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DRMAA
State of Java binding/implementation Futures

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GGF9

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Why Java™ Technology?

- *Popular*
    - *Over 3 million developers*
    - *Shooting for 10 million*
- *Web Services*
    - *Basis for Web Services interoperability*
        - *JAX Pack, Apache, etc.*
    - *Basis for OGSI interoperability*
        - *Globus Toolkit 3 OGSI framework*
- *Java is good*

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What is it?

- *Based directly on the DRMAA spec*
- *Applies object oriented structure*
- *Applies Java exception handling*
- *Applies Java naming conventions*

Classes

- *DRMAASession*
- *DRMAASessionFactory*
- *JobTemplate*
- *JobInfo*

Exceptions

- *Hierarchical*
- *Single base class*
- *Corresponds directly to errors in spec*
- *Makes for much prettier code*

Design Decisions

- *Naming does not directly follow spec*
- *API/SPI*
  - *A la Jax Pack*
  - *Default implementation built on C binding*
- *Simplified exception signatures*
  - *A la JDBC*
  - *Can still catch more specific exceptions*

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Open Issues

- *C artifacts*
  - *DRMAA_*_BUFFER*
- *Exception mapping*
  - **InconsistentStateException*
- *DRMAASessionFactory.getDRMAASessionFactory()*
- *JobTemplate.delete ()*
- *JobTemplate.(s|g)etAttribute(Values?)?*

What Next?

- *What about Web Services?*

- *Enable remote usage*

- *Theoretically easy to build on Java binding*

  - *Magic JAX-RPC WSDL stub generator*

Harder Than It Looks

- **JAX-RPC generates nonsense from Java binding**
  - **Processdural->OO->Proceedural**
- **Session state**
- **Blocking calls**
  - **wait() & synchronize()**

Still Theoretically Possible

- *Build WSDL and stubs by hand*
- *Build WSDL and stubs from C binding*
- *Build WSDL and stubs from flat Java class*
- *Explicit state*
- *Forever = as long as possible*

But Wait! There more!

- *If WSDL, why not GWSDL?*
- *Better fit*
  - *Grid Services are stateful*
  - *Factory pattern*
- *Still effectively proceedural*
- *Can use GT3 OGSI framework to generate GWSDL and stubs*

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OGSI Binding

- *Realigns DRMAA with the rest of the GGF*
- *GWSDL binding on Java binding on C binding*
    - *Instant OGSI compliance!*
- *Makes DRMAA more interesting to OGSA*

Other Thoughts

- *JXTA binding*
  - *Interface between P2P and DRM*
  - *Work with jxta.org*
- *EJB binding*
  - *Interface between J2EE and DRM*
  - *Redundant with Java binding?*