ARCHER2 Quarterly Report

April – June 2023

EPCC

The University of Edinburgh

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ARCHER 2 Quarterly Report

This section of the report covers the period April 2023 – June 2023 for the ARCHER2 service.

ARCHER2 Executive Summary

- The main focus for the CSE team has been the Papaya+ system software upgrade that HPE applied to ARCHER2 in early June. CSE had a significant role in both testing the Papaya+ software stack in advance on the TDS, plus reapplying localisations (e.g., centrally supported software, documentation, performance benchmarking) after the upgrade was completed.
- CSE's automated testing of the functionality and performance of ARCHER2 has been extended to include filesystem I/O performance. This testing exercises different measures of file-system performance and allows comparison of current performance with historical performance to help early identification of any potential deterioration in performance.
- The CSE team had a strong representation at the Cray User Group meeting in Helsinki, in May, including a talk and BoF highlighting the work of the team carried out as part of the UKRI Net Zero Digital Research Infrastructure Scoping Project around energy efficiency and energy-based charging.
- Juan Rodriguez Herrera has been elected as Director at Large on the CUG Board of Directors, a position that allows ARCHER2 to take a leadership role in engaging with other large-scale HPC sites and to benefit from community best practice.
- We have published three case studies this quarter highlighting science carried out on ARCHER2 by our users. These included the very topical 'Predicting airborne pathogen spread indoors', 'Coral reef connectivity in the southwest Indian Ocean', and 'Flow within and around a large windfarm'.
- CSE have received 106 positive user feedbacks to queries and have donated £106 to our selected charity Save the Children, £1 per piece of feedback received.
- The eCSE call 10 (eCSE10) closed on 13 June 2023 receiving 5 proposals of which 4 were funded. One early career observer attended the eCSE10 panel meeting on 29 June 2023.
- A total of 16 days of online and face-to-face training have been delivered this second quarter of the calendar year. Three of those days were aligned with EPCC's HPC Summer School.
- Through Women in HPC, the CSE team helped provide a full program of EDI activities at the ISC'23 conference including the exhibitor takeover, diversity day and the WHPC poster session.
- The ARCHER2 service will host three summer students for 3 weeks in July and August. These students are upper secondary children looking at careers in computational science and computing. The studentships are Nuffield Research Placements which are funded by the Nuffield Foundation with support from UKRI.
- The outreach team had a booth at the Edinburgh Science Festival and hosted drop-in sessions at the National Museum of Scotland from 10-13 April. Our aim was to highlight the benefit of supercomputing to society, whiling encouraging an interest in computational science.
- The team also hosted a booth at the Big Bang Fair (BBF) at the NEC in Birmingham from Wednesday 21st to Friday 23rd of June. This was an excellent opportunity to reach large numbers of schoolchildren and demonstrate core concepts in computing.
- The CSE team was actively involved in a recent major incident test, the scenario testing the robustness of the major incident processes. The service performed well with the test provided, with areas for improvement also identified.

ARCHER2 Forward Look

- During this quarter, CSE will continue to support HPE in resolving two outstanding Papaya+ software upgrade related issues (kernel memory leak and application performance).
- The training team have identified improvements to the Modern C++ for Computational Science course, which will be implemented before the next run of the course (likely end-2023). This includes splitting the course into an introductory course and a more advanced course.
- The team will have a booth at RSECon23 and are currently preparing appropriate material for the event, including material to highlight access mechanisms and opportunities for RSEs on the ARCHER2 service. This includes leaflet-style flyers to publicise the eCSE programme, the training programme, access routes and best practice in outreach.
- Work is ongoing to prepare for our annual ISO external audit. This year we have surveillance audits for quality service delivery (ISO 9001), information security (ISO 27001) and business continuity and disaster recovery (ISO 22301). Having the annual external audit from our ISO certification body, DNV, helps to ensure we deliver a high level of service and identify further service improvements.
- eCSE call 12 has recently completed. The recent software upgrade likely impacted on the number of proposals for this call, however the team is looking to ensure that the programme is publicised widely and that we provide appropriate support to applicants for future calls.
- eCSE call 11 (eCSE11) opens on 5 September 2023 and another early career observer call will open alongside the eCSE call.
- CSE is expecting to roll out the Spack package-management system in the next reporting period to streamline and automate the management of centrally supported software.
- The training team is currently porting the ARCHER2 self-service courses to a new shareable format that allows collaborative editing.
- Preparations are underway for the International HPC Summer School which, this year, will be held in Atlanta. The CSE service are teaching the MPI and the accelerator programming track.
- Wee Archie has proved to be a very popular and successful outreach tool. We are currently in the process of designing Wee Archie V2, which will incorporate greater monitoring of performance and power, to enhance the learning experience for attendees.

