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Tape in the Cloud
Why Tape?

Source: data growth projections from IDC White Paper – #US44413318
The data center is out of balance
A large fraction of data is cold…

… and tolerates higher latency
Times change!

2006

"Tape is dead, Disk is Tape, Flash is Disk, RAM locality is king"

Microsoft

2015

"All cloud vendors will be using tape and will be using it at a level never seen before"

Microsoft

http://research.microsoft.com/en-us/um/people/gray/talks/flash_is_good.ppt
Why tape is interesting again?

Cost

@ hyperscale
HDD Cost 3.7x Tape
(Ref: MS Azure 2016)

Scaling

Security

- Airgap
- Encryption
- Quantum computing safe tape demo

INSIC Tape Capacity
Scaling 40% CAGR to 2029
2017 Demo: 201 Gb/in² → 330 TB Capacity
Why isn’t tape more widely used?

Perception: tape hard to use

Reality: highly automated

20TB Cartridge up to 351 PB per library
Open Source Software for Tape Integration

LTFS DM for File Storage

Swift HLM for Object Storage

Poster and Oral Presentation in OCP Symposium
“The reports of my death have been greatly exaggerated.”

-Mark Twain
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