Gmail at CPCC

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Overview

In May of 2007, Central Piedmont Community College completed the migration of all student email to Google's Gmail service, Google Calendar, Google Docs, Google's gTalk and Google Personal Start Page (over 200,000 accounts). The system replaced an internally hosted solution and integrated with the automated account creation processes, online services and Single Sign-on at CPCC.

Background

A number of years ago, CPCC made a decision to provide lifetime email accounts to all current and former students of the college. This involved the creation of accounts and storage of mail for over 200,000 users. Around two years ago a decision was made by the College to make email the primary means of communication with all students. At this point capabilities and storage expectations for email increased to a point that the College would be required to update the available tool for students. The internal email system provided for students prior to the migration was based on a Cyrus mail server and Squirrelmail as a web client. This system allowed students to maintain a email box no larger than 10mb and a maximum message size of 2 mb. During this time a majority of students were forwarding their email to other services which provided higher availability and more features.

The standard for online email storage at the time was approximately 2 gigabytes per user (Google, Yahoo, and Live mail). In order to increase all student accounts to this level CPCC would have been required to increase storage capacity internally from roughly 120 GB to over 350 terabytes of storage. This coupled with the backup and redundancy requirements made for a financially unfeasible option. After exploring the option of upgrading the internal hosting configuration it was determined the best option was to explore external hosting of the service.

Selection

When the determination had been made to explore external vendors, the college technology team was convened to begin the process. The technology team is comprised of representatives from various areas of the institution (both faculty and administrative). The internal ITS group felt it was important that end users have a major say in the final decision.

During the selection process many vendors were explored and the list was narrowed to the Microsoft Live service and Google Apps for Education. When this narrowing was completed, ample testing had been completed in ITS for both solutions to ensure that either services would be feasible within the College's environment (this included testing all of the automation processes currently in use for account creation and management at the college).
Both services were presented to the college technology team. Test accounts were also provided to all technology team members in both systems so that they could experience both products first hand. (Preview the CIT/CIO Summit Presentation for a detailed view of the service comparison information)

After review and presentation a vote was taken by the College technology team and a decision was unanimously made to move to Google Apps for Education.

Migration

Initial Provisioning

In order to being the migration to the Google service over 200,000 student account required creation within the new system. This process was completed by utilizing the Google provisioning API and running 10,000 account batches to provision every student account. The script written to handle this took roughly one day to complete and was written using the Python programming language. The accounts were traversed alphabetically and re-checked to ensure that all accounts had been provisioned.

Mail Migration

When the accounts had been provisioned, Google had developed a tool to allow for automated migration of all mail messages within the Cyrus mail server to Gmail. This tool also maps folder structures within a users mailbox to "Labels" within the Gmail application. Internally CPCC developed a PAM module which worked with the Gmail migration API to complete the mail move. This migration lasted for 20 hours and migrated over 30 million email message plus their folders to Google without incident.

Change Awareness

One of the primary components of the migration was an awareness campaign to all students and faculty. This campaign involved varied print and online materials informing students of the change. The following materials and timeline were associated with the awareness campaign (please note: all marketing materials are available for download at www.cpcc.edu/web-services/opi/google):

- **January** -
  - Email announcement of coming change the email service and that it will be Gmail.
- **February** -
  - Posters describing the a pending change posted throughout campus.
  - Spotlight appears on the homepage announcing the change.
  - Announcement of change is placed in the student online portal.
- **March** -
  - FAQ website for the migration established at www.cpcc.edu/email.
  - Second Email announcing change with a link to the FAQ website released.
  - Flier’s regarding change are posted around campus.
  - Advertisement announcing change is placed in the student printed schedule for summer and fall registration.
- **April** -
  - Third email notification sent to students.
● Permanent link on the homepage is established noting the migration with a link to the FAQ page.
● 3 fold Brochure's are delivered to classrooms to provide detailed information regarding access and features of the service.
● Information cards are handed out to students and placed throughout all campuses.

• May -
  ● Final email announcing the change is delivered to students.
  ● MAY 19 - Service changes to Gmail and a welcome email is delivered to all students.

Authentication

One of the major challenges facing the migration was to ensure that the Google service would communicate with the College's single sign-on solution (Yale's CAS). By utilizing the tools provided through the Google API library, the College was able to provide seamless integration between CAS and Google (Google utilizes SAML for single sign-on). This provides a single username and password, managed by CPCC for all online services at the College (if you would like more information on other single sign-on project at CPCC visit www.cpcc.edu/web-services/opi).

Provisioning / Maintenance

CPCC has a completely automated admissions and registration process. All student accounts are generated automatically and manageable by the student. By utilizing the API's provided by Google, the College was able to integrate Google account provisioning into this process. When a user is admitted to the college and creates an account with the institution, a Google account is also automatically created and seamlessly integrates with all other online systems.

Results

This project has been one of the most successful and popular efforts undertaken at the College. When the service went live, helpdesk support calls for email virtually disappeared. The student response to the project has been overwhelmingly positive and spawned requested for additional services and tools provided by Google.

Future

After the project was released all of the other Google services available to Apps for Education were also made available to students (gTalk, Personal Start Page, Sites, Docs & Spreadsheets and more). Currently a project is underway to replace the student portal (uPortal) with iGoogle. As this is being released, new Gadgets and tools are being created daily to utilize the services provided by Google while enhancing the student experience. CPCC is also exploring the creation of faculty Google accounts to provide easier collaboration and sharing not just between students but also faculty. As the services continue to grow, the need to incorporate data and information into tools and products that students use on a daily basis increases. Development is now underway to allow access to various College services through mediums such as MySpace, Facebook, Yahoo and other services in addition to Google.

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Embracing the future began with a move to Google, continuing forward involves a partnership with Google and expansion into other services.

Questions

If you have questions or would like more information regarding the College's transition to Google Apps for Education please contact Ken Ingle (ken.ingle@cpcc.edu).