ARCHER2 Centralised CSE Team

The main focus for CSE's activities during the period has been the Papaya+ system software upgrade that HPE applied to ARCHER2 in early June. CSE had a significant role in both testing the Papaya+ software stack in advance on the TDS, plus reapplying localisations (e.g., centrally support software, documentation, performance benchmarking) after the upgrade was completed. The activity progressed well though CSE continue, at the time of writing, to support HPE in resolving two outstanding upgrade-related issues (kernel memory leak and application performance).

Despite this, CSE has been able to make good progress on a number of service-improvement activities (see below) and to continue to engage with the wider HPC and scientific-computing communities.

The CSE team were well-represented at the CUG 2023 conference (7—11 May, Helsinki), delivering talks on the ARCHER2 service and leading topical discussions:
- Andy Turner, Alan Simpson, Adrian Jackson, "Improving energy efficiency on the ARCHER2 UK National Supercomputing Service"
- Juan Rodriguez-Herrera, "Programming Environments, Applications, and Documentation (PEAD)"
- Alan Simpson and Juan Rodriguez-Herrera led a Birds of a Feather session on "Energy-based allocations and charging on large scale HPC systems"
- Wenqing Peng, Adrian Jackson, and Evgenij Belikov, "Assessing Memory Bandwidth on ARCHER2 and LUMI Using CAMP"
- Shrey Bhardwaj, Paul Bartholomew, and Mark Parsons, "Hiding I/O using SMT on the ARCHER2 HPE Cray EX system"

At the end of the CUG conference, we were pleased to hear that CSE member Juan Rodriguez Herrera was elected as the Director at Large on the CUG Board of Directors.

Juan Rodriguez Herrera also organised a mini-symposium at PASC 2023 "MS2H - Research Software Engineers (RSEs) in HPC".

The team welcomed Evgenij Belikov, who joined from June, replacing Julien Sindt who moved on to work in the Commercial Group in EPCC.

Following on from last-period's report, James Richings continued to work with Oliver Brown to scale up a quantum state vector simulation. Soon after the ARCHER2 upgrade, they were able to complete a 44-qubit simulation, employing 4,096 compute nodes, as part of capability-scale testing. This is likely to be one of the largest quantum state simulations ever completed.

Continual Service Improvement (CSI) Projects

ARCHER2 GPU Evaluation
The CSE work to evaluate the AMD GPU platform, completed during the previous reporting period, has now been published (Bareford et al., "Emerging technologies: an AMD MI250X GPU-based platform for HPC applications" (March 2023), 10.5281/zenodo.7752810.

ARCHER2 Reframe Enhancements
The Reframe test suite, which provides automated testing of the functionality and performance of ARCHER2, has been extended to include filesystem monitoring. Initially, based on BenchIO tests, one can measure topical performance of each of the work filesystems (including the NVMe-based filesystem) and compare to historic performance to help early identification of any potential deteriorations. Going forward, CSE is looking to expand the filesystem monitoring to include tests from the IO500 suite to exercise different measures of filesystem performance.

Support for Continuous Integration
In response to user feedback, the CSE team is trialling a Continuous Integration mechanism, which allows a user to link a Git repository to ARCHER2 and automatically test software updates (that is, commits) to the repository on ARCHER2. The current trial is based around the GitLab service, but it is intended to expand to GitHub and other comparable v/c systems in due course. The work will be presented to users via documentation and a webinar in the coming weeks.

Spack
Work has continued to evaluate the suitability of Spack for the ARCHER2 service (Spack is a package-management system, which has the potential to streamline and automate the deployment of supported (and user-managed) applications on ARCHER2. See:

https://www.archer2.ac.uk/training/courses/200617-spack-easybuild/).

