

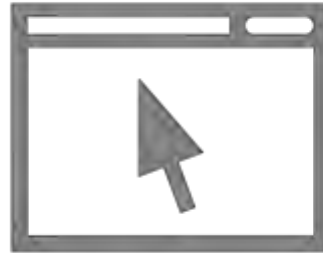
# Designing and Managing Large, Long-Lived Archives Efficiently

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Oracle StorageTek Archive Solutions  
May 16, 2017

# Value of Efficiently Designed Archives



**Lower Costs**



**Improve Efficiencies**



**Ensure Access**

# The Shift to Cloud Impacts Archive Design

**64%**

of CIOs expect  
cloud to impact  
their business

**15%**

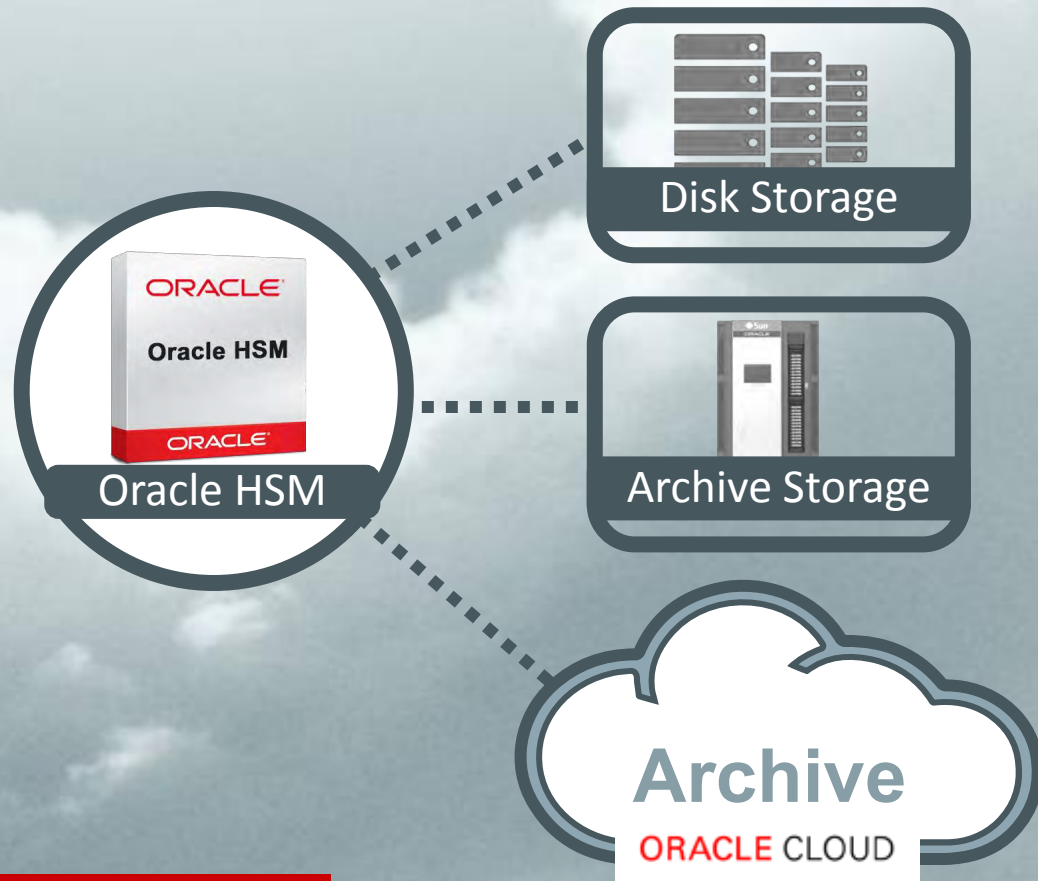
Y/Y Increase in  
Cloud IT spend  
through 2020

**-1.8%**

Annual Decline in  
Traditional IT HW  
through 2020

Source: Deloitte "2015 Global CIO Survey", <http://www2.deloitte.com/content/dam/Deloitte/at/Documents/technology-media-telecommunications/cio-survey2015.pdf>  
Source: IDC "Worldwide Cloud IT Infrastructure Hardware Spending Forecast, 2016-2020", December 2016 (#US41985416)

