Federated Identity for Scientific Collaborations: **Policy Issues**

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About Me

- Project staff for:
  - Open Science Grid (www.opensciencegrid.org)
  - XSEDE (www.xsede.org) (TeraGrid follow-on)
- Member:
  - InCommon Technical Advisory Committee (www.incommon.org/about)
  - TAGPMA (www.tagpma.org)
- Project lead for:
  - CILogon (www.cilogon.org)
  - MyProxy (myproxy.ncsa.uiuc.edu)
  - GSI-OpenSSH (grid.ncsa.uiuc.edu/ssh)
  - www.sciencegatewaysecurity.org

What is my definition of a community?

- Simply: A group of scientists working together, using common cyberinfrastructure
- Examples:
  - *Virtual Organization* in Open Science Grid
  - *Science Gateway* in XSEDE
  - *Project* in XSEDE
  - *Research and Scholarship* community in InCommon
  - CILogon user community:
    - *Ocean Observatories Initiative* users
    - *DataONE* users

What must a community do to be recognized?

- Register a new Virtual Organization with OSG (http://www.opensciencegrid.org/About/Getting_Started_with_OSG/Form_New_VO)
- Apply for an XSEDE Project allocation (https://www.xsede.org/allocations)
- Register an XSEDE Science Gateway (https://www.xsede.org/register-gateway)
- Register as an InCommon R&S Service Provider (https://spaces.internet2.edu/x/-IKVAQ)
- Request a custom CILogon instance (help@cilogon.org)

Federated ID Use Cases

1. Federating project-managed identities (example: LIGO/Virgo)
2. Linking project-managed identities with external identities
   - SAML + OpenID + …
   - International inter-federation
3. Integration across browser and non-browser (thick client, command-line, etc.) apps
4. Multi-tier apps: portals, glide-ins, pilot jobs

Lessons Learned

- InCommon today supports **browser** SSO
  - SAML->X.509 bridges are common for non-web apps (CILogon, TERENA Certificate Service, etc.)
  - SAML ECP adopted by ~5 InCommon IdPs so far (http://www.cilogon.org/ecp)
- Attribute release is a major challenge today for SPs that want to support many IdPs
- Google OpenID is a popular “catch-all” IdP
  - US ICAM LOA 1 certified (http://openidentityexchange.org/certified-providers)

Overhead of On-boarding

What do you consider to be an acceptable administrative overhead for a user to connect to a service WRT the actions that the user and actions that the IdP and SP administration have to perform?

- User may need to approve attribute release
- User may need to provide additional information during a service-specific registration process
- IdP must scale to many SPs
  - Attribute release policy using federation managed SP "tags"
  - Federation metadata for UI elements, public keys, etc.
- SP must scale to many IdPs
  - Apply to federation(s), not individual IdPs
  - Leverage federation metadata as with idP
- User should not need to email IdP and SP administrators to make this work!

Attribute Release Policies

- Per-Project / Per-SP doesn't scale
- Alternatives:
  - Release defined attribute bundles (targetedID, "directory attributes"), with user consent, to projects/SPs approved ("tagged") by federation
  - Handle attribute release problems at SP
    - Automated request to IdP for attribute release
    - Don't leave user stranded – redirect to "catch-all" IdPs

Can IdPs serve many concurrent and distinct projects?

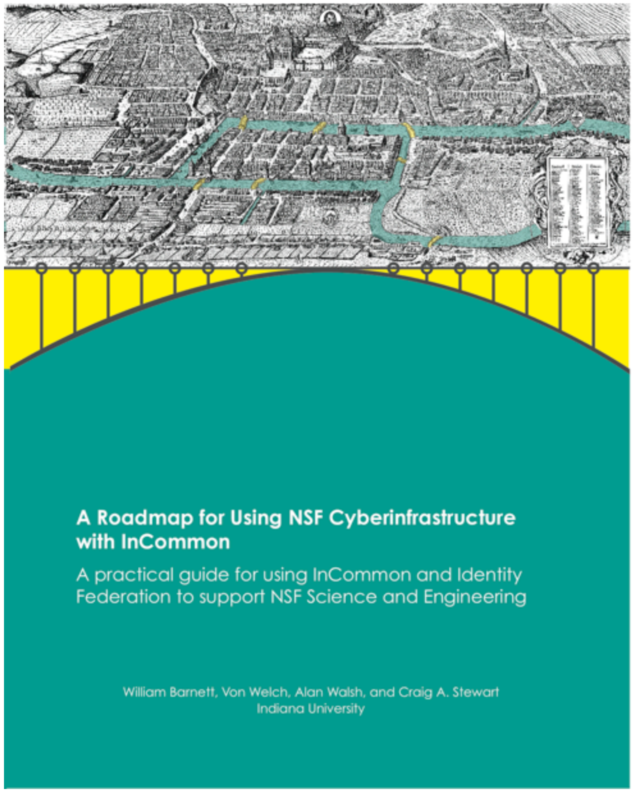
- Yes!
- Motivation
  - Expensive and inconvenient for every project to operate its own IdP(s)
  - Better to leverage cost of IdP operations across multiple projects
- How: General-purpose IdPs
  - Examples: University IdPs, IGTF CAs, Google OpenID, ProtectNetwork, Globus Online
  - Projects still need to manage their own attributes

Are there any efforts to bring harmonization of identity attributes across federations?

- Yes!
- MACE-Dir (http://middleware.internet2.edu/dir/)
- REFEDS (http://www.terena.org/refeds)

References

- A Roadmap for Using NSF CyberInfrastructure with InCommon (http://www.incommon.org/nsfroadmap)
- An Analysis of the Benefits and Risks to LIGO When Participating in Identity Federations (http://www.google.com/search?q=LIGOIdentityFederationRiskAnalysis.pdf)
- Federated Security Incident Response (https://spaces.internet2.edu/x/8o6KAQ)



A Roadmap for Using NSF Cyberinfrastructure with InCommon

A practical guide for using InCommon and Identity Federation to support NSF Science and Engineering

William Barnett, Von Welch, Alan Walsh, and Craig A. Stewart
Indiana University

Thanks!

Questions/Comments?

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