

Training and Support: Helping Users Leap to a New Messaging System

Cisco IT Case Study / IP Messaging / Global E-mail and Calendar - Training and Support: This case study describes the training and support plans behind Cisco IT's global network migration to Microsoft Exchange Server 2003. It details both the support and training that was provided to users before, during, and after the global migration. User training and user support are both critical to the eventual success of any major service change. Cisco customers can draw on Cisco IT's real-world experience in this area to help support similar enterprise needs.

"It was expected that a robust training program would reduce the need for support during and after the migration. Well-informed users do not require as much support, and a small investment in training will reduce the significant costs of support later on. The Global E-mail and Calendar Program team designed a training and support solution that would allow them to manage the users' experience with their e-mail and calendaring changes."

—Carina Reyes, IT worldwide Enterprise Messaging Services 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 Migration 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/ciscoitnetwork>

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	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)

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Overview

The Global E-mail and Calendar Program team designed a training and support solution that would allow them to manage the users' experience with their e-mail and calendaring changes.

This case study describes how Cisco approached training and support on a large-scale migration from a Sendmail environment to an Exchange environment. Cisco chose to invest heavily in both training and support due to the personal nature of e-mail and the dramatic shift with calendaring. As many support issues often come as a result of poor user training, Cisco IT put special emphasis on early, consistent, and well-timed training to reduce overall support costs.

Training and Support Objectives

The Training and Support track objectives were closely linked with each other. Issues identified through support would affect the content and frequency of instruction, while adequate and timely training would reduce the need for support.

The Global E-mail and Calendar Program team designed Support and Training tracks with the following objectives.

- Provide flexible options for a global mobile workforce
- Invest in the most effective medium for training and support
- Provide support that is accessible 24 hours a day
- Scale training and support for 50,000 users
- Provide early training for the Help Desk support and critical power users
- Use a core versus context approach to back-end operations and help desk support
- Develop a support model flow that defines a clear problem resolution path through all levels and types of support

E-mail Migration and Calendar Training

This section describes the training track team and training challenges, solutions, and lessons learned.

Training Track Team

This section describes how the Training Track team fulfilled their goals.

Training Goals

The Training Track team had three major responsibilities:

- Developing the global strategy and courses for training the population of general users and power users on the new Exchange e-mail and calendaring services.
- Collaborating closely with the other teams to help ensure that users understood how to use the new features and applications and to minimize any effect on their productivity.
- Coordinating communications delivered to the learners and monitoring support statistics to help ensure that adequate training was available and users knew how to obtain it.



Major Training Functions

The Training Track team accomplished their goals by pursuing the following tasks:

- Developed the training strategy and schedule planning
- Designed the instructional material
- Generated reports on a weekly basis to track enrollment, participant feedback, and other metrics
- Developed a tool to automatically send invitations to users two weeks after they had migrated their e-mail
- Outsourced course content development, instructor-led training (ILT), Virtual Classroom (VC) training, and translation of course content and Quick Reference Guides into multiple languages

Training Challenges

The Global E-mail and Calendar Program was a large-scale project. The Training department had never faced a rollout of this magnitude. Some of the challenges were as follows:

- Determining how much to invest in training
- Determining how to increase the usually low adoption rate of user training
- Training users on a new system in a very short period of time
- Training different types of groups: special users, power users, as well as regular users
- Developing adequate training for e-mail and calendaring applications, which are critical to each employee
- Providing the wide variety of training required by the global mobile workforce at Cisco
- Providing multiple language translations

Training Solution

This section discusses the different types of training available, the audience, training materials and languages, training notifications, metrics, as well as other sources of information.

Training Audience

The different categories of learners are described in the following table:

Audience Type	Characteristics
General Population	<ul style="list-style-type: none"> • Everyday users
Power Users	<ul style="list-style-type: none"> • People who use Outlook as a critical/major portion of their job function • Executives • Executive administrators • Administrative assistants • Others with similar job roles



Training Deliverables for the General Population

The training deliverables are described in the following table:

Class Type	Characteristics
Web-based Training	<ul style="list-style-type: none">• Provided at no cost• Cisco-developed Web-based training specifically for the Exchange rollout• Microsoft training library (MELL) will be made available in English and Japanese• Web-based training consists of several topic broken down into modules that the students complete at their own pace
Virtual Classes	<ul style="list-style-type: none">• Broadcasted by a live instructor over the Web• Cost associated with these classes was \$120 for three one-hour sessions• Offered globally in all time zones. Learners could register for the most suitable session.

Training Deliverables for Power Users

Power users required individual attention and courses specifically tailored to their job functions. They also needed mandatory training scheduled well in advance of the migration or cutover.

Class Type	Characteristics
Instructor-led	<ul style="list-style-type: none">• Classes led by an instructor in a classroom setting• Three hours in length• Limited to power users by invitation-only <p>Note: Because the cost of instructor-led training is fairly high and often has low participation, these classes were provided only to power users.</p>
Fast Learning (Virtual Classroom)	<ul style="list-style-type: none">• Length was 60 to 90 minutes• Focus on special topics in conjunction with support issues.• The objective was to improve productivity by providing tips and encouraging users to utilize new features.• Allowed the Training team to deal with specific complaints or requests for special training from specific groups.• During the calendar cutover, the following courses were taught:<ul style="list-style-type: none">— Outlook Mailbox Management— Calendar Permission Settings and Delegation— Top five Issues for Help Desk



Outlook E-mail and Calendar Trainer Program

In order to accomplish such a large-scale training project, the largest that Cisco had ever undertaken, training was outsourced through certified vendors worldwide. A program was established to train the trainers in-house and Trainer Guides were developed. It is estimated that over 20,000 training sessions were delivered.

Training Notifications

Available training was advertised in various ways:

- Notifications were included in the migration e-mails
- ITLG courses were announced through e-mails
- Training signup instructions were posted in the Outlook Exchange Learning Information Webpage

Training Materials

Training materials for Instructor-Led Training (ILT), Virtual Classroom, and Web-based courses for both e-mail and calendaring were designed by an in-house Instructional Designer and developed by an outside vendor.

Content	Course Type	Materials
E-mail and Contact	Instructor-led Training Virtual Classroom Web-based	Student Guide Trainer Guide Quick Reference Guide
Calendar	Instructor-led Training Virtual Classroom Web-based	Student Guide Trainer Guide Quick Reference Guide
Outlook Web Access (OWA)	None	Quick Reference Guide

Training Languages

“The determining factors for offering training in a local language are class size and Outlook user interface language,” says Paul Samuel Nosa, Cisco IT Training Track project manager. “In Japan, training was conducted in Japanese by local trainers using Japanese versions of the Student Guide and a Japanese user interface. In China and Korea the trainers taught the courses in their native language but used English Student Guides since the user interface text was in English. This was the most cost-effective way of teaching these courses.”

Course content was only translated into Japanese. Quick Reference Guides were translated into the following languages:

- Simplified Chinese (Mandarin)
- Japanese
- South American Spanish
- Portuguese (Brazilian)
- Korean



Informational Q&A Sessions

Informational sessions were presented as needed. "For example, these sessions were given to administrative assistants and executive administrators to help them prepare for the migration," says Paul Samuel Nosa, Cisco IT Training Track project manager. "After the migration, the sessions focused on specific topics. Q&A sessions (workshops) were also held, and included a technician who could answer specific questions and provide focused tips. These sessions were held globally, at random."

Training Registration (Notification Automation)

The migration registration and training database were linked to allow for automated notifications. The tool automatically triggered an invitation to attend a class. This tool was customized to identify the user background (Outlook, Eudora, etc.). Client segmentation was also done so the tool would send invitations for ILT only to special users, such as administrative assistants.

Other Learning Resources

Additional information aids are provided in the IT Services and Support Website. This material is not a substitute for training, but is targeted at specific situations. The information includes the following items:

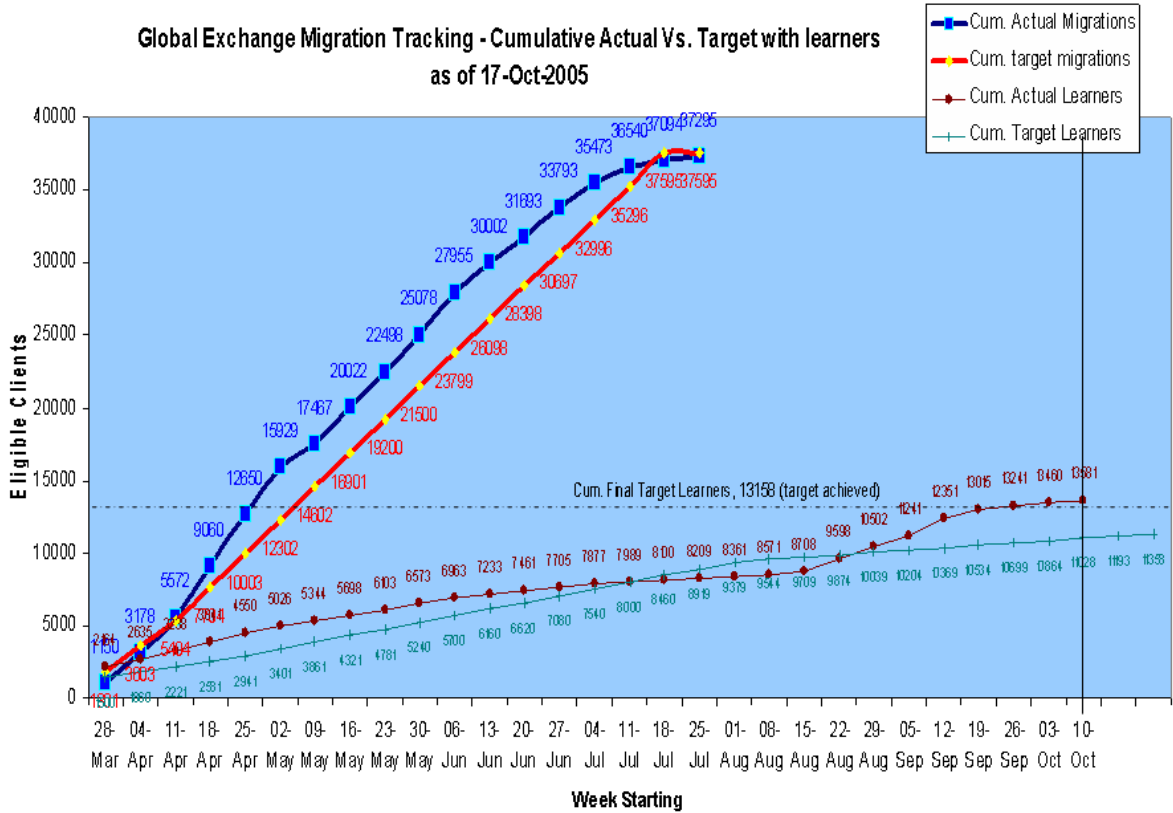
- Quick Reference Guides (QRG)—available in multiple languages: Outlook 2003 with Exchange, Outlook 2003 Calendar, and Outlook Web Access (OWA) Calendar.
- Best Practices—contain important information and instructions on how to mitigate potential problems for Outlook 2003 e-mail, calendar, and OWA.
- New Features—describes in detail the new Exchange features such as Cached Exchange Mode, Custom Search Folders, Junk E-mail Filter, Quick Flags, Auto-archive, and Rules and alerts.



Training Metrics

Training metrics were analyzed closely in tandem with migration rates. Figure 5-1 shows the target versus actual figures for learners several weeks after the September 19 calendar cutover date. By this time the number of users receiving training had exceeded the expected learners. The training levels reached their target on September 19, the day of the calendar cutover.

Figure 5-1: Cumulative Actual Versus Target Migrations with Learners



Customer Satisfaction Scores

Over 14 percent of class attendees provided feedback. Of these over 80 percent were satisfied or very satisfied. As of October 2005, the average Customer Satisfaction (CSAT) scores for the Exchange Migration courseware for all class types were as follows:

Duration	July 2004 to October 2005
Enrollment	13,540
Survey respondents	3,933
Average CSAT	4.01



Training Lessons Learned

This section describes the lessons learned during the e-mail and calendar migration.

Use Multiple Delivery Channels

Multiple delivery channels including Instructor-Led Training, Virtual Classroom, Web-based, and self-paced were used to reach as wide an audience as possible in a short time frame, and this worked very well.

Integrate Training with Program Schedule

As much as possible, training was integrated with the Global E-mail and Calendar Program schedule. Pre- and post-migration follow-up, case generation follow-up, and training were synchronized with the communications and migration schedule.

Deliver Specialized Training as Necessary

The Training team worked closely with the support groups of special users, such as executive administrators. The tight partnership was used to quickly deliver specialized training on the spot, as needed, over a period of two or three weeks. The Training Track team held one-hour workshops with these special users for specific questions and support issues. Special sessions, such as supplemental training on Mail Management and Calendaring were provided.

Improve Training Content Continuously

The sessions created for administrative assistants and executive administrators were around specific issues that had been identified by the support groups. Quick Tips based on those issues were later developed and distributed. Rollout training has different requirements than later training, because it starts from ground zero. After three or four months, the type of training required changed, and the training team launched Fast Learning sessions focused on specific topics for Mail Management and Calendaring.

Screen Carefully the Skills of Local Training Resources

The initial quality of instruction in Sydney and Singapore did not meet Cisco standards, but suitable instructors were quickly found for future training sessions. These were the only two instances of negative feedback. Local instructors should be screened carefully, not only for subject expertise, but also for their facilitation and people skills. Since Cisco-approved vendors provided the instructors, a template or criteria list would have been helpful to better qualify local training agency capabilities. On the other hand, local training was well received. Local training was adapted to the size of the audience and delivered in the local language.

Anticipate Supplemental Training Needs

The request for additional administrative training was not anticipated, but administrative needs were met with informational sessions and workshops. The Training team did not anticipate opportunistic training events or additional client interest and/or demand for training. In spite of some unforeseen emergencies, they had sufficient budget to take care of unexpected events.

Determine Whether Training is Needed on all Platforms

The training developed for this program was Microsoft Windows-dominant. A decision was made not to offer Outlook Web Access (OWA) or Evolution training, based on the number of Cisco users. A Quick Reference Guide was developed for OWA users. The topic was raised multiple times, and the same decision was always made by the Program team. Later, it was determined that this training was needed.



E-mail Migration and Calendar Support Model

This section describes the Support Model objectives, track team, priority levels and process.

Support Objectives

The Global E-mail and Calendar Program team developed a support model process to accomplish the following objectives:

- Provide client migration coordinators that would coordinate with users on their migration schedule, assist Help Desk personnel on migration issues, and record progress and status of migration
- Provide client-side support using the Help Desk—known internally as the Global Technical Response Center, or GTRC—for both the e-mail migration and the calendar cutover
- Provide operation support for the Exchange server, including Exchange and Windows support

Support Model Track Teams

The Support Track included multiple teams that focused on the process around the back-end support and developed the flow between the Help Desk and Level 3 client support.

The Support Track included the following teams:

- Client E-mail Migration Coordinators—managed the scheduling, end user interface, and reporting during the e-mail migration (see [“Client E-mail Migration Coordinators”](#) on page 5-9).
- Cisco Help Desk—outsourced to IBM—managed the e-mail migration.
- Operation support—Exchange Level 3—was outsourced as well to a specialized vendor, since this expertise was missing in-house. The team managed contracts and relationships with the Level 3 support vendor and provided an interface with the Vendor Management Office (VMO). Negotiations were completed in three and a half months.
- Windows Hosting support—provided by separate Data Center Systems and Solutions (DCSS) organizations at each of the three regions. This effort set in motion the development of the globalization process for DCSS.
- Active Directory/DNS support
- Storage support

Client E-mail Migration Coordinators

One of the major lessons learned from the European and Emerging Markets migration was that it took a lot of record keeping and interaction with users to negotiate and maintain schedules. The client migration coordinators would start with the baseline schedule for a given site, then deal with questions and rescheduling requests that would invariably come up. By having a team of people dedicated to this interaction with users, two things were accomplished: first, the team was able to adhere to the baseline schedule but still accommodate legitimate requests for special circumstances (such as leave of absence, PTO, or unavoidable conflicts). Secondly, the team was able to prevent scheduling questions and requests from reaching the Help Desk, allowing Help Desk (GTRC) personnel to focus on dealing with post-migration cases.



The client migration coordinators functions included handling case work, interacting with other track teams, and providing reports, as follows:

- Worked minor technical issues such as profile issues, and incomplete installation of Office 2003, thus preventing problems with simple fixes from reaching the Help Desk and increasing wait times
- Actively worked with the Help Desk on handling some of the support calls, for increased client support and satisfaction
- Created FAQs and support/response scripts for voice and e-mail inquiries
- Provided feedback to the Training track on topics that needed more visibility or inclusion in the courses themselves, based upon input from users' calls and e-mail
- Provided feedback to the Communications track on items that the users were not understanding or that needed elaboration.
- Acted as the primary point of contact for escalations, working on the issues and escalating them to the migration lead or to the regional migration project manager, as appropriate.
- Provided reports on all the key migration statistics, as follows:
 - The number migrated per week, reschedules per week, and forced migrations per week
 - A running total and percent migrated to date
 - The number migrated on a particular server type (for example, Mirapoint servers)
 - The number migrated per employee type or organization: Engineering, Technical Assistance Center (TAC), special cases, and power users

Priority Levels

The following table describes the levels of priority for the hardware:

Priority	Item
Highest Priority (P1)	Exchange Mailbox Servers
	More than one Bridgehead is down
	More than one Front-End server is down
	Exchange Free/Busy (Public Folder)
	Backup Servers
Moderate Priority (P3)	Exchange Bridgehead Servers
	Exchange Front-End Servers
Lower Priority (P4)	Hot Spare Servers



Priority Level Definitions

The following table describes the levels of priority for hardware problem or service request resolution:

Priority	Case Type	Definition	Potential Effect
P1	Problem	Loss of this service has the potential for immediate and severe business effect on Cisco.	<ul style="list-style-type: none"> Revenue loss (actual not postponed) Inability to make or ship product Inability to develop code or product Inability to meet contractual, legal, or government-imposed processing deadlines Effect on external Cisco customers, partners, and/or supplier processes with negative implications to relations, market perception, and/or revenue Engineering unable to work on a critical customer build or fix or CAP account issue
P2	Problem	Loss of this service has the potential for adverse business effect on Cisco.	<ul style="list-style-type: none"> Inability of one or more organizations within Cisco to perform their daily operations, such that they are essentially idle Direct and critical effect on executives within the company Development, test, disaster recovery, or staging environment for a P1 service or system
P3	Problem Service request	Loss of this service has the potential for low business effect on Cisco.	<ul style="list-style-type: none"> Inability of multiple users to perform their daily tasks such that they are essentially idle, or effect on a single user under an approved, documented SLA requirement Development, test, disaster recovery, or staging environment for a P2 service or system

Service Level Agreements (SLA)

The following table describes the service level agreements (SLA) for each priority level.

