CSAR Service - Management Report

April 1999

This report documents the quality of the CSAR service during the month of April 1999.

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 authorised 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 is listed for selection.

1. Introduction

This month has seen the introduction of additional features in the registration system, notably the Capacity Planning pages and the Sub Project management tools.

The workload has again been extremely variable with the beginning of the month giving daily totals in excess of the baseline, however this tailed off with the system virtually running out of work during some of the later weekends in the month.

The system suffered a major failure this month. A pump in the HEU for Turing failed, this resulted in a lengthy period of down time.This was managed effectively with details of the situation and regular updates being sent out by both e-mail and via the web to all users of the Service. Despite the nature of the failure, no work was actually lost and jobs were started as soon as the service resumed.

This document gives information on Service Quality and on actual usage of the CSAR Service during the reporting period of April 1999. The information, in particular, covers the availability and usage of the following two main CSAR Service High Performance Computing (HPC) systems:

- Cray T3E-1200E/576 (Turing)
- SGi Origin2000/16 (Fermat).

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

2. Service Quality

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

2.1 CPARS

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

CSAR Service - Service Quality Report - Performance Targets

Service Quality Measure	Performance Targets					
	White	Blue	Green	Yellow	Orange	Red
HPC Services Availability						
Availability in Core Time (% of time)	> 99.9%	> 99.5%	> 99.2%	> 98.5%	> 95%	95% or less
Availability out of Core Time (% of time)	> 99.8%	> 99.5%	> 99.2%	> 98.5%	> 95%	95% or less
Number of Failures in month	0	1	2 to 3	4	5	> 5
Mean Time between failures in 52 week rolling period (hours)	>750	>500	>300	>200	>150	otherwise
Help Desk						
Non In-depth Queries - Maximum Time to resolve 50% of all queries (working days)	< 1/4	< 1/2	< 1	< 2	< 4	4 or more
Non In-depth Queries - Maximum Time to resolve 95% of all queries (working days)	< 1/2	< 1	< 2	< 3	< 5	5 or more
Administrative Queries - Maximum Time to resolve 95% of all queries (working days)	< 1/2	< 1	< 2	< 3	< 5	5 or more
Help Desk Telephone - % of calls answered within 2 minutes	>98%	> 95%	> 90%	> 85%	> 80%	80% or less
Others						
Normal Media Exchange Requests - average response time in month (working days)	< 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 scheduled 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 April 1st to 30th inclusive.
Overall, the CPARS Performance Achievement was just below satisfactory (see Table 3), i.e. yellow measured against the CPARS performance targets, primarily due to the aforementioned pump failure.

CSAR Service - Service Quality Report - Actual Performance Achievement

Service Quality Measure	1998		1999						
	Nov.	Dec.	Jan	Feb	March	April	May	June	July
HPC Services Availability									
Availability in Core Time (% of time)	99.99%	97.20%	99.70%	100%	100%	97.10%			
Availability out of Core Time (% of time)	98.53%	98.41%	100%	99.40%	98.51%	98.10%			
Number of Failures in month	2	5	1	3	1	1			
Mean Time between failures in 52 week rolling period (hours)	400	174.1	744	354	432	480			
Help Desk									
Non In-depth Queries - Maximum Time to resolve 50% of all queries (working days)	1	<0.25	<0.25	<0.25	<0.25	<0.25			
Non In-depth Queries - Maximum Time to resolve 95% of all queries (working days)	4	5	<1	<2	<2	<1			
Administrative Queries - Maximum Time to resolve 95% of all queries (working days)	2	<1	<1	<5	<2	<2			
Help Desk Telephone - % of calls answered within 2 minutes	100%	100%	100%	100%	100%	100%			
Others									
Normal Media Exchange Requests - average response time in month (working days)	0.5	0	<0.5	0	<0.5	<0.5			
New User Registration Time (working days)	2	0	<2	0	0	0			
Management Report Delivery Times (working days)	10	10	10	10	10	10			
System Maintenance - no. of scheduled sessions taken per system in the month	4	1	2	2	2	0			

Table 2

Notes:

1. HPC Services Availability has been calculated using the following formulae, based on the relative NPB performance of Turing and Fermat:

   [Turing availability x 122 / (122 + 3.5)] + [Fermat availability x 3.5 / (122 + 3.5)]

2 Mean Time between failures for Service Credits is formally calculated from Go-Live Date.

Table 3 gives Service Credit values for the month of April. 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	1998		1999						
	Nov.	Dec.	Jan	Feb	March	April	May	June	July
HPC Services Availability									
Availability in Core Time (% of time)	-0.058	0.078	-0.039	-0.058	-0.058	0.078			
Availability out of Core Time (% of time)	0.000	0.039	-0.047	0.000	0.000	0.039			
Number of Failures in month	0.000	0.016	-0.008	0.000	-0.008	-0.008			
Mean Time between failures in 52 week rolling period (hours)	0.000	0.016	-0.009	0.000	0.000	0.000			
Help Desk									
Non In-depth Queries - Maximum Time to resolve 50% of all queries (working days)	0.000	-0.019	-0.019	-0.019	-0.019	-0.019			
Non In-depth Queries - Maximum Time to resolve 95% of all queries (working days)	0.031	0.046	-0.016	0.000	0.000	-0.016			
Administrative Queries - Maximum Time to resolve 95% of all queries (working days)	0.000	-0.016	-0.016	0.031	0.000	0.000			
Help Desk Telephone - % of calls answered within 2 minutes	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004			
Others									
Normal Media Exchange Requests - average response time in month (working days)	-0.002	0.000	-0.002	0.000	-0.002	-0.002			
New User Registration Time (working days)	0.000	0.000	0.000	0.000	0.000	0.000			
Management Report Delivery Times (working days)	0.000	0.000	0.000	0.000	0.000	0.000			
System Maintenance - no. of scheduled sessions taken per system in the month	0.006	-0.003	0.000	0.000	0.000	-0.004			
Monthly Total & overall Service Quality Rating for each period:	-0.01	0.08	-0.08	-0.02	-0.05	0.03	0.00	0.00	0.00

Table 3

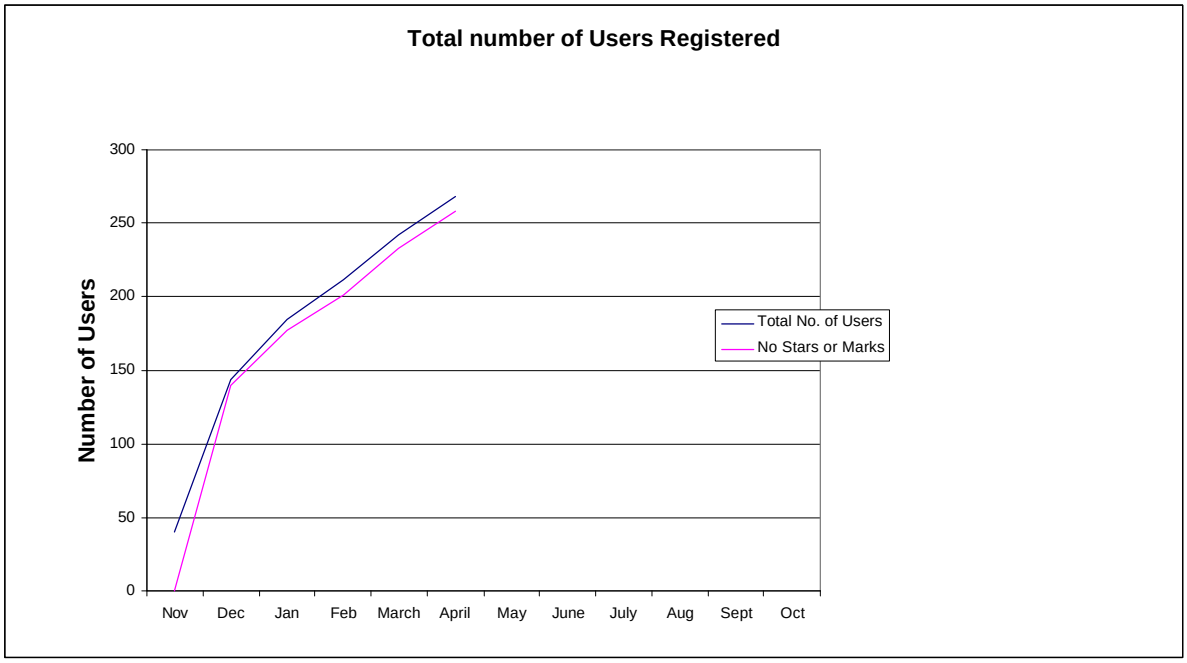
2.2 Service Quality Tokens

The current position at the end of April 1999 is that 10 of the 268 registered users of the CSAR Service had used Service Quality Tokens. See below:

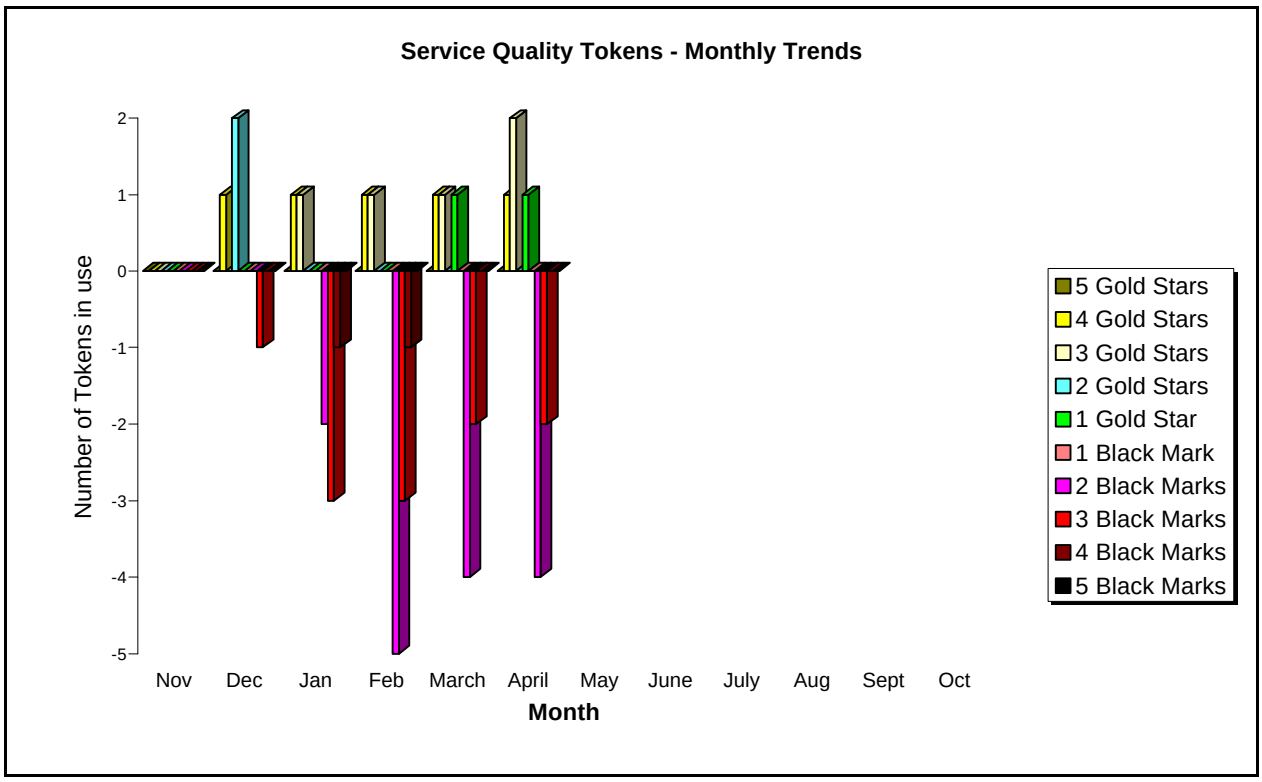
Service Quality Tokens

	Position as at end of each month											
	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct
5 Gold Stars	0	0	0	0	0	0						
4 Gold Stars	0	1	1	1	1	1						
3 Gold Stars	0	0	1	1	1	2						
2 Gold Stars	0	2	0	0	0	0						
1 Gold Star	0	0	0	0	1	1						
No Stars or Marks	0	140	177	201	233	258						
1 Black Mark	0	0	0	0	0	0						
2 Black Marks	0	0	2	5	4	4						
3 Black Marks	0	1	3	3	2	2						
4 Black Marks	0	0	1	1	0	0						
5 Black Marks	0	0	0	0	0	0						

