

- PD-ABU-522 -



**DEMOCRACY AND GOVERNANCE:
RULE OF LAW IQC**

Contract No. AEP-I-804-96-90030-00

El Salvador Legal Education Training, Public Information Dissemination,
Alternative Dispute Resolution, Technical Support for Justice Sector Plans,
and Contract Management

**UTE Hardware and Software Y2K Compliance Activity
Final Report**

Submitted to:
U.S. Agency for International Development

Submitted by:



CHEMONICS INTERNATIONAL INC.



July 2000

FINAL REPORT
UTE Hardware and Software Y2K Compliance Activity

Activity IV: Technical Support for Justice Sector Plans and Contract management

**El Salvador Legal Education Training, Public Information Dissemination, and Alternative
Dispute Resolution Services Contract No. AEP-I-804-96-90030-00**

Consultants: David L. Tacker
Maria Porras

Date: June 30, 2000

I. Introduction

From June 25 to June 30, 2000 the consultants traveled to San Salvador to perform follow up resulting from the Y2K work performed in December, 1999. This work consisted of installation and configuration of two new Servers with accompanying software and hardware. Specifically, the team was to perform the following tasks:

1. Installation of a new Email server with Microsoft Exchange 5.5 and Norton Antivirus for Exchange.
2. Installation of a new Backup server running Veritas Backup Executive and Norton Antivirus Corporate Edition.
3. Upgrade of service packs on existing servers (web server and primary domain controller).
4. Installation of a new Smart UPS and configuration of Powerchute software on the new servers.
5. Installation of a new 24 port 10/100 hub
6. Training in the use of Outlook 2000, shared file management and the use features enabled through the new Exchange server.

The upgrade of existing workstations to Windows 98 had already been performed by UTE Staff. The new workstations had already been configured and deployed by UTE staff.

The installation and configuration of this equipment and software within the span of four days was very ambitious. There are always unanticipated problems or incompatibilities that need to be worked out and resolved, especially in a multi-language server environment. The team was lucky to accomplish the large majority of the work. However, given the excellent technical abilities and knowledge of UTE's technology staff, the team has complete confidence that Raul Carcamo and Carlos Olivares can deal with the little that remains to be accomplished. The team was very happy to hear that Carlos has scheduled training in Microsoft Exchange 5.5 administration for August.

II. Equipment Installation

1. New Email Server

A new Microsoft Exchange 5.5 email server was installed and configured as a backup domain controller for UTE. This will allow uninterrupted access for LAN clients in the event that the Primary Domain Controller is unavailable for any reason. NT service pack 6a has been applied to the server and Exchange service pack 3 has been applied to Exchange. At present, all local clients (e.g. those clients on the LAN) are able to access this server using their Outlook clients for personal folders and shared public folders including calendars and organizational contacts.

The team found that clients attached to the LAN have been using Outlook 2000 but have been unable to take advantage of many of the features found within the software because they lack a dedicated IMAP server. Instead, they have been using POP3 mail protocols.

Because of the nature of the existing UTE email system it would have been much too disruptive to switch UTE completely over to the new system. This is mainly because the current POP3 system currently supports mail accounts for over 200 people outside UTE (but within the justice sector). A switch with no advanced warning would have resulted in complete denial of email services to all external clients.

Recommendation: In order to make a full migration of internal users from Sendmail (their current system) to Exchange, UTE's technology team should perform an orderly planned mail migration. This can be done through the following steps:

- a. Obtain a new domain name for their old mail system (Sendmail) from their ISP.
- b. Have UTE's ISP change the MX (mail exchange) record to associate the old domain name (ute.gob.sv) with a new dedicated IP address.
- c. Within UTE's proxy server, create a direct association of UTE's new mail IP address to the IP address of the new Exchange server so that mail directed to the new domain will be forwarded directly to Exchange.
- d. Have UTE's ISP create a new MX (mail exchange) record for the new domain and associate this with the address of their Proxy server. Sendmail will be able to receive mail directed to this new address.
- e. Set up the Internet Mail Service within Exchange.

These steps should be taken late on a Friday afternoon and ample warning should be given to all POP3 clients located outside UTE. These external clients should be informed of their new email addresses (new domain) with ample time for them to inform all of their contacts of their new address and the date of the switch. They also need to be given instructions for changing their client email settings so that they can retrieve mail from the new domain.

For internal clients there should be no real inconvenience caused by this change. Their internal email will be much faster, more secure and they will have access to all the shared and office-integrated features within Outlook 2000 and supported by Exchange 5.5.

External clients will continue with Sendmail and will see no difference from what they are currently using (other than the email address change). We recommend that UTE continue to use Sendmail for external clients mainly for cost reasons. Exchange client licenses are very expensive and a switch to exchange would provide little advantage for external users who are only going to use POP3 mail in any case.

