

# CSAR Service - Management Report

## June 2003

This report documents the quality of the CSAR service during the month of June 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 June 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.

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

CSAR has been granted an 18 month extension of service contract until June 30<sup>th</sup> 2006. With this extension CfS is implementing a further technology refresh which will introduce a 256 processor Itanium-2 (Madison) based SGI Altix by end September 2003.

### 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
<b>HPC Services Availability</b>						
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
<b>Help Desk</b>						
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
<b>Others</b>						
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 June 1<sup>st</sup> to 30<sup>th</sup> inclusive.

Overall, the CPARS Performance Achievement in June was satisfactory (see Table 3); i.e. Green measured against the CPARS performance targets.

### CSAR Service - Service Quality Report - Actual Performance Achievement

Service Quality Measure	2002/3											
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
<b>HPC Services Availability</b>												
Availability in Core Time (% of time)	99.2%	99.75%	98.75%	99.77%	99.25%	99.21%	99.46%	99.73%	100%	99.74%	97.66%	99.25%
Availability out of Core Time (% of time)	100%	100%	99.42%	99.52%	99.57%	100%	99.89%	100.00%	99.81%	99.81%	99.33%	99.9%
Number of Failures in month	0	1	2	1	1	0	3	1	1	1	4	1
Mean Time between failures in 52 week rolling period (hours)	365	381	381	398	417	515	487	487	515	548	461	548
<b>Help Desk</b>												
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	<2	<1	<2	<2	<2	<0.5	<1	<2	<3	<1	<2
Administrative Queries - Max Time to resolve 95% of all queries	<2	<0.5	<2	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5
Help Desk Telephone - % of calls answered within 2 minutes	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Others</b>												
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 June. 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.

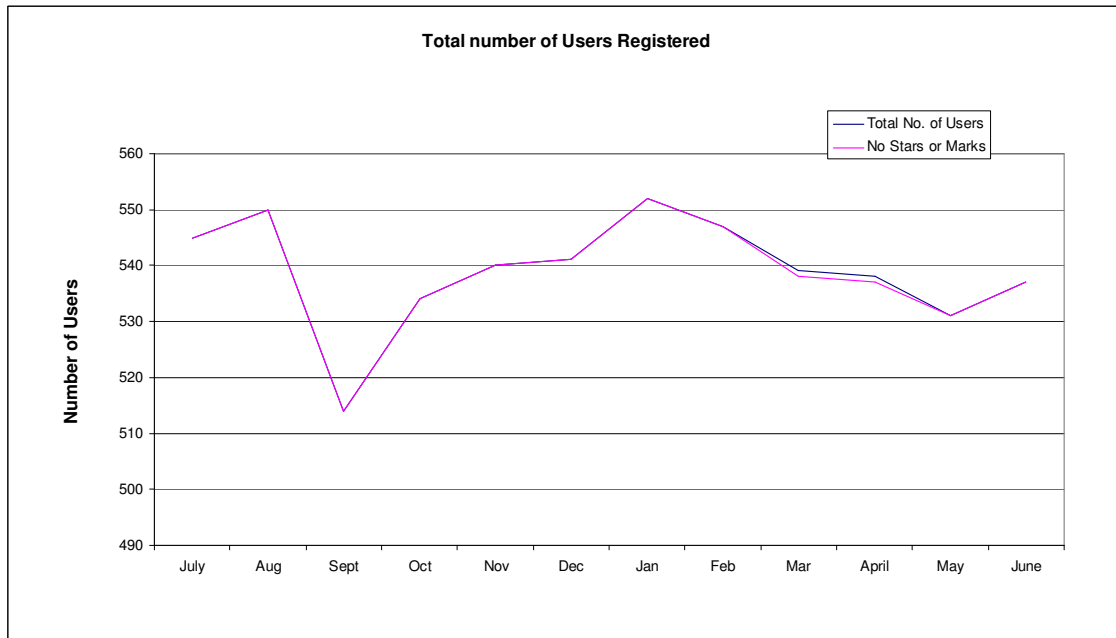
**CSAR Service - Service Quality Report - Service Credits**

Service Quality Measure	2002/3											
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
<b>HPC Services Availability</b>												
Availability in Core Time (% of time)	0	-0.039	0.039	-0.039	0	0	0	-0.039	-0.058	-0.039	0.078	0
Availability out of Core Time (% of time)	-0.047	-0.047	0	-0.039	-0.039	-0.047	-0.047	-0.047	-0.047	-0.047	0	-0.047
Number of Failures in month	-0.009	-0.008	0	-0.008	-0.008	-0.009	0	-0.008	-0.008	-0.008	0	-0.008
Mean Time between failures in 52 week rolling period (hours)	0	0	0	0	0	-0.008	0	0	-0.008	-0.008	0	-0.008
<b>Help Desk</b>												
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	-0.016	0	0	0	-0.019	-0.016	0	0.016	-0.016	0
Administrative Queries - Max Time to resolve 95% of all queries	0	-0.019	0	-0.019	-0.019	-0.019	-0.016	-0.019	-0.016	0	-0.019	-0.019
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
<b>Others</b>												
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:	-0.05	-0.08	-0.01	-0.07	-0.05	-0.06	-0.06	-0.09	-0.09	-0.07	0.00	-0.06

**Table 3**

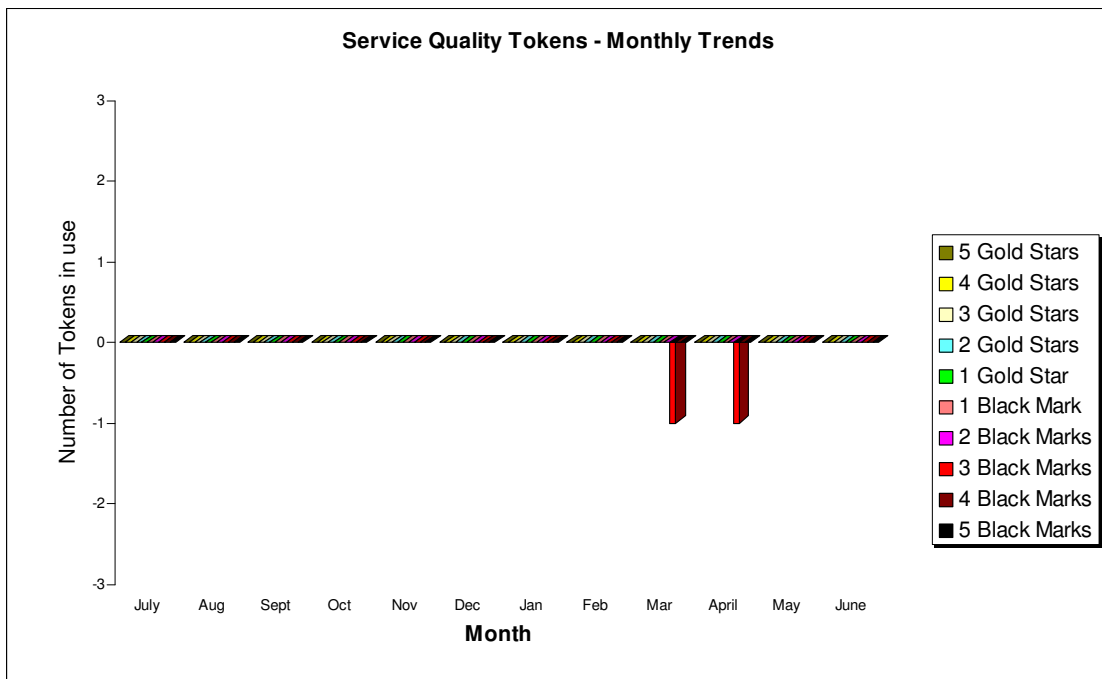
## 2.2 Service Quality Tokens

The position at the end of June 2003 is that none of the 537 users have awarded any tokens 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. NERC have removed their black marks since the CfS addition of 4 new tape drives has overcome the previous wait time problems with HSM storage and retrieval.

## 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 129% of Baseline capacity.

### Job Throughput Against Baseline CSAR Service Provision

Period: 1st to 30th June 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?	11.78	15.24	129.4%
	Baseline Capacity for Period (GFLOP Years)	Job Time Demands in Period	Job Demand above 110% of Baseline during Period (Yes/No)?
2. Have Users submitted work demanding > 110% of the Baseline during period?	11.78	19.7	Yes
		Number of Jobs at least 4 days old at end Period	Number of Jobs at least 4 days old at end Period is not zero (Yes/No)?
3. Are there User Jobs outstanding at the end of the period over 4 days old?		3	Yes
		Minimum Job Time Demands as % of Baseline during Period	Minimum Job Time Demand above 90% of Baseline during Period (Yes/No)?
4. Have Users submitted work demands above 90% of the Baseline during period?		69%	No
	Number of standard Job Queues (ignoring priorities)	Average % of time each queue contained jobs in the Period	Average % of time each queue contained jobs in the Period is > 97%?
5. Majority of Job Queues contained jobs from Users for more than 97% during period?	4	86%	No

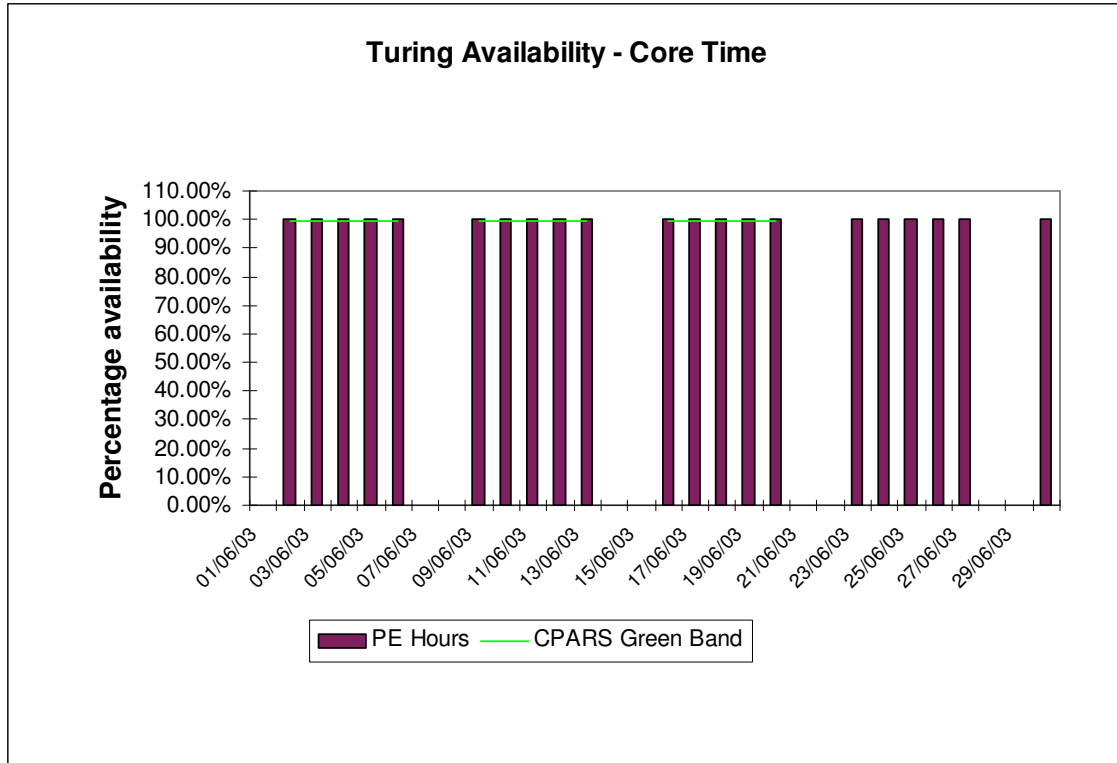
### 3. System Availability

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.

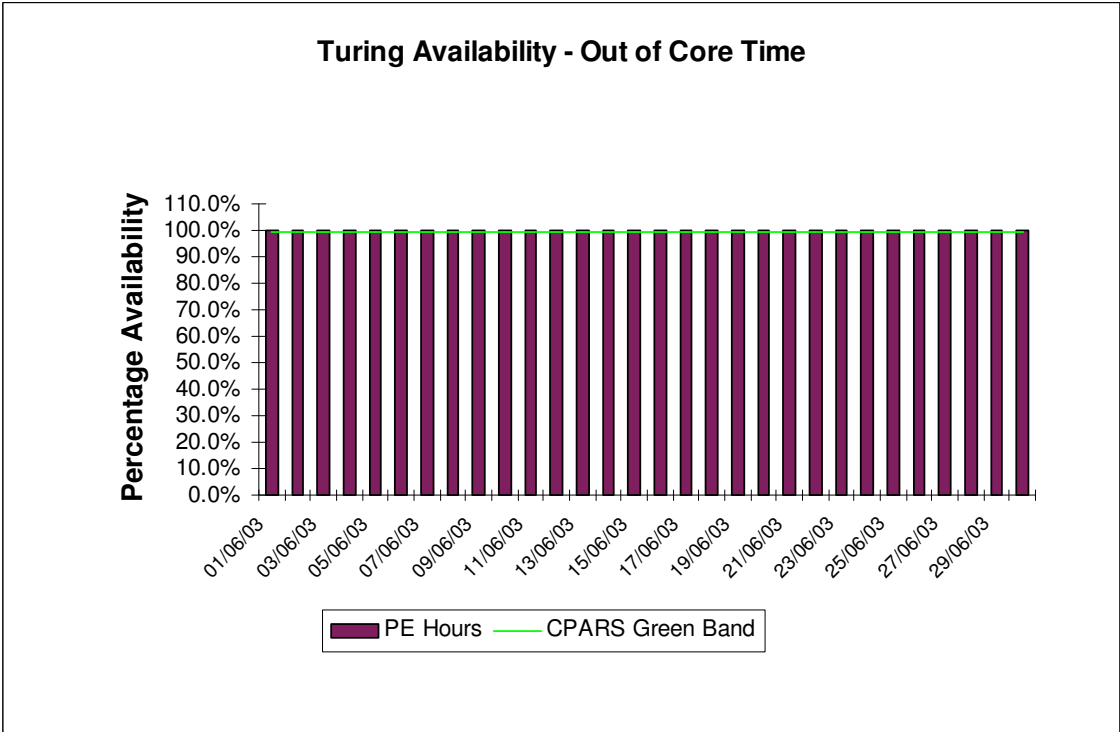
#### 3.1 Cray T3E-1200E System (Turing)

The following graphs show the availability of Turing both in core time and out of core time respectively during the period of 1<sup>st</sup> to 30<sup>th</sup> June.

Turing availability for June:



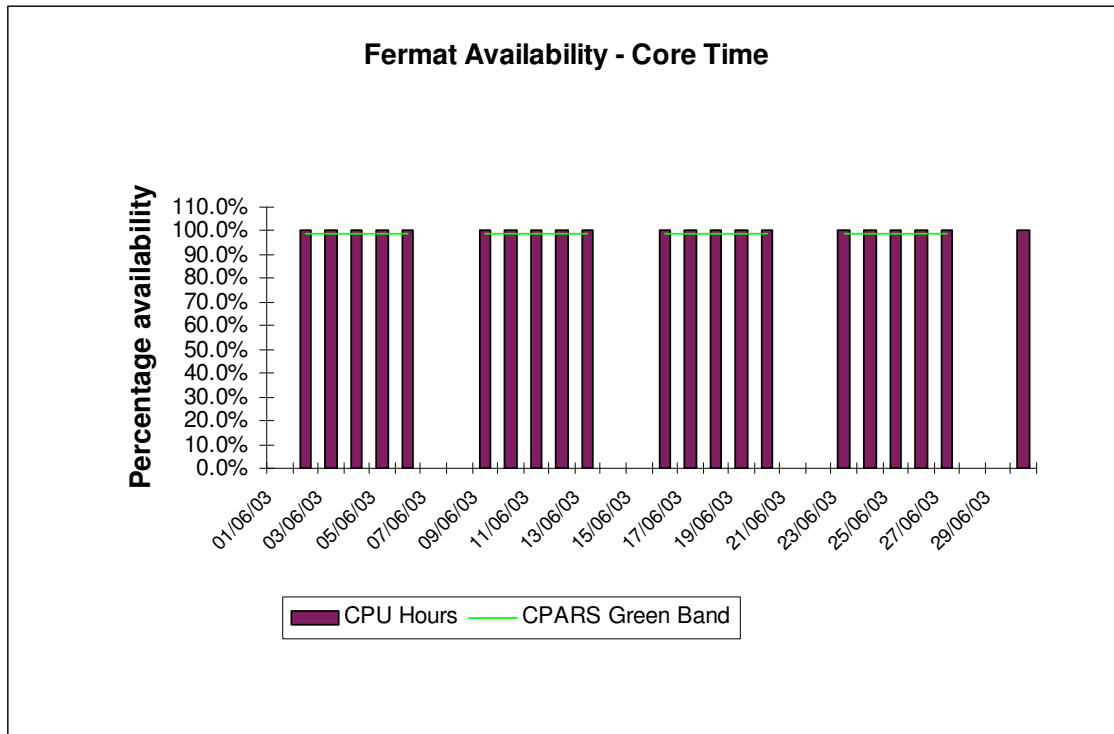
Availability of Turing in core time during June was excellent, with no outages.



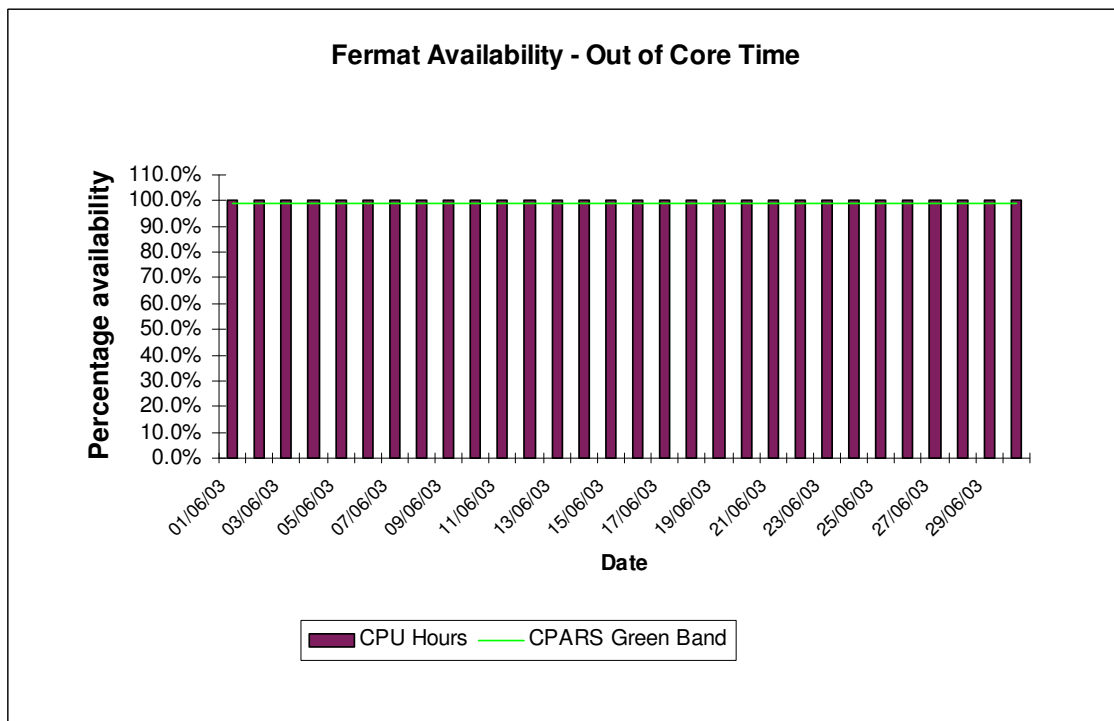
Availability of Turing out of core time during June was excellent, with no outages.

### 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 June was excellent, with no outages.

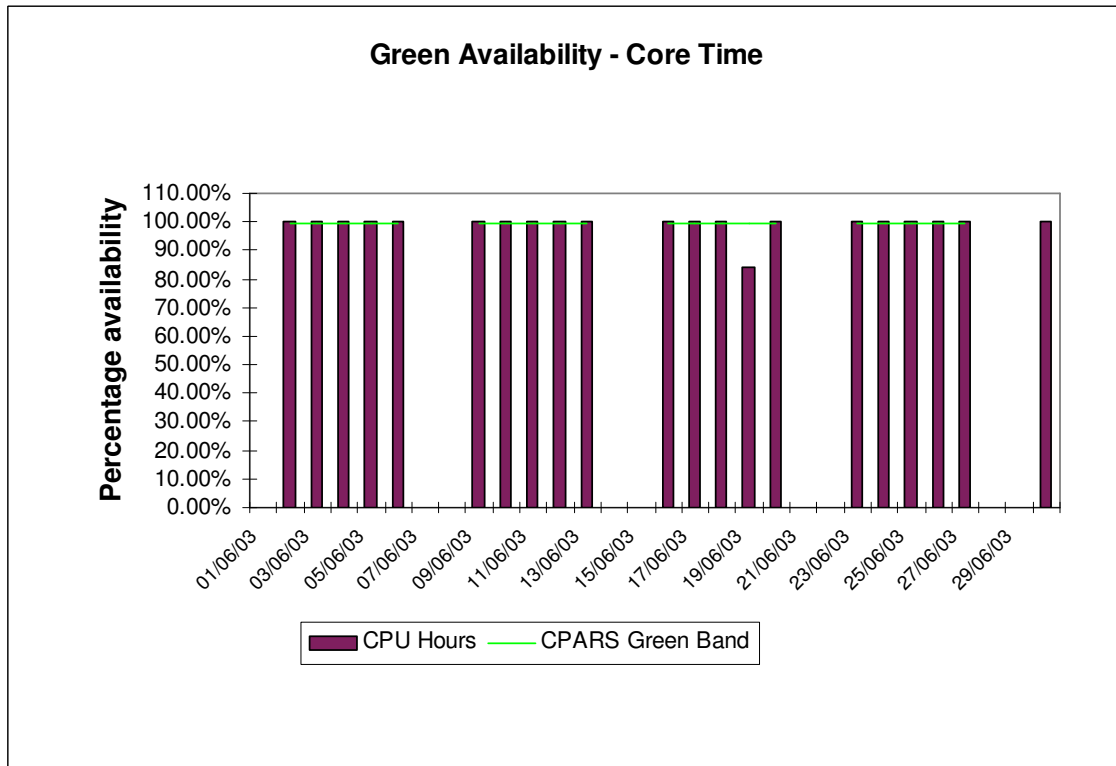


Availability of Fermat out of core time during June was excellent, with no outages.

