Case Study

How Cisco Migrated Nearly 40,000 Mailboxes in 16 Weeks

Cisco IT Case Study / IP Messaging / Global E-mail & Calendar - Client Migration: This case study describes the e-mail migration and calendar cutover processes behind the Cisco IT migration to Microsoft Exchange Server 2003 within the Cisco global network in 2005. It provides details on the creation of Exchange client mailboxes and the e-mail migration, and ending with the implementation of a full calendaring system over a single weekend. Cisco customers can draw on Cisco IT's real-world experience in this area to support similar enterprise migrations.

"It was essential to develop a migration strategy that minimized disruption to users, yet supported an aggressive schedule to obtain the benefits of global scheduling. Transferring user e-mail accounts to Exchange was a prerequisite to using the Exchange calendar. While e-mail accounts could be migrated on a user-by-user basis, the calendar migration had to take place at the same time for all users in a geographic region. This resulted in two distinct strategies on which the overall plan was based"—Jerry Applegate, Cisco IT messaging migration program manager




Organization of the Global E-mail and Calendar Program Case Study

The Global E-mail and Calendar Program case study consists of five modules and four appendices. Each module discusses the Global E-mail and Calendar Program from a different perspective—architecture, communications, migration, training, and support—and thus the modules are fairly independent of each other. Each appendix, however, is closely associated with a specific module. To view other modules or the complete case study, please visit

http://www.cisco.com/go/ciscoitatwork

The case study organization is as follows:

Module	Title	Description
1	New E-mail and Calendar Support Unified Communications Strategy	Provides an executive summary, program challenges, program organization, deployment strategy, and e-mail and calendaring solutions
2	Leveraging the IP Network on a Global Messaging Architecture	Contains architecture solutions for the network design, server and site configuration, virus protection, reliability, scalability, and redundancy
3	Communicating to Drive Enterprise Adoption of New E-Mail and Calendar	Describes the communications strategy used for the e-mail migration and calendar cutover, including challenges, audience analysis, key messages, and communication channels
4	How Cisco Migrated Nearly 40,000 Mailboxes in 16 Weeks	Contains the e-mail migration and calendar cutover challenges, strategy, and processes
5	Training and Support: Helping Users Leap to a New Messaging System	Contains training and support objectives, challenges, solutions, and metrics, as well as describing the Support Model process
A	E-mail and Calendar Policies and Features	Describes the e-mail and calendaring policies established during the migration and the main features of the new system (see Module 1)
B	Communications Details	Contains detailed Communications Plan and Exchange Migration Website information architecture (see Module 3)
C	Migration Data Details	Contains detailed information on e-mail migration pilot and calendar cutover weekend activities (see Module 4)
D	Support Details	Includes operational support details and Support Model processes flows (see Module 5)

MODULE 4

How Cisco Migrated Nearly 40,000 Mailboxes in 16 Weeks

Content

Overview

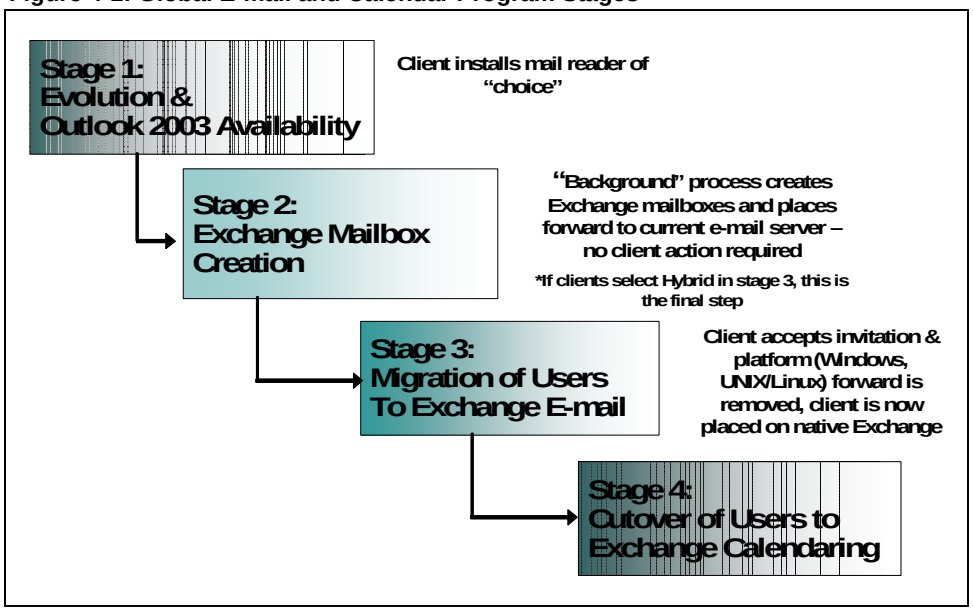
This module describes the e-mail migration and calendar cutover processes behind the Cisco IT migration to Microsoft Exchange Server 2003 within the Cisco global network. The deployment of the Exchange infrastructure is discussed in the Architecture module, while this module specifically discusses the e-mail migration and calendar cutover.

The migration process consisted of four stages:

1. Deploy Exchange 2003 Servers to five sites worldwide using a pod-based architecture. Make available for installation Microsoft Office 2003 (including Outlook) and Novell Evolution (for Linux users).
2. Develop an automated process to create Exchange mailboxes and to connect client e-mail software to the mailboxes—including developing a Web-based workflow communications tool incorporated with the mailbox provisioning.
3. Migrate e-mail clients and legacy e-mail data to Exchange.
4. Implement calendar cutover from Meeting Maker to Exchange calendaring, which includes working with facilities (Workplace Resources) to automate the process by which conference rooms become available to Exchange users.

Figure 4-1 illustrates the four stages of the migration process.

Figure 4-1: Global E-mail and Calendar Program Stages



Migration & Implementation Tracks

The Global E-mail and Calendar Program consisted of a global cross-functional team with members chosen for their expertise in various disciplines and functions needed to further the initiative. In addition to the program manager, each track had its own leader.

Client E-mail Migration Track

The Client Migration Track team managed automation, scheduling, and client communications. There was one global Messaging Manager, and each region had a separate subteam and local project manager:

- US/Canada and Americas International project manager
- Asia Pacific project manager
- European and Emerging Markets project manager

Calendar Cutover Track

The Calendar Cutover Track team managed the cutover from Meeting Maker to Exchange calendar. This cutover included both coordination with the Cisco facilities department, called Workplace Resources (WPR), to populate the global address list with official conference rooms and coordination with related training and support.

Automation/Tools Track

The Automation/Tools Track team focused on process automation—Client Migration Management (CMM) and back-end processes—migration status tracking, and overall integration with the IT infrastructure.

UNIX/Linux Client Track

The UNIX/Linux Track team focused on addressing the e-mail and calendaring needs of the large community of UNIX and Linux platform users, including developing tools, performing functional testing, and providing support.

Challenge

The following challenges needed to be addressed during the migration phase:

- A centralized user and facility data repository was needed for Active Directory.
- Because there were a large number of employees to migrate to the new Exchange-based system (approximately 40,000), parts of the migration process required automation.
- Support had to be integrated with the pace of migration so that employees could be supported as soon as they were migrated.
- User training also had to be integrated with the pace of migration.
- Effect on the user needed to be minimized.
- Since workplace resources—such as meeting rooms—could not be booked in two different systems at the same time, Cisco IT needed to cut an entire region over from Meeting Maker to Microsoft Exchange calendaring on a single day.
- Outlook provided new limitations to which users needed to adapt.

Centralized Data Repository

Before the migration critical data such as user data, server data, and conference room data were not centralized into a single repository. Because Exchange is tied to Active Directory, a single repository for all user accounts had to be created. The user account repository was designed so that the data could only be updated directly from HR data and not through manual intervention. Client roles, profiling, and identification data were stored here.

Large-Scale Migration

Migrating nearly 40,000 users in the span of a few weeks was a big challenge. A process needed to be automated to tackle a large-scale client migration. The communications needed to be automated and preferably integrated with the migration automation. The migration had to be paced sufficiently to allow for a reasonable number of support personnel to be on hand to resolve problems and answer questions. Support also had to be in place to handle the inevitable exceptions. To make the migration experience as smooth and pleasant as possible, the process needed to be flexible enough to allow users a choice of when to migrate their data within a given time frame.

Adequate Support for Migration Schedule

Support would set the pace for the migration in terms of the number of users who could be supported. Throughout the migration, sufficient support had to be available to answer questions and resolve issues. Because the users would be dealing with a new application, Outlook, and a new e-mail system, it was anticipated that each support call could take approximately 20 minutes. Because the migration had to be accomplished within a few weeks, and the number of dedicated support personnel was limited, the challenge was striking a balance between speed of migrations and adequate support. In addition, the existing support personnel also had to be trained in the new system so there would be adequate coverage.

