EPSRC

Engineering and Physical Sciences
Research Council

Resource Allocation Panel (RAP): Access to ARCHER

Call type: Invitation for proposals

Closing date for applications to EPSRC: 15 September 2014, 16:00

Closing date for the ARCHER technical assessment that needs to be attached to your application: 1 September 2014, 16:00

Related themes: Research infrastructure

Summary

This is a call for applications for direct access to ARCHER through the Resource Allocation Panel. Please note that this is a call for projects outside of the remit of the High End Computing Consortia. The total amount of resource for this call is limited to ~ 250,000 kAU, subject to the quality of the proposals.

We would encourage applicants to show relevant scaling data for their codes in order to assure the panel that the allocated resource is used efficiently. If no scaling data is available on the system, we would encourage researchers to obtain this information through a preliminary instant access to ARCHER: http://www.archer.ac.uk/access/instant-access/

Resource Allocation Panel calls for ARCHER resource are published approximately every four months.

Background

EPSRC offers access to ARCHER through calls for proposals to the Resource Allocation Panel (RAP). Users can request significant amounts (>1,000 kAUs) of computing resource over a maximum 1 year period. The aim of this call is to provide:

Access to our new national state-of-the-art high performance computing facility for proposals of high scientific quality that would benefit from ARCHER.

A non-exclusive list of eligible projects include:

- Short computational projects that do not warrant a full grant application

- UK led collaborative projects with international and/or industry partners

- Joint applications from students with proven HPC experience (e.g. a successfully completed instant access project) and their PIs

- Projects that link consecutive standard grant applications or that aid the preparation of a grant or fellowship application

- Extended feasibility studies and trialling application developments at scale *(for a short pump priming allocation of maximal 6 months, please contact the ARCHER service for "instant access").*

Applications to the Resource Allocation Panel should lie primarily within the remit of EPSRC although proposals in multidisciplinary areas will be accepted. Please note that **EPSRC reserves the right to reject proposals which lie outside the remit of EPSRC.** If you are unsure about eligibility, please contact us before preparing your application.

For more information about EPSRC's portfolio and strategies, see our website: http://www.epsrc.ac.uk/research/ourportfolio/

Funding available

Applications to this call can request ARCHER computer resource only for a maximum duration of 1 year.

Since this type of computer access is not intended to replace full peer reviewed standard grant access, full economic costs for projects cannot be requested; only ARCHER computing resource is available through this mechanism. Any resource allocated is for immediate use and the **start date of the proposal must be within one month of the panel date** (see Call Schedule).

Computing resources on ARCHER are awarded in Allocation Units (AUs) with one AU equivalent to a one-gigaflop/s processor running for one hour. Although there is no limit to the number of AUs which can be applied for, there is a limit to the total amount of AUs available against this call. EPSRC aims to allocate around 250,000 kAUs at every Resource Allocation Panel, with the potential to allocate more depending on the strength and scope of proposals received and the available resource on the machine.

Please note that we do not generally grant extensions of a RAP project and any AUs which have not been used by the end of this period will be lost. It is therefore imperative that applicants are well prepared and only request an allocation they can realistically use in the allocated period. This should take into account queuing times, potential issues with newly ported codes, service delays and the time to respond to intermediate results. *Please do not hesitate to contact the helpdesk at an early stage if any computational issues occur.* Exciting high-risk/high-reward research is strongly encouraged, but careful consideration is needed to ensure that the requested allocation is appropriate and can realistically be used within the project duration.

Please note that we would not normally allocate resource through the RAP where one of the High End Computing consortia (HEC consortia) would allocate projects of this type. If your application falls within the remit of a consortium, please contact the respective consortium directly:

➢ Materials Chemistry Consortium (http://www.ucl.ac.uk/klmc/mcc/)
➢ UK Turbulence Consortium (http://www.turbulence.ac.uk/)
➢ Biomolecular Simulation Consortium (www.hecbiosim.ac.uk/)
➢ Plasma Physics Consortium (http://www.ccpp.ac.uk/hec/index.html)
➢ Mesoscale Engineering Consortium (http://gow.epsrc.ac.uk/NGBOViewGrant.aspx?GrantRef=EP/L00030X/1)

- ➢ UK Car-Parrinello Consortium
  (http://gow.epsrc.ac.uk/NGBOViewGrant.aspx?GrantRef=EP/F036884/1)
- ➢ UK Turbulent Reacting Flows Consortium (http://www.ukctrf.co.uk/)

Please consider carefully if ARCHER is the appropriate resource for your proposal. If your project would be better placed at a Tier-2 or Tier-3 resource, please contact the respective regional centre or local University directly. Information on EPSRC supported regional centres can be found here: http://www.epsrc.ac.uk/research/ourportfolio/themes/researchinfrastructure/sub themes/einfrastructure/highperformance/computingcentres/

Eligibility

Only individuals eligible to hold a full EPSRC grant can apply to the Resource Allocation Panel.

