OGSA-DAI
Platform Dependencies
Malcolm Atkinson
for OMII SC
18th January 2005
OGSA-DAI: Current Release Status

- **Production Release R5**
  - On OGSI GT3 Implementation
    - Full set of currently available functions
- **OMII Technical Preview available**
  - On WS-I+ OMII platform
  - Configured for OMII 1 platform
  - Work planned to integrate fully with OMII platform
  - All of R5
    - All Relational DB operations: Query, Update, Bulk load
    - All XML DB operations: Query, Update & Bulk load
    - All File operations: Index, Query, read & write
    - All data translation operations
  - Except functions which require state retention
    - These are asynchronous and incremental data transfers
- **WSRF Technical Preview**
  - Alpha release on GT4 alpha
    - To give feedback into GT4 & for user preview
    - Functions as for R5 except those requiring naming / identification of state
Requirements for State

- **Third-party data delivery**
  - To avoid extra handling via client
  - When data is collected at a time chosen by a consumer

- **Asynchronous data delivery**
  - Essential with large result sets or streams
    - E.g. deliverTo/From GridFTP
    - And consumer-pull protocols deliverTo/From Stream
  - Stream from source to consumer

- **Those with small data sets**
  - Well supported by the functions on WS-I+ platform
    - E.g. deliverTo/From URL, deliverTo SMTP
Customer Options

- Those with small data sets
  - Well supported by the functions on WS-I+ platform
    - E.g. deliverTo URL

- Those with expectations of larger Data Sets
  - Use OMII platform to develop applications
  - Provided we commit to stateful operations in OMII release schedule by a suitable date

- Those with large data applications Now
  - Continue on GT3 platform
  - Transfer to WS-I+ extended platform later

Surveying existing and new user communities to assess distribution of requirements. Approx. equal each option. Expect this to evolve rapidly over next 6 months.
Challenge for Us

- **Upper Middleware Developers**
  - Require portability of code
  - i.e. same code functions on all infrastructures

- **Requires**
  - Models that work on all infrastructures
  - Consistent semantics from all infrastructures
  - Preferably consistent protocols and APIs

- **Must deliver**
  - Consistent semantics to our customers (application developers)
    - Then captured in standards
  - Consistent APIs (Enshrined in Standards & CTKs)
Technical Strategy: Requirements

- **Mechanism for creating and managing state**
  - c.f. WS-Resource - only selected portions!
  - WS-Resource Life Time
    - 4th version of standard proposal draft at OASIS
    - Proposal imminent
    - Multiple implementations

- **Mechanisms for Addressing state**
  - WS-Addressing
    - Proposed standard at W3C
    - Well supported & wide set of implementations
    - Expected in OMII Releases summer 2005

- **Mechanisms for naming / identifying state**
  - Developing in OGSA-DAI, DAIS & OGSA data
Technical Strategy: Proposals

- **Mechanism for creating and managing state**
  - Adopt what we need of WS-Resource Life Time
  - Import implementations (WSRF:Lite and GT4 Apache)
    - Choose minimal subset we can safely use now

- **Mechanisms for Addressing state**
  - Adopt WS-Addressing
    - Commit firmly to OMII Releases June 2005
    - Choose our use pattern

- **Mechanisms for naming / identifying state**
  - Continue our pioneering
  - Establish UK standard in conjunction with Grimoires
  - Push to standards: DAIS, GFS, OGSA-naming @ GGF

- **Mechanisms for Notification**
  - Use WS-BasicNotification

- **Develop data transport abstractions**
  - Clients / Application Developers should not be directing detail
  - Upper M/W needs flexibility from higher-level requests
    - Pioneer and develop standards at GGF

Security is a cross-cutting issue with multiple technologies. How do we support and interact with security mechanisms?
Conclusions

- There are differences between OGSA-DAI on the 3 Infrastructures
- This is undesirable
  - Consequence of different infrastructure semantics
  - Not very serious for most users
  - Should be addressed by Summer 2005
- Infrastructure variation has a high cost for Upper M/W developers
  - And application developers
- Urgently need more comprehensive and fewer standards
  - Integration of standards in profiles is a coping mechanism
- Urgently need infrastructure providers working to develop a single common infrastructure