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A Quick Reference Manual for Data Communications and File Management

by
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Bruce C. Goettel
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This report includes a collection of microcomputer-based file management and data communication procedures to help users transfer data between applications within a microcomputer environment, and between a microcomputer environment and mainframe applications. Each procedure summarizes possible applications and gives step-by-step instructions for implementation. Example applications are given where available. This manual is an update and supersedes USACERL Special Report P-87/09.

This manual is based on collective experience of the U.S. Army Construction Engineering Research Laboratory, Facility Systems Division (USACERL-FS) researchers. Thus, only a limited number of potential applications are covered for microcomputer operations and micro-PAX interface. Users with additional or alternative procedures are encouraged to contact USACERL-FS, COMM (217) 352-6511, toll-free 800-USA-CERL outside Illinois, 800-252-7122 within the state, PAX ID: DTMO.

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This report includes a collection of microcomputer-based file management and data communication procedures to help users transfer data between applications within a microcomputer environment, and between a microcomputer environment and mainframe applications. Each procedure summarizes possible applications and gives step-by-step instructions for implementation. Example applications are given where available. This manual is an update and supersedes USACERL Special Report P-87/09.

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FOREWORD

This work was performed for the Office of the Assistant Chief of Engineers (OACE), as part of the Operations and Maintenance, Army (OMA) project, "Data Traffic Management Program (DTMP)." The HQUSACE Technical Monitor was John J. Sheehey, CEMP-P.

The project was conducted by the U.S. Army Construction Engineering Research Laboratory (USACERL) Facility Systems Division (FS). Information gathered in the investigation reflects the collective experience of researchers in three teams within USACERL-FS: the Military Programs Analysis Team, the Construction Management Team, and the Management and Knowledge Integration Team. This document is intended to be updated at regular intervals to provide the user with state-of-the-art procedures for managing data communications and files. Dr. Michael J. O'Connor is Chief, USACERL-FS. The USACERL Technical Editor was William J. Wolfe, Information Management Office.

COL Everett R. Thomas is Commander and Director of USACERL, and Dr. L.R. Shaffer is Technical Director.

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DISTRIBUTION

INTRODUCTION

This manual is an updated collection of microcomputer-based file management and data communication procedures to help users transfer data between applications within a microcomputer environment and between a microcomputer environment and mainframe applications. Each procedure includes a synopsis of applications and step-by-step instructions. Where available, examples of each application also are included.

The manual is organized to be flexible. It consists of several forms that can be replaced, appended, or deleted. New sections and forms can be inserted easily.

This manual will also be available for distribution from the Dugout timesharing application available through the Programming, Administration, and eXecution (PAX) system menu. Dugout is a file distribution mechanism available for installing and updating PAX applications on remote PCs.

This manual is an updated version of USACERL Special Report P-87/09, March 1987. It reflects new versions of the commercial software products, additional communications products, comments by users, and changes to the mainframe environment.

Section I describes procedures for file format conversions. Section II describes ways to access the PAX system using different communications packages. Section III explains how files prepared in the microcomputer environment can be uploaded to the PAX mainframe environment. Section IV shows procedures for downloading files from PAX to the microcomputer. Section V contains some useful operations that can be performed within the PAX environment. Section VI explains procedures for microcomputer-assisted DD FORM 1391 processing. Appendix A contains a software index. A user can determine what type of operations can be performed based on the available software packages. Finally, Appendix B gives an overview of local area networks, which may assist users in improving their workstation environments.

Information in this manual has been compiled through USACERL-FS researchers' collective experience with microcomputer operations and micro-PAX interface applications. As such, only a limited number of potential applications are covered. Users who have developed their own procedures not covered here or who have better alternative methods are encouraged to contact USACERL-FS for possible inclusion of those procedures in future editions of this manual. Points of contact (POCs) for general questions are Dr. Ilker Adiguzel and Mr. Bruce Goettel, USACERL-FS, COMM (217) 352-6511, toll-free 800-USA-CERL (800-252-7122 inside Illinois), PAX ID: DTMO. Questions about specific procedures described in this manual should be directed to the POC listed in each form.

SECTION I

FILE FORMAT CONVERSIONS

FORM 1. CONVERTING LOTUS 123 SPREADSHEET FILES TO ASCII* FORMAT

1. **Synopsis:**

    - Save the LOTUS 123 SpreadSheet file

    - Convert it to ASCII format

    - Save the file in ASCII format.

2. **POC:** Ilker Adiguzel, USACERL-FS, COMM (217) 352-6511, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, LOTUS 123.

4. **Hardware Required: NA.****

5. **Step-by-Step Procedure/Instructions:**

    - Save the workfile in LOTUS 123 SpreadSheet (SS) format (it will have a .WK1 suffix).

    - Enter 123 and retrieve the SS file, if necessary.

    - First select the SS "PRINT" option and then, when asked to choose either "PRINTER" or "FILE," choose "FILE."

    - Enter a name for the converted file and specify the range to be converted; default is ALL.

    - Select "GO" for execution. At this point, a duplicate file is created in ASCII format with .PRN suffix from your file, in SpreadSheet format with .WKS suffix. Your LOTUS directory now has both versions.

6. **Examples/Programs/Notes:**

7. **Troubleshooting:**

8. **Additional Reference:** *Lotus 123* User's Manual.

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*ASCII = American Standard Code for Information Interchange.
**Not applicable.

FORM 2. CONVERTING WORDPERFECT WORD PROCESSING FILES TO ASCII FORMAT

1. Synopsis:

- Create/retrieve a WordPerfect word processing file

- Convert it to ASCII format

- Save the file in ASCII format.

2. POC: Ilker Adiguzel, USACERL-FS, COMM (217) 352-6511, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, WordPerfect 5.1.

4. Hardware Required: NA.

5. Step-by-Step Procedure/Instructions:

- Enter WordPerfect (WP). Either create a workfile or retrieve the word processing file previously saved.

- Press Ctrl-F5 for the WP Text In/Out menu. Select Option 1 (DOS Text). Select Option 1 (Save). When prompted, enter a unique filename for your DOS (ASCII) file. Press Return. You will be returned to the word processing environment.

- If your current document is a previously saved WP file, upon exiting WP, you will have both versions of the file in your directory—one in WP and the other in ASCII format.

- If you just created the file, you have the option of saving it in WP format as well (ASCII format version is already saved). However, if you want to do this step only for possible future editing, it is not needed. Next time, you can enter WP, press Ctrl-F5, select Option 1 (DOS Text), and select Option 2 (Retrieve a DOS Text File).

6. Examples/Programs/Notes:

7. Troubleshooting:

8. Additional Reference: *WordPerfect* User's Manual

FORM 3. CONVERTING AN ASCII DATA BASE TO DIF* USING PC/FOCUS

1. **Synopsis:**

   - FOCUS master file description and data file required

   - Create a PC/FOCUS Focexec program to convert the data

   - Run the Focexec program to create the DIF data file.

2. **POC:** Bruce Goette¹, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7-122 inside Illinois).

3. **Software Required:** MS-DOS, PC/FOCUS.

4. **Hardware Required:** NA.

5. **Step-by-Step Procedure/Instructions:**

   - Ensure that both the master file description, MINE.MAS, and the data file, MINE.FTM, exist in the PC/FOCUS directory.

   - Write a short program using PC/FOCUS, DOS, or any word processing software that can create an ASCII format file. The name of the file must have a .FEX extension, i.e., CONVERT.FEX. (See the sample program in part 6 below.)

   - Within PC/FOCUS, issue the command EX CONVERT. The file named by the Focexec will now exist in the PC/FOCUS directory and will be a single DIF data file such as NEWFILE.DIF. There will be no corresponding converted master file.

6. **Examples/Programs/Notes:** The source of the master and data files you are converting to DIF could have been created by using PC/FOCUS alone to build a master file description and to input the required data; or, the files could have been downloaded from CAPCES using PC/FOCUS. The mainframe Focexec creating the two files (if they were downloaded) would have ended with a statement similar to:

       ON TABLE PCHOLD AS MINE

The contents of CONVERT.FEX that you must write are:

       TABLE FILE MINE
       PRINT FIELD1 FIELD2 FIELD3 FIELD4 FIELD5 FIELD6 FIELD7 FIELD8
       FIELD9 FIELD10
       AFTER TABLE HOLD AS NEWFILE FORMAT DIF
       END

---

*DIF = Data Interchange Format.

Any IF or BY conditions that created the file being converted need not be restated in the .FEX program because data in the file are now ordered correctly and only data meeting the mainframe IF conditions are in the file. However, you could add different IF or BY conditions in the .FEX program to further sort the file or you could omit the names of fields that you did not want to include in the DIF file.

Now that you have a DIF file, there are several graphics packages available that can read the file. Also, you can now convert the file using LOTUS 123 so that you can display the data in a SpreadSheet format. To do so, use the LOTUS Files Convert option.

7. Troubleshooting: Make sure that: (1) Enough disk space exists for the new DIF file you are creating, (2) Your machine has enough memory for the file to be converted, and (3) Both the data file and the master file descriptions are in the PC/FOCUS directory.

8. Additional References: *PC/FOCUS Guide to Operations, LOTUS 123* User's Manual.

FORM 4. SAVING AN ENABLE FILE IN ASCII FORMAT

1. **Synopsis:**

   - Create/retrieve an ENABLE word processing file

   - Save the file in ASCII format.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7-122 inside Illinois).

3. **Software Required:** MS-DOS, ENABLE.

4. **Hardware Required:** NA.

5. **Step-by-Step Procedure/Instructions:**

   - Enter ENABLE. Choose the "Word Processing" option. Then select the "Create" suboption if you are creating a file, or the "Revise" suboption if you are retrieving a previously saved file.

   - Work on the file as needed. When you are done, press ALT-F10 to save the file. When prompted, sequentially select "Change Options," "ASCII," and "Entire File."

   - If you started the process by retrieving a file and want to save a duplicate of the file in ENABLE word processing format, choose the option of assigning a different name to the ASCII version of the file before leaving the workfile (part 6 below).

   - If you need to work on the file later, ENABLE will tell you that it is in ASCII format. You should select "Change Options" to save the file in ASCII format again.

6. **Examples/Programs/Notes:** When you select Change Options and save a file created in ASCII format using ENABLE, ENABLE will put a .WPF extension on the filename. To avoid this, enter the filename with a dot (period) after the name and no extension, or enter your own extension. For example:

   FILENAME. or FILENAME.ASC

If you let ENABLE put the .WPF extension on the file, you have no way of knowing that it is in a *different format when you later retrieve, copy it to a diskette, or distribute it.*

7. **Troubleshooting:** To revise an existing ASCII file with no extension, enter the filename followed by a dot (period), or ENABLE will not be able to find the file. To locate an unknown file with no extension, choose Use System, Word Processing, Revise, and enter *.? to select from the directory.

8. **Additional Reference:** *ENABLE* Documentation.

FORM 5. USING LOTUS 123 AND PC/FOCUS TO CREATE GRAPHS ON CAPCES DATA

1. **Synopsis:**

    *   Download CAPCES data using PC/FOCUS

    *   Use PC/FOCUS TableTalk option for creating a report and saving it in LOTUS format.

    *   Retrieve the report from LOTUS 123 and create graphs.

2. **POC:** Ilker Adiguzel, USACERL-FS, COMM (217) 373-6728, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, PC/FOCUS, and LOTUS 123.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

    *   Download the relevant CAPCES data fields using Option 1 of the instructions in "Downloading CAPCES Data Using PC/FOCUS." This procedure is preferred over downloading the CAPCES data directly in LOTUS format (Option 3) because Option 3 takes longer.

    *   From PC/FOCUS, type TABLETALK at the ">>" prompt. Follow the steps in TableTalk to create a report from the downloaded data. Finally, select the "Retrieve the Data in LOTUS Format" option, which will hold the report in a file called HOLD.PRN and exit PC/FOCUS.

    *   Get into LOTUS 123 SpreadSheet and select the FILE option. Within the FILE option, first select the DIRECTORY option and change the directory name from LOTUS to PCFOCUS. Again select FILE and then the IMPORT suboption. Select NUMBERS to retrieve the file as numbers recognizable by LOTUS. At the FILENAME? prompt, either enter HOLD or move the cursor over HOLD under the names of the existing files and press Return.

    *   The file HOLD is imported from PC/FOCUS to LOTUS 123 SpreadSheet. Select the GRAPH option. Continue with the normal procedure of creating graphs, bar charts, etc., within LOTUS.

    *   To save the report file in LOTUS, change the directory back to LOTUS, and use the SpreadSheet SAVE option. The report file will be saved as a SpreadSheet file with a .WK1 suffix.

6. **Examples/Programs/Notes:**

7. **Troubleshooting:**

8. **Additional References:** *PC/FOCUS Guide to Operations, LOTUS 123* User's Manual.

SECTION II

COMMUNICATIONS

FORM 6. SETTING UP VISTACOM AND VISTACOM SCRIPTS

1. Synopsis:

- Prepare the VistaCOM package for the system

- Set a VistaCOM Script file to connect to a host system.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7-122 inside Illinois).

3. Software Required: MS-DOS, VistaCOM.

4. Hardware Required: NA.

5. Step-by-Step Procedure/Instructions:

Setting Up a Working Copy of VistaCOM

- Hard disk: Use the VistaCOM program Install. This is located on VistaCOM disk 1. Place this diskette in drive A and type A:INSTALL. This program will create a directory called EXPRESS on drive C and copy the needed VistaCOM files. INSTALL will prompt to load each diskette in your floppy drive. It will also modify your AUTOEXEC.BAT file to add the device driver, VCOMDEVL. VCOMDEVL is required to be executed before VistaCOM is executed.

- Reboot your system and type VCOM to run VistaCOM.

Setting Up System Parameters

- At the MS-DOS prompt, type "VCOM". The VistaCOM main Screen will appear.

- Press the "F5 CONFIG" key. Select option "F2 ADD" when prompted for "Select desired connection:". Select "general Remote Access" and press "F1 SELECT." This will put you in the Parameter Selection screen.

- In the Parameter Selection screen, use the up/down arrows to change parameters. Use a Return to select the values you want.

