ARCHER CSE Service Quarterly Report

Quarter 1 2016

1. Document Information and Version History

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Status	Draft
Author(s):	Andy Turner, Lorna Smith, David Henty, Xu Guo, Chris Johnson, Toni Collis
Reviewer(s)	Lorna Smith, Alan Simpson

Version	Date	Comments, Changes, Status	Authors, contributors, reviewers
0.1	2016-03-02	Skeleton document	Andy Turner
0.2	2016-04-01	CSE statistics entered	Andy Turner
0.3	2016-04-05	Training section added	David Henty
0.4	2016-04-07	Outreach section added	Toni Collis
0.5	2016-04-11	eCSE section added	Chris Johnson
0.6	2016-04-13	Added centralised CSE sections	Andy Turner
0.7	2016-04-14	Corrections and additions	Andy Turner
0.8	2016-04-16	QA	Alan Simpson
0.9	2016-04-18	Responded to review comments	Andy Turner
1.0	2016-04-18	Final version for EPSRC	Alan Simpson, Andy Turner

2. Executive Summary

This report covers the period: 1 January 2016 to 31 March 2016 inclusive.

- Centralised CSE Team:
  - Along with users and service partners, we have identified key strategic priorities for the technical work of the centralised CSE team over the coming year to maximize the benefit of the CSE service to the user community (more information in Section 7 below.
  - A Jenkins Continuous Integration (CI) server has been set up and configured and a small set of initial compiler tests implemented.
  - We have exchanged application usage data with the NERSC HPC site and are in the process of analysing the data to understand where similarities and differences lie. This should help explore how unique the ARCHER workload is and where we can best share information.

- Training:
  - We delivered 19 days (408 student-days) of face-to-face training in the quarter at 6 different locations, with an average feedback score better than "very good".
  - We delivered 3 virtual tutorials as live interactive webinars with an average of 21 attendees per session.
  - Schedule of virtual tutorials was altered from initial plan to ensure users were kept up-to-date with the new features of a major ARCHER software upgrade (in February), and the associated availability of OpenMP 4.0 (in March).
  - The first training course to use the Research Data Facility (RDF) and associated Data Analytic Cluster (DAC) was successfully run in March to promote better data management on ARCHER.
  - The third follow-up survey on longer-term impact of training has been completed and the results analysed; a short report will be sent to training panel and EPSRC in April. The survey indicated that training has a strong impact on users' knowledge and use of HPC systems in general.
  - 36 people successfully completed the ARCHER "driving test" in Q1, 29 of whom have subsequently applied for and received a user account.
  - The ARCHER training programme was highlighted at the ARCHER Champions meeting and we discussed how attendees can access training material and collaborate to broaden the reach of HPC training..
  - We are using PRACE funding to offer travel bursaries to the week-long ARCHER Summer School training event in July.

- ARCHER Outreach Project:
  - The first ARCHER Champions face-to-face meeting was held on 16-17 March 2016 in Edinburgh. The event was considered extremely useful by those who attended. It covered a broad range of topics to facilitate discussion of what the next step is for the ARCHER Champions programme.
  - The ARCHER Outreach team staffed a booth at the Big Bang Fair (13-19 March). The booth showcased three interactive activities: Wee ARCHIE, designing a supercomputer, and parallel sorting. We had around 6000 interactions with children over the 4 days.
  - We have been successful in our proposals to provide Women in HPC workshops at ISC16 and SC16; planning has now begun for both events.

- eCSE:
  - Of 59 projects accepted for the first 5 calls, 54 have started and 29 of these have now completed. 14 final reports have been received; more final reports are expected during the next quarter to be reviewed at the eCSE08 panel meeting in late June/early July
  - The 5 projects which have not yet started are from the most recent closed call (eCSE07), and are all due to start with the next few months

- A call had previously gone out for early career researchers to attend an eCSE Panel meeting as observers with the aim of giving such researchers a better insight into the mechanism of selection to assist in the preparation of funding proposals. We received 17 proposals and at a selection meeting on 25 January 2016, nine candidates were selected to attend Panels over the next year. One such candidate attended the eCSE07 meeting and found this a very positive experience.

3. Collaborations and Outputs Summary

- Presentations:
    - o 18 Feb 2016, Andy Turner, Monitoring Application Usage on HPC Facilities using XALT and D3.js, HPC-SIG Meeting, University of Sheffield.
    - o 21-23 Mar 2016, Oliver Henrich, Poiseuille Flow of Cholesteric Liquid Crystals, Joint Conference of the British and German Liquid Crystal Societies, Edinburgh.

