

IBM SDLT Tape drives



H191651

SDLT tape drive all LEDs blinking

Symptoms

- Running backups or restore with a Super DLT (SDLT) tape drive may fail constantly
- Inserted media may be ejected automatically
- Media may not be ejected by the tape drive
- All LEDs of the tape drive are blinking simultaneously

Affected tape backup units

- 110 / 220 GB SDLT Internal SCSI Tape Drive, Option 00N8015
- 160 / 320 GB SDLT Internal SCSI Tape Drive, Option 59P6736
- IBM SDLT320 Tape Autoloader, 3607-16X
- IBM SDLT320 Tape Autoloader, 3623-2SX
- 2U SDLT320 Tape Autoloader, Option 36232SX
- Modular SDLT320 Drive Upgrade Option for the IBM 4560-SLX IBM SDLT/LTO Tape Library, Option 59P6660
- Modular SDLT600 Drive Upgrade Option for the IBM 4560-SLX IBM SDLT/LTO Tape Library , Option 24P8936

Information

When all LEDs of a SDLT tape drive blink, the leader responsible for pulling the tape to the read/write heads may have dropped. The tape drive is no longer able to thread the tape and the media cannot be safely retrieved.

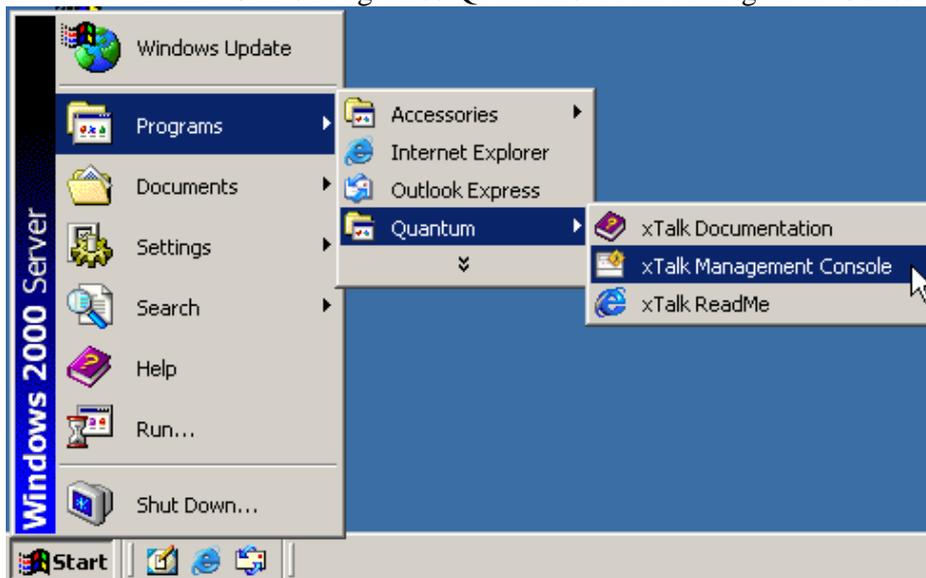
In order to verify this, a SDLT tape drive diagnostic dump must be pulled and reviewed.

