Enabling Grids for E-science in Europe

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JRA1 All Hands, 28-30/06/04

GAS in the prototype

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Contents

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- Facts about the GAS
- How the GAS works
- Workflow
- Security
- Advantages & disadvantages
- Questions & (hopefully) answers

Facts about GAS

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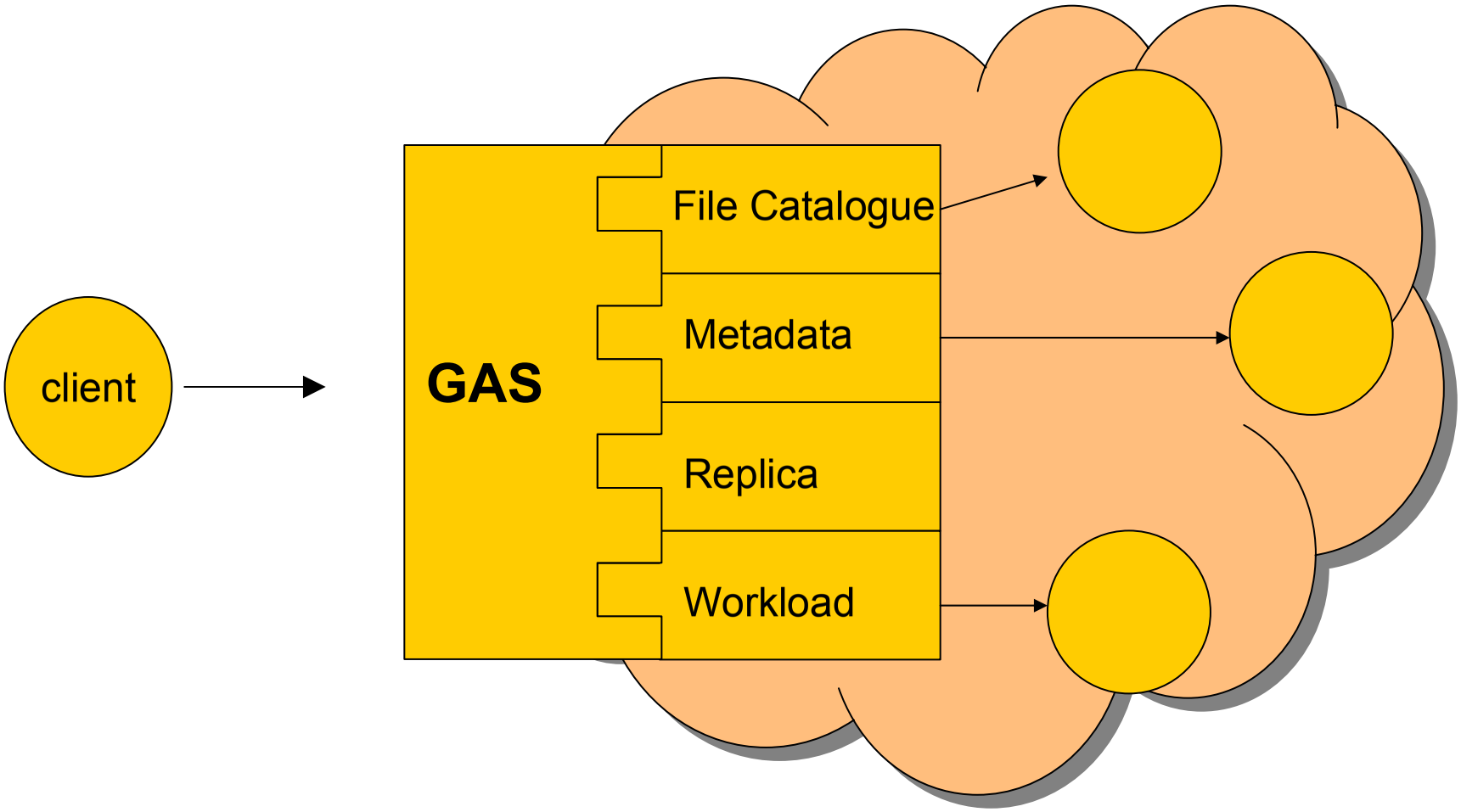
Warnings:

- GAS is not the only access point to GLite
  - We can access all the services without going through the GAS
  - At the moment, only limited access to File and Metatada Catalogue
- One GAS per user
- GAS has the same privileges as the user
- This is the current status of the GAS
- Still the ‘prototype version’

