

**Addendum****TRS-XENIX 1.3.5 UPGRADE**

Your TRS-XENIX 1.3.5 Upgrade package consists of 5 diskettes: Boot Disk, Install 1, Install 2, File Maintenance, and Install. These diskettes let you upgrade your TRS-XENIX system to the current version 1.3.5. To do so, follow the steps below that apply to the configuration of your system. After you have installed the upgrade, refer to the remainder of this addendum for additional information. You use the procedure described below only when installing the upgrade.

If you have modified the files listed below, save them before starting the upgrade; otherwise, you will lose them. You can save them by using the cp command. For example, to save the /etc/rc file, type:

```
cp /etc/rc /etc/rc.old <ENTER>
```

The files are:

```
/.profile  
/bin/sub.c  
/etc/motd  
/etc/rc  
/etc/termcap  
/etc/ttys  
/etc/ttypype  
/usr/lib/mkuser.prof
```

**Note:** Before you begin, shut down the system properly and turn off the computer, terminals, and all peripheral devices. Now, find the Media Error Map that is attached to your hard disk and copy the information on it. You will need to enter this information later in the installation process.

**FORMATTING FLOPPY DISKETTES**

You must format diskettes for backing up your hard disks.  
Format enough diskettes to back up all hard disks.

1. Turn on your computer and all peripherals.

2. At the XENIX boot prompt, type:

**diskutil <ENTER>**

3. Your screen displays the following message:

**Diskutil: format or copy floppy diskettes or  
format hard disks.**

At any time you may type <break> or press RESET to abort the procedure. The backspace key may be used to correct single characters of your input. End each line you type by typing <enter>.

**Diskutil: Hard or floppy disk (h or f)?**

4. Type f <ENTER>. The screen shows:

**Copy or format (c or f)?**

5. Type f <ENTER>. The screen shows:

**Format floppy disk in drive number (0..3)?**

Respond by typing the number of the floppy drive into which you plan to place the floppy diskette to be formatted. Then press <ENTER>.

6. Now the screen shows:

**TRS-Xenix or IBM single-density format (x or i)?**

7. Type **x <ENTER>**. The screen shows:

**About to format Tandy Xenix floppy disk in drive x.**

**Type <enter> to proceed or <break> to abort:**

8. Insert the diskette and press **<ENTER>**. Be sure the diskette has a write-enable tab. You may see the following message:

**Destination disk not blank. Any data on it will now be lost if you proceed. Type <enter> to proceed or <break> to abort.**

When the diskette is formatted, the screen shows:

**Disk format and verification complete.**

**About to format Tandy Xenix floppy disk in drive x.**

**Type <enter> to proceed or <break> to abort:**

9. Remove the formatted diskette, insert a new diskette, and press **<ENTER>**. When you have formatted all the diskettes you will need, press the reset switch, and the XENIX boot prompt reappears on your screen.

## 2 FLOPPY DRIVE SYSTEMS

You use this procedure only if your host computer has 2 floppy drives and 1 or more hard drives.

### Backing Up Your System

1. At the XENIX boot prompt, press <ENTER>. Start up TRS-XENIX in multi-user mode by typing <CTRL> d when prompted.
2. Log in as root, and at the root prompt, type:

```
verify -f y <ENTER>
sysadmin <ENTER>
```

3. The following menu appears on your screen:

#### File System Maintenance

```
Type 1 to do daily backup,
2 to backup all files,
3 to get a backup listing,
4 to restore a file,
5 to restore a hard disk,
6 to check a file system,
q to quit
```

> Enter Number:

4. Type 2 <ENTER> to back up all files. The screen shows:

```
FULL SYSTEM DUMP
Backup which hard drive (0-3)?
```

5. Type the number of the hard drive you want to back up and press <ENTER>. The screen shows:

```
Backup to which floppy drive (0-3)?
```

6. Type the number of the floppy drive you are using and press <ENTER>. Now the screen shows:

Type 1 for single sided, 2 for double sided:

If you are using single-sided floppy diskettes, type 1 <ENTER>. If you are using double-sided diskettes, type 2 <ENTER>. After you enter either 1 or 2, the screen shows:

Insert disk in drive x, then press ENTER

7. When the diskette is full, the screen shows:

Change volumes and press <ENTER> to continue.

8. Insert a new formatted diskette. The cursor stays at the end of the prompt until you press <ENTER>.

**Note:** Be sure to label each diskette with the date and the number of the hard drive, and number the diskettes in the order in which the backup was done.

When the entire file system is backed up, the screen shows:

DONE

9. TRS-XENIX returns to the File System Maintenance menu. If you have more than 1 hard drive, repeat Steps 4-8 until all file systems are backed up. When the backup is complete, at the File Maintenance menu, type q <ENTER> to quit. The root prompt appears on your screen.

**Reformatting Your Hard Disk**

Follow these steps to reformat all hard disks in your system.

