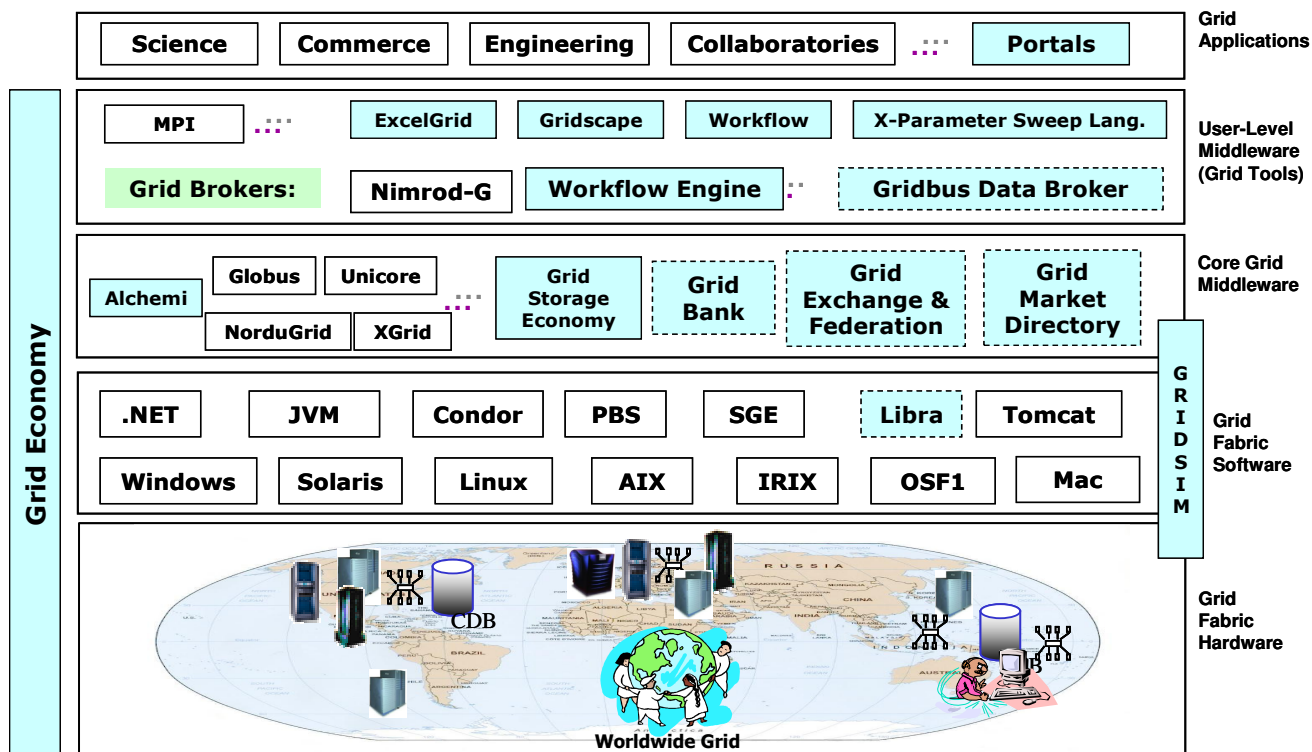


The Gridbus Middleware 2004

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The Gridbus Project is engaged in the design and development of grid middleware technologies to support eScience and eBusiness applications. These include visual Grid application development tools for rapid creation of distributed applications, competitive economy-based Grid scheduler, cooperative economy based cluster scheduler, Web-services based Grid market directory (GMD), Grid accounting services, Gridscape for creation of dynamic and interactive test-bed portals, G-monitor portal for web-based management of Grid applications execution, and the widely used GridSim toolkit for performance evaluation. Recently, the Gridbus Project has developed a Windows /.NET-based desktop clustering software and Grid job web services to support the integration of both Windows and Unix-class resources for Grid computing. A layered architecture for realisation of low-level and high-level Grid technologies is shown in the figure below. Some of the Gridbus technologies discussed below have been developed by making use of Web Services technologies and services provided by low-level Grid middleware, particularly Globus Toolkit and Alchemi. A summary and status of various Gridbus technologies is listed below.



Component	Description	Current Status
Gridbus Broker	An economy-capable Data Grid service broker for scheduling distributed data oriented applications across Windows and Unix-variant Grid resources.	v.1.2 with XML input interface.
Alchemi	A .NET-based desktop Grid framework.	v.0.8 with interface for user-level scheduling.
GridSim	A toolkit for modeling and simulation of global Grids.	v.3.1 with network extensions and trace capabilities.
Grid Workflow Management System	Workflow Management System and Monitor for Grid systems	v.1.0
Grid Market Directory	A directory for publication of Grid Service providers and their services.	v.1.1 with web services based query interface.
Grid Bank	A grid accounting, authentication, and payment management infrastructure.	v.1.0 with web services interface.
Gridscape	A tool for the creation of interactive and dynamic Grid test bed web portals.	v.1.2 implemented as Web application within Tomcat.
G-Monitor	A web portal to manage execution of applications on Grids using remote brokers.	v.2.0 with support for access from handhelds.
ExcelGrid	.Net based GUI client application for remote submission and monitoring of jobs to Grid middleware and brokering systems such as Gridbus broker and Alchemi.	v.0.8
Visual Parametric Modeller	A graphical environment for application parameterisation.	v.1.0 with visual parameterisation of data files.
Additional Tools:		
Libra	An economy based scheduler for clusters.	v.1.0 implemented as PBS plug-in.