- Enter the local PAX phone number. (The phone number for accessing PAX can be obtained from McAuto Hotline 800-331-1497). If you need to get an outside line when you make a call, enter a 9 and a comma before the PAX phone number.

- Enter the communication port the modem is attached to, usually either 1 or 2.

- Enter the baud rate of your system. Most systems today use 1200- or 2400-baud modems.

- Enter the emulator type from the list of choices (VT100).

- Enter the dial method: Auto if you have HAYES or HAYES-compatible auto-dial modem; manual if you have a manual dial modem.

- Enter Manual for login method.

- Enter "F1 SAVE" and you will be prompted for a new configuration name. Enter "PAX", a Return and "F9 EXIT" to exit the CONFIG section.

6. Examples/Programs/Notes: A script file can be used to help with login procedures. The script file is executed after connection with the host system has been established. The file is written in VistaCOM's own language. Many useful commands can be executed within the script file. Refer to Form 18 in this section for a sample script file to connect to the PAX system.

7. Troubleshooting:

8. Additional Reference: *VistaCOM* User's Manual.

FORM 7. SETTING UP CROSSTALK AND CROSSTALK SCRIPTS

1. Synopsis:

- Prepare the CROSSTALK (sometimes abbreviated as XTALK) package for the system

- Set a CROSSTALK script file to connect to a host system.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, CROSSTALK Mk.4.

4. Hardware Required: NA.

5. Step-by-Step Procedure/Instructions:

Setting Up a Working Copy of CROSSTALK

- Hard disk: Use the INSTALL program to copy the contents of the CROSSTALK disks into a directory such as XTALK4. Put the CROSSTALK Program Disk 1 in drive A. Change to your floppy drive by typing A:. Then type INSTALL. You can select several types of CROSSTALK configurations depending on the amount of disk space you have. The recommended one is "General."

Setting Up System Parameters

- After CROSSTALK sets up the files on your hard disk, you will have the chance to set your system parameters by either continuing in the INSTALL program or going to your CROSSTALK directory and typing CONFIG.

- Select "Complete Configuration." You are then prompted for the way CROSSTALK will be displayed, either by Commands (Autoexec) or by a menu system called Offline Menu (Autoexem). Select the type of display you wish to see each time you log into CROSSTALK. The Offline Menu is the easiest to use (you still will have the ability to switch back and forth between the two displays).

- Your next option is to select a number (if any) to dial for an outside line, such as a "9." You may also specify the number to get long distance, usually a "1." Typing the CTRL and Return keys at the same time will save your selections.

- CROSSTALK must know to which communication (COM) port the modem is connected, usually COM1 or COM2.

- Enter the baud rate of your system when prompted. Most systems today use 1200- or 2400-baud modems.

- Enter the modem type from the displayed list.

- You can now define how to access the PAX system by running the NEWCALL script and defining information for your system. Select "Enter Information for new card" by moving the cursor to it and pressing a return.

- Enter PAX for the name. You will then see a window where you can enter a description, the telephone number, a network ID (ignore), your PAX user ID, a password, your connection baud rate (already set), and a script filename (ignore for now). Press a Return to exit this screen.

- You may now review your settings or add more connections if you want. Follow the menus to exit from the CONFIG script. A quit will exit you from the INSTALL script and CROSSTALK.

- You are now finished configuring CROSSTALK to your system. This is the only time that this step will have to be done.

6. Examples/Programs/Notes: A script file can be used to help with login procedures. The script file is executed after connection with the host system has been established. The file is written in CROSSTALK's own language. Many useful commands can be executed within the script file. Form 13 in this section includes a sample script file for connection to the PAX system.

7. Troubleshooting:

8. Additional Reference: *CROSSTALK Mk.4* User's Manual

FORM 8. SETTING UP TYM/COMM AND TYM/COMM PROCEDURE FILES

1. Synopsis:

- Prepare the Tym/COMM package for the system

- Set a Tym/COMM procedure file to connect with the host system.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, Tym/COMM 4.1.

4. Hardware Required: NA.

5. Step-by-Step Procedure/Instructions:

Setting Up a Working Copy of Tym/COMM

- Hard disk: Create a directory such as COMM and copy the contents of the Tym/COMM disk into the directory.

Creating a Working Copy of Tym/COMM

- First enter the command "TYMGEN". This will run a program to generate a customized Tym/COMM file with the localized parameters you need to use.

- When you execute, TYMGEN you will see a Banner Screen for a few seconds, and then in the box labeled ACTION, a request for a filename. Enter TYMCOMM and the PgDn key and the next screen will display some default parameters. You may need to reset some of these parameters. Use the Return key or cursor keys to move to the parameters you want to change.

    a. Your modem's baud rate needs to be set. The default is 1200. Check your modem for the rate to use.

    b. Tym/COMM must know to which communications (COM) port the modem is connected, either COM1 or COM2.

    c. Tym/COMM can also start up a procedure file from this command. The procedure file must be named proc*.tym where * is a number from 0 to 9. TYMGEN will just need the number. Several sample procedure files will appear on the Tym/COMM diskette and these can be used.

    d. More options are available; review the Tym/COMM Manual for instructions on their usage.

- After the parameters have been set, enter the name of the file in which you want to save these changes. In most cases, you simply type TYMCOMM.

- Since Tym/COMM does not know what type of modem that you are using, it is necessary to use modem commands within Tym/COMM. For example, if a Hayes modem is being used, the "AT" commands found in the user's manual must be executed. It is convenient to put the modem commands in a procedure file.

- A simple procedure file that uses the $dial variable is sample3.tym. The $dial variable is used by including the /d: option followed by the telephone number. This procedure file also includes the Hayes AT command set. To use this procedure file, the name must be changed to a proc*.tym format, where * is a number between 0 and 9. If this procedure file was defined when running TYMGEN, the complete command line to execute this procedure would be:

      TYMCOMM /d:(phone number)

```
** Log in using $dial variable.
*  When you start Tym/COMM, use the start-up option /D:string,
*  where string is a telephone number.
*  Default settings are used for COUNT (3) and TIMEOUT (60).


PERMON "NO CARRIER" GOTO -AGAIN
ON TIMEOUT GOTO -GIVEUP
ON COUNT GOTO -GIVEUP


-AGAIN
SEND "AT X6 DP ",$dial
COUNT
MATCH "CONNECT" MATCH "    "
SEND "A",
MATCH "please log in:"
* Replace user name with your user name.
SEND "user name;",
WAIT 2
ECHO OFF
* Replace password with your password.
SEND "password;",
WAIT 2
* Replace Project code with your project code
SEND "Project Code;",
END "Logged in"


-GIVEUP
ECHO INLINE
SHOW "Login failed"
DROP-DTR-EXIT
```

6. Examples/Programs/Notes: A procedure file will simplify the login process. Many useful commands can be executed from within a procedure file. Form 15 in this section includes a sample script file for connection with the PAX system.

The first time a user logs into PAX and selects the DD 1391 Processor, the INITTYM command should be used at the Time-Of-Day prompt. This command starts the initialization program, which will prompt you for information specific to your PAX userid. Answer the prompts that will appear as appropriate.

Once the prompts have been answered, the initialization program will generate several files on your PC. PCEDIT.BAT can be used to start your word processing package automatically when performing PCEDITs. PROC1.TYM is an automated login command.

7. Troubleshooting:

8. Additional References: *Tym/COMM* User's Guide, your modem's user's manual.

FORM 9. SETTING UP SMARTCOM AND SMARTCOM SCRIPTS

1. Synopsis:

- Prepare the Smartcom package for the system

- Set a Smartcom Script file to connect to a host system.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7-122 inside Illinois).

3. Software Required: MS-DOS, Smartcom III.

4. Hardware Required: NA.

5. Step-by-Step Procedure/Instructions:

Setting Up a Working Copy of Smartcom

- Hard disk: Use the Smartcom program INSTALL. This is located on Smartcom disk 1. Place this diskette in drive A and type A:INSTALL. This program will create a directory called SCOM3 and copy the needed Smartcom files. INSTALL will prompt to load each diskette in your floppy drive.

- Type SCOM3 to run Smartcom.

Setting Up System Parameters

- At the MS-DOS prompt, type "SCOM3". The Smartcom main Screen will appear. Type a Return to go to the Main Menu.

- At the Main Menu, type "C" to go to the Connection Setting screen and "N" to define a new connection.

- Communications Settings:

  a. Enter PAX or your own choice for the name of the new connection. This will take you to the Major Settings screen where you can change the default parameters to the parameters fitting your system. Use the up/down arrows to change parameters. Use a Return to select the values you want.

  b. Enter the communication port the modem is attached to. Usually either 1 or 2.

  c. Enter the local PAX phone number. (The phone number for accessing PAX can be obtained from McAuto Hotline 800-331-1497.) If you need to get an outside line when you make a call, enter a 9 and a comma before the PAX phone number.

d. Enter the baud rate of your system. Most systems today use 1200- or 2400-baud modems.

e. Enter "F8 Save and Exit" to save your connection choices.

- An Activity must also be created:

a. Enter "A" for Activity at the Main Menu, and "N" for New at the Activity menu. You will then be prompted for the Activity Name and you should enter "PAX".

b. Enter "X" to Modify Connection List and a Return to select "Add Connection to Activity List." You will then be prompted for the name of the connection you defined above. Either enter "PAX" or scroll through the list to find it and select PAX with a Return.

c. Enter "F8 Save and Exit" to save this activity.

6. Examples/Programs/Notes: A script file can be used to help with login procedures. The script file is executed after connection with the host system has been established. The file is written in Smartcom's own language. Many useful commands can be executed within the script file. The Smartcom script file can be generated automatically by instructing Smartcom to memorize your actions:

- Initiate a Session by typing "I", Initiate a Session in the Main Menu. Select "PAX" for the Activity in which the script will be stored.

- You can then start Smartcom learning the login script at any time before or after you start a Connection. Select "L", Learn a Script, from the Session Menu. Enter a name for the Script (if "PAX" is entered and is the same name as the connection selected, the PAX script will be run each time you use the connection PAX).

- Start the Connection ("S" in the Session Menu) and log into PAX. When you've finished recording operations, turn off the script learning by pressing F3 (Session Menu) and select "L-Finish Learning Script." Smartcom will ask if you want to compile your script. Select "C", Compile, to convert the script into a format usable by Smartcom.

7. Troubleshooting:

8. Additional Reference: *Smartcom* User's Manual.

FORM 10. SETTING UP PROCOMM AND PROCOMM SCRIPTS

1. Synopsis:

- Prepare the Procomm package for the system

- Set a Procomm Script file to connect to a host system.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7-122 inside Illinois).

3. Software Required: MS-DOS, Procomm Plus 1.1B.

4. Hardware Required: NA.

5. Step-by-Step Procedure/Instructions:

Setting Up a Working Copy of Procomm

Hard disk: Use the Procomm program PCINSTAL, located on Procomm disk 1. Place this diskette in drive A and type "a:pcinstal" to create a directory called PCPLUS (or one of your choice) and copy the needed Procomm files. PCINSTAL will also prompt for your initial values for configuration.

Setting Up System Parameters

- The PCINSTAL program will prompt for the initial system parameters. Use the cursor keys to move up and down the list of options or type in the option number followed by a Return.

    a. Modem Type. Select your modem type from the list given.

    b. Enter the type of terminal you want to emulate. ANSI will work fine.

    c. Enter the communication port the modem is attached to, usually either 1 or 2.

    d. Enter the baud rate of your system. Most systems today use 1200- or 2400-baud modems.

    e. In this case, the Parity should be set to NONE, data bits set to 8, stop bits to 1, DUPLEX to FULL, and Protocol to NONE.

- The PCINSTAL program will create a file in which to save this information. These parameters may be changed in Procomm by typing PCPLUS to execute Procomm and Typing Alt-P (the Alt and P keys combined) to get to the Line/Port Setup options.

6. Examples/Programs/Notes: A script file can be used to help with login procedures. The script file is executed after connection with the host system has been established. The file is written in Procomm's own ASPECT language. Many useful commands can be executed within the script file. Form 14 in this section includes a sample script file for connection to the PAX system.

7. **Troubleshooting:**

8. **Additional Reference:** *Procomm* User's Manual

FORM 11. CREATING AN ENABLE TELEPROCESSING SETUP FOR PAX

1. **Synopsis:**

   - Enter the setup mode

   - Set communication parameters

   - Save the setup.

2. **POC:** Bruce Goettel, USACERL/FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, ENABLE.

4. **Hardware Required:** NA.

5. **Step-by-Step Procedure/Instructions:**

   - From the ENABLE Main Menu, select the Use System, Telecom, and Setup options. An instruction screen will appear that you can review. Press any key to proceed.

   - Next, enter a name for the Setup. You will be able to revise it, if necessary, using the same method.

   - The following are the recommended parameters. Some of the answers shown are for example only. Use the numbers or responses for your situation.

     PROMPT:SELECT:

Special digits?	Yes or No
Number for outside line?	e.g., 9
Use alternative phone system?	No
Use a network?	Yes
Which network?	2-Tymnet
Enter the phone number	(your number) e.g., 555-1234
Enter terminal identifier	A
Enter connection address	(leave blank)
Use autodial modem	Yes
Type of automatic dial	Tone
Baud rate	4=1200
Options	1
Type of duplex	Full
Transmission delay	0
Support Xon/Xoff?	Yes
Password or first response	(your ID) e.g., MYOWNID
Second response	(your password) e.g., PASS.WORD

See cost?	No
See connection time?	No
COM PORT to use?	COM2 or COM1
Setup to use if this one fails?	(leave blank)
Terminal emulation?	No
Options?	No

- Now press the F10 key and select Save to save your Setup. Next, press the F10 key and select Quit, and Yes to return to the ENABLE Main Menu. From there you can try the Setup you've created by selecting Use System, Telecom, Communicate, and Use Setup. Then follow the prompts.

6. Examples/Programs/Notes: If you don't want to put your ID and password in the Setup, simply leave those prompts blank. You can enter them when you are connected.

7. Troubleshooting: If no dial tone occurs, be sure the telephone line is connected to your modem. If you encounter "line garbage" at 1200 baud, change the Setup to 300 baud.

