

CILogon

**Enabling Federated Identity and Access Management for
Scientific Collaborations**

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July 2021 IAM Online



UNIVERSITY OF
ILLINOIS
URBANA-CHAMPAIGN



NCSA

IAM for Research Collaborations

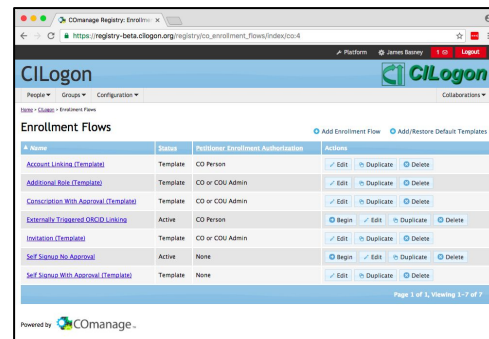
CILogon: 10+ year sustained effort to enable secure logon to scientific cyberinfrastructure (CI)

for seamless identity and access management (IAM)

using federated identities (SAML, OIDC, OAuth, JWT, X.509, LDAP, SSH, etc.) so researchers log on with their existing credentials from their home organization

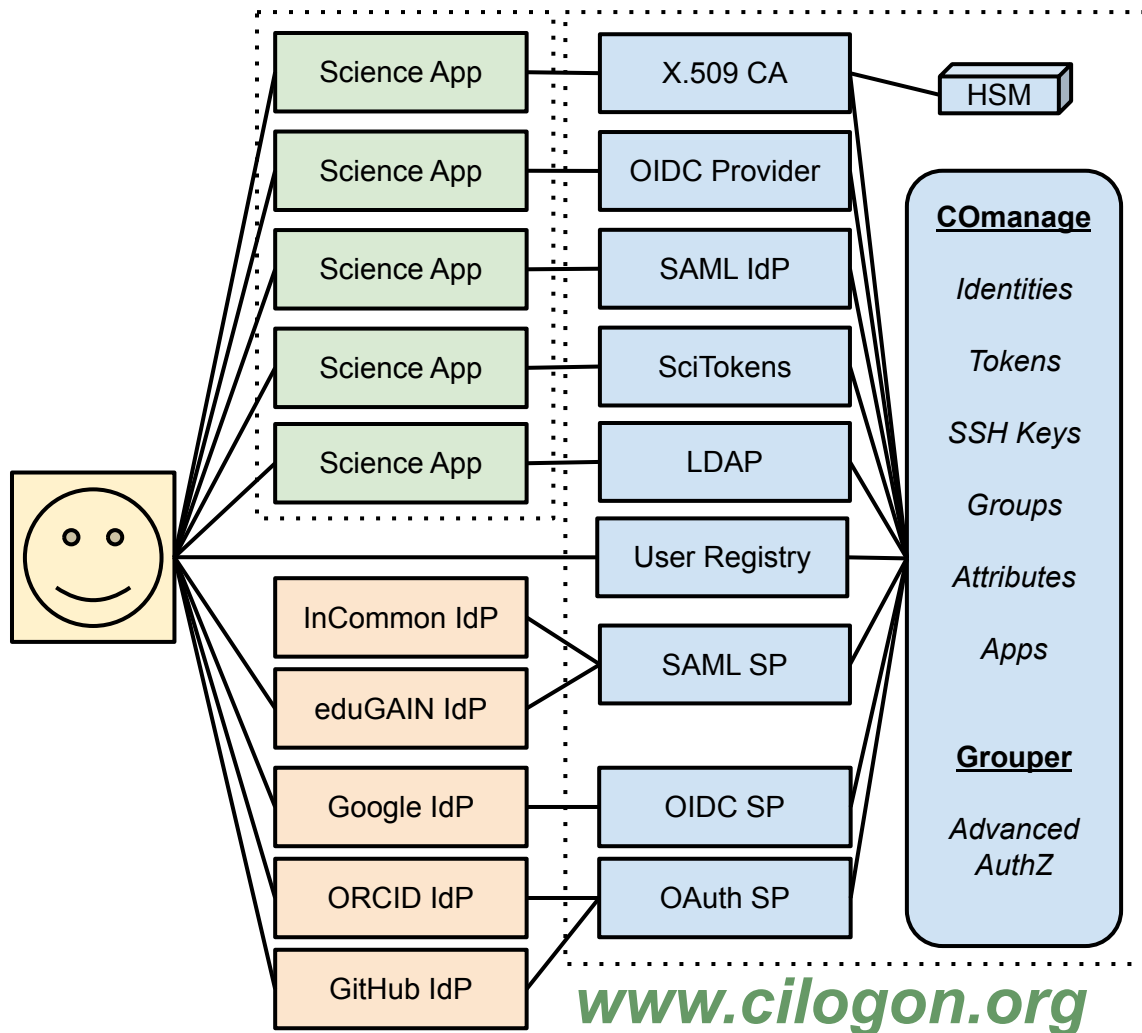
supporting 12,000+ active users from 400+ organizations around the world

with onboarding/offboarding/attributes/groups/roles managed consistently across multiple applications



supporting access to
science applications on
HPC clusters, in Jupyter
notebooks, using Globus,
via REST APIs, and many
other interfaces

using existing identity
providers from the
researcher's home
organization (SAML/ADFS)
or external sources
(Google, ORCID, GitHub)



realizing our vision

align with InCommon Trusted Access Platform
(<https://www.incommon.org/trusted-access/>)

Shibboleth, COmanage, Grouper

provide hosted services

common IAM platform across many collaborations

growing CILogon operations (since 2010)

reliability / sustainability

Open Source

CILogon (<https://github.com/cilogon>)

OpenID Connect, OAuth, X.509

InCommon (<https://www.incommon.org/trusted-access/>)

Shibboleth, COmanage, Grouper

IdentityPython (<https://idpy.org/>)

pyFF, SATOSA

SciTokens (<https://scitokens.org/>)

OpenLDAP with voPerson (<https://voperson.org>)

