

GSM-WG

June 2004, Honolulu

# Grid File System WG

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June 2004, Honolulu

# Charter of GFS-WG

- Two goals (two documents)
  - **File System Directory Services**
    - Manage namespace for files, access control, and metadata management
  - **Architecture for Grid File System Services**
    - Provides functionality of virtual file system in grid environment
    - Facilitates federation and sharing of virtualized data
    - Uses File System Directory Services and standard access protocols

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# GFS-WG #1 File System Directory Services

Tuesday, June 8 from 6pm-7:30pm in room South Pacific 4

Recommendation Document:

**“File System Directory Services Specification”**

- ***manage virtual file system directories in association with access permission, and other application-specific metadata***

[http://www.ggf.org/Meetings/GGF11/Documents/File\\_System\\_Directory\\_Service\\_Specification.pdf](http://www.ggf.org/Meetings/GGF11/Documents/File_System_Directory_Service_Specification.pdf)

Will be submitted in GGF13 (March 2005)

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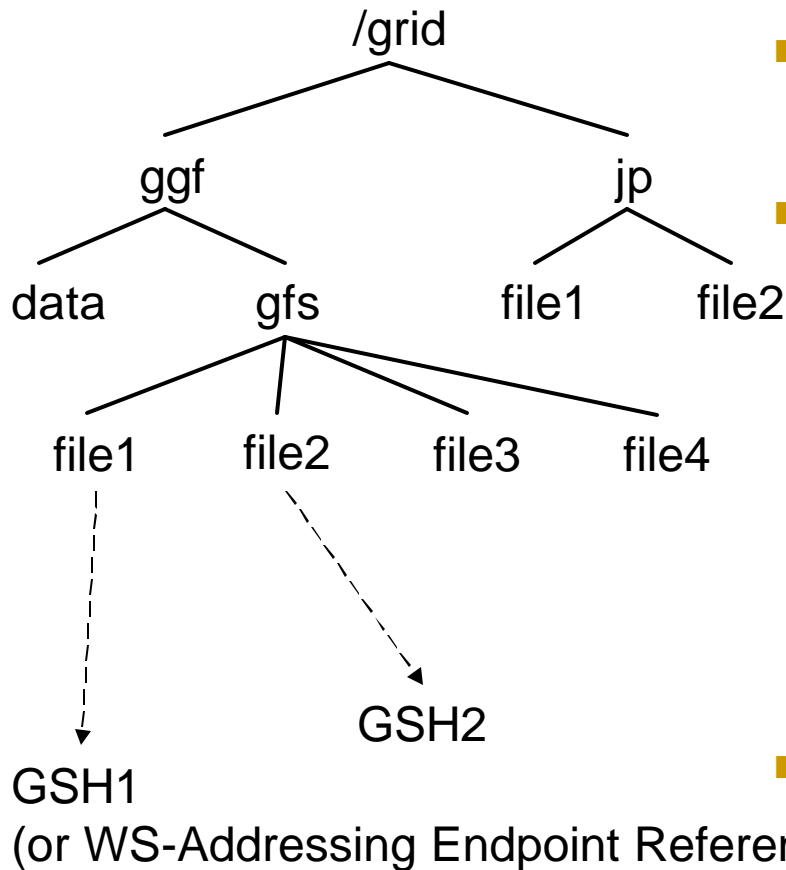
# GFS-WG #2 Architecture of Grid File System Services

Wednesday, June 9 from 8am - 9:30am in room South Pacific 3

Discussion about outline of a recommendation document: “Architecture for Grid File System Services”

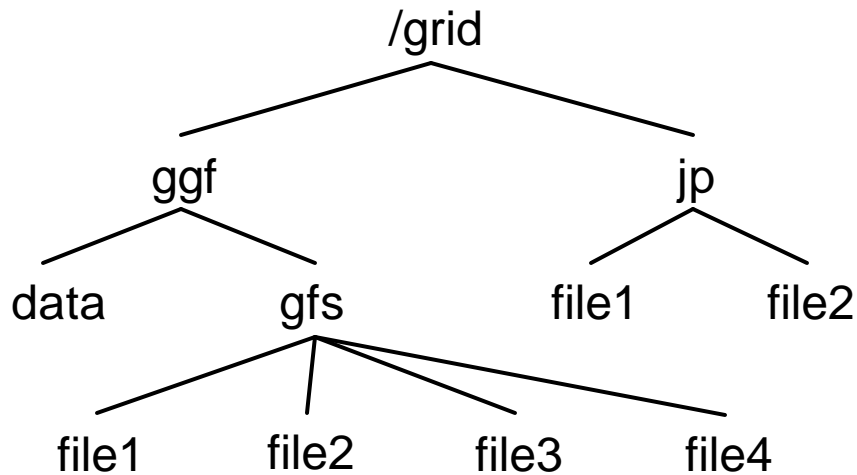
- provide a functionality of the grid file system using the File System Directory Services and other common services