Recent enhancements to Spack for the EX platform have allowed the CSE team to deploy a test version on ARCHER2 (initially, private to CSE) and this will be evaluated by the CSE team over the next couple of months, with an aspiration to move into production later in the year.

ARCHER2 Performance Report

This is the performance report for the ARCHER2 CSE Service for the Reporting Periods from April 2023 – June 2023.

The metrics were specified by EPSRC in Schedule 2.2 of ARCHER2 CSE Service Contract.

CSE Query Metrics

- **ARCHER2_CSE_Level1 (MTR)**: The Median Time to Resolution, as measured by Working Days (WDs), of all CSE queries falling within Level 1 resolved by the Contractor in the Reporting Period. *MTR applicable to OY3: Service Threshold: >4.2 WD; Operating Service Level: >1.2 WD, ≤2.2 WD.*
- **ARCHER2_CSE_Level2 (MTR)**: The Median Time to Resolution, as measured by Working Days (WD), of all CSE queries falling within Level 2 resolved by the Contractor in the Reporting Period. *MTR applicable to OY3: Service Threshold: >26 Working Days (WD); Operating Service Level: >11 WD, ≤16 WD.*
- **ARCHER2_CSE_Level3 (MTR)**: The Median Time to Resolution, as measured by Working Days (WD), of all CSE queries falling within Level 3 resolved by the Contractor in the Reporting Period. *MTR applicable to OY3: Service Threshold: >57 Working Days (WD); Operating Service Level: >27 WD, ≤37 WD.*
- **ARCHER2_CSE_TA (%):** The percentage of the total number of Technical Assessments (TAs) assigned to the Contractor in the Reporting Period completed prior to the commencement of the applicable TA Target Completion Date after the assignment of such Technical Assessment to the Contractor. *TA Target Completion Date in OY3: 7 WD; Service Threshold: <90.00%; Operating Service Level: 95.00-97.49%.*
- **Initial Response to Queries (%):** The percentage of the total number of CSE queries assigned to the Contractor in the Reporting Period responded to within 3 Working Hours. *Service Threshold: <96.00%; Operating Service Level: 98.00 – 98.99%.*
- **Query User Satisfaction (%):** The percentage of the total number of query satisfaction surveys completed in each Reporting Period, rating the quality of the resolution of Queries by the Contractor as "Good", "Very Good" or "Excellent". *Operating Service Level: 82.00 – 87.99%.*
- **Training User Satisfaction (%):** The percentage of all training satisfaction surveys completed in each Service Period, rating the Contractor as "Good", "Very Good" or "Excellent". *Operating Service Level: 88.00%-92.99%.*

Metric	April 2023		May 2023		June 2023		Q2 2023	
	Perf	Points	Perf	Points	Perf	Points	Perf	Points
ARCHER2_CSE_Level1 (MTR)	0.1WD	-2	0.1WD	-2	0.1WD	-2	0.1WD	-6
ARCHER2_CSE_Level2 (MTR)	0.8WD	-2	1.4WD	-2	0.4WD	-2	0.8WD	-6
ARCHER2_CSE_Level3 (MTR)	13WD	-2	19WD	-0.5	18WD	-0.5	18WD	-3
ARCHER2_CSE_TA (%)	100%	-1	100%	-1	100%	-1	100%	-3
Initial Response to Queries (%)	100%	-1	100%	-1	100%	-1	100%	-3
Query User Satisfaction (%)	100%	-2	100%	-2	100%	-2	100%	-6
Training Satisfaction (%)	96.15%	-0.25	100%	-1	100%	-1	97.5%	-2.25
Total		-10.25		-9.5		-9.5		-29.25

106 query feedback responses were received on query resolution in the Reporting Period. 100% of responses had a score of "Good", "Very Good" or "Excellent".

ARCHER2 CSE Queries

This section provides details on ARCHER2 CSE queries during the Reporting Periods from April 2023 – June 2023.

