Training Users – building the future David Fergusson E-IRG Madrid

Past

International

- Large scale projects funded internationally to create infrastructures
 - EGEE
 - DEISA
 - OSG

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- Early adopters
 - High Energy Physics LHC
- Structured communities around large scale instrumentation
 - Readily addressed as a whole community

EGEE

- 6 years of EGEE projects
- Created global production infrastructure
- Attracted approx 12,000 users (~24,000 CPUs)
- Training collaboration of 32 international institutes
 - > 20,000 trainee days in total
 - ~ 1500 participants/year
 - > 100 events/year
- Direct training
- Training trainers
- Trainer registration

Quality Assurance

Important feature of the EGEE collaboration

- A shared QA framework implemented
- Constant across events and over time
- Promotes attendee feedback
- Transparent QA presented for all events
 - Encourages continual improvement of materials and presentation.
- All event average > 5/6

EGEE Training locations (not complete)



Registered Trainers

- 134 Registered trainers
 - Peer approval
 - Train the trainer events
- 29 countries
- Promotes local autonomy
- Maintain trainer portfolio
- Share information about expertise

ICEAGE

- FP6 support activity
- Engaging existing academic frameworks with distributed computing training/education
 - Curriculum design
 - Course development and implementation
 - Shared educational events summer schools
 - Policy development
 - OGF, EUNIS & e-IRG task forces

Education and Training



Curricula Strands

NUMERICAL MODELS

Physics, engineering, earth systems, chemistry, materials science



Arts, languages, humanities

Biology, medicine, social sciences, economics

Challenges for Education

Curricula and textbook development

- Fluidity Text Book: curricula Research in Connected World
- Lack of well developed curricula and good textbooks
- A symptom of a larger issue in developing "digital thinking" <u>Expertise</u>

Masters courses

- Lack of general
 <u>Policy</u>
- Disparate educational policies, creating barriers to mobility, access and OGF & e-IRG ation and security issues
- <u>t-Infrastructure</u>
- Lack of shared t-Infrastructure across Member States <u>IPR</u>
- OGF recommendations and NeSC Digital Library example provisions)

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Summer Schools

• ISSGC series, since 2003

- Average 60 participants
- Technology and infrastructure agnostic
 - UNICORE, condor, globus, gLite, web 2.0, clouds
- Curriculum driven integration
 - Realistic scientific practical exercise across all technologies
- Networking
- Domain specific
 - GridKa, Biomed SS
- Regional/Local/National SS
- Engagement with EU ECTS scheme
 - Students can use credits in academic courses

Nationalities 2009



Online learning

- ISSGC material & tutors developed into online provision
- 1 month online course
- Blended learning
- Alternative methods for material delivery
 - iTunes, Facebook, SlideShare, etc.

080226 IWSGC Foster-pp



Attendee List (33)

- 🙈 Luke Humphry
- 🚝 Ian Foster
- 🚰 Petar Jandric
- 🔒 Aengus McCullough
- 🔒 amrey@epcc.ed.ac.uk
- 🔒 Anca Hangan
- 🔒 Angel deVicente
- 🔒 Anna Mereu
- 🔒 Bruno Goncalves
- 🟯 Carstea Alexandru

Ask for Help! (Q & A)

Luke Humphry: You can ask for support here Luke Humphry: questions and answers will be anonymous

PLAYING ...

The Big Questions



Future of the planet



Life & death



Consciousness



0:00:01



Camera and Voice

https://admin.emea.acrobat.com/_a781162709/p64232576/



Petar Jandric: I highly doubt it - at least, I'm sure I'm not one of them!
Valeria Mele: :D
Bruno Goncalves: eheh
Carstea Alexandru: it's better not to be perfect
Petar Jandric: yea makes one more approachable. Actually, this is the main
reason why I make all those mistakes!
Carstea Alexandru: =)
Valeria Mele: to be approachable
Valeria Mele: :D
Valeria Mele: thanks!
Valeria Mele: :)
Petar Jandric: Nooo just because that's the way I am!
Valeria Mele: ·)

Attendee List (29)

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<u>a</u> "] Ian Foster	=
<u>a</u>	Petar Jandric	
<u>a</u>	Aengus McCullough	
<u>a</u>	Anca Hangan	
8	Angel deVicente	
<u>a</u>	Anna Mereu	
8	Bruno Goncalves	
<u>a</u>	Carstea Alexandru	
Q	Celine Amoreira	

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International Winter School on Grid Computing 2008 6th February - 12th March 2008

Closing Notes

Here are the links from Ian's Talk:

email: foster@mcs.anl.gov homepage: http://ianfoster.typepad.com

Swift: www.ci.uchicago.edu/swift caBiG: https://cabig.nci.nih.gov dev.Globus: http://dev.globus.org Provenance Challenge: http://twiki.ipaw.info Social Informatics Data Grid: www.sidgrid.org

The slides from todays keynote presentation will be placed online shortly.

