

Carleton College

Integrated Email/Calendar System

System Recommendation

ITS Email/Calendar Workgroup
April 18th, 2007

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EXECUTIVE SUMMARY

Through the ITS Self Study process and other anecdotal feedback, there has been a frequent request for the college to adopt an integrated email/calendaring system for the entire campus. The advantages of this kind of integrated system are already realized in many administrative offices. Group calendaring allows for individuals and groups to easily schedule meetings across departments, allow administrative assistants to proxy calendars on behalf of others, and also tightly integrates the sending, receiving, and responding to meeting requests through an email interface. Moving to a joint system for the entire college, including students, staff and faculty would expand these and other functions to a greater audience.

In the Fall of 2006, ITS established a workgroup to evaluate available email/calendaring systems and make a recommendation as to which system Carleton should consider using for the entire campus. This workgroup worked in tandem with the rest of the campus via focus groups and with other members of ITS in making their recommendation. In this report we present our recommendation, documenting the process we went through, the solutions we considered and the factors we weighed.

We are recommending that the campus adopt the Zimbra Collaboration Suite as the campus-wide email and calendar solution. It provides the most functionality to the most groups of people: whether they are accessing via the Web or through a client application, or whether they are on a PC or a Mac, they have access to a broad core of features. It provides good functionality via Microsoft Outlook for PC users and Apple Mail/iCal for Mac users for supporting the business needs of the campus. It is also an easy service for ITS to administer and support.

Zimbra currently has about 6 million users worldwide, with Ohio State University, Stanford and Eastern Illinois University among the company's higher education clients. Georgia Tech University has also just recently signed agreements with Zimbra, and UW-Milwaukee just announced its intention to replace its existing email and calendaring systems with the Zimbra Collaboration Suite.

EVALUATION PROCESS

An ITS workgroup formed during Fall term 2006 to begin the process of evaluating email and calendar systems for the College. During Fall term we looked at our current email and calendar systems and approximately ten additional systems. We narrowed our choices down to five in December:

- **Novell GroupWise.** This is the existing system used by administrative offices on campus for email and calendar functions. It is an example of what we mean by an integrated email/calendaring solution.
- **Cyrus with Oracle Calendar.** Cyrus is the open-source email system currently used by students, faculty and academic staff. Oracle Calendar is one of a handful of calendaring packages that can work with a separate email system. (We would have liked to use Apple's iCal calendaring server for calendar functions instead of Oracle, but Apple's product was not available for evaluation in time.) This was the only non-integrated package we evaluated; with certain email clients using certain plug-ins, the distinction becomes less clear.
- **Microsoft Exchange 2007 with Outlook 2007.** Exchange is a very popular email/calendar/groupware package, especially in business. The 2007 versions of Outlook and Exchange are very new, and have many new features and enhancements over previous versions of the software.
- **Zimbra Collaboration Suite.** Zimbra is an integrated system that will work with clients like Outlook and other email clients used on campus, such as Thunderbird, Eudora and Apple Mail. Zimbra has many interesting features available in its web interface which are not currently available in any of the other systems.
- **Mirapoint Message Server.** Mirapoint provides an email/calendar solution that is compatible with Outlook and other email clients already used on campus.. It also comes with its own web interfaces for email and calendaring. Mirapoint is sold as a preconfigured "sealed appliance," while all other systems are software packages that ITS would need to install on general-purpose servers. The appliance is supposed to provide a highly stable, highly available system (99.999% uptime), and requires very little staff time to administer. Because of this, they claim to have a very low total cost of ownership.

In January, we sought out a balanced group of about 20 people representing students, staff and faculty, to participate in a focus group to evaluate the systems from the perspective of user experience. Evaluators were solicited via the following vehicles:

- From our advisory groups or nominated by them.
- Call for Participation from faculty was made via the Faculty Affairs Committee.
- The CSA subgroup on information technology to identify student testers.
- all-staff emails
- Currently @ Carleton.
- "Splash Page" on the academic webmail site CarlMail.

Participants who could make it to the kick-off meeting were provided lunch, as well.

We were surprised, but generally pleased, with the level of interest. We needed to limit the group to about 20 in order to provide adequate support, and there were quite a number of volunteers who were unable to participate.

We chose a mix of Mac and PC users, as well as people with different comfort levels with technology. We also had individuals experienced with email/calendar systems external to Carleton, and users who had somewhat more demanding needs, such as organizing calendars for other people. If there was a disappointing note, it was the low level of student participation. Although several were initially identified, most of them ended up not participating.

