

2018 Workshop



CALIFORNIA COMMUNITY COLLEGES

OpenCCC
Federated Identity Initiative



Welcome

Part 1: Identity Management Overview

- SSO vs Federated Identity
- Authentication & Authorization
- SAML
- Identity providers and Service Providers

Part 2: OpenCCC Overview

- Federated Identity Initiative
- Online Student Account & CCCID
- SSO Federation
- Proxy Integration Project
- Student Workflows

Conclusion: OpenCCC Roadmap

OpenCCC



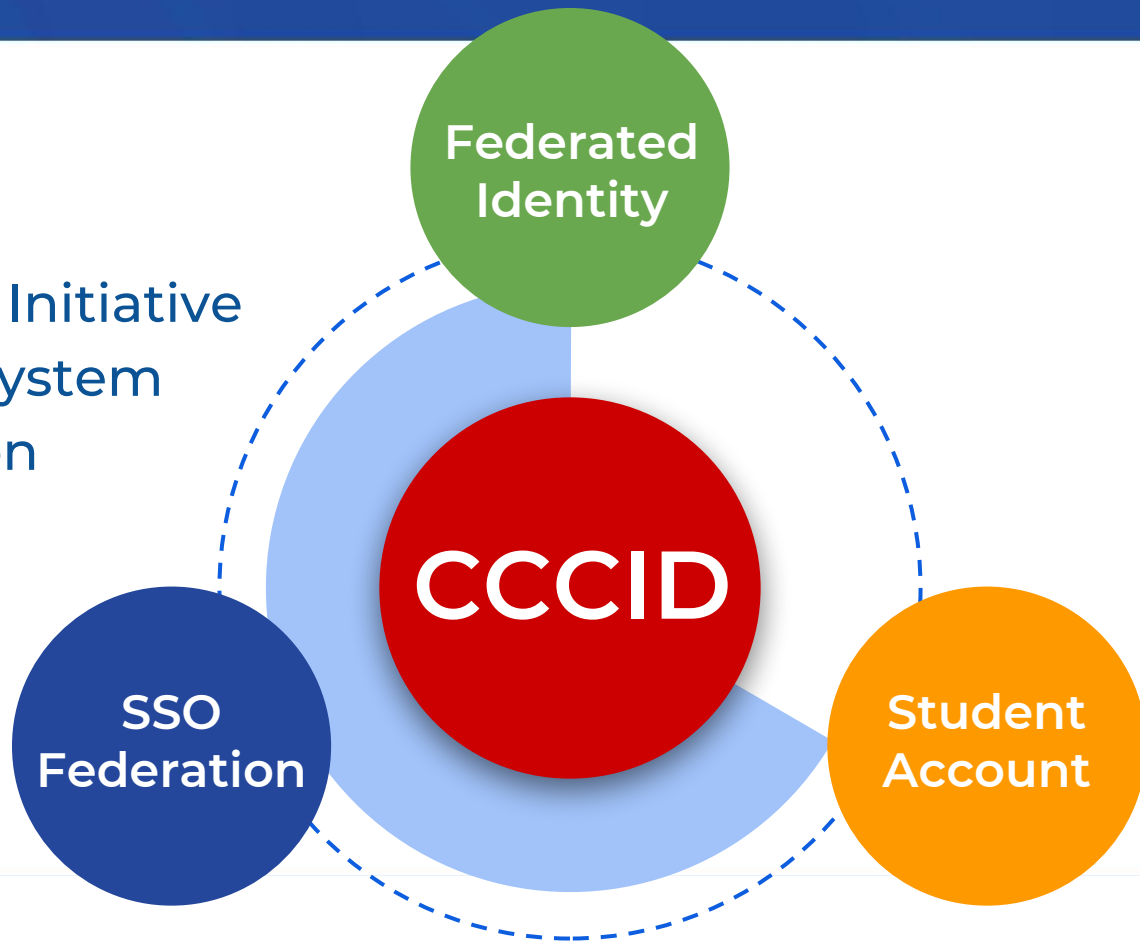
OpenCCC

Systemwide Federated Identity Initiative



OpenCCC

1. Federated Identity Initiative
2. Student Account System
3. CCC SSO Federation





OpenCCC

- Owned by the CCC Chancellor's Office
- Developed by the CCC Technology Center
- Integrates with existing & future CCC apps
- Future MIS Data Integration
- Controls statewide outcomes

Operates within the InCommon Federation with:

- CSUConnect (California State University)
- UCTrust (University of California)
- Institutions, government entities, and U.S. companies





Goals

1. Establish one systemwide ID for every CCC student
2. Provide a way to tie together student data
3. Provide **better outcomes for institutional improvement** as students swirl among our colleges
4. Deliver new, online services to students & colleges in a single sign on environment

OpenCCC

Federated Identity Initiative

2003 – 2012

CENIC: Statewide Fiber Optic Network
Systemwide Technology Infrastructure

Hosting and Listserv

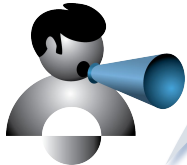
Centralized Library Content

Technology Governance (SAC / TTAC)

TechEDge

eTranscript California

CVC – Online Ed Catalog



2003

2012

2013

2015

2016

2017

Student-Oriented Architecture is Conceived

CCC Tech Center conceptualizes the SOA architecture: A student-oriented, guided pathway in a single sign on environment through online web applications, integrated courses and learning, and data exchange.

OpenCCC

Student Account System

2012

CCCApply:

Online Application for Admission

Administrator

Report Center

Download Client

College Implementations

Shibboleth IdP – Store CCCID

One Million CCCIDs
by December 2013

2017

2016

2015

2013

2012

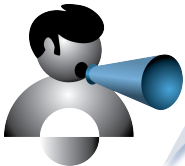
2003

OpenCCC Student Account & CCCID Is Launched

Contra Costa College goes live on CCCApply

BOG Fee Waiver Application is on deck

54 colleges live by end of 2014



OpenCCC

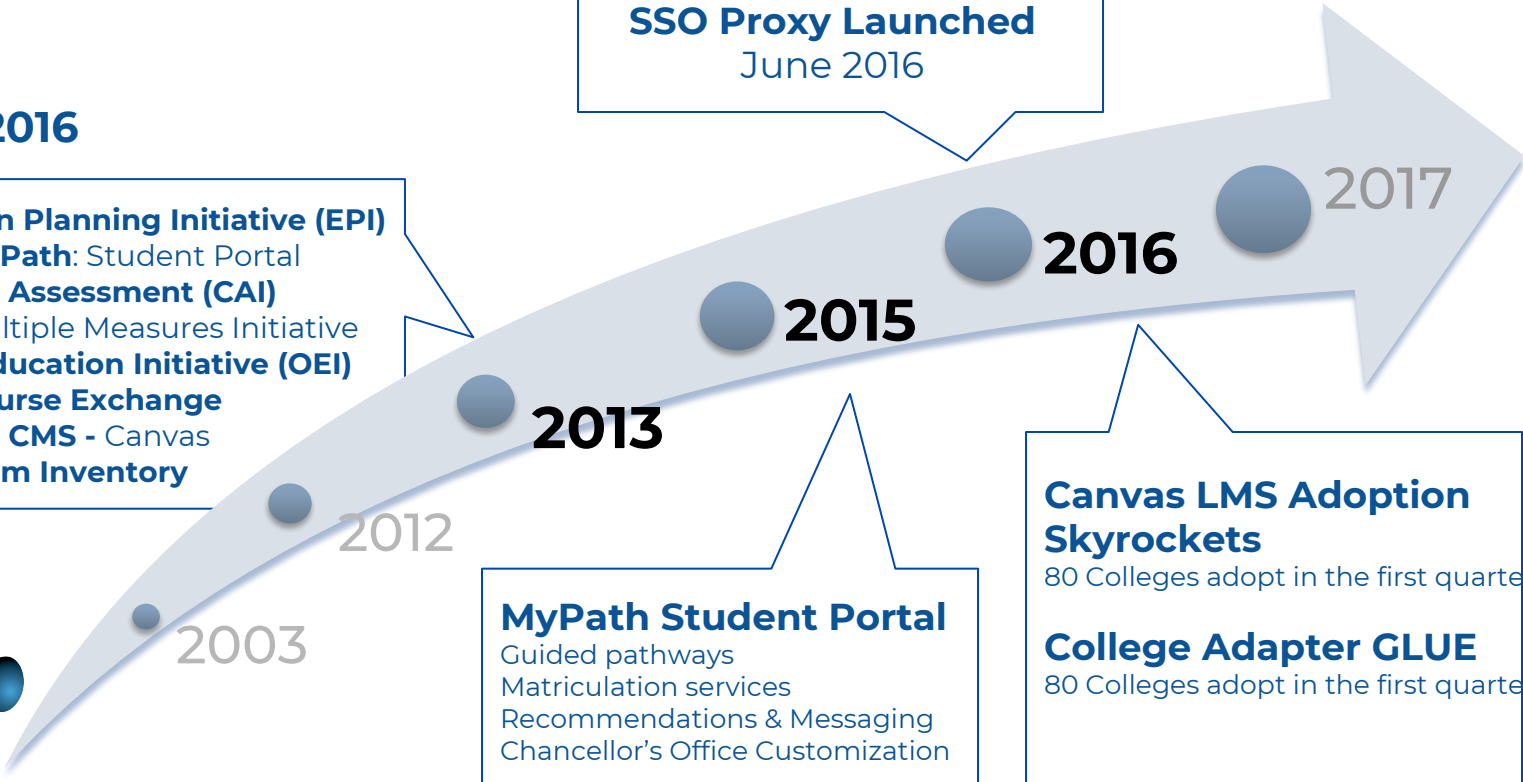
SSO Federation

4 Million CCCIDs
by December 2016

SSO Proxy Launched
June 2016

2013 - 2016

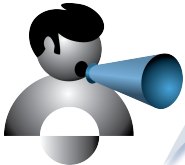
Education Planning Initiative (EPI)
MyPath: Student Portal
Common Assessment (CAI)
Multiple Measures Initiative
Online Education Initiative (OEI)
Course Exchange
Common CMS - Canvas
Curriculum Inventory



Canvas LMS Adoption Skyrockets
80 Colleges adopt in the first quarter

College Adapter GLUE
80 Colleges adopt in the first quarter

MyPath Student Portal
Guided pathways
Matriculation services
Recommendations & Messaging
Chancellor's Office Customization





OpenCCC Federated Identity

OpenCCC uses **standards-based, open source** specifications to insure privacy and security while allowing access to applications within the CCC.



Operates within the InCommon Federation with:

- CSUConnect (California State University)
- UCTrust (University of California)
- Institutions, government entities, and U.S. companies



Scalable Technology Solution

Secure

Scalable

Open source integrated technologies

OpenCCC take advantage of economies of scale and are facilitated by governance from the colleges, themselves.

The CCC SSO Federation offers a common framework for shared management of access to CCC resources and secure web applications.





Security Controls

To ensure the security of millions of student records containing personally identifiable information, our cloud hosting provider and our security practices and controls meet the highest industry standards (currently SOC 2.0 and ISO 27001).





Utilizing Outcomes Data

Year 5 of OpenCCC - Most students have CCCIDs by now

Incorporate CCCID into MIS DED
so that outcomes data in MIS can be tied to pre-enrollment data in CCCApply, assessment data in CCCAssess, education plans, and more.





InCommon Federation

Free membership for Colleges enabling single sign on access to system-wide applications and free security certs

- Facilitates SSO from local campuses
- Operates “assurance program”
- Offers free “security certificates”
- Multi-factor authentication services

“Provides a secure and private “trust fabric” for research and higher education, and their partners...”

InCommon Partnership

Immediate Savings for Security Certificates

Savings in using the security certificate program.

Single Sign-On for Higher Education Vendors

Microsoft, Blackboard, Dropbox, National Student Clearinghouse, rSmart, Parchment, EBSCO, are participants providing services to colleges.

SSO for CCC System-wide Technology Offerings

Low or no-cost offerings to colleges for all CCC system-wide technology applications.

InCommon®

Serving Over 10 Million Users



InCommon Membership

- To sign up, visit www.incommon.org/ccc and follow the instructions provided

Already a Member? Get Reimbursed!

- Colleges that are already members can receive a refund of their membership fees.
- Go to InCommon.org/ccc and sign the [CCC/InCommon Participation Agreement and Addendum](#) and email, snail mail, or fax to InCommon LLC.

Questions?

- For questions about InCommon membership, please contact Keith Franco, Statewide Services, CCC Technology Center, at francoke@cccnex.net or 530.520.3471