User Training Synchronized with the Migration

Client training had to be integrated with the pace of migration. The more adequate the training, the fewer calls to support would be made. Also, the users would be more responsive to migrating on schedule. Users also needed to understand how to use the tools and the new e-mail and calendar features so they could be productive immediately following the migration.

Maintaining Availability of E-mail and Calendaring to All Users

The goal was to maintain functionality at all times during the migration. Users could not have their e-mail and calendaring systems disrupted because of the huge effect on employee productivity and on outside business.

"It was essential to develop a migration strategy that minimized disruption to users, yet supported an aggressive schedule to obtain the benefits of global scheduling," says Jerry Applegate, Cisco IT messaging migration program manager. "Transferring user e-mail accounts to Exchange was a prerequisite to using the Exchange calendar. While e-mail accounts could be migrated on a user-by-user basis, the calendar migration had to take place at the same time for all users in a geographic region. This resulted in two distinct strategies on which the overall plan was based."

A primary requirement was that at all times during the migration, all end users must be able to send and receive e-mail and use calendaring services. Messaging services are used heavily by everyone at Cisco, and calendaring is used especially by managers, team leaders, and the administrative staffs, who consistently book conference rooms and schedule meetings.

A flash cut approach could not guarantee that e-mail would not be disrupted. The approach selected would greatly affect the Cisco IT support staff, who would be unable to adequately provide training and service to so many end users at the same time without an unreasonable, although temporary, personnel increase. For all these reasons, the flash cut approach was considered an infeasible migration strategy for the e-mail system.

New Features and Limitations

Outlook 2003 would provide users with great new features not available in their legacy system, but it would also challenge them to adapt to new limitations.

Great New Features in Outlook	Trade-offs with Legacy System
• Easy to share items, such as contacts folders • Side-by-side calendars and scheduling groups • Attachments in meeting/events • Local time zones displayed and supported • Search folders • Offline address book • Journal • Tasks • Follow Up Flags • Much more	• Quotas: Going from POP to Client/Server imposes a limit on mailbox (synchronized with the server) of 450 MB per employee. • Need to archive: The mailbox has a good auto-archive feature but it takes some training to get the desired results. • Meeting Series is somewhat rigid compared to Meeting Maker. It is easy to lose changes to prior meeting instances (single meetings versus the series). • Rules/Filters are limited: only around 50 filter rules can be created. • Formats: Supports HTML or Plain Text only, not Rich Text Format (RTF).

Calendar Cutover Challenges

Some of the calendar cutover challenges were as follows:

- The conference room data stored in Meeting Maker was inaccurate—including double entries and an inconsistent naming convention—and was out-of-date when compared to the facilities (Workplace Resources) data. The facilities database did not use a consistent naming convention either, which resulted in a redesign and clean-up effort on both sides.
- The volume of Meeting Maker data to be migrated for Cisco within the United States, the Americas, and the Asia Pacific regions was much higher than the Meeting Maker data for the European and Emerging Markets, which Cisco IT had migrated to Exchange earlier. The European and Emerging Markets cutover had been for only 6,000 users, while the cutover for the other regions resulted in nearly 40,000 users; therefore, the team did not have a comparable model for this new and much larger effort.

- Importing data from Meeting Maker could not affect the e-mail flow during a business day. If the same data import solution had been used for this global cutover as was used in the European and Emerging Markets, it would have resulted in an Exchange Server downtime window in excess of seven days.
- The Exchange calendar was available soon after the servers were in place, but rooms could not be booked until all e-mail migrations were completed and the cutover of conference rooms was completed. This caused a lot of confusion and presented a client education challenge.
- An older version of Meeting Maker was operational at Cisco, which meant that not all data fields could be mapped from Meeting Maker to Exchange.
- The data migration solutions investigated did not meet all the requirements. Since Cisco had the largest installation of Meeting Maker prior to the cutover to Exchange, a cutover the size of Cisco could not be proved by the vendors approached to perform this data migration.
- A client-only migration tool could be developed, but proved challenging. Such a tool would have only imported meeting data as appointments and not as meetings (such as no attendees and meeting rooms). As a result, all the data imported with a client-only import tool would have needed to be updated after the import.

Solution: Exchange Client Migration

This section describes the Exchange E-mail migration plan, client migration implementation schedule, tools required to facilitate migration, and basic e-mail migration process.

Exchange Client Migration Plan

This section describes the client migration plan requirements, schedule, waves, phases, rates, and number of users.

Basic Requirements

The following were the basic requirements for client migration:

- Use a client-friendly approach where the client determines the “moment of” migration.
- The program drives the overall schedule; therefore, reasonable limits need to be set.
- Process should be reliable, scalable, and supportable.
- As much should be done up-front as possible; as little as possible during the migration.

E-mail Migration Strategy

“The team determined that a realistic goal would be to convert users by site, beginning with the most populated sites within each region,” says Jerry Applegate, Cisco IT messaging migration program manager. “The e-mail migration was planned so that it could be carried out without disruption in multiple regions in parallel. Within each site, a number of users were selected each week and given the opportunity to schedule their migration within that week or to reschedule for a future time. The limiting factor was providing adequate support.”

A critical part of the overall strategy was the upgrade to Outlook 2003 *prior* to the Exchange migration itself. Outlook, bundled with Office 2003, was made available well in advance to allow users to become familiar with the new features before their accounts were migrated. Prior to the Office/Outlook deployment, around 10,000 clients were still using Eudora, with an average 5 GB of e-mail data each. After installing Office 2003, Eudora users could migrate their data to Outlook with a customized import tool. Because of the large volume of data and other issues related to the import, the deployment of Outlook took longer and generated higher case loads than expected. Once the users were accustomed to working with Outlook 2003, however, they were better able to assimilate the incremental changes from migrating to Exchange.

The client base was divided into two "waves:"

- Wave 1 consisted of regular employees
- Wave 2 consisted of all other employee types (pending entitlement resolution)

E-mail Migration Rate Management

The following table lists the approximate number of users initially planned for each e-mail migration wave, broken down by region. Regional managers in the United States, Canada, Americas International, Asia Pacific, and European and Emerging Markets were set up to handle the migration within their respective regions. This strategy helped ensure that deployments would be managed within each global region for improved communications and problem resolution.

US/Canada & Americas International	Wave 1	Wave 2	Total
United States	24,778	12,356	37,134
Non-US	1,001	816	1,817
Total	25,779	13,172	38,951

Asia Pacific	Wave 1	Wave 2	Total
Asia Pacific	1,972	1,480	3,452
India	662	4,311	4,973
Japan	824	447	1,272
Total	3,458	6,328	9,696

Migration Rates

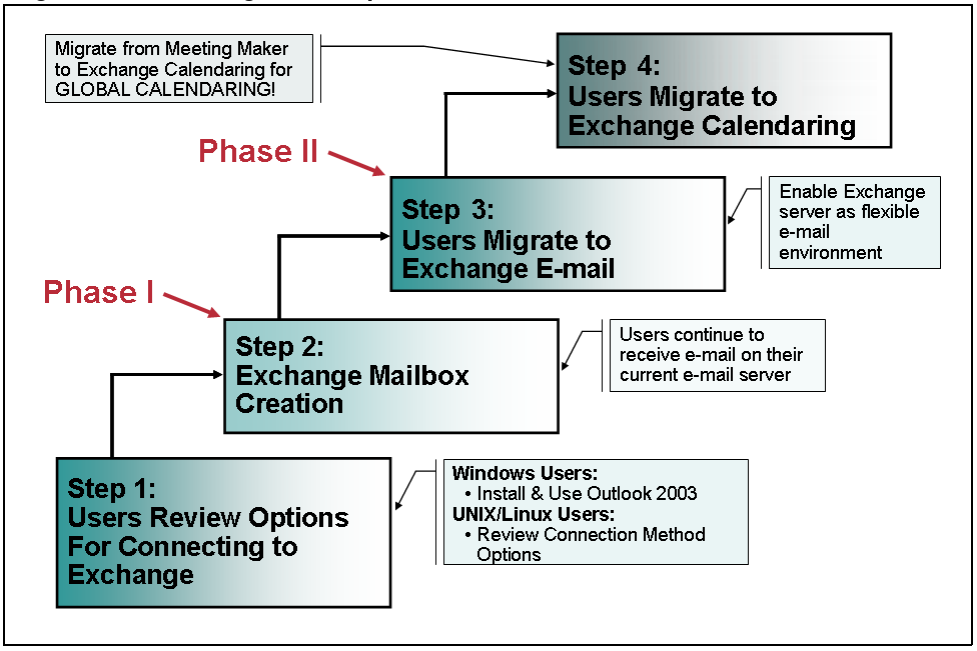
Of approximately 48,000 mail accounts, about 38,000 were eligible for migration and the rest were not. Target migration rates were developed based on the overall population, and they were adjusted along the way based on entitlements, as follows:

- If users were behind the firewall, by default they would get an Exchange account.
- If they were outside the firewall—that is, not permanent employees, such as manufacturing and development partners—by default they would get legacy e-mail accounts (Extra-net e-mail server).
- If they were inside the firewall and not a permanent employee, they were handled case-by-case.

