

# Types of grid users and the Customer-Service Provider relationship: a future picture of grid use

UK e-Science All Hands Meeting, 2006

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# This talk

- The ESP-GRID project
- Are we talking to the right users?
- The main types of grid users (in future)
- The Customer-Service Provider grid relationship
- Difficulties and threats to the C-SP model
- Where next?

# The ESP-GRID Project

- The Evaluation of Shibboleth and PKI for Grids (ESP-GRID) Project
  - Ran July 04 to June 06
- Aim was to investigate whether and how Shibboleth offers solutions to issues of grid authentication, authorisation and security
- The first questions we hit were:
  - Do we *really* need explicit IDs asserted everywhere?
  - What would make things scalable?

## Are we talking to the right users?

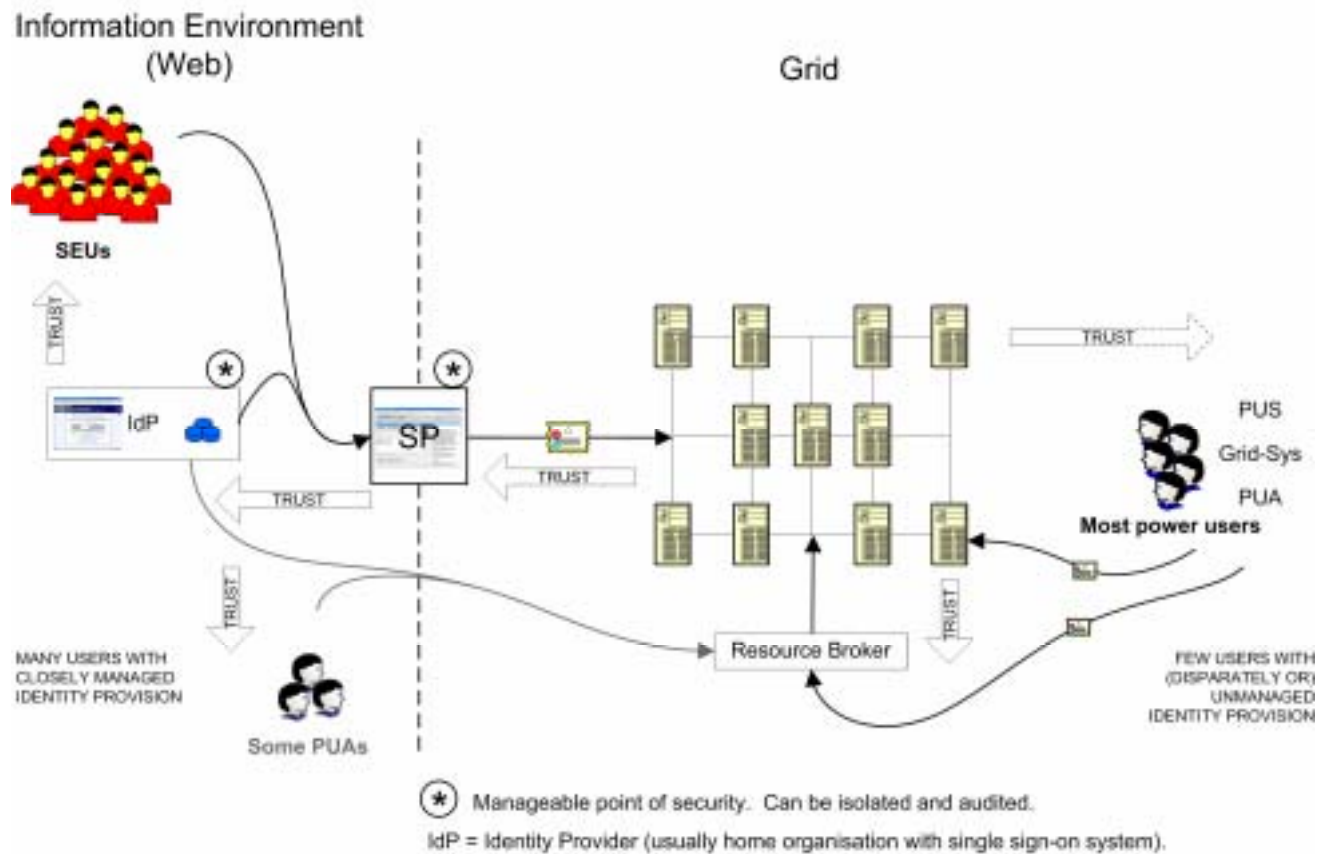
- Do you consider yourself to be a Power User?
  - No, hardly anyone does!
- Do you expect every biologist, mathematician, linguist etc. etc. to be able to program or script for the grid?
  - Is that realistic?
- Isn't "the grid" supposed to help researchers of all disciplines (where higher processing power is needed)?

