Change Package to Incorporate the Altos 486 Features into the Introduction to Xenix — Appendices

ALTOS 586/986 COMPUTER SYSTEMS INTRODUCTION TO XENIX -- APPENDICES

CHANGE PACKAGE

This Change Package incorporates Altos 486 features into the
Altos 586/986 Computer Systems Introduction to XENIX -- Appendices
(part number 690-15827-001).

Please remove/replace the following appendices:

Appendix C (pages C-1 through C-8)

Appendix D (pages D-1 through D-5)

Appendix E (pages E-1 through E-3)

Appendix C
File Transfer Program

CONTENTS

INTRODUCTION

File transfer programs transfer ASCII text files or binary data files from XENIX-to-XENIX, MP/M-to-XENIX, and XENIX-to-MP/M on Altos computer systems. You should be familiar with XENIX and MP/M before you use these programs.

The programs only transfer files; they do NOT convert MP/M programs to XENIX compatible programs or XENIX programs to MP/M programs.

NOTE

Use the ftp program between Altos computer systems. For transferring files between other XENIX or UNIX computer systems, use the cu or uucp utility. These utilities are described in the XENIX Development System Manual.

Setup Procedures

Before you transfer files,

1.   Connect the physical port on each machine via a null modem cable, which is a standard RS232 cable that swaps lines 2 and 3, 4 and 5, and 6 and 20. Refer to the chart below to determine the appropriate port.

SYSTEM	SENDING/RECEIVING OPERATING SYSTEM	DEFAULT PORT
ALTOS 186	XENIX CP/M, MP/M	3
ALTOS 486	XENIX CP/M, MP/M	5
ALTOS 586	XENIX CP/M, MP/M	6
ALTOS 986	XENIX CP/M, MP/M	6 10
ALTOS 8600	XENIX CP/M, MP/M	6 8

You may need to disconnect the printer cable before installing the null modem cable, or install a selector switch.

XENIX can use any available port, but first you must disable it. To disable the XENIX sending/re-

ceiving port(s), become super user, and enter

    # disable device <CR>

where

    device = the special file device that trans-
             fers files between machines. For
             example, if you have connected tty2
             to the other machine, the device is
             /dev/tty2. The sending/receiving
             port numbers don't have to be the
             same.

NOTE

If your Altos system has WorkNet, do use port 3
for the file transfer program.

If the cable gets disconnected during transmis-
sion, wait for the file transfer procedure to stop
(takes up to a minute) before restarting on the
same port. Otherwise, the first file transfer
procedure interferes with the second.

2. Select the same baud rates for both machines. For
    MP/M 16-bit machines, enter **MPMSETUP.CMD <CR>** and
    alter the port configuration to set the correct
    baud rate.

    Altos systems can run at 9600 baud on send
    and receive. Use the Business Shell port
    configuration utility to set the correct baud
    rate.

3. Make sure file names are compatible between sys-
    tems (you can copy the file and rename it). Files
    sent from MP/M or CP/M systems to XENIX systems
    may contain extra spaces. If you enclose the
    entire filename in quotes, XENIX recognizes it as
    the intended file name.

**Determining
Procedures**

Refer to the chart below to determine the appropriate
file transfer procedure.

SENDING OPERATING SYSTEM	RECEIVING OPERATING SYSTEM	USE PROCEDURE
CP/M - MP/M	XENIX	A
XENIX	XENIX	B
XENIX	CP/M - MP/M	C

Instructions

The File Transfer Program, **FTP86**, resident on both MP/M master distribution diskettes, transfers files to a XENIX system from any 8- or 16-bit Altos Computer System. FTP86 provides full error checking. Correction is accomplished by re-transmission of data blocks.

Follow the setup procedures on page C-2 and C-3.

It does not matter which side, sending or receiving, is started first, as long as both sides are started within one minue of each other.

Start the sending side by entering one of the following commands:

        0C>ftp86 filename <CR>

                or

        0C>ftp86 u: filename <CR>

    where

        filename = the name of the file you are transfer-
                   ring.

        u: = the drive letter of the destination
                   disk. If no drive letter is specified,
                   the logged disk is the destination disk.

