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STORAGE DEVELOPER CONFERENCE

SNIA  SANTA CLARA, 2017

# **Data Protection Modernization: Meeting the Challenges of a Changing IT Landscape**

**Tom Clark**

**IBM Distinguished Engineer, Chief Architect Storage Software**

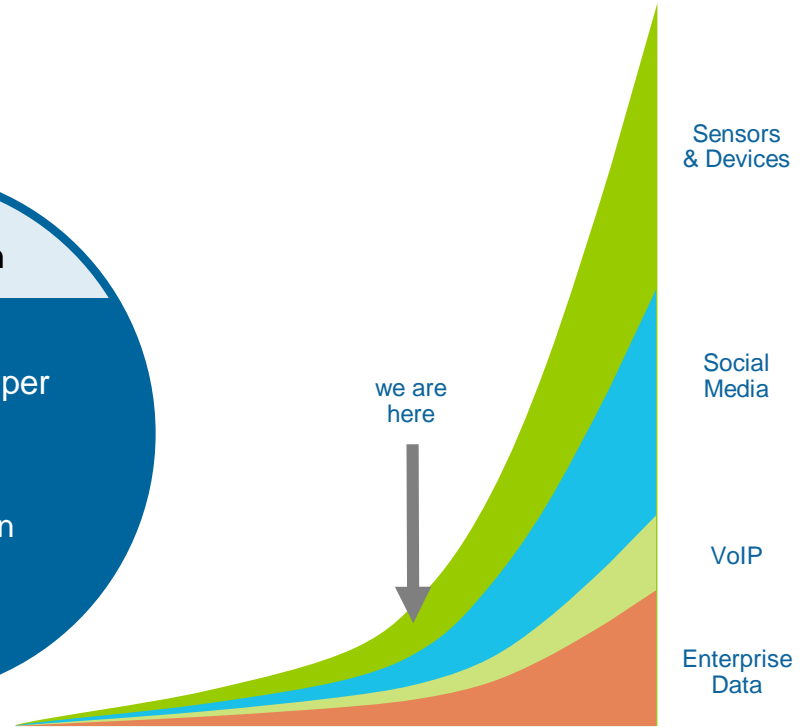
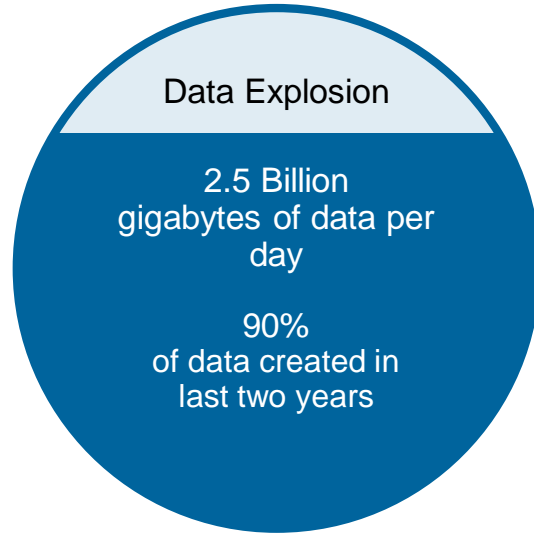
# Data growth is continuing to explode



IoT will connect  
30 billion devices  
by 2020



6.75 TBs of data  
will be created per  
person per day by  
2018



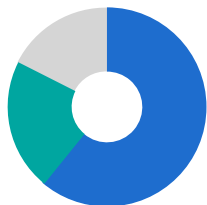
Growth of data from different sources



# Storage trends

*Continued dramatic growth in data driven by mobile, analytics, IoT, hybrid cloud, cognitive business and big data*

Transition of data types with new workloads, new applications



**60%** of clients committed to SDS

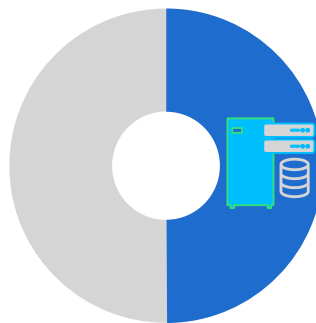
**23%** interested



**70%** of clients deploying object storage or plan to within 24 months

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New storage deployment models powered by software



By 2018, storage-rich servers are expected to account for

**50%**

of new capacity purchases

Transition to cloud models



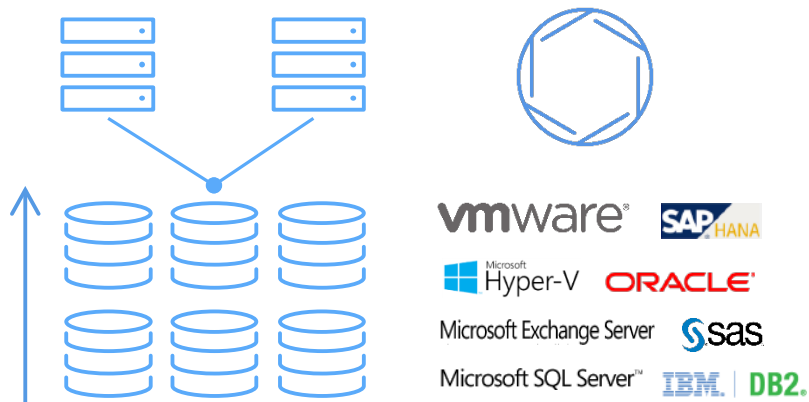
“IDC predicts that **over 80%** of enterprise IT organizations **will commit to hybrid cloud architectures by 2017.**”