Pulling SDLT tape drive diagnostic dumps

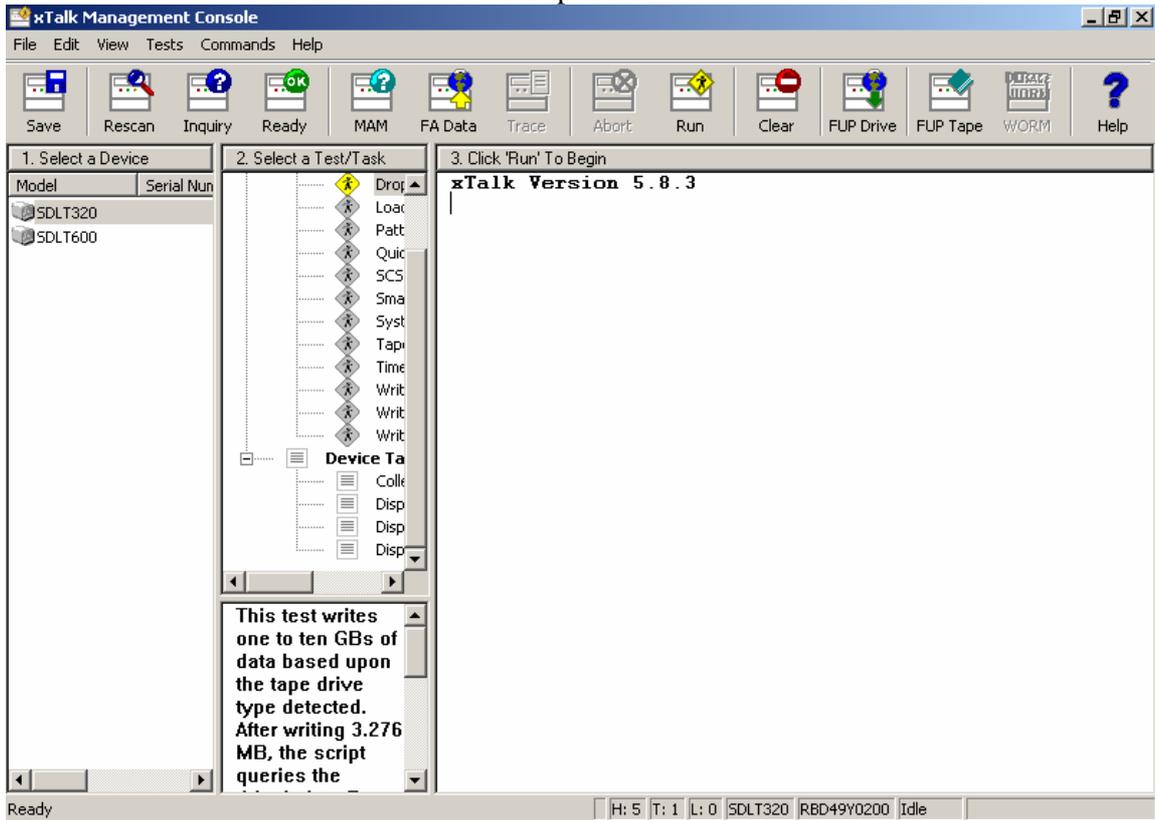
The logs for the SDLT320 and the SDLT600 tape drive sled has to be pulled with the xTalk tool which is available via the System x support document [MIGR-5073759](#)

Note: Depending on the backup application in use, it may be necessary to stop and / or disable the associated Windows services in order to complete the tape drive log pulling successfully. For more information review the backup application User Guide or contact the relevant software support.

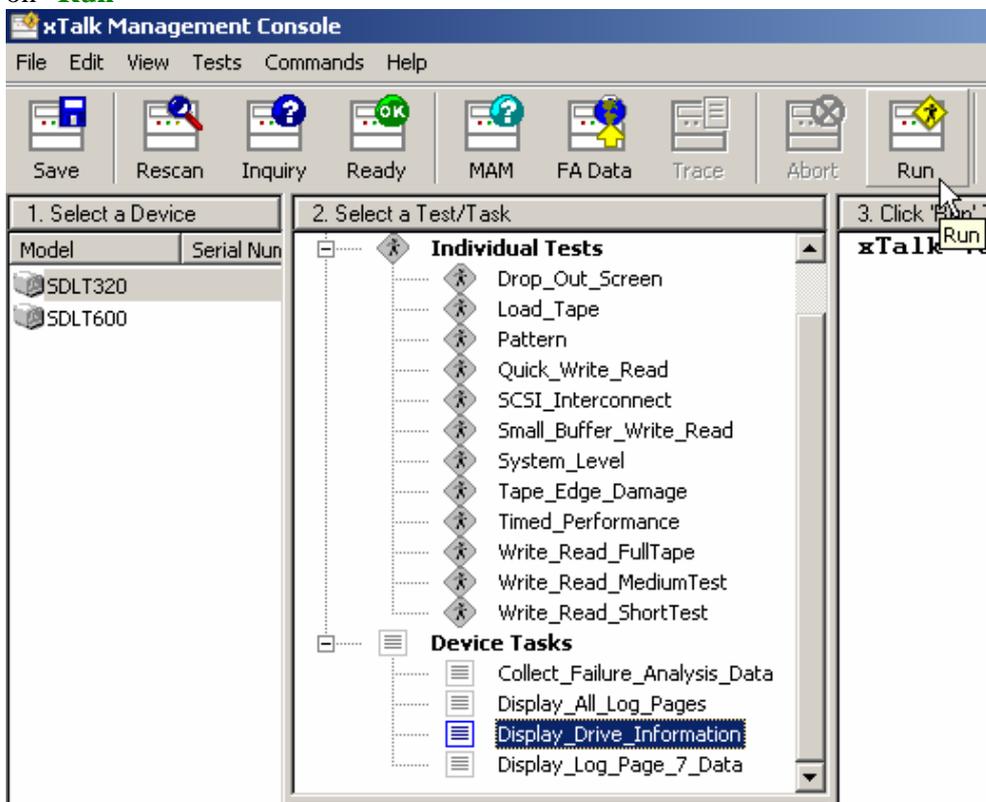
1. Install the xTalk tool from [MIGR-5073759](#)
2. Launch it via the “Start / Programs / Quantum / xTalk Management Console”