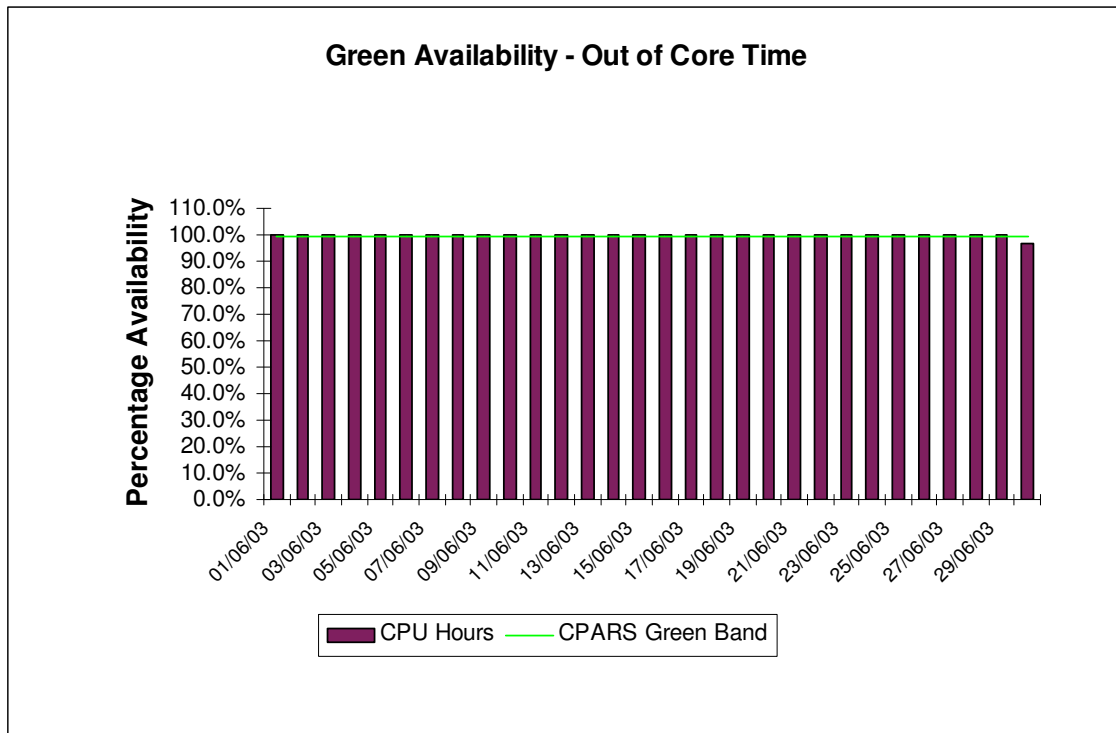


### 3.3 SGI Origin3000 System (Green)

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 June was good, with just one outage on the 19<sup>th</sup>.



Availability of Green out of core time during June was good, with one brief outage on the 30<sup>th</sup>.

## 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 June 1<sup>st</sup> to 30<sup>th</sup> is provided by Project/User Group, totalled by Research Council and overall. This covers:

• CPU usage	Turing:	396,588 PE Hours
	Fermat:	19,860.32 CPU Hours
	Wren (Batch):	16.33 CPU Hours
	Wren (Interactive):	196.57 CPU Hours
	Green:	96,299.2 CPU Hours
• User Disk allocation	Turing:	62 GB Years
	Fermat:	107.16 GB Years
	SAN HV:	24.66 GB Years
• HSM/tape usage		4,046.95 GB Years

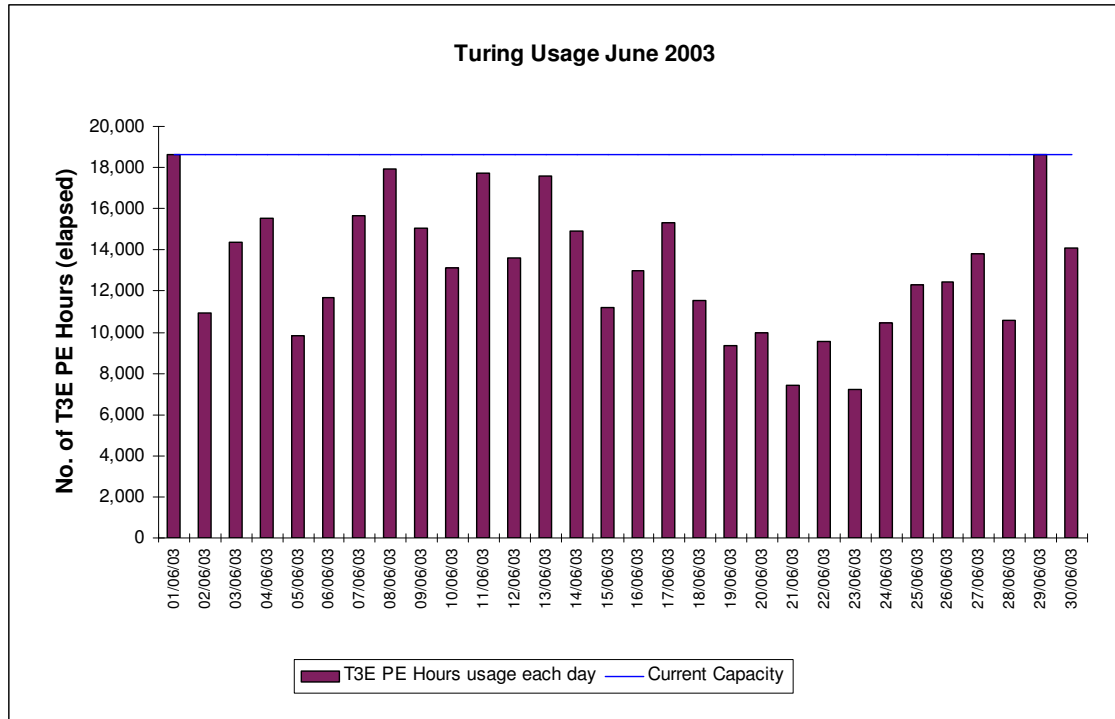
In addition, the following graphs are provided to illustrate usage per month, historically:

- 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 overall Capacity are shown by overlaid horizontal lines.
- 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 and overall Capacity are shown by overlaid horizontal lines.
- 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.
- 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.
- 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 June 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 June:



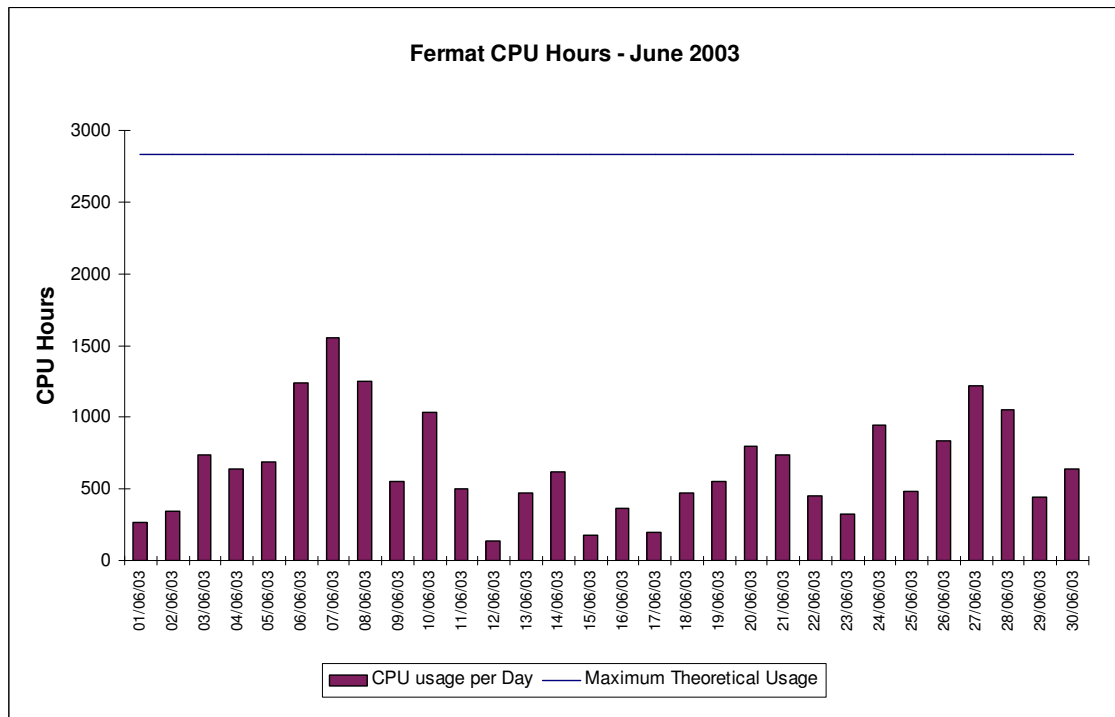
The above usage graph for the Turing system shows that Turing was reasonably utilised during June.

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.

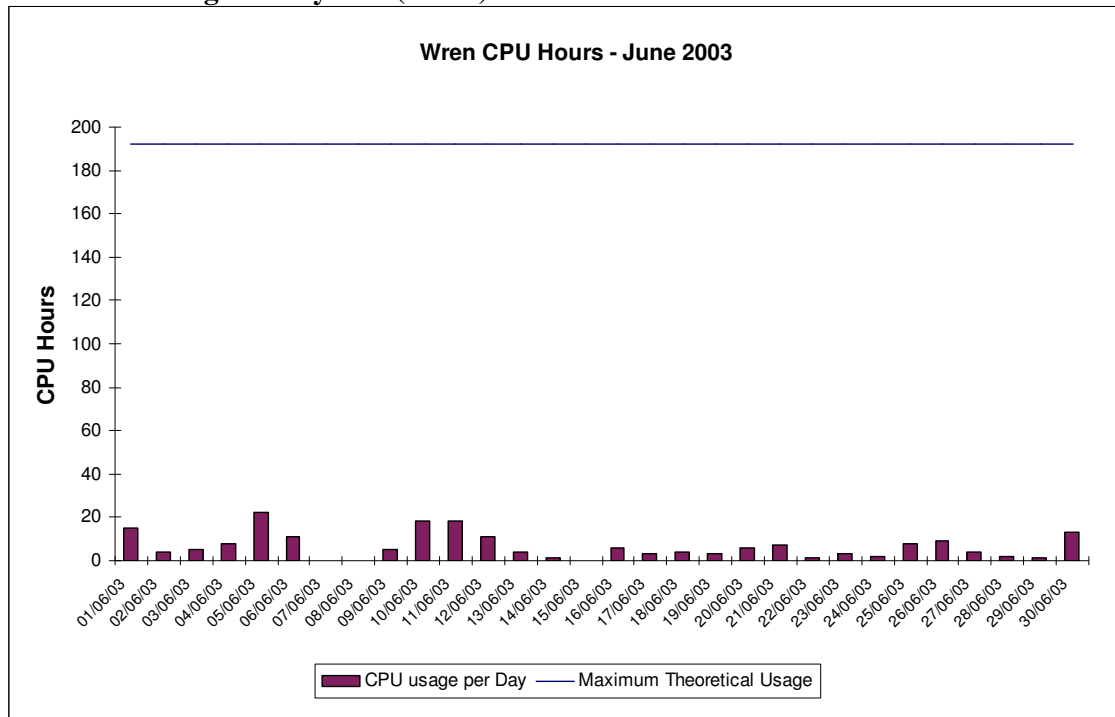
### 4.2 SGI Origin2000 System (Fermat)

The usage of the Origin system was low. The groups most heavily using the Fermat system are CSE056 (Zheng), CSE082 (Nayyar), CSN001 (De Cuevas) and CSN003 (Steenman-Clark).



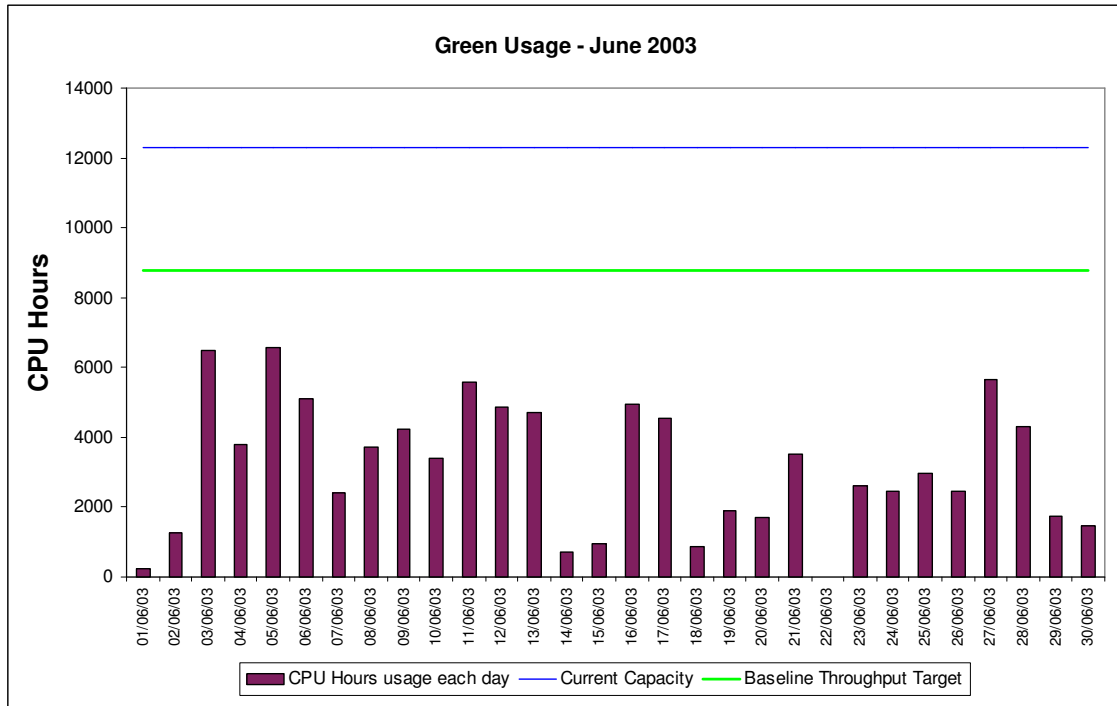
The above graph shows the variable utilisation of the Origin 128. As interactive usage was removed from Fermat at the beginning of March, Fermat is now a dedicated batch system.

### 4.3 SGI Origin300 System (Wren)



The above graph shows the utilisation of the SGI system Wren for the month of June. Wren has taken over from Fermat as the interactive machine.

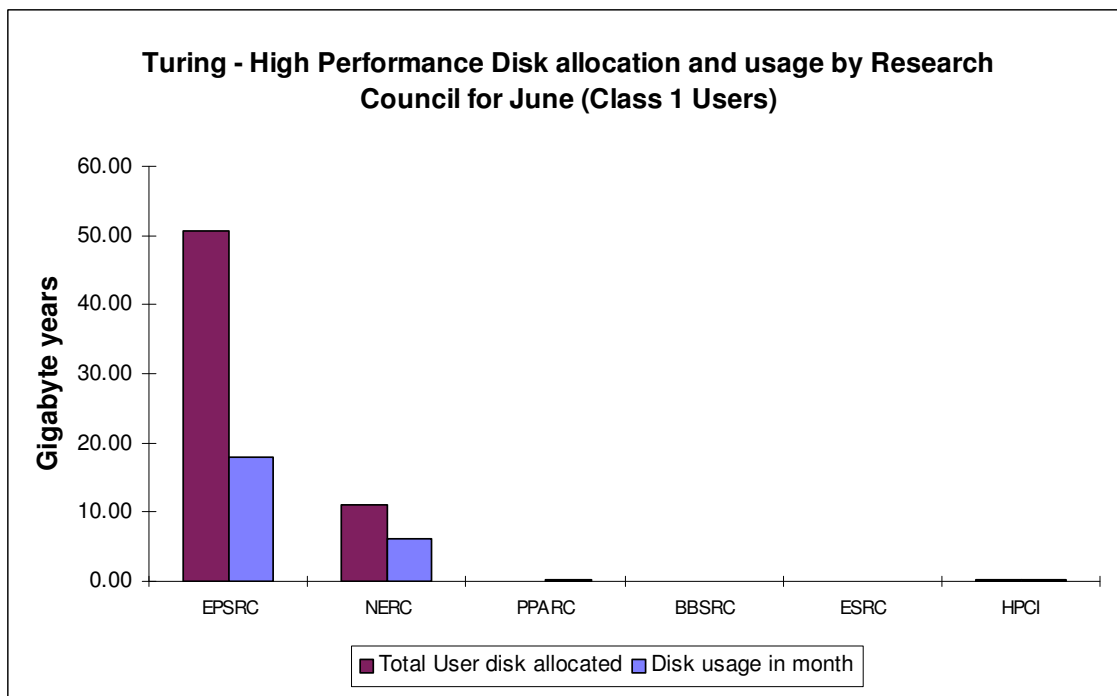
#### 4.4 SGI Origin3000 System (Green)



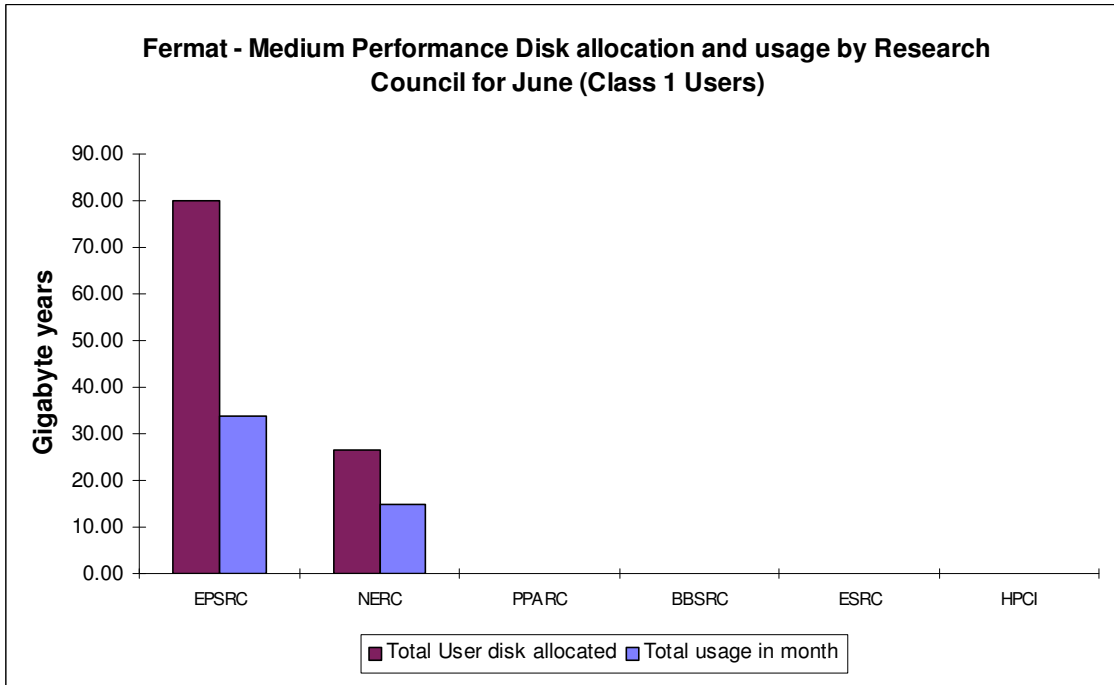
The above graph shows the utilisation of Green for the month of June, below Baseline.

