



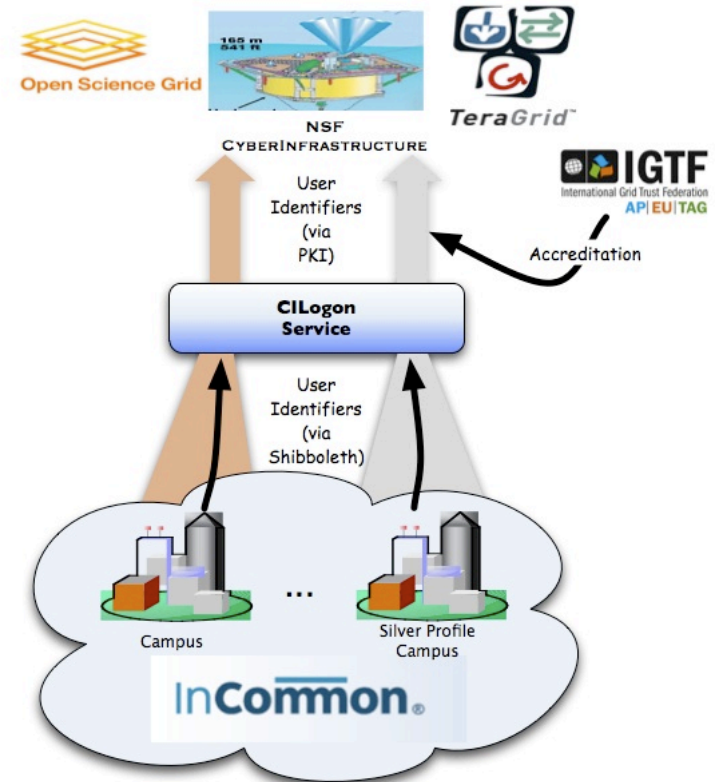
## Federating Identities for Researchers

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This material is based upon work supported by the National Science Foundation under grant number 0943633. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

# CILogon Project Goal

- Enable campus logon to CyberInfrastructure (CI)
  - Use researchers' existing security credentials at their home institution
  - Ease credential management for researchers and CI providers

