

## Best Practices for Troubleshooting Superloader3

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This document outlines the best practices to troubleshoot common failures on Superloader 3 units.

### Start by verifying the following:

- Cables are properly seated
- LED on SCSI terminator at rear of unit is “ON”.
- Power “ON/OFF” switch is working. Wait 10 seconds between power on and off.
- Loader and drive can be detected.
- Unit passes POST – failures during POST are due to a failure of the basic functionality of the unit.
- All functions on the LCD are working.
- Unit has latest loader FW and drive FW. If not, upload latest code.
- Magazines can be ejected

### Common Failures

#### 1. Power On Self Test (POST)

**Cause:** Could be a firmware upgrade issue.

If a recent FW upgrade has occurred, the unit might have been powered off before the reboot was complete. A secondary boot code is available, but it requires removing the loader top cover and changing two jumpers. Then a new code load must be done without an early power off

## 2. Initialization Failure

### Actions:

- Look at the loader logs acquired from the (RMU) Remote Management Unit.
- Compare the error reported on the OCP with the error reported in the hard queue.
- Disconnect the SCSI (Fiber or SAS) cable. Remove all tapes from the magazines and drive, then power cycle the unit.
- Remove magazine(s) and inspect for problems with the movement of the slots by turning the large white gear on the side. Movement should be smooth in both directions. Magazines can be damaged if mishandled (dropped). To avoid magazine damage, handle the magazine as shown on pages 33–35 of the User's Guide, 81-81317-07.
- If blanks are available (right and/or left), insert them and power cycle the unit.
  - Does the unit become System Ready?
    - If yes – Remove one blank and insert a magazine.
  - Does the OCP display show the left/right magazine inserted?
    - If yes – Remove the second blank and insert a second magazine.

## 3. Power Failures

### Symptoms:

- Unit failed to power up; unit is dead; no power; power switch intermittent. The unit must be unplugged before it can be powered back on.

**Cause:** The problem is most likely caused by turning the power switch on too quickly after the unit has been shut off. If a Superloader is powered off with the switch on the back of the unit, a capacitor in the power supply discharges, which takes about seven seconds. The unit can't be turned back on until the discharge is complete.

### Actions:

- Leave the switch in the OFF position for 10 seconds before powering on again.
- Is the unit totally dead, no lights, power or sound?
  - If yes – Replace the loader.

#### 4. Tape Stuck in Drive

##### **Actions:**

- Inspect for tape location by opening the mail slot door by gently pulling the bottom of the door towards the front of the unit. Through the mail slot door, look for any labels that may be stuck above, below, or in front of the cartridge such as that shown in Figure 1.
- Remove any cartridge labels stuck in the drive.

Figures 2 and 3 are close up examples of labels causing a stuck tape condition.



Figure 1: Stuck Label Viewed Through the Mail Slot

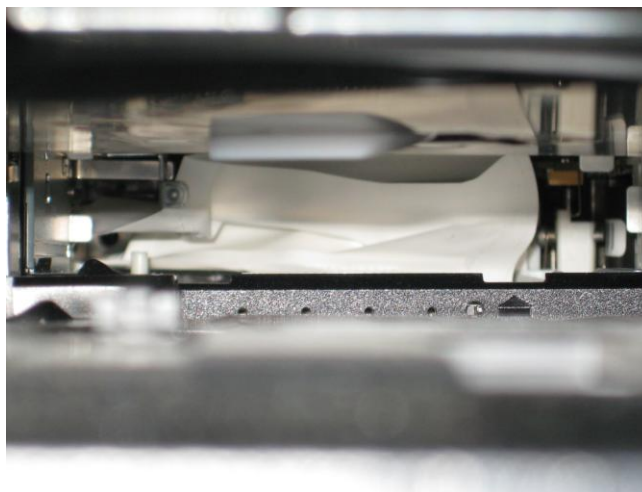


Figure 2: Label Causing a Stuck Tape

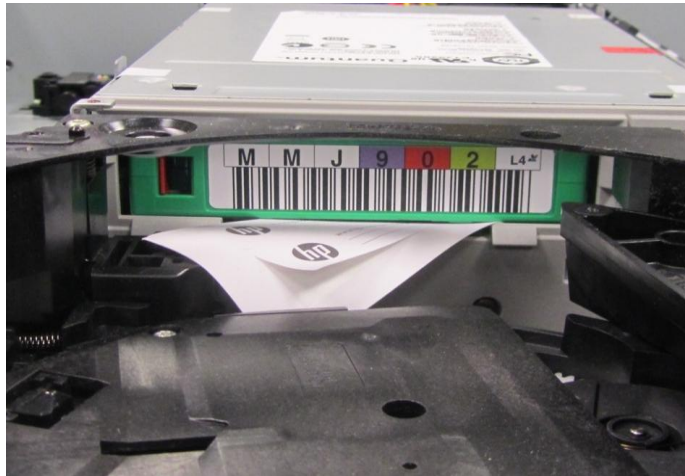


Figure 3: Label Causing a Stuck Tape

- Disconnect all data cables from the Superloader.
- Power cycle the unit and wait 10 minutes (do this 2x, if necessary).
- Use the following OCP Commands
  - Commands
  - Eject
  - Tape – Mail Slot
  - From Drive
- If the tape still remains stuck, use the stuck tape removal procedure #6-66736-02 published in CSWeb.