# In a mature grid, once upon a time...

- Our working possibilities for users:

Type of user	Typical characteristic	Main role
SEUD	Service End-User (data). Little or no computing expertise.	User of applications served by SPs. Uploads data or runs queries.
SEUX	Service End User (executables). Some understanding of code creation.	As SEUD, but runs either executable code or scripts via SPs
PUA	Power User Agnostic of grid resource node. High degree of computing expertise.	Develops programs and data but does not care where processing takes place.
PUS	Power User requiring Specific grid resource nodes. High degree of computing expertise.	As PUA but may have more platform etc. dependent expertise and some sysadmin expertise.
PUDS	Power user Developing a Service. High degree of computing expertise.	As PUA/PUS but developing expertise like SP.
SP	Service Provider. High degree of computing expertise.	As PUA/PUS but has expertise in authorisation and possibly identity management.
Grid-Sys	Infrastructure sysadmin. High degree of computing expertise.	System administration of grid nodes, possibly with infrastructure delivery and security expertise.

# The C-SP model



## Example: the BRIDGES/DyVOSE projects

- <http://www.brc.dcs.gla.ac.uk/projects/bridges/>
- <http://labserv.nesc.gla.ac.uk/projects/dyvose/>
  - Developed the Shibboleth front end to the portal as part of the ESP-GRID project



## Example: the BRIDGES/DyVOSE projects

- User attempts to connect to the portal via web browser
  - Is immediately caught by Shibboleth and asked “Where are you from?”

Select your home institution

**SDSS**  
Development Federation

**Selection options**

The service you are trying to reach requires that you authenticate with your home institution. Please select an institution using one of the methods below.

**Choose from list**

University of Oxford (test)

Remember for session

**Search by keyword**

Need assistance? Visit the SDSS Federation [web site](#).



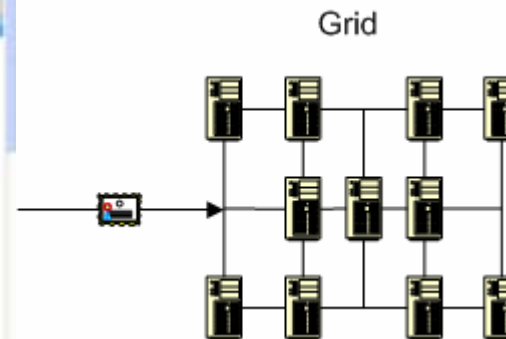
## Example: the BRIDGES/DyVOSE projects

- I'm from <my home organisation>
  - “OK – please log in there now”