CSE Query Statistics

The metrics were specified by EPSRC in Schedule 2.2 of ARCHER2 CSE Service Contract.
- **Assigned:** The number of CSE queries assigned to the Contractor within each query resolution category in the Reporting Period.
- **Resolved:** The number of CSE queries resolved by the Contractor within each query resolution category in the Reporting Period.
- **Backlog:** The number of CSE queries assigned to the Contractor that remained unsolved within each query resolution category in the Reporting Period
- **Correspondence:** The average number of pieces of correspondence generated for CSE queries in each query resolution category.
- **First Response:** The average time taken for the Contractor to first respond to the Originator of the CSE query.

April 2023					
Service level	Assigned	Resolved	Backlog	Correspondence	First Response
ARCHER2_CSE_Level1	75	74	1	3	0.3h
ARCHER2_CSE_Level2	42	45	21	14	0.3h
ARCHER2_CSE_Level3	2	2	3	64	0.3h
ARCHER2_CSE_TA	3	4	2	10	0.7h
May 2023					
Service level	Assigned	Resolved	Backlog	Correspondence	First Response
ARCHER2_CSE_Level1	23	23	1	4	0.4h
ARCHER2_CSE_Level2	31	43	9	15	0.3h
ARCHER2_CSE_Level3	1	3	1	60	0.5h
ARCHER2_CSE_TA	33	34	1	10	0.4h
June 2023					
Service level	Assigned	Resolved	Backlog	Correspondence	First Response
ARCHER2_CSE_Level1	30	31	0	3	0.3h
ARCHER2_CSE_Level2	126	92	43	12	0.2h
ARCHER2_CSE_Level3	0	1	0	15	0.7h
ARCHER2_CSE_TA	9	7	3	14	0.4h
Q2 2023					
Service level	Assigned	Resolved	Backlog	Correspondence	First Response
ARCHER2_CSE_Level1	128	128	0	3	0.3h
ARCHER2_CSE_Level2	199	180	43	13	0.3h
ARCHER2_CSE_Level3	3	6	0	54	0.5h
ARCHER2_CSE_TA	45	45	3	11	0.4h

CSE Query Categories

A total of 359 queries were resolved by the ARCHER2 CSE service in the Reporting Period. Resolved CSE queries in the Reporting Period fell into the following categories:

Service level	Category	Number resolved	% Queries
ARCHER2_CSE_Level1	Courses	128	35.7%
ARCHER2_CSE_Level2	3rd party software	61	17.0%
	Software errors	21	5.8%
	Batch system and queues	18	5.0%
	Software installation	18	5.0%
	Login, passwords and ssh	14	3.9%
	Compilers and system software	13	3.6%
	eCSE applications/calls	9	2.5%
	Data transfer	7	1.9%
	Storage and compute resources	6	1.7%
	Access to services	5	1.4%
	Other: Queries which do not fit within other categories	4	1.1%
	Porting, performance and scaling	3	0.8%
	Courses	1	0.3%
ARCHER2_CSE_Level3	3rd party software	6	1.7%
ARCHER2_CSE_TA	Access to HPC	31	8.6%
	Pump-priming	8	2.2%
	UKRI Grant	3	0.8%
	Fellowship	3	0.8%
Total		359	100.0%

ARCHER2 Training

As part of ARCHER2, the service has been developing and delivering a training programme for the ARCHER2 community, both online and in person. During the second quarter of 2023, the CSE service has provided a total of 16 days of training, 8 of which were in person and 8 online. These were scheduled as follows:

Dates	Course	Location*	Days	Attend
5 Apr	The Science behind the Image Competition #2	Online	0.5	17
11 Apr	ARCHER2 for Data Scientists	Online	1	6
11-12 Apr	HPC Carpentry	Napier	2	25
17-20 Apr	Modern C++ for Computational Scientists	Online	2	26
24-28 Apr	Data Carpentry	Online	2	28
24-28 Apr	Modern C++ for Computational Scientists	Online	2	20
24 May	Scientific Computing with Rust	Online	0.5	78
6-7 Jun	Data Carpentry	HWU	2	15
7 Jun	ARCHER2 User Forum	Online	0.5	28
26-27 Jun	Software Carpentry	UoE	2	14
28 Jun	HPC Carpentry	UoE	1	13
28 Jun	Introduction to Bash	Online	0.5	29

(*) Napier: Edinburgh Napier University; HWU: Heriot-Watt University, Edinburgh; UoE: University of Edinburgh.

