



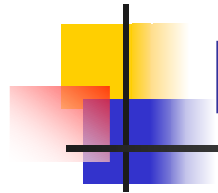
Management in OGSA Data Services

Norman Paton
University of Manchester

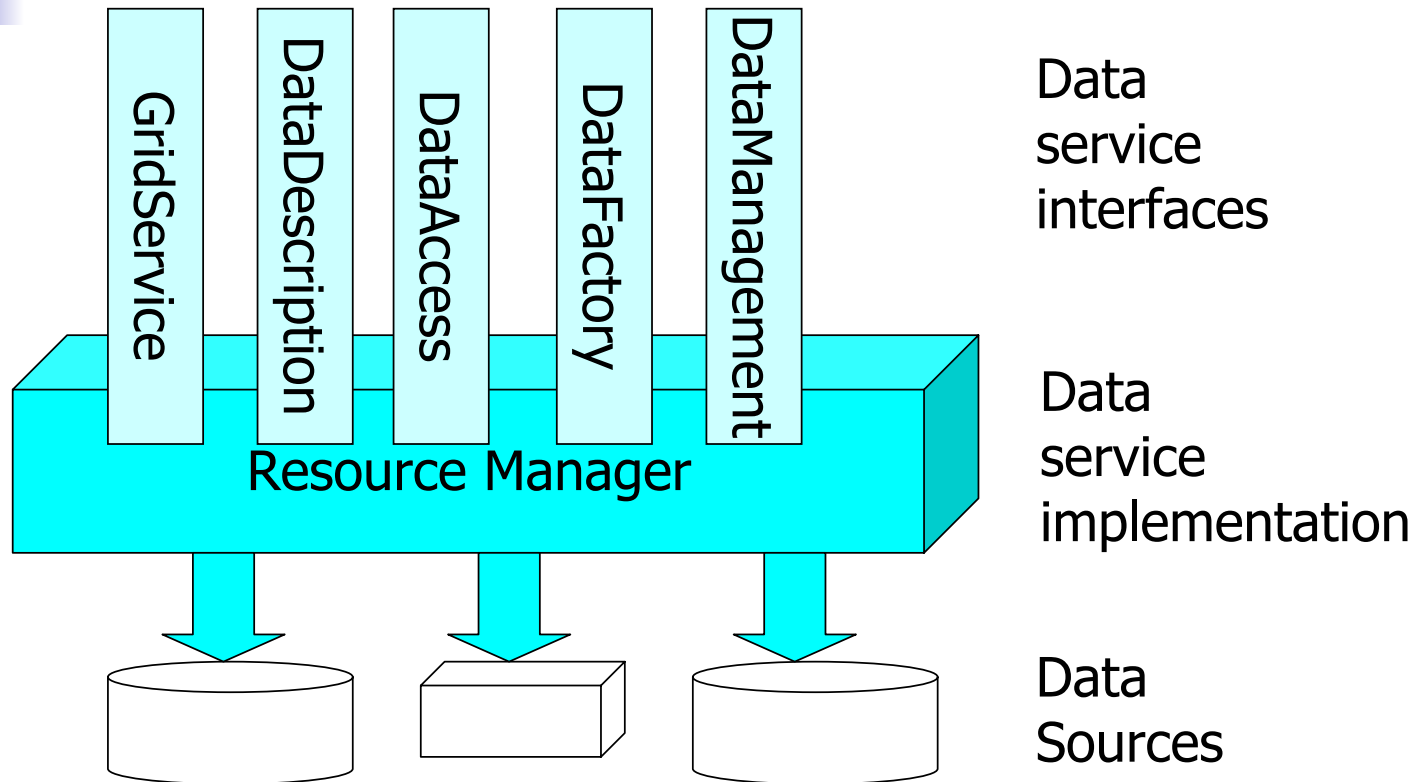


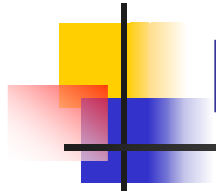
Context

- OGSA Data Services document [Aug 03]:
 - Defines terms for use describing data services.
 - Proposes a Data Management port type.
- Issues with Data Management port type:
 - Text seems inconsistent in scope and nature.
 - Lacks a finer grained classification to guide specification developers.



