

## **Group Assignment 2**

### **Research problem- 3**

#### **Chapter 5**

##### **Group Members**

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##### **Research Problem**

You are the chief information officer of a rapidly growing company. You manage several dozen small and medium servers and are about to acquire your first mainframe to setup a data warehouse. You currently have AIT tape drives but you wonder whether they will be enough in future. You're concerned about tape drive capacity, reliability and cost and consider switching to another tape format or technology. Which of the current tape formats provide the highest capacity at lowest cost? Which is most reliable? Which is least likely to become obsolete 5 years from now? Which, if any, should you buy?

##### **Solution**

Since the company is growing rapidly, there will be a tremendous increase in the demand of servers so as to hold lot of data. Hence, tape drives to be used for backup, should hold high amounts of data. In accordance to this, being the Chief Information Officer, I would certainly switch over from the current AIT (Advanced Intelligent Tape) tape drive format to the latest LTO (Linear Tape Open) format. Moreover, the enhancement in company data storage facilities can be more profitable for the company as more data can be assessed and hence the company could afford the expenses of LTO.

### Description of LTO Tape Drives

Linear Tape Open (LTO) was developed jointly by HP, IBM and Seagate to provide a viable option in the series of storage tape technologies. As included in the name, LTO is an “open format” technology which means that users will have access or deal with multiple sources of media. Another advantage of it’s being open source is that it enhances the compatibility with different vendors. In conclusion, LTO is an open source technology with high compatibility. Since LTO provided more data storage (about 800GB), many companies thought of it as a suitable alternative to the rapidly evading AIT tape drives.



Image of IBM LTO tape drive

### Description of AIT Tape Drives

Advanced Intelligent Tape (AIT) is high capacity magnetic data storage format developed and controlled by Sony. It uses helical scan method for reading and writing operations. Helical scan precisely is a method used to record high frequency signals on magnetic tapes. AIT provides excellent data storage facilities and the highest in its class. Initially companies use to rely on DDS storage drives with low storage capacity, for information storage. However, after the evolution of AIT which provided storage capacity of about 400 GB and consumed less power, businesses switched over to AIT.



Image of Sony AIT tape drive

**Table of Comparison between LTO and AIT**

Parameters	Linear Tape Open (LTO)	Advanced Intelligent Tape (AIT)
Capacity	800GB maximum up to 6.4 TB in higher range devices	400GB
Reliability	Highly reliable as it accepts lossless data compression technique.	Comparatively less reliable as data loss occurs during storage.
Cost	Costly as compared to AIT ( \$649- \$4000)	Relatively cheap (\$250- \$900)
Speed	80 Mbps and can exceed to about 540 Mbps in higher range devices.	12 Mbps and can exceed up to 78 Mbps.

Durability	Highly durable as it's an open format technology and hence can work well for about 15-20 years.	Less durable as compared to LTO. It may have a life span to about 5 years.
Portability	Being open source enhances the compatibility of LTO	It is also compatible but could not exceed the portability standards of LTO.
Market Share	As per the survey in 2010, LTO holds about 87.2% of the market share.	The market share of AIT lies within the remaining 12.8%

### **Reasons for choosing LTO tape drive as an replacement for AIT**

- LTO provides data storage capacity of about 800GB – 6.4TB in higher range devices. Since a growing company will require high data storage capacity for backup, LTO serves the purpose here.
- Moreover, LTO has Streaming Lossless Data Compression technique. Hence there is very little or no loss of data occurring while storing information in LTO for backup.
- Though, the cost of LTO is comparatively higher than AIT, the data storage and compatibility advantages that it provides over AIT, makes it a viable option to choose.
- Use of LTO tape drive is least likely to be obsolete after 5 years as it's an open format technology that can evolve with time rather than being replaced with an entire new tape drive format. Since users can provide their inputs to enhance the performance of LTO, the technology will only become better with time. Furthermore, compatibility of LTO also makes it a better choice than AIT.
- Apart from the above important advantages, LTO provides a few subsidiary advantages as well. It beats AIT in speed, performance, durability and market share.
- Also, since LTO holds a large market share in the current business scenario, as a Chief Information Officer of the company, I would go for LTO so as to keep a check on business competitors and also gain a higher market value for my company.

## **References**

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Image links- [https://www.google.com/search?q=what+is+AIT+tape+drive%3F&bav=on.2.or.r\\_qf.&biw=1366&bih=653&bvm=pv.xjs.s.en\\_US.E\\_HR746bqA4.O&um=1&ie=UTF-8&hl=en&tbm=isch&source=og&sa=N&tab=wi&ei=scxZUt3BOoKYqgGwo4HoBQ#hl=en&q=IBM+LTO+tape+drive&tbm=isch&um=1&facrc=\\_&imgdii=\\_&imgrc=FQuKVPJa92KbZM%3A%3BiXY3ipallYIE2M%3Bhttp%253A%252F%252Fimages.monstermarketplace.com%252Fdata-storage-and-backup-solutions%252Fibm-lto-4-external-tape-drive-standalone-half-height-sas-ultrium-800gb-native-1-6tb-compressed-ultrium-part-3580s4v-46c2738-46c2759-3580h4v-400x210.jpg%3Bhttp%253A%252F%252Fwww.monstermarketplace.com%252Fdata-storage-and-backup-solutions%252Fibm-lto-5-external-tape-drive-ts2250-half-height-hh-sas-ultrium-1-5tb-native-3-0tb-compressed-part-3580s5e-3580h5s-46c2762-46c2740%3B400%3B210](https://www.google.com/search?q=what+is+AIT+tape+drive%3F&bav=on.2.or.r_qf.&biw=1366&bih=653&bvm=pv.xjs.s.en_US.E_HR746bqA4.O&um=1&ie=UTF-8&hl=en&tbm=isch&source=og&sa=N&tab=wi&ei=scxZUt3BOoKYqgGwo4HoBQ#hl=en&q=IBM+LTO+tape+drive&tbm=isch&um=1&facrc=_&imgdii=_&imgrc=FQuKVPJa92KbZM%3A%3BiXY3ipallYIE2M%3Bhttp%253A%252F%252Fimages.monstermarketplace.com%252Fdata-storage-and-backup-solutions%252Fibm-lto-4-external-tape-drive-standalone-half-height-sas-ultrium-800gb-native-1-6tb-compressed-ultrium-part-3580s4v-46c2738-46c2759-3580h4v-400x210.jpg%3Bhttp%253A%252F%252Fwww.monstermarketplace.com%252Fdata-storage-and-backup-solutions%252Fibm-lto-5-external-tape-drive-ts2250-half-height-hh-sas-ultrium-1-5tb-native-3-0tb-compressed-part-3580s5e-3580h5s-46c2762-46c2740%3B400%3B210)

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