

# INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION & MANAGEMENT

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## WORLD WIDE MIDDLE WARE TECHNOLOGIES

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### ABSTRACT

*Grid is an infrastructure that involves the integrated and collaborative use of computers, internet and databases managed by organisations. Grid middleware's provide users with seamless computing ability and uniform access to resources in the heterogeneous Grid environment. In particular, we discuss the purpose of grid, its components, its challenges and issues in each level relationship between the Grid and the World Wide Web, its facts and fictions and its web services. It also includes the overview of web (grid) services, bus of web (grid) services and the necessary security issues.*

### KEYWORDS

Grid Computing, Middleware, Web Services, GSI, Bus Services

### 1. INTRODUCTION

Grid computing is a process of connecting computing resources to allocate their computing supremacy. Computer grids permit access to computing resources from many different locations, just as the World Wide Web permit access to information. These computing resources include data storage capacity, computing power, sensors, visualization tools and much, much more. Grids use networks to connect the computing resources of many different computers. The cyber-glue that binds all of these resources together is called "middleware." There are many different types of middleware, developed for many different types of grid. Middleware does all the work to connect users' jobs to computing resources, thereby hiding the grid's complexity from the user.

### 2. DIFFERENCES BETWEEN THE GRID, THE INTERNET AND THE WEB

The internet is a networking infrastructure, which connects together millions of computer worldwide. There comes from the idea of "interconnected networks". If both connected to the internet, any computer can communicate with any other one. But "being connected" is not only a question of cables! To talk to each other computers have to speak the same language, i.e. use the same protocol. A protocol is format for transmitting data. The common protocol for the internet is called the transmission control protocol/internet protocol or TCP/IP. The World Wide Web or simply the web is an information-sharing service built on the top of the internet. But it is not only one! The internet is also used for e-mail (SMTP) for file transfer (FTP) and so on. The grid is again a service built on the top of the internet, as the web is. But the grid goes one step supplementary.

**FIG. 1: WORLD WIDE GRID COMPUTING**



### 3. FACTS AND FICTIONS ABOUT THE GRID

#### FACT

Grid computing, like the World Wide Web, is an application of the Internet. It cannot replace Internet. In order to get such data transfer rates, individuals would have to set-up a dedicated fibre-optic link connecting home and the source of data (server). If one is able to do that, he/she can download the movie 10,000 times faster even now, without the Grid! With standard dial-up telephone link or shared broad-band connectivity, such speeds will remain a dream. The Grid cannot change the data transfer rate. Today's grid computing technologies and projects are geared toward research and businesses with highly specific needs, such as vast amounts of data to process and analyze within large, worldwide collaborations, like LHC project of CERN. While other computer users may benefit from grid computing through better weather prediction or more effective medications, they may not be logging onto a computing grid anytime soon.

#### FICTION

The Grid will replace the Internet. People will be able to download movies 10,000 times faster using the Grid. The Grid is going to dominate www

### 4. CHALLENGES AND ISSUES

The typical Grid Services include

- Security services which maintain user substantiation, endorsement and segregation
- Information services, which permit employ to see what resources (machines, software, other services) are accessible for use
- Job submission services, which permit a user to present a job to any compute resource that the user is endorsed to use,
- Co-scheduling services, which permit, multiple resources to be planned parallel,
- User-support services, which offer users, access the systems that cover the resources of an entire grid.

## 5. PURPOSES OF GRID COMPUTING

Applications consist of numerous sub-applications that are sewing up jointly to form one huge circulated application. The complexity lies in making all the bit work together in a reliable and expected manner.

The consistency of these assemblages is the cause of the problem. Issues such as organization and announcement across sites to different garbage of application running on different sites.

Application demands difficult communications between a variety of grid services, schedulers, precautions systems and network requirements. The complexity lies in handling of Grid programming utensils.

With Grid programming utensils, difficult distributed applications can be wrapped and restricted. Also, procedure of Web services in the programming models can deal with some of the difficulties.