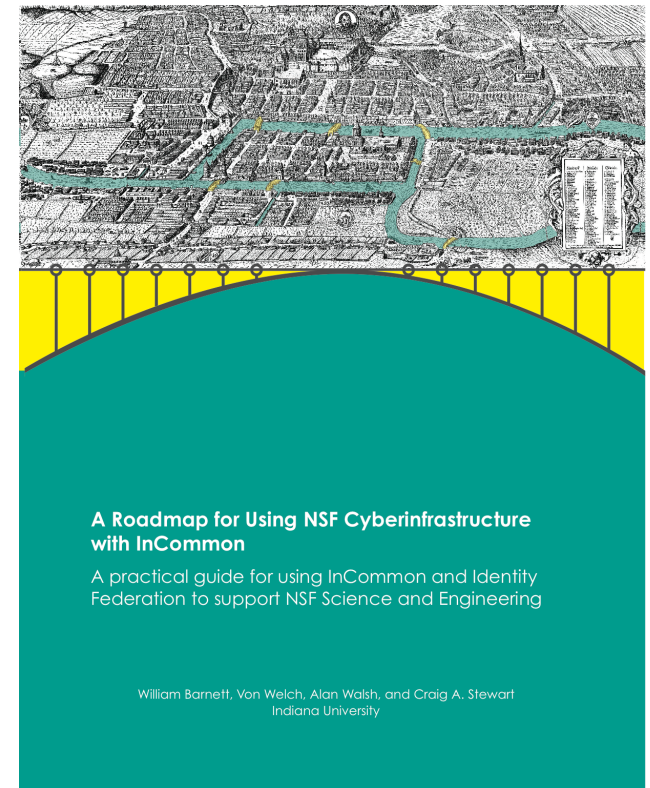


# A Roadmap for Using NSF Cyberinfrastructure with InCommon

A helpful guide for CI projects

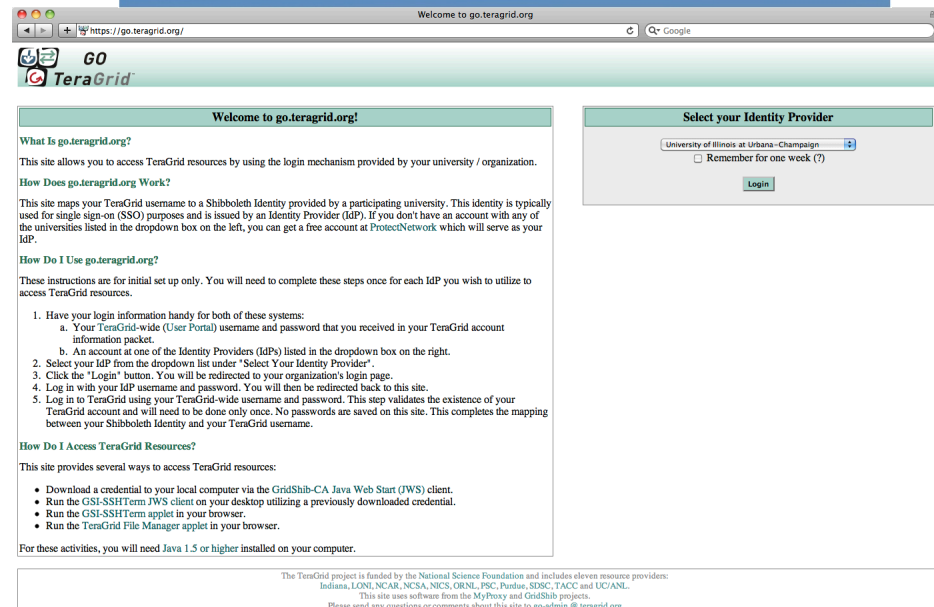
Discusses the role of CILogon

[www.incommon.org/nsfroadmap](http://www.incommon.org/nsfroadmap)



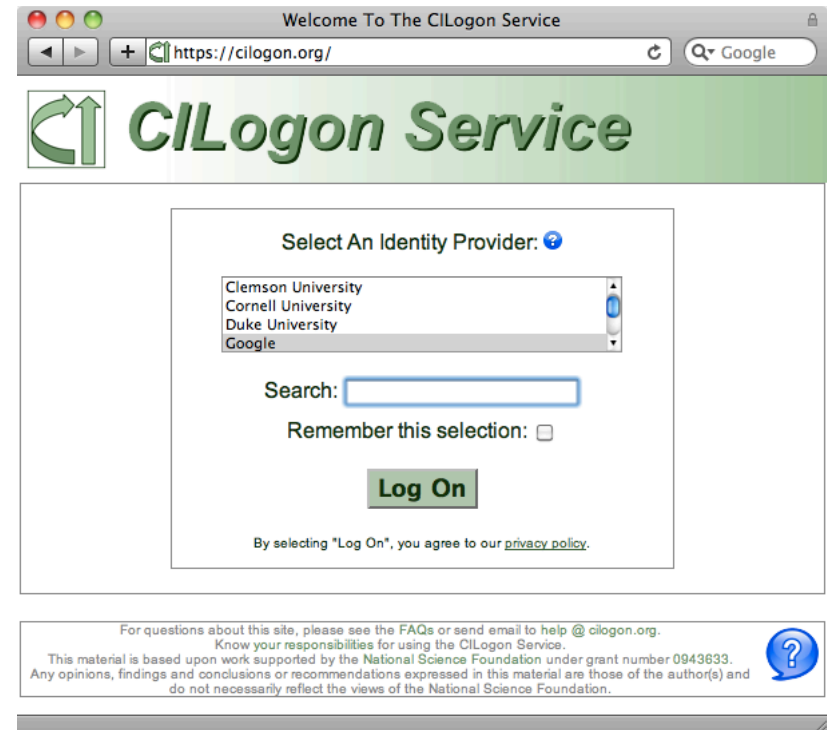
# Prior Work: go.teragrid.org

- Campus login to TeraGrid
- 35 campuses so far
- Uses TeraGrid ID vetting
- Available since Sep 2009
- TeraGrid to XSEDE transition in progress
- Integration with portal.xsede.org planned
- IDtrust 2010 paper: “Federated Login to TeraGrid”  
(<http://middleware.internet2.edu/idtrust/2010/>)