- Meetings:
    - o 23-24 Feb 2016, Andy Turner, PRACE WP6 F2F Meeting, EPCC, Edinburgh.
    - o 1 Mar 2016, Neelofer Banglawala, UKCTRF Management Meeting, Newcastle.
    - o 11 March 2016, Alan Simpson, HPC SAC Meeting, Imperial College, London.
    - o 14 Mar 2016, Andy Turner, National e-Infrastructure Project Directors' Group Meeting, Farr Institute, London.
    - o 17 Mar 2016, Andy Turner, EPSRC Consortia Chairs Meeting, MRC, London.
    - o 23 Mar 2016, Andy Turner, ARCHER RAP Meeting, EPSRC, Swindon.
    - o 24 Mar 2016, Gavin Pringle, eCSE F2F Meeting, Aeronautics Department, University of Glasgow.
    - o 29 Mar 2016, Gavin Pringle, eCSE F2F Meeting, Aeronautics Department, University of Glasgow.

4. Forward Look

- Parallel I/O Benchmarking:
  - Parallel I/O performance was identified as one of the key technical areas for the CSE tem to work on over the coming year. In particular, we want to understand how standard I/O benchmarks (such as IOR) relate to I/O patterns in real applications so that we can both monitor the I/O performance of ARCHER file systems in a realistic way and also provide input to future procurements on how to specify I/O benchmarks.
  - Work with user groups to identify a set of I/O benchmarks (both synthetic and real applications) that can be run across a variety of systems to provide an overview of parallel I/O technology performance. We are collaborating with other HPC services (JASMINE, DiRAC, Met Office), vendors and user communities to make this work as useful as possible.
  - Provide specific technical advice for ARCHER users on how to maximise their I/O performance on the service based on different usage modes.

- Training:
  - One course attendee gave a score of "very bad" for a recent course. From their more detailed feedback we believe this was due to a misunderstanding over the course content, although we have reviewed the course publicity and it was explicit about the content. Feedback is currently completely anonymous so we cannot follow this up any further. As a result, we are now including the option for attendees to enter contact details on the feedback form.
  - The new "Object Oriented Programming with Fortran" course was run for the first time. Although it attracted a relatively small class of 6 attendees, half of them gave it the highest rating of "excellent" and we are investigating running this course again in Q3.
  - An online Q&A session on user issues with MPI has been scheduled for Q2. The outcomes of this virtual tutorial will be used to inform the content of the new course on "Developing Scalable Scientific Applications with MPI" to be run in Q4.

- ARCHER Outreach
  - Best practice paper on "How to improve the representation of women at conferences" is currently in preparation.
  - We will hold Women in HPC workshops at ISC16, SC16 and in collaboration with EuroMPI 2016.
  - The second hands-on porting and optimisation workshop will run on 13 May at Imperial College, London.
  - The outreach material for the Teacher and Outreach Ambassadors pack is now being prepared, with anticipation of the material being released later in 2016.

- eCSE:
  - An analysis of available funds will be completed during the next quarter to determine if more person months are available for the next two calls, over and above the minimum of 672.
  - We are currently focused on utilising data provided in the eCSE final reports to demonstrate the impact and benefits of the eCSE and ARCHER service.
  - Each of the remaining 2 calls will be attended by up to 3 early career researchers who will observe the process of the Panel meeting

5. Contractual Performance Report

This is the contractual performance report for the ARCHER CSE Service for the Reporting Periods: January 2016, February 2016 and March 2016.

The metrics were specified by EPSRC in Schedule 2.2 of the CSE Service Contract.

CSE Query Metrics

- **QE1:** The percentage of all queries notified to the Contractor by the Help Desk in a Quarter that the Contractor responds to, and agrees a work plan with, the relevant End User within 3 working hours of receiving the notification from the Help Desk. *Service Threshold: 97%; Operating Service Level: 98%.*
- **QE2:** The percentage of all queries notified by the Help Desk to the Contractor that have been satisfactorily resolved or otherwise completed by the Contractor within a 4-month period from the date it was first notified to the Contractor. *Service Threshold: 80%; Operating Service Level: 90%.*
- **TA1:** The percentage of all technical assessments of software proposals provided to the Contractor by the Help Desk in any Service Period that are successfully completed by the Contractor within 10 days of the technical assessment being provided to the Contractor by the Help Desk. *Service Threshold: 85%; Operating Service Level: 90%.*
- **FB1:** The percentage of End User satisfaction surveys for CSE queries carried out in accordance with the Performance Monitoring System by the Contractor showing the level of End User satisfaction to be "satisfactory", "good" or "excellent". *Service Threshold: 30%; Operating Service Level: 50%.*

Period	Jan-16		Feb-16		Mar-16		Q1 2016	
Metric	Perf.	SP	Perf.	SP	Perf.	SP	Perf.	Total
QE1	100%	-2	100%	-2	100%	-2	100%	-6
QE2	100%	-2	100%	-2	100%	-2	100%	-6
TA1	100%	-1	100%	-1	100%	-1	100%	-3
FB1	100%	-2	100%	-2	100%	-2	100%	-6
Total		-7		-7		-7		-21

Pink – Below Service Threshold
Yellow – Below Operating Service Level
Green – At or above Operating Service Level

Of the ten feedback ratings received on In-Depth queries there were seven ratings of "Excellent" and three ratings of "Good".

