Agenda

- What were the goals of the ASU project?
- What is Google Apps for Education?
- How did ASU implement Authentication?
- How is account provisioning handled?
- Mail routing architecture
- Current Issues
- Next steps
- Pointers to various resources
- Questions?
Goals of the Project?

- Develop Strategic Alliance
  - [https://uto.asu.edu/mediawiki/index.php/Strategic_Technology_Alliance](https://uto.asu.edu/mediawiki/index.php/Strategic_Technology_Alliance)
- Improve E-mail Service for Students
- Reduce costs of administration
- Work towards Exchange replacement
- “Ride the wave”
What is **Google Apps for Education**?

**Currently**
- Gmail
- Calendar
- Talk
- Personal Start Page
- Single Sign-on
- Account Management API

**Future is many of the other Google Apps**
- Docs and Spreadsheets
- Groups, Blogs, etc.

**See** [https://www.google.com/a/edu/](https://www.google.com/a/edu/)
How Does it Work (10,000 feet)?

- ASU manages account and alias namespace
  - E-mail addresses are still @asu.edu
- ASU manages authentication service
- Google provides SSO API
- Google provides account management API
- Google provides Calendar API
- Infrastructure replaced
  - Mail routing and alias management
  - Spam Filtering
  - Virus checking
  - Mailbox access, storage, archive, backup, restore (incl. subpoenas)
Mail Routing Architecture

Gmail For ASU

Incoming E-mail
From: Jane@columbia.edu
To: sbarlow@asu.edu

ASU

ASU Address Lookup
Directory Address:
sbarlow@asu.edu
Destination Address:
sbarlow@email.asu.edu

E-mail is forwarded
To Google

Google

Gmail for ASU
(email.asu.edu)

Read & Send E-mail

User Interacts with Google Web Interface

http://google.com/a/asu.edu
alias=http://email.asu.edu

Outgoing E-mail
From: sbarlow@asu.edu
To: Jane@columbia.edu
ASU Implementation of SAML-based SSO for Google Hosted Services

**Google**
- **Hosted Service**
  - If no Google session exists, then Google generates SAML request and encapsulates it in redirect URL

**User**
- **Start Here**
  - User Goes to Google URL
  - Google redirects Browser to ASU SSO URL

**Browser**
- **3**
  - Browser redirects to SSO URL
- **4**
  - SSO Redirects To Weblogin
- **5**
  - Weblogin completes authentication process with user

**ASU**
- **SSO Service**
  - SSO parses SAML request. If no Webauth token exists, redirect browser to Weblogin. Else go to step 8.

**ACS**
- **9**
  - Browser redirects to Google ACS URL
- **10**
  - User logged in. Begins using Google app

**Weblogin**
- **Weblogin Redirects To SSO URL**
- **SSO redirects browser back to Google ACS URL**

**SSO verifies Webauth token and generates cryptographically signed SAML response**
Account Provisioning

- ASU Developed “EDNA”
  - Enterprise Dynamic Network Authorization.
  - Manages IDs and access

- ASU EPO (Electronic Post Office)
  - Manage e-mail aliases
  - Shares Identity namespace with EDNA

- Developed “RMI” for Google account creation.
  - Intermediary between EDNA “RMI” transactions and the “Google Apps for Your Domain API”.
  - Google API is REST based
ASU Google Account Provisioning

Existing ASU Infrastructure

ASU Student Service System
- New Students

ASU Human Resource System
- New Employees

Identity Namespace

EDNA
- User Subscribes To Gmail Service
- CREATE Transacation (ASURITE ID)
- Retrieve E-mail Alias

ASU Google RMI
- Create Account Set default alias (outgoing address)

Gmail for ASU User

Google API Server
Selling Gmail for ASU
Gmail For ASU

- 2 GB Quota
- Advanced tagging and searching
- Single Sign-On with ASURITE UserID
- Maintain @asu.edu e-mail address
- Gmail for Mobile
- Advanced spam filtering and virus checking
Google Calendar

- **Personal Calendar**
  - Every Gmail for ASU users has one
  - Each person can create many sub-calendars
  - Sub-calendar can be selectively chosen for composite view

- **Sharing**
  - Share Free/Busy only or entire calendar
  - Share with Gmail for ASU or gmail.com users
    - Automatically appears in their calendar list
  - Can publish via RSS, ICAL or HTML

- **ASU is creating Event Calendars**
Personal Start Page
Personal Start Page

- Implementation just underway
- Developing ASU Specific Gadgets
  - MyASU Courses (links to Blackboard, Sakai, iTunesU, etc.)
  - Various RSS feeds
    - Announcements
    - News
    - Events
    - Blogs
- Opening up development to ASU departments
Issues

- POP Access using ASURITE UserIDs (RADIUS)
- IMAP Mail import utility
- Integrated Directory
- Privacy Politics
- Integration of other Google Apps (e.g. Docs)
- Departmental and shared mailboxes
- Mail routing / forwarding
Plans

- Finish with IMAP retirement
- Route asu.edu to Google
  - Spam Filtering
  - Virus Checking
  - Alias routing
- Expand development of PSP gadgets
- *Ride the Wave*
Exchange Killer?

- Features needed to replace Exchange at ASU
  - Free/Busy Scheduling
  - Full mobile support. Calendar and e-mail synching.
  - Offline capability
  - Integrated directory
  - Shared folders
  - Shared distribution lists
Resources

- Google Apps for Education site (http://google.com/a/edu)
- Google SSO API
- Google Apps For Your Domain Provisioning API
  - http://code.google.com/apis/apps-for-your-domain/google_apps_provisioning_api_v1.0_reference.html
- Discussion lists (Google Groups)
  - Google Apps For Your Domain
  - Google Apps For Your Domain API
  - Google Calendar Data API
  - Gmail, Calendar
- ASU Documentation
  - Gmail FAQ (http://gmail.wiki.asu.edu)
  - Personal Start Page FAQ (http://personal.wiki.asu.edu)
  - Faculty/Staff Transition (http://docs.google.com/View?id=dcfqxxbc_9fh4dfh)