If the message "Modem Not Responding" occurs when you try to use the Setup, change the Setup to a different COMM port. For example, if you had set COM2, change to COM1.

You must start ENABLE with a ",B" parameter when you are connecting to a computer using full duplex. An example of the startup command is:

ENABLE (,,,,C:\MYDIR),B

Some early versions of ENABLE do not recognize the ,B parameter and will not upload successfully.

8. Additional Reference: *ENABLE* Documentation.

FORM 12. CONNECTING TO PAX USING SMARTCOM III

1. **Synopsis:**

   - Connect to the PAX system host McAuto computer using SMARTCOM III (SCOM3)

   - Access the PAX system.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7-122 inside Illinois).

3. **Software Required:** MS-DOS, SMARTCOM III.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

   - Assuming that transmission parameters are already set up, enter SCOM3 and select option "I" Initiate Session.

   - When prompted, choose the previously defined Activity "PAX."

   - Enter "S" Start Connection from the Session Menu.

   - After connection, enter your terminal identifier and log in normally.

   - After logging off the PAX system, press "T" Terminate Connection in the Main Menu to return to SCOM3 and choose option "Q" Quit Smartcom to exit SCOM3.

6. **Examples/Programs/Notes:** To include PAX in your communications directory, system parameters need to be set up first. See the instructions in "Form 9. *Setting Up Smartcom and Smartcom Scripts.*"

7. **Troubleshooting:** If there is excessive line noise (recognized by "garbage" characters across your screen) impairing your online operations, log off and dial in again in an attempt to obtain a clearer line.

   If the modem does not dial and issues a message such as "The modem is not responding," the communications port (to which the modem is connected) may not be identified properly. Select SCOM3 option "C" Connection Settings" and change the current Smartcom port identifier. Also make sure the modem is plugged in, turned on, and securely connected to the computer.

   If connection to PAX cannot be established after several rings, the communications network node might not be functioning. Call McAuto Hotline.

8. **Additional Reference:** *Hayes Smartcom III* Manual.

FORM 13. CONNECTING TO PAX USING CROSSTALK MK.4

1. Synopsis:

- Set the PAX dial-in sequence

- Access the PAX system.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, CROSSTALK Mk.4.

4. Hardware Required: One of the following modems or compatible:

- IBM Modem (all models)
- Hayes Smartmodem (all models)
- DCA 911 modem
- Ven-Tel Modem (all models)
- Rixon Modem (all models)
- Multi-Tech (224AD and 224AB)
- Bizcomp PC-Intellimodem (internal board)
- Concord Data Systems Autodial 224
- Popcom (all models)
- Bytcom 212 AD
- AT&T Autocall 2224B
- AT&T System 75/85 DTDM, PDM, 7404, 7407
- COMPAQ (internal) Modems
- Racal-Vadic (all models).
- Grid Case (internal)
- Midget Pocket Modem 1200
- Novation Modems
- U.S. Robotics Modem (all models).

5. Step-by-Step Procedure/Instructions:

Setting Up the Dialing Procedure for PAX

- Assuming that transmission parameters are already set up, at the MS-DOS prompt, type "XTALK". When using the Offline menus option a window will appear. Select "Make a Call From the Phone Book" by pressing return.

- Use PgUp or PgDn keys to select the previously-defined PAX connection and press return. CROSSTALK connect to PAX and you log in normally.

- When done with PAX, press enter the ALT and F10 keys together to see the Online Menu. Select "Disconnect from PAX" and exit CROSSTALK.

6. Examples/Programs/Notes: A script file can be used to help login procedures. The script file can be generated automatically using the Learn function, and can then be placed in the PAX Phone Book entry to be executed automatically. The following example, assumes you have already generated an entry in the Phone Book called PAX. See "Form 7, Setting Up Crosstalk and Crosstalk Scripts." To generate a PAX script:

- Type "XTALK" to enter CROSSTALK. Select DO LEARN from the menu. A window will appear with entries about the Phone Book. Pick "Select a Card From the Phone Book" by pressing a Return.

- Use PgUp and PgDn keys to select a previously defined PAX Phone entry and then enter a Return. Select "Make the Call" from the next menu.

- The Learn Screen will be shown. A small window in the upper right hand corner will echo the learned script as it is entered. Enter a Return to begin the connection and log in normally. What you type along with the CROSSTALK interface will be entered in a file called PAX.XTS.

- After logging in, press F10 to end the login script. Enter "No" to the question "Should PAX.XTS Hang up the Phone." Answer "YES" to the question, "Make PAX.XTS the Login Script."

- You then have the opportunity to Browse through, edit your new login script, or End. Select "Just End Learn" when done and then "Return to Terminal Mode" from the Crosstalk Main Menu. Complete your PAX session.

- You now have created a script that will log into PAX automatically whenever you select PAX from the CROSSTALK Phone Book.

7. Troubleshooting: As mentioned earlier, it may be necessary to toggle the duplex mode if the characters echo incorrectly. This can be done without logging off the PAX system. Return to the Offline menu (Alt-F10). Select "Change Configuration or Phone Book" and then "Add or Change a Phone Book Card." Now select "Change Information on an Old Card" and select PAX from the list of entries. A screen full of your PAX parameters will appear. Use the cursor keys to get to the ECHO parameter and toggle to a different duplex. Follow the menus to exit back to your PAX session.

If the wrong communications port has been chosen, it will be necessary to change the port number in your Equipment Setup. This situation will be evident when CROSSTALK acts as if it is attempting to connect to a remote line, but nothing happens. If you have a modem that echoes the calling procedure, this problem will be immediately obvious because no dialing will occur. Otherwise, you can monitor the outgoing call. To change the port number, select "Change Configuration or Phone Book" as shown above. Then select "Change Your Equipment Setup." This option will prompt you for your modem options. Change the Com port when prompted. Follow the menus to exit this section.

8. Additional Reference: *CROSSTALK Mk.4* User's Manual.

FORM 14. CONNECTING TO PAX USING PROCOMM

1. Synopsis:

- Connect to the PAX system host McAuto computer using Procomm (PCPLUS)

- Access the PAX system.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, Procomm Plus 1.1B.

4. Hardware Required: Modem (i.e., Hayes Smartmodem or compatible).

5. Step-by-Step Procedure/Instructions:

- Assuming that transmission parameters are already set up, enter PCPLUS and enter Alt-D (Alt and D keys at same time).

- Use cursor keys to choose the previously defined Activity "PAX."

- Enter a Return to start connection.

- After the connection is made, enter your terminal identifier and login normally.

- After logging off the PAX system, press Alt-X to exit Procomm.

6. Examples/Programs/Notes: To include PAX in your communications directory, system parameters need to be set up first. See the instructions in "Form 10. Setting Up Procomm and Procomm Scripts." Script files for logging into PAX may also be created to log into PAX. Procomm's script files are normal text files written in Procomm's script language and generated with the file extension of ASP, for example, PAX.ASP. A sample script file for logging into PAX is shown below.

```
;* A sample ASPECT script file for logging onto PAX
;*
;
ASSIGN S0 "555-5555"            ; enter your local PAX number here
ASSIGN S1 "uuuuu"               ; enter your USERID here

EMULATE ANSI                    ; Select terminal emulation

IF NOT LINKED                   ; If not called via Dial Dir
   CLEAR                        ; Clear the screen
   MESSAGE "Calling PAX"        ; Message to User
   SET BAUD 1200                ; Configure line settings
   SET PARITY EVEN              ; Change these to your own
   SET DATABITS 7               ; Settings
```

```
SET DUPLEX FULL
MDIAL S0                              ; Dial TYMNET
ENDIF

PAUSE 3                               ; Wait a bit
TRANSMIT "A"                          ; Send the terminal ID
WAITFOR "please log in:" 30           ; Wait for prompt
TRANSMIT S1                           ; Send ID
TRANSMIT "^M"                         ; Send CR
WAITFOR "Password:"                   ; Wait for prompt

EXIT                                  ; Exit script
```

To use this script, first use a word processor or editor to enter this script on your computer. Make any changes relative to your own modem, phone number, and user number. Save this in a text file called PAX.ASP. Next enter Procomm by typing PCPLUS.

Now you need to place this script in the Dialing Directory. Press Alt-D for the Dialing Directory. Use the cursor keys to move to the entry for PAX you have already defined. Press "R" to Revise the PAX entry. A Revise window will appear. Move down to the SCRIPT entry and enter PAX. You don't need to enter the ASP filename extension. Press two Returns and follow the prompts to save this entry. This script file may be executed in two ways:

- Press Alt-D for the Dialing Directory and use the cursor keys to move to the PAX entry. Press Return at the Dialing Directory entry and the script will be executed automatically

- Press Alt-F5 to execute in the Terminal mode. Procomm will ask which script file you want to execute. Type "PAX" and press Return. Procomm will begin executing the PAX script.

7. Troubleshooting: If there is excessive line noise (recognized by "garbage" characters across your screen) impairing your online operations, log off and dial in again in an attempt to obtain a clearer line.

If the modem does not dial and issues a message such as "The modem is not responding," the communications port (to which the modem is connected) may not be identified properly. Select PCPLUS option Alt-P Line/Port Setup and change the current port identifier. Also make sure the modem is plugged in, turned on, and is securely connected to the computer.

If connection to PAX cannot be established after several rings, the communications network node might not be functioning. Call McAuto Hotline.

8. Additional Reference: *Procomm Plus* User's Manual.

FORM 15. CONNECTING TO PAX USING TYM/COMM 4.1

1. **Synopsis:**

   - Set the PAX dial-in sequence

   - Access the PAX system.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, Tym/COMM 4.1.

4. **Hardware Required:** See modems listed under "Form 13. Connecting to PAX Using CROSSTALK MK.4."

5. **Step-by-Step Procedure/Instructions:**

Setting Up the Dialing Procedure for PAX

   - First, TYMGEN should be used to set parameters as described in "Form 8. Setting Up Tym/COMM and Tym/COMM Procedure Files."

   - Include the telephone number for the PAX system in the dial variable. If you must exit your telephone system to reach an outside line, for example, by first dialing 9, then the local PAX access number, type the telephone number this way: 9,3591163. If you are dialing from an open line, omit the "9,". Note: 359-1163 is the PAX number for the USACERL area LAN.

Using a Procedure File to Automate the Login Process

   - A procedure file is composed of Tym/COMM procedure statements. These statements can be found in the *Tym/COMM* User's Guide, "Section 3." To create a procedure file, use any text editor to store the procedure statements in a PC file. You can use any combination of upper- and lower-case letters, except in strings. Each procedure statement must be entered on a separate line. A procedure file can have any valid DOS filename. However, as discussed earlier under Form 8, a procedure file named in the proc*.tym format can be started in your working copy. The procedure file can simply log you on to PAX or it can be written to assist with more complex tasks such as file transfers or PAXMAIL. Part 6 below shows an example of a simple procedure file.

6. **Examples/Programs/Notes:** The following procedure file can be used to log in to the PAX system when the working copy contains the $dial variable with the PAX telephone number.

```
********************** TYM/COM PROGRAM TO DIAL UP **********************
****************************THE PAX SYSTEM****************************
****** THIS PROGRAM IS FOR A HAYES MODEM OPERATING AT 1200 BAUD RATE
**** SET THE HAYES MODEM TO 1200 BAUD RATE AND DIAL THE PAX SYSTEM
PERMON "NO CARRIER" GOTO -AGAIN
ON TIMEOUT GOTO -GIVEUP
ON COUNT GOTO -GIVEUP

-AGAIN
SEND "AT H DT",$DIAL

* WAIT FOR THE INITIAL MESSAGE FROM THE PAX SYSTEM
MATCH "xxx"

* SEND TERMINAL IDENTIFIER CHARACTER A, WITHOUT A RETURN SEND "A"

* WAIT FOR "PLEASE LOG IN" MESSAGE
MATCH "please log in"

-GIVEUP INLINE
SHOW "Login failed"
DROP-DTR-EXIT
```

7. **Troubleshooting:** If characters are echoing incorrectly, it may be necessary to toggle the duplex mode. Full-duplex is the default communications mode for Tym/COMM. If half-duplex mode is needed, the variable "/H" should be added to your working copy.

If the wrong communication port was chosen, it will be necessary to change the COM port in your working copy.

If the above suggestions do not solve your problem, consult the Tym/COMM User's Guide or call the McDonnell Douglas ISG (formerly Tymshare) Hotline at 800-331-1497.

8. **Additional Reference:** *Tym/COMM* User's Guide.

FORM 16. CONNECTING TO PAX USING ENABLE

1. **Synopsis:**

   • Set parameters

   • Use the Capture mode as desired

   • Access the PAX system.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, ENABLE.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

   • From the ENABLE Main Menu, select Use System, Telecom, Communicate, and Use Setup. Enter the name of the setup you will use or press the "up" arrow to move the cursor to the desired setup, then press enter.

   • Enter the filename to which you want to capture screen text, such as reports, data bases, or electronic mail. If you do not intend to capture text, press Return without entering a name.

   • Next, ENABLE will make the connection and indicate the status. ENABLE will enter the A, which is normally your terminal identifier. If you have included your ID and password in the telecommunications setup you are using, ENABLE will display each on the screen. You must press Return to send each one. Otherwise, type in your ID and password after ENABLE has finished passing the terminal identifier. You are now connected to PAX; proceed as you wish.

   • If at any time during your session you want to capture text or data, use the F7 key, which is a toggle for capture mode. Pressing the Pg Up key during your session will let you edit any text you have been capturing. Pressing Shift-F9 will return you to the online session.

   • To end your session, select F10, Disconnect, Yes, and then answer Yes or No to indicate whether you want to save any captured data. If you answer Yes, you can save the data under the name shown on the status line or under a different name by selecting Change Options. If you answer No, pressing any key will return you to the ENABLE Main Menu.

6. **Examples/Programs/Notes:** Additional help is available under "Form 11. Creating an ENABLE Teleprocessing Setup for PAX." More recent versions of ENABLE allow you to capture text or files onto a disk. Use the F10 menu while online to open a disk capture file and then close it after the text or file has been printed on the screen. The disk file will be in ASCII format. If you have captured a data base file onto disk, it can be converted to an ENABLE data base by designing and running an ENABLE

transfer form. This conversion is done using the ENABLE DBMS copy screen. (Also see the ENABLE DBMS Manual.)

