# ARCHER2 User Survey

2021/2022

# 1. Document Information and Version History

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|---|---|
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| **Author(s):** | Anne Whiting |
| **Reviewer(s)** | Alan Simpson, Andy Turner, Lorna Smith |

| Version | Date | Comments, Changes, Status | Authors, contributors, reviewers |
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| 0.1 | 2022-07-04 | Initial draft | Anne Whiting |
| 0.2 | 2022-07-05 | Added text | Anne Whiting |
| 0.3 | 2022-07-07 | Reviewed | Alan Simpson |
| 0.4 | 2022-07-07 | Updated to appropriate template and post review corrections | Anne Whiting |
| 1.0 | 2022-07-07 | Version for UKRI | Anne Whiting |
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## 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 11 May 2022 and closed on 30 June 2022. The period covered by the survey was from 1 November 2021 to 30 June 2022. 119 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 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 94% 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 first ARCHER2 service user survey conducted. In the past a user survey was carried out every year of the ARCHER service for the previous year, opening early in the subsequent year. For ARCHER2 this initial survey was delayed with the agreement of UKRI until the users had had sufficient time using the full service to be able to try its functionality and make serious use of it. This survey therefore covers a period of 1 November 2021 to 30 June 2022.

The results of the 2021/22 annual ARCHER2 User Survey have been analysed. 119 responses were received with the mean results shown below (scores 1 representing "Very Unsatisfied" and 5 representing "Very Satisfied"):

| Service Aspect | 2022 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 |

As can be seen users are very positive about the service, with an overall mean score of 4.3 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 ARCHER service taken from the annual user surveys run each year of service. These figures were taken from the 2019 report, with the user survey run at the start of 2020 and the report published in May 2020.

| Service Aspect | 2014 Mean Score (out of 5) | 2015 Mean Score (out of 5) | 2016 Mean Score (out of 5) | 2017 Mean Score (out of 5) | 2018 Mean Score (out of 5) | 2019 Mean Score (out of 5) |
|---|---|---|---|---|---|---|
| **Overall Satisfaction** | 4.4 | 4.3 | 4.3 | 4.4 | 4.5 | 4.3 |
| **Hardware** | 4.1 | 4.1 | 4.2 | 4.3 | 3.9 | 3.8 |
| **Software** | 4.0 | 4.0 | 4.2 | 4.1 | 3.8 | 3.8 |
| **Helpdesk** | 4.5 | 4.5 | 4.5 | 4.6 | 4.5 | 4.4 |
| **Documentation** | 4.1 | 4.1 | 4.2 | 4.2 | 4.0 | 3.9 |
| **Website** | 4.1 | 4.2 | 4.2 | 4.2 | 4.0 | 3.9 |
| **Training** | 4.1 | 4.1 | 4.2 | 4.1 | 4.3 | 4.2 |
| **Webinars** | 3.6 | 3.9 | 3.9 | 4.2 | 3.9 | 4.0 |
| **Online training** | - | 4.0 | 4.1 | 4.2 | 3.9 | 3.9 |

**Selected Quotes**

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

- *Exceptionally good services and well managed queues*
- *My go-to resource for CPU-heavy tasks, needing hundreds of cores, typically DFT calculations using VASP*
- *Reliable, reasonable queue times, good performance!*
- *An excellent research machine, once the teething problems were sorted*

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:

- *Have nothing but praise for the help desk. They usually come back promptly with solutions*
- *Really impressed with the ARCHER2 service desk - this PhD student is very grateful for you guys!*
- *Very quick, informative, and helpful replies, with satisfactory resolution of issues. The service desk team should be commended*

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

- *I find the ARCHER2 documentation much easier to navigate with respect to ARCHER documentation*
- *In my opinion it is very thorough and simply exemplary*
- *My go-to for finding submission scripts, setting up Python etc.*

# 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". **Error! Reference source not found.** 1 summarises the ratings for each aspect for 2021/22 and reveals how the all aspects of the ARCHER2 Service are rated highly by users. The number of responses was 119.

| Service Aspect | Total Responses | Mean Score (out of 5) | Median Score (out of 5) |
|---|---|---|---|
| **Overall Satisfaction** | 119 | 4.3 | 5 |
| **Hardware Config** | 119 | 3.9 | 4 |
| **Software Config** | 119 | 3.9 | 4 |
| **Service Desk** | 96 | 4.8 | 5 |
| **Documentation** | 112 | 4.2 | 4 |
| **Website** | 109 | 4.2 | 4 |
| **Training** | 77 | 4.2 | 4 |
| **Webinars and VT** | 65 | 4.0 | 4 |
| **Online training** | 65 | 4.0 | 4 |

**Table1: Summary of scores for different aspects of the ARCHER2 Service 2021/22**

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 4.3, and the median rating is 5.