#### 4.6 Disk/HSM Usage Chart

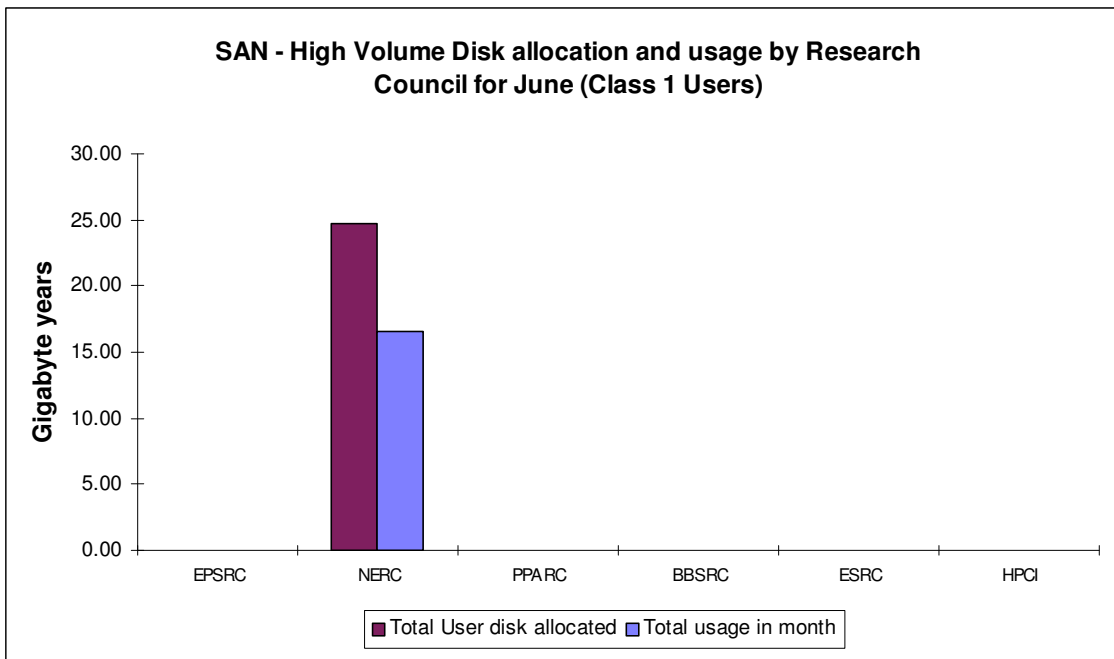
The graphs below show current disk and HSM allocations and usage.



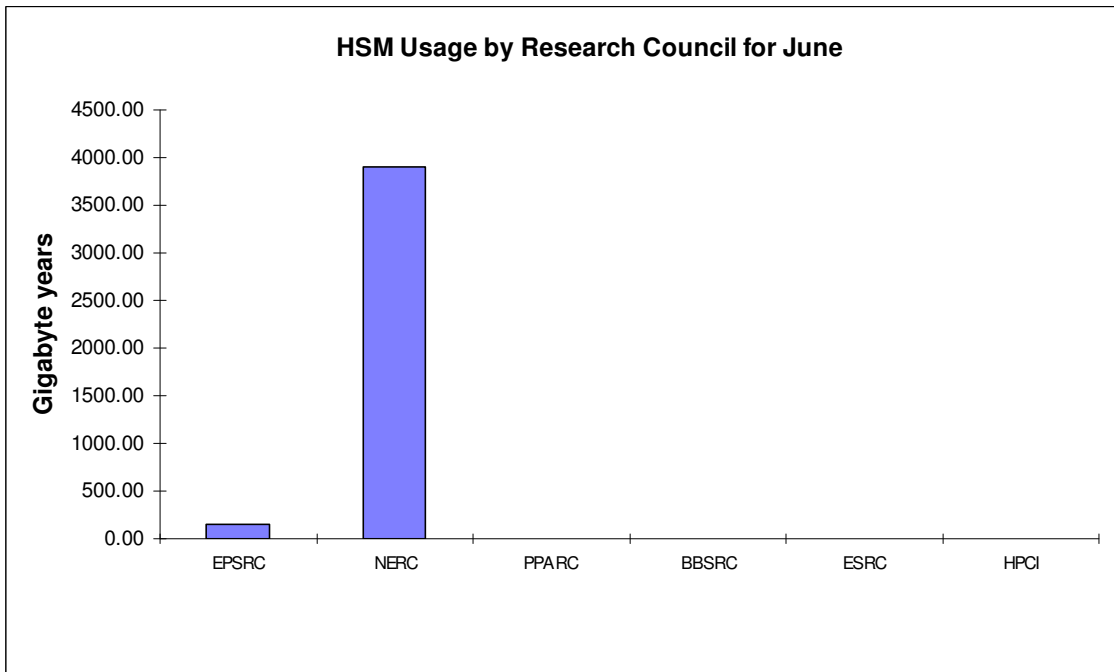
The above graph shows actual usage on average against the current allocation of disk on the Turing system.



Shown above is the disk allocation against usage on average of the disk on Fermat.

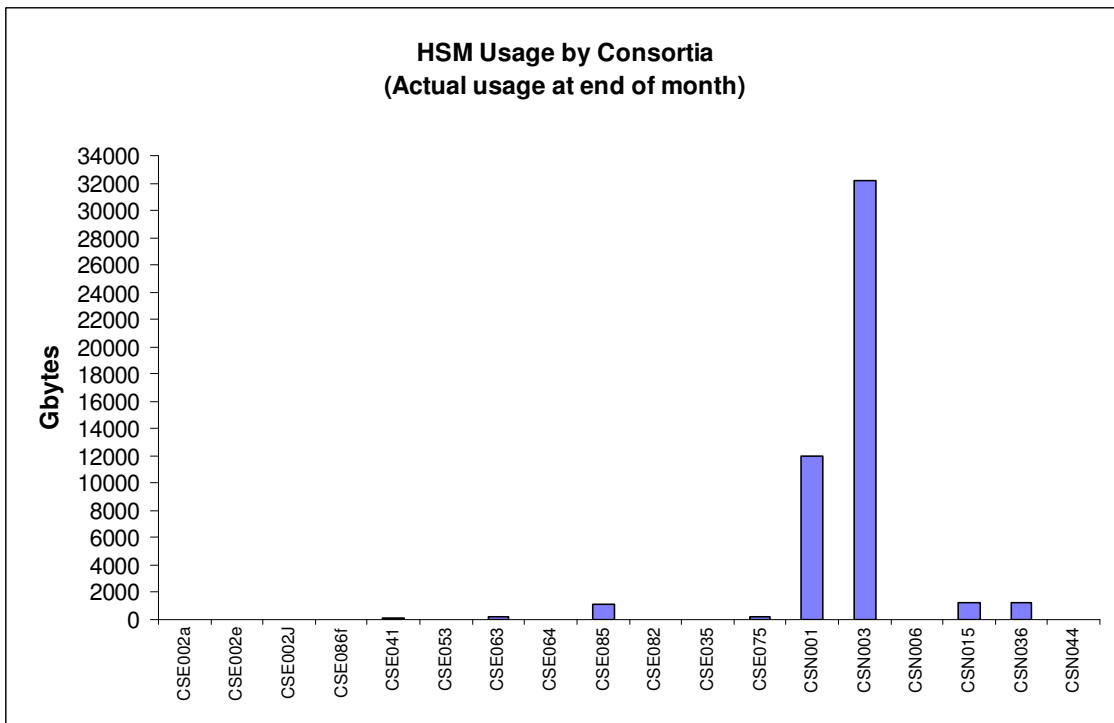


This graph shows the disk allocation against usage on average of the new SAN High Volume (HV) disk.

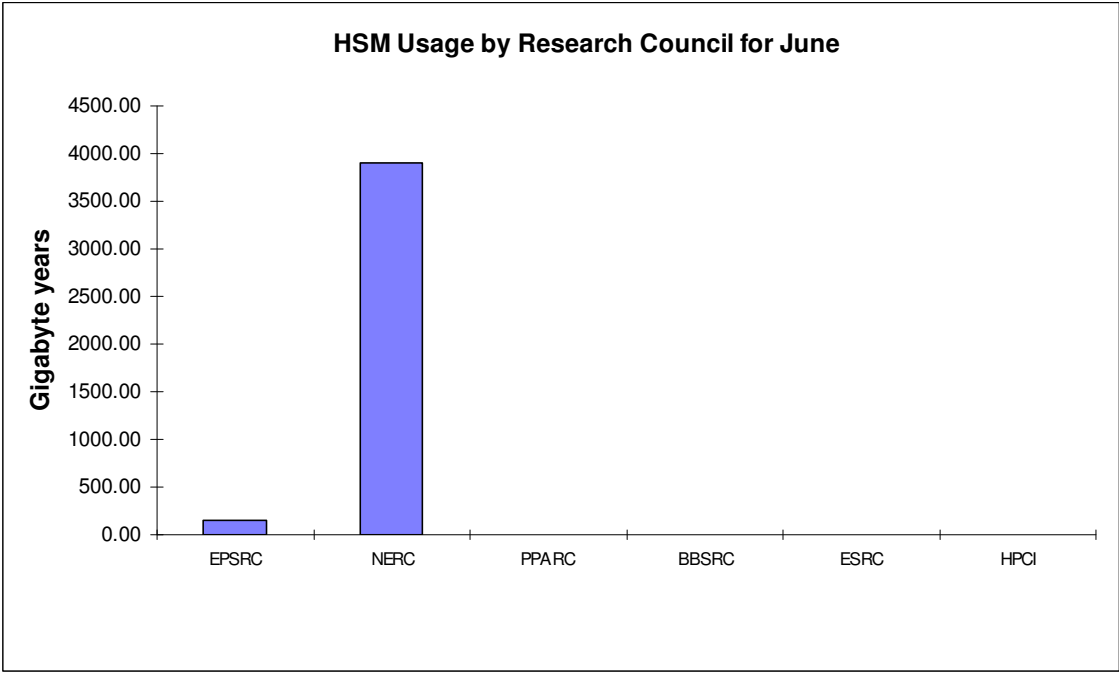


The above graph shows the total usage of the HSM facility by Research Council.

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



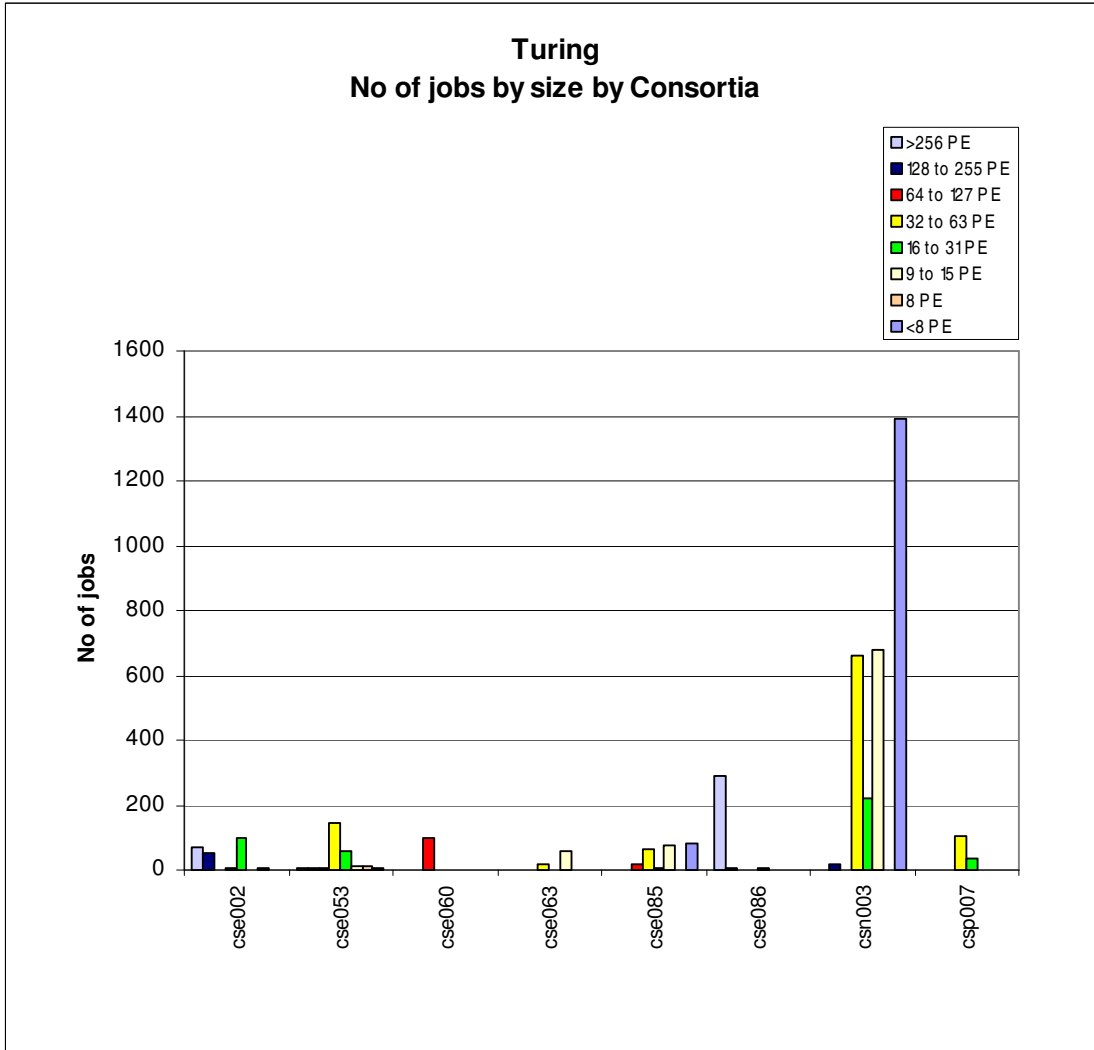
CSE085 (Sandham), CSN001 (De Cuevas), CSN003 (Steenman-Clark), CSN015 (Proctor) & CSN036 (Woolf) were the major users of HSM resource.





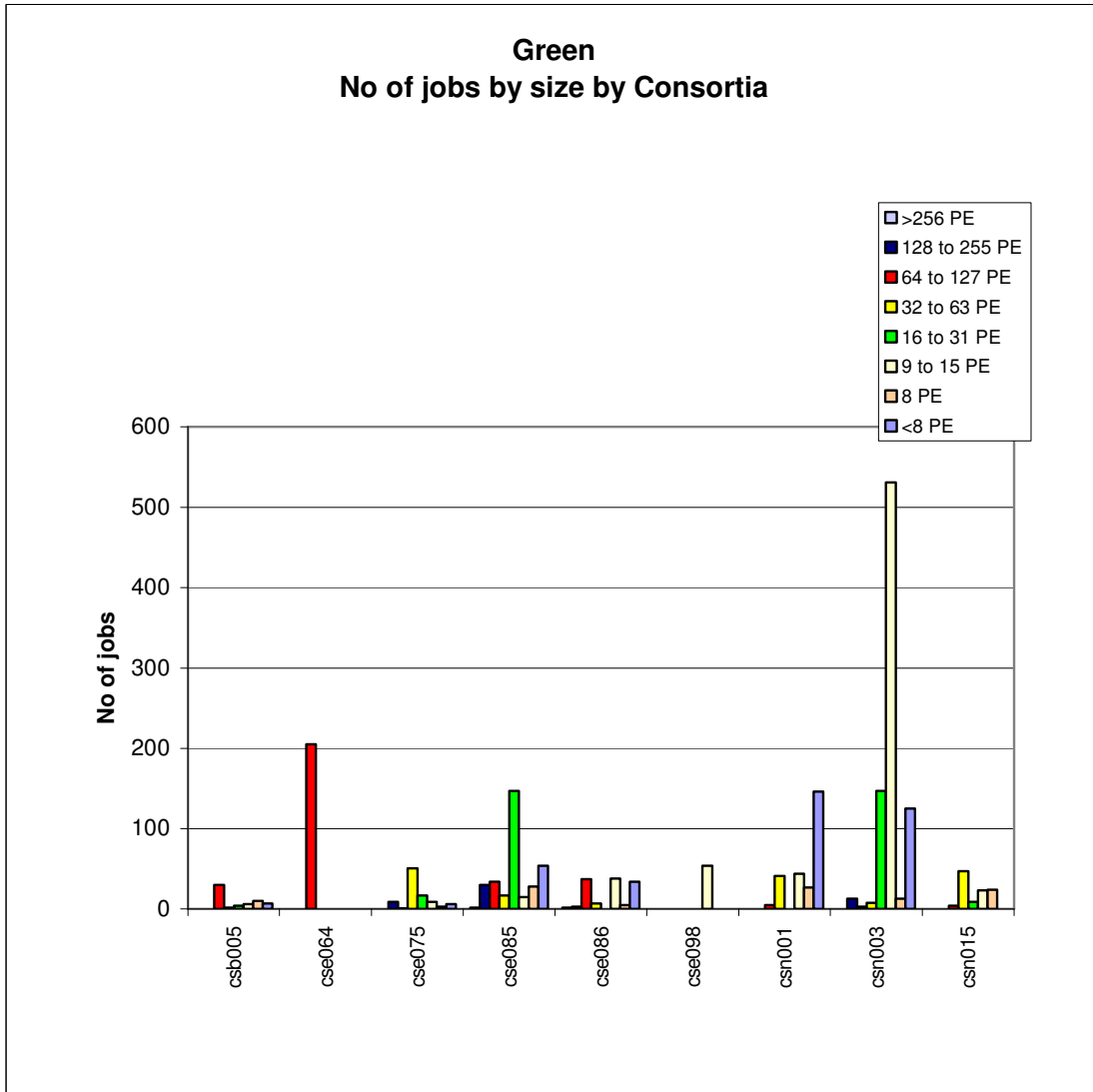
### 4.7 Processor Usage and Job Statistics Charts

Job statistics for Turing:



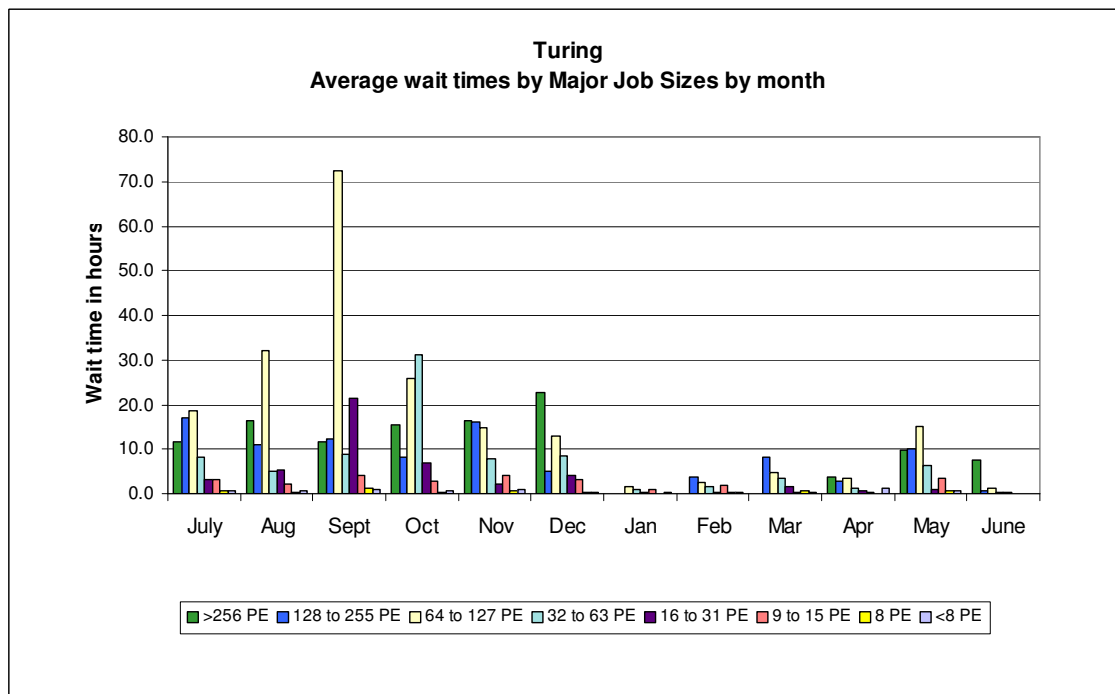
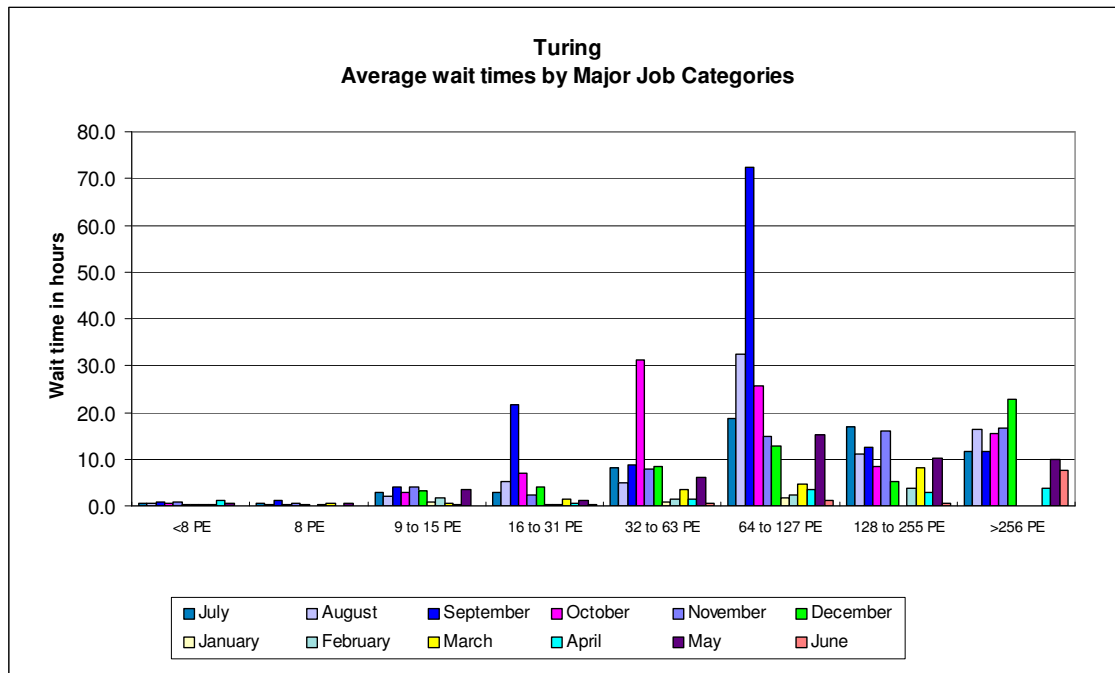
The above graph shows the number of jobs of the major sizes run in the period 1<sup>st</sup> to 30<sup>th</sup> June 2003.