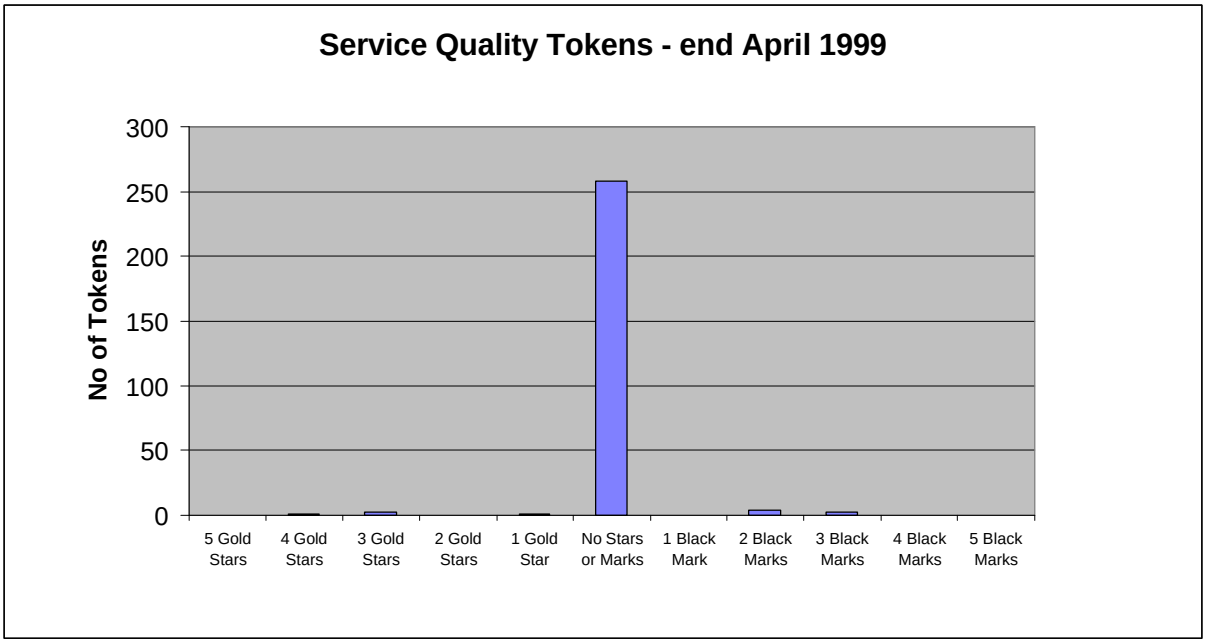
The graph below shows the total number of registered users on the CSAR Service and the number of users holding a neutral view of the service.



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



In the form of a bar chart, the current statistics are:



SUMMARY OF SERVICE QUALITY TOKEN USAGE

No of Stars or Marks	Consortia	Date Allocated	Reason Given
3 Black Marks	CSE002	08/12/98	Early problems experienced by the Consortium.
3 Black Marks	CSE004	12/02/99	Registration System deficiencies and complexities.
2 Black Marks	CSE002	21/01/99	Registration System speed, lack of a sub project facility. On the positive side Improvements in scheduling to allow larger jobs to run.
2 Black marks	CSE003	26/02/99	Interactive pool problems, now resolved.
2 Black Marks	CSE002	04/02/99	Lack of group level CPU management for UKCP.
2 Black Marks	CSE002	05/02/99	Lack of group level CPU management for UKCP.
1 Gold Star	CSE002	31/03/99	Improvements in Registration system page speed.
3 Gold Stars	CSE003	29/04/99	Helpdesk efficiency in dealing with queries.
3 Gold Stars	CSE007	27/01/99	Reliability good, particularly no job loss or problems following maintenance sessions.
4 Gold Stars	CSE006	07/12/99	Good job throughput and rapid response to queries

The above table summarises the currently allocated Service Quality Tokens, detailing the reason given for the allocation of the tokens.

2.3 Throughput Target against Baseline

The Baseline Target for throughput was achieved this month despite the loss of over 15 hours of production service (equivalent to 8,640 PE hours). The actual usage for the 30 day period of April was 100.3% of Baseline.

Job Throughput Against Baseline CSAR Service Provision

Period: 1st to 31st March 1999

	Baseline Capacity for Period (T3E PE Hours)	**Actual Usage in Period (T3E PE Hours)**	**Actual % Utilisation c/w Baseline during Period**
1. Has CfS failed to deliver Baseline MPP Computing Capacity for EPSRC?	350,132	351,235	**100.31%**
	Baseline Capacity for Period (T3E PE Hours)	**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?	350,132	353,261	No
		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 oustanding at the end of the period over 4 days old?		0	No
		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?		15%	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	81.7%	No

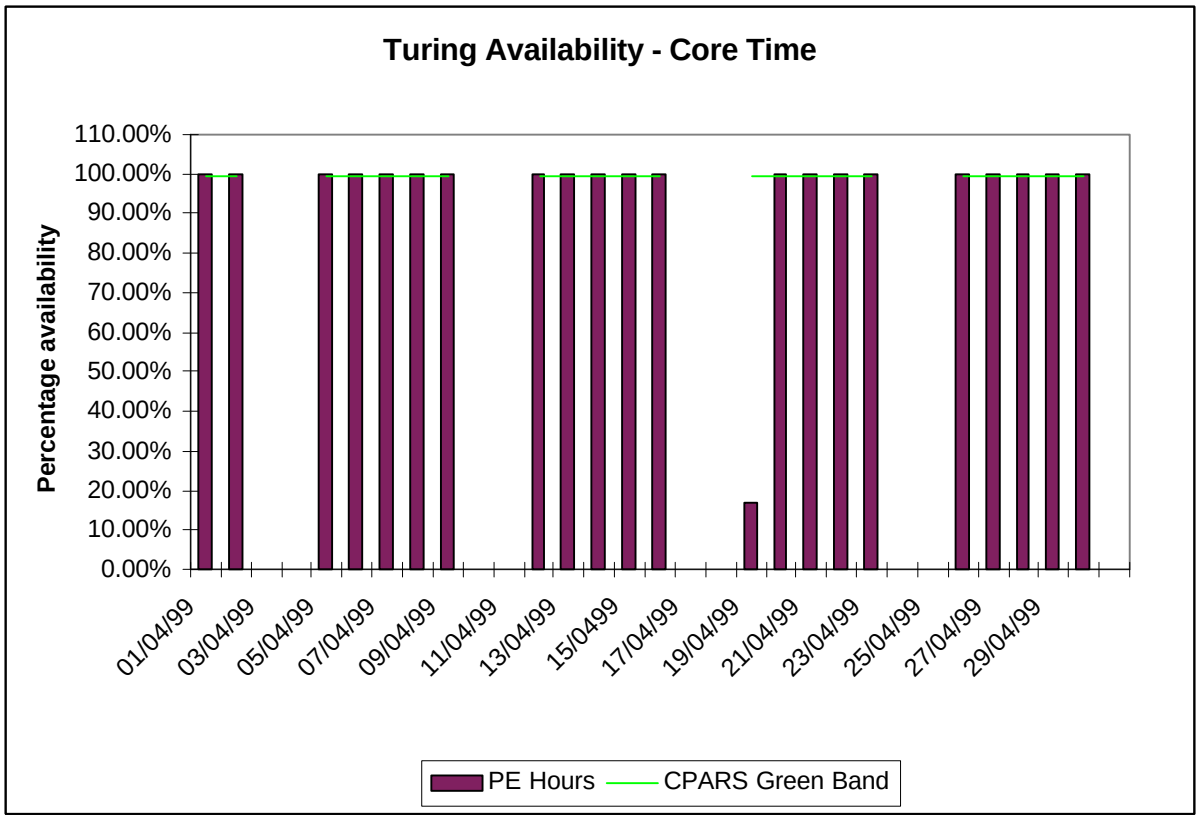
3. System Availability

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

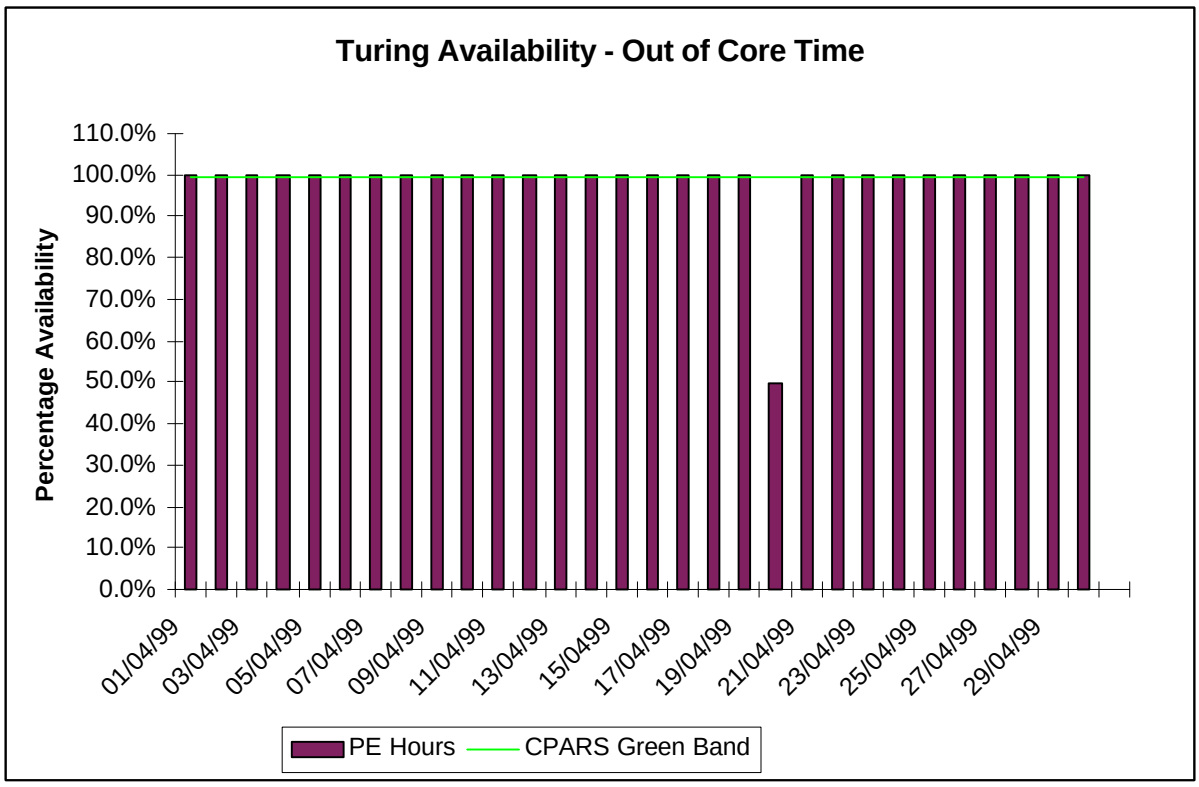
3.1 Cray T3E-1200E System (Turing)

The following graphs show the availability of Turing both in core time and out of core time respectively during the period of 1st to 30th April.

Turing availability for April:



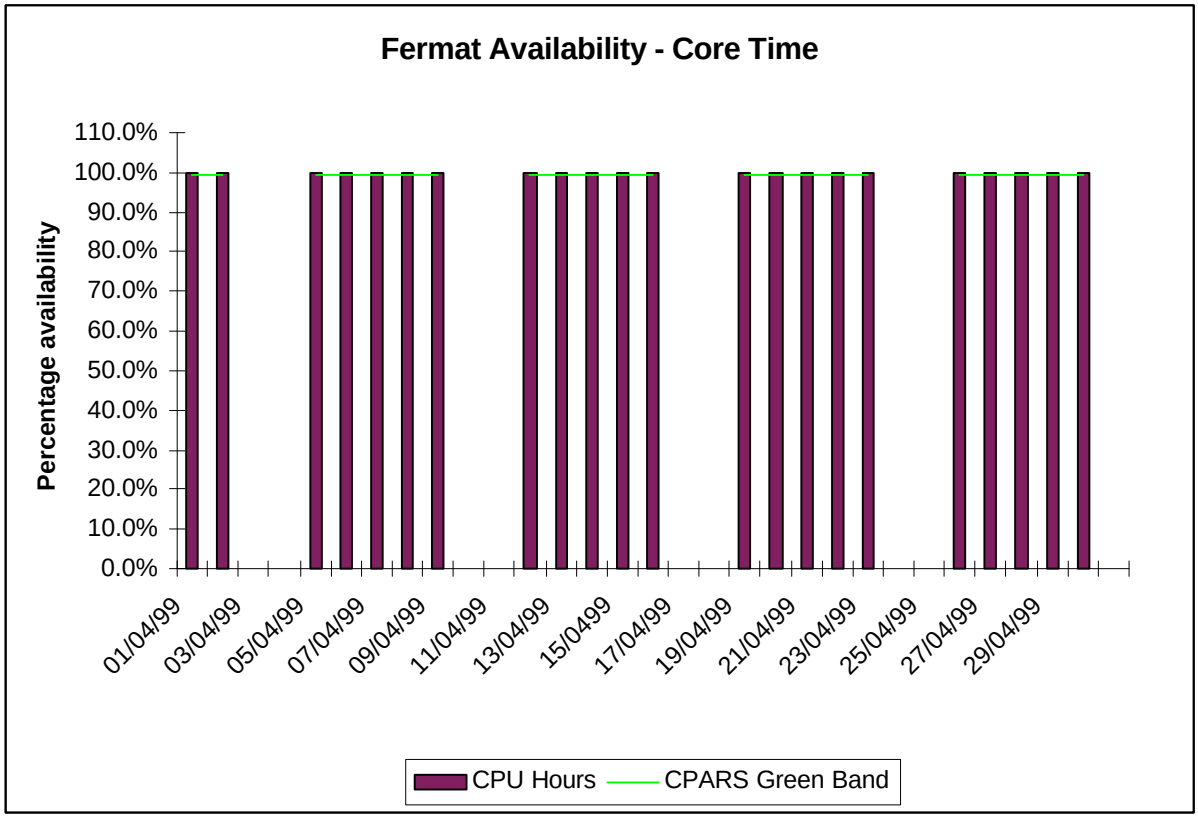
Availability of Turing in core time during April was good with the exception of the one failure as documented elsewhere in this report.



