5GB 8mm Tape Drive Install Problem

Special Notices

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> **Note:** The information in this document has **not** been verified for AIX 4.1.

Problem Description

8mm 5GB Tape Drive IPL File Corruption Problem

A problem has been discovered when a system is booted with an 8mm 5GB tape drive (7208-011 and feature codes 6144, 6147, 6148, 6149; also generic Exabyte 5GB tape drives). This problem exists both with the IBM version and generic Exabyte version 5GB tape drives. There is an incompatability between the microcode on this tape drive and the microcode on some RISC System/6000 SCSI controllers. This problem only occurs during a boot from this tape drive; and even then it will only occur if attached to certain levels of the SCSI controller.

The symptom is that the system will appear to boot successfully but will have file corruption. Some corruption can be detected as check sum errors, some may be detected as operational errors, and some may not be detectable at all.

If you have ever installed from an AIX software distribution tape or from a mksysb tape using the 8MM 5GB tape drive, it is possible that files have been corrupted. Only files that are in rootvg could be corrupted. Therefore, if you have your applications or application data in rootvg, it could possibly be corrupted. In this case, you will need to take action to correct and to prevent any additional file corruption.

If you have an 8mm 5GB tape drive and you are using it for boot purposes, check the SCSI controller to which the tape drive is attached. You can do this by executing the AIX command "lscfg -v | pg" and then viewing the results on the display screen. Press Enter to page down and press the minus key and

Enter to page up. Look for the part number for the embedded controllers under the heading "sio0"; look for the part number of the SCSI adapter cards under the heading "scsiX" where X is any number.

If your controller is listed below, then please order the proper Engineering Change Announcement (ECA) from this list by calling 1-800-IBM-SERV.

Note: Have your machine type and serial number available when you call.

- If the SCSI controller is a microchannel adapter card P/N 71F0913 or P/N 00G2362 or P/N 00G1887, order ECA 104.
- If the SCSI controller is embedded in the I/O planar of a 7012 Model 340 or 350 and the I/O planar is P/N 51G8631 or P/N 32G0163, order ECA 105 for Model 340 and ECA 106 for model 350. (See Note 1 below)
- If the SCSI controller is embedded in the I/O planar on a 7015 Model 970 or 980 and the I/O planar is P/N 43G2216 or P/N 52G1265, order ECA 107 for model 970 and ECA 108 for model 980. (See Note 1 below)

Figure 1. Affected SCSI Controllers

If you use the tape drive on multiple systems, you would want to order the proper ECA for any card/planar to which you are likely to attach the tape drive. If you apply the ECA to an embedded controller, that ECA will cause the boot to perform properly from any adapter used in that machine.

If the SCSI controller you are using is not on the list above, you should not have this problem.

Note 1: The fix for the embedded controllers is a two-part fix. One part is the hardware included in the ECA. The other part is If you are not comfortable with editing the files, then please order the PTF as soon as possible by calling 1-800-CALL-AIX.

Steps to Take

A set of three diskettes
A VPD module
An IPL ROS module
Labels for the CPU Planar
Label for an 8mm AIX install tape

The IPL ROS includes part of the fix for the problem. The VPD and new labels are for record-keeping (so this machine will be distinguishable from one that hasn't been updated). The diskettes are install diskettes for booting up without exposure to data corruption (they contain downloadable SCSI controller micro-code which fixes the problem).

1. Replace the VPD module, IPL ROS, and labels on the CPU Planar. For details on the installation procedure, refer to the instructions included with the parts.

   Note: With the new VPD, the CPU ID of your machine will change. This may cause problems with certain software applications which rely on a certain CPU ID to operate. If this is the case, the applications will have to be updated somehow. If this is not possible or desirable at this time, you may postpone replacing the VPD. The machine will still operate with the old VPD.

2. Here are the rules for determining potential data corruption:

   - If you have never installed or restored from a mksysb using a 5 GB tape, you will have no data corruption.
   - If you have installed or restored from a mksysb using a 5 GB tape, some of your files may be corrupted:
     - System files may be corrupted in either case.
     - Application files may be corrupted only if they meet two conditions: they reside in rootvg, and they were restored from a mksysb tape. If either of these conditions is not met, the application files will not be corrupted.

3. If you meet any of the conditions for potential corruption, you will need to reinstall the system. Boot from the included install diskettes using the standard BOSboot diskette procedure. At the appropriate prompt, select the option to install AIX from the tape and use your original AIX tape. Additionally, if any of your applications have been exposed to corruption, you will need to reinstall them as well.

   Note that, even if you have not seen the problem, you should apply the hardware fixes and the following software fixes to avoid seeing the problem in the future.

4. After the system has been reinstalled, edit the files:

   a. /usr/lib/boot/tape.proto

      1) Search for the string: 8d77

      2) Add two lines

      FROM

```
microcode d--- 777 0 0
      8d77.32.04  ---- 777 0 0 /etc/microcode/8d77.32.04
      $
```

      TO

```
microcode d--- 777 0 0
      8d77.32.04  ---- 777 0 0 /etc/microcode/8d77.32.04
      8d77.44.54  ---- 777 0 0 /etc/microcode/8d77.44.54
      8d77.42.54  l--- 777 0 0 /etc/microcode/8d77.44.54
      $
```

Note the lower-case "L" on the third line.

b. /sbin/rc.boot

1) Search for the string: Tape

2) Add one line (a few lines down from Tape)

FROM

```
showled 0x510
# Run config manager for phase 1 boot
/etc/cfgmgr -f
  showled 0x511
```

TO

```
showled 0x510
#Run config manager for phase 1 boot
/etc/cfgmgr -f
/etc/cfgmgr -s > /dev/null 2>&1
showled 0x511
```

5. Affix the label to your AIX install tape. This will ensure that in the future, if another system is installed with this tape, that the new diskettes will be used, thus preventing any data corruption on install.

6. If you have had any problems with this procedure or have any further questions, contact the U.S. Customer Service Center at 1-800-CALL-AIX.

Reader's Comments

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