Focus group members were asked to attend a three hour kick-off meeting, test drive one of the candidate systems for a period of at least 10 days, complete a feedback form about their experience, and participate in a wrap-up meeting. During the test drive period, they were given a set of tasks to complete and were asked to attempt, as much as possible, to do all of their work within the test system. If there were tasks they absolutely needed to do outside of the system, we asked them to also do something as similar as possible within. We let them know that if they needed to, they could choose to leave their demo system and revert to their normal email package. Participants were encouraged to examine multiple systems, but we wanted them to pay particular attention to their assigned system.

On February 5, we held our kick-off meeting with the focus group, in which we assigned them to the different candidate systems, demonstrated basic tasks in each of the candidates and answered general questions. Later that day we held a similar demonstration open to the campus. Over the next few days we worked with each of the focus group members individually to get them going in their candidate system, and then we let them do their work.

After a couple weeks, focus group members were asked to complete an online survey in which they could give us feedback on any of the systems they tried. We met with the focus group again for a wrap-up session on March 7. Some of the interesting results of the meeting were:

- The focus group agreed early in the meeting to concentrate the discussions on Exchange, GroupWise and Zimbra. Although the survey data was pretty positive for all five systems, no one recommended either Cyrus+Oracle or Mirapoint as their first choice for the College. These systems also either had fewer or less positive responses generally throughout the survey.
- By the end of the meeting, the consensus of the focus group was not to narrow the field any further, but rather let the ITS workgroup go consider other factors in order to pick among the three.
- “Feature parity” was important to the focus group: we should not adopt a package that leaves out important features to broad classes of users. Where packages had

issues with feature parity, they tended to show either along platform lines (Windows vs. Mac) or for students vs. employees.

- In a significant sense, as long as a “thick” client (such as Outlook or the GroupWise desktop client) was going to be the recommended client for faculty and staff, the focus group had less concern about what system was running on the server.

Having narrowed our selection to three systems, the ITS work group created a list of other factors to consider:

- Cost
- How difficult is the initial implementation?
- How difficult is ongoing support and maintenance?
 - How good is the vendor’s technical support? How available is it?
 - How much staff time is needed to administer the solution?
 - How much local expertise do we need to maintain? How much training does that translate to?
- What is the vendor’s track record? How viable are they? What is their road map of the product?
- How much planned downtime will be expected? How much unplanned downtime?
- Interoperability issues
 - What interoperability issues are there with existing mail client programs?
 - Are there issues with exchanging mail with other mail systems off-campus? Issues with attachment sizes or types?
- How well does it support handheld devices (Palm OS, Windows Mobile)?
- What are the backup and recovery strategies
 - For users recovering an individual message
 - For recovering the accidental deletion of a user
 - For recovering the entire system
- Can calendars be published to the public? Can the meeting contents be kept private but free/busy time shown?
- Automatic provisioning
 - User account creation/deletion
 - Global calendars (such as Carleton event calendars, or non-Carleton calendars such as Google Calendar)
 - Information from Moodle (exam dates, assignment due dates)
 - Class schedules from Student Information System
- Outstanding user experience concerns, such as web calendar views as expressed in the focus group

It quickly became apparent, however, that despite the length of the initial list, important deviation was found in four areas: hardware and software costs; ongoing vendor support costs and policies; staff time to maintain the system; and client issues.

After a discussion, with each package having a respective champion, a consensus was reached on a final candidate. We then performed a second set of evaluations to clarify or address some remaining concerns we had with the final candidate, including:

- Looking for additional issues with Outlook 2007 and the connector that the focus group did not encounter. (Except for Exchange, focus group members testing Outlook had all used Outlook 2003, not 2007.)
- Stress testing a user with 45,000 messages (1,300 MB) in an inbox and over 6,000 contacts.
- Testing the interoperability of calendars between the web interface, Apple iCal and Outlook.
- Synchronizing handhelds.
- Testing various user migration scenarios, including how users might co-exist in GroupWise and the new environment if a short overlap period was needed.

TOP THREE SYSTEM SYNOPSIS

GroupWise

Software

The annual software licensing cost for GroupWise is \$18,500 annually. This is our current ALA cost which covers all Novell services, including file management, print services, NDS, GroupWise server software and GroupWise Client Software, among other things.

GroupWise Extranet is used to publish calendars and costs \$1,996 annually. It is sold as a three-year subscription, so the initial cost would be \$5,990 and includes all support and upgrades.

GroupWise Mobile Server is used to sync handheld devices and comes included with our GroupWise license.

Hardware

The hardware costs are \$6,500, which is the cost of an additional server for GroupWise Extranet and GroupWise Mobile Server.

