

Accessing DEISA Superomputer Resources via **UNICORE**



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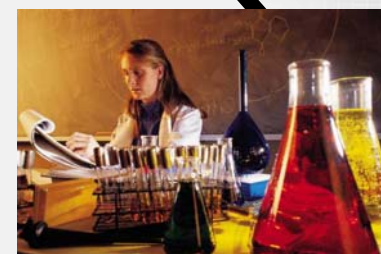
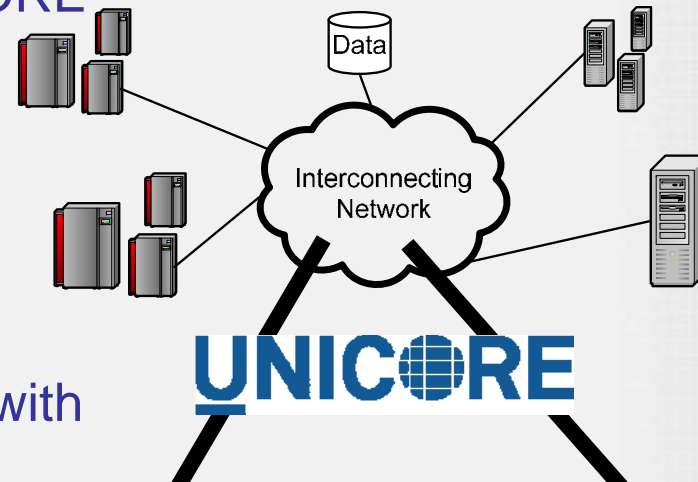
Motivation: Why UNICORE ?

- Supercomputers are managed by Resource Management Systems (RMSs) that handle the scheduling
- But: There are many RMSs available
- Proprietary ways of job submitting
 - IBM Loadleveler → `llsubmit...`
 - Torque Resource Manager → `qsub...`
- Different job description languages (# of nodes, memory requirements...)



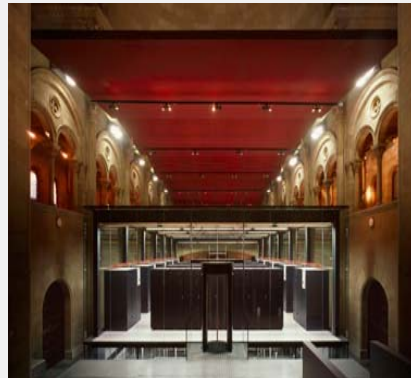
Motivation: Why UNICORE ?

- Solution: Grid System UNICORE
- Define job workflows in abstract manner
- Immediate portability of job definitions for other systems with other architectures
- No 'learn overhead' if a new RMS is used
- Applications across multiple supercomputers/clusters



Motivation: Why UNICORE ?

- DEISA supercomputers



November 14, 2007

SC07, Reno - DEISA and UNICORE

DEISA UNICORE – general aspects



- How to access DEISA resources:
 - Via **UNICORE** and **DESHL**
- Future additional planned access
 - Globus (GTK 4.*)
 - Web portals