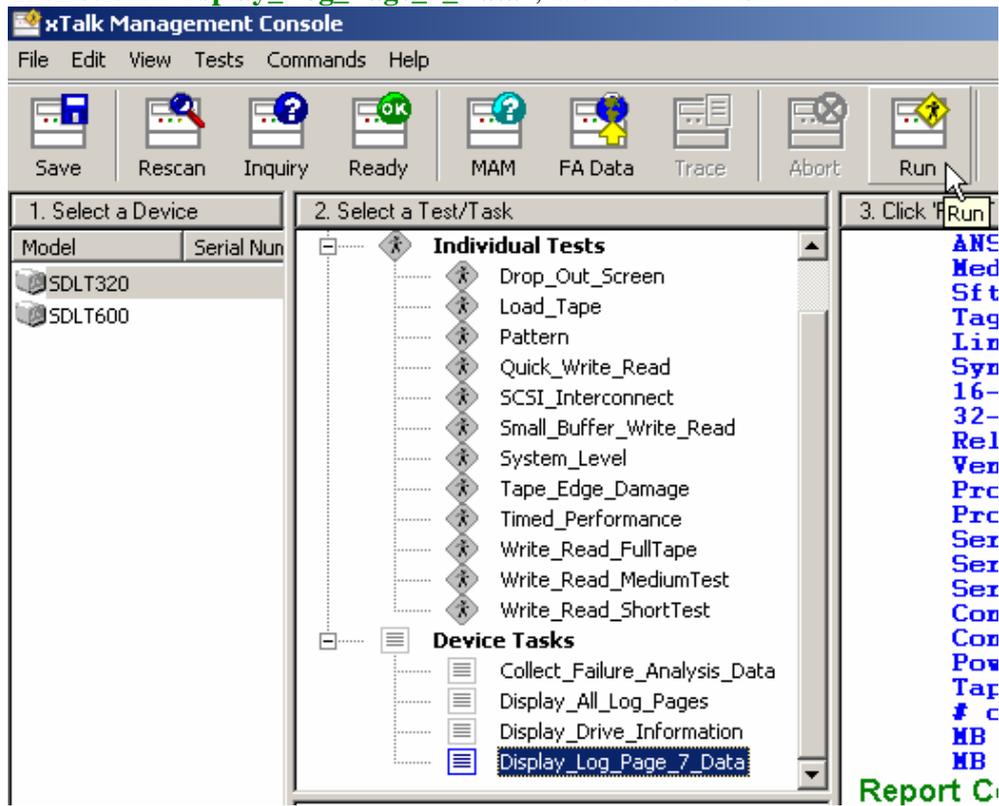
- Once xTalk has been launched it shows all tape drives it can find



- Select the tape drive for which a log has to be pulled
- Click in the “**2. Select a Test/Task**” window on “**Display_Drive_Information**”, and click on “**Run**”



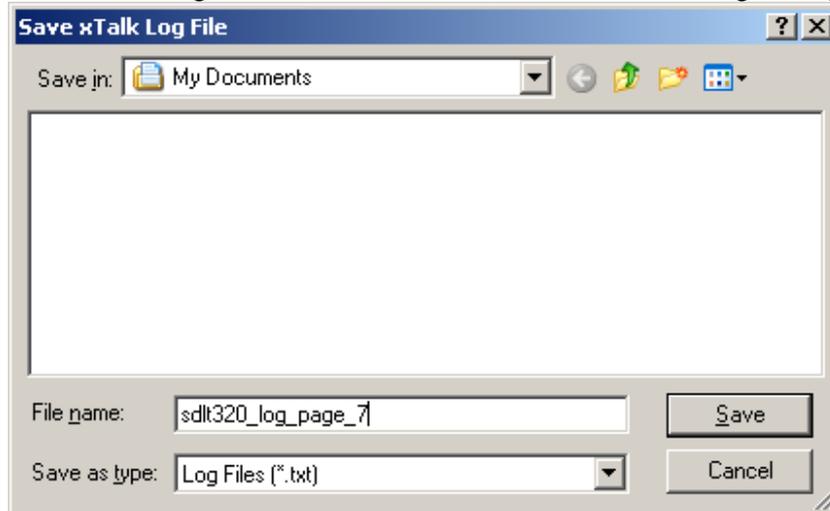
6. Then select “**Display_Log_Page_7_Data**”, and click on “**Run**”