The screen displays the following:

        File Transfer Program version 3.0
        Copyright (C) 1982 by Altos Computer Systems

The sending side selects the ftp port, and displays an "s" every few seconds until communication is established with the other side.

Start the receiving side of the transfer by using the command format

        $ ftp [-f device] [-s speed] [name] <CR>

    where

        device = the special file device that transfers
                 files between machines. The default
                 device is /dev/tty3 (port 3) on the 186
                 and /dev/tty6 (port 6) on the 586/986,
                 and /dev/tty5 (port 5) on the 486. If
                 you don't specify the device, omit the
                 -f. Then ftp will use the default
                 device.

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speed = transmission speed: 1200, 2400, 4800, or 9600 bits per second. The default is 9600 baud. If you don't specify the speed, omit the -s also. Then _ftp_ will use the default speed.

name = directory, if other than home directory. For example, if you want to transfer the file "update" to your directory "newdir," enter "newdir" as the name.

Do not enter the square brackets ([ ]). They indicate that the enclosed part of the command is optional.

For example, to transfer the file named "update" to the "newdir" directory on the XENIX system, enter

```
0C> ftp86 update <CR> (sending side)

$ ftp -f /dev/tty2 -s 4800 new-dir <CR>
   (receiving side)
```

If you do not start procedures within a minute of each other, XENIX will time out and the # prompt reappears. To return to the MP/M prompt, type <CONTROL-C>. Then restart the procedures.

The receiving FTP periodically displays a "w" while waiting for the sender to become active.

THE FILE TRANSFER UTILITY FOR XENIX-TO-XENIX — PROCEDURE B

The XENIX file transfer program, _ftp_, can transfer files between two Altos Computer Systems running the XENIX operating system.

Instructions

Follow the setup procedures on page C-2 and C-3.

It does not matter which side, sending or receiving, is started first, as long as both sides are started within one minute of each other.

Start the _ftp_ utility by using the following command format on the sending computer:

    ftp [-f device] [-s speed] name

 where

    device = the special file device that transfers
             files between machines. The default

device is /dev/ftp, which uses port 3 on
the 186, port 6 on the 586/986, and port
5 on the 486. The sending/receiving port
numbers don't have to be the same.   If
you don't specify the device, omit the -f
also.   Then ftp will use the default
device.

speed = transmission speed: 1200, 2400, 4800, or
         9600 (the default) bits per second. If
         you don't specify the speed, omit the -s
         also.   Then ftp will use the default
         speed.

name   = the name of the file you are sending.

Do not enter the square brackets ([ ]). They indicate
that the enclosed part of the command is optional.

The sending side displays an "s" every few seconds
until communication is established with the other side.

Enter the ftp utility on the receiving computer using
the format

    ftp [-f device] [-s speed] [name]

The device can differ from the sending device; however,
the speed of the two systems must be the same. Enter
the name only if you want to specify a directory for
the transferred file other than your home directory.

The receiving side displays a "w" every few seconds.
During the file transfer, the ftp utility outputs an
"*" after each successful transfer of 128-byte block
increments. A "?" is displayed each time a block is
retransmitted to overcome a transmission error. If you
receive many "?"s, decrease the baud rate.

For example, to transfer the file named "newfile" on
the sending XENIX system to the directory "/tmp" on the
receiving XENIX system, enter

```
$ ftp -f /dev/tty2 -s 4800 newfile <CR>
  (sending side)

$ ftp -f /dev/tty5 -s 4800 /tmp <CR>
  (receiving side)
```

Instructions

The XENIX file transfer program, ftp, can transfer files from a XENIX system to an MP/M system.

The XENIX ftp runs on the XENIX system, and the FTP86 runs on the MP/M system during file transfer between XENIX and MP/M.

Follow the setup procedures on page C-2 and C-3.

It does not matter which side, sending or receiving, is started first, as long as both sides are started within one minute of each other.

Start the ftp utility by using the following command format on the sending system:

        ftp [-f device] [-s speed] [name]

   where

        device = the special file device that transfers
                 files between machines. If you don't
                 specify the device, omit the -f also.
                 Then ftp will use the default device.

        speed = transmission speed: 1200, 2400, 4800, or
                 9600 bits per second. The default is
                 9600 baud. If you don't specify the
                 speed, omit the -s also. Then ftp will
                 use the default speed.

        name   = the name of the file you are sending.

