Call for Proposals: the AAL Supercomputer Time Allocation Committee (ASTAC) Large Program

Applications close on Friday 1 July 2022, 11pm AWST. Late applications will not be accepted. Apply online here.

Background, Minimum Request and Eligibility

Astronomy Australia Limited (AAL) has purchased 10M CPU hours (or equivalently 20M service units*) per year on Gadi, the Fujitsu system at the National Computational Infrastructure (NCI). This time is available to the Australian astronomical community via a competitive review process, to be overseen by the AAL Supercomputer Time Allocation Committee (ASTAC).

This call for supercomputing time proposals will include the 10M CPU hours on NCI Gadi, with resources available from 1 July 2022 to 30 June 2023. Specifically, the time is intended to be awarded in relatively large allocations running large-scale parallel computations. This is to support projects that could not be carried out using the smaller amounts of time available via previous ASTAC calls, hence the **minimum request for this call will be 2M CPU hours**, and all projects that are awarded time are **expected to be able to use at least 192 cores (4 Gadi nodes)** in parallel.

Researchers affiliated with an institute in Australia are eligible to apply. Early Career Researchers, including postdocs and students, are especially encouraged to apply.

Online Submission, Proposal Elements and Selection Criteria

The online proposal submission URL is: **https://tac.adacs.org.au/calls/35/**

The proposal should be submitted no later than **11pm AWST on Friday 1 July 2022**.

In addition to administrative data, applicants will be requested to submit a **science justification** and a **technical justification** for their request. Both are to be submitted in PDF format, are limited to a **maximum of five pages** plus references. The proposal must contain the following elements:

1. **Science justification**: this document should clearly explain the science goals of the project, and how the computations to be carried out are necessary to achieve those goals. Note that in this call the minimum request is 2M CPU hours. The proposal should explain clearly why an allocation of >= 2M CPU hours is needed to enable the science goals and how the results are expected to be of high impact.

* On Gadi, the conversion rate is 1 CPU hour = 1 Service Unit (SU) for a regular job request on the normal queue, noting this conversion rate can vary depending on job type. See https://opus.nci.org.au/display/Help/2.2+Job+Cost+Examples for examples.

2. **Technical justification**: this document should provide the following technical information on the proposed computations:
    - **Explain the computational paradigm** (e.g., computational fluid dynamics, N-body dynamics, Monte Carlo calculations, etc.) and workflow (e.g., what is the typical CPU count and wall clock time per job? Does the code write checkpoints?) for the calculations to be carried out.
    - **Justify the resources requested**: estimate the number of CPU hours required to carry out the proposed calculations; this justification should be directly related to the science goals outlined in the science justification. If the calculations also require additional resources (e.g., extra long-term storage), please state that as well.
    - **Scalability**: demonstrate that the proposed calculations can be carried out efficiently in parallel on Gadi. Where applicable, provide a scaling study demonstrating the efficiency of the calculations as a function of CPU count.
    - **Specialised hardware (optional)**: if the computations can take advantage of GPU acceleration or other specialised hardware (e.g., high-throughput file systems), explain how they do so, and provide evidence for the speedup or improvement provided by the specialised hardware.
    - **Data management**: explain the plan for storing, managing, and curating the data produced by the computations.

Timetable

The following timetable is envisaged:

Activity	Date
ASTAC Call for HPC Proposal opens	17 June 2022
ASTAC Call for HPC Proposal closes	1 July 2022
Evaluation panel reviews and makes final recommendations for allocations to the AAL Board	15 July 2022
Intended formal notification of successful tender(s)	Late July 2022

Communication

All communication will be documented and communication, wherever possible, will be in writing. Any additional information regarding this competitive process provided to one applicant shall be disclosed to all applicants to ensure an open and transparent process.

Enquiries

Any enquiries regarding this competitive process, email submission, or other issues, please contact:

- **Shona Madoc**, AAL HPC Program Manager: shona.madoc@astronomyaustralia.org.au
- **Dr Bernhard Mueller**, Chair of ASTAC, Monash University: Bernhard.Mueller@monash.edu.au

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