1. At the root prompt, shut down the system. To do so, type:

**sync; haltsys <ENTER>**

2. Press the reset switch. Now press **<BREAK>** and **<REPEAT>** simultaneously until the following prompt appears on the screen:

**INSERT DISKETTE**

3. Insert the 1.3.5 Boot Diskette into Drive **Ø**. At the XENIX boot prompt, type:

**diskutil <ENTER>**

4. The screen shows:

**Diskutil: format or copy floppy diskettes, or format hard disks.**

At any time you may type **<break>** or press **RESET** to abort the procedure. The backspace key may be used to correct single characters of your input.

End each line you type by typing **<enter>**.

**Diskutil: Hard or floppy disk (h or f)?**

5. Type **h <ENTER>** and the screen shows:

**Hard disk unit number (Ø..3)?**

Type the number of the hard disk you wish to format and press **<ENTER>**.

6. The screen now shows:

Consult your computer manual, or the instruction sheet that accompanies your hard disk, for the answers to the following two questions:

How many cylinders (tracks)?

7. Answer this question and the one following with numbers given in the manual. For example, if you have a 15-megabyte hard disk, there are 306 cylinders and 6 heads. After you answer both questions, the screen shows:

Find the MEDIA ERROR MAP and type in the list of TRACK and HEAD numbers as follows. For instance, if the list shows

TRACK	HEAD	BYTE COUNT	LENGTH
133	00	01333	02
174	03	09826	05

you should type

133,0 <enter>

174,3 <enter>

done <enter>

If the list is empty, just type "done":

At any time, you may type <break> to abort.

enter next pair or "done":

8. After you type done <ENTER>, the following appears on your screen:

About to format hard disk drive x  
This will take about xx minutes.

Type <enter> to proceed or <break> to abort:

On your screen, xx is the number of minutes. The time depends on the size of your hard disk.

9. Press <ENTER>. When the formatting is complete, the screen shows:

Hard disk successfully formatted.  
Drive parameters and MEDIA ERROR MAP successfully written.

Your hard disk is ready for the XENIX initialization.

Diskutil: Hard or floppy disk (h or f)?

10. Repeat Steps 5 - 9 for each of your hard disks.

#### Restoring Files to Hard Drive(s)

Be sure to have all your backup diskettes at hand and in order before you begin restoring.

1. Insert the 1.3.5 File Maintenance diskette in Drive Ø.
2. Press the reset switch, and then press <BREAK> and <REPEAT> simultaneously until the XENIX boot prompt appears on your screen.
3. Press <ENTER> and your screen shows:

System loaded  
Change root if desired  
type <enter> to proceed or <break> to abort

---

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4. Press <ENTER> and the following menu appears:

**File System Maintenance**

Type      1 to get a backup listing,  
              2 to restore an entire dump,  
              3 to restore a daily dump,  
              4 to check a file system,  
              q to quit

5. Type 2 <ENTER>, and the screen shows:

RESTORE AN ENTIRE DUMP SET TO A HARD DISK  
Restore to which hard drive (0-3)?

6. Type 0 <ENTER>, and TRS-XENIX asks for information about your hard disk. Be sure to respond with the same data you entered when you formatted the hard disk. After you enter the information, your screen shows:

About to erase any data on drive 0  
Press ENTER to continue:

**Note:** Any existing information on your hard disk will be overwritten when the full system dump is restored. Your backup diskettes contain everything that was on the hard disk; so you need not be concerned about this warning. It is simply a reminder.

7. Press <ENTER>, and then answer the prompts as they appear on the screen. Insert the first diskette when asked to do so. Be sure to use the set of diskettes that backed up the primary hard drive. During the process of restoring, you may see the following message on your screen:

"/dev/rhd0" contains data; press <ENTER> to continue or <BREAK> to abort:

8. Press <ENTER> and continue restoring. When all the information on your backup diskettes has been restored to your primary hard disk, your screen shows:

**End of Dump**

9. The File System Maintenance menu reappears on your screen. To restore files to secondary hard disks, type 2 <ENTER> and follow the instructions as given above in Steps 5-8. Be sure to use the correct diskettes for the secondary hard disk.

10. When all hard disks have been restored, type 4 <ENTER> to select check a file system. Answer the prompts as they appear. When the verification of the file system is complete, the File System Maintenance menu appears on your screen.

11. Repeat Step 10 for all of your hard disks.

12. When all hard disks have been verified, type q <ENTER> to quit, and the message **\*\* Normal System Shutdown \*\*** appears.

13. Remove the File System Maintenance diskette from Drive Ø.

14. Press the reset switch. Now press <BREAK> and <REPEAT> simultaneously until the following prompt appears on the screen:

**INSERT DISKETTE**

15. Insert the 1.3.5 Boot Diskette into Drive Ø. At the XENIX boot prompt, press <ENTER>. Your screen shows:

System loaded  
Change root if desired  
type <enter> to proceed or <break> to abort

---

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Press <ENTER>. After a while the following question appears on your screen:

Do you wish to initialize your hard disk?

