

CILogon

Supporting Research Collaborations

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IAM for Research Collaborations

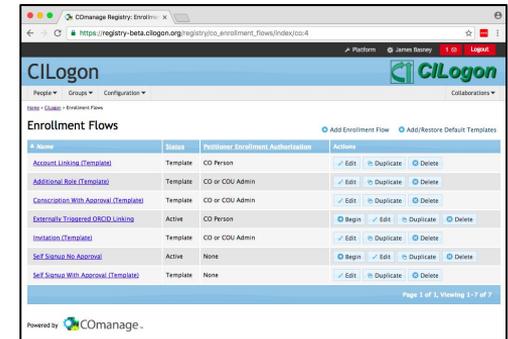
CILogon: 15+ year sustained effort to enable secure logon to scientific cyberinfrastructure (CI)

for seamless identity and access management (IAM)

using federated identities (SAML, OIDC, OAuth, JWT) so researchers log on with their existing credentials

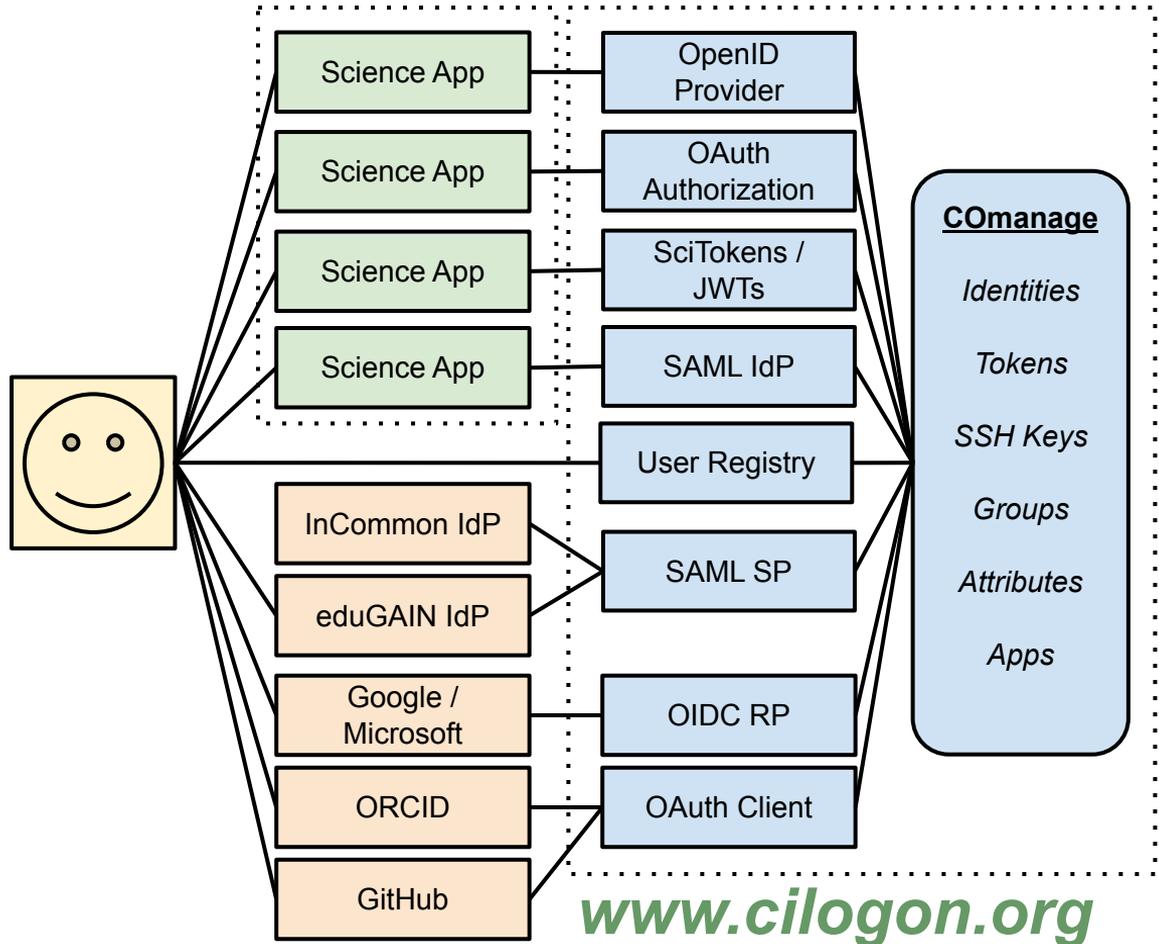
supporting 60,000+ active users from 800+ organizations around the world

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 Google, GitHub, InCommon/eduGAIN, Microsoft, OneID, and ORCID credentials



tokens for science

OpenID Connect (OIDC) ID Tokens (e.g., ACCESS)
containing user attributes and group memberships
from the research community (via COmanage Registry)
and from the researcher's home institution (via InCommon)



SciTokens (e.g., LIGO)
containing authorization scope values
determined by per client/subscriber policy



WLCG Tokens (e.g., Fermilab)
support for `wlcg.groups` and `storage.*|compute.*` scopes



trustworthy long-term operations

reliability

scalability

sustainability

operational security

managing technical debt

managing dependencies

preparing for transitions

community engagement

our team

NCSA Team

Jeff Gaynor, Jim Basney, Richelle Lu-Rivera, Robin Blair, Scott Koranda, Shayna Atkinson, and Terry Fleury

Partners

Australian Access Federation, InCommon, and SCG Collaboration Group



www.cilogon.org

our subscription model

Basic Authentication

best effort support for academic research projects using manually approved OIDC clients

Essential Service

multi-tenant CManage Registry, OAuth dynamic client registration, cloud integrations, custom configurations, SLA

Full Service

dedicated CManage Registry, custom JWTs, OAuth dynamic client registration, cloud integrations, custom configurations, SLA

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

our 15+ year history (1)

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 COmanage support. AWS deployment.