For information on the eligibility of organisations and individuals to receive EPSRC funding, see the EPSRC Funding Guide: http://www.epsrc.ac.uk/funding/howtoapply/fundingguide/

As this call is a targeted funding opportunity provided by EPSRC, higher education institutions, and some research council institutes and independent research organisations are eligible to apply. A list of eligible organisations to apply to EPSRC is provided at: http://www.rcuk.ac.uk/funding/eligibilityforrcs/

Repeat applicants: Since applications to the ARCHER RAP do not pose the same burden on peer review as full grant applications, they are not considered as part of EPSRC's policy toward repeatedly unsuccessful candidates (see http://www.epsrc.ac.uk/funding/howtoapply/basics/resubpol/).

However, to manage demand, repeat applications to the RAP from previously successful applicants are not encouraged. Also, **researchers may not submit more than two consecutive proposals to the RAP (as PI or Co-I) regardless of previous success**.

Only one application per PI or Co-I is permitted in each round.

How to apply

Applicants must provide two documents:

1) Technical Assessment

2) Application Form

1. ARCHER technical assessment

Applicants must submit a completed **technical assessment from the ARCHER service provider together with their application** in order for it to be considered by the panel. This additional step is important to ensure that the level of resources requested has been appropriately scoped and that all technical requirements have been considered prior to submission.

In order to obtain a technical assessment, applicants should submit a short project description together with a ARCHER technical assessment form http://www.archer.ac.uk/access/ta/ to the ARCHER service (support@archer.ac.uk) prior to 1 September 2014 (16:00).

Please make sure the subject header of your submission email states that this is an "ARCHER RAP submission".

The completed technical assessment will normally be returned to the applicant promptly, although if the reviewer has concerns about the project, it may take extra time for these to be addressed. **EPSRC and the service provider cannot be held responsible for applications that miss the final deadline if the applicant has not met the deadline specified above for submission of the technical assessment.**

2. Application form

Applicants should download the application form from the ARCHER website: http://www.archer.ac.uk/access/rap/Application_Form_RAP_summer_2014.pdf When completing your proposal you should take into account the assessment criteria given below (see Assessment Criteria) and consider the broad expertise of the panel (see Assessment Process). Applicants must use the most recent version of the application form. **Applications submitted on the incorrect form will not be considered. Unless explicitly stated otherwise, only information contained in the application form and the technical assessment will be considered by the panel.**

Submitting application

Provided the technical assessment endorses the proposal, **applications should be sent together with the completed technical assessment** directly to ARCHERRAP@epsrc.ac.uk before the call deadline.

Guidance on writing application

Track Record (max 1 page): Provide details of the applicant(s) track record in computational science and engineering, porting, developing and using codes, on HPC facilities such as ARCHER. Highlight any previous publications or other scientific outputs arising from HPC work relevant to this application. If you are new to HPC, how do you plan to involve partners / CSE support to ensure the necessary computing expertise is guaranteed? Please include any other information you think is relevant to demonstrate applicant(s) suitability to undertake this work.

If your project involves collaboration with an international or industrial partner please include any information you feel is relevant regarding their expertise and your collaboration with them.

Additional Support (max ½ page): State details of any additional financial and/or technical support for this or other research projects relevant to this application. As this proposal is for computing resources only, applicants should give details of how any other necessary resources for the project (e.g. staff time) will be made available.

Objectives (max ½ page): Briefly list the main objectives of the proposed research, written for a generalist scientific audience. Explain how ARCHER will help you to meet these objectives.

National Importance (max ½ page): Please justify why this proposal warrants support in terms of the importance to the UK and explain how the proposed research relates to and contributes to EPSRC priority areas (http://www.epsrc.ac.uk/research/ourportfolio/)

Please also state which research area(s) this proposal relates to:
http://www.epsrc.ac.uk/research/ourportfolio/researchareas/

Case for support (max 2 pages): Describe your proposed research explaining clearly the novelty and timeliness of the work. Explain how it will deliver a high quality scientific output, or lead to results that will ultimately enable high quality scientific research. If the work has particularly novel elements that could be considered high risk - high reward please indicate how the risks will be managed.

Please explain why ARCHER is the most appropriate resource for this work, rather than other national, regional or local (university) resources. If your proposal is within the remit of one of the EPSRC HEC consortia (see links above), please explain why the consortium could not provide access to you in this case. We encourage you to attach a letter from the consortium to strengthen your case.

