Minutes of the OGF20 Education and Training Community Group Sessions

The Education and Training Community Group held four sessions at OGF20 covering the topics

- Managing IPR for Educational Repositories
- Implementation of Policies for Cooperation on t-Infrastructures
- Development of National and International Education and Training Policy
- Towards Professional Grid Certification

Overall the sessions were very well attended and a considerable amount of progress was made on various documents. The relevant documents can be found at

https://forge.gridforum.org/sf/go/projects.et-cg/wiki

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Session 1: Managing IPR for Educational Repositories

This was the first of four Education and Training Community Group sessions at OGF20. The minutes for this session contain a summary of the discussion while more detail can be found in the associated wiki documents at https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/IPRForGridEducationTraining

Participants

Fergusson, David - NeSC

Clifford, Ben - University of Chicago

Pfeiler, Christoph-Erdmann - Forschungszentrum Karlsruhe (FZK)

Antoni, Torsten – Forschungszentrum Karlsruhe

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Halfpenny, Peter - ESRC National Centre for e-Social Science

Low, Boon - National e-Science Centre

Schott, Bernhard - Platform Computing GmbH

Sipos, Gergely - MTA Sztaki

Suzuki, Toshihiro - Oracle

Agenda

1. Welcome (David Fergusson)
2. Introduction and presentation of recommendations document (David Fergusson)
3. Repositories, IPR and project policy experience (Boon Low - presentation and demo)

4. Discussion and document drafting (David Fergusson chair)

Presentation and Discussion

Boon Low gave a presentation on the topic of "Repositories, IPR and Project Policy Experience" focussed on the lessons learned from the ICEAGE digital repository development. This served as the basis for discussion of a number of IPR topics.

The discussions on these licences are available in the ET-CG will at https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/IPRForGridEducationTraining

Issues:

- If you charge for courses which use licenced material is this considered to be commercial use?
- Should attribution include more than the name of the Author?
  - For the ICEAGE repository only the author's name is required.
  - Funding organisations and employers may also want to be acknowledged.
  - This is possible in the metadata, but not required.
  - The more metadata fields you require the users to fill in, the less likely people are to add material.
- Different countries, universities have different IPR rules hence the importance to allow the depositor to choose their preferred end-user licence.

IPR Recommendation Document

We then went on to work on a new document on IPR recommendations. David Fergusson presented a basic structure of a document and some notes were taken to fill in these sections and create content. This document has been merged with the document produced at OGF19 and is available at https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/IPRForGridEducationTraining

Future Work

The document begun in this session should be merged with the notes produced from the OGF19 IPR session in the wiki. All members are encouraged to review the document and make additions or changes. The draft document is available in the wiki at the following url https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/IPRForGridEducationTraining

Session 2: Implementation of Policies for Cooperation on t-Infrastructure

This was the second of four Education and Training Community Group sessions at OGF20. The minutes for this session contain a summary of the discussion while more detail can be found in the associated wiki documents at https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/PoliciesForCooperationOnTInfrastructure

Participants

Fergusson, David - NeSC
Sipos, Gergely - MTA Sztaki
Low, Boon - NeSC
Clifford, Ben - University of Chicago
Schopf, Jennifer - ANL
Schott, Bernhard - Platform Computing GmbH
Mitjana, Enric – European Commission
Stamou, Katerina - PDC
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Atkinson, Malcolm - NeSC
Baird, Kenny - ESRC National Centre for e-Social Science
Bararsani, Azadeh – PDC
Berlich, Ruediger - Forschungszentrum Karlsruhe
Bulanza, Antal - BELNET
De Roest, Jim - University of Washington
Halfpenny, Peter - ESRC National Centre for e-Social Science
La Rosa, Marco - The University of Melbourne
Messom, Chris - Massey University
Mun, Young Song - Soongsil University
Pfeiler, Christoph-Erdmann - Forschungszentrum Karlsruhe (FZK)
Schaer, Frederic - CEA
Van Till, Frederique – JISC
Villa, Adam - University of New Hampshire
Stagni, Federico - INFN Ferrara

Agenda

1. Presentation on GILDA middleware coexistence – Gergely Sipos
2. Progress towards t-Infrastructure sharing document – David Fergusson

t-Infrastructure recommendations

A number of required features of a t-Infrastructure were identified in the OGF19 session on t-Infrastructure in North Carolina, USA. The wiki document at

https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/PoliciesForCooperationOnTInfrastructure contains these details and was referenced here.

It was noted that the idea is not to have a single monolithic t-Infrastructure, but to have various ways of creating a t-Infrastructure which can still be integrated and shared with other t-Infrastructures.

While it is necessary to have a specialised t-Infrastructure for certain courses and types of training (this need was identified at the OGF19 meeting), the ability to have a training VO on production is also useful. This can be used for complementary education and training activities.