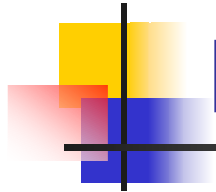
Reminder: Data Services





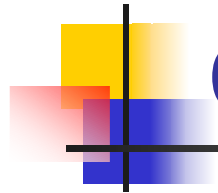
Reminder: Data Management

"DataManagement: provides operations to monitor and manage a data service's virtualization, including (depending on the implementation) the data sources (such as database management systems) that underlie the data service."



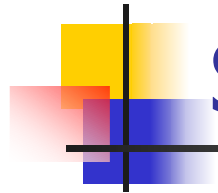
Revision to Delete V-Word

DataManagement: provides operations to monitor and manage a data service, including (depending on the implementation) the data sources (such as database management systems) that underlie the data service."



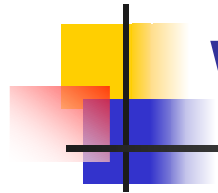
Categories of Management

- In terms from OGSA Data Services:
 - Management of the Data Service.
 - Management of the Data Source.
 - Management of the relationship between the Data Source and the Data Service.
- Each of the above *could* be different port-types, selectively implemented by a particular Data Service.



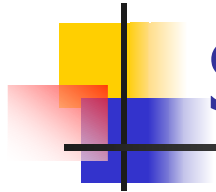
Structure of Following Slides

- First: management functionalities that seem to have an obvious place in the above classification.
- Second: management functionalities that are more difficult to place.



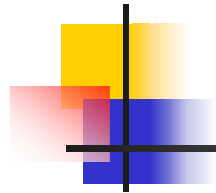
Water Under the Bridge

- The Distributed Management Task Force (DMTF) Common Information Model (CIM) Database Model defines models of:
 - Database Systems.
 - Common Databases.
 - Database Services.
- Terms from the CIM Database Model White Paper (Version 2.7) are used below.
(http://www.dmtf.org/standards/published_documents#whitepapers)



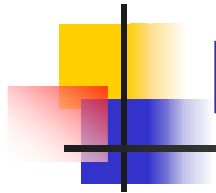
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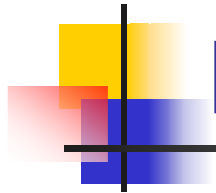
Management of Data Service

- Generic service management involves:
 - Service lifetime (in *GridService* port type) – clearly a property of the service.
 - Quality of service (by way of WS-Agreement) – the agreement again is made with the service, and not with an underlying source.
- Some properties of a *Database Service* in the CIM Database Model are subsumed by OGSI SDEs. Not in this category:
 - OperationalStatus, LastStatusChangeTime, ConnectionLimit, ...



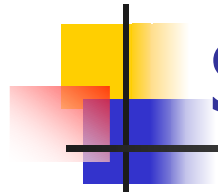
Management of Data Source

- Management involves:
 - Access to and setting of properties of the installed data source.
 - For databases, relevant concepts are defined in the *Database System* section of the CIM Database Model:
 - PrimaryOwnerName.
 - OperationalStatus.
 - InstalledDate.
 - The *CIM_DatabaseParameter* class provides an abstract model for capturing data source settings.



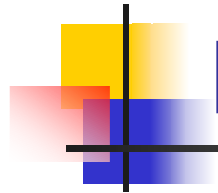
Management of Relationship

- Management involves:
 - How a Data Service is constructed from Data Sources (e.g. which database is connected to, what replicas exist).
 - Security mappings (e.g. may have different users and granularity of access at service and source).
 - These topics seem not to be covered by the CIM Database Model.



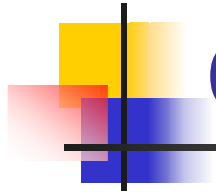
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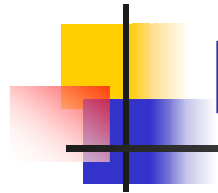
DDL Commands

- Possible placement of DDL commands:
 - In a *DataAccess* port type.
 - In a *DataManagement* port type.
- Issues:
 - May prefer to selectively offer DDL commands only through some services.
 - A *DataAccess* Interface may not be able to block submission of DDL commands without parsing language statements.



Common Database Features

- Common Database is as defined in the CIM Database Model:
 - Sizes, last backup, owners, etc.
- Issues: These properties *may* be those of the *Resource Manager* or of a *Data Source* accessed through the resource manager.



Monitoring for Management

- The CIM Database Model describes many different management properties that could be monitored, some database specific, some more general:
 - Database Resource Statistics: Limits (e.g., max locks), Failures.
 - Database Statistics: SizeUsed.
 - Database Service Statistics: CumulativeConnections, DiskReads, ...