16. Type n <ENTER>. TRS-XENIX displays a message and the root prompt. Type:

```
/etc/mount /dev/hd0 /mnt <ENTER>
cp /xenix /z80ctl /mnt <ENTER>
/etc/umount /dev/hd0 <ENTER>
```

17. Now shutdown the system by typing:

```
sync; /etc/haltsys <ENTER>
```

### Installing the Upgrade

1. Press the reset switch. At the XENIX Boot prompt, press <ENTER>. Start up TRS-XENIX in multi-user mode by typing <CTRL> d when prompted.
2. Log in as root
3. Before you can install the upgrade, you must disable all ports. To do so, at the root prompt, type:

```
disable ttyxx ttyxx ttyxx <ENTER>
```

Be sure to disable each port that is currently enabled.

4. Now, at the root prompt, type:

```
install <ENTER>
```

The screen shows:

Installation Menu

- 1. to install
- q. to quit

5. Type 1 <ENTER> to install the TRS-XENIX Upgrade diskette.
6. At the prompt, insert the TRS-XENIX Upgrade diskette in Drive Ø and press <ENTER>.
7. When the installation of the upgrade is complete, the screen shows:

**\*\*Normal System Shutdown\*\***

8. Remove the diskette from Drive Ø and press the reset switch.

1. Press the reset switch. If the Xenix boot floppy is still in Drive Ø, press the page down key.

2. Before you can use the diskette, the page up key must be pressed.

<ENTER>

3. Now, if the boot floppy exists, it will be loaded.

4. Now, if the boot floppy exists, it will be loaded.

<ENTER>

## 1 FLOPPY DRIVE SYSTEMS

You use this procedure only if your host computer has 1 floppy drive and 1 or more hard drives.

### Backing Up Your System

1. At the XENIX boot prompt, press <ENTER>.
2. Log in as root. Before you begin making backups, be sure all secondary drives are mounted. To do so, type **mount <ENTER>**. Make a list of drives and directory names on which they are mounted. You will need this information later.

If your secondary drives are not mounted, use the mount command to mount them on their usual directories.

3. Now insert the 1.3.5 Upgrade Diskette in Drive Ø. At the root prompt, type:

```
cd / <ENTER>
mount /dev/fdØ /mnt <ENTER>
tar xvfn /mnt/update.tar etc/finfo <ENTER>
```

The screen shows that TRS-XENIX is copying a file named "etc/finfo." When the copy is complete, the root prompt appears on the screen.

4. At the root prompt, type:

```
umount /dev/fdØ <ENTER>
```

Remove the Upgrade Diskette from Drive Ø.

5. Now type:

```
verify -f y <ENTER>
FILES=`ls / | sed s,dev,,` <ENTER>
finfo -r $FILES > /tmp/perms.dist <ENTER>
```

Type <CTRL> ' for ` . Also, be sure to type the line exactly as it is shown.

6. Now insert a formatted diskette in the drive and type:

```
tar cvfbk /dev/rfd0 16 nnnn $FILES <ENTER>
```

nnnn is the number of kbytes on the floppy diskette. If you are using single-sided diskettes, replace nnnn with 608. If you are using double-sided diskettes, replace nnnn with 1224.

When this diskette is full, TRS-XENIX asks you to insert the next diskette. Continue doing so until the entire system is backed up. When the backup is complete, TRS-XENIX returns you to your root prompt.

#### **Reformatting Your Hard Disk(s)**

Follow the instructions given earlier for 2 floppy drive systems.

#### **Restoring Files to Hard Disk**

The procedures for restoring files vary according to the number of hard disks on your system. Be sure to follow the instructions that pertain to your configuration.

#### **On Systems with Only 1 Hard Disk**

1. Press the reset switch. Now press <BREAK> and <REPEAT> simultaneously until the following prompt appears on the screen:

**INSERT DISKETTE**

2. Insert the 1.3.5 Boot Diskette. At the prompt, press <ENTER> and the screen shows:

System loaded . . .  
Change root disk if desired;  
type <enter> to proceed or <break> to abort

3. Press <ENTER>. After a while the following question appears on your screen:

Do you wish to initialize your hard disk?

4. Type y <ENTER>. Now TRS-XENIX asks:

Has your hard disk been formatted with diskutil?

5. Type y <ENTER>. The screen shows that initialization is proceeding. This takes a few minutes. When initialization is complete, the screen shows:

Please reboot from the hard disk after the system  
shuts itself down.

Halting system . . .  
\*\* Normal System Shutdown \*\*

6. Remove the Boot Disk from Drive Ø.

7. Press the reset switch. The screen shows:

XENIX Boot  
:

8. Press <ENTER>. After a while the screen shows:

If you ever see the message "tar: please mount new volume," insert the next floppy into Drive Ø and press <ENTER>. Do not interrupt the installation of the distribution at this point.