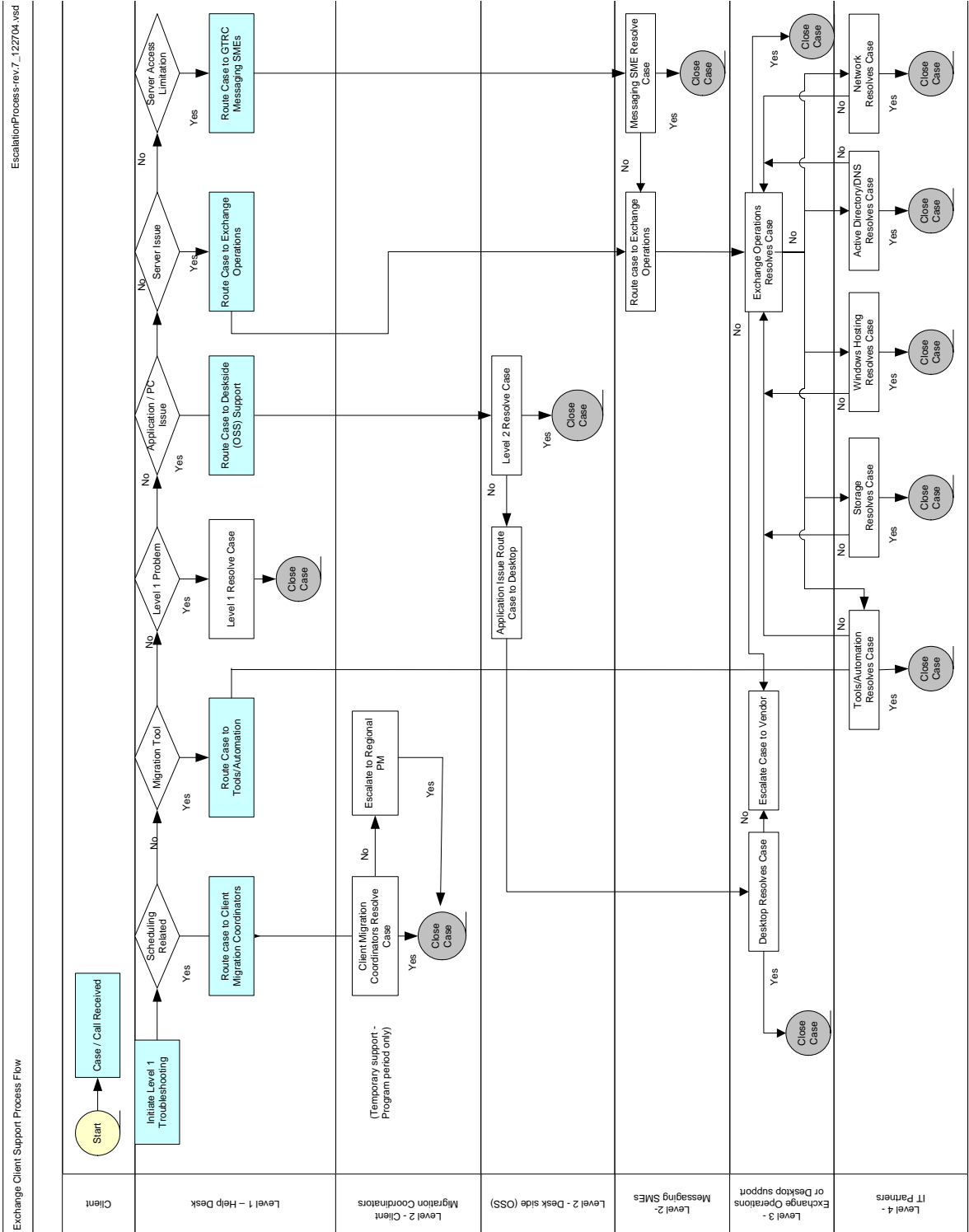
Priority	Time to Respond	Time to Resolve
P1	Immediate response	2-hour resolution
P2	Immediate response	4-hour resolution
P3	Four-hour response	24-hour resolution
P4	Call to confirm	48-hour resolution

Support Model Process

Figure 5-2 illustrates the support process flow.



Figure 5-2: Support Model Process





Operation Support

Operation Support provides system and application administration support. This section discusses the Operation Support challenges, solution, and lessons learned.

Operation Support Challenges

Operation support had the following challenges:

- Not sufficient expertise in-house for Exchange hardware and Microsoft Windows required support to be outsourced to a third-party vendor.
- Global support had to be provided by two separate Data Center Systems and Solution (DCSS) groups in three regions. These groups were separate, and not unified, at the time.

Operation Support Solution

The Operation Support solution involved developing a process for hardware and OS support and outsourcing the application administration.

Hardware and OS Support

Process flows were developed by the EMS team to describe support functions between the EMS and the DCSS-WIS and DCSS-APJ teams. For detailed flows, see [“Support Processes” on page D-4](#). The DCSS-WIS and DCSS-APJ teams used their existing processes for Hardware and OS support for Exchange and owned the documentation. The DCSS-WIS and DCSS-APJ teams provided the EMS team with the process flows that would be used for hardware and OS support during the global E-mail and Calendar migration. For location of server functions, see [“Server Functions Distribution” on page D-2](#) and for software configuration, see [“Software \(Operating System\) Configuration” on page D-2](#).

Outsourced Global Applications Support

The application support was outsourced to a third-party vendor with Exchange support experience, but the Enterprise Messaging Services (EMS) group retained ownership. The Support Model group provided liaison with the Vendor Management Office (VMO). The support agreement also included support for Exchange Unity. For details on application support processes, see [“Application Support Escalation Processes” on page D-3](#).

The applications support parameters were defined as follows:

- Global support delivered 24 hours a day from SJC and RTP for redundancy
- Responsible for all Exchange application support:
 - Tickets to WW-SCH-Duty
 - Reactive support
 - Proactive support
 - Change management



Operation Support Lessons

This section discusses some of the lessons learned for providing operation support.

Create Single Location for all Messaging Issues

To help ensure specialist support for areas such as networking and storage, IT teams were created for this support, but because of their different areas of expertise, they did not work at the same location. This resulted in initial cross-functional team work issues. Co-locating the Tier 3 Exchange support (application support) desk with the Enterprise Messaging Services (EMS) team helped to ensure a consistent one-stop-shop for all messaging issues and allowed leveraging the cross-functional teamwork already in place between messaging and the other IT teams, such as storage and networking.

Provide High Level of Operational Support

To help ensure a high level of operational support, the Support Model for Exchange Operations developed procedures for the following:

- A central repository for support documentation
- Monitoring
- Hot spare solutions
- A 24 hours-per-day follow-the-sun support

E-mail Migration Support

This section discusses the e-mail migration support challenges, solution, and lessons learned.

E-mail Migration Support Challenges

The client migration challenges were as follows:

- Large deployment each week
- Concerns over the Help Desk ability to scale
- Scheduling concerns—too many reschedules or low scheduling would affect the deployment
- Shadow IT rogue mail rollouts

E-mail Migration Support Solution

This section describes the e-mail migration solution.

E-mail Migration Support Pilot

A pilot was conducted to validate the process and tools for the client migration. The pilot results helped identify issues and suggested enhancements. Support team members were involved in the Pilot, which made it possible for them to anticipate client issues.

E-mail Migration Support Rates

This section discusses weekly target migration rates in the US/Canada, Americas International, and Asia Pacific. The migration rates assume the following support rates:

- Call/case rate = 30 percent, average 2 cases per user.