7. Troubleshooting: Make sure you have assigned the correct COM port within the ENABLE telecommunications setup you are using and that the telephone line is working correctly.

8. Additional Reference: *ENABLE Telecommunications* Manual.

FORM 17. CONNECTING TO PAX USING PC/FOCUS

1. Synopsis:

- Set parameters

- Issue the dial sequence.

2. POC: Sandra Kappes, USACERL/FS, COMM (217) 352-6511, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, PC/FOCUS.

4. Hardware Required: Modem (i.e., Hayes Smartmodem or compatible).

5. Step-by-Step Procedure/Instructions:

- Enter "PC/FOCUS", and at the PC/FOCUS ">>" prompt, type LINK.

- After the LINK selection menu appears, supply each of the following parameter values, followed by a Return:

Async Dial:	X
System:	CMS
Baud:	1200
Duplex:	FULL
Parity:	MARK
Stop Bits:	1
Start Bits:	7

- The message HOST SYSTEM CONNECTED should now be displayed indicating that the modem is connected.

- To dial the mainframe, type ATD#,PAX (substituting the appropriate telephone numbers for #,PAX) and press Return. Significant characters are:

  - AT: The attention code for the Smartmodem (upper-case only)
  - D: The code that causes Smartmodem to initiate the call
  - #: Optional digit to obtain an outside line; if not required, omit this and the trailing comma
  - PAX: Your local PAX access number.

- once connected, log on to PAX normally.

6. Examples/Programs/Notes:

- Parameters also can be supplied on the LINK command line. For example: LINK SYSTEM CMS BAUD 1200 DUPLEX FULL PARITY MARK STOP 1 BITS 7 END

The END command must be included to instruct PC/FOCUS to process the command. To eliminate the need to enter this command each time you want to communicate with PAX, you can save it as a focexec file using the PC/FOCUS TED option. For example, if you saved the command in a file named DIALPAX.FEX you could invoke it by typing EX DIALPAX at the ">>" prompt. The dialing sequence should follow.

- While connected to the mainframe, press the F2 key to return to your previous point in PC/FOCUS. To return to the mainframe, press F2 or Return LINK R (where R is Resume). Depending on your hardware, you may have to redial, but you will not have to repeat the login process.

7. Troubleshooting:

8. Additional Reference: *PC/FOCUS Guide to Operations.*

FORM 18. CONNECTING TO PAX USING VISTACOM

1. Synopsis:

- Set the PAX dial-in sequence

- Access the PAX system.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, VistaCOM

4. Hardware Required: See modems listed under "Form 13. Connecting to PAX Using CROSSTALK Mk.4."

5. Step-by-Step Procedure/Instructions:

Setting Up the Dialing Procedure for PAX

- First, a working copy should be implemented as described in "Form 6. Setting Up VistaCOM and VistaCOM Scripts."

- Assuming that transmission parameters are already set up, VCOM and select option "F3 CONSEL" at the main VistaCOM Screen.

- When prompted, select the connection defined for PAX if one exists by moving the horizontal bar with the up/down arrow keys, and then pressing "F1 SELECT." You will then be returned to the main VistaCOM screen.

- To start the connection, press "F1 ENTER" at the main VistaCOM screen and press "F1 ONLINE" at the interactive screen.

- After the connection is made, your terminal identifier and log in normally.

- After logging off the PAX system, press "F9 EXIT" to return to VCOM interactive screen. The connection with the host will remain active until the host drops you or you disconnect. This allows you to access the other functions of VistaCOM and then resume your interactive session.

- To completely logout, choose option F9 to return to the main VistaCOM menu. F9 will exit the main VistaCOM menu and you will be prompted to "disconnect before program exit?" "F1" (Yes) will complete your exit from VistaCOM.

Using a Procedure File to Automate the Login Process

A procedure file is composed of vistacom procedure statements. These statements can be found in the *VistaCOM* User's Manual, "Section 9." To create a procedure file, use any text editor to store the

procedure statements in a PC file. You can use any combination of upper- and lower-case letters, except in strings. Each procedure statement must be entered on a separate line. A procedure file can have any valid DOS filename. However, VistaCOM's naming convention would prefer the file have a PF extension. This will let VistaCOM provide the user with a directory of all procedure files. Part 6 below shows an example of a simple procedure file.

6. Examples/Programs/Notes: The following procedure file can be used to log in to the PAX system when a configuration with the PAX parameters and phone number has already been generated and has been named PAX. Comments are denoted with a semicolon.

```
********************* VistaCOM PROGRAM TO DIAL UP****************
***************************THE PAX SYSTEM***********************
SET ABORT=LOGINERR;set branch for error
CONNECT "PAX";uses defined configuration
DISPLAY "CONNECTING to PAX"
ANSWER "PAX" FOR 60 SECONDS;sets time to wait for dialing

SAY "~1"      ;terminal identifier
SEE 7 SECONDS FOR "please "
ONLINE
END 0         ;normal termination

:LOGINERR  ;Error handling
DISPLAY "Error in Connecting"
END 1
```

To execute this procedure, select "F1 ENTER" from the main VistaCOM screen. This takes you to the Interactive screen where you select "F4 SCRIPT." A list of all procedure files (those ending with the extension PF) will be displayed. Move to it and press "F1 SELECT." The connection to PAX will then take place automatically.

7. Troubleshooting: If the wrong communication port was chosen, it will be necessary to change the PAX Configuration; see "Form 6, Setting Up VistaCOM and VistaCOM Scripts."

If characters echo incorrectly, it may be necessary to change the duplex mode in the configuration section. "F5 CONFIG" and select the PAX configuration. PgDn to go to the second page of parameters. Go down to the "Type of Echo" and change the value. LOCAL is half-duplex and REMOTE is full-duplex. Save this configuration and try again.

If there is excessive line noise (recognized by "garbage" characters across your screen) impairing your online operations, log off and dial in again in an attempt to obtain a cleaner line.

If VistaCOM does not dial and issues a message such as "Error in Configuration Information," the communications port (to which the modem is connected) or other parameters are not identified properly. Select "F5 CONFIG" from the main VistaCOM menu, select the PAX connection and check the current parameters.

If connection to PAX cannot be established after several rings, the communications network node might not be functioning. Call McAuto Hotline 800-331-1497.

Before a connection to VistaCOM can take place, the program VCOMDEVL (device driver installation program) must be executed. If VistaCOM Install program was used to set up VistaCOM on a hard disk, VCOMDEVL is automatically added to your AUTOEXEC.BAT file and will be executed when you boot/reboot your computer. If VCOMDEVL is not executed automatically, go to your VistaCOM directory and type VCOMDEVL.

8. Additional Reference: *VistaCOM* User's Manual.

SECTION III

UPLOADING

FORM 19. UPLOADING ASCII FILES USING SMARTCOM III

1. Synopsis:

- Connect to PAX using SCOM3

- Upload the file(s) in SCOM3 directory.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, SMARTCOM III.

4. Hardware Required: Modem (i.e., Hayes Smartmodem or compatible).

5. Step-by-Step Procedure/Instructions:

- SMARTCOM III (SCOM3).

- Connect to PAX, log in, and choose an application from the menu, e.g., CAPCES or PAXMAIL.

- If you are using an application other than PAXMAIL, CMS edit mode by typing EDIT <filename> <filetype> at a "CMS>" or "C>" prompt. After seeing an "E>" prompt, I for input to attain an "I>" prompt.

- If you are using PAXMAIL, choose Send to send a memo and all applicable information for the TO, CC, PRIORITY, and SUBJECT lines. Upon completion, you will see an "I>" prompt.

- At the "I>" prompt, press F3 to the Session Menu. Select "A" Turn Autotype On. Select "T" Text file unless the file was created by Smartcom's own text editor. the filename to be transferred if in the SCOM3 directory, and press Enter. If the file is not in the SCOM3 directory, you can select a new subdirectory from the table shown (subdirectories are enclosed in the < > symbols. Or you can just the drive, path, filename, or all three, for example:

    C:\WP\WORK\LETTER.WPF

- After completing the uploading, you will be returned to the "I>" prompt. Press again to receive the "E>" prompt.

- At the "E>" prompt, type "$NODS" to delete the extra blank lines acquired during uploading.

- Type FILE to save the uploaded file and to exit the edit mode, or type QUIT to exit the editor without saving.

- Repeat the above uploading procedure if more than one file needs to be uploaded.

- Proceed with your online PAX operations.

III-1

6. Examples/Programs/Notes:

Example 1

You wrote a FOCEXEC using a word processing package. To upload and execute it: CAPCES, type EDIT <filename> FOCEXEC, and follow the above procedure beginning with the "E>" prompt.

Example 2

You have a very long message that you do not want to type manually online: prepare your mail using a word processing package; initiate a PAXMAIL and follow the above procedure beginning with the "I>" prompt.

7. Troubleshooting: You can upload ASCII files only. Refer to "Section I. File Format Conversions" for help if the file to be uploaded is not in ASCII format.

8. Additional Reference: *Hayes Smartcom III* Manual.

FORM 20. UPLOADING LOTUS 123 SPREADSHEET FILES USING SMARTCOM III

1. **Synopsis:**

   - Convert from 123 SpreadSheet format to ASCII format

   - Use SMARTCOM III to upload.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, LOTUS 123, and SMARTCOM III.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

   - Follow the instructions in "Form 1. Converting LOTUS 123 SpreadSheet Files to ASCII Format."

   - SMARTCOM III.

   - Follow the instructions in "Form 19. Uploading ASCII Files Using SMARTCOM III."

6. **Examples/Programs/Notes:**

7. **Troubleshooting:**

8. **Additional References:**

FORM 21. UPLOADING WORDPERFECT WORD PROCESSING FILES USING SMARTCOM III

1. **Synopsis:**

   • Convert from WordPerfect format to ASCII format

   • Use SMARTCOM III to upload.

2. **POC:** Bruce Goettel, USACERL/FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, WordPerfect, and SMARTCOM III.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

   • Follow the instructions in "Form 2. Converting WordPerfect Word Processing Files to ASCII Format."

   • SMARTCOM III and follow the instructions under "Form 19. Uploading ASCII Files Using SMARTCOM III."

6. **Examples/Programs/Notes:**

7. **Troubleshooting:**

8. **Additional References:**

FORM 22. UPLOADING ASCII FILES USING CROSSTALK MK.4

1. Synopsis:

- Connect to PAX using CROSSTALK (XTALK) Package

- Transmit data to the PAX system.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, CROSSTALK Mk.4.

4. Hardware Required: Modem (e.g., Hayes Smartmodem or compatible).

5. Step-by-Step Procedure/Instructions:

- It is assumed from this point on that the user has connected with the PAX system and has set CROSSTALK data parameters as described under "Form 13. Connecting to PAX Using CROSSTALK Mk.4."

- After you have logged in to the PAX system, choose your application from the PAX system menu (usually CAPCES or PAXMAIL).

- If you are using an application other than PAXMAIL, CMS edit mode by typing EDIT <filename> <filetype> at a "CMS>" or "C>" prompt. After seeing an "E>" prompt, I for input to attain an "I>" prompt.

- If you are using PAXMAIL, choose Send to send a memo and all applicable information for the TO, CC, PRIORITY, and SUBJECT lines. When done with those, you will see an "I>" prompt. The PAX system is now ready to receive data from your terminal.

- Depress Alt-F10 at the same time for the CROSSTALK ONLINE Menu. Select "Text File Upload Control" and then "Upload a File" from the next menu.

- CROSSTALK will prompt for a filename. Either type in the full filename or PgUp to display files in the current directory, and select from this list.

- CROSSTALK will now upload the file, displaying the number of lines uploaded and the percentage of the file uploaded as the uploading proceeds.

- After uploading is complete, select "Return to Previous Menu" and "Return to Terminal Mode" to return to PAX and proceed with your online PAX operations.

6. Examples/Programs/Notes:

Example 1.

You wrote a FOCEXEC using a word processing package. To upload and execute it: CAPCES, type EDIT <filename> FOCEXEC, and follow the above procedure beginning with the "E>" prompt.

Example 2

You have a very long message that you do not want to type manually online: prepare your mail using a word processing package, move it to the XTALK directory, sign on to PAX, initiate PAXMAIL, and follow the above procedure beginning with the "I>" prompt.

7. Troubleshooting: You can upload ASCII files only. Refer to "Section I. File Format Conversions" for help if the file(s) to be uploaded is not in ASCII format.

8. Additional References: *CROSSTALK Mk.4* User's Manual, *CMS Editing Environment* User's Guide.

FORM 23. UPLOADING LOTUS 123 SPREADSHEET FILES USING CROSSTALK MK.4

1. **Synopsis:**

    - Convert from 123 SpreadSheet format to ASCII format

    - Use CROSSTALK Mk.4 to upload.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, LOTUS 123, and CROSSTALK Mk.4.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

    - Refer to instructions in "Form 1. Converting LOTUS 123 SpreadSheet Files to ASCII Format."

    - CROSSTALK Mk.4 and copy your ASCII file from the LOTUS directory.

    - Follow the instructions in "Form 22. Uploading ASCII Files Using CROSSTALK Mk.4."

6. **Examples/Programs/Notes:**

7. **Troubleshooting:**

8. **Additional References:**

FORM 24. UPLOADING WORDPERFECT WORD PROCESSING FILES USING CROSSTALK MK.4

1. **Synopsis:**

    - Convert from WordPerfect to ASCII format

    - Use CROSSTALK Mk.4 to upload.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, WordPerfect, and CROSSTALK Mk.4.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

    - Follow the instructions in "Form 2. Converting WordPerfect Word Processing Files to ASCII Format."

    - CROSSTALK Mk.4 and copy your ASCII file from the WordPerfect directory.

    - Follow the instructions in "Form 22. Uploading ASCII Files Using CROSSTALK Mk.4."

6. **Examples/Programs/Notes:**

7. **Troubleshooting:**

8. **Additional References:**

FORM 25. UPLOADING ASCII FILES USING PROCOMM PLUS 1.1B

1. **Synopsis:**

   - Connect to PAX using PCPLUS

   - Upload the file(s).