The last two courses (Software Carpentry and HPC Carpentry) were run in conjunction with the EPCC's HPC Summer School, a five-week programme aimed at undergraduate students in computing science, software engineering, mathematics, physics, and environmental science from UK universities, with participants ranging from first year to final year. The HPC Summer School students are also enrolled in the *Message-Passing Programming with MPI* and *Shared Memory Programming with OpenMP* self-service courses.

Juan Rodriguez Herrera participated in the HPC Days meeting (Durham 16th—19th May), delivering a talk titled "Training design and delivery: ARCHER2 and UNIVERSE-HPC".

The training team have identified improvements to the Modern C++ for Computational Science course, which will be implemented before the next run of the course (likely end 2023). This includes splitting the course into an introductory course and a more advance course.

On the feedback for online 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 4.2, i.e., better than "Very Good". Users provided 46 responses, a response rate of 31%.
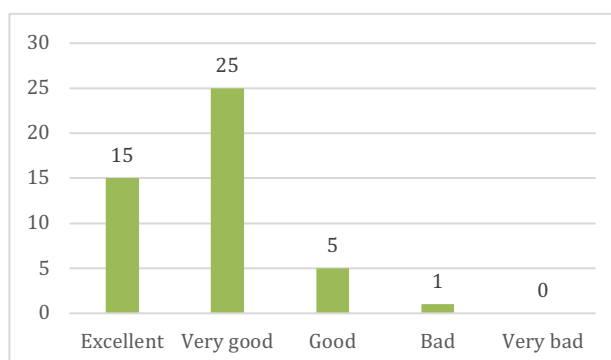
ARCHER2 Embedded CSE Programme (eCSE)

Call 12 has recently completed. The recent software upgrade likely impacted on the number of proposals, however the team is looking to ensure that the programme is publicised widely and that we provide appropriate support to applicants for future calls.

- eCSE calls 1-10
    - Call 10 (eCSE10) opened on 18 April 2023. The deadline for submitting documents for technical evaluations was 23 May 2023 and the final deadline for proposal submission was 13 June 2023. The call received 5 technical evaluations followed by 5 proposals requesting a total of 59 person months.
    - The eCSE10 panel meeting was held on 29 Jun 2023 and the panel awarded 4 projects a total of 44 person months
        - This includes 2 projects accepted conditionally, one on condition of proving further technical information and one on condition of accepted a reduced number of PMs due to some of the proposed work being of a research nature and thus ineligible.
- For call 1 and from call 5 onwards, only proposals with software within the EPSRC remit have been eligible.
- We plan to open call 11 (eCSE11) on 5 September 2023, closing for technical evaluations on 3 October 2023 with final proposals due on 24 October 2023.

eCSE call	Call Dates	# Technical Evaluations Received	# Proposals Received (EPSRC,NERC)	# PM requested (EPSRC, NERC)	# Proposals accepted (EPSRC, NERC)	# PMs Awarded (EPSRC, NERC)
eCSE01	19/05/20 - 07/07/20	25	25 (25,0)	235 (235,0)	13 (13,0)	132 (132,0)
eCSE02	08/09/20 - 27/10/20	13	12 (9,3)	107 (87,20)	7 (4,3)	53 (33,20)
eCSE03	08/12/20 - 16/03/21	15	14 (10,4)	136 (105,31)	8 (6,2)	73 (54,19)
eCSE04	20/04/21 - 08/06/21	13	12 (9,3)	109 (83,26)	7 (4,3)	60 (37,23)
eCSE05	07/09/21 - 26/10/21	10	9 (9,0)	85 (85,0)	5 (5,0)	47 (47,0)
eCSE06	09/12/21 - 15/03/22	7	6 (6,0)	61 (61,0)	5 (5,0)	49 (49,0)
eCSE07	19/04/22 - 14/06/22	13	10 (10,0)	77 (77,0)	7 (7,0)	55 (55,0)
eCSE08	06/09/22- 25/10/22	17	12(12,0)	144 (144,0)	7 (7,0)	80 (80,0)
eCSE09	06/12/22- 14/03/23	12	12(12,0)	146 (146,0)	6 (6,0)	67 (67,0)
eCSE010	18/04/23 - 13/06/23	5	5 (5,0)	59 (59,0)	4 (4,0)	44 (44,0)
Total		**130**	**117 (107,10)**	**1159 (1082,77)**	**69 (61,8)**	**660 (598,62)**

