SRM over SSL

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Setting the scene

- **SRM**
  - for managing storage
- **GSI**
  - V similar to SSLv3 but incompatible
  - Clients can delegate
- **Delegation**
  - Allows **SRM** server to act “on behalf of” end-users
  - Creates key-pair on server
Why delegate?

- **3rd party copy**
  
srmCopy

- **Reserving bandwidth**
  
srmPrepareTo(Get|Put),
srm(Get|Put)Done, srmCopy

- **X.509 backed tape**
  
SrmBringOnline, srmPrepareTo(Get|Put),
srm(Get|Put)Done, srmCopy

- **Federated SRM**
  
Everything except srmPing.
Why switch from GSI to SSL?

- **GSI is not a standard** (SSLv3 is)
- Coupling delegation with transport negotiation is **inflexible**.
- It's **not widely used** outside of Grid
- Only libraries are coming from a **single vendor**: Globus
- Hard to add advanced features; e.g., **no hardware acceleration**.
What to do about delegation?

• If delegation isn't needed then SSLv3 works fine.

• Delegation requires extra functionality

• Solution is a “service” that allows delegation.

(NB. we're not talking about a single, per-site shared service; rather, each service has a common extra API)
# Delegation Services

<table>
<thead>
<tr>
<th>Name</th>
<th>Tech.</th>
<th>C / Native</th>
<th>Java / JVM</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Client</td>
<td>Server</td>
<td>Client</td>
</tr>
<tr>
<td>Global Credential Delegation Service</td>
<td>SOAP</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>GridSite Delegation Service</td>
<td>SOAP</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Globus New Delegation Service</td>
<td>REST</td>
<td>N</td>
<td>N</td>
<td>N</td>
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<tr>
<td>IVOA Delegation Service</td>
<td>REST</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>
Current status

• Agreement on SRM-over-SSL
• Servers:
  – Available in EMI-1 as prototype
    • No delegation support.
    • Initially dCache,
    • DPM in 2011Q4
    • StoRM starting work in May, expect for EMI-2 (April 2012)
• Clients:
  – Prototype support in dCache clients
Future plans

• Remain **backwards compatible**:  
  – Servers will run both GSI and SSL

• SSL support in **all SRM servers software** 
  – Move from prototype to production

• Add **delegation** support

• All **clients** to support SSL

• Everything ready for EMI-2 (April 2012)
Thank you!

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