Client Migration Wave Phases

Each wave was divided into two phases. The phases provided more time for Windows clients to upgrade to Outlook 2003 and import legacy mail if desired. Figure 4-2 illustrates the major steps for migrating clients to Exchange e-mail and calendaring.

Figure 4-2: Client Migration Steps

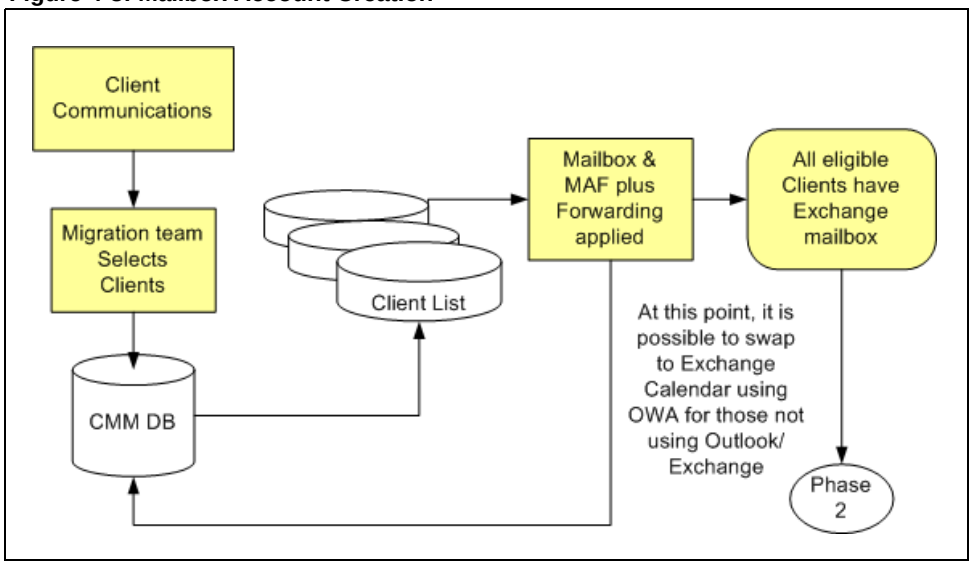


Phase 1: Mailbox Account Creation

Phase 1 involved creating mailboxes for all clients within their wave in order to routes messages to legacy mail servers transparently, requiring no client action. Clients could access their mailbox via Outlook Web Access (OWA). A background process prepared client Exchange accounts without disrupting their current e-mail delivery. Users were not required to connect to their Exchange account until notified to do so in Phase 2.

Figure 4-3 illustrates the mailbox account creation.

Figure 4-3: Mailbox Account Creation



Phase 2: Exchange Migration

Users were required to start background processes that configured their Exchange account (created in Phase 1) for use, and to set up their preferred e-mail application to connect to their Exchange mailbox. In the case of Windows clients, this entailed creating or changing their Outlook profile with the appropriate account information and selecting MAPI (Exchange native protocol) option. Clients could connect to Exchange via MAPI (Outlook), Evolution Exchange Connector, or other protocols, depending on the client base (for example, TAC (Sun) or Engineering (UNIX/Linux)). The e-mail application setup was automated for Outlook 2003 users; all other users were provided instructions to connect to Exchange.

Client-Facing Migration Website Functions

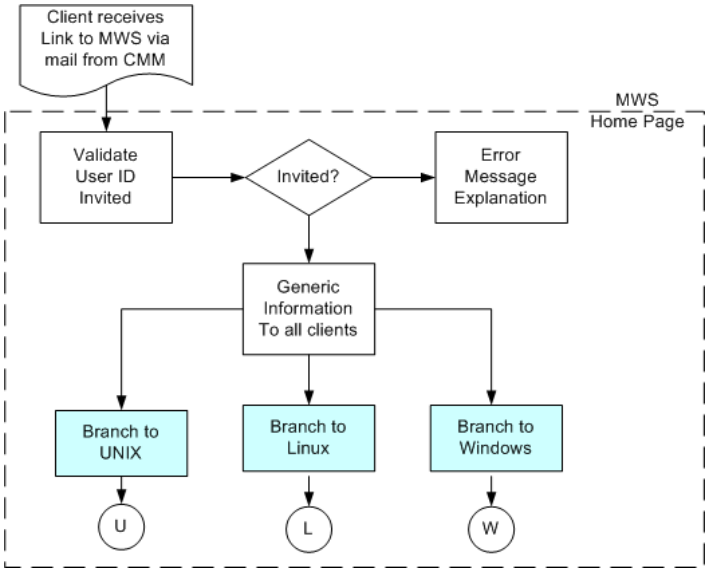
During Phase 2, employees were guided through the migration process using a client-facing migration Website that also allowed coordination of the "back-end events." The Website had the following characteristics:

- Was globally accessible as a common starting point for all clients/platforms (UNIX/Linux/Windows) with branches to platform-specific functions and information
- Provided basic information about the process, links to more details, and training opportunities (links open in new windows)
- Provided a mechanism for clients to request a delay and/or open a case for assistance
- For all clients, when “Proceed with my migration" was selected, a background script was initiated that turned off the Exchange forwarding and auto-purge set up in Phase 1
- The Website “communicated” with the CMM (Client Migration Management) database, setting flags to reflect the client’s migration progress

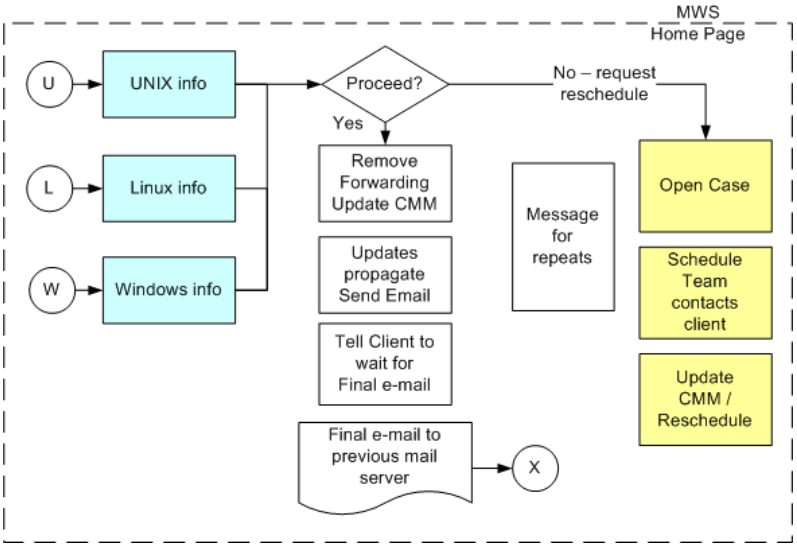
Phase 2: Client Migration Website (MWS) Process

The client Website migration process is as follows:

1. E-mail notices are sent to selected clients from the CMM system, as shown in the following flow. A final "day of" message provides a link to the migration Webpage.

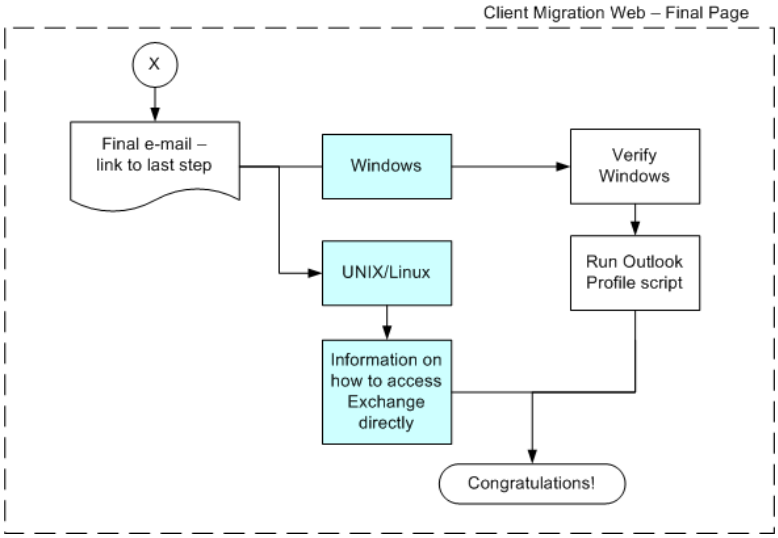


2. A client visits the Website, reviews the information, and either proceeds or requests rescheduling (opens a case), as shown in the following flow.



3. If the client proceeds, the final button initiates a script that removes the forwarding from the client's Exchange mailbox.

4. At this point, the client is thanked and told to expect a confirmation e-mail within the next xx hours. CMM is updated.
5. The clients receive at their old server the final e-mail with the location of the "final page," as shown in the following flow.



