Apply for access to SNIC resources

The Swedish National Infrastructure for Computing (SNIC) coordinates and provides high end computing and storage capacity for Swedish academic research and education. For this purpose, SNIC provides a set of resources to meet the needs of researchers from all scientific disciplines and from all Swedish universities, university colleges and research institutes. The resources are made available through open application procedures such that the best Swedish research is supported.

Resource allocation is an important function of SNIC. SNIC provides researchers open access to the compute and storage resources. Prioritization and allocation of resources is done in a clear and transparent manner, based on scientific quality, scientific need and technical feasibility of using the requested resources efficiently.

The Swedish National Allocations Committee (SNAC) has the task to prepare the calls for applications, prioritize applications and allocate SNIC resources, based on scientific quality, scientific need and technical feasibility of using the requested resources efficiently. Policies and guidelines for application-based allocation of resources are established by SNIC, and reviewed by SNAC.

GENERAL INFORMATION ON AVAILABLE COMPUTE RESOURCES

In general, each compute resource in SNIC consists of a number of nodes that are interconnected by a high-performance network. Each node contains a number of processors, memory and internal disk. Each processor consists of a number of processor cores. All nodes typically also have access to central storage. The operating system on each of the SNIC compute resources is Linux. The compute resources are hosted and operated by the SNIC-affiliated compute centres.

Despite these similarities, the compute resources differ in hardware characteristics and software configuration, for example the number of compute nodes, processor type, memory per node, node-interconnect performance, I/O-performance, batch system and job scheduler. This diversity (heterogeneity) in computer resources is intentional. The models, algorithms and software applications that researchers develop and use in their work differ widely in the (hardware) resources that are required for efficient execution. A main objective for SNIC is that the set of compute resources provides a balanced and cost-efficient set of resources for large scale computation.

Each compute resource is set up as a shared resource. At any time, each resource is used by multiple users and several applications from different users are executed simultaneously. Even if the resources are large in terms of the number of nodes, processors, memory, and storage, there are limitations to their capacities. If one or more of these capacities are exhausted, the performance of the overall system may be seriously degraded.

However, to ensure that all users are satisfied with the provided services and to ensure that the resources are used efficiently and provide a smooth, reliable and robust service to all users, some rules for the use of the resources are enforced. One such rule is that (project) access to the compute resources is by application for computing time (allocations). This allows SNIC to assess the science that is proposed to be carried out on the resources, the scientific need for having access to the resources and the technical feasibility of using the allocations efficiently. In addition, by granting allocations to projects, SNIC ensures that the resources are not (heavily) overloaded.

HOW TO APPLY FOR ACCESS

SNIC uses on-line application forms and procedures to request computing time or storage capacity (allocations) on one or more of the available resources. An allocation is in the form of computing hours (processor core hours) per calendar month or [Tebibyte](#) (TiB) of storage.

Applying for allocations on SNIC resources consists of the following steps:

1. Verify that you are eligible to apply. Individuals and groups can apply for allocations on the available resources. For all types of allocations, except SMALL allocations, the applicant must be a senior scientist in Swedish academia, at least at the level of assistant professor (*forskarassistent*). Master students, PhD students, postdoctoral students, and guest researchers cannot apply for a MEDIUM or LARGE allocation, but can get access to such allocations that have been granted to PIs that are eligible to apply. (See below for the types of allocations that can be requested.)

The SNIC resources are available only for research and education, but agreements may be established with SNIC for other usage of the resources (e.g., industrial/commercial research or production workloads). Organizations that are not academic, but that would like to have access, should contact the [SNIC office]. If you are uncertain whether you can apply, contact the SNIC office.

For technical questions, contact [the support staff at one of the SNIC centers]. If needed, the center will forward your query to the right place or people.

2. Apply for a project allocation on one or more of the SNIC resources. It is important that the allocations that are requested match the intended usage and the characteristics of the storage or compute resources and application software that will be used. In case of doubt, consult the [SNIC office] or the support staff at the SNIC-affiliated centers to get assistance in choosing the correct resources. (See below for the types of allocations that can be requested.)

