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OGSA-DAI

OGSA-DAI Tomorrow – Resources and Persistence

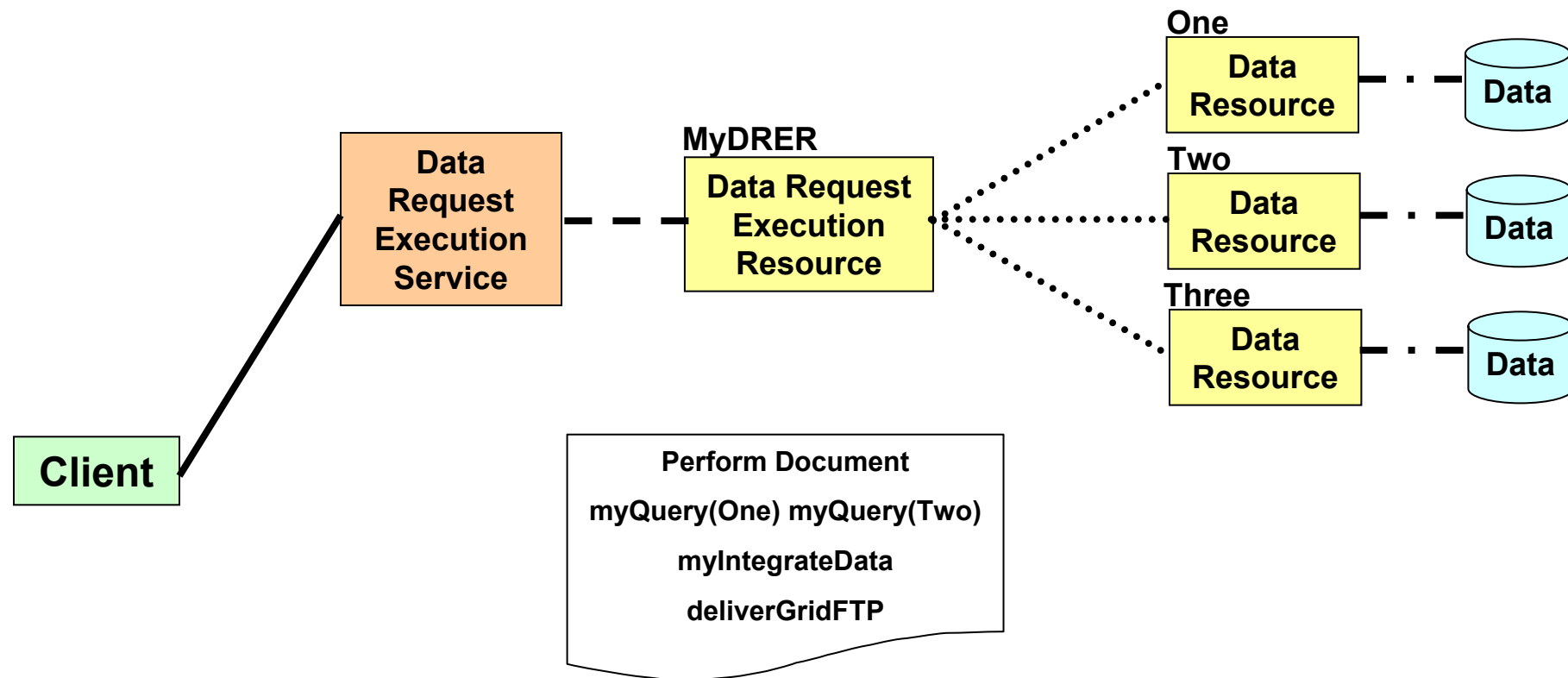
GridWorld 2006, Washington DC

11 September 2006

What's next?