For questions about today's keynote please use the chat box to the right.

Chat to Ian Foster infrastructure and community in the next 5, 10, 20 years? Christos Gkekas: How do you envision the future of Grid

Christos Gkekas: How do you envision the future of Grid Computing. Will Grids eventually become available for public use or will scientists be their main users in the future?

Cezary Boldak: Do the services need centralized indexes to be published in ? Someone looking for a service has to know where to search. Something like Google for services ?

Enrique MoralesRamos: Do you think the Grid could be some day in the future like the electrical power grid, a (computational) service accesible for everyone everywhere? Could everybody (I'm thinking about common users) some day simply connect and run their service requests? or is it only a comparing figure or a dream?

Mathias Brito: What do you think about the evolution of standards? Globus moved to WSRF in version 4, and now another standard, WSRT, was developed. how about that?!

Jose Junior: I know that Condor can be used with Globus by Condor-G, but is it a future idea to add Condor in the Globus Toolkit?

Ioanna Dionysiou: In your opinion, how secure the grid is? How difficult it would be to launch a DDoS attack? I'm not implying that I will do it :):) **Rogerio Iope:** Thinking of science being carried on through services, what do

you think are the key technologies that still need to be developed (if any) for enabling the automation of highly service loads, supposing e.g. thousands of e -scientists doing requests simultaneously into the same common infrastructure?

Petar Jandric: We got 15 minutes until the end of our session. Please, wrap up the discussion. We will accept 3 more questions.

Shared Services

Digital Library of shared material

- Audio, video, practicals, online exercises, animations
- Podcasts, RSS, ATOM, federation, facebook
- Shared event recording and advertising
- Specialised infrastructures
- Trainer registration
- Coordination

Present

National/Regional/Domain

- Focus is now on National/Regional/Domain support for training and education
- Some NGIs have existing and well established activities in this field
- Many others have little activity in this field
- Most research domains have no coordinated activity
- Limited resource tends to be spent on operations – immediate issues
- doesn't necessarily deal with longer term issues

EGI

- Materials digital library
- Registered trainers
- Events & advertising database
- Coordination of national activities
 - Sharing expertise

Future

Features of training requirements

- Very "peaky" demand
- Access to resource highly time dependent
- Highly sensitive to job time of completion
- Need to support immediate access to infrastructure for new users
- Process must be transparent to allow illustration of its features.
- Compare and contrast illustrate principles using different implementations

Sustainability

- Lack of support for international collaborative/coordinated activities
- Support currently must be nationally based
- Coordination with academic provision
- Self funding training (cost-recovery basis)
 - Doesn't really address material development costs.
 - Doesn't address capital costs of infrastructure

Summer Schools

- Is having summer schools for every project and effective and efficient use of resources?
- Shared summer schools on the model of ISSGC
 - More efficient?
 - Allows things individual schools do not
 - Networking
 - Comparison by users
 - Use different implementations to illustrate principles
 - Better reflects life cycle of researchers whole task
- Sustainability meeting Finland 1-3/7/2010
 - HPC, HTC, clouds Anyone with an interest is welcome
 - Already have offers from STFC and CSC of HPC cycles for students

Across platforms/infrastructures

- Silos of specific infrastructures/middlewares are unsustainable.
- Researchers expect/demand interoperability
- Researcher's tasks are not directly map-able onto IT concepts (HPC/HTC.....)

• The web/web 2.0 means that researchers expect to be able to access data and rapidly mash it together.

Usability

Usability, usability, usabilityHCI principles

Summary of feedback from training attendees:

• All of the infrastructures are effectively impossible to use for anyone other than computational specialists, and has a significant adoption cost even for them.