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NATIONAL TECHNICAL SUPPORT 0220 817-390-3810
400 ATRIUM—ONE TANDY CENTER, FORT WORTH, TEXAS 76102

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To: Ken Brookner

Cc: Gary Kueck

From: Valerie See

Subject: Hard Disk Based **/etc/sysadmin** in Xenix 3.1

It has recently come to my attention that the hard disk based **/etc/sysadmin** in Xenix 3.1 has a problem when it attempts to restore a full save to a secondary drive of 35 or 70 megs. The difficulty is in line 330 of the script, where the filesystem size passed to **/etc/mkfs** is adjusted for bad tracks:

```
SIZE=`expr $SIZE - \( 17 \* \( 24 + 2 \) \)`
```

Unfortunately, this allows for only 24 bad tracks on the larger drives. As is apparent, this is rather short of the 96 bad tracks allowed on the 35 and 70 meg drives. Additionally, passing the resultant block count to **/etc/mkfs** to create a file system on the drive in question will result in a write error from **/etc/mkfs**, and the restore procedure will abort. In the case of a 35 meg drive, you are attempting to create a file system of some 69190 blocks instead of the 67966 blocks which would normally be used.

Curiously enough, the floppy version of **/etc/sysadmin** used on the File Maintenance diskette does, in fact, test for the number of tracks on the drive and adjusts the bad track count accordingly. This results in correct block numbers being passed to **/etc/mkfs**, which in turn is able to run to completion, allowing the restore process to be completed. The segment of the script in question looks like this:

```
TRACKS=`expr $CYLS \* $HEADS`
BADT=24
if test $TRACKS -ge 3000
then
        BADT=96
fi
```

Something of this nature should be incorporated into the hard drive version of **/etc/sysadmin** for future use. As it currently stands, it will not handle secondary drives of the larger types.

As an emergency expedient for a technician, a sufficient solution (although an inelegant one) is the following:

1) Copy **/etc/sysadmin** to **/etc/sysadmin35**:

   cp /etc/sysadmin /etc/sysadmin35 <ENTER>

2) Edit the file accordingly:

   ed /etc/sysadmin35 <ENTER>

3) The system will respond with:

   9478
   *

4) Type:

   33Øp <ENTER>

   You should see:

   SIZE=`expr $SIZE - \( 17 \* \( 24 + 2 \) \)`

5) Type:

   .s/ 24 / 96 /p <ENTER>

   You should see:

   SIZE=`expr $SIZE - \( 17 \* \( 96 + 2 \) \)`

6) Type:

   w <ENTER>

   The system will respond with:

   9478
   *

   Type:

   q <ENTER>

This will have to be performed as root, and will leave the customer with a hard drive version of **/etc/sysadmin** (called **/etc/sysadmin35**) which will work with 35 and 70 meg drives. It will also work with the smaller drives, but will not use all of the available space due to reserving an excess number of tracks for bad track mapping. This is an extremely unsatisfactory workaround, and should only be used by technicians as a last resort. It is quite a bit easier than adding the additional code for elegance.

Of course, the most obvious solution of all is to use the File Maintenance disk, but there are circumstances where that may not be available to the technician. This problem should in any case be fixed in some reasonable fashion on the hard drive **/etc/sysadmin** if for no other reason than compatibility with the floppy drive version.