Grid Security and Identity Management

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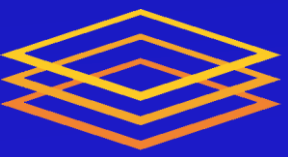
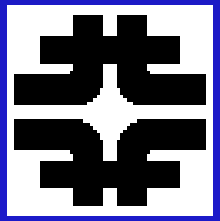




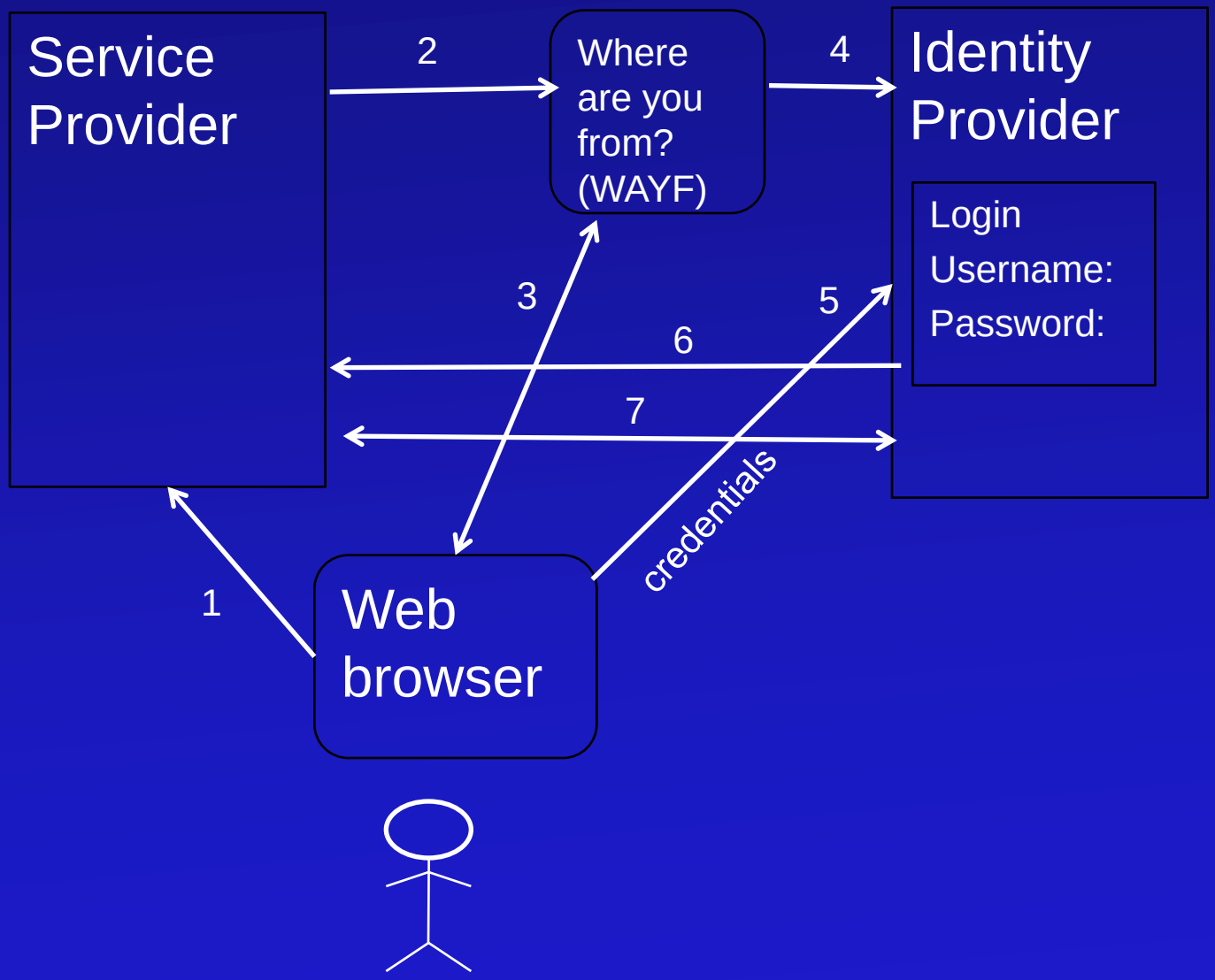
Grid Security in a nutshell

- Identity management: authN
- Access control: authZ
- Operational security
  - Monitoring/detecting suspicious behavior
  - Incident response

