Recovery from LED 552, 554, or 556 in AIX 4.1

Special Notices

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Warning: Please do not use this document if the system is a /usr client, diskless client, or dataless client.

About This Document

This document discusses the known causes of LED 552, 554 and 556. Included is a procedure for recovery from these errors. This document is applicable to AIX 4.1.

Causes of an LED 552, 554, or 556

The known causes of an LED 552, 554, or 556 during IPL on a RISC System/6000 are:

- A corrupted file system.
- A corrupted journaled-file-system (JFS) log device.
- A bad IPL-device record or bad IPL-device magic number. (The magic number indicates the device type.)
- A corrupted copy of the ODM (Object Data Manager) database on the boot logical volume.
- A fixed disk (hard disk) in the state of inactive in the root volume group.

Recovery Procedure

To diagnose and fix the problem, you will need to boot from BOOTABLE MEDIA and run fsck (file-system check) on each file system. If the file-system check fails, you may need to perform other steps.

Warning: Please do not use this document if the system is a /usr client, diskless client, or dataless client.

1. Turn the key to the Service position.
2. With **Bootable media of the same version and level as the system**, boot the system.

   The bootable media can be ANY ONE of the following:

   - Bootable cdrom
   - Mksysb
   - Bootable Install Tape

   Follow the prompts to the "Welcome to Base OS" menu.
3. Choose "Start Maintenance Mode for System Recovery" (Option 3)

   The Next Screen would prompt the following Menu "Maintenance"

   - Choose "Access a Root Volume Group" (Option 1)

     At this stage the console will display information about rootvg, and also Display a Menu with two Options.
   - Choose "Access this volume group and start a shell before mounting the filesystems" (Option 2)

   If you get errors from the above option, do not continue with the rest of this procedure. Correct the problem causing the error. If you need assistance correcting the problem causing the error, contact one of the following:

   - local branch office
   - your point of sale
   - 1-800-CALL-AIX (to register for fee-based services)

   All of the above avenues for assistance may be billable.
4. Run the following commands to check and repair file systems. (The "-y" option gives fsck permission to repair file systems when necessary.)

   ```
   fsck -y /dev/hd1
   fsck -y /dev/hd2
   fsck -y /dev/hd3
   fsck -y /dev/hd4
   fsck -y /dev/hd9var
   ```

   If fsck indicates that

   - block 8 could not be read, the file system is probably unrecoverable. See step 5 for information on unrecoverable file systems.
   - block 8 could be read, but one of the following errors is given:

     ```
     "fsck:  Not an AIXV3 file system."
     "fsck:  Not a recognized file system type."
     ```

     then go to step 6.

- a file system has an unknown log record type, or fsck fails in the logredo process, then go to step 7.
- **If the file system checks were successful**, skip to step 9.

5. The easiest way to fix an unrecoverable file system is to recreate it. This involves deleting it from the system and restoring it from a backup. Note that hd2 and hd3 can be recreated but hd4 cannot be recreated. If hd4 is unrecoverable, you must reinstall AIX. For assistance with unrecoverable file systems, contact your local branch office or point of sale, or call 1-800-CALL-AIX to register for fee-based support services. **Do not follow the rest of the steps in this fax.**
6. Attempt to repair the file system with this command:

   ```
   dd count=1 bs=4k skip=31 seek=1 if=/dev/hd# of=/dev/hd#
   ```

   Replace "hd#" with the appropriate file system.

   Now skip to step 8.
7. A corruption of the JFS log logical volume has been detected. Use the logform command to reformat it.

   ```
   /usr/sbin/logform /dev/hd8
   ```

   Answer YES when asked if you want to destroy the log.
8. Repeat step 4 for all file systems that did not successfully complete fsck the first time. If step 4 fails a second time, the file system is almost always unrecoverable. See step 5 for an explanation of the options at this point. In most cases, step 4 will be successful. If step 4 is successful, continue to step 9.
9. With the key in Normal position, run the following commands to reboot the system:

   ```
   exit
   sync;sync;sync
   shutdown -Fr
   ```

   As you reboot in Normal mode, **notice how many times LED 551 appears**. If LED 551 appears twice, fsck is probably failing because of a bad fshelper file. If this is the case and you are running AFS, see step 12.

   The majority of LED 552s, 554s, and 556s will be resolved at this point. If you still have an LED 552, 554, or 556, try the following steps:
10. Repeat steps 1 through 3.
11. Run the following commands, which will remove much of the system's configuration, saving it to a backup directory.

```
mount /dev/hd4 /mnt
mount /dev/hd2 /usr
mkdir /mnt/etc/objrepos/bak
cp /mnt/etc/objrepos/Cu* /mnt/etc/objrepos/bak
cp /etc/objrepos/Cu* /mnt/etc/objrepos
/etc/umount all
exit
```

Determine which disk is the boot disk with the lslv command. The boot disk will be shown in the PV1 column of the lslv output.

```
lslv -m hd5
```

Save the clean ODM database to the boot logical volume. ('#' is the number of the fixed disk, determined with the previous command.)

```
savebase -d /dev/hdisk#
```

If you are running AFS, go to step 12, otherwise, go to step 13.

12. If you are running the Andrew File System (AFS), use the following commands to find out whether you have more than one version of the v3fshelper file.

    ```
    cd /sbin/helpers

    ls -l v3fshelper*
    ```

    If you have only one version of the v3fshelper file (for example, "v3fshelper"), proceed to step 13.

    If there is a version of v3fshelper marked as original (for example, "v3fshelper.orig"), run the following commands:

    ```
    cp v3fshelper v3fshelper.afs
    cp v3fshelper.orig v3fshelper
    ```

13. **Warning**: Please do not proceed further if the system is a /usr client, diskless client, or dataless client.

    Recreate the boot image (hdisk# is the fixed disk determined in step 13 or 14):

    ```
    bosboot -a -d /dev/hdisk#
    ```

14. If you copied files in step 12, copy the AFS file-system helper back to v3fshelper:

    ```
    cp v3fshelper.afs v3fshelper
    ```

15. Turn the key to Normal position and run

    ```
    shutdown -Fr
    ```

    If you followed all of the above steps and the system still stops at an LED 552, 554, or 556 during a reboot in Normal mode, you may want to pursue further system recovery assistance from one of the following:

    - local branch office

- your point of sale
- 1-800-CALL-AIX (to register for fee-based services)

All of the above avenues for assistance may be billable.

For reasons of time and the integrity of your AIX operating system, the best alternative at this point may be to reinstall AIX.

Reader's Comments

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