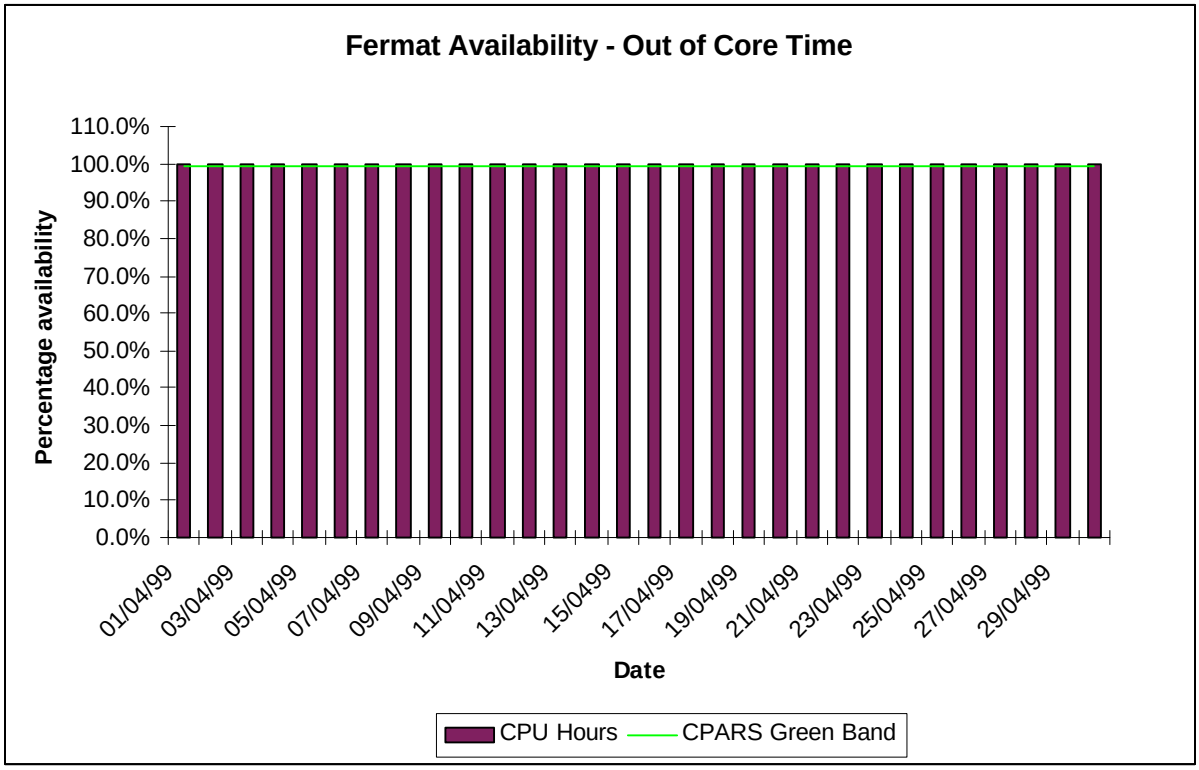
Availability of Turing out of core time during was good with the exception of the one failure detailed elsewhere in this document.

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 April was excellent.



Availability of Fermat out of core time during April was excellent.

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 April 1st to 30th is provided by Project/User Group, totalled by Research Council and overall. This covers:

• CPU usage	Turing: 351,231 PE Hours	Fermet: 5,114.48 CPU Hours
• User Disk allocation	Turing: 49.40 GB Years	Fermat: 34.56 GB Years
• HSM/tape usage	300.82 GB Years	

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

a) MPP (T3E) Usage by month, showing usage each month of CPU (T3E PE Elapsed Hours), split by Research Council and giving the equivalent GFLOP-Years as per NPB. The Baseline Capacity (103 GFLOP-Years) is shown by an overlaid horizontal line.

b) SMP (Origin) Usage by month, showing usage each month in CPU Hours, split by Research Council and giving the equivalent GFLOP-Years as per NPB. The Baseline Capacity (3.5 GFLOP-Years) is shown by an overlaid horizontal line.

c) High Performance Disk (T3E) allocated for User Data by month, showing the allocated space each month in GBytes, split by Research Council. The Baseline Capacity (1 Terabyte) is shown by an overlaid horizontal line.

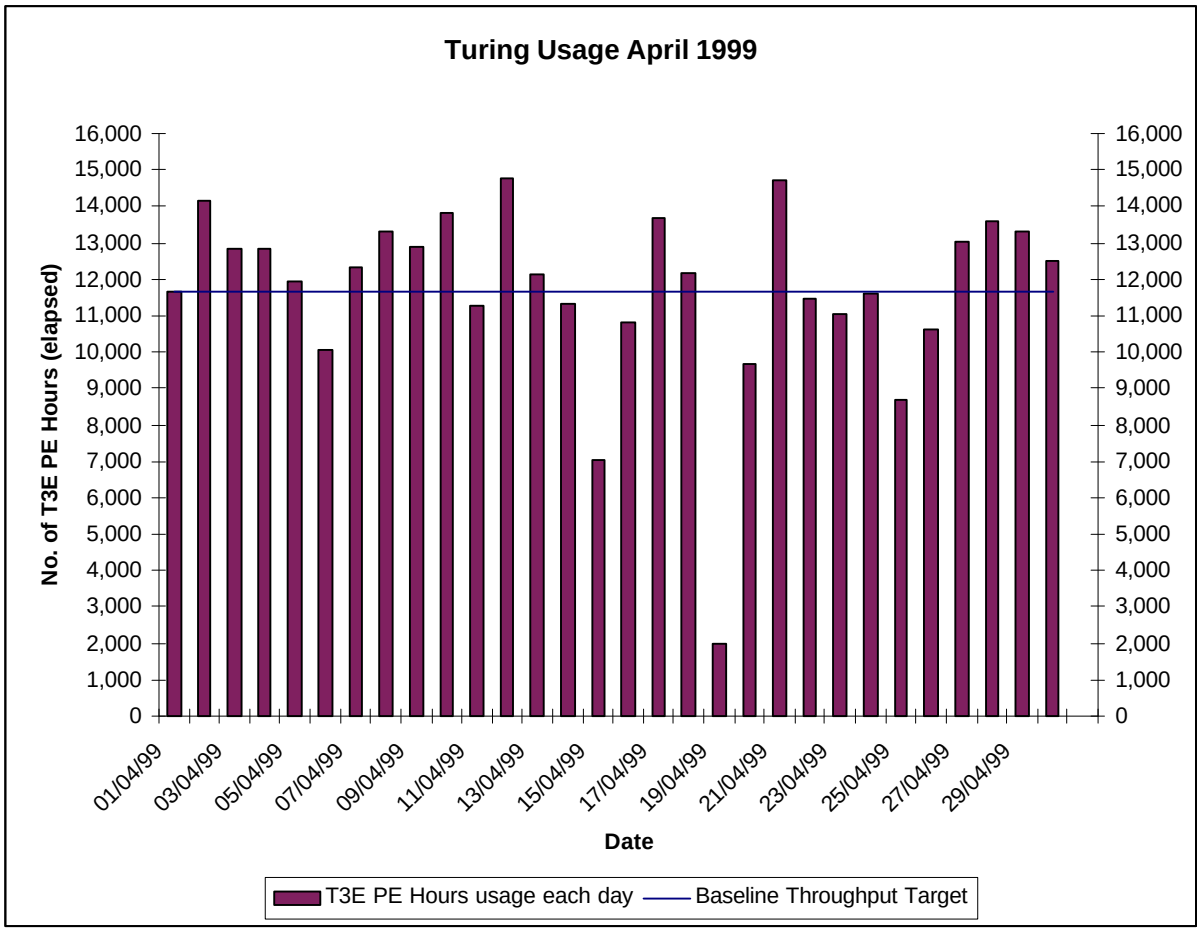
d) Medium Performance Disk (Origin) allocated for User Data by month, showing the allocated space each month in GBytes, split by Research Council. The Baseline Capacity (1.5 Terabytes) is shown by an overlaid horizontal line.

e) HSM/Tape Usage (T3E) by month, showing the volumes held each in GBytes, split by Research Council. The Baseline Capacity (16 Terabytes) available will be shown by an overlaid horizontal line.

4.1 Cray T3E-1200E System (Turing)

The following graph shows the usage of Turing during each day of April 1999. 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 12 hour limit on jobs, so that they are check-pointed, and computational time lost due to any failure is well managed.

Turing usage for April:

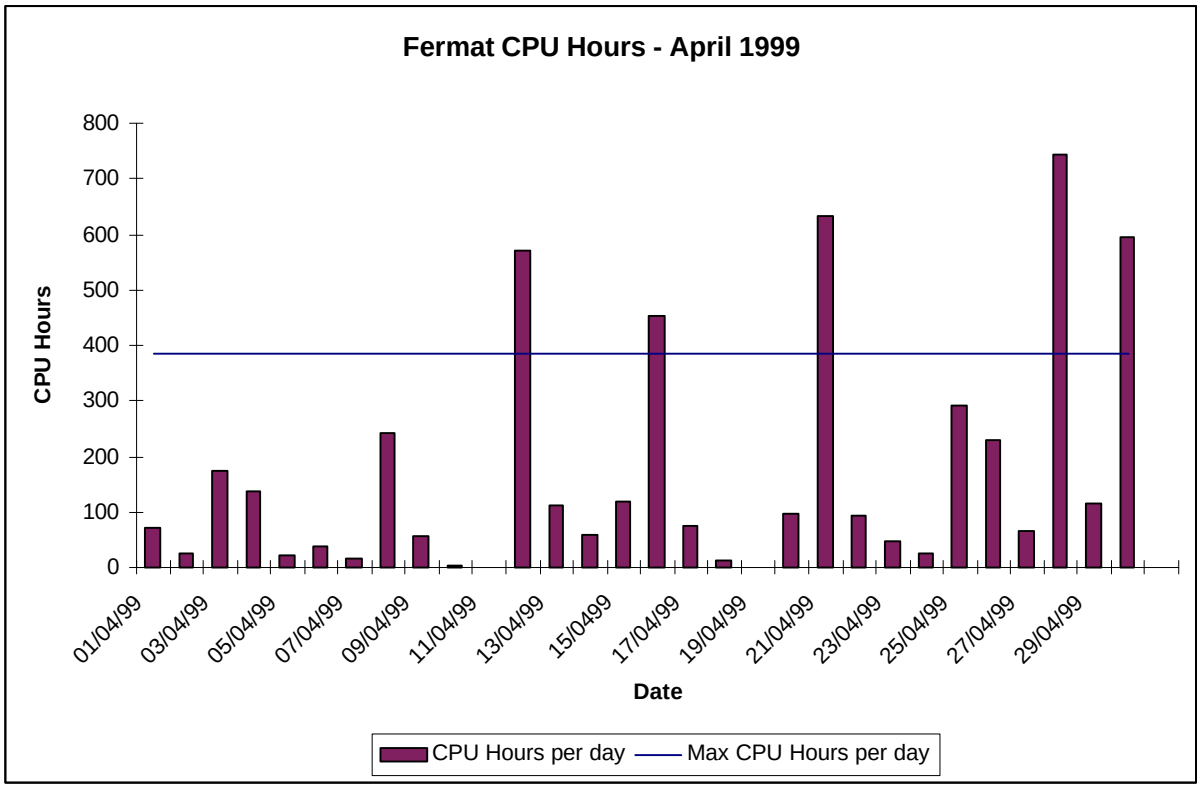


The above usage graph for the Turing system shows that the overall workload tailed off towards the end of each week. This resulted in the system running, on average, to baseline.

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.