Support

The cost for support for GroupWise is \$4,800, annually and includes 10 incidents. The estimated FTE required for administration of a campus implementation of GroupWise is .35 as it is an “administrator friendly” system.

Client Recommendations

For Faculty and Staff, all PC users would use the GroupWise client for the PC and all Mac users would use the GroupWise client for the Mac.

Students and Faculty/Staff access from off campus would primarily use GroupWise Web Access, though the full GroupWise client would be available to them without charge.

Implementation Plan

To implement GroupWise at Carleton, we would need to bring up the GroupWise Extranet and the GroupWise Mobile Server on production level servers. Copying of mail from the Academic Mail System (Cyrus) would need to be done to GroupWise mailboxes. There are tools available to assist in that type of migration.

Pros:

- GroupWise is already in use for administrative users, so there will be very little change for them.
- GroupWise is administrator friendly and would require a small amount of administrative time.
- Accidentally emptied trash is easily recoverable by the end user.
- New and much improved support for hand-held devices

Cons:

- GroupWise IMAP is not at the level of support of some other vendors (this means the ability to access GroupWise using a client different than the GroupWise provided program).
- There is a reproducible problem with email that has various MIME types. Novell does not provide a solution.

Exchange

Software

The annual software licensing cost for Exchange is \$396.66 annually. This covers the server license, which has the Mobile Services included. The ability to publish calendars to an external location is also included, though the location is not. The client license is \$1,260.

Hardware

Three servers are recommended for Microsoft Exchange at a cost of \$20,000.

Support

The cost for support for Exchange is \$0 annually, since it is included in our software licensing and includes 2 free phone incidents and unlimited web support. Both support options are 24 x 7 x 365. Additional phone support can be purchased per incident or as an expanded support contract.

The estimated FTE required for administration of a campus implementation of Exchange is .5, which is our current email administration allocation between the two systems.

Training for the system administrators is recommended at an approximate cost of \$8,000.

Client Recommendations

Faculty and Staff PC users would use Outlook 2007. Faculty and Staff Mac users would use Entourage 2004. Both programs are available for offline use, for those who use it while travelling.

Students would be encouraged to use Outlook Web Access for Exchange (OWA). PC users (65%) can use Internet Explorer (IE) to access the premium web client. Macintosh and Linux users, as well as anyone not using IE (35%), would use the Light OWA web client.

Our current campus license agreement covers faculty and staff for Outlook or Entourage but does not extend to student owned machines. Costs for licensing this software are as follows:

Option 1

Purchase on an as need basis

Outlook = \$19.84 per individual

Office for Mac = \$84 per individual Entourage is not available apart from the entire Office suite.

Option 2

Add students to our campus agreement = \$38,000, annually.

Implementation Plan

There are migration tools and other third party applications available to assist with moving mail from other systems into Exchange. The Quest GroupWise Migrator for Exchange directly migrates from GroupWise to Exchange 2007. This also will migrate GroupWise Archives to the archive equivalent in Exchange.

A full Active Directory implementation would be necessary.

Pros:

- Exchange is the strongest platform for administrative users.
- Entourage provides Mac users a single application for calendar, contacts and email.
- Accidentally emptied trash is easily recoverable by the end user.
- Outlook and Entourage are tightly integrated with Microsoft Office.

Cons:

- The quality of access is not the same across platforms (web vs. Mac vs. PC)
- Enterprise calendar provisioning is not currently available.
- Heavy hardware requirements are recommended to support Exchange

Zimbra

Software

The cost of Zimbra is \$12,000, annually. However, with pre-payment for multiple years, discounts do apply. A five year license would come with a 25% discount, equaling to \$9,000 a year for an upfront cost of \$45,000.

This license includes support, expanded search and attachment capabilities, online backup and restore, branding (we can change colors, logos, etc.), Outlook support and mobile/handheld syncing.

Due to concern about the difficulty and importance of a complete and successful migration for existing GroupWise users, we are also negotiating a scope of work for professional services, at no additional charge.

Hardware

The existing servers currently used for academic email will be adequate for Zimbra and disk storage needs may actually decrease due to integrated Hierarchical Storage Management (HSM, a strategy of migrating less frequently accessed data to less expensive storage). However, we will need an additional server for the migration period – we can't turn the existing GroupWise and Cyrus servers off until the new servers are all ready. We will probably have to purchase an \$8000 server and plan to repurpose it later.

Support

Our license would include 24/7 phone crisis support and unlimited non-crisis support incidents.

The estimated FTE for Zimbra is .5 FTE during the migration period and then .25 FTE for ongoing maintenance and administration.