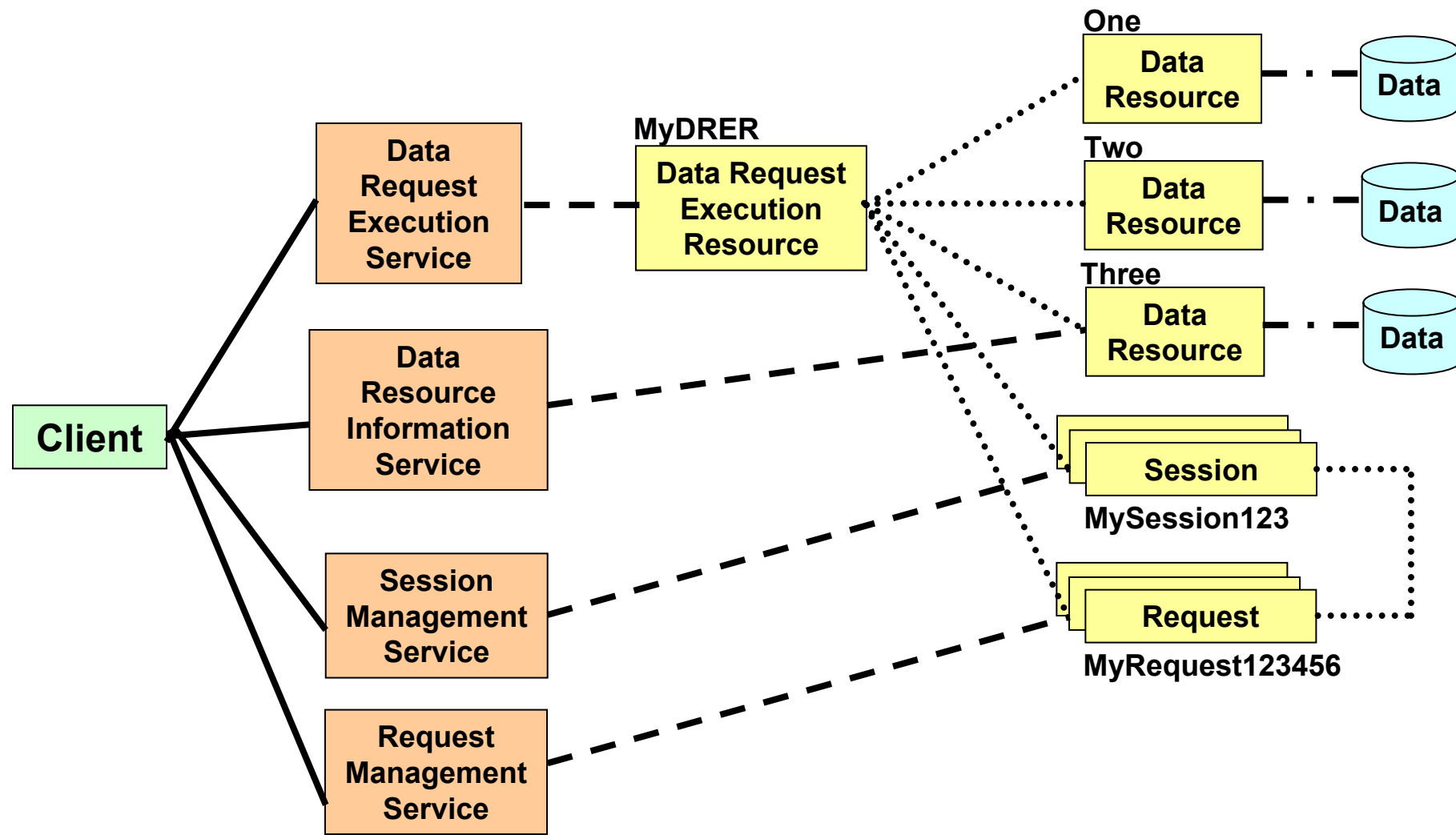
- Releases are now when functionality is available
 - ◆ No longer every 6 months
- OGSA-DAI WSI 3.0 and OGSA-DAI WSRF 3.0
- March 2007

Multi-resource requests



- Client-server interaction
- - - Service-resource association
- Resource-resource association
- . - Resource-database association

