

UNICORE Portal

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UNICORE Summit

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Architecture

Extension Points

Security and Authentication

To Do List

A Walk Through Portal

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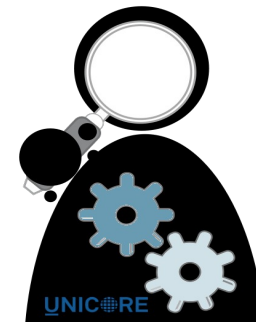
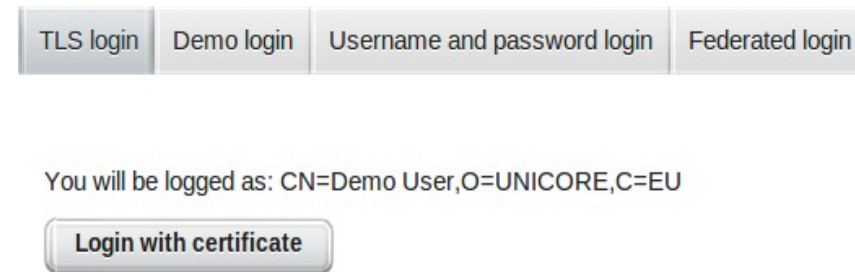
Security and Authentication

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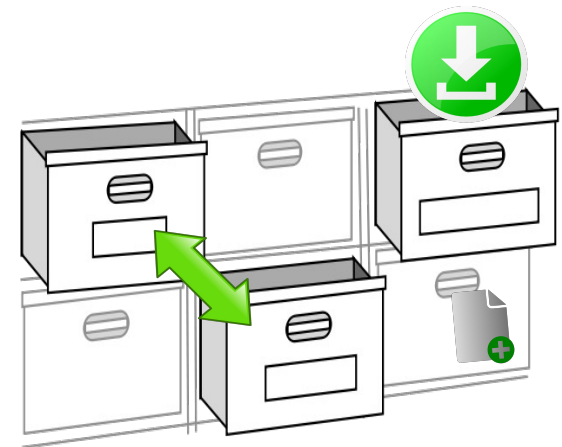
Motivation (1)

- Secure web based interface to access Grid resources
 - User registration and management based on UNICORE security mechanisms
- Easy launching and monitoring of jobs and workflows
- Sites monitoring



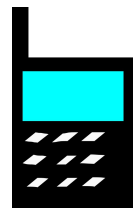
Motivation (2)

- Secure web based interface to access Grid resources
 - Data management
 - File Imports/Exports
 - File Upload/Download/Transfer between UNICORE storages, user „workspace“ and local disk
- Internationalization for user interface
- Extensible and easy to customize



Motivation (3)

- Portal vs. URC (UNICORE Rich Client) and UCC (UNICORE Commandline Client)
 - No need to install and manage any software on end user machines
 - Authentication can be simplified
 - Access from mobile devices should be much easier
 - No client-server version conflicts
 - Easy software updates



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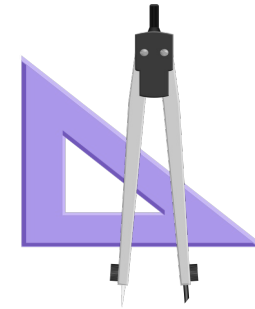
Architecture

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Architecture

- General concepts
 - Modular structure (core, grid.core, ui, grid.ui, workflows.core, workflows.ui, authn)
 - Vaadin chosen as the underlying GUI technology
 - Authentication is performed by a separate servlet, providing currently 3 different options
 - Concept of „user workspace“ to store user data in portal
 - Extension points in portal.xml to add own components

