

3-2-1 Preservation

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What is 3-2-1 Preservation?

- **3 Copies of data**
- **Using 2 Different Storage Media/Technologies**
- **1 Copy Offsite**

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**Why is 3-2-1 Preservation
Important today?
Data Resilience
Hardware Failure
Cyber Attacks
Natural Disasters
Compliance Requirements**

Past implementations

- Primary copy – local storage
- Copy on external storage
- Copy on tape media storage remotely



Past environment issues with growth

- Large increases in data to be preserved (50Tb to 800Tb in 12 months)
- Increased local data center costs
 - Staffing
 - Hardware
 - Physical space





Current Environment

- 3-2-1 is still applicable
 - One production copy (AWS)
 - Read/Write
 - One quickly available copy (AWS)
 - Read Only (WORM)
 - Discussing third copy (LTO-9)
- If we use the cloud
 - Are using two zones (~60 miles apart) adequate or are two regions needed?
 - Should it utilize two separate cloud services?
 - Is using a snapshot adequate (often becomes expensive so fewer snapshots can be kept)?
 - If we use a different region is a tape copy needed to provide 3-2-1 protection?



Thank you

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