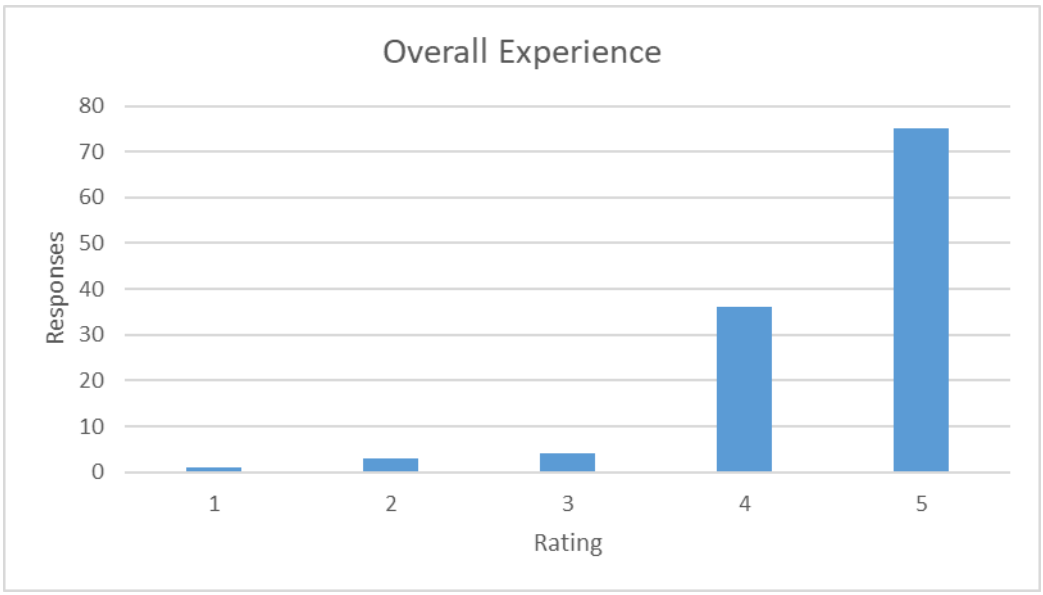


**Figure 1: Distribution of scores for overall satisfaction with the ARCHER2 service (119 responses in total).**

For the hardware and software (Figure 2 and Figure 3 respectively), the overall satisfaction with the service is high, with 6 users rating the hardware below 3 and 4 users rating the software below 3. There was one rating of 1 ("Very Unsatisfactory") for the hardware and none for the software on ARCHER2. The mean rating for hardware and for software is 3.9 (median is 4) for both.