At some point in the future, UTE can install the Exchange Web Access component on their mail server. To give internal users access to their mail from home. We did not do this at present because we felt that the migration needs to be sorted out first or there could be confusion as not all of their mail would be visible through web client until the migration occurs. This is something that Raul Carcamo and Carlos Olivares can easily implement when the need arises.

Currently, UTE LAN users are getting their external email from Sendmail and their internal email from Exchange. This forces them to keep two sets of folders within Outlook. The migration from Sendmail to Exchange should occur as soon as possible.

An interesting Note - We installed the English version of Exchange 5.5. We had some problems connecting Spanish Outlook clients to it until we discovered that Spanish templates found on the Exchange SP3 CD can be loaded into Exchange to support these clients. We were tipped off to this by Microsoft's on line support website (though their tip sent us in search of the templates on the "Spanish client CD that ships with Exchange" - a CD which we did not have).

In addition to Exchange, the team created a shared directory on the server to act as a place where files can be stored on the network. The server has a RAID5 striped set with parity which will allow fault-tolerant storage of up to 24 GB of data. With the current usage of the email server this drive should be able to accommodate file storage with little problem. The UTE technology professionals should closely monitor the drive to insure that space does not become a problem.

2. Backup Server

The team installed a new Backup Server running NT 4.0 Server SP 6a. The backup software is Veritas Backup Executive with the Open File Option and the Exchange 5.5 Agent. The server uses a DLT 40/80 drive which can accommodate one 40 GB cartridge at a time. Currently UTE only has one cartridge.

Recommendation - We urgently recommend that UTE purchase more DLT Cartridge tapes as soon as possible. A minimum of 10 tape cartridges are needed for a secure backup strategy (five daily tapes can be re-used on a weekly basis, four weekly tapes can be re-used on a monthly basis, and one that can be updated at the end of each month).

When the team left El Salvador, the backup software was working and had created a backup of three of the four servers on the network: the Exchange server, the Backup Server, and the Web Server. The fourth server, the PDC needs to be cleaned up as it has many unnecessary program

files loaded onto it. Once it is cleaned up all four servers should be able to be backed up onto one tape without need for compression.

The team was unable to install a comprehensive virus solution because the wrong version of Norton Antivirus had been purchased. During the assignment, word was sent to Washington to procure Norton Antivirus Corporate Edition. This will be sent down after the project so that the UTE Technology team can install it. Installation should be straightforward and the Chemonics Home Office technology team is available for consultation should UTE encounter any problems with the installation.

Norton Antivirus for Exchange was installed on the new Exchange server. This will protect UTE from viruses attached to emails. It will automatically examine and clean infected files sent to UTE via email. It will not accomplish much, however, until UTE migrates mail from Sendmail to Exchange.

3. Upgrade of Existing NT 4.0 servers to Service Pack 6a.

Recommendation - The team recommends that the UTE technicians download SP 6a for NT 4.0 (Spanish) from the Microsoft Web Site as soon as possible. Before installation, a full backup of all servers should be made. Installation should be straightforward and the Chemonics HO team will be available for consultation should any problems be encountered.

4. Installation of a new Smart UPS and configuration of Powerchute software on the new servers.

The team ran into a problem as soon as the new APC Smart UPS came out of the box. It was rigged with a plug to go into a power converter. While it is common to use a power converter in countries such as Honduras and Nicaragua, it is uncommon to use them in El Salvador. As UTE did not have a power converter the team had to search for an adapter. Eventually, UTE's electrician found a new socket and wired it directly into the wall. Once this was in place, installation went smoothly. The team configured the Powerchute software to notify the network administrators in the event of a power failure. The system was also configured to trigger an orderly shutdown of the Exchange server in the event of a power failure that lasts more than five minutes. Because of the lack of an extra serial cable, Powerchute was not installed on the backup server.

Recommendation - The team recommends that UTE's technicians acquire an extra serial port cable and install Powerchute software onto the backup server. This will enable the backup server to perform an orderly shutdown in the event of long term power failure.

5. Installation of a new 24 port 10/100 hub

A new CISCO 24 port hub was installed by the team. This allowed the team to hook up the new servers and will provide plenty of room for growth for UTE in the future.



6. *Training in the use of Outlook 2000, shared file management and the use of features enabled through the new Exchange server.*

Installation of the Exchange Mail Server required that all users be trained to use MS Outlook with Exchange Server. Also, after establishing additional hard disk space on the mail server for use as a file server it was necessary to concentrate on improving the office's computer file management skills.