OpenCCC Student Account System

Generates the CCCID

OpenCCC + **CCCApply** launched in 2012

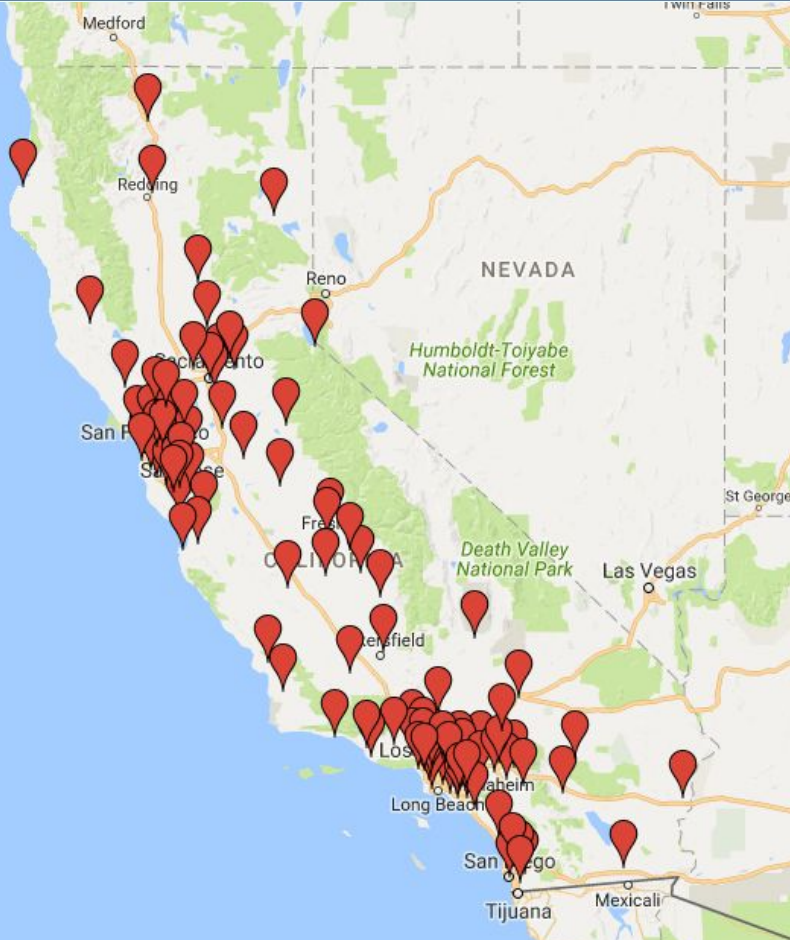
Nearly 5 million students have a CCCID

Current duplication rate = 0.002

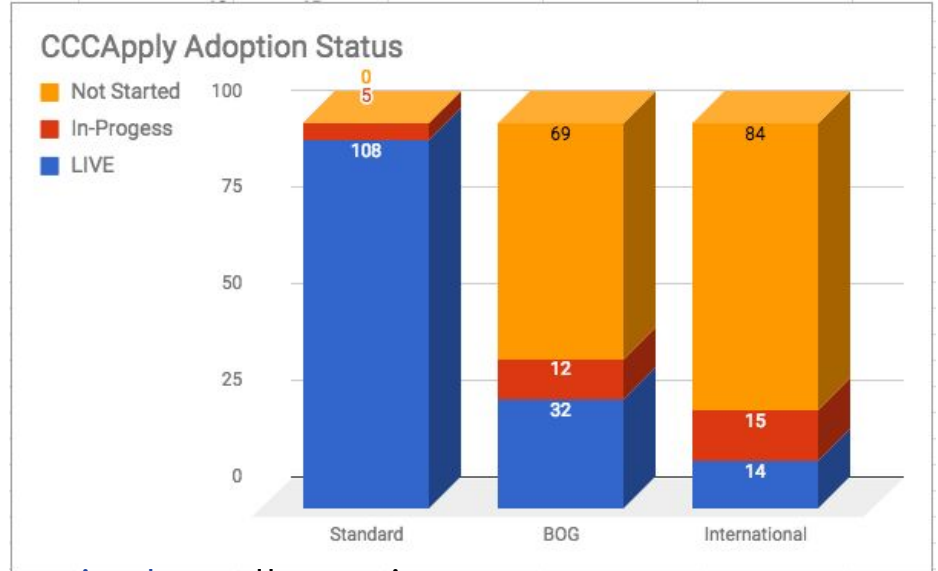
CCCID is reliable way to identify students

Matching CCCID with SSID & CCGI





Adoption



- Final 5 colleges in-progress
- 29 colleges setting up International app
- 11 colleges working on Promise Grant app



Online Account Creation & Recovery

- Quick and easy 3-page, online form
- Advanced account recovery options
- Multiple “edit account” opportunities
- Unique matching & verification service
- Rejects duplicates before they are created

Other benefits:

- Authorization for Text Messaging for colleges and CCCCO
- Supports homeless youth students
- Auto-login to CCCApply or MyPath
- Passes data to CCCApply

The screenshot shows the OpenCCC login page. At the top left is the OpenCCC logo, which includes the California Community Colleges logo and the text "OpenCCC". Below the logo is the text "CALIFORNIA COMMUNITY COLLEGES". The main heading reads "To continue to a California Community College secure web application, please sign in or create a new account." Below this is a form with two tabs: "Sign In" (selected) and "Forgot?". The form contains two input fields: "Username" and "Password". To the right of the "Password" field is a blue "Sign In" button. Below the input fields is a link that says "Create a New Account". At the bottom of the page, it says "A Service Of The CALIFORNIA COMMUNITY COLLEGES CHANCELLOR'S OFFICE". There are four links at the bottom: "Help", "Terms of Use", "Accessibility", and "Privacy Policy".



CCCID

Systemwide Identifier



A CCCID is a **unique student-identifier** generated by the OpenCCC Student Account, enabling secure, single sign-on access to admissions applications and other systemwide web-based services.

- Ensures student journey is *tracked over time*
- Passed to the college through CCCApply data downloads
- The CCCID is then stored in the college's SIS or college LDAP/Active Directory
- The CCCID is passed back in college's IdP to the systemwide applications SP (i.e. Canvas, CCCAssess, MyPath, etc.)

Our Systemwide GPS for Improving Student Outcomes



Significance of CCCID to the OpenCCC Federation & CCC System



The CCCID is used for multiple purposes across the California Community Colleges system.

- CCCCO relies on the CCCID to track progress and the educational choices made by students across the course of their academic journey
- Ties together student data - students who attend multiple colleges - swirling
- CCCID will be used in research (locally and systemwide) to better align support and services across the system.



Minimize Duplicates

By employing machine learning technologies, we will better identify and prevent duplicate accounts during the account creation process, thus driving duplicates below one-tenth of one-percent (0.001).

- Low duplicates rate = .2% and dropping
- Rejects duplicates before they are created
- Advanced account recovery - matching & verification





Data Collection & Matching

- Collects basic “Directory Information”
- Collects Birthdate, SSN, and Email Address
- SSN Confirmation
- Legal, Previous & Preferred Name fields
- Permanent address
 - Supports Homeless Youth
 - Supports international students
- Collects text messaging authorization
- Username & Password
- PIN & Security Questions



Create Your Account

OpenCCC allows you to access California Community Colleges secure web applications.

You Must Have an Email Address

The California Community Colleges and OpenCCC will use email to send you important information. You will need to provide an email address when you create your account.

Free email accounts are available from many sources:

- Google Gmail
- Yahoo Email
- Microsoft Outlook
- Other Providers

Note: While all of the providers listed above have millions of users and are widely trusted to be reliable and secure, OpenCCC and the CCC Chancellor's Office do not endorse any particular email providers, and will have no liability should any issues arise with a particular email provider.

All information is kept secure and private as explained in the Privacy Policy. By creating an OpenCCC account, you are agreeing to the terms and conditions of the Privacy Policy.

[Begin Creating Your Account](#)

or [Return to Sign In](#)



Student Satisfaction Feedback

- 10,663 Surveys from Jan 2018
- 871 Comments
- Top 100 words in Word Cloud

Overall
Satisfaction Rate = 98%





OpenCCC Integrations

After account creation, data is passed to the college through CCCApply & downloaded via the Download Client

Other integrations:

- CCC Report Center - post-submission
- Passed to Data Warehouse & Data Lake
- Shared with MyPath & other CCC web applications
- Integrates with college through CCC Glue
- CCCID passed back to colleges via API web