## 6. GRID MIDDLEWARE

Grid middleware to work out enormous amount of applications is demanding. Examples of well-liked Grid Middleware are UNICORE, Globus, Legion, and Gridbus

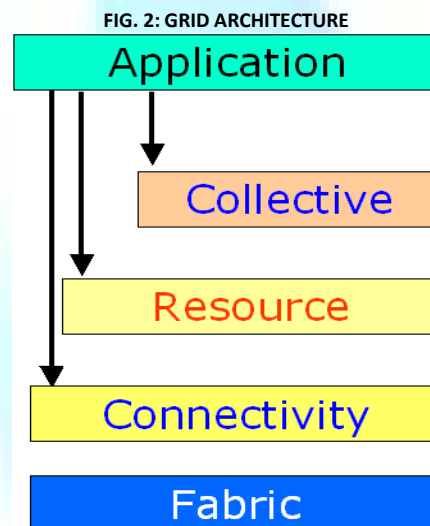
## 7. GRID ARCHITECTURE

### FABRIC LEVEL

Interfaces to local control, with physical and logical resources such as records, or even a circulated folder system.

### CONNECTIVITY LEVEL

Defines central part of communication and endorsement set of rules supporting Grid-specific network connections.



### RESOURCE LEVEL

Permits the allocation of a distinct resource and it builds on connectivity level communication and endorsement protocols to define set of rules for protected recognition, beginning, monitor, and control of sharing operations on individual resources.

### COLLECTIVE LEVEL

Permits resources to be analysis as gathering and allocation of resources. The collective level contains set of rules and services not connected with any one particular resource but instead of capturing connections across the gathering of resources.

### APPLICATION LEVEL

Use the suitable mechanism of each level to maintain the application Each of these level may contain set of rules, APIs, and software Development Kits (SDKs) to maintain the development of Grid applications.

## 8. COMPONENTS AND SERVICES OF GLOBUS GRID LAYER

### GRID FABRIC

The fabric of the Grid includes the essential systems, PCs, operating systems, networks, storage systems and routers the building blocks.

### GRID SERVICES

Grid services combine the components of the Grid fabric.

### GRAM

The Globus Resource Allocation Manager (GRAM) is a basic library service that give ability to do remote-submission work begin. GRAM unites Grid machines, given that a frequent user interfaces so that you can submit a work to multiple machines on the Grid fabric. GRAM is a common, ubiquitous service, with particular application toolkit instructions built on top of it.

### GRID FTP

The Grid FTP data transfer protocol, which develop the standard FTP protocol consist of a superset of the features accessible by the different Grid storage systems at present in use. Grid FTP has selected subsets of the accessible FTP protocol with latest features. The FTP protocol is most commonly used for data transmit on the Internet and the most possible entrant for gathering the Grid's needs. FTP is a broadly apply and well-understood IETF standard protocol with a large base of code and capability from which to assemble. An FTP client and server with support for GSSAPI protection following protocol extension defined by the Internet society were implemented. The GSSAPI supports any PKI or Kerberos endorsement. Grid FTP functionality comprises various features that are maintained by FTP expansion to have already been standardized (RFC 959) but are rarely executed in current systems. Other features are new expansion to FTP.

**Grid Security roads and Kerberos support:** Robust and flexible endorsement, honesty, and discretion features are vital when relocating or accessing files. Grid FTP must maintain GSI and Kerberos endorsement, with user restricted setting of various stages of data integrity and/or privacy. Grid FTP implements the



endorsement system defined by RFC 2228, "FTP Security Extensions". Grid FTP implements secret and GSSAPI endorsement with elective veracity and /or solitude, as defined by the Existing Generic Security Services (GSS) API enabled FTP standard.

**GIS**

The Grid Information Service, GIS, earlier known as the Meta computing Directory Service, MDS, supplies information service. GIS to find out the properties of the technology, computers and networks that you would like to use: how many processors are existing at this instant? What bandwidth is afforded? Is the storage on tape or disk? Using an LDAP (Lightweight Directory Access Protocol) server, GIS provides middleware information in a frequent interface to put a unifying picture on top of dissimilar equipment.