Training Metrics

- **FB2:** The percentage of all training satisfaction surveys carried out in accordance with the Performance Monitoring System by the Contractor) in each Quarter that are rated "good", "very good" or "excellent". *Service Threshold: 70%; Operating Service Level: 80%.*

Period	Jan-16		Feb-16		Mar-16		Q1 2016	
Metric	Perf.	SP	Perf.	SP	Perf.	SP	Perf.	Total
FB2	100%	-1	100%	-1	98%	-1	100%	-3
Total		-1		-1		-1		-3

Pink – Below Service Threshold
Yellow – Below Operating Service Level
Green – At or above Operating Service Level

Service Credits

Period	Jan-16	Feb-16	Mar-16
Total Service Points	-8	-8	-8

6. CSE Queries

Queries Resolved in Reporting Period

Metric Descriptions

In-Depth	All technical queries passed to ARCHER CSE team
Course Registration	Requests for registration on ARCHER training courses or enquiries about registration
Technical Assessment: <Category>	Request for Technical Assessments of applications for ARCHER time
eCSE Application	Queries relating to eCSE applications

A total of 403 queries were resolved by the CSE service in the reporting period.

Metric	Jan-16	Feb-16	Mar-16	Total	% Total
In-Depth	5	13	13	31	8%
Course Registration	79	121	103	303	75%
Technical Assessment: Grant	4	2	8	14	3%
Technical Assessment: RAP	2	16	1	19	5%
Technical Assessment: Instant	2	0	2	4	1%
eCSE Application	9	23	0	32	8%

10 query feedback responses were received on In-depth queries in the reporting period. This represents a 32% return rate for feedback forms.

Resolved In-Depth queries fell into the following categories:

Category	Number of Queries	% Queries
3rd Party Software	14	45%
User Programs	5	16%
Compilers and system software	2	7%
Batch System and Queues	1	3%
Other	9	29%

In-Depth Query Highlights

A small number of In-Depth queries have been selected to illustrate the work of the centralised CSE team over the report period.

Q740265: Query - Job Activity
An experienced user and application developer was having issues with their application (CONQUEST, linear scaling DFT) not updating output files once a certain point in the simulation was reached. Debugging the issue was non-trivial as the application did not crash at the problem point but instead kept running, so had to be manually stopped to try and identify where the problem was coming from. The same calculation also ran fine on another HPC system, so it was unclear if the issue was with the application or with ARCHER software/hardware. The CSE team managed to identify that it was a subtle parallel bug in the code that was only exposed on ARCHER, and not on the other HPC system due to differences in the parallel runtime. A fix was provided back to the user and this was incorporated into the application for all users on ARCHER and beyond.

Q741917: CP2K Segmentation Fault Error
A user was seeing a crash in CP2K when they used a specific combination of settings for geometry optimisation calculations using Auxiliary Density Matrix Methods (ADMM). Analysis from the CSE

team revealed that the combination of options used in the calculations was invalid but that CP2K was not identifying them as such. The CP2K code was updated to catch this exception and print a useful error message (rather than just crashing) and the user was advised on alternative functionalities in CP2K that could be used for the calculations. The changes to CP2K were implemented on the version on ARCHER and fed back into the main source code to benefit all CP2K users worldwide.

Q743669: Install Fortran77 Code on ARCHER
A new user on ARCHER was having difficulty compiling their CFD application on ARCHER. After discussion with the user we resolved the issues they were having, primarily due to lack of experience with the ARCHER application development environment. We managed to improve the performance of the code by showing the user how to use system versions of key numerical libraries rather than their own versions. Finally, we also provided information on how to future-proof the application with regard to using the PETSc library as they were using an obsolete mechanism for including the PETSc routines. Both the additional pieces of advice will allow the application to be more portable and better performing on other HPC systems as well as on ARCHER.