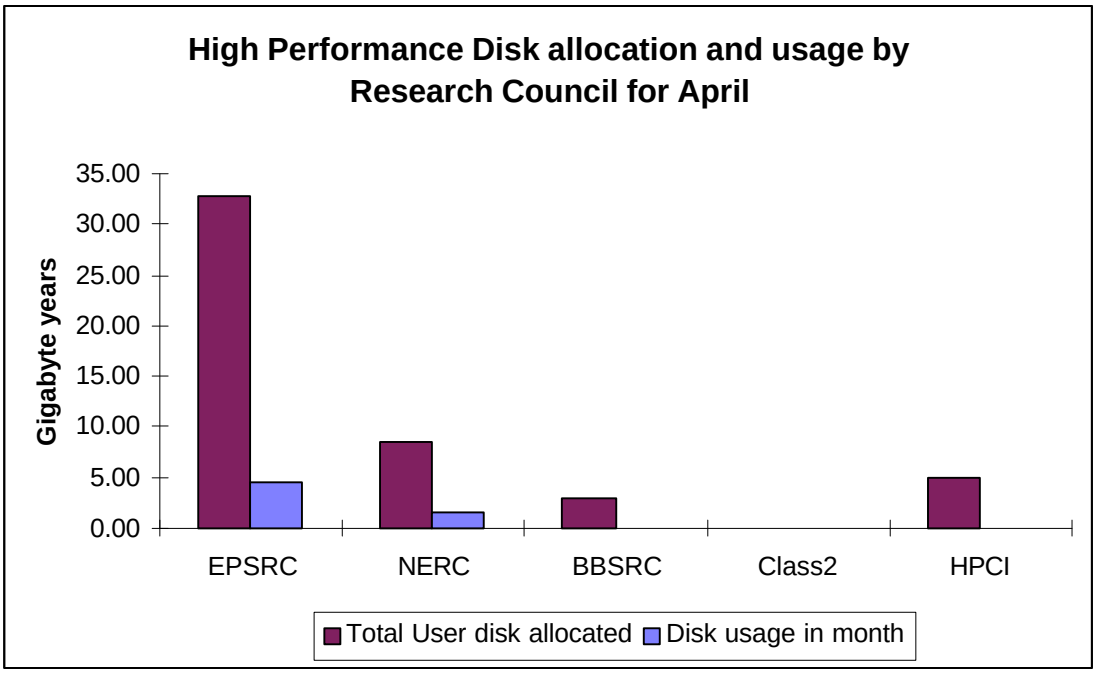
4.2 SGi Origin2000 System (Fermat)

The usage of the Origin system was good for the month with the daily usage of the system averaging 43% of theoretical maximum. This figure does not show that in some periods CPU time is running at 99.9% of the total available CPU time. The groups most heavily using the Fermat system are CSE009 and CSN001.

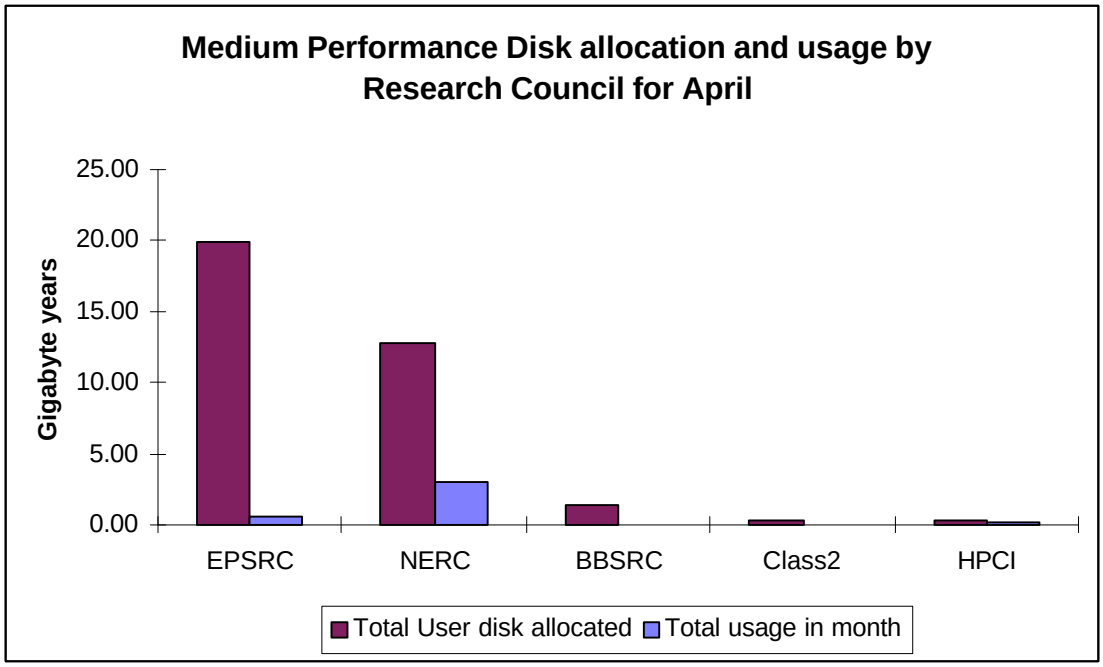


4.3 Disk/HSM Usage Charts

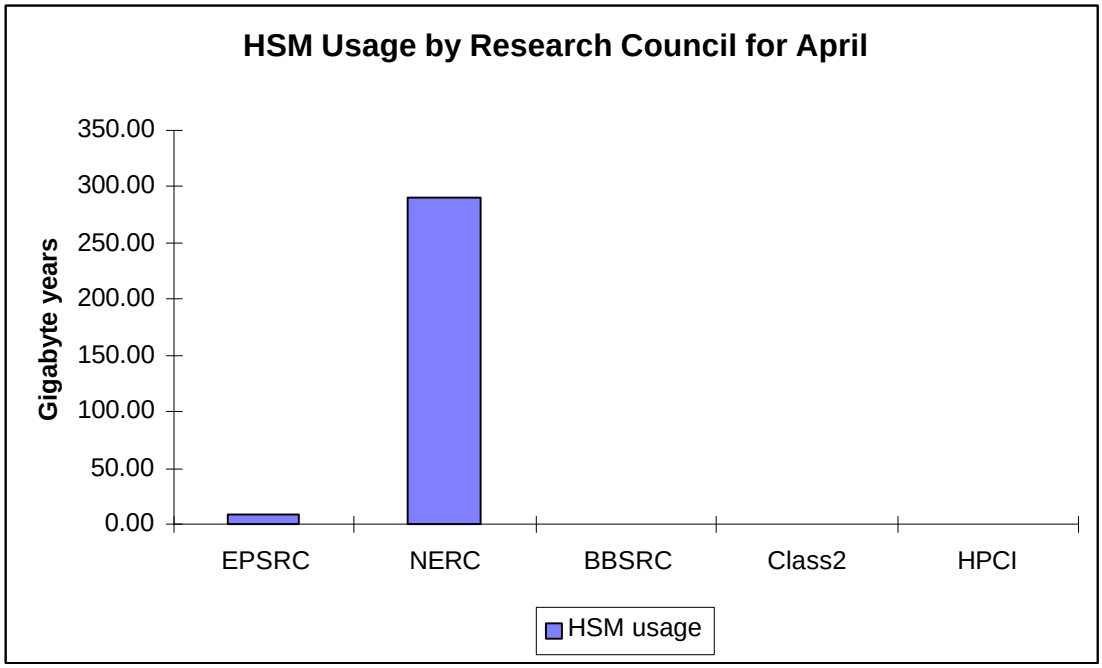
The graphs below show current disk and HSM allocations and usage.



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

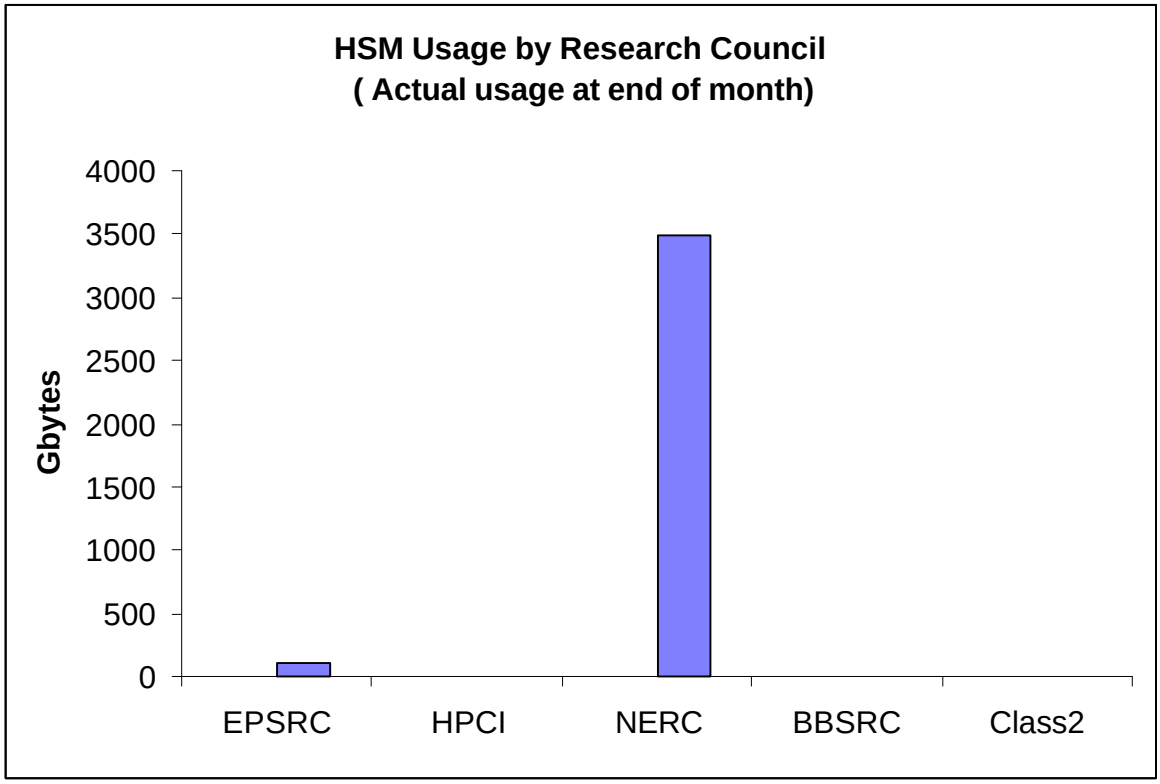


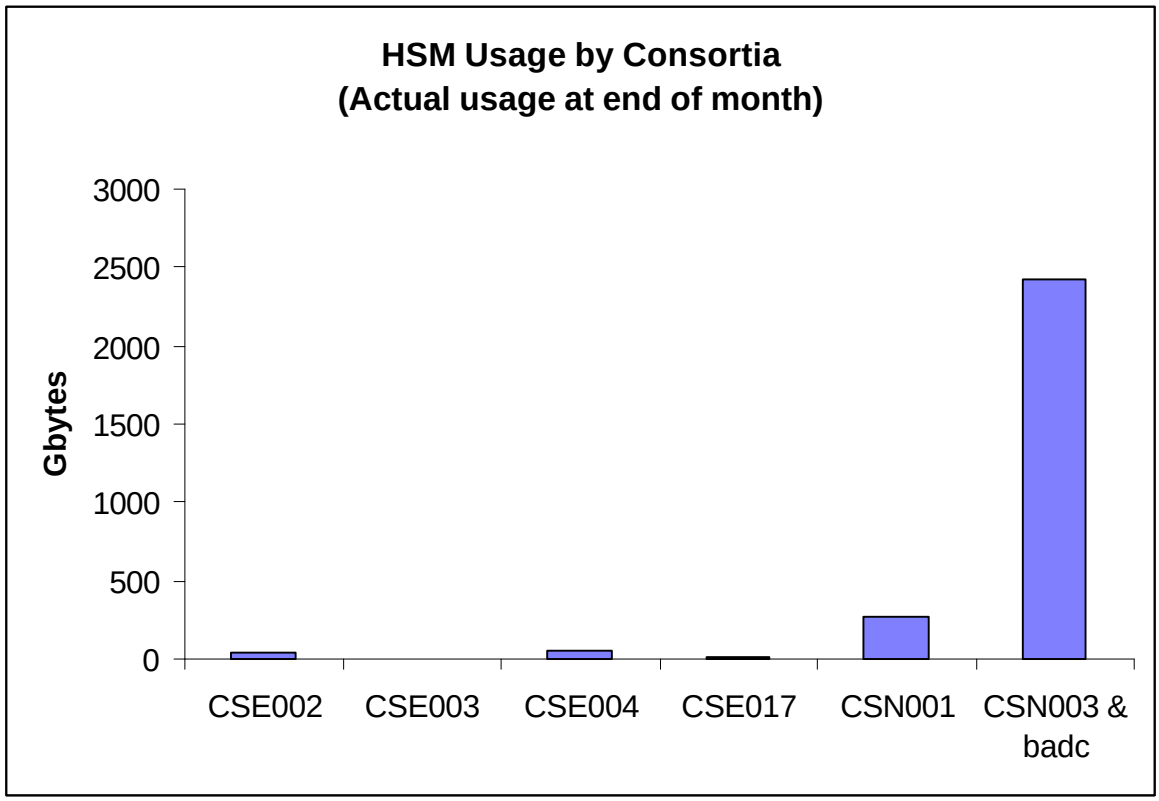
The above graph shows the disk allocations against usage on average of the disk on Fermat.