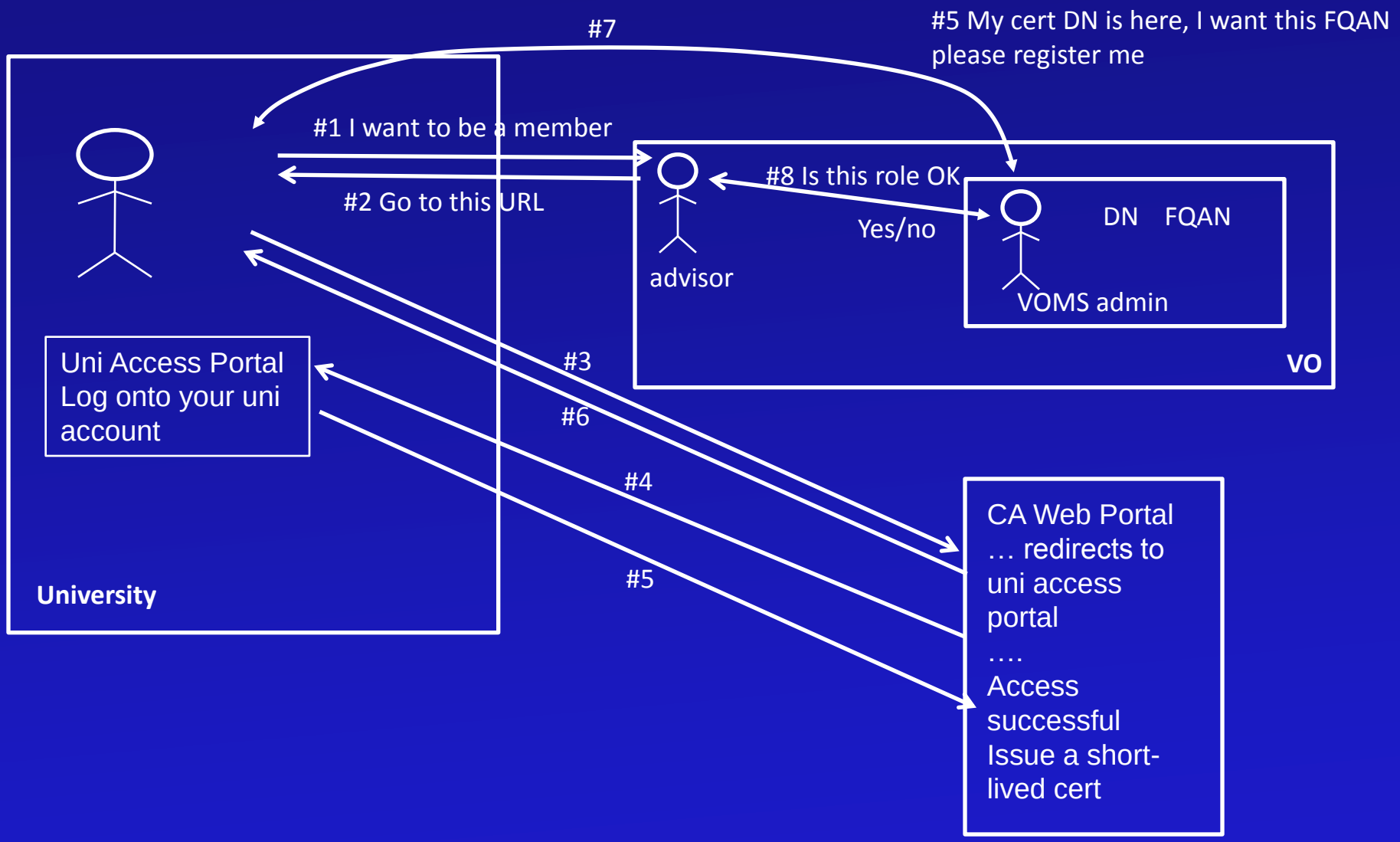
Identity Management

- Who are you?
- Currently PKI and X.509
  - Public-private key pairs
  - Users still not used to certificate management
  - Renewing, requesting, moving certs around.
- Is X.509 the only answer
  - Of course not
- Federation-based identity management springs up
- Proprietary tools: Microsoft infocards, IBM Higgins, etc

