



# ARCHER2 User Survey

2022 - 2024



## 1. Document Information and Version History

<b>Version:</b>	1.0
<b>Status</b>	Final
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<b>Reviewer(s)</b>	Alan Simpson, Andy Turner, Lorna Smith

Version	Date	Comments, Changes, Status	Authors, contributors, reviewers
0.1	2024-02-05	Initial draft	Anne Whiting
0.2	2024-02-13	Analysis completed	Anne Whiting
0.3	2024-03-18	Initial review	Catherine Inglis
0.4	2024-04-10	Update post review	Anne Whiting
0.5	2024-04-11	Internal review	George Beckett
1.0			

### Structure of this paper

**Section 2** provides a description of the survey, its questions, the scoring and how it was constructed.

**Section 3** gives some highlights of the comments provided by responders to the survey.

**Section 4** provides an analysis of the responses received, comparisons to previous years and graphical distributions of the scores.

**Section 5** lists the comments received in full and unedited form by question together with the ID of the anonymous respondent.

## 2. Description of the Survey

The ARCHER2 User Survey opened on 5 October 2023 and closed on 31 January 2024. The period covered by the survey was from 30 June 2022 to 31 January 2024. 81 responses were received from ARCHER2 users. The survey asked for ratings (on a scale of 1 to 5) with the following questions:

1. Please rate your overall experience of the ARCHER2 Service (required) [Very Dissatisfied (1) – Very Satisfied (5)]
2. Has the ARCHER2 hardware configuration met the requirements of your research? (required) [Not met any requirements (1) – Exceeded requirements (5)]
3. Has the software on ARCHER2 met the requirements of your research? (required) [Not met any requirements (1) – Exceeded requirements (5)]
4. If you have used the ARCHER2 service desk, please rate your experience [Very Dissatisfied (1) – Very Satisfied (5)]
5. If you have used the ARCHER2 documentation, did it provide the information you required? [Did not provide the information I required (1) – Provided all the information I required and more (5)]
6. If you have used the ARCHER2 website, please rate the quality of the content and ease of navigation [Very poor (1) – Excellent (5)]
7. Please rate your experience of any ARCHER2 Training you have used (either online or face-to-face)? [Very Dissatisfied (1) – Very Satisfied (5)]
8. If you have attended any ARCHER2 webinars or virtual tutorials, did you find the session worthwhile? [A complete waste of time (1) – Extremely interesting and useful (5)]
9. If you have used any of the ARCHER2 online training material, how useful did you find the material? [Of no use at all (1) – Extremely useful (5)]

Only the first three questions were compulsory for all survey respondents, but 93% of respondents also provided feedback to some of the optional questions. Users were also provided with the opportunity to offer comments or suggestions under all of the above headings. As previously with other services, user feedback received will be reviewed to identify opportunities for improvement.

The survey was constructed using Google Forms and embedded directly into the ARCHER2 website.

## Executive Summary

This was the second ARCHER2 service user survey conducted. Typically a user survey was carried out annually. This survey was delayed with the agreement of UKRI after the major upgrade of ARCHER2 to allow users to try out its functionality. This survey therefore covers the period from 30 June 2022 to 31 January 2024.

The results of the 2022/24 annual ARCHER2 User Survey have been analysed. 81 responses were received with the mean results shown below (scores 1 representing “Very Unsatisfied” and 5 representing “Very Satisfied”):

Service Aspect	2022/4 ARCHER2 Mean Score (out of 5)
Overall	4.4
Hardware	3.9
Software	3.8
Service Desk	4.6
Documentation	4.1
Website	4.1
Training	4.3
Webinars and virtual tutorials	4.2
Online training	4.2

As can be seen users are very positive about the service, with a mean score across all questions of 4.2 out of 5. A particular highlight is the excellent score for the service desk being provided by all the teams involved at EPCC. Where users have rated elements of the service under 3 or provided negative comments, the users will be contacted to obtain further details if they have provided contact information.

For comparison purposes, the table below shows the satisfaction scores for the ARCHER2 service taken from the annual user survey run in 2021/22.