Job statistics for Green:



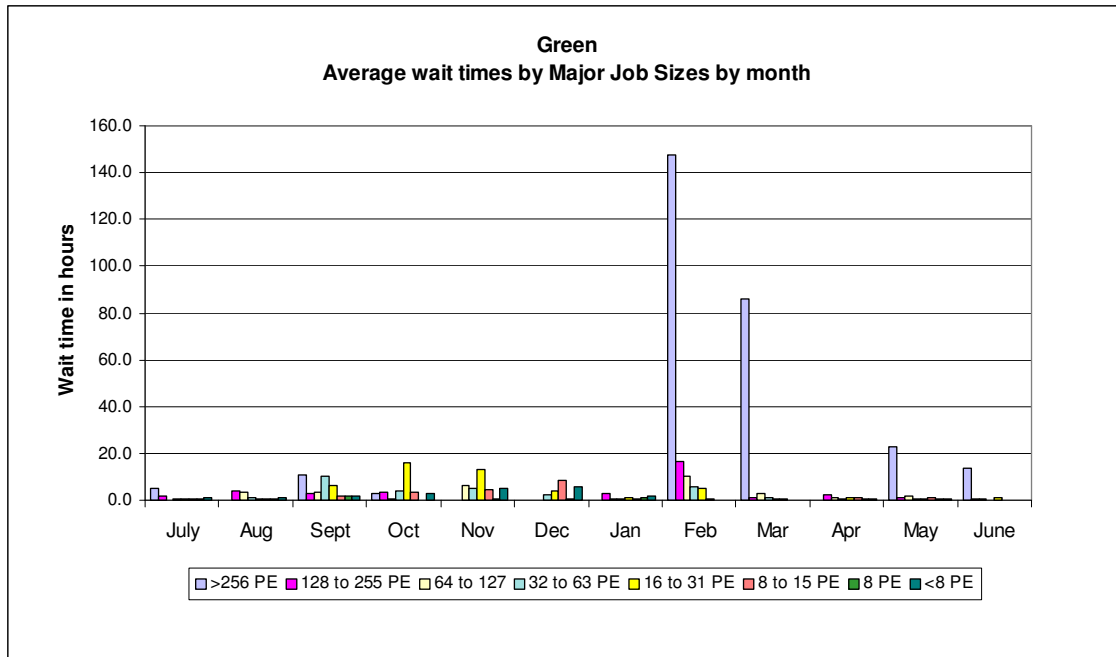
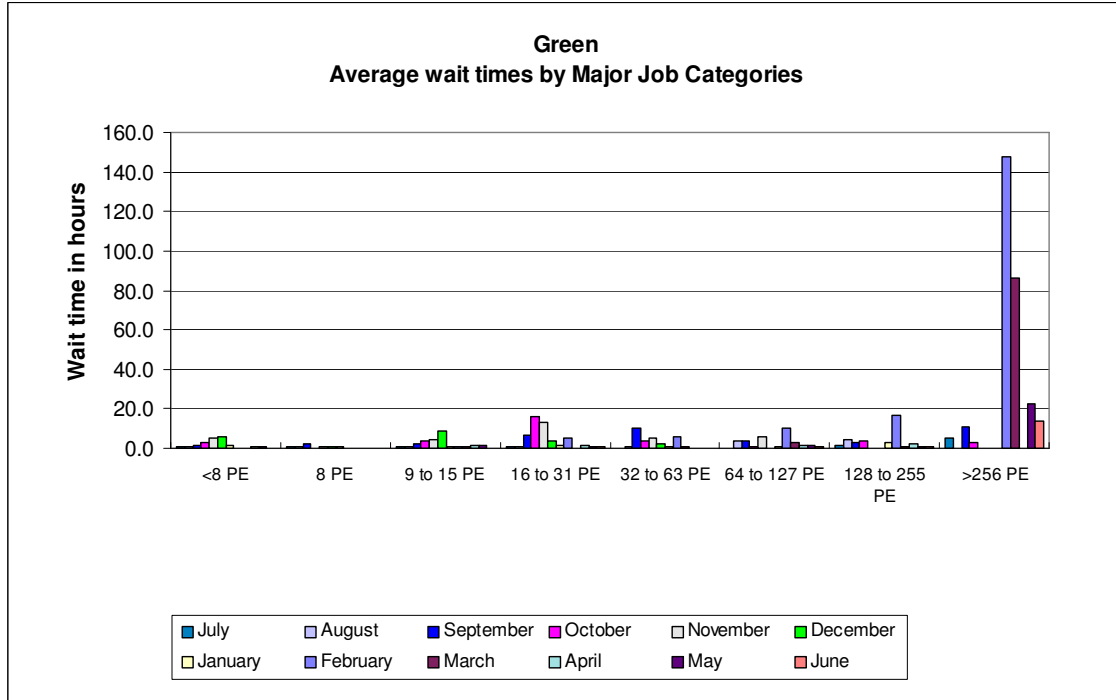
The above graph shows the number of jobs of the major sizes run in the period 1<sup>st</sup> to 30<sup>th</sup> June 2003.

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

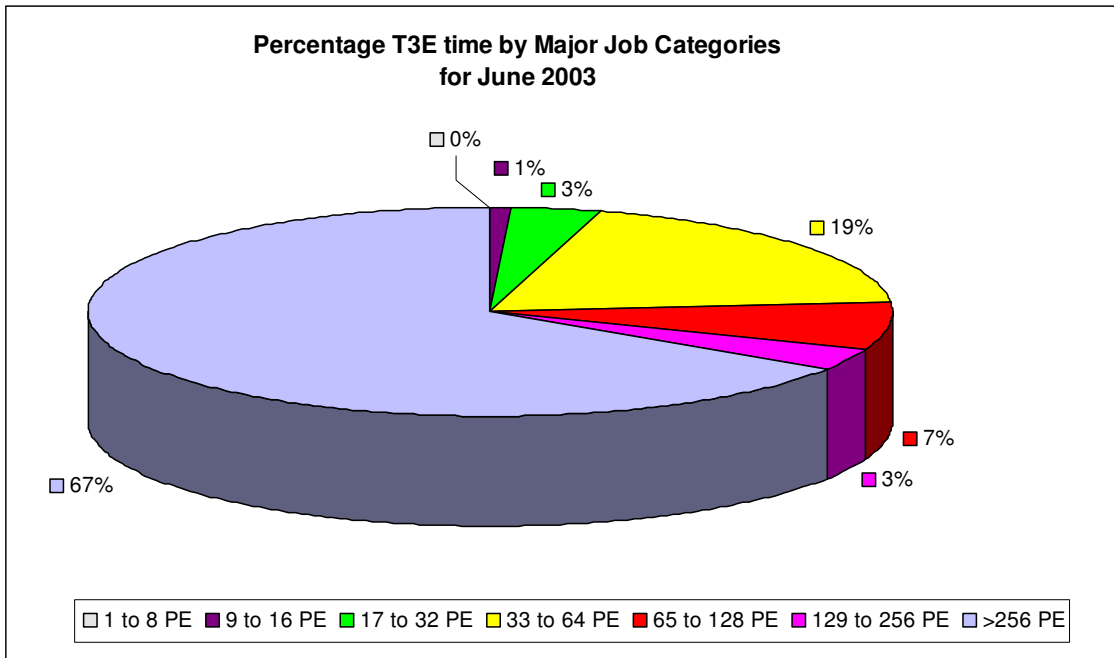


The chart above shows the average wait time trend on Turing over the last 12 months.

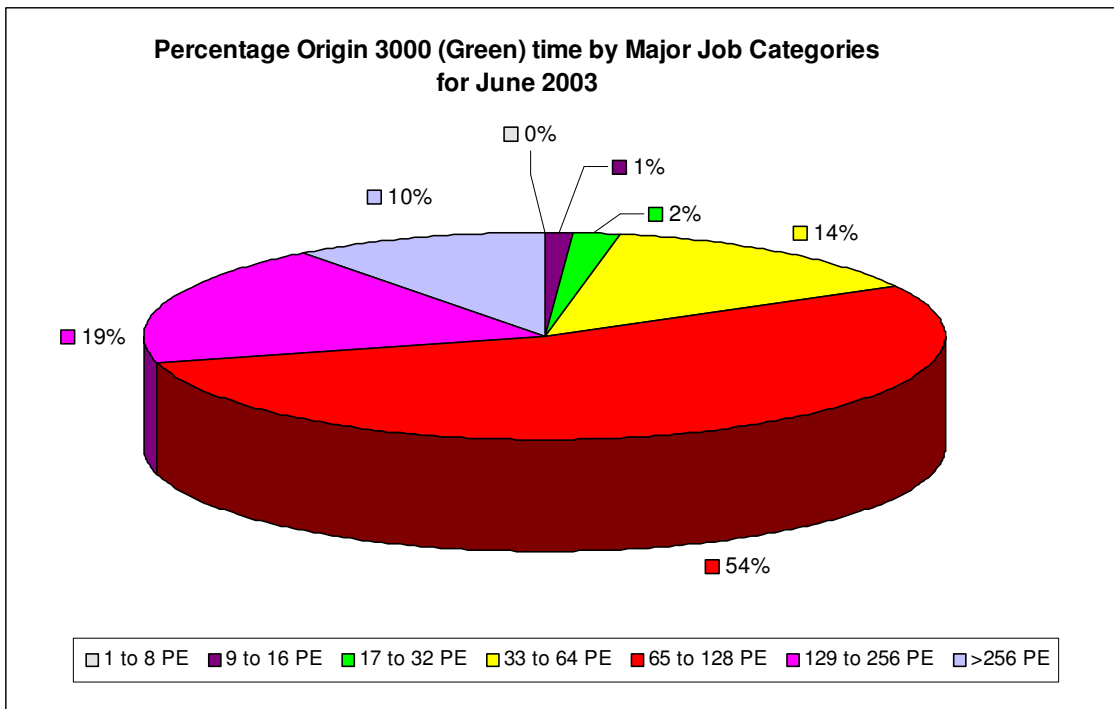
The next graph shows the wait times in hours on Green for the major categories of jobs:



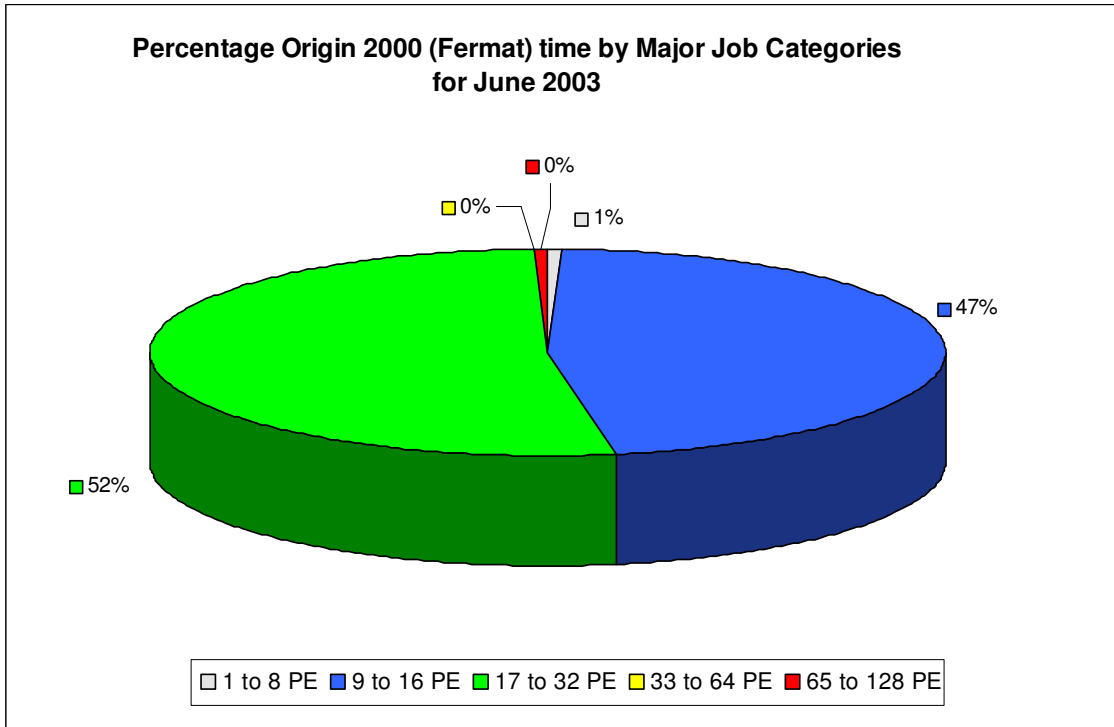
The chart above shows the average wait time trend on Green for the last 12 month period.



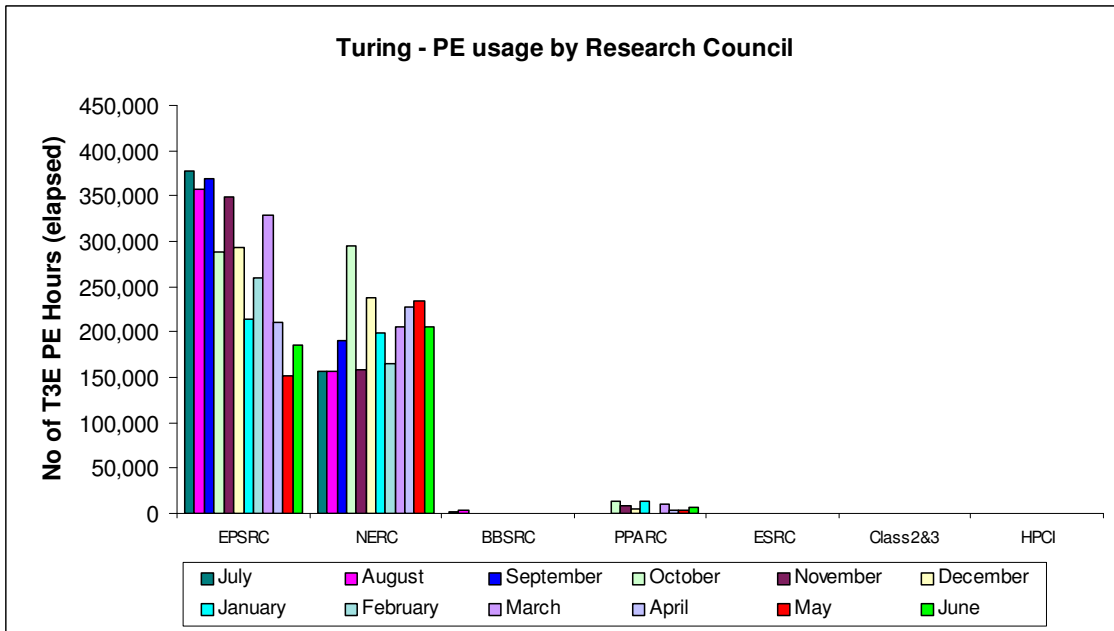
Workload on Turing for June was at its highest concentration in the above 256 PE range, at 67% of the total workload of the machine.



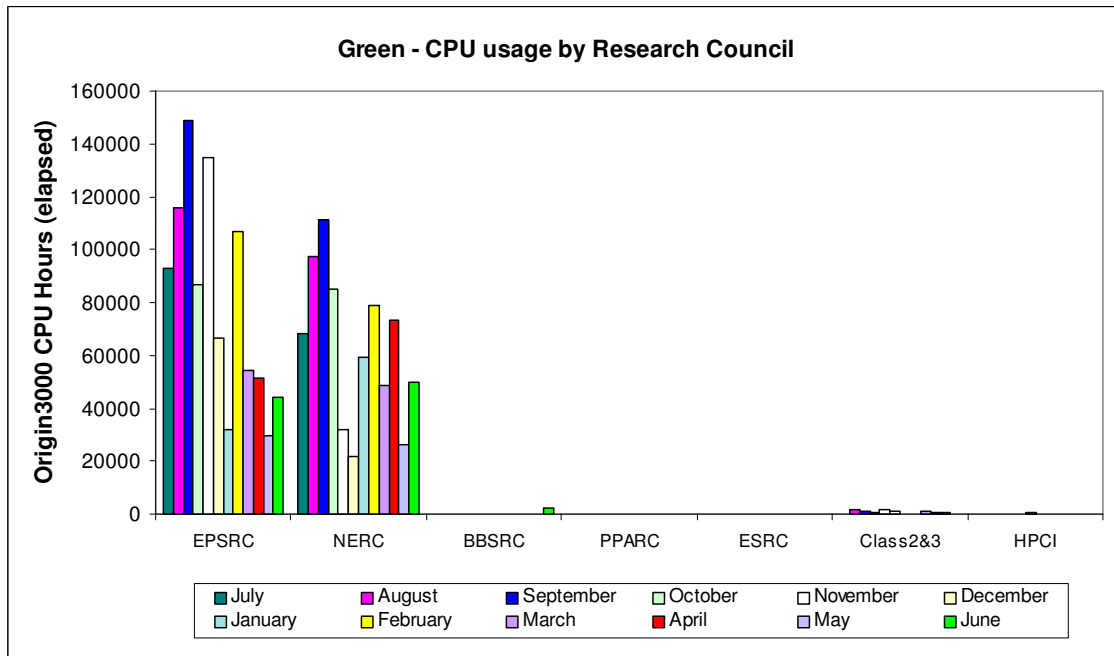
The greatest percentage of workload on Green, 54%, was in the 65 to 128 PE range, with a fairly even spread across the rest of the PE ranges.



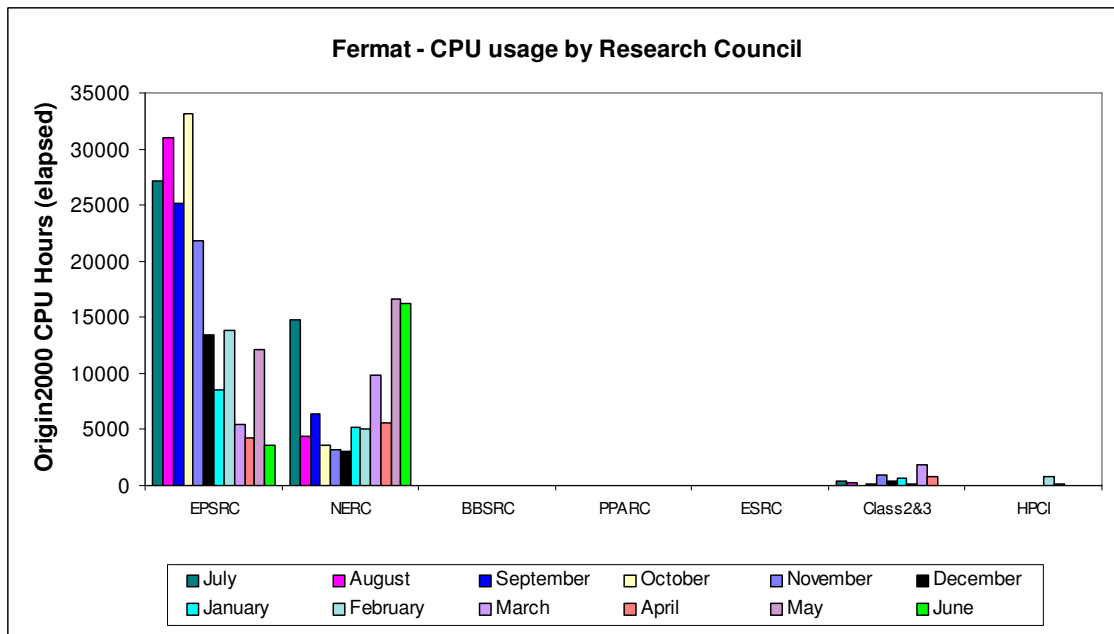
The greatest proportion of work on Fermat for June split evenly between the 9 to 16 PE range and the 17 to 32 PE range.



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.

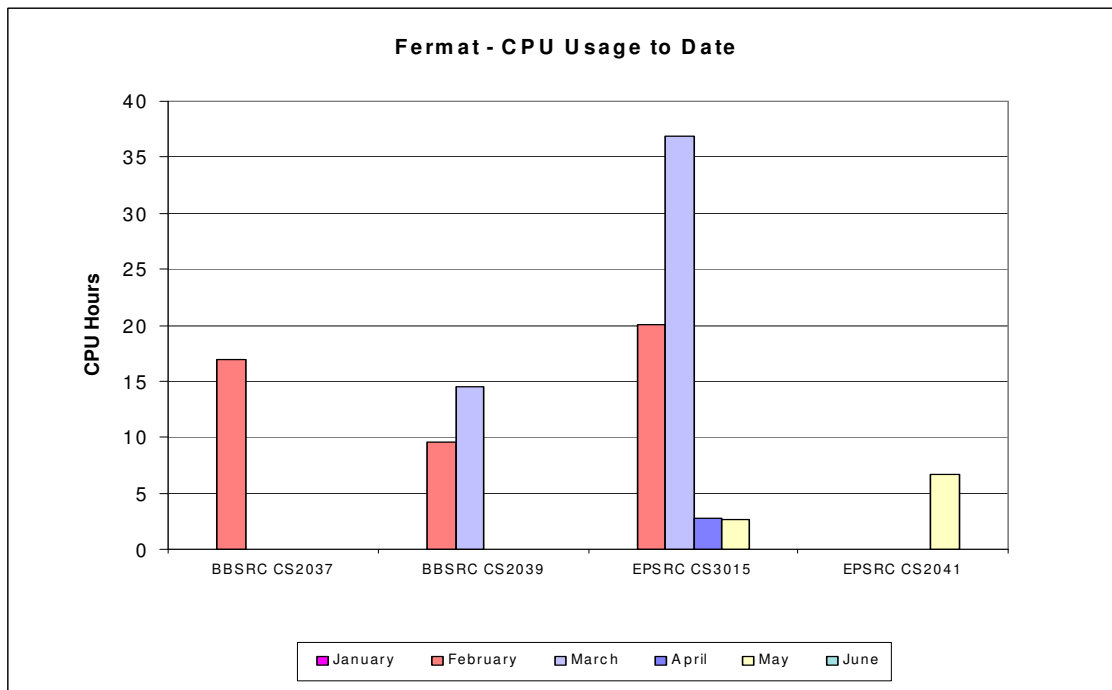


Origin 2000 CPU usage is shown by Research Council during the past 12 months of service in the above chart.