## 5. Tape Sticks in Drive During Backups and/or Restores in Backup Exec

**Cause:** When performing backups and/or restores in Backup Exec, a degaussed cartridge loaded to the drive may result in a stuck tape. The drive will send a 03x53x00 (Media load or eject failed) back to Backup Exec. Instead of marking the tape as bad, Backup Exec takes the drive offline

### **Actions:**

Stop and restart all services by following these steps:

- From the Devices tab on Backup Exec, right click on the drive that has been placed offline and select Online.
- From the option (radio) buttons at the top of the application, select Tools > Backup Exec Services.
- From the Backup Exec Services Manager, select Stop All Services.
- Select “Yes “to verify that you want to stop all services.

- Once all services have been stopped, select Restart All Services.
- Once all services have been restarted, right click on the selected Robotic Library and select Unlock. This will allow the user to remove the “bad” cartridge by issuing a move command from the loader Operator Control Panel by moving the “bad” cartridge from the slot that it resides in to the mail slot.
- Lock the loader once the bad cartridge has been removed. Resume normal operations.

## 6. Low Speed, Poor Performance, Low Transfer Rate

**Cause:** The overall performance of the Superloader3 depends on the configuration of the host system on which it is operating. A low sustained data transfer rate can be caused by a down-rev version of the host adapter device driver.

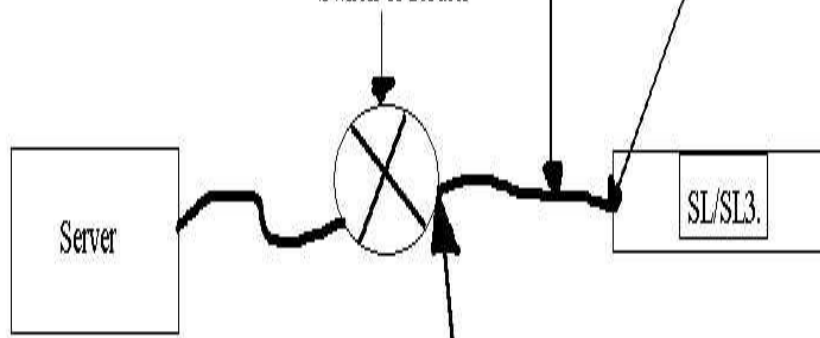
### **Actions:**

- Update the driver. Updates can be downloaded from [www.adaptec.com](http://www.adaptec.com).

**NOTE:** Any updates to an Adaptec dual-channel host adapter must be done independently for both channels.

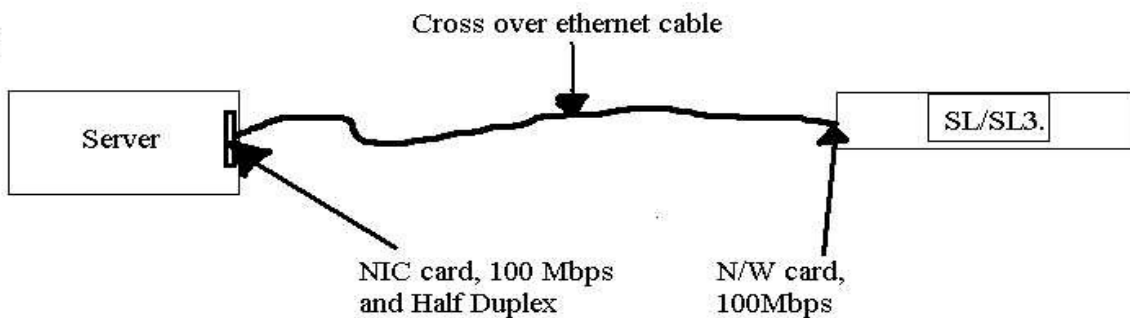
- Test the drive:
  - IBM drives: use **itdt-ge.exe**.
    - The utility is described at <http://www-01.ibm.com/support/docview.wss?uid=ssg1S4000662>
    - The utility can be downloaded from IBM’s Fix Central Web site at [http://www-933.ibm.com/support/fixcentral/options?productGroup0=ibm/StorageSystems&productGroup1=ibm/Storage\\_Tape&productGroup2=ibm/ST/Tapedevicedriversandsoftware&productGroup3=ibm/Storage\\_Tape/IBM+Tape+Diagnostic+Tool+ITDT](http://www-933.ibm.com/support/fixcentral/options?productGroup0=ibm/StorageSystems&productGroup1=ibm/Storage_Tape&productGroup2=ibm/ST/Tapedevicedriversandsoftware&productGroup3=ibm/Storage_Tape/IBM+Tape+Diagnostic+Tool+ITDT).
  - HP drives: use the appropriate version of HP\_LTT.EXE, available at [http://h20000.www2.hp.com/bizsupport/TechSupport/DriverDownload.jsp?pnameOID=406731&locale=en\\_US&taskId=135&prodTypeId=12169&prodSeriesId=406729](http://h20000.www2.hp.com/bizsupport/TechSupport/DriverDownload.jsp?pnameOID=406731&locale=en_US&taskId=135&prodTypeId=12169&prodSeriesId=406729)
  - Quantum drives: use **xTalk.exe**