In-Depth Query Analysis

The histogram below shows the time to resolution for In-Depth queries in the current reporting period. The median resolution time during this period is 2 weeks (median resolution time since 1 Jan 2014 is 2 weeks).
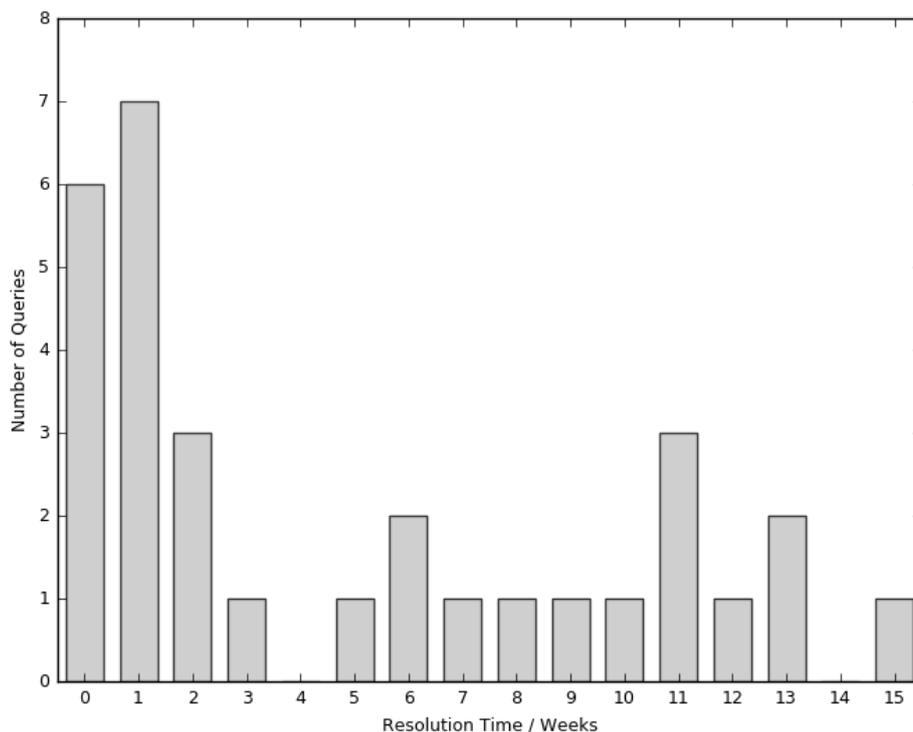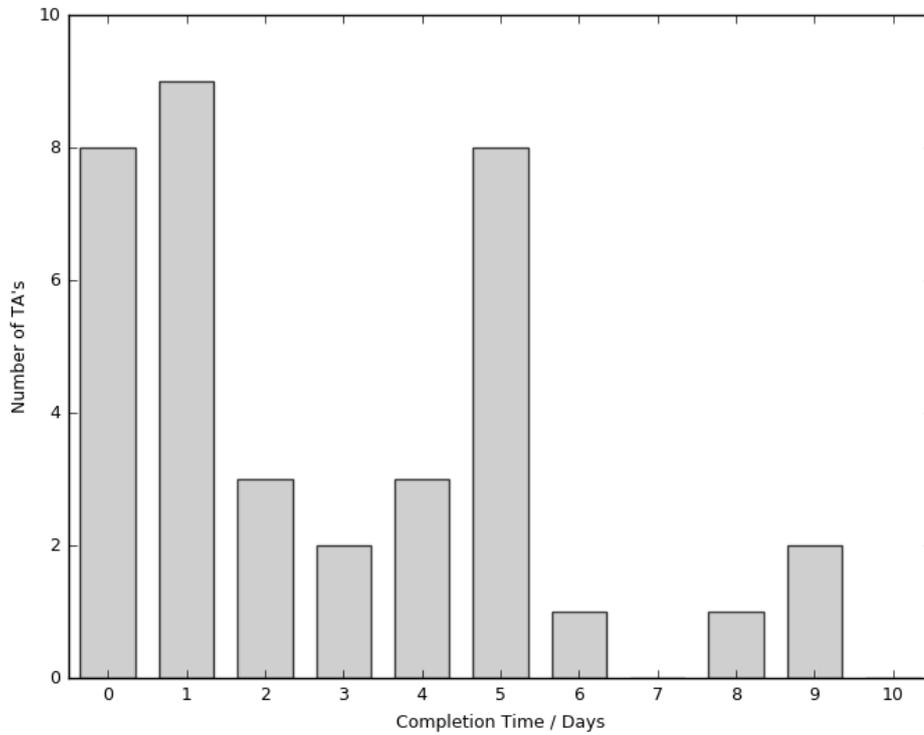
Plot of numbers of In Depth queries received per quarter:
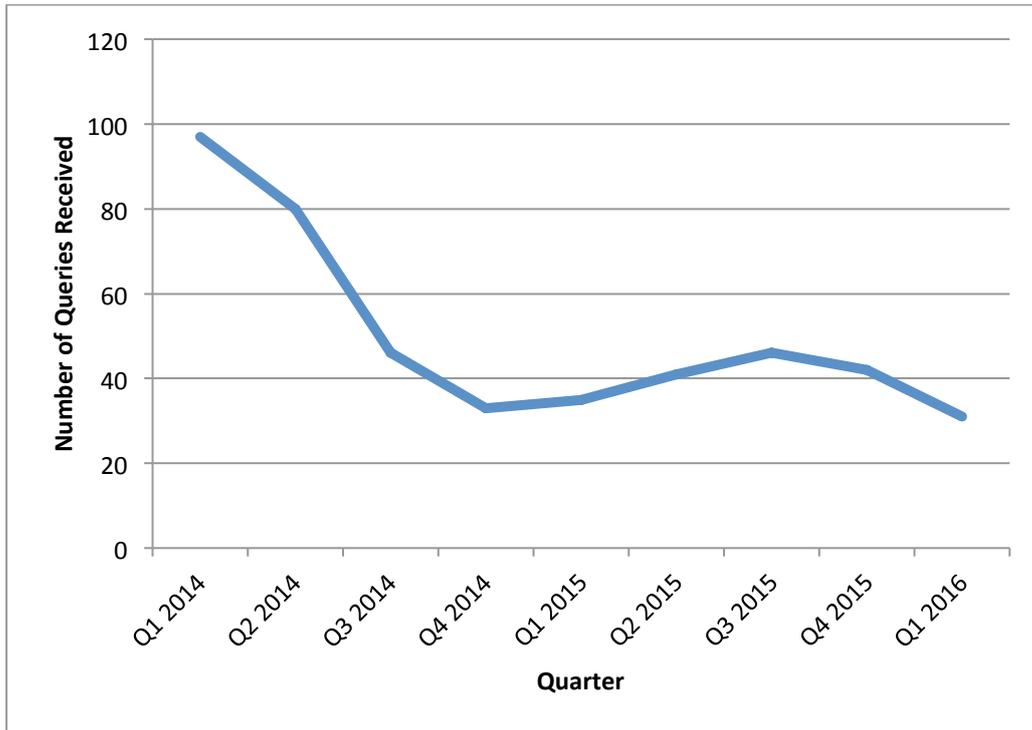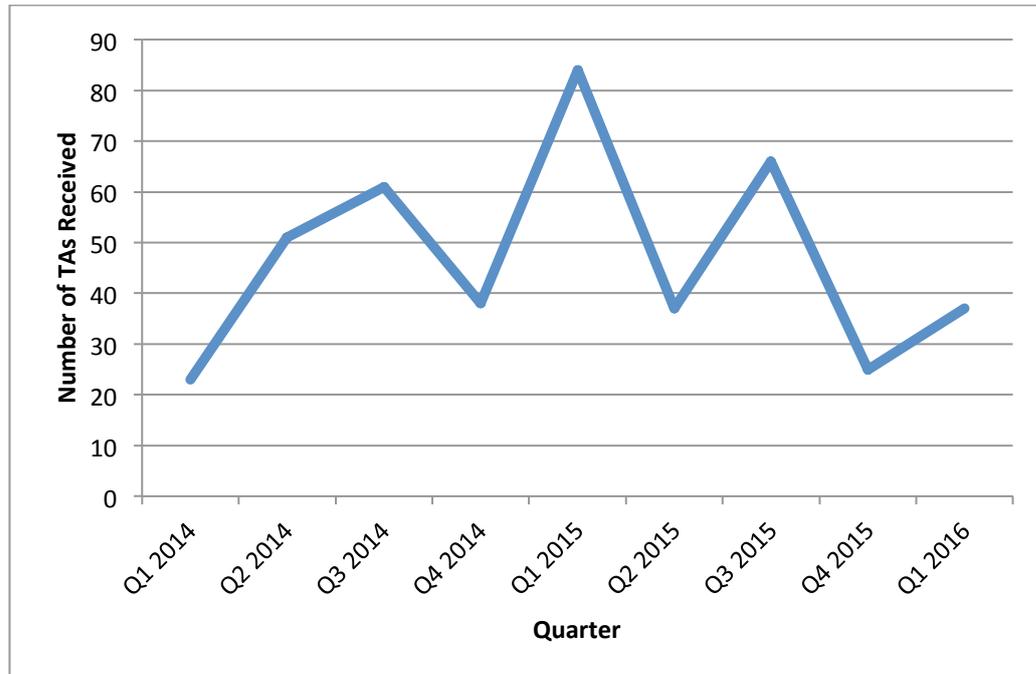
Technical Assessment Analysis

