UNICORE

A European Grid Middleware

http://www.unicore.eu
History Lesson

3rd September 1996: round table with users, supercomputer centres, competence centres, vendors
  - discussion: “what prevents an efficient use of distributed supercomputers?”
  - results: seamless, secure and intuitive to use access

December 1996: UNICORE project idea submitted to BMBF

Spring 1997: UNICORE project proposal developed and submitted to BMBF

1st of August 1997: start of the German UNICORE project
1998

- UNICORE – applet client
UNICORE – compile, link & run task

UNICORE

Welcome to UNICORE

Uniform Interface to Computing Resources

Job creation and submission
Job management

Edit job properties

Ensure destination system and site

Submit
UNICORE Plus – First Application Client
UNICORE Plus – CMPD plugin
Application Testbed for European GRID Computing
Running UNICORE jobs on Globus 2.4 managed resources
Workflow automation & speed-up

Automatic split-up of data-parallel task
- Web Services enabled UNICORE

Unicore/GS Architecture
- Unicore Component
- New Component
- Web Services Interface

Unicore Client
OGSA Client
UniGrids Portal

Network Job Supervisor
- Resource Broker
- Resource Database
- TSI
- OGSA Server A
- OGSA Server B
- User Database
Accessing the DEISA infrastructure with UNICORE
UNICORE 6.0

11. January 6.0 alpha5
30. April 6.0 beta
3. July 6.0 RC1
21. July 6.0 RC2
13. August 6.0 final

By 30. September 6.0.5
By 31. December 6.1
Some Technical Details of UNICORE 6.0
Design Principles

- Service-oriented, web services foundation
- Integrated, complete stack
- Strong security
- Easy installation and configuration
- Excellent application support
- Workflows
- Support for many operating and batch systems
  - Existing TSI installation can be reused
- Open, extensible, interoperable
- Easy to use clients
  - Graphical and command line clients
  - Portal, RCP-based
- Open Source under BSD license
Architecture

Gateway

https

Web Services

WSRF Service Container

XFire SOAP engine

Atomic Services

Additional Services

Security

Target System Interface

XNJS Execution Management System

Target systems

Clients

e.g. graphical, portal, command line

non WS

https

Access control policies

User DB

Target systems

Clients

e.g. graphical, portal, command line

non WS

Target systems

https

Gateway
Technical Features

- Standards-compliant
  - OASIS WSRF 1.2
  - OGF JSDL 1.0
- Pluggable file transfer mechanisms
  - OGSA ByteIO as default
  - Others are pluggable
- State of the art software
  - High-performance SOAP stack (XFire)
  - Jetty 6 web server
  - Java 5
- Security
  - X.509
  - Support for proxy certificates
  - XACML 1.0 authorisation policies
  - Web-services based user database
  - Pluggable extensions for VO management
- Configuration, management and administration
  - All components are pluggable
  - Support for Java management extensions (JMX)
http://www.unicore.eu

Please send support-requests to:
unicore-support@lists.sourceforge.net