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# Optimizing Data Protection: Selecting the Right Storage Devices for Your Strategy

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***Abstract: Choosing the appropriate storage devices is critical for optimizing data protection strategies. This article explores various storage options, including disk-based, deduplication, tape, network, cloud, and OST devices, offering insights into their ideal use cases. By understanding the benefits and applications of each storage type, administrators can make informed decisions to enhance their data protection and recovery efforts, achieving an effective 3-2-1 data protection strategy.***

## I. INTRODUCTION

In today's complex data protection landscape, selecting the right storage devices is crucial for ensuring robust backup and recovery solutions. While experienced Backup Exec administrators are often well-versed in choosing suitable storage options, newer administrators may require additional guidance to validate their choices. This article provides an in-depth examination of the various storage devices supported by Backup Exec, highlighting their benefits and ideal use cases. The goal is to assist administrators in aligning their storage choices with their data protection objectives, ultimately optimizing their backup and recovery strategies.

### *A. Disk Backups (Backup-to-Disk aka B2D)*

Disk devices are often preferred for their ability to achieve faster backups and shorter backup windows due to:

1) *Faster Writes:* Disk writes (I/O) are quicker compared to tape (sequential writing) or cloud storage, which depends on internet bandwidth.
2) *Reduced Time to Data:* Disk devices offer rapid access to data with automatic discovery of local disk volumes, unlike tapes, which can have longer access times.

Ideal Use Cases

- Frequent incremental backups
- High frequency of restore requests
- Needs for rapid backup and restore operations

### *B. Deduplication Storage*

Deduplication devices help save costly disk space by eliminating duplicate data. Benefits include:

1) *Cost and Time Savings:* Reduces storage needs and speeds up backups.
2) *Reduced Network Load:* Client-side deduplication processes data on the client machine, sending only unique data to the media server, which is beneficial in low-bandwidth scenarios.
3) *Optimized Transfer:* Efficient data transfer over LAN/WAN for cost-effective disaster recovery.
4) *Recommended Practice:* Follow best practices for deduplication to maximize its benefits.

### *C. Cloud Deduplication Storage*

Cloud storage offers scalable, pay-as-you-go solutions and is advantageous for:

1) *Redundancy:* Off-site backups fit well into the 3-2-1 data protection strategy.
2) *Cost Efficiency:* Utilizes cloud storage tiers for long-term retention at minimal costs.
3) *Security:* Ensures data encryption during transit and at rest.

Use Case: Ideal for creating off-site backups and long-term retention.

### *D. Cloud Connector*

For organizations with S3-enabled object cloud storage, Backup Exec can:

1) *Leverage S3 Storage:* Store backups with SSL-enabled communication for high security between the backup server and cloud storage.

 

*E. Tape Devices*

Tape devices are cost-effective, especially considering the initial investment. They are ideal for:

*1) Redundant Copies:* Creating off-site backups to guard against single points of failure in disaster scenarios.

Ideal Use Case: Long-term storage and off-site redundancy where immediate restore speed is less critical.

*F. OST Devices*

Open Storage Technology (OST) devices offer:

*1) WORM Capability:* Data immutability support starting from Backup Exec 21.4.

*2) Recommended Appliances:* EMC Data Domain, HP StoreOnce, Quantum DXi, and Fujitsu Eternus CS800.

Use Case: Suitable for environments needing appliance-level deduplication and WORM support.

*G. SAN & NAS Storage Devices*

SAN and NAS storage options include:

*1) SAN (Storage Area Network):* Present LUNs to the backup server to create backup destinations.

*2) NAS (Network Attached Storage):* Connect via UNC paths to specify NAS shares as backup targets.

Use Case: Effective for network-based backup storage solutions.

Important Note:

- All storage devices supported by Backup Exec come with lifecycle management policies (DLM).
- They are equipped with encryption and compression capabilities.
- Devices such as B2D, deduplication, and disk cartridge devices are protected against ransomware attacks.

