

Introduction to Grid portals

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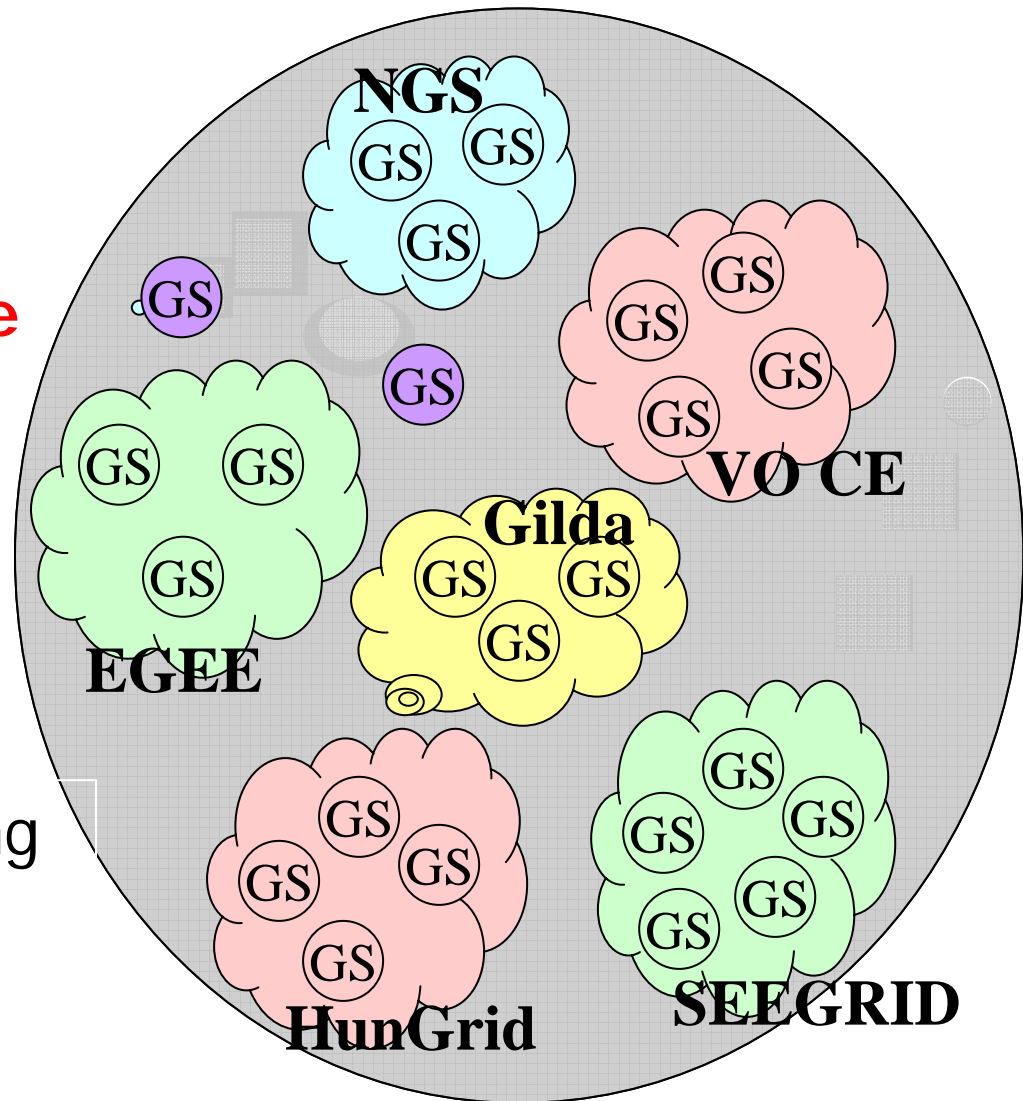
MTA SZTAKI