- The wait time exceeded normal service levels and varied, but occasionally the call duration exceeded 20 minutes. Some of these calls were training calls.
- Peak calls = 5000 * 30% = 1,500/week = 300/day

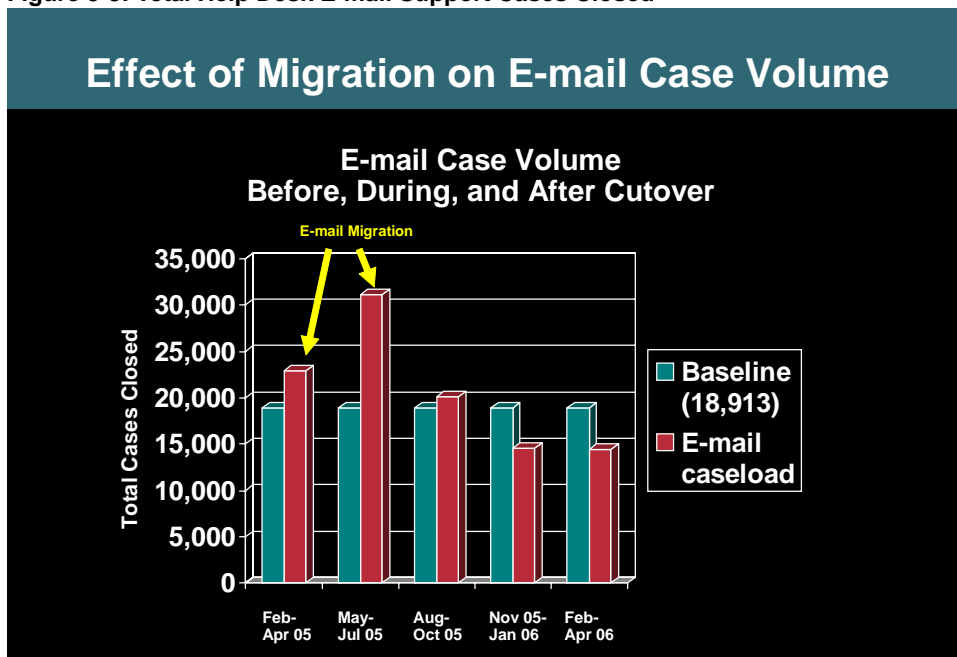
The high weekly adoption rate led to a faster deployment. First-Level support (Help Desk) handled over 85 percent of the e-mail migration support call volume with 1 percent being escalated to Level 3.

The additional staff given to the Help Desk proved insufficient during the peak times. The call handle time was between 18 and 20 minutes, as opposed to the estimated 10-minute handle time per case. The calls took longer because they were more complex; that is, users addressed multiple issues on every single phone call. Most users kept support people on the phone for the whole process. Coupled with the large call volume, this led to long support wait time. Customers would get very frustrated with the wait time and would press any extension to get a live agent. Additional phone redirection messages were added to redirect users to the IT Services Support Webpage.

Help Desk Total Cases for E-mail Migration

Figure 5-3 shows the total Outlook e-mail cases closed by the Help Desk (GTRC) before, during, and after the global e-mail migration period, May to July 2005. The case rate in the last quarter shown was approximately 37 percent less than in the quarter before the migration and 24 percent less than the case load baseline. The case load during the migration was 39 percent higher than the baseline. Over the period shown, the average customer satisfaction (CSAT) score was a very high 4.7, out of a possible score of 5.0.

Figure 5-3: Total Help Desk E-mail Support Cases Closed





E-mail Migration Support Cases by Topic

The following were the major topics of e-mail migration support calls:

- Familiarity with mail on the server (MAPI)
- Management of e-mail quotas
- Client automation

Client E-mail Migration Support Lessons

This section discusses several lessons learned from the e-mail migration support.

Provide Robust Support Training

"The migration support team was very pleased with the in-depth frontline training," says Branson Sossomon Jr., Cisco IT support project manager. "The training was very good and proved valuable, except for preparing them for unanticipated events. A couple of train-the-trainer sessions, including QA, were conducted at a Cisco location. These trainers, in turn, trained the rest of the staff. The Global E-mail and Calendar Program team was very quick in responding to questions."

Spread out the Change over Time

The strategy of performing e-mail migration prior to calendaring migration helped to ensure that the majority of change occurred early in the process, which helped lower the volume of calls.

The Adoption Rate was Higher than Expected

The adoption rate was higher than expected, and the how-to questions needed to be constantly updated as the migration progressed. The overall support effect on the e-mail client migration population was below 30 percent. The program team had expected that 30 out of 100 migrated users would call the migration Support group.

Report Metrics Had to be Compiled Manually

One support resource had to be dedicated to manually scrub cases in order to assign root causes to opened cases. This delayed the metrics reports, and it also kept a valuable resource from providing much needed migration support. It was not good that a full-time resource was required, when this task should either have been handled earlier, or through automation at a higher level.

Provide FAQs through Multiple Media

The Service Request Tool (SRT) and FAQs were created with meaningful questions and tips to either provide client self-help or assist support with troubleshooting steps. This was very helpful, even though it was necessary to keep updating the FAQs as the migration progressed. The FAQs were provided in the Support and IT Exchange Messaging Website, but many users did not read the information. It would have been good to provide phone menu FAQs for those who preferred this method of accessing information.



Calendar Cutover Support

This section discusses the calendar cutover support challenges, solution, and lessons learned.

Calendar Cutover Support Challenges

The calendar cutover support challenges were as follows:

- Meeting Maker had reached end-of-life support
- Scalability for a flash cutover
- Dual bookings of conference rooms
- Any delays will push out calendar migration.

Calendar Cutover Support Solution

During the two months prior to the cutover, the support group made the following preparations:

- Support personnel underwent training.
- Internal tools, such as SRT and Alliance, were set up.
- FAQs were developed by Calendar Support team members working in conjunction with the Calendar track team.
- The phone system (central support room) was set up. Physical central support rooms were set up in Asia Pacific and San Jose, but not in Amsterdam because the European and Emerging Markets had already migrated to Exchange calendaring.

After the e-mail migration and prior to the calendar cutover, the users could set up roomless meetings with Exchange calendar. During this period, support did not receive the expected volume of calls on calendars.

Calendar Conflict Resolution Tool (CCRT)

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 (GTRC) 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.

Cutover Weekend Support Plan

The one-day cutover to Exchange calendaring took place several months after Outlook had been installed in the system. Users had been encouraged to start using Outlook for calendar appointments, even though it was not possible to book conference rooms. Before the cutover, most users had had sufficient time to obtain training and to become familiar with the calendar application.

Support Room

The support plan included direct line communications from the support room between the project team and the Help Desk from Day 1 of the cutover. Calendar support calls could be monitored by everyone in the support room, thus avoiding any need for escalation.

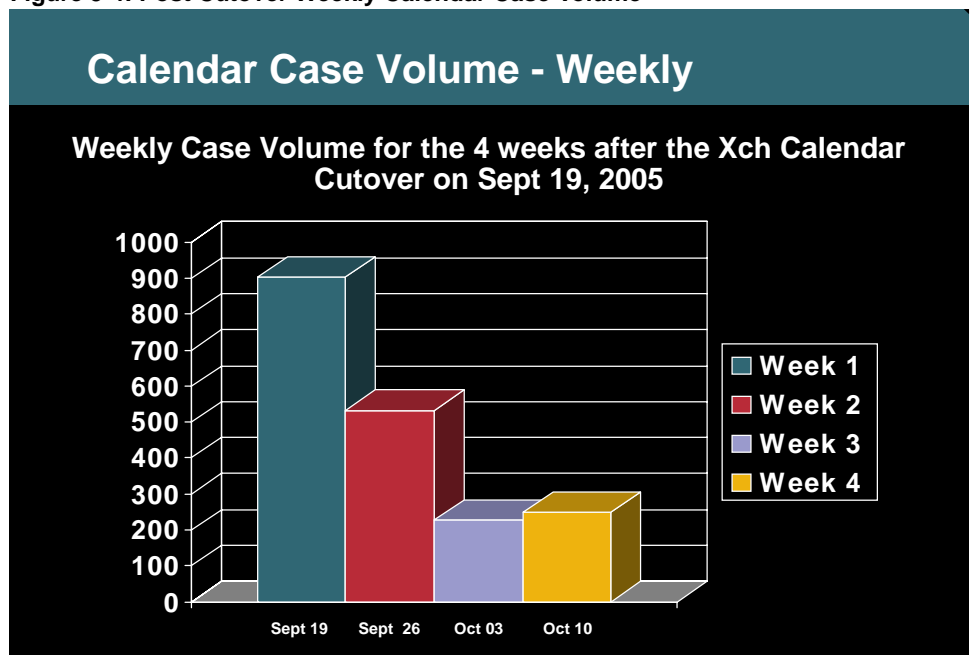


"During the cutover weekend, there were sufficient resources to handle all the calls that came in," says Adel Du Toit, Cisco IT calendar cutover project manager. "The main topics of the calls were 'how to' questions. The support calls were typical for the rollout of a new application. Users asked, 'How do I do this now?' or complained about the new interface, 'I don't like how this works.' These were ordinary questions for a rollout. The users did not seem to be as familiar as expected with the calendar information that they had been receiving by e-mail and through other forms of communications. Non-Windows users, however, seemed to be the most affected by the change. They complained about the interface being limited."

Day 2 Support

The Help Desk (GTRC) was ready for the Asia Pacific start of business, and the Global E-mail and Calendar Program team staffed a support room in support of the GTRC in Austin, Texas, San Jose, California, and Sydney, Australia. Updated client support documentation had already been pushed to production in a support database and in the Exchange Website. Despite the one-day cutover event, the number of problem cases was vastly lower than expected. Twenty-four-hour conference calls were open for every region but only fielded a few hundred calls. For detailed metrics for the first five days of support, see "[Day 2 Calendar Cutover Support Metrics](#)" on page D-12. Weekly call volume slowly decreased steadily over the first four weeks after the calendar cutover. [Figure 5-4](#) shows the declining rate.