The team met with Lic. Raul Carcamo and Lic. Carlos Olivares to determine the best possible training schedule and environment for the following two days. An off-site conference room with projector was suggested for three, 1½-hour sessions. Due to time constraints and lack of accessibility to the network, the team suggested keeping it to 1½ hour training sessions on-site and use grouped pre-configured workstations. Trainer, Ms. Porrás, suggested preparing a sign up sheet but Lic. Raul Carcamo decided against it. He preferred approaching the staff personally. The size of the average groups that were available to attend was no larger than 2 to 4 people, at a time.

On Wednesday morning, Ms. Porrás reviewed with Lic. Carlos Olivares, network administrator, how to prepare and configure the workstations for MS Outlook 2000 running under Internet Mail and Exchange Server. Preparation included saving personal folders (PST files) for exporting from lower versions of Outlook and Outlook Express to Outlook 2000. Only seven (7) workstations were configured on Wednesday due to language conflicts between workstations using Office 2000 in Spanish trying to access Outlook forms from Exchange Server in English. After the conflict was resolved, Ms. Porrás demonstrated how to in share items in Outlook 2000 between personal folders and the user's mailbox.

Lic. Raul Carcamo explained that upper management thought it crucial to have their support staff trained first. They also requested that each group receive an overview of Windows 98, training in file management in a local and network environment, basic features in Outlook 2000 and MS Word 2000. Ms. Porrás explained that due to the time constraint that it would be vital for all users to be trained in the new email system and file management on the network first. Windows 98 and MSWord 2000 would be covered time permitting.

1st Day of User Training

1st Session (2.5 hours)

Four support staff members attended the first session. Ms. Porrás briefly conversed with the selected group to determine their level of computer skills.

Ms. Porrás presented a basic overview (in Spanish):

- a) File Management: My Computer vs. Window Explorer, file locations (local vs. network), file types vs. extensions, copy disks vs. files, rename vs. save as, cut vs. delete, file sharing, find files and back up locations.

- b) Outlook 2000: Reviewed the folder list and instructed how to: create new items (mail message, appointments, meeting, contacts, notes, tasks), share contacts and meeting agendas. Description of mailbox vs. personal folders vs. public folders, how to switch mail accounts for incoming and outgoing mail using Exchange and internet mail.

This first training session ran longer than scheduled because the next group was late and the first group still had many questions.

2nd Session (2 hours)

Second group consisted of two additional support staff members plus three from the first group attended the last half hour. This group received full user training (see 1st session) plus MS Word: Formatting, templates and setting preferences in Tools: Options.

3rd Session (1 hour)

Two support staff members were available for quick orientation of MS Outlook. Their skill levels was assessed at intermediate and chose to concentrate on MS Outlook 2000 only. As it was close to the end of the day, Ms. Porras agreed that this would be the best use of their time. Ms. Porras demonstrated the use of network file management through MS Outlook 2000.

During the first day of user training, five (5) more workstations were configured for training. There was one workstation running Windows 95 and using Outlook 97. It could not be upgraded because there was not enough room on the hard disk to install Windows 98 or Office 2000 or Outlook 2000. Most of the late morning was used troubleshooting issues because some users changed mail settings, inadvertently imported mail from Outlook to Outlook Express or mail server was unavailable because of installation issues.

2nd Day of User Training

4th Session (2 hours)

Training was provided for two of the office attorneys at their own workstations. They requested that MS Outlook 2000 training be kept as brief as possible, since they were familiar with it. The Outlook features used with Exchange were only covered. Both were much more interested in file management and back up on the network.

5th Session

Three staff members (one upper and two middle management) attended the last session. Full user training (see 1st session) was provided in the director's office.

Users responded well to the small group sessions and all were able to get hands-on training for each objective. Those who did not receive training either chose not to attend their scheduled

session or suffered from time constraints caused by their work schedules which did not permit them to attend full sessions. These people received brief one-on-one question and answer time with the trainer.

Recommendations:

- a) Additional basic and intermediate level training for support staff in various Office 2000 applications is strongly advised.
- b) Encourage staff to share computer knowledge with MS Outlook 2000. Exchange Server will now enable them to create a location where helpful tips and hints can be shared among the office.
- c) Given the workload and daily demands on both Lic. Carcamo and Lic. Olivares, UTE should consider hiring a junior technician to serve as an on-site help desk user support person. This would be especially useful for simple user support calls and could help to assist users on a timely basis with questions regarding use of the software. An off-site support line would be an improvement but not as beneficial. This person does not necessarily need to be an engineer but should be someone who is very familiar with the workings of Microsoft Office 2000. Local universities and technical colleges would be ideal locations to find junior level computer-literate user support candidates.
- d) Training materials should be offered for check out to all staff. The team provided a set of books called "MS Office 2000 At A Glance" (includes Word, Excel, Access and Outlook). It is written in English but the graphics make it easy to follow.