Sources: ESG, IDC



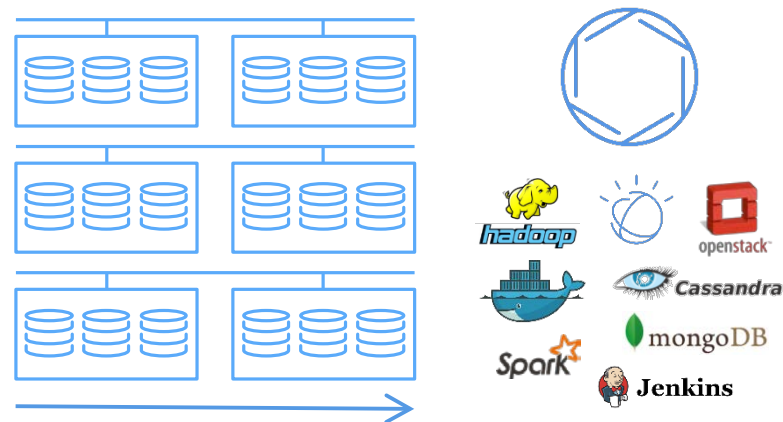
# Traditional and New Generation Applications

## Traditional application workloads



Traditional workloads require further optimization, leveraging features in applications, hypervisors and storage

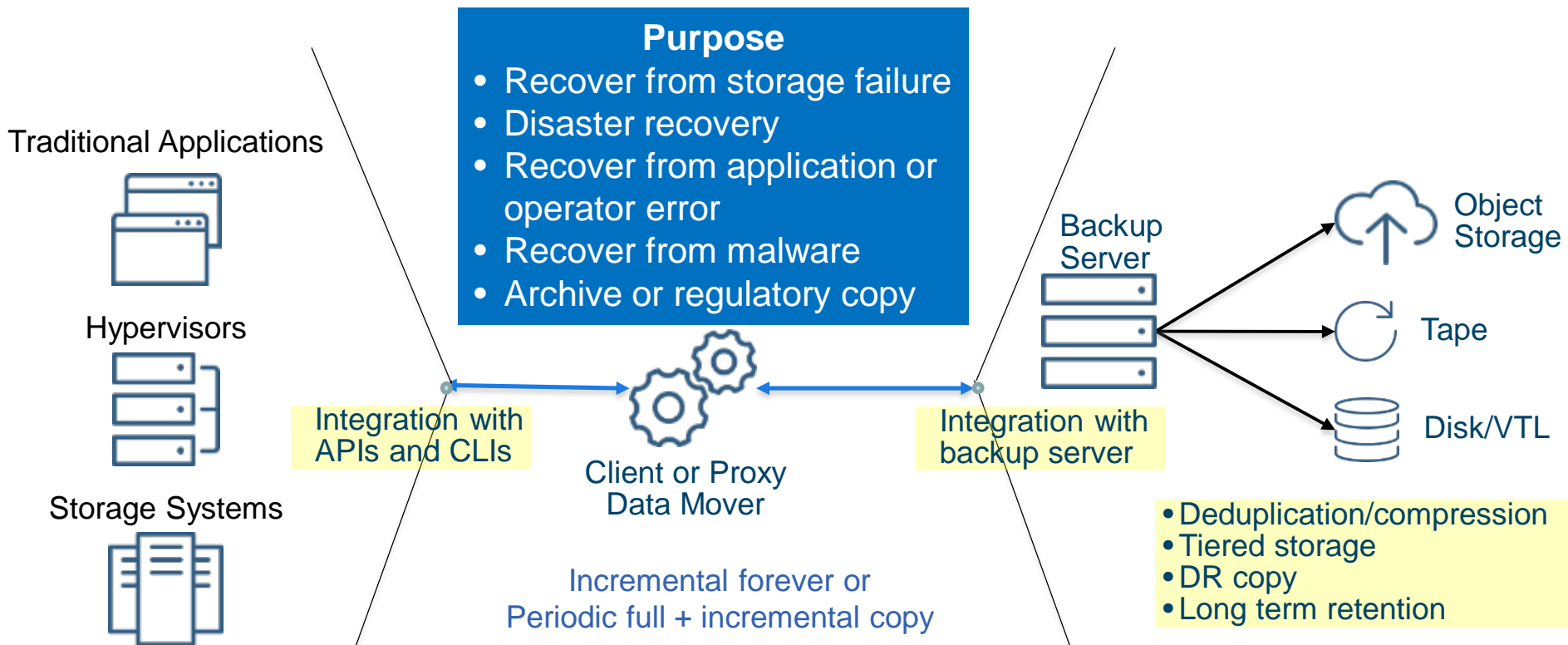
## New generation application workloads



Scale out infrastructure to support new workloads requires new approaches to management

