

# Vienna Scientific Cluster

## Access Conditions

### Preamble

The Vienna Scientific Cluster (VSC) is a pool of high-performance computing resources that covers the computing demands of 3 different Universities: the University of Vienna (UNI), Vienna University of Technology (TU) and the University of Natural Resources and Applied Life Sciences (BOKU). Projects that have passed a *peer-review* panel and - besides having established scientific excellence - have also proven the need for extremely high performance processing power, are eligible to access the VSC.

For all decisions concerning access to the VSC a Steering Committee has been formed by the Universities taking part.

### Definitions

#### ***Project***

A project is a scientific undertaking of a participating University, that in order to be realised, needs the resources that the VSC makes available. *Projects* are generally scientifically evaluated and reviewed (*peer review*).

#### **Sponsored Project**

A sponsored project is financed entirely or partially by a sponsor (see Appendix 1) after a positive peer-review process.

#### **Internal Project**

An internal project is not evaluated by a sponsor and is therefore evaluated before granting resources.

#### **External Project**

An external project is not evaluated, but the Steering Committee can - in return for refunding of full costs for used resources - allow a Project-Account to be arranged, whereby sponsored and internal projects have priority.

#### ***Project Manager***

The Project Manager makes the required applications and is responsible for the proper organisation and realisation of the project. If a project is sponsored, the project manager is generally identical with the project manager of an externally sponsored project. Project managers are scientific staff members of one of the participating Universities, and as such, that University is the center of their scientific operations. The project manager receives a personal account and is allowed to create further accounts for fellow collaborators.

### ***Project Account***

A Project Account is applied for by the Project Manager. It must either be approved or rejected by the Steering Committee. An accepted account will then receive the following resources, (usually for one year);

- *computing time*
- *bulk storage*
- *Maximum number of available Processor Cores.*

Approved Project Accounts will be automatically extended when an intermediate report shows good cause. One Project Account includes multiple personal accounts.

### ***Personal Accounts***

A personal account is composed of a username and a password which allows one person to log in. Personal accounts are only given in connection with a project account, or a test account in which case it is given by the system administrator. The project manager is in charge of creating personal accounts.

### ***Test Account***

A test account is given by the system administrator. It is however valid for a maximum of one month only, and is restricted to a minimum of computing resources. All together a test account should not exceed 5% of the potential resources. The purpose of such an account is typically to test software and its use of computing power, so that the appropriate calculations can be made for the application of a Project Account.

### ***Resource Agreement***

A resource agreement is an insurance of computer resources in case a particular sponsored project is approved by the sponsor. The resource agreement must be signed by the head of the sponsoring company and is needed before the project is applied for. It is basically a confirmation that the needed computer resources will be available for the duration of the project. Resource agreements are generally given when a maximum of 50% of the computing capacity is needed for any future dates reserved.

### ***Block Reservation***

Block reservation means the reserving of a certain amount of processor cores for a certain amount of time for a project. The reserved computer time will be charged to the project, irrespective of the actual utilized capacity. Block reservations can be used for technical reasons (computer engineering) or for urgent applications. Block reservations should never exceed 30% of the available capacity and are only used when the project still has unused assigned resources at its disposal.

### ***Large jobs***

Large jobs are jobs that simultaneously use more processor cores than given in the parameter "maximum job size without operator intervention" within the system. Such jobs can take up the whole system (see Supplement 1 of the Operational Regulations).

### ***Accounting and Scheduling Unit***

Predefined units of computing resources will be assigned to each job and accounted for, regardless whether all resources of the unit are actually used. These units are defined in Supplement 1 of the Operational Regulations.

### ***Project application***

Project applications are usually arranged by the project manager and the Steering Committee.

If the applicant of a sponsored project makes a commitment to the sponsor or external partner, for an arrangement of computer resources, then a request for a *resource agreement* must be made by the sponsor before the application can be processed. In such a case this request is only allowed if the confirmation of the resources has already taken place. Such a confirmation is only valid under the condition that the sponsor has authorized it.