6. Linux/UNIX clients receive information to configure various mail clients for direct access to Exchange.
7. For Windows clients only, an Outlook profile is automatically configured for Exchange access.

Baseline Schedule

The baseline schedule was developed with exceptions for selected groups:

- The migration started with San Jose when the first pod production was ready.
- The migration proceeded from larger to smaller sites, and then from region to region (for example, from the United States and Canada to South America), or it went by common attributes such as small-site or off-site location.
- A few sites were scheduled based on the need to retire current mail servers.
- Other sites were scheduled based on their expressed desire to participate early.
- There were special one-off cases that required focused attention such as migrating the Office of the President and the Technical Assistance Center (TAC) whose primary communication with customers is by e-mail. The training and support teams were on hand to provide special training and support.
- Holidays and "catch-up" gaps were factored in to allow adjustments and backlog. This also accommodated focus for specially selected clients.
- About 500 users were connected to rogue Exchange servers. Focused attention on special cases was given to these rogue setups to do their own migration using the official tools and processes.

Outsourced Messaging System Operational Support

The messaging system operational support was outsourced to an independent technical support vendor during the migration. Cisco handled the entire user interface and coordinated with the support vendor to manage the Exchange infrastructure. The support vendor was responsible for keeping the Exchange infrastructure running smoothly in a heterogeneous environment until the migration was completed. For details, see "Operational Support" on page D-2.

Client Migration and Implementation Schedule

"The migration schedule outlined a sequence of events carefully planned to minimize disruption and support issues," says Jerry Applegate, Cisco IT messaging migration program manager. "It also allowed users to be exposed to the new system in stages. The upgrade to Microsoft Office 2003 was planned well before the mail migration, so users could become familiar with the tool. A pilot was also planned before the migration to test the automation strategy and support channel."

The client e-mail and calendar migration schedule was as follows:

1. Upgrade clients to Office 2003 and distribute Outlook using the Altiris software distribution tool prior to the Exchange server deployment.
2. For Linux users only, upgrade Evolution as part of Cisco Linux 4.31-3.
3. Run pilot several weeks before mail migration.
4. Perform e-mail account migration first:
   - Overlap deployment in both regions
   - US/Canada and Americas International target start first
   - Asia Pacific target start one month later
5. Evolution was provided to Linux clients as part of an upgrade of Cisco Linux, which is Enterprise Red Hat Linux with additional components and modifications. Users wanting to use Evolution for e-mail/calendar were required to upgrade to Cisco Linux 4.31-3 or higher. This was not an automated process.
6. Export e-mail items and contact data to Outlook using Transend utility.
7. Migrate executive staff and "select users" after global migration is completed.
8. Schedule calendar flash cut after most client migrations are completed.

Tools Required for Facilitating the Migration

The following tools were either developed or customized by the Tools/Automation team to automate client migration:

- Altiris workstation management and software distribution tool
- Transend client utility for importing e-mail data
- Mailbox provisioning script for configuring Exchange mailboxes
- Client Migration Management (CMM) database containing user, server, and status information
- Automated notification process for managing e-mail notifications
- Automated process to import conference room data

Altiris/Microsoft Office 2003 Distribution and Installation with ACNS

Altiris is a workstation management and software distribution tool that was used to distribute Outlook as part of the Microsoft Office 2003 upgrade. This tool was already available in Cisco, but the Office 2003 package was the largest software installation performed with Altiris. The Office package was customized to some extent using Microsoft's Custom Installation Wizard. In addition, Altiris leveraged the ACNS (Application and Content Networking Services) Cisco product to stage the Office package at various distribution sites through the Cisco network.

Transend E-mail Data Import Tool

Transend was a third-party optional client utility that was used to facilitate the import of legacy messages and contact data to Outlook. The desktop team developed a “wrapper” to facilitate ease of use and to overcome some of the limitations of the default setup.

Exchange Mailbox Provisioning Tool

A background process was developed for configuring Exchange mailboxes in advance of the migrations. Its purpose was to create an Exchange mailbox in the correct region based on the user’s primary work location. Creating the mailboxes with an automated tool allowed the migration team to monitor the success of the process and remove a potential source of errors, once the users initiated their portion of the migration.

Client Migration Management (CMM)

“To meet the aggressive schedule at Cisco, it was essential to provide detailed status tracking on a global level,” says Russ Bancroft, Cisco IT messaging migration project manager for the Americas International region. “The Client Migration Management (CMM) is a Web-based application that consists of a Web interface and a back-end database. The CMM database was developed to record several key user attributes such as user ID, legacy mail server, demographics, and each user’s migration status at any given point in time. The database was also used to track the decommissioning of the legacy mail servers since the Migration team could use it to verify that all user accounts had been migrated before a given server was retired.”

Automated Notification Process

CMM was programmed to use scheduling groups to process special groups of people, based on specific criteria. The baseline schedule was keyed off the location. This allowed customization of e-mail and timing of events. Given a target date, CMM would schedule notices automatically. The client migration coordinators were the primary users of CMM scheduling capabilities.

Conference Room Mailbox Creation Tool

Prior to the calendar cutover, an automated process was developed to import conference room data from the facilities (WPR) database into Active Directory. This process allowed for the automated creation, deletion, and updates to conference room mailboxes in Exchange whenever facilities (WPR) made changes on their systems. This is the same process/tool that was used in the earlier European and Emerging Markets migration for conference room updates.

Basic Client Migration Process

The client migration process involved the following major steps (for details, see "Expected Client Actions to Prepare for E-mail Migration" on page C-2):

1. Upgrade to Office 2003 (Windows) and Evolution 1.4.5 (Linux)
2. Creation of Exchange mailboxes
3. Integration of business process e-mail accounts
4. Training for "select users" (executive staff and administrators, power users)
5. Invitation to migrate sent from CMM to users
6. If rescheduling was needed, user contacted a client migration coordinator
7. Client Exchange mailbox was enabled and master routing tables was updated
8. E-mail client was configured by the user
9. Problem resolution and information resources were provided
10. Training for regular users was provided

Upgrade of Microsoft Windows Users to Office 2003

Initially the client software that needed to be updated to a common baseline Outlook 2003 was distributed to Windows users as part of the Office 2003 upgrade. During this upgrade, the support team was available for questions and coordination efforts. Since the files were backward compatible, no major problems were anticipated. The upgrade was performed using the Altiris software distribution utility. The process was similar to that used for other updates and on new machines. The users were asked to import old mail items after upgrading to Microsoft Office and before migrating to Exchange.

Update of Linux Users to Novell Evolution 1.4.5

For Linux users, Evolution 1.4.5 was upgraded in Cisco Linux 4.31-3 as an e-mail/calendar option. Cisco Linux includes Enterprise Red Hat, with some modifications and additional components. Evolution 1.4.5 was bundled in Cisco Linux 4.31-3. The upgrade to Cisco Linux 4.31-3 was performed automatically on all Linux users. The users had the option to import old mail items after upgrading to Evolution and before migrating to Exchange. Linux users could also use Outlook Web Access (OWA) for e-mail and calendaring.

OWA Deployed for European and Emerging Markets

Users on all platforms could connect to their messaging services via Outlook Web Access (OWA) using http://<domain name>. OWA was implemented for the European and Emerging Markets migration long before the Global E-mail and Calendar Program started. It was developed primarily for users who could only access e-mail and calendaring over an Internet browser. No client installation was needed. It also provided a safety net if a user did not have a workstation.

Creation of Exchange Mailboxes

Exchange mailboxes were automatically created and provisioned based on the clients' geographical location and a master schedule. The Exchange mailboxes remained disabled and only forwarded messages to the client's legacy mail server. The Exchange mailboxes remained in this state until a subsequent step that was initiated by the user.

Consolidation of Mail-Dependent Applications

Accounts for a few mail-dependent applications such as Remedy were created in Exchange. The Remedy case-tracking process had been tied to an Exchange 5.5

Server. Most accounts of this type that were supported in HP and Mirapoint servers were consolidated in a single non-Exchange server.

Invitations to Migrate

Based on the master schedule defined in the migration database, users would start receiving a series of mail messages from CMM that provided more information on the migration process and links to training, and other resources. Within each site, on average the weekly target was to migrate 2300 users. They would receive an e-mail informing them that they had been selected to migrate that week and asking them to either select the day of the week for their migration or to contact the client migration coordinator to reschedule for a later week. A large proportion of users chose to migrate on the indicated week. To initiate the migration, the user was asked to visit a Website and trigger the migration process.

Rescheduling Process

A Client Migration Coordinators team was assembled to deal with exceptions and questions. The coordinators interacted with CMM to determine if someone was on vacation or otherwise unavailable. CMM asked the users to specify when they wanted to migrate. This provided great flexibility. Between 75 and 80 percent of users migrated when they were invited.