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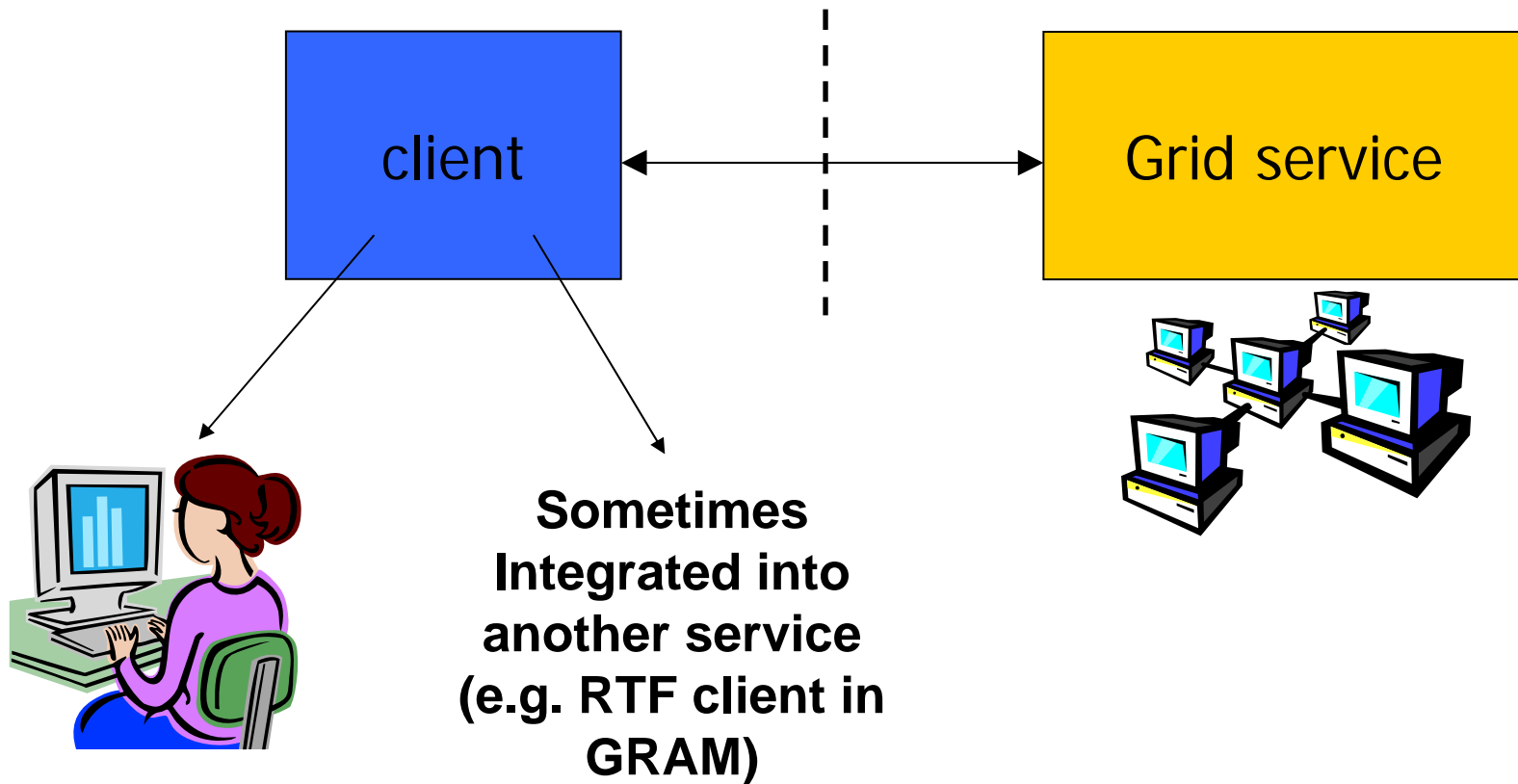
Grid Computing Course
Porto, 22-24 January 2007.

Grids

- A Grid is a collection of **services** that can **join and leave** a community
- **Resource → Grid service**
- Services are more or less **standardised**
 - Standard interfaces
 - Standard technologies
- They can be accessed using some service **clients**



