CS3016	0.00
HPCI Southampton	0.00	HPCI Southampton	0.00
HPCI Daresbury	0.00	HPCI Daresbury	0.00
HPCI Edinburgh	0.00	HPCI Edinburgh	0.00
UKHEC	0.00	UKHEC	0.00
CSN001	0.00	CSN001	33.69
CSN003	43.52	CSN003	2.57
CSN005	0.00	CSN005	0.00
CSN006	3.03	CSN006	0.00
CSN007	0.00	CSN007	0.00
CSN010	0.00	CSN010	0.00
CSN012	0.00	CSN012	0.00
CSN015	0.04	CSN015	0.00
CSN017	0.00	CSN017	0.00
CSN036	0.00	CSN036	0.17
CSN044	0.00	CSN044	0.00
CSB001	0.00	CSB001	0.00
CSB002	0.00	CSB002	0.00
CSP004	3.08	CSP004	0.00
CS2018	0.00	CS2004	0.00
CS2033	0.00	CS2033	0.00
CS2034	0.00	CS2034	0.00
CS2035	0.00	CS2035	0.00
CS2036	0.00	CS2036	4.67
CS2037	0.00	CS2037	0.00
CS3001	0.00	CS2039	0.00
CS3002	0.00	CS3002	0.00
CS3005	0.00	CS3005	0.00
CS3010	0.00	CS3010	0.00
CS3015	0.00	CS3015	0.00

Appendix 2

Percentage CPU time per consortia for Green in January 2003		Percentage CPU time per consortia for Wren in January 2003	
Consortia	% Machine Time	Consortia	% Machine Time
CSE002	1.99	CSE002	0.81
CSE084	0.00	CSE084	0.00
CSE086	0.09	CSE086	15.67
CSE013	22.30	CSE013	1.41
CSE053	0.00	CSE053	0.00
CSE064	0.01	CSE064	1.42
CSE085	0.49	CSE086	0.00
CSE009	9.47	CSE009	4.10
CSE066	0.00	CSE066	0.00
CSE075	0.64	CSE075	1.92
CSE076	0.00	CSE076	15.50
HPCI Daresbury	0.00	HPCI Daresbury	0.48
UKHEC	0.00	UKHEC	0.00
CSN001	2.27	CSN001	27.24
CSN003	0.32	CSN003	10.02
CSN006	55.14	CSN006	5.84
CSN015	6.42	CSN015	10.62
CSN017	0.00	CSN017	0.00
CSN036	0.88	CSN036	4.89
CS2037	0.00	CS2037	0.00
CS2039	0.00	CS2039	0.03
CS3015	0.00	CS3015	0.00

Appendix 2

Percentage disc allocation by Consortia for Turing in January 2003		Percentage disc allocation by Consortia for Fermat in January 2003	
Consortia	%Allocation	Consortia	%Allocation
CSE002	27.74	CSE002	8.23
CSE003	0.00	CSE003	0.00
CSE021	0.00	CSE021	0.00
CSE023	0.00	CSE023	0.00
CSE025	0.00	CSE025	0.00
CSE030	0.00	CSE030	8.33
CSE055	0.11	CSE055	0.00
CSE057	0.04	CSE057	0.00
CSE084	1.46	CSE084	1.67
CSE086	12.37	CSE086	8.32
CSE004	0.00	CSE004	0.00
CSE013	2.43	CSE013	0.83
CSE014	0.00	CSE014	0.00
CSE016	0.00	CSE016	0.00
CSE027	0.00	CSE027	0.00
CSE040	0.03	CSE040	0.41
CSE041	0.06	CSE041	0.08
CSE043	0.06	CSE043	0.09
CSE052	0.36	CSE052	0.00
CSE053	0.11	CSE053	0.08
CSE056	0.00	CSE056	0.08
CSE063	1.22	CSE063	0.00
CSE064	0.03	CSE064	0.08
CSE085	18.22	CSE085	9.17
CSE008	0.00	CSE008	0.00
CSE009	6.49	CSE009	1.67
CSE024	0.00	CSE024	0.00
CSE033	0.00	CSE033	0.00
CSE035	0.84	CSE035	0.00
CSE019	0.00	CSE019	0.00
CSE020	0.00	CSE020	0.00
CSE066	1.42	CSE066	0.86
CSE075	7.12	CSE075	34.61
CSE076	0.13	CSE076	0.46
CSE034	0.00	CSE034	0.00
CSE036	0.03	CSE036	0.01
HPCI Southampton	0.00	HPCI Southampton	0.00
HPCI Daresbury	0.11	HPCI Daresbury	0.04
HPCI Edinburgh	0.11	HPCI Edinburgh	0.08
UKHEC	0.11	UKHEC	0.50
CSN001	2.43	CSN001	12.50
CSN003	3.76	CSN003	1.25
CSN005	0.00	CSN005	0.00
CSN006	6.08	CSN006	1.67
CSN007	0.00	CSN007	0.00
CSN010	0.00	CSN010	0.00
CSN012	0.00	CSN012	0.00
CSN015	0.24	CSN015	1.25
CSN017	0.01	CSN017	0.25
CSN036	3.65	CSN036	5.84
CSB001	0.06	CSB001	0.04
CSP004	1.82	CSP004	1.25
CS2037	0.00	CS2037	0.33
CS3001	0.00	CS3001	0.00
CS3002	0.00	CS3002	0.00
CS3005	0.00	CS3005	0.00
CS3010	0.00	CS3010	0.00
CS3015	0.00	CS3015	0.18

Percentage usage of HSM by Consortium for January 2003	
Consortium	% Usage
CSE002	0.31
CSE086	0.04
CSE013	0.04
CSE041	0.30
CSE043	0.08
CSE063	0.08
CSE064	0.01
CSE085	2.63
CSE035	0.02
CSE075	0.61
CSN001	27.45
CSN003	61.73
CSN006	0.01
CSN015	2.61
CSN036	4.06
CSN044	0.02

Appendix 3

<u>Percentage PE usage on Turing by Research Council for January 2003</u>			<u>Percentage CPU usage on Fermat by Research Council for January 2003</u>		
<u>Research Council</u>	<u>% Usage</u>		<u>Research Council</u>	<u>% Usage</u>	
EPSRC	50.33		EPSRC	63.56	
HPCI	0.00		HPCI	0.00	
NERC	46.59		NERC	36.43	
BBSRC	0.00		BBSRC	0.00	
ESRC	0.00		ESRC	0.00	
PPARC	3.08		PPARC	0.00	

<u>Percentage PE usage on Green by Research Council for January 2003</u>			<u>Percentage CPU usage on Wren by Research Council for January 2003</u>		
<u>Research Council</u>	<u>% Usage</u>		<u>Research Council</u>	<u>% Usage</u>	
EPSRC	34.98		EPSRC	41.04	
HPCI	0.00		HPCI	0.49	
NERC	65.02		NERC	58.87	
BBSRC	0.00		BBSRC	0.00	
ESRC	0.00		ESRC	0.00	
PPARC	0.00		PPARC	0.00	

<u>Percentage Disc allocated on Turing by Research Council for January 2003</u>			<u>Percentage Disc allocated on Fermat by Research Council for January 2003</u>		
<u>Research Council</u>	<u>% Allocated</u>		<u>Research Council</u>	<u>% Allocated</u>	
EPSRC	81.58		EPSRC	75.61	
HPCI	0.36		HPCI	0.63	
NERC	16.18		NERC	22.76	
BBSRC	0.06		BBSRC	0.33	
ESRC	0.00		ESRC	0.00	
PPARC	1.82		PPARC	0.67	

<u>Percentage Disc allocated as SAN UHP by Research Council for January 2003</u>			<u>Percentage Disc allocated as SAN HV by Research Council for January 2003</u>		
<u>Research Council</u>	<u>% Allocated</u>		<u>Research Council</u>	<u>% Allocated</u>	
EPSRC	0.00		EPSRC	0.00	
HPCI	0.00		HPCI	0.00	
NERC	0.00		NERC	100.00	
BBSRC	0.00		BBSRC	0.00	
ESRC	0.00		ESRC	0.00	
PPARC	0.00		PPARC	0.00	

<u>Percentage HSM usage by Research Council for January 2003</u>		
<u>Research Council</u>	<u>% usage</u>	
EPSRC	4.12	
HPCI	0.00	
NERC	95.88	
BBSRC	0.00	
ESRC	0.00	
PPARC	0.00	

Appendix 4

The following tables show the training and support resource usage by the consortias in person days to the current month.

Project	PI	Subject	Discipline/ Department	Liaison Officer	Support Bought	Apps Support for Jan 2003	Total Apps Support from July 2000	Opt Support for Jan 2003	Total Opt Support from July 2000	Total Support Used	Training Bought	Training Used
cse002	Wander, A (Dr)	Support for the UKCP	Physics	Neil Stringfellow	446.7		12.25			144.25	74	3
cse003	Dundas, D (Dr)	HPC Consortiums 98-2000		Martyn Foster	25.27		6		15.5	24.5	10	6
cse004	Sandham, N (Prof)	UK Turbulence		Keith Taylor							2	2
cse006	Briddon, P (Dr)	Covalently Bonded Materials		Kevin Roy	4				4	4		
cse007	Foulkes, M (Dr)	Quantum Many Body Theory		Martyn Foster	4					1	2	2
cse008	Vincent, M (Dr)	Model Chemical Reactivity		Robin Pinning								
cse009	Slater, Ben	HPC Computing Applications in Materials Chemistry	Chemistry	Kevin Roy	275.5		6		3	9	26.5	
cse010	Williams, J (Dr)	Free Surface Flows		Dan Kidger	15.95					15.95		
cse011	Williams, J (Dr)	Open Channel Flood Plains		Dan Kidger	2.18					2.18	1	
cse012												
cse013	Leschziner, M (Prof)	Large Eddy Simulation for Aerospace & Turbomachinery Dynamics	Mechanical Engineering	Mike Pettipher	9						57.5	4
cse014	de Oliverira, C (Dr)	Problems in Nuclear Safety		Dan Kidger	3							
cse016	Cant, S (Dr)	Turbulent Combustion		Keith Taylor								
cse017	Luo, K (Dr)	Large Eddy Simulation & Modelling of Buoyant Plumes & Smoke Spread in Enclosures		Keith Taylor	2.44						5	
cse018	Jaffri, K			Keith Taylor								
cse019	Lander, J (Dr)			Kevin Roy								
cse020				Kevin Roy								
cse021	Staunton, J (Dr)			John Brooke	0.2						1.04	1
cse022	Jones, W P (Prof)			Keith Taylor								
cse023	Allen, M (Prof)			Robin Pinning								
cse024	Allan, R J (Dr)			Ben Jesson	24						300	

cse025	Walet, N R (Dr)			Martyn Foster							2	1.5
cse026	Neal, M (Dr)											
cse027												
cse028												
cse029	Apsley, D D (Dr)			Keith Taylor								
cse030	Desplat, J C (Dr)	High Performance Computing for Complex Fluids	Physics	Andrew Jones	103		21		5	51	31	7
cse031												
cse033	Breard, C (Dr)											
cse034				Kevin Roy								
cse035	Jenkins, S (Dr)	Ab Initio Simulations of Catalytic Processes at Extended Metal Surfaces	Chemistry	Neil Stringfellow								
cse036	Duff, I (Prof)	Research & Development of Algorithms & Software for Large-Scale Linear & Non-Linear Systems	Maths	Adrian Tate								
cse040	Badcock, K (Dr)	Prediction of Non-Linear Flutter Characteristics by Numerical Path Following & Model Reduction	Aerospace Engineering									
cse041	Wu, X (Dr)	Flutter & Noise Generation Mechanisms - Turbomachinery Fan Assemblies	Mechanical Engineering	Keith Taylor	60						5	
cse043	Williams, J (Dr)	Numerical Simulation of Flow over a Rough Bed	Engineering	Neil Stringfellow	4		2		2	4	4	4
cse050	Bradley, D (Prof)	Flame Instabilities: their influence on turbulent combustion & incorporation in mathematical models.	Mechanical Engineering		20						10	
cse051												
cse052	Di Mare, F (Miss)	Heat Transfer in Turbine Combustors	Mechanical Engineering	Jon Gibson	10						25	
cse053	Leschziner, M (Prof)	Coupling RANS Near-Wall Turbulence Models with Large Eddy Simulation Strategies	Aerospace Engineering	Mike Pettipher	15						8	

