CILogon-HA: Higher Assurance Federated Identities for DOE Science

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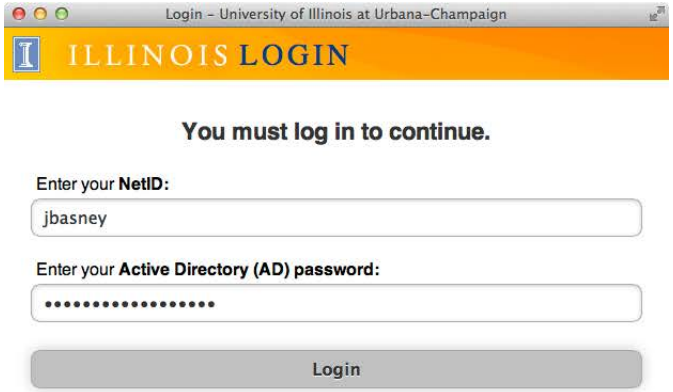
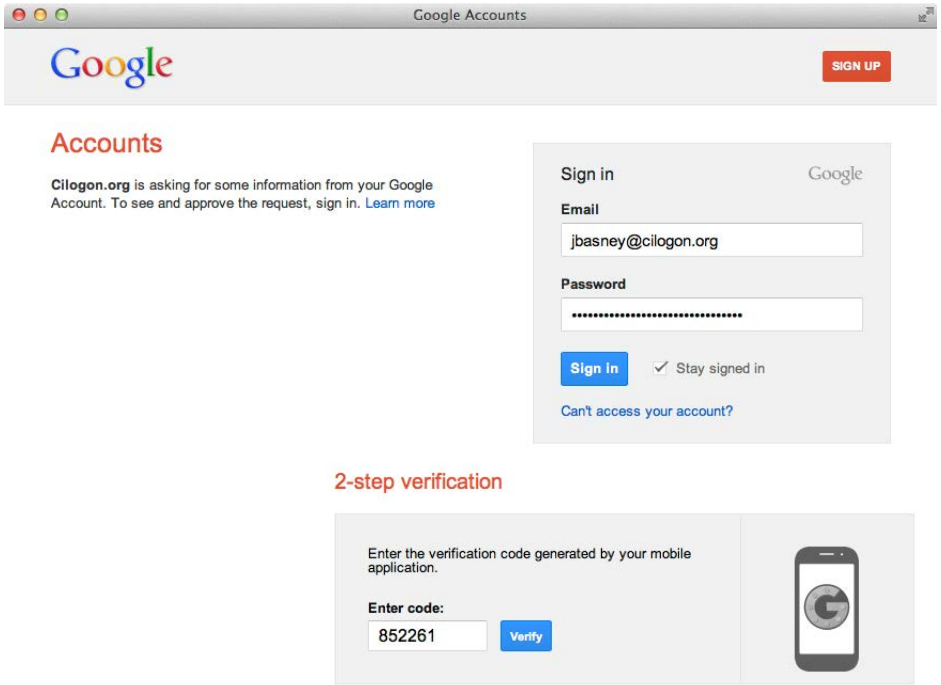
CILogon – https://cilogon.org/

- Provides personal digital certificates for access to cyberinfrastructure
- Uses federated authentication for user identification

Federated Authentication

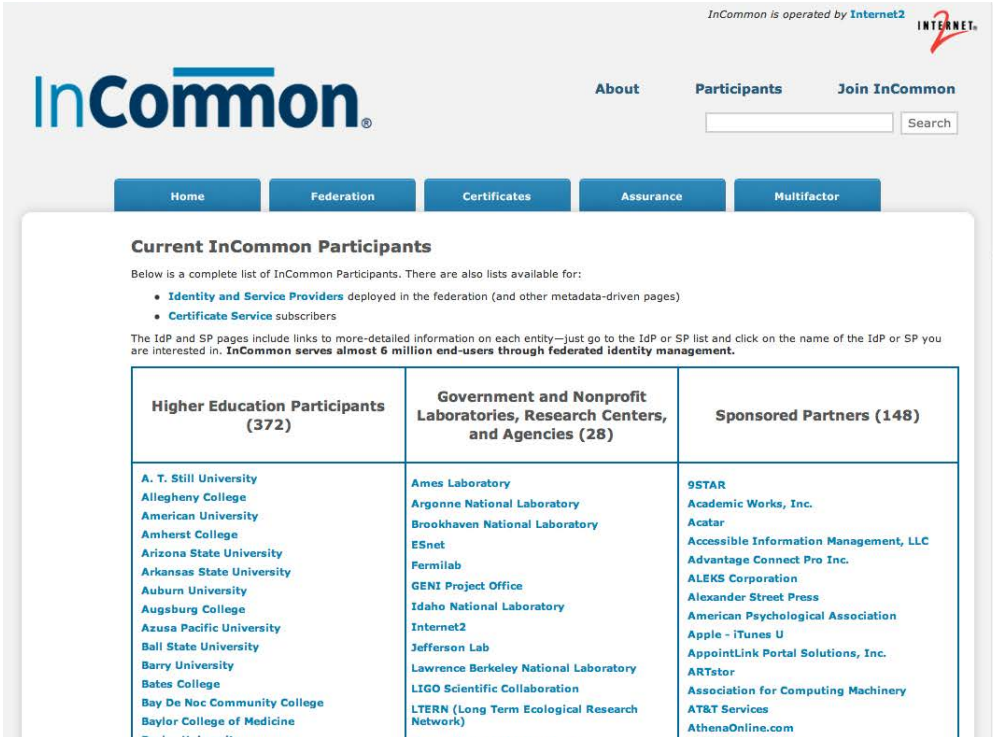
- Log on to CILogon using your campus (InCommon) or Google (OpenID) account