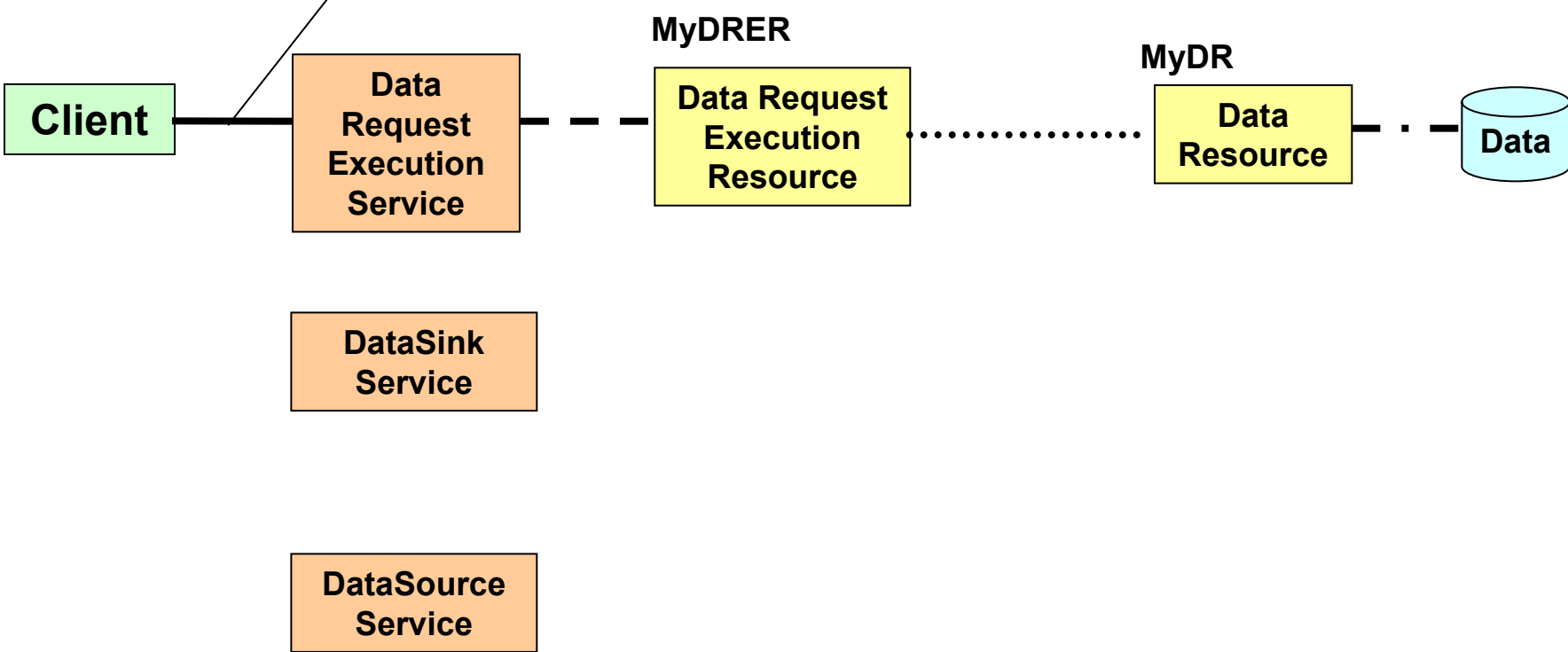
An expanded resource model



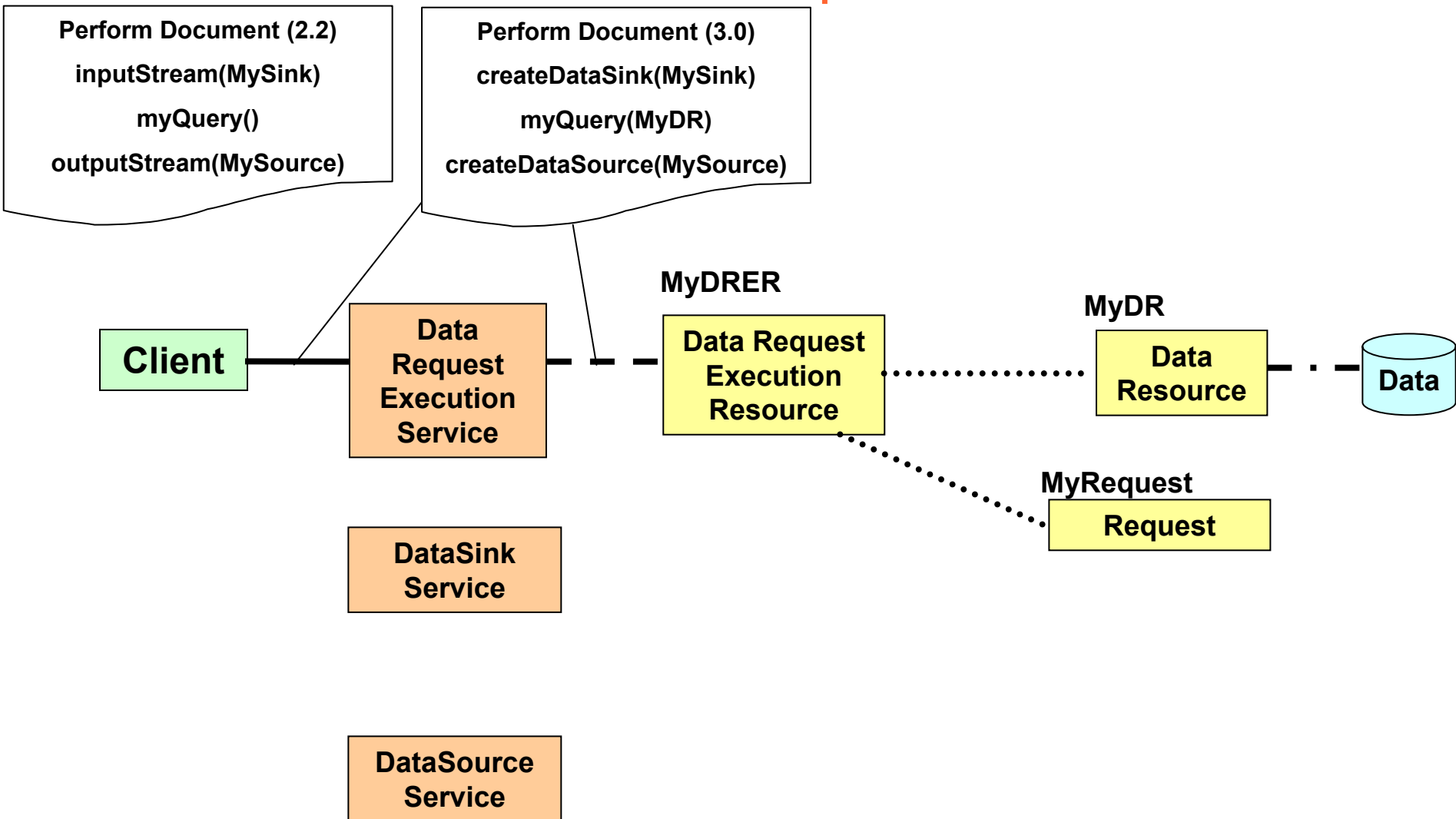
Data transport

```
Perform Document (2.2)
  inputStream(MySink)
  myQuery()
  outputStream(MySource)
```