College Implementation

Sets up as part of CCCApply implementation

College is required to stand up SAML-compliant IdP to authenticate

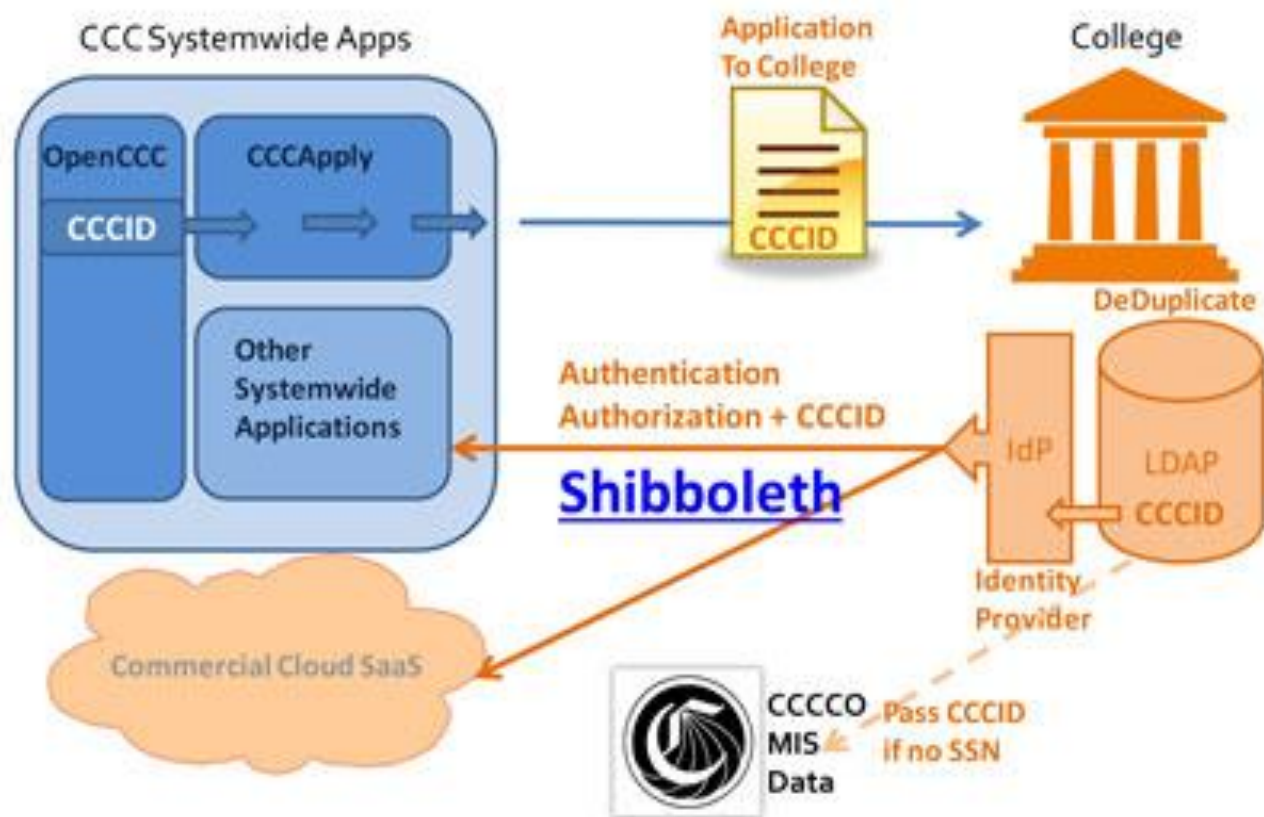
- Staff to Administrator & Report Center
- Students to the SSO federation

*Tech Center supports Shibboleth open-source, provides support for installation and upgrade

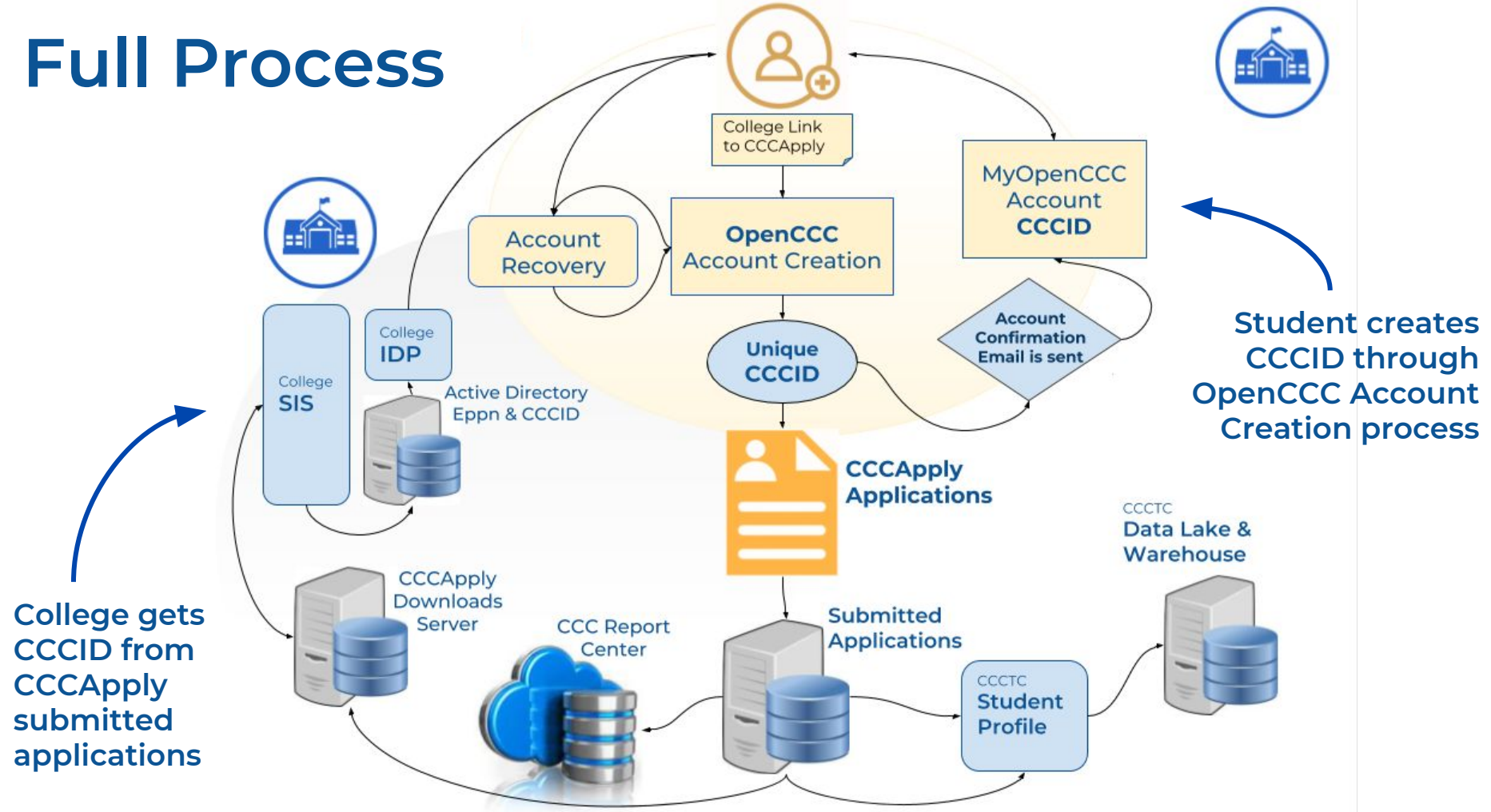
Download Client configured to download & store OpenCCC Account and CCCApply data



How it works



Full Process



College gets CCCID from CCCApply submitted applications

Student creates CCCID through OpenCCC Account Creation process



OpenCCC SSO Federation

Secure CCC and vendor applications within a secure, single sign on environment (OpenCCC & Proxy IdPs)

- MyPath Portal
- CCCApply
- CVC, COCI, CID
- Course Exchange
- Canvas LMS
- Hobsons Ed Planning
- **Administrator & Report Center - Staff User Accounts**





SSO Proxy

1. Facilitates single sign on to apps in the CCC federation
2. Looks for the CCCID in the IdP to identify, authenticate and track **students** as they move between apps
3. Ensures all students have an OpenCCC account (CCCID)



CALIFORNIA COMMUNITY COLLEGES

Unable to Locate Your Information

We need your OpenCCC Account statewide student identifier (CCCID).

