Enabling and supporting provenance in Grids for complex problems

Provenance

The **concept** of 'provenance' is already well understood in the study of fine art where it refers to the trusted, documented history of a work of art. Given that documented history, the object attains an authority that allows scholars to understand and appreciate its importance and context relative to other works of art. Objects that do not have a trusted, proven history may be treated with some scepticism by those that study and view them. This same concept of provenance may also be applied to data and information generated within a computer system, particularly when the information is subject to regulatory control over an extended period of time.

Today's Grid architectures suffer from limitations, such as a lack of mechanisms to trace results and infrastructures to build up **trusted** networks. The Provenance project enables users to **trace** how a particular result has been arrived at by identifying the individual and aggregated services that produced a particular output.

The overarching **aim** of the Provenance project is to design, conceive and implement an industrial-strength open provenance architecture for Grid systems, and to deploy and evaluate it in complex Grid applications, namely aerospace engineering and organ transplant management. This support includes a scalable and secure architecture, an open proposal for standardising the protocols and data structures, a set of tools for configuring and using the provenance architecture, an open source reference implementation, and a deployment and validation in industrial context.

The **impact** of this project is that it will allow information generated and managed within a Grid infrastructure to be proven and trusted. By this it is meant that the information's history, including the processes that created and modified it, are documented in a way that can be inspected, validated and reasoned about by authorised users that need to ensure information controls have not been altered, abused or tampered with.

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511085

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Specific targeted research project

Project coordinator
IBM UK Ltd

Contact person
John Ibbotson
Hursley Park
Winchester SO21 2JN
United Kingdom
john_ibbotson@uk.ibm.com

Maximum Community contribution to project
EUR 1 981 996

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1 September 2004

Duration
24 months

Project partners
Organisation name and country

Organisation name	Country
IBM UNITED KINGDOM LIMITED	UK
THE UNIVERSITY OF SOUTHAMPTON	UK
DEUTSCHES ZENTRUM FUER LUFT- UND RAUMFAHRT E.V.	DE
UNIVERSITY OF WALES, CARDIFF	UK
UNIVERSITAT POLITECNICA DE CATALUNYA	ES
MAGYAR TUDOMANYOS AKADEMIA SZAMITASTECHNIKAI ES AUTOMATIZALASI KUTATO INTEZET	HU

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