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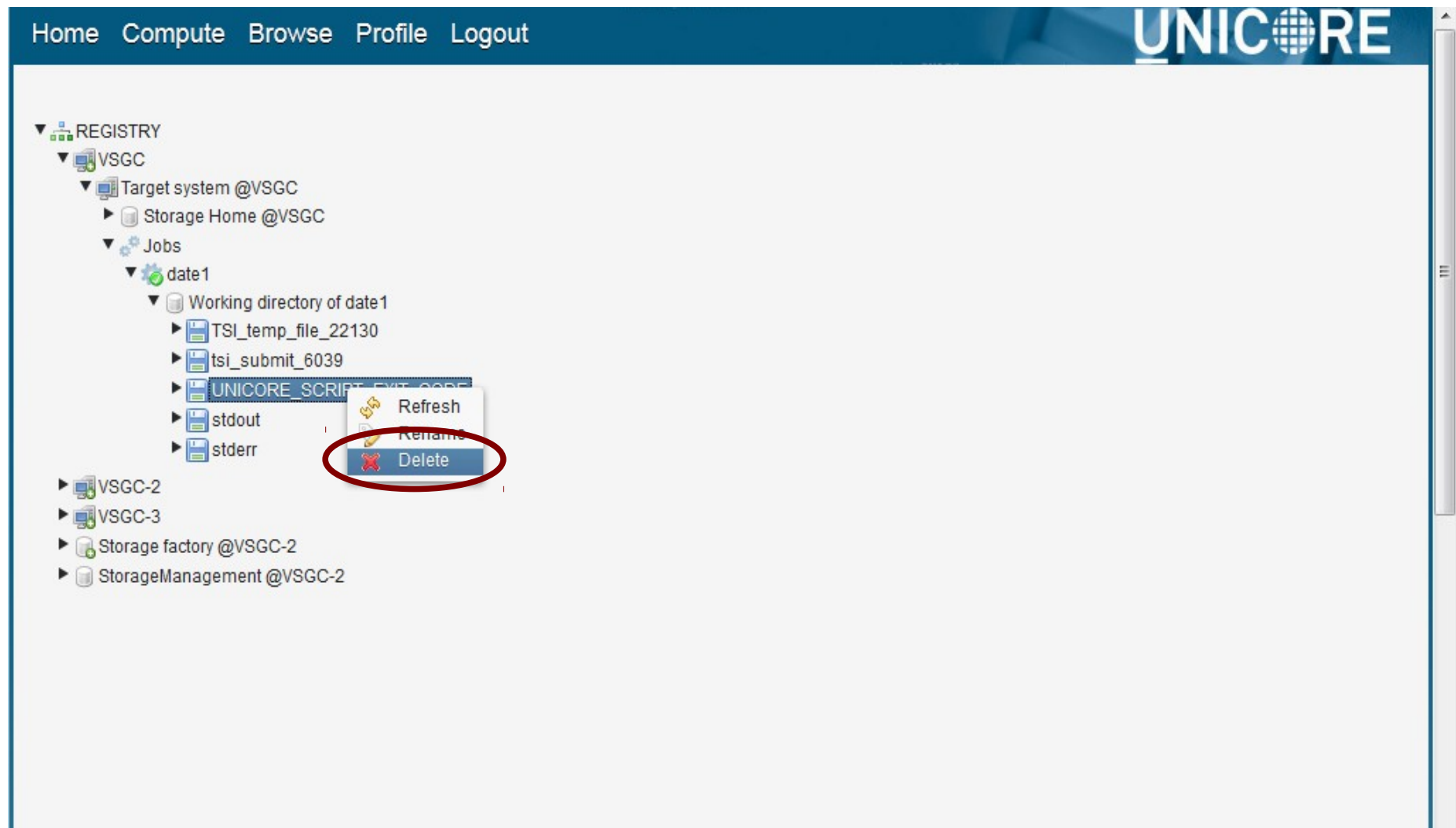
A Walk Through Portal

Portal Extensions: Command Extension Point

```
<commandExtension>
  <id>eu.unicore.portal.grid.ui.commands.DeleteFileNodeCommand</id>
  <commandId>eu.unicore.portal.grid.ui.commands.DeleteFileNodeCommand</commandId>
  <commandClass>eu.unicore.portal.grid.ui.commands.DeleteFileNodeCommand</commandClass>
</commandExtension>

<menuExtension>
  <id>eu.unicore.portal.grid.ui.deleteFileNode</id>
  <name>Delete</name>
  <description>Delete</description>
  <icon>vfsaction/delete</icon>
  <!-- This menu item should be available in any menu -->
  <menuPath>.*</menuPath>
  <category>/delete</category>
  <visibleWhen>
    <selection>
      <instanceof>eu.unicore.portal.grid.core.nodes.u6.AbstractFileNode</instanceof>
    </selection>
  </visibleWhen>
  <commandDescriptor>
    <commandId>eu.unicore.portal.grid.ui.commands.DeleteFileNodeCommand</commandId>
  </commandDescriptor>
</menuExtension>
```

Portal Extensions: Command Extension Point



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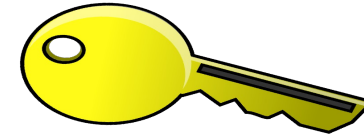
Extension Points