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, Procomm Plus 1.1B.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

   - Procomm (PCPLUS)

   - Connect to the PAX system, log in, and choose your application from the PAX menu (usually CAPCES or PAXMAIL).

   - If you are using an application other than PAXMAIL, CMS edit mode by typing EDIT <filename> <filetype> at a "CMS>" or "C>" prompt. After seeing an "E>" prompt, I for input to attain an "I>" prompt.

   - If you are using PAXMAIL, choose "Send" to send a memo; all applicable information for the TO, CC, PRIORITY, and SUBJECT lines. Upon completion, you will see an "I>" prompt.

   - At the "I>" prompt, press the PgUp key to the Send Window displaying the file-transfer protocols you can select. Select number 4, "ASCII." the filename to be transferred including drive and path if not in the PCPLUS directory, and press Enter.

   - Procomm will begin sending and displaying the file. After seeing that uploading is completed, you will be returned to the "I>" prompt. Press again to receive the "E>" prompt.

   - At the "E>" prompt, type in $NODS to delete the extra blank lines that occurred during uploading.

   - Type FILE to save the uploaded file and exit the editor, or QUIT to exit without saving.

   - Repeat the above uploading procedure if more than one file needs to be uploaded.

   - Proceed with your online PAX operations.

6. **Examples/Programs/Notes:**

7. Troubleshooting: You can upload ASCII files only. Refer to "Section I. File Format Conversions" for help if the file to be uploaded is not in ASCII format.

8. Additional Reference: *Procomm* User's Manual.

FORM 26. UPLOADING ASCII FILES USING TYM/COMM 4.1

1. **Synopsis:**

   - Connect to PAX using the Tym/COMM software package

   - Transmit data to the PAX system.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, Tym/COMM 4.1.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

   - Connect to the PAX system as described under "Form 15. Connecting to PAX Using Tym/COMM 4.1."

   - After you have logged in to the PAX system, choose your application from the PAX system menu.

   - At a CMS prompt, you can use the COPYPC command to upload a file. The format for the command is:

     ```
     COPYPC filename on your PC      complete PAX filename      <CR>
     ---------------------------     -----------------------
              (source)                        (target)
     ```

The CMS prompt will be displayed when the command completes. An error message will be issued if the upload was unsuccessful.

6. **Examples/Programs/Notes:**

7. **Troubleshooting:**

8. **Additional References:** *Tym/COMM* User's Guide, *CMS Editing Environment* User's Guide.

FORM 27. UPLOADING ASCII TEXT FILES USING ENABLE

1. Synopsis:

- Connect to PAX using ENABLE

- Attain an "I>" prompt

- Upload files using ENABLE.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, ENABLE.

4. Hardware Required: Modem (i.e., Hayes Smartmodem or compatible).

5. Step-by-Step Procedure/Instructions:

- Connect to the PAX system using ENABLE and choose your application from the PAX menu (usually CAPCES or PAXMAIL).

- If you are using an application other than PAXMAIL, CMS edit mode by typing EDIT <filename> <filetype> at a "CMS>" or "C>" prompt. After seeing an "E>" prompt, I for input to attain an "I>" prompt.

- If you are using PAXMAIL, choose "Send" to send a memo and all applicable information for the TO, CC, PRIORITY and SUBJECT lines. Upon completion, you will see an "I>" prompt.

- At the "I>" prompt, press F10 and select Files, Transmit, and None for protocol, then the name of the ASCII file you want to send. If the file is not in the source directory being used by ENABLE, specify the path for the file before entering the filename. You will see a message on the screen. You may press Escape to stop the process or any key to start the file transfer. When transfer is completed, you will be online where you can review, edit, save, or cancel the file; or you can send the memo if you are in PAXMAIL.

6. Examples/Programs/Notes: See "Form 4. Saving an ENABLE File in ASCII Format," and "Form 11. Creating an ENABLE Teleprocessing Setup for PAX."

7. Troubleshooting: Make sure you have assigned the correct COM port within the ENABLE telecommunications setup you are using. Also ensure that your telephone is working correctly and that the file you wish to send is in ASCII format. If it has no file extension, it must be entered as FILENAME. for ENABLE to find it.

You must start ENABLE with a ",B" parameter when you are connecting to a computer using full duplex. An example of the start-up command is:

ENABLE (,,,,C:\MYDIR),B

If you omit the ,B parameter, the file will not upload successfully. Some early versions of ENABLE do not recognize the ,B parameter and do not upload successfully.

8. Additional References: *ENABLE Telecommunications* Manual, *ENABLE Word Processing* Manual.

FORM 28. UPLOADING ASCII FILES USING VISTACOM

1. **Synopsis:**

   - Connect to PAX using VistaCOM

   - Upload the file(s).

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, VistaCOM.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

   - VistaCOM by typing VCOM.

   - Connect to the PAX system, log in, and choose your application from the PAX menu (usually CAPCES or PAXMAIL).

   - If you are using an application other than PAXMAIL, CMS edit mode by typing EDIT <filename> <filetype> at a "CMS>" or "C>" prompt. After seeing an "E>" prompt, I for input to attain an "I>" prompt. If you are using PAXMAIL, choose "Send" to send a memo and all applicable information for the TO, CC, PRIORITY, and SUBJECT lines. Upon completion, you will see an "I>" prompt.

   - At the "I>" prompt, press F9 to return to the INTER screen. Select the "F3 XMIT" option. Select "F1 IN" option to select the file to be transmitted. A directory of all files in the current directory will be displayed. Either press "F1 SELECT" to select a displayed file or the filename with a valid path if the file is found in another directory.

   - VistaCOM will send the file to the host a line at a time until the entire file has been transmitted. Control is then returned to you at the Interactive screen.

   - "F1 ONLINE" to return to PAX and the "I>" prompt. Press again to receive the "E>" prompt.

   - At the "E>" prompt, type in $NODS to delete the extra blank lines that occurred during uploading.

   - Type FILE to save the uploaded file and to exit the edit mode, or type QUIT to exit the editor without saving.

   - Repeat the above uploading procedure if more than one file needs to be uploaded.

   - Proceed with your online PAX operations.

6. Examples/Programs/Notes:

Example 1

You wrote a FOCEXEC using a word processing package. To upload and execute it: CAPCES, type EDIT <filename> FOCEXEC, and follow the above procedure beginning with the "E>" prompt.

Example 2

You have a very long message that you do not want to type manually online: prepare your mail using a word processing package; initiate a PAXMAIL and follow the above procedure beginning with the "I>" prompt.

7. Troubleshooting: You can upload ASCII files only. Refer to "Section I. File Format Conversions" for help if the file to be uploaded is not in ASCII format.

8. Additional Reference: *VistaCOM* User's Manual.

FORM 29. UPLOADING LOTUS 123 SPREADSHEET FILES USING VISTACOM

1. **Synopsis:**

    - Convert from 123 SpreadSheet format to ASCII format

    - Use VistaCOM to upload.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, LOTUS 123, and VistaCOM.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

    - Follow the instructions in "Form 1. Converting LOTUS 123 SpreadSheet Files to ASCII Format."

    - VistaCOM.

    - Follow the instructions in "Form 28. Uploading ASCII Files Using VistaCOM."

6. *Examples/Programs/Notes:*

7. **Troubleshooting:**

8. **Additional References:**

FORM 30. UPLOADING WORDPERFECT WORD PROCESSING FILES USING VISTACOM

1. **Synopsis:**

   - Convert from WordPerfect format to ASCII format

   - Use VistaCOM to upload.

2. **POC:** Bruce Goettel, USACERL/FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, WordPerfect, and VistaCOM.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

   - Follow the instructions in "Form 2. Converting WordPerfect Word Processing Files to ASCII Format."

   - VistaCOM.

   - Follow the instructions in "Form 28. Uploading ASCII Files Using VistaCOM."

6. **Examples/Programs/Notes:**

7. **Troubleshooting:**

8. **Additional References:**

SECTION IV

DOWNLOADING

FORM 31. CAPTURING SCREEN TEXT USING SMARTCOM III

1. Synopsis:

- Connect to PAX using SMARTCOM III (SCOM3)

- Download files/programs/mail from any PAX application.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, SMARTCOM III.

4. Hardware Required: Modem (i.e., Hayes Smartmodem or compatible).

5. Step-by-Step Procedure/Instructions: It is possible to capture a session and record it to the PC disk (hard or floppy), regardless of your present application in PAX. You have complete control over the origination and termination of recording.

- Connect to the PAX system using SCOM3 and log in.

- To capture screen data and record it to your PC disk:

    a. Press F3 and display the Session menu.

    b. Select "D" (Turn Disk Capture On).

    c. The complete filename for storing the downloaded data.

    d. Press return. Everything you see on the screen will be captured and stored until you stop recording by pressing F3 for the Session menu and "D" for Turn Disk Capture Off.

- At this point, you can either proceed with your online operations or log off. In either case, with your file now on your PC disk and in the SCOM3 directory, you can later perform the offline operations (edit, print, etc.) you wish.

6. Examples/Programs/Notes:

Example 1

You received a very long PAXMAIL that you do not want to print while online. Record it onto your PC disk by initiating one of the two options above at the "* * * Please turn Printer ON and press Return * * *" prompt. You can view your mail while it is being stored on your PC disk and print it later. You need not store it on your PAXMAIL disk (for which you pay).

Example 2

There is a long report under someone else's ID linked by you, or there is something else on PAX (a long newsletter or a long program) that you do not want to print online; or your printer cannot keep up with the screen; or you want to edit the text offline or copy it onto a floppy disk, etc. Decide when to start and stop recording, and follow the instructions above.

7. Troubleshooting: Since you initiate and terminate downloading, unwanted extra lines sometimes are captured at the beginning or end of the document being downloaded. To remove them, you can use either DOS command EDLIN or a word processing package after moving the file into a word processing environment.

8. Additional Reference: *Hayes Smartcom III* Manual.

FORM 32. CAPTURING SCREEN TEXT USING CROSSTALK MK.4

1. **Synopsis:**

   - Connect to PAX using CROSSTALK (XTALK) package

   - Transmit Data from the PAX system.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, CROSSTALK Mk.4.

4. **Hardware Required:** Modem (e.g., Hayes Smartmodem or compatible).

5. **STEP-BY-STEP PROCEDURE/INSTRUCTIONS:**

   - When you want to start downloading, select "Capture Control" from the CROSSTALK Online Menu (Alt-F10).

   - CROSSTALK will display the Capture menu. First move to "Select File" and press return. the filename to which you want to download the file.

   - Next select either "Start Capturing With this Screen" or "Start Capturing After this Screen."

   - When done downloading data, select Capture Control from the CROSSTALK Online Menu and then select "Stop Capturing" from the Capture menu.

6. **Examples/Programs/Notes:** As an example, suppose you have received a very long PAXMAIL that you do not want to print while online: at the "* * * Please turn printer ON and press Return * * *" prompt before the return, press Alt-F10 for the Online Menu and follow the above instructions.

7. **Troubleshooting:**

8. **Additional Reference:** *CROSSTALK Mk.4* User's Manual.

FORM 33. CAPTURING SCREEN TEXT USING PROCOMM PLUS 1.1B

1. Synopsis:

- Connect to PAX using Procomm (PCPLUS)

- Download files/programs/mail from any PAX application.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, Procomm Plus 1.1B.

4. Hardware Required: Modem (i.e., Hayes Smartmodem or compatible).

5. Step-by-Step Procedure/Instructions: It is possible to capture a session and record it to the PC disk (hard or floppy), regardless of your present application in PAX. You have complete control over the origination and termination of recording.

- Connect to the PAX system using PCPLUS and log in.

- To capture screen data and record it to your PC disk:

    a. Press the PgDn key to see a window listing the file-transfer protocols.

    b. Select number 4, ASCII.

    c. Press Return.

    d. Enter the complete filename for storing the downloaded data.

    e. Press return. The screen image will be captured and stored; Press ESC to terminate.

- Proceed with your online operations or log off. In either case, with your file now on your PC disk, you can later perform the offline operations you wish (edit, print, etc.).

6. Examples/Programs/Notes:

7. Troubleshooting: Since you initiate and terminate downloading, unwanted extra lines sometimes are captured at the beginning or end of the document being downloaded. To remove them, you can use either DOS command EDLIN or a word processing package after moving the file into a word processing environment.

8. Additional Reference: *Procomm* Manual.

FORM 34. DOWNLOADING FILES FROM PAX USING TYM/COMM 4.1

1. **Synopsis:**

   - Connect to PAX using the Tym/COMM software package

   - Transmit data from the PAX system.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, Tym/COMM 4.1.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

   - Connect to the PAX system as described in "Form 15. Connecting to PAX Using Tym/COMM 4.1."

   - After you have logged onto the PAX system, choose your application from the PAX system menu.

   - At a CMS prompt, use the COPYPC command to download a file. The format for the command is:

COPYPC complete PAX filename	filename on PC	<CR>
(source)	(target)	

   The CMS prompt will be displayed when the command completes. An error message will be issued if the download was unsuccessful.

6. **Examples/Programs/Notes:**

7. **Troubleshooting:**

8. **Additional References:** *Tym/COMM* User's Guide, *CMS Editing Environment* User's Guide.

FORM 35. CAPTURING SCREEN TEXT USING ENABLE

1. **Synopsis:**

   - Connect to PAX using ENABLE

   - Use the Capture mode.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, ENABLE.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

   - From the ENABLE Main Menu, select Use System, Telecom, Communicate, and Use Setup. Enter the name of the desired setup or cursor up to the desired setup and press Enter.

   - Enter a filename to receive screen text (e.g., reports, data bases, or electronic mail.).

   - ENABLE makes the connection and enters you into the PAX application you wish.

   - Any time during the session when you want to capture text or data, use the F7 key, which is a toggle for Capture mode. Pressing Page Up during the session will let you edit any text you have been capturing. Pressing Shift-F9 will return you to your online session.

   - To end the session, select F10, Disconnect, Yes, and then either "Yes," to save any captured data under the name shown on the status line or under a different name selected under Change Options; or "No," after which any keypress returns you to the ENABLE Main Menu.