Support Issues

When the migration response rate exceeded expectations, it created a support scalability challenge because the migration support team was not prepared to handle this high level of compliance. One of the reasons for the high compliance was an effective communications strategy. If the user did not respond to the first invitation, the next e-mail sent was copied to the manager. If there was no response the third time, the user was migrated automatically.

Enable Client Mailbox and Configure E-mail Client

After the user had triggered the migration process, the migration application would run background scripts to enable the client Exchange mailbox and update the master routing tables, causing e-mail to flow to the system. The new mailbox and routing updates were performed overnight. The migration consisted of an update to the user's "profile" that connected the user to their mailbox and took only minutes to complete. After the client mailbox was enabled, the user received notification that their new account was ready to access and that they could now run an automated script to configure their e-mail client.

E-mail Migration Pilot

Before starting such a large-scale migration, the team decided to conduct an e-mail pilot using randomly selected participants in Asia Pacific and Americas International, as well as volunteers. The goal of the e-mail migration pilot was to help ensure that there was adequate support for the e-mail migration by determining the optimum number of users who could be migrated with the support resources allocated.

The e-mail migration pilot was conducted over a two-month period. A larger than expected number of user queries led the team to generate a list of FAQs and to enhance their communications plan. The pilot also convinced the team that they could successfully scale 1000 users a week with their current support resources. The pilot population, however, was not large enough to give an accurate estimation of the actual migration support rate, and the support team struggled with the volume of calls during the migration. For more details, see "E-mail Migration Pilot" on page C-3.

E-mail Migration Readiness Checklist

Before deployment could begin in each region, the Global E-mail and Calendar Program team assessed project readiness. It was assumed that Exchange was ready for deployment if the items in Figure 4-4 were in place.

Figure 4-4: Readiness Checklist

Assume Completion on or before 3-Dec
Preparatory/Dependencies
General Readiness - before Phase 1 & 2
Presentation of Project plan to management
New hire process in place
Office 2003/Outlook 2003 in place prior to Phase 2
UNIX/Linux plan approved
Client ready (legacy mail?)
Readiness Review / Approval to Start
PODs
HK Pods Production Ready
Bangalore Pods Production Ready (before 12-Dec)
Americas Pods Production Ready (SJxx is first)
Tools
Migration/invitation/profile tools ready
Legacy data migration tools ready (client only)
Pilot Client feedback tool/process ready
Support & Scheduling Teams
Host/server support in place
Help Desk support and escalation plans in place
Scheduling Coordinators in place
GSD/Onsite support staff trained on Cisco specifics
Training
General Outlook WBT in place
Calandar WBT available (not needed until Phase 2)
Power User Training available
Entitlement/Access Policy check with progran
Non Cisco employees - Ruling for Wave 1
Special Users/Execs Identified and custom-scheduled
Technical Assistance Center - ruling - guidelines and ID
Global Communications
Global Comms issued
Asia Pacific Region Comms issued
Americas Region Comms issued

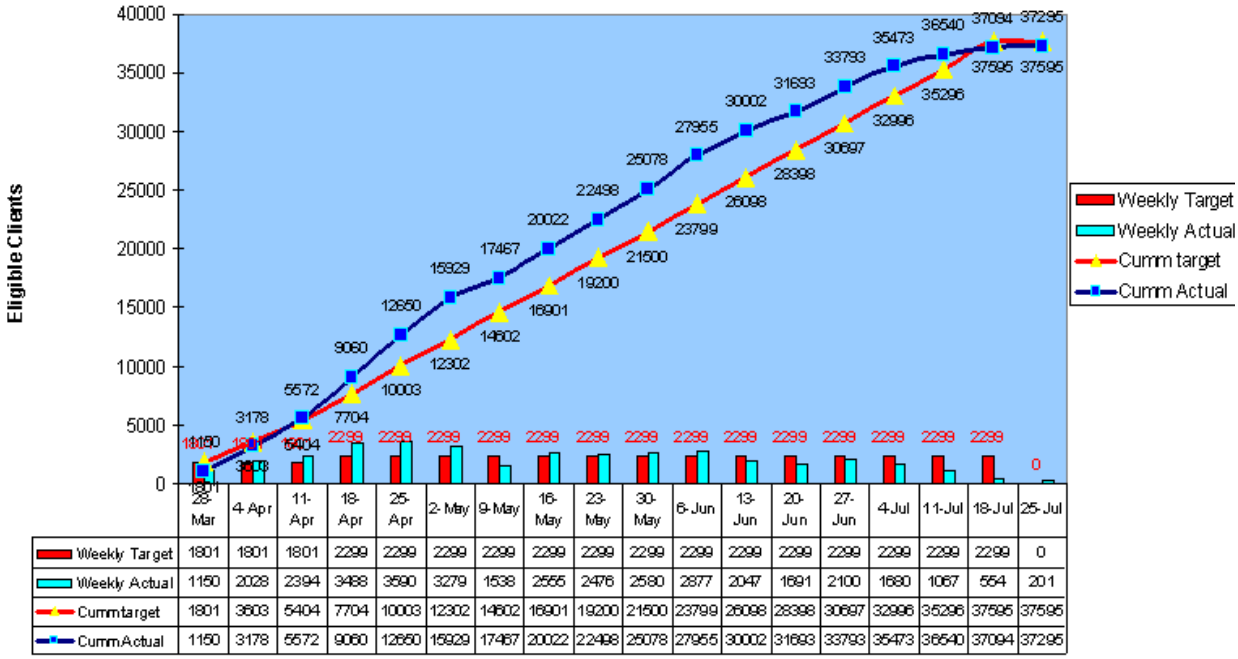
E-mail Migration Rates

The migration rates needed to stay within projected case rates (300 cases/day maximum). The rate could be adjusted if needed.

- The goal completion date was end of July 2005, subject to client satisfaction and support issues.
- The "catch up" and RC (Special Handling) intervals allowed time for reducing the backlog and adjusting schedules.
- Close coordination was maintained with the Learning group and the support staff of "select users."
- During the US/Canada and Americas International migration, the rates were tracked and exceeded, while the Asia Pacific migration proceeded on schedule.
- The project was completed by the beginning of July, roughly 30 days ahead of schedule. There was some cleanup after the end.

Figure 4-5 shows the weekly target and actual migration rates in US/Canada, Americas International, and Asia Pacific from start to end. The target was essentially reached by the second week of July.

Figure 4-5: Global E-mail and Calendar—Weekly Actual Tracking



	28-Mar	4-Apr	11-Apr	18-Apr	25-Apr	2-May	9-May	16-May	23-May	30-May	6-Jun	13-Jun	20-Jun	27-Jun	4-Jul	11-Jul	18-Jul	25-Jul
Weekly Target	1801	1801	1801	2299	2299	2299	2299	2299	2299	2299	2299	2299	2299	2299	2299	2299	2299	0
Weekly Actual	1150	2028	2394	3488	3590	3279	1538	2555	2476	2580	2877	2047	1691	2100	1680	1067	554	201
Cummtarget	1801	3603	5404	7704	10003	12302	14602	16901	19200	21500	23799	26098	28398	30697	32996	35296	37595	37595
CummActual	1150	3178	5572	9060	12650	15929	17467	20022	22498	25078	27955	30002	31693	33793	35473	36540	37094	37295

"Automating the entire migration workflow yielded a surprising speed of execution," says Teh Cheng, Global E-mail and Calendar Program manager.

E-mail Migration Lessons

This section discusses lessons learned by the migration program and project managers, the UNIX/Linux track, and the tools automation track.

Think Locally

To accomplish a global rollout, some degree of international and regional differences must be accommodated. Conducting onsite sessions in Asia Pacific, for instance, was critical to raising awareness and addressing concerns proactively. Visits by the team members also demonstrate a level of commitment from management, providing an unspoken endorsement. The same principle applies to staffing. Having region-based project managers with detailed knowledge of the cultural aspects as well as other local activities/priorities was of tremendous advantage.

Special Case Handling

There were two important considerations behind successfully meeting the aggressive migration schedule. One aspect was setting up a simple strategy with a scalable process for handling the "normal" cases. The other involved separating out "special" cases. By identifying clients who otherwise would have slowed down the mainstream progress, the team could address them in parallel with the masses and deal with their particular issues while still making the numbers. Once the special cases were culled, tiger teams were formed to handle them without affecting the baseline schedule. Regional project managers, under the leadership of the Messaging program manager, focused on the process for the masses.

“One example of how the migration team successfully managed special cases involved the 900 client mailboxes on the Sydney Microsoft Exchange 5.5 server,” says Peter Colless, messaging migration project manager for Asia Pacific. This relatively small and manageable group was already working out of the mailbox on the server. The Asia Pacific migration team decided to make this group's transition to their new mailboxes as seamless as possible by modifying the main Exchange 2003 migration process so that all the Exchange 5.5 client data could be copied to their new mailboxes as part of the migration.”

