



Enabling Grids for
E-science in Europe

www.eu-egee.org

LCG-2 Middleware Internals and APIs
29th-30th October 2004

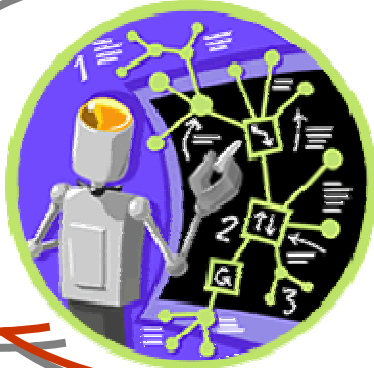
Tutorial Introduction

Flavia Donno
Section Leader for
LCG Experiment Integration and Support
CERN IT

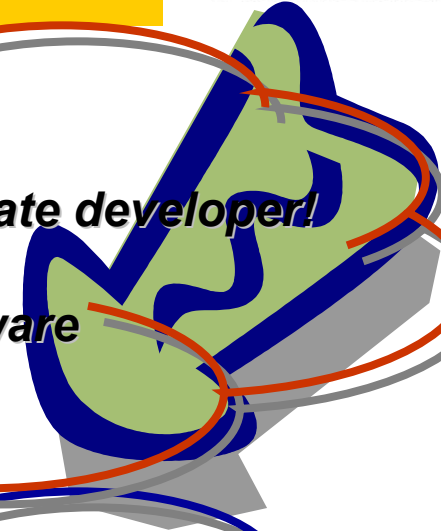


EGEE is a project funded by the European Union under contract IST-2003-508833

Goal of the course



***We assume you are a candidate developer!
You know C/C++/Java
You know the LCG-2 Middleware***



***Give inside view of current LCG-2 Grid
middleware and details on the use of the APIs for
writing grid-enabled applications***

The tutors

The EIS team has acquired experience helping HEP experiments Integrating their applications with the LCG-2 Middleware.



EIS has developed tools and interfaces,
Created special middleware distributions,
Given full assistance during data challenges

Outline

<http://agenda.cern.ch/fullAgenda.php?ida=a044732>

Monday 29 November 2004

Session 1 (09:00->18:00)

Chairperson: [Flavia Donno](#)

Room: [40-SS-C01](#)

09:00 Introduction (10')

[Flavia Donno](#)
(CERN)

09:15 Security in Grid: Internals and APIs (1h00')

[Andrea Sciaba](#)
(CERN)

10:15 COFFEE BREAK

10:30 Security Hands-on (1h30')

12:00 Grid Information System: Internals and APIs (1h00') ([more information](#)) ([transparencies](#))

[Patricia Mendez Lorenzo](#)
(CERN)

13:00 LUNCH

14:00 Grid Information System Hands-on (1h15') ([more information](#)) ([transparencies](#))

15:15 COFFEE BREAK

15:30 Workload Management System: Internals and APIs (1h00') ([more information](#))

[Simone Campana](#)
(CERN)

16:30 Workload Management System Hands-on (1h30') ([more information](#))

Outline

<http://agenda.cern.ch/fullAgenda.php?ida=a044732>

Tuesday 30 November 2004

Session 2 (09:00->18:00)

Chairperson: [Flavia Donno](#)

Room: [40-SS-C01](#)

09:00 Data Management Services: Internals and APIs (1h00) ([more information](#) [transparencies](#))

[Antonio Delgado Peris](#)
(CERN)

10:00 COFFEE BREAK

10:15 Data Management Services Hands-on (1h00) ([transparencies](#))

