



OGSA Services

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- Core Services
 - Some variant of them should eventually be supported by any OGSA service
- Data and Information Services
 - Management of data and information
- Resource and Service Management

Core Services

- Name resolution and discovery

- Capable of resolving GSHs to GSRs
- Every Grid Service instance is assigned a globally unique GSH
- All the instance specific information are encapsulated in a single abstraction called a Grid Service reference(GSR).

- Service Domains

- Coordination of internal services
- High-level abstraction model to describe the behaviours, attributes, operations, and interfaces to allow a collection of services to function as a single unit.

- Service Discovery

- Process of identifying a subset of GSH's from a specified set.
- Registry: Grid service that supports service discovery.

Core Services

- Security
- Policy
- Messaging, queuing, and logging
- Events
- Metering and accounting
- Higher level Services
 - Distributed Data Management Services.
 - Workflow Services.
 - Auditing Services.
 - Instrumentation and Monitoring Services.
 - Problem determination services for distributed computing.
 - Security protocol mapping services.



Data and Information Services

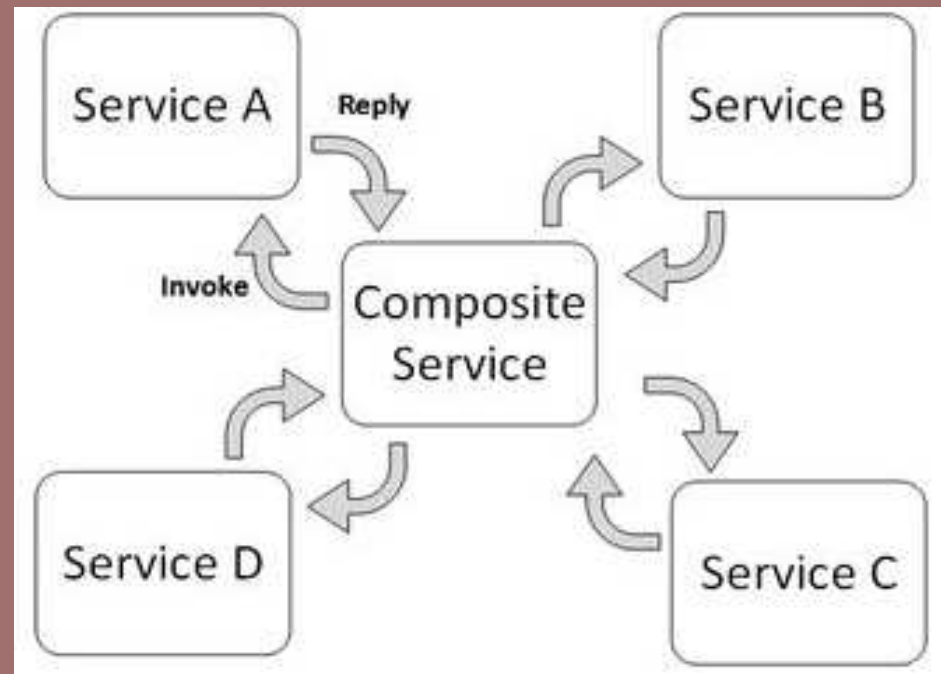
- **Data naming and access**
 - Naming and accessing data resources across relational & XML databases, file systems
- **Replication**
 - Tracking, discovering, and replicating data resources
- **Metadata and provenance**
 - Maintaining metadata
 - Describing and tracking how data is created

Resource and Service Management

- **Provisioning and Resource Management**
 - Negotiating SLAs (Service-Level agreements)
- **Service orchestration**
 - Service orchestration represents a single centralized executable business process (the orchestrator) that coordinates the interaction among different services
 - Describing and managing choreography of a set of interacting services
 - **Service choreography** is a form of service composition in which the interaction protocol between several partner services is defined from a global perspective
- **Transactions**
 - Assure all parties that transactions have executed correctly
- **Administration and deployment**
 - Software deployment, change & identity management
 - Deploying needed software and data into hosting environments