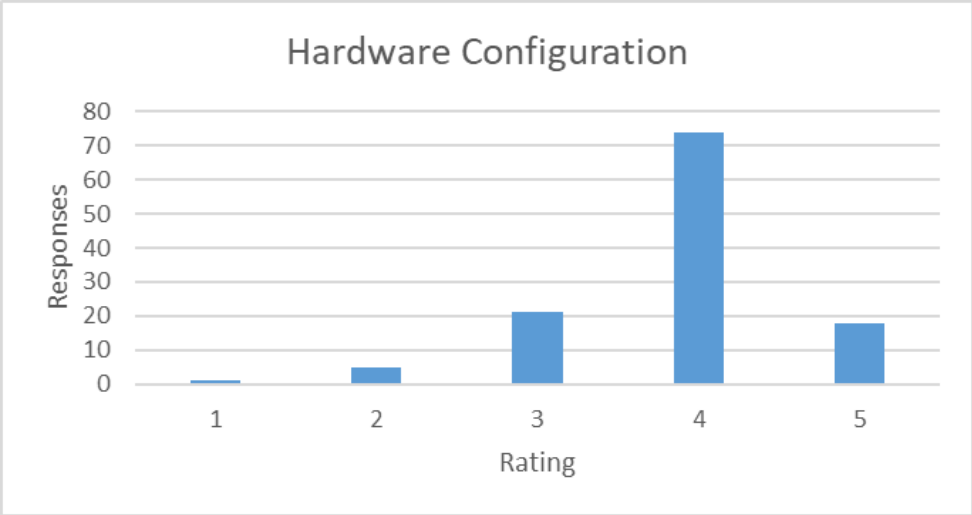


**Figure 2: Distribution of scores for satisfaction with the ARCHER2 hardware (119 responses in total).**

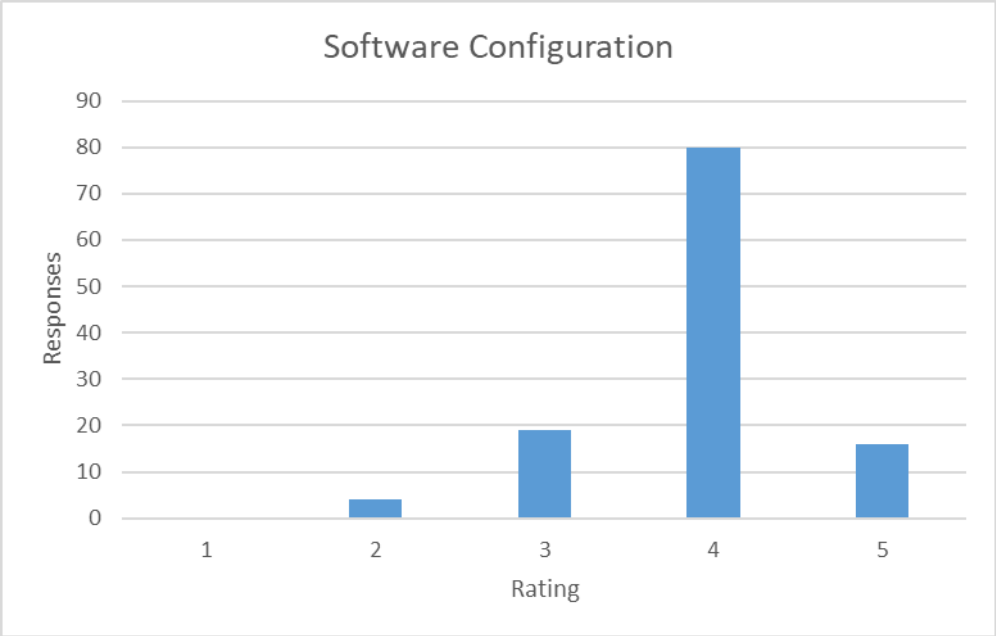


**Figure 3: Distribution of scores for satisfaction with the ARCHER2 software (119 responses in total).**

The satisfaction ratings for the ARCHER2 Service Desk showed a mean rating of 4.8 (median is 5). This is the highest score the service desk has received whilst running the ARCHER and ARCHER2 service desks. Of the 119 responses, 110 (78%) gave a score of 4 or 5 ("Excellent" or "Very good").

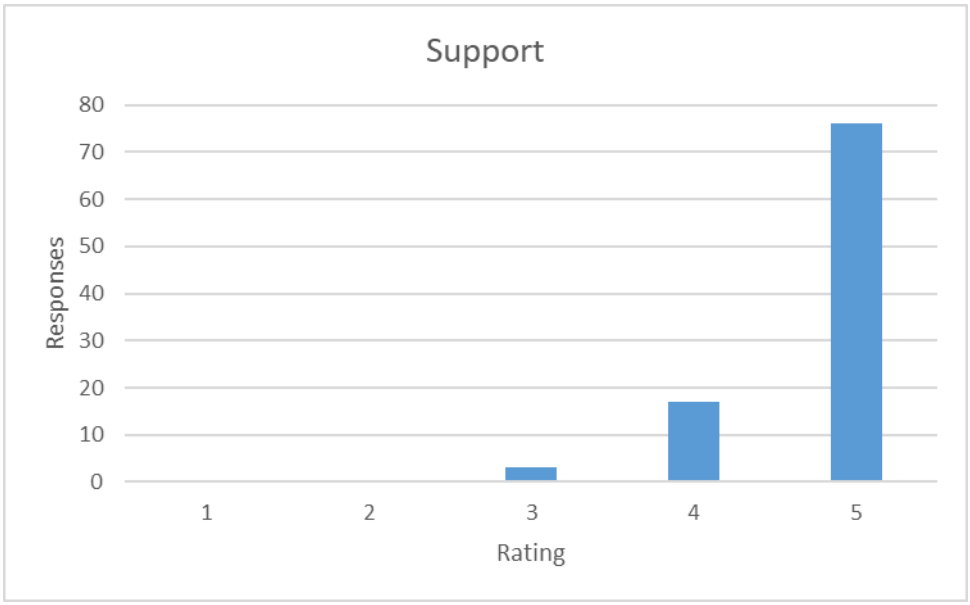


**Figure 4: Distribution of scores for satisfaction with the ARCHER2 Service Desk (96 responses in total).**

ARCHER2 documentation (Figure 5, mean = 4.2, median 4) and website (Figure 6, mean = 4.1, median 4) show the same high level of overall satisfaction as that shown for the overall service. The 1 user who gave a score of 2 will be contacted if they have provided their email addresses to ask for further details.

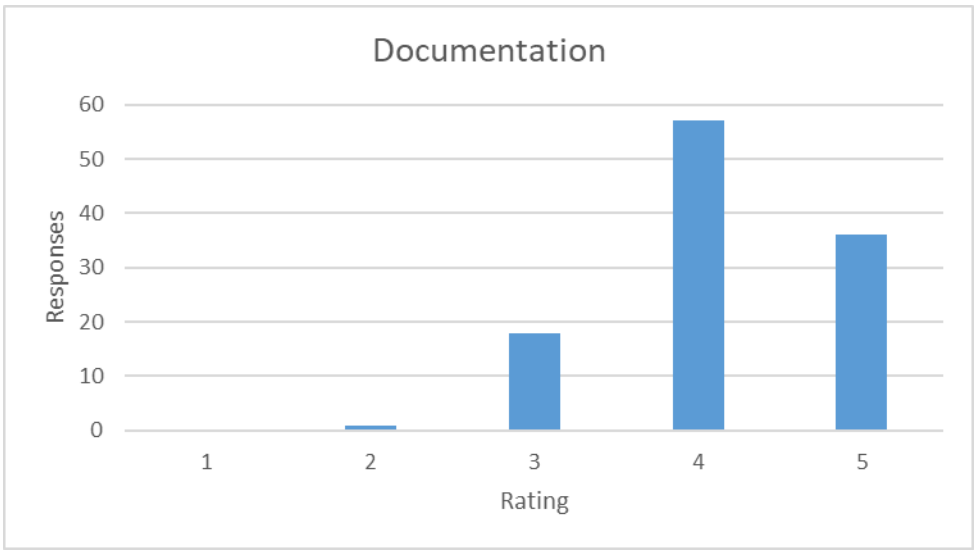


**Figure 5: Distribution of scores for satisfaction with the ARCHER2 documentation (112 responses in total).**


**Figure 6: Distribution of scores for satisfaction with the ARCHER2 website (109 responses in total).**

The results for ARCHER2 training (Figure 7, mean = 4.2, median = 4) are high and consistent with the course survey results presented in the CSE Service quarterly reports. 92 percent gave a score of 4 or over. There were 2 users with a rating of under 3.

