Grid Operations Interoperations Overview

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Outline

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- Coordination
  - Description of global task
  - Goals and activities
  - NGI driven
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- Ongoing work: MS 407
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Welcome and Agenda

- Grid Operations Interoperability Overview
- The Operations Portal and the Grid Operations Interoperability
- Procedures and Policies
- Fitting ARC services into the EGI infrastructure
- Operational Integration of UNICORE services

Goal of this session

- Towards a sustainable grid infrastructure!
- Getting to know each other within this task: defining communication channels, common knowledge basis on the status quo and the goals to be achieved.
- Formulating requirements and possible solutions
  - Functionalities of operational interfaces
  - Standards
  - Procedures and policies
- Reminding the NGIs on their part of the deal

Coordination

- The “Coordination of interoperations between National Grid Initiatives (NGIs) and with other Grids” task is described as O-E-11, in the EGI functions document.
  - http://web.eu-egi.eu/fileadmin/public/Deliverables/d3.2-postrev-v3.2.pdf
  - The prefix O-E identifies operations services provided by EGI.eu.
    - **Coordination is needed to foster the creation of a seamless operations model across administrative boundaries, in order to pursue pervasiveness and sustainability of the infrastructure. This is of great importance as users who want to cross Grid boundaries need to know that the environments will be similar, and applications must function properly without major changes. Interoperation covers a number of aspects, such as the availability of common tests for monitoring of site status, the interconnection between helpdesks/ticketing systems, etc. “Other Grids” includes Asia-Pacific regional Grids, OSG, Naregi, and related infrastructure projects.**
- In EGI global task under TSA1.3 Service Deployment - validation (Mario David,LIP)
  - O-E-9 Coordination of middleware roll-out and deployment, middleware pilot and certification testbeds (0.9 FTE Spain)
  - O-E-11 Interoperability (0.5 FTE Sweden)
  - O-N-9b rollout
  - O-N-9d interoperability in the region

Goals and Activities

- Assisting the European Grid Infrastructure, as coordinated by EGI.eu, to become a formal, operational reality
- Maintain and extend interoperation within Europe and abroad
  - Unified (?) ways of operations through all middleware
    - **Higher resources needed to coordinate different operations procedures and multiple operations tools and mw stacks (and not yet experience with that, besides within OSG and NDGF)**
  - Within EGI: allow NGIs to deploy services from ARC, Condor, gLite, globus, and UNICORE
- Defining operational tools interfaces and therewith the interconnection to helpdesks and ticketing systems (Ensuring all middlewares fit together)
  - Exact definition of operational interfaces to integrate to be part of the EGI production infrastructure (MS 407) and influence the development of the deployed operational tools (input on JRA1 together with OTAG)
- Development of a basic mandatory set of policies and procedures and operational activities allowing the NGIs to interwork and valid for EGI production sites
  - increasingly important as the infrastructure scales out to include more NGIs yet remain a seamless and integrated resource for all.
  - In collaboration with
    - **TSA1.8: Providing a Reliable Grid Infrastructure (O-E-13, Best practices and procedures)**
    - **Security Policy Group (SPG)**
    - **Infrastructure Policy Group (IPG)..**

Goals and Activities II

- Has to be done in international context in an open global collaboration of e-infrastructures providers. Hence OGF is the right place. (IPG, standard definitions and use cases in PGI/GIN WG)
  - Open standardised interfaces to avoid vendor lock in
  - Make sure open standards are used and improved!
- new software releases (for operational tools, and global and site services) will be deployed safely and reliably without any degradation of service to the production grid infrastructure, and while maintaining interoperability with other grids infrastructures.
  - Currently no regional input from NGIs that produces higher coordination effort.
  - Strong interaction with projects supporting middleware is essential
- Related activities:
  - Ensuring the availability of common tests for monitoring of site status
    - **Syncing the availability of common NAGIOS probes via staged roll-out**
    - **checking staged roll-out especially in case of interface change.**
- … (you decide)
  - EGI should be NGI driven!

Communication and Meetings

- Internal TSA 1.3 meetings (indico),
- OMB
- EGI Grid Operation meetings
- special dedicated meetings
- ad-hoc Face2Face meetings (soon to come)
- IPG, PGI/GIN meetings

- Phone
- Chat
- personal mail, no manager mailing list yet.
  - Mario David as deputy
  - Announcements made on other mailing lists.

