



UK NGS Technical Roadmap

David Wallom

NGS Technical Director

- Introduction
- Central Services
- Functional Requirements
- Conclusion



NGS

Background

- NGS is now the UKs NGI
 - Continue to support member sites and researchers
 - Also address the common needs of large scale European/global projects
- Things to note
 - Key driver for change through the requirements of the UK research community
 - Minimize where possible the scope of changes seen by the community
 - Does not mean throwing away existing solutions just to use EU solutions
- Need input from all stakeholders to provide a longer term roadmap

- Services to support the continued operation of the overall UK e-Infrastructure
- Support users, communities and institutions by providing 'back-office' services.
- Support EGI Global tasks
- Continue development of an operational roadmap.



NGS

Information Publishing

- Single methodology for services to publish their state allowing for service discovery
- Drivers: Need to provide a single national level information service to support WMS
- Steps
 - Continue with BDII
 - Continue development of UEE system
 - Develop the regional GOCDDB solution
 - Support for certified and non-certified resources
 - Track GLUE schema versions supported within EGI and other stakeholder communities
 - Develop support for publishing of services not currently included in the schema, e.g. metadata repositories for CLARIN/DARIA



NGS

Data Information

- Mechanisms for abstracting from the user the physical location of data
- Data availability irrespective of where it is physically located
- Steps:
 - Continued support for LFC and SRB MCAT
 - Expand publicity of these resources linking into appropriate user facing tools
 - Learn from communities who have moved from SRB to iRODs
 - Expand knowledge of tools and technologies such as LFC and 'CancerGrid' Metadata Catalogue and other tools being developed by ESFRI communities as well as STFC ICAT



NGS

Authentication and Authorization

- Continued AA through some form of single sign on:
 - Personal X509 certificates
 - Shibboleth enabled services
- Operate the UK e-Science CA and network of RAs
- Expand the support and operation of SARoNGS to production status
- Operate VOMS to support all users of UK e-Infrastructure
- Break up single NGS VO through institutional, subject or project VOs, allowing finer grained choice of user community support for member resources
- Work with the UK Access Management Federation: Shibboleth V2 and changes to policies to allow command line access methods



NGS

Accounting

- Need to provide a uniformly presented accounting solution
- Three current client side solutions: RUS, APEL, GridSAFE
- Need a single solution to sit under the NGS UAS
- Move to utilising APEL and GridSAFE where appropriate
- Develop reporting for other e-Infrastructure usage: storage, network



NGS

Infrastructure monitoring

- Single integrated monitoring system
- Integrate current INCA and Nagios
- Develop reporters for different types of resources beyond the current compute and data services
- Deprecate INCA tests as Nagios ones are developed



NGS

User Access Interfaces

- Provide a number of exemplar user access mechanisms to e-Infrastructure
- Current exemplars:
 - UI/WMS, Portals (NGS Portal, P-GRADE Portal), HERMES, Certificate Wizard, MEG, AHE
- Host documentation for other mechanisms, possible future exemplars:
 - Drop and Compute, DataMINX
- Push further exemplars for application level integration within non computationally aware communities



NGS

Access to Compute

- Support user access to compute resources using middleware that is simple to deploy and maintain
- Need to be able to support new user communities with European compatible systems
- Engage with GridPP to install gLite CE at new sites where there is a requirement
- Continue support for current NGS profile, engaging with new EU IGE project
- Investigate UNICORE and ARC, engage with other middleware providers
- Continue where necessary support for current standards compliant middleware where fundamentally important user communities require it, e.g. BADC/OGC



NGS

Access to Data

- Provide global access to shared data infrastructure, including relational databases and metadata repositories
- Continue support for SRB, widen installation of LFC clients, documentation for AFS cells
- SRM interface to SRB
- CancerGrid metadata repository
- Recipes for member sites



NGS

Interactive usage/ advanced reservation

- Interactive usage through the utilization of advanced reservation services
- Complete development of HARC to production quality level
- Apply for funding to support reservation of storage and network services

- Visualization: Engagement with VizNet
- Clouds: Evaluating provision of research computing interfaces through cloud systems: initially Infrastructure-as-a-Service

Conclusion (1)

- Middleware from Europe has a single community
- There are other large scale European projects with diverse user requirements
- UK also has fundamentally important intercontinental collaboration requirements
- We must be in a position to push for all these requirements to be recognized



NGS

Conclusion (2)

- EGI is independent from the middleware provider
- EMI is initial front runner. However EGI will engage with other middleware providers.
- NGS has an opportunity to lead in interoperability:
 - Engage with EGI middleware process
 - Input our requirements to EGI
 - Take advantage of broader community
 - Participate in staged rollout plans
 - Align UK technical roadmap with EGI technical roadmap