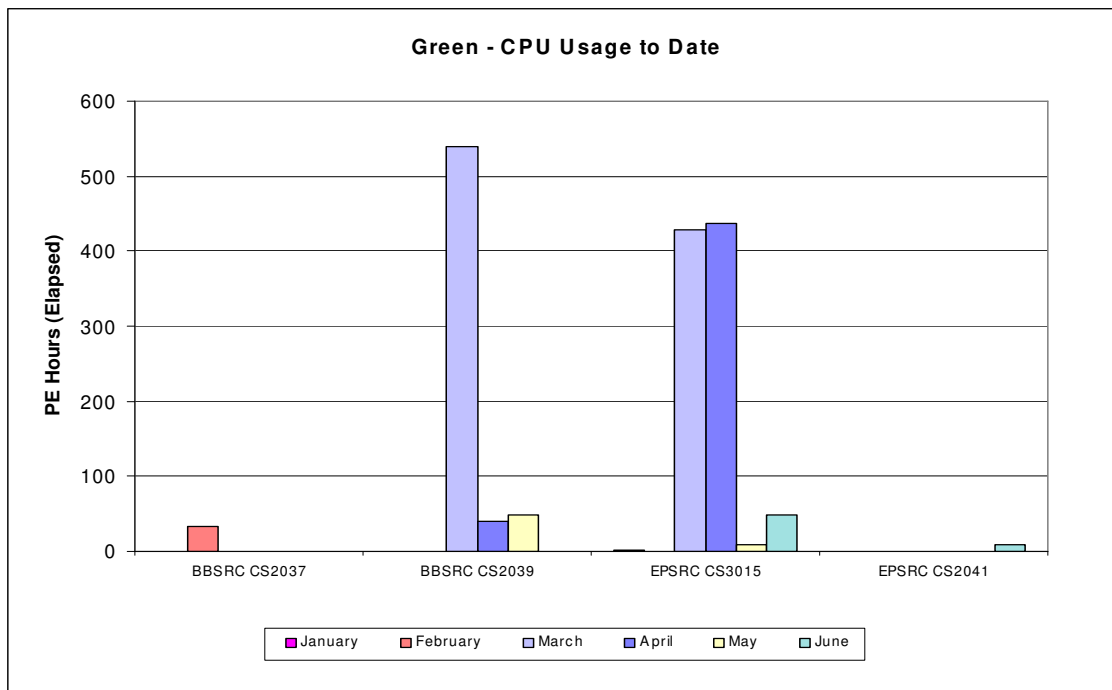
### 4.8 Class 2 & 3 Usage Charts

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.

There is currently no PE usage of the Turing system by class 2 and class 3 users.

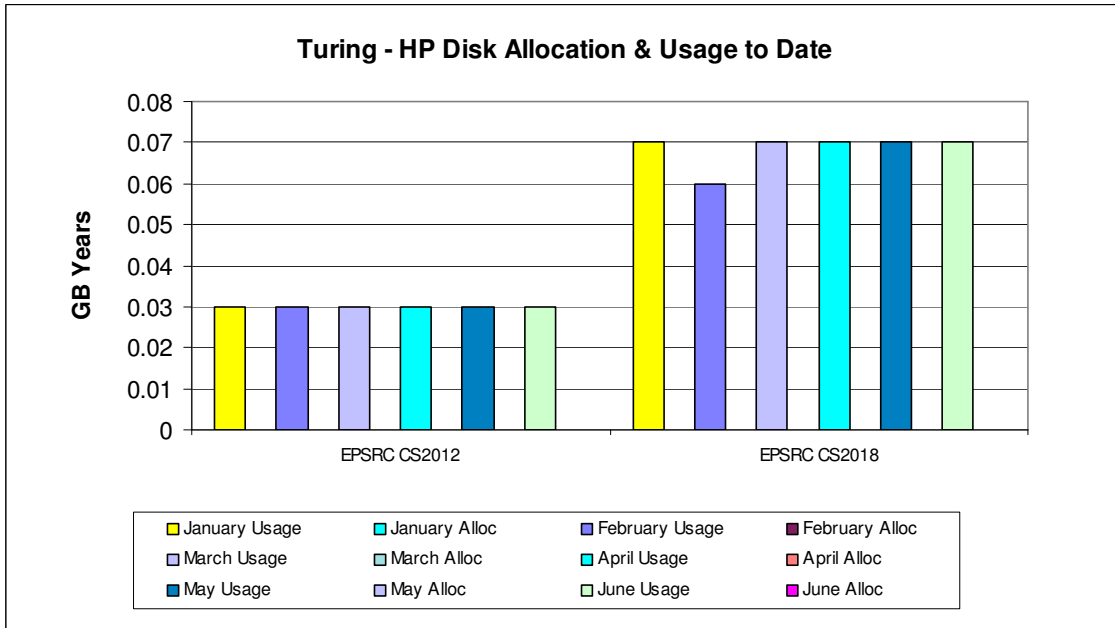


The above chart shows the CPU usage of the Fermat system by class 2 and class 3 users.

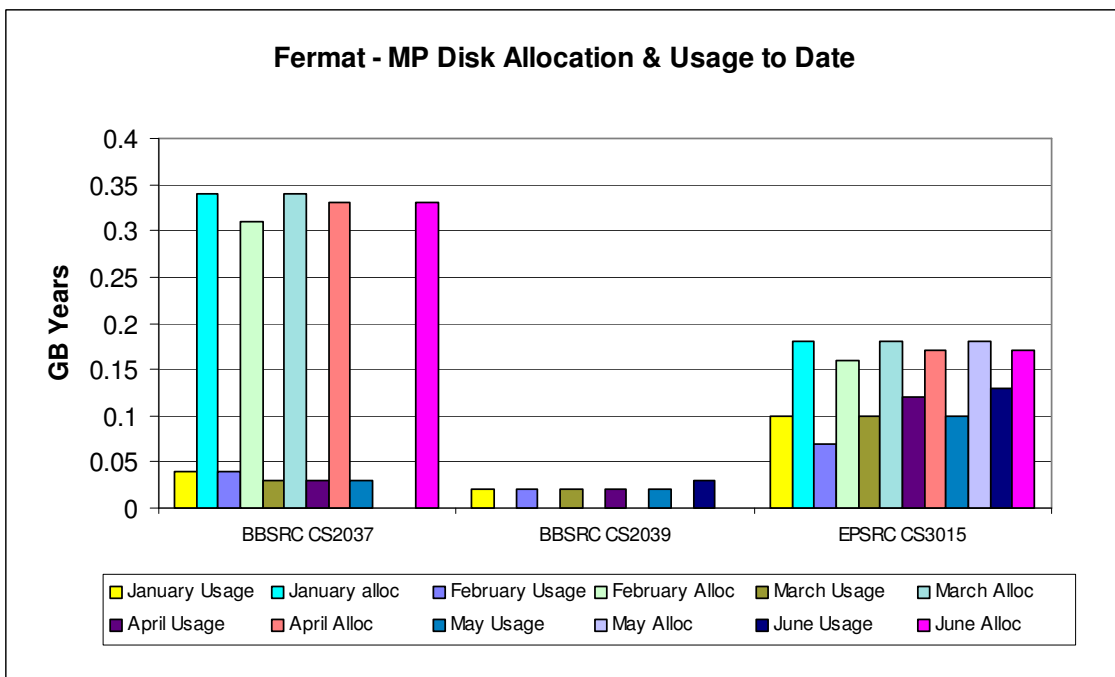


The above chart shows the CPU usage of Green by class 2 and class 3 users.





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

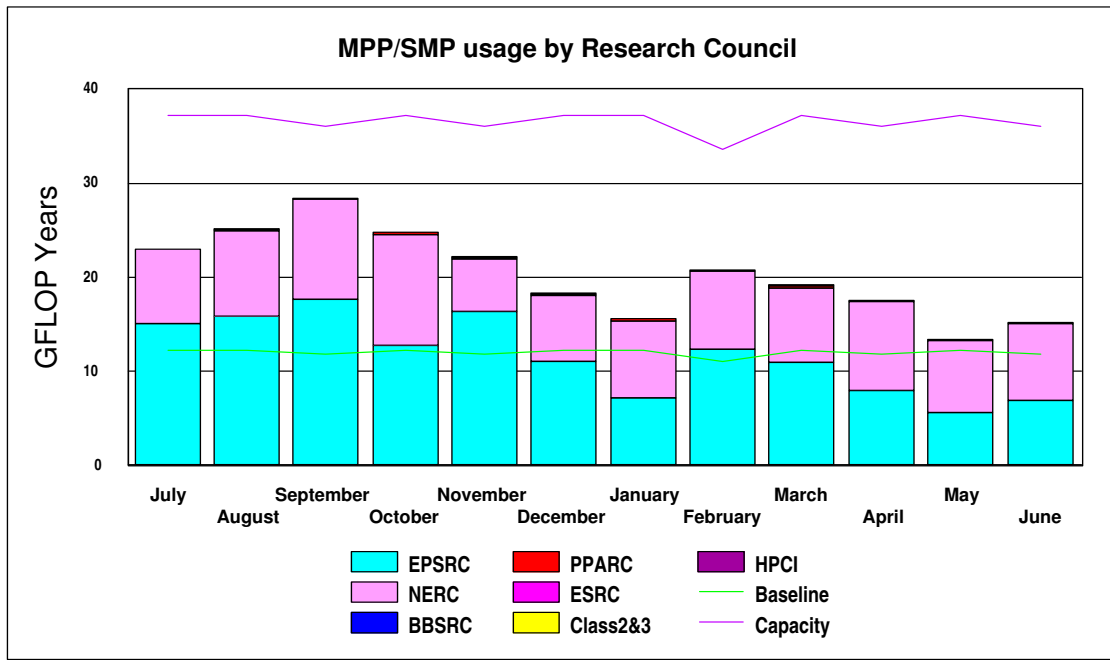


The above chart shows the most significant disk allocations on the Fermat system for class 2 and class 3 users. There is currently no HSM usage by class 2 and class 3 users.

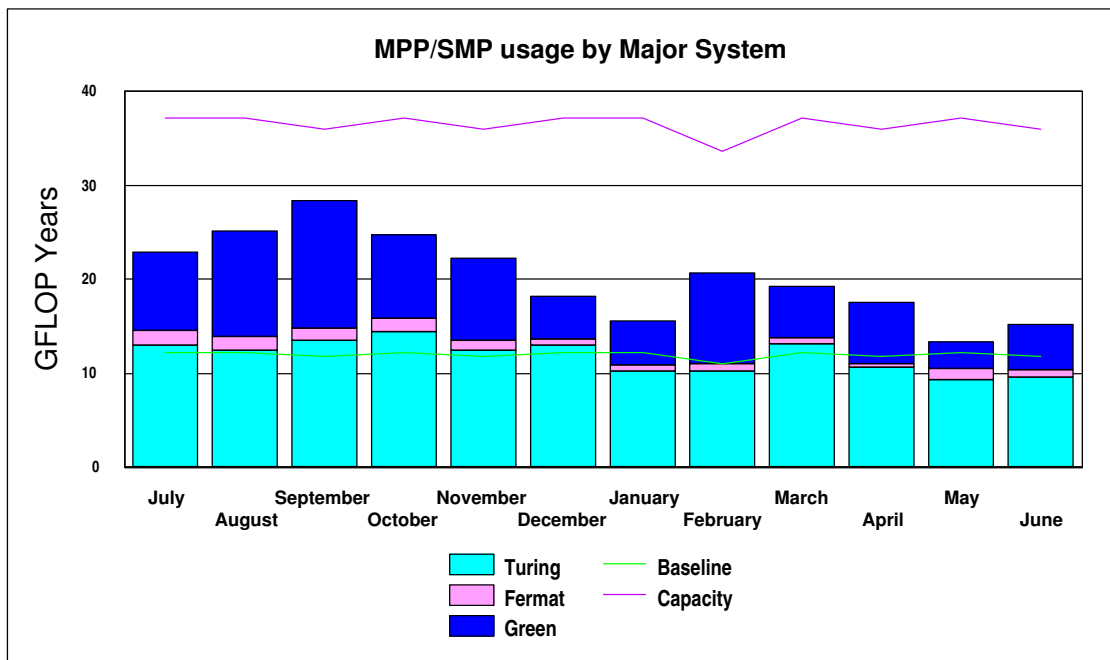
#### 4.9 Charts of Historical Usage

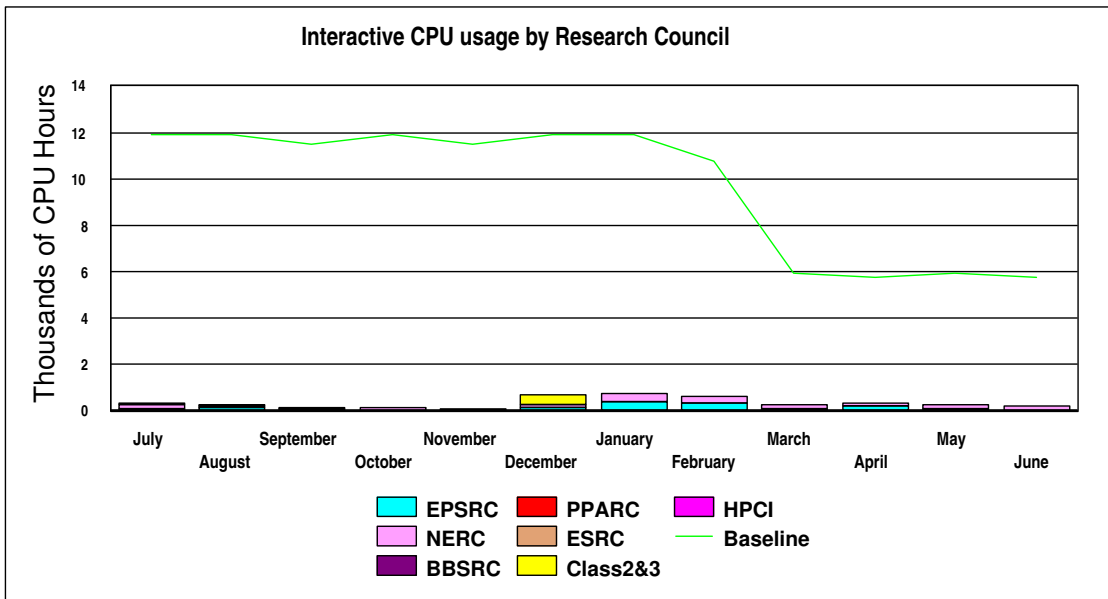
In all the Usage Charts, the baseline varies dependant on the number of days in each month, within a 365-day year.

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



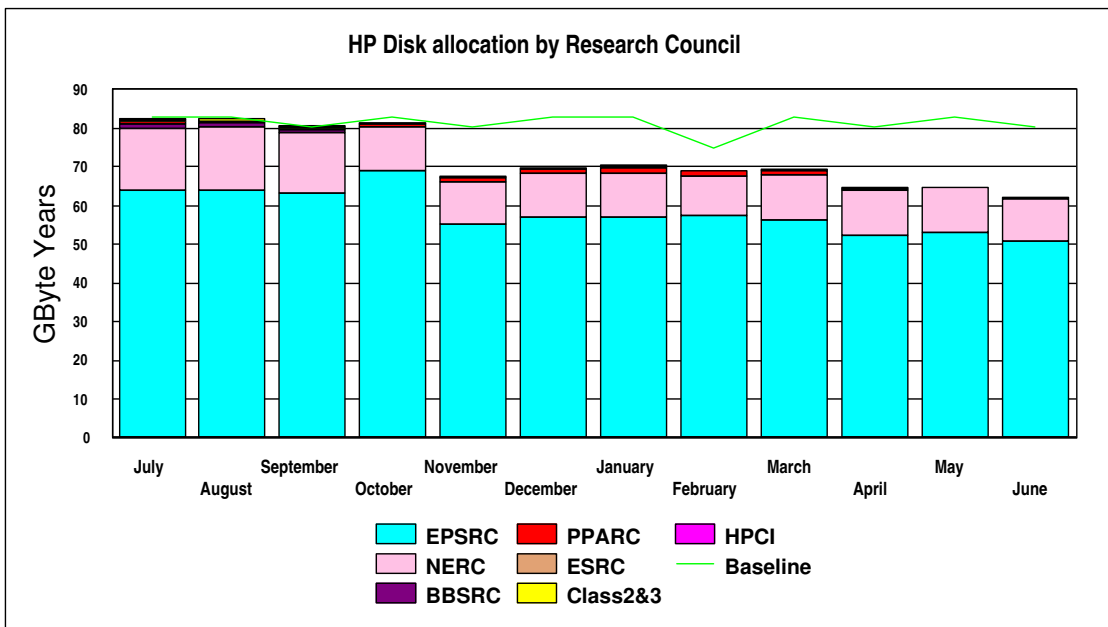
The graph below shows the historic SMP/MPP usage on the major systems.



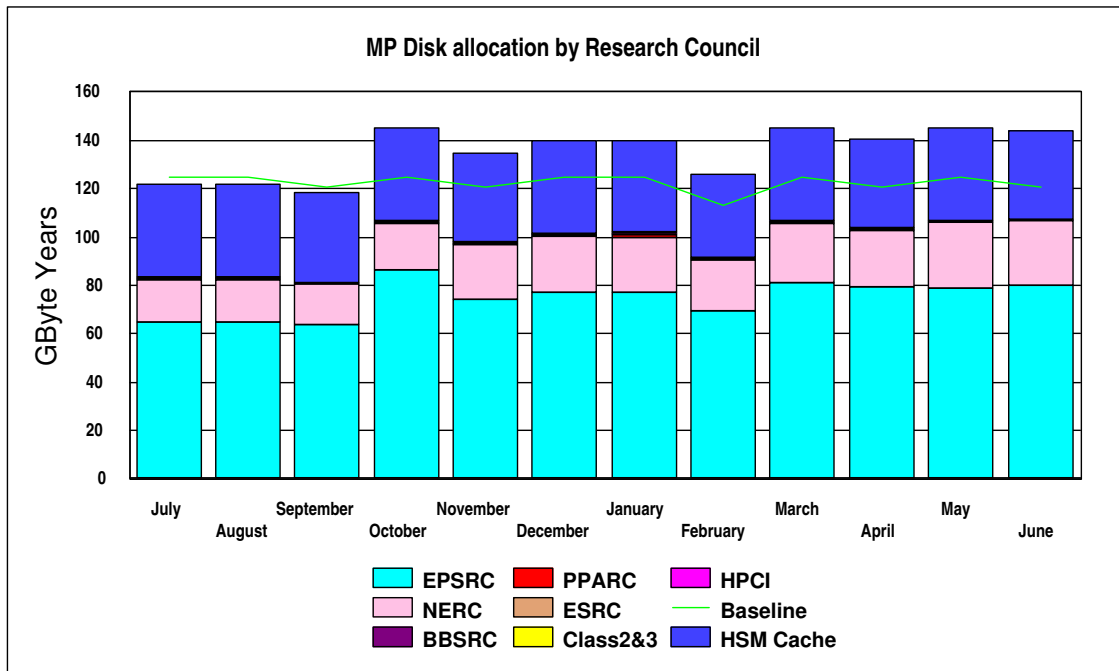


The above graph shows the historic interactive usage of the 'baseline' Fermat system (equivalent to 16@250Mhz CPUs) up to the end of February 2003, at which point the interactive usage was transferred to Wren and Fermat became a batch-only system.. Eight of the higher speed 500Mhz CPUs in the Origin 300 system (Wren) deliver the baseline capacity equivalent to that which was previously available on Fermat for interactive usage.