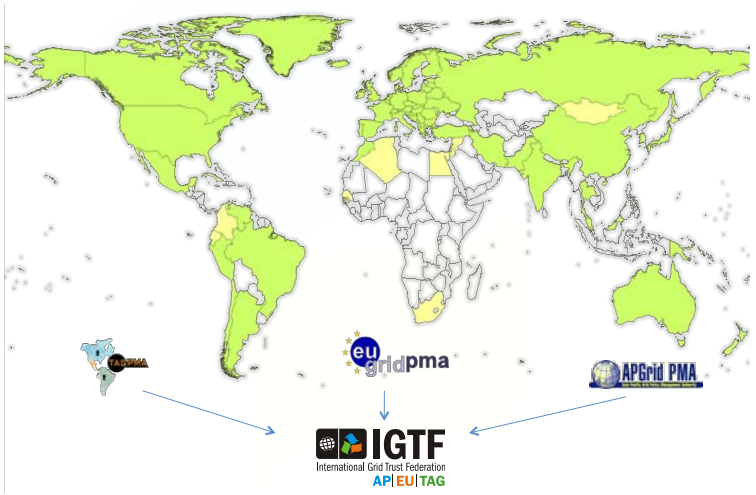




Bridging InCommon and IGTF

- Translating mechanism and policy across higher education and grid trust federations