Do not enter the square brackets ([ ]). They indicate that the enclosed part of the command is optional.

For example, to transfer a file named SAMPLE.TXT to the MP/M system, enter

        $ ftp -f /dev/tty2 -s 4800 SAMPLE.TXT <CR>

The sending side displays an "s" every few seconds until communication is established with the other side.

Start the receiving side by entering one of the following commands:

```
0C>FTP86

        or

0C>FTP86 u:
```

where

> u: = the drive letter of the destination disk. If
> no drive letter is specified, the logged disk
> is the destination disk.

The screen displays the following:

> File Transfer Program version 3.0
> Copyright (C) 1982 by Altos Computer Systems

The receiving side selects the ftp port, and periodi-
cally displays a "w" while waiting for the sender to
become active. If the XENIX system times out, the
receiving side normally does not exit by itself; type
<Control-C> to get back to the MP/M prompt.

During the file transfer, the _ftp_ utility outputs an
"*" after each successful transfer of 128-byte block
increments. A "?" is displayed each time a block is
retransmitted to overcome a transmission error. If you
receive many "?"s, decrease the baud rate.

Appendix D
Upgrading your Xenix
Operating System

CONTENTS

This appendix describes how to upgrade your XENIX operating system. If you are installing XENIX for the first time, use the procedures described in Chapter 1. This appendix also describes how to install a second hard disk.

INTRODUCTION

Before you begin the upgrade procedure, make a copy of each upgrade diskette, and label each diskette by hand.

When you upgrade the system, XENIX

o   Preserves system files that you have probably changed (e.g., /etc/passwd, which changes when you run the User Administration program)

o   Preserves user files

o   Replaces other system files with new files of the same name.

You must be the super user to use this procedure, and other users must be logged off.

UPGRADE PROCEDURE

To upgrade your system, assemble the diskettes you are using for the upgrade, and proceed as follows.

1.   Log in as admin and enter admin's password.

2.   Shut down the system. To do this from the Business Shell, type **k** to access the System Administration menu. Then type **s** to shut down the system.

3.   The shut down program displays

        Minutes until shutdown? (0 - 15)

       Enter the number of minutes; if no one is on the system, enter

            0 <CR>

       XENIX broadcasts a message that the system is shutting down, and then displays

            XENIX will now terminate.
            ** Normal System Shutdown **

4. Press the reset button. You will see a monitor
    sign-on message; however, your screen may be dif-
    ferent from the screen below. Prepare to press
    any key when you are prompted.

        Monitor Version n.nn

        Press any key to interrupt boot

    If you press a key in time, you will see a menu
    (Step 5 shows the first two items of the menu).
    If not, press the RESET button, and press any key
    when prompted.

                        NOTE

    Make sure your copy of the XENIX Root File System
    diskette does not have a write-protect tab on it,
    so the system can place information on it.

5. When you see the menu below, or one similar to it,
    insert your copy of the diskette labelled "XENIX
    Root File System" into the disk drive. Enter 2 to
    boot from the floppy diskette.

        Enter   [1] to boot from Hard Disk
                [2] to boot from Floppy Disk

        Enter option: **2**
        Booting From floppy disk . . .

    After a delay of about 45 seconds, the following
    message appears.