The graph below shows the current person months awarded to eCSE projects to date (blue line) along with the number to be awarded up until the end of the ARCHER2 service including the extension to November 2025 (orange line).

eCSE person month spend against time
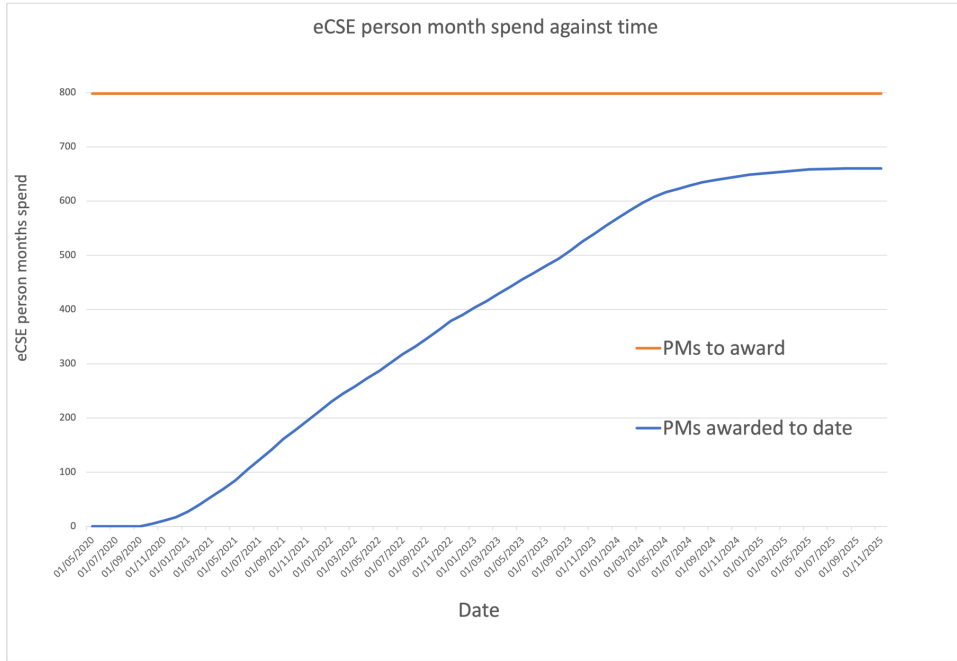
ARCHER2 Community Engagement, Outreach, Collaboration and Impact

Impact

Effort this quarter has focused on producing new case studies to showcase the science on ARCHER2. In addition, the team has continued to publish blogs ranging from science highlights to technical articles for the community. In particular:

- We have published five blogs this quarter including pieces from our image competition entries and one on simulating quantum circuits on GPUs.
- We have published three case studies this quarter highlighting science carried out on ARCHER2 by our users. These included the very topical 'Predicting airborne pathogen spread indoors', 'Coral reef connectivity in the southwest Indian Ocean', and 'Flow within and around a large windfarm'.

Community and Outreach Activities

Edinburgh Science Festival

The team had a booth at the Edinburgh Science Festival and hosted drop-in sessions at the National Museum of Scotland from 10-13 April. The event was busy and successful, with a constant flow of engaged participants. Our aim was to highlight the benefit of supercomputing to society, while introducing some early computational concepts to young people and encouraging an interest in computational science. Participants were able to take part in hands-on activities around switches and circuits, around binary numbers, and around machine hardware. ARCHER2 postcards proved popular, generating interest in the science on ARCHER2.

Big Bang Fair

The team also hosted a booth at the Big Bang Fair (BBF). BBF is one of the country's largest STEM education events, giving us an excellent opportunity to reach large numbers of schoolchildren over three hectic but fun days. Our activities are designed to draw in a wide audience while demonstrating core concepts in computing, and especially to appeal to those who may have little initial knowledge in the subject. Held in the NEC in Birmingham from Wednesday 21st to Friday 23rd of June, the booth was very busy, with our logic puzzles providing an interesting challenge for attendees.