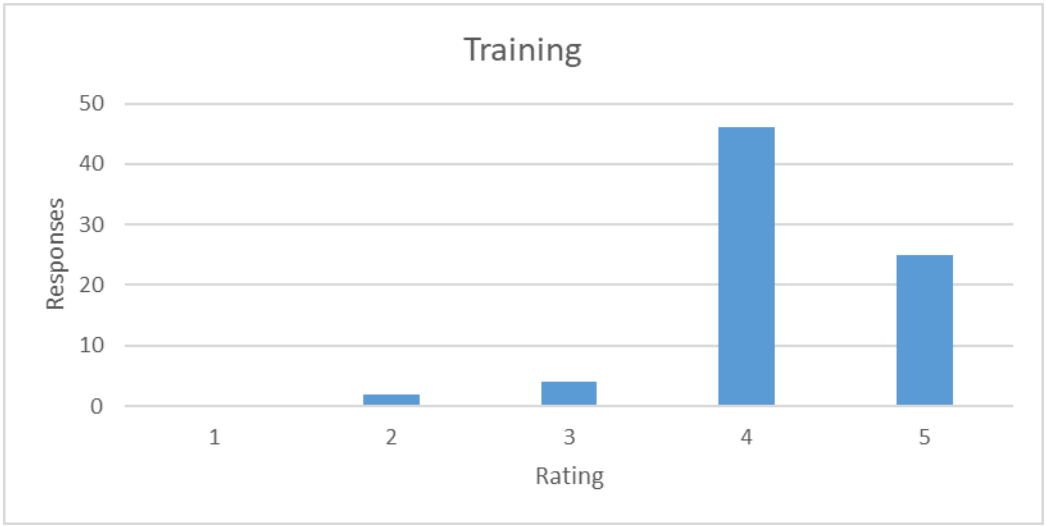


**Figure 7: Distribution of scores for satisfaction with the ARCHER2 training (77 responses in total).**

The webinars, virtual tutorials and online training show a good satisfaction rating (Figures 8 and 9, mean = 4.0 for webinars and 4.1 for online training, median = 4 for both). Webinars received 1 response with a score of under 3.

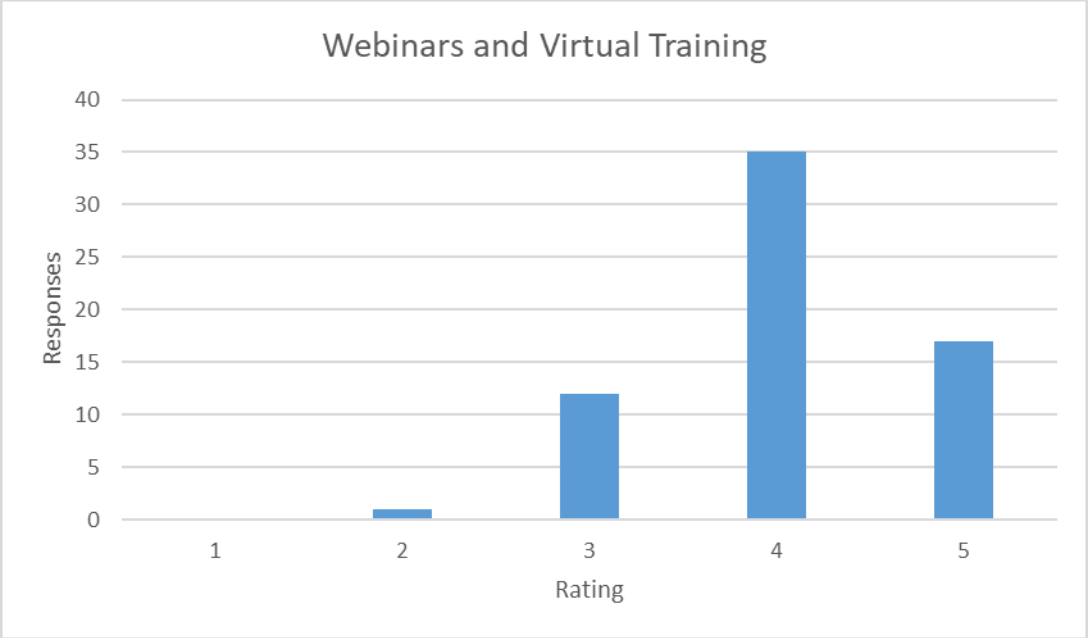


**Figure 8: Distribution of scores for satisfaction with the ARCHER2 webinars and virtual tutorials (65 responses in total).**