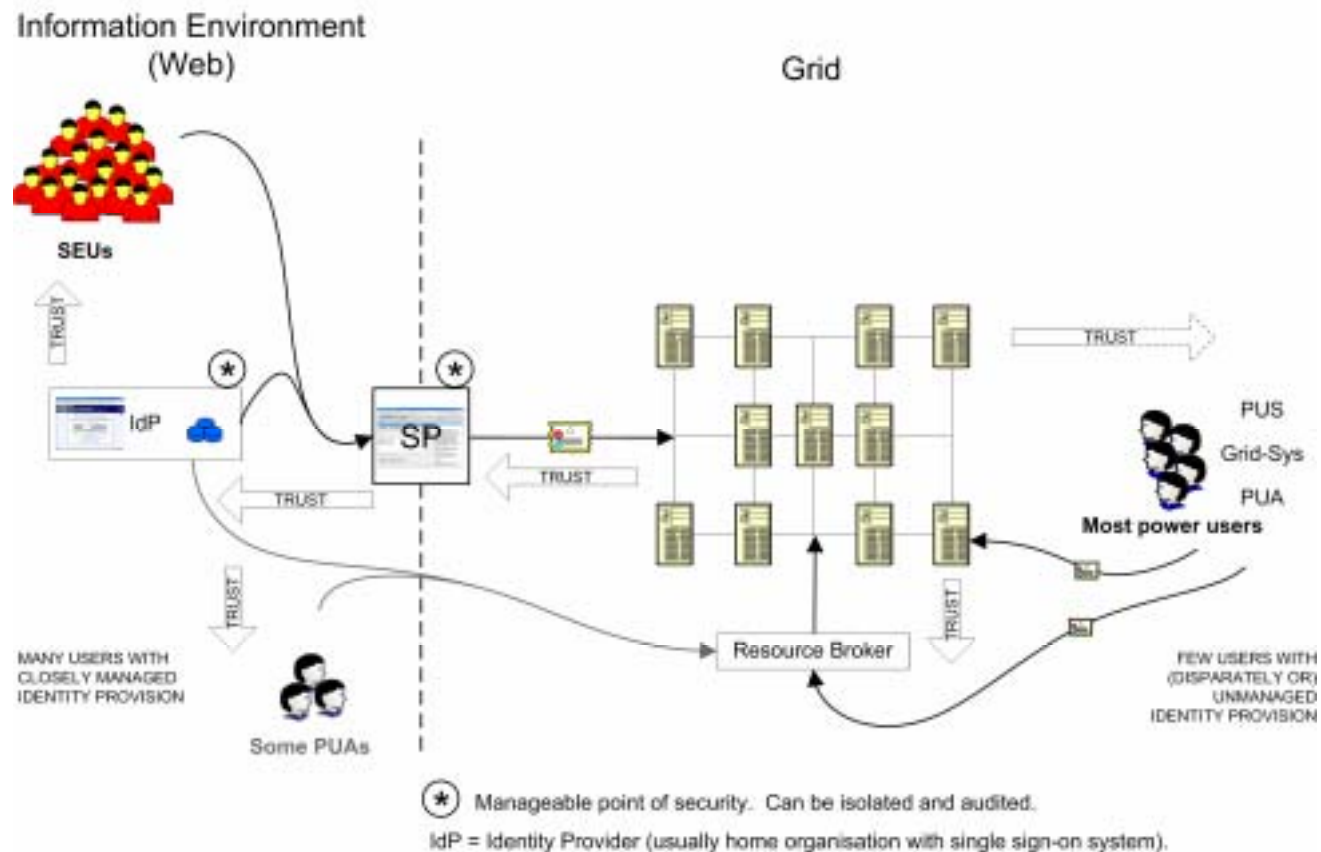


# Example: the BRIDGES/DyVOSE projects

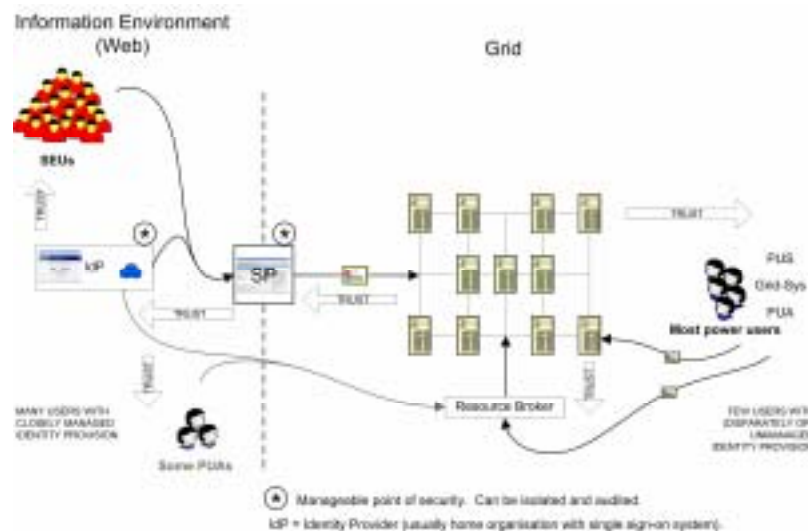
- Enter some data
- Press go
- Portal runs job on “the grid”



# The C-SP model



# Metering/Accounting is possible



- Grid (or individual nodes) is able to specify policies regarding types of users
- SP can be billed by grid (nodes) on a usage basis
- IdPs can be billed for their users' activities or...
  - SP may determine the user groups from the IdPs at the time and bill users (or projects) directly

# Difficulties

- Denial of service (DoS) attacks
- May need multiple ‘host’ certificates (one for each user?!?)
- Portal (and application/portlets need to be secure)
  - Or grid nodes remove privileges
- Error capturing must be good
  - (and may have to emanate from the portal)
  - e.g. nucleotide sequence never resolving

## Only if we are right, that

- Power Users will be relatively low in numbers
- Applications provide ‘funnels’ for predictable usage of grid nodes
- Service Providers are able to demand authentication and can be audited and metered
  - and pass metering on

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