        XENIX vn.na

        mem = nnnk

6. The screen then displays the Welcome to XENIX
    menu.

```
                    WELCOME TO XENIX
                      Version n.na

         Options:

                 a.   Install XENIX for the first time on your computer
                 b.   Upgrade your computer system to XENIX version n.na
                 c.   Restore data to the hard disk from cartridge tape
                 d.   Shut down the system
                 e.   Exit to the XENIX shell


         Enter option (a, b, c, d, or e) and press RETURN:
```
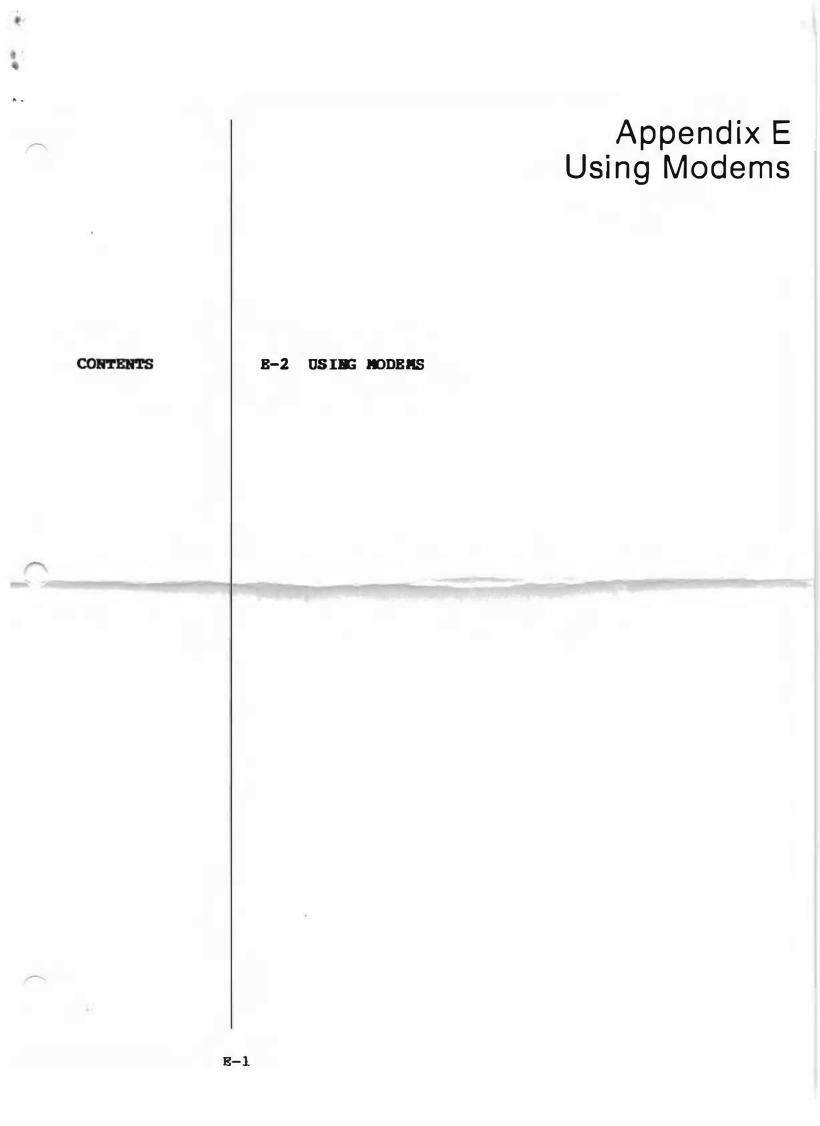
Enter **b** <CR>

NOTE

The 486 does not have the restore data from tape
option, and the screen adjusts accordingly.

7. XENIX displays messages as it upgrades the system.
    First it checks the file system. Then the upgrade
    procedure begins. Next, it saves the local system
    files. After this, the screen displays

        Remove the "XENIX Root File System" diskette
        and store it in a safe place.

        Please insert the diskette labelled "XENIX
        Utilities" and press RETURN.

8. Remove the XENIX Root System diskette and store it
    in a safe place.

9. Insert your copy of the diskette labelled "XENIX
    Utilities," and press the Return key.

    The system copies the utilities from the floppy
    diskette to the hard disk. You will see messages
    of the form:

        x filename, nnnnn bytes, nn tape blocks

You will also see messages saying that a file has been linked to another file. These messages are for information only.

When this process is finished, the screen displays

Remove the "XENIX Utilities" diskette and store it in a safe place.

10. Remove the XENIX Utilities diskette and store it. Next, XENIX configures the other system files and restores the local file system.

After the upgrade procedure is complete, the system asks you if you want to do some tasks:

Change the descriptions of the terminal(s) and/or the printer (configure the ports)

Add or change user accounts.