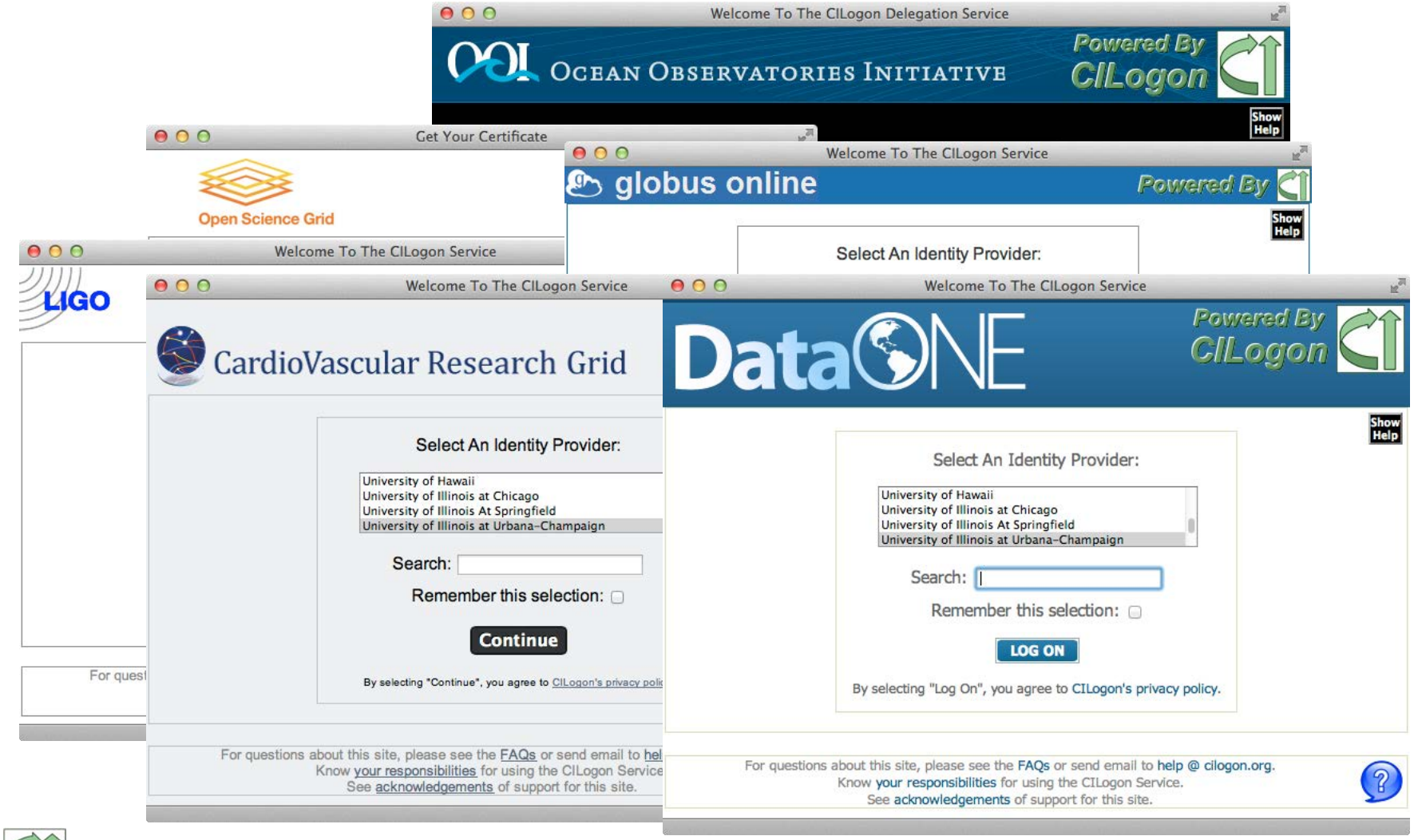




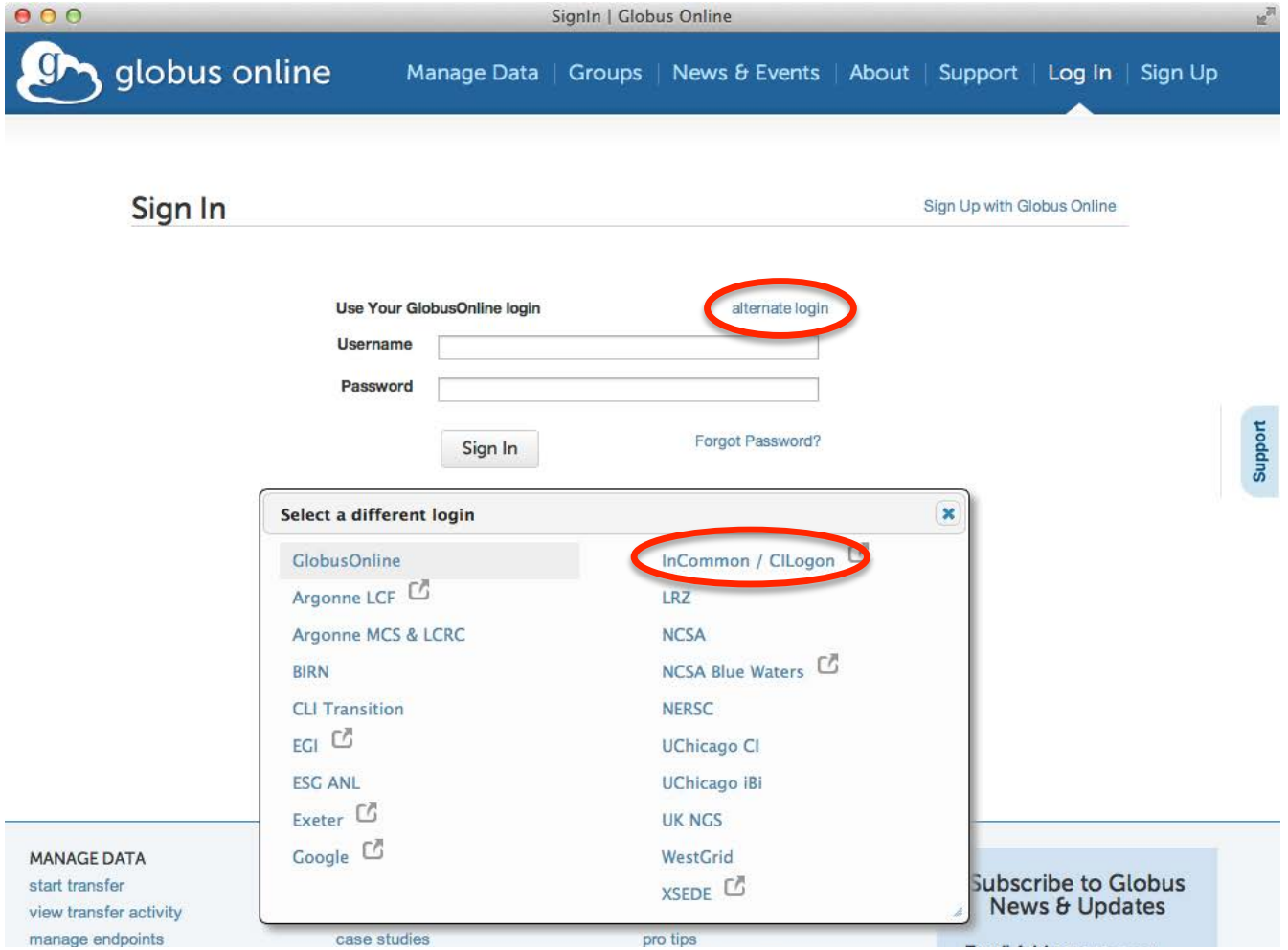
Multiple Levels of Assurance

- CILogon Silver CA
  - InCommon Silver IDs
  - IGTF accredited February 2011
- CILogon Basic CA
  - "Basic" InCommon IDs
  - IGTF accredited June 2014
- Google Authenticator provides second authentication factor