To continue to a California Community College secure web application, **please sign in, or create your new account.**

Sign In [Forgot?](#)

Username

Password

[Sign In](#)

[Create a New Account](#)

A Service Of The
CALIFORNIA COMMUNITY COLLEGES
CHANCELLOR'S OFFICE

[Help](#)

[Terms of Use](#)

[Accessibility](#)

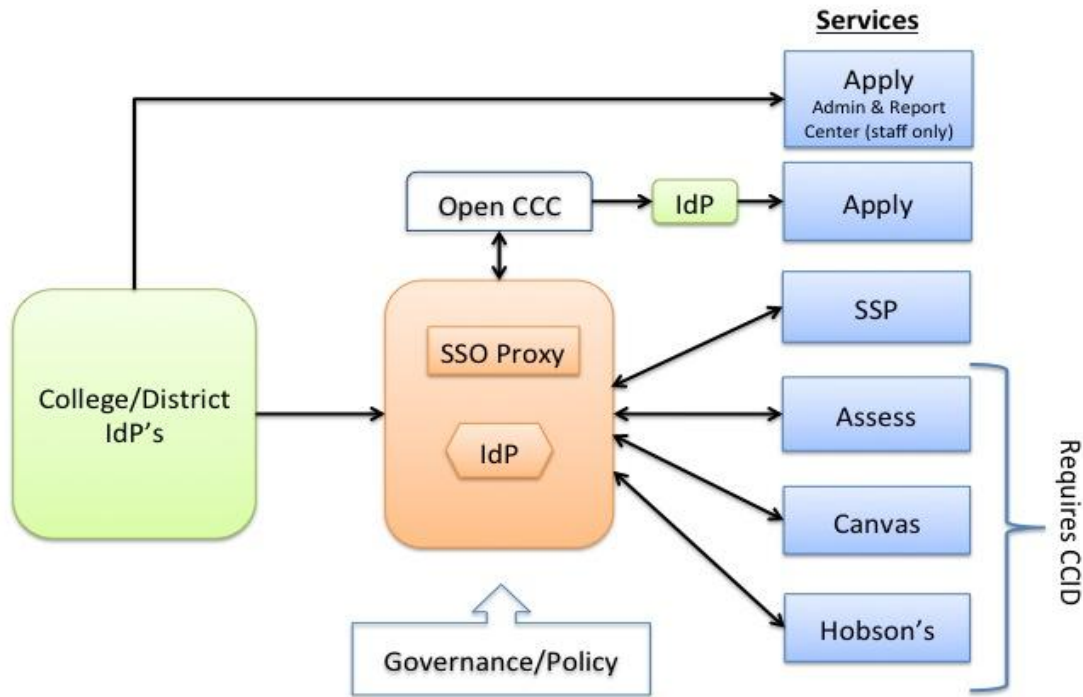
[Privacy Policy](#)



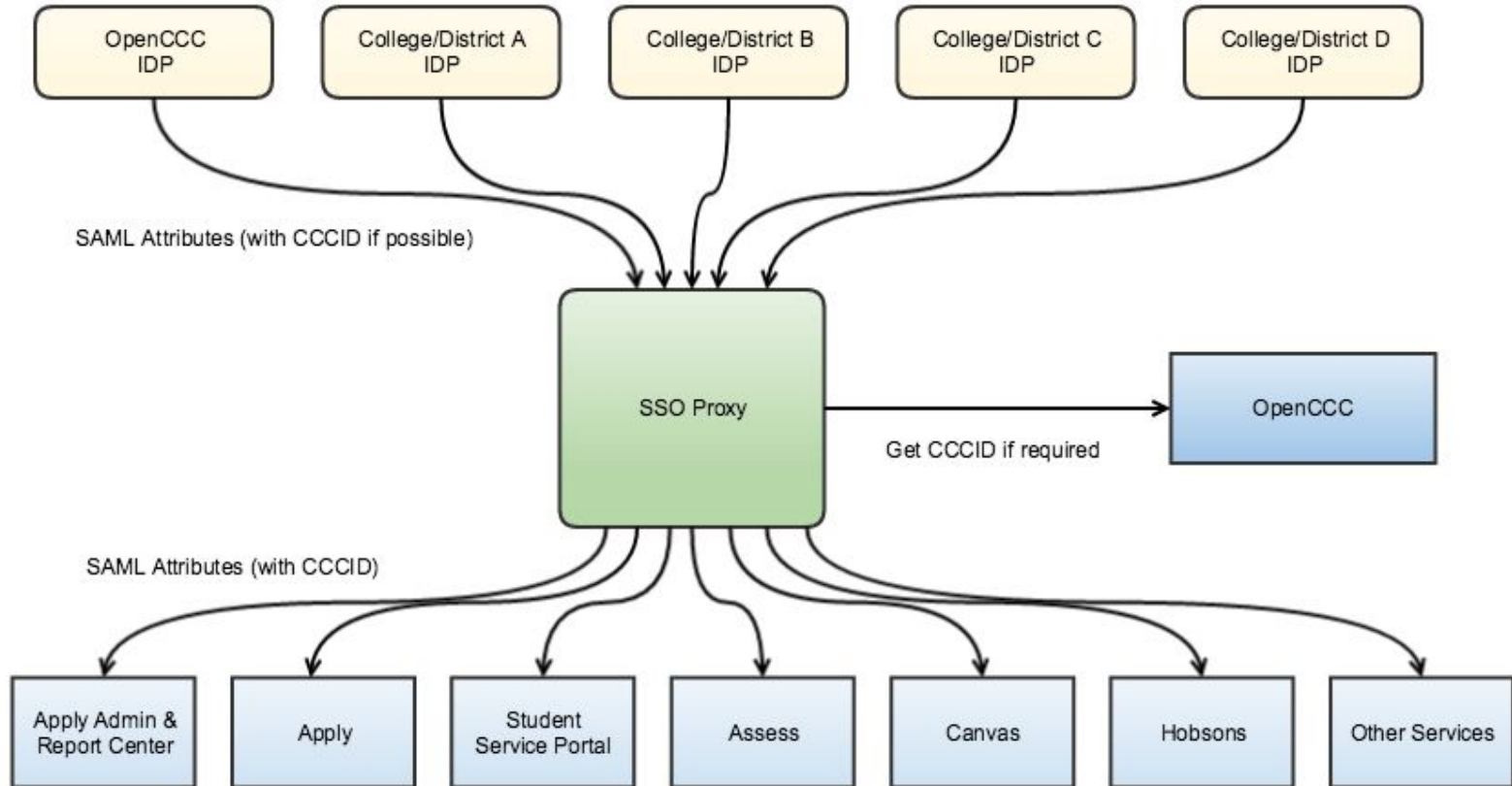
OpenCCC vs Proxy IdP

Currently, OpenCCC sits in front of admission application

SSO Proxy sits between CCC web applications & the college IdP



SSO Federation IdPs & SPs





Initiative Compliance

To participate in the Federation, Colleges are must implement a SAML-2 compliant IDP to facilitate single sign on for secure CCC web applications, including:

- MyPath Student Services Portal
- CCC College Adapter (Glue)
- Course Exchange (OEI)
- Common Course Management (Canvas)
Hobsons/Starfish Degree Audit Systems

Requirements

SAML Compliant Identity Provider

Savings in using the security certificate program.

