

How Do I Debug a Tape Drive Read/Write Problem?

Question:

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Answer:

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The UNIX system contains special files in order to help control the hardware devices attached to the system. For the HP3070, the tape drive should be connected to the file /dev/update.src. This file is known as a "character special" file, and has some special characteristics. Occasionally this file is overwritten or removed, and the tape drive is no longer accessible. You could have problems with this file, or you may have hardware problems that aren't obvious.

Checking your hardware

The tape drive on a 3070 system should typically be set to address 3. However, in some cases, there may be a reason that your tape drive is not set to address 3 on your SCSI bus, or you may have some other hardware problem. In order to find where your tape drive is set, log in as "root", and type:

/etc/ioscan

at the UNIX prompt. You should get output similar to the following:

H/W Path	Description	Status
1.0.0	graphics	ok(0x785)
2.0.1	scsi	ok(0x7082)
2.0.1.3.0	tape_drive	ok(0x1800202)
2.0.1.6.	disk	ok(0x202)
2.0.2	lan	ok(0x708a)
2.0.4	serial	ok(0x708c)
2.0.6	parallel	ok(0x7074)
2.0.8	audio	ok(0x707b)
2.0.11	ps2	ok(0x7084)
2.0.12	ps2	ok(0x7084)
6.0.2	lan	ok(0x708a)
6.0.4	serial	ok(0x708c)

2.0.1 indicates the SCSI bus. The first number following the address of the SCSI bus indicates the SCSI address of a particular device. In the example shown above, the tape drive is at address 3 (standard for a 3070 system), and the disk drive is at address 6 (typical for most root drives). If no tape drive address

appears at all, you may have a problem with your tape hardware. If you get an address, you can use it to correct problems with the device file used for the HP3070 - /dev/update.src.

Checking your device file

In order to tell whether there is a problem with your tape drive device file, type the following at the UNIX prompt:

ls -1 /dev/update.src

The system should return something like the following:

For the HP3070 Series II controllers, the "major" number is always 121. The "minor" number for a typical 3070 should be:

0x201306

This may be different if the SCSI address shown in your /etc/ioscan output is not 3. If your tape drive address is set to 3, and your /dev/update.src does not match the above, then log in as root and type the following commands to reset this file:

/etc/mknod /dev/update.src c 121 0x201306 chmod 0666 /dev/update.src chown root:root /dev/update.src

If you would like to know how the mknod command works, please type:

man mknod

at a UNIX prompt. This will give you general information on how block special and character special devices are created.

Systems with nonstandard scsi addresses for their tape drives

In some special cases, your tape drive may be set to an address other than 3. If so, the following should help you create the correct mknod command to reset your tape drive device file. The general form of the mknod command to create a character special file is as follows:

/etc/mknod /dev/update.src c MAJOR MINOR

For all 3070 Series II controllers, the major number to use in the above command is 121. The minor number may vary depending on the SCSI address of the device. 0x201 is always standard for the beginning of a minor number for a device on the SCSI bus on a 700 series computer. The minor number has several fields in it. For a tape drive, they look like this:

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Set the third digit from the right to match your SCSI address shown in your /etc/ioscan output. Therefore, you should use a mknod command that looks like this:

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/etc/mknod /dev/update.src c 121 0x201n06
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Replacing the "n" with the scsi bus address from your /etc/ioscan output.