Security and Authentication

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Portal security



- Requires a X.509 credential
- Acts as an *agent* using the UNICORE explicit trust delegation model
- All actions are preformed with user permissions
- Certificate-less access via SAML (Security Assertion Markup Language) authentication in UVOS/Unity
- Pluggable models of authentication and registration components

Portal: Login Page



The image shows the UNICORE portal login page. At the top, there is a globe graphic with the text "Welcome to UNICORE". Below this, there are two flags (UK and Poland) and the text "UNICORE portal authentication". A horizontal bar contains four login options: "TLS login", "Demo login", "Username and password login", and "Federated login". The "TLS login" and "Username and password login" options are circled in red. Below this bar, it says "You will be logged as: CN=Demo User,O=UNICORE,C=EU" and there is a "Login with certificate" button. At the bottom, there is a "Switch to user registration" button, which is also circled in red.

Welcome to
UNICORE

UNICORE portal authentication

TLS login Demo login Username and password login Federated login

You will be logged as: CN=Demo User,O=UNICORE,C=EU

Login with certificate

Switch to user registration

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Portal Milestones

V 1.0 (Autumn 2013)

- Basic social features
- Custom executable implementation
- Basic workflow editor
- Local file system in the data browser



Portal future extensions



“Cool” features:

- Workflow editing component and templates (if not done previously)
- History component and/or Message box component
- Resource reservation
- Improvement of existing components with support for metadata, resource sharing, ...
- Improved error logging

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Portal: Home Page

Home Compute Browse Profile Logout

UNICORE


Welcome, dear Mariya Petrova



NEWS

Customizable

LATEST ACTIVITY

	Jun 11, 2013 5:21:08 PM Mariya Petrova logged in.
	Jun 11, 2013 5:20:27 PM Mariya Petrova logged in.
	Jun 11, 2013 5:17:23 PM Mariya Petrova logged in.

UNICORE sourceforge JÜLICH FORSCHUNGSZENTRUM OGF

Portal: Job creation

Application

Input Files

Resources

Job name:

Select application: Bash shell

Select version: 3.1.16

Command line arguments:

Input parameters

☐ DEBUG:

☐ VERBOSE:

☐ OPTIONS:

☒ SOURCE:

File content

```

hostname
echo hallo
date
id
ls
mkdir dir1
echo hallo1 > dir1/file1
echo hallo2 > dir1/file2
mkdir dir2
mkdir dir2/dir3

```

Portal: Output Files

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UNICORE

Job Computation

Application

Input Files

Output files

Resources

☐ Select all

Output files

☒ STDOUT
 UFTP:https://zam025s02.zam.kfa-juelich.de:7700

 output file: stdout
 rename in destination: my_out_file

Submit

Portal: Job Resources Specification

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UNICORE

Job Computation

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Resource requirements

☐ CPU architecture: x86_64

☐ CPUs per node: 1

☐ CPU speed (MHz): 1024.0

☐ Wall time (sec): 3600.0 $x = 3600.0 \times x \in [1.0, 86400.0]$

☐ RAM per node (MBytes): 1024 $x = 268435456 \times x \in [1048576, 1073741824]$

☐ Total number of nodes: 1 $x = 1 \times x \in [1, 6]$

☐ Total number of CPUs: 1 $x \in [1, 12]$

☐ Operating system: LINUX

Available execution services

- REGISTRY
 - VSGC
 - Target system @VSGC
 - VSGC-2
 - Target system @VSGC-2
 - VSGC-3
 - Target system @VSGC-3

Submit

Portal: Job Submission

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Job Computation

Application
Input Files
Output files
Resources

Resource requirements

☐ CPU architecture: x86_64

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☐ Total number of CPUs: 1 $x \in [1, 12]$

☐ Operating system: LINUX

Available execution services

- REGISTRY
 - VSGC
 - Target system @VSGC
 - VSGC-2
 - Target system @VSGC-2
 - VSGC-3
 - Target system @VSGC-3

Running tasks

monitoring job execution

cancel

Portal: Jobs Browser

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	NAME	JOB STATUS	SUBMISSION TIME ▼	ACTIONS
	script1	FAILED	2013-04-08 16:07:52	
	date1	SUCCESSFUL	2013-04-08 16:03:00	

Details

Name script1

Type JobManagement

State Ready

Application Bash shell (Version 3.1.16)