7.

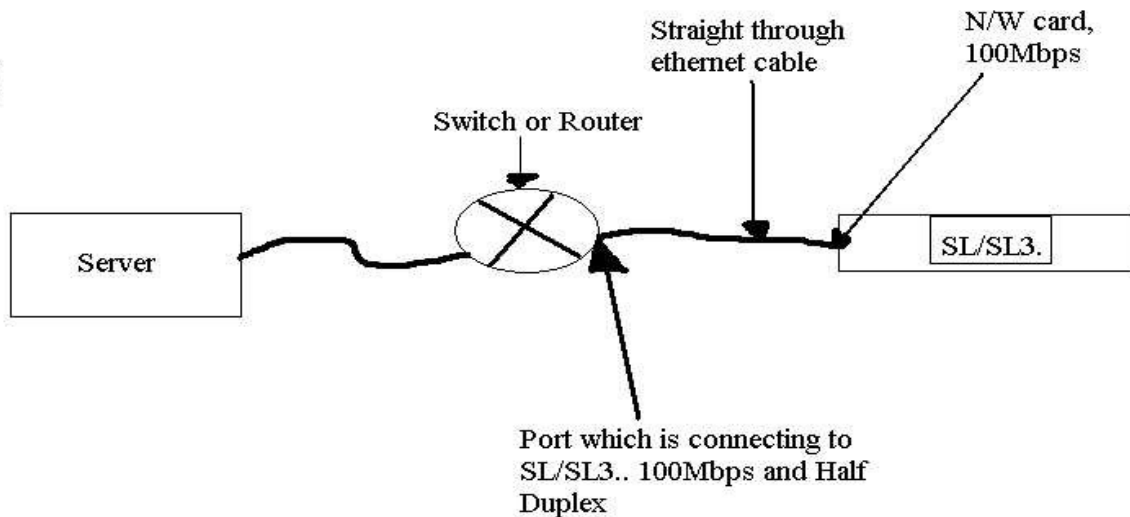


pass. To

1



2



## 8. Backup Exec with Quantum LTO drives reports many soft write errors

### Background:

A large number of soft write errors may be reported by Symantec Backup Exec (on the Drive Properties page) after erase and backup operations with Quantum LTO tape drives.

If an end user reports more than 2400 soft write errors per GB, and backup jobs are failing due to write errors, perform the following.

**Actions:**

- Clean the tape drive several times, and then monitor the soft write error count.
- Insert a brand new tape, and then issue a command to re-tension the tape (via the backup application). Re-tensioning with a new tape is one of the most effective ways to remove stubborn debris that cannot be cleared with a cleaning tape.

**9. Error 93****Background:**

On occasion the SL3 may post a Hardware Error Type (93) on the OCP and in the Hard Event Log. This entry is very intermittent and has no negative effect on the autoloader operation.

**Action:**

- Press the ESC key and clear the error message. The “Hardware Error Type (93)” message on the OCP can always be safely ignored and is only reported if an event is encountered at the 500-hour calibration check.

**10. Calibration Failure****Actions:**

Magazine

- Remove magazine(s).
- Inspect for problems with the movement of the slots by turning the large white gear on the side. Movement should be smooth in both directions.

[NOTE: Magazines can be damaged if mishandled \(dropped\) To avoid magazine damage, handle the magazine as shown on pages 33–35 of the User's Guide, 81-81317-07.](#)

**11. Communication Failure****Actions:**

- Failure between drive and loader – 6E and/or 6F
  - Disconnect the SCSI (Fiber or SAS) cable, Remove all tapes from the magazines and drive, power cycle the unit.
  - If the error persists, get the loader logs.

- With Host and/or Backup software
  - Ensure that the device manager in the PC/Server had been disabled.
  - Check to see if all external cables are correct and seated properly.
  - Check to see if the SCSI termination is correct.
  - Disconnect the SCSI (Fiber or SAS) cable, Remove all tapes from the magazines and drive, power cycle the unit.

## **12. Error 24 in hard queue**

### **Action:**

- Ignore this error and press the ESC key.

## **13. Error B7 – Refer to the attached TSB.**



TSB\_B7 Position Error Immediately After a Move from the Mainlot.pdf