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<?xml version="1.0" encoding="UTF-8" ?>
- <wsdl:definitions targetNamespace="urn:resmgmt.gridlab.org"
  xmlns="http://schemas.xmlsoap.org/wsdl/"
  xmlns:apacheSOAP="http://xml.apache.org/xml-soap"
  xmlns:impl="urn:resmgmt.gridlab.org"
  xmlns:intf="urn:resmgmt.gridlab.org"
  xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
  xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
  xmlns:wsdlsoap="http://schemas.xmlsoap.org/wsdl/soap/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
- <wsdl:types>
- <schema targetNamespace="urn:resmgmt.gridlab.org"
  xmlns="http://www.w3.org/2001/XMLSchema">
<import namespace="http://schemas.xmlsoap.org/soap/encoding/" />
- <complexType name="ArrayOf_xsd_string">
- <complexContent>
- <restriction base="soapenc:Array">
<attribute ref="soapenc:arrayType" wsdl:arrayType="xsd:string[]" />
</restriction>
</complexContent>
</complexType>
<element name="ArrayOf_xsd_string" nillable="true" type="impl:ArrayOf_xsd_string" />
</schema>
</wsdl:types>
- <wsdl:message name="submitJobRequest">
<wsdl:part name="jobDefinition" type="xsd:string" />
<wsdl:part name="credential" type="xsd:base64Binary" />
</wsdl:message>

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GridLab will dramatically change the way we use computing today. GridLab will develop core capabilities for simulation and visualization codes to be self aware of the changing Grid environment, and to be able to fully exploit dynamic resources for fundamentally new and innovative application scenarios.

The applications themselves will possess the capability to migrate from site to site during the execution, both in whole or in part, to spawn related tasks, and to acquire additional resources as needed, according to both the changing availabilities of various resources in the grid, and the needs of the applications themselves.

The GAT will contain independent modules for handling many different aspects of Grid programming, including simulation, performance and grid monitoring, resource brokering and resource selecting, performance prediction, interaction with information servers, security, notification, collaboration, data handling and remote application steering.

"The GridLab Project will build a Grid Application Toolkit to provide developers with these very building blocks. As suggested by the project's name it aims to provide a grid environment or laboratory for users to both develop and test applications."

BYTE, www.byte.com, Spring 2002

GridLab Applications

CACTUS

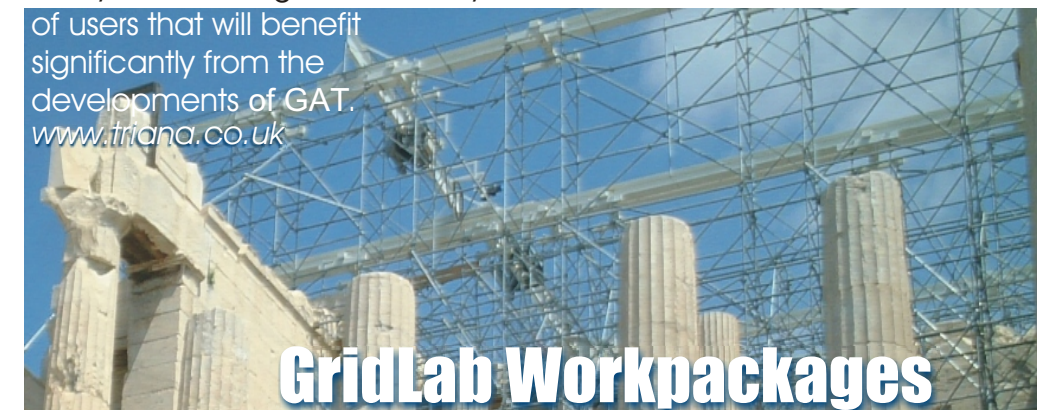
The primary application framework and environment for the development and testing of the GAT is the open source Cactus Computational Toolkit (Cactus). Cactus is a modular, collaborative framework for developing parallel scientific and engineering applications which are already widely used in Grid computing. Cactus was developed over many years to solve some of the largest scale problems in computational science, and to enable large scale collaborations of different communities to work together. www.cactuscode.org

TRIANA

The Work-Flow Application Toolkit, based on the Triana package developed originally for gravitational wave (GW) data analysis, will provide a second example application toolkit for GridLab. GW data analysis has a large community of users that will benefit significantly from the developments of GAT. www.triana.co.uk

OTHER APPLICATIONS

GridLab develops a generic GAT which can be used by all the other scientific and engineering applications. Using the GAT you can make your applications grid enabled in a very fast way.



WP1 Grid Application Toolkit provides a link between Grid middleware and applications, usable by any conforming application or middleware component.

WP2 Cactus Grid Application Toolkit provides an extended GAT interface for Cactus.

WP3 Work-Flow Application Toolkit will develop Grid capabilities for a widely used data flow programming environment.

WP4 Grid Portals will be highly application driven, aimed at providing uniform, flexible and intuitive user access to Grid resources.

WP5 Testbed Management will administrate and maintain an active development testbed across roughly a dozen EU and US sites

WP6 Security will ensure the integration of all the technologies developed under other WPs, taking into account the various local security requirements and state of the art solutions.

WP7 Adaptive Application Components develops a set of components and APIs to be plugged into the Grid Application Toolkit.

WP8 Data handling and Visualization will provide Grid aware techniques for data management, analysis, and visualization, needed especially for dynamic applications.

WP9 Resource Management will develop resource management mechanisms such as estimators and resource brokers.

WP10 Information Services will extend existing Grid middleware toolkits with dynamic features needed by applications to select appropriate Grid resources.

WP11 Monitoring will develop new components that will tie in the general Grid monitoring architecture to support application steering, monitoring and automatic analysis.

WP12 Access for mobile users will develop and test Grid access technologies through a variety of mobile devices, from 2.5G and 3G wireless networks.

WP13 Information Dissemination and Exploitation will ensure the active dissemination of the project results through a variety of channels.

WP14 Project Management will ensure the project's professional management, including careful orchestration and monitoring of work across all groups.