By choosing the appropriate storage devices, administrators can effectively implement a 3-2-1 data protection strategy, ensuring multiple copies of data across different media and at least one off-site location.

## II. ACKNOWLEDGEMENTS

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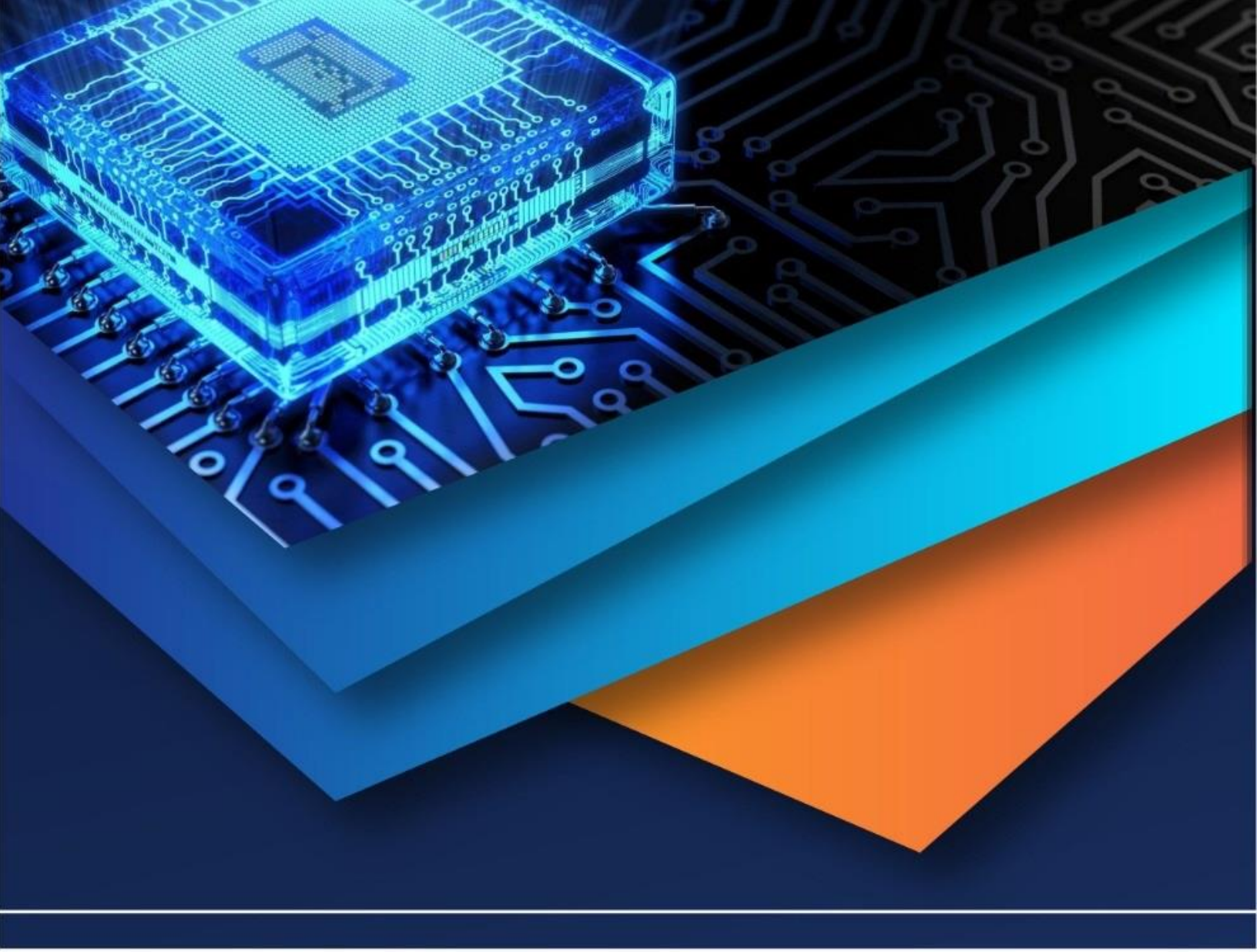

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