

UNICORE

Easy and Uniform Access to JSC Resources

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Outline

- Introduction
- Features
- UNICORE Rich Client
- UNICORE Command Line Client
- Links and documentation

Introduction



Moab/Torque -> msub,...

LoadLeveler -> llsuubmit,...



Introduction

Supercomputers are managed by Resource Management Systems (RMSs) that handle the scheduling

- JUGENE: IBM LoadLeveler
- JUROPA: Moab/Torque
- Different job description languages (# of nodes, memory requirements,...)

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UNICORE

- To unify and simplify the supercomputer access

Why UNICORE?

Advantages

- One interface to create, submit and monitor jobs
 - *Seamless, secure, and intuitive access to distributed resources and data*
- No need to learn system specific commands
- Remote access to the JSC supercomputers from anywhere
- Open Source software

Why UNICORE?

Advantages (cont.)

- Easy to install and to configure clients
 - *Intuitive graphical user interface (Rich Client) and powerful command line client (ucc)*
 - *Linux, Windows, MacOS versions available*
- Integrated data management
- Integrated resource management

UNICORE Security

Security model based on X509 public key infrastructure

- No “userid and password” authentication
- Credential consists of a public and a private key

Trusted certificates provided by the national European Grid Certification Authorities (e.g. DFN Grid CA)

- Each user has her own private key
- JSC is DFN-Registry provider

Support: unicore-info@fz-juelich.de

UNICORE Client Installation and Configuration -1

Prerequisites:

- Approved account on JUROPA and/or JUGENE (JUQUEEN)
- Personal user certificate
- Installed SUN Java Runtime Environment (JRE) \geq 1.6

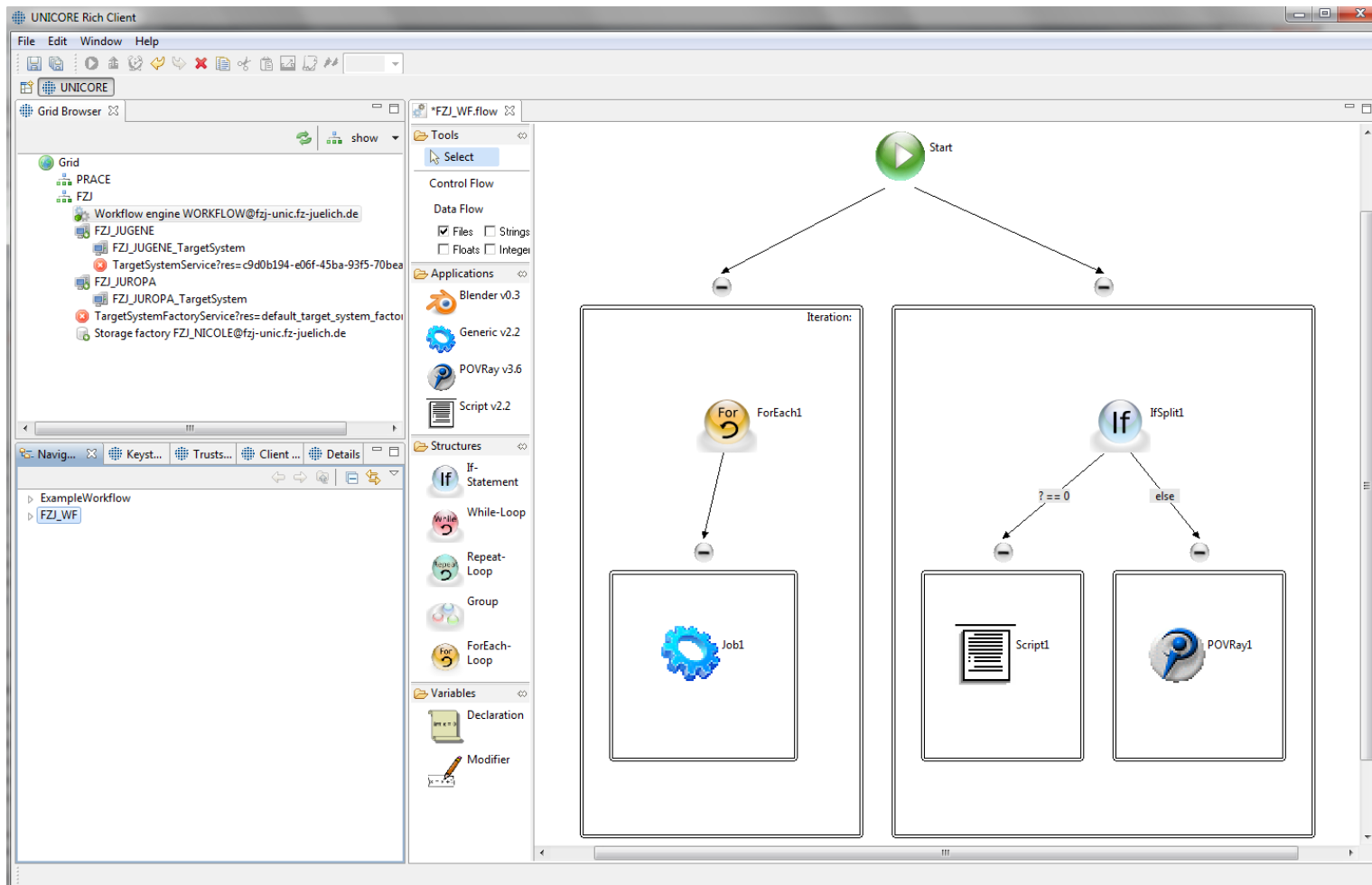
Download UNICORE clients:

