

The Community information

Legal organization representing the research community:

(person and institution)

Johan Montagnat, France Grilles

Country contact points:

Supporting organizations/Representatives

- EGI-Inspire LS representative / Giovanni Aloisio
- Dutch NGI / Silvia Olabarriaga
- Swiss NGI / Heinz Stockinger
- French NGI / Johan Montagnat
- Spanish NGI / Ignacio Blanquer
- German LS users (MEDIGRID?) / Dagmar Krefting
- Lifewatch ESFRI / Los Wouter
- Italian NGI / Luciano Milanesi, Giorgio Maggi

Description:

The “Life-Science community” covers notably the following scientific domains: bioinformatics, genomics, biobanking, medical imaging, (statistical) analysis and systems biology (e.g., virtual physiological human). It covers research groups from universities, research centers and industry, IT actors developing tools for Life Sciences, hospitals and ESFRIs. A “grid ” consists of the distributed infrastructures provided by the National and European Grid Initiatives (NGIs and EGI), supercomputing platforms (DEISA), infrastructures potentially provided by ESFRIs, and other possible resources (e.g. commercial/private cloud resources).

The goal of the VRC is to serve the European Life Sciences community in its exploitation of the grid.

It has the following missions:

- Advance and apply grid technology for life sciences.
- Represent the Life Sciences grid users: negotiate resources, liaise with EGI and other worldwide resource providers.
- Coordinate actions: serve as a contact point for new users, share expertise, avoid replication of efforts, define domain-specific requirements and encourage sharing of resources, data and tools.
- Provide technical services: operate and support common VOs, operate shared services, provide targeted user support and application porting.
- Induction: organize community-specific training events that can smooth the learning curve and lower the start-up cost.
- Dissemination: transfer knowledge, advertize actions, and facilitate communication internally with the members and externally to other groups of interest (e.g., funding and policy-making initiatives).

The VRC is as a lightweight non-profit organization. The HealthGrid association is proposed as the legal entity to host the LSVRC. VRC members are VOs, NGIs, projects, institutions or individuals. The VRC coordinator and deputy are elected by the VRC members. The scientific board is constituted and defines the VRC goals which are implemented by an executive body. Decisions are made based on scientific merit, technical feasibility and value for money.

Comprises 6 VOs (1000+ users)

- biomed (~20 countries): catch-all multi-activities VO
- Isgrid (NL): Bioinformatics
- medigrid (DE): Neuroimaging, image and biosignal processing, surgery support
- vlemed (NL): Bioinformatics and Medical Imaging
- MOSGRID (DE): Molecular Simulation
- DECIDE (EU): Neurodegenerative diseases

EGI Participants currently supporting the research community:

The following National Grid Initiatives (NGIs) actively follow and/or contribute to LSGC activities:

- [SURFsara \(Dutch NGI\)](#)
- [France Grilles \(French NGI\)](#)
- [Italian Grid Infrastructure](#)
- [Ibergrid](#) (Spanish/Portuguese NGI)
- Swiss NGI

NGIs of the following countries contribute compute and storage resources + admin teams to LSGC users: Asia Pacific, Bulgaria, Canada, Croatia, Cyprus, Germany, GISELA project, France, Greece, Hungary, Ireland, Italy, Latin America, Netherlands, Poland, Portugal, Russia, Slovakia, Spain, Turkey, UK.

Resource Center support:

- biomed
 - Arabia Africa: MA-01-CNRST
 - NGI BG: BG05-SUGrid
 - NGI CHINA: BEIJING-LCG2
 - NGI DE: DESY-HH, TUDresden-ZIH
 - NGI FRANCE: AUVERGRID, CREATIS-INSA-LYON, GRIF, IN2P3-CC, IN2P3-CPPM
IN2P3-IRES IN2P3-LPC IN2P3-LPSC M3PEC OBSPM UNIV-LILLE
 - NGI GE: GE-01-GRENA
 - NGI GRNET: GR-01-AUTH GR-04-FORTH-ICS HG-01-GRNET HG-02-IASA HG-03-AUTH
HG-04-CTI-CEID HG-05-FORTH HG-06-EKT HG-08-Okeanos
 - NGI HR: egee.fesb.hr egee.irb.hr egee.srce.hr
 - NGI IBERGRID: CESGA CETA-GRID CIEMAT-LCG2 CIEMAT-TIC IFCA-LCG2 LIP-
Coimbra LIP-Lisbon NCG-INGRID-PT RedIRIS UPorto ifae pic