cse055	Staunton, J (Dr)	Ab-initio theory of magnetic anisotropy in transition metal ferromagnets	Physics	Andrew Jones	5						10	
cse056	Chen, T (Dr)	Aerothermalelasticity Modelling of Air Riding Seals for Large Gas Turbines	Mechanical Engineering	Keith Taylor	5						10	
cse057	Evans, R (Dr)	Relativistic Particle Generation from Ultra-Intense Laser Plasma Interactions	Physics	Andrew Jones	20						10	
cse060	Robb, M (Prof)	CCP1 Renewal plus falgship project on Car-Parrinello in Chemistry	Chemistry	Neil Stringfellow	10						10	
cse061	Imregun, M (Prof)	Casing treatment modelling for the investigation of stall, flutter and noise mechanisms in turbomachinery compressors.	Mechanical Engineering		5						5	
cse063	Sandham, N (Prof)	Computational Aeroacustics for Turbulent Plane Jets	Aerospace Engineering	Adrian Tate	30						10	
cse064	Leschziner, M (Prof)	Improvement of predictive performance of anisotropy-resolving turbulence models in post-reattachment recovery region of separated flow using Large Eddy Simulation	Aerodynamics	Mike Pettipher	10						8	
cse066	Coveney, P V (Prof)	New clay-polymer nanocomposites using diversity-discovery methods: synthesis, processing and testing	IT	Neil Stringfellow	21						6	3

cse071	Iacovides (Dr)	The Practical Computation of Three-Dimensional Time-Dependent Turbulent Flows in Rotating Cavities	Mechanical Engineering	Mike Pettipher	5						6	
cse072	Karlin, V (Dr)	Structure & Dynamics of Unstable Premixed Laminar Flames	Engineering	Jon Gibson	18						9	
cse074	Luo (Dr)	Consortium on Computational Combustion for Engineering Applications	Engineering	Jon Gibson								
cse075	Novik, K (Dr)	The Reality Grid - a tool for investigating condensed matter & materials	IT	Neil Stringfellow	14	5	5			5	14	
cse076	Briddon, P (Dr)	HPC facilities for the first principles simulation of covalently bonded materials	IT	Adrian Tate	20				11	11		
cse077	Kronenburg, A (Dr)	Combustion Model Development for Large-Eddy Simulation of Non-Premixed Reactive Flows.	Mechanical Engineering								2	
cse082	Barakos, G (Dr)	CFD Study of Three-Dimensional Dynamic Shelf	Aerospace Engineering		5						1	
cse084	Needs, R (Dr)	The Consortium for Computational Quantum Many-Body Theory	Physics	Adrian Tate	19						10	
cse085	Sandham, N (Prof)	UK Turbulence Consortium	Engineering	Adrian Tate	15						6	3
cse086	Taylor, K (Prof)	Multiphoton, Electron Collisions and BEC HPC Consortium 2002-2004	Physics	Kevin Roy	35				5	5	116	

cse089	Wiercigroch, M (Dr)	Nonlinear Dynamics & Rock Contact Fracture Mechanics in Modelling of Vibration Enhanced Drilling	Engineering	Keith Taylor	15						7	
csn001	De Cuevas, B (Mrs)	OCCAM	Ocean/Earth Sciences	Zoe Chaplin	60.5		1		55	58	20	3
csn002	Vincent, Mark (Dr)			Robin Pinning								
csn003	Steenman-Clark, L (Dr)	UGAMP	Meteorology	Zoe Chaplin				1	1	1	12.1	4
csn005	Huw Davies, J (Dr)			Fumie Costen	27					27	6	6
csn006	Brodholt, J (Dr)		Geological Sciences	Neil Stringfellow								
csn007				Stephen Pickles								
csn008				Michael Bane								
csn009	Proctor, R (Dr)			Michael Bane								
csn010				Kevin Roy	2						5	
csn011	Gray, S L (Dr)											
csn012	Tennyson, J (Prof)	Calculated Absorption by water vapour at near infra-red & optical wavelengths	Physics & Astronomy	Andrew Jones								
csn013	Voke, P (Prof)	Large Eddy Simulation Extended by Extreme Value Theory for the Prediction of Dispersion, Concentration Threshold Boundaries & Field Connectivity	Mechanical & Materials Engineering	Keith Taylor								
csn014	Llewellyn Jones (Prof)		Physics & Astronomy	Andrew Jones								
csn015	Proctor, R (Dr)	A Testbed for Zooplankton Models of the Irish Sea	Coastal & Marine Sciences	Zoe Chaplin	20		2			2	10	3
csn017	Payne, A (Dr)	Stability of the Antarctic Ice Sheet	Geography	Kevin Roy	16				2	2	18	2

csn036	Woolf, A (Mr)	Assimilation of Altimeter, Radiometer & in situ data into the OCCAM model. Analysis of water properties & transports	Environmental Science	Zoe Chaplin	2						5	
csn044	Steenman-Clark, L (Dr)	Earth Observation Project	Meteorology	Zoe Chaplin								
csb001	Houldershaw, D (Dr)	Use of Cray T3E for multiple long trajectories of protein unfolding	Crystallography	Keith Taylor	6		1.5			3.5	4	2
csb002	Mulholland, A (Dr)			Robin Pinning								
csb003	Carling, J (Dr)										3	
csp002	Chapman, S (Dr)				2						8	4
csp003	Ord, S M (Mr)			Stephen Pickles	11.79		10			11	12	12
csp004	Bell, K L (Prof)	A Programme for Atomic Physics for Astrophysics at Queen's University Belfast (2001-2005)	Astronomy	Keith Taylor	7						8	
csp006	Jain, R (Dr)	Numerical Simulation of forced magnetic reconnection in the solar corona	Physics	Jon Gibson							12	
css001	Boyle, P (Dr)			John Brooke							20	
css002	Crouchley, R (Dr)			John Brooke							2.5	2
HPCID	Allan, R (Dr)										1	1
HPCIE	Henty, D (Dr)											
HPCIS	Nicole, D (Dr)											
UKHEC	Allan, R (Dr)	UK HEC Collaboration, Core Support for High-End Computing 1999-2002		Andrew Jones							2	2
cs2001				Stephen Pickles							10	
cs2002				John Brooke	0.25					0.25		
cs2003												
cs2004				Keith Taylor								
cs2005												
cs2006				Mike Pettipher								
cs2007											1	1

cs2008				Robin Pinning	7.91					7.91		
cs2009	Pennington, V (Dr)			Michael Bane								
cs2010												
cs2011	Mallinger, F (Dr)											
cs2012	Qin, N (Prof)										1.5	1.5
cs2014	Karlin, V (Dr)										2	2
cs2015	Tejera Cuesta, P (Mr)			Keith Taylor							3	1.5
cs2016	Miles, J J (Dr)				2							
cs2017	Eisenbach, M (Mr)											
cs2018												
cs2019												
cs2020					1							
cs2021											6	1
cs2022											3	2
cs2023												
cs2024												
cs2026											1	
cs2027					6						4	
cs2028	Annett (Dr)				2						2	
cs2029												
cs2030	McKenna, K (Mr)										1	1
cs2031	Ess											
cs2032	Jain, R (Dr)											
cs2033												
cs2034	De Souza, M M (Dr)	Indium interactions in silicon for future ULSI technologies.	Physics	Jon Gibson								
cs2035	Barakos, G (Dr)	Detached Eddy Simulation of Aerodynamics & Aeroacoustics of Cavity Flows	Aerospace Engineering	Keith Taylor								
cs2036	Farid, Vakili-Tahami (Mr)	MPI Evaluation	Mechanical Aerospace & Manufacturing Engineering	Jon Gibson	1.7				1	1		
cs2037	Domene, Carmen (Dr)	Ab initio molecular dynamics of ion in membrane proteins										
cs2038	Excell, P (Prof)	Computational Bioelectromagnetic Modelling of Human Cellular Processes for Mobile Phone Safety Research.	Informatics		1							
cs2039	Carlborg (Dr)	Genetic Analysis of Complex Traits	Genetics & Biometry									
cs3001					6.8						10.45	3
cs3002	Novik, K (Dr)										2	2
cs3003	Chambers, E (Dr)											
cs3004	Avis, N (Prof)			Jo Leng	19						12	1
cs3005	Zarei, B (Mr)			John Brooke	10						5	3
cs3006					4						5	1
cs3007	Finch, E				37		7		5	12	5	

cs3008	Alsberg, B (Dr)				3						13	
cs3009	Flower, D (Dr)				2						3	
cs3010	Kemsley, K (Dr)				4						8	1
cs3012	Austin, J (Prof)				5				3	3	3	2
cs3013	Raval, R (Prof)				2							
cs3014	MacLaren, J (Dr)				2							
cs3015	Hampshire, D (Dr)	High Performance Computational Solutions for the Ginzburg-Landau Equations that describe Flux Pinning in High-Field Superconductors	Physics	Keith Taylor	2						5	
cs3016	Petchey, O (Dr)	Randomisation test for the significance of functional diversity for ecosystem processes	Animal & Plant Sciences	Adrian Tate	2							
cs3017	Gross, M (Mr)	Numerical Simulation of Laser Materials Processing	Engineering		3							
cs3018	Durrant, M (Dr)	Functional modelling of oxalate-degrading enzymes & of lipoxygenase using quantum calculations.	Biology		3						3	
cs3019	Bengough (Dr)	Lattice-Boltzmann simulation of water & solute transport in porous media.	Physics		2							

The following table shows resource utilisation by Consortia to the end of January 2003.

<p>Usage Report run on Sat Feb 1 08:50:01 2003 for the CSAR service</p> <p>cs2036 Hayhurst Last Trade: re-enabled Usage: 0.0 of 78.4 Hour Wren CPU (0.0 of 3.9 G.S.T), 0.0% 2587.2 of 2363.2 Hour SMP CPU (100.5 of 91.8 G.S.T), 109.5% 0.0 of 1.0 GByteYear MP Disk (0.0 of 3.6 G.S.T), 0.0% 1.0 of 1.7 PersonDay Support (29.4 of 50.0 G.S.T), 58.8% Total usage for project cs2036 129.9 of 149.3 Generic Service Tokens, 87.0%</p> <hr/> <p>cs2037 Domene Last Trade: re-enabled Usage: 0.0 of 1.6 Hour Wren CPU (0.0 of 0.1 G.S.T), 0.8% 0.0 of 384.1 Hour SMP CPU (0.0 of 14.9 G.S.T), 0.0% 0.8 of 4.7 GByteYear MP Disk (2.9 of 16.7 G.S.T), 17.6% 1137.0 of 1244.0 Hour Green CPU (59.4 of 65.0 G.S.T), 91.4% Total usage for project cs2037 62.3 of 96.7 Generic Service Tokens, 64.5%</p> <hr/> <p>cs2038 Excell Last Trade: Mon Nov 4 09:58:38 2002 Usage: 0.0 of 1.3 Hour SMP CPU (0.0 of 0.0 G.S.T), 0.4% 0.0 of 4.9 GByteYear HSM/Tape (0.0 of 3.1 G.S.T), 0.0% 0.2 of 50.0 Hour VPP_CPU (0.2 of 55.3 G.S.T), 0.4% 0.0 of 4.0 GByteYear Fuji Disk (0.0 of 14.3 G.S.T), 0.0% 0.0 of 1.0 PersonDay Support (0.0 of 29.4 G.S.T), 0.0% Total usage for project cs2038 0.2 of 102.2 Generic Service Tokens, 0.2%</p> <hr/> <p>cs2039 Carlborg Last Trade: Tue Dec 10 14:02:33 2002 Usage: 0.1 of 20.2 Hour Wren CPU (0.0 of 1.0 G.S.T), 0.6% 0.0 of 0.5 GByteYear MP Disk (0.0 of 1.8 G.S.T), 0.0% 0.0 of 1853.6 Hour Green CPU (0.0 of 96.9 G.S.T), 0.0% Total usage for project cs2039 0.0 of 99.6 Generic Service Tokens, 0.0%</p> <hr/> <p>cs3015 Hampshire Last Trade: re-enabled Usage: 79.0 of 235.3 Hour Wren CPU (3.9 of 11.7 G.S.T), 33.6% 450.0 of 648.8 Hour SMP CPU (17.5 of 25.2 G.S.T), 69.4% 1.5 of 2.0 GByteYear MP Disk (5.3 of 7.1 G.S.T), 73.8% 4273.8 of 6596.1 Hour Green CPU (223.3 of 344.7 G.S.T), 64.8% 0.0 of 2.0 PersonDay Support (0.0 of 58.8 G.S.T), 0.0% 0.0 of 5.0 Day Training (0.0 of 53.8 G.S.T), 0.0% Total usage for project cs3015 250.0 of 501.2 Generic Service Tokens, 49.9%</p> <hr/> <p>cs3016 Petchey Last Trade: re-enabled</p>

Usage:

42.7 of 78.4 Hour Wren CPU (2.1 of 3.9 G.S.T), 54.4%
 111.4 of 9920.1 Hour SMP CPU (4.3 of 385.4 G.S.T), 1.1%
 0.0 of 0.5 GByteYear MP Disk (0.0 of 1.8 G.S.T), 0.0%
 0.0 of 2.0 PersonDay Support (0.0 of 58.8 G.S.T), 0.0%
 Total usage for project cs3016 6.4 of 449.9 Generic Service Tokens, 1.4%

cs3017 Gross

Last Trade: Mon Jan 13 10:31:13 2003

Usage:

0.0 of 100.3 Hour Wren CPU (0.0 of 5.0 G.S.T), 0.0%
 0.0 of 1.3 Hour SMP CPU (0.0 of 0.1 G.S.T), 0.0%
 0.0 of 25.0 GByteYear MP Disk (0.0 of 89.3 G.S.T), 0.0%
 0.0 of 6075.3 Hour Green CPU (0.0 of 317.4 G.S.T), 0.0%
 0.0 of 3.0 PersonDay Support (0.0 of 88.2 G.S.T), 0.0%
 Total usage for project cs3017 0.0 of 500.0 Generic Service Tokens, 0.0%

cs3019 Bengough

Last Trade: Tue Dec 17 12:55:36 2002

Usage:

0.0 of 360.1 Hour Wren CPU (0.0 of 17.8 G.S.T), 0.0%
 0.5 of 10648.7 Hour SMP CPU (0.0 of 413.7 G.S.T), 0.0%
 0.0 of 3.0 GByteYear MP Disk (0.0 of 10.7 G.S.T), 0.0%
 0.0 of 2.0 PersonDay Support (0.0 of 58.8 G.S.T), 0.0%
 Total usage for project cs3019 0.0 of 501.1 Generic Service Tokens, 0.0%

csb001 27/B13508 Goodfellow

Last Trade: re-enabled

Usage:

148619.6 of 250989.4 PEHour MPP PE CPU (3593.4 of 6068.6 G.S.T), 59.2%
 8.1 of 48.1 GByteYear HP Disk (48.1 of 286.4 G.S.T), 16.8%
 0.4 of 1.2 Hour SMP CPU (0.0 of 0.0 G.S.T), 28.3%
 6.1 of 13.7 GByteYear MP Disk (21.9 of 49.0 G.S.T), 44.7%
 0.0 of 115.0 GByteYear HSM/Tape (0.0 of 72.2 G.S.T), 0.0%
 2454.8 of 12444.9 Hour Green CPU (128.3 of 650.3 G.S.T), 19.7%
 3.5 of 6.0 PersonDay Support (102.9 of 176.5 G.S.T), 58.3%
 2.0 of 4.0 Day Training (21.5 of 43.2 G.S.T), 49.8%
 Total usage for project csb001 3916.1 of 7346.2 Generic Service Tokens, 53.3%

CSE001 - Admin users

Last Trade: Fri Oct 8 15:16:30 1999

Usage:

0.0 of 12.4 PEHour MPP PE CPU (0.0 of 0.3 G.S.T), 0.0%
 0.1 of 0.1 GByteYear HP Disk (0.4 of 0.5 G.S.T), 69.2%
 Total usage for project cse001 0.4 of 0.8 Generic Service Tokens, 44.4%

cse002 GR/N02337 Bird

Last Trade: Tue Dec 3 10:39:15 2002

Usage:

2982531.0 of 3078966.1 PEHour MPP PE CPU (72113.8 of 74445.4 G.S.T), 96.9%
 746.9 of 1322.0 GByteYear HP Disk (4445.9 of 7869.1 G.S.T), 56.5%
 17.1 of 102.8 Hour Wren CPU (0.8 of 5.1 G.S.T), 16.6%
 138664.5 of 162260.2 Hour SMP CPU (5387.3 of 6304.1 G.S.T), 85.5%
 285.7 of 1222.0 GByteYear MP Disk (1020.3 of 4364.3 G.S.T), 23.4%
 370.8 of 414.5 GByteYear HSM/Tape (232.9 of 260.4 G.S.T), 89.5%

258028.0 of 256260.5 Hour Green CPU (13482.5 of 13390.1 G.S.T), 100.7%
 144.2 of 144.3 PersonDay Support (4242.6 of 4242.6 G.S.T), 100.0%
 3.0 of 3.0 Day Training (32.3 of 32.3 G.S.T), 100.0%
 Total usage for project cse002 100958.5 of 110913.3 Generic Service Tokens, 91.0%

cse002 Daresbury

Last Trade: never

Usage:

476442.6 of 482686.0 PEHour MPP PE CPU (11519.8 of 11670.7 G.S.T), 98.7%
 127.7 of 200.0 GByteYear HP Disk (759.9 of 1190.5 G.S.T), 63.8%
 16.7 of 25.0 Hour Wren CPU (0.8 of 1.2 G.S.T), 66.9%
 34167.4 of 35350.0 Hour SMP CPU (1327.5 of 1373.4 G.S.T), 96.7%
 32.6 of 48.9 GByteYear MP Disk (116.5 of 174.6 G.S.T), 66.7%
 69.6 of 106.0 GByteYear HSM/Tape (43.7 of 66.6 G.S.T), 65.7%
 38123.2 of 22500.0 Hour Green CPU (1992.0 of 1175.7 G.S.T), 169.4%
 Total usage for subproject cse002a 15760.2 of 15652.7 Generic Service Tokens, 100.7%

cse002 Belfast

Last Trade: never

Usage:

350870.0 of 353170.0 PEHour MPP PE CPU (8483.6 of 8539.2 G.S.T), 99.3%
 94.8 of 99.0 GByteYear HP Disk (564.3 of 589.3 G.S.T), 95.8%
 0.0 of 6.0 Hour Wren CPU (0.0 of 0.3 G.S.T), 0.0%
 19555.1 of 20446.0 Hour SMP CPU (759.7 of 794.4 G.S.T), 95.6%
 10.4 of 44.9 GByteYear MP Disk (37.2 of 160.4 G.S.T), 23.2%
 0.0 of 3.0 GByteYear HSM/Tape (0.0 of 1.9 G.S.T), 0.0%
 Total usage for subproject cse002b 9844.8 of 10085.4 Generic Service Tokens, 97.6%

cse002 Cambridge - Matsci

Last Trade: never

Usage:

371895.7 of 371396.0 PEHour MPP PE CPU (8992.0 of 8979.9 G.S.T), 100.1%
 47.8 of 54.4 GByteYear HP Disk (284.8 of 323.8 G.S.T), 87.9%
 0.0 of 6.0 Hour Wren CPU (0.0 of 0.3 G.S.T), 0.0%
 0.0 of 1.0 Hour SMP CPU (0.0 of 0.0 G.S.T), 0.0%
 25.2 of 50.4 GByteYear MP Disk (90.0 of 180.0 G.S.T), 50.0%
 9.9 of 52.0 GByteYear HSM/Tape (6.2 of 32.6 G.S.T), 19.0%
 Total usage for subproject cse002c 9372.9 of 9516.7 Generic Service Tokens, 98.5%

cse002 Cambridge - Physics

Last Trade: never

Usage:

88900.2 of 92520.0 PEHour MPP PE CPU (2149.5 of 2237.0 G.S.T), 96.1%
 13.2 of 26.7 GByteYear HP Disk (78.6 of 158.9 G.S.T), 49.5%
 0.1 of 8.0 Hour Wren CPU (0.0 of 0.4 G.S.T), 0.8%
 18353.7 of 27938.0 Hour SMP CPU (713.1 of 1085.4 G.S.T), 65.7%
 19.5 of 27.7 GByteYear MP Disk (69.6 of 98.9 G.S.T), 70.3%
 0.0 of 27.0 GByteYear HSM/Tape (0.0 of 16.9 G.S.T), 0.0%
 0.0 of 0.5 Hour Green CPU (0.0 of 0.0 G.S.T), 0.0%
 Total usage for subproject cse002d 3010.8 of 3597.7 Generic Service Tokens, 83.7%

cse002 Bath

Last Trade: never

Usage:

455233.5 of 462619.0 PEHour MPP PE CPU (11007.0 of 11185.5 G.S.T), 98.4%

158.2 of 199.0 GByteYear HP Disk (941.7 of 1184.5 G.S.T), 79.5%
 0.0 of 4.0 Hour Wren CPU (0.0 of 0.2 G.S.T), 0.0%
 0.0 of 1.0 Hour SMP CPU (0.0 of 0.0 G.S.T), 0.0%
 34.9 of 50.5 GByteYear MP Disk (124.7 of 180.4 G.S.T), 69.1%
 116.1 of 75.0 GByteYear HSM/Tape (72.9 of 47.1 G.S.T), 154.8%
 Total usage for subproject cse002e 12146.3 of 12597.8 Generic Service Tokens, 96.4%

cse002 UCL

Last Trade: never

Usage:

84029.4 of 128733.0 PEHour MPP PE CPU (2031.7 of 3112.6 G.S.T), 65.3%
 25.7 of 59.1 GByteYear HP Disk (153.2 of 351.8 G.S.T), 43.6%
 0.0 of 12.0 Hour Wren CPU (0.0 of 0.6 G.S.T), 0.0%
 4775.9 of 3450.0 Hour SMP CPU (185.6 of 134.0 G.S.T), 138.4%
 25.9 of 54.6 GByteYear MP Disk (92.5 of 195.0 G.S.T), 47.5%
 0.0 of 3.3 GByteYear HSM/Tape (0.0 of 2.1 G.S.T), 0.0%
 34210.9 of 29998.0 Hour Green CPU (1787.6 of 1567.5 G.S.T), 114.0%
 Total usage for subproject cse002f 4250.7 of 5363.5 Generic Service Tokens, 79.3%

cse002 Oxford - pcl

Last Trade: never

Usage:

120308.2 of 157112.0 PEHour MPP PE CPU (2908.9 of 3798.8 G.S.T), 76.6%
 15.4 of 32.8 GByteYear HP Disk (91.4 of 195.2 G.S.T), 46.8%
 0.3 of 8.0 Hour Wren CPU (0.0 of 0.4 G.S.T), 3.6%
 1905.4 of 1875.0 Hour SMP CPU (74.0 of 72.8 G.S.T), 101.6%
 26.9 of 30.8 GByteYear MP Disk (96.1 of 110.0 G.S.T), 87.4%
 0.0 of 2.2 GByteYear HSM/Tape (0.0 of 1.4 G.S.T), 0.0%
 12576.2 of 16195.0 Hour Green CPU (657.1 of 846.2 G.S.T), 77.7%
 Total usage for subproject cse002g 3827.6 of 5024.8 Generic Service Tokens, 76.2%

cse002 Edinburgh

Last Trade: never

Usage:

366804.2 of 304793.0 PEHour MPP PE CPU (8868.9 of 7369.5 G.S.T), 120.3%
 43.6 of 51.0 GByteYear HP Disk (259.4 of 303.6 G.S.T), 85.5%
 0.0 of 8.0 Hour Wren CPU (0.0 of 0.4 G.S.T), 0.0%
 0.0 of 12800.0 Hour SMP CPU (0.0 of 497.3 G.S.T), 0.0%
 12.7 of 46.5 GByteYear MP Disk (45.4 of 166.1 G.S.T), 27.3%
 0.0 of 2.8 GByteYear HSM/Tape (0.0 of 1.8 G.S.T), 0.0%
 Total usage for subproject cse002i 9173.6 of 8338.6 Generic Service Tokens, 110.0%

cse002 Kent (UKC)

Last Trade: never

Usage:

240727.7 of 239888.0 PEHour MPP PE CPU (5820.5 of 5800.2 G.S.T), 100.4%
 78.9 of 100.0 GByteYear HP Disk (469.9 of 595.2 G.S.T), 78.9%
 0.0 of 6.0 Hour Wren CPU (0.0 of 0.3 G.S.T), 0.0%
 0.0 of 1.0 Hour SMP CPU (0.0 of 0.0 G.S.T), 0.0%
 17.2 of 33.6 GByteYear MP Disk (61.4 of 120.0 G.S.T), 51.1%
 54.8 of 100.0 GByteYear HSM/Tape (34.5 of 62.8 G.S.T), 54.8%
 148939.9 of 156113.0 Hour Green CPU (7782.4 of 8157.2 G.S.T), 95.4%
 Total usage for subproject cse002j 14168.6 of 14735.8 Generic Service Tokens, 96.2%

cse002 Durham

Last Trade: never

Usage:

56878.0 of 90000.0 PEHour MPP PE CPU (1375.2 of 2176.1 G.S.T), 63.2%

24.9 of 45.0 GByteYear HP Disk (148.5 of 267.9 G.S.T), 55.4%

0.0 of 1.0 Hour SMP CPU (0.0 of 0.0 G.S.T), 0.0%

11.4 of 45.0 GByteYear MP Disk (40.9 of 160.7 G.S.T), 25.4%

Total usage for subproject cse002k 1564.5 of 2604.7 Generic Service Tokens, 60.1%

cse002 York

Last Trade: never

Usage:

0.2 of 10000.0 PEHour MPP PE CPU (0.0 of 241.8 G.S.T), 0.0%

2.3 of 5.0 GByteYear HP Disk (13.5 of 29.8 G.S.T), 45.3%

0.0 of 2.0 Hour Wren CPU (0.0 of 0.1 G.S.T), 0.0%

0.0 of 1.0 Hour SMP CPU (0.0 of 0.0 G.S.T), 0.0%

18.2 of 30.0 GByteYear MP Disk (64.9 of 107.1 G.S.T), 60.6%

Total usage for subproject cse002l 78.4 of 378.8 Generic Service Tokens, 20.7%

cse009 GR/20607 Catlow

Last Trade: Wed Jan 29 18:03:33 2003

Usage:

1736858.0 of 1737108.0 PEHour MPP PE CPU (41995.0 of 42001.0 G.S.T), 100.0%

190.3 of 728.3 GByteYear HP Disk (1132.8 of 4335.3 G.S.T), 26.1%

14.7 of 79.4 Hour Wren CPU (0.7 of 3.9 G.S.T), 18.6%

52016.3 of 55111.5 Hour SMP CPU (2020.9 of 2141.2 G.S.T), 94.4%

31.0 of 646.7 GByteYear MP Disk (110.8 of 2309.7 G.S.T), 4.8%

0.0 of 0.9 GByteYear HSM/Tape (0.0 of 0.6 G.S.T), 0.0%

215778.9 of 255006.0 Hour Green CPU (11274.9 of 13324.6 G.S.T), 84.6%

9.0 of 9.5 PersonDay Support (264.7 of 279.4 G.S.T), 94.7%

0.0 of 0.5 Day Training (0.0 of 5.4 G.S.T), 0.0%

Total usage for project cse009 56799.8 of 64401.2 Generic Service Tokens, 88.2%

cse013 GR/M50539 Leschziner

Last Trade: Mon Dec 2 10:22:09 2002

Usage:

1535646.9 of 4037760.0 PEHour MPP PE CPU (37130.0 of 97627.9 G.S.T), 38.0%

36.6 of 820.4 GByteYear HP Disk (218.0 of 4883.5 G.S.T), 4.5%

3.6 of 15.7 Hour Wren CPU (0.2 of 0.8 G.S.T), 22.7%

17556.9 of 29344.5 Hour SMP CPU (682.1 of 1140.1 G.S.T), 59.8%

14.9 of 308.0 GByteYear MP Disk (53.2 of 1100.0 G.S.T), 4.8%

34.4 of 504.0 GByteYear HSM/Tape (21.6 of 316.6 G.S.T), 6.8%

82837.4 of 259280.1 Hour Green CPU (4328.4 of 13547.9 G.S.T), 31.9%

0.0 of 9.0 PersonDay Support (0.0 of 264.7 G.S.T), 0.0%

4.0 of 57.5 Day Training (43.0 of 618.3 G.S.T), 7.0%

Total usage for project cse013 42476.5 of 119499.7 Generic Service Tokens, 35.5%

cse013 - ICL

Last Trade: never

Usage:

136902.5 of 200000.0 PEHour MPP PE CPU (3310.1 of 4835.7 G.S.T), 68.5%

2.6 of 4.0 GByteYear HP Disk (15.4 of 23.8 G.S.T), 64.8%

0.0 of 3.0 Hour Wren CPU (0.0 of 0.1 G.S.T), 0.0%

366.3 of 500.0 Hour SMP CPU (14.2 of 19.4 G.S.T), 73.3%

0.2 of 5.0 GByteYear MP Disk (0.5 of 17.9 G.S.T), 3.0%

0.0 of 2.0 GByteYear HSM/Tape (0.0 of 1.3 G.S.T), 0.0%

Total usage for subproject cse013a 3340.3 of 4898.2 Generic Service Tokens, 68.2%

cse013 - Loughborough

Last Trade: never

Usage:

766765.5 of 800000.0 PEHour MPP PE CPU (18539.4 of 19343.0 G.S.T), 95.8%

9.0 of 10.0 GByteYear HP Disk (53.4 of 59.5 G.S.T), 89.6%

0.0 of 3.0 Hour Wren CPU (0.0 of 0.1 G.S.T), 0.0%

9145.2 of 12000.0 Hour SMP CPU (355.3 of 466.2 G.S.T), 76.2%

2.2 of 15.0 GByteYear MP Disk (8.0 of 53.6 G.S.T), 15.0%

0.0 of 5.0 GByteYear HSM/Tape (0.0 of 3.1 G.S.T), 0.0%

4449.5 of 7000.0 Hour Green CPU (232.5 of 365.8 G.S.T), 63.6%

Total usage for subproject cse013b 19188.6 of 20291.3 Generic Service Tokens, 94.6%

cse013 - Surrey

Last Trade: never

Usage:

73101.7 of 80000.0 PEHour MPP PE CPU (1767.5 of 1934.3 G.S.T), 91.4%

6.7 of 8.0 GByteYear HP Disk (39.9 of 47.6 G.S.T), 83.8%

0.8 of 3.0 Hour Wren CPU (0.0 of 0.1 G.S.T), 25.6%

1805.0 of 3600.0 Hour SMP CPU (70.1 of 139.9 G.S.T), 50.1%

3.0 of 15.0 GByteYear MP Disk (10.8 of 53.6 G.S.T), 20.1%

0.0 of 5.0 GByteYear HSM/Tape (0.0 of 3.1 G.S.T), 0.0%

25497.0 of 40000.0 Hour Green CPU (1332.3 of 2090.1 G.S.T), 63.7%

Total usage for subproject cse013c 3220.6 of 4268.7 Generic Service Tokens, 75.4%

cse013 - QMW

Last Trade: never

Usage:

558877.3 of 700000.0 PEHour MPP PE CPU (13512.9 of 16925.1 G.S.T), 79.8%

10.8 of 15.0 GByteYear HP Disk (64.0 of 89.3 G.S.T), 71.7%

2.8 of 5.0 Hour Wren CPU (0.1 of 0.2 G.S.T), 55.8%

1906.9 of 3000.0 Hour SMP CPU (74.1 of 116.6 G.S.T), 63.6%

4.2 of 15.0 GByteYear MP Disk (14.9 of 53.6 G.S.T), 27.8%

34.4 of 40.0 GByteYear HSM/Tape (21.6 of 25.1 G.S.T), 86.0%

Total usage for subproject cse013d 13687.7 of 17209.9 Generic Service Tokens, 79.5%

cse030 Edinburgh

Last Trade: never

Usage:

102882.3 of 110480.0 PEHour MPP PE CPU (2487.6 of 2671.3 G.S.T), 93.1%

206.6 of 234.4 GByteYear HP Disk (1229.5 of 1395.2 G.S.T), 88.1%

2920.1 of 3200.0 Hour SMP CPU (113.5 of 124.3 G.S.T), 91.3%

101.2 of 120.0 GByteYear MP Disk (361.4 of 428.6 G.S.T), 84.3%

410.6 of 516.3 GByteYear HSM/Tape (257.9 of 324.3 G.S.T), 79.5%

0.0 of 1.0 Hour Green CPU (0.0 of 0.1 G.S.T), 0.0%

Total usage for subproject cse030a 4449.8 of 4943.7 Generic Service Tokens, 90.0%

cse030 QMW

Last Trade: never

Usage:

196350.5 of 213142.1 PEHour MPP PE CPU (4747.5 of 5153.5 G.S.T), 92.1%

190.9 of 215.0 GByteYear HP Disk (1136.4 of 1279.8 G.S.T), 88.8%

8.0 of 0.0 Hour Wren CPU (0.4 of 0.0 G.S.T), 40075.0%

2056.3 of 3000.0 Hour SMP CPU (79.9 of 116.6 G.S.T), 68.5%

459.0 of 440.0 GByteYear MP Disk (1639.1 of 1571.4 G.S.T), 104.3%

188.1 of 322.2 GByteYear HSM/Tape (118.2 of 202.4 G.S.T), 58.4%
0.0 of 1.0 Hour Green CPU (0.0 of 0.1 G.S.T), 0.0%
Total usage for subproject cse030b 7721.5 of 8323.7 Generic Service Tokens, 92.8%

cse030 Oxford

Last Trade: never

Usage:

18310.7 of 18310.7 PEHour MPP PE CPU (442.7 of 442.7 G.S.T), 100.0%
1.1 of 2.0 GByteYear HP Disk (6.6 of 11.9 G.S.T), 55.4%
0.0 of 50.0 Hour SMP CPU (0.0 of 1.9 G.S.T), 0.0%
7.7 of 10.0 GByteYear MP Disk (27.6 of 35.7 G.S.T), 77.2%
0.0 of 0.0 GByteYear HSM/Tape (0.0 of 0.0 G.S.T)
0.0 of 1.0 Hour Green CPU (0.0 of 0.1 G.S.T), 0.0%
Total usage for subproject cse030c 476.9 of 492.3 Generic Service Tokens, 96.9%

cse030 Bristol

Last Trade: never

Usage:

0.0 of 50.0 PEHour MPP PE CPU (0.0 of 1.2 G.S.T), 0.0%
10.7 of 12.0 GByteYear HP Disk (63.4 of 71.4 G.S.T), 88.8%
0.0 of 50.0 Hour SMP CPU (0.0 of 1.9 G.S.T), 0.0%
11.8 of 14.0 GByteYear MP Disk (42.0 of 50.0 G.S.T), 83.9%
0.0 of 0.0 GByteYear HSM/Tape (0.0 of 0.0 G.S.T)
Total usage for subproject cse030d 105.4 of 124.6 Generic Service Tokens, 84.6%

cse030 Leeds

Last Trade: never

Usage:

0.0 of 0.0 PEHour MPP PE CPU (0.0 of 0.0 G.S.T)
0.0 of 0.0 GByteYear HP Disk (0.0 of 0.0 G.S.T)
0.0 of 0.0 Hour SMP CPU (0.0 of 0.0 G.S.T)
0.0 of 0.0 GByteYear MP Disk (0.0 of 0.0 G.S.T)
0.0 of 0.0 GByteYear HSM/Tape (0.0 of 0.0 G.S.T)
Total usage for subproject cse030e 0.0 of 0.0 Generic Service Tokens, 0.0%

cse030 Cambridge

Last Trade: never

Usage:

0.0 of 0.0 PEHour MPP PE CPU (0.0 of 0.0 G.S.T)
0.0 of 0.0 GByteYear HP Disk (0.0 of 0.0 G.S.T)
0.0 of 200.0 Hour SMP CPU (0.0 of 7.8 G.S.T), 0.0%
0.0 of 3.0 GByteYear MP Disk (0.0 of 10.7 G.S.T), 0.0%
0.0 of 0.0 GByteYear HSM/Tape (0.0 of 0.0 G.S.T)
0.0 of 1.0 Hour Green CPU (0.0 of 0.1 G.S.T), 0.0%
Total usage for subproject cse030f 0.0 of 18.5 Generic Service Tokens, 0.0%

cse030 Sheffield Hallam

Last Trade: never

Usage:

8896.1 of 8900.0 PEHour MPP PE CPU (215.1 of 215.2 G.S.T), 100.0%
5.0 of 5.8 GByteYear HP Disk (29.9 of 34.2 G.S.T), 87.5%
0.0 of 50.0 Hour SMP CPU (0.0 of 1.9 G.S.T), 0.0%
4.5 of 6.0 GByteYear MP Disk (15.9 of 21.4 G.S.T), 74.4%
0.0 of 0.0 GByteYear HSM/Tape (0.0 of 0.0 G.S.T)
0.0 of 0.0 Hour Green CPU (0.0 of 0.0 G.S.T)

Total usage for subproject cse030g 261.0 of 272.8 Generic Service Tokens, 95.7%

cse035 GR/M76720 King

Last Trade: Fri Dec 6 15:42:12 2002

Usage:

419350.4 of 424189.3 PEHour MPP PE CPU (10139.4 of 10256.4 G.S.T), 98.9%

21.4 of 23.3 GByteYear HP Disk (127.4 of 138.5 G.S.T), 92.0%

0.0 of 0.3 Hour SMP CPU (0.0 of 0.0 G.S.T), 6.0%

0.0 of 0.6 GByteYear MP Disk (0.1 of 2.0 G.S.T), 3.1%

18.0 of 18.7 GByteYear HSM/Tape (11.3 of 11.8 G.S.T), 95.8%

Total usage for project cse035 10278.1 of 10408.6 Generic Service Tokens, 98.7%

cse036 GR/M78502 Duff

Last Trade: re-enabled

Usage:

40.3 of 617.1 PEHour MPP PE CPU (1.0 of 14.9 G.S.T), 6.5%

0.7 of 3.0 GByteYear HP Disk (4.1 of 17.9 G.S.T), 23.1%

0.0 of 15.7 Hour Wren CPU (0.0 of 0.8 G.S.T), 0.0%

88.0 of 379.9 Hour SMP CPU (3.4 of 14.8 G.S.T), 23.2%

0.4 of 3.0 GByteYear MP Disk (1.4 of 10.7 G.S.T), 13.4%

Total usage for project cse036 10.0 of 59.0 Generic Service Tokens, 16.9%

cse040 GR/M84350 Badcock

Last Trade: re-enabled

Usage:

