China University Libraries and Library Identity Management

—— Integration and Application of CALIS Authentication Cloud and Shibboleth

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1. Introduction to Shibboleth in China
2. CALIS Authentication Service in Cloud
3. About CALIS-CARSI Working Group
4. Integration between CALIS and Shibboleth
5. Conclusion
Background

• Most Chinese university libraries use LAS (Library Automation System) to provide authentication service

• Growing needs to access electronic Resources outside campus for faculties in China

• Traditional ways to access outside campus:
  - VPN, Proxy Server, EasyProxy ……

• Problems of the above ways:
  - Expensive (VPN), Accounts abused, Hard to Manage
  - Lower number of Concurrent Users, ……
Shibboleth in China (2009-2012)

• CARSI -- CERNET Authentication and Resource Sharing Infrastructure
  – Based on the Shibboleth Project of Internet2

• CARSI aims to build a federated authentication infrastructure for China Universities, so that teacher and users can access web resources at any place without restriction of campus IP ranges.

• Based on CARSI, CHINA CERNET Federation (similar to InCommon) was founded.

• CARSI has built a Portal and WAYS services for more than 30 universities which have installed Shibboleth IDP modules integrated with campus Authentication systems.
About CALIS

• China Academic Library Information System
  • Nation-wide Academic Library Consortium with more than 1,800 member libraries in China
  • Administrative Center is located in Peking University

• Mission:
  • To promote creation, preservation and sharing of resources among academic libraries collaboratively
  • To provide technological solutions to digital libraries for academic libraries
CALIS Cloud Service Project
(2009-2012, $33 million, 1000+ libraries)

- Software as a Service
  - Authentication as a Service (AaaS)
    - Inter-library Loan as a Service
    - Resource Discovery as a Service
    - Virtual Reference as a Service
    - ETD -System as a Service
    - E-Reserve as a Service
    - Log & Monitoring as a Service
- Data Repository as a Service
- Cloud Infrastructure
  (Virtual machine, Hardware, Storage, Networking)
CALIS Authentication as a Service (AaaS)

• Unified Authentication System in Cloud rent freely for all librarias

• Have realized Single Sign On (SSO) between CALIS AssS and Library Identity Systems (such as LAS, etc., which serve as an IDP)

• Provides Authentication and Authorization services for all other applications (SaaS) and Data Repositories (DRAas) in CALIS Cloud.
**Federated Authentication Integration between CALIS and Libraries**

- **Three ways for integration:**

  1. **User-Data Synchronization** from Library Automation Systems (LAS) to CALIS AaaS in Cloud
     - 636 Libraries (by now)

  2. **SSO** between CALIS AaaS and Libraries’ LAS
     - 456 Libraries

  3. **SSO** between CALIS AaaS and Campus Identity System
     - several universities

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![Diagram](chart.png)

- **CALIS APP in Cloud**
- **User Data Sync**
- **Local Identity System**
- **User DB**
Growth of member libraries of CALIS Authentication as a Service

http://www.calis.edu.cn/
About DRAA

• Digital Resource Acquisition Alliance of Chinese Academic Libraries (DRAA)
  – its office is hosted by CALIS
  – Its members are all members of CALIS

• Mission:
  – to standardize electronic resource group procurement procedures
  – to introduce and promote electronic resources for member libraries
  – to conduct the negotiation about prices and contracts between vendors and libraries
**Promote Shibboleth in China 2013**

- **CALIS-CARSI Working Group** was established in June

<table>
<thead>
<tr>
<th>Partner</th>
<th>Responsibility</th>
</tr>
</thead>
</table>
| CALIS   | ① writes *guidelines* about Shibboleth deployment in libraries.  
           ② maintains integration among **CALIS AaaS**, Library systems and Shibboleth IDP modules.  
           ③ distributes **Shibboleth IDP modules** to libraries.  
           ④ promotes libraries to install and use the above **Shibboleth IDP modules**. |
**CALIS-CARSI Working Group**

<table>
<thead>
<tr>
<th>Partner</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRAA</td>
<td>① communicates with and promotes <strong>Vendors</strong> to open <strong>Shibboleth services</strong> for Chinese universities libraries.</td>
</tr>
<tr>
<td>CARSI</td>
<td>① develops and supports <strong>Shibboleth IDP modules</strong> and <strong>CARSI (WAYF)</strong> Portal; ② integrates <strong>IDP modules</strong> with Vendors’ Resources, and tests</td>
</tr>
</tbody>
</table>
Technical Solutions provides by CALIS-CARSI Working Group