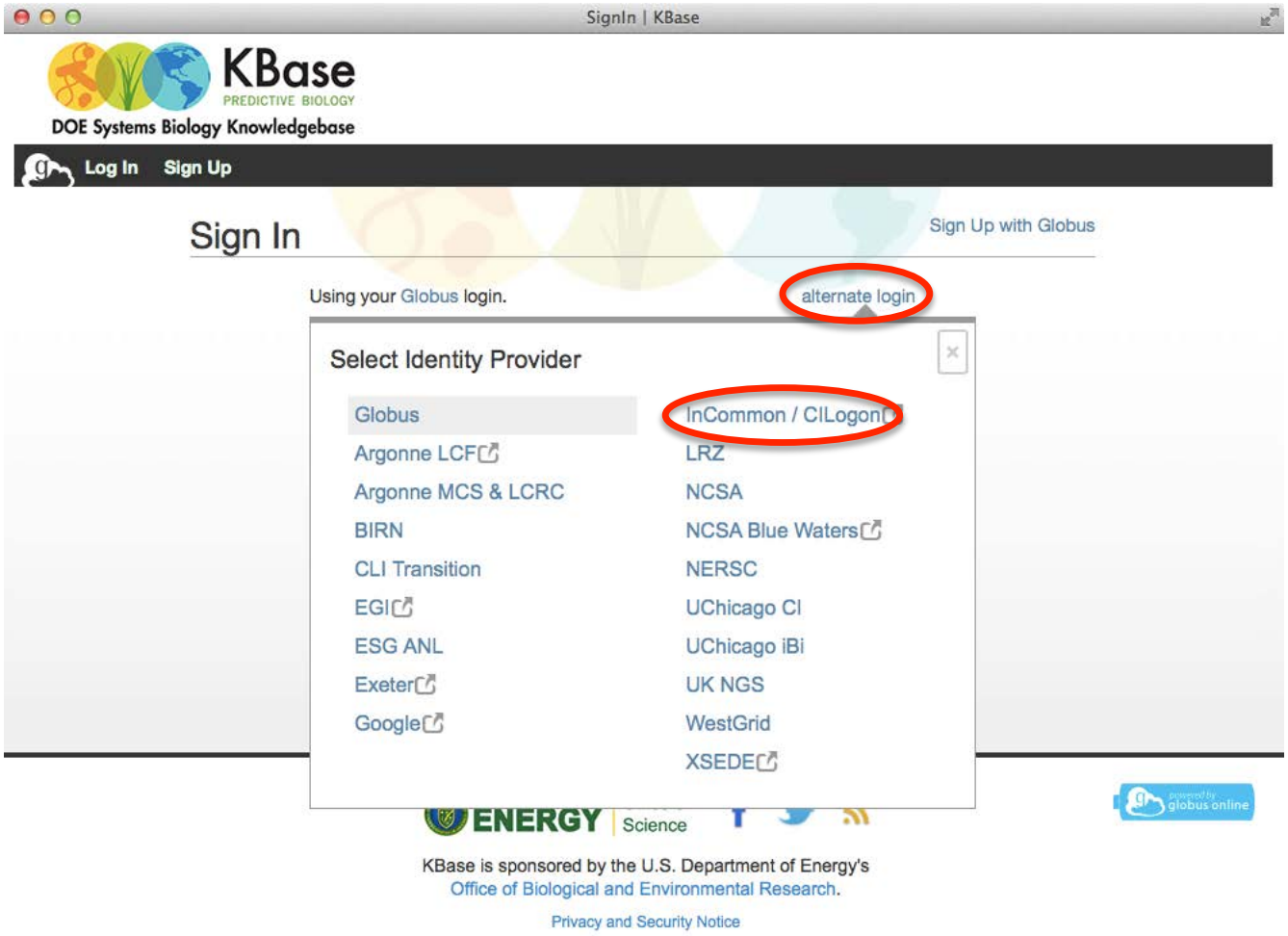
Integrated with CyberInfrastructure



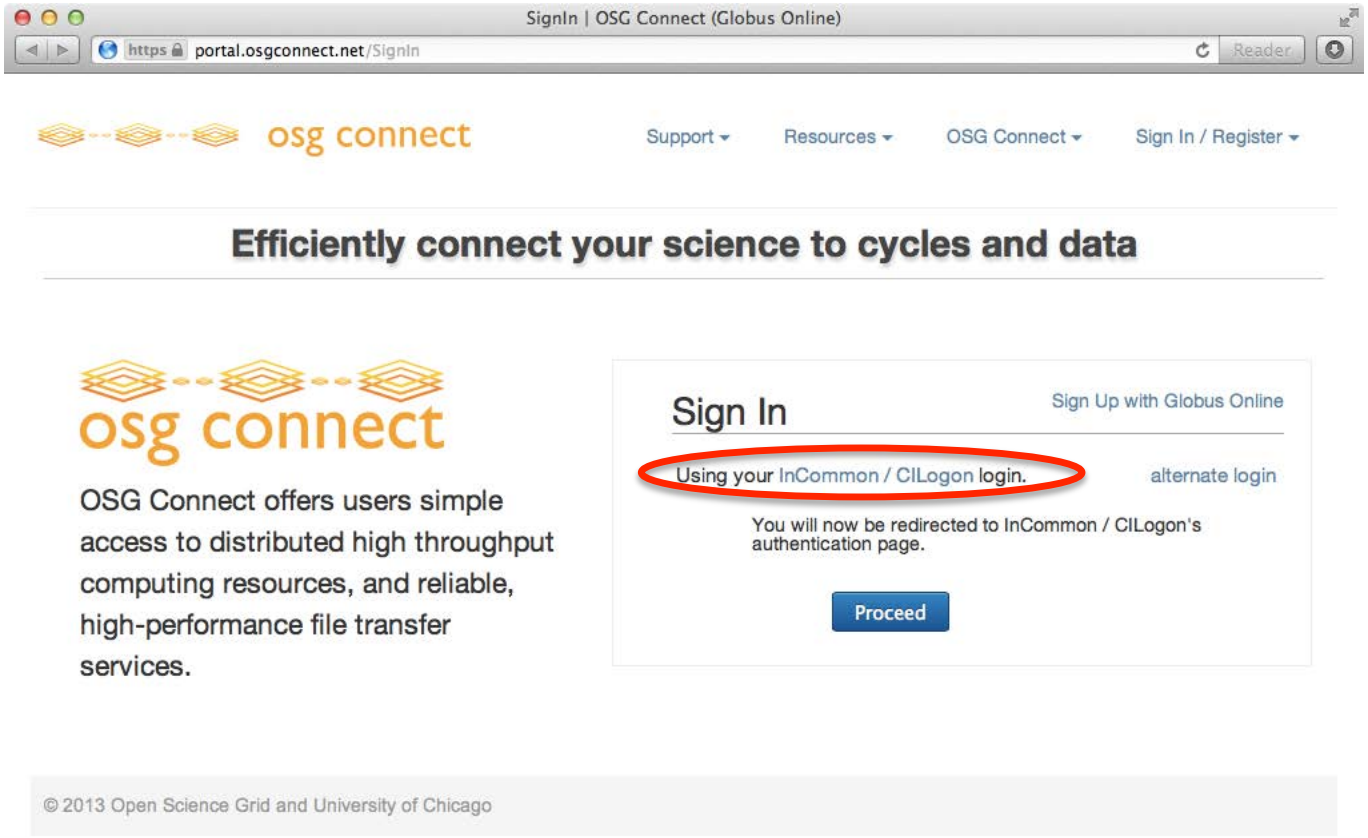
Integrated with Globus Nexus



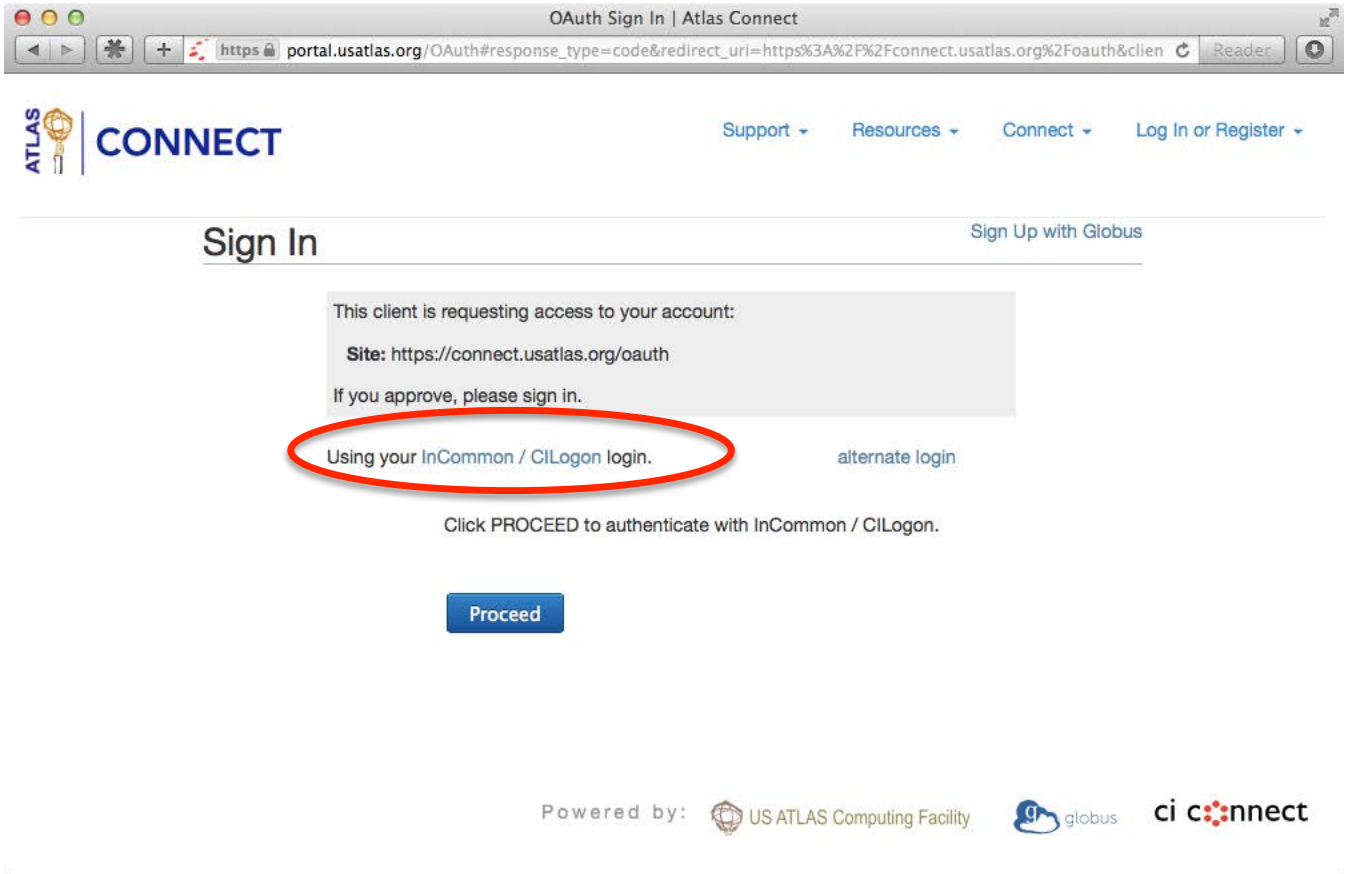
Used by DOE KBase



Used by OSG Connect



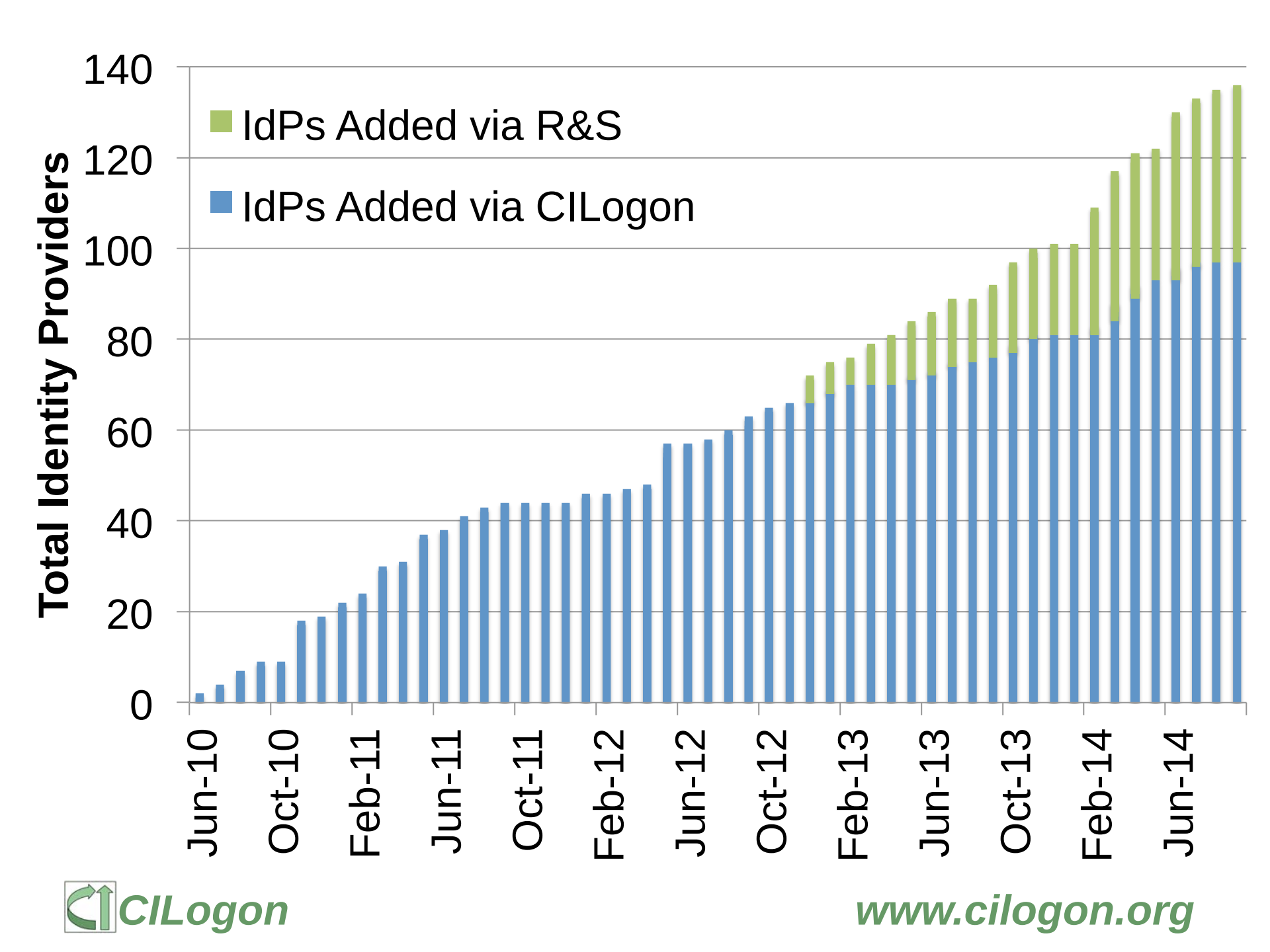
Used by ATLAS Connect

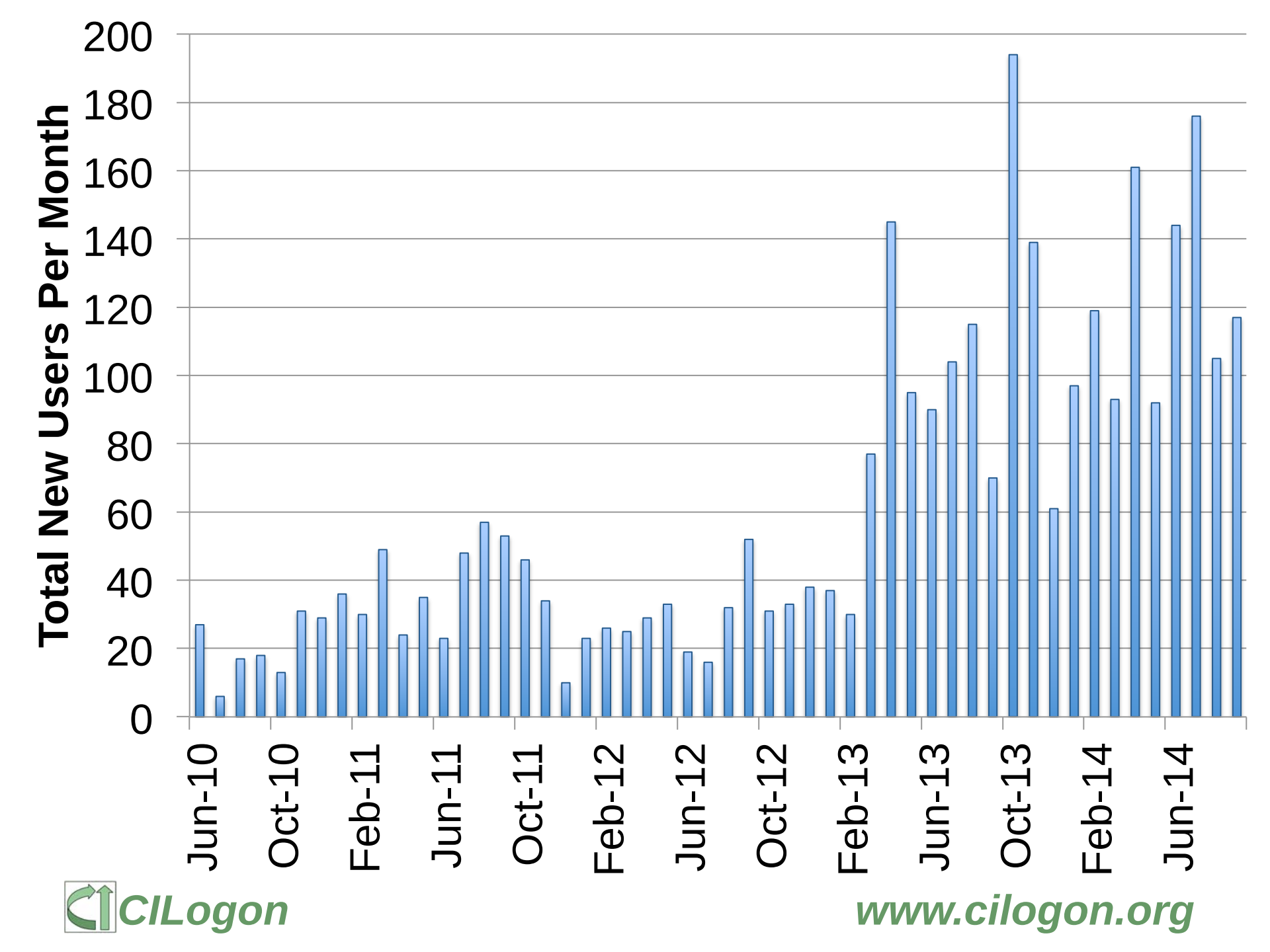


CILogon and XSEDE

Extreme Science and Engineering Discovery Environment

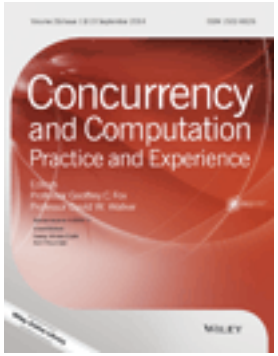
- CILogon is
  - a component in the XSEDE architecture
