

IBM VXA-2 and VXA-320
tape drives



Performing the IBM VXA-2 and
VXA-320 Internal Self Test (IST)

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Preface

The VXA Internal Self Test (IST) allows you to perform a tape drive test without any interference from the host OS, or the SCSI subsystem. It will help to determine whether the tape drive exhibits a hardware fault or not.

It does not check for any communication issues between the tape drive and the host server.

This document helps to test one of the following IBM VXA tape drives for a hardware fault:

- IBM 80/160 GB VXA-2 tape drive, p/n 59P6746
- IBM VXA-320 tape drive, p/n 25R0045
- IBM VXA-320 tape drive in an IBM VXA320 Tape Autoloader, 8769-1VX

Checks to be performed before executing the IST

Check if:

- Any of the used data cartridges is affected by the Quality alert for Exabyte brand media. For additional information refer to Retain tip [H193634](#) in support document [MIGR-5076660](#)
- The tape drive is installed correctly into the host server. For additional information refer to Retain tip [H191246](#) in support document [MIGR-5071554](#)
- The tape drive is installed in an IBM 8765-1UX enclosure. Check if Retain tip [H193333](#) per support document [MIGR-5070600](#) applies
- The tape drive is attached to a dedicated SCSI Host Bus Adapter (HBA). It should be attached to a dedicated SCSI HBA
- The SCSI ID of the tape drive. It must be either SCSI ID 5 or 6; for the IBM 1U VXA-320 Tape Autoloader, 8769-1VX, the default values should be selected
- How the tape drive has been installed in an IBM System x x3400 or x3500 server. For these servers it is recommended to temporarily remove the blue plastic rails from the tape drive that were shipped with the server and are used to install the tape drive into the server
- IBM Recommended Media is in use. For additional information refer to support document [MIGR-5074910](#)
- The tape drive is on the latest firmware code level. The latest firmware code can be obtained from the [TAPE-FILES](#) support document

Prerequisites and additional information

- The test is run independently from the SCSI bus, Operating System, software, and drivers
- The test is not designed as a media test. It may, however, indicate a tape failure if the location that the drive is trying to write to during the test is bad
- This test is designed to test hardware, not media
- This test wipes out all data on the tape, as well as the tape history
- It is not necessary to reformat or erase the tape after the test. It can be used after the test for normal operation
- VXA-2 Tape Drive: must be on firmware code v2123 or higher
- VXA-320 Tape Drive: must be on firmware v320C or higher
- 1x Unexpired VXA Cleaning cartridge X style
- 1x Unused brand new VXA X6, X10 or X23 data cartridge
- Ensure that no cartridge is loaded in the drive prior to initiating the VXA IST
- The IST test can also be performed with the VXA-320 tape drive in an IBM 1U VXA-320 Tape Autoloader, 8769-1VX. For this test the tape drive should be removed from the Autolader but still be connected to the SCSI HBA and the Autoloader power supply. For additional tape drive removal and installation instructions refer to the IBM VXA320 Tape Autoloader User's Guide per support document [MIGR-64795](#)

Actions for initiating the IST

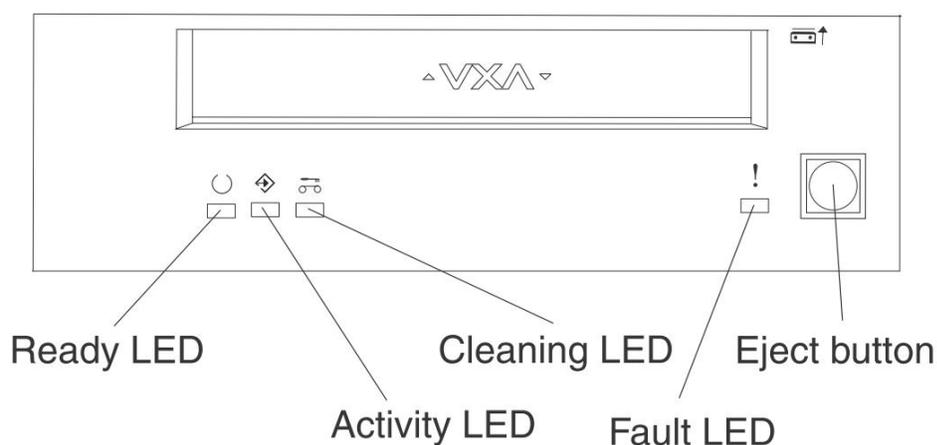


Figure 1: VXA tape drive LED locations

1. Load a cleaning cartridge into the tape drive to clean the drive. When completed remove the cleaning cartridge from the drive
2. Press the blue eject button for 7 seconds
3. When the Ready LED blinks rapidly release the blue eject button and insert the new X6, X10 or X23 data cartridge within 15 seconds
4. The tape drive performs the IST which can take up to 15 minutes
5. After successful completion the media will get ejected

Document IST results

Please fill in the below table with the test results, once all IST tests have been completed. Provide these results to the IBM System x support team for review.

LED / LED status	LED 1 Ready LED 	LED 2 Activity LED 	LED 3 Cleaning LED 	LED 4 Fault LED 
Illuminated solid?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blinking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Green?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amber?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Red?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Media loaded?	<input type="checkbox"/>			
Media unloaded?	<input type="checkbox"/>			

What to do if the IST fails

A failing Internal Self Test is indicated by the fact that any of the LED on the tape drive may be illuminated or blinking. If this is the case then the tape drive's IST it can be repeated as follows in order to confirm the previous LED status:

- Power off the host server and disconnect the VXA tape drive from the SCSI bus. Turn the host server on again and repeat the IST procedure with a new X style of data cartridge. Retire the cartridge that did not yield a proper result

If during all these alternative ISTs the LED result is the same then the VXA tape drive has not passed the IST.

Refer to the next page for IST Status and results.

IST Status and results

The below chart indicates the tape drive's LED status.

- Fields left blank indicate that the according LED is turned off
- The background colour of the cell indicates the LED colour
- If the IST passes – i.e. all LEDs are turned off - then the tape drive has no hardware fault and no further tests are required

Action / LED status	LED 1 Ready LED 	LED 2 Activity LED 	LED 3 Cleaning LED 	LED 4 Fault LED 	Tape (Media) status
IST initiated	Flashing rapidly				Unloaded
IST running	Flashing rapidly	Flashing			Loaded
IST passed	off	off	off	off	Unloaded
IST passed (cleaning needed)			On		Unloaded
IST media failure			Flashing		Loaded
IST media write-protected		Flashing	Flashing		Unloaded
IST media not compatible		Flashing	Flashing		Unloaded
IST drive failure				Flashing	Loaded
Test failed (1)	Flashing (2)			Flashing	n/a
Test failed (1)		Flashing (3)		Flashing	n/a
Test failed (1)			Flashing (4)	Flashing	n/a

- 1) If the IST test has failed, failure modes will be indicated by any combination of Amber Flashing LED's 1 (Ready), 2 (Activity), and / or 3 (Cleaning) as listed above, in combination with a Red Flashing LED4 (Fault). Multiple LEDs indicate multiple failures.
- 2) Media Pool, indicates that a cartridge used previously in the media pool is damaged and should be replaced
- 3) Media Problem
- 4) Drive Problem

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This document was written by Christian Flatscher
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