

ARC tutorial

NorduGrid ARC could previously be installed as a standalone client, however that got too complex.

On Linux systems, arc can be installed from Debian/Ubuntu/Fedora/EPEL repositories.

On Macs, there is a homebrew packaging ready.

What to install?

Required packages are:

- nordugrid-arc-client
- Nordugrid-arc-plugins-globus

+ all their dependencies.

Client configuration

The minimal configuration of a client for use in Finland is just two files, a
~/.arc/client.conf file looking like this:

client.conf

[common]

vomsespath=/home/user/vomses

[registry/giis1]

url=ldap://giis1.fgi.csc.fi:2135/Mds-Vo-name=Finland,o=grid

registryinterface=org.nordugrid.Idapegiis

default=yes

[registry/giis2]

url=ldap://giis2.fgi.csc.fi:2135/Mds-Vo-name=Finland,o=grid

registryinterface=org.nordugrid.Idapegiis

default=yes

vomses

The „vomses“ file referenced by the previous file looks minimally like this:

```
"fgi.csc.fi" "voms.fgi.csc.fi" "15003"  
"/O=Grid/O=NorduGrid/CN=host/voms.fgi.csc.fi" "fgi.csc.fi"
```

On one row. The location of this file must be correct in `~/.arc/client.conf`. The location of it can be anywhere.

Other needed things (1/2)

The hardest thing to install is the eScience Certificate Authority files. These should be installed from a separate apt/yum repository (for debian/ubuntu/fedora/centos) and kept up to date. A good solution for nontechnical users is a virtual machine set up by somebody else, or a FGI/FGCI login node.

Other needed things (2/2)

A eScience user certificate with matching secret key is also needed. Getting one is documented in the FGI Confluence and too long for this tutorial.

Most Finnish universities can now get certificates via the Terena3 Digicert portal, the rest can only get them from NorduGrid 2015.

VO membership

To be able to use grid resources, the user need to belong to a virtual organisation. In Finland we mostly use the „fgi.csc.fi“ VO. Enrolling in it is documented in the FGI Confluence.

After registration there is a multihour delay before the systems authorize new users.

Generating a proxy

A proxy is a temporary ID-token used by the grid middleware to authenticate you. It can be passed to the server so that the server can access files from remote storage.

```
arcproxy -S fgi.csc.fi
```

It should then ask for a password, and generate a proxy.

Test job

When enough time has passed, you can send a test job:

```
arctest -J 1
```

This will send a short compute job to one of the clusters that you can use. The jobid it returns can then be used to query the status of the job using the command `arcstat`.

Grid storage

The basic idea of the grid is that your input and output data are automatically handled. That is: the data gets fetched from global storage before the jobs starts, and the result get uploaded when the job finishes.

This trades some security for ease of use so it should be looked at on a case-by-case basis, luckily Kimmo is the master of those.