KnowARC Concepts

KnowARC Objectives

- Create a novel, powerful next generation Grid middleware that is simple, non-invasive and cost-efficient.
- Promote Grid standardization and interoperability
- Contribute to the take-up of Grid technology, bridging the gap between academia and business in Grid development

Exploitation & Outreach

The organisations behind ARC, such as NorduGrid and KnowARC, actively work to promote ARC and Grid technology in general, to a broad range of communities.

KnowARC has brought ARC to scientific and public sector communities across Europe, both the project partners and other groups interested in ARC’s simple, portable solution.

The KnowARC project also works hard on exploiting ARC, through working with Industry and through working with the European Grid Initiative to provide components for their Unified Middleware Distribution.

Portability & Integration

ARC has been designed from the start to run on the widest range of platforms and operating systems possible. ARC users and resource providers can use any major Linux distribution, such as Debian, Ubuntu, Fedora and RedHat.

ARC and its dependencies are also being submitted to these distributions for integration, to make it even easier to get set up with ARC. Already KnowARC has ported several packages from Globus and the The Virtual Organization Membership Service (VOMS) and had them accepted by a range of Linux distributions.

Virtualization

KnowARC’s virtualization framework provides on-demand job execution environments as well as virtual hosting.

By using virtual hosting, a desktop PC can be used simultaneously for interactive work in Microsoft Windows and for executing grid jobs in a Linux environment.

Simplicity

The next generation grid middleware developed by KnowARC is a simple, self-healing system which requires minimal effort to install and to use.

International cooperation

ARC began through the NorduGrid collaboration, which brought together a range of experts in distributed computing from the Nordic countries in order to develop an effective Grid middleware solution. This built on existing collaborative efforts in the region, such as NorduNet, the Nordic joint data network for the Academic sector.

ARC’s simple and effective solution has helped its user base grow beyond the Nordic countries, through KnowARC and through other groups using ARC such as the Swiss Multi Science Computing Grid (SMSCG).

The KnowARC project attracted participation from a wide range of countries beyond the Nordic regions, organisations in Germany, Hungary, Slovakia, Switzerland and the UK.

Standards & Interoperability

The ARC community’s commitment to standards has helped make it a highly standardised and interoperable middleware.

Through bodies such as the Open Grid Forum, ARC developers have played a major role in the production of the GLUE2 standard, as well as implementing a wide range of other OGF standards such as BES and JSDL and WSRF. ARC also actively tracks evolving standards that will become relevant as they mature, so they can be implemented as soon as possible.

This standards-driven approach has allowed ARC to be interoperable with other major middleware. Notably, it can submit to both gLite, through the CREAM interface, and to UNICORE.

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www.knowarc.eu  www.nordugrid.org