# CILogon Service: cilogon.org

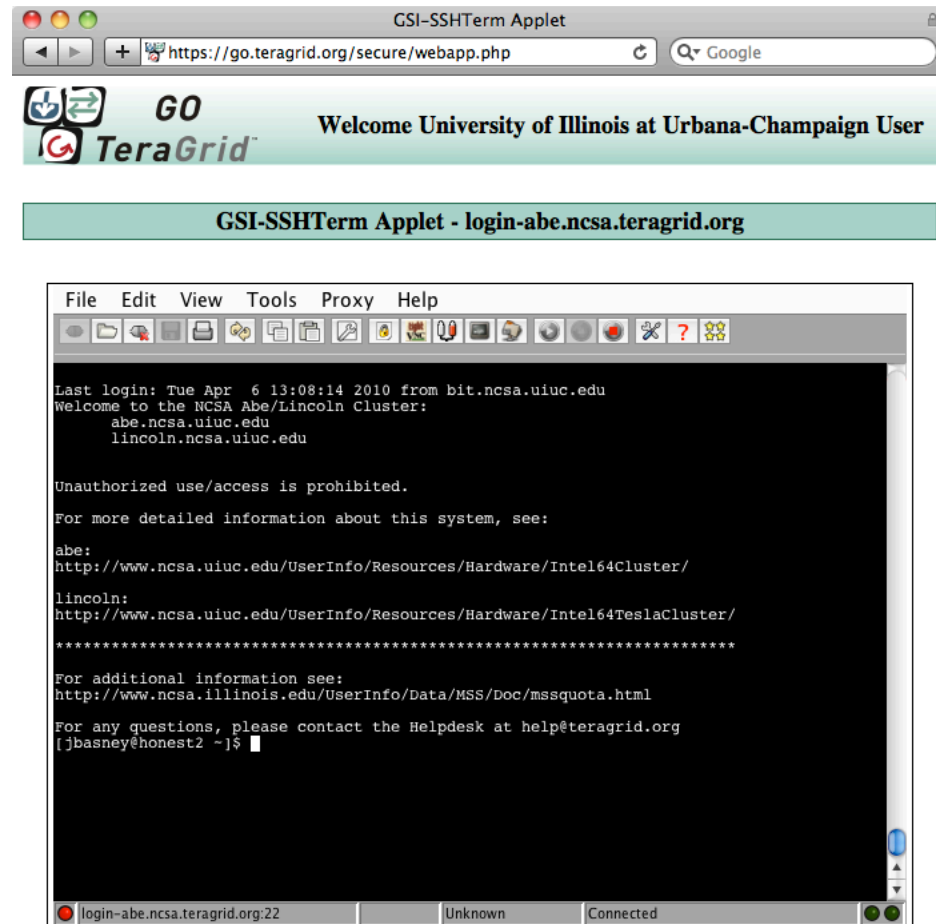
- No TeraGrid account required
- Supports InCommon and OpenID authentication
  - 43 InCommon IdPs so far
- Delivers certificates to desktop, browser, and portals
- Available certificate lifetimes: from 1 hour to 13 months
- Supports close integration with CI projects
- Available now!
- FAQ: [www.cilogon.org/faq](http://www.cilogon.org/faq)



The screenshot shows a web browser window titled "Welcome To The CILogon Service". The address bar displays "https://cilogon.org/". The page features the CILogon Service logo at the top. Below the logo, there is a section titled "Select An Identity Provider: ?". This section contains a list box with the following options: "Clemson University", "Cornell University", "Duke University", and "Google". Below the list box is a "Search:" input field and a "Remember this selection:" checkbox. A green "Log On" button is positioned below the checkbox. At the bottom of this section, a small text line reads: "By selecting 'Log On', you agree to our [privacy policy](#)." At the very bottom of the browser window, there is a footer containing contact information and a disclaimer: "For questions about this site, please see the FAQs or send email to [help@cilogon.org](mailto:help@cilogon.org). Know your responsibilities for using the CILogon Service. This material is based upon work supported by the National Science Foundation under grant number 0943633. Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation." A blue question mark icon is located to the right of the footer text.