First Floppy? [y,n]

9. Although the screen messages refer to "distribution" floppies, you use this program to restore backups to hard disk. Whenever TRS-XENIX mentions distribution floppies, substitute the appropriate backup diskette. Insert the first backup diskette in the drive and press <ENTER>. When the restoration of each diskette is complete, the screen shows:

**Next Floppy? [y,n]**

Insert the next diskette and press <ENTER>. Continue in this manner until all information has been restored to the hard disk. The screen then shows:

**Next Floppy? [y,n]**

10. Type n <ENTER> and the screen shows:

Setting up directories and permissions  
Installation complete  
Type CONTROL-d to proceed with normal startup,  
(or give root password for system maintenance):

11. Enter the root password and press <ENTER>. At the root prompt, type:

**sync; /etc/haltsys <ENTER>**

12. Remove the diskette currently in Drive Ø.

13. Press the reset switch. Now press <BREAK> and <REPEAT> simultaneously until the following prompt appears on the screen:

**INSERT DISKETTE**

14. Insert the 1.3.5 Boot Diskette into Drive Ø. At the XENIX boot prompt, press <ENTER>. After a while the following question appears on your screen:

**Do you wish to initialize your hard disk?**

15. Type n <ENTER>. TRS-XENIX displays a message and the root prompt. Type:

```
/etc/mount /dev/hd0 /mnt <ENTER>
cp /xenix /z80ctl /mnt <ENTER>
/etc/umount /dev/hd0 <ENTER>
```

16. Now shutdown the system by typing:

```
sync; /etc/haltsys <ENTER>
```

#### Installing the Upgrade

Follow the instructions for 2 floppy drive systems.

#### On Systems with More Than 1 Hard Disk

1. Press the reset switch. Now press <BREAK> and <REPEAT> simultaneously until the following prompt appears on the screen:

**INSERT DISKETTE**

2. Insert the 1.3.5 Boot Diskette. At the prompt, press <ENTER> and the screen shows:

```
System loaded . . .
Change root disk if desired;
type <enter> to proceed or <break> to abort
```

3. Press <ENTER>. After a while the following question appears on your screen:

**Do you wish to initialize your hard disk?**

4. Type y <ENTER>. Now TRS-XENIX asks:

**Has your hard disk been formatted with diskutil?**

5. Type **y <ENTER>**. The screen shows that initialization is proceeding. This takes a few minutes. When initialization is complete, the screen shows:

Please reboot from the hard disk after the system shuts itself down.

Halting system . . .  
**\*\* Normal System Shutdown \*\***

6. Remove the Boot Disk from Drive Ø.

7. Press the reset switch. When the screen shows the XENIX boot prompt, press **<ENTER>**.

8. Now the screen shows:

For each floppy in the distribution set, insert the floppy into Drive Ø and press **<Enter>** or type **y**. Type **n** after the last floppy is installed.

If you ever see the message "tar: please mount new volume," insert the next floppy into Drive Ø and press **<ENTER>**. Do not interrupt the installation of the distribution at this point.

**First Floppy? [y,n]**

9. Type **n <ENTER>**. The screen shows:

**Installation complete**

The screen now shows the root prompt.

10. Before you can restore files to hard disks, you must make file systems and directories for each secondary drive and then mount each drive.

To create a file system on the hard disk, you need to know the number of blocks and the number of sectors. All hard disks have 17 sectors per track. An 8-megabyte hard disk has 16966 usable blocks; a 12-megabyte hard disk has 23018; a 15-megabyte hard disk has 30770; and a 35-megabyte hard disk has 69190. When you create the file system, enter the appropriate number of blocks when typing the following:

```
/etc/mkfs /dev/rhdx blocks 1 17 <ENTER>
```

x indicates the hard disk drive number. The 1 17 following the number of blocks should be used for all hard disks.

**Note:** Make a file system for each drive you intend to mount. Use the above command, substituting the appropriate device name and number of blocks.

11. Now you must create a directory in TRS-XENIX for each new file system.

**Note:** To restore information properly, you must use the name of the directory that existed for it at the time you backed it up.

To make a directory, type:

```
mkdir /directoryname <ENTER>
```

Make a directory for each file system you intend to mount.

12. Before you can use your secondary hard disks, you must mount each drive on the same directory it was on when you saved your system. To do so, type:

```
/etc/mount /dev/hdx /directoryname <ENTER>
```

Use the above command to mount each hard disk you intend to access. x indicates the hard disk drive number.

13. Now, you are ready to begin the process of restoring information to your hard disks. Be sure to have all your backup diskettes at hand and in order.

At the root prompt, type:

```
/firsttime <ENTER>
```

14. The screen shows:

For each floppy in the distribution set, insert the floppy into Drive Ø and press <Enter> or type y. Type n after the last floppy is installed.

If you ever see the message "tar: please mount new volume," insert the next floppy into Drive Ø and press <ENTER>. Do not interrupt the installation of the distribution at this point.