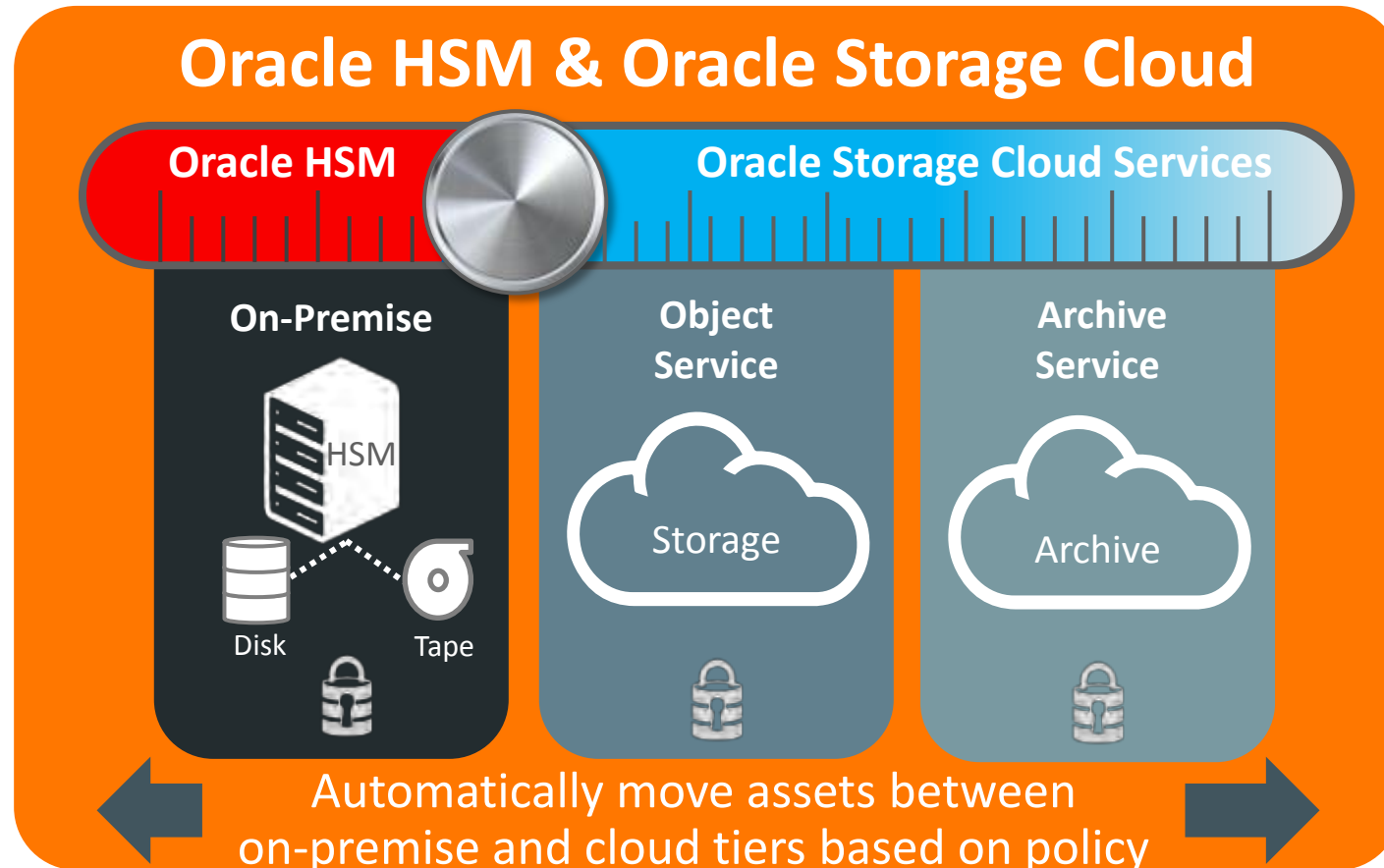
# Build an Archive Solution that Seamlessly Integrates Cloud



Empowering you to have  
**control** and **choice**  
over your cloud integration