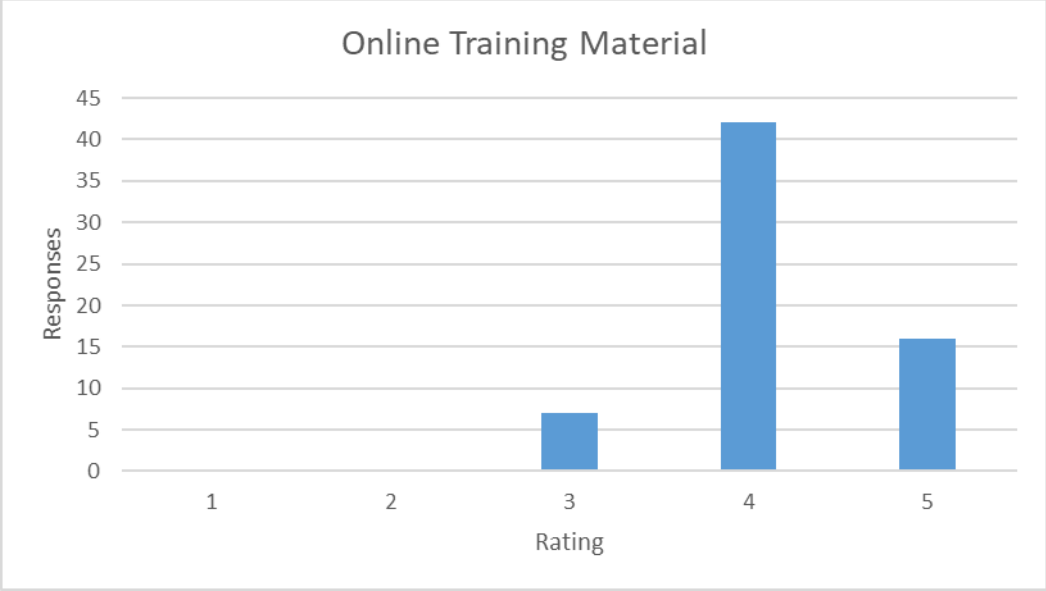


**Figure 9: Distribution of scores for satisfaction with the ARCHER2 Online Training (65 responses in total).**

# 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**

- *First the system is not busy and one can run large simulation very quickly*
  *The bad experience comes from:*
  *- Slow data writing to the disk both during the job run or on the login node doing a copy*
  *- The MPI fabric is not stable yet, both OFI and UCX are used and both have some issues (2)*
- *ARCHER2 can't simulate my work much faster than my pc (4)*
- *slow to get started and with significant delays, but working well now (6)*
- *Initial set-up was quite complex but since set-up has been great! (7)*
- *Advantages: Much better Queue waiting time than 4c.*
  *Drawback: only 2GB per core memory. It is too less compared with modern HPC clusters (Young: 4GB, even Thomas has over 5 GB)! For very large systems in QM/MM calculations/ NWCHEM/ VASP, I can only use 64/ 40/ core per node to enhance the per-core memory to satisfy my calculations. It is really inefficient and expensive (9)*
- *I miss the option for emails sent by the job submission system (12)*
- *all the delays with the service were pretty annoying, but now it is all working it is great (14)*
- *the transition from cab4 to cab23 was harder than anticipated, the helpdeskis great and seem to respond quickly to my requests.(15)*
- *the service is good, however, there are a lot of issues when willing to run codes at scale (from 1024 nodes on). (17)*
- *Generally service is very good, although it would be improved by supporting more simulation codes. (19)*
- *The cluster is transformative. I hope the allocations for its use are distributed more efficiently in the future. (20)*
- *All good, my only suggestion is that a longer wall clock time to run jobs would be better. (23)*
- *not enough resources (24)*
- *I have started using ARCHER 2 a few days ago. ARCHER2 provides me access to up-to-date software for performing molecular simulations such 'GROMACS patched with CP2K', which is extremely important for my research and not available at my institute HPC. I am thankful to ARCHER2 and the administration for that. (27)*
- *Good things: availability of a large amount of CPU time.*
  *Issues:*
  **** It would be very helpful to have commands available for reporting usage and budgets, rather than having to use the SAFE website. ****
  *Loading modules craype-network-ucx and cray-mpich-ucx seemed to be absolutely essential for scaling on multiple nodes, but also reduced the performance in single-node jobs. I never quite got to the bottom of this.*
  *As a minor thing, it would be helpful to mount /home on compute nodes, to avoid the need to copy binaries to working directories.*
- *There have been some strange hardware behaviours from time to time. I discussed this with the user support and they have been helpful. (30)*
- *My go-to resource for CPU-heavy tasks, needing hundreds of cores, typically DFT calculations using VASP. (33)*
- *My use of the Archer2 service has covered the "4-cabinet -> full size system" transition, therefore I could not benefit from the full power of the system for all the time. However, I am deeply impressed by the quality of the system and the user-level information (e.g. periodical announcements of changes). (35)*
- *sometimes nodes failed (36)*