Pathway to Impact (max ½ page): Please identify any potential applications of the proposed work which are not already covered in the case for support section. How might this work impact the national / international high performance computing landscape (for example generating new code, development of existing code, increased computational efficiency, opening up HPC for new scientific areas). In the long term, could there be any training opportunities arising from this project? Would access to ARCHER impact new or existing academic collaborations and industry-partnerships? Explain how you will ensure that impacts are achieved.

Further general guidance on impact can be found here:
http://www.epsrc.ac.uk/funding/howtoapply/preparing/economicimpact/

Resources Management (max 1 page): Please state the requested number of AUs, memory, storage and notional costs; as approved by the technical assessment. Please state how much storage space on the Research Data Facility (RDF) you require. Explain how you plan to use and manage the allocated resources. Please remember that the total number of AUs allocated through this process is limited. If you are applying for a comparatively large number of AUs, you need to demonstrate that your code(s) can make optimal use of this resource – e.g. by providing detailed, relevant, benchmarking and scaling data. It is important that you ensure a timely start and finish of the project as well as efficient use of the granted AU allocation over the requested time period. (Please note, the Resource Allocation Panel can recommend a reduction in AUs or time awarded if the original request is not fully justified).

Work plan (max 1 page): Please provide a work plan for the proposed project to justify the requested amount of time and AUs.

List of High Performance Computing related publications: Please provide a list of your scientific output in terms of publications in the area of High Performance Computing over the last 2 years. Please state the name and type of machine used for the work (Tier-3 = local clusters; Tier-2 = regional machine; Tier-1 = national machines; e.g. ARCHER; Tier-0: large international supercomputers, e.g. through PRACE or INCITE).

Assessment

Assessment process

Applications to this call are not subject to postal peer review and will be reviewed and prioritised directly by the Resource Allocation Panel (RAP).

The RAP is selected to comprise a broad cross section of HPC users from disciplines within engineering and the physical sciences. The RAP meets at regular intervals throughout the year and its membership is refreshed periodically.

At the panel meeting, the RAP will rank the submitted proposals in priority order for allocation. EPSRC will then decide on the total number of AUs and time awarded.

Applicants will be notified of the outcome of the panel within one week of the meeting. **Successful applicants should then contact support@archer.ac.uk to confirm the start date of their project.**

Assessment criteria

The assessment criteria used by the panel to rank proposals are:

- **Scientific quality**: What is the quality, importance, novelty and timeliness of the proposal in terms of the scientific research proposed? To what extent will the proposal deliver a high quality scientific output, or lead to results that will ultimately enable high quality scientific research? To what extent, is the proposed work exploring novel and new ideas that may have a high risk, high reward element? To what extent are the risks involved with the project appropriate and adequately managed?

- **Appropriateness and Technical suitability:** What is the technical suitability of the proposed work for the ARCHER facility? Is ARCHER the best or only UK system on which this research can be conducted? Is ARCHER better suited for this work than computing facilities at local universities or regional centres?

- **Applicant(s)**: Is this the appropriate team to undertake the research proposed? What is the applicant(s)' track record in computational science and engineering, porting, developing and using codes, on HPC facilities such as ARCHER? What is their track record of publishing in this area? If the applicants are relatively new to HPC, are appropriate support mechanisms in place to guarantee efficient use of the allocated resource?

- **Impact**: What is the potential impact of the proposed research on the application domain and the HPC landscape? Have the applicants demonstrated awareness of the potential broader impacts of the proposed work? For example, does the proposed project have further potential applications? Does the project offer training or career development opportunities? Is there scope for future academic collaborations and industry-partnerships?

- **Resources and Management:** Is the level of requested resource (no of AUs) appropriate and well justified? Does the proposal contain a work plan that

justifies the requested time? Is there sufficient staff time allocated to do this work? Is the project adequately managed, including potential risks?

Moving forward

Please note that you will be required to produce a narrative final report for within 3 months of the completion of your project, including a summary which will be published on our website:
http://www.epsrc.ac.uk/research/facilities/hpc/allocations/

If your application is successful you will be sent written guidance on the reporting requirements.

Key dates

Activity	Date
Technical assessment deadline	1 September 2014
Closing date for proposals submissions	15 September 2014
Resource Allocation Panel	Early October 2014
Earliest project start	1 November 2014
Latest project start	1 December 2014

Contacts

For further information about this call, please contact:
Dr Michele Erat, Research Infrastructure Programme, EPSRC
(01793 444213, michele.erat@epsrc.ac.uk)

Additional information about the ARCHER service can be found here:
http://www.epsrc.ac.uk/research/facilities/hpc/intro/

Change log

Name	Date	Version	Change
Michele Erat	15/07/2014	1	N/A