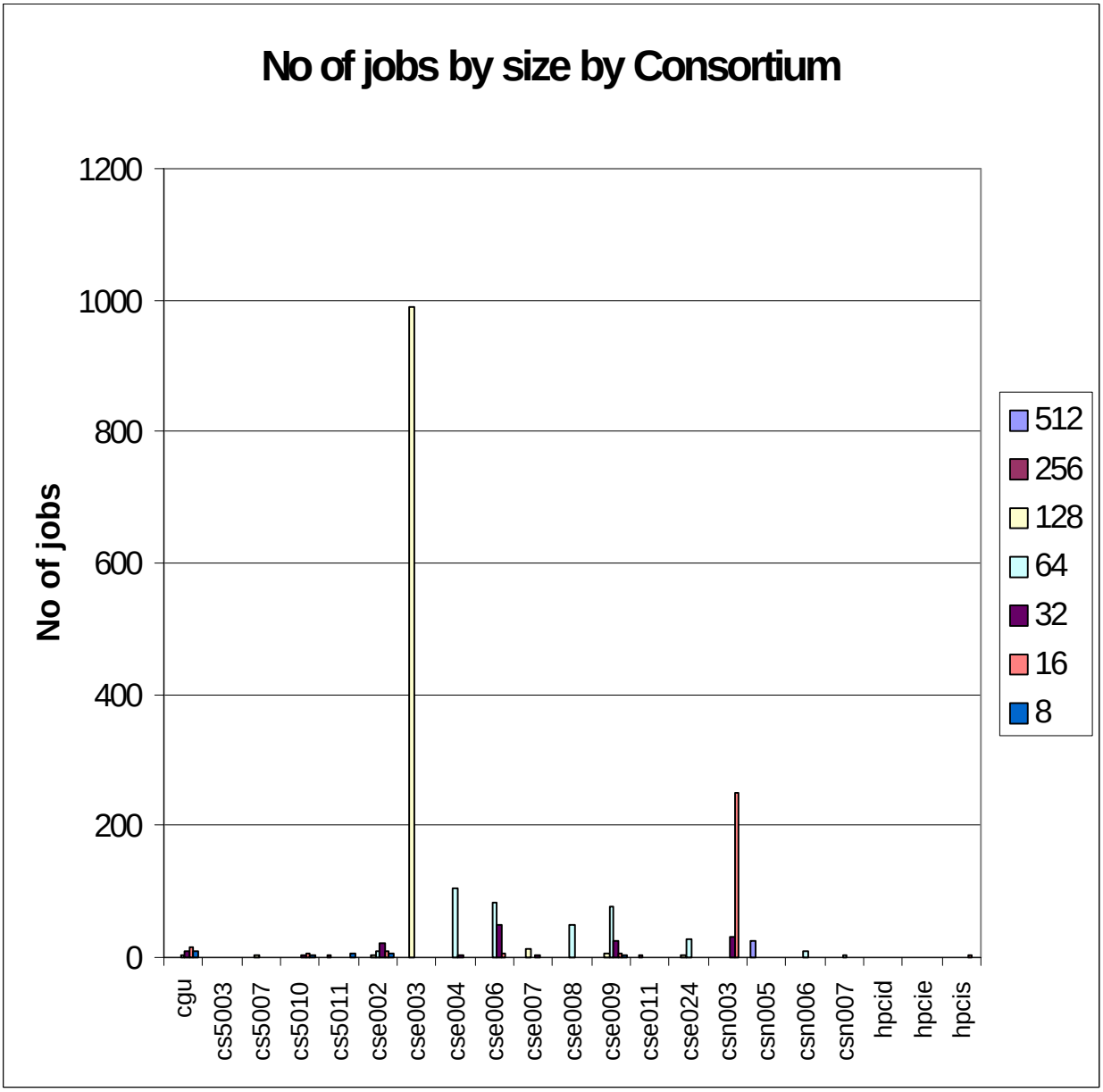
The above graph shows the total usage of the HSM facility by Research Council.

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





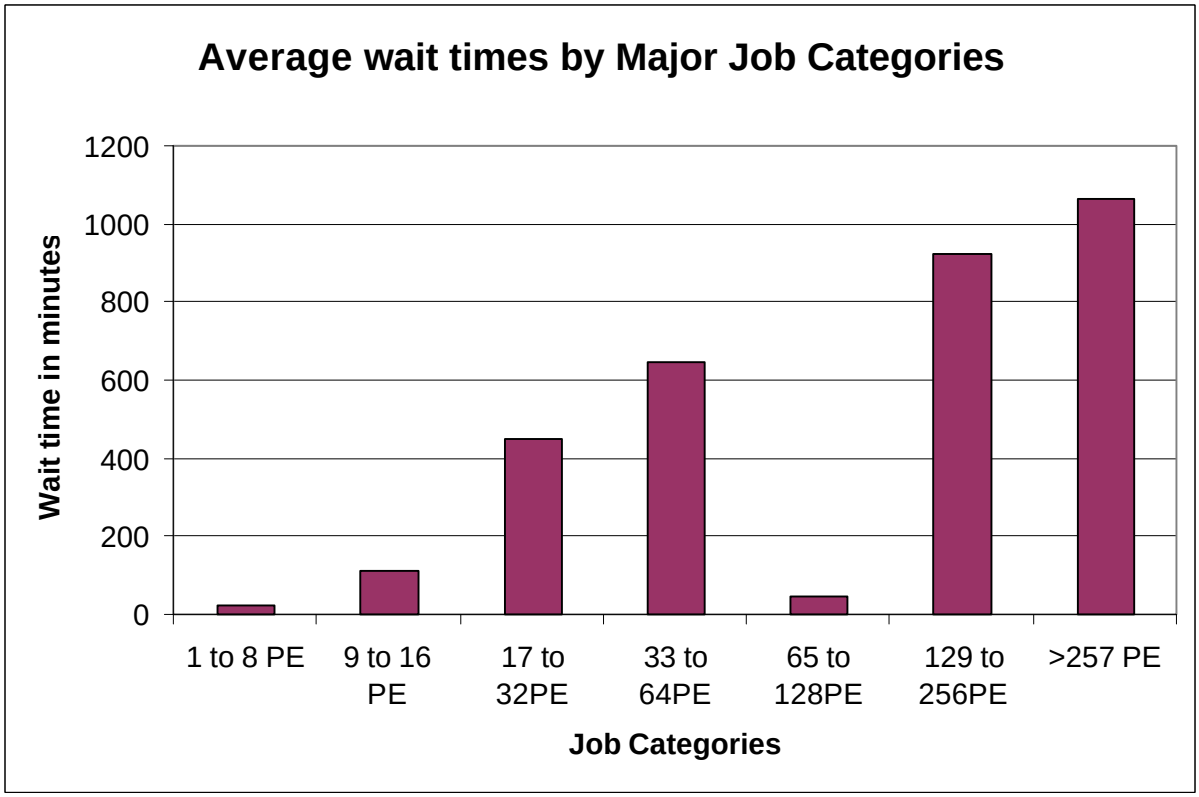
Job statistics for Turing:



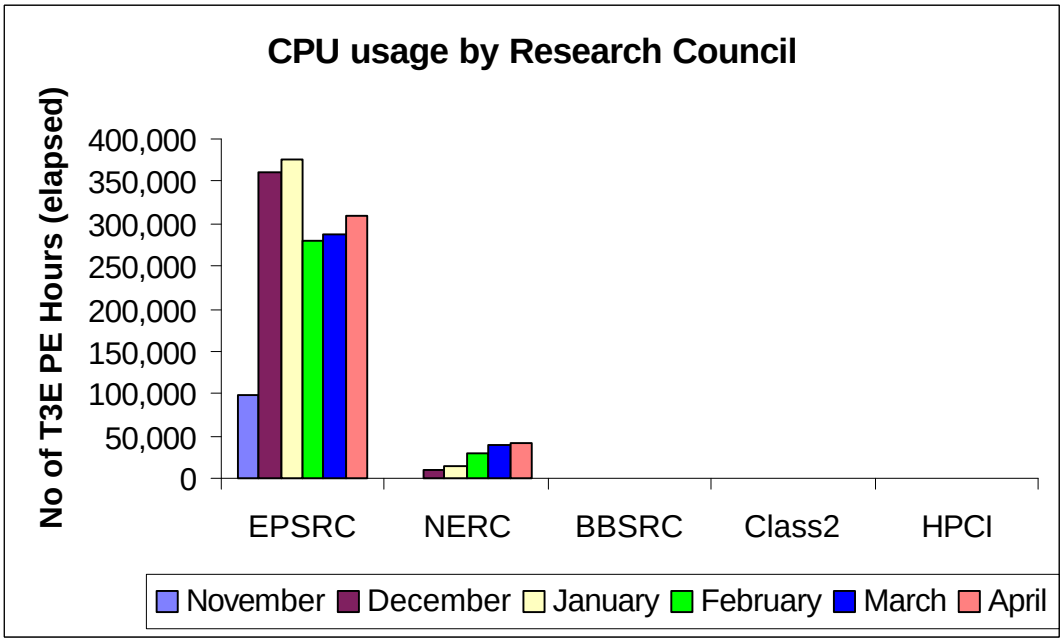
The above graph shows the number of jobs of the major sizes run in the period 1st to 30th April 1999.

The large number of cse003 jobs were primarily of short duration.

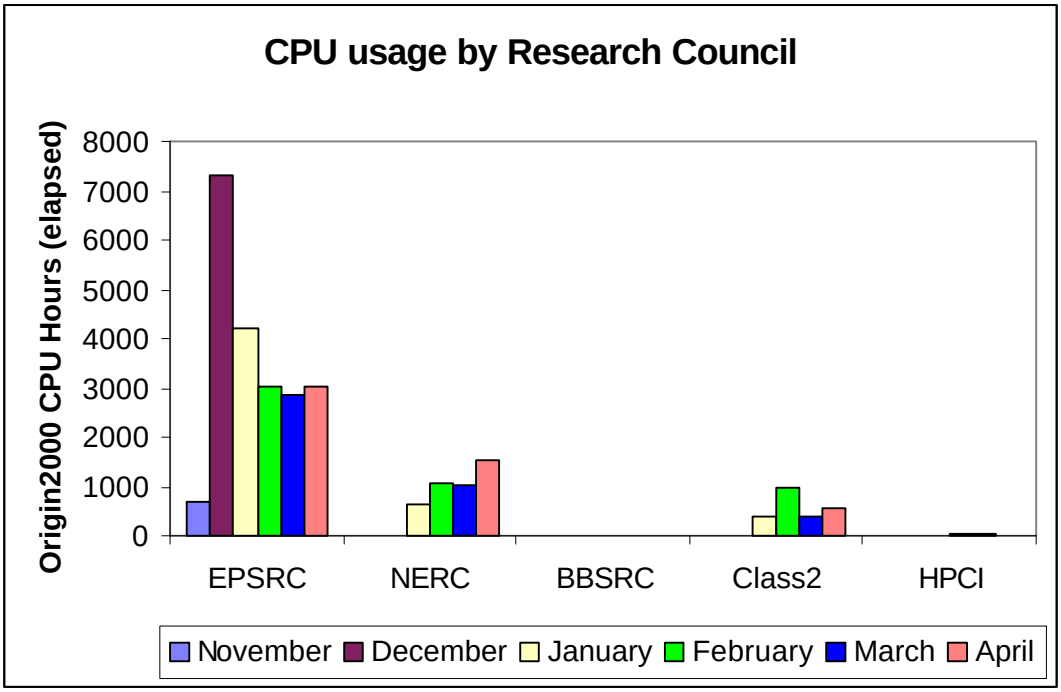
The next graph shows the wait times in minutes for the major categories of jobs.



The average wait time for 128 PE jobs was very low in this period due to a very large number of short duration jobs being submitted sequentially during the early part of the month.