Join InCommon Federation

Free membership paid for by CCC Tech Center

SSO Proxy Integration

Integrate with the IdP proxy to facilitate SSO

Pass & Store the CCCID

Through OpenCCC Account system, store and pass your students' CCCID through college IdP



Proxy Benefits for Students

CCCID allows students to participate in CCC applications

Data is tracked across colleges & applications

One set of login credentials to remember

Facilitates single sign on for the student



Proxy Benefits for Colleges

Ensures all students have CCCID accounts

Passes and stores student CCCID to CCC applications

Single Service Provider for all applications



Proxy Systemwide Benefits

Track students from high school with SSID (CA Dept Ed)

Ties swirling students data together

CCCIDs can be shared with CSU and UC



SSO Proxy Integration Project



- Overview of the SSO Proxy
 - What and why
 - Benefits to students, colleges, system
- College Integration
 - General Requirements
 - Requirements for Hobsons, Canvas, Administrator
- Student Workflows through Proxy
- Challenges
- Q&A





Student Workflow

When a user attempts to access an application in the SSO federation, such as MyPath or Canvas, the proxy web service looks for the required information being passed by the college IdP to authenticate the user:

- **EPPN** - Which Identifies & authorizes the user from the College IdP
- **CCCID** - Which identifies & authorizes the user in the CCC SSO federation

The screenshot shows the OpenCCC login interface. At the top left is the OpenCCC logo with the text "CALIFORNIA COMMUNITY COLLEGES". Below this is the heading "Unable to Locate Your Information" followed by the message: "We need your OpenCCC Account statewide student identifier (CCCID). To continue to a California Community Colleges secure web application, please sign in, recover your existing account, or create your new account." Below the message is a sign-in form with two tabs: "Sign In" (selected) and "Forgot?". The form contains fields for "Username" and "Password", a blue "Sign In" button, and a "Create a New Account" link. At the bottom of the page, it reads "A Service Of The CALIFORNIA COMMUNITY COLLEGES CHANCELLOR'S OFFICE" and includes links for "Help", "Terms of Use", "Accessibility", and "Privacy Policy".



No CCCID? Proxy Re-Directs to OpenCCC

If the college IdP is not configured for the proxy* or is not passing the required CCCID and other attributes, the Re-Direct page appears to notify and prompt the user to one of the following actions:

- **Login to retrieve CCCID** - Which Identifies & authorizes the user from the College IdP
- **Account Recovery** - Student can recover their account through “Forgot?” (CCCID)
- **Account Creation** - Student can “create a new account” to obtain a CCCID

ALL users must have an Account to participate

The screenshot shows the OpenCCC login interface. At the top left is the OpenCCC logo with the text 'CALIFORNIA COMMUNITY COLLEGES'. Below the logo is the heading 'Unable to Locate Your Information' followed by the message: 'We need your OpenCCC Account statewide student identifier (CCCID). To continue to a California Community Colleges secure web application, please sign in, recover your existing account, or create your new account.' Below this is a sign-in form with two tabs: 'Sign In' (selected) and 'Forgot?'. The form contains fields for 'Username' and 'Password', a blue 'Sign In' button, and a link for 'Create a New Account'. At the bottom of the page, it states 'A Service Of The CALIFORNIA COMMUNITY COLLEGES CHANCELLOR'S OFFICE' and includes links for 'Help', 'Terms of Use', 'Accessibility', and 'Privacy Policy'.

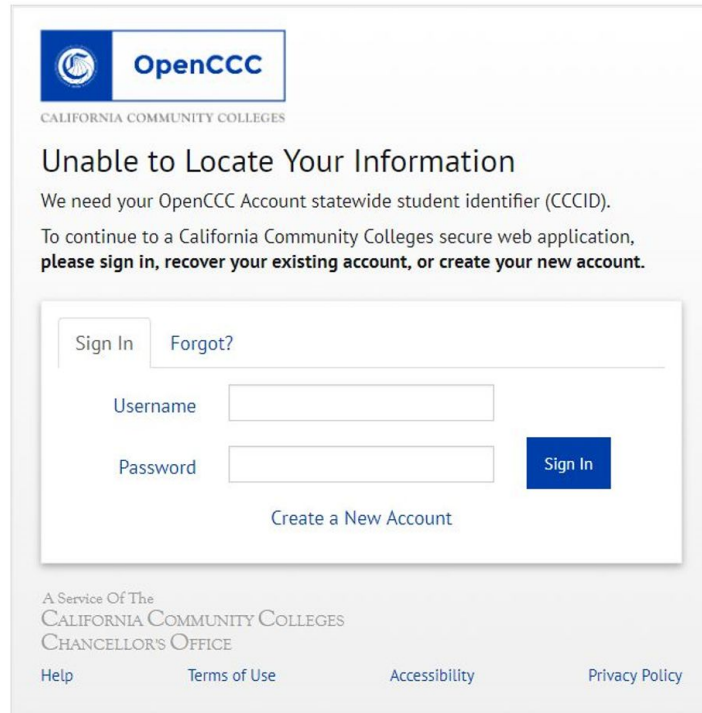




Why?

- **Login to retrieve CCCID** - Which Identifies & authorizes the user from the College IdP
- **Account Recovery** - Student can recover their account through “Forgot?” (CCCID)
- **Account Creation** - Student can “create a new account” to obtain a CCCID

ALL users must have an Account to participate



Demo: Student Workflows Using the Proxy



The image shows a screenshot of a web browser displaying the MyPath student portal for College A. The browser's address bar shows the URL: <https://my.path.collegea.edu/>. The portal features a blue header with the MyPath logo on the left, a search bar in the center, and navigation links for 'COLLEGE A', 'TCC', 'TCC CENTER', 'TCCS', and 'COLLEGE' on the right. Below the header, the College A logo and name are displayed, followed by a decorative starburst graphic. A large photograph of six diverse students walking in front of a stone building with arches is centered on the page. At the bottom, a dark blue navigation bar contains four main sections: 'Explore Careers', 'Apply for Admission', 'Financial Aid Info', and 'Priority Registration'. Each section includes a sub-section title and a list of links.

Explore Careers	Apply for Admission	Financial Aid Info	Priority Registration
Explore Careers	Apply for Admission	Financial Aid Info	Priority Registration - Advance your progress
<ul style="list-style-type: none">• Careers• EA Career Guide	<ul style="list-style-type: none">• Prospective Term/Current Term• Admit	<ul style="list-style-type: none">• Get a Financial Package	<ul style="list-style-type: none">• Priority Registration



Proxy Integration - Requirements

College or District must set up an Identity provider (IdP)

College configures metadata to pass required attributes

Colleges tests in Pilot and Production

Make sure CCCID exists in directory source



Identity Providers

CCC Technology Center supports Shibboleth Identity provider solutions for student, staff, and faculty SSO.