- *The helpdesk is helpful. The queues are very long - it sometimes takes a few days for a job to start, and running on the short queue is much better. (37)*
- *nice experience (40)*
- *Using the original 4 cabinet system (not to mention the ridiculous delays in getting even that far ) was very frustrating. The full archer2 since January has been much more stable experience with more acceptable queuing times, although our software has been subject to mysterious slowdowns that have not occurred on other platforms and I do not think have been entirely resolved by the helpdesk (41)*
- *Good but a lot of messing around over the last year of what works and does not, when research is time sensitive, stopping and starting can be an issue. (42)*
- *It's been a bit stop-and-start with the transition up to the full system. (44)*
- *Exceptionally good services and well managed queues. (45)*
- *Nodes are quick and the service desk is quicker! (46)*
- *Very good user support (48)*
- *This is a fantastic and necessary resource for UK higher education institutions. I appreciate the access, generous computing resources, and quick and helpful support from the ARCHER2 team. (49)*
- *Very nice documentation, and very easy-to-use queue system (51)*
- *I ahve only been running a few single-node micro-benchmarks. so am not a "real" user :-) (53)*
- *I would like to thanks Archer2 support team. They are very supportive. (55)*
- *This is my first experience with hpc but I have found Archer2 (generally) reliable and very user friendly (61)*
- *Please reduce the number of incidents and shutdowns to the archer. (62)*
- *Great, reliable service with relatively short queue times for even low-priority jobs (63)*
- *timely responses to queries and good software (64)*
- *Excellent support. Quick responses to queries. (65)*
- *Generally good uptime, and good fast feedback on technical queries (70)*
- *Reliable, reasonable queue times, good performance (76)*
- *Excellent Service (79)*
- *ARCHER2 is UK's proud asset for science and engineering research. (83)*
- *It's great that there is a low priority queue to run jobs in addition to the allocated resources. Queue overall is very good also. (84)*
- *Turnback times are great even in the lowpriority group. Whenever there was an issue, archer support team always responded quite fast and with helpful answers. (87)*
- *All I can say is excellent. The scale of computational resources that ARCHER2 provides is outstanding. I recently moved from one of the leading countries in computational science. Over there, that has been always challenges to conduct many big simulations. ARCHER2 has facilitated this for us. Further, the level of support that I receive from ARCHER2 team is excellent. Every time I raise a quote, I receive the response in a few minutes and everything will be sorted quickly. (88)*
- *I just would like to say that signing up process was a bit difficult for me. (89)*
- *Archer2 is the powerful cluster I have never seen before. To be honest, I am so satisfied with its works, and it helps a lot during my PhD. (94)*
- *Found the computer time was used more quickly because of the increased number of cores. (95)*
- *Excellent service and training (100)*
- *An excellent research machine, once the teething problems were sorted. (104)*
- *No problems. (110)*
- *Super facility and great support from technicians (112)*
- *Using ARCHER2 Service has really improved the quality and efficiency of my research. The support offered when I faced issues was also quick and helpful. (113)*
- *The staff working for ARCHER2 are always extremely responsive and helpful, which do accelerate my research progress!! The only thing is that at UKCTRF, our simulations sometimes automatically stop due to some of other users occupy the "full disk" without clearing their modelling files. It will be really good to setup a mechanism to remind other users if somehow can be achieved. (114)*

- *The training is very useful not only to use efficiently the results but also to learn (117)*

### Hardware

- *Lower memory per core than ARCHER is disappointing (3)*
- *I need to be dedicated more CPU cores to reduce time assumption (4)*
- *the lower RAM to core ratio on A2 nodes compared to A1 nodes has been an issue at times (6)*
- *larger per-core memory! (9)*
- *wondering if/when any GPGPU will be attached? (15)*
- *I wrote "partially met requirements", as I expect the machine to be up and running very soon, I hope. For the rest, the machine has met my requirements. (17)*
- *Although the hardware is an excellent improvement on ARCHER1, more RAM per node would enable the system to be used more efficiently. (19)*
- *Good things: focussing resources on CPUs rather than GPUs is very helpful. Issues: see the comment about craype-network-ucx and cray-mpich-ucx in comment box 2. (29)*
- *It would be useful if the system could be improved with some GPUs. (30)*
- *There are hybrid CPU/GPU systems based on AMD GPUs that are becoming available. Might be worth looking into for a future upgrade. (33)*
- *The 2x64-core nodes are the top configuration I have encountered. The number of large memory nodes seemed also to meet my needs. (35)*
- *more local storage for staging of model output to ease the logistics of transferring it elsewhere would have been appreciated (41)*
- *time sensitive work and a lot of issues, still not enough space for large model outputs. (42)*
- *Execution at large-scale remains problematic. There appears to be an upper limit of around 2k nodes for the largest jobs that can be successfully executed. Whether a hardware/network issue or a software one, I'm not sure. The reduced bandwidth of the nodes also seems to inhibit the performance of my memory-bound application based on the lattice Boltzmann method. The lack of scale deployment of GPUs also seems an oversight/restriction. (43)*
- *The lack of a GPU partition is noticeable absence in the current direction of travel for model development research (44)*
- *GPU nodes (46)*
- *Not to say I am not extremely happy with the resources provided. I only selected the middle option because I am creating a huge database for my machine learning model, and that takes a lot of CPU time & nodes. (54)*
- *The memory-per-core on ARCHER 2 can sometimes be a limiting factor for periodic electronic structure (DFT) calculations in e.g. VASP (due to the sheer number of cores per node, these codes are likely to become memory-bound). The highmem partition helps with this somewhat, but often the best (60)*
- *We have found it very easy to exceed the memory capacity of a node leading to either using the high memory nodes or the need to use many nodes, sometimes more than we'd initially planned. (61)*
- *That is great. (62)*
- *Access to some GPU resources could be useful (63)*
- *GPUs would be very useful. (69)*
- *I hope that there will be a plan for long-term large-scale data storage capacity. (83)*
- *archer 2 was a step up for my work and allowed me to explore parameter regions not yet explored in the literature of my subject. (87)*
- *No comments. Initially, I had some memory issues due to using old C libraries for compilation. The support team resolved this issue for me. (88)*
- *GPUs when? (93)*
- *No, Archer2 hardware is the best, fastest one. (94)*
- *Would appreciate a qos that is longer than 48 hours for very long jobs that can no longer be sped up by increasing the number of nodes (100)*