UNICORE Features

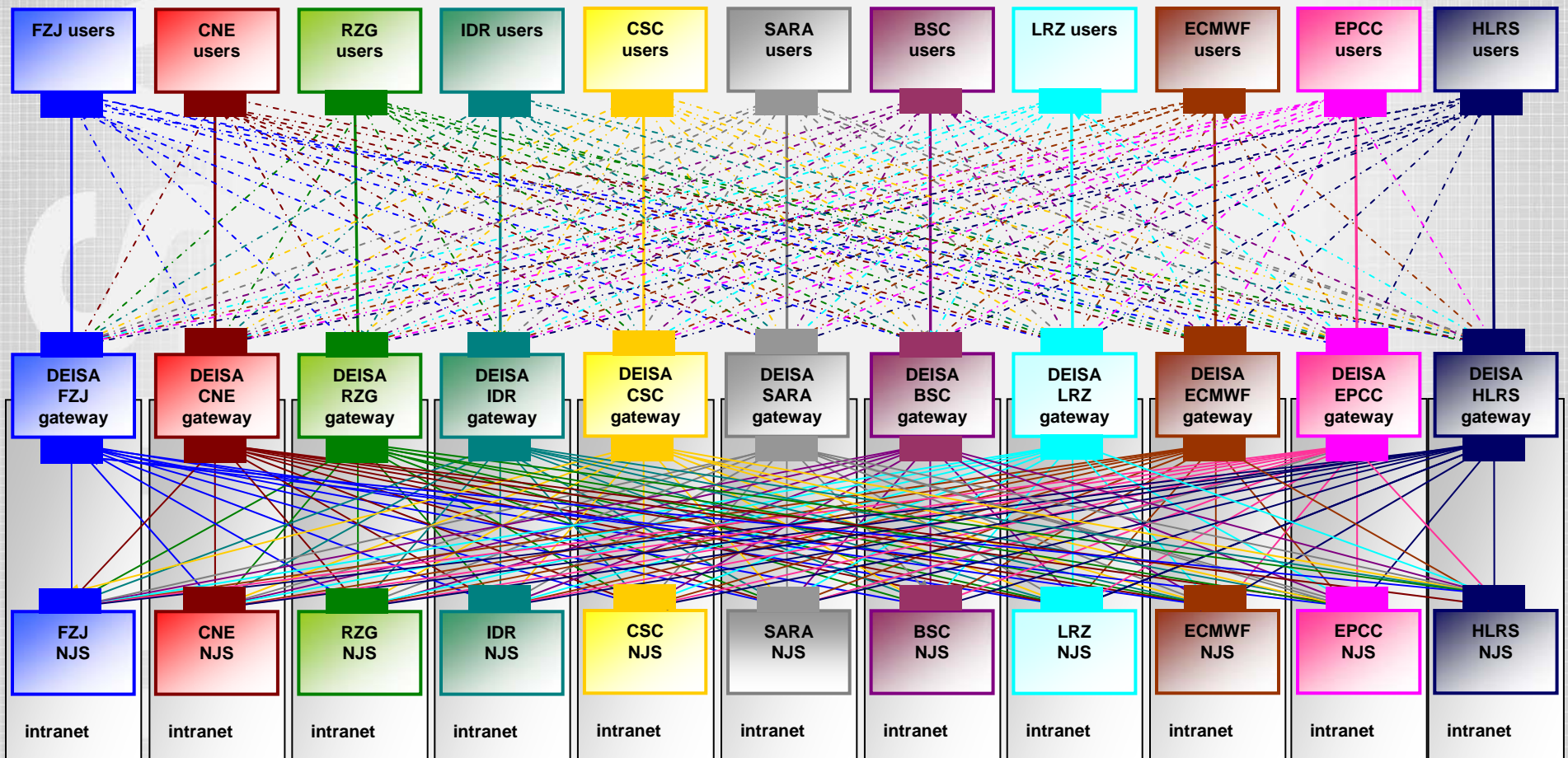


- UNiform Interface to COmputing REsources
- Seamless, secure, and intuitive access to distributed resources and data
- A vertically integrated Grid system
- Intuitive GUI with single sign-on
- X.509 certificates for authentication and authorization and job/data signing

UNICORE Features



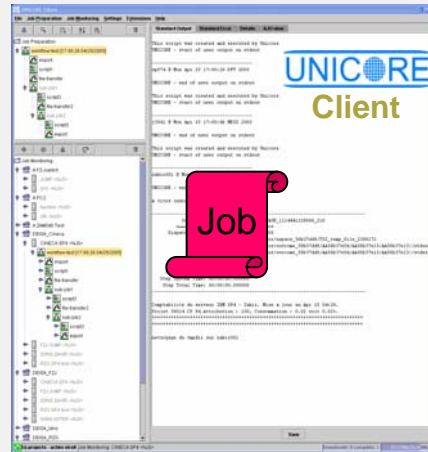
- workflow engine for
 - complex multi-site, multi-step workflows
 - job monitoring
- extensible application support
- secure data transfer integrated
- resource management
- easy installation and configuration of client and server components
- production quality