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

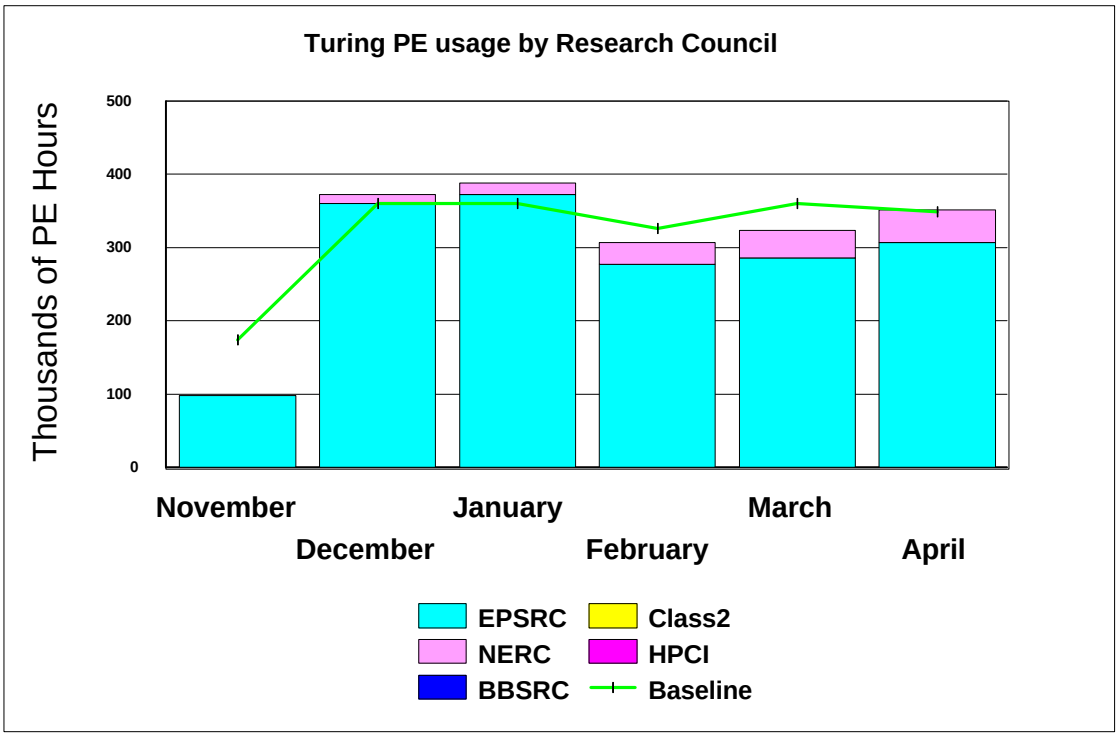


Origin 2000 CPU usage is shown by Research Council during the months of service to date in the above chart.

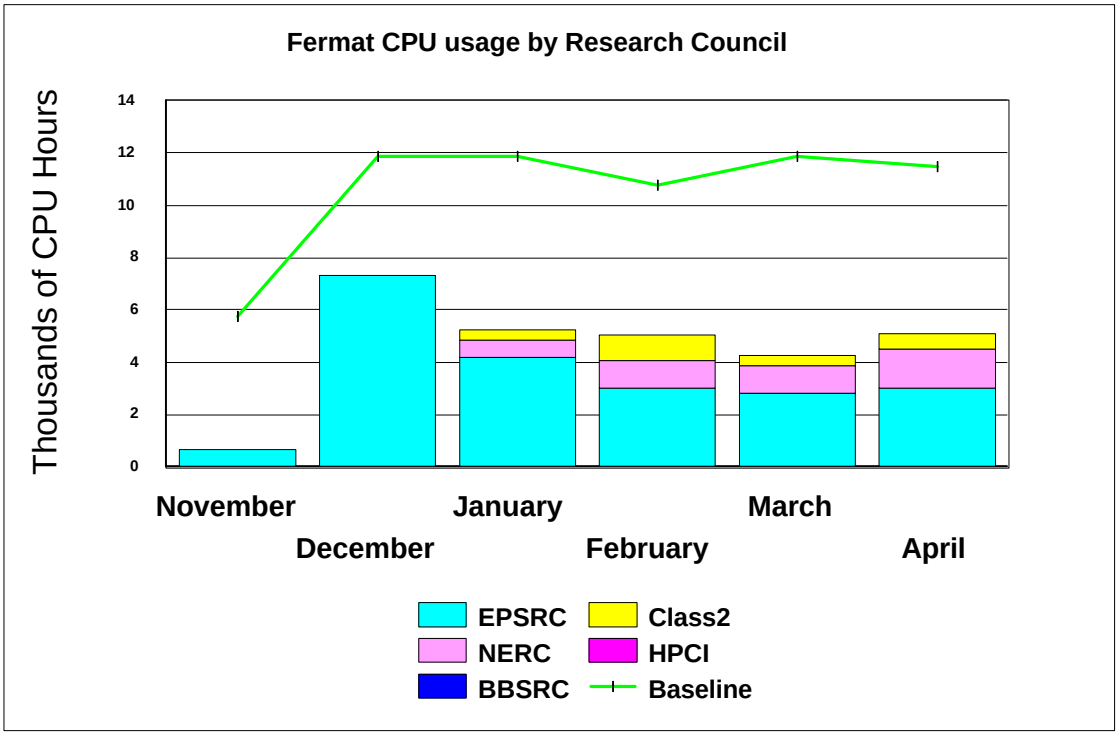
4.4 Historical Usage Charts

In all the Usage Charts, the baseline varies dependant on the number of days in each month, within a 365-day year. The reduced Baseline in November 1998 represents half a month.

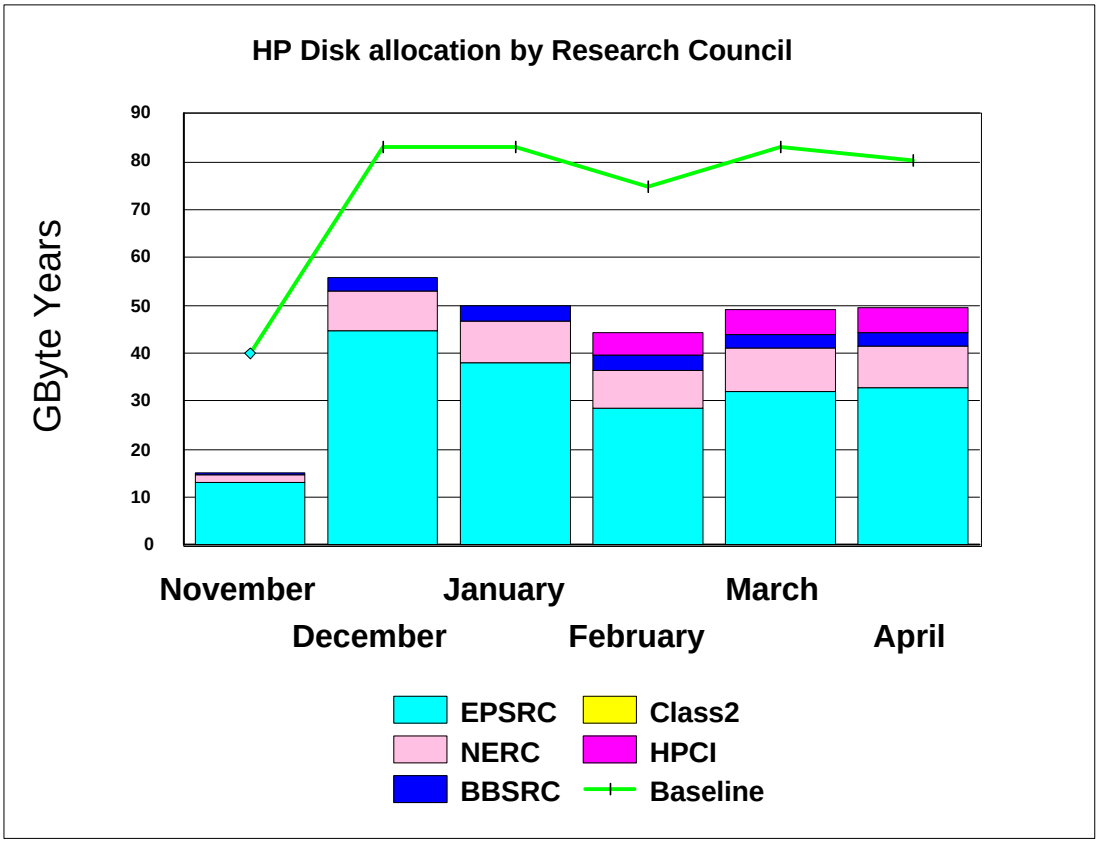
The graph below shows the PE hour's utilisation on Turing by Research Council from November 1998.



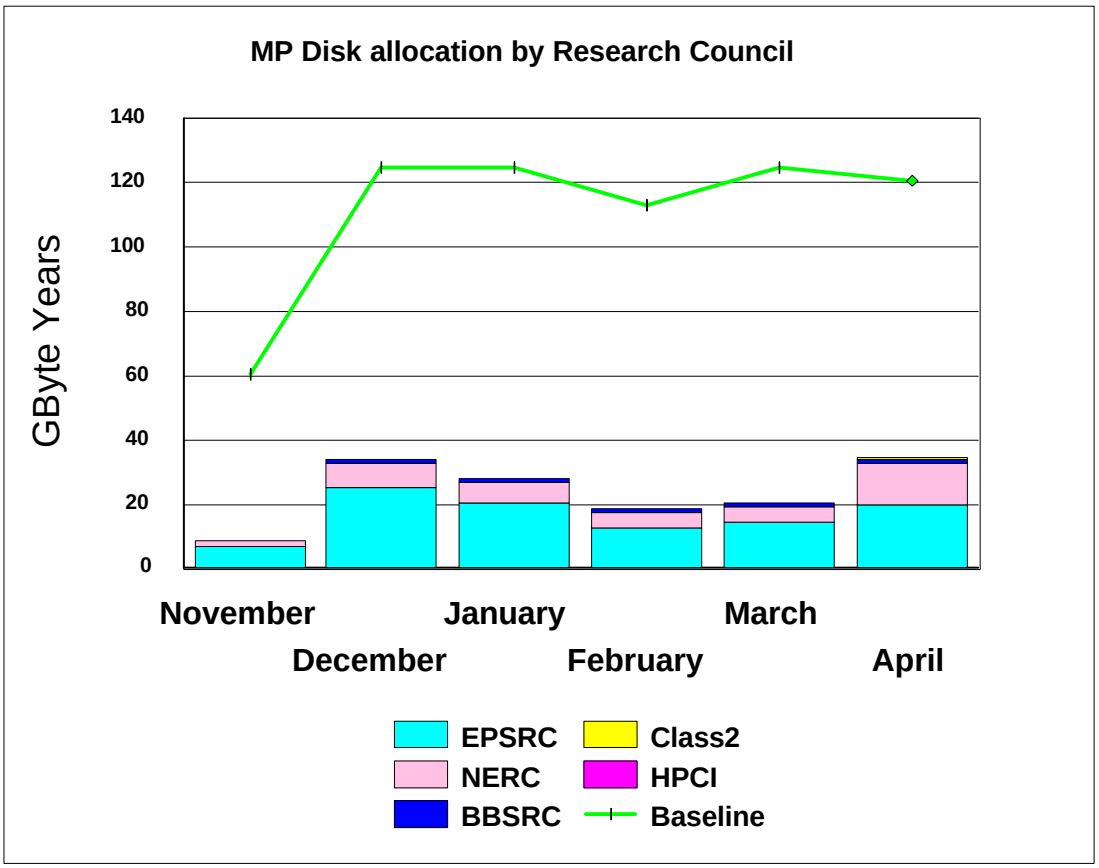
The graph below shows the historic CPU usage on Fermat by Research Council from November.



