

Tape Library Selection Criteria

In a market with dozens of products to choose from, selecting the right tape solution can stymie even the most technically-savvy of consumers. From standalone drives to autoloaders to very large automated libraries, one of the challenges is knowing where to start, and which questions to ask. This worksheet is designed to help you consider potential tape solutions based on more than one hundred selection criteria and questions.

Fill in the the following tables as accurately as possible:

Current tape environment

Tape drives	Drive 1	Drive 2	Drive 3	Notes
Name/type of drive				
Number of drives				
Paths/channels				
Native data rate				
Max theoretical data rate ¹				
Compression rate				
Tape media	Media 1	Media 2	Media 3	Notes
Cartridge type				
Cartridge capacity				
Maximum theoretical capacity ²				
Tape libraries	Library 1	Library 2	Library 3	Notes
Type of library				
Number of libraries				
Cartridge slot capacity				
Cartridge slots in use				
Number of drives installed				
Number of drive slots available				

¹Maximum theoretical data rate = number of drives x data rate

²Maximum theoretical capacity = number of cartridges x unit capacity



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Current backup environment

Backup software	Product 1	Product 2	Product 3	Notes
Supported operating systems				
Number of servers				
Full backups -size (MBs) -number of cartridges -number of sets retained				
Incremental/differential backups -size (MBs) -number of cartridges -number of sets retained				
Backup elapsed time				
Service level agreements -Are service level agreements met?				
Restore time objectives				

Evaluating new tape drives

Drive specifications	Drive 1	Drive 2	Drive 3	Notes
Native/compressed data rate				
Buffer size				
Tape load time				
Average time to first search				
Average subsequent search times				
Maximum rewind time				
Compression				
Fibre channel support				
FICON support				
ESCON support				
SCSI support				
Emulation modes -3480,3590				
WORM support				

Evaluating new tape drives *continued...*

Drive specifications	Drive 1	Drive 2	Drive 3	Notes
Conversion -Can the new drives read existing cartridges? -Do you have to retain older tape drives to read existing cartridges? -Do you plan to convert older cartridges to newer cartridges? -If so, will this be done in-house? Hire professional services? What is the cost?				
Maintenance				
MTBF tape load/unload				
Head life				
Recommended vendor maintenance				
Spare parts -location				
Maintenance agreement -24x7?				
Proactive/predictive maintenance				

Evaluating new tape libraries

Library specifications	Library 1	Library 2	Library 3	Notes
Number of cartridge slots				
Total library capacity ³				
Number and type of drives supported				
Native throughput per hour (minimum/maximum configurations)				
Number of mounts/dismounts per hour				
Mail slots -how many?				

³Total library capacity = number of slots x cartridge capacity

Evaluating new tape libraries *continued...*

Library specifications	Library 1	Library 2	Library 3	Notes
Can library be extended? -additional capacity				
Library partitioning -Is it available? -How granular?				
Remote vaulting support -Is it supported? -Equipment required?				
Library management software -Local and remote support available? -Does it interface with ISV software? -Cost?				
Training -What is required? -What is the cost?				
Physical dimensions -height -width -depth				
Weight -Floor loading requirements				
Maintenance				
MTBF				
Installation and shipping costs -Are installation and shipping included in the cost? -How long will it take to install? -Any special shipping instructions required? -Special door clearances required?				
Redundant parts -Which parts are redundant?				

Evaluating new tape libraries *continued...*

Library specifications	Library 1	Library 2	Library 3	Notes
<p>Recommended vendor maintenance</p> <ul style="list-style-type: none"> -How often? -How much down time is required? -Are some parts hot-swappable? -How often are microcode changes available? -How long do the changes take? -Do microcode changes require the library to be offline? 				
<p>Spare parts</p> <ul style="list-style-type: none"> -Where are they located? 				
<p>Maintenance agreement</p> <ul style="list-style-type: none"> -What is the warranty period? -24x7? Other levels of maintenance? -What is the cost for maintenance? -Escalation procedures when problems occur -What problems are not included in the maintenance agreement? 				
<p>Call home-remote maintenance</p>				
<p>Proactive/predictive maintenance</p>				

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Sizing the new backup environment

Backup environment	Responses	Notes
<p>Full backups</p> <ul style="list-style-type: none"> -Size (MBs) -Number cartridges per set -Number of sets retained -How many sets do you want retained in library? -Expected growth rate 		
<p>Incremental/differential backups</p> <ul style="list-style-type: none"> -Size (MBs) -Number of cartridges -Number of sets retained -How many sets do you want retained in library? -Expected growth rate 		
<p>New service level agreements</p> <ul style="list-style-type: none"> -Do new service level agreements have to be established? 		
<p>Desired backup elapsed time</p> <ul style="list-style-type: none"> --If you need to improve the current elapsed time for backups, does the vendor have a tool to size the proper configuration to achieve that goal? -Will the vendor guarantee a certain level of performance? -What will be the penalties if that performance level is not met? 		
<p>Restore time objectives</p> <ul style="list-style-type: none"> -What are the new restore time objectives? -Does the vendor have a tool to predict restore times? -Will the vendor guarantee a certain level of restore time? 		

Sizing a space management environment (HSM)

Space mgmt environment	Responses	Notes
<p>If you are planning to implement space management</p> <ul style="list-style-type: none"> -What will be the policies established? -What data will be under control of space management? -What is the average size of the data that will be under its control? -How often will data be migrated? -Expected growth rate 		
<ul style="list-style-type: none"> -Does the vendor have a tool to help size this environment? -How many additional drives are required to support this environment? -How many additional cartridges are required to support this environment? -Is there a cost for the tool? -Are professional services available to set up the environment? -What is the cost of their services? 		

Sizing an archive environment

Archive environment	Responses	Notes
<p>If you are planning to archive emails</p> <ul style="list-style-type: none"> -What is the average size of an email message? -How many employees? -What is the avg number of emails an employee receives in a year? 		

Sizing an archive environment *continued*...

Archive environment	Responses			Notes
-How long do you need to retain the emails? -Expected growth rate?				
If you are planning to archive other objects -What types of objects? -Size (MBs) -What is the average size -How many are there? -Retained for how long? -Expected growth rate?				
Does the vendor have a tool to help size this environment? -Cost for the tool? -Are professional services available to set up the environment? -What is the cost of their services?				
What is the target media for archival information? -What is the vendor's estimated useful life for the media? --How long will the vendor support the drive and media? -What is the future roadmap for the drive or media? -Will newer drives be able to read older media?				
Space-saving tools ⁴	Product 1	Product 2	Product 3	Notes
-What are the hardware/software requirements? -OS compatibility -What is the cost? -What is the projected storage savings?				

⁴There are many tools on the market that will reduce content space consumption using a variety of methods. These tools, for example, will only store one occurrence of an object, say a PowerPoint presentation, and reference the object multiple times rather than create multiple space-consuming copies. Tools may be software-based, hardware-based, or a combination of the two (e.g., an appliance).