A histogram of the time to completion for Technical Assessments (see below) reveals that the median completion time for this quarter was 2 days (median completion time since 1 Jan 2014 is 3 days).

Plot of numbers of In Depth queries received per quarter:

7. Centralised CSE Team: Strategic Priorities

In collaboration with user groups and the other Service partners, the CSE service has identified a number of priority areas to invest technical effort from the centralised CSE team. The meetings identified three key areas and a number of additional areas.

This identification and prioritization process has a number of aims:
1. Ensure technical work undertaken by the centralised CSE team is of maximum benefit to the ARCHER user community.
2. Ensure that the CSE service partners effectively with other groups (e.g. Cray CoE, DiRAC benchmarking team) in any joint technical work to bring benefit to the ARCHER user community
3. Ensure that UK national HPC services have the best technical data on which to base procurement decisions

The three key areas identified are:

Parallel I/O Performance
HPC users and application developers often poorly understand parallel I/O performance in terms of:
- what "good" performance actually is on a particular file system;
- what a particular application does;
- what benchmarks illustrate.

We will run a number of benchmarks to understand I/O performance in production and make the results publically available. These benchmarks will include:
- Synthetic benchmarks: IOR (multiple models), EPCC I/O benchmark. This includes understanding how they relate to how users actually perform I/O.
- Application benchmarks: identify applications from the user community that are I/O bound in some way.

We will also identify a subset of benchmarks that can be run regularly (using the CI server) to build up statistical picture of performance variation in production. Finally, we will collaborate with other parties to compare performance for the benchmarks across different systems and technologies.