**GSI**

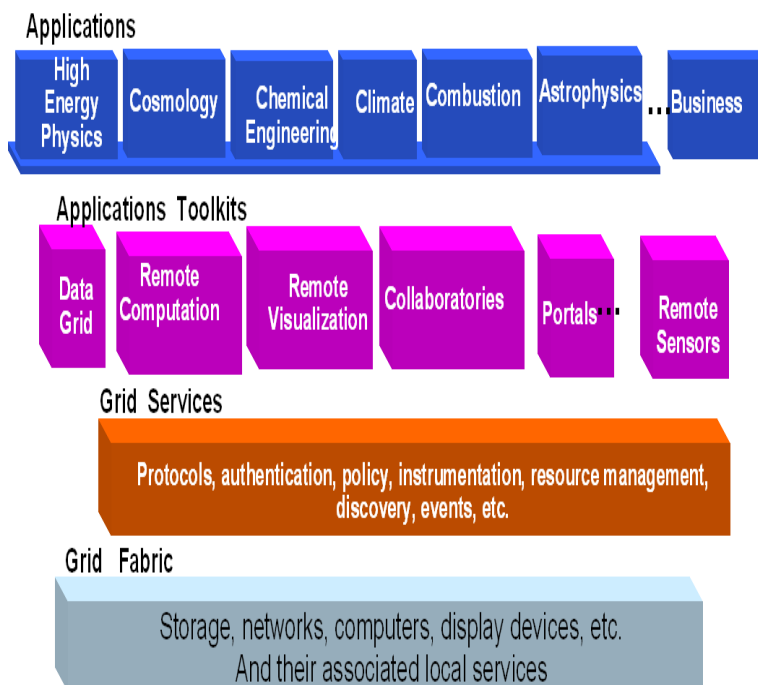
The Grid Security Infrastructure, is a library for provide generic protection services for applications that will be run on the Grid. Application programmers use the gss-api library for adding endorsement to a program. GSI provides programs, such as grid-proxy-init, to make possible login to a variety of sites, while each site has its own savor of protection measures. That is, on the fabric level, the a variety of machines you want to use may be managed by different protection policies; GSI afford a way of shorten many remote logins. The GSI afford methods for endorsement of grid users and safe communication. It is based on SSL (Secure Socket Layer), PKI (Public Key Infrastructure) and X.509 certificate architecture. The GSI affords services, procedure, and libraries to complete the following information for grid protection:

- Single Sign-on for using grid services through user certificates
- Resource endorsement through host certificates
- Data encryption
- Endorsement
- Allocation of authority and trust through surrogate and certificate chains of dependence for certificate authorities (CAs)

**APPLICATION TOOL KIT**

Application toolkits use Grid Services to offer higher-level abilities, often targeted to specific classes. A number of groups are also budding a variety of other toolkits such as maintain for distributed management of large datasets, combined revelation, and online instrumentation.

FIG. 3



A rich variety of applications have been developed that build on services provided by the three layers.

For example, Navier-Stokes flow solver for structured grids that has been customized to operate on several supercomputers via the use of Message Passing Programming Environment (MPICH-G2) Other application areas being targeted to the Grid consist of High-Energy Physics, Cosmology, Chemical Engineering, Climate, Combustion, and Astrobiology.

**9. WEB SERVICES**

Most people are well-known with accessing the Web through a Web browser, which afford a human-oriented interface to information and user-oriented services such as on-line mart and retail stores. When a consumer requests a Web page, the request is handled by a remote Web server, which returns the information in HTML a form that allows the browser to present it using a variety of fonts, colors and pictures, all factors that make it more useful and attractive to a human.

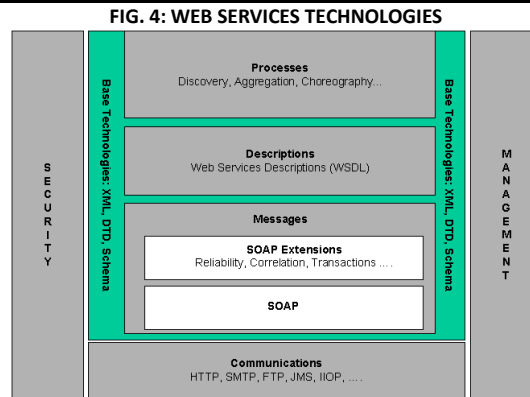
Web services are distributed software components that afford information to *applications* rather than to humans, during an application-oriented interface. The information is controlled using *extensible Markup Language (XML)*, so that it can be parsed and processed easily rather than being design for display. In a Web-based retail operation, for example, Web services that may be running on commonly separated servers might afford account management, inventory control, shopping cart and credit card endorsement services, all of which may be invoked several times in the course of a single purchase.

Web services issues details of their functions and interfaces, but they maintain their performance details private; thus a client and a service that support frequent communication protocols can interact any of the platforms on which they run, or the programming languages in which they are written. It makes Web services mainly applicable to a distributed various environment.