DEISA UNICORE features

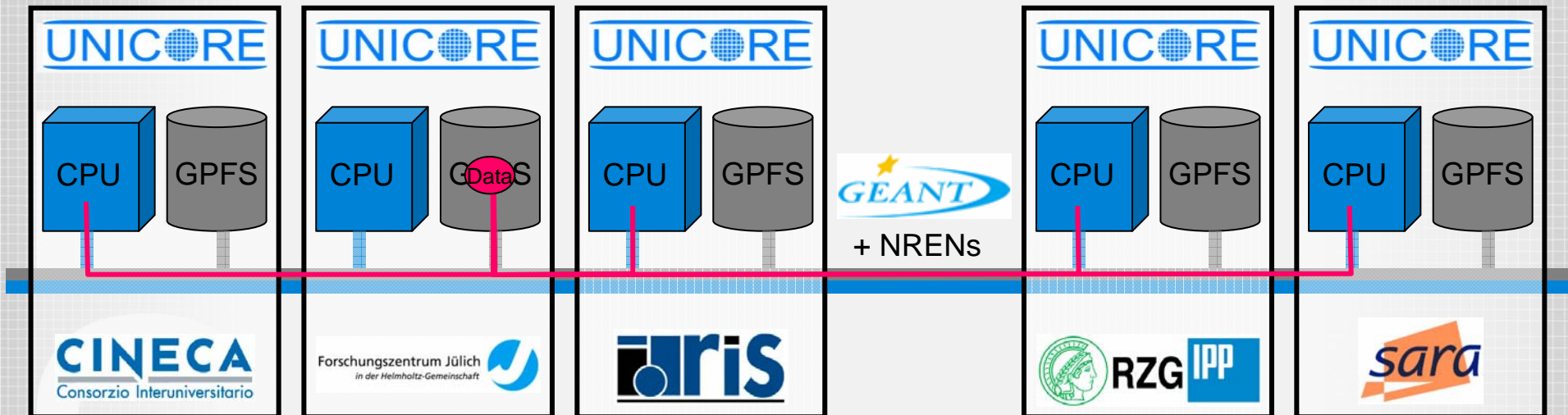
- DEISA Services for Heterogeneous Management Layer (DESHL) as UNICORE command line interface
- Integrated GridFTP filetransfer
- UNICORE monitoring with SIMON
- Firewall friendly (only two ports have to be opened)
- Heavily used in DEISA Extreme Computing Initiative (DECI) projects
- Regularly DEISA training sessions
- Access to DEISA GPFS via UNICORE

UNICORE Workflow using GPFS



- Job-workflow:
- 1) FZJ
 - 2) CINECA
 - 3) RZG
 - 4) IDRIS
 - 5) SARA

• Integrated GridFTP filetransfer



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Getting **UNICORE**



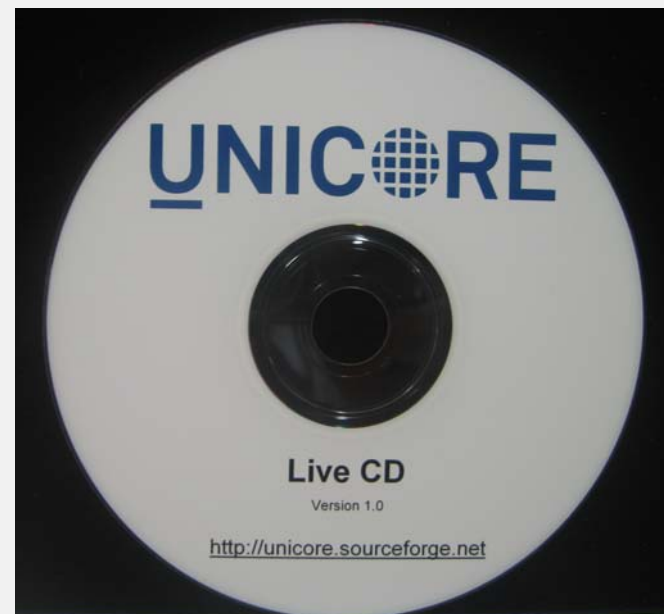
UNICORE **OPEN SOURCE**

- <http://www.unicore.eu>

UNICORE Live CD

- Complete “out-of-the-box” usage of UNICORE 5/6
- Bootable Linux OS with UNICORE 5/6 pre-installed
- Does not harm your system → sandbox scenario
- For testing, evaluating, ...

**AVAILABLE HERE
AND AS ISO-IMAGE
ON unicore.eu**



Thanks...