**First Floppy? [y,n]**

Insert the first diskette and press <ENTER>. Continue in this manner until all information has been restored to the hard disk. The screen then shows:

**Next Floppy? [y,n]**

15. Type n <ENTER> and the screen shows:

**Setting up directories and permissions  
Installation complete  
#**

16. At the root prompt, type:

**sync; /etc/haltsys <ENTER>**

17. Remove the diskette currently in Drive Ø.

18. Press the reset switch. Now press <BREAK> and <REPEAT> simultaneously until the following prompt appears on the screen:

**INSERT DISKETTE**

19. Insert the 1.3.5 Boot Diskette into Drive Ø. At the XENIX boot prompt, press <ENTER>. The screen shows:

System loaded . . .  
Change root disk if desired;  
type <enter> to proceed or <break> to abort

Press <ENTER>. After a while the following question appears on your screen:

Do you wish to initialize your hard disk?

20. Type n <ENTER>. TRS-XENIX displays the root prompt.  
Type:

/etc/mount /dev/hdØ /mnt <ENTER>  
cp /xenix /z8Øctl /mnt <ENTER>  
/etc/umount /dev/hdØ <ENTER>

21. Now shutdown the system by typing:

sync; /etc/haltsys <ENTER>

### Installing the Upgrade

Follow the instructions for 2 floppy drive systems.

INTERNAL DISKETTE

## FEATURES OF TRS-XENIX 1.3.5

This latest version of TRS-XENIX features the enhanced commands /etc/sysadmin and lpr and the new commands local, spooler, spool, and park. The File Maintenance diskette is an alternative method for restoring a complete system to the hard disk, including data and application programs.

## USING /etc/sysadmin TO BACK UP YOUR HARD DISK

Standard operating procedure dictates that you make periodic and daily backups on floppy diskettes of the information on your hard disk. This is to ensure that no information is lost if something happens to your hard disk.

The following backup procedures are new with your latest version of TRS-XENIX. You use them to do a daily backup and to do a periodic backup of all files.

First, format all the diskettes you will need with diskutil. After doing so, press <RESET> and reboot your TRS-XENIX system.

Log in as root, and at the root prompt, type:

/etc/sysadmin <ENTER>

The following menu appears on your screen:

File System Maintenance

Type      1 to do daily backup,  
          2 to backup all files,  
          3 to get a backup listing,  
          4 to restore a file,  
          5 to restore a hard disk,  
          6 to check a file system,  
          q to quit

> Enter Number:

Type 2 <ENTER> to back up all files. The screen shows:

**FULL SYSTEM DUMP**

**Backup which hard drive (0-3)?**

Type the number of the hard drive you want to back up and <ENTER>. The screen shows:

**Backup to which floppy drive (0-3)?**

For purposes of this example, we assume you are using a doubled-sided diskette in Drive 0. Therefore, type 0 <ENTER>. The screen shows:

Type 1 for single sided, 2 for double sided:

Type 2 <ENTER> and the screen shows:

**Insert disk in drive 0, then press enter**

When the disk is complete, the screen shows:

**Change volumes and press <ENTER> to continue.**

Insert a new formatted diskette. The cursor stays at the end of the prompt until you press <ENTER>. When the entire file system is backed up, the screen shows:

**DONE**

TRS-XENIX returns to the File System Maintenance menu. Type **> C8070**  
**q <ENTER>** to quit and the root prompt appears.

To do a daily backup, or a backup of all files changed since  
the previous periodic backup, select 1 at the File System  
Maintenance menu and respond to the prompts in a manner  
similar to the above instructions. Use freshly formatted  
diskettes for your daily backups.

#### RESTORING INFORMATION TO YOUR HARD DISK

You can use the procedures described below (available on  
Version 1.3.2 and later versions of TRS-XENIX) to restore  
information to your present hard disk or to transfer all the  
information on your present hard disk to a new hard disk.  
If you are transferring information to a new hard disk, you  
must first format the hard disk using **diskutil** (for  
information on how to do this, see your TRS-XENIX  
Operations Manual).

#### Using the File Maintenance Diskette

You use the File Maintenance Diskette to restore your  
primary hard disk if you have 2 or more floppy drives.  
First, be sure that all your backup diskettes are at hand.  
Turn on your hard disk, turn on your computer, and format  
your hard disk if necessary. Now insert File Maintenance  
Diskette in Drive **Ø**. Press the reset switch, and then press  
**<BREAK>** and **<REPEAT>** simultaneously until the following  
appears on your screen:

**XENIX Boot**

:

xaib budi rooy no noljerridni paliakze vna rado enem aid  
.berlojaar ei qub majeve llui edi nedw nejjivsevo sd lliw

Press <ENTER> and your screen shows:

**System loaded**

**Change root if desired**

**type <enter> to proceed or <break> to abort**

Press <ENTER> and the following menu appears:

**File System Maintenance**

- Type      1 to get a backup listing,  
          2 to restore an entire dump,  
          3 to restore a daily dump,  
          4 to check a file system,  
          q to quit

Type 1 <ENTER> to verify that you are restoring the latest backup. Answer the prompts and insert your first backup diskette in Drive 1 when asked to do so.

**Note:** TRS-XENIX refers to your backup diskettes as volumes. When you are asked to type a volume number, type the number of the backup diskette you are inserting.