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

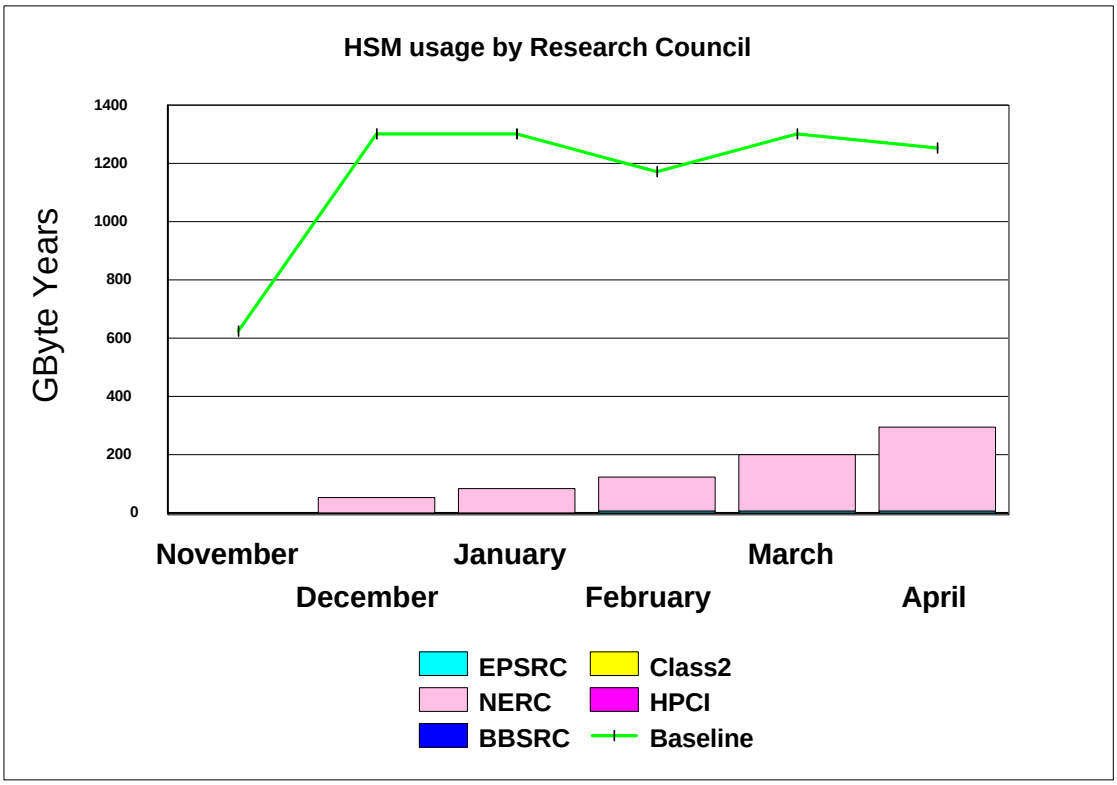


The preceding graph illustrates the historic allocation of the High Performance Disk on Turing.



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

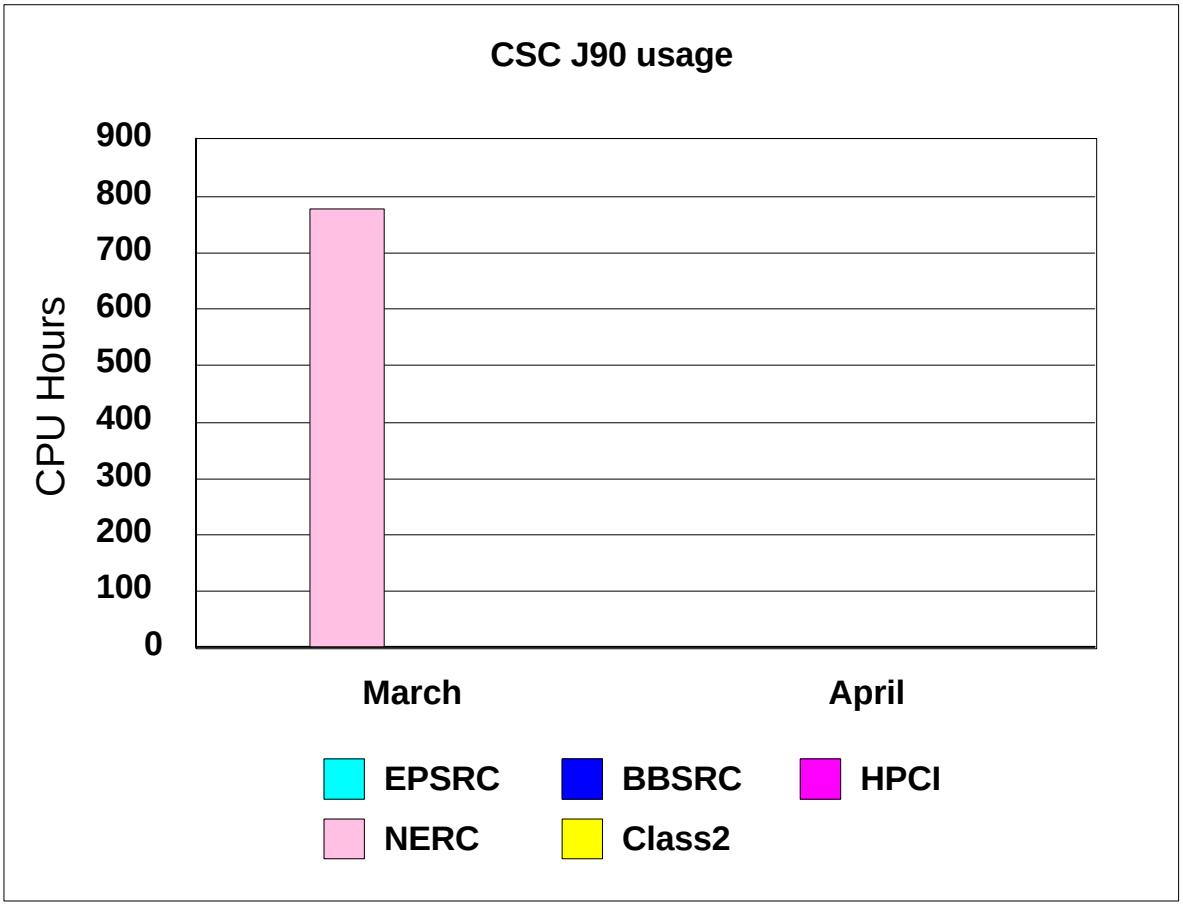
The graph below shows the historic HSM usage by Research Council funded projects. The primary usage is for NERC.



4.5 Guest System Usage Charts

The following graph shows the CPU usage on the current two available CSAR guest systems.

The Fujitsu usage graph has not been included this month due to an error in the basic accounting that is currently under investigation by Fujitsu.



The usage on the CSCJ90 guest system was just over one hour during this period, as indicated by the above graph.

5. Service Status, Issues and Plans

5.1 Status

The system suffered a lengthy outage this month as a pump on the T3E HEU failed resulting in over 15 hours of unscheduled down time. Spares were dual sourced in order to minimise down time. This resulted in the pump being replaced early on the morning of the 20th April with the second pump arriving a few hours later. At all times during the incident the users were kept informed of the status of the service. In the course of the outage no actual production work is understood to have been lost.

The system met the baseline throughput target this month, despite losing the time as described above.

5.2 Issues

The system this month has been loaded with 64 PE jobs which has been the predominant size of batch work with a mixture of other work including 128's and 512's towards the end of the month. This was however insufficient to fully load the system for the whole of the month.

5.3 Plans

The new Sub Project facility is now available, however, as yet, no project has applied to the helpdesk to have a Sub Project initiated.

A new short development queue has been implemented on Turing. This has been extensively tested and is in the process of being released to the users.

6. Conclusion

April 1999 saw the overall CPARS rating drop to yellow due to the lengthy outage, however the Baseline Capacity for job throughput was achieved with excessive queue times.

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 April 1999

Appendix 2 contains the Percentage shares by Consortium for April 1999

Appendix 3 contains the Percentage shares by Research Council for April 1999

Appendix 1

CfS Supercomputer Service

Usage report for Research Council Projects

From Thursday 1-Apr-99 to Friday 30-Apr-99

Account		CPU Usage (Hours) Inter Priority	Normal	Low	Total	Storage (GB-Years) D-Usage	D-Allocn	HSM
CSE001 Admin users	turing	-	-	-	-	0.00	0.01	-
	fermat	-	-	-	-	0.00	-	-
	fuji	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-
Total for Subject								
EPSRC Administration	turing	-	-	-	-	0.00	0.01	-
	fermat	-	-	-	-	0.00	-	-
	fuji	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-
CSE002 gr/m01753 Gillan	turing	17.39	295.37	22818.09	-	23130.84	2.12	8.79	-
	fermat	654.50	-	-	-	654.50	0.25	4.68	3.49
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSE003 gr/m01784 Taylor	turing	49.38	-	32700.34	-	32749.72	0.37	2.67	-
	fermat	1167.40	-	-	-	1167.40	0.01	3.75	0.06
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSE007 gr m05348 Foulkes	turing	15.68	-	29391.02	-	29406.70	0.09	0.48	-
	fermat	-	-	-	-	-	0.00	0.39	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
cse021 GR/L95427 Staunton	turing	0.03	-	235.75	-	235.78	0.01	0.08	-
	fermat	-	-	-	-	-	0.00	0.11	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSE025 GR/L22331 Bishop	turing	0.00	-	-	-	0.00	-	0.02	-
	fermat	-	-	-	-	-	0.00	0.02	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSE030 GR/M56234 Cates	turing	13.79	1.01	1.01	-	15.82	0.00	0.40	-
	fermat	2.52	-	-	-	2.52	0.00	0.56	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
Total for Subject								
Physics	turing	96.28	296.38	85146.21	-	85538.87	2.60	12.43	-
	fermat	1824.42	-	-	-	1824.42	0.26	9.51	3.55
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSE006 gr/m05201 Briddon	turing	480.07	-	69399.72	-	69879.79	0.06	2.78	-
	fermat	7.20	-	-	-	7.20	0.00	0.01	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
Total for Subject								
Materials	turing	480.07	-	69399.72	-	69879.79	0.06	2.78	-
	fermat	7.20	-	-	-	7.20	0.00	0.01	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-

CfS Supercomputer Service

Account		Inter Priority	Normal	Low	Total	D-Usage	D-Allocn	HSM
		---------- CPU Usage (Hours) ----------				--- Storage (GB-Years) ---		
CSE004 gr/m08424 Sandham	turing	441.44	- 62147.32	-	62588.75	0.92	3.29	-
	fermat	0.55	- -	-	0.55	0.21	3.93	4.88
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
CSE010 gr/l04108 Williams	turing	-	- -	-	-	0.00	0.00	-
	fermat	-	- -	-	-	0.00	0.00	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
CSE011 gr/k52317 Williams	turing	0.06	- 3937.91	-	3937.97	0.19	3.18	-
	fermat	-	- -	-	-	0.00	0.00	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
cse013 gr/k43902 Leschzine	turing	-	- -	-	-	0.00	0.79	-
	fermat	71.75	- -	-	71.75	0.00	1.12	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
cse014 GR/K73466 Goddard	turing	-	- -	-	-	0.00	0.08	-
	fermat	-	- -	-	-	0.00	-	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
CSE016 GR/K96519 Cant	turing	-	- -	-	-	0.00	0.00	-
	fermat	-	- -	-	-	0.00	0.00	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
cse017 GR/L58699 Luo	turing	-	- -	-	-	0.13	0.27	-
	fermat	-	- -	-	-	0.04	0.22	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
cse018 GR/L68353 Cant	turing	-	- -	-	-	0.00	0.00	-
	fermat	-	- -	-	-	0.00	0.00	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
cse022 GR/L98527 Jones	turing	-	- -	-	-	0.01	0.79	-
	fermat	-	- -	-	-	0.00	-	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
Total for Subject								
Engineering	turing	441.50	- 66085.23	-	66526.73	1.24	8.41	-
	fermat	72.30	- -	-	72.30	0.25	5.28	4.88
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
CSE008 GR/M07624 Hillier	turing	3.10	- 31695.78	-	31698.88	0.01	0.06	-
	fermat	0.03	- -	-	0.03	0.00	0.00	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
CSE009 gr/m07441 Catlow	turing	185.54	1095.05 37865.39	-	39145.98	0.64	6.36	-
	fermat	1110.08	- -	-	1110.08	0.01	1.12	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
cse024 GR/M44453 Tennyson	turing	14.27	13203.74 3257.63	-	16475.64	0.03	2.78	-
	fermat	-	- -	-	-	0.05	3.93	-
	fuji	0.08	- -	-	0.08	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
Total for Subject								
Chemistry	turing	202.91	14298.79 72818.80	-	87320.50	0.67	9.20	-
	fermat	1110.12	- -	-	1110.12	0.05	5.06	-
	fuji	0.08	- -	-	0.08	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
CSE019 cr/l73104 Berzins	turing	-	- -	-	-	0.01	0.08	-
	fermat	-	- -	-	-	0.00	0.11	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
CSE020 GR/L75139 Szularz	turing	3.78	- -	-	3.78	-	-	-
	fermat	-	- -	-	-	-	-	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
Total for Subject								
Information Technology	turing	3.78	- -	-	3.78	0.01	0.08	-
	fermat	-	- -	-	-	0.00	0.11	-
	fuji	-	- -	-	-	-	-	-
	CSCJ90	-	- -	-	-	-	-	-
Total for Council								

EPSRC	turing	1224.54	14595.17	293449	-	309269	4.58	32.91	-
	fermat	3014.03	-	-	-	3014.03	0.57	19.97	8.44
	fuji	0.08	-	-	-	0.08	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-