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

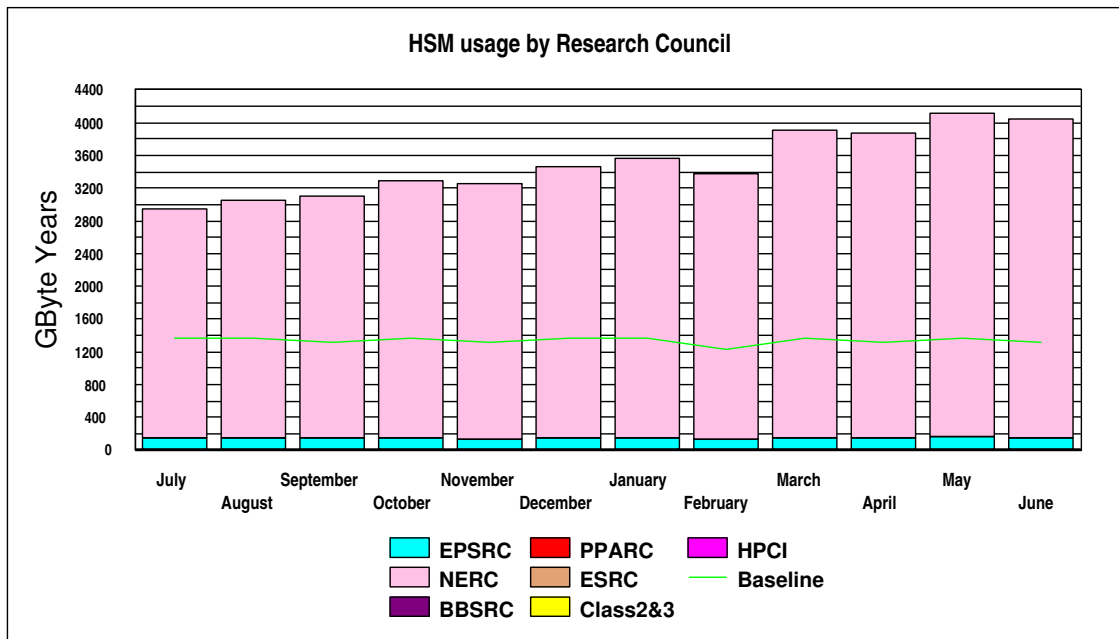


The preceding graph illustrates the historic allocation of the High Performance Disk on Turing.



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 48 Terabytes. The primary usage is for NERC.



### 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 reasonably utilised in June, with usage exceeding baseline.

During the month there was a fairly balanced spread of work across all major systems.

The four additional fibre-attached tape drives on Fermat have helped to improve the response and reliability of the Data Migration Facility; response times this month have been much better than in previous months..

### 5.2 Issues

There are no issues to report for June.

### 5.3 Plans

A 32-PE Altix system (Reynolds) has been introduced as a forerunner to the 256-PE Altix system (Newton) due for installation during September 2003. Further details will be announced as they become available.

It is also the intention of CfS to further upgrade the Silo configuration by the addition of a second tape silo within the next few months.

## 6. Conclusion

June 2003 saw the overall CPARS rating at Green with the baseline being exceeded by 29.4%.

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 June 2003

**Appendix 2** contains the Percentage shares by Consortium for June 2003

**Appendix 3** contains the Percentage shares by Research Council for June 2003

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

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

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

**Appendix 1**

The summary accounts for the month of June 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 June 2003		Percentage CPU time per consortia for Fermat in June 2003	
Consortia	% Machine Time	Consortia	% Machine Time
CSE002	6.80	CSE002	0.20
CSE057	0.00	CSE057	0.00
CSE086	18.05	CSE086	0.06
CSE013	0.00	CSE013	0.00
CSE053	2.81	CSE053	0.00
CSE063	2.55	CSE063	0.00
CSE064	0.00	CSE064	0.00
CSE072	0.18	CSE072	0.00
CSE085	9.59	CSE085	0.02
CSE082	0.00	CSE082	1.36
CSE061	0.00	CSE061	16.29
CSE009	0.00	CSE009	0.00
CSE035	0.00	CSE035	0.00
CSE060	5.68	CSE060	0.00
CSE020	0.00	CSE020	0.00
CSE066	1.03	CSE066	0.00
CSE075	0.00	CSE075	0.17
CSE076	0.03	CSE076	0.00
CSN001	0.00	CSN001	59.73
CSN003	51.58	CSN003	22.04
CSN005	0.00	CSN005	0.00
CSN006	0.01	CSN006	0.14
CSN007	0.00	CSN007	0.00
CSN015	0.11	CSN015	0.00
CSN017	0.00	CSN017	0.00
CSN036	0.00	CSN036	0.00
CSN044	0.00	CSN044	0.00
CSN052	0.00	CSN052	0.00
CSB001	0.00	CSB001	0.00
CSP007	1.55	CSP007	0.00
CS3015	0.00	CS3015	0.00

Percentage CPU time per consortia for Green in June 2003		Percentage CPU time per consortia for Wren in June 2003	
Consortia	% Machine Time	Consortia	% Machine Time
CSE002	0.38	CSE002	0.02
CSE084	0.00	CSE084	0.03
CSE086	13.29	CSE086	5.58
CSE098	0.45	CSE098	0.00
CSE041	0.00	CSE041	0.00
CSE053	0.40	CSE053	0.01
CSE056	0.00	CSE056	2.48
CSE063	0.02	CSE063	0.00
CSE064	7.17	CSE064	1.02
CSE085	10.44	CSE085	0.22
CSE082	1.51	CSE082	0.64
CSE009	0.00	CSE009	0.66
CSE075	12.32	CSE075	1.63
CSE076	0.00	CSE076	0.08
CSN001	20.87	CSN001	15.25
CSN003	4.56	CSN003	62.25
CSN006	0.03	CSN006	0.18
CSN015	13.73	CSN015	3.82
CSN052	0.65	CSN052	0.54
CSB005	2.08	CSB005	3.75
CSP006	0.00	CSP007	3.58
CS2041	0.01	CS2041	0.27
CS2039	0.00	CS2039	0.00
CS3015	0.05	CS3015	0.00

Appendix 2

Percentage disc allocation by Consortia for Turing in June 2003		Percentage disc allocation by Consortia for Fermat in June 2003	
Consortia	%Allocation	Consortia	%Allocation
CSE002	30.27	CSE002	7.61
CSE055	0.13	CSE055	0.00
CSE057	0.05	CSE057	0.00
CSE084	1.60	CSE084	1.53
CSE086	9.90	CSE086	7.66
CSE098	0.00	CSE098	0.16
CSE040	0.03	CSE040	0.38
CSE041	0.06	CSE041	0.07
CSE043	0.06	CSE043	0.07
CSE052	0.03	CSE052	0.00
CSE053	0.27	CSE053	0.46
CSE056	0.00	CSE056	0.11
CSE063	1.32	CSE063	0.00
CSE064	0.03	CSE064	0.07
CSE085	19.89	CSE085	8.44
CSE082	13.26	CSE082	7.67
CSE061	0.19	CSE061	0.09
CSE009	7.10	CSE009	1.53
CSE035	0.10	CSE035	0.00
CSE066	1.55	CSE066	0.79
CSE075	7.77	CSE075	37.13
CSE076	0.13	CSE076	0.42
CSE036	0.03	CSE036	0.01
HPCI Daresbury	0.13	HPCI Daresbury	0.04
HPCI Edinburgh	0.13	HPCI Edinburgh	0.07
CSN001	2.65	CSN001	11.51
CSN003	4.11	CSN003	2.30
CSN005	0.00	CSN005	0.00
CSN006	6.63	CSN006	1.73
CSN007	0.00	CSN007	0.00
CSN010	0.00	CSN010	0.00
CSN012	0.00	CSN012	0.04
CSN015	0.35	CSN015	1.53
CSN017	0.02	CSN017	0.03
CSN036	3.98	CSN036	5.37
CSN052	0.13	CSN052	2.30
CSB001	0.00	CSB001	0.00
CSP004	0.00	CSP004	0.00
CS2037	0.00	CS2037	0.31
CS3015	0.00	CS3015	0.16

Percentage usage of HSM by Consortium for June 2003	
Consortium	% Usage
CSE002	0.18
CSE086	0.03
CSE041	0.26
CSE053	0.04
CSE063	0.43
CSE064	0.02
CSE085	2.31
CSE082	0.00
CSE035	0.01
CSE075	0.52
CSN001	24.67
CSN003	66.31
CSN006	0.01
CSN015	2.69
CSN036	2.49
CSN044	0.02



## Appendix 3

<u>Percentage PE usage on Turing by Research Council for June 2003</u>			<u>Percentage CPU usage on Fermat by Research Council for June 2003</u>		
<u>Research Council</u>	<u>% Usage</u>		<u>Research Council</u>	<u>% Usage</u>	
EPSRC	46.75		EPSRC	18.10	
HPCI	0.00		HPCI	0.00	
NERC	51.70		NERC	81.90	
BBSRC	0.00		BBSRC	0.00	
ESRC	0.00		ESRC	0.00	
PPARC	1.55		PPARC	0.00	

<u>Percentage PE usage on Green by Research Council for June 2003</u>			<u>Percentage CPU usage on Wren by Research Council for June 2003</u>		
<u>Research Council</u>	<u>% Usage</u>		<u>Research Council</u>	<u>% Usage</u>	
EPSRC	46.03		EPSRC	10.63	
HPCI	0.00		HPCI	0.00	
NERC	51.74		NERC	82.04	
BBSRC	2.08		BBSRC	3.75	
ESRC	0.00		ESRC	0.00	
PPARC	0.00		PPARC	3.58	

<u>Percentage Disc allocated on Turing by Research Council for June 2003</u>			<u>Percentage Disc allocated on Fermat by Research Council for June 2003</u>		
<u>Research Council</u>	<u>% Allocated</u>		<u>Research Council</u>	<u>% Allocated</u>	
EPSRC	81.89		EPSRC	74.78	
HPCI	0.26		HPCI	0.11	
NERC	17.85		NERC	24.80	
BBSRC	0.00		BBSRC	0.31	
ESRC	0.00		ESRC	0.00	
PPARC	0.00		PPARC	0.00	

<u>Percentage Disc allocated as SAN UHP by Research Council for June 2003</u>			<u>Percentage Disc allocated as SAN HV by Research Council for June 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 June 2003</u>		
<u>Research Council</u>	<u>% usage</u>	
EPSRC	3.81	
HPCI	0.00	
NERC	96.19	
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 June 2003	Total Apps Support from July 2000	Opt Support for June 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	10
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)	CCPI 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 Aeroacoustics 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	6
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	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	5
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	
cse098	De Souza M M (Dr)	Indium interactions in silicon for ULSI technologies	Physics		5						5	
csn001	De Cuevas, B (Mrs)	OCCAM	Ocean/Earth Sciences	Zoe Chaplin	70.5		1	3	58	61	20	3
csn002	Vincent, Mark (Dr)			Robin Pinning								
csn003	Steenman-Clark, L (Dr)	UGAMP	Meteorology	Zoe Chaplin					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 infrared & 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	
csb002	Chapman, S (Dr)				2						8	4
csb003	Ord, S M (Mr)			Stephen Pickles	11.79		10			11	12	12
csb004	Bell, K L (Prof)	A Programme for Atomic Physics for Astrophysics at Queen's University Belfast (2001-2005)	Astronomy	Keith Taylor	7						8	
csb006	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 & Aerocautics 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	Alshero, B				3					13		



	(Dr)											
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 June 2003.

<p>cs2041 Filippone  Last Trade: re-enabled  Usage:  1.8 of 10.1 Hour Wren CPU (0.1 of 0.5 G.S.T), 17.6%  6.7 of 0.0 Hour SMP CPU (0.3 of 0.0 G.S.T), 49892.3%  0.0 of 12.5 GByteYear MP Disk (0.0 of 44.5 G.S.T), 0.0%  24.5 of 1052.6 Hour Green CPU (1.3 of 55.0 G.S.T), 2.3%  Total usage for project cs2041 1.6 of 100.0 Generic Service Tokens, 1.6%</p> <hr/>
<p>cs2043 Theodoropoulos  Last Trade: Thu Jun 12 15:44:00 2003  Usage:  0.0 of 500.0 Hour Wren CPU (0.0 of 24.8 G.S.T), 0.0%  0.0 of 400.0 Hour SMP CPU (0.0 of 15.5 G.S.T), 0.0%  0.0 of 0.6 GByteYear MP Disk (0.0 of 2.2 G.S.T), 0.0%  0.0 of 450.0 Hour Green CPU (0.0 of 23.5 G.S.T), 0.0%  Total usage for project cs2043 0.0 of 66.0 Generic Service Tokens, 0.0%</p> <hr/>
<p>cs3015 Hampshire  Last Trade: re-enabled  Usage:  85.1 of 285.3 Hour Wren CPU (4.2 of 14.1 G.S.T), 29.8%  512.4 of 648.8 Hour SMP CPU (19.9 of 25.2 G.S.T), 79.0%  2.3 of 3.0 GByteYear MP Disk (8.3 of 10.7 G.S.T), 78.0%  5494.4 of 16049.3 Hour Green CPU (287.1 of 838.6 G.S.T), 34.2%  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 319.6 of 1001.2 Generic Service Tokens, 31.9%</p> <hr/>
<p>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%</p> <hr/>
<p>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%</p> <hr/>
<p>csb005 Haley  Last Trade: Mon Jun 9 10:54:30 2003  Usage:</p>

8.0 of 400.0 Hour Wren CPU (0.4 of 19.8 G.S.T), 2.0%  
 0.0 of 12.3 GByteYear MP Disk (0.0 of 43.9 G.S.T), 0.0%  
 1990.7 of 100000.0 Hour Green CPU (104.0 of 5225.2 G.S.T), 2.0%  
 0.0 of 10.0 PersonDay Support (0.0 of 294.1 G.S.T), 0.0%  
 Total usage for project csb005 104.4 of 5583.0 Generic Service Tokens, 1.9%

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#### 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), 70.9%  
 Total usage for project cse001 0.4 of 0.8 Generic Service Tokens, 45.5%

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#### cse002 GR/N02337 Bird

Last Trade: Fri May 23 14:58:09 2003

##### Usage:

3083426.2 of 3093737.0 PEHour MPP PE CPU (74553.3 of 74802.6 G.S.T), 99.7%  
 840.8 of 1262.0 GByteYear HP Disk (5004.5 of 7511.9 G.S.T), 66.6%  
 28.3 of 102.8 Hour Wren CPU (1.4 of 5.1 G.S.T), 27.5%  
 148936.6 of 162260.2 Hour SMP CPU (5786.4 of 6304.1 G.S.T), 91.8%  
 326.4 of 1222.0 GByteYear MP Disk (1165.7 of 4364.3 G.S.T), 26.7%  
 406.6 of 414.5 GByteYear HSM/Tape (255.4 of 260.4 G.S.T), 98.1%  
 266855.0 of 256260.5 Hour Green CPU (13943.7 of 13390.1 G.S.T), 104.1%  
 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 104985.3 of 110913.3 Generic Service Tokens, 94.7%

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#### cse002 Daresbury

Last Trade: never

##### Usage:

501103.8 of 499686.0 PEHour MPP PE CPU (12116.0 of 12081.8 G.S.T), 100.3%  
 137.7 of 200.0 GByteYear HP Disk (819.8 of 1190.5 G.S.T), 68.9%  
 27.6 of 25.0 Hour Wren CPU (1.4 of 1.2 G.S.T), 110.3%  
 35538.5 of 35350.0 Hour SMP CPU (1380.7 of 1373.4 G.S.T), 100.5%  
 35.7 of 48.9 GByteYear MP Disk (127.4 of 174.6 G.S.T), 72.9%  
 71.4 of 106.0 GByteYear HSM/Tape (44.9 of 66.6 G.S.T), 67.4%  
 38123.2 of 22500.0 Hour Green CPU (1992.0 of 1175.7 G.S.T), 169.4%  
 Total usage for subproject cse002a 16482.3 of 16063.8 Generic Service Tokens, 102.6%

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#### cse002 Belfast

Last Trade: never

##### Usage:

384900.0 of 388170.0 PEHour MPP PE CPU (9306.4 of 9385.5 G.S.T), 99.2%  
 112.9 of 120.0 GByteYear HP Disk (672.0 of 714.3 G.S.T), 94.1%  
 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%  
 13.7 of 44.9 GByteYear MP Disk (48.9 of 160.4 G.S.T), 30.5%  
 0.0 of 3.0 GByteYear HSM/Tape (0.0 of 1.9 G.S.T), 0.0%  
 Total usage for subproject cse002b 10787.0 of 11056.6 Generic Service Tokens, 97.6%

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#### 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%  
 51.5 of 54.4 GByteYear HP Disk (306.5 of 323.8 G.S.T), 94.7%

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%  
 28.1 of 50.4 GByteYear MP Disk (100.3 of 180.0 G.S.T), 55.7%  
 9.9 of 52.0 GByteYear HSM/Tape (6.2 of 32.6 G.S.T), 19.0%  
 Total usage for subproject cse002c 9405.0 of 9516.7 Generic Service Tokens, 98.8%

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#### cse002 Cambridge - Physics

Last Trade: never

Usage:

88900.2 of 89901.0 PEHour MPP PE CPU (2149.5 of 2173.7 G.S.T), 98.9%  
 16.7 of 26.7 GByteYear HP Disk (99.4 of 158.9 G.S.T), 62.6%  
 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%  
 24.6 of 27.7 GByteYear MP Disk (87.9 of 98.9 G.S.T), 88.9%  
 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 3049.9 of 3534.4 Generic Service Tokens, 86.3%

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#### cse002 Bath

Last Trade: never

Usage:

455233.5 of 457233.0 PEHour MPP PE CPU (11007.0 of 11055.3 G.S.T), 99.6%  
 183.5 of 199.0 GByteYear HP Disk (1092.2 of 1184.5 G.S.T), 92.2%  
 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%  
 39.0 of 50.5 GByteYear MP Disk (139.3 of 180.4 G.S.T), 77.3%  
 128.1 of 75.0 GByteYear HSM/Tape (80.5 of 47.1 G.S.T), 170.8%  
 Total usage for subproject cse002e 12318.9 of 12467.5 Generic Service Tokens, 98.8%

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#### cse002 UCL

Last Trade: never

Usage:

84029.5 of 89030.0 PEHour MPP PE CPU (2031.7 of 2152.6 G.S.T), 94.4%  
 28.6 of 59.1 GByteYear HP Disk (170.4 of 351.8 G.S.T), 48.4%  
 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%  
 30.4 of 54.6 GByteYear MP Disk (108.7 of 195.0 G.S.T), 55.7%  
 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 4283.9 of 4403.6 Generic Service Tokens, 97.3%

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#### cse002 Oxford - pcl

Last Trade: never

Usage:

120318.8 of 120319.0 PEHour MPP PE CPU (2909.2 of 2909.2 G.S.T), 100.0%  
 20.1 of 32.8 GByteYear HP Disk (119.5 of 195.2 G.S.T), 61.2%  
 0.3 of 8.0 Hour Wren CPU (0.0 of 0.4 G.S.T), 4.1%  
 1905.4 of 1875.0 Hour SMP CPU (74.0 of 72.8 G.S.T), 101.6%  
 33.1 of 35.0 GByteYear MP Disk (118.1 of 125.0 G.S.T), 94.5%  
 0.0 of 2.2 GByteYear HSM/Tape (0.0 of 1.4 G.S.T), 0.0%  
 17426.1 of 16195.0 Hour Green CPU (910.5 of 846.2 G.S.T), 107.6%  
 Total usage for subproject cse002g 4131.4 of 4150.2 Generic Service Tokens, 99.5%

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#### 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%  
 47.7 of 51.0 GByteYear HP Disk (283.9 of 303.6 G.S.T), 93.5%  
 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%  
 13.9 of 46.5 GByteYear MP Disk (49.8 of 166.1 G.S.T), 30.0%  
 0.0 of 2.8 GByteYear HSM/Tape (0.0 of 1.8 G.S.T), 0.0%  
 Total usage for subproject cse002i 9202.5 of 8338.6 Generic Service Tokens, 110.4%

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cse002 Kent (UKC)

Last Trade: never

Usage:  
 240739.8 of 239888.0 PEHour MPP PE CPU (5820.8 of 5800.2 G.S.T), 100.4%  
 90.4 of 100.0 GByteYear HP Disk (538.4 of 595.2 G.S.T), 90.4%  
 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%  
 22.1 of 33.6 GByteYear MP Disk (79.0 of 120.0 G.S.T), 65.8%  
 76.8 of 100.0 GByteYear HSM/Tape (48.3 of 62.8 G.S.T), 76.8%  
 152917.0 of 156113.0 Hour Green CPU (7990.2 of 8157.2 G.S.T), 98.0%  
 Total usage for subproject cse002j 14476.6 of 14735.8 Generic Service Tokens, 98.2%

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cse002 Durham

Last Trade: never

Usage:  
 57482.5 of 110000.0 PEHour MPP PE CPU (1389.9 of 2659.7 G.S.T), 52.3%  
 32.3 of 45.0 GByteYear HP Disk (192.5 of 267.9 G.S.T), 71.9%  
 0.0 of 1.0 Hour SMP CPU (0.0 of 0.0 G.S.T), 0.0%  
 13.5 of 45.0 GByteYear MP Disk (48.2 of 160.7 G.S.T), 30.0%  
 Total usage for subproject cse002k 1630.5 of 3088.3 Generic Service Tokens, 52.8%

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cse002 York

Last Trade: never

Usage:  
 41576.9 of 49999.0 PEHour MPP PE CPU (1005.3 of 1208.9 G.S.T), 83.2%  
 2.7 of 5.0 GByteYear HP Disk (15.9 of 29.8 G.S.T), 53.5%  
 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%  
 21.5 of 30.0 GByteYear MP Disk (76.6 of 107.1 G.S.T), 71.5%  
 Total usage for subproject cse002l 1097.8 of 1346.0 Generic Service Tokens, 81.6%