When the backup listing is complete, press <ENTER> to return to the File System Maintenance menu. Now type 2 <ENTER> and the screen shows:

**RESTORE AN ENTIRE DUMP SET TO A HARD DISK**

**Restore to which hard drive (0-3)?**

Type **0** <ENTER>. TRS-XENIX now asks for information about your hard disk. Be sure to respond with the same data you entered when you formatted the hard disk. After you enter the information, your screen shows:

**About to erase any data on drive 0  
Press ENTER to continue:**

This means that any existing information on your hard disk will be overwritten when the full system dump is restored.

Since your backup diskettes contain everything that was on the hard disk, you need not be concerned about this warning. It is simply a reminder. Press <ENTER> and then answer the prompts as they appear on the screen. During the process of restoring, you may see the following message on your screen:

"*/dev/rhd0*" contains data; press <ENTER> to continue or <BREAK> to abort:

Press <ENTER> and continue restoring. When all the information on your backup diskettes has been restored to your hard disk, your screen shows:

**End of Dump**

The File System Maintenance menu reappears on your screen. Type 4 <ENTER> to select check a file system. Answer the prompts as they appear.

**Warning:** Before selecting File System Check, be sure the file system is not mounted on a secondary hard disk. If it is mounted, files may be lost.

When the verification of the file system on your hard disk is complete, the File System Maintenance menu reappears on your screen. Type q <ENTER> to quit and wait until your screen shows:

**\*\* Normal System Shutdown \*\***

You can now press the reset switch and boot TRS-XENIX.

**Using /etc/sysadmin to Restore Files or an Entire System**

You use /etc/sysadmin from the primary hard disk to restore a secondary hard disk if you have either 1 or 2 floppy disk drives. To restore a primary hard disk with 1 floppy disk drive, you must first install Runtime on the primary hard disk.

**Restoring Files**

Log in to TRS-XENIX and at the root prompt type /etc/sysadmin. The following menu appears:

**File System Maintenance**

Type      1 to do daily backup,  
          2 to backup all files,  
          3 to get a backup listing,  
          4 to restore a file,  
          5 to restore a hard disk,  
          6 to check a file system,  
          q to quit  
      > Enter Number:

Type 3 <ENTER> to verify that the diskettes you are about to restore to hard disk are the latest backup. Note: If you have made a daily backup since the last periodic backup, first restore the periodic backup and then restore the daily backup.

The screen shows:

PRODUCE BACKUP LISTING  
Insert first disk in drive zero, then press <ENTER>

After you press <ENTER>, the screen briefly displays the following:

LIST IS IN /tmp/backup.list

Then the File System Maintenance menu reappears. To list the file contents and date of the backup, type q <ENTER> to quit. At the root prompt, type:

```
cat /tmp/backup.list
```

When you have verified the date and contents, at the root prompt type /etc/sysadmin. The menu appears again. Now select 4 to restore a file or 5 to restore the entire system. For purposes of this example, type 4 <ENTER>. The screen shows:

```
RESTORE FILE(S)
```

```
DRIVE DIRECTORY  
hd0 on /
```

```
Enter directory name from above list (or //)  
(Directory name must begin with "/")
```

```
Enter Pathname of Files to Restore.  
If a directory is specified, all files in it will be  
restored.  
Type one name per line, blank line to terminate
```

```
Enter Pathname:
```

When you have entered all pathnames, type <ENTER> at the prompt. The screen shows:

```
These files will NOT be restored with numbers as  
names, that is, they will be restored to their correct  
places.
```

```
Restore from which floppy drive (0-3)?
```

Type the floppy drive number and <ENTER> in response to this prompt. Then answer the succeeding prompts and follow the instructions exactly as they appear on your screen by inserting Volume 1 of the dump set and specifying the volume number. When all files have been restored to the hard

disk, TRS-XENIX returns to the File System Maintenance menu.

Select 6 to check a file system. If problems are encountered during the check, the system tells you and awaits your input. If the check is satisfactory, you are returned to the menu. Type q <ENTER> to quit.

#### Restoring an Entire System

To restore an entire system of files to hard disk, follow the above procedures, but at the File System Maintenance menu select 5. The screen shows:

**RESTORE A HARD DISK**

**Restore which hard disk (0-3)?**

Type 0 <ENTER>. The screen then shows:

**Restore from which floppy drive (0-3)?**

Type 0 <ENTER> again and the screen shows:

**Type 1 if disks are single sided, 2 if double sided:**

Type 2 <ENTER> and the screen shows:

**Insert disk in drive 0, then press ENTER:**

Insert Volume 1 from the dump set and press <ENTER>. After a brief time, you are instructed:

**Mount desired dump volume: Specify volume#:**

Type 1 <ENTER>. When the restoration is complete, the File System Maintenance menu reappears. Type q <ENTER> to quit.

**Note:** To restore a file or an entire file system to a primary hard disk when you have only 1 floppy disk drive,

first install Runtime and then follow the above instructions.