Other Grids

- At this stage concentration on transition and the NGIs
- Key external infrastructures: OSG, DEISA/PRACE, TeraGrid
- “interoperatbility with another Grid Infrastructure only possible if it uses IGTF as Trust Anchor”?
- Working together in Infrastructure Policy Group IPG
- Keeping an eye on standards developed and typical use cases (within OGF)
- E.g.: status quo OSG:
  - publish accounting to APEL, consolidated BDII, automated ticket exchange between US GOC and GGUS, exchange and automated exchange of availability and test information, tests of gLite released, adaption to cream-ce, testing pilot /overlay jobs, workflows across OSG and TG, pilot agents an each side understand the environment (OSG is operating in academia, security is not considered an issue), enables application of intra and inter-VO policy, IRODS as an interoperable layer for data management
- TG: more at the Interoperation HPC-HTC session this Thursday:
  - https://www.egi.eu/indico/sessionDisplay.py?sessionId=19&slotId=0&confId=48#2010-09-16

MS 407

Integrating Resources into the EGI Production Infrastructure

- Defintion of needed functionalities of operational interfaces (including the interconnection between helpdesks/ticketing systems that need to be supported to be part of the EGI production infrastructure
  - operations portal (for operators)
  - EGI helpdesk infrastructure (GGUS), integrated with national instances, to coordinate activity between the different support teams.
  - Grid configuration repository (GOCDB)
  - APEL accounting repository
  - Accounting and metrics portal (central portal where aggregated use of the infrastructure is recorded)
  - Service Availability Monitoring framework needed to manage the production grid infrastructure
- Definition of needed policies and procedures
  - SLDs will be agreed between NGIs and their sites and overseen centrally to garantee quality and performance of the sites. This task will use the outputs of various monitoring tools to evaluate site quality metrics
  - The operational process during the first year of the project will be mainly based on existing EGEE procedures and practices. These will be redefined to adapt them to the needs of new NGIs joining the infrastructure, and to the new operations architecture that will be defined by the EGI project.
  - Overlap with MS 408 EGI Operational Procedures and MS405 Operational Security Procedures
  - Procedures that continue to evolve with the infrastructure
- Current version: mainly collecting status quo
- Parts will go to wiki

Immedeate Future Outlook

- Collect operational requirements from NGIs that are interested in integrating novel resource types into their e-Infrastructure. Collection of requirements could happen
  - Here during the EGI Technical Forum and/or
  - through a set of dedicated face to face meetings with the most prominent NGIs in the fields in question.
- Possible candidate list of relevant NGIs for such dedicated meetings are:
  - Integration of UNICORE and Globus services: NGI-DE
  - Integration of desktop services: NGI-HU. Hungary is leading the EDGI project
  - Integration of cloud services: NGI-FRANCE and NGI-IBERGRID. France and Spain are involved in the StratusLab project
  - Integration of storage resources into accounting: Italy and possibly other NGIs that are pioneers in this field.
  - MPI accounting: Italy is certainly interested in this, together with Spain. Other NGIs from SEE region such as Turkey and Bulgaria have expertise/requirements in this,
- The call for participation to the meeting will be open in such a way that any NGI that wishes to contribute is welcome.

Future Outlook

- More work on procedures
- MS 407 (again and again..)
- Open the horizon actively to other Grids
- Data managment
- NGIs wishes and requirements!

Collaborative data intensive science

- Reduce barriers
- Storage managment biggest issue for the future
- Current data policy questionnaire in IPG

Data Policy Questionnaire

- Allocation policy:
  - 1) How can users request storage space on the infrastructure?
  - 2) Can users select the geographic location of the storage space?
  - 3) Can users select the storage medium?
  - 4) What are possible time limitations of requests?
  - 5) Do you have specific terms of use for storage?
- Security:
  - 6) How do users authenticate with the infrastructure?
  - 7) What mechanisms for data privacy/protection are provided?
  - 8) Do you provide mechanisms for data encryption?
  - 9) What happens in the case of change of digital identity?
- Availability:
  - 10) Do you provide mechanisms for disaster recovery? (E.g. automatic replication of data)
  - 11) What happens to the data when allocation time runs out?
- Access and mgmt:
  - 12) What means of data access are provided?
  - 13) Do you provide support for metadata mgmt? If so, what?
  - 14) By what means can users manage their data?
  - 15) Can users change the storage medium?
- Interoperability:
  - 16) Is it possible for users to access data stored in another infrastructure?
  - 17) How can users interface to data stored elsewhere (e.g. local data center)