- Shibboleth open-source (Latest Version)
- Portal Guard IdP

Other Compliant IdP Software:

- ADFS
- Ellucian

Free Shib Upgrade

The CCCTC recommends that all colleges using Shibboleth upgrade to the latest version.

Benefits & Enhancements:

- Improved security
- Ease of use and configuration
- Fewer support calls -
- Fewer passwords to remember
- Increased student productivity
- Interoperability and integration with CCC applications



Shibboleth IdP

CCC Technology Center supports Shibboleth Identity provider solutions for student, staff, and faculty SSO.

- Shibboleth open-source (Version 3.3.2)
- Portal Guard IdP

Other Compliant IdP Software:

- ADFS
- Ellucian

Free Shib Upgrade

The CCCTC recommends that all colleges using Shibboleth upgrade to the latest version 3.3.2.

Benefits & Enhancements:

- Improved security
- Ease of use and configuration
- Fewer support calls -
- Fewer passwords to remember
- Increased student productivity
- Interoperability and integration with CCC applications



Proxy Integration - Configuring IdP

Configure IdP to release required attributes

Register metadata with InCommon (Recommended)

Alternate: Send us a copy of your metadata



Proxy Integration - Required Attributes

eduPersonPrincipleName (EPPN)

Primary identifier for a given user from college or district IdP

eduPersonAffiliation

User's role within the institution

CCCID: Unique ID for user in the CCC system

uid:	Username
givenName	First Name
sn (surname)	Last Name
displayName	Full name to display
mail (email)	Email Address



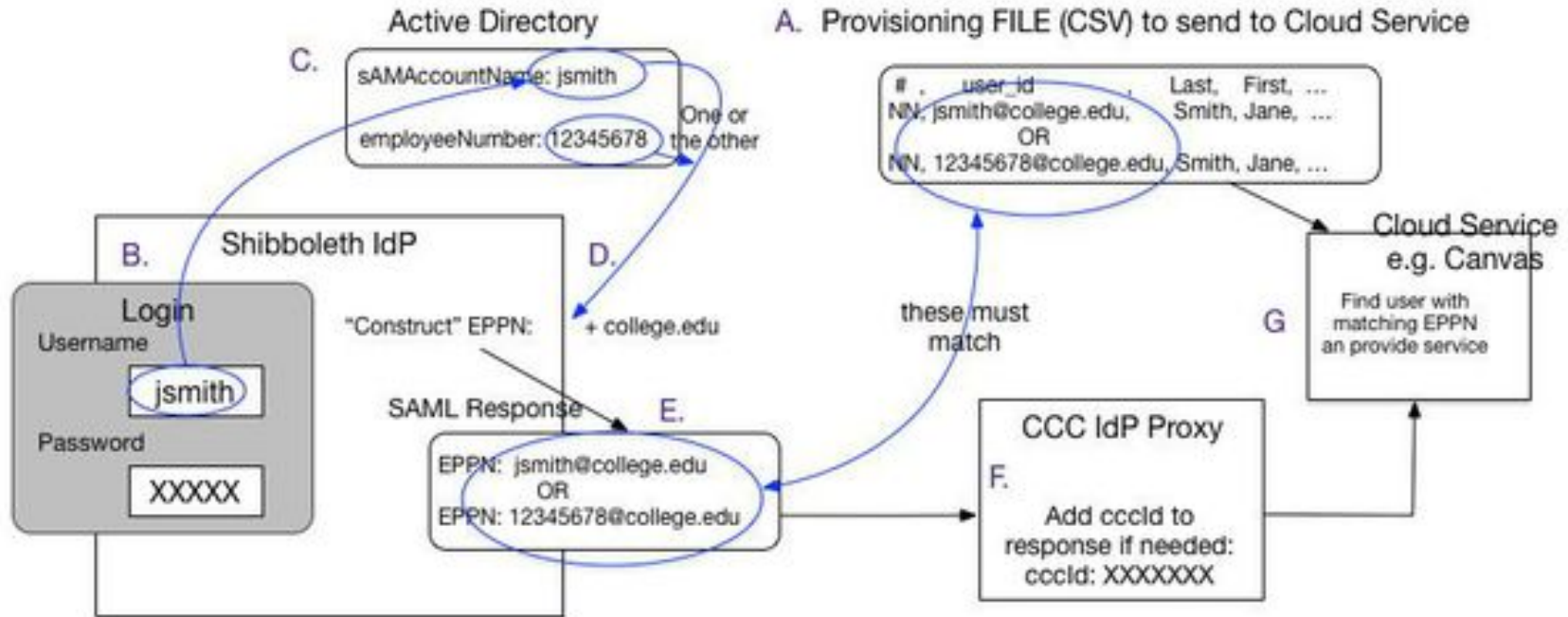
What is the EPPN?

The *EduPersonPrincipalName* (EPPN) is the unique identifier for a user (applicant, student, faculty, staff) across all college IdPs.

- The EPPN has the syntax of an email address, but should be considered a "globally unique federated identifier" rather than an email address. It is generally the most important attribute to be shared with federated services. Note that the value of EPPN does not have to match what the user fills in as their username when they login, and the user does not need to know what their EPPN is, as it is shared between the IdP and the service. It should be unique, rarely change, and not be reassigned to another user.
- Facilitates existing students to create OpenCCC accounts (CCCID)