sustainability

development supported by NSF/DOE

operational support from XSEDE



non-profit subscription model administered by NCSA/UIUC

supports long-term sustainability

provides contracted SLAs

CILogon remains open source and focused on research & scholarship needs

<https://www.cilogon.org/subscribe>

our 10+ year history

2009 Federated login to TeraGrid. NSF ARRA award.

2010 CILogon operations begin. IGTF X.509 CAs operational.

2011 NSF SDCI award. OAuth support. InCommon Silver support.

2012 DOE ASCR award. Globus identity linking. InCommon R&S.

2013 XSEDE operations support. LIGO Data Grid use.

2016 NSF CICI award. eduGAIN support. OIDC support.

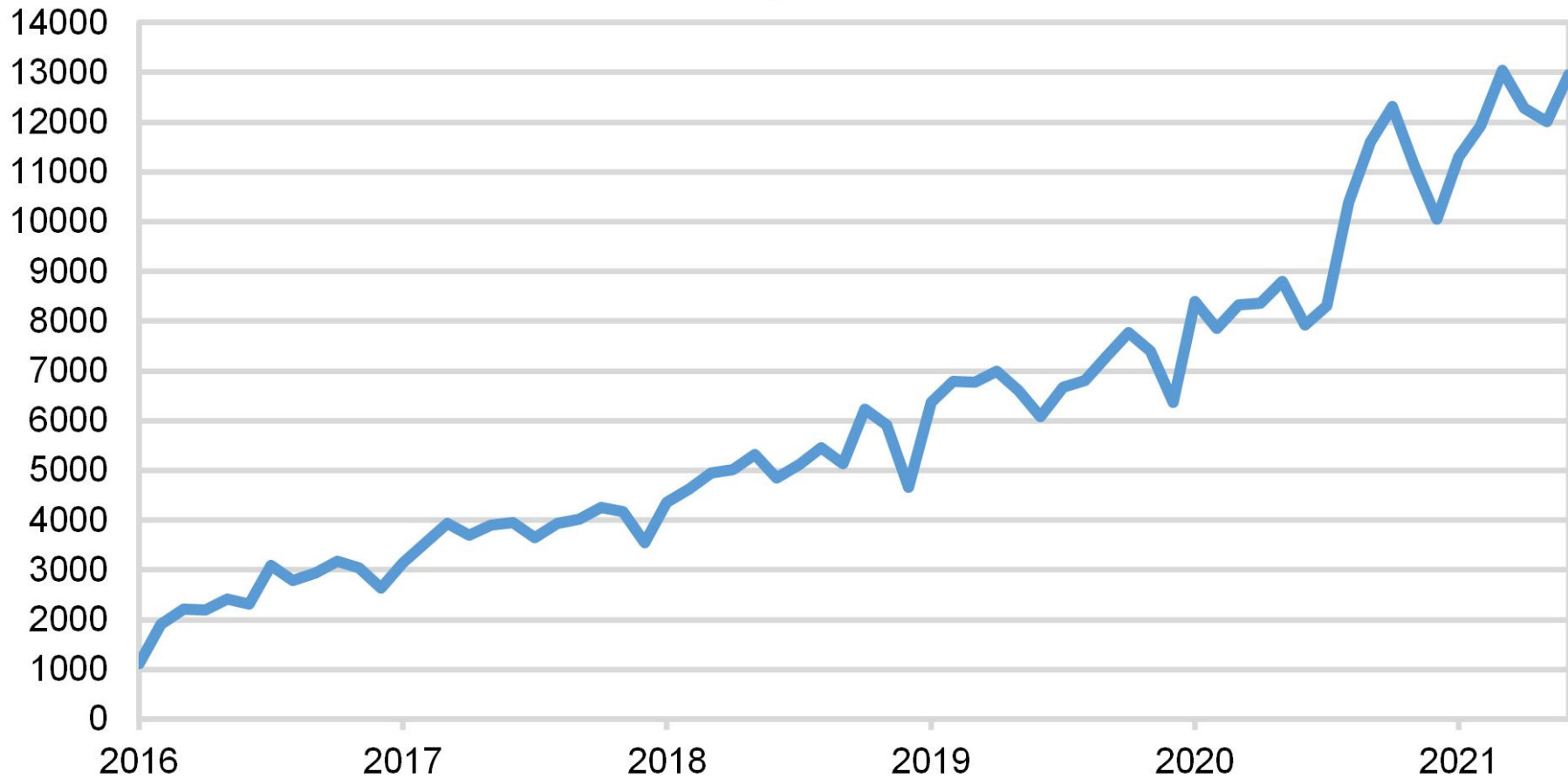
2017 COnanage support. AWS deployment.

2019 Transition to subscription funding model.

2020 Grouper and SATOSA support.

2021 InCommon Catalyst Program. SciTokens and WLCG JWT support.

Active CILogon Users Per Month



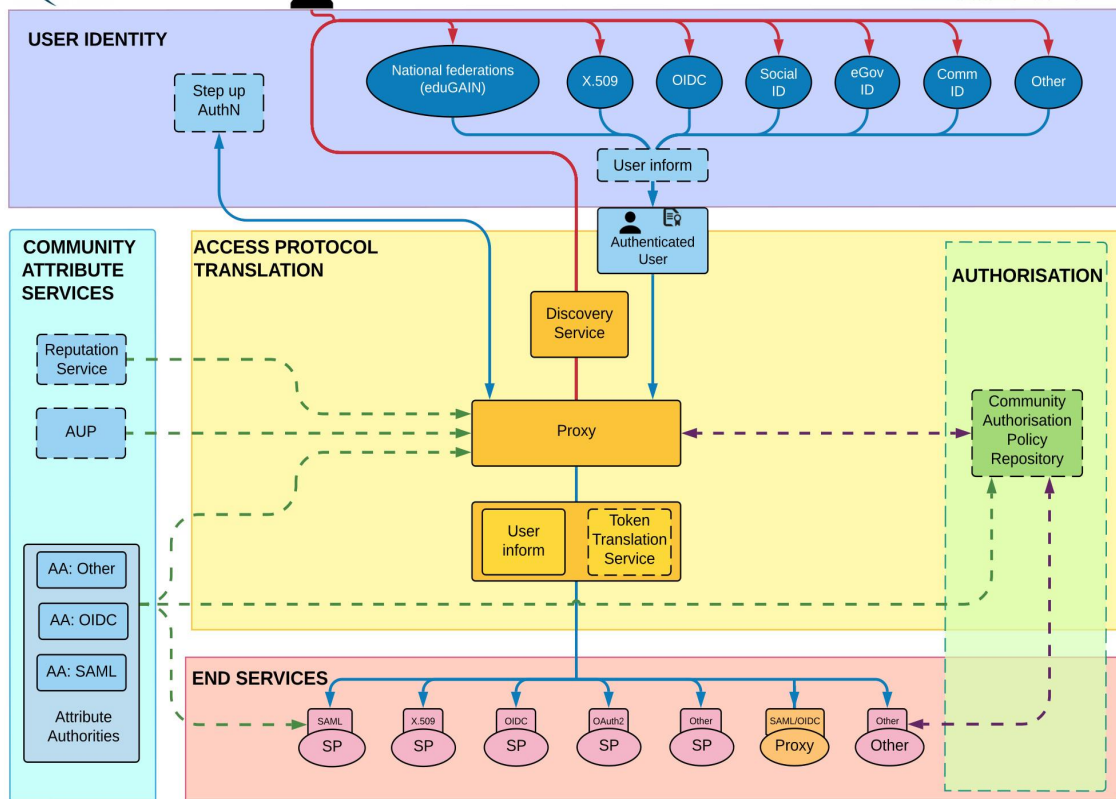
Top 20 IdPs

(by # of unique active users in June 2021)

638 National Institutes of Health	226 Purdue University Main Campus
555 Fermi National Accelerator Laboratory	215 Yale University
529 XSEDE	208 Stanford University
508 LIGO Scientific Collaboration	208 NCSA
416 University of Michigan	194 University of California-Los Angeles
377 University of Illinois Urbana-Champaign	181 University of California-San Diego
335 Michigan State University	163 Johns Hopkins
311 Penn State	155 Northwestern University
249 Massachusetts Institute of Technology	153 Northeastern University
238 University of Chicago	149 University of North Carolina Chapel Hill



AARC Blueprint Architecture



<https://aarc-community.org/architecture/>



CILogon

www.cilogon.org

federation proxy

apps don't need to handle the complexities of federation in isolation

many apps can't handle 1000s of identity providers (e.g., AWS)

a federation proxy service can handle federation for many (related) apps

a federation proxy can handle targeted user identifiers consistently

open source software for operating your own proxy:

SATOSA / SimpleSAMLphp

proxy as-a-service providers:

CILogon / eduTEAMS / Globus

campus & researcher IDs

4,000+ identity providers available via eduGAIN

including CERN, NCSA, LIGO, XSEDE, ...