Federation-Based Identity Management: Shibboleth



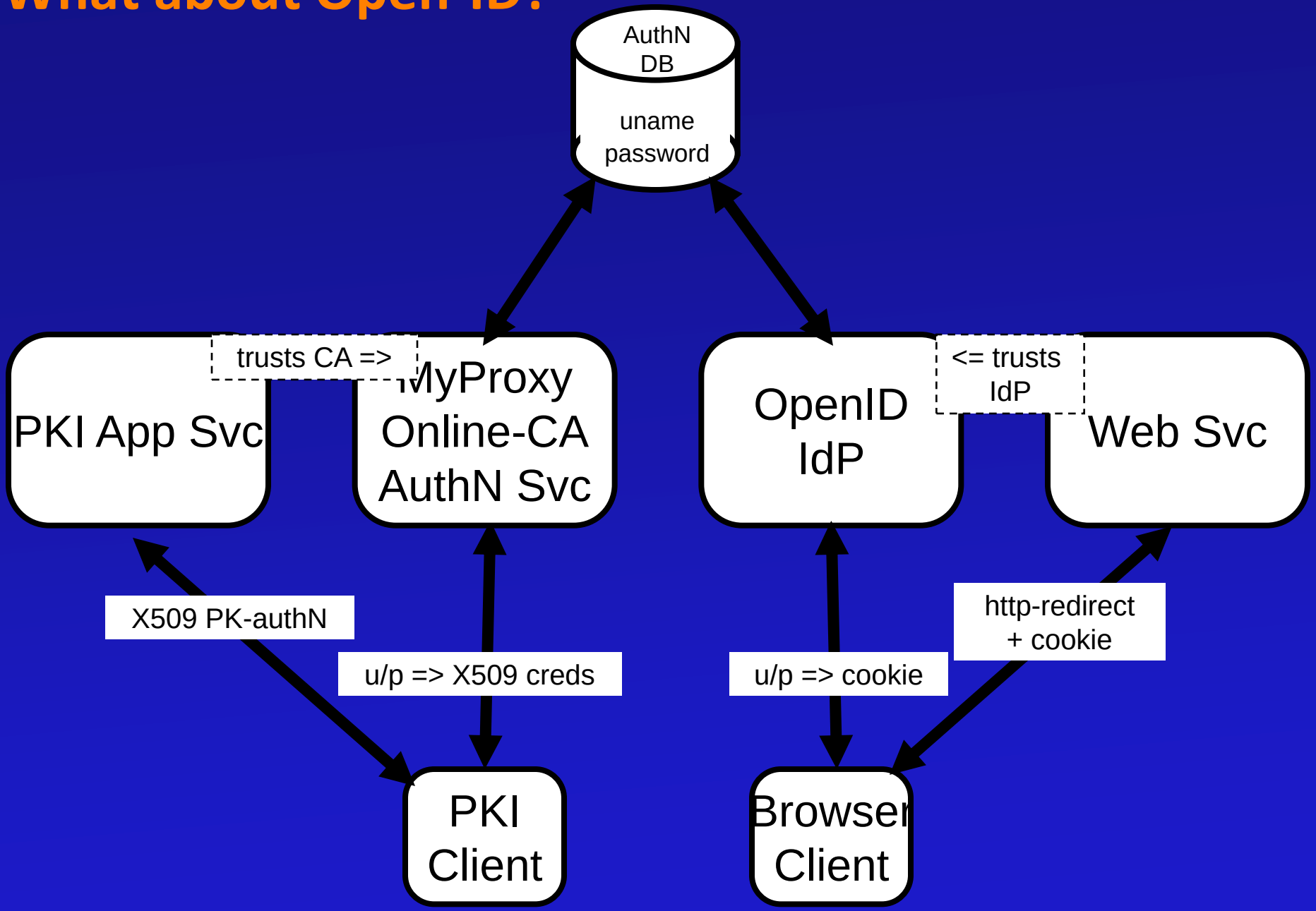
How Shibboleth would work in Grid



Shib-CAs

- Federation-based CAs
- Identity vetting up to federation member institutions
- IGTF accredited
- Short lived certs (1 week)

What about Open-ID?



Diversity

- Diversity in identity mgmt will continue
- Will increase
- NSF and NIH joined Shibboleth
- TG started a Shib test bed
- ESG uses OpenID
- …..
- The goal is to get diverse systems to talk to one another

Interoperability:

Can OSG users use web-based ESG services ?

- Right now no.
- if OSG user has another IdP that ESG can work with,
- or OSG can build and operate an IdP for OSG users

Can OSG users use non-web ESG services ?

- Yes. ESG should recognize the same CA OSG uses

Can ESG users use OSG services ?

- Yes. ESG users have certs. OSG would recognize the CA and authenticate ESG users

Authorization

- Standards have not emerged as in authentication
- It will happen
- Messaging layer has been worked on
- Diverse, home-grown tools used by grids
- Does not get a lot of attention but….
- Will be affected by changes in authN mechanisms

Operational Security

- Cares about authN/authZ
- Traceability, accountability, containment are dependent on authN/authZ
- Who did it? Can we suspend him/her? Can we re-instate his/her access after an incident?
- Inter-operation during incident response
  - Grids are connected via bridges, gateways
  - Incidents spread
  - EGEE-TG-OSG shares incident data for cross-incidents
  - Incident sharing community for HEP institutions

Operational Security

- Hard to teach and execute
  - NSF Large Facility CyberSecurity Workshop
  - NSF Small Facility Workshop to help small sites
- Hard to research and implement
- DOE Labs town-hall meetings on Security R&D
  - Incident response and intrusion detection
  - data provenance
  - Quantifying risk
  - Report sent to DOE