① Host CARSI’s Shibboleth IDP modules in university

② Integration between CALIS AaaS, Shibboleth IDP Modules and electronic Resources

③ Configure Shibboleth IDP and User-attributes Mapping

④ Library Portal Integration

⑤ Integrate Shibboleth IDP with CALIS Log System in Cloud
Two Ways to Host Shibboleth IDP modules

(1) Hosted by University Computing or Networking Center

(2) Hosted by Libraries (preferred by CALIS)
Integration between CALIS AaaS, Shibboleth IDP Module and Databases

Vendor

Electronic Resources

① SSO Request

Library / Campus

Local Identity

② SSO Request

CALIS Cloud

CALIS AaaS

③ SSO Request

CALIS APP in Cloud

2013/9/16

http://www.calis.edu.cn/
Shibboleth IDP Configuration

The IDP host needs to configure:

• Local IDP URL (as an entity ID)
• URL of CALIS AaaS in Cloud
• URL of CARSI Registry Center
• User Attributes Mapping
## User Attributes Mapping

- Mapping between Shibboleth and CALIS AaaS to control which users have rights to access resources from outside campus

<table>
<thead>
<tr>
<th>Library User Type In CALIS AaaS</th>
<th>Shibboleth User Type</th>
<th>Outside-Campus Access (Default)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Undergraduate</td>
<td>Student</td>
<td>Yes</td>
</tr>
<tr>
<td>2: Graduate</td>
<td>Student</td>
<td>Yes</td>
</tr>
<tr>
<td>3: Doctor</td>
<td>Student</td>
<td>Yes</td>
</tr>
<tr>
<td>4: Teacher</td>
<td>Faculty</td>
<td>Yes</td>
</tr>
<tr>
<td>5: Students</td>
<td>Student</td>
<td>Yes</td>
</tr>
<tr>
<td>6: Adult Education</td>
<td>Student</td>
<td>Yes</td>
</tr>
<tr>
<td>7: External readers</td>
<td>Other</td>
<td>No</td>
</tr>
<tr>
<td>8: Other</td>
<td>Other</td>
<td>No</td>
</tr>
</tbody>
</table>

2013/9/16 http://www.calis.edu.cn/
Library Portal Integration

- Put **Resource Outside-Campus Access Guides** beneath each links in Library Portal for users

- If exits, set **direct link** in Library Portal with Library’s own **entityID** and target URL pointing to a page of the Database:
  - **Hathitrust**:
    https://babel.hathitrust.org/Shibboleth.sso/Login?entityID=<IDP's entity ID>&target=<target URL>
  - **IEEE**:
    http://ieeexplore.ieee.org/servlet/wayf.jsp?entityId=<IDP's entity ID>&url=%2FXplore%2Fhome.jsp
  - **Sage Publications**:
    http://online.sagepub.com/cgi/shibboleth?entityID=<IDP's entity ID>&uri=<target URL>
Example of Library Portal Integration

Add database access links

Add External Access Guide

Add Database Access Guide
When users click on a **Database link** in the Library Portal, there are two cases in which the Database leads users to Login-page of Library in one or two jumps:

**Case 1 (two Jumps):** Leads user first to **WAYS-page** provided by Vendor or CARSI to select schools, than to **Login-page** of Library.

**Case 2 (one Jumps, for direct link):** The Database direct users to **Login-page** of Library straightly.
Integration Shibboleth IDP with CALIS Log System in Cloud

- CALIS provides Log & Monitoring as a Service (Log-aaS) in Cloud for libraries.
- The Shibboleth IDP modules need to be integrated with CALIS Log-aaS through CARSI Log Harvesting Center.
Progress

• Before June, 2013, only four Databases open Shibboleth service to China

• In July, **CALIS-CARSI Group** sent invitation-letters to **38 vendors with all of 129 databases** to request them to support CARSI Federation.

• By the first week of this September:
  • 8 databases have been integrated with CALIS-CARSI.
  • 3 vendors have rejected
  • Others are waiting replies from their headquarters.
Conclusion

Difficulties and Challenges

• Time-consuming negotiation and integration between vendors and CALIS-CARSI Working group.
• Low enthusiasm or even rejection from some foreign vendors.

Suggestion

• Direct link is preferred. Without direct link, Shibboleth login is not friendly.
Thank You!