Wee Archie V2

Wee Archie has proven to be a very popular and successful outreach tool. We are currently in the process of designing Wee Archie V2 (not necessarily the final name), which will incorporate greater monitoring of performance and power, to enhance the learning experience for attendees. The system will also host a GPU as well as CPU option, which can demonstrate the benefits and issues of different types of hardware.

Nuffield Research Placement Students

The ARCHER2 service will host three summer students for 3 weeks in July and August. These students are upper secondary children looking at careers in computational science and computing. The studentships are Nuffield Research Placements which are funded by the Nuffield Foundation with support from UKRI and delivered by STEM Learning. See:

https://www.stem.org.uk/research-placements

Diversity and Inclusivity

Women in HPC

The CSE service has been very active in organising and running the WHPC activities at the ISC'23 conference in Hamburg. In particular, we helped to organise the WHPC on-site programme at ISC (https://womeninhpc.org/events/isc-2023) including the exhibitor takeover, diversity day and the WHPC poster session. Eleanor Broadway served as the WHPC ISC'23 mentoring chair. Additionally, Eleanor has accepted the role of the submission co-chair for the WHPC workshop at SC'23.

ACM SIGHPC Education Chapter – Global Seminar Series

Juan Rodriguez Herrera gave a talk at the new global seminar series focused on HPC teaching, training, and outreach around the world. This was titled 'Three years of the ARCHER2 training service – a retrospective and forward look'. Weronika Filinger is coordinating the new global seminar series. The next session will feature education-related activities from the Pawsey Supercomputing Centre based in Australia.

ISC'23

Eleanor Broadway gave a talk at a Birds of a Feather session at ISC'23 titled 'Another Step Towards the Sustainable HPC Outreach Ecosystem'. She talked about the ARCHER2 outreach team, her personal experiences as an outreach volunteer, and gave pointers for creating a sustainable outreach team based on volunteer effort.

PEARC'23

Weronika Filinger as the co-chair of the Workforce Development, Training, Diversity and Education track, is finalising the agenda for four, paper sessions at the PEARC'23 conference (Portland, Oregon, 23rd—27th July). She is also co-organising two BoF sessions - 'Community FAIR: Finding and Sharing HPC Education, Training and Outreach Materials' and 'Building a Community-Driven Outreach Video'.

IHPCSS'23

Preparations are also well underway for the International HPC Summer School (https://ss23.ihpcss.org/) which, this year, will be held in Atlanta, 9th—14th July. There are three ARCHER2-affiliated staff members and five students going from the UK. David Henty and Ludovic Capelli are teaching the MPI and the accelerator programming track, respectively.

Quality Management, Information Security and Business Continuity

We have an annual external audit by our ISO certification body on our three ISO standards that we have implemented:

- ISO 9001 – quality service delivery
- ISO 27001 – information security
- ISO 22301 – business continuity and disaster recovery

Our external auditor visits in the Autumn to make sure we are complying with the requirements of these three standards and to identify any improvement areas. During the year we carry out an internal programme of internal audits and improvement projects and the external audit is a further validation of our work. We do this to ensure we run the best service for our users, to apply best practice to making sure we keep their data safe, and to minimise the chances of the service going down and so causing user disruption.

BCDR Test

The CSE team was actively involved in a recent major incident test, with a rogue actor scenario presented. The scenario tested the robustness of the major incident processes. The service performed well with the test provided, with areas for improvement also identified. Both UKRI and various groups within the University engaged in the process allowing for a realistic simulation to be performed.

Benefits Realisation

As a service we collect data in the SAFE from user accounts themselves, the projects and their research areas, and the jobs run on ARCHER2. We use this data to run the service and also in summary form to contribute to UKRI's business case for future investment in HPC (see https://www.archer2.ac.uk/about/policies/ for the privacy policies describing this).

The benefits realisation report can be run from the SAFE by UKRI, see:

https://safe.epcc.ed.ac.uk/Data/ServeData/659303/BenefitStatsReport.html#form

The report for the period Jan – June 2023 shows the number of new accounts created and CPU utilisation, broken down by funding body, research area and by career stage. The report also lists publications added to the publication database. The team have been encouraging users to add publications through, e.g., the weekly mailing list; there has been an increase in entries to the database.