ARC from the SYSADMIN's perspective

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A typical sysadmin managing a cluster:

- Already has a highly configured and customized cluster
- Runs his favorite distribution
- Runs his favorite batch system
- Has strong views
  - on the internal network configuration of the cluster
  - on the software layout and network access of the frontend
  - on the node software and shared directories

Considers the grid software as an intruder
What sysadmin wants:

- Non-intrusive lightweight grid layer:
  - Respect the local computing unit, take my cluster as it is configured now
  - Keep the grid software away from the nodes
  - Keep the grid software away from the frontend
Sysadmin wish list

- Open source middleware, access to the code
  - ARC has a GPL license, the full source is available from the ftp.nordugrid.org, public read access to the CVS

- I want to build the software myself
  - ARC build dependencies are clearly defined
    - GPT, GT pre-WS, gSOAP, GACL, MySQL client libs, libxml2, VOMS (optional)
    - Build instruction and the required external software is available from our site

- I want to install prebuilt binaries
  - Binary packages of ARC releases are available for all recent versions of major Linuxes: redhat/fedora, suse, mandrake, debian

- Hope you make use of standard software, don't mess with your own packaging solution and don't have hundreds of packages
  - ARC provides tarballs and RPMs (for Globus as well)
  - Unfortunately GT2 ships with its own patched version of Openssl, Openldap, Cyrus SASL
  - The modularity of ARC is kept on a reasonable level: 7 packages including the nordugrid-doc package
Sysadmin wish list 2

- Hope no need to reconfigure my nodes, install part of the middleware there
  - ARC keeps itself away from the nodes, no Grid software is needed on the nodes
  - ARC does not require changes in the node network configuration either
  - You may need to assign some shared disk areas for ARC services

- Hope I don't have to install anything onto the frontend either
  - In our recommended setup the ARC software is installed onto the frontend
  - Optionally ARC can be installed to a separate box and use that as a gateway machine to the cluster

- Hope I can use my current batch system
  - ARC supports the full PBS family, Condor, SGE and “unix fork”
  - Porting to another batch system will be done on request

- Hope I can install the software to arbitrary location on the frontend
  - ARC by default installs into /opt/nordugrid and makes use of some config files from /etc, ARC is almost fully relocatable, see our relocation-instructions
Sysadmin wish list 3

- Hope you have a well-documented reasonable configuration and no need to maintain 99 config files scattered all-over the machine
  - The full ARC installation (including external packages) is configured via only two configuration files: nordugrid.conf, globus.conf
  - We need to work more on config clean up and documentation
- Tell me I don't have to change my firewall
  - ARC requires a Grid-friendly firewall, by default the IANA registered gridftp and mds-ldap ports must be open on the frontend (see our firewall instructions)
  - All the ports used by ARC are configurable
- Hope your grid software does not launch dozens of daemons, and those processes can run non-root
  - ARC comes with only three daemons: gridftpd server, ldap server, and the grid-manager
  - non-root operation is possible with some limitations
Sysadmin wish list 4

- Hope you have usable logs, I like to know what is happening on my cluster
  - All the ARC services comes with detailed configurable logs
  - Easy to monitor the active grid jobs & users, history of previous grid jobs is also available
  - Some of the ARC error messages are difficult to decode
- It doesn't work for me, wish someone could help with my problem
  - The NorduGrid Collaboration operates a support service at nordugrid-support@nordugrid.org
  - bugzilla.nordugrid.org may contain relevant information as well
  - Plenty of technical documentation is available on our website
conclusion

We work hard so that most of sysadmins could get along with ARC

Lightweight grid