3. An application that gets a positive evaluation receives a project allocation. Once an application has been approved, a project will be established on the resources on which allocations are granted. The applicant will be responsible (PI) for this project and must keep an overview of the usage of the allocation(s). The PI must specify and approve which users are allowed to use the project allocation. The PI must ensure that the allocation(s) are used only for the activities that are specified in the application that was approved. The project allocation is shared by all users that are connected to the project.

SNIC reserves the right to grant a project allocation that differs from the request in the application. There can be several reasons for this. It can for example be that the total requested allocations (i.e., the sum from all submitted applications) for a specific compute resource exceeds the total available capacity of that resource. Another reason can be that the proposed research activity in the application is believed to be more suited for another resource than applied for. In such cases, requested allocations may be reduced in size or be assigned to another resource. The request may also be altered if it appears to be too large and/or the size of the allocation is not sufficiently motivated. A request may also be merged with another request or existing allocation in case the research activities (and or groups) are the same or very similar.

The SNAC policy for allocation of resources can be found at www.snic.se.

SNIC COMPUTE ALLOCATION TYPES

Three types of compute project allocations exist. For each type, a project allocation is given in the form of a number of computing hours (processor core hours) per calender month. A project will exist a number of months (typically 6 or 12). Unused allocations in one month cannot be transferred to a later month.

All applications for allocation will be subject to some form of assessment. In general, applications must be deemed technically feasible and result in acceptable efficiency in resource use. Applications for large allocations undergo a scientific and technical assessment. Large applications are sent for assessment to external experts. Applications for small- or medium-sized allocations only undergo a technical assessment.

SMALL allocations

SMALL allocations are for up to 5 000 core hours/month per resource.

This category targets individual researchers and research groups that are not familiar with using HPC resources and would like to build experience and install applications. Also existing SNIC projects that would like to get acquainted with other compute platforms can make use of this category.

MEDIUM allocations

This category is for allocations up to a maximum size (core hours/month). The maximum size of a MEDIUM allocation varies for each resource. The total size of all MEDIUM allocations granted to you can maximally amount to 150%. For example, 80% of the maximum size of a MEDIUM allocation of one resource and 70% of the maximum size of a MEDIUM allocation of another resource.

Applications for MEDIUM allocations can be submitted at any time via a unified online application form. Applications are evaluated by the center(s) that host(s) the resource(s) on which the allocation(s) is/are requested. The evaluation is carried out by application experts and assesses the feasibility of using the requested resources efficiently. The evaluation will normally be completed in two weeks.

Please note that all your granted MEDIUM allocations will be terminated if you are granted a LARGE allocation. Furthermore, note that you cannot be granted a MEDIUM allocation if you have already been granted a LARGE allocation.

LARGE allocations

LARGE allocations are larger than the upper limit for a MEDIUM allocation (for at least one resource).

Calls for LARGE applications are issued twice a year. For the evaluation of applications for LARGE allocations, a peer review procedure is used. SNAC evaluates the applications and decides on the allocations. The evaluation is based on scientific merit, need for the resources, feasibility of efficient use of the requested resources, and impact. For the evaluation of an application for a LARGE allocation, SNAC may consult experts in the scientific and engineering area of the application as well as experts in applications and techniques for efficient resource utilization.

LARGE allocations are granted for a specific period. The allocation period is a 6-month or 12-month period, starting January 1 or July 1.

LARGE allocations are usually decided a few weeks before the start of the allocation period. It is not possible to apply for a LARGE allocation outside the regular calls. Applications outside the regular calls are normally only granted allocations of SMALL or MEDIUM size.

Minor applications for additional allocations to be added to an existing LARGE project allocation can be included.

Please note that all your granted MEDIUM allocations will be terminated if you are granted a LARGE allocation. Furthermore, note that you cannot be granted a MEDIUM allocation if you have already been granted a LARGE allocation.