Service Aspect	2021/2 ARCHER2 Mean Score (out of 5)
Overall	4.3
Hardware	3.9
Software	3.9
Service Desk	4.8
Documentation	4.2
Website	4.1
Training	4.2
Webinars and virtual tutorials	4.0
Online training	4.1

## Selected Quotes

The following unedited quotes reflect the tone of the majority of responders to the survey with regard to the ARCHER2 service:

- *ARCHER2 has been working as expected for me. The documentation is extensive and very clear, and in the rare occasions when I needed it, the support was great. So, in summary, very satisfied.*
- *Very pleased with ARCHER2 service. Great to use the compute resources and great support service*
- *The service is very supportive.*

Quotes on the Service Desk (which reflect contributions from the HPC Systems Team, the User Support and Liaison Team and the centralised CSE team) echo the particularly high ratings for this aspect of the service:

- *Always polite. Always take my experiences seriously. Take the time to explain things I do not understand, and listen to my concerns.*
- *ARCHER2 service desk staff have been excellent and provide the best support I have experienced in my time using a number of different HPC services.*
- *They gave prompt responses to my queries, and updates without me having to chase-up -- excellent service.*

Quotes on documentation reflected very positive feedback and an improvement over the ARCHER service:

- *Provided all the information I required and more*
- *Any docs (including logging in after upgrade) easy to find and clear*
- *It is also excellent. I mainly use it for its section on running MITgcm, and it's very good.*
- *Good to be able to search again*

### 3. Ratings

All questions asked responders to rate their satisfaction with each particular aspect of the survey on a scale of 1 to 5 with 1 representing “Very Unsatisfied” and 5 representing “Very Satisfied”. Table 1 summarises the ratings for each aspect for 2022/23 and reveals how the all aspects of the ARCHER2 Service are rated highly by users. The number of responses was 81.

Service Aspect	Total Responses	Mean Score (out of 5)	Median Score (out of 5)
Overall Satisfaction	81	4.3	4
Hardware Config	81	3.9	4
Software Config	81	3.8	4
Service Desk	61	4.6	5
Documentation	75	4.0	4
Website	75	4.0	4
Training	39	4.3	4
Webinars and VT	29	4.2	4
Online training	41	4.2	4

**Table1: Summary of scores for different aspects of the ARCHER2 Service 2022/24**

As can be seen from Figure 1, the overall satisfaction with the ARCHER2 service is high with only 4 responders rating the service below 3 on a 1-5 scale from “Very Unsatisfied” to “Very Satisfied.” The mean rating is 4.4, and the median rating is 4.



**Figure 1: Distribution of scores for overall satisfaction with the ARCHER2 service (81 responses in total).**

For the hardware and software (Figure 2 and Figure 3 respectively), the overall satisfaction with the service is high, with only 4 users rating the hardware and software below 3. There were no ratings of (“Very Unsatisfactory”) for the hardware or software on ARCHER2. The mean rating for hardware is 3.9 and for software is 3.8 (median is 4) for both.

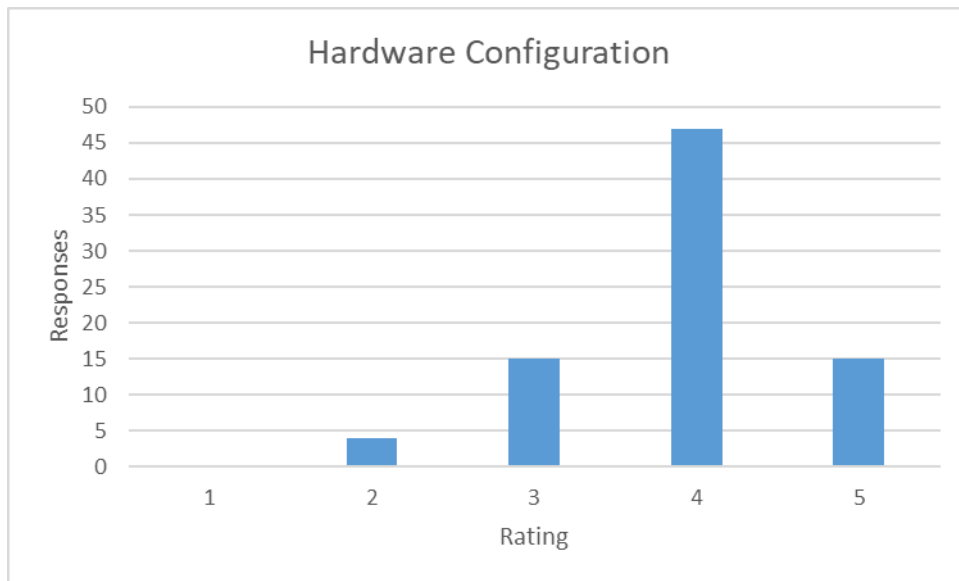


Figure 2: Distribution of scores for satisfaction with the ARCHER2 hardware (81 responses in total).