Importance of EPPN in SSO

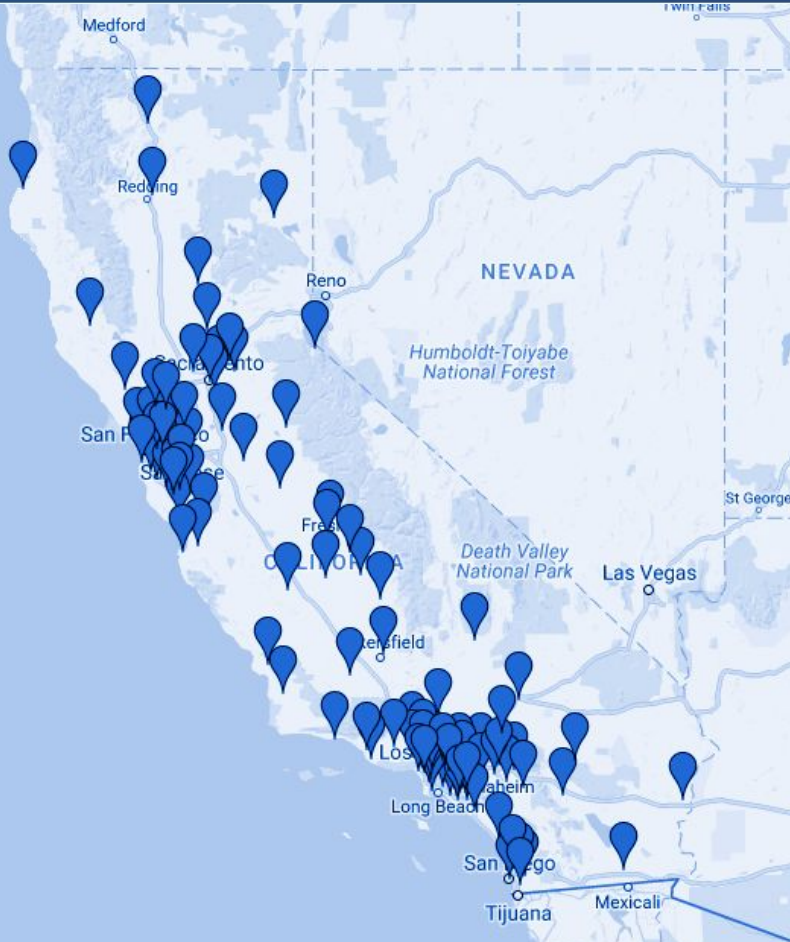




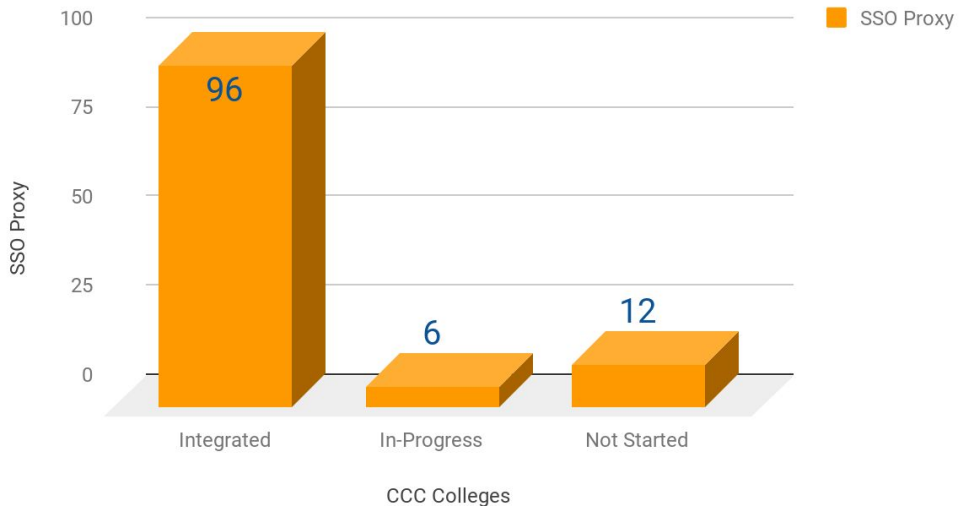
EPPN Mapping API

Two ways to help colleges get new CCCIDs back from the SSO Proxy

- API web service to return CCCIDs created through the SSO Proxy back to Colleges
- Export a report from Report Center (Excel, CSV files) mapping of CCCID to EPPNs



Proxy Integration



Final 12 colleges working on Proxy integration

90 colleges using Shibboleth

8 colleges using Portal Guard

10 colleges using ADFS



Communication Plan

Identify users that have an eduPersonAffiliation of “student” that are missing a CCCID and notify these users of the OpenCCC redirect process.

Give the users the option to create an OpenCCC account before facing the redirect via a production application.

CCCID Seeding Link



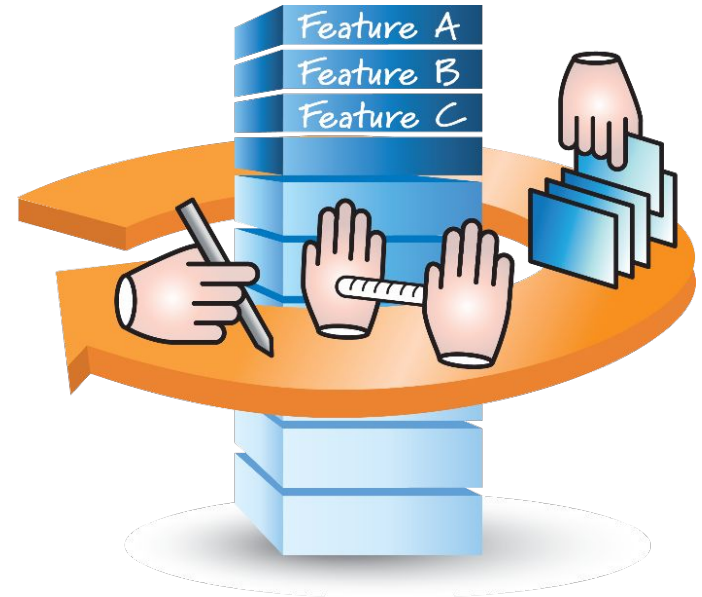
June 2018 Release

Pilot Site Release: May 2018

- 30-Day Preview
- College Implementation Support

Production Release: June 25, 2018

- Maintenance window 6:00PM – 9:00PM
- Students are notified on CCCTechnology.info
- CCC Help Desk monitoring calls and emails





Future Developments

OpenCCC & CCCApply Integrate with MyPath

To streamline the student experience, OpenCCC Account and CCCApply will be fully integrated into MyPath - further establishing the clear pathway for the student.





Roadmap

FY 2018 - 2019

Responsive Design for Mobile Applications

To better support mobile platforms, OpenCCC will be revised as a fully responsive design application that will optimize the user experience for phone, tablet, or computer.





Roadmap

FY 2018 - 2019

Auto-Populate Promise Grant with OpenCCCApply Data

Streamline the Promise Grant app with pre-filled data from previously submitted apps & OpenCCCApply responses

MyPath > Promise Grant > Glue Integration

Launch the CC Promise Grant application from MyPath, with CCC Glue data integration directly to your SIS





Roadmap

FY 2018 - 2019

- Implement responsive design for mobile apps
- Implement Email Matching Logic Upgrades
- Data Security: AWS Deep Freeze
- Integrate CCCID as MIS Data Element
- Re-engineer CCCApply to Improve Data Gathering Engine
- Launch New CCCApply Administrator
- Build Spam Filter web service into CCCApply





Support for OpenCCC and the Proxy

www.ccctechnology.info

OpenCCC IdP – www.ccctechnology.info

SSO Proxy - Matt Schroeder - mschroeder@ccctechcenter.org

OpenCCC Account - pdonohue@ccctechcenter.org

The screenshot shows the homepage of the California Community Colleges Technology Center. At the top, it says "Community powered support for California Community Colleges". The navigation bar includes "HOME", "CATEGORIES", "ABOUT", "NEW POST", a search bar with the placeholder "Find or start a conversation", and "Sign In" and "Register" links. A yellow banner below the navigation bar reads "Joining the Community is Easy!" and "Our community is a great place to get your questions answered, share your ideas and feedback, get your problems solved, and give back by helping others! It only takes a minute to get started." with a "GET STARTED TODAY" button. Below the banner is a search bar and a "Conversations" section with tabs for "ALL", "QUESTIONS", "IDEAS", "PROBLEMS", "PRAISE", and "ANNOUNCEMENTS". The "Recent Conversations" section shows a conversation titled "what other schools have vet tech" with a snippet of text: "I know pierce has the career I want to study for what other schools in LA area has the career v...". On the right side, there is a "Message from California Community Colleges" section with text: "The California Community Colleges serve nearly three million students on 113 campuses statewide. This support community is facilitated by the CCC Technology Center on behalf of the California Community Colleges Chancellor's Office. Currently, this community primarily supports CCCApply, ...".

Q & A



Thank you!

Patricia Donohue – pdonohue@ccctechcenter.org

Charles Hasegawa - chasegawa@unicon.net