6. **Examples/Programs/Notes:** See "Form 16. Connecting to PAX Using ENABLE."

7. **Troubleshooting:** Make sure that you have assigned the correct COM port within your ENABLE telecommunications setup. Also, ensure that your telephone line is working correctly.

   Recent versions of ENABLE allow you to capture text or files onto a disk. Use the F10 menu while online to open a disk capture file and then close it after the text or file has been typed out. The disk file will be in ASCII format. If you have captured a data base file onto a disk, it can be converted to an ENABLE data base by designing and running an ENABLE transfer form. This conversion takes place using the ENABLE DBMS copy screen. See *ENABLE DBMS* Manual.

8. **Additional Reference:** *ENABLE Telecommunications* Manual.

FORM 36. DOWNLOADING CAPCES DATA USING PC/FOCUS

1. **Synopsis:**

   - Connect to PAX

   - Request data to be downloaded

   - Receive options for downloading data.

2. **POC:** Sandra Kappes, USACERL-FS, COMM (217) 352-6511, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** MS-DOS, PC/FOCUS.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

   - Connect to Pax following the instructions in "Form 17. Connecting to Pax Using PC/FOCUS."

   - Choose "Capces" from the Pax system menu and enter "Mainframe focus" by typing "Focus" at the cms> prompt.

   - Request the data to be downloaded by using the "table" or "tablef" command. The line directly before the end command must contain the command:

     ON TABLE PCHOLD AS [m:fnm]

   where m is the target disk on your PC and fnm is a filename of your choice. Once the report is generated, the data is transferred to your PC.

6. **Examples/Programs/Notes:**

Sample Focexec Using the PCHOLD Command

```
TABLE FILE PMMFILE
PRINT KEYNR PDES PROG_AMT
BY FY
IF COMMAND IS FORSCOM
IF FY EQ 85
ON TABLE PCHOLD AS C:FY85
END
```

Options in Using the PCHOLD Command

Option 1: ON TABLE PCHOLD AS [m:fnm]. The data is transferred to a file with the extension .FTM that can then be used to generate other reports in PC/FOCUS. The Master File description is also downloaded with the file extension .MAS.

Option 2: ON TABLE PCHOLD AS [m:fnm] FORMAT DIF. The data is transferred to a file in Data Interchange Format with the extension .DIF. This file can then be used by most spreadsheet programs.

Option 3: ON TABLE PCHOLD AS [m:fnm] FORMAT LOTUS. The data is transferred to a file in LOTUS PRN format with a .PRN extension.

Option 4: ON TABLE PCHOLD AS [m:fnm] FORMAT WP. The data is transferred to a file in ASCII format exactly as it would appear on the screen with a .WP extension. The file can then be used by most word processing software packages.

7. Troubleshooting:

8. Additional Reference: *PC/FOCUS Guide to Operations*

FORM 37. CAPTURING SCREEN TEXT USING VISTACOM

1. Synopsis:

- Connect to PAX using VistaCOM (VCOM)

- Download files/programs/mail from any PAX application.

2. POC: Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: MS-DOS, VistaCOM.

4. Hardware Required: Modem (i.e., Hayes Smartmodem or compatible).

5. Step-by-Step Procedure/Instructions: It is possible to capture a session and record it to the PC disk (hard or floppy), regardless of your present application in PAX. You have complete control over the origination and termination of recording.

- Connect to the PAX system using VCOM and log in.

- To capture screen data and record it to your PC disk:

    a. Press F9 and go back to the Interactive menu. Select the "F2 CAPTURE" option. Select "F1 IN" option to select the file the session will be captured into. The current directory will be displayed. Either select a existing file or enter a filename. Press return.

    b. Go back to the capture screen by pressing "F2 CAPTURE." Then press "F2 ON" to start the capturing process and "F1 ONLINE" to go back to the PAX system. The screen image will be captured and stored.

    c. When you want to stop the capture process, enter "F9 EXIT" to return to the interactive screen, "F2 CAPTURE to go to the Capture menu, and "F3 OFF" to stop the capture.

- At this point, you can either proceed with your online operations or log off. In either case, with your file now on your PC disk, you can later perform the offline operations (e.g., edit, print, etc.) you wish.

6. Examples/Programs/Notes:

Example 1

You received a very long PAXMAIL that you do not want to print while online: record it onto your PC disk by initiating this procedure when reading mail. You can view your mail while it is being stored on your PC disk and print it later. You need not store it on your PAXMAIL disk (for which you pay).

Example 2

There is a long report under someone else's ID linked by you, or there is something else on PAX (a long newsletter or a long program) that you do not want to print online; or your printer cannot keep up with the screen; or you want to edit the text offline or copy it onto a floppy disk, etc. Decide when to start and stop recording, and follow the instructions above.

7. Troubleshooting: Since you initiate and terminate downloading, unwanted extra lines sometimes are captured at the beginning or end of the document being downloaded. To remove them, you can use either DOS command EDLIN or a word processing package after moving the file into a word processing environment.

8. Additional Reference: *VistaCOM* User's Manual.

SECTION V

PAX ONLINE OPERATIONS

FORM 38. USING THE PAX FILE TRANSFER FACILITY (PAXNET)

1. Synopsis:

- Access the PAX system

- Access and use PAXNET.

2. POC: Ilker Adiguzel, USACERL-FS, COMM (217) 373-6728, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: NA.

4. Hardware Required: NA.

5. Step-by-Step Procedure/Instructions: PAXNET is a mainframe-to-mainframe communications package that allows files to be transferred between PAX and other mainframe computers. The network is PAX-centered, in that all file transfer requests (FTRs) are initiated from a PAX ID by a PAX user. Currently, files in ASCII format with no more than 80 characters in record length and 180 kilobytes in size can be transferred between PAX and three other data centers using the following procedure:

- Gain access to the PAX system as you normally would.

- Enter PAXNET at a "C>" or "CMS>" prompt, regardless of your current application in PAX. Press Enter.

- PAXNET will show you the Main Menu and allow you to select whether to send a file, retrieve a file, etc. Then a series of prompts will ask you where you are sending the file (or from where you are retrieving it), what filename the duplicate will have, and similar questions. All you need to do is follow the prompts to perform a file transfer. See the sample PAXNET access procedure in Part 6 below.

- If you are not using the file transfer facility for the first time, you can also enter XFERFILE to skip the Main Menu. You will be prompted for the same choices listed above.

- Although the file transfer process is automatic, it is not instantaneous; therefore, you can continue with other work or log off and check the status of the transfer later.

- To check the the FTR status, enter PAXNET at a "C>" or "CMS>" prompt and press Return. (Enter the PAX environment if you logged off earlier). Choose Main Menu Option S. A list of completed and open FTRs will appear. A status of DONE indicates that the FTR is completed.

- To retrieve a file, access it once the status message shows DONE. Enter PAXNET and, from the Main Menu, select Option M. You will be prompted for the name of the file to retrieve. Enter the filename and file type. The file will be placed on your "A" disk.

6. Examples/Programs/Notes: Using PAXNET, you can transfer files between PAX IBM (CAPCES, DD1391, PAXMAIL, etc.); Engineering and Service Administration (EASA) Honeywell (MCPRS and other data bases); University of Illinois/USACERL VAX e.g., the ETIS data base), etc. PAXNET is currently being enhanced for adding more mainframes, handling binary or larger files, and other functions. A sample PAXNET access procedure is as follows:

```
CMS>PAXNET

HOST TO HOST FILE TRANSFER SUBSYSTEM

PLEASE SELECT FUNCTION BY LETTER (#):
#   FUNCTION
-------------------------------------

T   TRANSFER FILE TO REMOTE HOST
G   GET FILE FROM REMOTE HOST
M   MOVE RECEIVED FILE TO YOUR DISK
S   STATUS OF A TRANSFER REQUEST
C   TRANSFER COMMAND TO REMOTE HOST
H   HELP WITH THIS MENU
A   STOP A TRANSFER
P   MAKE REQUEST PRIORITY
D   DO A PREVIOUS REQUEST AGAIN
?   RE-SHOW MENU

X: EXIT          06/28/89   10:51

ENTER SELECTION -=>T
```

Enter "S" to Send a file from PAX to another host, "R" to Receive a file from another host to PAX, "S IMAGE" or "R IMAGE" for Image Transfer.

Enter S, R, or Q to quit.

Enter S, R, OR Q =>S

Enter the name of the file as it is on PAX.

Enter Filename and File Type (e.g., CMS> myfile data)

Enter fn ft fm =>TEST FILE

Number	Host Name	Host Abbrev.	Machine Type
1	CERL	CERL	VAX/PYRAMID
2	EHSC	EHSC	IBM/CMS
3	EASA	EASA	HONEYWELL
4	USAFAC	USAFAC	IBM
5	Europe	EUD	HONEYWELL
6	Huntsville	HND	HONEYWELL
7	Lower Mississippi Valley	LMV	HONEYWELL
8	Middle East	MER	HONEYWELL
9	Missouri River	MRD	HONEYWELL
10	North Atlantic	NAD	HONEYWELL
11	North Central	NCD	HONEYWELL
12	New England	NED	HONEYWELL
13	North Pacific	NPD	HONEYWELL
14	Ohio River	ORD	HONEYWELL
15	Pacific Ocean	POD	HONEYWELL
16	South Atlantic	SAD	HONEYWELL
17	South Pacific	SPD	HONEYWELL
18	South Western	SWD	HONEYWELL
19	ENG & CON VAX	VMS	VAX/VMS
20	CERL/SPERRY 5000	S500	SPERRY/UNIX
21	CENPD	CNPD	AMDAHL/MVS

Enter Remhost Host number =>1

Please enter the filename for the Remote Host

Please enter the entire filename.

Enter R/H Filename (or Quit) =>

7. **Troubleshooting:**

8. **Additional Reference:**

FORM 39. MAILING FILES FROM OTHER PAX APPLICATIONS

1. Synopsis:

- Access the PAXMAIL system

- Mail files stored on CAPCES or other disks.

2. POC: Ilker Adiguzel, USACERL-FS, COMM (217) 373-6728, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required: NA.

4. Hardware Required: NA.

5. Step-by-Step Procedure/Instructions:

- Gain access to the PAXMAIL system as you normally would.

- Select Send and proceed with the normal procedure for sending mail. When you reach the point at which you want to insert a file stored on another disk: if you have an "E>" prompt, type "X"; otherwise, first press Return to enter edit mode and then type "X".

- You will be asked the location, name, and type of file. Upon confirming the information you furnish, the file will be inserted into your mail.

- Proceed with your normal PAXMAIL operations.

6. Examples/Programs/Notes: As an example, say you have a file on the CAPCES disk that you want to send by PAXMAIL to someone else. First, gain access to PAXMAIL and initiate the mail sending procedure. At the "E>" prompt, enter "X". Choose CAPCES from the list of applications posted. Enter the filename and file type at the "FN?>" and "FT?>" prompts. After your confirmation, a copy of the file on your CAPCES disk will be inserted into your PAXMAIL.

7. Troubleshooting:

8. Additional Reference: *PAXMAIL Training Manual.*

FORM 40. LINKING TO OTHER USER DISKS

1. **Synopsis:**

   - Access the PAX system

   - Execute the CMS LINK and COPY commands.

2. **POC:** Ilker Adiguzel, USACERL-FS, COMM (217) 373-6728, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** NA.

4. **Hardware Required:** NA.

5. **Step-by-Step Procedure/Instructions:**

   - Connect to the PAX system, log in, and select an application from the PAX menu (usually CAPCES). At a "C>" or "CMS>" prompt, enter the LINK and ACCESS commands in the syntax as follows:

         C>LINK userid sysaddr vaddr accmode password

         C>ACC vaddr filemode

     where:

userid	=	User ID being linked.
sysaddr	=	System-assigned address for the disk being linked (298 for PAXMAIL).
vaddr	=	Virtual address assigned by user (cannot be previously assigned to any other disk to which you are currently linked; this can be checked by the QUERY SEARCH command).
accmode	=	Virtual device access mode (RR for read access).
password	=	Access mode password (CAPR for read-only access in CAPCES).
filemode	=	Virtual configuration access mode (last parameter of CMS file identifier: fn ft fm). This identifier also cannot be assigned to any other disk to which you are currently linked and can be checked by the QUERY SEARCH command.

   - You may now copy a file or group of files onto your "A" disk using the COPY command. The COPY command can combine two or more files into a single file or copy one or more files into one or more new files without affecting the old file(s). The general form of the COPY command is as follows:

         C>COPY filename filetype filemode   filename filetype filemode
                --------------------------   --------------------------
                      input file list   output file identifier
                         (source)   (target)

- The input file list comprises one or more file identifiers, separated by blanks. In any input identifier, either none, one, or two of the three components can each be specified by an asterisk; for example, if an asterisk is given for the filename, then all files with the specified file type and file mode will be copied, regardless of their filenames.

- The output file identifier must have all three components specified, but any component may be specified by an equal sign to indicate that component is to be the same as in the first input file identifier. If the user specifies an output file identifier that already exists, the system prints a message such as:

  FILE 'SAMPLE DATA A1' ALREADY EXISTS -- SPECIFY 'REPLACE'

If you want to write over the existing file, specify the REPLACE option as follows:

C>COPY	fn ft fm	fn ft fm	(REPLACE)
	------------	------------	
	(source)	(target)	

Note: All of the above functions (linking, listing, copying, etc.) can be performed using the File Management Facility (FMF), in which case there is no need for executing the LINK and ACCESS commands. See "Form 30. Using the PAX File Management Facility (FMF)."

7. **Troubleshooting:** The read and write passwords for the user disks can be changed by a PAX user. Before executing a LINK command, make sure that the password for the ID to which you want to link is current.

8. **Additional References:** *CMS Editing Environment* User's Guide, PAX/CAPCES Training Manual.

FORM 41. USING THE CMS MESSAGE FACILITY

1. **Synopsis:**

   • Use the MESSAGE command

   ◦ Use the SLEEP command.

2. **POC:** Bruce Goettel, USACERL-FS, COMM (217) 373-6719, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** NA.

4. **Hardware Required:** NA.