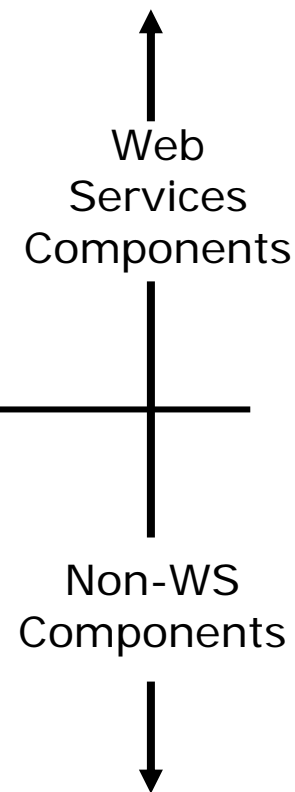
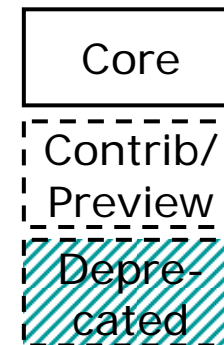
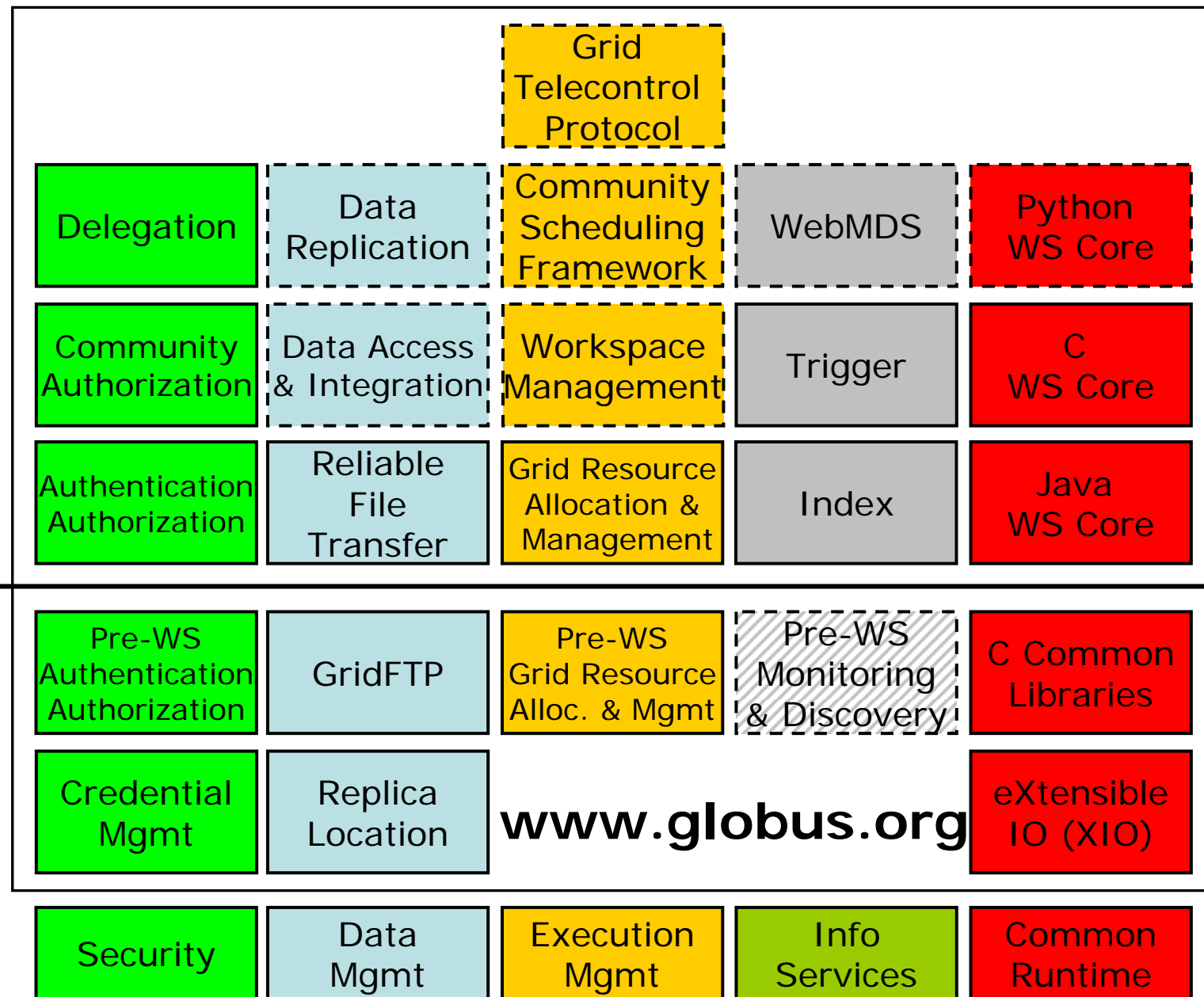
A Grid service