OAuth-based identity providers

ORCID GitHub Google

supporting researcher mobility

supporting researchers w/o campus IdPs

informed consent

 globus Powered By  CILogon

Globus requests access to the following information. If you do not approve this request, do not proceed.


- Your CILogon username
- Your name
- Your email address
- Your username and affiliation from your identity provider
- A certificate that allows "Globus" to act on your behalf

Selected Identity Provider:

Remember this selection: ☐

By selecting "Log On", you agree to CILogon's privacy policy.

For questions about this site, please see the [FAQs](#) or send email to help@cilogon.org.
Know [your responsibilities](#) for using the CILogon Service.
See [acknowledgements](#) of support for this site.



tokens for science

WLCG Common JWT Profiles

(<https://doi.org/10.5281/zenodo.3460257>)

group based authorization (wlcg.groups)

capability based authorization (scope)

use cases:

1) identity token with groups

2) access token with groups

3) access token with authorization scopes



registering your OIDC app

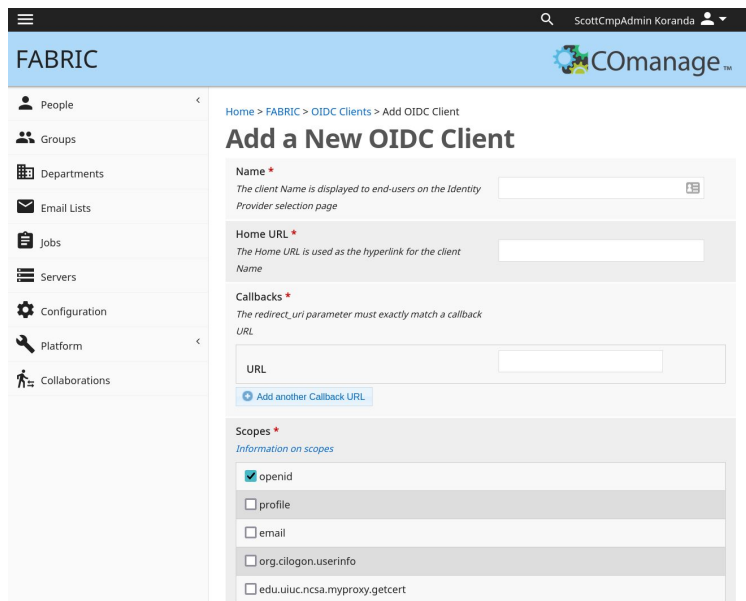
submit request at
<https://cilogon.org/oauth2/register>
including app details
save client_id and client_secret
wait for notification
by help@cilogon.org
see docs:
<http://www.cilogon.org/oidc>

A screenshot of the CILogon OIDC/OAuth 2.0 Client Registration form. The form has a green header with the CILogon logo. Below the header, the title 'CILogon OIDC/OAuth 2.0 Client Registration' is displayed. A message states: 'Please fill out the form below to register your OIDC/OAuth 2.0 client with CILogon. Your request will be manually evaluated for approval. For more information, please read the Registering a Client with an OAuth 2 server documentation.' The form contains several input fields: 'Client Name' (with a placeholder 'Name of your OAuth 2.0 client' and a note 'The Client Name is displayed to end-users on the Identity Provider selection page.'), 'Contact Email' (with a placeholder 'Your email address' and a note 'A client approval email will be sent to this address.'), 'Home URL' (with a placeholder 'URL of your client's home page' and a note 'The Home URL is used as the hyperlink for the Client Name.'), 'Callback URLs' (with a placeholder 'Enter your callback URLs, one per line. The redirect_uri parameter must exactly match a URL in this list.'), 'Scopes' (a list of checkboxes: 'email', 'edu.uiuc.ncsa.myproxy.getcert', 'openid' (checked), 'profile', and 'org.cilogon.userinfo', with a link 'Information on scopes'), 'Refresh Token Lifetime' (with a placeholder '(Optional) lifetime in seconds' and a note 'Leave blank if refresh tokens are not required.'), and a blue 'Register Client' button at the bottom.

www.cilogon.org

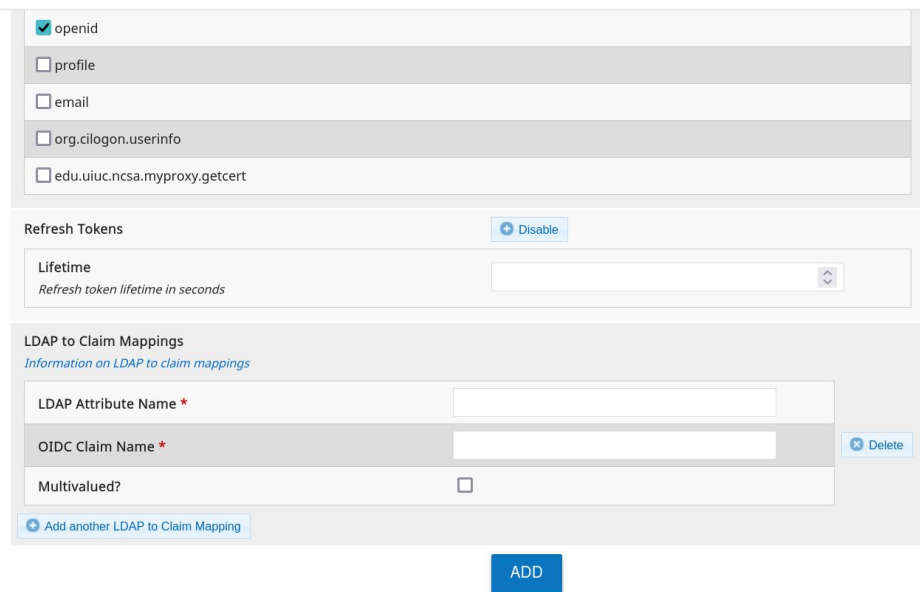
managing your OIDC apps

subscribers manage apps using CManage



The screenshot shows the FABRIC CManage interface. The left sidebar contains navigation links: People, Groups, Departments, Email Lists, Jobs, Servers, Configuration, Platform, and Collaborations. The main content area is titled 'Add a New OIDC Client' and includes the following sections:

- Name ***: A text input field with a help icon. Below it, a note states: 'The client Name is displayed to end-users on the Identity Provider selection page'.
- Home URL ***: A text input field. Below it, a note states: 'The Home URL is used as the hyperlink for the client Name'.
- Callbacks ***: A section with a note: 'The redirect_uri parameter must exactly match a callback URL'. It contains a 'URL' input field and a button 'Add another Callback URL'.
- Scopes ***: A section with a note: 'Information on scopes'. It contains a list of checkboxes: openid (checked), profile, email, org.cilogon.userinfo, and edu.uiuc.ncsa.myproxy.getcert.



The screenshot shows the 'Refresh Tokens' and 'LDAP to Claim Mappings' sections of the CManage interface.

Refresh Tokens: Includes a 'Disable' button and a 'Lifetime' section with a dropdown menu and a note: 'Refresh token lifetime in seconds'.