How the GAS works



How the GAS works

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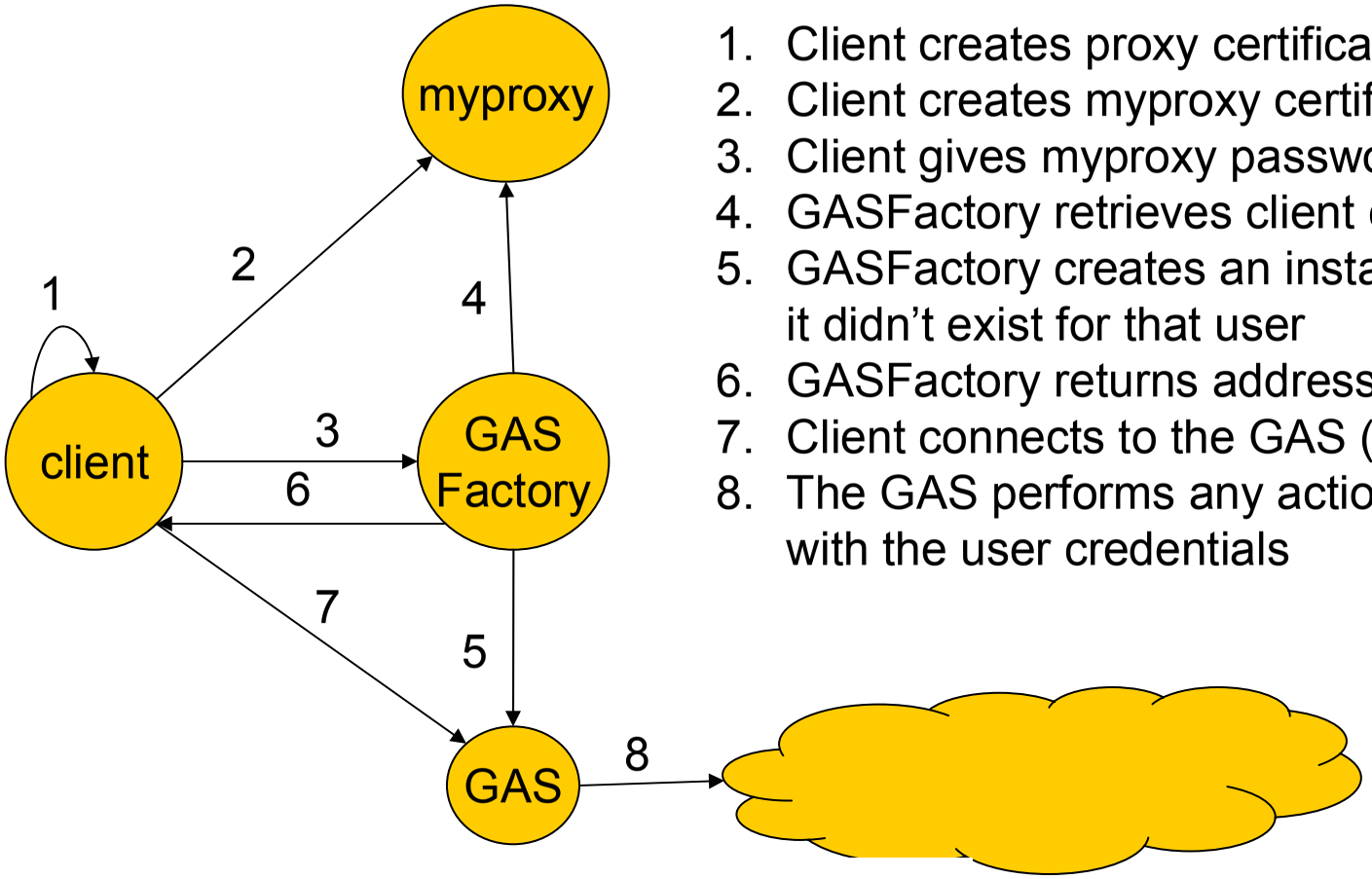
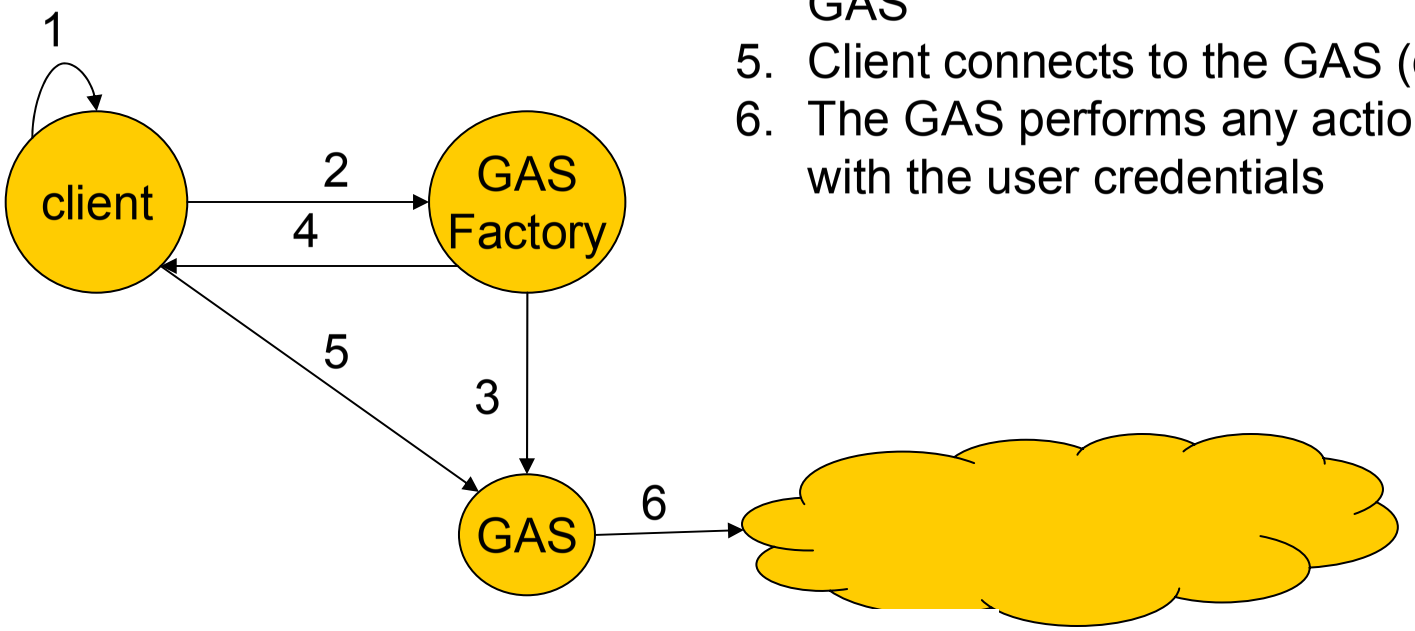
- Plugin to (part of) File & Metadata Catalogue
  - It does not move files around (no *copyAndRegister* netiher *get*)
- Replica & Workload still under development (although no problem anticipated in their implementation)
- Other plugins?
- GAS talks to the plugins either directly (if the service has a perl API) or over soap.
  - Plugin should describe way to startup.
- GAS is not able to move files around.
  - Users will have to install client of GAS + at least one transport method.