# Why certificates?

- Command-line apps, non-web apps
- Multi-stage, unattended batch workflows
- Significant worldwide CI investment in PKI
  - Software, operations, standards, etc.

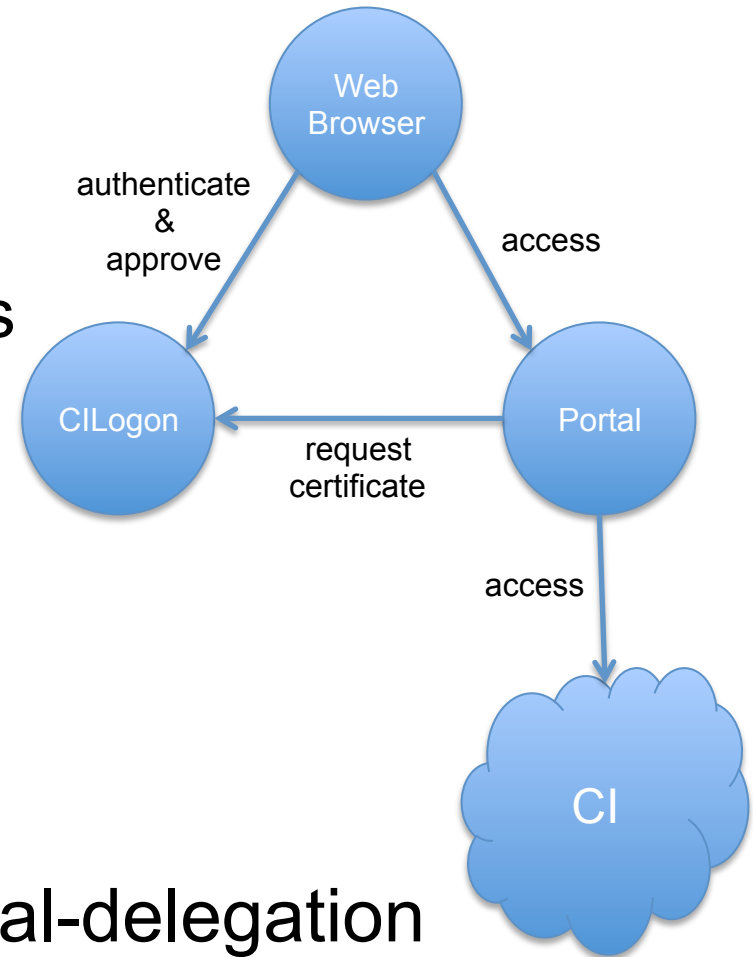


# Levels of Assurance

- LOA requirements differ across scientific collaborations
  - 2-factor authentication
  - IGTF accreditation
  - Open access with usage statistics
- CILogon LOA options:
  - InCommon Silver: US Gov't ICAM Level 2
    - Produces IGTF accredited certificates
  - OpenID OIX: US Gov't ICAM Level 1
  - InCommon “Basic”

# CILogon Portal Delegation

- Science Gateways (portals) provide web interfaces to CI
  - Need credentials to access CI on researchers' behalf
- CILogon Delegation Service allows researchers to approve certificate issuance to portals (via **OAuth**)



[www.cilogon.org/portal-delegation](http://www.cilogon.org/portal-delegation)



# Integration Example: OOI

The screenshot shows the OOI Integrated Observatory Network web application. The browser window title is "OOI Integrated Observatory Network". The address bar shows a Google search bar. The main header features the OOI logo and the text "INTEGRATED OBSERVATORY NETWORK" and "OCEAN OBSERVATORIES INITIATIVE". On the right side of the header, there are links for "Sign in", "Create account", and "Help". A green arrow points to the "Sign in" link.

The left sidebar contains the "Resource Selector" section with options for "View Existing" (All Registered Resources, My Notification Settings, My Registered Resources) and "Geospatial Extent" (Bounding Box, Vertical Extent, Upper Bound, Lower Bound). The "Temporal Extent" section includes "Time Range" (All, Defined) and "From:" and "To:" fields.