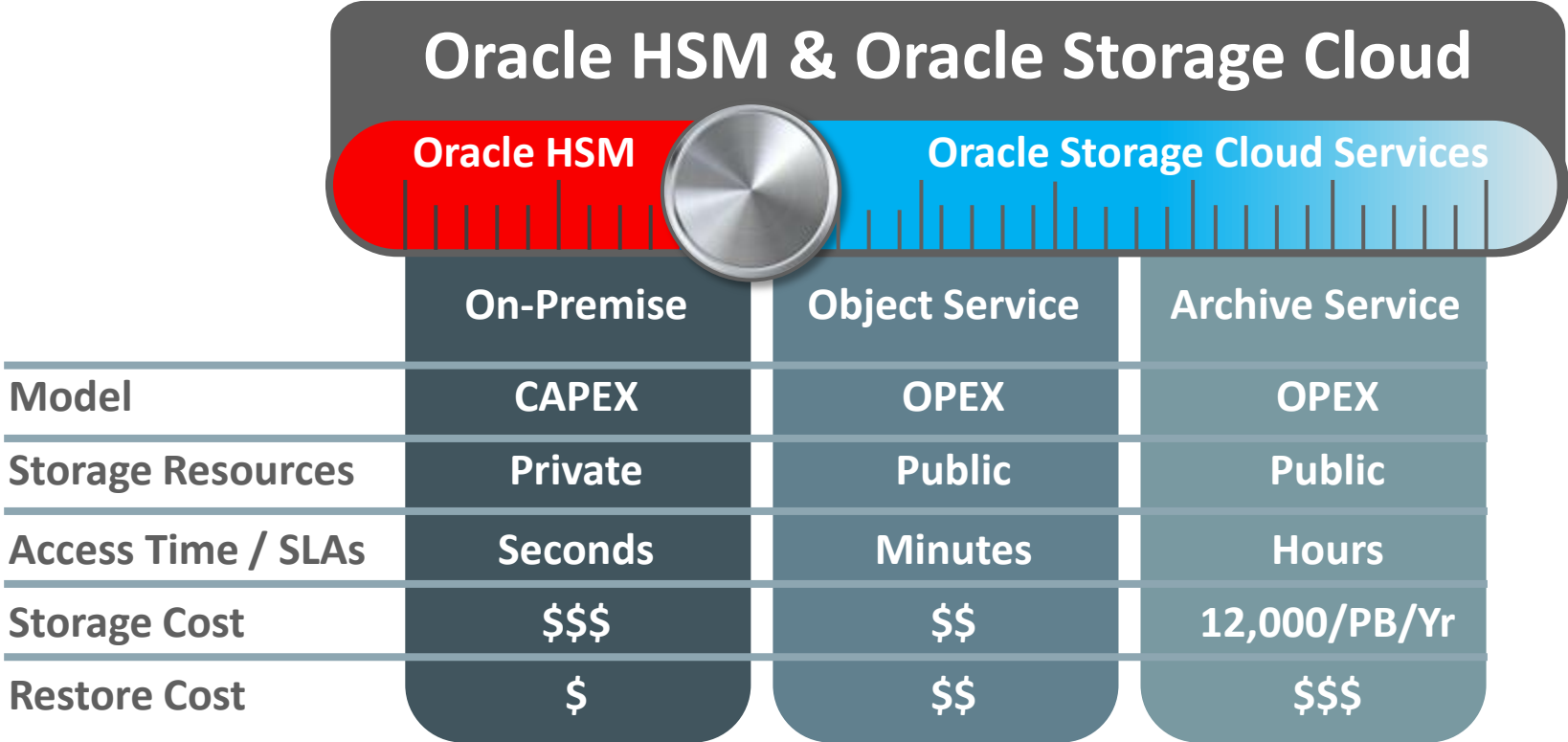
# Control Your Cloud Integration

Effortlessly Manage Archive Assets On-Premise and in the Cloud



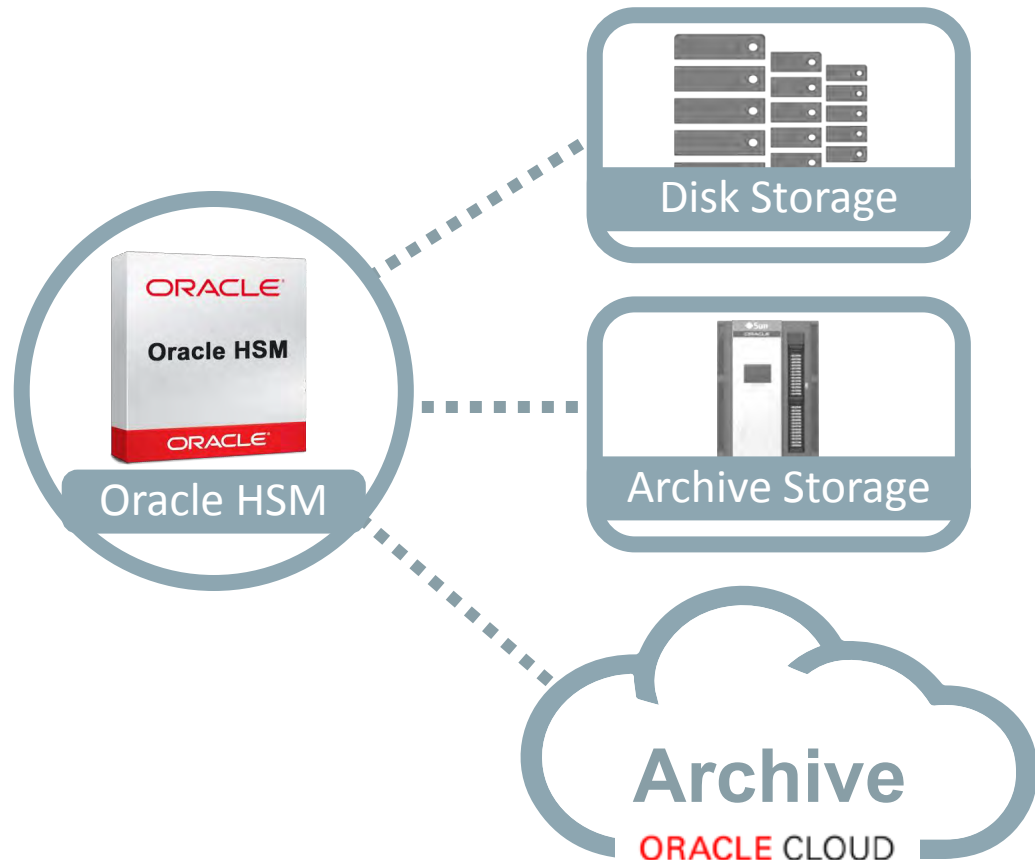
# Design a Long-Term Archive to Meet Your Objectives