Client Recommendations

Faculty and Staff PC users would use Microsoft Outlook with the Zimbra Connector for Outlook (ZCO). Faculty and Staff Mac users would use Apple Mail for email, iCal for calendaring, and Apple's system Address Book for contacts, all of which come with the Mac Operating System. The iSync connector allows them to sync with Zimbra. All programs keep a local copy for offline use, such as while travelling.

While students will have the option to use a full client if they wish, we are anticipating that students and those working from other locations will use the Zimbra web interface. This is a robust web interface that provides the same, if not more, functionality than the clients.

Implementation Plan

As with the other systems, adequate tools exist to help migrate academic users' email. Professional services from Zimbra are available to assist with the GroupWise migration, to ensure a smooth and complete transition.

Pros

- Feature parity between clients and web for all campus groups.
- Most robust web client
- Easiest of the finalists to integrate with current college systems.
- Strong support for the product from the vendor and user groups
- Most modern and standards-based solution.

Cons

- Of the three finalists, Zimbra is the youngest company.
- Uses an add-in connector for Outlook, raising possible compatibility issues. In contrast, the other two finalists are single-vendor, end-to-end solutions.
- Users cannot recover emptied trash items.

- There are apparent inconsistencies between the web and Apple Mail views for end users, particularly related to deleted messages and calendar sharing.

HANDHELD SYNCING

A significant number of people in the Carleton community use handheld devices to manage their time and email. It is because of this that we deemed it necessary to investigate the compatibility of handheld devices with the leading email systems.

GroupWise

There are two main choices for syncing Palm OS based hand-helds to Groupwise. First, for older devices that cannot access the network, either via wifi or through a cellular provider's data channels, Toffa's SyncWise Pro provides a conduit for the Palm Desktop, allowing fairly seamless syncing with the Groupwise calendar, address book, and task list. For handhelds that do have network access and smartphones, we would use the IntelliSync Mobile Suite, which allows real-time syncing of the Groupwise calendar, addressbook, task list, and email. Unfortunately, Macintosh users would only be able to sync using the Intellisync Mobile Suite on a network enable device; there are no Macintosh conduits for syncing Groupwise.

For Windows Mobile devices, we would deploy the Intellisync Mobile Suite. For smartphones, syncing would take place automatically over the air, either on demand or at pre-defined intervals. For not-networkable devices, Mobile Suite works through ActiveSync, providing the same syncing options when at the user's desktop.

Exchange

Palm devices would use Chapura Pocket Mirror to sync tasks, contacts, and calendar information to Outlook on the PC. Macintosh users would use MacOS X 10.4 SyncServices and the Entourage conduit to sync tasks, contacts, and calendar information to Entourage.

Non-networkable Windows Mobile devices would sync to Exchange through ActiveSync and the desktop cradle/cable. It is because all of the products involved are made by Microsoft that there is a very high level of integration. Networkable Windows Mobile Devices would sync over the air to the Exchange server, either manually or on a predefined schedule.

Zimbra

Networkable Windows Mobile, Palm 650p or newer, and Symbian devices would sync over the air to the Zimbra server, either manually or on a predefined schedule.

Older or non-networkable Palm devices would use Chapura Pocket Mirror to sync tasks, contacts, and calendar information to Outlook on the PC. Macintosh users would use MacOS X 10.4 SyncServices to contacts to the Macintosh AddressBook and tasks and calendar information to iCal.

Non-networkable Windows Mobile devices would use ActiveSync's ability to share a desktop computer's network connection to sync tasks, contacts, and calendar information directly to the Zimbra server.

RECOMMENDATION

Taking all of the factors into consideration, while focusing heavily on the user experience, feedback from the focus group and figuring out what the best program for the campus would be, regardless of timeline, the recommendation for the campus integrated email and calendaring system is Zimbra.

The key reason for this decision was that Zimbra gives the most functionality to the most groups of people. Regardless of whether the user is on a PC or a Mac, accessing via the Web or through a client, they have access to the same core features and services.

Zimbra is also a very easy service to run and administer. From our evaluation, the quality and availability of technical support has been superb. With what we intend to purchase, this same level of service is included. Our initial installation and upgrades have gone very smoothly.

Although both Exchange and GroupWise support some of the following features, Zimbra is the only system that supports them on all systems:

- Fully featured webmail compatible with all major web browsers
- RSS
- iCal publish and subscribe
- secure and standards-based IMAP
- mobile devices (running Windows Mobile 5 or later, which is the recommendation for campus)

NEXT STEPS

Assuming the ITS computing advisory committees support the recommendations of this report, we plan on proceeding with an extended pilot of at least four weeks, using ITS employees as test subjects. While we are confident we wish to proceed with Zimbra as our application for the campus, the details of how to implement the software as well as a realistic timeline need to be further established. These will depend greatly on the results from the extended pilot.