A document structure was proposed covering a number of topics such as authorisation and authentication, booking, support, etc. and there was discussion of each topic. The notes taken on these discussions have been added to the wiki document which was created as a result of discussions on the requirements for t-Infrastructures at OGF19. This document is available at
https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/PoliciesForCooperationOnTInfrastructure

Future Work

The document worked on at this session has been added to the wiki draft document produced at the OGF19 IPR session. All members are encouraged to review the document and make additions or changes. The draft document is available in the wiki at the following url https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/IPRForGridEducationTraining

Development of National and International Education and Training Policy

This was the third of four Education and Training Community Group sessions at OGF20. The minutes for this session contain a summary of the discussion which focussed on creating a policy recommendations document.   A draft of this document can be found at https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/NationalAndInternationalGridEducationTrainingPolicy

Participants

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Fergusson, David - NeSC

Frame, Ian - NIEeS

Kertcher, Zack - University of Chicago

Kowalchuk, Jill - Netera Alliance

Lanzarini, Simone - CINECA

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Messom, Chris - Massey University

Micout, Pierrick - CEA DAPNIA

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Schott, Bernhard - Platform Computing GmbH

Sipos, Gergely - MTA Sztaki

Stell, Anthony - University of Glasgow

Agenda

1. Introduction and Welcome (Malcolm Atkinson)
2. Discussion and draft document development (Malcolm Atkinson chair)

Target Audience

The ICEAGE Forum has stressed the importance of working with people who would use the technology rather than the people who build it, i.e. the application disciplines should be targeted rather than computer scientists.

It was agreed that this initial document would target politicians and policy-makers and it must thus be accessible to a non-technical audience. Further documents will target academics, industry and other audiences.

Curricula

It was agreed that it is important to look at curricula and set out high level concepts which should be covered in Grid courses. This would facilitate recognition of qualifications. We should, however, avoid too going into much detail or attempting to prescribe what should be taught.

Scale of investment

We should attempt to identify the scale of investment required and look at issues such as return on investment and cost benefit analyses. This will be of interest to Industry and also to politicians and regulatory bodies, etc.

Input from Industry and from educational economists would be invaluable here and Malcolm asked if anybody had contacts in educational economics who would be willing to participate.

ACTION All: Identify an educational economist who would be willing to help us with this.

Surveys

Surveys could be a useful tool to help us to identify the need for training and education, although it was pointed out that surveys will not always capture accurate results, in particular from Industry where many Grid users may be unwilling to give away information which could be considered to give them a competitive advantage.

We should, nonetheless, look at creating questions to be included in surveys run by other bodies, or run our own surveys where we need evidence to back up our arguments.

ACTION All: Identify surveys in which to participate or organise our own.

ACTION All: Identify what we should ask and develop questions.

Measuring Impact

We need to be able to measure effect of training and education on uptake and understanding of Grid and distributed computing. We should propose metrics or at least, raise this as an issue which must be resolved in our document. Designing metrics to measure impact of education in particular is quite difficult.

Industry role

If industry partner says something about industry requirements it could carry more weight than academics. We should therefore look for Industry documents to reference, and have our industry partners listed as contributors/authors.

Platform for instance, who have a large customer base, many of whom are using very large grid infrastructures feel that a major obstacle to uptake is the lack of qualified/certified personnel. They have agreed to contribute to the policy document.

ACTION Bernhard Schott: Contribute to the Requirements and Challenges sections of the wiki document.

Outreach

We should not ignore the our strategy for disseminating the message of the document. It was suggested that we could bring copies of the document to various conferences, fora, etc. and try to encourage people to read it and to apply it.

Future work

We need to have a fairly complete draft document for discussion at OGF21 in October. We thus need to keep up momentum between now and then with a big push to get a lot of progress made after July as several participants are quite busy until then. The document is available at the following url
https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/NationalAndInternationalGridEducationTrainingPolicy

We should attempt to find an educational economist who would be willing to help us with developing cost-benefit analyses to show the benefits of investment in education and training.

As it was suggested that we should conduct a user survey to identify the need for education and training, we should look at designing questions for this purpose. The session on Grid Certification (see page 11 of minutes) also determined that a user survey would be required so it may be possible to combine these into one survey.

Towards Professional Grid Qualifications

This was the fourth and final Education and Training Community Group session at OGF20. The minutes for this session contain a summary of the discussion, but there are also a number of documents in GridForge which are relevant.

● Draft Recommendations https://forge.gridforum.org/sf/go/doc14419?nav=1
● Draft curriculum for CGE and CGT courses
   https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/GridCertifiedEngineer

The discussions were led by a panel consisting of Rüdiger Berlich, Bernhard Schott and Gabriel Zaquine.