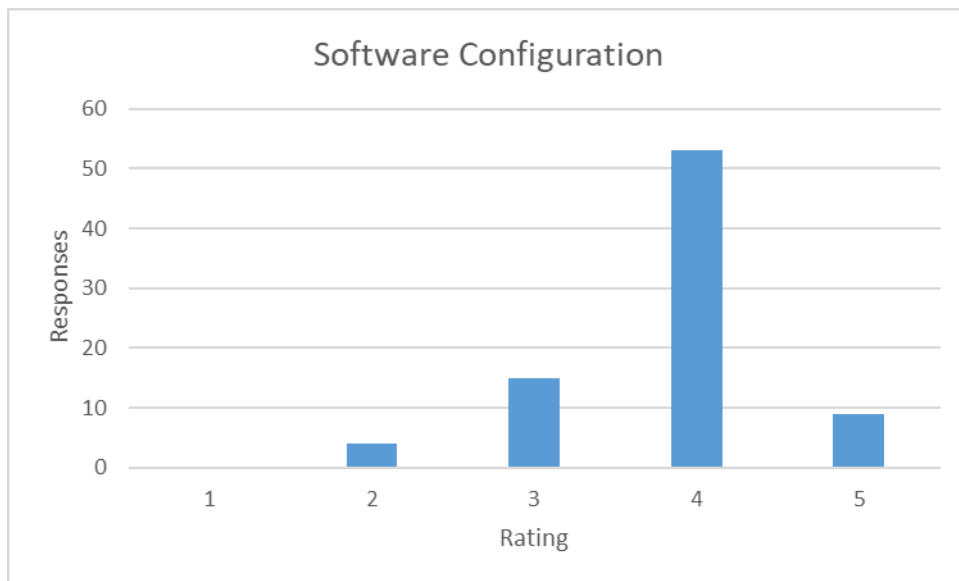


Figure 3: Distribution of scores for satisfaction with the ARCHER2 software (81 responses in total).

The satisfaction ratings for the ARCHER2 Service Desk showed a mean rating of 4.6 (median is 5). Of the 61 responses, 55 (90%) gave a score of 4 or 5 ("Excellent" or "Very good"). 1 gave a score of 'Very Poor (user will be contacted to discuss feedback if they have provided contact details).

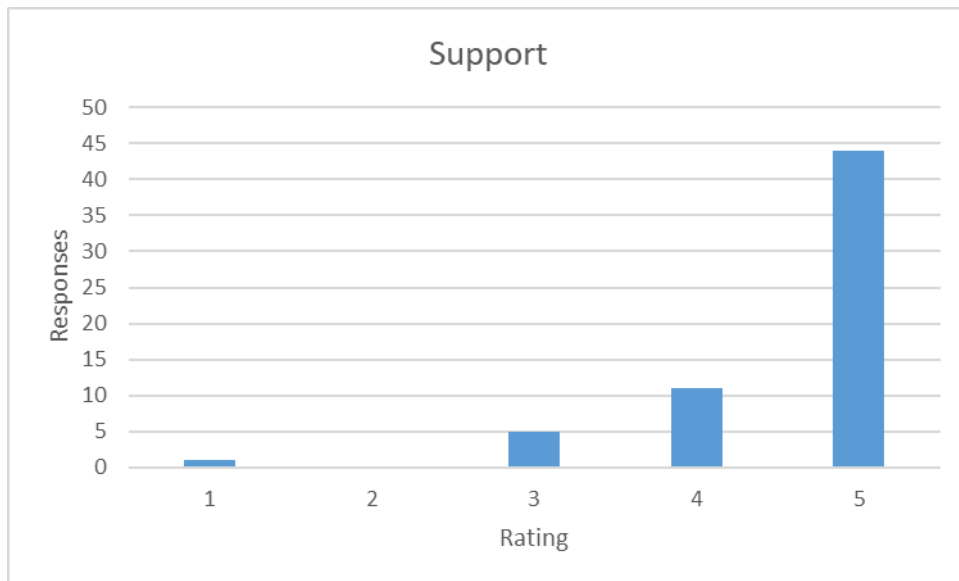


Figure 4: Distribution of scores for satisfaction with the ARCHER2 Service Desk (61 responses in total).

ARCHER2 documentation (Figure 5, mean = 4.1, median 4) and website (Figure 6, mean = 4.1, median 4) show the same high level of satisfaction as that shown for the overall service. The users who provided a rating under 3 will be contacted for further details if they have supplied their contact details.