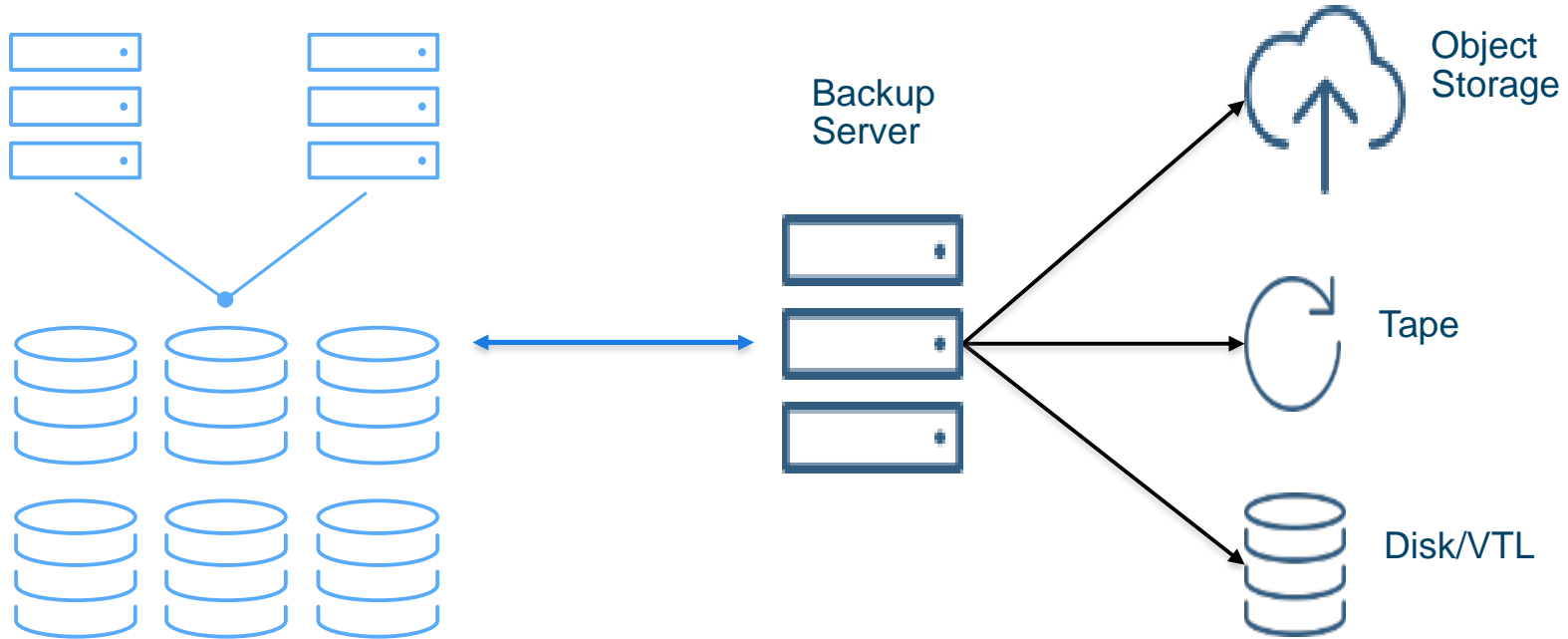


# Traditional Data Protection Approach



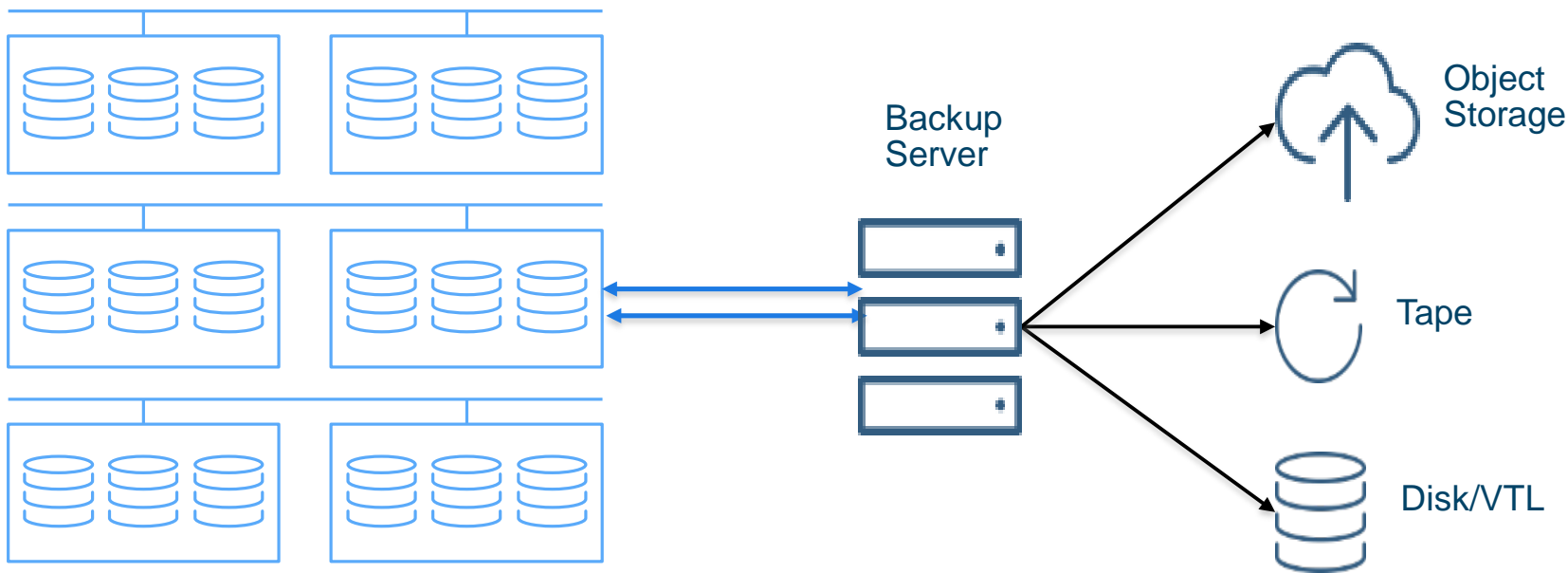
# Traditional Data Protection Challenges

