

Guideline for Application Form – Call for Projects on ASPIRE 2A

V2.0 (30 October 2024)

1. Basic Information

1.1. Project Name

If you are supported by a grant from a funding agency, please use the exact form of your project title in your research grant proposal.

1.2. Project Description

If you are supported by a grant from a funding agency, please use the exact form of your project abstract in your research grant proposal.

Please provide a summary that accurately describes your project, including the following information:

- project objectives;
- scientific rationale;
- innovation potential;
- expected outcomes and scientific advances.

1.3. Project Significance (National or Global benchmark)

Please describe the significance of your project in terms of national or global contribution.

1.4. Primary Scientific Domain

Please specify the scientific domain of research for your project.

1.5. Organisation

Please select the organisation that you belong to.

1.6. Software Applications

Please provide the applications and their versions.

Example:

abyss/2.3.2

bazel/4.2.2

cuda/11.6.2

gcc/8.5.0-nsc

1.7. Principal Investigator (PI) / Project Supervisor

Please provide the contact information of the PI or supervisor. If your project does not have a, please provide the contact information of your supervisor (manager, director or the equivalent).

Note that the PI / project supervisor must be from the same institute as the applicant.

1.8. Project Team (Add member)

This section allows you to add users to the project using their NSCC user IDs. You may add users to the project at a later date by sending an email to projects-admin@nsc.sg by specifying the user's NSCC ID and project ID.

2. Project Type

2.1. Project Grant ID

This is the Grant ID given by your project funding's grant agency. Please do not use the NSCC project ID.

2.2. Project Start and End Date

Please specify the expected start and end date of your entire project that requires computational support from NSCC.

2.3. Overall Project Funding (SGD)

This question is required for us to have a high-level understanding of the scale of your project.

2.4. Status of Project Funding

Approved: Funding approved by funding agency.

Submitted: Project and funding information has been sent to the funding agency and pending for approval.

Under Review: Project and funding information under review to be submitted to the funding agency.

Under Preparation: Process of preparing project and funding information.

2.5. Is there a compute budget (out of the overall project funding) allocated?

A HPC Compute Budget refers to the funds set aside as part of the overall applied project funding for the provisioning of HPC resources which includes CPU core hours, GPU card hours and storage.

2.6. Compute Budget

All projects must include a HPC Compute Budget for the entire project cycle. Estimating the HPC Compute Budget: to base on commercial Cloud Service Provider (CSP) rates of the respective institutions/organisations' existing contracts.

- a. Ensure that PIs have sufficient HPC Compute Budget for the CSPs, should their Call for Projects application be unsuccessful.
- b. All HPC Resources allocated are subjected to charges, as mandated by NRF. The charges will be based on NSCC Singapore's RIE-funded projects rate.

3. Project Deliverables

Please provide the expected deliverables throughout the *full duration* of your project. Please indicate the number of manpower involved in the project only and not the entire research lab/institute.

4. Resource Request

Please provide the resources you require for the 1-year period of the project cycle. You may request for resources that you require only and there is no need to select every type of resource.

4.1. CPU / GPU

CPU

This refers to the Cray EX CPU Nodes (128 physical cores per node).

Provide the justification for the CPU core hours required, including the calculations and utilisation plan.

Example:

Resources required for molecular dynamics software, e.g., GROMACS, LAMMPS, etc.

(X1 cores) x (Y1 hours) x (Z1 runs) = A core hours

For quantum chemistry software, e.g., Quantum ESPRESSO, BerkeleyGW, etc.

(X2 cores) x (Y2 hours) x (Z2 runs) = B core hours

Total: A + B = C core hours

GPU

This refers to the Cray EX 4-GPU Nodes (4 A100 GPUs per node).

Provide the justification for the GPU card hours required, including the calculations and utilisation plan.

Example:

Resources required for molecular dynamics software, e.g., GROMACS, LAMMPS, etc.

(X cards) x (Y hours) x (Z runs) = A card hours

4.2. AI System

This refers to the Apollo 4/8-GPU Nodes. These GPU nodes come with local storage. In general, AI applications will benefit from local storage but not traditional HPC applications.

Please provide the justification for the AI System card hours required, including the calculations and utilisation plan.

Example:

Resources required for AI model,

(X cards) x (Y hours) x (Z runs) = A card hours

Utilisation plan over the months:

4.3. High Performance Storage (GB)

This is for the estimation of the local high performance storage space that is needed. You may use the scratch disk for the storing of temporary data.

Example:

Resources required for molecular dynamics software, e.g., GROMACS, LAMMPS, etc.

(X1 GB per run) x (Y1 runs) = A GB

For quantum chemistry software, e.g., Quantum ESPRESSO, BerkeleyGW, etc.

(X2 GB per run) x (Y2 runs) = B GB

Total: A GB + B GB = C GB