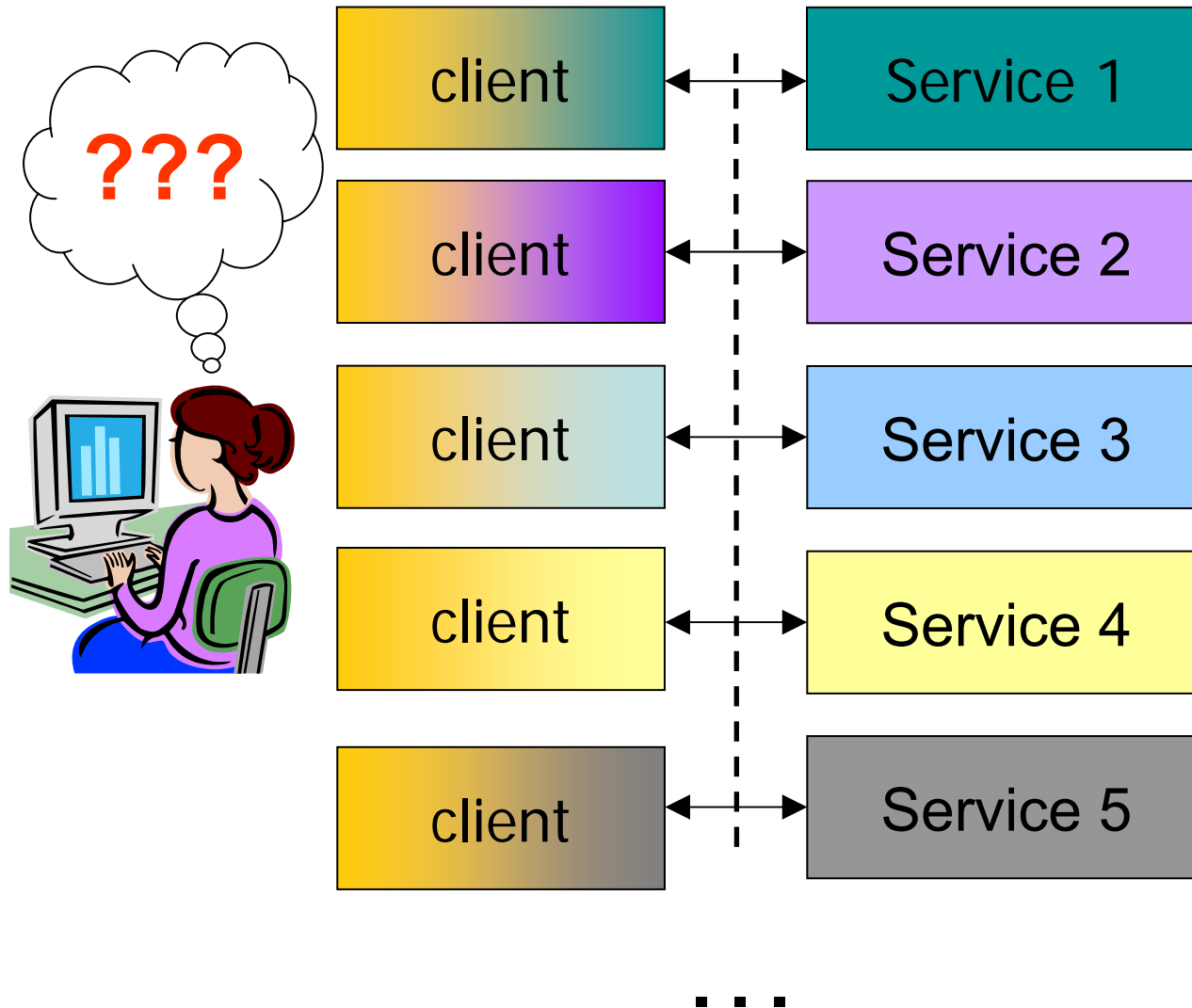
Difficulties for end-users

- **Grid services are secure:**
 - You must obtain a certificate from a CA
 - You must register at a Virtual Organization (Grid services are members of VOs.)
 - You must generate a short term proxy credential
- **Grid clients are low level tools (to stay generic)**
 - Command line programs
 - Platform dependent (usually Linux)
 - Lots and lots of parameters
 - Output for machine not humans...