LDAP to Claim Mappings: Includes a note: 'Information on LDAP to claim mappings'. It contains a table with two columns: 'LDAP Attribute Name *' and 'OIDC Claim Name *'. The table has one row with empty input fields. A 'Delete' button is next to the 'OIDC Claim Name' field. Below the table is a 'Multivalued?' checkbox and a button 'Add another LDAP to Claim Mapping'.

An 'ADD' button is located at the bottom right of the form.

OAuth APIs for managing apps

subscribers can also manage OIDC apps via standard APIs:

- RFC 7591 - OAuth 2.0 Dynamic Client Registration Protocol
- RFC 7592 - OAuth 2.0 Dynamic Client Registration Management Protocol

examples of CILogon-enabled sites

Apache Airavata Test Drive, Ask.CI, ATLAS Connect, Australian BioCommons, BNL Quantum Astrometry, Brainlife.io, CADRE, CERN PanDA, Chem Compute, ClassTranscribe, CloudBank, Clowder, CMS Connect, Connect.ci, Custos, CyberGISX, CyVerse, DataCite, DataONE, Duke CI Connect, Einstein Toolkit, FABRIC, Fermilab, Flywheel, GeoChemSim, Globus, GW-Astronomy, HubICL, ImPACT, LIGO, LROSE, LS-CAT, LSST, Mass Open Cloud, MIT Engaging OnDemand, MSU HPCC OnDemand, MyGeoHub, NEON, NIH ClinOmics, NIH KnowEnG, Ocean Observatories Initiative, Open Science Chain, OSC OnDemand, OSG Connect, Pacific Research Platform, QUBES, SciGaP, SCiMMA, SEAGrid, SeedMeLab, SimVascular, Social Media Macroscope, UCLA JupyterHub, Vanderbilt JupyterHub, and XSEDE

science gateways

enable web-based computational
experiments and data management

CILogon-enabled hosted gateways:

Science Gateway Platform as a Service



CUSTOS



Supercomputing. Seamlessly. Open, Interactive HPC Via the Web

Support for Apache HTTP authentication modules including ADFS, CAS, OIDC, Shibboleth, Keycloak

CILogon support via Keycloak

Mapping federated identities to local accounts

<https://openondemand.org/>

<https://osc.github.io/ood-documentation/latest/authentication>



Ohio Supercomputer Center

An OH-TECH Consortium Member

Log in with your OSC username and password.

This system is for the use of authorized users only. Individuals using this computer system without authority, or in excess of their authority, are subject to having all of their activities on this system monitored and recorded by system personnel. In the course of monitoring individuals improperly using this system, or in the course of system maintenance, the activities of authorized users may also be monitored. Anyone using this system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity, system personnel may provide the evidence of such monitoring to law enforcement officials.

Password changes are taking longer than usual to go into effect across all OSC services, in some cases up to 17 minutes. Please be patient if you change your password.

Username

Password

☐ Remember me

Log In with your OSC account

[Forgot your password?](#) [Need Help?](#) [Register for a new account](#)

Log in with third party through CILogon

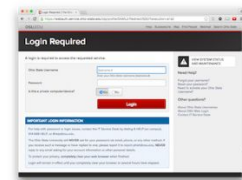
Step 1. Choose your identity provider

CILogon provides access to identity providers from many academic institutions across the state.



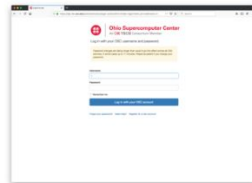
Step 2. Login via your provider

For example, here I've chosen Ohio State University as my provider and am presented OSU's login page.



Step 3. Map it to your HPC account (first login only)

If it is the first time logging in with this provider, you will need to associate it with your HPC account.



Log in with third party through CILogon

Globus

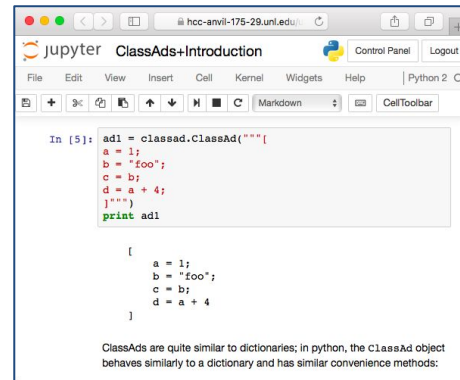
campus authentication to your
Globus Data Transfer Node

campus identities for Globus Auth



JupyterHub

notebooks support authoring/sharing of
code, math, text, and multimedia
federated authentication using CILogon
one IdP or many



<https://jupyterhub.readthedocs.io/en/latest/reference/authenticators.html>

<https://github.com/jupyterhub/oauthenticator>

<https://zero-to-jupyterhub.readthedocs.io/en/latest/authentication.html>



www.cilogon.org

Kubernetes

using Kubernetes native OIDC support
public clients, refresh tokens, API access

<https://kubernetes.io/docs/reference/access-authn-authz/>

demonstrated by PRP@UCSD

<https://ucsd-prp.gitlab.io/userdocs/start/get-access/>



The screenshot shows the 'Get access' page of the PRP Kubernetes portal. At the top is a navigation bar with links: START, TUTORIAL, RUNNING, STORAGE, DEVELOPMENT, BACK TO NAUTILUS, and BACK TO PRP. Below the navigation bar, the 'Get access' section contains a list of instructions. The first instruction is to get access to the PRP Nautilus cluster, which involves clicking the 'Login' button on the 'Nautilus portal'. A screenshot of the 'PRP Kubernetes portal' is shown, displaying the 'CILogon' login interface. The second instruction is that the user will be redirected to the 'CILogon' page. A screenshot of the 'CILogon' page is shown, which prompts the user to select an identity provider (e.g., UCSD University, UCSD@UCSD.EDU) and click 'Log On'. The third instruction is that after a successful authentication, the user will login on the portal. The fourth instruction is to notify admin users to request that their account be upgraded from 'guest' to 'user'. The fifth instruction is to add the user to a namespace. The sixth instruction is to follow the quick start page to start using Kubernetes. At the bottom of the page, there is a footer with the Pacific Research Platform logo and the text: 'PRP is supported by its members institutions and the United States National Science Foundation through the NSF awards CNS-1456638, CNS-1730158, ACI-1540112, ACI-1541349, and OAC-1826967. Any opinions, findings, 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.' The footer also includes the text '© PACIFIC RESEARCH PLATFORM | DESIGN: PRP DESIGN TEAM'.



“Managed Services to Simplify Cloud Access for Computer Science Research and Education”

University of California, San Diego (UCSD)'s San Diego Supercomputer Center (SDSC)
and Information Technology Services (ITS) Division

University of Washington (UW)'s eScience Institute

University of California, Berkeley (UCB)'s Division of Data Science

Partners

[HOME](#) / [ABOUT](#)

CloudBank has engaged with these important public partners. Click on the company logo to learn more.



Beam



Google Cloud



IBM Cloud



Microsoft
Azure



Log in

To **manage or access your CloudBank funds**, click the "Log in with *CILogon*" button using the instructions below. Login is currently limited to [funded](#) users. Contact help@cloudbank.org with any issues.