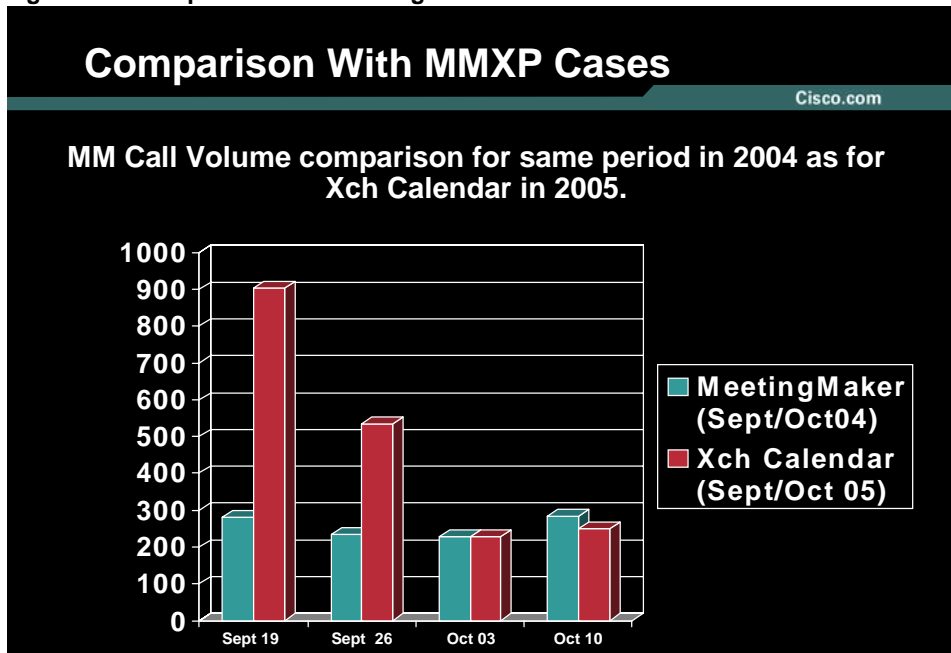
Figure 5-4: Post Cutover Weekly Calendar Case Volume



[Figure 5-5](#) compares the call volume with Meeting Maker cases a year earlier. By the third week, the number of calls was equal to that of the previous year, and during the fourth week the number of calls was actually lower than the previous year.



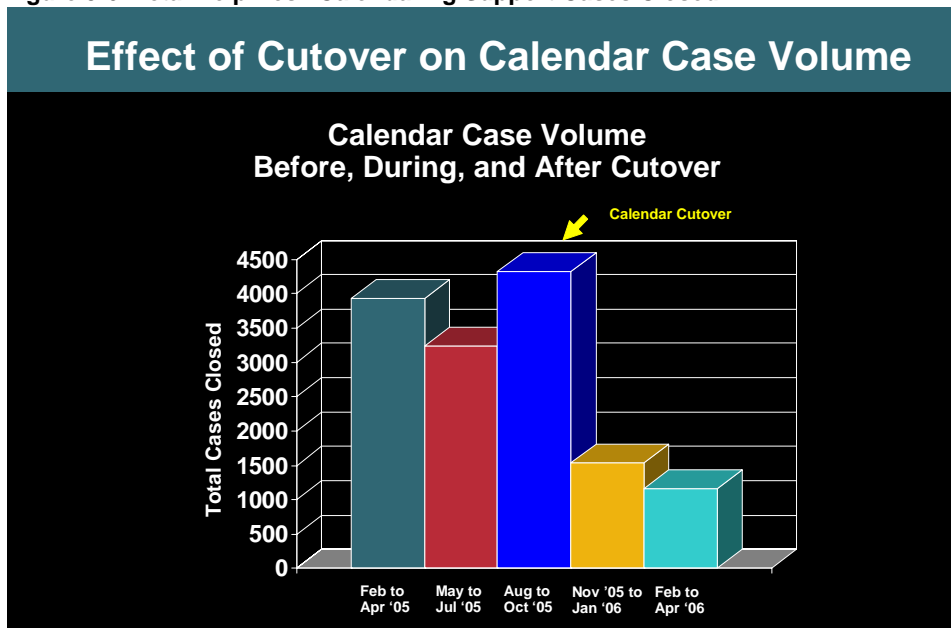
Figure 5-5: Comparison with Meeting Maker Cases



Help Desk Total Calendaring Cases

Figure 5-6 shows the total Outlook calendar cases closed by the Help Desk before, during, and after the cutover date, September 19 2005. The case rate in the first quarter of 2006 was 64 percent less than in the quarter immediately preceding the calendar cutover.

Figure 5-6: Total Help Desk Calendaring Support Cases Closed





Calendar Cutover Support Lessons

This section describes lessons learned from the calendar cutover support.

Support Room Setup Days 1 to 5

A support room was set up for Days 1 to 5. Immediately following the cutover, the project team, including track leads and migration coordinators, were gathered in a single room at three locations: San Jose, California, Austin, Texas, and Sydney Australia. A phone bridge and a collaborate (chat) session were set up to connect all three support rooms. Help Desk (GTRC) personnel could call in on this line at any time and talk to everyone in the support room to get their input on how issues should be fixed. Because all the principals were gathered in one place, there was no need to escalate anything. This setup promoted teamwork between Help Desk and the migration team, and was a morale booster for all support staff.

Allow Early Access and Training to Special Users

The migration of special users to e-mail was at the end of the migration schedule, just before the calendar migration. These users did not have sufficient time to get familiar with Outlook before they had to learn the calendar application. The situation could have been avoided if the special user contact and Training had communicated better, to optimize the scheduling. On the other hand, special users were given two weeks lead time to book Exchange conference rooms. This mitigated most of the "mad scramble" to secure Exchange conference rooms on Day 1 and helped reduced the number of support calls.

Support Details

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Operational Support

Server Functions Distribution

The following table lists the total server hardware components located at the hubs (San Jose, RTP, Hong Kong, and Bangalore). The hardware configuration is described in the Architecture module.

Component	Total
Number of Pods	7
Mailbox Servers	71
Bridgehead Servers	9
Free/Busy Servers	7
Front-End Servers	14
Hot Spare Servers	7
Backup Servers	7
Total Server Count	115

Software (Operating System) Configuration

The basic operating system (OS) components and software are listed in the following table.

Component	Description
Operating System	<ul style="list-style-type: none">• Microsoft Windows 2003 Standard Edition
Installation	<ul style="list-style-type: none">• WINES
Additional Components	<ul style="list-style-type: none">• IIS Admin, NNTP, WWW• Terminal Services in Administration mode• ASP.NET
Additional Software	<ul style="list-style-type: none">• Third-party server protection software• Netbackup 4.5• EMC Powerpath (only servers that attach to the SAN)• EMC Navisphere (only servers that attach to the SAN)• NETIQ agent (or replacement monitoring solution)• Windows support tools• Windows Resource kit



Application Support Escalation Processes

This section describes escalation process defined in different regions.

Escalation Process in the United States and Canada

The DCSS-WIS team used their existing processes for hardware and OS support for Exchange and owned the documentation.

The escalation path was as follows:

1. Alliance Assignment Group
2. Contact/Escalations e-mail
3. Duty pager
4. DCSS-WIS manager
5. Biz/Hosting manager
6. DCSS manager

Escalation Process in Bangalore (Asia Pacific)

The support process for engaging DCSS-WIS for all Hardware and OS support in Bangalore was done through the Global DCSS-WIS team. This means that all interaction from the EMS team (or in the event of P1s, via the Operations team) took place via the DCSS-WIS team.

The following escalation rules applied:

- All OS issues were handled by the global DCSS-WIS team.
- If the DCSS-WIS team determined that the issue was hardware-related, it would be escalated to the India IT Hosting team.
- The India IT hosting team utilized their onsite process to cover hardware support 24 hours a day.
- In the event that the India Hosting team needed to get HP onsite, they would utilize the HP escalation matrix.

The escalation process for Bangalore Support was set up as follows:

1. Duty Pager
2. On-call duty cell number
3. Escalation manager e-page

Escalation Process in Hong Kong (Asia Pacific)

The DCSS-APJ team used their existing processes for hardware and OS support for Exchange and owned the documentation. The DCSS-APJ team provided the Enterprise Messaging Services (EMS) team with the processes that they would use for hardware and OS support. The processes included onsite process to cover P1/P2 scenarios, as well as P3 to P6 scenarios. This process includes how the interaction works between the outsourced vendors and DCSS-APJ.