5. **Step-by-Step Procedure/Instructions:**

   • A PAX user can request and receive online help from the operator or another user through the MESSAGE command. Its general form is:

      C>MSG OPERATOR <message>

   • The <message> can contain as many as 130 characters, including line feeds (which return the carriage but do not end the message). The operator can also send a message to the user, but the user does not receive the message until a command is entered or a Return is pressed. In addition, a user must be logged in in order to receive messages.

   • The SLEEP command allows messages to be printed on your terminal as soon as they are sent; in this way, you need not enter a command or press a Return to receive the online messages sent. The form of the SLEEP command is:

   ```
                      MIN
       C>SLEEP<time> SEC
                      HRS
   ```

   where <time> specifies the number of minutes, seconds, or hours. The default time unit is MIN. If no time is specified, SLEEP remains in effect until terminated by pressing the Escape key. You cannot enter other commands while the SLEEP command is in effect.

6. **Examples/Programs/Notes:** A PAX user can set the message facility to "off" by issuing the SET MSG OFF command at a "CMS>" or "C>" prompt. This can be reversed later by typing SET MSG ON. This feature is useful if, for example, a report is being printed.

The following user IDs can be used for online assistance:

OPERATOR   for general problems
TYMSERV   for PAX-related problems
CAP001   for CAPCES or FOCUS problems.

7. Troubleshooting: If the message exceeds 130 characters, it is truncated before it is transmitted to the addressee. PAXMAIL can be used for longer messages, although response time is somewhat slowed.

The message cannot be delivered if the addressee has turned the message facility off or has logged out. In this case, the sender is notified.

8. Additional References: *CMS Editing Environment* User's Guide, *PAX/CAPCES Training Manual.*

SECTION VI

MICROCOMPUTER-ASSISTED DD FORM 1391 PROCESSING

FORM 42. EDITING A NEW DD FORM 1391 USING A PERSONAL COMPUTER

1. Synopsis:

- Create a new form

- Create a template file for text entry

- Enter text on a new form.

2. POC: Sandra Kappes, USACERL-FS, COMM (217) 352-6511, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required:

- Word processing package capable of producing ASCII files

- Communications package.

4. Hardware Required: Hayes smartmodem or compatible.

5. Step-by-Step Procedure/Instructions:

- Enter the 1391 system and prepare a new form in the usual way.

- Enter the data gathered for nontext input; generally, this includes data for blocks 1 through 9. Do not fill in text at this time.

- Using the 1391 Processor /Save command, save the form, and log off the PAX system.

- Now that the form has been created, the text can be entered using a word processor. In order to be uploaded to the DD Form 1391 system, the text file must be in a specific format. It is recommended that a template file be created using the format required. A copy of this template can then be used to enter text for a particular form using a filename related to the form number (e.g., T15279). A sample of the empty template is given in Part 6 below. The following rules must be followed strictly:

  a. Line 1 must be the user's processor identification word.

  b. Line 2 must be "RECALL FORM xxxx" where xxxx is the assigned form number.

  c. Text paragraphs must be in the same order and paragraph numbers typed exactly as they appear in the sample template.

  d. Text information is anything between the paragraph number and the end-of-paragraph mark ***. Text within a paragraph will replace any text already stored for that paragraph in the 1391 data base. If a paragraph is listed but the next line is the end-of-paragraph mark, there will be

no effect on the previously stored form. Also, any paragraph can be omitted from the template with no effect on the form by removing the paragraph number line and end-of-paragraph marker. Comments, which are considered part of the text, can be entered by typing an exclamation point and then the comment.

e. The /SAVE command is required to save form changes.

f. The preparer's name, office, and telephone number must be typed in the P1., P2., and P3. paragraphs, respectively.

g. The end-of-form symbol, /* , must appear in the first two columns. You can enter multiple forms by starting over again at RECALL FORM xxxxx.

h. The-end-of-process symbol,)/*(, must follow the last /* end-of-form symbol.

- After the textual information has been entered into the template, it must be saved as an ASCII file. The file can then be uploaded into the DD Form 1391 Processor. See "Form 43. Uploading a Form to the DD Form 1391 Processor."

6. Examples/Programs/Notes:

Sample Template

```
AAAAAA   !PUT YOUR DD1391 PROCESSOR IDENTIFICATION HERE
RECALL FORM ##### !ENTER FORM NUMBER HERE
   10F.!DESCRIPTION OF WORK TO BE DONE (TEXT)
   ***
   11J.!REMARKS (TEXT)
   ***
11K.!RELATED PROJECTS (TEXT)
   ***
11L.!PROJECT (WHAT IS NEEDED) (TEXT)
   ***
   11M.!REQUIREMENT (WHY IS IT NEEDED NOW) (TEXT)
   ***
   11N.!CURRENT SITUATION (HOW IS NEED CURRENTLY BEING MET) (TEXT)
   ***
   11O.!IMPACT IF NOT PROVIDED (TEXT)
   ***
   11P.!ADDITIONAL (TEXT)
   ***
   D1.!GENERAL (TEXT)
   ***
   D2.!ACCOMMODATIONS NOW IN USE (TEXT)
   ***
   D3.!ANALYSIS OF DEFICIENCY (TEXT)
   ***
   D4.!CONSIDERATION OF ALTERNATIVES (TEXT)
```

***

D5.!CRITERIA FOR PROPOSED CONSTRUCTION (TEXT)

***

D6.!PROGRAM FOR RELATED FURNISHINGS AND EQUIPMENT (TEXT)

***

D7.!DISPOSAL OF PRESENT ASSETS (TEXT)

***

D8.!SURVIVAL MEASURES (TEXT)

***

D9.!SUMMARY OF ENVIRONMENTAL CONSEQUENCES (TEXT)

***

D10.!EVALUATION OF FLOOD HAZARDS (TEXT)

***

D11.!ECONOMIC JUSTIFICATION (TEXT)

***

D12.!UTILITY AND COMMUNICATIONS SUPPORT (TEXT)

***

D13.!PROTECTION OF HISTORIC PLACES AND ARCHEOLOGICAL SITES (TEXT)

   ***

D14.!PROJECT DEVELOPMENT BROCHURE (TEXT)

***

D15.!ENERGY REQUIREMENTS (TEXT)

***

D16.!PROVISIONS FOR THE HANDICAPPED (TEXT)

***

D17.!REAL PROPERTY MAINTENANCE ACTIVITY (RPMA) ANALYSIS (TEXT)

***

D18.!COMMERCIAL INDUSTRY TYPE ACTIVITY (CITA) ANALYSIS (TEXT)

***

SR1.!SPECIAL REQUIREMENTS PARAGRAPH 1. (TEXT)

***

SR2.!SPECIAL REQUIREMENTS PARAGRAPH 2. (TEXT)

***

SR3.!SPECIAL REQUIREMENTS PARAGRAPH 3. (TEXT)

***

SR4.!SPECIAL REQUIREMENTS PARAGRAPH 4. (TEXT)

***

SR5.!SPECIAL REQUIREMENTS PARAGRAPH 5. (TEXT)

***

SR6.!SPECIAL REQUIREMENTS PARAGRAPH 6. (TEXT)

***

SR7.!SPECIAL REQUIREMENTS PARAGRAPH 7. (TEXT)

***

SR8.!SPECIAL REQUIREMENTS PARAGRAPH 8. (TEXT)

***

SR9.!SPECIAL REQUIREMENTS PARAGRAPH 9. (TEXT)

***

SR10.!SPECIAL REQUIREMENTS PARAGRAPH 10. (TEXT)

```
***
/SAVEP1. !PREPARER'S NAME
P2. !PREPARER'S OFFICE
P3. !PREPARER'S PHONE NUMBER/*)/*(
```

Sample Form

```
RECALL FORM 15276
10F.!DESCRIPTION OR WORK TO BE DONE.  NOTICE THAT THIS IS A COMMENT AND
WILL BE CONSIDERED PART OF THIS PARAGRAPH.  IF ANYTHING WAS ALREADY
STORED FOR THIS PARAGRAPH IT WILL BE ERASED AND REPLACED BY THIS TEXT.

Renovation of building.

***
11L.

***
11P.
***
/SAVE
P1.Preparer's Name
P2.Preparer's Office
P3.Preparer's Phone Number
/*
)/*(
```

In this sample form, only three paragraphs are included. If text had already been entered into the form for the omitted paragraphs, it would not be overwritten. However, in paragraph 11L, the blank line will be considered text and will overwrite anything stored previously. Since nothing is entered into paragraph 11P, any existing text will not be affected.

7. **Troubleshooting:** The DD 1391 Processor is under redesign. Much of this information may need to be modified. Consult your new *DD Form 1391 Processor System Manual* when available.

8. **Additional Reference:** *DD Form 1391 Processor System Manual.*

FORM 43. UPLOADING A FORM TO THE DD 1391 PROCESSOR

1. **Synopsis:** Use the BATCHIN command to upload text to the DD 1391 Processor.

2. **POC:** Sandra Kappes, USACERL-FS, COMM (217) 352-6511, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. **Software Required:** Communications Package.

4. **Hardware Required:** Modem (i.e., Hayes Smartmodem or compatible).

5. **Step-by-Step Procedure/Instructions:**

   - Enter the DD Form 1391 Processor system in the usual way.

   - At the time-of-day prompt, enter BATCHIN and press the return. The following message will then be displayed on the screen:

     PLEASE ENTER IMMEDIATE, OVERNIGHT, OR QUIT

   - Type "IM" for immediate if results are required while you are online. Type "OV" for overnight if results are not needed until the next morning to process these requests in a batch run at night. After typing IM or OV, press the return. The following choices will then be displayed:

     WHERE IS THE FILE THAT NEEDS TO BE BATCHED IN:

     1) OFFLINE STORAGE DEVICE OR MICROCOMPUTER
     2) DD1391 PERMANENT DISK

   - To send the file from the microcomputer to the mainframe, choose Option 1 and press the return.

   - The system then prompts you to turn on the reader--that is, to start transmission of the file to the mainframe. The method for doing this step depends on the type of communications software being used. Refer to "Section III Uploading" for instructions.

   - Once the reader has been turned on, you should see the message "Sending file: filename." After the file transmission is complete, the following line is displayed on the screen:

     RECORDS = xx, BYTES = xxxx, ACTIVATIONS = x

   - The system now performs diagnostics on the transmitted file. It checks for errors such as missing identification word, /SAVE command, paragraph order and other necessary lines as described in "Form 42. Editing a New DD Form 1391 Using a Personal Computer." If a fatal error occurs, the system will be unable to continue processing the file. If a nonfatal error occurs, the error will be listed in the diagnostics report and the user can decide whether to continue. An example of a fatal error would be omitting the identification word or RECALL statement. Common nonfatal errors are forgetting to enter the preparer's name or the end-of-form symbol.

- If no fatal errors are reported for your form, you will be able to load it successfully into the 1391 Processor by answering "Y" to the prompt DO YOU WISH TO CONTINUE TO LOAD THIS FILE (Y/N). If there are errors you wish to correct before loading the form, answer "N" and return to your word processing package to correct them.

- If you chose to load the file, the system will respond with a message stating that the BATCHIN load request is completed.

6. **Examples/Programs/Notes:** A sample session using the BATCHIN command is as follows:

15:44:05>BATCHIN IM

WHERE IS THE FILE THAT NEEDS TO BE BATCHED IN:

1) OFFLINE STORAGE DEVICE OR MICROCOMPUTER
2) DD1391 PERMANENT DISK

SELECT >1

Turn on reader

Sending file: C:T15279

RECORDS = xx, BYTES = xxxx, ACTIVATIONS = x

DIAGNOSTICS REPORT FOR TRANSMITTED BATCH FILE

*** Error Listing for Form xxxxx ***

No Fatal Errors for Form xxxxx   .

Diagnostics Completed for Form xxxxx.

DO YOU WISH TO CONTINUE TO LOAD THIS FILE (Y/N)?
>Y
THANK YOU, PLEASE WAIT... THE PROCESS MAY TAKE SEVERAL MINUTES

DD1391 BATCHIN BATCH EXECUTION REPORT FORM NUMBER(S) UPDATED THIS RUN

RECALL OF FORM NUMBER   xxxxx BEGINNING
    FORM NUMBER   xxxxx SAVED

THIS COMPLETES YOUR BATCHIN LOAD REQUEST

7. **Troubleshooting:**

8. **Additional Reference:** *DD Form 1391 Processor System Manual.*

FORM 44. REVISING AN EXISTING DD FORM 1391 USING A PERSONAL COMPUTER

1. Synopsis:

- Use the BATCHOUT command to download existing DD Form 1391 text to a personal computer

- Edit downloaded text using a word processing package.

2. POC: Sandra Kappes, USACERL-FS, COMM (217) 352-6511, toll-free 800-USA-CERL (800-252-7122 inside Illinois).

3. Software Required:

- Word processing package that can produce ASCII files

- Communications package.

4. Hardware Required: Modem (i.e., Hayes Smartmodem or compatible).

5. Step-by-Step Procedure/Instructions:

- Enter the DD Form 1391 Processor system in the usual way.

- At the time-of-day prompt, enter BATCHOUT and press the return. The following messages will then be displayed on the screen:

THIS PROGRAM WILL ALLOW YOU TO COPY TEXT PARAGRAPHS TO YOUR PERMANENT DISK OR TO AN OFFLINE DEVICE IN A FORMAT DESIGNED FOR USE WITH THE BATCHIN PROGRAM. TYPE /HELP FOR ASSISTANCE OR RETURN TO CONTINUE.

- As instructed, press Return to continue. The system will then ask for your Processor identification.

    IDENTIFICATION:>AAAAA

- Next you are prompted for the forms and textfields that you want to download. For example:

    PLEASE ENTER ONLY ONE FORM NUMBER AFTER EACH PROMPT.
    TYPE "END" WHEN FINISHED.
    =>15279
    =>END

    PLEASE ENTER THE TEXTFIELDS YOU WISH TO DOWNLOAD, ONE FIELD OR A PAIR OF FIELDS SEPARATED BY A HYPHEN, PER LINE. ENTER ALL FOR ALL TEXT FIELDS. TYPE END TO FINISH.

```
=>10F
=>D1-D5
=>end
```

- The system will then display the following options:

WHERE DO YOU WANT TO STORE THIS DATA:

(1) OFFLINE STORAGE DEVICE .
(2) DD1391 PERMANENT DISK

SELECT>

- At the "SELECT >" prompt, type "1" for offline storage device. The system then requests that you turn on the offline device. In other words, it requests you to instruct your communications software to receive a file to your PC's hard disk or floppy diskette. Refer to "Section 4 Downloading" for instructions.