LOG IN WITH CILOGON

1. Click the "Log in with CIlogon" button to visit a page for selecting login credentials.
2. Select an organization (Identity Provider) from the list to which you belong, and for which the email address matches your existing cloudbank.org account.
3. Click the "Log On" button to visit your organization's login page.
4. Login with your organization's credentials and you will be redirected back to cloudbank.org.




[Consent to Attribute Release](#)

[CloudBank](#) requests access to the following information. If you do not approve this request, do not proceed.

- Your CILogon user identifier
- Your name
- Your email address
- Your username and affiliation from your identity provider

Select an Identity Provider

University of Illinois at Urbana-Champaign 

☐ Remember this selection 

Log On

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

For questions about this site, please see the [FAQs](#) or send email to help@cilogon.org.
Know [your responsibilities](#) for using the CILogon Service.
See [acknowledgements](#) of support for this site.

Dashboard



Manage CloudBank Funds

View and manage your CloudBank funds and grant access to associated billing accounts (IAM).



Access CloudBank Billing Accounts

View all of your cloud billing accounts and current spend. Access public cloud web portals to manage cloud services.



Monitor & Optimize Your Usage

Access Nutanix Beam to monitor usage for each of accounts and view recommendations to optimize your usage.

Billing Account Access

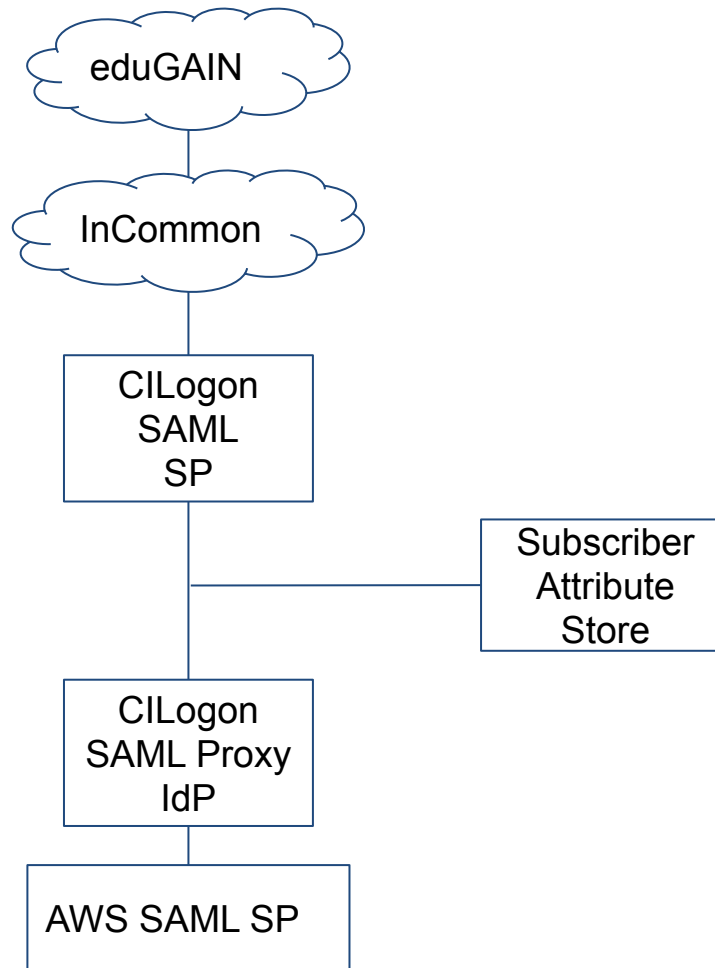
[HOME](#) / [DASHBOARD](#)

You have access to the following *billing accounts*. A billing account can be dedicated or shared with multiple people. If you are in a shared billing account, please note that we can only track usage at the tag and service level so consult your billing account manager for assistance if you need to track usage at a finer granularity.

BILLING ACCOUNT ID	CLOUD USERNAME	INITIAL PRIVILEGES GRANTED	PUBLIC CLOUD	PUBLIC CLOUD WEB CONSOLE LOGIN	FUND	AWARD AMOUNT	BALANCE
713660817510	skoranda	Login	Amazon Web Services	login ➡	Test Fund 1	\$51.00 *	\$41.39 (81%) *
test-2-1268	skoranda	Login (viewer)	Google Cloud Platform	login ➡	Test Fund 2	\$100.00 *	\$31.58 (32%) *

* No specific limit specified on this *billing account*, value is inherited from *fund*.







Australian
BioCommons

“To actively support life science research communities with community scale digital infrastructure developed and maintained in concert with international peer infrastructures.”

Target ~30,000 life science researchers in AU



CI Logon

www.cilogon.org



“Established in 2009, the Australian Access Federation (AAF) is Australia’s identity federation and part of a global network of over 61 federations around the world.”

Initial Collaboration Target



University of Melbourne
Centre for Cancer
Research (UMCCR)
“Driving innovation and
implementation for clinical
impact in cancer care”



Zero Childhood Cancer
Program (ZERO)
“Australia’s first-ever
personalised medicine
program for children and
young people with
high-risk cancer”


Home — Mozilla Firefox

File Edit View History Bookmarks Tools Help

Home x +

← → ↻ 🏠 🔒 https://registry-test.biocommons.org.au/registry/ 170% ☆ 📄 🗨️ ☰

Australian BioCommons



☰ ScottCmpAdmin Koranda 👤 ▼

🔧 Platform <

👤 Collaborations


📘 Your last login as <http://cilogon.org/serverT/users/64703> was at 2021-07-19 15:51:01 from 104.231.255.140

Welcome to CManage Registry. Please select a collaboration.

Available Collaborations

Name	Description
CManage	CManage Registry Internal CO
Australian BioCommons (Not a Member)	Australian BioCommons
Threaten Species Initiative (Not a Member)	Threaten Species Initiative
University of Melbourne Centre for Cancer Research (Not a Member)	University of Melbourne Centre for Cancer Research
Zero Childhood Cancer (Not a Member)	Zero Childhood Cancer

The Australian BioCommons is supported by Bioplatforms Australia. Bioplatforms Australia is enabled by NCRIS.

Powered by  CManage™



CILogon

www.cilogon.org



Center for Translational Data Science,
University of Chicago

“Gen3 Data Commons are cyberinfrastructure that co-locates data analysis, exploration and visualization tools with data management services for import and export of structured information like clinical, phenotypic, or biospecimen data, and data objects, like genomics data files or medical images.”

OIDC Clients — Mozilla Firefox

File Edit View History Bookmarks Tools Help

OIDC Clients

← → ↺ 🏠 https://registry-test.biocommons.org.au/registry/oa4mp_client/oa4mp_client_co_oidc_clients/index/co:3 170% ☆

Australian BioCommons

ScottCmpAdmin Koranda

Australian BioCommons

OIDC Clients


Home > [University of Melbourne Centre for Cancer Research](#) > OIDC Clients

[Add a New OIDC Client](#)

Name	Client ID	Actions
Patto Test	cilogon:/client_id/2e91851f6427452bea1eec8d0a16991c	Edit Delete
Test 01	cilogon:/client_id/eba66e1c90a0160e478abaf8fa4f6d4	Edit Delete
UMCCR Data Commons (DEV)	cilogon:/client_id/2d0a547d421d74a9cd87b0a21fca22ef	Edit Delete

Display 25 records [Go](#) Page 1 of 1, Viewing 1-3 of 3

The Australian BioCommons is supported by Bioplatforms Australia. Bioplatforms Australia is enabled by NCRIS.