Choose the Right Mix of Storage for Your Data



# Oracle HSM Support for Oracle Storage Cloud - Archive Service

Breakthrough cost for off-site data protection



**Google Nearline**  
**\$0.011**  
\$/GB/Mo.  
\$132,000/PB/Yr

**Amazon Glacier**  
**\$0.004- 0.006\***  
\$/GB/Mo.  
\$48,000 - \$72,000/PB/Yr

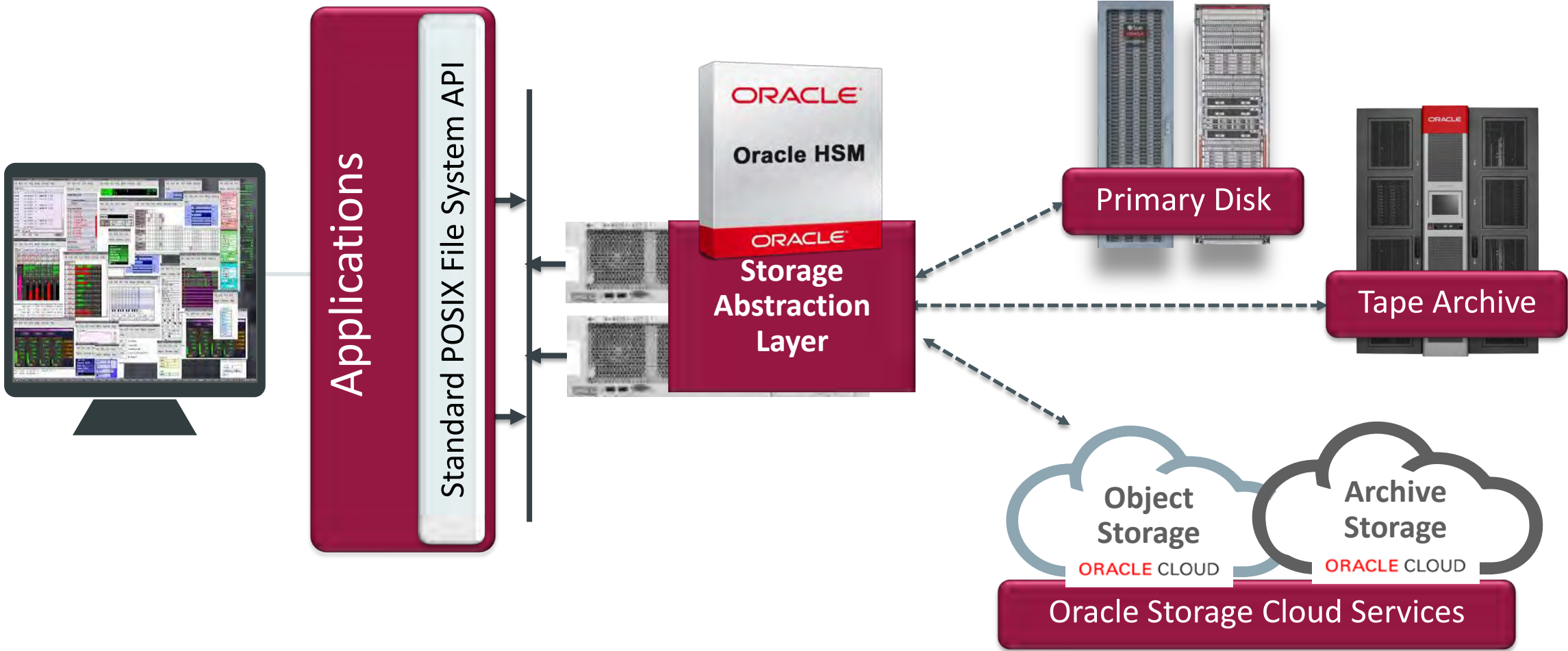
\* Region dependent

**ORACLE CLOUD**  
**Oracle Storage Cloud Service – Archive Service**  
**\$0.001**  
\$/GB/Mo.

**\$12,000/PB/Yr.**

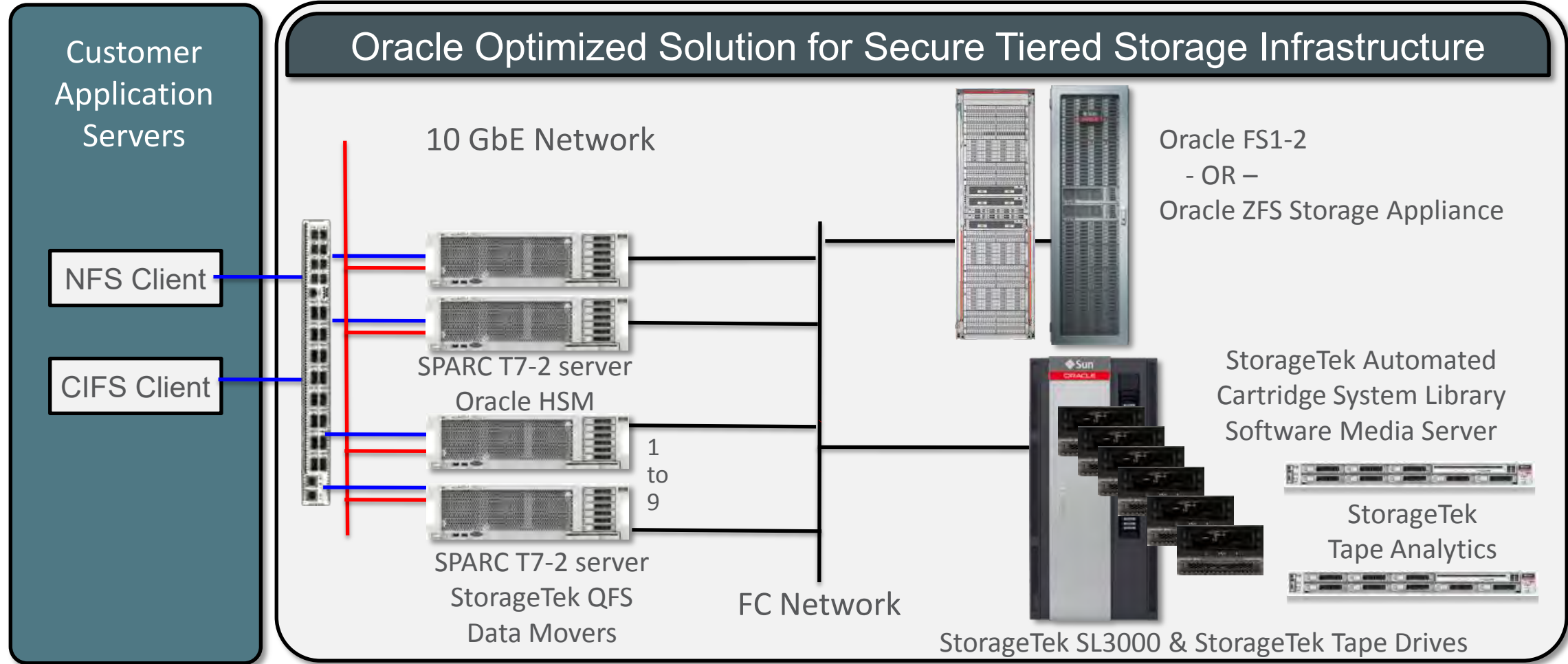