Understanding the ARCHER Application Landscape
Understanding which applications are used on ARCHER and by whom has a direct bearing on structuring the service in the best way for the user community and also on understanding what is required from any future national service. We already collect statistic on applications running on ARCHER and will extend this to collect:
- the libraries and compilers used, and how often users recompile applications;
- memory usage patterns;
- I/O usage patterns;
- energy usage by applications.

We will also analyse the dataset to understand if:
- the ARCHER procurement benchmarks still represent how the system is actually used currently;
- where the growth areas are for national HPC usage.

Assessing New HPC Technologies
One key question that we do not currently have a concrete answer to is: What performance can you get out of future processor/memory technologies from the major applications in use on ARCHER with the limited porting effort that users and developers usually have available when moving to a new HPC system.

This activity should more realistically represent the position when moving to a new HPC platform rather than the in-depth porting effort numbers that are quoted by vendors when promoting a new technology.

From this activity we should gain a broad overview of how much effort would be required for different communities to exploit future HPC platforms. We will collaborate with external parties to gain access to appropriate technology.

Other Areas

In addition to the three key areas above, a number of other areas were identified:

- Using autotuning frameworks to set compile/input options for applications;
- Using continuous integration servers to benchmark and profile applications ;automatically
- Uncertainty quantification in HPC applications;
- Using user-level containers on national HPC.

8. Training

In the reporting period, the CSE Service provided a total of 19 days (408 student-days) of face-to-face training across six different locations, and 1.5 days of interactive online tutorials (average attendance 21 per tutorial).

Month	Dates	Course	Location	Days	Attendees
Jan 2016	13	PBS job submission	Online	0.5	21
	14 - 15	Object Oriented Programming with Fortran	Culham	2	6
	19 - 20	Single Node Performance Optimisation	Swansea	2	17
	19 - 22	Ab initio Periodic Codes - Joint MCC-UKCP-EPCC Workshop	Daresbury	4	31
Feb 2016	10	ARCHER Programming Environment Update	Online	0.5	10
	16 - 17	Software Carpentry	Edinburgh	2	21
Mar 2016	9	OpenMP 4.0	Online	0.5	31
	10 - 11	Modern Fortran Programming	London	2	23
	14 - 15	Data Storage and Management	Edinburgh	2	7
	22 - 24	Message-Passing Programming with MPI	Southampton	3	32
	24 - 25	Software Carpentry	London	2	20

On the feedback for face-to-face courses, attendees rate the course on a scale of 1-5 ("Very bad", "Bad", "Good", "Very good" and "Excellent"). The average feedback using this metric was 4.3, i.e. better than "Very Good". Users provided 89 feedback forms, a response rate of 57%.
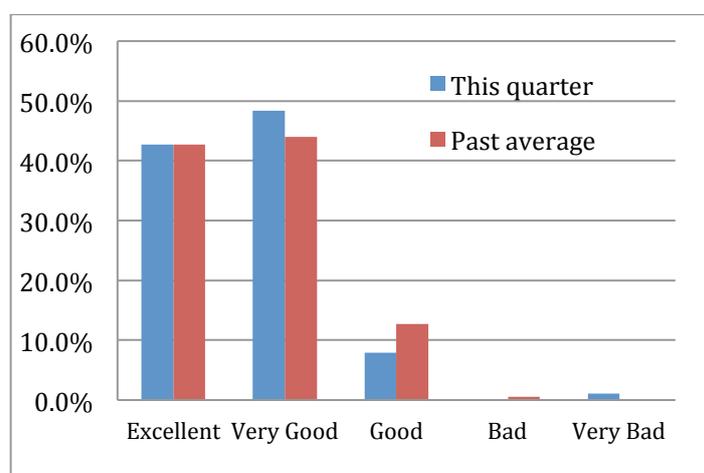
13 days of face-to-face training are planned for the next quarter, plus 1.5 days of online training.

Month	Dates	Course	Location	Days	Attendees
Apr 2016	6	Using MPI – Q&A Session	Online	0.5	
	11 - 12	Data Carpentry	London	2	
	12 - 14	Shared-Memory Programming with OpenMP	Southampton	3	
May 2016	4	Using the Data Analytics Cluster	Online	0.5	
	11 - 12	Shared-Memory Programming with OpenMP	Sheffield	2	
	12 - 13	Modern Fortran Programming	Leeds	2	
	19 - 20	Scientific Python	Liverpool	2	
Jun 2016	9	TBC	Online	0.5	
	9 -10	Software Carpentry	Belfast	2	

9. Outreach Project

Work Package 1: Diversity

Current/completed activities:
- Diversity in HPC (www.hpc-diversity.ac.uk)
  - Currently we have 7 interviews and 7 historical biographies available online.
- Women in HPC
  - Women in HPC has successfully applied to run one full-day workshop at SC16 (Salt Lake City, UT, November 2016), and a half-day workshop and BoF at ISC16 (Frankfurt, Germany, June 2016).