TERMINAL PRINTING

### Enhancements

The lpr command has 2 new options:

**-F ["p=size of form"] [x]**

Forms Option for Local Print (only). The "p=" option sets the size of the form on which you wish to print. It does so in number of lines (6 lines = 1 inch). For example, to print on a form that is 33 lines long, set "p=33". This does not mean that you actually print 33 lines of text on the form. The line printer prints whatever you have specified and then goes to the top of the next form. From the top of the form to the bottom is 33 lines.

Form length defaults to 66 lines. In other words, if you do not specify a form length, TRS-XENIX assumes your form is 66 lines from perforation to perforation.

**Note:** You use the forms option primarily to print forms such as checks or invoices. It is not a paginating device and will not work as such.

The x option specifies transparent mode for lpr. In transparent mode, lpr sends all data directly to the printer without translation or interpretation. The options "p=" and x are mutually exclusive; only one can be used on a line. Transparent mode defaults off.

**-T [type]**

Printer Type. Tells lpr where to send data intended for the printer. Type may include one of the following:

**spooler** tells lpr to send all data to the system spooler. It is printed on the system printer when it is available. Type defaults to spooler.

**local** tells lpr to send all data to the printer connected to your terminal if available.

**live = device type** is provided for applications requiring interactive printing capabilities. (Example: live=/dev/clp)

You can use the **export** command to set new defaults for these options:

```
PRINTER=type;export PRINTER  
or  
FORMS="p=page length";export FORMS
```

For example:

```
PRINTER=local;export PRINTER
```

sets the printer to the terminal's printer.

```
FORMS="p=33"; export FORMS
```

sets the forms option to 33 lines per page.

**Note:** You can add these commands to a user's .profile file. For example, adding PRINTER=local;export PRINTER lets the user print locally as soon as the user logs in to the system.

**New Commands****local TRS-XENIX command**

Sends all printer output generated by the TRS-XENIX command to the local printer.

For example, the command:

```
local lpr letter.doc
```

sends the file "letter.doc" to the local printer.

**spooler**

Displays the current status of the spooler. For example:

```
spooler <ENTER>
```

The system spooler is ON

You can use the following parameters with spooler:

```
[-on] [-off] [-y] [-n] [-q] [-h]
```

```
spooler -on
```

or

```
spooler -y
```

turns on the system spooler function. Data to be printed is sent to the system spooler and printed in turn.

```
spooler -off
```

or

```
spooler -n
```

turns off the system spooler function. Data to be printed is sent to the system spooler but is not printed until you turn the spooler on again.

**spooler -q [-on|-off]**

places the spooler in the "quiet" mode, that is, its status is not displayed.

**spooler -h**

displays the available parameters for spooler, that is, "help."

**spool TRS-XENIX command**

Sends all printer output generated by the TRS-XENIX command to the system spooler.

For example, the command:

**spool lpr data.doc**

sends the file "data.doc" to the system spooler.

**USING park****/etc/park [-off] [-on]**

Specifies where TRS-XENIX is to position the read/write head of the hard drive at system shutdown. You can execute this command only if you are logged in as root. If **park** is off, the read/write head is not moved before shutdown. If **park** is on, the read/write head moves to the last cylinder of the hard disk before shutdown. Using **park** protects your hard disk from accidentally being damaged by a hard knock or by a power surge.

If you have **park** turned on, you may need to press the reset switch twice to reboot TRS-XENIX after you have shutdown the system.

**FOR DT-1 USERS ONLY**

Your terminal must be modified before it will be capable of local printing. Consult your Radio Shack Computer Center representative about this modification.

**FOR DT-100 USERS ONLY**

To do local printing, you need a Tandy DT-100 Terminal Interface (Catalog No. 26-1198).

**FOR DT-1 AND DT-100 USERS**

To do local printing, first be sure the printer is properly connected to the terminal. Power up the printer and be sure that it is online.

If the printer does not start or if it stops during printing, check the printer before pressing any key. If the printer goes offline, the system waits for it to come back online. Correct the problem that caused the printer to go offline and place the printer back online. The printer then continues from the point that it went offline. Do not attempt to terminate the printing process by pressing <BREAK> or by typing <CTRL> <C>, for example. Doing so can cause problems with the terminal.

**Note:** When doing local printing from an MBASIC program, be sure the program contains an END statement.

**USING LOCAL PRINTING WITH APPLICATIONS****PROFILE-16, Version 01.00.00**

If you want to do local printing from Profile-16, you must edit the termcap file and patch a Profile-16 module. Follow these instructions carefully:

1. Start up TRS-XENIX and log in as root.
2. Change Directories.

If you installed Profile-16 on your primary hard disk, type:

**cd /appl/pf <ENTER>**

If you installed Profile-16 on a secondary hard disk, use cd to position yourself in that drive's directory. Then type:

**cd appl/pf <ENTER>**

3. Edit the termcap file. Type:

**ed termcap <ENTER>**

**Note:** You may exit at any time from ed by typing <q> <ENTER>.

The display shows: 4693

Type: 23 <ENTER>

The display shows: :vb=\Eb\Eb\Eb\Eb\Eb\Eb\Eb\Eb\Ed:

---

TANDY COMPUTER PRODUCTS

---

Type:            i <ENTER>  
<TAB>:PN=\E3:PS=^T:<ENTER>  
. <ENTER>  
w <ENTER>  
q <ENTER>

4.        Note: To print a backslash, type <CTRL> </>. Refer to Appendix H of your Profile-16 Manual for a description of the different versions of REQUEST OUTPUT.

