

Storage Decisions

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DISK RFP WORKSHOP

Dianne McAdam
Senior Analyst and Partner
Data Mobility Group

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Agenda

- General RFP Rules
- Basic Disk Questions
- Comparing Performance
- Software Features
- Replication Products
- Service and Support

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General RFP Rules

- Give vendors time to respond.
 - 2 weeks for small RFP
 - 1 month for large RFP
- Ask specific questions.
 - General questions get general answers.
- Request customer references.

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General Disk Questions

Disk drives

- Minimum and maximum number of drives
- Speed of drives
- RAID set
- Raw and usable capacity

Cache sizes

- Minimum and maximum cache sizes

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General Disk Questions, II

Operating systems support

Connectivity

- Fibre Channel, FICON, SCSI, ESCON

Number of LUNs and volumes supported

Emulation modes

- 3390 models

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General Disk Questions, III

Environmental requirements

- Electrical
- Air Conditioning
- Dimensions
- Weight

Training

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Future Considerations

Upgrades

- Additional disk capacity, cache
- Additional frames/modules

Technology upgrade

- Cost to upgrade to new technology

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Disk Performance

Bandwidth is not a true indicator of response time.

Response time will vary by

- Application
- Cache sizes
- Cache algorithms
- RAID level
- Disk type

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Comparing Disk Performance

Vendor benchmarks measure different

- Block sizes
- I/O rates
- Cache hits

Storage Performance Council (SPC) is only universal benchmark available.

- www.storageperformance.org
- Read the fine print!
- Configurations can vary.

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Software Products

- Local replication
 - Physical copies
 - Logical copies
- Remote replication
- Disk management software

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Replication Products

Local replication products not all the same

Physical copies (clones)

- Entire volume copied
- Requires twice the capacity

Logical copies

- Create a new image without copying data.
- Copy on first write.

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Questions About Physical Copies

- Time to establish clone
- Maximum number of clones per volume
- Maximum number of clones per storage subsystem
- Time and technique to synchronize volumes
- Can restore from clone?
- Ease of configuration of clones
- Software to manage clones

Questions About Logical Copies

- Maximum number of copies per volume
- Maximum number of copies per storage subsystem
- Require pre-allocation of save area?
- Can restore from logical copy?
- Ease of configuration of copies
- Software to manage copies

Questions About Remote Replication

- Synchronous and asynchronous mode supported?
- Requirements of remote subsystem
 - Same type and model?
- Maximum number of replicated volumes
- Time to establish remote volume
- Time and technique to re-establish volumes

Questions About Remote Replication, II

- Maximum number of volumes that can be replicated
- Number and type of links supported
 - FICON, Fibre Channel, GigE
- Support for more than 2 datacenters
- Replicate one volume to two different subsystems
- Integration with copying software

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Disk Management Software

Interface with in-house/future products

Ease of installation and use

Additional console required?

Commitment to open standards

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Beware of Additional Costs

Cost for

- Freight
- Installation

Additional software costs

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Beware of Additional Costs, II

Upgrade costs

Professional services

- Implement software

Training

Migration

- How long?
- Available tools

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Service and Support

- How many service people are local?
- What is the reputation of the service group?
- Remote support
- Alerts
- Debugging/ predictive tools
- Reliability of equipment
- Spare parts and logistics

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Service and Support, II

- Microcode updates
 - How frequently
 - How lengthy
 - Disruptive/non-disruptive

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Questions?

More details on worksheet

Contact information:

dmcadam@datamobilitygroup.com

Thank you.

**Ms. McAdam will be available in the
Ask-the-Expert booth in the Exhibit Hall:
Monday 5-6 PM**