Flow diagram



1. Client creates proxy certificate
2. Client creates myproxy certificate
3. Client gives myproxy password (over https)
4. GASFactory retrieves client credentials
5. GASFactory creates an instance of a GAS (if it didn't exist for that user
6. GASFactory returns address of GAS
7. Client connects to the GAS (over https)
8. The GAS performs any action on the system with the user credentials

Flow diagram (2)



1. Client creates proxy certificate
2. Client asks GASFactory for a GAS
3. GASFactory checks that the GAS is still up
4. GASFactory returns address of the existing GAS
5. Client connects to the GAS (over https)
6. The GAS performs any action on the system with the user credentials

Security

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- All the connections over https (secure, but slow…)
- Everyone with a certificate can connect to the GASFactory.
- Only the creator of the GAS (or anything holding its proxy certificate) can connect to the GAS.
  - Using the callbacks of openssl (thanks Andrew!!)
- User creates myproxy certificate with a nickname.
  - Same nickname used inside the catalog
- We could use <VO>+<nickname> to guarantee uniqueness

Advantages

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Advantages:

- ✓ One access point to the GRID.
- ✓ Very thin layer on the client side.
- ✓ Calls over SOAP (interface to any language).
- ✓ Decreases the effect of latency (if GAS close to database, not to user!!).
  - ✓ Register: ~10 SQL operations.
    - ✓ Without GAS: 10 op. with latency
    - ✓ With GAS:1 op. with latency +10 op. without latency

Disadvantages:

- ✗ (At least) One more layer of communication: slower

Questions & Answers

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All you wanted to know about the GAS and never dared to ask…