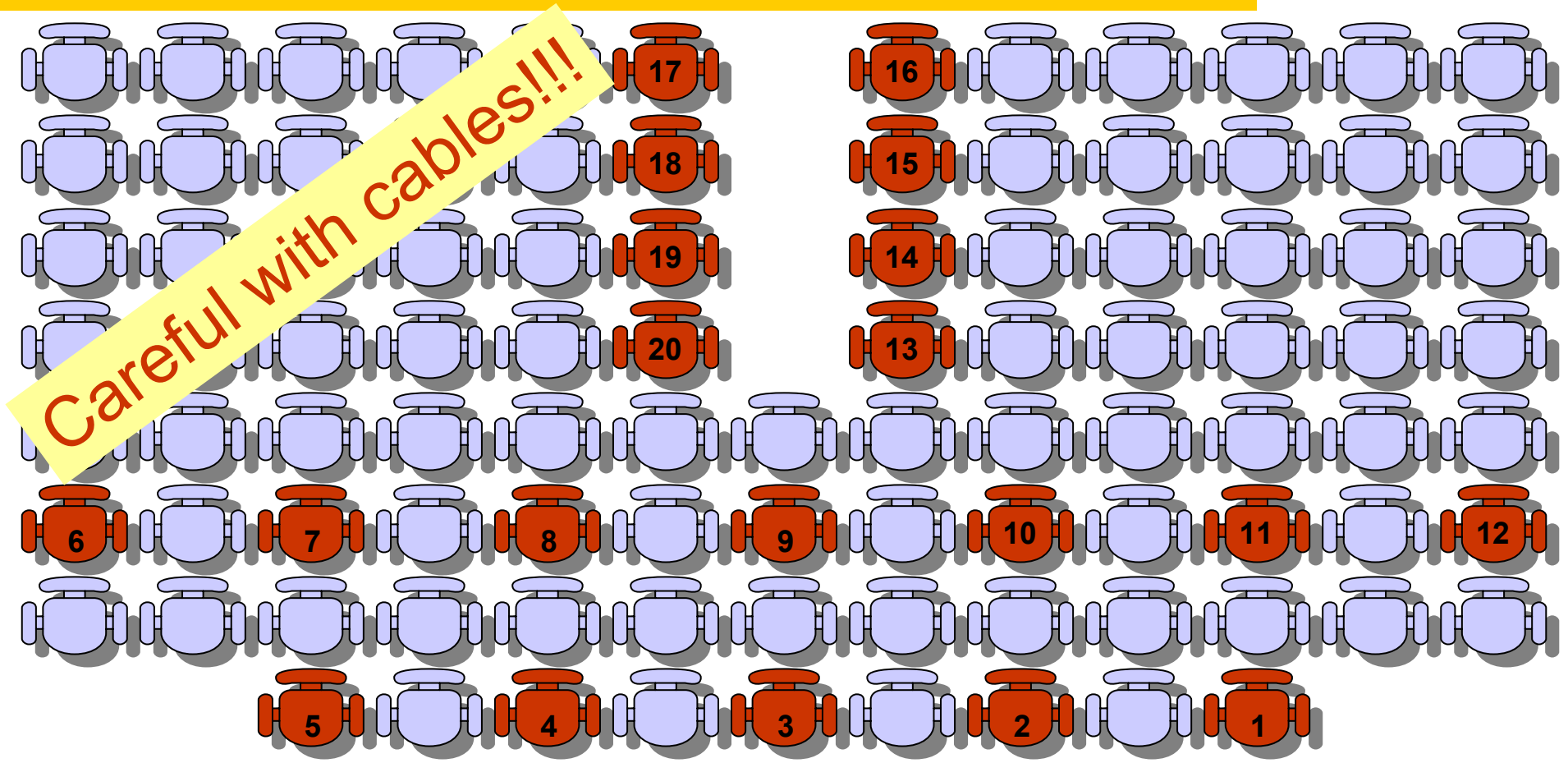
11:15 Application Software Installation System in LCG-2 (1h30) ([transparencies](#))

[Roberto Santinelli](#)
(CERN)

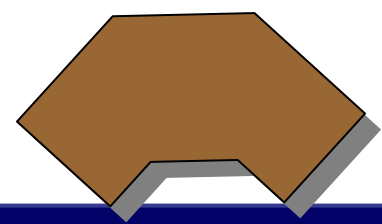
13:00 LUNCH

14:00 Global Examples Hands-on (2h30)

Room disposition



To each seat a user account is associated for hands-on



Please, remember your seat number!!!

Overview and technical details

- Each session includes a theoretical part on CLI and API usage in LCG-2 and it is followed by a hands-on part.
- Please, feel free to ask questions whenever you feel like
- Hands-on sessions will use the **GILDA** dissemination Grid: for more information, please refer to: <https://gilda.ct.infn.it>
- You all have already a temporary GILDA certificate and an account on the GILDA User Interfaces (UI):