Future activities:
- How to improve the representation of women at conferences: the outcome of the discussions at SC15 are currently being merged with best practices as discussed in literature to a best practice and experience paper to be shared with the Women in HPC community as well as being made available on the HPC diversity website.
- Planning for the Women in HPC workshops and BoFs is now underway.

Work Package 2: User Engagement and Skills Development

Current/Completed activities:
- ARCHER Champions:
  - ARCHER Champions was held on 16-17 March 2016.
  - We invited 11 people based on the previous teleconference meeting held in November, and we also provided an open application procedure including the opportunity to apply for travel and accommodation bursaries. A total of 26 people registered, of whom 23 actually attended.
  - The Champions event included the following sessions:
    - Overview of ARCHER as a National resources, when ARCHER should be used and how it fits into the National HPC Infrastructure.
    - Views from regional HPC services on providing a coherent HPC infrastructure.
    - Migrating to ARCHER: common issues encountered.
    - ARCHER training
    - SAFE demonstration
    - Outreach activities and becoming and HPC Outreach Ambassador
    - The eCSE Programme
    - ARCHER Support structure: how do we assist users.
    - Access routes to ARCHER
  - The final focus of the meeting was discussion, ensuring that we understand how the Champions programme can be taken forward, how often meetings should be, and where they should be located.
  - Feedback from the event indicated that all who attended were engaged and would like to stay involved in the Champions programme. In the feedback form attendees provided the Champions event with an average score of 4.2 out of a possible 5.0.
  - Attendee feedback requests that we run either annual or twice per year events.

Future activities:
- The second hands-on porting and optimisation workshop will run on 13 May at Imperial College, London.

Work Package 3: Outreach Programme

Current/Completed activities:
- The ARCHER outreach team attended the Big Bang Fair at the NEC in Birmingham between 14 and 19 March 2016.

- o Over 80,000 people registered for the Big Bang Fair.
- o The ARCHER booth had three activities:
  - Using the Design-a-Supercomputer game on iPads to learn about what components are in an HPC system, how to manage a machine, and the tradeoffs between components.
  - Wee ARCHIE and the dinosaur simulator.
  - Post sorting: how your mail is sorted and how this can be implemented as a pipeline and in parallel.
- o Seven ARCHER staff worked on the ARCHER booth as demonstrators over the course of the event..
- o Over the four days, we had over 2590 recorded direct interactions with children through the activities, and we estimate that we spoke to at least another 3000 children who did not directly interact with the activities.
- Teacher and outreach ambassadors pack:
  - o Work has now begun on the teacher and outreach ambassadors packs. We are liaising with schools to ensure that the teacher material compliments the curriculum, and have started to engage the ARCHER Champions community with the outreach ambassadors program.

Future activities:
- National outreach activities designed to reach a wide geographical distribution of schools and children.
  - o We plan to obtain accreditation from the Children's University for our on-line outreach material. This nationwide scheme operates a credit-based passport scheme and should provide benefit to schoolchildren on a nationwide level.
  - o We plan to attend the Big Bang Fair again in 2017 to maximize our return on investment to discuss HPC with the general public.
- Teacher pack:
  - o This will be produced over the next 6 months.
  - o Teacher support forum and tutorials – 2016/17
  - o Teacher's workshop – mid/late 2016.
- Outreach Ambassadors:
  - o The outreach ambassadors pack is now in development and we anticipate holding our first training session in Q3 of 2016.
- Online outreach resources: to be developed alongside the outreach pack.

## Work Package 4: Impact Material

Current/Completed activities:
- ARCHER case studies: seven completed.
- Annual impact and success report is currently in progress, and will include the successes and scientific impact of ARCHER on the UK and international research community.

Future activities:
Continuing programme of case study development from a variety of sources, including eCSEs, image and impact competitions, and Consortia.