Lastly, XENIX displays the Options menu.

For instructions on these tasks, please turn to Chapter 4, User Administration.

INSTALLING A SECOND HARD DISK

This section tells you how to set up the software for a second hard disk. You must be the super user for this procedure.

To set up the software for a second hard disk, enter

```
# root <CR>
password:       <CR>
# add.hd <CR>
```

The add.hd command initializes the second hard disk, creates the bad sector table, creates the file system, runs the fsck program, makes the /usr2 directory, and mounts the hard disk. Add.hd adds a line to the /etc/rc file, so that every time the system is set up for multiple users (displays "login:" on other terminals), the second hard disk is mounted.

Appendix E
Using Modems

CONTENTS

USING MODEMS

The Altos 586/986 and 486 systems support remote communication over telephone lines. You can attach most commercially available asynchronous modems to an Altos system using a standard computer-to-modem cable. Modems that have been used successfully with Altos systems are some models of Racal-Vadic, Cermetek, and Hayes.

When using modems on ports 1 through 6 of the Altos 586/986, make sure that your serial concentrator board is jumpered correctly.

NOTE

Ports on the 486 and ports 7-10 on the serial expander board are already configured for modems.

The table below lists jumper positions for ports 1-6:

Port	Location	Non-modem jumpers	Modem jumpers
1	E-28	4-6, 1-3	3-4, 5-6
2	E-26	4-6, 1-3	3-4, 5-6
3	E-24	2-4, 3-5	1-3, 4-6
4	E-20	4-6, 1-3	3-4, 5-6
5	E-18	4-6, 1-3	3-4, 5-6
6	E-17	4-6, 1-3	3-4, 5-6

With the jumpers in these positions, the Altos 586/986 will support terminals, printers, or modems on these ports.

Attaching terminals and printers to the Altos 586/986 is a simple operation if you remember that Pin 20 (DTR) must be logic TRUE before any I/O can occur. When attaching a modem to the system, remember that Pin 4 (RTS) must be logic TRUE for "login:" to appear.

To set up a terminal port (ttyn) for modem use, enter

        $ **disable ttyn <CR>**
        $ **/etc/modem ttyn <CR>**
        $ **enable ttyn <CR>**

where

        ttyn = the tty device (n) that has the modem
               attached.

Note that the disable command isn't necessary if the port is already disabled.

When a user hangs up, the modem command causes him to be logged out and his foreground processes to be terminated.

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Execute this command once for every port with a
modem attached to your Altos system. Modify the
/etc/rc file to include the modem command, so it
will be executed every time you boot the system.

For example, to tell the system that serial port 5
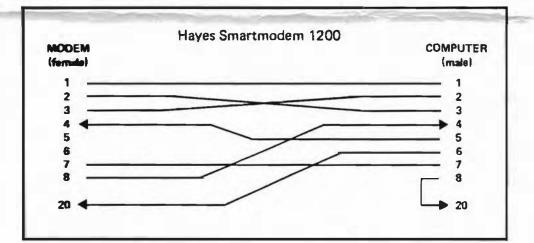(which is already disabled) is a modem port, enter

```
$ /etc/modem tty5 <CR>
$ enable tty5 <CR>
```

To unset a modem port and enable it for login,
enter

```
$ disable ttyn <CR>
$ /etc/unmodem ttyn <CR>
$ enable ttyn <CR>
```

Note that the disable command isn't necessary if
the port is already disabled.

Cable pinouts for the modem interface cable are as
follows:

Hayes Smartmodem 1200

MODEM (female)   COMPUTER (male)

```
1 ───────────────────────────── 1
2 ──────────────┐   ┌────────── 2
3 ──────────────┼───┘           3
4 ◄─────────────┼──────────┐    
5               │          │ ──► 4
6               │          │    5
7 ──────────────┼──────────┘    6
8 ──────────────┘               7
                                8
20 ◄────────────────────────────► 20
```

Hayes switch settings are as follows:

	1	2	3	4	5	6	7	8
Dial in or Dial out	up	up	down	down	up	up	up	down

Appendix C of the XENIX Development System
Programmer's Guide tells you how to use cu and
uucp with modems.