- 5a.      If you have the large version of REQUEST OUTPUT, type:

patch report <ENTER>

The display shows: byte offset (<ENTER> to exit)?

Type:            13e7 <ENTER>

The display shows: 13e7: 56 | v | >

Type:            75 <ENTER>

The display shows: 13C6: ØØ | . | >

Type:            q <ENTER>

The display shows: byte offset (<ENTER> to exit)?

Press:           <ENTER>

- 5b.      If you have the small version of REQUEST OUTPUT, type:

patch report2 <ENTER>

The display shows: byte offset (<ENTER> to exit)?

Type:            ØeØ9 <ENTER>

The display shows: ØeØ9: 56 | v | >

Type: 75 <ENTER>

The display shows: ØeØa: ØØ | .| >

Type: q <ENTER>

The display shows: byte offset (<ENTER> to exit)?

Press: <ENTER>

6. You can now do local printing. If you are not already set up for local printing, before going into Profile, type:

**PRINTER=local;export PRINTER**

### UNIFY

You can use local printing from Unify for the database reports you define and all reports built into Unify. However, Schema Listing and Screen Reports (when printing all screens only) should not be printed locally. Unify does not generate an error, but extraneous data appears in the report.

ACCOUNTING PACKAGES

Local printing is available on Version Ø3.ØØ.ØØ of the following:

General Ledger (26-62Ø1)  
Payroll (26-62Ø3)  
Accounts Receivable (26-62Ø4)  
Accounts Payable (26-62Ø5)  
Order Entry (26-62Ø7)  
Sales Analysis (26-62Ø8)

MULTIPLAN (26-648Ø)

To do local printing, follow these instructions. Be sure that the terminal has not been set to local print. If it has, set terminal to print to spooler.

1. At the Menu Line, select the print option.
2. From the Print Menu, select the file option.
3. At the filename prompt, type filename to print the report to a disk file.

Note: Multiplan assigns the extension .pr to the filename if you do not specify an extension.

4. To print the report, first save the sheet to a file. Then exit Multiplan and type:

**local lpr filename.pr**

SCRIPTSIT™-16 (26-6431)

Local printing is available on Version 01.01.00 of SCRIPSIT-16.

At the DT-1:

To do local printing, at the Print Menu respond to the Printer option by typing **dumb**. At the Mode option, type **L**.

**Note:** The DT-1 does not send control codes to the printer. Therefore, the following special print attributes are not available: underline, boldface, font changes, superscripts, subscripts, diacritic markings, strikethrough, and user-defined codes. If you are using a terminal other than the DT-1 but which also lacks the capability of sending control codes to the printer, these same attributes are unavailable.

At the DT-100:

To do local printing, at the Print Menu respond to the Printer option by typing the standard abbreviation for your printer, for example, **dwii** for the Daisy Wheel II. At the Mode option, type **L**.

**Special Note:** While doing local printing on either the DT-1 or the DT-100, you cannot open or edit another document.

## USING LOCAL PRINTING WITH SYSTEMS AND LANGUAGES

Local printing is available on the following:

TRS-XENIX™ Development System (26-6401)  
Editor/Assembler (26-6450)  
FORTRAN 77 (26-6451)  
PASCAL (26-6452)  
TRS-XENIX COBOL Development System (26-6455)  
TRS-XENIX BASIC Interpreter (26-6457)

**Note:** Be sure your BASIC programs contain an  
END statement. If you encounter a problem while  
executing a program that is doing local printing,  
in the next execution information that should be  
going to the printer may appear on your screen.  
If this occurs, rerun the program. It then prints  
correctly.

## USING cu

To use cu, change the permissions for the device to include  
read and write permissions for everyone. For example, if cu  
uses tty01 as a port, then /dev/tty01 should have read and  
write permission for all. See your TRS-XENIX Operations  
Manual for information on how to change permissions.

## ADDED cu CAPABILITIES

With TRS-XENIX 1.3.5, as with earlier versions, you can let  
TRS-XENIX identify the speed of your modem. To do so, you  
use the following command:

cu phone-number -s speed

With TRS-XENIX 1.3.5, however, you can now select the dialout speed to your modem.

At the root prompt, type:

```
chmod 666 /dev/cua?.* <ENTER>
```

To select a dialout speed of 1200 baud (and 1200 baud only), type:

```
cu phone-number -a /dev/cua#.1200 -s 1200 <ENTER>
```

phone-number is the desired phone number. # is 0 if you are dialing out on tty01; it is 1 if you are dialing out on tty02.

To select a dialout speed of 300 baud (and 300 baud only), simply substitute 300 for 1200 in the above command line.