10. Embedded CSE (eCSE)

Overview of eCSE Effort
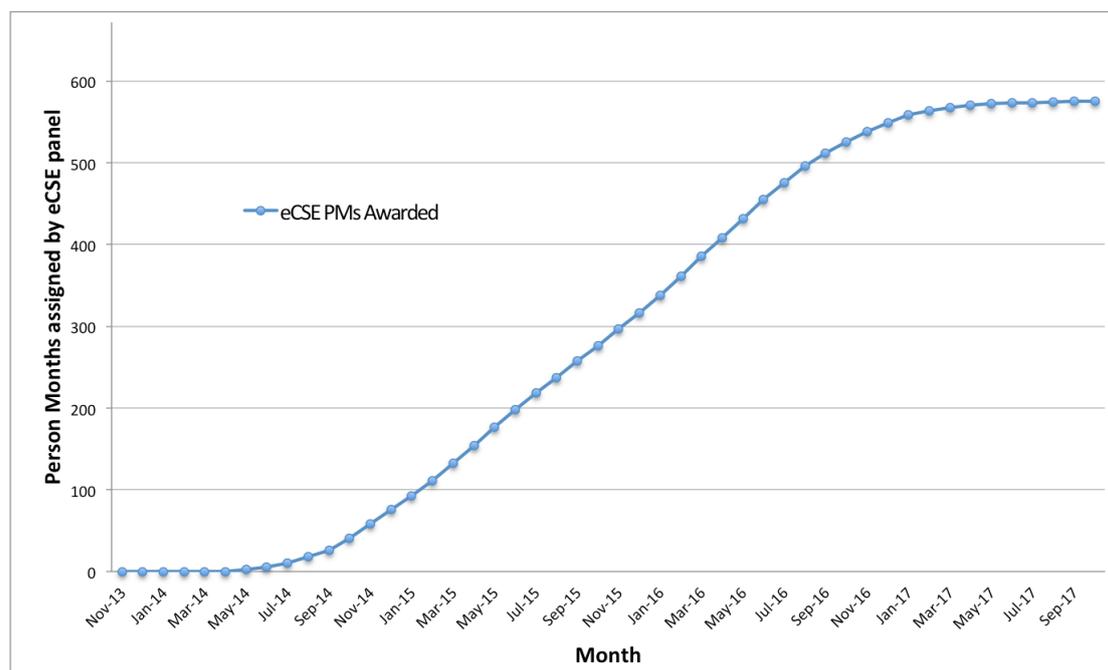
- The eCSE person months awarded up to and including the 7th eCSE call are shown in blue.
- At least 672 person months will be awarded by the end of the project (14 FTEs for 4 years).
- 582 person months have been awarded so far over 59 awarded eCSE projects.

eCSE Call 1

- 12 of the 14 projects have completed with 11 final reports received. One report is presently overdue and is been pursued.
- Of the running projects, a risk analysis identified all projects as being of either low or very low risk apart from eCSE01-019 that was considered to be of medium risk due to difficulties in agreeing staffing for the project.
  - This project is now almost complete and is being monitored via the eCSE contact within the centralised CSE team. The project is progressing well.

eCSE Call 2

- 8 of the 9 projects have completed with 3 final reports received. 3 overdue final reports are being pursued.
- Of the running projects, a risk analysis identified all projects as being of either low or very low risk apart from eCSE02-11 which was considered of medium risk due to the original named member of technical staff leaving the project and a new member of staff being recruited.
  - The staffing for this changed for a second time and the activity has recommenced with a member of the UCL Research Software Development group taking on the work. The project will be monitored via the eCSE contact within the centralised CSE team.

eCSE Call 3

- All 10 projects have started; 6 of these have now completed.
- Of the running projects, a risk analysis identified all projects as being of either low or very low risk apart from eCSE03-8 which was identified as being of medium risk due to the challenging nature of completing the work within the given timescale.
  - o This project was monitored and has now completed. The project appears to have gone well with plans for the resulting code to be contributed to the libsupermesh library.

eCSE Call 4

- All 8 projects have started with 3 completed.
- A risk analysis identified all projects as being of either low or very low risk apart from the following:
  - o eCSE04-4 which was identified as being of medium risk as the person named to do the technical work was offered a position elsewhere.
    - The member of staff originally named on the contract completed 1.5 of the 12 months of work before leaving to take up another post. With approval from the PI and eCSE Panel chair, we identified a new member of staff within the ARCHER CSE team who took on the work from 01/10/15.
  - o eCSE04-10 which was identified as being of medium risk as the PI indicated that the person named to do the technical work might not be available.
    - This project will go ahead with the original staffing. There was a short delay to the start of the project which started on 01/01/16
  - o eCSE04-16 which was identified as being of medium risk as the PI indicated that the person named to do the technical work might not be available.
    - This project started on 01/9/15 with a change of staffing. This project was originally to be staffed by Imperial College but will now be staffed by STFC. The PI and Panel chair have approved this arrangement.

eCSE Call 5

- All 8 projects have started.
- A risk analysis identified all projects as being of either low or very low risk.

eCSE Call 6

- 5 of the 6 projects have now started.
- A risk analysis identified all projects as being of either low or very low risk.

eCSE Call 7

- The call closed on 19/01/16 receiving 16 proposals requesting a total of 167 person months.
- 5 projects were accepted at the Panel meeting on 14/03/16; all apart from one will start in the next quarter.

eCSE Call 8

- The eCSE08 call opened on 29/04/16 and closes at on 10/05/16.
- Improvements have been made to the proposal form and associated guidance with regard to requesting information about any previously funded eCSE projects the PI may have had. Applicants are now requested to provide the previous final report(s) or, as a

minimum, given sections of said report(s). Applicants are also requested now to justify their choice of application where there are multiple applications available for a given task.

Future eCSE Calls

- eCSE calls are run to a regular schedule. The future calls are:
    - eCSE08: opened Tuesday 29/03/16 and closes at 4pm on 10/05/16;
    - eCSE09: opens Tuesday 02/08/16 and closes at 4pm on 13/09/16.