The key terms used by Web services are:

**XML (EXTENSIBLE MARKUP LANGUAGE)**

A markup language for formatting and replacing structured data.

**SOAP (SIMPLE OBJECT ACCESS PROTOCOL)**

An XML-based protocol to indicate wrapping information, contents and processing information for a message.

**WSDL (WEB SERVICES DESCRIPTION LANGUAGE)**

An XML based language used to explain the element, interfaces and other belongings of a web service. A WSDL document can be study by a possible consumer to study about the service.

Web service can maintain any communication protocol, and may offer its consumers an option, the most common is SOAP over either HTTP or HTTPS. This supply to the request of Web services, as HTTP and HTTPS are ubiquitous and usually do not raise problems of firewall traversal in an organization that allows bi-directional HTTP passage.

**10. WEB SEMANTICS (GRID)**

The Semantic Web explains the relationships between things. The purpose of the Semantic Web is motivating the growth of the current Web by enabling users to find, share, and mingle information more easily. Information, computing resources and services are explained using the **semantic data model**. In this type the data and metadata are expressed through facts.

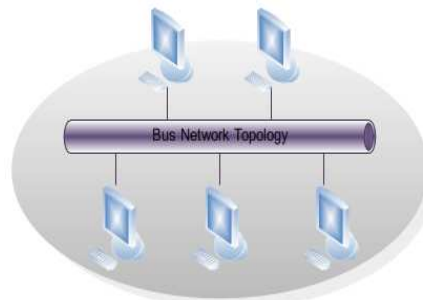
**11. WEB (GRID) SERVICES**

The Open Grid Services Architecture explains architecture for a service-oriented grid computing location for business and scientific use, developed within the Global Grid Forum (GGF). OGSA is based on several other Web service technologies WSDL and SOAP. It was intended to provide an infrastructure layer for the Open Grid Services Architecture. OGSI takes the statelessness issues into account by basically expanding web services to contain grid computing resources that are both temporary and state full

**12. BUS (GRID) SERVICES**

The major condition of the time with respect to the Web services and the Grid computing is to have a Bus Web (Grid) Services, this is a bus of web services, and the design of these web services is consists of both the web service contents and the grid.

Several Web (Grid) Service will work in a network of Bus, divide the resources with each other in a fast and secure way, for the completion of particular task or to solve a problem in a joint way by making a distributed web (grid) service network, as shown in the figure Bus Web (Grid) Service.



The most important issue related to Bus Web (Grid) Service which requires some time to solve and be retaining throughout the time is the protection issue. Without having a strong protection mechanism now days, it is not possible to have right communication, relations, allocation of resources and on time result. Protection requires in both the supplier and demand application and services. The major aim of this technology is to improve the allocation of resources in a quick and protected way with in practical environment by ubiquitous having access for the result of a particular problem.

**13. CONCLUSION**

In the end of this report, we are proposing a new concept by merging the already existing concepts of Grid Computing and Web Services as Web (Grid) Services and then elaborate this concept in to the bus of Web (Grid) Services. This new concept requires a little more time to make it into an accurate shape. Further it also requires implementations, to have some experimental results, on the basis of these experimental results this can be finalised.

**14. REFERENCES**

1. Parvin Asadzadeh, Rajkumar Buyya<sup>1</sup>, Chun Ling Kei, Deepa Nayar, and Srikumar Venugopal Grid Computing and Distributed Systems (GRIDS) Laboratory, Department of Computer Science and Software Engineering, The University of Melbourne, Australia. Global Grids and Software Toolkits: A Study of Four Grid Middleware Technologies
2. David Booth, W3C Fellow / Hewlett-Packard, Hugo Haas W3C, Francis McCabe, Fujitsu Labs of America, Eric Newcomer (until October 2003), Michael Champion (until March 2003), Chris Ferris (until March 2003) IBM and David Orchard (until March 2003) BEA Systems. Web Services Architecture W3C Working Group Note 11 February 2004
3. Zeeshan Ahmed, Department of Intelligent Software Systems and Computer Science, Blekinge Institute of Technology, A Middleware road towards Web (Grid) Services.
4. Grigoris Antoniou and Frank van Harmelen: A Semantic Web Primer.
5. A Networking Approach to Grid Computing, pp 1-100, by Daniel Minoli, John Willey and sons

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