The main content area is titled "All Registered Resources" and displays a table of resources. The table has columns for "Title", "Notification Set", "Provider", "Type", "Date Registered", and "Details". The table lists several resources, including "APPOMATTOX RIVER AT MATOACA VA (02041650)", "CHOPTANK RIVER NEAR GREENSBORO MD (01491000)", "CONNECTICUT RIVER AT THOMPSONVILLE CT (01184000)", "Delaware River at Trenton NJ (01463500)", "ESOPUS CREEK AT COLD BROOK NY (01362500)", "HUDSON RIVER AT FORT EDWARD NY (01327750)", "JAMES RIVER AT CARTERSVILLE VA (02035000)", and "Honolulu Oahu HI (16229000)".


The right sidebar contains a list of links: "Resource Registration Description", "Resource Registration Contact Information", "Original Source Description", "Original Source Contact Information", "Geospatial Coverage", "Temporal Coverage", "Variables", and "References".


At the bottom of the page, there are "Search" and "Dataset Access" buttons, and a "Set Up Notifications" button.

# Integration Example: OOI

Welcome To The CILogon Delegation Service

https://cilogon.org/delegate/?oauth\_token=http://cilogon.org/serverA/tempCred/5bb668056d439369850bb1e3f7a474a8/1316530539597& Google

 **INTEGRATED OBSERVATORY NETWORK**  
OCEAN OBSERVATORIES INITIATIVE

Powered By  CILogon

Show Help

Select An Identity Provider:


- University of Alabama at Birmingham
- University of California-San Diego
- University of Chicago
- University of Delaware
- University of Illinois at Chicago
- University of Illinois at Urbana-Champaign**
- University of Iowa
- University of Maryland Baltimore County
- University of Michigan
- University of Missouri System

Search:

Remember this selection: ☐

By selecting "Continue", you agree to [CILogon's privacy policy](#).

For questions about this site, please see the FAQs or send email to [help@cilogon.org](mailto:help@cilogon.org).  
Know your responsibilities for using the CILogon Service.  
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# Integration Example: OOI

Login - University of Illinois at Urbana-Champaign

https://shibboleth.illinois.edu/idp/Authn/UserPassword

Google

## ILLINOIS LOGIN

You must log in to continue.

Enter your **NetID**:

Enter your **Active Directory (AD) password**:

Login

**Forgot your Active Directory password?**  
To change or reset your Active Directory password, go to the [CITES Password Manager](#).

### More Information

**Where to Get Help**  
Contact the [CITES Help Desk](#) at [consult@illinois.edu](mailto:consult@illinois.edu).

**What is a NetID?**  
Your NetID serves as your login to many University computing and networking services and also determines your University email address, which is [netid@illinois.edu](mailto:netid@illinois.edu).  
For more information, see the [Your Network ID \(NetID\)](#) page.

### Technical Information

Service that has requested authentication:

**Service Provider EntityID:**  
<https://cilogon.org/shibboleth>

This login service uses the following server:

**shibboleth.illinois.edu**

This page's URL should start with <https://> followed by the server listed above.

For most web browsers, the security padlock icon for this page should be closed/locked.