- After the BATCHOUT procedure has finished, the following message is displayed and the user is returned to the time-of-day prompt:

RECORDS WRITTEN TO OFFLINE DEVICE

- At this point, do not forget to turn off the offline device. Otherwise, all text written onto the screen will be sent to your PC file. If you do forget, you can easily remove the unwanted lines from within your word processor.

- Your form(s) are now on your microcomputer under the filename you selected. To revise them, leave the PAX system and edit them using your word processor. When you are finished, upload the files into the 1391 system using the BATCHIN command. Refer to "Form 43. Uploading a Form to the DD Form 1391 Processor."

6. **Examples/Programs/Notes:** A sample session using the BATCHOUT command is as follows:

15:51:14>BATCHOUT

THIS PROGRAM WILL ALLOW YOU TO COPY TEXT PARAGRAPHS TO YOUR PERMANENT DISK OR TO AN OFFLINE DEVICE IN A FORMAT DESIGNED FOR USE WITH THE BATCHIN PROGRAM. TYPE /HELP FOR ASSISTANCE OR RETURN TO CONTINUE.

IDENTIFICATION:>XXXX
YOU HAVE JUST ENTERED INTO THE PROCESSOR AS:
INSTALLATION   - FORT CERL

```
PLEASE ENTER ONLY ONE FORM NUMBER AFTER EACH PROMPT.
TYPE "END" WHEN FINISHED.
=>15279
>END

PLEASE ENTER THE TEXTFIELDS YOU WISH TO DOWNLOAD, ONE FIELD OR A PAIR
OF FIELDS SEPARATED BY A HYPHEN, PER LINE. ENTER "ALL" FOR ALL TEXTFIELDS.
TYPE "END" TO FINISH.

=>ALL
=>END

YOUR OUTPUT CONTAINS 20 LINES. WHERE DO YOU WANT TO STORE THIS DATA:

    (1)  OFFLINE STORAGE DEVICE
    (2)  DD1391 PERMANENT DISK

SELECT >1

TURN OFFLINE RECORD MODE ON. ENTER RETURN TO
CONTINUE
>

20 RECORDS WRITTEN TO OFFLINE DEVICE

    15:53:30>
```

7. **Troubleshooting:**

8. **Additional Reference:** *DD Form 1391 Processor System Manual.*

APPENDIX A:

FORMS INDEXED BY SOFTWARE REQUIREMENTS

CROSSTALK Mk.4

ENABLE

LOTUS 123

PC/FOCUS

PROCOMM PLUS 1.1B

DD FORM 1391

Tym/COMM 4.1

VistaCOM

WordPerfect

APPENDIX B:

LOCAL AREA NETWORKS: AN OVERVIEW

Introduction

A local area network (LAN) is a geographically confined computer-based communications system. For the purpose of this guide, a LAN is defined as a communications path between several personal computers. A LAN allows several microcomputers to communicate with each other. It provides a means of accessing a central mass storage device or file server that can be attached to the network. It allows for the attachment of peripheral devices such as laser printers or plotters, so that these relatively expensive devices can be shared by several users.

LANs enable easy communication between PCs through the use of a mail system or the rapid transmission of data between PCs. A LAN will allow communication and sharing between similar or different types of networks or communication between a PC and mainframe computer. LANs provide a centralized backup facility, using tape or an alternate hard drive to backup a users files. A standard daily backup is also performed instead of a random backup as is the case of most PC users.

A basic LAN configuration may consist of several PCs hooked together by Ethernet cable and connected to a server with a printer and a modem for remote communications.

Basic Network Components/Terms

Topology

Topology refers to the layout of the connection between the computers. Typical topologies are the bus, ring, and star. A bus system consists of a main cable with the PCs hung off the cable. A ring system consists of a single cable connecting each microcomputer in a continuous loop. A star topology routes everything through a central point.

Cabling or Media

Local area network connections use three different types of wiring: coaxial, fiber optic, and twisted-pair cable.

Coax

Coaxial cable consists of a central, insulated conductor wrapped with a braid or foil. Coaxial cable has the ability to carry high-frequency signals, and the foil or braid on the outside protects the signal from outside interferences. Coaxial cable is used for cable television and can transmit information at speeds up to 50 Mbytes per second (Mbps). Although a wide variety of coaxial cables exist, usually only the cables specified by the network vendor will deliver proper network performance.

Fiber

Fiber optics are glass or plastic fibers that use light to transmit information. They are immune to interference caused by electrical or electronic devices and can transmit information at speeds between 50 Mbps and 140 Mbps. In most cases, fiber optic cable can be substituted for coaxial cable with no change to the network software, although a different type of card is needed to connect to the PC. Fiber optics are also the most expensive type of wiring.

Twisted-Pair

Twisted-pair cable is composed of two braided wires that have been partially wrapped around each other. For example, a telephone-to-wall connection is a twisted pair. This type of wire is easy to install and costs little per foot. It is now available in speeds up to 10 Mbps, but is sensitive to interference from electrical and electronic devices (particularly fluorescent lights and copying machines).

Baseband/Broadband

Another LAN issue is whether to use baseband or broadband media. This involves the way the coaxial cable connecting the network stations is handled electrically. Broadband systems use a cable like radio link and broadcast a wide number of frequencies over the cable. Network stations can be tuned to specific frequencies to form their own subnetworks. Baseband systems treat the cable like a piece of wire and send strong pulses over it that every station receives. Broadband networks require more electronics and may be more expensive to install and maintain than baseband networks. However, their cables can have other uses such as transmitting television signals, security system signals, and environmental controls, while baseband networks are good only for digital data transmission.

Server

A server is a specially designated station on the network that handles chores such as disk storage, printing, or communications. It may be an ordinary PC set aside to act as the server or it may be a machine specially designed for the server role. The server must have one or more fast hard disk drives and a processor capable of handling a heavy communications load.

While a PC may be used as a server in a small network environment, it will have limited speed, services, and number of supported users. Any PC used as a server should first have a RAM and hard disk upgrade. These additional costs usually negate any cost savings of a PC server. For these reasons, only 286-based machines (IBM AT, Zenith Z-248) and above should be considered as PC servers.

Multiple servers can exist on a single network. A server can support up to 50 PCs; however the practical limit should (depending on usage) be about one fourth to one third of this limit.

Network Software

A file server runs a series of programs known collectively as the network software. It provides the connection between the workstations and the server. The network software's main functions are moving data between the network and workstations, controlling data access, file or record sharing, print spooling, and managing security. It may also include electronic mail, server backup, and system diagnostics.

Modem

A modem (MOdulator/DEModulator) is used to let computers and terminals communicate with each other by sending signals over the telephone lines. It transforms the digital signals it receives from a computer into audio or analog electronic signals. To communicate, both ends of a line must be equipped with modems and the parameters and protocols must match.

When purchasing a modem, probably the most important parameter to be concerned with is the transmission speed or Baud rate. The Baud rate determines how fast the data is sent and is roughly equivalent to bits per second. Over nondedicated phone lines, the highest rate obtainable is 9600 baud. Typical modems are available in 1200, 2400, 9600 baud with costs ranging from $300 to $2000.

Gateway/Bridge

A gateway is a device that connects two dissimilar networks running different communication protocols, such as a 3Com to a Banyan network. It can also link networks to mainframes or minicomputers allowing the uploading/downloading of files from a host, which eliminates the need to buy communications boards for each PC.

Bridges, on the other hand, are used to connect two or more networks using the same protocol. A bridge can expand the distance of a network beyond the maximum cable limit. It can also allow two geographically remote networks to communicate. Gateways and bridges are not cheap, however, and may cost between $10,000 and $20,000.

Diskless Workstations

A diskless workstation that contains neither a floppy drive nor a hard drive may be used as a less expensive node on the network. A diskless workstation is ideal for use in a dusty environment, which might damage a disk drive, or for providing secure access to the network and to limit user functions on the network as nothing can be downloaded.

Network Peripherals

All networks need at least one printer and depending on the network size, may be able to support the need for several printers. Laser printers and dot matrix printers are the two most common choices.

Dot Matrix

Dot matrix printers are generally good quality machines that are inexpensive, easy to use, and very reliable. The higher cost 24-pin printers produce variable-font, letter quality print very similar in quality to a laser printer. (Letter quality on dot matrix printers may run at half the speed of draft quality. A typical speed on a $1000 to $1500 printer in draft mode may range from 100 to 150 characters-per-second). Dot matrix printers range in price from $150 to $3000, however most of the lower priced printers would be too slow for most network applications.

Laser Printers

Recently, laser printers have become common for several reasons. The quality of print is extremely good; lasers are fast (many at 8 pages a minute), very quiet, and have come down in price to under $2000. Disadvantages to having a laser are: the expense of toner cartridges ($30-$100 for 1500 to 4000 pages), printing a page with graphics may take a minute or more, and not all lasers are supported by many software packages. It's wise to check what your software supports before you purchase a laser.

Two qualities to look for in a laser printer are Hewlett Packard (HP) emulation, and PostScript functions. The emulation of the HP laserjet will provide compatibility with most commercial software packages. PostScript is a page description language (PDL) used by many high-resolution laser printers for desktop publishing applications. A PDL is a system for describing whole pages to a printer and PostScript is the current leader among PDLs.

Benefits of a LAN

The traditional justification for installing a local area network is the money saved by sharing resources among PCs. However, there are other reasons for implementing a network that deserve equal or greater consideration than resource sharing.

The experience of many present network users indicates that LANs can provide greater benefits than mere peripheral sharing because they allow the use of multiuser applications. These applications include providing for file and data sharing, making communications between internal and external organizational users easier through the use of electronic mail, reducing software costs, and consolidating and ensuring proper backups. LANs will also provide help in solving computer support problems by standardizing software and program interfaces.

Resource Sharing

A LAN will provide for sharing of expensive peripherals such as printers, plotters, modems, hard disks, and tape backup devices. A LAN will allow users to share these devices and distribute the cost over many users. For example, by eliminating the need for each workstation to have its own printer, the money saved could justify the purchase of a higher quality printer such as a laser printer.

Unlike printers, plotters and modems are not common at individual workstations. even though they can be shared in the same way as printers. A LAN can provide all workstations access to these devices.

A LAN will also provide users access to additional hard disk storage that may be used to store applications programs or data files, saving room on a user's PC. Once again, the cost for this additional storage may be spread over many users, resulting in a lower per-user cost.

File Sharing

File sharing is an important advantage of a local area network. It helps facilitate the sharing of information among multiple PCs. There are many multiuser applications available on the commercial market in areas of calendaring, database management, accounting, and word processing that permit multiple users to access, make changes, or view entries in a data base. Users may send files via electronic

mail or place files in shared directories on the LAN for viewing by a user. A file may be placed in a shared area for use by multiple LAN users.

To provide for some security of files on the network, access can be controlled through various methods. Passwords may be assigned to shared areas to limit access to only those who need it. Different permission levels may be assigned to shared areas to limit what level of access users may have in a directory. For example, users may be given "read only" access to a file or read/write access.

Communications

Communications are made easier with a LAN. Electronic mail for a LAN makes the sending of text messages and full file transfers simple. Electronic mail enhances work group communication and reduces "telephone tag." Mail may be sent to users on the same LAN or users on remote networks even if they are located thousands of miles away.

On a typical LAN, after initially gaining information about the remote server entered, all a user needs to know is the name and LAN address of the person to whom the mail will be sent. The server can then make the connection, transparent to the user. Capabilities such as online editing, forwarding, distribution of lists, reply to messages, deletion, and sending multiple-address messages, are all available. A resident program is available to check and inform recipients when mail is received even when the user is in another program.

In addition to electronic mail, other types of communications may be made through the LAN. It is possible to attach mainframe computers as LAN nodes to communicate with them through the LAN.

Another form of communication through the LAN is to attach a communications server or gateway to the network (e.g., a Bridge CS/100), and then to attach a modem to the communications server. Any workstation will then have the ability to dial out to mainframe computers, thereby eliminating the cost of installing emulation software and a modem on every PC that might connect to an outside host.

Reduced Software Costs

Sharing software on the network will result in a lower cost per user. The cost of a license for a software package is usually lower than the sum of software purchased for each individual workstation.

Provide Centralized Backups

Many computer users are careless about doing proper backups of information on their hard disks. In a standalone environment, backups are rarely performed, and when they are performed, often they are not done properly. In an ideal situation, backups should be performed daily, documented, verified, and stored off site. This is seldom done.

In a LAN environment, the network administrator should routinely back up the server's hard disk. All files on the LAN will be backed up without personal effort. The backups will occur at a fixed interval more frequently than most users would do them. Should a report be lost the server, centralized backup could save the organization the loss of this data and the time to regenerate the report, eventually repaying the cost of the LAN.

Solve Support Problems

Another common problem facing installations with computers is how to support a growing PC user population with limited support personnel. A LAN will help solve this problem by standardizing the users' systems. With a LAN, when a user calls with a problem, support will already know the user's system, from the main menu to the individual applications. The network is a common interface to all users and establishes a similar environment for all users when they log in. The same user on a standalone PC is likely to experience unique problems, and support personnel unfamiliiar with individualized systems would need to visit the user's office to assess the nature of the problem.

The ease of software installation/maintenance is another good reason for installing a LAN. Now, instead of each user maintaining their own copy of software, there is a single copy to maintain and update. There would be no need for the individual user to install software. Everyone will be operating on the same version of the software. Therefore, if a software problem occurs, the network manager will know what version the software is and how parameters have been set.

Summary

Installing a LAN can provide a broadly based set of solutions that improve the management and efficiency of an organization. A LAN provides for peripheral sharing, allows the use of multiuser software applications, increases communications internally and externally, provides tighter control of hardware, software, and data, and provides for proper backups. The user gets shared data, better information, and better peripherals. Management gets ease of support, less potential data loss, and reduced overall costs.

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