- *The AMD Rome architecture is performing very well. (104)*
- *I was performing measurement and performance reporting of my application but was not able to collect floating point counters (with perf) due to Kernel and hardware compatibility issue. (111)*
- *It is perfect. (114)*

### Software

- *There were early software issues, but these seem to have been mostly ironed out (6)*
- *CDO commands and Python/Iris being pre-set up for users would be useful as this took a while to get working (7)*
- *the new hidden modules is a challenge. another new thing to contend with while coping with the differences to cab4. (15)*
- *I wrote "partially met requirements", as I expect the machine to be up and running very soon, I hope. For the rest, the machine has met my requirements. (17)*
- *I would like DFTB+ plus to be installed on Archer2, although I accept that codes can only be supported when there is sufficient interest (19)*
- *Not really. Keep up to date on developments. (33)*
- *I have relied in some part on the external software which I compiled as needed. Because of the transition from the 4cab to the full service, some changes to the default compile environment were unavoidable, making the maintenance of binaries slightly less easy. I expect, however, that now when the system is mature, these problems have mostly vanished. (35)*
- *I need ChemShell. But for almost half year, it is unfinidhed. Hope it can be finished soon. (36)*
- *being forced to move away from the intel compilers has been a pain (41)*
- *Execution at large-scale remains problematic. There appears to be an upper limit of around 2k nodes for the largest jobs that can be successfully executed. As I recall, my jobs above this fail with errors related to UCX. Using other networking layout (OFI) inhibit code performance. (43)*
- *Software all seems fine. (44)*
- *Access to more QM/MM codes could be useful (46)*
- *It would be valuable to have a graphical user interface through which users could use, for example, data visualisation software (e.g., gnuplot, paraview). (49)*
- *Not fully met because I had to install some software myself, which was not an issue at all. (54)*
- *Everything is fine. (62)*
- *would be useful to have older gromacs versions available to maintain the protocol for whole sets of work (64)*
- *would be useful to have older gromacs versions available to maintain consistency within projects. (65)*
- *ffmpeg should be part of the modules that are easy to load. I had to install it manually and know of at least 3 colleagues who did the same. (69)*
- *I include in this the queueing setup of ARCHER2 - it would be helpful to have some access to longer walltimes for some smaller jobs (70)*
- *Intel compilers for fortran would be useful! (73)*
- *Email notification is a nice feature to have. Hope it will come back. (74)*
- *Mostly using codes compiled by myself, and compiler setup is good. The python setup is a bit clunky, using conda environments would have been preferable. (76)*
- *No, software on Archer2 are the best. (94)*
- *There were quite a few bugs in the maths libraries, which have caused some headaches. It would be good if the "known issues" web page included these, especially the known problems with MKL and LibSci. (104)*
- *The software I wanted to use for my research were all available and up to date. I did not face any issue regarding the functionality of the software. (113)*
- *For myself, it would be useful to have more up-to-date versions of materials modelling codes, e.g. CASTEP, installed on the machine (116)*

**Service Desk**

- *The quick response of the help is very appreciated (2)*
- *excellent and rapid, as with A1 (6)*
- *Might be useful to see others queries and answers? (7)*
- *it took a while for one of my queries but it was mainly down to AOCC profiling so maybe out of the hands of support desk. Eventually answered. (15)*
- *very quick to answer questions and friendly staff (18)*
- *The service desk is very helpful and effective (19)*
- *The service desk always replied promptly to my queries (30)*
- *Have nothing but praise for the help desk. They usually come back promptly with solutions. (33)*
- *No problem encountered - the service desk were always helpful. (35)*
- *Perfect (36)*
- *Usually very quick and helpful. (42)*
- *Useful comments and responses. Good habit of following up on open threads. (43)*
- *Very quick at resolving issues (46)*
- *have always gotten fast and helpful support from the service desk. The staff continue to communicate and dive into issues until they are solved. (49)*
- *Really impressed with the ARCHER2 service desk - this PhD student is very grateful for you guys! (57)*
- *Very quick, informative, and helpful replies, with satisfactory resolution of issues. The service desk team should be commended. (60)*
- *Good service and fast response from them. (62)*
- *polite and timely response - thank you Jo (64)*
- *Whilst people are helpful, I was waiting up to 2 weeks for a reply so it was impossible to have a conversation (73)*
- *The service desk is incredibly helpful and knowledgable. (82)*
- *ARCHER2 service desk is very helpful and rapid in response. (83)*
- *Always received a reply within 48h - very good. (84)*
- *Always quick answers, kind and helpful (87)*
- *As stated above, I am completely satisfied with the level of support that service desk provides. Never seen such a well committed and expert group of staff in a service desk. (88)*
- *Very quick, very professional replies (96)*
- *Prompt, helpful responses to all of my queries. (102)*
- *Always quick and helpful, I've been extremely pleased with the service desk people. (104)*
- *Quick response and great support (112)*
- *As stated above, the service desk offered fast and helpful support. (113)*
- *Very good experience indeed. (114)*
- *Thanks for the very fast and clear responses (117)*