SNIC STORAGE ALLOCATION TYPES

Two types of storage project allocations currently exist. For each type, a project allocation is given in the form of a number of Tebibytes (in Base 2, TiB). A project will exist a number of years (typically 1).

All applications for allocation will be subject to some form of assessment. In general, applications must be deemed technically feasible and result in acceptable efficiency in resource use. Applications for small- or medium-sized allocations only undergo a technical assessment.

SMALL allocations

SMALL allocations are for up to 10 TiB and 1 year.

Used for testing and development of storage procedures.

MEDIUM allocations

Medium allocations are for up to 50 TiB and 4 years.

POLICY FOR ACKNOWLEDGING THE USE OF SNIC RESOURCES

The number of published research articles is a common way to assess the impact and success of scientific work. It is also an important end-point when taking decision regarding e.g. funding. SNIC therefore explicitly requests the acknowledgement of SNIC in scientific publications that required the use of SNIC resources, services or expertise.
Papers, presentations and other publications that feature work that relied on SNIC should include an acknowledgement.

SNAC has defined the following template for such acknowledgement:

"The computations/simulations/[SIMILAR] were performed on resources provided by the Swedish National Infrastructure for Computing (SNIC) at [SNIC CENTER]."

If applicable, also add an acknowledgement for application support:

"[NAME] at [SNIC CENTER] is acknowledged for assistance concerning technical and implementation aspects [OR SIMILAR] in making the code run on the [OR SIMILAR] [SNIC CENTER] resources."

or

"We thank [NAME] at [SNIC CENTER] for [his/her] assistance with [describe tasks such as porting, optimization, etc.], which was made possible through application support provided by SNIC."

POLICY FOR USING SNIC ALLOCATIONS

By registering as a user of the SNIC infrastructure, you agree to accept the conditions of use. These conditions may vary per partner that hosts SNIC resources and per individual resource. *In general, the local regulations for use of the general IT-infrastructure at each partner also apply to the SNIC resources operated by that partner.*

It is important that each user complies with the rules and regulations of SNIC and its partners. This applies to all types of resources provided by SNIC, including compute facilities, storage (disk and tape) and the network. If you are in doubt whether your (intended) usage of a resource conforms to the rules and regulations, contact the local support staff.

In general, the following conditions of use apply for the use of the SNIC infrastructure / allocations:

§ You shall only use the SNIC infrastructure / allocations to perform work, or transmit or store data consistent with the stated goals and policies of the project that was accepted by SNAC (and of which you are grant holder or user/member) and in compliance with the conditions of use for the SNIC resource(s) on which the allocation(s) are made available.

§ You shall not use the SNIC infrastructure / allocations for any unlawful purpose and not (attempt to) breach or circumvent any administrative or security controls. You shall respect copyright and confidentiality agreements and protect your SNIC user credentials (e.g. private keys, passwords), sensitive data and files.

§ You shall immediately report any known or suspected security breach or misuse of the SNIC infrastructure / allocations / user credentials to the relevant incident reporting locations and, when appropriate, to the authorities that issued the user credentials.

§ Use of the SNIC infrastructure / allocations is at your own risk. There is no guarantee that the SNIC infrastructure / allocations will be available or that it / they will suit your purpose at any time.

§ Logged information, including information provided by you for registration purposes, shall be used for administrative, operational, accounting, monitoring and security purposes only. This information may be disclosed, via secured mechanisms, only for the same purposes and only as far as necessary to other organizations cooperating with SNIC. Although efforts are made to maintain confidentiality, no guarantees are given.

§ The SNIC partners and their operators are entitled to regulate and terminate access to the SNIC infrastructure / allocations for administrative, operational and security purposes and you shall immediately comply with their instructions.

§ You are liable for the consequences of any violation by you of the conditions of use for the SNIC resource(s) in question.

§ You must notify the authorities that issued your SNIC user credentials about any changes in your contact information.

For support questions, see the SNIC knowledge base (http://docs.snic.se) or contact one of the SNIC centers directly (see http://www.snic.se/about/partners/).