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cse009 GR/20607 Catlow

Last Trade: re-enabled

Usage:  
 1740831.7 of 1738836.8 PEHour MPP PE CPU (42091.1 of 42042.8 G.S.T), 100.1%  
 212.3 of 728.3 GByteYear HP Disk (1263.7 of 4335.3 G.S.T), 29.1%  
 39.3 of 79.4 Hour Wren CPU (1.9 of 3.9 G.S.T), 49.4%  
 52016.7 of 55111.5 Hour SMP CPU (2020.9 of 2141.2 G.S.T), 94.4%  
 39.2 of 646.7 GByteYear MP Disk (140.1 of 2309.7 G.S.T), 6.1%  
 0.0 of 0.9 GByteYear HSM/Tape (0.0 of 0.6 G.S.T), 0.0%  
 254419.1 of 254206.0 Hour Green CPU (13293.9 of 13282.8 G.S.T), 100.1%  
 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 59076.4 of 64401.2 Generic Service Tokens, 91.7%

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cse013 - ICL

Last Trade: never  
 Usage:  
 168218.4 of 200000.0 PEHour MPP PE CPU (4067.3 of 4835.7 G.S.T), 84.1%  
 3.3 of 4.0 GByteYear HP Disk (19.8 of 23.8 G.S.T), 83.3%  
 0.0 of 1.0 Hour Wren CPU (0.0 of 0.0 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 (0.6 of 17.9 G.S.T), 3.5%  
 0.0 of 2.0 GByteYear HSM/Tape (0.0 of 1.3 G.S.T), 0.0%  
 Total usage for subproject cse013a 4102.0 of 4898.1 Generic Service Tokens, 83.7%

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cse013 - Loughborough  
 Last Trade: never  
 Usage:  
 822149.8 of 950000.0 PEHour MPP PE CPU (19878.5 of 22969.8 G.S.T), 86.5%  
 10.3 of 10.0 GByteYear HP Disk (61.5 of 59.5 G.S.T), 103.3%  
 0.0 of 1.0 Hour Wren CPU (0.0 of 0.0 G.S.T), 0.0%  
 9145.2 of 12000.0 Hour SMP CPU (355.3 of 466.2 G.S.T), 76.2%  
 2.4 of 15.0 GByteYear MP Disk (8.6 of 53.6 G.S.T), 16.0%  
 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 20536.4 of 23918.0 Generic Service Tokens, 85.9%

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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%  
 7.2 of 8.0 GByteYear HP Disk (43.0 of 47.6 G.S.T), 90.4%  
 5.2 of 5.0 Hour Wren CPU (0.3 of 0.2 G.S.T), 105.0%  
 5160.0 of 5900.0 Hour SMP CPU (200.5 of 229.2 G.S.T), 87.5%  
 3.5 of 15.0 GByteYear MP Disk (12.6 of 53.6 G.S.T), 23.6%  
 0.0 of 5.0 GByteYear HSM/Tape (0.0 of 3.1 G.S.T), 0.0%  
 47000.9 of 50000.0 Hour Green CPU (2455.9 of 2612.6 G.S.T), 94.0%  
 Total usage for subproject cse013c 4479.8 of 4880.7 Generic Service Tokens, 91.8%

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cse013 - QMW  
 Last Trade: never  
 Usage:  
 569166.5 of 700000.0 PEHour MPP PE CPU (13761.7 of 16925.1 G.S.T), 81.3%  
 11.3 of 15.0 GByteYear HP Disk (67.0 of 89.3 G.S.T), 75.0%  
 4.5 of 5.0 Hour Wren CPU (0.2 of 0.2 G.S.T), 90.8%  
 2212.0 of 3000.0 Hour SMP CPU (85.9 of 116.6 G.S.T), 73.7%  
 4.9 of 15.0 GByteYear MP Disk (17.5 of 53.6 G.S.T), 32.7%  
 35.3 of 40.0 GByteYear HSM/Tape (22.2 of 25.1 G.S.T), 88.3%  
 Total usage for subproject cse013d 13954.6 of 17209.9 Generic Service Tokens, 81.1%

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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%  
 482.8 of 440.0 GByteYear MP Disk (1724.3 of 1571.4 G.S.T), 109.7%  
 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 7806.6 of 8323.7 Generic Service Tokens, 93.8%

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## 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%

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## 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%

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## 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%

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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%

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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%  
 0.8 of 3.0 GByteYear HP Disk (4.7 of 17.9 G.S.T), 26.5%  
 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%  
 0.5 of 3.0 GByteYear MP Disk (1.6 of 10.7 G.S.T), 15.3%  
 Total usage for project cse036 10.8 of 59.0 Generic Service Tokens, 18.2%

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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%  
 0.3 of 6.0 GByteYear HP Disk (1.7 of 35.8 G.S.T), 4.8%  
 5.8 of 6.8 GByteYear MP Disk (20.7 of 24.4 G.S.T), 85.0%  
 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 22.9 of 321.3 Generic Service Tokens, 7.1%

---

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%  
 1.5 of 119.7 GByteYear HP Disk (8.9 of 712.4 G.S.T), 1.3%  
 171.1 of 78.4 Hour Wren CPU (8.5 of 3.9 G.S.T), 218.2%  
 1699.1 of 4431.4 Hour SMP CPU (66.0 of 172.2 G.S.T), 38.3%  
 1.6 of 123.5 GByteYear MP Disk (5.7 of 440.9 G.S.T), 1.3%  
 190.5 of 230.3 GByteYear HSM/Tape (119.6 of 144.6 G.S.T), 82.7%  
 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 223.0 of 3606.4 Generic Service Tokens, 6.2%

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cse043 GR/M85241 Williams  
 Last Trade: re-enabled  
 Usage:  
 146564.2 of 148935.0 PEHour MPP PE CPU (3543.7 of 3601.1 G.S.T), 98.4%  
 1.8 of 10.0 GByteYear HP Disk (10.6 of 59.5 G.S.T), 17.8%  
 0.0 of 6.2 Hour SMP CPU (0.0 of 0.2 G.S.T), 0.2%  
 2.8 of 4.8 GByteYear MP Disk (10.1 of 17.3 G.S.T), 58.1%  
 20.0 of 28.8 GByteYear HSM/Tape (12.6 of 18.1 G.S.T), 69.7%  
 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 3737.6 of 3857.0 Generic Service Tokens, 96.9%



cse050 GR/N/38152 Bradley  
 Last Trade: re-enabled  
 Usage:  
 891.1 of 104742.3 PEHour MPP PE CPU (21.5 of 2532.5 G.S.T), 0.9%  
 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%  
 0.3 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 21.6 of 3347.1 Generic Service Tokens, 0.6%

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cse053 GR/R04225 Leschziner  
 Last Trade: Tue Apr 8 09:06:47 2003  
 Usage:  
 66561.1 of 259557.6 PEHour MPP PE CPU (1609.4 of 6275.8 G.S.T), 25.6%  
 2.3 of 115.0 GByteYear HP Disk (13.4 of 684.5 G.S.T), 2.0%  
 2.0 of 78.4 Hour Wren CPU (0.1 of 3.9 G.S.T), 2.5%  
 73.9 of 13900.0 Hour SMP CPU (2.9 of 540.0 G.S.T), 0.5%  
 2.6 of 85.0 GByteYear MP Disk (9.2 of 303.6 G.S.T), 3.0%  
 5.4 of 100.0 GByteYear HSM/Tape (3.4 of 62.8 G.S.T), 5.4%  
 26395.6 of 29614.9 Hour Green CPU (1379.2 of 1547.4 G.S.T), 89.1%  
 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 3017.5 of 9945.2 Generic Service Tokens, 30.3%

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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%  
 2.0 of 2.5 GByteYear HP Disk (11.8 of 14.9 G.S.T), 79.0%  
 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 225.5 of 864.5 Generic Service Tokens, 26.1%

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cse056 GR/N24773 Imregun  
 Last Trade: Tue Feb 18 12:13:04 2003  
 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%  
 5.4 of 78.4 Hour Wren CPU (0.3 of 3.9 G.S.T), 6.8%  
 4653.7 of 33674.1 Hour SMP CPU (180.8 of 1308.3 G.S.T), 13.8%  
 1.4 of 43.9 GByteYear MP Disk (5.0 of 156.8 G.S.T), 3.2%  
 0.0 of 0.0 PersonDay Support (0.0 of 0.0 G.S.T)  
 0.0 of 10.0 Day Training (0.0 of 107.5 G.S.T), 0.0%  
 Total usage for project cse056 186.1 of 1817.0 Generic Service Tokens, 10.2%

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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%  
 0.8 of 30.0 GByteYear HP Disk (4.5 of 178.6 G.S.T), 2.5%  
 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 60.4 of 2998.5 Generic Service Tokens, 2.0%

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cse060 GR/R17058 Robb

Last Trade: Mon Apr 7 12:05:34 2003

Usage:

97055.6 of 120607.5 PEHour MPP PE CPU (2346.7 of 2916.1 G.S.T), 80.5%  
 0.0 of 3.0 GByteYear HP Disk (0.0 of 17.9 G.S.T), 0.0%  
 0.0 of 0.0 Hour Wren CPU (0.0 of 0.0 G.S.T), 51.2%  
 0.0 of 1.2 GByteYear MP Disk SAN (0.0 of 5.2 G.S.T), 0.0%  
 0.0 of 9154.6 Hour Green CPU (0.0 of 478.3 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 2346.7 of 3819.2 Generic Service Tokens, 61.4%

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cse061 GR/R42672 Imregun

Last Trade: Mon Jun 30 09:35:50 2003

Usage:

1.0 of 5.0 PEHour MPP PE CPU (0.0 of 0.1 G.S.T), 19.0%  
 0.1 of 0.7 GByteYear HP Disk (0.7 of 4.3 G.S.T), 16.1%  
 0.9 of 1952.1 Hour Wren CPU (0.0 of 96.7 G.S.T), 0.0%  
 0.0 of 10.0 GByteYear HP Disk SAN - /d (0.0 of 59.5 G.S.T), 0.0%  
 3235.7 of 50950.6 Hour SMP CPU (125.7 of 1979.5 G.S.T), 6.4%  
 0.1 of 65.7 GByteYear MP Disk (0.4 of 234.5 G.S.T), 0.2%  
 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 126.8 of 2575.5 Generic Service Tokens, 4.9%

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cse063 GR/R46151 Sandham

Last Trade: Thu Mar 13 11:50:09 2003

Usage:

87339.3 of 288901.7 PEHour MPP PE CPU (2111.8 of 6985.3 G.S.T), 30.2%  
 16.1 of 100.0 GByteYear HP Disk (95.7 of 595.2 G.S.T), 16.1%  
 6.5 of 10.8 Hour Wren CPU (0.3 of 0.5 G.S.T), 60.2%  
 167.9 of 62.9 Hour SMP CPU (6.5 of 2.4 G.S.T), 267.2%  
 0.0 of 50.0 GByteYear MP Disk (0.0 of 178.6 G.S.T), 0.0%  
 70.0 of 525.0 GByteYear HSM/Tape (44.0 of 329.8 G.S.T), 13.3%  
 45470.4 of 69408.8 Hour Green CPU (2375.9 of 3626.8 G.S.T), 65.5%  
 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 4634.2 of 11865.6 Generic Service Tokens, 39.1%

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cse064 GR/R43570 Leschziner

Last Trade: Mon May 12 17:12:43 2003

Usage:

14530.2 of 115039.1 PEHour MPP PE CPU (351.3 of 2781.5 G.S.T), 12.6%  
 0.4 of 15.0 GByteYear HP Disk (2.4 of 89.3 G.S.T), 2.7%  
 16.3 of 78.4 Hour Wren CPU (0.8 of 3.9 G.S.T), 20.8%  
 6986.8 of 21900.0 Hour SMP CPU (271.4 of 850.8 G.S.T), 31.9%  
 0.5 of 33.0 GByteYear MP Disk (1.9 of 117.9 G.S.T), 1.6%  
 5.7 of 193.5 GByteYear HSM/Tape (3.6 of 121.6 G.S.T), 3.0%  
 15671.2 of 23136.6 Hour Green CPU (818.9 of 1208.9 G.S.T), 67.7%  
 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 1471.9 of 5554.0 Generic Service Tokens, 26.5%

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cse066 GR/R30907 Coveney  
 Last Trade: re-enabled  
 Usage:  
 68983.4 of 87981.1 PEHour MPP PE CPU (1667.9 of 2127.3 G.S.T), 78.4%  
 14.9 of 90.0 GByteYear HP Disk (88.8 of 535.7 G.S.T), 16.6%  
 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%  
 15.0 of 18.0 GByteYear MP Disk (53.6 of 64.5 G.S.T), 83.2%  
 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 2572.1 of 7370.6 Generic Service Tokens, 34.9%

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cse071 GR/R23657 Iacovides  
 Last Trade: Fri Oct 5 16:21:54 2001  
 Usage:  
 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 211.6 Generic Service Tokens, 0.0%

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cse072 GR/R66692 Karlin  
 Last Trade: re-enabled  
 Usage:  
 2745.5 of 160329.2 PEHour MPP PE CPU (66.4 of 3876.6 G.S.T), 1.7%  
 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 18.0 PersonDay Support (0.0 of 529.4 G.S.T), 0.0%  
 6.0 of 9.0 Day Training (64.5 of 96.8 G.S.T), 66.7%  
 Total usage for project cse072 130.9 of 4666.2 Generic Service Tokens, 2.8%

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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%

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cse075 GR/R67699 Coveney  
 Last Trade: re-enabled  
 Usage:  
 8401.6 of 264758.5 PEHour MPP PE CPU (203.1 of 6401.5 G.S.T), 3.2%  
 46.0 of 217.0 GByteYear HP Disk (273.6 of 1291.5 G.S.T), 21.2%  
 26.9 of 263.6 Hour Wren CPU (1.3 of 13.1 G.S.T), 10.2%  
 0.0 of 350.5 GByteYear MP Disk SAN (0.0 of 1504.4 G.S.T), 0.0%  
 6550.6 of 31500.0 Hour SMP CPU (254.5 of 1223.8 G.S.T), 20.8%  
 335.5 of 1013.5 GByteYear MP Disk (1198.3 of 3619.6 G.S.T), 33.1%  
 183.0 of 1959.4 GByteYear HSM/Tape (115.0 of 1230.8 G.S.T), 9.3%  
 87237.5 of 398388.6 Hour Green CPU (4558.3 of 20816.6 G.S.T), 21.9%  
 0.0 of 34.0 PersonDay Support (0.0 of 1000.0 G.S.T), 0.0%

5.0 of 14.0 Day Training (53.8 of 150.5 G.S.T), 35.7%  
 Total usage for project cse075 6657.9 of 37251.9 Generic Service Tokens, 17.9%

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cse076 GR/R66975 Briddon

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

Usage:

9003.9 of 4161.1 PEHour MPP PE CPU (217.7 of 100.6 G.S.T), 216.4%  
 1.4 of 1.3 GByteYear HP Disk (8.2 of 8.0 G.S.T), 102.2%  
 91.9 of 504.6 Hour Wren CPU (4.6 of 25.0 G.S.T), 18.2%  
 268169.5 of 267888.9 Hour SMP CPU (10418.8 of 10407.9 G.S.T), 100.1%  
 7.9 of 27.2 GByteYear MP Disk (28.3 of 97.1 G.S.T), 29.1%  
 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 24310.6 of 25397.7 Generic Service Tokens, 95.7%

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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%

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cse082 GR/R79654 Barakos

Last Trade: Mon Jun 9 09:33:40 2003

Usage:

9.9 of 15.7 Hour Wren CPU (0.5 of 0.8 G.S.T), 62.8%  
 9174.1 of 9264.7 Hour SMP CPU (356.4 of 359.9 G.S.T), 99.0%  
 13.4 of 15.5 GByteYear MP Disk (47.9 of 55.2 G.S.T), 86.8%  
 0.0 of 28.7 GByteYear HSM/Tape (0.0 of 18.0 G.S.T), 0.0%  
 1446.5 of 1379.8 Hour Green CPU (75.6 of 72.1 G.S.T), 104.8%  
 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 480.4 of 663.9 Generic Service Tokens, 72.4%

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cse084 GR/R47066 Needs

Last Trade: re-enabled

Usage:

270844.7 of 306225.8 PEHour MPP PE CPU (6548.7 of 7404.1 G.S.T), 88.4%  
 20.9 of 270.0 GByteYear HP Disk (124.3 of 1607.1 G.S.T), 7.7%  
 187.5 of 78.4 Hour Wren CPU (9.3 of 3.9 G.S.T), 239.1%  
 4282.7 of 14384.3 Hour SMP CPU (166.4 of 558.9 G.S.T), 29.8%  
 27.8 of 75.6 GByteYear MP Disk (99.2 of 270.1 G.S.T), 36.7%  
 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 11144.9 of 14636.0 Generic Service Tokens, 76.1%

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cse085 GR/R64957 Sandham

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

Usage:

1070687.1 of 1388400.0 PEHour MPP PE CPU (25887.8 of 33569.7 G.S.T), 77.1%  
 252.4 of 650.0 GByteYear HP Disk (1502.1 of 3869.0 G.S.T), 38.8%  
 30.0 of 78.4 Hour Wren CPU (1.5 of 3.9 G.S.T), 38.3%

2319.2 of 3945.2 Hour SMP CPU (90.1 of 153.3 G.S.T), 58.8%  
 183.8 of 750.0 GByteYear MP Disk (656.6 of 2678.6 G.S.T), 24.5%  
 1637.6 of 2373.2 GByteYear HSM/Tape (1028.7 of 1490.7 G.S.T), 69.0%  
 215631.3 of 643628.0 Hour Green CPU (11267.2 of 33630.9 G.S.T), 33.5%  
 0.0 of 15.0 PersonDay Support (0.0 of 441.2 G.S.T), 0.0%  
 6.0 of 6.0 Day Training (64.5 of 64.5 G.S.T), 100.0%  
 Total usage for project cse085 40498.5 of 75901.8 Generic Service Tokens, 53.4%

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cse086 GR/R83118 Taylor

Last Trade: Fri May 16 15:21:38 2003

Usage:

573854.5 of 751363.8 PEHour MPP PE CPU (13875.1 of 18167.0 G.S.T), 76.4%  
 93.9 of 162.7 GByteYear HP Disk (558.9 of 968.4 G.S.T), 57.7%  
 483.3 of 2208.1 Hour Wren CPU (23.9 of 109.4 G.S.T), 21.9%  
 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%  
 9054.9 of 13449.2 Hour SMP CPU (351.8 of 522.5 G.S.T), 67.3%  
 123.3 of 497.0 GByteYear MP Disk (440.3 of 1775.0 G.S.T), 24.8%  
 18.5 of 3750.0 GByteYear HSM/Tape (11.6 of 2355.5 G.S.T), 0.5%  
 110964.3 of 658900.0 Hour Green CPU (5798.1 of 34428.9 G.S.T), 16.8%  
 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 21206.8 of 60763.6 Generic Service Tokens, 34.9%

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cse086a MP1

Last Trade: never

Usage:

423239.2 of 500000.0 PEHour MPP PE CPU (10233.4 of 12089.4 G.S.T), 84.6%  
 5.9 of 10.0 GByteYear HP Disk (35.2 of 59.5 G.S.T), 59.1%  
 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%  
 7.4 of 10.0 GByteYear MP Disk (26.3 of 35.7 G.S.T), 73.6%  
 0.0 of 10000.0 Hour Green CPU (0.0 of 522.5 G.S.T), 0.0%  
 Total usage for subproject cse086a 10294.8 of 12719.0 Generic Service Tokens, 80.9%

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cse086b MP2

Last Trade: never

Usage:

48448.5 of 56000.0 PEHour MPP PE CPU (1171.4 of 1354.0 G.S.T), 86.5%  
 24.7 of 30.0 GByteYear HP Disk (146.8 of 178.6 G.S.T), 82.2%  
 120.1 of 200.0 Hour Wren CPU (6.0 of 9.9 G.S.T), 60.1%  
 2089.8 of 4000.0 Hour SMP CPU (81.2 of 155.4 G.S.T), 52.2%  
 19.5 of 30.0 GByteYear MP Disk (69.6 of 107.1 G.S.T), 65.0%  
 107800.4 of 120000.0 Hour Green CPU (5632.8 of 6270.2 G.S.T), 89.8%  
 Total usage for subproject cse086b 7107.8 of 8075.3 Generic Service Tokens, 88.0%

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cse086d MP4

Last Trade: never

Usage:

0.1 of 0.1 GByteYear HP Disk (0.4 of 0.6 G.S.T), 61.7%  
 0.1 of 0.1 GByteYear MP Disk (0.2 of 0.4 G.S.T), 61.1%  
 Total usage for subproject cse086d 0.6 of 1.0 Generic Service Tokens, 61.5%

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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%  
 1.2 of 2.0 GByteYear HP Disk (7.4 of 11.9 G.S.T), 62.2%  
 280.6 of 450.0 Hour Wren CPU (13.9 of 22.3 G.S.T), 62.4%  
 0.0 of 5.0 GbyteYear HV Disk SAN /v (0.0 of 8.9 G.S.T), 0.0%  
 4073.5 of 5000.0 Hour SMP CPU (158.3 of 194.3 G.S.T), 81.5%  
 8.7 of 10.0 GByteYear MP Disk (31.0 of 35.7 G.S.T), 86.7%  
 553.5 of 10000.0 Hour Green CPU (28.9 of 522.5 G.S.T), 5.5%  
 Total usage for subproject cse086e 240.6 of 807.7 Generic Service Tokens, 29.8%