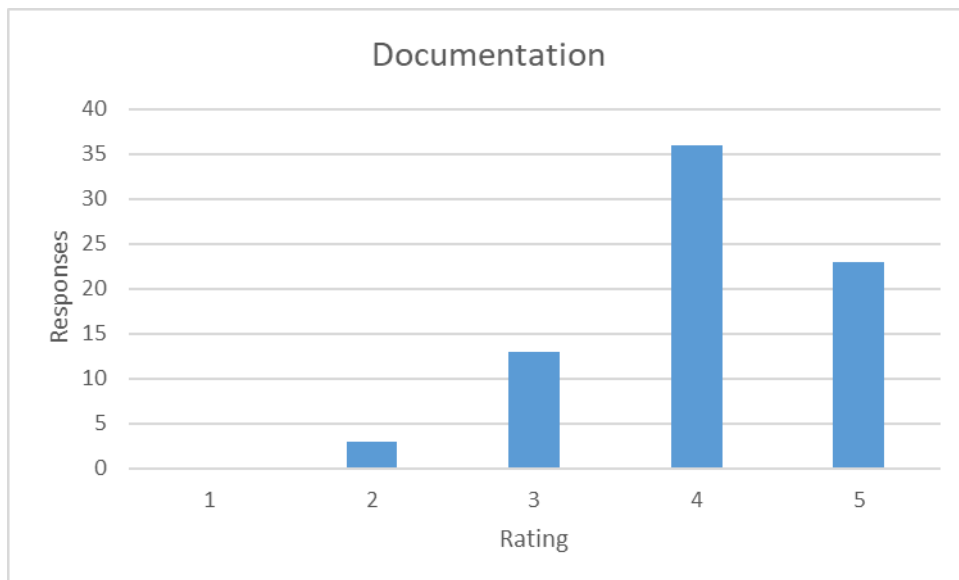


Figure 5: Distribution of scores for satisfaction with the ARCHER2 documentation (75 responses in total).



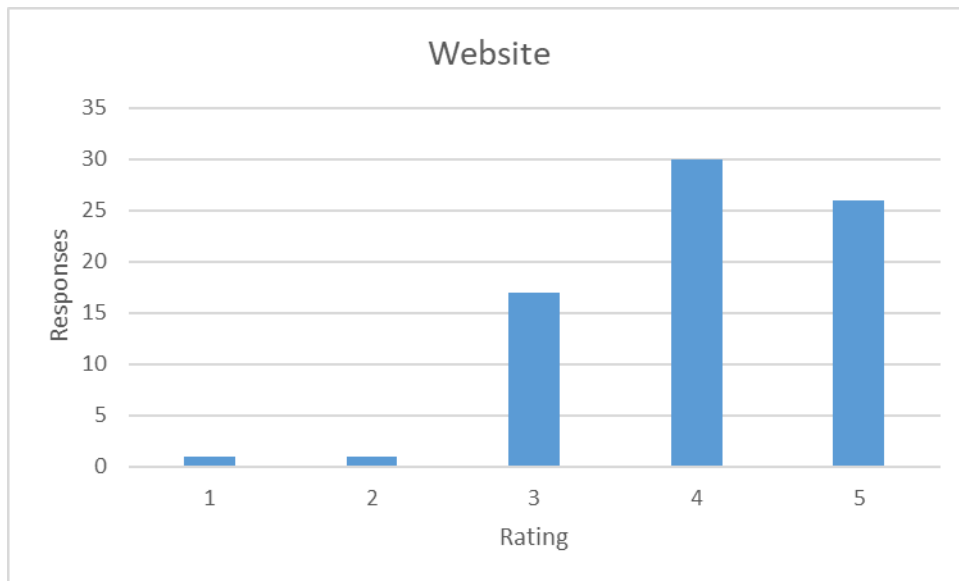


Figure 6: Distribution of scores for satisfaction with the ARCHER2 website (75 responses in total).

The results for ARCHER2 training (Figure 7, mean = 4.3, median = 4) are high and consistent with the course survey results presented in the CSE Service quarterly reports. 87 percent gave a score of 4 or over. There were no users with a rating of under 3.

