

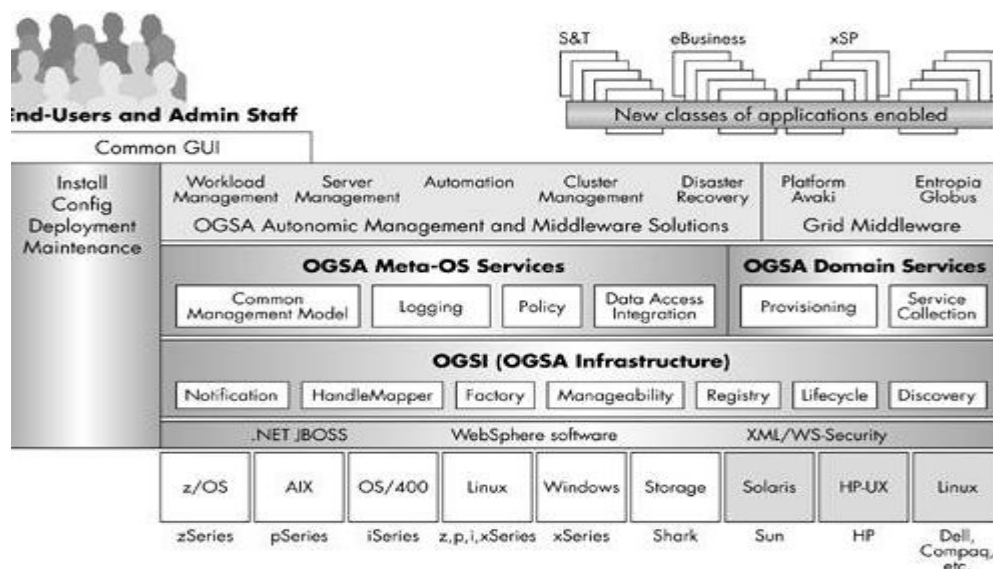
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The job of the OGSA is to build on the grid service specification (Open Grid Service Infrastructure, or OGSi) to define architectures and standards for a set of "core grid services" that are essential components to every grid. As we have discussed in the previous chapter, a set of core OSGA use cases are developed, which forms a representative collection from different business models (e.g., business grids and science grids) and are used for the collection of the OSGA functional requirements. We have identified some core basic functions across all the grid services.

As shown in figure 5.1, the basic OSGA architectural organization can be classified into five layers: native platform services and transport mechanisms

- OSGA hosting environment
- OSGA transport and security
- OSGA infrastructure (OGSi)
- OSGA basic services (meta-OS and domain services)

Figure 5.1. OSGA core platform components—an IBM vision on OSGA and integrated software components.



The above defined OSGA layers form the foundation for new high-level management applications and middleware Grid solutions and new class of Grid applications.

5.1 NATIVE PLATFORM SERVICES AND TRANSPORT MECHANISMS

The native platforms form the concrete resource-hosting environment. These platforms can be host resources specific to operating systems or hardware components, and the native resource managers manage them. The transport mechanisms use existing networking services transport protocols and standards.

5.2 OGSA HOSTING ENVIRONMENT

These definitions do not, however, address the portability of services implementations. Portability across hosting environments still needs to be addressed by both grid communities and other hosting environments, including J2EE or .NET. These communities are working together on this, and solutions will be forthcoming over the next relatively short period of time.

5.3 CORE NETWORKING SERVICES TRANSPORT AND SECURITY

An OGSA standard does not define the specific networking services transport, nor the security mechanisms in the specification. Instead, it assumes use of the platform-specific transport and security at the runtime instance of operation. In other words, these properties are defined as service binding properties, and they are dynamically bound to the native networking services transport and security systems at runtime. These binding requirements are flexible; however, the communities in collaboration with the hosting and platform capabilities must work together to provide the necessary interoperability aspects.

5.4 OGSA INFRASTRUCTURE

The grid service specification developed within the OGSI working group has defined the essential building block for distributed systems. This is defined in terms of Web service specifications and description mechanisms (i.e., WSDL). This specification provides a common set of behaviors and interfaces to discover a service, create service instance, service lifecycle management, and subscribe to and deliver respective notifications.

5.5 OGSA BASIC SERVICES

Some of the most notable and interesting basic services are as follows:

- Common Management Model (CMM)
- Service domains
- Distributed data access and replication
- Policy
- Security
- Provisioning and resource management
- Accounting/metering
- Common distributed logging
- Monitoring
- Scheduling

These representational services are derived from the use cases, which we have discussed in the last chapter. In subsequent chapters we will cover each of the above core services in greater detail. This discussion will include these services and their behaviors, the interfaces and information model, and their relevance to the grid community and OGSA in particular. Some of these basic services have already been defined and others are still evolving. However, we believe these services are representational services and, hence, require a more thorough discussion.

Source : <http://elearningatria.files.wordpress.com/2013/10/ise-viii-grid-computing-06is845-notes.pdf>