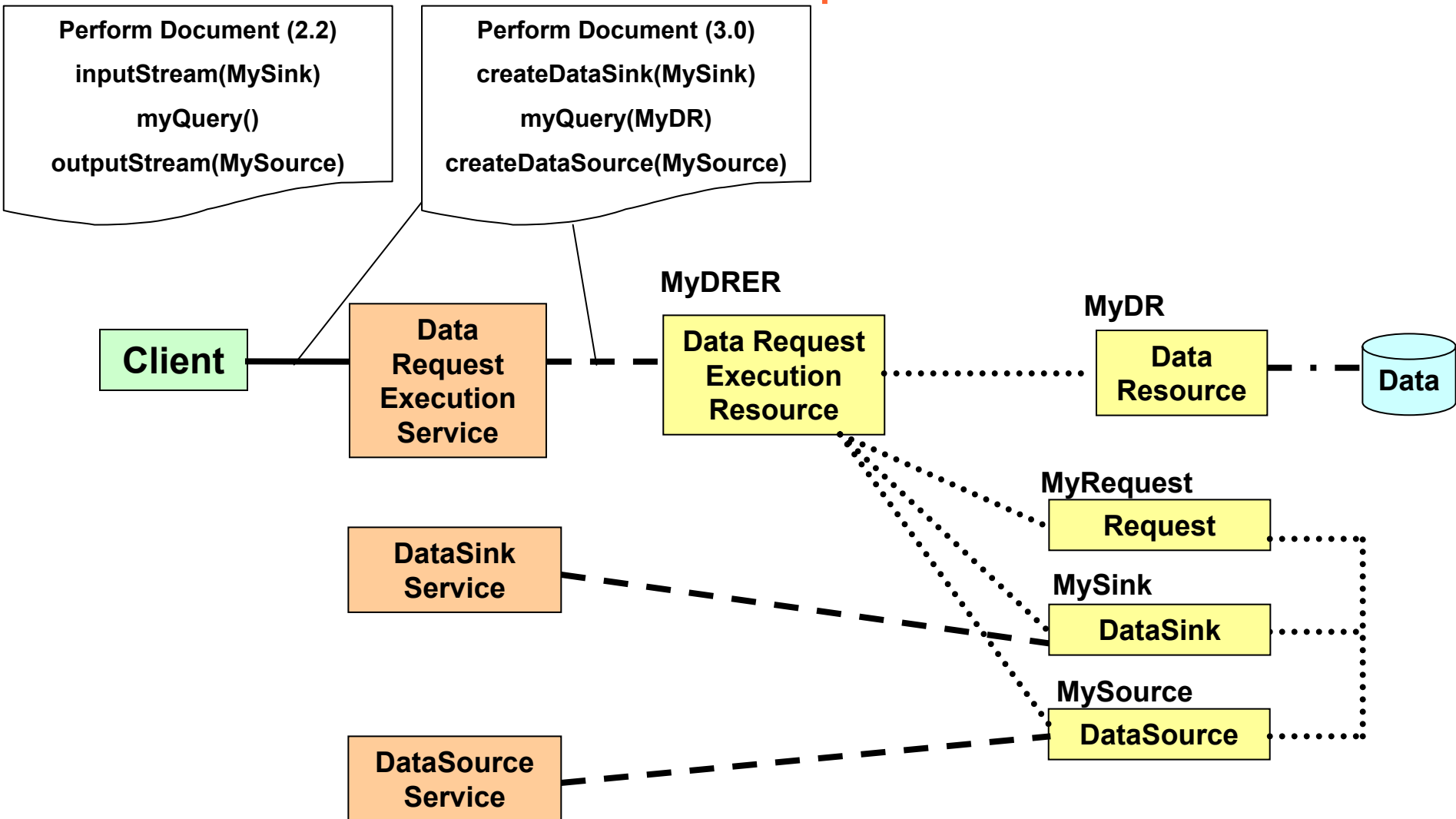
```
Perform Document (3.0)
  createDataSink(MySink)
  myQuery(MyDR)
  createDataSource(MySource)
```