# File System Directory Services (1)



- **Web Service (aka Grid Service)**
  - **Directory PortType**
- **Grid namespace** (Virtual directory tree, Grid namespace for files, OGSA naming)
  - Virtual directories
  - Junctions (referrals)
    - points to an object (logical or physical files, file systems, other File System Directory Service instances)
    - Translation point to a grid-wide pointer
- **Attributes (and Status)**
  - Attributes: ACL, times
  - (Status: open, lock)

# File System Directory Services (2)



## ■ Operations

- Lookup
  - “Path” name to a Grid-wide general pointer
- Creation, removal, rename
- Management of attributes and status

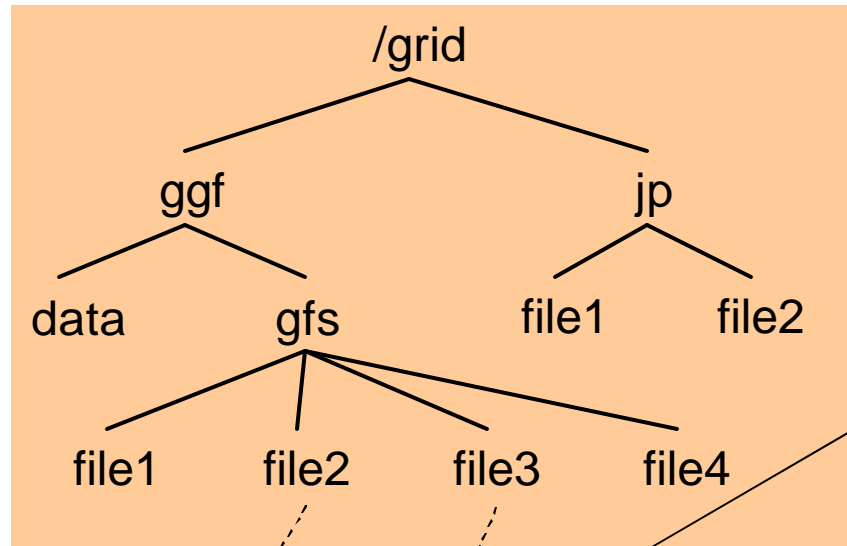
# Grid File System Services

- Provides virtual file system by integrating and federating file systems in a grid
- Service oriented architecture using several services
- Architecture document
  - Provide a composition of services to realize Grid file system
    - What kind of functionalities each service should have
    - How these services relate with each other

# Example: Architecture of Grid file system

File System Directory Services

POSIX APIs

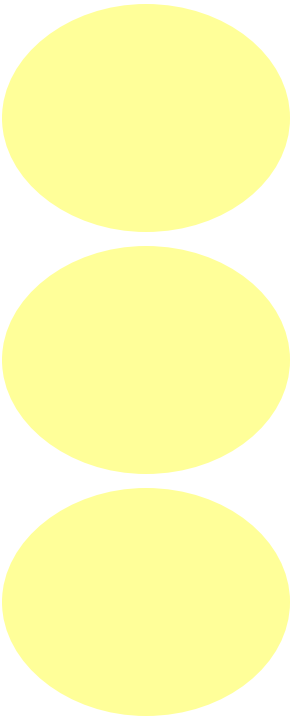


RLS

Client Library

File System Server

NFSv4, ...



Applications,  
Users, ...

File Access Services, ...



# [Possible issue] Access control issues

- Access control provided by file system directory services
- (Access control provided by RLS)
- Access control provided by file access services

Directory \ Access	Allow	Deny
	Allow	Deny
Allow	OK	Cannot access
Deny	Security violation	OK