7. Final observations and Recommendations

With the pending installation of the PIX firewall, the UTE staff will take Proxy Server off the network and will use the new firewall in its place. Both Raul Carcamo and Carlos Olivares should become familiar with firewall technology. they will be responsible for maintaining the new firewall on a daily basis. They should, if possible, obtain basic training in CISCO firewall technology.

Following up on the previous report, the team discussed with Lic. Carcamo and Lic. Olivares about the real need for a server rack to protect UTE's servers from possible harm. They are going to look into local sources for racks.

Once a rack, firewall, and Norton Antivirus Corporate edition are installed, UTE's network will be very secure both from physical harm and from the standpoint of security.

UTE's technology level is now such that they can become a real asset to the justice sector. Lic. Carcamo and Lic. Olivares are well placed to provide technology support to the sector.

ANNEX A - SCOPE OF WORK

Activity IV: Technical Support for Justice Sector Plans and Contract Management

UTE Hardware and Software Y2K Compliance Activity

El Salvador Legal Education Training, Public Information Dissemination, and Alternative Dispute Resolution Services, Contract No. AEP-I-804-96-90030-00

Consultants: Dave Tacker
Maria Porras

Date: June 16, 2000

I. Introduction

This Scope of Work will address the following objectives:

1. In accordance with the Y2K review and workplan presented on December 10, 1999 in the Chemonics document entitled "Upgrading of UTE's Hardware and Software for Y2K Compliance", two Chemonics IT consultants will travel to El Salvador to set-up and install the new servers, hardware and software equipment and provide training to UTE personnel for desktop applications.
2. Specific activities will include:
 - Server installation and configuration to include Microsoft Exchange, Veritas Backup Exec and Norton AntiVirus Corporate Edition.
 - New workstation installation and configuration.
 - Three days of training classes in two parts: one day of four two-hour training overview sessions for 6-7 staff members per session, and two days of individualized training by appointment.
 - Windows98 upgrades on two existing workstations.
 - Upgrade of existing server service pack
 - Installation of 24 port 10/100 hub.
 - UPS installation and configuration.

II. Design

The following tasks must be completed prior to performing these tasks:

1. Delivery of new Y2K compliant equipment to El Salvador.
2. Travel preparations for consultants.
3. Initial configuration of the server at the Home Office.

III. Delivery

During the week of June 26, 2000, the consultants will install one Windows NT 4.0 server along with the requisite software for email and data archiving. In addition, eight Windows98 workstations will be setup and configured with Office 2000. A network management workstation will also be setup running NT Workstation to be used for day to day network administration including Exchange and Backup Exec Administrator. Additional network hardware will be installed at this time, to include a 24 port hub, uninterruptible power supply and server rack. Existing servers will also receive software updates and memory upgrades at this time.

In accordance with the recommendations on page 7 of the Y2K Compliance Report, training classes for MSOffice 2000 and Outlook 2000 will be held on June 28 and 29, and will cover any upgrade issues due regarding the new equipment and software, including file management and email. The two-part training sessions will consist of: one day of four two-hour training overview sessions for 6-7 staff members per session, and one day of individualized training by appointment.

IV. Level of Effort

	Dave Tacker	Maria Porras
Equipment Installation	5	3
Training Classes	0	2
TOTAL NUMBER OF CONSULTING DAYS	5	5

V. Itinerary

Day	Date	Activity
Sunday	June 25, 2000	Consultants travel to El Salvador
Monday	June 26, 2000	Equipment Installation
Tuesday	June 27, 2000	Equipment Installation
Wednesday	June 28, 2000	Equipment Installation/Training Overview
Thursday	June 29, 2000	Individualized Training
Friday	June 30, 2000	Wrap-up Installation and Training (AM) Consultants travel to Washington, DC (PM)

VI. Specific Requests for Support

The project consultants request that:

- 1) Each UTE staff member be allowed to attend one of the training sessions that will be held May 25, 26 or 29.
- 2) Use of the UTE conference room to hold the trainings. Trainer will need an LCD projector.

- 3) The consultants be granted full access to all of UTE's offices containing computer equipment (or related equipment) from May 19 – May 26 (including the weekend) in order to perform their tasks.
- 4) A memo from the Chemonics Field Office be distributed to all UTE to ensure that all staff members are aware of the Computer Team's arrival and their need to work on all computer equipment.
- 5) A meeting be scheduled with Lic. Raul Carcamo and Carlos Olivares on the afternoon of Friday, May 19 to discuss weekend installation of equipment.
- 6) An administrative account and password be provided to Mr. Tacker and Ms. Porras if necessary.