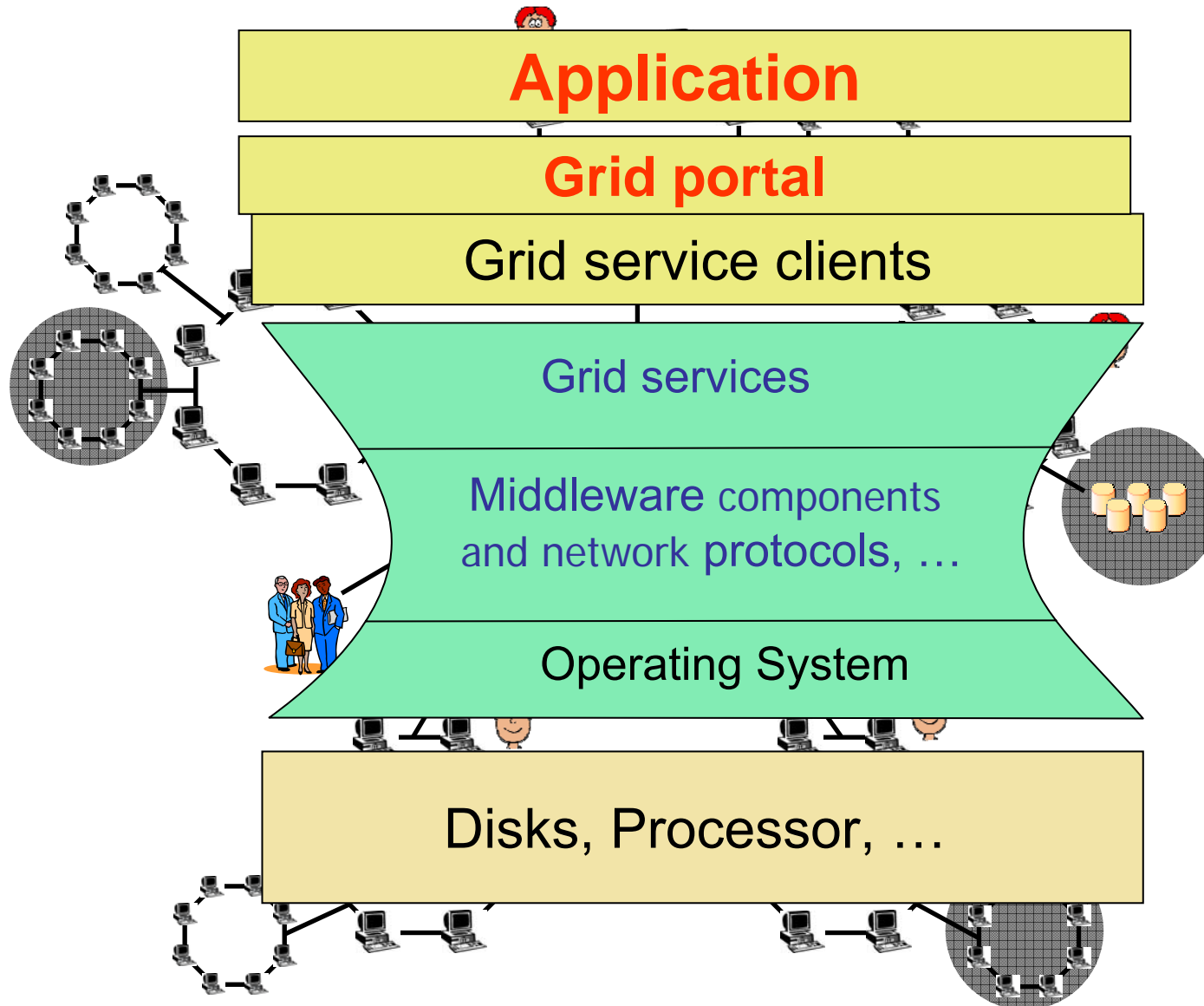
Services in Globus Toolkit version 4



Different services → different clients



The solution: Grid portals!



Grid portals

- **A portal is a web server that**
 - Provides each user with a **repository of personal information** and data saved from previous sessions.
 - Is a website that allows **users to customize their views** of information and tools
 - Examples
 - Ebay, yahoo, Amazon.com, on-line banks are all portals...
- **A Grid portal is the gateway to**
 - Grid services

Why Do People Build Grid Portals?

- To Provide Scientists with a way to access tools (services) hosted on a Grid.
- To make scientific resources available to a community
 - Data, knowledge bases, directories, storages, computers, applications,...
- To provide users a way to organize their personal Grid space.
- **To Shield the User community from Grid details**

Typical functionalities of a Grid portal

- **User authentication**
 - Web security (e.g. name&psw) → grid security (proxies)
- **Data management**
 - Web protocols (e.g. HTTP) → grid protocols (e.g. GridFTP)
- **Job management**
 - Local resource → distributed resources
- **Visualization**
 - Application input/output/execution progress

A few examples

- UK NGS portal
 - Job oriented, Globus
- GILDA demonstrator
 - Training environment
- LEAD
 - Predicting Severe Storms, workflow-oriented
- TeraGrid User Portal
 - Providing users access to the US TeraGrid (Globus)
- **P-GRADE Portal, GEMLCA Portal** → Today!

Summery and conclusion

- Grid portals are gateways to Grid services
- Intermediate between grid protocols and Web technologies
- Can support different
 - Middleware technologies
 - Grid services
 - Application fields
 - Application types

YOU have to decide which portal fits best for your needs!

Thank you!

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