It is possible, therefore, that we may discover things during our pilot which could affect our implementation timeline. Some of the unresolved issues we will continue to explore through the pilot phase are:

- Which version of Outlook to roll out: Outlook 2007 connector is scheduled to be available later this summer and testing will need to be done to ensure viability with a campus roll out. Outlook 2003 is currently available; however GroupWise 7 function parity will need to be fully examined. Outlook 2007 is preferred as that is the current horizon of Outlook and where our attention was focused.
- Known performance issues with Outlook 2007, especially with respect to indexing mailboxes We can either wait until Microsoft addresses the issue, or try to identify which of our users might be affected and find workarounds for them.
- Rules/filters: For Outlook with the Zimbra connector, rules defined in Outlook are run only on the workstation (not on the server), and are not run automatically. Generally speaking, rules should be run on the server, not on the workstation. This needs to be addressed, either in the Outlook client, or through user training and documentation.
- Migrating GroupWise calendars: We will be migrating GroupWise calendars to Zimbra during implementation. There are multiple ways documented to do this, but so far, none of them have worked perfectly. We will invoke Zimbra's professional services group to address the GroupWise migration.
- Palm handheld synchronization for older hardware: We have been testing handheld synchronization, but mostly with newer models of handheld devices. We have a number of users with older handhelds, and need to continue to test solutions. We are confident, however, because historically handhelds have been able to successfully synchronize with Microsoft Outlook.
- Global Address List: We have encountered some issues with various the Global Address List implementations and are working on a solution.

In parallel to the pilot project, we will begin an advertising and education campaign with users for roll out of the new system. We will also spend time working out the details and testing the migration of user email and calendar entries to the new system prior to the actual implementation.

Implementation timing

Current GroupWise and Cyrus users can be migrated to the new system separately, and there may be good reasons to do that.

Current GroupWise users: We will wait to migrate GroupWise users until after two things occur: the production version of the Zimbra Outlook 2007 connector is released and stable, and we work through performance issues in Outlook 2007, particularly pertaining to large mailboxes. We will then need to coordinate migration around the College's business calendar as well as training. The actual migration will probably be done in stages, migrating departments (or closely-related groups of departments)

together. It is possible that GroupWise users might not be migrated until sometime during Fall term.

Cyrus users: We will want to migrate Cyrus users (faculty, academic staff and students) in mid-summer, after graduating senior accounts are removed. Users who will eventually use Outlook 2007 should probably wait until the connector is ready and performance issues resolved, but would have calendaring features available though the web interface immediately. Once users return in the Fall (and Outlook 2007 integration is ready) we can work with users to migrate them to their new email and calendaring environments.

APPENDIX

SYSTEMS THAT WERE NOT TOP THREE CANDIDATES

Two candidate systems did not make it out of the focus group: Cyrus+Oracle Calendar and Mirapoint. The other systems have been considered in detail in other parts of this report. This section provides supplemental information on these other two systems.

Cyrus+Oracle Calendar

Cyrus is the existing email system for “academic” users. It was written by and for higher education institutions and has a robust user community. As an email system, it has many advanced features, and is arguably the best email engine of all of the systems we considered. It is also very non-proprietary, and would support Windows and Mac users, students and non-students

Cyrus does not, however, have a group calendar component, and many people expressed interest early on in only looking at integrated systems. Some of us felt that for most users, what they really were interested in a email/calendar client such as Outlook, which presented an integrated, unified experience. Although the focus group validated this concept, the two users assigned to Cyrus+Oracle+Outlook remained confused as to what, precisely, they were evaluating. Ultimately, we decided to drop Cyrus+Oracle as a candidate due to the lack of integrated web-based calendaring and handheld synchronization components.

Mirapoint Message System

Mirapoint has taken email and calendaring and packaged it into an appliance that is easy to maintain, easy to integrate and highly reliable. Mirapoint has a growing presence in both business and higher education markets, and is one of the few major commercial products in these markets with a growing market share. They boast a user community of 120,000,000 user mailboxes.

Within higher education, Mirapoint seems to be doing best at large institutions, although they also had some customers about the size of Carleton. No CLAC schools currently implement a Mirapoint solution, however, and none seem to be seriously considering them.

We knew going into the focus group that the Mirapoint solution was somewhat weaker for user experience, and that its strengths were in areas that would not be considered by the focus group. Like Cyrus+Oracle Calendar, Mirapoint did not fare so well with the focus group. And although user experience was not the only consideration, it is a very important one, which is why we were content with dropping Mirapoint from further consideration.