- <http://www.unicore.eu>
- <http://www.fz-juelich.de/unicore>

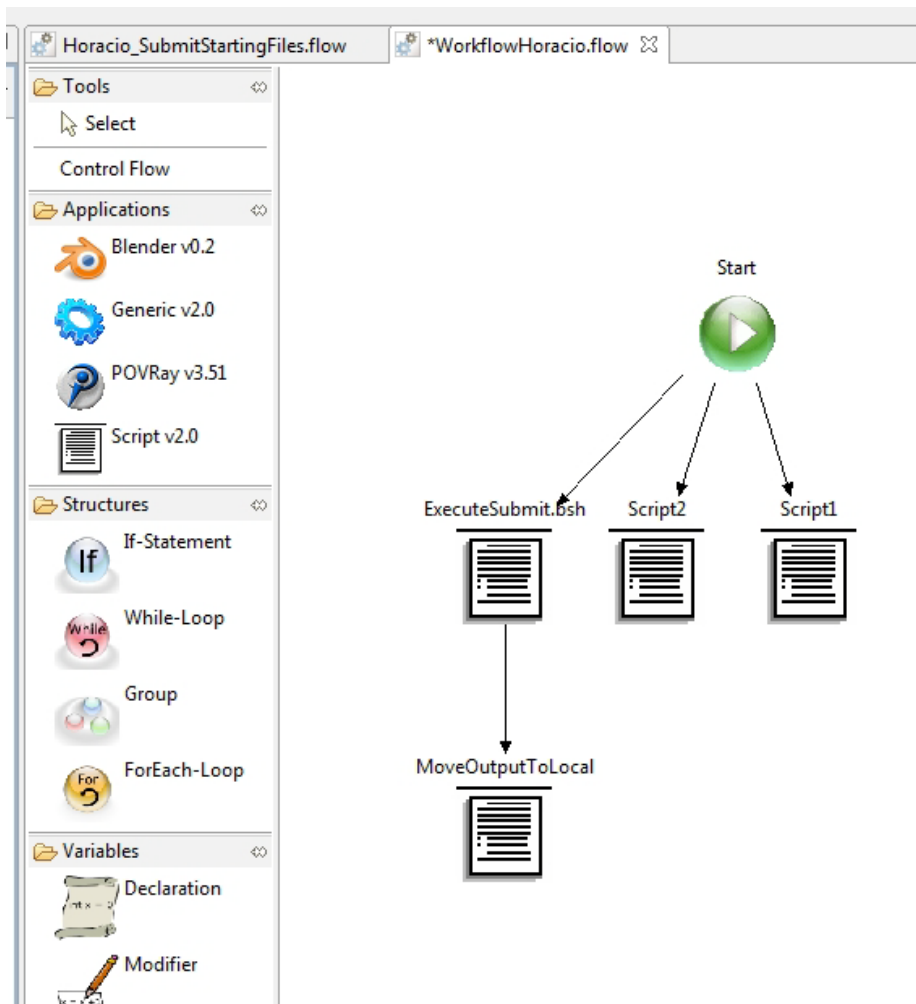
Central Registry:

https://fzj-unic.fz-juelich.de:9112/FZJ/services/Registry?res=default_registry

UNICORE Rich Client



UNICORE Features - Extended Workflow capacity



UCC – UNICORE Command Line Client - 1

Run jobs, get status, get output

Transfer files

- Local to remote
- Server-to-server
- Remote-to-Local

Administrative use

- List jobs, clean up, etc.

Workflows

UCC – UNICORE Command Line Client - 3

Basic commands

- `ucc help` get help information
- `ucc connect [-v]` connect to a Grid
- `ucc list-sites` list the available target systems
- `ucc run [-a] <job>` submit a job script [asynchronously]
- `ucc batch <dir>` submit all jobs stored in <dir>
- `ucc get-status` query job status
- `ucc list-jobs` get list of your jobs
- `ucc put-file` copy local file to remote
- `ucc get-file` copy remote file to local

UCC Examples - 1

```
> ucc put-file -s ..\samples\date.u -t  
u6://FZJ_JUROPA/home
```

```
> ucc ls u6://FZJ_JUROPA/home
```

```
.ssh
```

```
.sh_history
```

```
.profile
```

```
date.u
```

```
> ucc get-file -s u6://FZJ_JUMP/home/.profile -  
t myfile
```

UNICORE Summary

Functionality of both graphical and command line client:

- Platform-independent Java application
- Uniform access to JUGENE, JUROPA (and other European and US Supercomputers)
- Job submission, monitoring and control
- File management

Links and documentation

Download FZJ production UNICORE release and manuals

- <http://www.fz-juelich.de/jsc/unicore/unicore6>

Getting Grid certificates from DFN

- <http://www.pki.dfn.de/index.php?id=grid>
- <http://www.fz-juelich.de/jsc/zertifikate/grid> (RA @ FZJ)

Access UNICORE documentation, e.g. tutorials, manuals, FAQs

- <https://www.unicore.eu/documentation>

UNICORE Testgrid

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

Questions, troubles, or suggestions?

- contact unicore-info@fz-juelich.de

Questions?