2019 Transition to subscription funding model with 5 subscribers.

our 15+ year history (2)

2020 AWS, Azure, GCP, and IBM Cloud integration for NSF CloudBank.

2021 SciTokens and WLCG JWT support.

2022 COmanage Registry for NSF ACCESS. Virgo and KAGRA for IGWN.

2023 AWS Sydney deployment for Australian Access Federation. IPv6 support.

2024 25 subscribers including Digital Research Alliance of Canada.

2025 Federation with DOE OneID. X.509 CAs retired.

Next: COmanage Registry v5

CManage Registry v5

major web application framework upgrade, addressing technical debt

UI/UX redesign focused on usability, accessibility, and workflow

UI/UX streamline and simplification for end user

improved customization of Enrollment Flows

<https://spaces.at.internet2.edu/display/CManage/CManage+Product+Roadmap>

Case Study: ITRSS (1)

“The Division of Information Technology Research Support Solutions team (ITRSS) provides investigators with in-person assistance to meet their research-related IT needs. We advocate for and prioritize the development of next-generation computing resources and work to strengthen the university’s research data ecosystem.”

SSH/POSIX access to computing clusters for ~5000 MU affiliated users

Microsoft Entra IdM with ~1000 authorized groups for ITRSS

Evolve to enable collaborator access without provisioning MU accounts



Case Study: ITRSS (2)

Organizational Identity Source (OIS) plugin to reflect authorized group UM users from Entra into CManage Registry

Synchronize name, email, POSIX, group memberships.

Traditional “self-signup with approval” enrollment flow for collaborators.

Leverage CManage Registry Identifier and UnixCluster data models to layer collaborator accounts while respecting existing UID, GID, ...

Authentication to cluster using OIDC flow to Open OnDemand (OOD)

Authorization using POSIX source from LDAP provisioned by CManage





[Home](#) > [ITRSS](#) > [My Population](#) > Buddy Scharfenberg

Edit Buddy Scharfenberg

^ Name

Add

Buddy Scharfenberg	Primary	Official	
Buddy Scharfenberg		Official Entra	

^ Identifiers

Add

0fb421a6-f836-4f18-9b12-575835c97780	System of Record ID	Entra	
blspcy@umsystem.edu	userPrincipalName	Entra	
R	primaryCampus	Entra	
blspcy	UID	Entra	
925906	uidNumber	Entra	
925906	GID Number	Entra	



Welcome to Open OnDemand for DeltaAI.

Home / All Apps

Show 10 entries Search:

Name	Category	Sub Category
 Files	Files	
 Active Jobs	Jobs	
 Code Server	Interactive Apps	Servers
 DeltaAI Shell Access	Clusters	
 Job Composer	Jobs	
 Jupyter Lab	Interactive Apps	Jupyter



```
File Edit View History Bookmarks Tools Help
Dashboard - DeltaAI OnDem x Shell - DeltaAI OnDemand x +
gh-ondemand.delta.ncsa.illinois.edu/pun/sys/shell/ssh/gh-login
Host: gh-login Themes: Default

NCSA DeltaAI System

Login with NCSA Kerberos + NCSA Duo multi-factor.

DUO Documentation: https://go.ncsa.illinois.edu/2fa

Last login: Mon Feb  9 00:59:37 2026 from 141.142.248.3
           CrayOS      NVIDIA Grace-Grace aarch64

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User Guide: https://docs.ncsa.illinois.edu/systems/deltaai

DeltaAI Slurm has had some recent configuration changes:
1. CPU cores and GPUs for a given job are more likely to be allocated from
   the same superchip(s).
2. A prolog will run before each job that will sync memory and drop caches
   in order to clean up memory that may be stuck on the node's GPUs. This
   may cause a brief slowdown for other jobs already running on the node.
3. Slurm is now topology aware. Run 'scontrol show topo' for details.
skoranda@gh-login01:~> █
```

OAuth Device Flow for SSH

Powered By  CILogon

CILogon User Code Verification

 You have successfully approved the user code. Please return to your device for further instructions.

```
1 / 1 + - x
Title: skoranda@bastion: -
t: skoranda@bastion: -
skoranda@parsley:~$ ssh bastion.mess-project.net
(skoranda@bastion.mess-project.net) Authenticate at
-----
https://test.cilogon.org/device/?user_code=J67-FKQ-2TP
-----
Hit enter after you have authenticated
Welcome to the MESS computing cluster
skoranda@bastion:~$
```

https://github.com/stfc/pam_oauth2_device

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

https://youtu.be/swoxhqBd_es

Thanks!

contact:

skoranda@illinois.edu

help@cilogon.org