Host: grid-tutor.ct.infn.it or grid-tutor1.ct.infn.it

User: cern01 – cern20

Password: GridCER01 - GridCER20

Certificate Pass Phrase: CERN

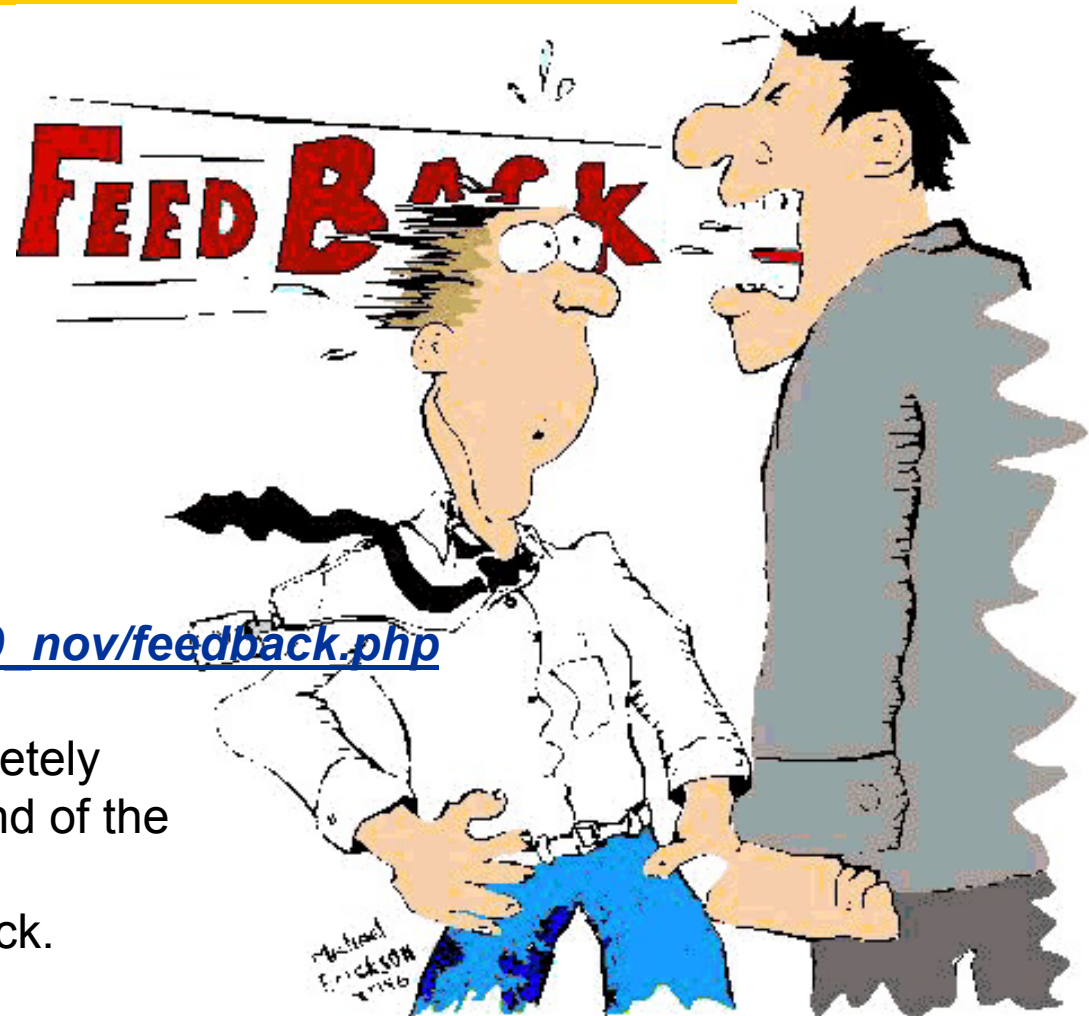
- You can login on GILDA UIs only using the DHCP addresses dynamically assigned and via an ssh session.

Feedback form

- It is very important for us to get your feedback
- Both an electronic form and a paper form are available for this
- The electronic form can be found at this URL:

http://egee-na4.ct.infn.it/cern_29_nov/feedback.php

- The electronic feedback is completely anonymous. The userid at the end of the form is only used to find out if all attendees have provided feedback.

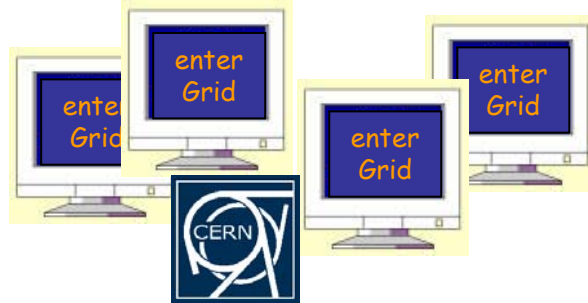


Few notes on LCG-2 APIs

- The LCG middleware system has been developed in several different languages and by many different people in different countries
 - Programming languages such as C, C++, Python, Java etc. have been used
 - End user APIs usually exist in either C, C++ or Java
- The API signature is not very coherent; primarily due to different languages, technologies and maturity of middleware parts
 - Web services usually allow for a higher diversity of language bindings (APIs) than standard C or C++ based services
- All API libraries are either available in /opt/edg or /opt/lcg
 - .../lib for C, C++ libraries
 - .../share/java for Java libraries

Few notes on GILDA Infrastructure

Students Terminals



Grid services

This is a table of the general Grid Services available on GILDA.

SERVICE	HOST
Resource Broker (RB)	grid004.ct.infn.it
Backup Resource Broker (RB)	grid007.ct.infn.it
Information Index (BDII)	grid017.ct.infn.it
Backup Information Index (BDII)	grid018.ct.infn.it
GILDA VO sever	grid-vo.cnaf.infn.it:10389
GridICE Monitoring System	alifarm7.ct.infn.it:50080
Replica Location Service (RLS)	grid008.ct.infn.it



And



Hope you enjoy this lecture.
Thank you for attending !