Powered by  COManage™

People

My Population

Organizational Identities

Enroll

CO Petitions

Groups

Departments

Email Lists

Jobs

Servers

Configuration

Platform

Collaborations

First commit of CILogon authentication #896

Edit

Open with ▾

Merged

paulineribeyre merged 3 commits into `uc-cdis:master` from `cilogon:feat/cilogon` on Apr 21

Conversation 7

Commits 3

Checks 5

Files changed 9

+124 -3



skoranda commented on Apr 8 • edited by paulineribeyre ▾

Contributor

😊 ...

First commit of CILogon authentication. CILogon provides a standards-compliant OpenID Connect (OAuth 2.0) interface to federated authentication including InCommon, the Australian Access Federation (AAF), and eduGAIN. CILogon OpenID Connect (OIDC) client registration is available to researchers and scholars at <https://cilogon.org/oauth2/register>

New Features

Add CILogon as an authentication option. CILogon provides a standards-compliant OpenID Connect (OAuth 2.0) interface to federated authentication including InCommon, the Australian Access Federation (AAF), and eduGAIN. CILogon OpenID Connect (OIDC) client registration is available to researchers and scholars at <https://cilogon.org/oauth2/register>

Reviewers



williamhaley



paulineribeyre



Assignees

No one assigned

Labels

None yet

Milestone

No milestone

Notifications

Customize



CILogon

www.cilogon.org

Global Authz Interoperability



Global Alliance
for Genomics & Health
Collaborate. Innovate. Accelerate.

GA4GH Passports and the Authorization and Authentication Infrastructure



CILogon

www.cilogon.org

GA4GH AAI

OpenID Connect Profile


“In particular, this specification introduces a JSON Web Token (JWT) syntax for an access token to enable an OIDC provider (called a Broker) to allow a downstream access token consumer (called a Claim Clearinghouse) to locate the Broker’s /userinfo endpoint as a means to fetch GA4GH Claims. This specification is suggested to be used together with others that specify the syntax and semantics of the GA4GH Claims exchanged.”

CILogon Demo Success Page. — Mozilla Firefox

File Edit View History Bookmarks Tools Help ∞

CILogon Demo Success x +

← → ↺ 🏠 https://demo0.cilogon.org/cilogon2/ready?code=NB2HI4DTHIX565DFON2C4Y3JNRXW0330FZXEXZPN5QXK5DIGIXTEMRZMY2TAZB5GFTDKNZWH 170% ☆ 📧 🔴 🔊 📶



CILogon

Success!

- [Show/Hide User Info](#)

```
{
  "sub": "http://cilogon.org/serverT/users/27326098",
  "idp_name": "University of Illinois at Urbana-Champaign",
  "eppn": "skoranda@illinois.edu",
  "cert_subject_dn": "/DC=org/DC=cilogon/C=US/O=University of Illinois at Urbana-Champaign/CN=Scott Koranda T27326098",
  "eptid": "urn:mace:incommon:uiuc.edu!https://cilogon.org/shibboleth!3fsruagzH47Z8Q0fjwaXGRnFVR8=",
  "iss": "https://test.cilogon.org",
  "entitlement": "urn:mace:dir:entitlement:common-lib-terms",
  "given_name": "Scott",
  "acr": "urn:oasis:names:tc:SAML:2.0:ac:classes:PasswordProtectedTransport",
  "aud": "cilogon:test.cilogon.org/demo0",
  "idp": "urn:mace:incommon:uiuc.edu",
  "token_id": "https://test.cilogon.org/oauth2/idToken/7361b76653124b76098696b676fc41bf/1627044179747",
  "affiliation": "staff@illinois.edu;employee@illinois.edu;member@illinois.edu",
  "name": "Scott Koranda",
  "itrustruin": "659628827",
  "family_name": "Koranda",
  "ga4gh_passport v1": [
    "eyJ0eXAiOiJKV1QiLCJraWQwOiIyNDRCMjM1RjZCMjhFMzQxMDhEMTAxRUFDNzZM2MkM0RSIsImFsZyI6IjJTMjU2In0.eyJzdWIiOiJodHRwOi8vY2lsb2dvbi5vcmcvc2Vyd",
    "eyJ0eXAiOiJKV1QiLCJraWQwOiIyNDRCMjM1RjZCMjhFMzQxMDhEMTAxRUFDNzZM2MkM0RSIsImFsZyI6IjJTMjU2In0.eyJzdWIiOiJodHRwOi8vY2lsb2dvbi5vcmcvc2Vyd",
    "eyJ0eXAiOiJKV1QiLCJraWQwOiIyNDRCMjM1RjZCMjhFMzQxMDhEMTAxRUFDNzZM2MkM0RSIsImFsZyI6IjJTMjU2In0.eyJzdWIiOiJodHRwOi8vY2lsb2dvbi5vcmcvc2Vyd"
  ],
  "email": "skoranda@illinois.edu",
  "cid": "cilogon:test.cilogon.org/demo0"
}
```

- [Show/Hide Access Token](#)
- [Show/Hide ID Token](#)
- [Show/Hide certificate subject](#)



CILogon

www.cilogon.org

<https://demo0.cilogon.org/>

Thanks!

contact:

help@cilogon.org



CILogon

www.cilogon.org

extra slides

our vision

enable logon to scientific cyberinfrastructure (CI)
seamless IAM for academic research collaborations
use campus identity (eduGAIN/InCommon/Shibboleth)
manage onboarding/offboarding/attributes/groups/roles in
one place (CManage)
integrate with a variety of research apps
(OIDC, OAuth, JWT, SAML, LDAP, X.509, SSH)

our vision

enable logon to scientific cyberinfrastructure (CI)

seamless IAM for academic research collaborations

use campus identity (eduGAIN/InCommon/Shibboleth)

manage onboarding/offboarding/attributes/groups/roles in one place
(CManage, Grouper)

integrate with a variety of research apps

(OIDC, OAuth, JWT, SAML, LDAP, X.509, SSH)