7. Once all information has been collected, save the output by clicking on the “Save” button



8. Enter a meaningful file name and select a location for saving the log file



9. The output file is a text file that can be reviewed using any text editor

What to look for in the SDLT dump log file

When reviewing the SDLT dump log file, search for an entry called **Event: A503**. This entry contains information to whether the SDLT tape drive suffered a dropped leader. Below is a sample A503 entry in the log file:

```
Packet # 156 - Event: A503 (drive error log) [V53-0 30-Jul-2008]
Up = 000:05:51.464 POH/PC= 2513/16
Temp = 30 Motion (Hr:Min) = 229:14 Uptime = 0 days 0:05:51.464
This event is information only and does not necessarily indicate an error
200E0001 00048000 00AB0000 00000002 20000000 00000000 EBF7FFFF 01000002
00100000 00000000 00100000 0DE30678 000
```

If there is in the third packet – see the highlighted packet above - an AB entry, then the SDLT tape drive may exhibit a dropped leader.

Visual SDLT tape drive inspection

In order to confirm a dropped leader a visual inspection of the tape drive can be performed. For this purpose no media must be present in the tape drive.

Push the front bezel of the tape drive upwards and use a torch / flash light to lighten up the internals of the tape drive. Look on the back left hand side of the tape drive if the leader is visible.

Note: For the following picture a SDLT tape drive has been opened up. This has been done for demonstration purposes only. DO NOT open up a SDLT tape drive as this voids your tape drive warranty!



Figure 1: Indicating a dropped SDLT tape leader

If SDLT tape leader can be seen as above then it has been dropped which causes all the various issues described in the section "Symptoms" in this document.

What to do

- Contact the IBM System x technical support for further assistance
- Supply the IBM System x technical support with the SDLT tape drive dump log file for further review
- Record the media type, mark it as suspect media, and do NOT use that piece of media again.
- The media is considered a suspect of the failure and should be inspected
- The SDLT tape drive may have to be replaced. This will be determined by the IBM System x technical support
- Use IBM recommended media only as outlined in support document [MIGR-5074910](#)

Inspecting SDLT tape media for damages

The following section describes how to perform a SDLT media inspection for any fault.

1. Look at the tape cartridge to check for any obvious cracks or other physical damage. Look for broken or missing parts
2. Gently shake the tape cartridge. Listen for any rattling or sound of any loose pieces inside the cartridge. *If you hear anything loose inside, do not use the cartridge.*
3. Hold the tape cartridge so that the end of the cartridge that is inserted into the Super DLTtape drive is facing you, as shown in Figure 2 below. You will see that there is a small opening on the left-hand side of the tape cartridge



Reel Lock 1

Figure 2: Location of one of the two Reel Lock Tabs on a Super DLTtape

Inside and near the centre of this opening, you should see a small plastic tab. This is one of the reel locks. The reel locks can break if the cartridge is dropped. This may be the cause of any rattling sound your hear when your gently shake the tape cartridge. *If this reel lock tab is not visible do not use the cartridge.*

4. Look at the bottom of the tape cartridge, as shown in Figure 3 below

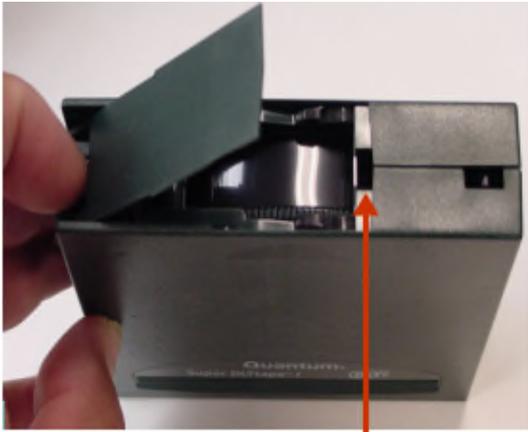


**Spring-Loaded
Hub**

Reel Lock 2

Figure 3: Location of Reel Lock Opening and Spring-Loaded Hub on bottom of Super DLTtape Cartridge

5. Ensure that the tape Leader buckler is within the tape cartridge is in the correct position. To do this, you must open that tape cartridge door. Refer to Figure 4 below.