**Backup/restore are times too long for critical applications**



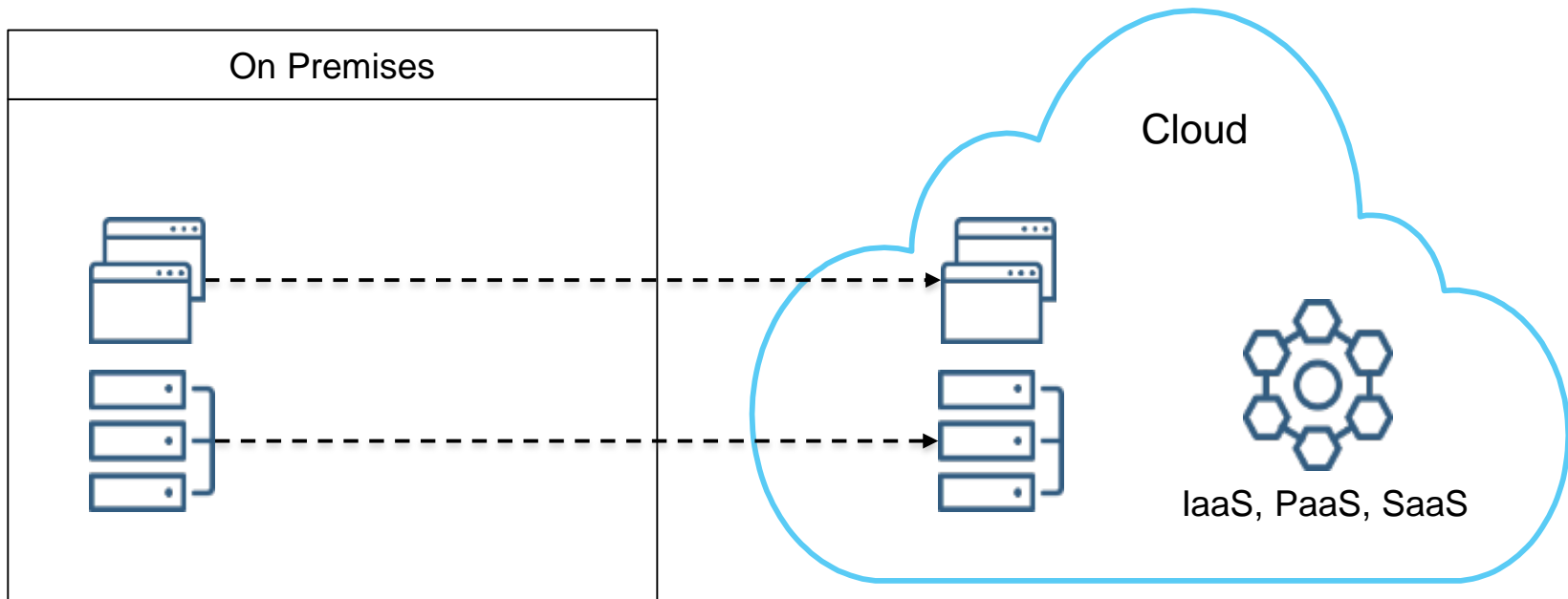
# Traditional Data Protection Challenges