via a non-profit, open source, reliable, sustainable hosted IAM service

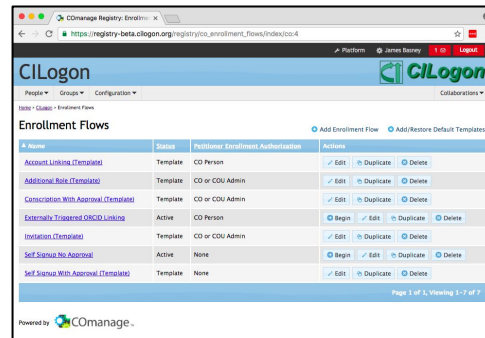
examples

grid computing

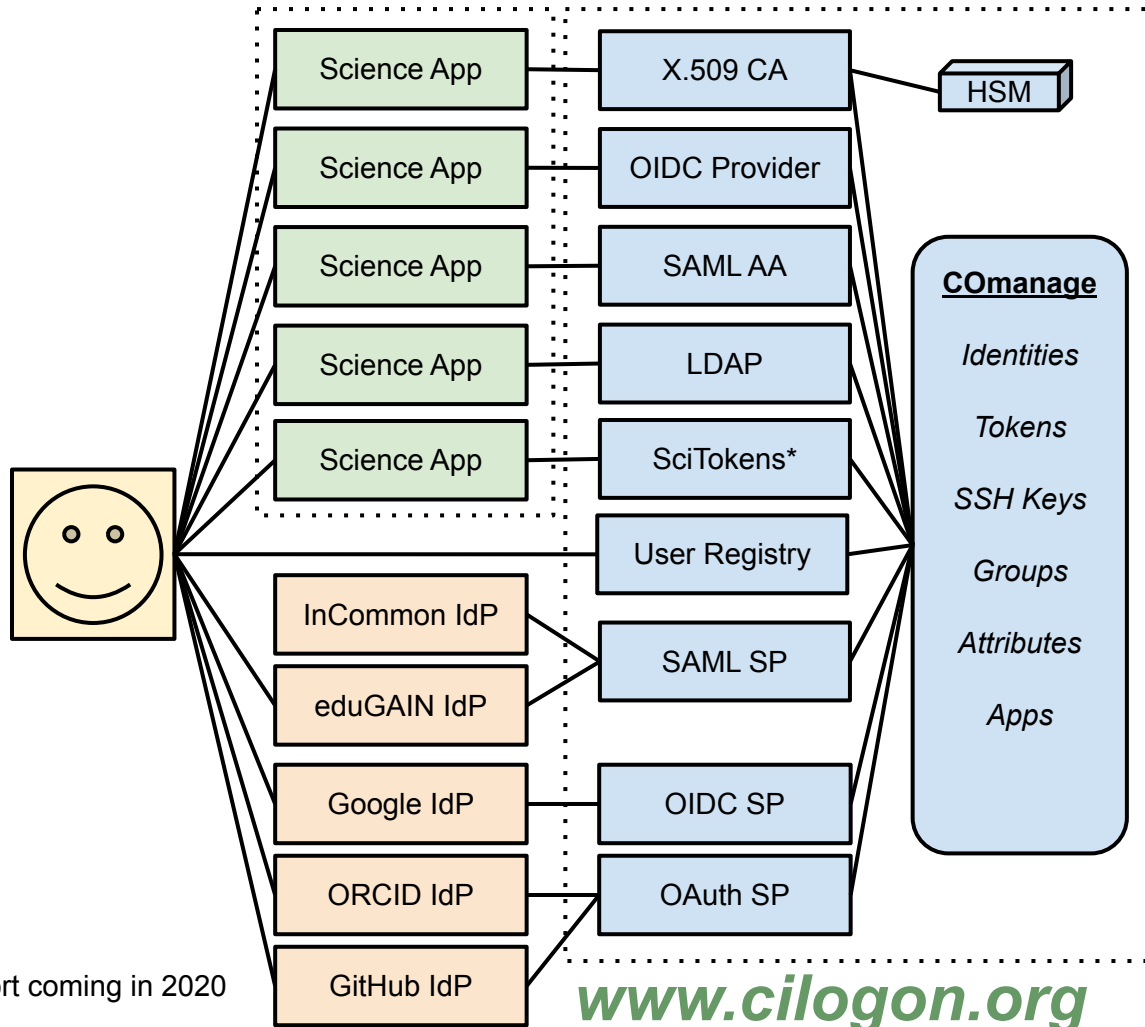
science gateways

jupyter notebooks

campus HPC clusters



federated identity management and collaborative organization management



building blocks

InCommon Federation:

single sign-on for US R&E

eduGAIN:

global interfederation

REFEDS:

international standards for R&E federations

InCommon Trusted Access Platform:

open source IAM software

InCommon Trusted Access Platform

Shibboleth: federated single sign-on

COmanage: collaborative organization management

Grouper: enterprise group and access management (including point-in-time auditing)

Midpoint: provisioning engine

<https://www.incommon.org/trusted-access/>

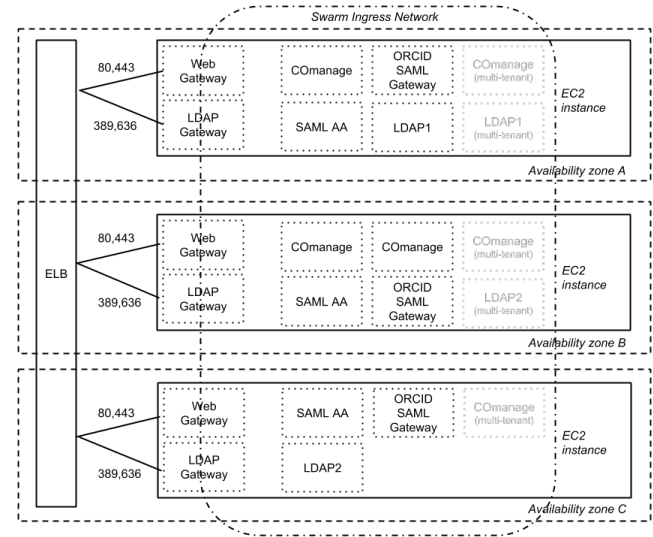
deployed to *AWS*

benefits of Net+ AWS

multiple availability zones

Docker containers in swarm mode

using R53 EC2 RDS ELB EFS



our baseline: REFEDS R&S

Attribute release continues to be the #1 stumbling block for new users.

We operate under the REFEDS R&S policy.

Does your campus support REFEDS R&S?

<https://refeds.org/research-and-scholarship>

<https://cilogon.org/testidp/>

security for global interfederation

We operate under the SIRTFI
framework: Security Incident Response
Trust Framework for Federated Identity

<https://refeds.org/sirtfi>



Supported by the NCSA Incident
Response Team

<https://security.ncsa.illinois.edu/>



certificates for int'l science

CILogon CA policy update for int'l use approved in
2016 by Interoperable Global Trust Federation

Requiring R&S + Sirtfi

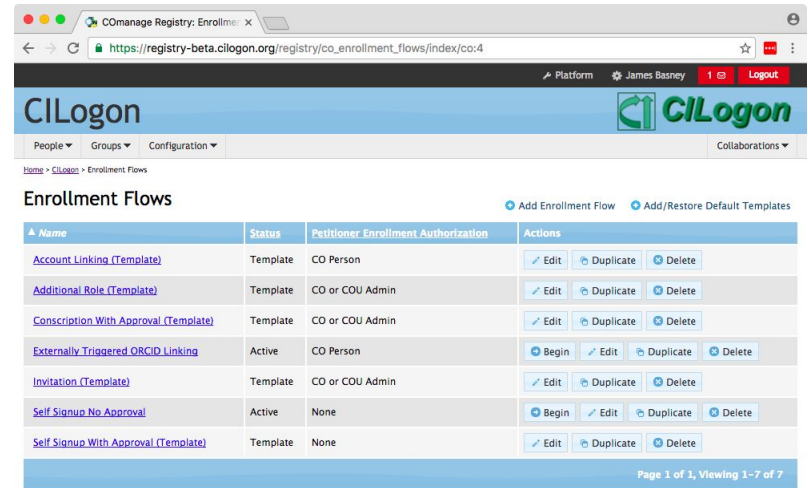
Select An Identity Provider:

CEReq - Centre d'Etudes et de Recherches sur les Quali
CERN
CESNET
CETEM - Centro de Tecnologia Mineral



managing project groups/roles

COmanage provides:
enrollment flows
expiration policies
self service permissions
pipelines



The screenshot shows the CILogon COmanage Registry interface. The browser address bar displays https://registry-beta.cilogon.org/registry/co_enrollment_flows/index/co:4. The page header includes the CILogon logo and navigation links for Platform, James Basney, and Logout. Below the header, there are tabs for People, Groups, and Configuration. The main content area is titled "Enrollment Flows" and includes links to "Add Enrollment Flow" and "Add/Restore Default Templates". A table lists various enrollment flows with columns for Name, Status, Petitioner Enrollment Authorization, and Actions.