**Documentation**

- *I find the ARCHER2 documentation much easier to navigate with respect to ARCHER documentation (30)*
- *My go-to for finding submission scripts, setting up Python etc. not much to say. (33)*
- *In my opinion it is very thorough and simply exemplary. (35)*
- *i want to find some scripts, but i need to find on the website of ARCHER2 longer time (36)*
- *Further comments on execution at scale would be useful. Though, understandably, this may be very application dependent. (43)*
- *I learnt a lot of useful things about HPC while reading this documentation (51)*
- *Documentation is understandably an ongoing process, but greater detail/advice for very commonly used codes (e.g. VASP) would be appreciated, particularly e.g. advice on efficient job sizes/allocation of resources, or documentation of common errors. (60)*
- *More links to recommended further information would be great (61)*

- *Documentation is complex for the readers. It is difficult to find the section I needed for my job. (62)*
- *I think this is probably the weakest point for me. I have to say I don't feel very confident with my computing skills. So at some point I found that I would have liked more detail, clarity or examples for jobs submission that require to change the type of queue and memory resource request depending on the partition and queue, or launching several jobs at once, etc I never understood exactly why I use the --distribution=block:block for instance. I also have to say I assume responsibility because I never did the training when it was offered since I thought I was not going to use it at that time. (87)*
- *Note above comment about "known issues". (104)*
- *Not really an issue but I think it would be better to explicitly clarify that the burst buffer on archer2 is literally a burst buffer in front of the PFS. I was given the impression that there is DataWarp (which is also marketed by Cray as a burst buffer) on Archer2. (111)*
- *I used the ARCHER2 Documentation often, especially the "Running jobs" section to find the best option to submit my jobs. (113)*

**Website**

- *The ARCHER safe interface which allows you to see usage and jobs remains somewhat clunky to use (though fully functional) (6)*
- *not really used extensively: main reasons to find out about the hardware configuration and access to SAFE (15)*
- *Mostly use if to access SAFE. (33)*
- *No problems noticed. (35)*
- *some files need to find with long times (36)*
- *service issues sometimes not updated straight away and a little more confusing than the ARCHER2 service status. (42)*
- *Good (62)*
- *A bit confusing but can usually find things needed (65)*
- *Nothing in particular (83)*
- *Sometimes it annoys me when I'm looking for the docs and I end up on the website (93)*
- *It would be handy if the eCSE requirements (webinar and report) were mentioned on the website and if templates were provided there, too. (102)*
- *I have not used the website a lot, mainly to contact service desk or access the documentation. (113)*

**Training**

- *All good as i was ale to give feedback on the training i have had. (15)*
- *I am waiting for a new course on containers! (30)*
- *Popular courses seem to fill up quickly, so I guess there is a need to run them regularly. (33)*
- *Probably specific application-oriented courses could attract new users or help existing users broaden their use of the system (e.g. optimal use of AMD and MKL math libraries with practical demonstrations - code timing...) (35)*
- *some videos on archer2 i cannot watch because i cannot visit youtube in China. (36)*
- *I went to what I thought was a training session on CASTEP, and it didn't cover basic things that I didn't know. New people use the service every year, and it would be good to have some very basic training, otherwise we risk teaching one another bad practices that we have picked up along the way. (37)*
- *I completed two trainings before using Archer2 and found them both very good. The presenters were very knowledgeable and were able to help where needed. (61)*
- *Honestly, I don't need training, as I am fully familiar with the simulation method and capabilities of Archer2. (62)*

- *I attended the Advanced MPI training. I feel that the course is good enough to provide glimpse of Advanced MPI but on the other hand somewhat lacks in providing comprehensive knowledge of the subject. Two courses can be conceptualized with one being introductory in nature and of shorter duration and other being longer duration course covering stuff in details. (101)*
- *I only attended one online training and it was good. (113)*
- *Excellent courses (117)*

### Webinars and Virtual Tutorials

- *all good (15)*
- *I have mostly attended presentations related to Archer2, as well as some science. (33)*
- *My use of these webinars was too small for me to provide a "statistically significant" answer. (35)*
- *Fine (36)*
- *The webinars provide some basic instructions which are useful for learners and not advanced researchers. (62)*
- *Appreciate training on aspects of python that work well with Archer2 (100)*
- *Having webinars allows me, from abroad, to learn (117)*

### Online Training Material

- *Have only looked at some of the basic stuff. (33)*
- *Again, my use of the online trainings was too small for me to provide a "statistically significant" answer. I happened to find the material fully explaining my problems. (35)*
- *maybe more training material needed (36)*
- *Helpful to go through when needed (42)*
- *It was about wind turbine modelling. It was useful to see another software usage on Archer. (62)*
- *I used only one training material for QM/MM using gromacs+cp2k. I found it really useful, however, I could not access fully the parameter files (.mdp and .inp), thus I could not compare with my files to spot any differences that might be causing the issues on my jobs. (113)*