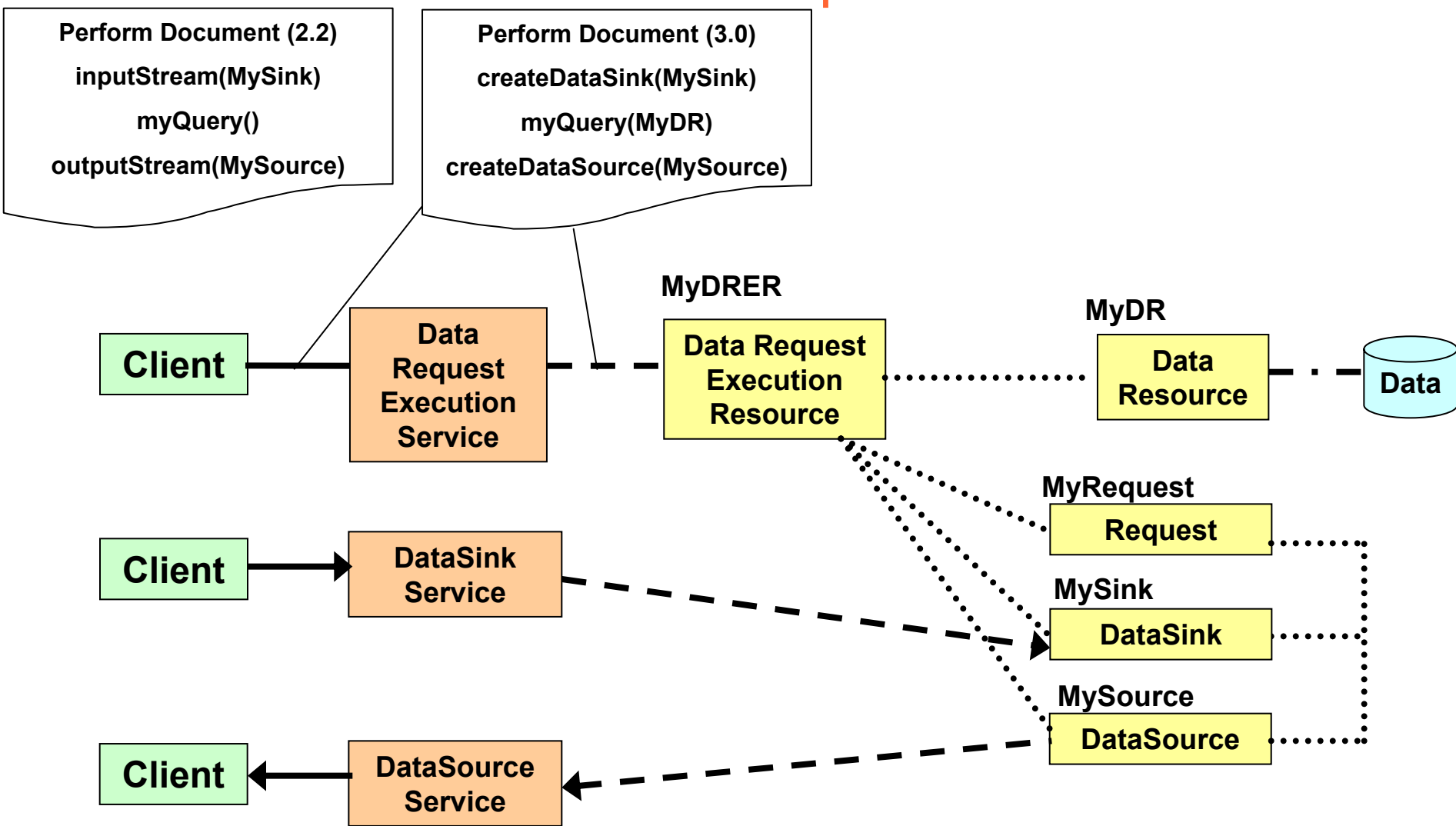
Data transport



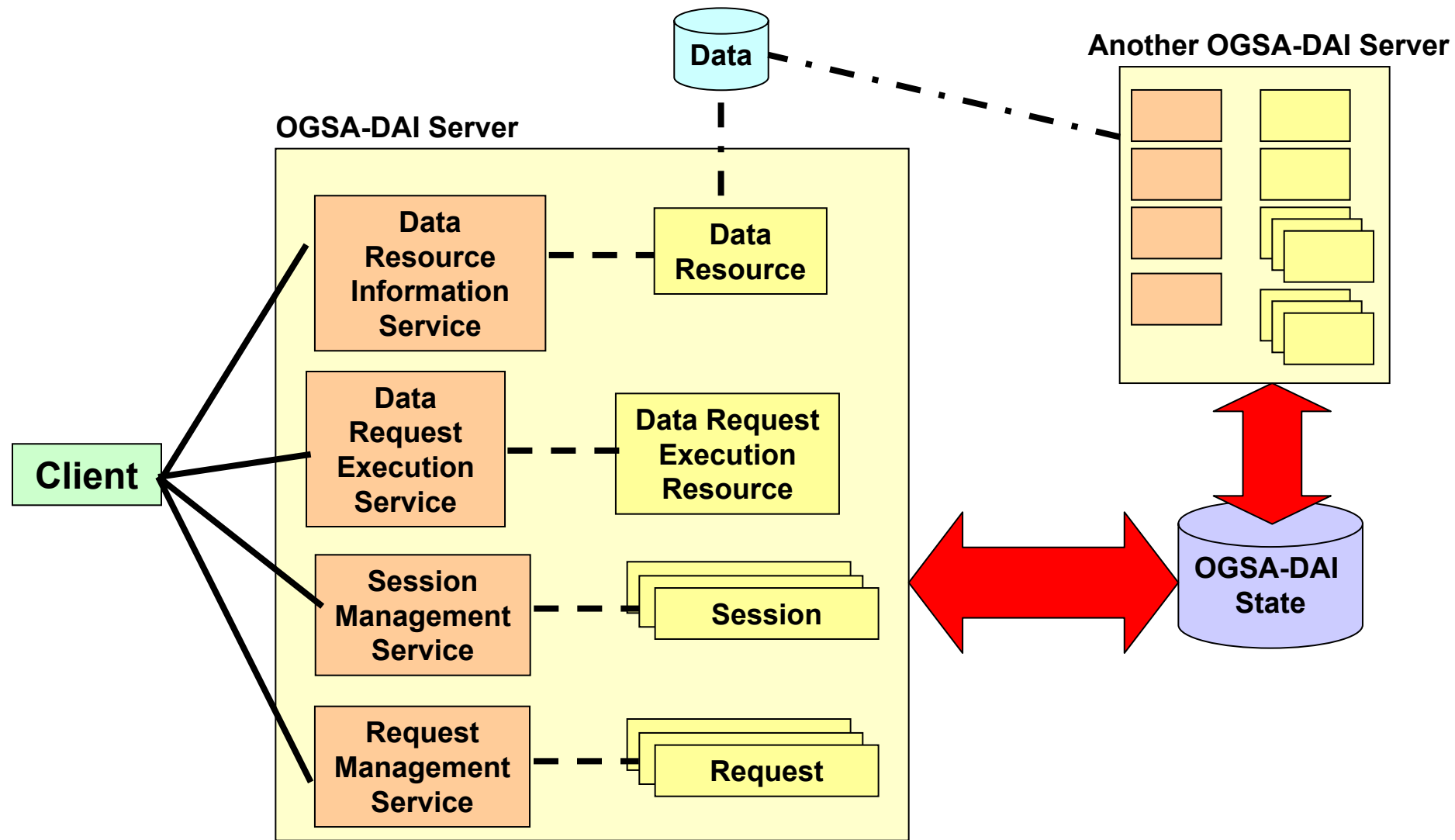
Data transport



Data transport



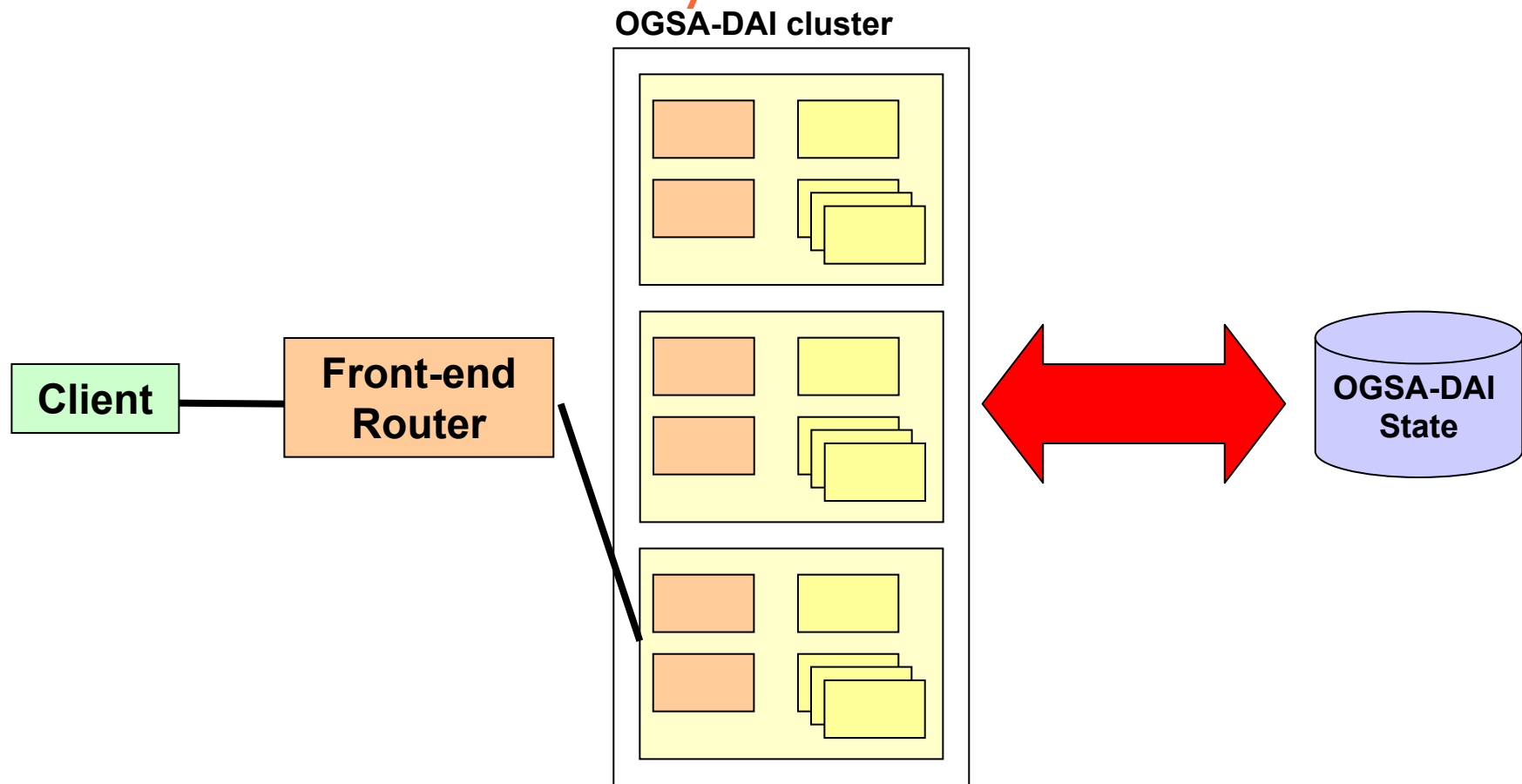
Persistence



Persistence

- Caching
 - ◆ Reduce overheads of OGSA-DAI-database communications
- Allows configuration and state to persist between container shutdowns/crashes
- Sticky resources
 - ◆ e.g. data sources and sinks
 - ◆ In-memory – only available via server that created them
- API
 - ◆ File-based implementation for backwards compatibility
 - ◆ Relational implementation for compatibility with common OGSA-DAI databases
 - ◆ Extensibility point

Scalability and robustness



Scalability and robustness