Name	Status	Petitioner Enrollment Authorization	Actions
Account Linking (Template)	Template	CO Person	Edit Duplicate Delete
Additional Role (Template)	Template	CO or COU Admin	Edit Duplicate Delete
Conscription With Approval (Template)	Template	CO or COU Admin	Edit Duplicate Delete
Externally Triggered ORCID Linking	Active	CO Person	Begin Edit Duplicate Delete
Invitation (Template)	Template	CO or COU Admin	Edit Duplicate Delete
Self Signup No Approval	Active	None	Begin Edit Duplicate Delete
Self Signup With Approval (Template)	Template	None	Edit Duplicate Delete

Page 1 of 1, Viewing 1-7 of 7

Powered by  COmanage

<https://www.cilogon.org/comanage>



collaboration management platform
built for federated identity

Open Source

Internet2/InCommon

PHP

20+ deployments managing more than 50K federated identities

OpenID Connect (OIDC)

third gen OpenID (after OpenID 1.0/2.0)

specifications: <https://openid.net/connect/>

authentication layer on top of OAuth 2.0 authorization framework (RFC 6749)

adds new token type: ID Token

adds new OAuth resource: UserInfo

standard claims and scope values

MediaWiki



custom CManage user identifier assignment for
MediaWiki username

MediaWiki's OIDC extension for auth

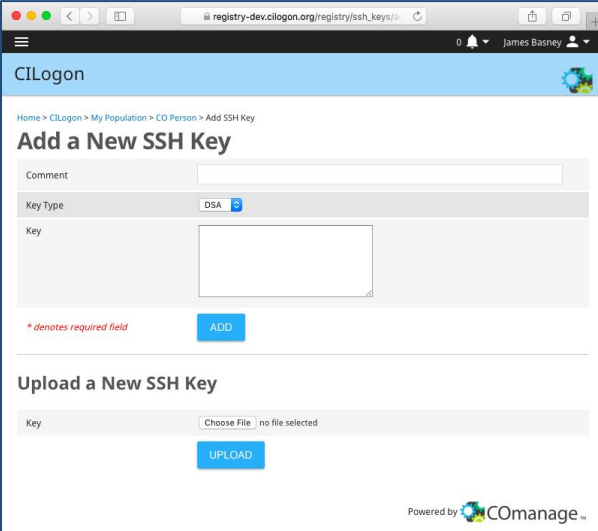
CILogon OIDC Provider sends custom MediaWiki
username as sub claim

MediaWiki's OAuth extension for CManage account
provisioner

<http://www.cilogon.org/mediawiki>

federated SSH keys

users register SSH public key during
enrollment
associated with their federated identity
provisioned to LDAP
used by SSH server for authorization



The screenshot shows a web browser window with the URL `registry-dev.cilogon.org/registry/ssh_keys`. The page is titled "CILogon" and shows a user profile for "James Basney". The main heading is "Add a New SSH Key". Below this, there is a form with the following fields: "Comment" (text input), "Key Type" (dropdown menu showing "DSA"), and "Key" (text area). A red asterisk note indicates that the "Key" field is required. There is an "ADD" button at the bottom of the form. Below the "Add a New SSH Key" section, there is another section titled "Upload a New SSH Key" with a "Choose File" button and an "UPLOAD" button. The footer of the page says "Powered by CManage..".

<https://serverfault.com/questions/653792/ssh-key-authentication-using-ldap>

support for idphint specification

<https://www.cilogon.org/oidc>

<https://aarc-project.eu/guidelines/aarc-g049/>

AARC-G049 A specification for IdP hinting

This document defines a generic browser-based protocol for conveying – to services – hints about the IdPs or IdP-SP-proxies that should be used for authenticating the principal.

attribute-based authz example

eduPersonAffiliation: specifies the person's relationship(s) to the institution in broad categories

permissible values: faculty, student, staff, alum, member, affiliate, employee, library-walk-in

specification: <https://refeds.org/eduperson>

use cases:

- software licenses
- data access restrictions
- resource allocation limits

role-based authz example: AWS

COmanage assigns Roles to each Person

via enrollment, approval workflows, expiration, etc.

linked to federated identities of the Person

CILogon SAML Proxy asserts Roles to AWS at authentication time

SAML proxy allows use of multiple identity providers

AWS IAM maps Roles to Permissions for access to AWS services

AWS Security Token Service (STS) provides temporary security credentials for CLI/API access

configuring your OIDC app

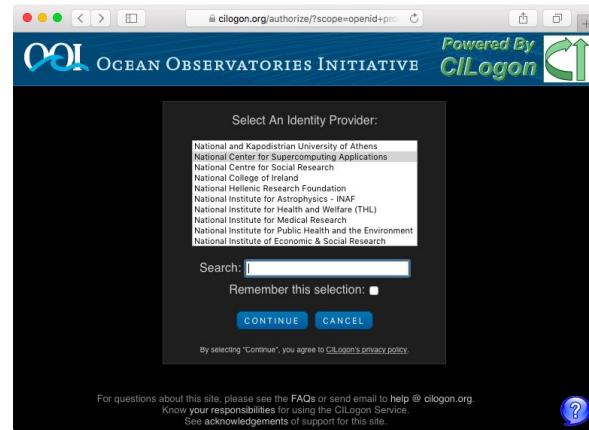
OIDC Discovery URL provides metadata

<https://cilogon.org/.well-known/openid-configuration>

contact help@cilogon.org to
customize IdPs, claims, etc.

docs / examples:

<http://www.cilogon.org/oidc>



integration examples

science gateways

HPC clusters

Jupyter notebooks

wikis

mailing lists

Kubernetes

Globus

SSH

grid computing

AWS

G Suite

Auth0

seamless campus integration

bypass CILogon screens when accessing local campus research applications

consent managed locally by campus

always use campus IdP

an OpenID Connect proxy to your campus SAML IdP

example: <https://cybergateway.iu.edu/>

bridging campus and VO IAM

passing campus and VO attributes to the application

obtaining user consent via OIDC

manage VO attributes in CManage

customize attributes/claims per app

application-specific identifiers

linking campus, researcher, and VO IDs

driving authorization via group memberships

voPerson

an LDAP attribute schema (object class)
with usage recommendations for VOs

voPersonApplicationUID	voPersonExternalID
voPersonAuthorName	voPersonID
voPersonCertificateDN	voPersonSoRID
voPersonCertificateIssuerDN	voPersonStatus

<https://voperson.org/>

Zoom Survey! Thank you.

Next IAM Online: August 11, 2021, 2:00 p.m. ET



CAMP WEEK



Go CAMPing

CAMP includes community presentations such as case studies, organizations' innovations in identity management, best practices, and other information that helps move the community forward.

2021 CAMP dates: **October 4 - 8**

Learn more at:

<https://incommon.org/academy/camp-meetings/2021-camp-week/>