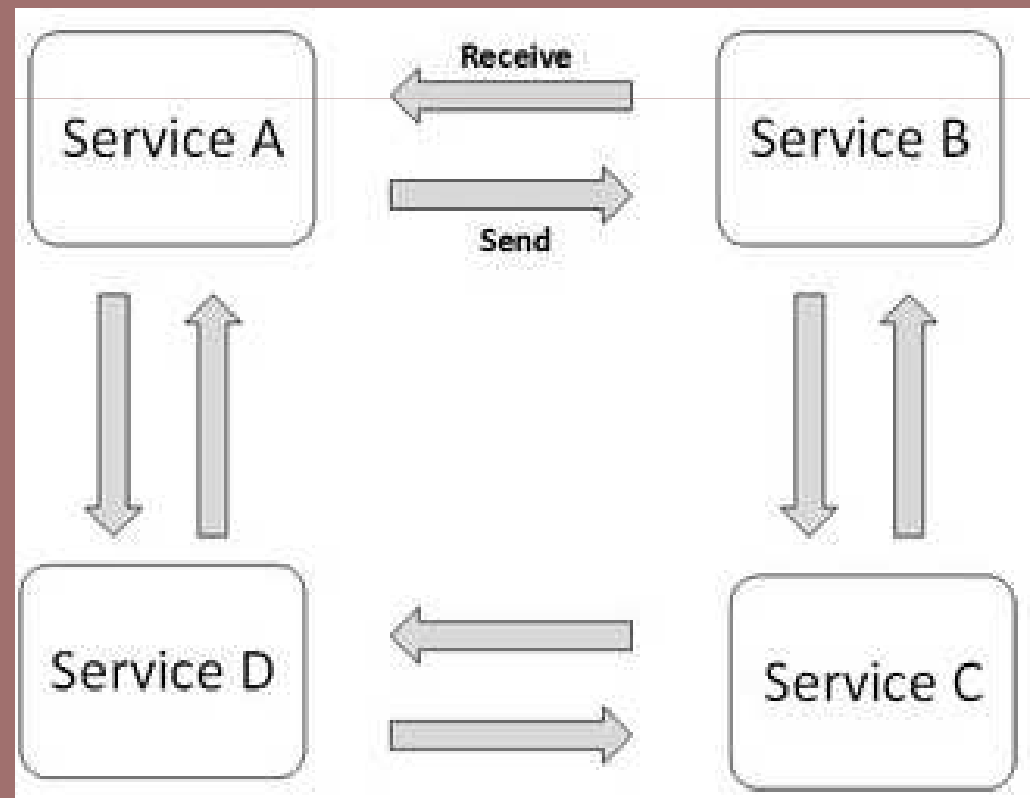
Service orchestration

- Service orchestration represents a single centralized executable business process (the orchestrator) that coordinates the interaction among different services.
- The orchestrator is responsible for invoking and combining the services.
- The relationship between all the participating services are described by a single endpoint
- Orchestration employs a centralized approach for service composition.



Service choreography

- Service choreography is a global description of the participating services, which is defined by exchange of messages, rules of interaction and agreements between two or more endpoints.
- Choreography employs a decentralized approach for service composition.



Interesting Idea!!!

Consider you want build a Grid Architecture.

OGSA: (The Definition) is the blueprints the architect creates to show how grid infrastructure will be.

OGSI: (The Specification) is the structural design that the engineer creates to support the architect's vision of the building grid architecture.

GT3: (The implementation) is the resources (storage, CPU, Memory and network) and components used to build the grid environment with the engineer's specifications.



References

<http://www.globus.org/alliance/publications/papers/ogsa.pdf>

<http://docs.huihoo.com/globus/gt3-tutorial/ch01s01.html>

The Grid2: By Ian Foster and Carl Kesselman