18.9 of 5000.0 PEHour MPP PE CPU (0.5 of 120.9 G.S.T), 0.4%

0.2 of 6.0 GByteYear HP Disk (1.1 of 35.8 G.S.T), 3.1%

3.8 of 6.8 GByteYear MP Disk (13.4 of 24.4 G.S.T), 54.9%

0.0 of 2.5 PersonDay Support (0.0 of 72.2 G.S.T), 0.0%

0.0 of 6.3 Day Training (0.0 of 68.1 G.S.T), 0.0%

Total usage for project cse040 15.0 of 321.3 Generic Service Tokens, 4.7%

cse041 GR/M84879 Imregun

Last Trade: re-enabled

Usage:

588.6 of 12981.4 PEHour MPP PE CPU (14.2 of 313.9 G.S.T), 4.5%

1.3 of 119.7 GByteYear HP Disk (7.7 of 712.4 G.S.T), 1.1%

0.0 of 78.4 Hour Wren CPU (0.0 of 3.9 G.S.T), 0.0%

1407.1 of 4431.4 Hour SMP CPU (54.7 of 172.2 G.S.T), 31.8%

1.2 of 123.5 GByteYear MP Disk (4.2 of 440.9 G.S.T), 1.0%

138.1 of 230.3 GByteYear HSM/Tape (86.7 of 144.6 G.S.T), 60.0%

0.0 of 60.0 PersonDay Support (0.0 of 1764.7 G.S.T), 0.0%

0.0 of 5.0 Day Training (0.0 of 53.8 G.S.T), 0.0%

Total usage for project cse041 167.5 of 3606.4 Generic Service Tokens, 4.6%

cse043 GR/M85241 Williams

Last Trade: re-enabled

Usage:

146253.7 of 148935.0 PEHour MPP PE CPU (3536.2 of 3601.1 G.S.T), 98.2%

1.6 of 10.0 GByteYear HP Disk (9.4 of 59.5 G.S.T), 15.8%

0.0 of 6.2 Hour SMP CPU (0.0 of 0.2 G.S.T), 0.2%

2.4 of 4.8 GByteYear MP Disk (8.6 of 17.3 G.S.T), 49.6%

16.3 of 28.8 GByteYear HSM/Tape (10.2 of 18.1 G.S.T), 56.6%

4.0 of 4.0 PersonDay Support (117.6 of 117.8 G.S.T), 99.8%

4.0 of 4.0 Day Training (43.0 of 43.0 G.S.T), 100.1%

Total usage for project cse043 3725.1 of 3857.0 Generic Service Tokens, 96.6%

cse050 GR/N/38152 Bradley

Last Trade: re-enabled

Usage:

0.0 of 104742.3 PEHour MPP PE CPU (0.0 of 2532.5 G.S.T), 0.0%

0.0 of 11.0 GByteYear HP Disk (0.0 of 65.5 G.S.T), 0.0%

0.0 of 78.4 Hour Wren CPU (0.0 of 3.9 G.S.T), 0.0%

0.1 of 1200.0 Hour SMP CPU (0.0 of 46.6 G.S.T), 0.0%

0.0 of 4.5 GByteYear HSM/Tape (0.0 of 2.8 G.S.T), 0.0%

0.0 of 20.0 PersonDay Support (0.0 of 588.2 G.S.T), 0.0%

0.0 of 10.0 Day Training (0.0 of 107.5 G.S.T), 0.0%

Total usage for project cse050 0.0 of 3347.1 Generic Service Tokens, 0.0%

cse052 GR/N17683 Hayes

Last Trade: re-enabled

Usage:

299750.1 of 298505.0 PEHour MPP PE CPU (7247.6 of 7217.5 G.S.T), 100.4%

4.7 of 9.1 GByteYear HP Disk (27.9 of 54.4 G.S.T), 51.3%

0.0 of 0.0 Hour Wren CPU (0.0 of 0.0 G.S.T)

0.0 of 0.0 Hour SMP CPU (0.0 of 0.0 G.S.T)

0.0 of 8.5 GByteYear MP Disk (0.0 of 30.4 G.S.T), 0.0%

0.0 of 3.0 GByteYear HSM/Tape (0.0 of 1.9 G.S.T), 0.0%

0.0 of 10.0 PersonDay Support (0.0 of 294.1 G.S.T), 0.0%

0.0 of 0.0 Day Training (0.0 of 0.0 G.S.T)

Total usage for project cse052 7275.5 of 7598.3 Generic Service Tokens, 95.8%

cse053 GR/R04225 Leschziner

Last Trade: re-enabled

Usage:

41932.9 of 319557.6 PEHour MPP PE CPU (1013.9 of 7726.5 G.S.T), 13.1%

1.6 of 115.0 GByteYear HP Disk (9.4 of 684.5 G.S.T), 1.4%

0.1 of 78.4 Hour Wren CPU (0.0 of 3.9 G.S.T), 0.1%

73.9 of 13900.0 Hour SMP CPU (2.9 of 540.0 G.S.T), 0.5%

1.2 of 85.0 GByteYear MP Disk (4.2 of 303.6 G.S.T), 1.4%

0.0 of 100.0 GByteYear HSM/Tape (0.0 of 62.8 G.S.T), 0.0%

612.4 of 1850.9 Hour Green CPU (32.0 of 96.7 G.S.T), 33.1%

0.0 of 15.0 PersonDay Support (0.0 of 441.2 G.S.T), 0.0%

0.0 of 8.0 Day Training (0.0 of 86.0 G.S.T), 0.0%

Total usage for project cse053 1062.3 of 9945.2 Generic Service Tokens, 10.7%

cse055 GR/N66810 Staunton

Last Trade: Mon Aug 6 09:05:54 2001

Usage:

8840.4 of 24604.0 PEHour MPP PE CPU (213.7 of 594.9 G.S.T), 35.9%

1.6 of 2.5 GByteYear HP Disk (9.3 of 14.9 G.S.T), 62.6%

0.0 of 3.1 Hour SMP CPU (0.0 of 0.1 G.S.T), 0.0%

0.0 of 5.0 PersonDay Support (0.0 of 147.1 G.S.T), 0.0%

0.0 of 10.0 Day Training (0.0 of 107.5 G.S.T), 0.0%

Total usage for project cse055 223.1 of 864.5 Generic Service Tokens, 25.8%

cse056 GR/N24773 Imregun

Last Trade: re-enabled

Usage:

0.0 of 100.2 PEHour MPP PE CPU (0.0 of 2.4 G.S.T), 0.0%

0.0 of 40.0 GByteYear HP Disk (0.0 of 238.0 G.S.T), 0.0%
0.0 of 78.4 Hour Wren CPU (0.0 of 3.9 G.S.T), 0.0%
346.7 of 33674.1 Hour SMP CPU (13.5 of 1308.3 G.S.T), 1.0%
0.8 of 2.7 GByteYear MP Disk (2.9 of 9.8 G.S.T), 29.2%
0.0 of 5.0 PersonDay Support (0.0 of 147.1 G.S.T), 0.0%
0.0 of 10.0 Day Training (0.0 of 107.5 G.S.T), 0.0%
Total usage for project cse056 16.3 of 1817.0 Generic Service Tokens, 0.9%

cse057 GR/R23909 Krushelnick

Last Trade: Fri Sep 7 11:39:20 2001

Usage:

2310.0 of 86751.6 PEHour MPP PE CPU (55.9 of 2097.5 G.S.T), 2.7%
0.6 of 30.0 GByteYear HP Disk (3.5 of 178.6 G.S.T), 2.0%
1.7 of 62.2 Hour SMP CPU (0.1 of 2.4 G.S.T), 2.7%
0.5 of 462.7 Hour Green CPU (0.0 of 24.2 G.S.T), 0.1%
0.0 of 20.0 PersonDay Support (0.0 of 588.2 G.S.T), 0.0%
0.0 of 10.0 Day Training (0.0 of 107.5 G.S.T), 0.0%
Total usage for project cse057 59.4 of 2998.5 Generic Service Tokens, 2.0%

cse060 GR/R17058 Robb

Last Trade: re-enabled

Usage:

17.5 of 140607.5 PEHour MPP PE CPU (0.4 of 3399.7 G.S.T), 0.0%
0.0 of 3.0 GByteYear HP Disk (0.0 of 17.9 G.S.T), 0.0%
0.0 of 10.0 PersonDay Support (0.0 of 294.1 G.S.T), 0.0%
0.0 of 10.0 Day Training (0.0 of 107.5 G.S.T), 0.0%
Total usage for project cse060 0.4 of 3819.2 Generic Service Tokens, 0.0%

cse061 GR/R42672 Imregun

Last Trade: Thu Oct 17 15:11:50 2002

Usage:

0.0 of 85875.0 PEHour MPP PE CPU (0.0 of 2076.3 G.S.T), 0.0%
0.0 of 50.1 GByteYear HP Disk (0.0 of 298.3 G.S.T), 0.0%
0.0 of 5.0 PersonDay Support (0.0 of 147.1 G.S.T), 0.0%
0.0 of 5.0 Day Training (0.0 of 53.8 G.S.T), 0.0%
Total usage for project cse061 0.0 of 2575.5 Generic Service Tokens, 0.0%

cse063 GR/R46151 Sandham

Last Trade: Tue Jan 28 14:17:21 2003

Usage:

42228.4 of 288921.7 PEHour MPP PE CPU (1021.0 of 6985.8 G.S.T), 14.6%
12.0 of 100.0 GByteYear HP Disk (71.3 of 595.2 G.S.T), 12.0%
167.9 of 62.9 Hour SMP CPU (6.5 of 2.4 G.S.T), 267.1%
0.0 of 50.0 GByteYear MP Disk (0.0 of 178.6 G.S.T), 0.0%
14.6 of 525.0 GByteYear HSM/Tape (9.2 of 329.8 G.S.T), 2.8%
0.0 of 69409.8 Hour Green CPU (0.0 of 3626.8 G.S.T), 0.0%
0.0 of 5.0 PersonDay Support (0.0 of 147.1 G.S.T), 0.0%
0.0 of 0.0 Day Training (0.0 of 0.0 G.S.T)
Total usage for project cse063 1108.0 of 11865.6 Generic Service Tokens, 9.3%

cse064 GR/R43570 Leschziner

Last Trade: Thu Oct 17 18:03:11 2002

Usage:

13155.5 of 115039.1 PEHour MPP PE CPU (318.1 of 2781.5 G.S.T), 11.4%
0.3 of 35.0 GByteYear HP Disk (1.7 of 208.3 G.S.T), 0.8%

1.0 of 78.4 Hour Wren CPU (0.1 of 3.9 G.S.T), 1.3%
2245.8 of 21900.0 Hour SMP CPU (87.3 of 850.8 G.S.T), 10.3%
0.1 of 33.0 GByteYear MP Disk (0.4 of 117.9 G.S.T), 0.4%
0.7 of 4.0 GByteYear HSM/Tape (0.4 of 2.5 G.S.T), 16.3%
55.3 of 23136.6 Hour Green CPU (2.9 of 1208.9 G.S.T), 0.2%
0.0 of 10.0 PersonDay Support (0.0 of 294.1 G.S.T), 0.0%
2.0 of 8.0 Day Training (21.5 of 86.0 G.S.T), 25.0%
Total usage for project cse064 432.4 of 5554.0 Generic Service Tokens, 7.8%

cse066 GR/R30907 Coveney

Last Trade: re-enabled

Usage:

60786.0 of 87981.1 PEHour MPP PE CPU (1469.7 of 2127.3 G.S.T), 69.1%
10.1 of 90.0 GByteYear HP Disk (60.3 of 535.7 G.S.T), 11.3%
0.0 of 78.4 Hour Wren CPU (0.0 of 3.9 G.S.T), 0.0%
2389.0 of 14900.0 Hour SMP CPU (92.8 of 578.9 G.S.T), 16.0%
10.8 of 18.0 GByteYear MP Disk (38.5 of 64.5 G.S.T), 59.7%
12184.5 of 64652.8 Hour Green CPU (636.7 of 3378.2 G.S.T), 18.8%
0.0 of 21.0 PersonDay Support (0.0 of 617.6 G.S.T), 0.0%
3.0 of 6.0 Day Training (32.3 of 64.5 G.S.T), 50.0%
Total usage for project cse066 2330.3 of 7370.6 Generic Service Tokens, 31.6%

cse071 GR/R23657 Iacovides

Last Trade: Fri Oct 5 16:21:54 2001

Usage:

0.0 of 3729.7 Hour VPP_CPU (0.0 of 4125.8 G.S.T), 0.0%
0.0 of 20.0 GByteYear Fuji Disk (0.0 of 71.4 G.S.T), 0.0%
0.0 of 5.0 PersonDay Support (0.0 of 147.1 G.S.T), 0.0%
0.0 of 6.0 Day Training (0.0 of 64.5 G.S.T), 0.0%
Total usage for project cse071 0.0 of 4408.8 Generic Service Tokens, 0.0%

cse072 GR/R66692 Karlin

Last Trade: re-enabled

Usage:

0.0 of 160329.2 PEHour MPP PE CPU (0.0 of 3876.6 G.S.T), 0.0%
0.0 of 3.0 GByteYear HP Disk (0.0 of 17.9 G.S.T), 0.0%
0.0 of 15.7 Hour Wren CPU (0.0 of 0.8 G.S.T), 0.0%
0.0 of 163.0 Hour SMP CPU (0.0 of 6.3 G.S.T), 0.0%
0.0 of 24.0 GByteYear MP Disk (0.0 of 85.7 G.S.T), 0.0%
0.0 of 84.0 GByteYear HSM/Tape (0.0 of 52.8 G.S.T), 0.0%
0.0 of 120.0 Hour VPP_CPU (0.0 of 132.7 G.S.T), 0.0%
0.0 of 1.0 GByteYear Fuji Disk (0.0 of 3.6 G.S.T), 0.0%
0.0 of 18.0 PersonDay Support (0.0 of 529.4 G.S.T), 0.0%
0.0 of 9.0 Day Training (0.0 of 96.8 G.S.T), 0.0%
Total usage for project cse072 0.0 of 4802.5 Generic Service Tokens, 0.0%

cse074 GR/R66197 Luo

Last Trade: Wed Jan 2 15:22:45 2002

Usage:

0.0 of 15370.1 PEHour MPP PE CPU (0.0 of 371.6 G.S.T), 0.0%
0.0 of 6.0 GByteYear HP Disk (0.0 of 35.7 G.S.T), 0.0%
0.0 of 600.0 Hour SMP CPU (0.0 of 23.3 G.S.T), 0.0%
0.0 of 9.0 GByteYear MP Disk (0.0 of 32.1 G.S.T), 0.0%
Total usage for project cse074 0.0 of 462.8 Generic Service Tokens, 0.0%

cse075 GR/R59540 Coveney

Last Trade: Mon Jan 27 15:38:41 2003

Usage:

8401.4 of 264758.5 PEHour MPP PE CPU (203.1 of 6401.5 G.S.T), 3.2%
21.9 of 217.0 GByteYear HP Disk (130.2 of 1291.5 G.S.T), 10.1%
8.2 of 300.6 Hour Wren CPU (0.4 of 14.9 G.S.T), 2.7%
5139.1 of 31500.0 Hour SMP CPU (199.7 of 1223.8 G.S.T), 16.3%
143.0 of 690.5 GByteYear MP Disk (510.7 of 2466.1 G.S.T), 20.7%
77.4 of 1636.4 GByteYear HSM/Tape (48.6 of 1027.9 G.S.T), 4.7%
36527.8 of 300000.0 Hour Green CPU (1908.7 of 15675.6 G.S.T), 12.2%
0.0 of 34.0 PersonDay Support (0.0 of 1000.0 G.S.T), 0.0%
0.0 of 14.0 Day Training (0.0 of 150.5 G.S.T), 0.0%
Total usage for project cse075 3001.4 of 29251.9 Generic Service Tokens, 10.3%

cse076 GR/R66975 Briddon

Last Trade: Fri Aug 30 09:40:32 2002

Usage:

8601.7 of 4161.1 PEHour MPP PE CPU (208.0 of 100.6 G.S.T), 206.7%
1.0 of 1.3 GByteYear HP Disk (5.8 of 8.0 G.S.T), 71.7%
58.0 of 504.6 Hour Wren CPU (2.9 of 25.0 G.S.T), 11.5%
268169.0 of 267888.9 Hour SMP CPU (10418.8 of 10407.9 G.S.T), 100.1%
5.7 of 27.2 GByteYear MP Disk (20.2 of 97.1 G.S.T), 20.8%
254717.4 of 260197.5 Hour Green CPU (13309.5 of 13595.9 G.S.T), 97.9%
11.0 of 20.0 PersonDay Support (323.5 of 588.2 G.S.T), 55.0%
0.0 of 53.5 Day Training (0.0 of 575.0 G.S.T), 0.0%
Total usage for project cse076 24288.6 of 25397.7 Generic Service Tokens, 95.6%

cse077 GR/R69792 Kronenburg

Last Trade: Thu Oct 17 14:11:09 2002

Usage:

0.0 of 400000.6 PEHour MPP PE CPU (0.0 of 9671.5 G.S.T), 0.0%
0.0 of 22.5 GByteYear HP Disk (0.0 of 134.0 G.S.T), 0.0%
0.0 of 2.0 Day Training (0.0 of 21.5 G.S.T), 0.0%
Total usage for project cse077 0.0 of 9827.0 Generic Service Tokens, 0.0%

cse082 GR/R79654 Barakos

Last Trade: Wed Oct 16 16:04:52 2002

Usage:

0.0 of 7079.3 Hour SMP CPU (0.0 of 275.0 G.S.T), 0.0%
0.0 of 55.0 GByteYear MP Disk (0.0 of 196.5 G.S.T), 0.0%
0.0 of 55.0 GByteYear HSM/Tape (0.0 of 34.6 G.S.T), 0.0%
0.0 of 5.0 PersonDay Support (0.0 of 147.1 G.S.T), 0.0%
0.0 of 1.0 Day Training (0.0 of 10.8 G.S.T), 0.0%
Total usage for project cse082 0.0 of 663.9 Generic Service Tokens, 0.0%

cse084 GR/R47066 Needs

Last Trade: re-enabled

Usage:

254580.1 of 306225.8 PEHour MPP PE CPU (6155.4 of 7404.1 G.S.T), 83.1%
15.9 of 270.0 GByteYear HP Disk (94.9 of 1607.1 G.S.T), 5.9%
186.8 of 78.4 Hour Wren CPU (9.3 of 3.9 G.S.T), 238.2%
4258.8 of 14384.3 Hour SMP CPU (165.5 of 558.9 G.S.T), 29.6%
19.5 of 75.6 GByteYear MP Disk (69.8 of 270.1 G.S.T), 25.8%
80324.2 of 78955.4 Hour Green CPU (4197.1 of 4125.6 G.S.T), 101.7%
0.0 of 19.0 PersonDay Support (0.0 of 558.8 G.S.T), 0.0%
0.0 of 10.0 Day Training (0.0 of 107.5 G.S.T), 0.0%

Total usage for project cse084 10692.0 of 14636.0 Generic Service Tokens, 73.1%

cse085 GR/R64957 Sandham

Last Trade: Mon Jan 6 14:15:52 2003

Usage:

643578.6 of 1388400.0 PEHour MPP PE CPU (15560.9 of 33569.7 G.S.T), 46.4%

190.7 of 650.0 GByteYear HP Disk (1135.2 of 3869.0 G.S.T), 29.3%

2.8 of 78.4 Hour Wren CPU (0.1 of 3.9 G.S.T), 3.5%

2152.7 of 3945.2 Hour SMP CPU (83.6 of 153.3 G.S.T), 54.6%

138.6 of 750.0 GByteYear MP Disk (495.1 of 2678.6 G.S.T), 18.5%

1164.8 of 2373.2 GByteYear HSM/Tape (731.7 of 1490.7 G.S.T), 49.1%

193890.1 of 643628.0 Hour Green CPU (10131.2 of 33630.9 G.S.T), 30.1%

0.0 of 257.1 Hour VPP_CPU (0.0 of 284.4 G.S.T), 0.0%

0.0 of 0.6 GByteYear Fuji Disk (0.0 of 2.0 G.S.T), 0.0%

0.0 of 15.0 PersonDay Support (0.0 of 441.2 G.S.T), 0.0%

3.0 of 6.0 Day Training (32.3 of 64.5 G.S.T), 50.0%

Total usage for project cse085 28170.1 of 76188.3 Generic Service Tokens, 37.0%

cse086 GR/R83118 Taylor

Last Trade: Thu Oct 10 11:53:19 2002

Usage:

386556.0 of 521898.0 PEHour MPP PE CPU (9346.4 of 12618.8 G.S.T), 74.1%

58.7 of 74.9 GByteYear HP Disk (349.4 of 445.9 G.S.T), 78.4%

360.8 of 2208.1 Hour Wren CPU (17.9 of 109.4 G.S.T), 16.3%

0.0 of 12.9 GByteYear HP Disk SAN - /d (0.0 of 76.8 G.S.T), 0.0%

0.0 of 46.6 GByteYear HV Disk SAN /v (0.0 of 83.4 G.S.T), 0.0%

7013.5 of 13449.2 Hour SMP CPU (272.5 of 522.5 G.S.T), 52.1%

82.2 of 497.0 GByteYear MP Disk (293.6 of 1775.0 G.S.T), 16.5%

11.6 of 3750.0 GByteYear HSM/Tape (7.3 of 2355.5 G.S.T), 0.3%

96046.3 of 768900.0 Hour Green CPU (5018.6 of 40176.6 G.S.T), 12.5%

5.0 of 35.0 PersonDay Support (147.1 of 1029.4 G.S.T), 14.3%

0.0 of 116.0 Day Training (0.0 of 1247.3 G.S.T), 0.0%

Total usage for project cse086 15452.8 of 60440.7 Generic Service Tokens, 25.6%

cse086a MP1

Last Trade: never

Usage:

262591.4 of 340000.0 PEHour MPP PE CPU (6349.1 of 8220.8 G.S.T), 77.2%

3.9 of 10.0 GByteYear HP Disk (22.9 of 59.5 G.S.T), 38.5%

0.0 of 200.0 Hour Wren CPU (0.0 of 9.9 G.S.T), 0.0%

0.0 of 50.0 Hour SMP CPU (0.0 of 1.9 G.S.T), 0.0%

5.3 of 10.0 GByteYear MP Disk (18.9 of 35.7 G.S.T), 53.0%

0.0 of 10000.0 Hour Green CPU (0.0 of 522.5 G.S.T), 0.0%

Total usage for subproject cse086a 6391.0 of 8850.4 Generic Service Tokens, 72.2%

cse086b MP2

Last Trade: never

Usage:

48448.5 of 58000.0 PEHour MPP PE CPU (1171.4 of 1402.4 G.S.T), 83.5%

14.4 of 15.0 GByteYear HP Disk (85.6 of 89.3 G.S.T), 95.9%

109.2 of 200.0 Hour Wren CPU (5.4 of 9.9 G.S.T), 54.6%

2088.8 of 4000.0 Hour SMP CPU (81.2 of 155.4 G.S.T), 52.2%

10.7 of 20.0 GByteYear MP Disk (38.4 of 71.4 G.S.T), 53.7%

94664.1 of 100000.0 Hour Green CPU (4946.4 of 5225.2 G.S.T), 94.7%

Total usage for subproject cse086b 6328.4 of 6953.6 Generic Service Tokens, 91.0%

cse086d MP4

Last Trade: never

Usage:

0.0 of 0.1 GByteYear HP Disk (0.2 of 0.6 G.S.T), 41.3%

0.0 of 0.1 GByteYear MP Disk (0.1 of 0.4 G.S.T), 40.7%

Total usage for subproject cse086d 0.4 of 1.0 Generic Service Tokens, 41.1%

cse086e MP5

Last Trade: never

Usage:

48.8 of 500.0 PEHour MPP PE CPU (1.2 of 12.1 G.S.T), 9.8%

0.8 of 2.0 GByteYear HP Disk (5.0 of 11.9 G.S.T), 41.6%

244.2 of 450.0 Hour Wren CPU (12.1 of 22.3 G.S.T), 54.3%

0.0 of 5.0 GbyteYear HV Disk SAN /v (0.0 of 8.9 G.S.T), 0.0%

2391.7 of 4000.0 Hour SMP CPU (92.9 of 155.4 G.S.T), 59.8%

6.6 of 10.0 GByteYear MP Disk (23.6 of 35.7 G.S.T), 66.2%

545.8 of 10000.0 Hour Green CPU (28.5 of 522.5 G.S.T), 5.5%

Total usage for subproject cse086e 163.3 of 768.9 Generic Service Tokens, 21.2%

cse086f EC1

Last Trade: never

Usage:

1.8 of 5000.0 PEHour MPP PE CPU (0.0 of 120.9 G.S.T), 0.0%

1.6 of 2.0 GByteYear HP Disk (9.5 of 11.9 G.S.T), 79.5%

0.7 of 200.0 Hour Wren CPU (0.0 of 9.9 G.S.T), 0.3%

4.8 of 50.0 Hour SMP CPU (0.2 of 1.9 G.S.T), 9.5%

9.5 of 10.0 GByteYear MP Disk (34.1 of 35.7 G.S.T), 95.4%

11.6 of 40.0 GByteYear HSM/Tape (7.3 of 25.1 G.S.T), 29.1%

0.0 of 10000.0 Hour Green CPU (0.0 of 522.5 G.S.T), 0.0%

Total usage for subproject cse086f 51.1 of 728.0 Generic Service Tokens, 7.0%

cse086g EC2

Last Trade: never

Usage:

524.0 of 5000.0 PEHour MPP PE CPU (12.7 of 120.9 G.S.T), 10.5%

13.8 of 20.0 GByteYear HP Disk (82.0 of 119.0 G.S.T), 68.9%

6.7 of 200.0 Hour Wren CPU (0.3 of 9.9 G.S.T), 3.3%

108.6 of 200.0 Hour SMP CPU (4.2 of 7.8 G.S.T), 54.3%

27.1 of 30.0 GByteYear MP Disk (96.7 of 107.1 G.S.T), 90.2%

0.0 of 50.0 GByteYear HSM/Tape (0.0 of 31.4 G.S.T), 0.0%

836.4 of 10000.0 Hour Green CPU (43.7 of 522.5 G.S.T), 8.4%

Total usage for subproject cse086g 239.6 of 918.7 Generic Service Tokens, 26.1%

cse086h EC3

Last Trade: never

Usage:

46335.1 of 50000.0 PEHour MPP PE CPU (1120.3 of 1208.9 G.S.T), 92.7%

3.3 of 3.2 GByteYear HP Disk (19.4 of 19.0 G.S.T), 101.7%

0.0 of 200.0 Hour Wren CPU (0.0 of 9.9 G.S.T), 0.0%

219.9 of 250.0 Hour SMP CPU (8.5 of 9.7 G.S.T), 87.9%

14.0 of 20.0 GByteYear MP Disk (49.9 of 71.4 G.S.T), 69.9%

0.0 of 10000.0 Hour Green CPU (0.0 of 522.5 G.S.T), 0.0%

Total usage for subproject cse086h 1198.2 of 1841.6 Generic Service Tokens, 65.1%

cse086i EC4

Last Trade: never

Usage:

0.0 of 0.1 GByteYear HP Disk (0.2 of 0.6 G.S.T), 40.7%

0.0 of 0.1 GByteYear MP Disk (0.1 of 0.4 G.S.T), 40.7%

Total usage for subproject cse086i 0.4 of 1.0 Generic Service Tokens, 40.7%

cse086j BEC1

Last Trade: never

Usage:

28606.5 of 30000.0 PEHour MPP PE CPU (691.7 of 725.4 G.S.T), 95.4%

0.7 of 3.0 GByteYear HP Disk (4.3 of 17.9 G.S.T), 24.2%

0.0 of 200.0 Hour Wren CPU (0.0 of 9.9 G.S.T), 0.0%

0.0 of 0.1 Hour SMP CPU (0.0 of 0.0 G.S.T), 0.2%

0.1 of 5.0 GByteYear MP Disk (0.5 of 17.9 G.S.T), 3.0%

0.0 of 1000.0 Hour Green CPU (0.0 of 52.3 G.S.T), 0.0%

Total usage for subproject cse086j 696.5 of 823.2 Generic Service Tokens, 84.6%

cse086k BEC2

Last Trade: never

Usage:

0.0 of 0.1 GByteYear HP Disk (0.2 of 0.6 G.S.T), 40.7%

0.0 of 200.0 Hour Wren CPU (0.0 of 9.9 G.S.T), 0.0%

2199.8 of 4500.0 Hour SMP CPU (85.5 of 174.8 G.S.T), 48.9%

8.1 of 10.0 GByteYear MP Disk (28.8 of 35.7 G.S.T), 80.6%

Total usage for subproject cse086k 114.5 of 221.1 Generic Service Tokens, 51.8%

cse089 GR/R85556 Wiercigroch

Last Trade: re-enabled

Usage:

0.0 of 8242.8 PEHour MPP PE CPU (0.0 of 199.3 G.S.T), 0.0%

0.0 of 45.1 GByteYear HP Disk (0.0 of 268.2 G.S.T), 0.0%

0.0 of 15.0 PersonDay Support (0.0 of 441.2 G.S.T), 0.0%

0.0 of 7.0 Day Training (0.0 of 75.3 G.S.T), 0.0%

Total usage for project cse089 0.0 of 984.0 Generic Service Tokens, 0.0%

csehpcx - benchmarking

Last Trade: Fri Oct 4 14:39:35 2002

Usage:

9804.9 of 134743.4 PEHour MPP PE CPU (237.1 of 3257.9 G.S.T), 7.3%

6.8 of 18.9 GByteYear HP Disk (40.6 of 112.5 G.S.T), 36.1%

0.0 of 1464.1 Hour Wren CPU (0.0 of 72.5 G.S.T), 0.0%

0.5 of 1867.0 Hour SMP CPU (0.0 of 72.5 G.S.T), 0.0%

1.8 of 56.4 GByteYear MP Disk (6.5 of 201.3 G.S.T), 3.2%

13783.9 of 23136.6 Hour Green CPU (720.2 of 1208.9 G.S.T), 59.6%

Total usage for project csehpcx 1004.5 of 4925.7 Generic Service Tokens, 20.4%

csn001 Webb & GST/02/2846 Killworth & T/S/2001/00187 New

Last Trade: Thu Jan 9 12:24:23 2003

Usage:

403672.0 of 418058.5 PEHour MPP PE CPU (9760.3 of 10108.1 G.S.T), 96.6%

288.6 of 420.3 GByteYear HP Disk (1718.0 of 2501.6 G.S.T), 68.7%

61.0 of 201.8 Hour Wren CPU (3.0 of 10.0 G.S.T), 30.2%

75389.5 of 149188.6 Hour SMP CPU (2929.0 of 5796.2 G.S.T), 50.5%

337.9 of 702.2 GByteYear MP Disk (1206.8 of 2507.7 G.S.T), 48.1%

15079.7 of 18405.7 GByteYear HSM/Tape (9472.2 of 11561.4 G.S.T), 81.9%
 701500.3 of 760920.9 Hour Green CPU (36654.8 of 39759.7 G.S.T), 92.2%
 645.3 of 646.8 Hour VPP_CPU (713.9 of 715.5 G.S.T), 99.8%
 2.7 of 6.3 GByteYear Fuji Disk (9.5 of 22.6 G.S.T), 41.9%
 58.0 of 60.5 PersonDay Support (1705.9 of 1779.4 G.S.T), 95.9%
 3.0 of 15.3 Day Training (32.3 of 164.4 G.S.T), 19.6%
 Total usage for project csn001 64205.6 of 74926.6 Generic Service Tokens, 85.7%

csn003 UGAMP O'Neill

Last Trade: Fri Jan 17 17:08:55 2003

Usage:

4617767.5 of 5339209.5 PEHour MPP PE CPU (111651.7 of 129095.2 G.S.T), 86.5%
 84.7 of 113.9 GByteYear HP Disk (504.2 of 677.7 G.S.T), 74.4%
 32.4 of 78.4 Hour Wren CPU (1.6 of 3.9 G.S.T), 41.3%
 30.3 of 200.0 GbyteYear HV Disk SAN /v (54.2 of 357.8 G.S.T), 15.1%
 20503.9 of 22458.7 Hour SMP CPU (796.6 of 872.6 G.S.T), 91.3%
 68.6 of 93.8 GByteYear MP Disk (244.8 of 334.9 G.S.T), 73.1%
 42256.3 of 45650.4 GByteYear HSM/Tape (26542.9 of 28674.9 G.S.T), 92.6%
 87263.3 of 96760.6 Hour Green CPU (4559.7 of 5055.9 G.S.T), 90.2%
 87799.5 of 90477.5 Hour VPP_CPU (97123.4 of 100085.7 G.S.T), 97.0%
 401.9 of 442.9 GByteYear Fuji Disk (1435.3 of 1581.9 G.S.T), 90.7%
 0.0 of 0.0 Hour Compaq EV67 CPU (0.0 of 0.0 G.S.T)
 0.0 of 0.1 GByteYear Compaq Disk (0.0 of 0.2 G.S.T), 0.0%
 0.0 of 0.0 PersonDay Support (0.0 of 0.0 G.S.T)
 4.0 of 12.1 Day Training (43.0 of 130.1 G.S.T), 33.1%
 Total usage for project csn003 242957.4 of 266870.8 Generic Service Tokens, 91.0%

csn006 GR9/3550 Price

Last Trade: Mon Jan 20 16:15:10 2003

Usage:

1560515.5 of 1674524.0 PEHour MPP PE CPU (37731.3 of 40487.8 G.S.T), 93.2%
 144.7 of 192.2 GByteYear HP Disk (861.2 of 1144.3 G.S.T), 75.3%
 126.1 of 78.4 Hour Wren CPU (6.2 of 3.9 G.S.T), 160.8%
 70823.3 of 72126.1 Hour SMP CPU (2751.6 of 2802.2 G.S.T), 98.2%
 34.0 of 85.5 GByteYear MP Disk (121.4 of 305.4 G.S.T), 39.8%
 4.8 of 20.3 GByteYear HSM/Tape (3.0 of 12.7 G.S.T), 23.6%
 379486.3 of 465084.9 Hour Green CPU (19828.9 of 24301.6 G.S.T), 81.6%
 Total usage for project csn006 61303.7 of 69057.9 Generic Service Tokens, 88.8%

csn012 NER/A/S/2000/01315 Tennyson

Last Trade: Thu Oct 3 10:43:22 2002

Usage:

96.8 of 250.1 PEHour MPP PE CPU (2.3 of 6.0 G.S.T), 38.7%
 0.0 of 1.2 GByteYear MP Disk (0.0 of 4.2 G.S.T), 0.4%
 4395.6 of 4845.2 Hour VPP_CPU (4862.4 of 5359.7 G.S.T), 90.7%
 9.2 of 9.3 GByteYear Fuji Disk (33.0 of 33.3 G.S.T), 99.2%
 Total usage for project csn012 4897.8 of 5403.2 Generic Service Tokens, 90.6%

csn013 GR3/12954 Voke

Last Trade: re-enabled

Usage:

926.0 of 1711.2 Hour VPP_CPU (1024.3 of 1893.0 G.S.T), 54.1%
 0.0 of 2.3 GByteYear Fuji Disk (0.0 of 8.3 G.S.T), 0.0%
 Total usage for project csn013 1024.3 of 1901.2 Generic Service Tokens, 53.9%

csn014 GST/02/2785 Llewellyn-Jones

Last Trade: Tue Aug 27 15:35:33 2002

Usage:

0.0 of 658.3 PEHour MPP PE CPU (0.0 of 15.9 G.S.T), 0.0%

0.0 of 15.0 GByteYear HP Disk (0.0 of 89.3 G.S.T), 0.0%

0.0 of 0.8 Hour Wren CPU (0.0 of 0.0 G.S.T), 0.0%

0.0 of 11.9 Hour SMP CPU (0.0 of 0.5 G.S.T), 0.0%

0.0 of 5.0 GByteYear MP Disk (0.0 of 17.9 G.S.T), 0.0%

Total usage for project csn014 0.0 of 123.6 Generic Service Tokens, 0.0%

csn015 Proctor

Last Trade: re-enabled

Usage:

254027.3 of 472776.0 PEHour MPP PE CPU (6142.1 of 11431.1 G.S.T), 53.7%

4.4 of 5.0 GByteYear HP Disk (26.0 of 29.8 G.S.T), 87.4%

10.8 of 78.4 Hour Wren CPU (0.5 of 3.9 G.S.T), 13.7%

733.8 of 1562.0 Hour SMP CPU (28.5 of 60.7 G.S.T), 47.0%

50.1 of 99.3 GByteYear MP Disk (179.0 of 354.5 G.S.T), 50.5%

2420.6 of 3330.5 GByteYear HSM/Tape (1520.5 of 2092.0 G.S.T), 72.7%

139720.2 of 303613.7 Hour Green CPU (7300.7 of 15864.4 G.S.T), 46.0%

0.0 of 0.0 Hour VPP_CPU (0.0 of 0.0 G.S.T), 100.0%

0.0 of 0.0 GByteYear Fuji Disk (0.0 of 0.0 G.S.T)

2.0 of 10.0 PersonDay Support (58.8 of 294.1 G.S.T), 20.0%

3.0 of 7.0 Day Training (32.3 of 75.3 G.S.T), 42.9%

Total usage for project csn015 15288.4 of 30205.8 Generic Service Tokens, 50.6%

csn017 Payne GR3/12917

Last Trade: re-enabled

Usage:

435.9 of 435.9 PEHour MPP PE CPU (10.5 of 10.5 G.S.T), 100.0%

0.3 of 0.2 GByteYear HP Disk (2.0 of 1.4 G.S.T), 147.6%

0.0 of 78.4 Hour Wren CPU (0.0 of 3.9 G.S.T), 0.0%

2025.0 of 2137.4 Hour SMP CPU (78.7 of 83.0 G.S.T), 94.7%

2.6 of 13.6 GByteYear MP Disk (9.1 of 48.6 G.S.T), 18.8%

603.3 of 2126.6 Hour Green CPU (31.5 of 111.1 G.S.T), 28.4%

0.0 of 16.0 PersonDay Support (0.0 of 470.6 G.S.T), 0.0%

2.0 of 18.0 Day Training (21.5 of 193.5 G.S.T), 11.1%

Total usage for project csn017 153.4 of 922.7 Generic Service Tokens, 16.6%

csn036 NER/T/S/1999/00110 Haines

Last Trade: Tue Oct 22 16:39:08 2002

Usage:

1158.7 of 10737.1 PEHour MPP PE CPU (28.0 of 259.6 G.S.T), 10.8%

13.4 of 30.0 GByteYear HP Disk (79.7 of 178.6 G.S.T), 44.6%

9.8 of 78.4 Hour Wren CPU (0.5 of 3.9 G.S.T), 12.5%

2037.5 of 25193.4 Hour SMP CPU (79.2 of 978.8 G.S.T), 8.1%

24.2 of 50.0 GByteYear MP Disk (86.3 of 178.6 G.S.T), 48.3%

1129.1 of 2014.0 GByteYear HSM/Tape (709.2 of 1265.1 G.S.T), 56.1%

19535.0 of 25450.3 Hour Green CPU (1020.7 of 1329.8 G.S.T), 76.8%

0.0 of 2.0 PersonDay Support (0.0 of 58.8 G.S.T), 0.0%

0.0 of 5.0 Day Training (0.0 of 53.8 G.S.T), 0.0%

Total usage for project csn036 2003.6 of 4306.9 Generic Service Tokens, 46.5%

csn044 Earth Observation

Last Trade: Wed Aug 28 11:09:50 2002

Usage:

9948.9 of 13857.9 PEHour MPP PE CPU (240.6 of 335.1 G.S.T), 71.8%
 0.0 of 5.0 GByteYear HP Disk (0.0 of 30.0 G.S.T), 0.0%
 0.0 of 28.4 Hour Wren CPU (0.0 of 1.4 G.S.T), 0.0%
 0.2 of 73.9 Hour SMP CPU (0.0 of 2.9 G.S.T), 0.3%
 0.0 of 5.0 GByteYear MP Disk (0.0 of 17.9 G.S.T), 0.0%
 5.9 of 53.8 GByteYear HSM/Tape (3.7 of 33.8 G.S.T), 11.0%
 0.0 of 41.1 Hour VPP_CPU (0.0 of 45.5 G.S.T), 0.0%
 0.0 of 5.0 GByteYear Fuji Disk (0.0 of 17.9 G.S.T), 0.0%
 Total usage for project csn044 244.3 of 484.4 Generic Service Tokens, 50.4%

csp004 PPA/G/0/2000/00024 Bell
 Last Trade: Wed Jan 22 14:16:39 2003

Usage:

80172.9 of 99402.3 PEHour MPP PE CPU (1938.5 of 2403.4 G.S.T), 80.7%
 13.7 of 47.0 GByteYear HP Disk (81.3 of 279.8 G.S.T), 29.1%
 1.9 of 862.6 Hour Wren CPU (0.1 of 42.7 G.S.T), 0.2%
 43.0 of 1174.0 Hour SMP CPU (1.7 of 45.6 G.S.T), 3.7%
 9.2 of 24.0 GByteYear MP Disk (32.8 of 85.7 G.S.T), 38.3%
 0.0 of 1.0 PersonDay Support (0.0 of 29.4 G.S.T), 0.0%
 0.0 of 2.0 Day Training (0.0 of 21.5 G.S.T), 0.0%
 Total usage for project csp004 2054.4 of 2908.2 Generic Service Tokens, 70.6%

csp006 PPA/G/S/2001/00050 Browning
 Last Trade: Fri Feb 15 17:02:18 2002

Usage:

65.8 of 800.0 Hour VPP_CPU (72.8 of 885.0 G.S.T), 8.2%
 0.0 of 20.0 GByteYear Fuji Disk (0.0 of 71.4 G.S.T), 0.0%
 0.0 of 12.0 Day Training (0.0 of 129.0 G.S.T), 0.0%
 Total usage for project csp006 72.8 of 1085.4 Generic Service Tokens, 6.7%

HPCI Daresbury

Last Trade: Mon Oct 7 10:07:27 2002

Usage:

34673.1 of 34482.9 PEHour MPP PE CPU (838.4 of 833.8 G.S.T), 100.6%
 4.2 of 3.8 GByteYear HP Disk (24.8 of 22.7 G.S.T), 109.1%
 0.6 of 0.0 Hour Wren CPU (0.0 of 0.0 G.S.T), 143028.5%
 4062.4 of 4120.4 Hour SMP CPU (157.8 of 160.1 G.S.T), 98.6%
 2.0 of 1.7 GByteYear MP Disk (7.2 of 6.0 G.S.T), 119.4%
 10817.5 of 10497.3 Hour Green CPU (565.2 of 548.5 G.S.T), 103.1%
 1.0 of 1.0 Day Training (10.8 of 10.8 G.S.T), 99.7%
 Total usage for project hpcid 1604.2 of 1581.9 Generic Service Tokens, 101.4%

HPCI Edinburgh

Last Trade: Wed Jul 11 12:09:29 2001

Usage:

1759.1 of 4070.6 PEHour MPP PE CPU (42.5 of 98.4 G.S.T), 43.2%
 4.1 of 4.7 GByteYear HP Disk (24.7 of 28.1 G.S.T), 87.8%
 698.4 of 770.8 Hour SMP CPU (27.1 of 29.9 G.S.T), 90.6%
 3.1 of 2.8 GByteYear MP Disk (10.9 of 10.0 G.S.T), 108.8%
 1728.7 of 1739.8 Hour Green CPU (90.3 of 90.9 G.S.T), 99.4%
 Total usage for project hpcie 195.6 of 257.4 Generic Service Tokens, 76.0%

HPCI Southampton

Last Trade: re-enabled

Usage:

737.9 of 5825.0 PEHour MPP PE CPU (17.8 of 140.8 G.S.T), 12.7%
31.7 of 31.6 GByteYear HP Disk (188.9 of 188.2 G.S.T), 100.4%
37.8 of 1074.0 Hour SMP CPU (1.5 of 41.7 G.S.T), 3.5%
3.1 of 3.0 GByteYear MP Disk (11.2 of 10.7 G.S.T), 104.6%
Total usage for project hpcis 219.4 of 381.5 Generic Service Tokens, 57.5%

Appendix 6

Project	PI Name	Subject	Discipline/Department
cse002	Wander, A (Dr)	Support for the UKCP	Physics
cse009	Slater, Ben	HPC Computing Applications in Materials Chemistry	Chemistry
cse013	Leschziner, M (Prof)	Large Eddy Simulation for Aerospace & Turbomachinery Dynamics	Mechanical Engineering
cse035	Jenkins, S (Dr)	Ab Initio Simulations of Catalytic Processes at Extended Metal Surfaces	Chemistry
cse036	Duff, I (Prof)	Research & Development of Algorithms & Software for Large-Scale Linear & Non-Linear Systems	Maths
cse041	Wu, X (Dr)	Flutter & Noise Generation Mechanisms - Turbomachinery Fan Assemblies	Mechanical Engineering
cse043	Williams, J (Dr)	Numerical Simulation of Flow over a Rough Bed	Engineering
cse050	Bradley, D (Prof)	Flame Instabilities: their influence on turbulent combustion & incorporation in mathematical models.	Mechanical Engineering
cse052	Di Mare, F (Miss)	Heat Transfer in Turbine Combustors	Mechanical Engineering
cse053	Leschziner, M (Prof)	Coupling RANS Near-Wall Turbulence Models with Large Eddy Simulation Strategies	Aerospace Engineering
cse055	Staunton, J (Dr)	Ab-initio theory of magnetic anisotropy in transition metal ferromagnets	Physics
cse056	Chen, T (Dr)	Aerothermalelasticity Modelling of Air Riding Seals for Large Gas Turbines	Mechanical Engineering
cse057	Evans, R (Dr)	Relativistic Particle Generation from Ultra-Intense Laser Plasma Interactions	Physics
cse060	Robb, M (Prof)	CCP1 Renewal plus flagship project on Car-Parrinello in Chemistry	Chemistry
cse061	Imregun, M (Prof)	Casing treatment modelling for the investigation of stall, flutter and noise mechanisms in turbomachinery compressors.	Mechanical Engineering
cse063	Sandham, N (Prof)	Computational Aeroacoustics for Turbulent Plane Jets	Aerospace Engineering
cse064	Leschziner, M (Prof)	Improvement of predictive performance of anisotropy-resolving turbulence models in post-reattachment recovery region of separated flow using Large Eddy Simulation	Aerodynamics
cse066	Coveney, P V (Prof)	New clay-polymer nanocomposites using diversity-discovery methods: synthesis, processing and testing	IT
cse071	Iacovides (Dr)	The Practical Computation of Three-Dimensional Time-Dependent Turbulent Flows in Rotating Cavities	Mechanical Engineering
cse072	Karlin, V (Dr)	Structure & Dynamics of Unstable Premixed Laminar Flames	Engineering
cse074	Luo (Dr)	Consortium on Computational Combustion for Engineering Applications	Engineering
cse075	Novik, K (Dr)	The Reality Grid - a tool for investigating condensed matter & materials	IT
cse076	Briddon, P (Dr)	HPC facilities for the first principles simulation of covalently bonded materials	IT
cse077	Kronenburg, A (Dr)	Combustion Model Development for Large-Eddy Simulation of Non-Premixed Reactive Flows.	Mechanical Engineering
cse082	Barakos, G (Dr)	CFD Study of Three-dimensional Dynamic Shelf	Aerospace Engineering
cse084	Needs, R (Dr)	The Consortium for Computational Quantum Many-Body Theory	Physics
cse085	Sandham, N (Prof)	UK Turbulence Consortium	Engineering
cse086	Taylor, K (Prof)	Multiphoton, Electron Collisions and BEC HPC Consortium 2002-2004	Physics
cse089	Wiercigroch, M (Dr)	Nonlinear Dynamics & Rock Contact Fracture Mechanics in Modelling of Vibration Enhanced Drilling	Engineering
csn001	De Cuevas, B (Mrs)	OCCAM	Ocean/Earth Sciences
csn003	Steenman-Clark, L (Dr)	UGAMP	Meteorology
csn006	Brodholt, J (Dr)		Geological Sciences

csn012	Tennyson, J (Prof)	Calculated Absorption by water vapour at near infra-red & optical wavelengths	Physics & Astronomy
csn013	Voke, P (Prof)	Large Eddy Simulation Extended by Extreme Value Theory for the Prediction of Dispersion, Concentration Threshold Boundaries & Field Connectivity	Mechanical & Materials Engineering
csn014	Llewellyn Jones (Prof)		Physics & Astronomy
csn015	Proctor, R (Dr)	A Testbed for Zooplankton Models of the Irish Sea	Coastal & Marine Sciences
csn017	Payne, A (Dr)	Stability of the Antarctic Ice Sheet	Geography
csn036	Woolf, A (Mr)	Assimilation of Altimeter, Radiometer & in situ data into the OCCAM model. Analysis of water properties & transports	Environmental Science
csn044	Steenman-Clark, L (Dr)	Earth Observation Project	Meteorology
csb001	Houldershaw, D (Dr)	Use of Cray T3E for multiple long trajectories of protein unfolding	Crystallography
csp004	Bell, K L (Prof)	A Programme for Atomic Physics for Astrophysics at Queen's University Belfast (2001-2005)	Astronomy
csp006	Jain, R (Dr)	Numerical Simulation of forced magnetic reconnection in the solar corona	Physics
HPCID	Allan, R (Dr)		
HPCIE	Henty, D (Dr)		
UKHEC	Allan, R (Dr)	UK HEC Collaboration, Core Support for High-End Computing 1999-2002	
cs2036	Farid, Vakili-Tahami (Mr)	MPI Evaluation	Mechanical Aerospace & Manufacturing Engineering
cs2037	Domene, Carmen (Dr)	Ab initio molecular dynamics of ion in membrane proteins	
cs2038	Excell, P (Prof)	Computational Bioelectromagnetic Modelling of Human Cellular Processes for Mobile Phone Safety Research.	Informatics
cs2039	Carlborg (Dr)	Genetic Analysis of Complex Traits	Genetics & Biometry
cs3015	Hampshire, D (Dr)	High Performance Computational Solutions for the Ginzburg-Landau Equations that describe Flux Pinning in High-Field Superconductors	Physics
cs3016	Petchey, O (Dr)	Randomisation test for the significance of functional diversity for ecosystem processes	Animal & Plant Sciences
cs3017	Gross, M (Mr)	Numerical Simulation of Laser Materials Processing	Engineering
cs3018	Durrant, M (Dr)	Functional modelling of oxalate-degrading enzymes & of lipoxigenase using quantum calculations.	Biology
cs3019	Bengough (Dr)	Lattice-Boltzmann simulation of water & solute transport in porous media.	Physics