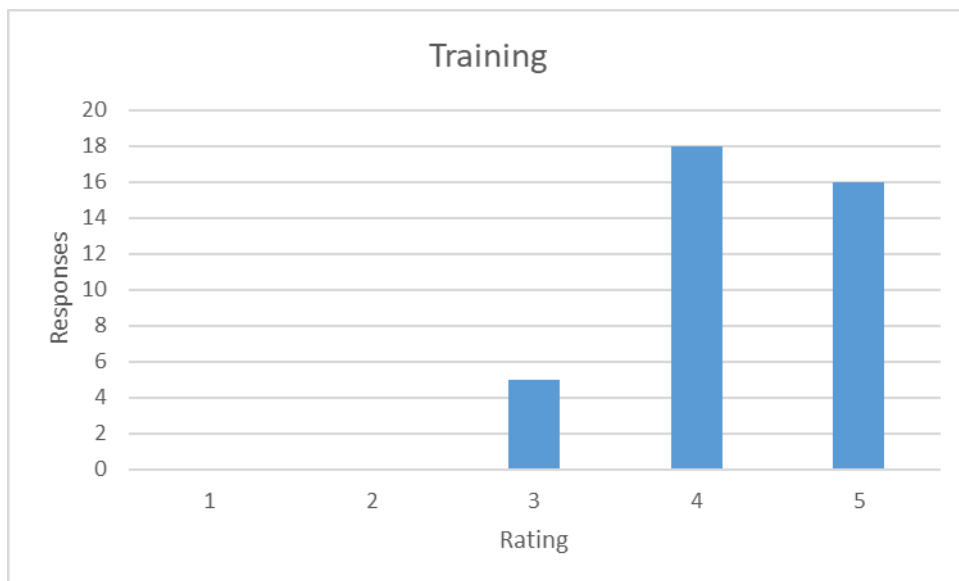


Figure 7: Distribution of scores for satisfaction with the ARCHER2 training (39 responses in total).

The webinars, virtual tutorials and online training show a good satisfaction rating (Figures 8 and 9, mean = 4.2 and median = 4 for both). Neither received any responses with a score of under 3.

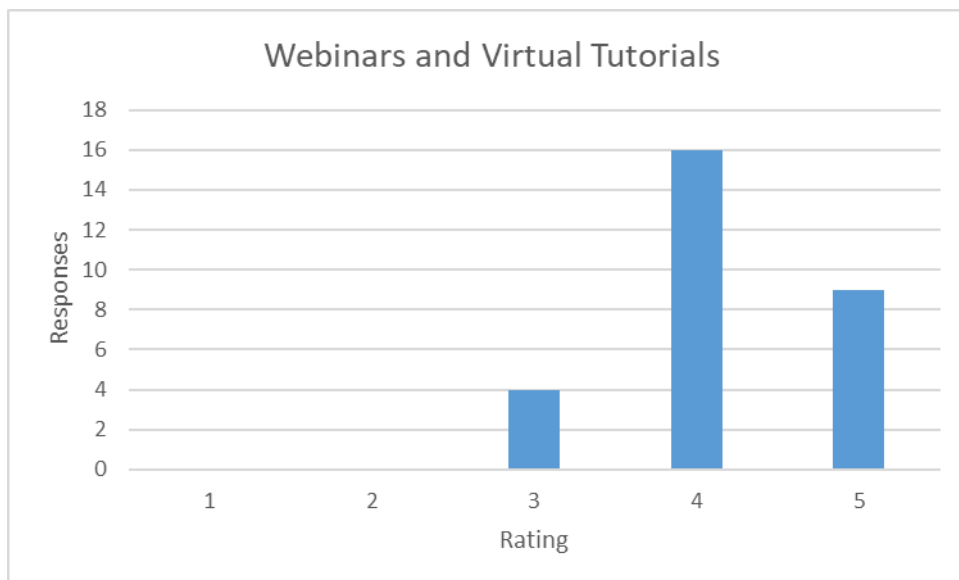


Figure 8: Distribution of scores for satisfaction with the ARCHER2 webinars and virtual tutorials (29 responses in total).