Setting an Example at the Executive Level

Despite the risk, if it is expected that the client base may offer some resistance, getting the senior executives on board early can be strategic. For the e-mail migrations, the team migrated the Office of the President before tackling the primary schedule and well before approaching the next rung down in the management ladder. This allowed the team members to refer to some very influential users when they encountered reluctance later on.

Partnering

The E-mail Migration team made an excellent and effective effort to partner with other key groups—from the Technical Assistance Center (TAC) to "special cases" support teams, to resistant engineering groups. Engaging them early, training them and leveraging their skills was crucial. Isolated cases such as rogue Exchange and Sendmail servers, and Exchange 5.5 users were handled by specialty teams with expertise in these areas.

Successful UNIX/Linux Outreach

A flexible, hybrid solution was exactly what was needed for e-mail. An Evolution client option was identified for Linux users. An early program outreach resulted in noncontentious e-mail migration. The Program built some credibility for frankness and willingness to acknowledge UNIX group existence. A quota tool was built to address the feature gap. The UNIX/Linux community requires constant and sustained specific outreach from the IT side.

UNIX/Linux Users Calendar Acceptance

There was a failure to match the level of e-mail success with calendaring. E-mail acceptance was not equivalent to calendar acceptance. The Program lost much of the credibility earned in the e-mail phase. The UNIX/Linux community needed more sustained focus. There was not enough communications focus on Microsoft OWA and Novell Evolution. The team was unable to build a server-side rules tool to bridge the gap. Also, the team should have migrated scribe/cypher/holdouts earlier.

Good Tools Requirements

Better requirements gathering should have been done prior to tool development—for example, the Tools requirements did not include operational usage. The infrastructure should not be underestimated—more system analysis was required than anticipated. Requirements should help ensure that tools are usable by Support and Operations teams, not just developers. The processes still required a lot of manual intervention.

Solution: Exchange Calendar Cutover

This section discusses the calendar cutover plan and the calendar cutover phases.

Calendar Cutover Plan

Although the e-mail migration took months, the Exchange calendar cutover was performed over a single weekend. This was a requirement, because there was no way to share the process of scheduling reservable resources, such as meeting rooms, across two calendar platforms. Although the actual cutover took only one weekend, a good deal of preparation was required.

The Calendar Cutover track team performed the following tasks to prepare for the cutover:

- Validated facilities (WPR) conference room data and related import process
- Developed training plan for regular users and power users or “special users”
- Allowed key users early access (two to three weeks ahead of the cutover) for conference room reservation under special circumstances
- Developed a robust support plan for the one-day cutover
- Developed a strong communications plan to communicate to users the cutover date and what they needed to do
- Determined, after adequate research, not to convert calendar data to Exchange and opted for a “cold-cutover” from Meeting Maker to Exchange (see “Decision not to Convert Calendar Data to Exchange” on page C-5)

Validate WPR (Facilities) Conference Room Data

This document refers to two sets of data, as follows:

- List of conference rooms—the actual list of conference rooms to be migrated from Meeting Maker to Exchange had to be imported into Exchange.
- Data in conference rooms and in end-user calendars—this data consisted of the actual meetings or bookings and was not migrated to Exchange.

Conference rooms could not be fed directly from Meeting Maker but had to be fed from WPR. Data from WPR had to be cleaned, and the status of conference rooms had to be updated to reflect Online, Offline, or Private. Only ten percent of the conference rooms remained offline when the cutover took place. This helped to ensure that more conference rooms would be available for users to reserve automatically and was a direct result of the clean-up process between the WPR systems and the data stored in Meeting Maker.

The conference room fixed accessories, such as built-in projectors and microphones, were added as room attributes so they would be visible to the user, but the accessories could not be managed. Portable accessories such as projectors were not tracked into the WPR system and, therefore, could not be imported into Exchange.

The following three types of rooms were imported:

- Online—all online rooms can be automatically booked.
- Offline—these rooms are owned by a specific team; for example, the training organization. Booking requests to these rooms have to be accepted by a proxy administrator for the room. These rooms are visible to everyone.
- Private—these VIP rooms are managed by one or more proxy owners, but are hidden from view to help ensure privacy.

Cutover Support

"Due to the 'cold-cutover' approach used, it was essential that the team be ready to support the end-user base on Day 1," says Adel Du Toit, Cisco IT calendar cutover project manager. "The support plan included direct line communications from the support room between the project team and the Help Desk (GTRC) from Day 1 of the cutover. Calendar support calls could be monitored by everyone in the support room, thus avoiding any need for escalation. In addition, the Calendar Conflict Resolution Tool (CCRT) was developed to help resolve room booking conflicts."

Once a user entered a calendar conflict case, the Help Desk would route it to the support room, where someone could access CCRT to query the Meeting Maker database for information. This information would allow support room and Help Desk personnel to quickly and smoothly negotiate an amicable resolution of the conflict between the affected parties. For more details, see "Day 2 Calendar Cutover Support Metrics" on page D-12.

Communications Plan

An Exchange Calendar Website was developed, posters were placed in strategic locations, and a series of calendar invites were sent at the start of each phase. Once the event was scheduled in the calendar, users would get reminders that were precisely synchronized to appear in between the invites. For details on the invites, see "Calendar Invitations" on page C-6.

Calendaring Migration Strategy

Approximately 40,000 users needed to be migrated from Meeting Maker to Exchange calendar. Calendar propagation across multiple zones needed to be supported. The strategy for migrating the calendar system was to wait until all sites had migrated their e-mail systems and could access Exchange. Conference rooms could not be added as sites migrated because meeting rooms were not distributed across Meeting maker on a site-by-site basis. One source of truth had to remain in place for conference room bookings. This strategy gave users the opportunity to feel comfortable with Outlook 2003 and Exchange and helped ensure that the system was running smoothly before they migrated their calendar. The calendar cutover of meeting rooms had to take place in a 30-hour window (over a weekend) to prevent disruption to the system.

Calendar Pilot

"Before migrating the conference rooms to Exchange calendar, the e-mail migration to Exchange 2003 had to be complete," says Adel Du Toit, calendar cutover project manager. "Large-scale pilots could not be conducted with 'live' conference rooms, as Meeting Maker had to remain the system of record for conference room bookings until the cutover took place. The calendar pilot primarily consisted of provisioning and then testing."

The majority of testing was conducted on a staging environment; all conference rooms were injected to help ensure accuracy. This complete provisioning on the stage environment was conducted five times. In addition, a limited number of "dummy" conference rooms were also imported into the production environment to help ensure end-to-end testing.

Calendar Cutover Steps

For more details on these steps, see "Calendar Cutover Details" on page C-5.

Step 1. Cutover Preparation

The cutover preparation step consisted of the following tasks (for details, see "Step 1: Calendar Cutover Preparation" on page C-5):

- Enabling conference room import process
- Creating and configuring mailboxes for the conference rooms
- Allowing power users early access to data
- Broadcasting IPTV calendar precutover training

Step 2. Calendar Cutover: Weekend Support Room Tasks

The cutover weekend was managed from a dedicated support room, as follows (for details, see "Step 2: Calendar Cutover Weekend" on page C-7):

- Turning Meeting Maker servers off and placing data files on share
- Provisioning all rooms, testing, and making Go/No Go decision
- Updating phone message to invite users to IPTV session and to inform them that the conference rooms were now available

Step 3. Calendar Postcutover: Day 1 and Beyond

The postcutover tasks were as follows (for details, see "Step 3: Day 1 and Beyond" on page C-10):

- E-mail with "now available" message and CIO voicemail sent on Day 1
- Three locations (Sydney, Australia; Austin, Texas; and San Jose, California) provided business hours support for three days following the cutover.
- Users were encouraged to migrate calendar data and recreate conference room bookings.

Calendar Cutover Lessons

This section discusses lessons learned during the Calendar cutover.

Three-Step Approach

The Calendar track team developed a three-step approach to prepare end users for the cutover, and this worked extremely well. During the cutover step, users were allowed to recreate and start using their calendars and booking roomless meetings—that is, they could book meetings with other people, but still needed to reserve meeting rooms with older calendaring software. Several weeks later, in the final step, users could begin booking conference rooms immediately after the cutover because they were already acquainted with the new calendaring services. The team learned, however, that they should have found the right people at the start to engage with facilities (WPR).

Calendar Invitations

To begin adoption of Exchange calendaring, the Calendar Cutover track team sent calendar invitations to users as an all-day event (banner). This helped to ensure that each user who had not already received a calendar invitation, received at least two invitations prior to cutover. Three invitations were sent corresponding to each of the three steps. For maximum effectiveness, each invitation had a reminder that was precisely coordinated for delivery along with the other invitations.