Participants

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Cassidy, Kathryn - Trinity College Dublin

Clifford, Ben - University of Chicago

Dovey, Matthew - JISC

El Khatib, Yehia - Lancaster University

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Hernandez, Israel - University of Edinburgh

Kertcher, Zack - University of Chicago

Koren'kov, Vladimir - Joint Institute for Nuclear Research

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Schott, Bernhard - Platform Computing GmbH

Sipos, Gergely - MTA Sztaki

Strizh, Tatiana - Joint Institute for Nuclear Research

Tkachev, Igor - Joint Institute for Nuclear Research

Volpato, Gian Luca - RRZN, Leibniz Universitaet Hannover

Zaquine, Gabriel - CS SI

Content and Structure

The certification process will define curriculum and exams only. It will be up to course providers to ensure that their courses teach the necessary skills and knowledge for students to pass the certification. For details of the content of the curriculum see the wiki document https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/GridCertifiedEngineer

The certification should be generic and not focus on any particular technology. Suggested models were:

- Linux Professional Institute (LPI) (http://www.lpi.org/) - modules for different Linux Distributions
- Professional pilot qualifications - certified pilot rated for different types of plane.

Course Length

Examples of various courses were given

- ISSGC – 60 hours
- Ben Clifford Globus courses – 18 hours
- Bernhard Schott Platform training – 1 week per sub-module

After some discussion it was agreed that five days per module be the recommended course length. However, in order to facilitate people who want a shorter course, each module can be taken independently.

Issues:

- How much of the above is practical vs. lecture?
- How much could/should be done by students working on their own?

Scope

- The Engineer level has to be able to do planning and select technologies.
- The Technician level certification will cover day-to-day grid administration and use skills.

Naming

An Engineer in UK has a specific meaning. If we want to use the term Engineer then the certification should include a long study period and in-service demonstration of

application of grid engineering. It would also be necessary to make a clearer distinction between the Engineer and Technician levels.

It was agreed that we would determine the scope first then decide on the exact naming later.

Issues:

- Different terms should be used for potential employers and the training and certification industry to avoid confusion.
- Confirmation of the levels needed as follows
  - CGE
  - CGT
  - Individual modules can be taken without certification where a shorter course is required
- How much practical work is required
- How much In-service work required

Requirements and Justification

Opinion was divided about the need for Grid qualifications, the following comments were made:

- EGEE would find certifications useful (Gabriel Zaquine)
- Certification would drive grid take-up among Platform's customers (Bernhard Schott)
- Financial industry is required to have certified staff by the regulators
- Pharmaceutical companies want staff who can advise on the use of Grid technologies (David Fergusson)
- No demand for certification in technology providers' dealings with industry (Jennifer Schopf)
- Staff are hired by word of mouth and there may not yet be a market for certification
- Technology providers will need to be persuaded of the merits of any certification before they will participate.

To clarify whether there is a need for training and to collect and prioritise customers' training requirements it was suggested that we run a training requirements survey.

This survey should reference the proposed curriculum at https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/GridCertifiedEngineer to identify whether these are the skills which are of

interest to potential employers.

Grid professional institute

The tasks of keeping questions and answers up-to-date as technology changes, accrediting training and examining bodies, etc. cannot be done through OGF. It will require full-time staff will be expensive. A number of options were proposed:

● Create a non-profit body funded by interested industry partners
  • Is there enough interest from industry?
  • Hard to keep the certification independent if this body was funded by industry.
  • Non-profit – would this dissuade organisations who were denied certification from suing for example? It was argued that they would sue for the goodwill not for the money...
● Use existing professional bodies which do accreditation of qualifications
  • Would avoid legal issues which we might otherwise run into
  • Examples could include the British Computing Society, IEEE, ACM, etc.
● Create a for-profit company
  • Is there a business case for this?
● Create a non-profit EU-funded body
  • Would the EU be interested?

Future Work

The following actions were proposed:

● A small group should push the process forward and come up with a proposed certification for review by the full Education and Training group.
● This group should consist of interested members of the ET-CG along with other experts from Industry (in particular from those companies who would employ Grid Engineers).
● Rüdiger Berlich will send the draft recommendations document to the ET-CG mailing list for comment, comments to be sent directly to Rüdiger within the next week.
● We will organise a session at the enterprise track for OGF21. This will publicise our work and also present an opportunity to get feedback and endorsement from a broad range of stakeholders.
● A number of pilot courses should be run, it was suggested that one might be done by EGEE NA3 while another could be an Industry partner.
● In order to run certification for such a pilot program we first need to create a sample exam.

- The effort required to run and mark an exam should be estimated as part of the pilot proposal.
- We already have an idea of content from OGF19 (see https://forge.gridforum.org/sf/wiki/do/viewPage/projects.et-cg/wiki/GridCertifiedEngineer) now we have an idea of time, we should review the content in light of the discussions on module length and determine whether the modules need to be modified to allow them to be covered in the proposed five day course length.
- A user survey should be organised to determine training requirements.
- The Systems Administrators Guild (SAGE) is also looking into certification, we might benefit from talking to them.
- Contact the EU and potential Industry sponsors about the possibility of funding a Grid Professional Institute. At the same time contact should be made with existing certification bodies to see whether they would handle this process for us. Further investigation is required before a decision on how to proceed can be made.

Volunteers to work on the items and timescales were not clearly defined, the first action therefore should be to form the group who will push the process forward and they should develop the ideas above into a concrete timeline.