CfS Supercomputer Service

		CPU Usage (Hours)					Storage (GB-Years)		
Account		Inter	Priority	Normal	Low	Total	D-Usage	D-Allocn	HSM
HPCI Southampton	turing	7.28	-	0.04	-	7.33	0.06	4.77	-
	fermat	0.38	-	-	-	0.38	0.07	0.11	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
HPCI Daresbury	turing	8.87	22.53	-	-	31.40	0.01	0.08	-
	fermat	-	-	-	-	-	0.00	0.11	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
HPCI Edinburgh	turing	0.00	-	-	-	0.00	0.00	0.08	-
	fermat	-	-	-	-	-	0.01	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-

Total for Council

HPCI	turing	16.16	22.53	0.04	-	38.73	0.07	4.93	-
	fermat	0.38	-	-	-	0.38	0.08	0.22	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSN001 SOC Core Strategic	turing	3.26	-	76.12	-	79.38	0.87	3.97	-
	fermat	1338.45	-	-	-	1338.45	0.19	5.62	22.40
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSN002 gr3.10789 Hillier	turing	-	-	-	-	-	0.00	0.00	-
	fermat	-	-	-	-	-	-	0.02	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
badc	turing	-	-	-	-	-	-	-	-
	fermat	4.95	-	-	-	4.95	2.75	-	71.63
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSN003 UGAMP O'Neill	turing	11.34	3.26	17417.54	1189.31	18621.45	0.19	0.67	-
	fermat	186.60	-	-	-	186.60	0.04	7.17	196.57
	fuji	140.52	-	-	-	140.52	-	-	-
	CSCJ90	0.07	1.22	-	-	1.28	-	-	-
CSN005 GR9/2909 Davies	turing	0.70	-	14998.76	-	14999.45	0.38	1.41	-
	fermat	-	-	-	-	-	0.00	0.01	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSN006 GR9/3550 Price	turing	80.85	-	5697.38	-	5778.23	0.11	2.15	-
	fermat	-	-	-	-	-	0.00	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSN007 GST/02/1454 Price	turing	0.05	-	2401.48	-	2401.53	0.03	0.32	-
	fermat	-	-	-	-	-	0.00	0.00	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSN009 GST/02/1472 Proctor	turing	0.00	-	-	-	0.00	0.00	0.03	-
	fermat	-	-	-	-	-	0.00	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSN011 GST/02/1889 Thorpe	turing	0.14	0.18	46.62	-	46.93	0.02	0.06	-
	fermat	-	-	-	-	-	-	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-

Total for Council

NERC	turing	96.33	3.44	40637.91	1189.31	41926.99	1.61	8.60	-
	fermat	1530.00	-	-	-	1530.00	2.98	12.82	290.60
	fuji	140.52	-	-	-	140.52	-	-	-
	CSCJ90	0.07	1.22	-	-	1.28	-	-	-
CSB001 27/B07117 Goodfello	turing	-	-	-	-	-	0.00	0.95	-
	fermat	-	-	-	-	-	0.00	1.35	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CSB002 86/B10059 Danson	turing	-	-	-	-	-	0.01	1.99	-
	fermat	-	-	-	-	-	0.00	-	-
	fuji	-	-	-	-	-	-	-	-

	CSCJ90	-	-	-	-	-	-	-	-
CSB003 117/SO9645 Williams	turing	0.00	-	-	-	0.00	0.00	0.03	-
	fermat	-	-	-	-	-	0.00	0.00	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-

CfS Supercomputer Service

Account		CPU Usage (Hours) Inter Priority	Normal	Low	Total	Storage (GB-Years) D-Usage	D-Allocn	HSM
Total for Council								
BBSRC	turing	0.00	-	-	0.00	0.01	2.97	-
	fermat	-	-	-	-	0.00	1.35	-
	fuji	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-
cs2001 CompApps3D Jain	turing	0.01	-	0.01	-	0.02	0.00	0.04	-
	fermat	-	-	-	-	-	0.00	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CS2002 PTMP Lyne	turing	0.00	-	-	-	0.00	0.00	0.00	-
	fermat	-	-	-	-	-	0.00	0.00	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
cs2003 GST/02/0760 Coultha	turing	-	-	-	-	-	-	-	-
	fermat	570.08	-	-	-	570.08	0.02	0.21	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CS2004 ICE Watkins	turing	0.01	-	-	-	0.01	-	-	-
	fermat	-	-	-	-	-	0.00	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
Total for Council									
Class 2	turing	0.02	-	0.01	-	0.03	0.00	0.04	-
	fermat	570.08	-	-	-	570.08	0.02	0.21	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
CS3001 Stavely	turing	0.01	-	-	-	0.01	-	0.00	-
	fermat	-	-	-	-	-	-	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
euukcp	turing	-	-	-	-	-	0.50	-	-
	fermat	-	-	-	-	-	-	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
eugamp	turing	-	-	-	-	-	0.02	-	-
	fermat	-	-	-	-	-	-	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
euqub	turing	-	-	-	-	-	0.00	-	-
	fermat	-	-	-	-	-	-	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
euocam	turing	-	-	-	-	-	0.06	-	-
	fermat	-	-	-	-	-	-	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
euqmw	turing	-	-	-	-	-	1.29	-	-
	fermat	-	-	-	-	-	-	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
euhpci	turing	-	-	-	-	-	0.09	-	-
	fermat	-	-	-	-	-	-	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
euston	turing	-	-	-	-	-	0.01	-	-
	fermat	-	-	-	-	-	-	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
eural	turing	-	-	-	-	-	0.87	-	-
	fermat	-	-	-	-	-	-	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
eubbk	turing	-	-	-	-	-	0.04	-	-
	fermat	-	-	-	-	-	-	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
earlyu	turing	-	-	-	-	-	-	-	-
	fermat	-	-	-	-	-	0.11	-	1.78
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-

dummy	turing	-	-	-	-	-	0.00	-	-
	fermat	-	-	-	-	-	0.00	-	-
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
Total for Subject									
eu accounts	turing	0.01	-	-	-	0.01	2.87	0.00	-
	fermat	-	-	-	-	-	0.11	-	1.78
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-
Total for Council									
Research	turing	0.01	-	-	-	0.01	2.87	0.00	-
	fermat	-	-	-	-	-	0.11	-	1.78
	fuji	-	-	-	-	-	-	-	-
	CSCJ90	-	-	-	-	-	-	-	-

Usage report for All Research Councils

From Thursday 1-Apr-99 to Friday 30-Apr-99

		CPU Usage (Hours)					Storage (GB-Years)		
Account		Inter	Priority	Normal	Low	Total	D-Usage	D-Allocn	HSM
Total									
Research Councils	turing	1337.07	14621.13	334087	1189.31	351235	9.14	49.45	-
	fermat	5114.50	-	-	-	5114.50	3.76	34.57	300.82
	fuji	140.59	-	-	-	140.59	-	-	-
	CSCJ90	0.07	1.22	-	-	1.28	-	-	-

Appendix 2

Percentage PE time per consortia for Turing in April 1999

Consortia	% Machine Time
CSE002	6.59
CSE003	9.32
CSE007	8.37
CSE021	0.07
CSE025	0.00
CSE030	0.00
CSE006	19.90
CSE004	17.82
CSE010	0.00
CSE011	1.12
CSE013	0.02
CSE014	0.00
CSE016	0.00
CSE017	0.00
CSE018	0.00
CSE022	0.00
CSE008	9.02
CSE009	11.15
CSE024	4.69
CSE019	0.00
CSE020	0.00
HPCI Southampton	0.00
HPCI Daresbury	0.01
HPCI Edinburgh	0.00
CSN001	0.02
CSN002	0.00
BADC	0.00
CSN003	5.30
CSN005	4.27
CSN006	1.65
CSN007	0.68
CSN009	0.00
CSN011	0.01
CSB001	0.00
CSB002	0.00
CSB003	0.00
CS2001	0.00
CS2002	0.00
CS2003	0.00
CS2004	0.00
CS3001	0.00

Percentage CPU time per consortia for Fermat in April 1999

Consortia	% Machine Time
CSE002	12.80
CSE003	22.83
CSE007	0.00
CSE021	0.00
CSE025	0.00
CSE030	0.05
CSE006	0.14
CSE004	0.01
CSE010	0.00
CSE011	0.00
CSE013	1.40
CSE014	0.00
CSE016	0.00
CSE017	0.00
CSE018	0.00
CSE022	0.00
CSE008	0.00
CSE009	21.70
CSE024	0.00
CSE019	0.00
CSE020	0.00
HPCI Southampton	0.01
HPCI Daresbury	0.00
HPCI Edinburgh	0.81
CSN001	26.17
CSN002	0.00
BADC	0.10
CSN003	3.65
CSN005	0.00
CSN006	0.00
CSN007	0.00
CSN009	0.00
CSN011	0.00
CSB001	0.00
CSB002	0.00
CSB003	0.00
CS2001	0.00
CS2002	0.00
CS2003	11.15
CS2004	0.00
CS3001	0.00

Percentage disc allocation by Consortia for Turing in April 1999

Consortia	%Allocation
CSE002	17.78
CSE003	5.40
CSE007	0.97
CSE021	0.16
CSE025	0.04
CSE030	0.81
CSE006	5.62
CSE004	6.65
CSE010	0.00
CSE011	6.43
CSE013	1.60
CSE014	0.16
CSE016	0.00
CSE017	0.55
CSE018	0.00
CSE022	1.60
CSE008	0.12
CSE009	12.86
CSE024	5.62
CSE019	0.16
CSE020	0.00
HPCI Southampton	9.65
HPCI Daresbury	0.16
HPCI Edinburgh	0.16
CSN001	8.03
CSN002	0.00
BADC	0.00
CSN003	1.35
CSN005	2.85
CSN006	4.35
CSN007	0.65
CSN009	0.06
CSN011	0.12
CSB001	1.92
CSB002	4.02
CSB003	0.06
CS2001	0.08
CS2002	0.00
CS2003	0.00
CS2004	0.00
CS3001	0.00

Percentage disc allocation by Consortia for Fermat in March 1999

Consortia	%Allocation
CSE002	13.54
CSE003	10.85
CSE007	1.13
CSE021	0.32
CSE025	0.06
CSE030	1.62
CSE006	0.03
CSE004	11.37
CSE010	0.00
CSE011	0.00
CSE013	3.24
CSE014	0.23
CSE016	0.00
CSE017	0.64
CSE018	0.00
CSE022	0.00
CSE008	0.00
CSE009	3.24
CSE024	11.37
CSE019	0.32
CSE020	0.00
HPCI Southampton	0.32
HPCI Daresbury	0.32
HPCI Edinburgh	0.00
CSN001	16.26
CSN002	0.06
BADC	0.00
CSN003	20.74
CSN005	0.03
CSN006	0.00
CSN007	0.00
CSN009	0.00
CSN011	0.00
CSB001	3.91
CSB002	0.00
CSB003	0.00
CS2001	0.00
CS2002	0.00
CS2003	0.61
CS2004	0.00
CS3001	0.00

Appendix 2

Percentage usage of HSM by Consortium for April 1999

Consortium	% Usage
CSE002	1.16
CSE003	0.02
CSE007	0.00
CSE021	0.00
CSE025	0.00
CSE030	0.00
CSE006	0.00
CSE004	1.62
CSE010	0.00
CSE011	0.00
CSE013	0.00
CSE014	0.00
CSE016	0.00
CSE017	0.00
CSE018	0.00
CSE022	0.00
CSE008	0.00
CSE009	0.00
CSE024	0.00
CSE019	0.00
CSE020	0.00
HPCI Southampton	0.00
HPCI Daresbury	0.00
HPCI Edinburgh	0.00
CSN001	7.45
CSN002	0.00
BADC	23.81
CSN003	65.34
CSN005	0.00
CSN006	0.00
CSN007	0.00
CSN009	0.00
CSN011	0.00
CSB001	0.00
CSB002	0.00
CSB003	0.00
CS2001	0.00
CS2002	0.00
CS2003	0.00
CS2004	0.00
CS3001	0.00

Appendix 3

Percentage PE usage on Turing by Reserch Council for April 1999			Percentage CPU usage on Fermat by Reserch Council for April 1999		
Research Coucil	**% Usage**		**Research Coucil**	**% Usage**	
EPSRC	88.05		EPSRC	58.93	
HPCI	0.011		HPCI	0.01	
NERC	11.94		NERC	29.91	
BBSRC	0		BBSRC	0	
Class2	0		Class2	11.15	

Percentage Disc allocated on Turing by Research Council for April 1999			Percentage Disc allocated on Fermat by Research Council for April 1999		
Research Council	**% Allocated**		**Research Council**	**% Allocated**	
EPSRC	66.55		EPSRC	57.77	
HPCI	9.97		HPCI	0.64	
NERC	17.39		NERC	37.08	
BBSRC	6.01		BBSRC	3.91	
Class2	0.08		Class2	0.61	

Percentage HSM usage by Research Council for April 1999		
Research Council	**% usage**	
EPSRC	2.81	
HPCI	0	
NERC	96.60	
BBSRC	0	
Class2	0	