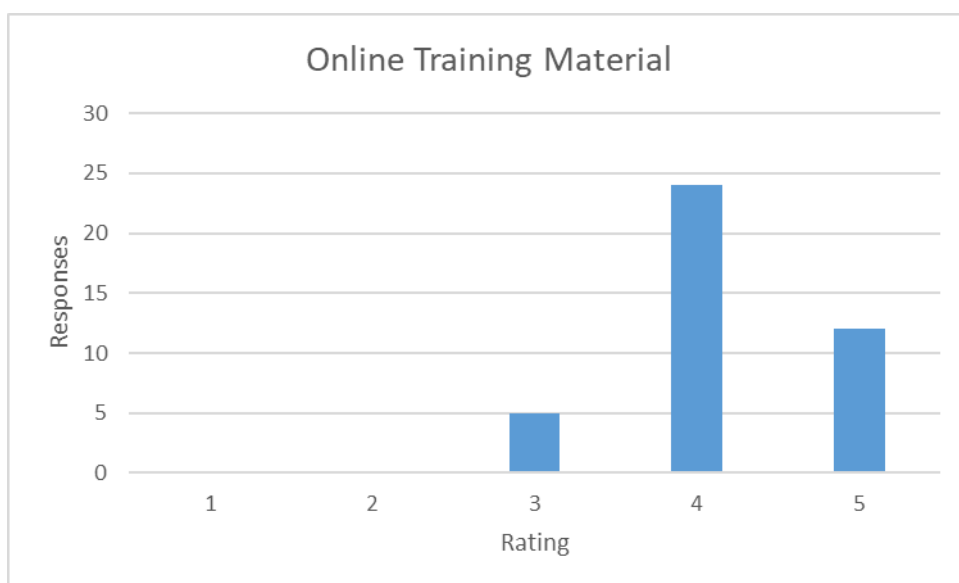


Figure 9: Distribution of scores for satisfaction with the ARCHER2 Online Training (41 responses in total).

## 4. List of Comments

The comments shown are all the comments received for each question in an unedited form. The number shown in brackets at the end of each comment represents the ID of the respondent.

### Overall Service

- *It's a great service with a friendly and efficient Helpdesk. (1)*
- *I am generally satisfied. If the devoted time can be increased to more than 48hrs it would be better. (3)*
- *Now that I have direct secure access from my laptop the overall experience is satisfactory, the latency is not as noticeable as when I connected from Laptop ->VPN->Jasmin->Archer2. When I learned how to use sshfs, what a boom that gave. I can now use my local GUI editor to edit files! (6)*
- *My overall experience has been amazing. No comments here. :) (17)*
- *Generally satisfied, some issues after upgrade (but service desk always quick) (18)*
- *The help desk has always been very helpful when I've emailed them with issues! Quick and helpful responses; the issues are almost always solved right away. (23)*
- *Help desk and service desk have both been really helpful whenever I've contacted them. Never not had great service from them (25)*
- *I like the tutorials and courses given on the website. I will like to encourage the ARCHER team to continue uploading them. (31)*
- *Queues aren't too long but instructions to load packages are hard to follow. (32)*
- *The waiting time for some of the big job (over 60 nodes) is quite big. (35)*
- *I think Archer2 service is really responsive. (39)*
  - *' - It would be very helpful to me if someone offered a tutorial on how to set up advanced workflow tools on archer2. Examples of advanced workflow tools include aiida, jobflow, and others. This is by far the most important feedback I can give.*
  - *- extreme crowding towards the ends of resource allocation periods making queue times very long; for the past two weeks the queue times have been over two days for me. Please encourage users to spend compute more evenly throughout the year.*
  - *- MFA is a big hassle and makes automation even more difficult than it already was. This makes my work less efficient. (40)*
- *It works fairly seamlessly for our needs. We are using a well tested and well used software stack. The queue times are reasonable most of the time. (44)*
- *Queues are long, especially during certain times in the year. (45)*
- *A bit rough on the software environment side; but it's my first serious supercomputer experience, so as far as I know, it might just be the best around! (49)*
- *The service is very supportive. (51)*
- *Very prompt and professional ! Thanks (53)*
- *It would be nice to have some better tools for checking things like how much credit I still have from the command line, so that I can better optimise my working practices. (57)*
- *It can be very slow and the queues are long (58)*
- *I use the e05 pool for materials modelling and my jobs are taking days if not weeks to get through the queue, it ends up being less useful than using regional computers etc even if the jobs run slower there. (59)*
- *ARCHER2 has been working as expected for me. The documentation is extensive and very clear, and in the rare occasions when I needed it, the support was great. So, in summary, very satisfied. (65)*
- *Reduction of memory per core and per node, compared to archer and especially post upgrade has hampered research progress. (66)*
- *It is a generally good service, but for larger cases the interconnect quite often fails. (67)*