# Key Components to Build a Long-Lived Archive

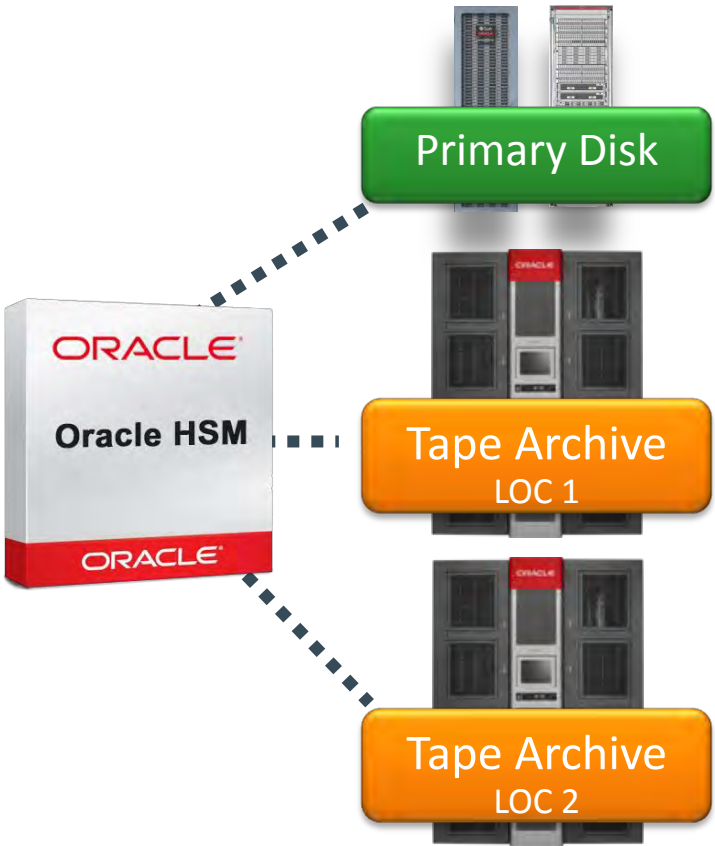




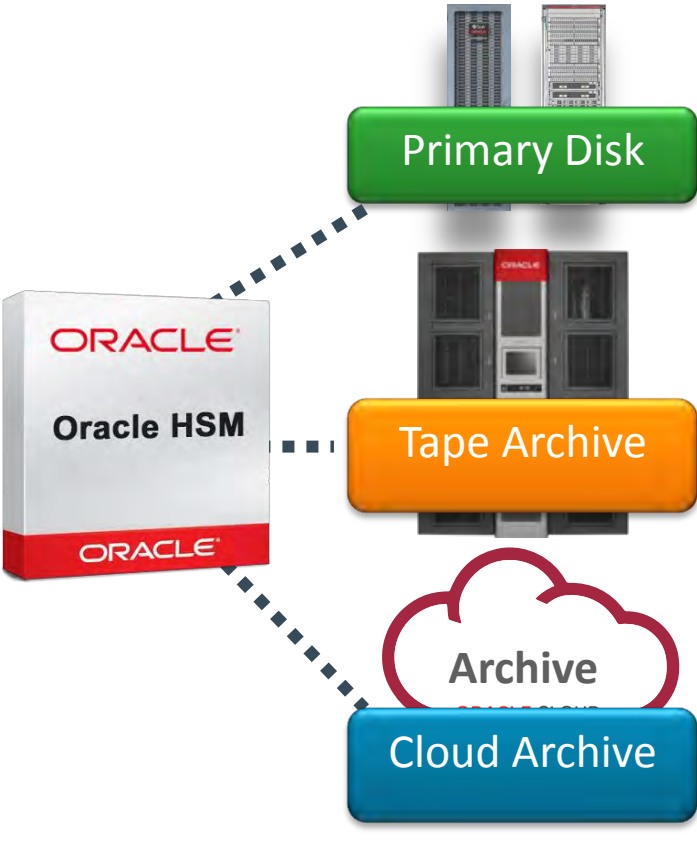
# Oracle Optimized Solution for Tiered Storage Infrastructure One Architecture Example



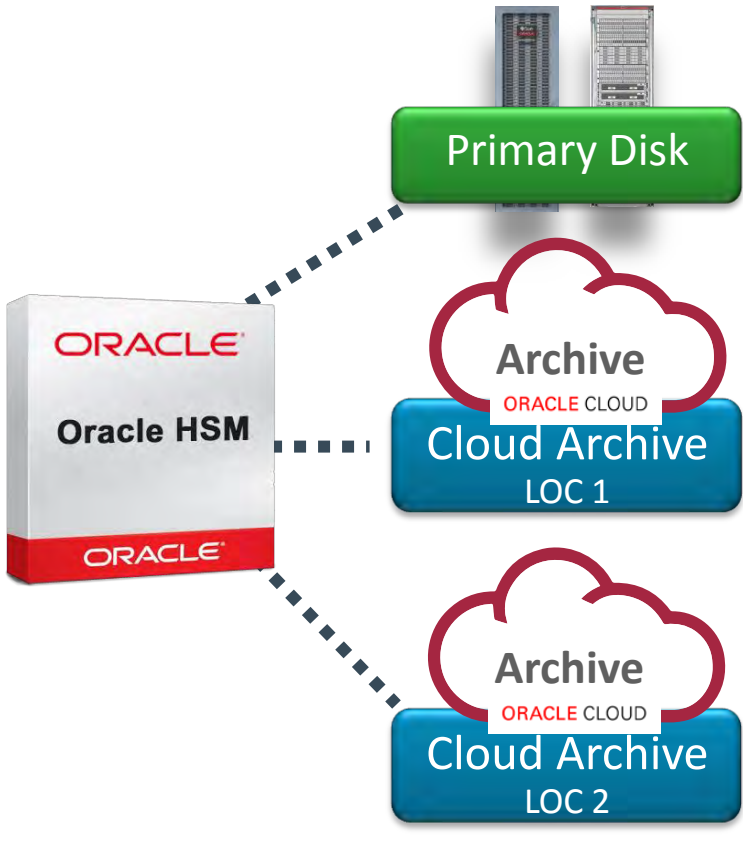
# Flexible Archive Architectures – Meet a Variety of Use Cases