Current time 2013-04-08 16:07:57

Environment variables SOURCE=source

Error message Staging in failed. Reason: Filetransfer FAILED: https://localhost:9091/portal/resources /9c9e9f99-20f1-4ff2-be12-a734f30be8bf -> source, error message: Download failed.: java.net.ConnectException: Connection refused FAILED

Job status

Submission time 2013-04-08 16:07:52

Termination time 2013-04-09 16:07:52

URI https://zam025s02.zam.kfa-juelich.de:7700/NSGC-3/services/JobManagement?res=a52ffac8-c79e-4e47-bb2c-d475cff1907b

Portal: Grid Browser



Portal: Sites Browser

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	NAME	STATE	TOTAL NUMBER OF PROCESSORS	ACTIONS
	REGISTRY	Ready		
	VSGC	Ready	12	
	VSGC-2	Failed		
	VSGC-3	Ready	12	

Details

Name VSGC

Type TargetSystemFactoryService

State Ready

Current time 2013-04-08 16:01:05

Installed Applications Korn shell (Version Version M 1993-12-28 q) blast (Version 2.2.23+) POVRay (Version 3.5) Perl (Version 5.8.8) Date (Version 1.0) Custom executable (Version 1.0) Convert (Version 6.5.4) Octave (Version 3.2.2) C shell (Version 6.14.00) BlenderTest (Version 2.42) Bash shell (Version 3.1.16) GAUSSIAN (Version 3.0) Python Script (Version 2.4.2) MP2C (Version 1.0.0) MPI (Version 1.0)

Installed Operating Systems LINUX (Version 2.6.27)

Main Memory 1024 Megabyte

Number of Nodes 6

Processor Architecture x86_64

Processors per Node 2

Server identity CN=Demo UNICORE/X,O=UNICORE,C=EU

Termination time 2016-03-07 13:36:24

Total Number of Processors 12

URI https://zam025s02.zam.kfa-juelich.de:7700/VSGC/services/TargetSystemFactoryService?res=default_target_sys...

Portal: Data Browser

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☐ Select All

Path: /

NAME	EXT	SIZE	MODIFIED
.tomboy.log	log	4683 Byte	2008-12-19 10:53:21
.tomboy		<DIR>	2008-12-19 10:46:51
chemomentum-ca.pem	pem	1250 Byte	2009-01-14 12:45:11
demouser.jks	jks	7972 Byte	2010-01-05 14:01:11
6117ec2f-434b-4d02-8e2d-45c		<DIR>	2010-03-01 10:17:01
myscript.sh	sh	19 Byte	2009-01-16 16:46:21
folder1		<DIR>	2013-04-03 20:17:31
folder2		<DIR>	2013-03-30 14:34:01
first.sh	sh	26 Byte	2009-01-19 10:12:31
second.sh	sh	48 Byte	2009-01-16 13:51:31
if.sh	sh	17 Byte	2009-01-19 10:12:21
else.sh	sh	21 Byte	2009-01-19 10:12:21
loop.sh	sh	32 Byte	2009-01-20 10:41:01

Protocol: BFT
Type: Storage

URL: u6://zam025s02.zam.kfa-juelich.de:7700/VSGC-3/services/StorageManagement?res=client-doku-Home#

☐ Select All

Path: /

NAME	EXT	SIZE	MODIFIED
.xim.template	tem	1940 Byte	2008-12-11 16:38:51
public_html		<DIR>	2010-02-25 12:46:31
.inputrc		861 Byte	2008-12-11 16:38:51
.emacs		1637 Byte	2008-12-11 16:38:51
Documents		<DIR>	2010-03-04 10:10:21
.bash_history		25 kByte	2013-01-22 17:38:31
.fonts		<DIR>	2008-12-11 16:38:51
.mozilla		<DIR>	2009-01-23 12:40:01
.bashrc		1177 Byte	2008-12-11 16:38:51
.profile		1066 Byte	2013-03-28 16:47:31
bin		<DIR>	2008-12-11 16:38:51
.xinitrc.template	tem	1446 Byte	2008-12-11 16:38:51

Protocol: UFTP
Type: Storage

URL: u6://zam025s02.zam.kfa-juelich.de:7700/VSGC/services/StorageManagement?res=client-doku-Home#

Portal: Workflow Editor

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Workflow computation

Click on an application to add it to the workflow.

Double-click to create a job or edit job settings

Delete workflow

Thank you