# Integration Example: OOI

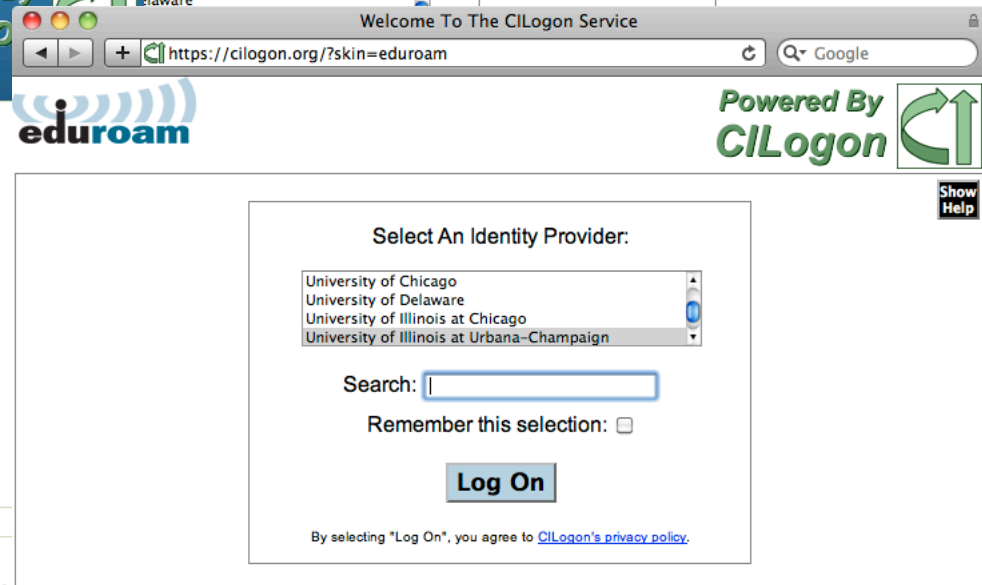
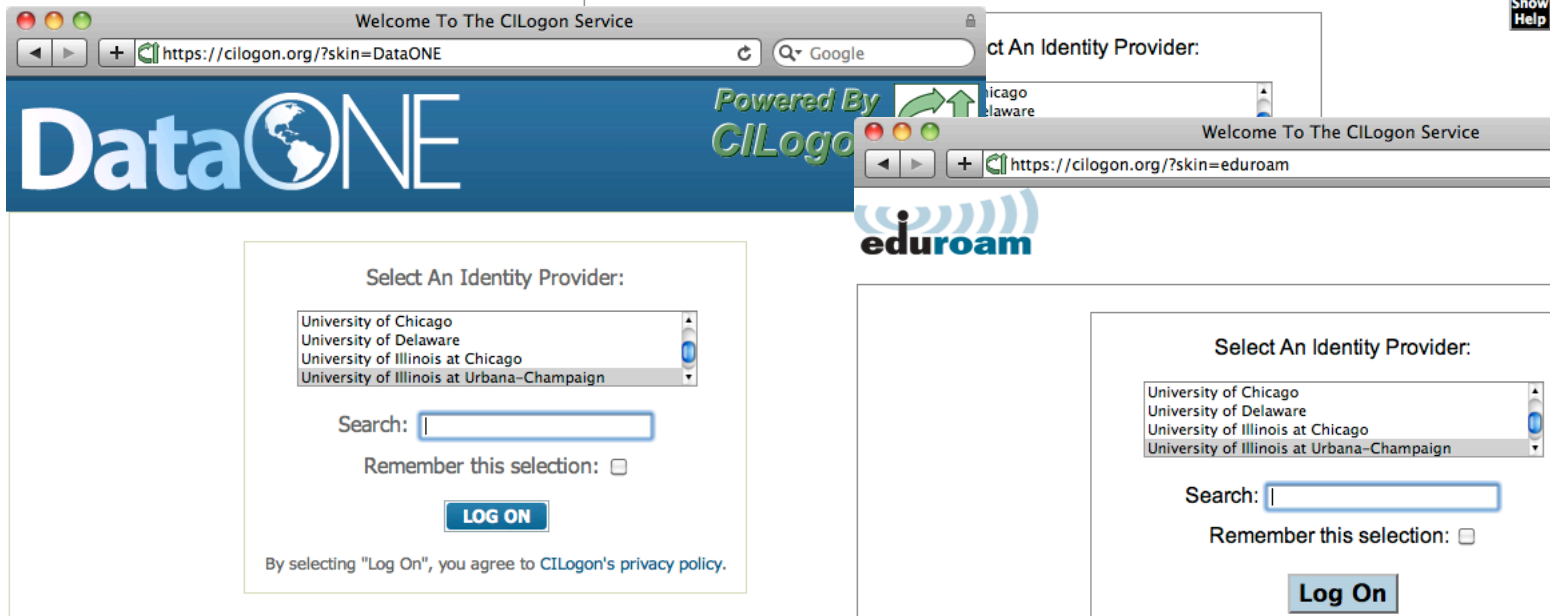
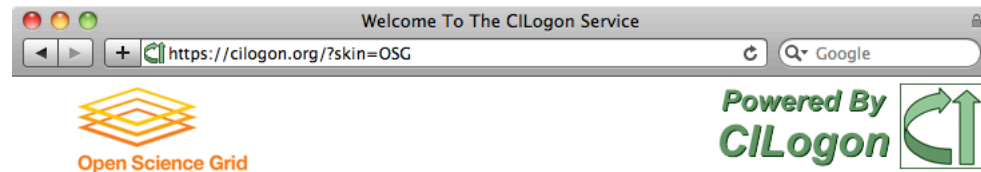
The screenshot shows the OOI Integrated Observatory Network web application. The browser window title is "OOI Integrated Observatory Network". The page header includes the OOI logo and the text "INTEGRATED OBSERVATORY NETWORK OCEAN OBSERVATORIES INITIATIVE". Navigation links for "Sign out", "Account settings", and "Help" are in the top right.