On-Premise Archive



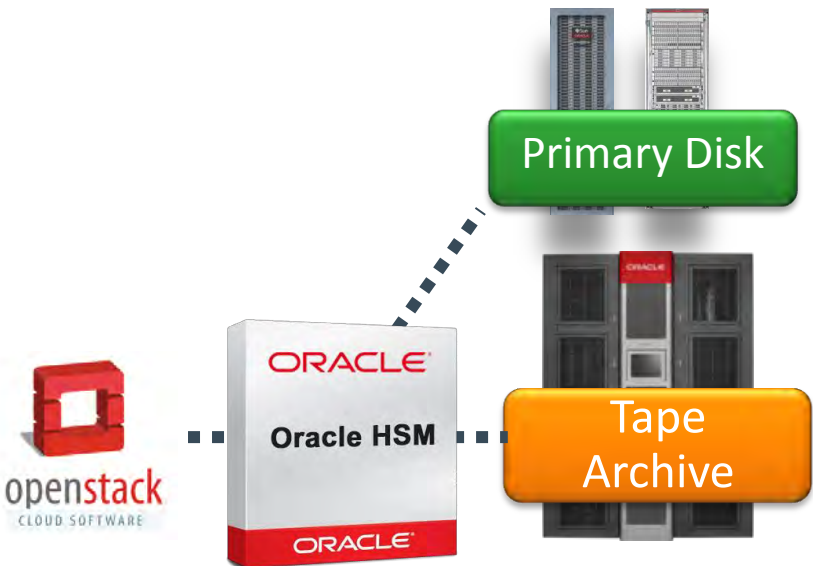
Hybrid Archive



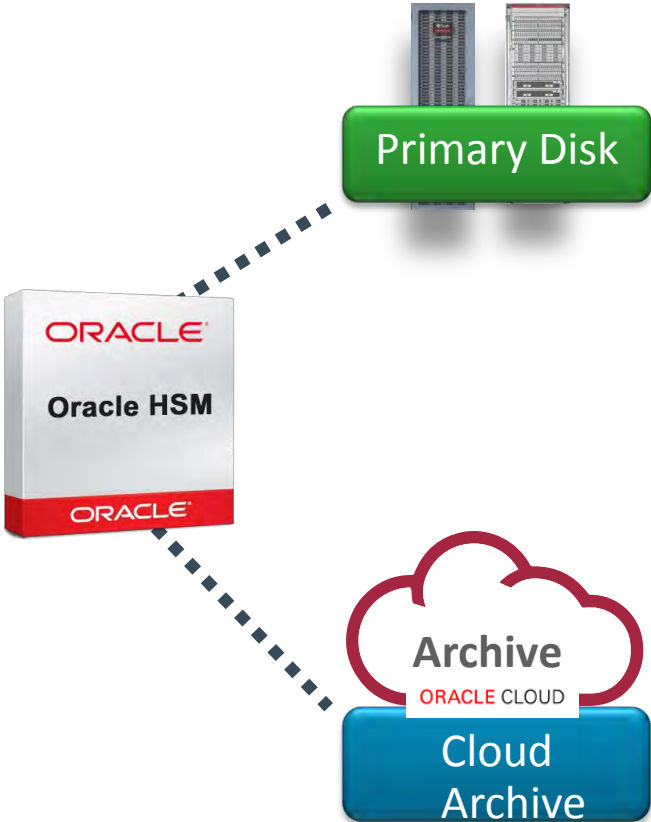
All Cloud Archive



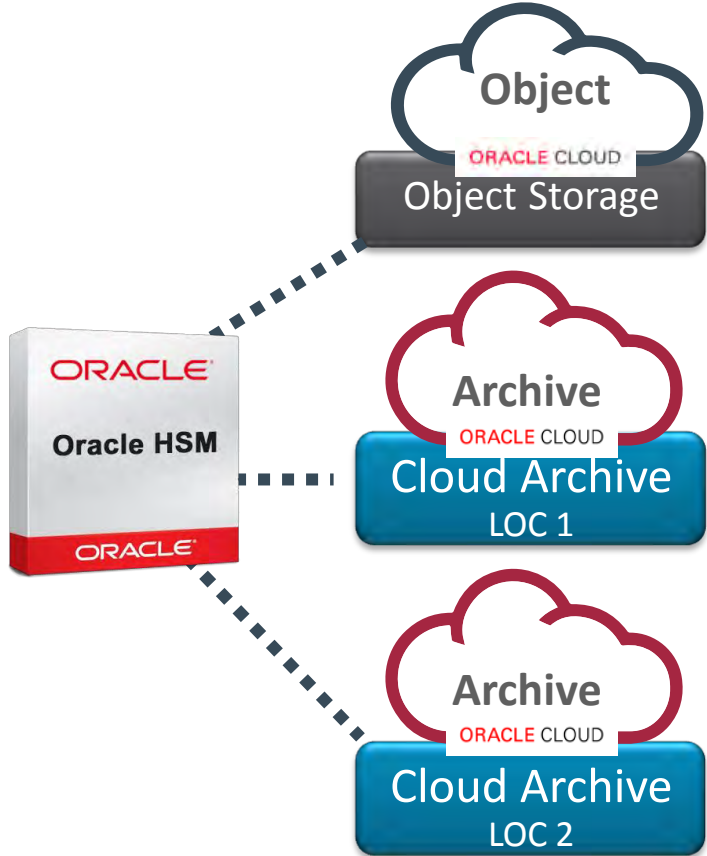
# Flexible Archive Architectures – Meet a Variety of Use Cases



On-Premise Private Cloud



On-Premise Fast Access & Archive Cloud



On-Premise Software, Disk Cache, & All Cloud Storage



# Key Software Features to Ensure Data Access

## Automated File Fixity

Uses industry standard and B.Y.O. checksums

Verify each read, write, and copy of file

Constant, Unchanged, Stable

## Automated Data Integrity Validation

Set policy-based audits

Verify each read, write, and periodically

Dedicate tape drives

Self-heal automatically

## Open Formats

Store in tar

Import/export LTFS

Future-proof access

Simplify migration

Share across systems

# Case Study: Ensuring Long Term Access

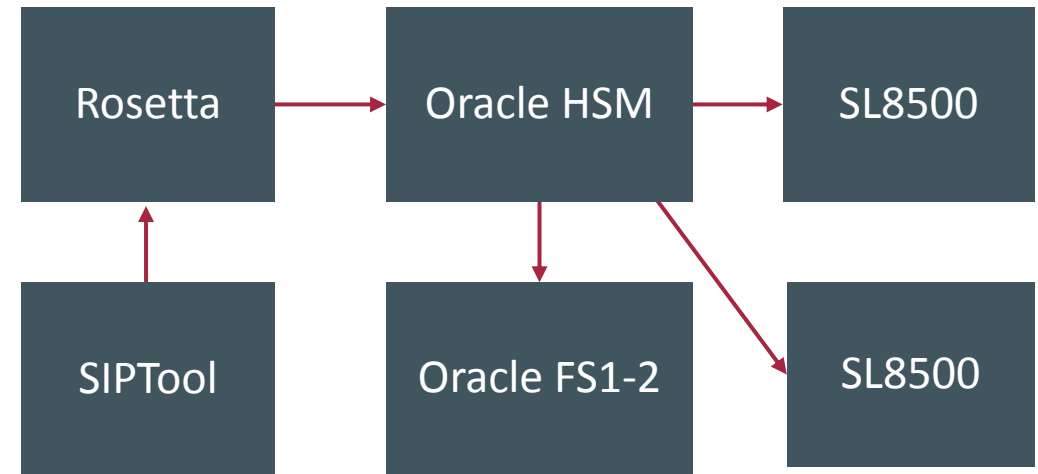
## Major U.S. Religious Organization Addresses Data Protection and Security Requirements

### Data in Transit

- ssum command to set fixity
- Restful Service to ssum command
- Standard algorithms
- Application provided Fixity value

### Data at Rest

- In-drive Data Integrity Validation (DIV)
- Fixity of files check as they are staged



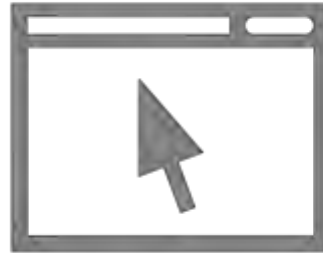
# Managing Your Long-Lived Archive with Oracle HSM

## Future-Proof Your Archive with Seamless and Flexible Cloud Integration



### Lower Costs

- Backup and Archiving
- Tiered Storage
- Private Storage Clouds
- Oracle Storage Cloud – Archive Service



### Improve Efficiencies

- Policy based movement
- Limitless scalability
- Horizontal scaling
- Automated media migration



### Ensure Access

- End to end data integrity validation (DIV)
- Fixity
- Open formats

# Integrated Cloud

## Applications & Platform Services