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cse086f EC1  
 Last Trade: never  
 Usage:  
 3.3 of 5000.0 PEHour MPP PE CPU (0.1 of 120.9 G.S.T), 0.1%  
 2.5 of 5.0 GByteYear HP Disk (15.1 of 29.8 G.S.T), 50.8%  
 0.7 of 200.0 Hour Wren CPU (0.0 of 9.9 G.S.T), 0.4%  
 4.8 of 50.0 Hour SMP CPU (0.2 of 1.9 G.S.T), 9.6%  
 14.5 of 20.0 GByteYear MP Disk (51.7 of 71.4 G.S.T), 72.3%  
 18.5 of 40.0 GByteYear HSM/Tape (11.6 of 25.1 G.S.T), 46.2%  
 0.0 of 10000.0 Hour Green CPU (0.0 of 522.5 G.S.T), 0.0%  
 Total usage for subproject cse086f 78.7 of 781.6 Generic Service Tokens, 10.1%

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cse086g EC2  
 Last Trade: never  
 Usage:  
 571.7 of 5000.0 PEHour MPP PE CPU (13.8 of 120.9 G.S.T), 11.4%  
 26.9 of 30.0 GByteYear HP Disk (160.3 of 178.6 G.S.T), 89.8%  
 81.8 of 200.0 Hour Wren CPU (4.1 of 9.9 G.S.T), 40.9%  
 462.0 of 550.0 Hour SMP CPU (17.9 of 21.4 G.S.T), 84.0%  
 46.7 of 55.0 GByteYear MP Disk (166.8 of 196.4 G.S.T), 84.9%  
 0.0 of 50.0 GByteYear HSM/Tape (0.0 of 31.4 G.S.T), 0.0%  
 2610.4 of 10000.0 Hour Green CPU (136.4 of 522.5 G.S.T), 26.1%  
 Total usage for subproject cse086g 499.3 of 1081.1 Generic Service Tokens, 46.2%

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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%  
 4.9 of 10.0 GByteYear HP Disk (29.2 of 59.5 G.S.T), 49.0%  
 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%  
 14.4 of 20.0 GByteYear MP Disk (51.4 of 71.4 G.S.T), 72.0%  
 0.0 of 10000.0 Hour Green CPU (0.0 of 522.5 G.S.T), 0.0%  
 Total usage for subproject cse086h 1209.4 of 1882.0 Generic Service Tokens, 64.3%

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cse086i EC4  
 Last Trade: never  
 Usage:  
 0.1 of 0.1 GByteYear HP Disk (0.4 of 0.6 G.S.T), 61.1%  
 0.1 of 0.1 GByteYear MP Disk (0.2 of 0.4 G.S.T), 61.1%  
 Total usage for subproject cse086i 0.6 of 1.0 Generic Service Tokens, 61.1%

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cse086j BEC1  
 Last Trade: never  
 Usage:

55207.9 of 60000.0 PEHour MPP PE CPU (1334.9 of 1450.7 G.S.T), 92.0%  
 1.1 of 3.0 GByteYear HP Disk (6.8 of 17.9 G.S.T), 37.9%  
 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%  
 0.2 of 5.0 GByteYear MP Disk (0.8 of 17.9 G.S.T), 4.6%  
 0.0 of 1000.0 Hour Green CPU (0.0 of 52.3 G.S.T), 0.0%  
 Total usage for subproject cse086j 1342.4 of 1548.6 Generic Service Tokens, 86.7%

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cse086k BEC2

Last Trade: never

Usage:

0.1 of 0.1 GByteYear HP Disk (0.4 of 0.6 G.S.T), 61.1%  
 0.0 of 200.0 Hour Wren CPU (0.0 of 9.9 G.S.T), 0.0%  
 2205.0 of 3500.0 Hour SMP CPU (85.7 of 136.0 G.S.T), 63.0%  
 10.9 of 15.0 GByteYear MP Disk (39.1 of 53.6 G.S.T), 72.9%  
 Total usage for subproject cse086k 125.1 of 200.1 Generic Service Tokens, 62.5%

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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%

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cse098 GR/S20062 De Souza

Last Trade: Fri Feb 7 10:25:19 2003

Usage:

0.0 of 333000.0 PEHour MPP PE CPU (0.0 of 8051.5 G.S.T), 0.0%  
 0.0 of 20.0 GByteYear HP Disk (0.0 of 119.0 G.S.T), 0.0%  
 0.0 of 10.0 Hour Wren CPU (0.0 of 0.5 G.S.T), 0.0%  
 0.0 of 3975.4 Hour SMP CPU (0.0 of 154.5 G.S.T), 0.0%  
 0.2 of 10.0 GByteYear MP Disk (0.6 of 35.7 G.S.T), 1.7%  
 0.0 of 100.0 GByteYear HSM/Tape (0.0 of 62.8 G.S.T), 0.0%  
 433.5 of 8500.0 Hour Green CPU (22.7 of 444.1 G.S.T), 5.1%  
 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 cse098 23.3 of 9069.0 Generic Service Tokens, 0.3%

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csehpcx - benchmarking

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

Usage:

10146.7 of 134743.4 PEHour MPP PE CPU (245.3 of 3257.9 G.S.T), 7.5%  
 10.9 of 18.9 GByteYear HP Disk (65.1 of 112.5 G.S.T), 57.9%  
 0.1 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%  
 3.9 of 56.4 GByteYear MP Disk (13.9 of 201.3 G.S.T), 6.9%  
 21193.2 of 23136.6 Hour Green CPU (1107.4 of 1208.9 G.S.T), 91.6%  
 Total usage for project csehpcx 1431.7 of 4925.7 Generic Service Tokens, 29.1%

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

Last Trade: Sat Jun 14 16:06:20 2003

Usage:

403672.2 of 403758.5 PEHour MPP PE CPU (9760.3 of 9762.4 G.S.T), 100.0%

296.8 of 420.3 GByteYear HP Disk (1767.0 of 2501.6 G.S.T), 70.6%  
 177.9 of 401.8 Hour Wren CPU (8.8 of 19.9 G.S.T), 44.3%  
 116247.1 of 200666.6 Hour SMP CPU (4516.4 of 7796.2 G.S.T), 57.9%  
 399.5 of 902.2 GByteYear MP Disk (1427.0 of 3222.0 G.S.T), 44.3%  
 19993.1 of 28957.7 GByteYear HSM/Tape (12558.5 of 18189.5 G.S.T), 69.0%  
 799320.7 of 817182.3 Hour Green CPU (41766.2 of 42699.5 G.S.T), 97.8%  
 61.0 of 64.5 PersonDay Support (1794.1 of 1897.1 G.S.T), 94.6%  
 3.0 of 15.3 Day Training (32.3 of 164.4 G.S.T), 19.6%  
 Total usage for project csn001 73630.4 of 86252.5 Generic Service Tokens, 85.4%

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csn003 UGAMP O'Neill

Last Trade: Mon Jun 9 09:45:17 2003

Usage:

5614693.4 of 6248258.3 PEHour MPP PE CPU (135756.1 of 151074.9 G.S.T), 89.9%  
 97.4 of 113.9 GByteYear HP Disk (580.0 of 677.7 G.S.T), 85.6%  
 529.8 of 2664.9 Hour Wren CPU (26.2 of 132.0 G.S.T), 19.9%  
 136.5 of 470.3 GByteYear HV Disk SAN /v (244.1 of 841.4 G.S.T), 29.0%  
 32969.4 of 153954.2 Hour SMP CPU (1280.9 of 5981.4 G.S.T), 21.4%  
 79.5 of 93.8 GByteYear MP Disk (284.0 of 334.9 G.S.T), 84.8%  
 54797.7 of 65916.4 GByteYear HSM/Tape (34420.7 of 41404.8 G.S.T), 83.1%  
 122291.5 of 190178.0 Hour Green CPU (6390.0 of 9937.2 G.S.T), 64.3%  
 4.0 of 4.8 PersonDay Support (117.6 of 141.1 G.S.T), 83.4%  
 22.0 of 22.8 Day Training (236.6 of 245.0 G.S.T), 96.6%  
 Total usage for project csn003 179336.2 of 210770.3 Generic Service Tokens, 85.1%

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csn006 GR9/3550 Price

Last Trade: re-enabled

Usage:

1600050.2 of 1674524.0 PEHour MPP PE CPU (38687.2 of 40487.8 G.S.T), 95.6%  
 165.2 of 192.2 GByteYear HP Disk (983.5 of 1144.3 G.S.T), 86.0%  
 193.9 of 78.4 Hour Wren CPU (9.6 of 3.9 G.S.T), 247.3%  
 70852.4 of 72126.1 Hour SMP CPU (2752.7 of 2802.2 G.S.T), 98.2%  
 42.4 of 85.5 GByteYear MP Disk (151.5 of 305.4 G.S.T), 49.6%  
 7.2 of 20.3 GByteYear HSM/Tape (4.5 of 12.7 G.S.T), 35.4%  
 461692.8 of 626272.8 Hour Green CPU (24124.4 of 32724.0 G.S.T), 73.7%  
 Total usage for project csn006 66713.4 of 77480.3 Generic Service Tokens, 86.1%

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csn012 NER/A/S/2000/01315 Tennyson

Last Trade: Fri Mar 28 09:40:00 2003

Usage:

96.8 of 250.1 PEHour MPP PE CPU (2.3 of 6.0 G.S.T), 38.7%  
 0.0 of 0.0 Hour Wren CPU (0.0 of 0.0 G.S.T), 2233.5%  
 0.0 of 0.0 Hour SMP CPU (0.0 of 0.0 G.S.T), 8.0%  
 0.1 of 1.1 GByteYear MP Disk (0.4 of 3.8 G.S.T), 11.4%  
 0.0 of 9518.0 Hour Green CPU (0.0 of 497.3 G.S.T), 0.0%  
 Total usage for project csn012 2.8 of 507.1 Generic Service Tokens, 0.5%

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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: Wed Apr 16 16:48:08 2003

## Usage:

254851.9 of 470776.0 PEHour MPP PE CPU (6162.0 of 11382.8 G.S.T), 54.1%  
 5.2 of 13.1 GByteYear HP Disk (31.2 of 78.1 G.S.T), 39.9%  
 49.8 of 78.4 Hour Wren CPU (2.5 of 3.9 G.S.T), 63.6%  
 736.0 of 1562.0 Hour SMP CPU (28.6 of 60.7 G.S.T), 47.1%  
 57.1 of 99.3 GByteYear MP Disk (204.1 of 354.5 G.S.T), 57.6%  
 2933.6 of 3330.5 GByteYear HSM/Tape (1842.7 of 2092.0 G.S.T), 88.1%  
 197316.6 of 303613.7 Hour Green CPU (10310.2 of 15864.4 G.S.T), 65.0%  
 2.0 of 10.0 PersonDay Support (58.8 of 294.1 G.S.T), 20.0%  
 3.0 of 862.6 Day Training (32.3 of 9275.3 G.S.T), 0.3%  
 Total usage for project csn015 18672.3 of 39405.8 Generic Service Tokens, 47.4%

## csn036 NER/T/S/1999/00110 Haines

Last Trade: Wed Jun 25 10:45:47 2003

## Usage:

1158.7 of 10737.1 PEHour MPP PE CPU (28.0 of 259.6 G.S.T), 10.8%  
 25.7 of 30.0 GByteYear HP Disk (153.1 of 178.6 G.S.T), 85.7%  
 12.7 of 78.4 Hour Wren CPU (0.6 of 3.9 G.S.T), 16.2%  
 2091.8 of 25193.4 Hour SMP CPU (81.3 of 978.8 G.S.T), 8.3%  
 52.9 of 66.4 GByteYear MP Disk (189.0 of 237.1 G.S.T), 79.7%  
 1724.7 of 2004.0 GByteYear HSM/Tape (1083.3 of 1258.8 G.S.T), 86.1%  
 21990.5 of 24450.3 Hour Green CPU (1149.0 of 1277.6 G.S.T), 89.9%  
 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 2684.4 of 4306.9 Generic Service Tokens, 62.3%

## 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%  
 9.3 of 53.8 GByteYear HSM/Tape (5.8 of 33.8 G.S.T), 17.3%  
 Total usage for project csn044 246.4 of 421.0 Generic Service Tokens, 58.5%

## csn052 GST/02/2658 Mackay

Last Trade: Wed May 7 16:10:52 2003

## Usage:

3.6 of 10905.9 PEHour MPP PE CPU (0.1 of 263.7 G.S.T), 0.0%  
 1.1 of 3.0 GByteYear HP Disk (6.7 of 17.9 G.S.T), 37.6%  
 3.8 of 5.9 Hour Wren CPU (0.2 of 0.3 G.S.T), 64.1%  
 0.0 of 1.0 GByteYear HP Disk SAN - /d (0.0 of 6.0 G.S.T), 0.0%  
 0.0 of 0.0 GByteYear MP Disk SAN (0.0 of 0.0 G.S.T), 0.0%  
 1.3 of 1.9 Hour SMP CPU (0.1 of 0.1 G.S.T), 71.0%  
 4.8 of 17.3 GByteYear MP Disk (17.2 of 61.9 G.S.T), 27.8%  
 0.0 of 5.7 GByteYear HSM/Tape (0.0 of 3.6 G.S.T), 0.0%  
 2640.4 of 11365.5 Hour Green CPU (138.0 of 593.9 G.S.T), 23.2%  
 5.0 of 5.0 Day Training (53.8 of 53.8 G.S.T), 100.0%  
 Total usage for project csn052 216.0 of 1001.0 Generic Service Tokens, 21.6%

csp006 PPA/G/S/2001/00050 Browning  
 Last Trade: Wed Mar 26 11:34:05 2003  
 Usage:  
 0.0 of 111.6 Hour Wren CPU (0.0 of 5.5 G.S.T), 0.0%  
 0.0 of 20699.4 Hour SMP CPU (0.0 of 804.2 G.S.T), 0.0%  
 0.0 of 20.0 GByteYear MP 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 0.0 of 1010.2 Generic Service Tokens, 0.0%

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csp007 PPA/G/O/2002/00004 Hibbert  
 Last Trade: Tue Apr 1 15:29:22 2003  
 Usage:  
 11237.6 of 49999.7 PEHour MPP PE CPU (271.7 of 1208.9 G.S.T), 22.5%  
 0.0 of 80.0 GByteYear HP Disk (0.0 of 476.2 G.S.T), 0.0%  
 14.2 of 600.0 Hour Wren CPU (0.7 of 29.7 G.S.T), 2.4%  
 0.0 of 60.0 GByteYear HP Disk SAN - /d (0.0 of 357.1 G.S.T), 0.0%  
 0.0 of 600.0 Hour SMP CPU (0.0 of 23.3 G.S.T), 0.0%  
 Total usage for project csp007 272.4 of 2095.3 Generic Service Tokens, 13.0%

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HPCI Daresbury  
 Last Trade: Mon Oct 7 10:07:27 2002  
 Usage:  
 34683.7 of 34482.9 PEHour MPP PE CPU (838.6 of 833.8 G.S.T), 100.6%  
 4.6 of 3.8 GByteYear HP Disk (27.2 of 22.7 G.S.T), 119.9%  
 1.9 of 0.0 Hour Wren CPU (0.1 of 0.0 G.S.T), 485016.4%  
 4062.9 of 4120.4 Hour SMP CPU (157.8 of 160.1 G.S.T), 98.6%  
 2.2 of 1.7 GByteYear MP Disk (7.9 of 6.0 G.S.T), 131.6%  
 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 1607.7 of 1581.9 Generic Service Tokens, 101.6%

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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%  
 4.6 of 4.7 GByteYear HP Disk (27.1 of 28.1 G.S.T), 96.5%  
 698.4 of 770.8 Hour SMP CPU (27.1 of 29.9 G.S.T), 90.6%  
 3.5 of 2.8 GByteYear MP Disk (12.4 of 10.0 G.S.T), 123.4%  
 1728.7 of 1739.8 Hour Green CPU (90.3 of 90.9 G.S.T), 99.4%  
 Total usage for project hpcie 199.5 of 257.4 Generic Service Tokens, 77.5%

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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
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	Zheng, Y (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 falgship 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	Coveney, PV (Prof)	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-dDimensional 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
cse098	De Souza, M M (Dr)	Indium interaction in silicon for ULSI technologies	Physics
cse100	Gao, S (Dr)	Dev of Novel Aerodynamic Lenses for Focusing Nanoparticle Beams	Engineering
cse101	Jiang (Dr)	Direct Numerical Simulation of Fuel-Air Mixing with Passive Flow Control of Diesel Combustion.	Mechanical Engineering
cse102	Williams, J (Prof)	Numerical Modelling of Flow around Bridge Piers	Engineering

cse103	Neil, M P (Prof)	Simulation and Modelling of liquid crystal mesophases linked to the design of molecular and material properties.	Mathematics
cse104	Greaves, D M (Dr)	CFD Modelling of free surface waves driven by moving bodies using adaptively refined cut cell hierarchical grids	
cse105	Chemysenko, S I (Prof)	Optimal database of the direct numerical simulation of turbulent channel flow	Aerodynamics & Flight Mechanics
cse106	Augarde (Dr)	Parametric Studies of multiple tunnels	Engineering
cse107	Hicks, MA (Dr)	Parallel Finite Elements for Stochastic Analysis	Engineering
cse108	Holden, AV (Prof)	Large-scale parallelisation of electro-physiological & mechanical cardiac virtual tissues.	Biomedical Sciences
cse109	Allen, M (Prof)	University of Warwick New HPC Project	Physics
cse110	Leach, SA (Dr)	Application of HE Computing to Develop Complex Stochastic Models to aid Public Health & National Operational Responses to Infectious Disease Threats.	
cse111	Avital, Eldad 9Dr)	A numerical study of three dimensional wakes generated by free surface piecing circular cylinders	Engineering
cse112	Chemysenko, SI (Prof)	Master-mode analysis of the genesis of organized structures in turbulent flows.	Engineering - Aerodynamics
cse113	Wirth, T (Prof)	Stereoselective Halocyclisations	Chemistry
cse114	Jiang, X (Dr)	Direct numerical simulation of fuel injection & spray combustion	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	Liu, C (Dr)	Assimilation of Altimeter, Radiometer & in situ data into the OCCAM model. Analysis of water properties & transports	Environmental Science
csn042	Gray, SL (Dr)	Transport & Mixing in Fronts	
csn044	Steenman-Clark, L (Dr)	Earth Observation Project	Meteorology
csn049	Srokosz	Climate impact changes in Atlantic Thermohaline.	
csn050	Challenor	The Probability of rapid climate change	
csn051	Proctor	Ultra-fine scale modeling of the northern North Atlantic Thermohaline.	
csn052	Xie, Z (Dr0)	Quantifying the scaling of physical transport in structured heterogeneous porous media	Earth Sciences
csn053	Das, S (Dr)	Rupture History of large earthquakes from analysis of broad band seismograms, and its physical interpretation.	Earth Sciences
csn054	Thuburn, J (Dr)	An Integrated Model of Atmospheric Convection	Meteorology
csn055	Vocadlo, L (Dr0)	The structure and anisotropy of Earth's inner core.	Earth Sciences
csn056	Hoskins B (Prof)	Atmospheric water vapour budget & it's relevance to the thermohaline circulation	Meteorology
csn057	Guilyardi, E (Dr)	Role of salinity in ocean circulation and climate response to greenhouse gas forcing.	Atmospheric Modelling
csn058	Tudhope, A (Dr)	Improving ability to predict rapid changes in the el nino southern oscillation climatic phenomenon	Atmospheric Modelling
csn059	Watson, AJ (Prof)	Circulation, overflow & deep connection in the Nordic seas.	Environmental Sciences
esb001	Houldershaw, D (Dr)	Use of Cray T3E for multiple long trajectories of protein unfolding	Crystallography
esb005	Haley	Genetic Analysis of Complex Traits	
esp004	Bell, K L (Prof)	A Programme for Atomic Physics for Astrophysics at Queen's University Belfast (2001-2005)	Astronomy
esp006	Jain, R (Dr)	Numerical Simulation of forced magnetic reconnection in the solar corona	Physics
esp007	Scott, P (Dr)	A Programme for Atomic Physics for Astrophysics at Queens University Belfast (2001-2005)	Astronomy
HPCID	Allan, R (Dr)		
HPCIE	Henty, D (Dr)		
UKHEC	Allan, R (Dr)	UK HEC Collaboration, Core Support for High-End Computing 1999-2002	
cs2034	Chichkine, M (Mr)	Indium interaction in silicon for future ULSI technologies	Physics
cs2035	Barakos, G (Dr)	Detached Eddy Simulation of Aerodynamics & Aerocautics of Cavity Flows	Aerospace Engineering
cs2036	Farid, Vakili-Tahami (Mr)	MPI Evaluation	Mechanical Aerospace & Manufacturing Engineering
cs2037	Domene, Carmen (Dr)	Ab initio molecular dynamics of ion in membrane proteins	
cs2039	Carlborg (Dr)	Genetic Analysis of Complex Traits	Genetics & Biometry

cs2040	Costen, F (Mrs)	Impulse radio propagation in a dense multipath & shadowed environment for ultra-wideband communication systems	Computer Science
cs2041	Filippone, A (Dr)	Numerical Study of the 3D obstructed shear-driven cavity flow.	Mechanical Aerospace & Manufacturing Engineering
cs2042	Smeed, DA (Dr)	A temporally continuous high-resolution record of global sea level during the Holocene.	
cs2043	Theodoropoulos, K (Dr)	Design of microchannel structures for microreactor applications	Process Integration
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 lipoxygenase using quantum calculations.	Biology
cs3019	Bengough (Dr)	Lattice-Boltzmann simulation of water & solute transport in porous media.	Physics
cs4001	White P		
cs4002	Cooper A (Miss)		