**Scale out applications don't map well to traditional backup infrastructures**



# Traditional Data Protection Challenges

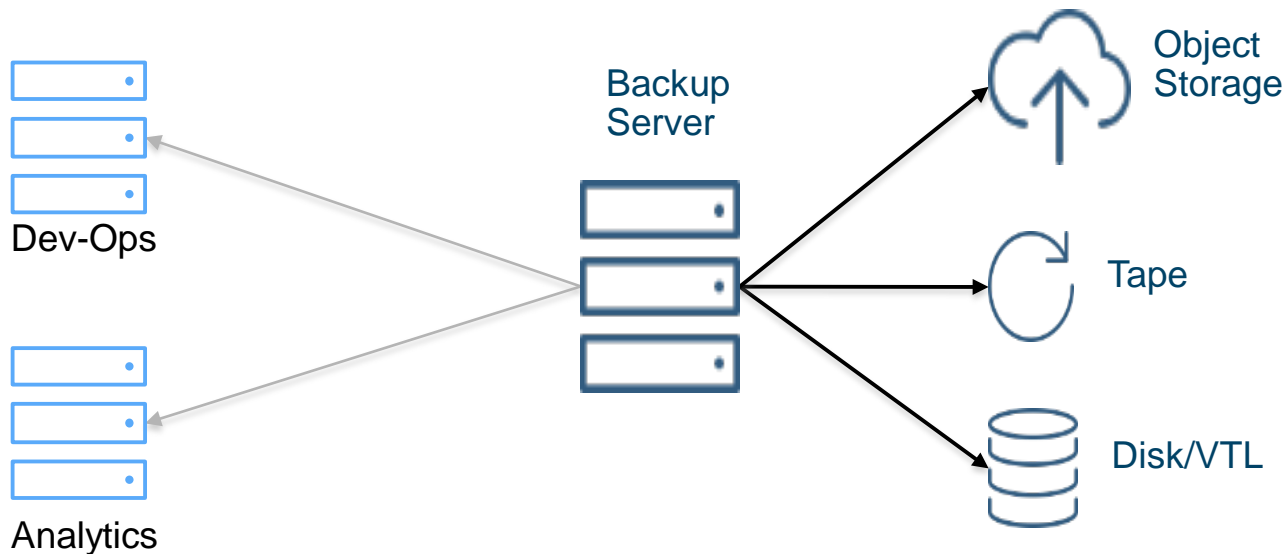
## Data protection for apps moving to cloud and cloud apps





# Traditional Data Protection Challenges

**It's hard to reuse backup data for other purposes**



# Traditional Data Protection Challenges

## Compliance with increasing regulations



“Forget about me”



Backup Server



Object Storage



Tape



Disk/VTL

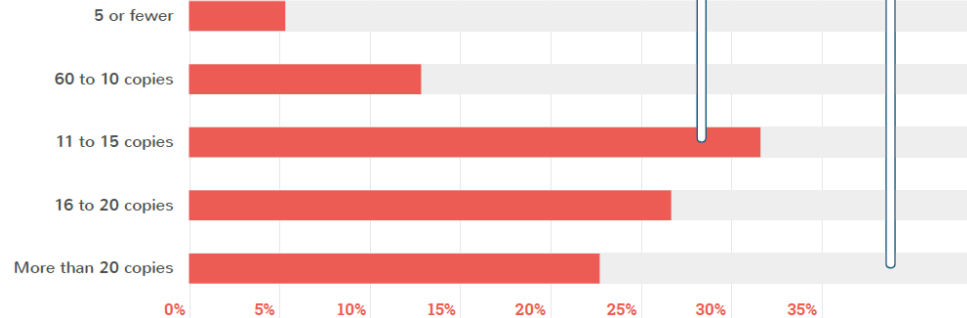
82% have more than **10 copies** of each DB

This amounts to **more than 2000 database copies** to manage



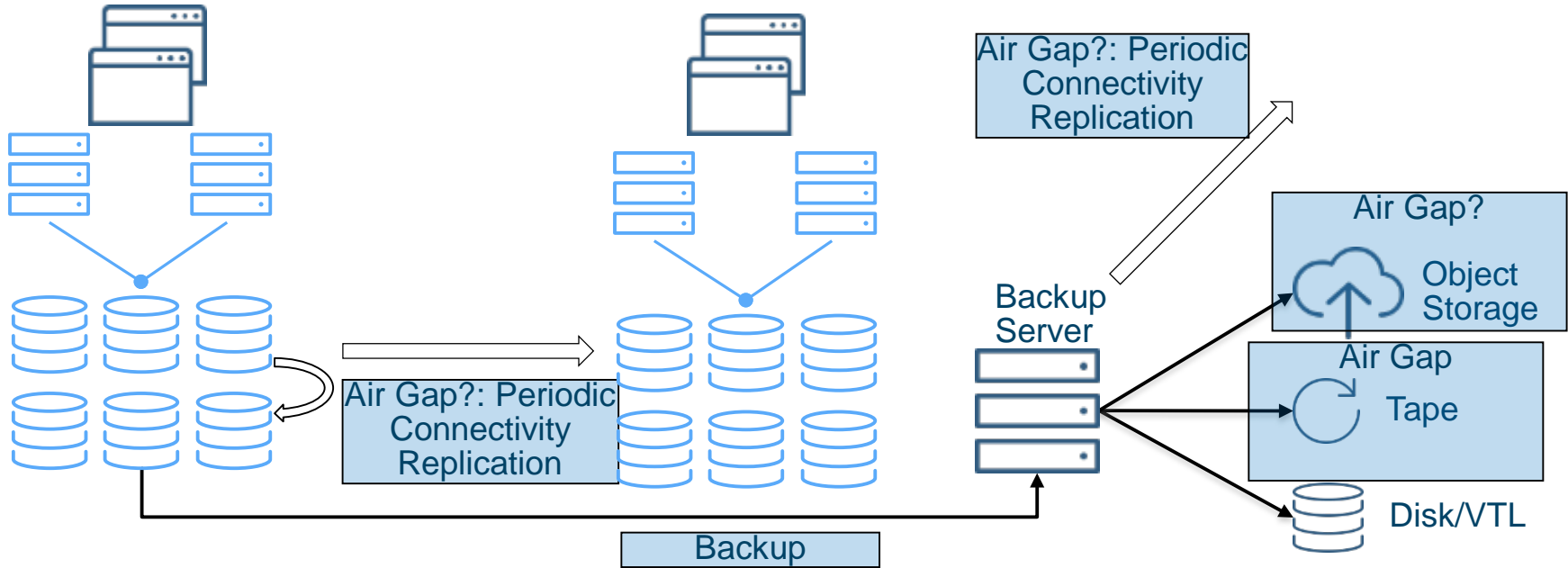
What are the typical number of physical copies of a given production instance that are made for the purpose of test/development, QA, DR testing, data warehouse loading, reporting, etc?