  - following the XSEDE engineering process: architecture, design, and security reviews and operational acceptance tests
- XSEDE provides sustained operational support to CILogon users (ATLAS, DataONE, OOI, OSG, KBASE, LIGO, etc.)
- Including backup CILogon instance at NICS


Total Identity Providers
140
120
100
80
60
40
20
0
IdPs Added via R&S
IdPs Added via CILogon
Jun-10
Oct-10
Feb-11
Jun-11
Oct-11
Feb-12
Jun-12
Oct-12
Feb-13
Jun-13
Oct-13
Feb-14
Jun-14


Total New Users Per Month
200
180
160
140
120
100
80
60
40
20
0
Jun-10
Oct-10
Feb-11
Jun-11
Oct-11
Feb-12
Jun-12
Oct-12
Feb-13
Jun-13
Oct-13
Feb-14
Jun-14
CILogon
www.cilogon.org

Our Journal Article

Jim Basney, Terry Fleury, and Jeff Gaynor, "CILogon: A Federated X.509 Certification Authority for CyberInfrastructure Logon," Concurrency and Computation: Practice and Experience, Volume 26, Issue 13, pages 2225-2239, September 2014. http://dx.doi.org/10.1002/cpe.3265



“What question does your research motivate you to now ask?”

- What models are effective for exchange of user information in distributed systems?
  - need user info for authentication, authorization, accounting, incident response, troubleshooting
  - models: virtual organization, gateways/hubs, user consent/control, certification (InCommon R&S, IGTF), self-asserted compliance (InCommon Bronze, REFEDS CoC)
  - challenges: regulatory, scaling, information quality/timeliness, misaligned goals
  - Who owns/controls the data?

Thanks!

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