- Release 3 will afford future provision of clustering and load balancing
- Clustered OGSA-DAI servers
 - ◆ Different JVM
 - ◆ Different machine
- Load balancer
 - ◆ Simple e.g. round robin
 - ◆ Complex e.g. decide on basis of current load of each server
- Scalable
 - ◆ Increases number of requests that OGSA-DAI can handle concurrently
- Robust
 - ◆ Seamless operation in the face of errors e.g. server failures
- Sticky sessions and resources
 - ◆ Session and resource state may be non-serializable or be lightweight in-memory components
 - ◆ Need to dispatch resources to their “owner” JVM

Other planned features

- Support for registries
 - ◆ Guidelines on how to best use standard registries (e.g. GRIMOIRES or GT4 ServiceGroups) and tools to help you do so within OGSA-DAI
- Improved support for message-level and transport-level security including delegation
- Concurrent or closely-following releases of
 - ◆ A new implementation of DAIS
 - OGSA-DAIR and OGSA-DAIX
 - ◆ A refactored OGSA-DQP with a Java-compliant query compiler and which runs under Linux, Solaris or Windows

Further information

- The OGSA-DAI project site
 - ◆ <http://www.ogsadai.org.uk>
- The DAIS-WG site
 - ◆ <http://forge.gridforum.org/projects/dais-wg>
- OGSA-DAI users mailing list
 - ◆ users@ogsadai.org.uk
 - ◆ General discussion on OGSA-DAI, data and the grid
- Formal support for OGSA-DAI releases
 - ◆ <http://www.ogsadai.org.uk/support>
 - ◆ support@ogsadai.org.uk
- OGSA-DAI training courses