**82%**  
82% have more than 10 copies  
Consistent with other IDC research



# Traditional Data Protection Challenges

## Avoiding and recovering from ransomware



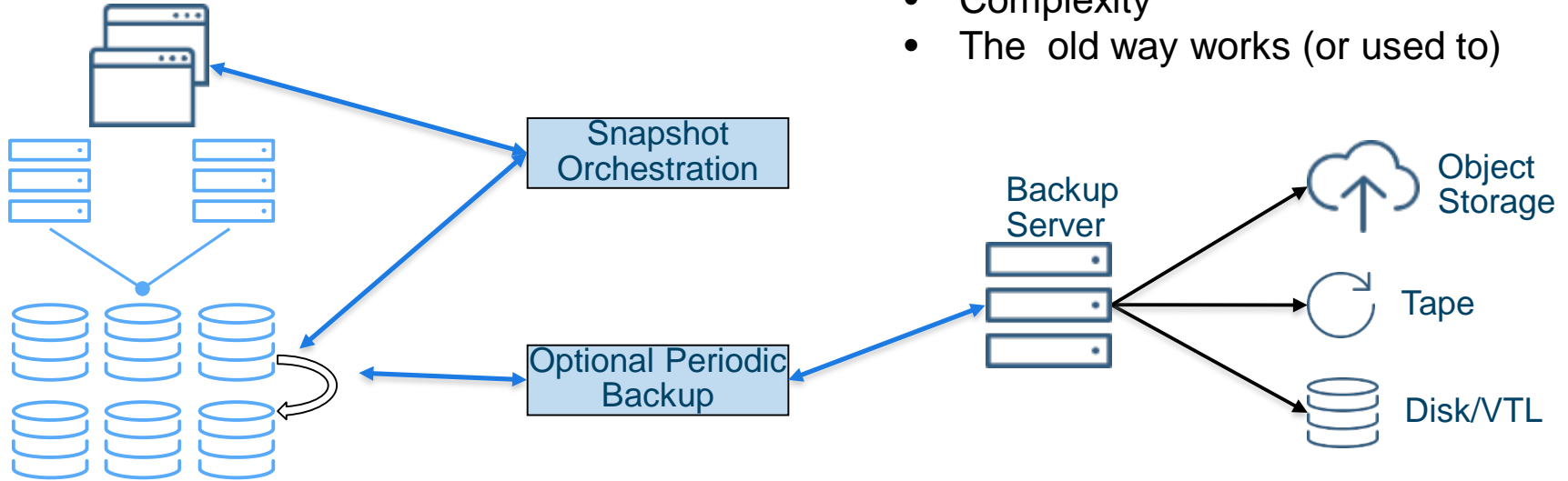
# Evolution of Data Protection: Storage Snapshot Backup

Advantages:

- Fast backup, fast recovery

Challenges:

- End to end orchestration
- Complexity
- The old way works (or used to)



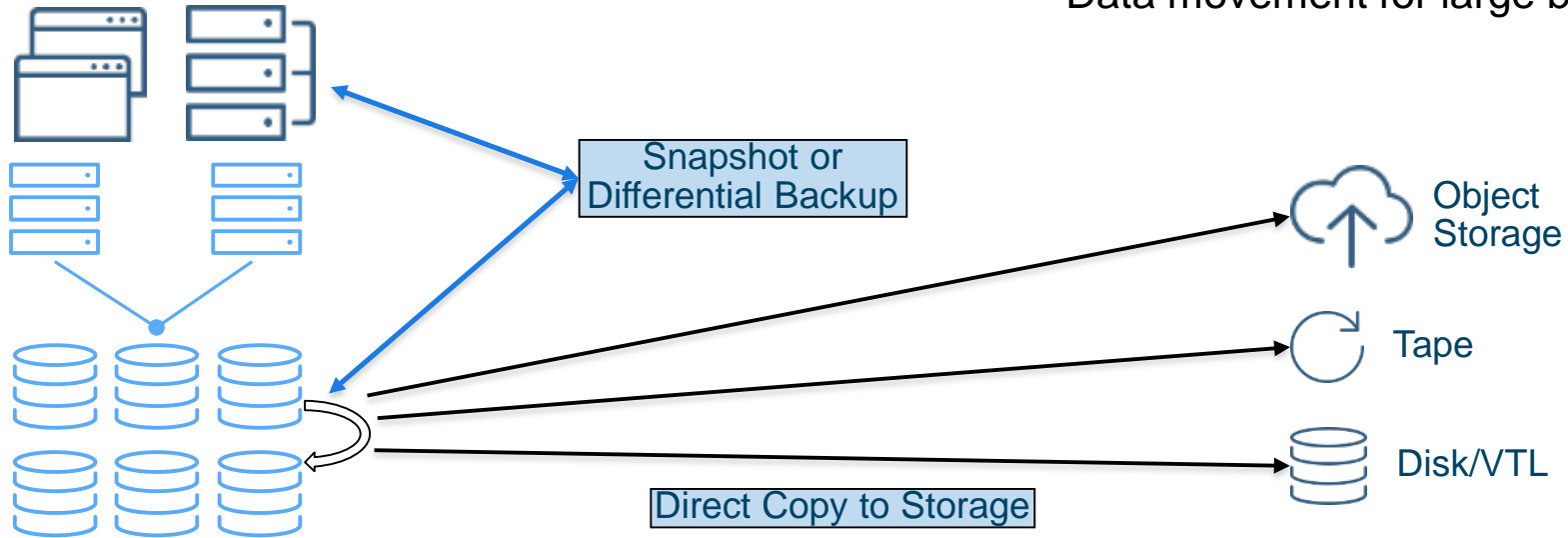
# Evolution of Data Protection: Self-Protecting Storage