Assumptions Based on Prior Experience

The assumption was made that the calendar migration would be easy because the European and Emerging Markets had already migrated successfully to Outlook calendar. It should not be assumed that the successful deployment of calendar in one region, European and Emerging Markets, implies the same calm outcome in other regions, such as the United States, Canada, and Asia Pacific. With 20/20 hindsight, a calendar pilot in June could have given the team more time to develop FAQs and identify problems. The team also underestimated user anxiety over the cold-cut approach. Euphoria in a prior project phase should not be allowed to skew the focus on client details for latter phases.

APPENDIX C

Migration Data Details

Content

E-mail Migration Details

This section describes the client tasks to prepare for the migration, the e-mail migration pilot, and the migration schedule.

Expected Client Actions to Prepare for E-mail Migration

The following table lists the expected client actions during the first two steps of the migration. Frequent and timely communications to users prepared them to take these actions.

Exchange Migration Steps	Microsoft Windows Clients			UNIX/Linux Clients
	Qualcomm Eudora	**Microsoft Outlook**	**Netscape**	**Pine/Elm/etc.**
Step 1: Outlook 2003 Availability	• Clean up old mail • Install Microsoft Office 2003 • Import legacy mail • Use Outlook 2003 for e-mail • Take Outlook 2003 training • Continue Outlook 2003 training	• Clean up old mail • Upgrade to Microsoft Office 2003 • Take Outlook 2003 training • Continue Outlook 2003 training	• Clean up old mail • Install Microsoft Office 2003 • Import legacy mail • Use Outlook 2003 for e-mail • Take Outlook 2003 training • Continue Outlook 2003 training	• Install and evaluate Evolution • Review connection method options on IT Services site • Continue Evolution evaluation
Step 2: Exchange Mailbox Creation	• Respond to migration invitations • Adhere to migration schedule	• Respond to migration invitations • Adhere to migration schedule	• Respond to migration invitations • Adhere to migration schedule	• Respond to migration invitations • Adhere to migration schedule

E-mail Migration Pilot

Before starting such a large-scale migration, the team decided to conduct a pilot involving 2000 e-mail migrations for randomly selected participants scattered in the Asia/Pacific and Americas International regions. The first few hundred participants were selected from IT groups. The participants were drafted from specific areas or volunteered. For instance, the Toronto Management Support group was one of the first to agree to stop using Meeting Maker and cut over to Exchange. The goal of the migration pilot was to help ensure that there was adequate support for the migration.

Pilot Schedule

The pilot was conducted from December 2004 to February 2005. The pilot had initially been targeted to start in October 2004, but a series of delays pushed the start date to December 2004. One of the reasons that the pilot could not start in October was that the Client Migration Management (CMM) tool was not ready yet. The automation of the migration process provided by CMM was considered critical, because support actually set the pace for the migration. Also, the RTP server needed to be up and running, and the system environments needed to be ready and stable.

Because the pilot was delayed, the start date for the migrations slipped to March 2005, thus shortening the original timeframe from October-July to March-July. The migration had to be completed in half the originally estimated time.

US/Canada Wave 1 Phase 1 Mailbox Account Creation (Pilot)

The first set of notices began to be sent three weeks before the pilot started.

Amer Wave 1	Phase 1 = Mailbox creation			
Regulars Only	Pilot			
Week of:	6-Dec	13-Dec	20-Dec	27-Dec
Mbx/week:	1000	10000	15000	0
cumm totals:	1000	11000	**26000**	**26000**

US/Canada Wave 1 Phase 2 Connect to Exchange (Pilots)

The first set of notices began to be sent three weeks before the pilots started.

Amer Wave 1 Phase 2 Connect to Exch	13-Dec	20-Dec	27-Dec	3-Jan	10/Jan	17/Jan	24/Jan	31/Jan
	Pilot	Pilot	holidays	Pilot	Pilot	review& adj	review	**Begin**
Target Mig per Week:	***200***	***200***	***0***	***500***	***1000***	***0***	***0***	***2000***
cumm totals:	200	400	400	900	1900	1900	1900	3900

Asia Pacific Wave 1 Phase 2 (Pilot)

The “catch up” and RC (Special Handling) phase allowed time for reducing the backlog and adjusting schedules. The first set of notices began to be sent three weeks before the pilots started.

		10-Jan	17-Jan	24-Jan	31-Jan	7-Feb
Asia/Pac Ph 2			Pilot	Pilot	**review**	**review**
phase 2/wave 1			100	100	0	0
running totals:		0	100	200		

Lessons Learned from the E-mail Pilot

The Global E-mail and Calendar Program team learned valuable information:

- Transend, the mail-importing utility, generated more trouble cases than had been expected.
- The number of expected user queries had been underestimated. As a result of the pilot a list of FAQs was generated.
- Most of the queries were from users who were not following instructions or who did not understand the migration process. The team realized that they needed to have adequate support and improve communications.
- The migration team learned that scalability was not about process but about the ability to support users. They could successfully scale 1000 users a week.
- A high percentage of users had unofficial versions of Microsoft Office that were not compatible with the automated migration process. The automation routine was adjusted to notify these users that they had to download the official version before starting.

Calendar Cutover Details

This section describes in detail each of the three steps followed during the calendar cutover: preparation, cutover weekend, and Day 1 and beyond.

Step 1: Calendar Cutover Preparation

This step covered the time period from August 29, 2005 until the cutover, September 16, 2005. During these two weeks, support was added for the calendaring functionality within Exchange for roomless meeting requests and appointments.

Decision not to Convert Calendar Data to Exchange

Cisco IT investigated multiple solutions for converting data from Meeting Maker servers to Microsoft Exchange servers—including the major vendors in this niche solution market and the solution used for the European and Emerging Markets data conversion process in FY'04.

Given that both Meeting Maker and Exchange use proprietary database structures, a solution had to meet the following server-side data conversion requirements:

- Accurate data mapping from Meeting Maker to Microsoft Exchange calendaring
- Predictable and reliable confirmation of actual data injected with robust exception handling
- Demonstrated ability to complete data transforms and injections within 30 hours

No vendor was able to provide a solution that met all of the requirements. One vendor could convert the user data but not the calendar data and there was no time to resolve the problem. As a result, the team determined that a reliable solution did not exist to move or copy Meeting Maker data into the Exchange free/busy database.

The team also reviewed the option of using the Microsoft Exchange server import process to import data, an option that requires a very lengthy server downtime. Using the timeframe required for the European and Emerging Markets data conversion as a baseline for the required downtime, the Exchange import process would require at least seven days of Exchange server downtime to complete the data conversion for the remaining regions. Due to the importance of e-mail on Cisco employee productivity, this too was not a feasible option.

A decision was made to proceed with a cold cutover using a three-step approach, rather than delay for additional research, which would have pushed the cutover out for an additional two to three months. The original date selected, September 12, was pushed to September 19 due to an IT management meeting off site.

Enabling Conference Room Import Process

The conference room nightly update import process from the facilities (WPR) database was enabled by inserting the conference rooms from the WPR feed (WINS) into Exchange, thus bringing all rooms online. Conference rooms were imported as Exchange mailboxes without any booking data. At this time, conference rooms were invisible to everyone except power users (executive administrators, administrative assistants, and a select number of receptionists). This was accomplished by creating a separate Active Directory group to which only those users that fell into the "early-access" group were added.

Creating and Configuring Mailboxes

Conference rooms were imported into Exchange about four weeks before the cutover date of September 19. Mailboxes were created for each conference room and then configured to accept reservations. The conference rooms were not visible to the general user population at this time; only users added to the “early-access” Active Directory group could view the conference rooms.

During the one-week period prior to granting access to the power users, the project team helped to ensure the accuracy of the data, and all updates from facilities (WPR) were frozen.

Early Access to Power Users

Power users received training and added to the “early-access” group three weeks prior to the general cutover. This helped to ensure that the power users could secure special purpose conference rooms.

IPTV Calendar Precutover Training Broadcasts

Users were encouraged before the cutover to receive an overview of the calendar cutover process, available calendaring applications, and learning options. The 60-minute segment was broadcast four times from September 12 through 16.

Calendar Invitations

The calendar invitations sent included the following information:

1. Monday, August 29, 2005—Start using Outlook, OWA, or Evolution calendar today to schedule roomless meetings and invite attendees. Use Meeting Maker to book conference rooms, and then add room details to the Exchange meeting. Outlook users were prompted to take formal training. Links were provided to calendar policies and best practices.
2. Friday, September 16, 2005—Today is the last day for using Meeting Maker. Log into Meeting Maker before 6:00 p.m. PT to accept/deny all outstanding meeting requests. Print Meeting Maker schedule for September 19-23 to help ensure that you do not miss any meetings. Use “meeting tracker template” to identify all Meeting Maker meetings that you own and need to recreate after the cutover. Review calendar policies.
3. Monday, September 19, 2005—Use your preferred application for Exchange conference room booking. Use your completed “meeting tracker template” to recreate your Meeting Maker calendar in Exchange. Attend a live IPTV broadcast to receive a demonstration of core calendaring functions. Review the calendaring policies. For more details, see “Postcutover Communications” on page C-11.