- *Amazing mostly. However the queueing system could be improved to take into account usage of accounts within projects with their allocated computational time instead of usage of one account within the entire project's budget and usage. (68)*
- *Good service (69)*
- *Very helpfull and no problems (71)*
- *timely response (73)*
- *I do wish it was less complicated to set up a mamba environment, but I've been very impressed with the speed of the support replies. (78)*
- *Very pleased with ARCHER2 service. Great to use the compute resources and great support service. (81)*

## Hardware

- *More nodes? :) (1)*
- *Additional disc workspace would be helpful, although it can be requested, the current default was too small to enable the transfer of files from the Met Office. (6)*
- *GPU components for each node for future ARCHER upgrade (8)*
- *End Users should be able to decide whether they can run multiple jobs per node on a node they are using (12)*
- *All requirements met (18)*
- *We have some recurring issues with memory/core being a limitation for high memory calculations, which prevents us from doing all the work we'd like with the ARCHER2 infrastructure. (21)*
- *Compile module for Multiwfn package (22)*
- *Accelerators for ARCHER3 please (28)*
- *It will be useful to have a shortcut to have an approximated time when the simulations will run. I have tried: `squeue --me --start`, and it doesn't give the estimated time for my runs to begin. (31)*
- *Archer2 have good computing performance but I have to wait in a queue for a long time. (39)*
- *Aside from not having GPUs, ARCHER2 hardware is really great (40)*
- *We could always do with more hardware (with sufficient memory per core: 128GB or more); however there is also an element that we scale the ambition of our research problems to test the limits of hardware available. GPU cards (A100) are increasingly important, although we do currently meet this need through Young. (44)*
- *reduce the queue time for submitted jobs near Christmas (53)*
- *Very efficient for running large parallel climate models. Could do with more storage to save model output, but this is always an issue - our work is never constrained by HPC performance, and more by available storage space. (63)*
- *As a heavy CPU user, I am satisfied with the current hardware configuration. Of course, increasing the number of CPUs, the CPUs per job, and additional Highmem nodes will always be welcome. (65)*
- *More memory per node, especially post the upgrade to the OS which now occupies more of the available memory. (66)*
- *Met requirements for my use (69)*

## Software

- *I use OpenFOAM10. (3)*
- *I've started using Singularity/Docker apps, however, these can be quite large files even when only a single application is being used. (6)*
- *All software that I need is available (12)*
- *Convincing CMake pick up libsci can be tricky. (13)*
- *All requirements met (18)*
- *We run our own software, and the compilation environment has been fine. (21)*
- *Could have more packages pre-loaded, such as Matplotlib (32)*

- *I hope I can use the email notification (job end&fail) with slurm. It seems this feature is disabled at the moment. (36)*
- *I think the CESM need to update since there has 2.3 beta version but in ARCHER2 still 2.1.3. (39)*
- *It would be very helpful to me if someone created a documentation page or offered a tutorial on how to set up advanced workflow tools on archer2. Examples of advanced workflow tools include aiida, jobflow, and others. This is by far the most important feedback I can give. (40)*
- *Try to maintain close-to-latest Python versions.*
- *I work on and with a mode Python-native compiler framework, needing Python at least 3.10. It will even probably raise that minimum version quickly, as we use advanced Python features. Overall, I think Python is still gaining traction, so it might make sense to keep it updated. (49)*
- *keep update software version (53)*
- *There has been uncertainty surrounding eCSE for CPU applications and this has held up some of our research plans. (63)*
- *I only use the gfortran compilers, so all is good on my part (65)*
- *TexLive and ghostscript as well as updated central installations of OpenFOAM or at least updated installation scripts. (68)*