Leader Buckler

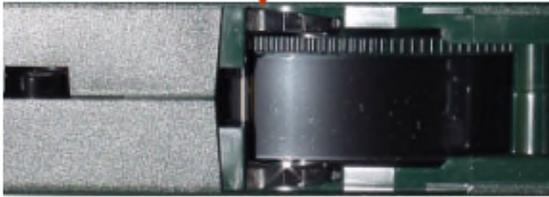
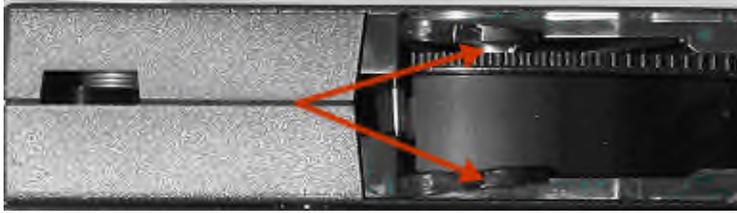
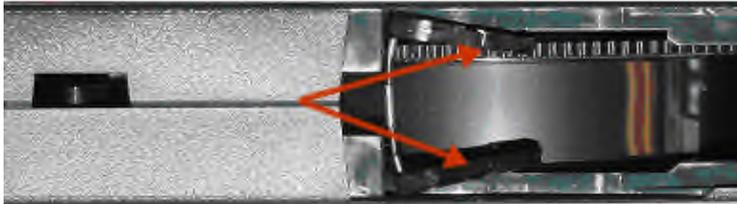


Figure 4: Opening the Door on a Super DLTtape Cartridge Showing Leader Buckler in its Correct Position

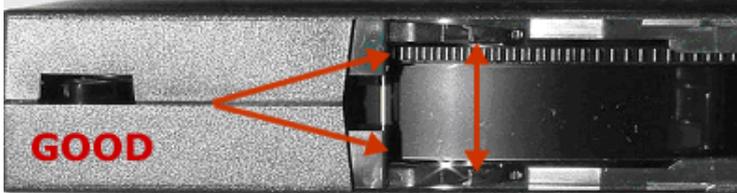
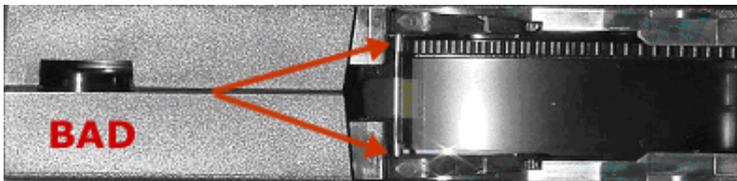
6. Figure 5 shows three different cartridge leader buckler arm problems. No tape cartridge that exhibits the problem shown in the example in Figure E-4 should be used in a Super DLT tape system.



Example 1: "Bent Bucker Arm"



Example 2: "More Severe Bent Bucker Arm"



Example 3: "Slightly pulled and bent Buckler Arm Pin"

Figure 5: Three Examples of Tape Cartridges with Damage Visible During Visual Inspection

7. Finally, check for proper operation of the tape cartridge's Write Protect Switch (Figure 6). This sliding switch, located on the end of the tape cartridge used for the tape label, should snap smartly back and fourth, and the orange tab should be visible when the tape cartridge is set to provide Write Protection (data on the tape cannot be written over).



Figure 6: Location of Write Protect Switch

Additional information on a dropped SDLT leader

In case it is confirmed that the SDLT tape drive leader has dropped, then the source of a dropped leader can have two causes:

1. Defective media. For example, if a data cartridge has been dropped and is then used again, the leader may drop in the tape drive. Excessively worn media can also prevent the tape from threading.
2. Mishandling of the tape in the drive. This is very rare, but the leader could be dropped by improper tape drive handling.

When the tape drive is replaced because of a dropped leader, the media should also be replaced at the same time because the media may cause a dropped leader again in the new tape drive.

Only IBM Servicers should attempt to reattach the dropped leader at designated facilities. Reattaching the dropped leader should not be performed in the field.

Reattaching the dropped SDLT leader by anyone except other than specifically designated servicers voids the warranty and support of the SDLT tape drive, as it can not be guaranteed that the tape drive will function to its specifications.

For replacement of your currently used media, please refer to the IBM System x recommended media list. For further information refer to support document [MIGR-5074910](#).

THIS DOCUMENT WAS WRITTEN BY CHRISTIAN FLATSCHER

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