The main content area is divided into three columns:

- Left Column:**
  - Resource Selector:** Includes "View Existing" with radio buttons for "All Registered Resources", "My Notification Settings", and "My Registered Resources".
  - Geospatial Extent:** Includes "Bounding Box" with "All" (selected) and "Defined" radio buttons, and "Vertical Extent" with "All" (selected) and "Defined" radio buttons. It also has input fields for North, South, East, and West coordinates, and "Upper Bound" and "Lower Bound" for vertical extent. The format is "DD.DDDD Decimal Degrees".
  - Temporal Extent:** Includes "Time Range" with "All" (selected) and "Defined" radio buttons, and "From:" and "To:" input fields. The format is "ISO Formatted Time in UTC yyyy-mm-ddThh:mm:ssZ".
- Middle Column:**
  - My Registered Resources:** Shows a table with columns: "Availability", "My Registration Title", "Original Source Title", "Publication Date", and "Details". The table is currently empty, displaying "No data available in table".
- Right Column:**
  - Resource Registration Description:** A list of links including "Resource Registration Contact Information", "Resource Availability Settings", "Resource Activation Settings", "Original Source Description", "Original Source Contact Information", "Geospatial Coverage", "Temporal Coverage", "Variables", and "References".

The bottom of the page features a "Search" button on the left and "Select All", "Deselect All", "Delete Selected", and "Save Changes" buttons on the right.

# More Integration Examples



For questions about this site, please see the [FAQs](#) or send email to [help@cilogon.org](mailto:help@cilogon.org).  
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# Support for Non-Browser Apps

- Option #1:
  - Use browser-based authentication (SAML, OpenID)
  - Get URL for certificate download (wget/curl)
    - Or use Java Web Start, etc.
  - Use certificate for non-browser authentication
  - *Unfortunately still requires a browser*
- Option #2
  - Use SAML Enhanced Client or Proxy (ECP) authentication *outside the browser* to download certificate
  - ECP adoption by InCommon campuses beginning
    - Successfully tested with U Washington, U Chicago, LTER, and ProtectNetwork
  - For more info: <http://www.cilogon.org/ecp>

# ECP Example

```
$ curl -sSO https://cilogon.org/ecp.pl
```

```
$ perl ecp.pl --get cert -c create -k userkey.pem -o usercert.pem -t 12
```

Select an Identity Provider (IdP):

1> LTER Network

2> ProtectNetwork

3> University of Chicago

4> University of Washington

5> Specify the URL of another IdP

Choose [2]: **2**

Enter a username for the Identity Provider: **jbasney**

Enter a password for the Identity Provider: **\*\*\*\*\***

```
$ grid-proxy-init -cert usercert.pem -key userkey.pem -hours 4
```

Your identity: /DC=org/DC=cilogon/C=US/O=ProtectNetwork/CN=Jim Basney A685

Creating proxy ..... Done

```
$ gsissh citest.example.edu
```

```
[jbasney@citest ~]$
```

# Thanks

For more information:

[www.cilogon.org/faq](http://www.cilogon.org/faq)

[info@cilogon.org](mailto:info@cilogon.org)