Advantages:

- Fast backup, fast recovery

Challenges:

- End to end orchestration, reporting
- Data movement for large backups



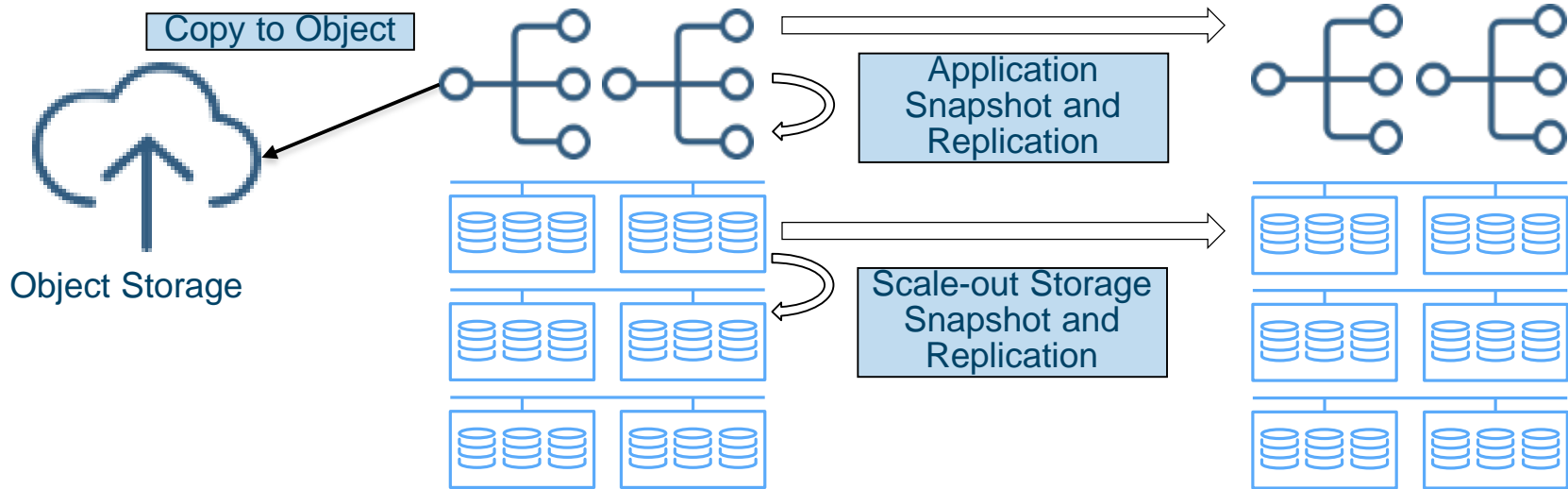
# Evolution of Data Protection: Scale-out Application Backup Self-protecting Applications, Self-service

Advantages:

- Operates at scale

Challenges:

- End to end management, reporting
- Lack of capability in current applications
- App developer expertise