- NGI IT: CNR-ILC-PISA GARR-01-DIR GRISU-UNINA IGI-BOLOGNA INFN-BARI INFN-CATANIA INFN-FERRARA INFN-PADOVA INFN-PISA INFN-ROMA3 INFN-T1 INFN-TORINO UNINA-EGEE
- NGI MARGI: MK-03-FINKI
- NGI NL: NIKHEF-ELPROD RUG-CIT SARA-MATRIX
- NGI PL: CYFRONET-LCG2 PSNC WCSS64
- NGI SK: IISAS-Bratislava
- NGI TR: TR-03-METU TR-10-ULAKBIM
- NGI UK: EFDA-JET RAL-LCG2 UKI-LT2-Brunel UKI-LT2-IC-HEP UKI-LT2-QMUL UKI-NORTHGRID-LANCS-HEP UKI-NORTHGRID-LIV-HEP UKI-NORTHGRID-MAN-HEP UKI-NORTHGRID-SHEF-HEP UKI-SCOTGRID-GLASGOW UKI-SOUTHGRID-BHAM-HEP
- ROC LA: ATLAND AstrogridPUC CBPF ICN-UNAM SAMPA
- ROC Russia: JINR-LCG2
- Isgrid
 - NGI NL: LSG-AMC LSG-BCBR LSG-EMC LSG-KUN LSG-LUMC LSG-RUG LSG-TUD LSG-UM LSG-VU LSG-WUR NIKHEF-ELPROD RUG-CIT SARA-MATRIX
- vlemed
 - NGI NL: LSG-AMC, LSG-AMS LSG-BCBR LSG-EMC LSG-KUN LSG-LUMC LSG-RUG LSG-TUD LSG-UM LSG-VU LSG-WUR NIKHEF-ELPROD RUG-CIT SARA-MATRIX

Current and future research impact:

(no of papers published, current/expected number of researchers served, growth expectations)
 In terms of scientific goals, they are many since the LSGC is fragmented in small research group with different research topic. In terms of growth expectation, we have observed a 50% increase in terms of NormCPU time over the past years (~100 M NormCPU hours in 2016).

References:

- <http://lsgc.org/en/LSGC>
- <http://lsgc.org/en/Biomed:home>
- <https://www.eu-decide.eu/>
- <http://lsgc.org/en/LSGC:medigrid>
- <https://mosgrid.de/portal>
- <http://lsgc.org/en/LSGC:vlemed>

Scope of the service request:

* High throughput data analysis (<http://www.egi.eu/solutions/htc/>)

Acknowledgements policy

Contributions will be acknowledged both verbally at conferences and in written form in all major manuscripts communicated by the community.

Minimum access mode required.

Opportunistic: (resources are not exclusively allocated, but subject to local availability), however opportunistic access is guaranteed for the agreed duration. More favourable allocation policies are welcome. Different access modes to the minimum requested here will be considered.

Payment mode requirement:

free at point of use

HTC requirements CPU

- * Opportunistic computing time [HEPSPEC-hours]: ~ 100 M NormCPU hours in 2016
- * Max job duration [hours] : 24h
- * Min local storage [GB] (scratch space per each core used by the job): highly dependent on the job
- * Min physical memory per core [GB]: highly dependent on the job
- * Other technical requirements
- * Preferences for middleware: DIRAC is the reference WMS for the LSGC

HTC requirements Storage

- * Opportunistic storage capacity [unit: TB]: ~5P PB storage in 2016
- * Type of storage requested [disk, tape, combination of both]: disk

Cloud requirements Virtual Machines (defined per VM)

- * Start time of allocation and duration requested [units: dd/mm/yyyy, number of months]
- * Number of virtual cores
- * RAM [GB]
- * Scratch/ephemeral storage [GB]
- * Other technical requirements

There is currently no reported usage of the FedCloud: applications have not migrated yet (although it is likely to change in the future)

Cloud requirements Storage

- * Start time of allocation and duration requested [units: dd/mm/yyyy, number of months]
- * Object Capacity [GB]
- * Block Capacity [GB]
- * High availability levels (Yes/No)
- * Other technical requirements

Cloud requirements Other

- * Interfaces
- * ...

Current resources

– Computing capacity

- 100+ sites, 186 CEs, 36 WMSs, 108 SEs

- ~50 million CPU hours in 2014
- ~4 PB storage used

– Critical (central) services

- VOMS
- LFC
- DIRAC

These are the most critical services (single point of failures) so these are the services that would really make sense to guarantee. This said, it is not clear in the current context that CC IN2P3 want to engage in an SLA.