The application can be made in German or English and should include:

- Project Title
- Project Manager and contact information
- Affiliation of project manager (University, Institute, or professional field)
- A short scientific description (1 to 2 pages if the project is sponsored, otherwise about 5 pages)
- A short description of the software being used, including previous experience about runtime, parallelisation, and efficiency
- Expected starting time of project
- Requested duration of project
- Requested computing time (CPU time)
- Number of processor cores that will be simultaneously used
- Requested bulk memory (GByte)
- Required block reservations

Sponsored project applications should also include:

- Name of sponsor
- Project title
- Project number (if available)
- Amount of funds
- Authorisation and date, or expected date of decision (Resource Agreement)

Internal project applications should also include:

- Suggested names of three experts

External project applications should also include:

- Name of sponsor
- SAP-project account (if available)

If a block reservation is needed then:

- A short reason for the block reservations
- Exact or approximated dates of the needed block reservations

Preferences for the distribution of high performance resources that are accessible to the applicant's University according to Supplement 1 of the Operational Regulations may be indicated optionally, for information only. The actual distribution of the systems available will be administered by the Steering Committee, depending on available resources, organizational and technical aspects.

## **Authorisation procedure**

Project applications can be made anytime online, and will first be examined by the system administrator for technical reasons such as software, and especially the availability of requested resources. The examined application is then sent to the head of the Steering Committee.

Project applications for internal projects are sent to experts for evaluation after arriving to the head

of the committee. The experts might be the ones suggested, or others. After a positive evaluation, the internal project is handled as a promoted project. The number of experts for evaluation is decided upon by the Steering Committee, regardless of the projects scope, and is a maximum of three.

The Steering Committee makes the ultimate decision over sponsored project applications that have already been approved by the sponsor, just as internal projects that have already been positively evaluated, and if approved, then distributes the resources accordingly, for which the following points are taken into consideration:

- Requested resources
- Statement from the system administrators
- Available resources in relation to the requested resources
- Distribution of the entire usage of resources by all participating Universities
- Evaluation from the experts

Project applications for external projects are approved depending upon available resources, where in doing so the Steering Committee determines a uniform cost rate for all external projects. Sponsored and internal projects have priority over external ones, when the resources are allocated.

The Steering Committee decides over requests for a resource agreement in the same way as positively evaluated project applications, including the allocation of those resources. After a project is approved by the sponsor, the approval of the project application is automatic. Requests for resource agreements that do not exceed 300.000 core-hours/year (ca. 1% of the entire capacity), fulfill the formal requirements, and correspond to a sponsored project from a recognised peer reviewed sponsor (see Appendix 1), will be automatically approved by the ZID director of that University. When the Steering Committee makes a decision about a project from one University, the representatives of the other Universities will only oppose that decision when a important reason exists (article 4.3 Letter of Understanding). An exception are external projects that in order to be approved need the agreement of all partners.

## **Adjustment of resource allocation**

When there are no more available resources for a new project, the Steering Committee can extend already given resources for a longer period (or in rare cases shorten them). However the parties involved must be notified first in order to make sure that their contractual responsibilities can continue to be fulfilled.

The Steering Committee can also increase the resource allotment of a project when the project manager can give good reason.

## **Final provisions**

These access conditions have been authorized by an enactment of the Steering Committee on 07.09.2009, and in this actual version by an enactment on the 19. 05. 2011, and can when needed, be changed by the Steering Committee with a new enactment.

## Appendix 1

Sponsors with acknowledged peer review treatment:

FWF	Fonds zur Förderung der wissenschaftlichen Forschung All lines, incl. ERA-NET projects coordinated by the FWF
FFG	Österreichische Forschungsförderungsgesellschaft mbH Including all program lines administered by the FFG with peer-review
ÖAW	Österreichische Akademie der Wissenschaften
WWTF	Wiener Wissenschafts-, Forschungs- und Technologiefonds
ERC	European Research Council
EU	European Union
ACRP	Austrian Climate Research Program
proVISION	Vorsorge für Natur und Gesellschaft (Programm des BMWF)
IV2Splus	Intelligente Verkehrssysteme und Services plus (Programm des BMVIT)