The escalation process to the Asia Pacific Support team was set up as follows:

1. Alliance Assignment Group
2. Contact/Escalations e-mail
3. Duty pager



Support Processes

Process flows were developed by the EMS team to describe support functions between the EMS and the DCSS-WIS and DCSS-APJ teams. The DCSS-WIS and DCSS-APJ teams used their existing processes for hardware and OS support for Exchange and owned the documentation. The DCSS-WIS and DCSS-APJ teams provided the EMS team with the process flows that would be used for hardware and operating system (OS) support during the Global E-mail and Calendar migration, as follows:

- Figure D-1, "Communication and Interaction Process Flow," on page D-4
- Figure D-2, "Incident Start Process Flow," on page D-5
- Figure D-3, "Incident Review Process Flow," on page D-6
- Figure D-4, "Incident Fix Process Flow," on page D-7
- Figure D-5, "Lower Priority Incident Process Flow," on page D-8
- Figure D-6, "Third-Party Escalations," on page D-9
- Figure D-7, "Software and Firmware Upgrades," on page D-10
- Figure D-8, "Hardware Upgrades," on page D-11

Figure D-1: Communication and Interaction Process Flow

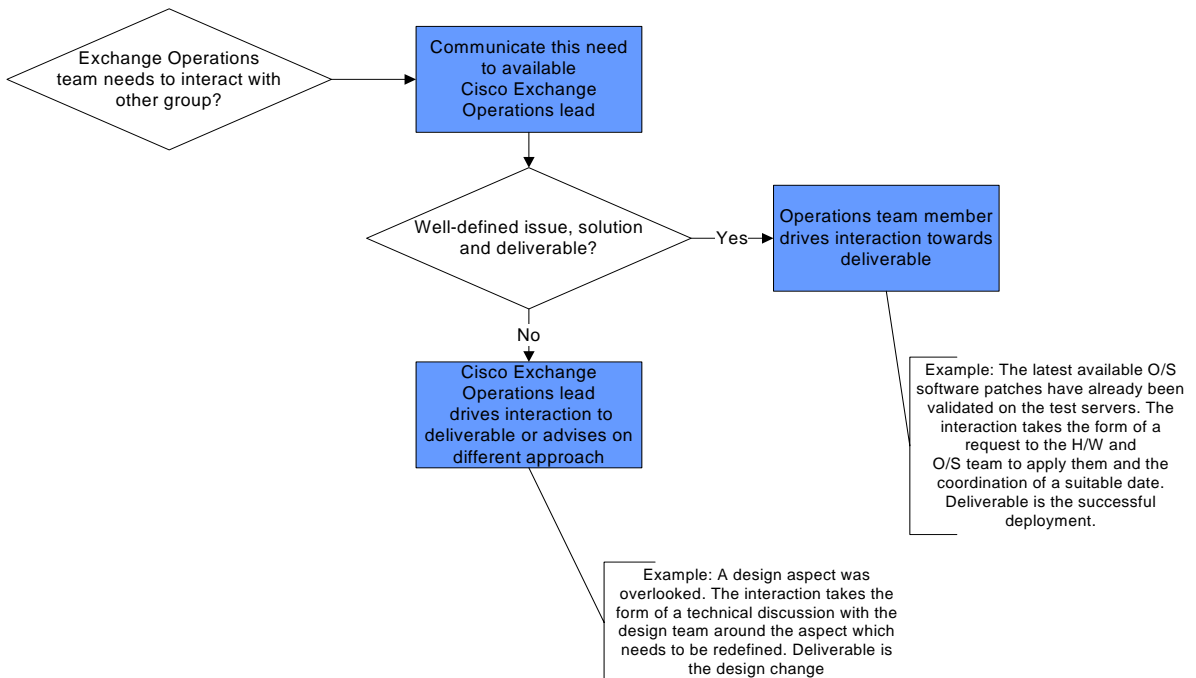




Figure D-2: Incident Start Process Flow

Emergency

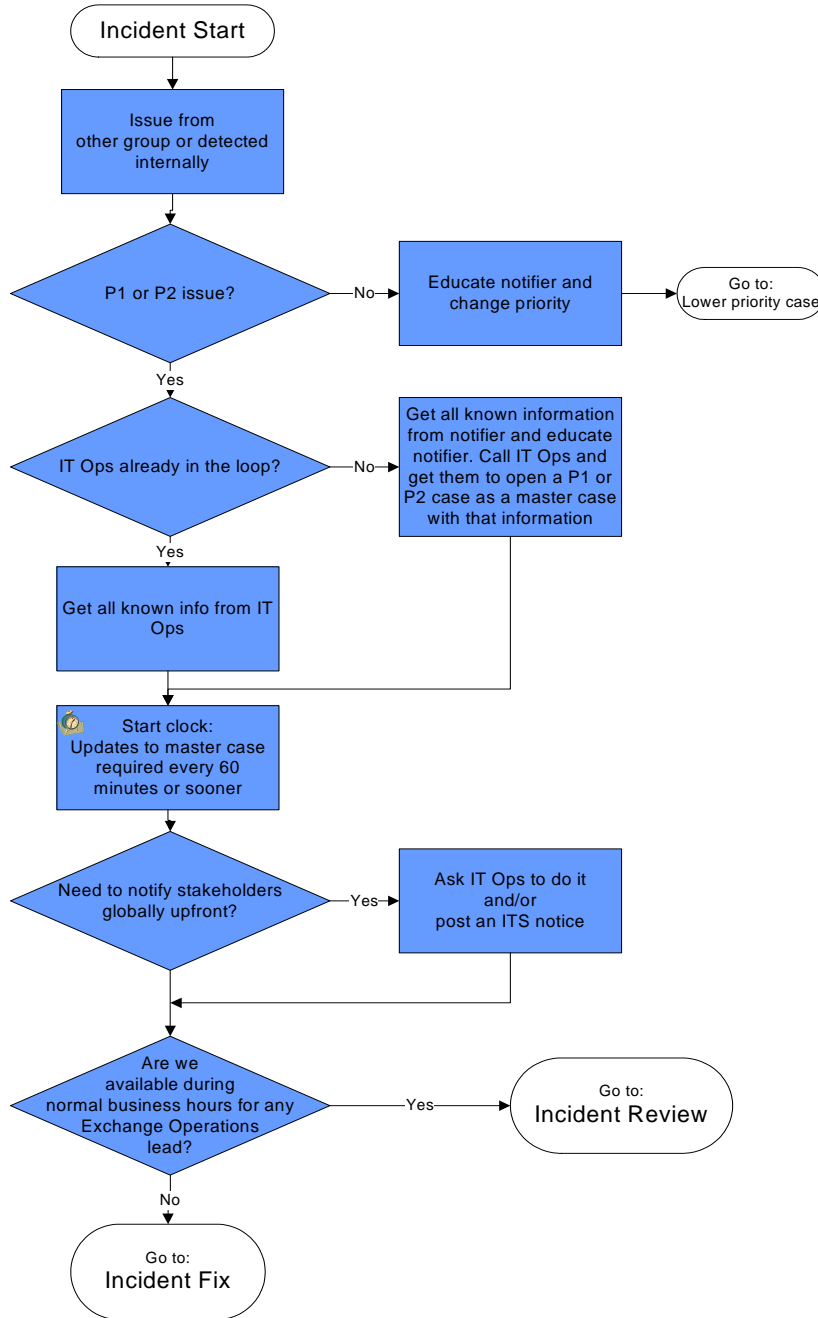




Figure D-3: Incident Review Process Flow

Emergency

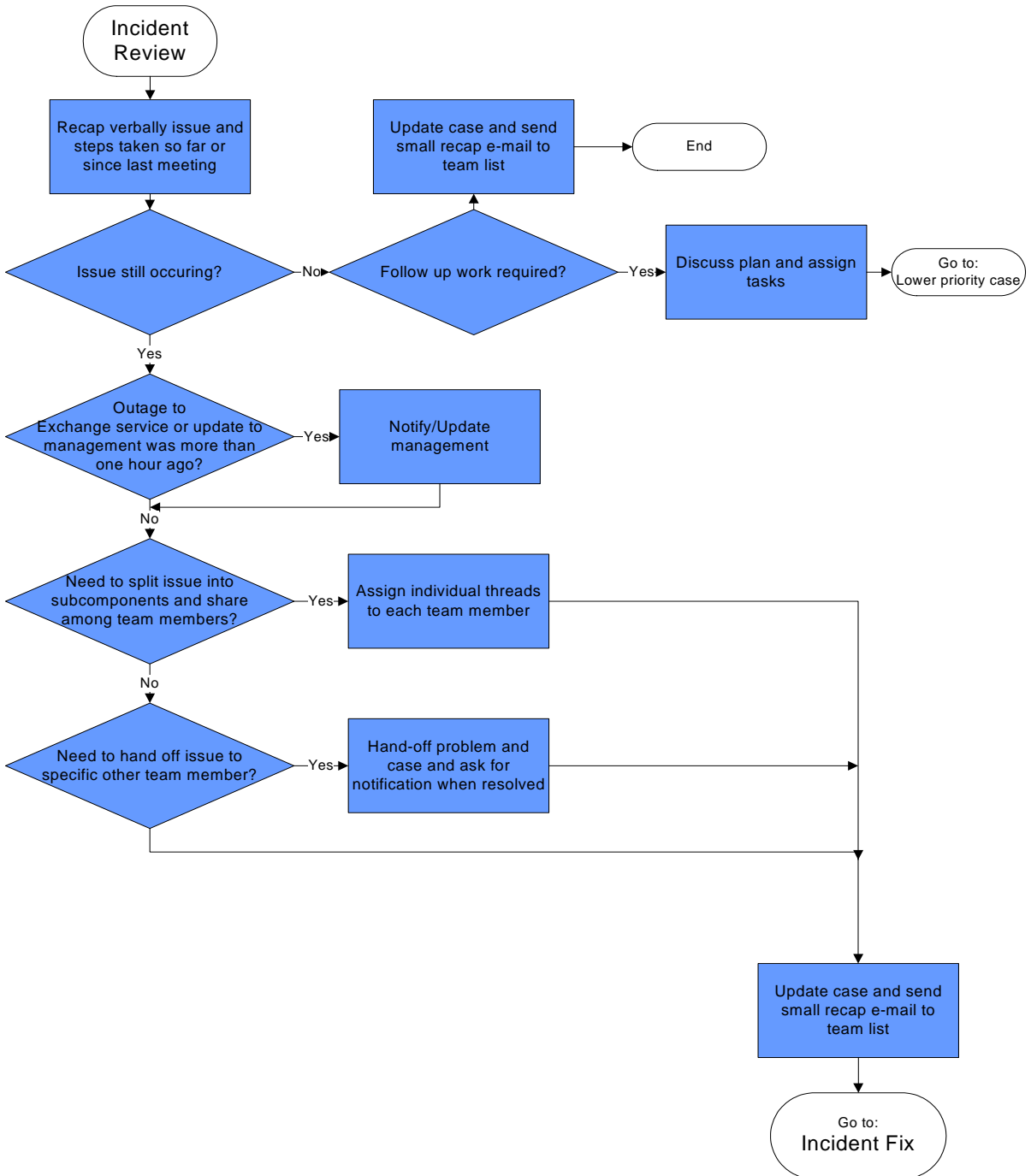




Figure D-4: Incident Fix Process Flow

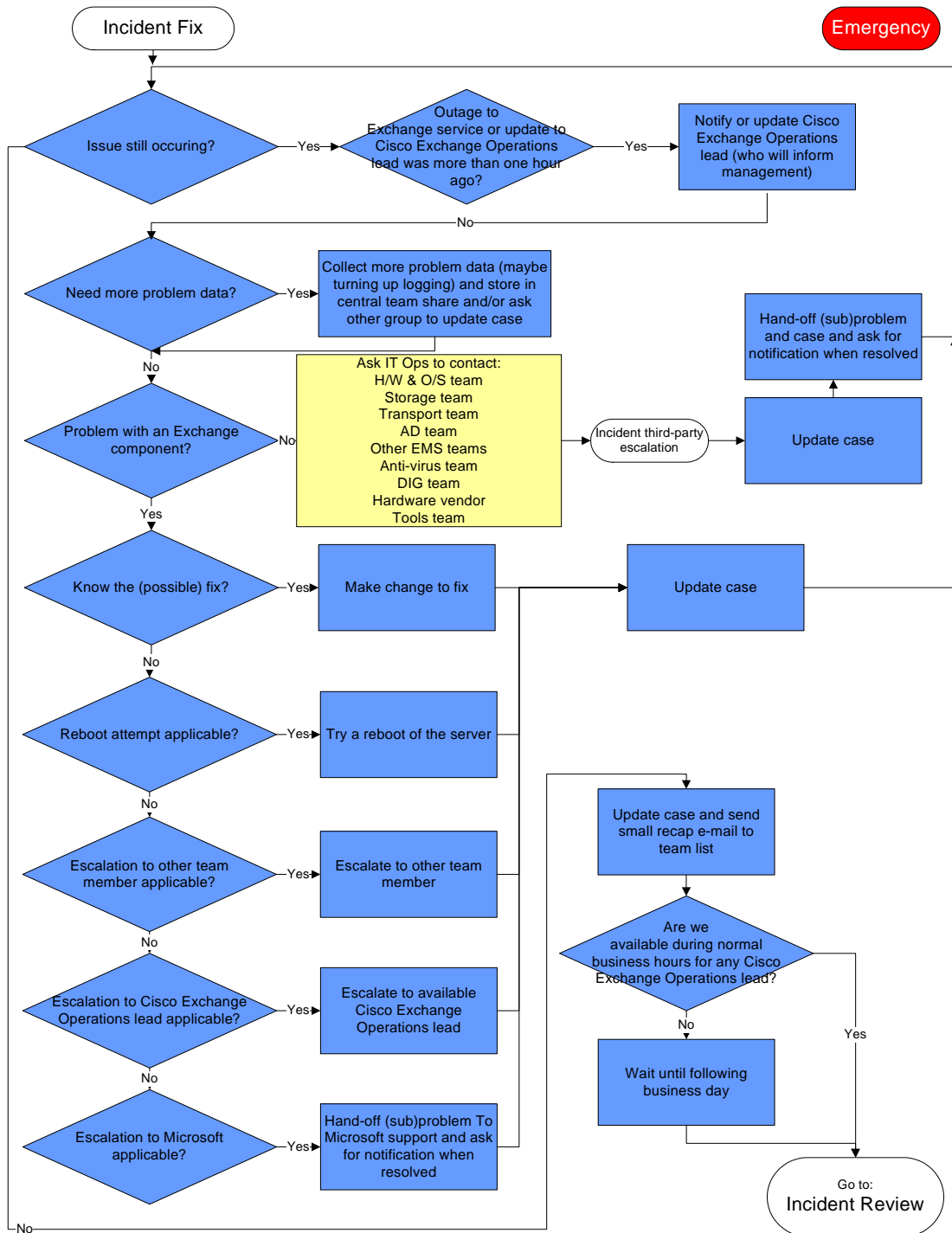
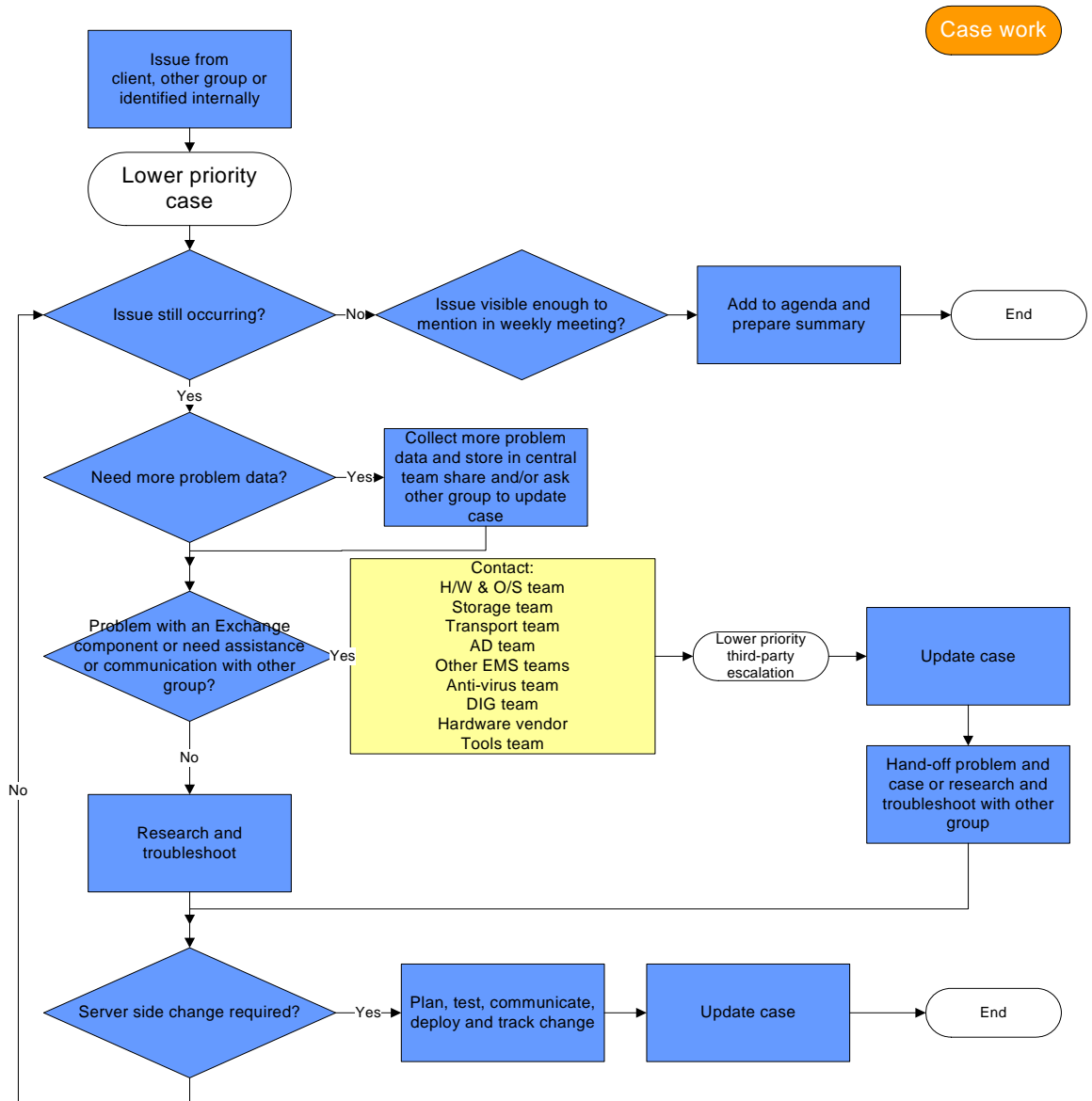