Step 2: Calendar Cutover Weekend

This step covered the cutover weekend, from Friday, September 16, 2005, to Sunday, September 18, 2005, at 4 p.m. PT. The main support room was located in San Jose, California.

Support Room Setup

The support room for step 2 was set up in San Jose, California. The support room activities are described in Table C-5.

Table C-5: Calendar Cutover Weekend Tasks

Item	Task Name	Duration	Day	Start	End
1	**Meeting Maker**				
1.1	**Asia Pacific**				
1.1.1	Turn Meeting Maker Servers off	10 minutes	Friday	09.00	09.10
1.1.2	Create .dat files	2 hours	Friday	09.10	11.00
1.1.3	Place .dat files on share for development of CCRT Tool	10 minutes	Friday	11.00	11.10
1.1.4	Confirm with developer that files are placed on share	5 minutes	Friday	11.15	18.00
1.2	**US/Canada and Americas International**				
1.2.1	Turn Meeting Maker Servers off	10 minutes	Friday	18.00	18.10
1.2.2	Create .dat files	3 hours	Friday	09.10	11.00
1.2.3	Place .dat files on share for development of CCRT Tool	10 minutes	Friday	11.00	11.10
1.2.4	Confirm with developer that files are placed on share	5 minutes	Friday	11.15	18.00
1.2.5	Convert files for CCRT	9 hours	Fri/Sat	21.15	07.00
1.3	**Conflict Resolution Tool (CRT)**				
1.3.1	Make available to Help Desk (GTRC) and support room		Sunday		
2	**Exchange**				
2.1	**Conference Rooms**				
2.1.1	Data Provision all Rooms/ Change Attribute 8	2 hours	Friday	18.00	20.00
2.1.2	Implement private tag as part of data provision	0			
2.1.3	Security Reset	14 hours	Friday	will run overnight	
2.1.4	OWA Event Sink Registration Note: We will leave the EA address book set up in place.	1 hour	Friday	20.00	21.00

Table C-5: Calendar Cutover Weekend Tasks (Continued)

Item	Task Name	Duration	Day	Start	End
2.2	**Testing**				
2.2.1	Execute full testing of all Calendar functionality associated with Conference Room Booking per Test Plan	3 hours	Saturday	13.00	16.00
2.3	**GO / NO GO DECISION**				
2.3.1	Discuss any issues encountered during cutover and identify show stoppers (if any) for back out.	1 hour	Saturday	16.00	17.00
3	**Support—Help Desk (GTRC—Global Technical Response Center)**				
3.1	**Update Phone Wait Message to Include:**				
3.1.1	Conference Rooms are found in the Global Address List (GAL) under Conference Rooms and then US/Canada and Americas International, Asia Pacific, or European and Emerging Markets. If you cannot view the rooms or receive and invalid bookmark error, please download the Offline Address Book by selecting Tools, then Send and Receive, and then Download Address Book.	30 minutes	Sunday		
3.1.2	Attend an IPTV session this week to learn how to resolve the top Outlook Calendar issues. Read the CEC article for the IPTV broadcast schedule.	N/A	Sunday?	?	?
4	**Communications**				
4.1	**E-mail and Voicemail**				
4.1.1.	Send Calendar “now available” e-mail	1 hour	Sunday	13.00	14.00
4.1.2	Send Brad Boston voicemail	30 minutes	Sunday	13.00	13.30

First Leg Completed: Saturday, September 17, 4:17 a.m. PT

Completed all the activities associated with the first leg of the cutover from Meeting Maker to Exchange Calendar, as follows:

- Meeting Maker:
  - Turned Off /Disabled all Meeting Maker Servers globally on Friday evening. Users can still reference their historical records.
  - Created .dat files and placed them on a share in preparation for the creation of the Conflict Resolution Tool (CRT).
- Exchange:
  - Data-provisioned all rooms. Changed Attribute 8 to bring all rooms to the correct status—Online, Offline, or Private—for booking after cutover. The conference room names were made visible in a global address list (GAL).
  - Security reset was initiated to allow all Cisco users to see the conference rooms. The estimated run time was approximately 16 hours starting on Saturday, September 17, 7 p.m. Pacific Time.

— OWA Event Sink Registration is complete.

Second Leg Completed: Saturday, September 17, 11:40 p.m. PT

Completed all the activities associated with the second leg of the cutover from Meeting Maker to Exchange Calendar, as follows:

- Meeting Maker:
  - All .dat files had been imported to be visible in the CRT, which was at that moment in the development environment. The initial testing was successful.
  - System was ready to push the CRT to production and grant permissions to conflict resolution personnel.
- Exchange:
  - Security Reset was completed for Online, Offline, and Private rooms.
- Issues Encountered
  - Security reset for conference rooms could not be performed from a server that had not allowed MAPI connections to set the security of the rooms.
  - Security reset for Offline and Private Rooms had to be redone due to vendor display name change.
  - The address book setup for conference rooms was not displaying the conference rooms when filtering down to the United States, Canada, and Americas International, as well as Asia Pacific.

Third Leg Completed: Sunday, September 18, 3:40 p.m. PT

All server-side activities associated with the readiness for go-live with Exchange Calendar had been completed. Client notifications were scheduled for September 18, at 4 p.m., prior to start of the Asia Pacific business day. The Go / No Go decision point was 4:00 p.m. PT, at which time the team had a readiness indication.

- Summary of Changes
  - All Meeting Makers were offline.
  - Global conference rooms could be reserved by all Exchange users in the global address list (GAL)
  - Test bookings had been completed for Novell Evolution, and Microsoft Outlook and OWA clients.
  - The Offline address book replication would complete before the start of business day in Asia Pacific.
- All Issues Resolved
  - Security reset for conference rooms could not be performed from a server—server restart resolved the issue.
  - Vendor display name change required changing the scripts and testing to help ensure that the issue was resolved.
  - Address book view not displaying the conference rooms—reset of security for the address book resolved the issue.

Step 3: Day 1 and Beyond

The final step covered the post-cutover time period beginning with the start of business in Australia corresponding to Sunday, September 18, at 4 p.m. Pacific Time (PT). Because of the global time zones, the team had to help ensure that the system was in place and running on APAC Monday morning. Users could start recreating their scheduling and conference bookings in Microsoft Outlook, Microsoft OWA, or Novell Evolution.

Support Rooms Setup

Support rooms for step 3 were set up at three locations: Sydney, Australia; Austin, Texas; San Jose, California. Eight-hour shifts were staggered in order to cover the schedule allocated to each location. The time shown in the following table is in Pacific Time (PT). Each support room was connected to a bridge that was opened daily by the Austin support room. The bridge ran the whole time that the support rooms were staffed. The Chair Pin was assigned to the designated support room lead. During the cutover weekend, the Chair Pin was assigned to the Calendar Cutover project manager.

Date	Location	Staff	Start			End		
			SYD	AST	SJ	SYD	AST	SJ
Sunday 18 September	Sydney (SYD)	1	9am	4pm	6pm	5pm	12am	2am
	Austin (AST)	3	2pm	5am	12am	6pm	9am	4pm
	San Jose (SJ)	3			6pm			9pm
Monday 19 September	Sydney	1	9am			5pm		
	Austin	4		7am			6pm	
	San Jose	10			9am			6pm
Tuesday 20 September	Sydney	1	9am			5pm		
	Austin	4		7am			6pm	
	San Jose	10			9am			6pm
Wednesday 21 September	Sydney	1	9am			5pm		
	Austin	4		7am			6pm	
	San Jose	10			9am			6pm

Support Rooms Responsibilities

The support room personnel had the following responsibilities:

- Handled escalations
- Created FAQs as needed
- Created communications/website updates as needed
- Responded to daily questions coming in from IPTV viewers
- Monitored and responded to xch-calendaring-feedback alias
- If needed, set up ad-hoc QA sessions for groups of users

Recreate Schedules and Bookings

Users were encouraged to migrate their own calendar data from Meeting Maker to the Exchange calendar, and to recreate their conference room bookings in Exchange. The Calendar Cutover team used strategic communications to convey this message to the users.

Postcutover Communications

The following announcements were scheduled to be delivered or available at start of business, Monday, September 19:

- A pre-recorded IPTV broadcast, set up to run daily from September 19 through 22, provided information on how to migrate calendar data and recreate bookings in Outlook 2003 and Outlook Web Access (OWA).
- “Exchange Calendar now available” e-mail message was sent on Day 1.
- A pre-recorded voicemail from Brad Boston, Chief Information Officer, was sent on Day 1.
- An e-mail from Edzard Overbeek, vice president of European Markets, was sent to all European and Emerging Markets users on Day 1.

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Note:
This publication describes how Cisco has benefitted from the deployment of its own products. Many factors may have contributed to the results and benefits described; Cisco does not guarantee comparable results elsewhere.

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