### Service Desk

- *very professional, quick, and helpful. (1)*
- *To date, I have found the response from the service desk sluggish. Granted the issues reported I would class a low-priority but I would expect a response within a couple of weeks rather than a couple of months. Issues at the bottom of the list often get pushed further down the list and then forgotten or raised again in a separate report. (6)*
- *Always polite. Always take my experiences seriously. Take the time to explain things I do not understand, and listen to my concerns. (12)*
- *They do not offer to help if you use any unsupported software, even if the issue is unrelated to the software being used. (13)*
- *ARCHER2 service desk has always been accurate and timely in resolving my queries. (17)*
- *Quick and all problems sorted (18)*
- *Always extremely friendly and helpful - their support is great. (21)*
- *Fast high-quality solutions to majority of problems (22)*
- *Excellent!! Have always been so quick and helpful and kind in my experience! (23)*
- *The Archer2 service desk team are brilliant. I always get a fast response and my issue is always handled quickly and efficiently. (26)*
- *When I have had any issues related to my project the helpdesk has promptly replied to me and been able to quickly resolve any problems that I have had (37)*
- *Great service and quick response. (39)*
- *The ARCHER2 service desk are always very helpful and polite. Even if I have a silly question about something I don't understand they are always nice and take the time to explain things to ensure that I do understand. (41)*
- *My issue isn't solved yet, but I appreciate the swift reaction and acknowledgement of the issue already! (49)*
- *I couldn't install a quantum espresso related library, and I do not have the capability to do it myself. I received guidance on how to do it but ultimately failed. It would have been good and more time efficient of someone in the service desk had compiled it for me. (62)*
- *ARCHER2 service desk staff have been excellent and provide the best support I have experienced in my time using a number of different HPC services. (63)*
- *Thank you. Keep the good work! (65)*
- *Amazing and helpful either from the getgo, or after a few emails when there is a small gap in understanding from either side. Maybe (68)*
- *All issues solved (mainly jobs stuck in queue) (69)*

- *They gave prompt responses to my queries, and updates without me having to chase-up -- excellent service. (70)*

## Documentation

- *Provided all the information I required and more (1)*
- *could expand on the examples of the research software (15)*
- *Any docs (including logging in after upgrade) easy to find and clear (18)*
- *It is also excellent. I mainly use it for its section on running MITgcm, and it's very good. (23)*
- *Good to be able to search again (30)*
- *Specifically, I have used the documentation to help compile software within the Archer2 Programming Environments. I found it easy to navigate and clear. One small suggestion is the documentation provided in the hpc-uk/build-instructions repository could be copied/replicated within the Archer2 documentation. (37)*
- *I tried to use the Serial queue following the instructions in the ARCHER2 documentation and I could not get it to work. (38)*
- *The globus details should be included in the documents. (39)*
- *It would be very helpful to me if someone created a documentation page or offered a tutorial on how to set up advanced workflow tools on archer2. Examples of advanced workflow tools include aiida, jobflow, and others. This is by far the most important feedback I can give. (40)*
- *Had difficulty finding some info on virtualenv usage, but that's a minute detail... (43)*
- *A good website. (44)*
- *Amazing documentation! (49)*
- *The search is a bit poor, and finding things is hard. Most things seem to be documented but are not so easily discovered. Often it is easier to phone a friend than look for them. (57)*
- *Thank you. Keep the good work! (65)*

## Website

- *Generally very good and easy to use (18)*
- *It's pretty old-fashioned in design and layout compared to other HPC services. (22)*
- *excellent enough (39)*
- *Really nice, the search bar helps finding whatever the navigation bar doesn't indicate (49)*
- *Generally good site (69)*

## Training

- *I am taking the Message-passing Programming with MPI course, and so far, I have liked it. (31)*
- *I attended the Archer2 course on C++, which was delivered in an online format. The course was good and the material was very helpful, however I feel that it would have been better if this training was an in person event (37)*
- *It would be very helpful to me if someone offered a tutorial on how to set up advanced workflow tools on archer2. Examples of advanced workflow tools include aiida, jobflow, and others. This is by far the most important feedback I can give. (40)*
- *I would love an AIIDA or jobflow workshop on archer2. (45)*

## Webinars and Virtual Tutorials

- *I attended a webinar relating to use of Docker containers, which was useful. (44)*

### Online Training Material

- *I think in person or online training would suit me better. I just haven't been able to fit any in yet. (11)*
- *I am taking the Message-passing Programming with MPI course, and so far, I have liked it. (30)*
- *Please tell us / teach us how we can make ARCHER work with advanced workflow tools. Examples are aiida or jobflow. (40)*
- *If the documentation counts, again, I found it amazingly clear on what it covers (49)*

### Any other comments

- *This doesn't relate to the service but FYI under section 22 of this survey you have requested gender information, but the options offered are sexes. This is quite a surprising oversight, and not of the level expected. Greater awareness of the impact of this choice of wording in survey setters would be beneficial. (21)*
- *I cannot say this enough: Please tell us / teach us how we can make ARCHER work with advanced workflow tools. Examples are aiida or jobflow. A documentation page, or a tutorial, or a virtual tutorial, or anything, would be so very appreciated. (40)*
- *It would be great to have QCG-pilotjob supported as a module on the machine. (43)*
- *It would be better if the VASP compilation is improved. Currently, it sometimes gives error and stop if it runs parallel on 6+ nodes. (74)*