Figure D-5: Lower Priority Incident Process Flow



Case work



Figure D-6: Third-Party Escalations

Lower priority and incident escalations

Case work
Emergency

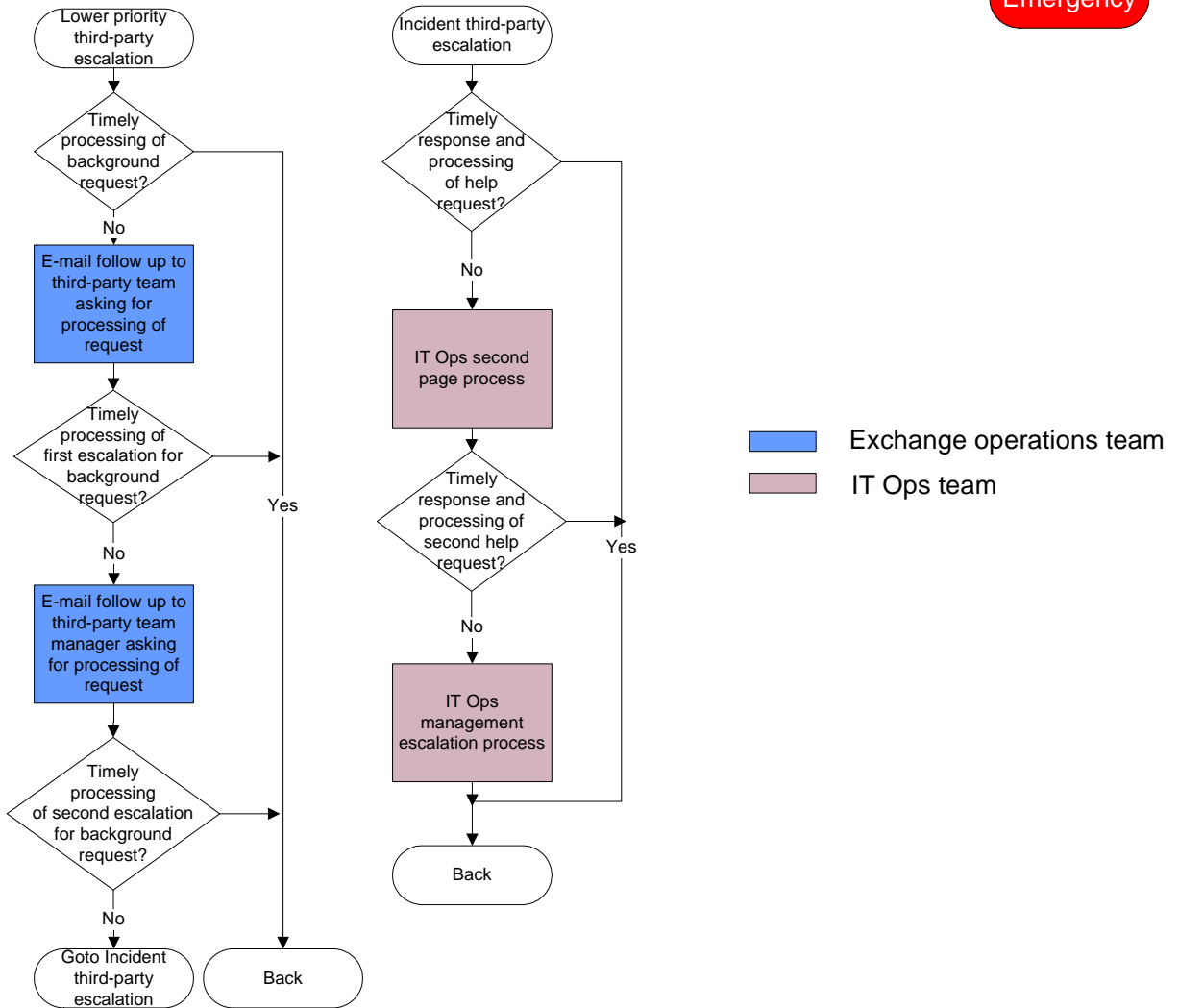




Figure D-7: Software and Firmware Upgrades

Planned

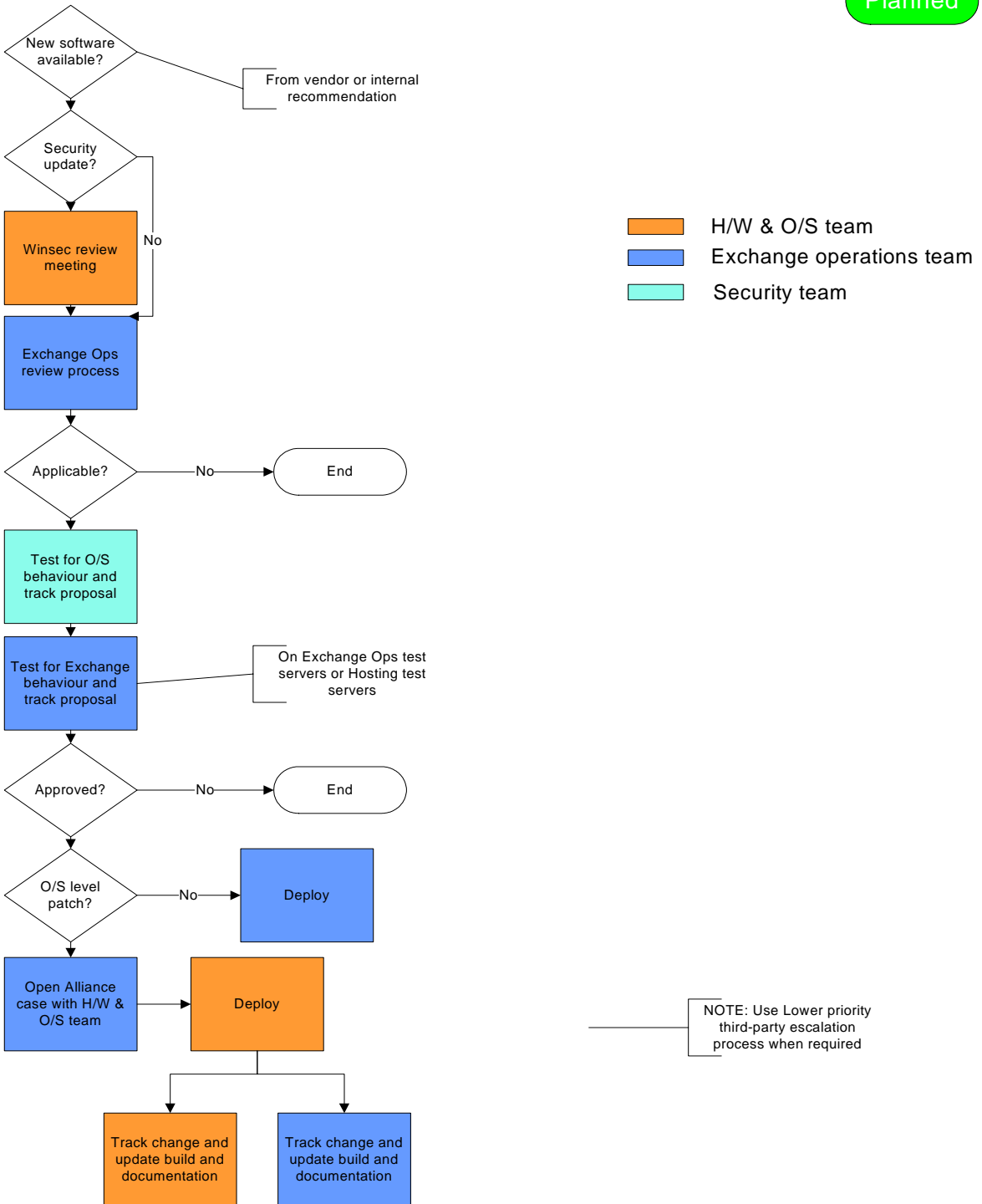




Figure D-8: Hardware Upgrades

Planned





Day 2 Calendar Cutover Support Metrics

The following table provides details on the total cutover support calls handled.

Post-Cutover	Metrics	US	APAC	Total
Day 1: Monday, September 19, 2005	Total Number of Calls	270	26	296
	Answered Calls	264	25	289
	Abandoned Calls	6	1	7
	Average Speed to Answer (sec)	47.0	9.2	43.7
	Average Service Time (min)	13.1	14.0	13.2
Day 2: Tuesday September 20, 2005	Total Number of Calls	180	41	221
	Answered Calls	175	40	215
	Abandoned Calls	5	1	6
	Average Speed to Answer (sec)	45.0	54.0	46.7
	Average Service Time (min)	12.5	15.0	13.0
Day 3: Wednesday September 21, 2005	Total Number of Calls	149	22	171
	Answered Calls	143	22	165
	Abandoned Calls	6	0	6
	Average Speed to Answer (sec)	18.7	108.0	30.6
	Average Service Time (min)	12.3	15.0	12.7
Day 4: Thursday September 22, 2005	Total Number of Calls	98	21	119
	Answered Calls	98	21	119
	Abandoned Calls	0	0	0
	Average Speed to Answer (sec)	4.8	60.0	14.5
	Average Service Time (min)	14.5	27.0	16.7
Day 5: Friday, September 23, 2005	Total Number of Calls	82	14	96
	Answered Calls	82	14	96
	Abandoned Calls	0	0	0
	Average Speed to Answer (sec)	21.0	60.0	26.7
	Average Service Time (min)	12.4	14.0	12.6

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