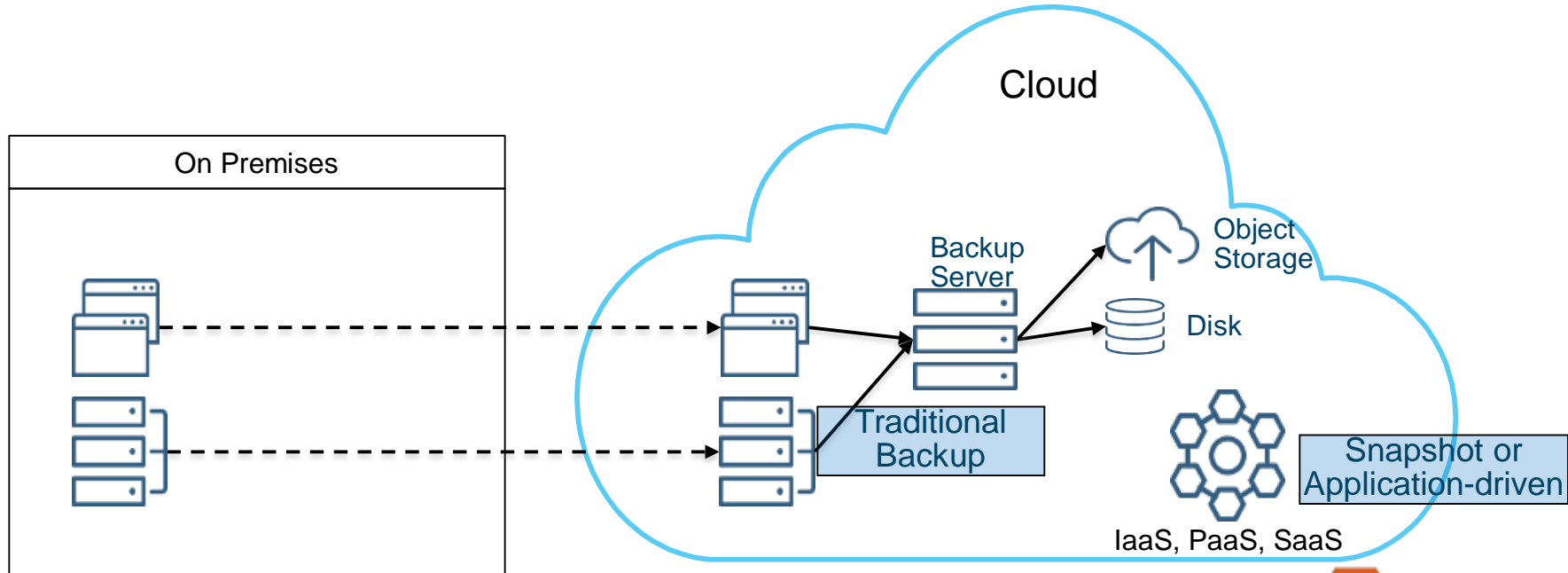
# Evolution of Data Protection: Data Protection in Clouds

Advantages:

- Similar operations to on premises

Challenges:

- Centralized hybrid management
- Lack of capability or APIs in cloud \*aaS



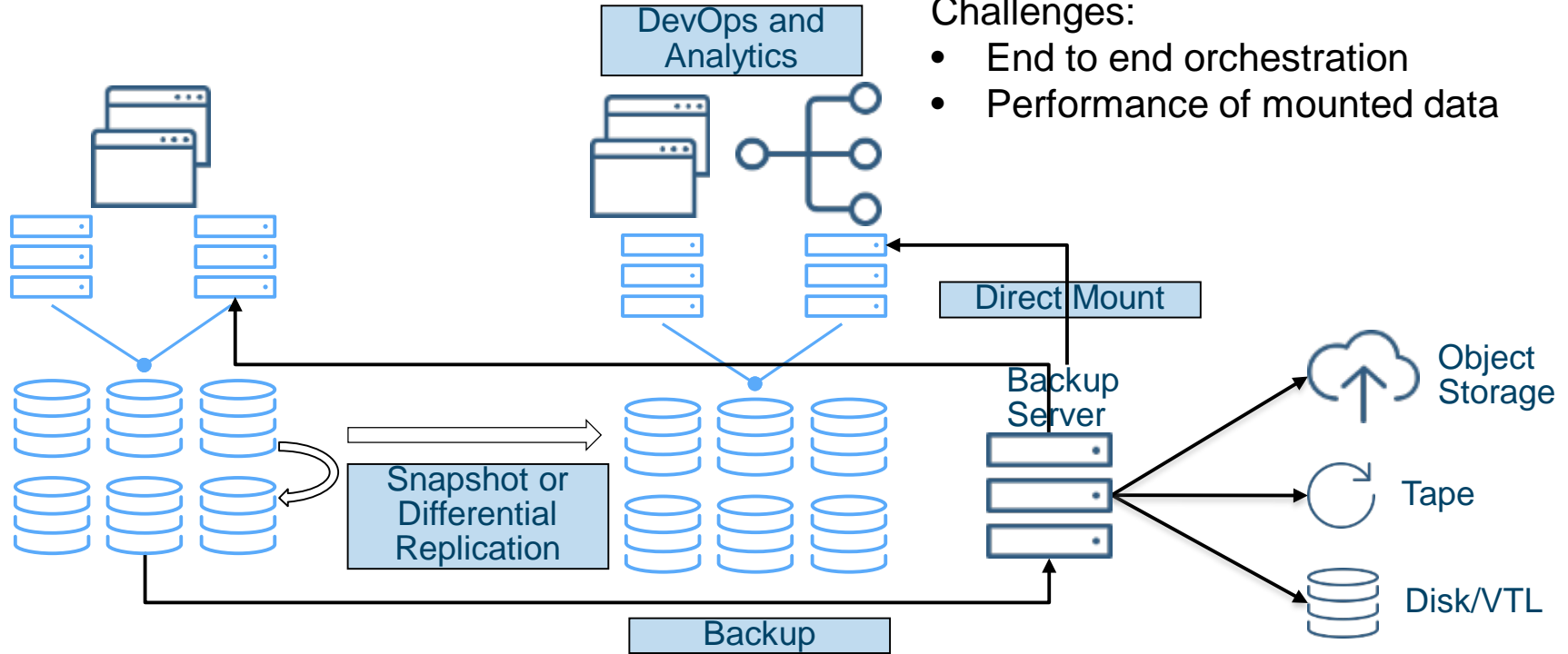
# Evolution of Data Protection: Data Reuse

## Advantages:

- Leverage collected data
- Immediate data availability

## Challenges:

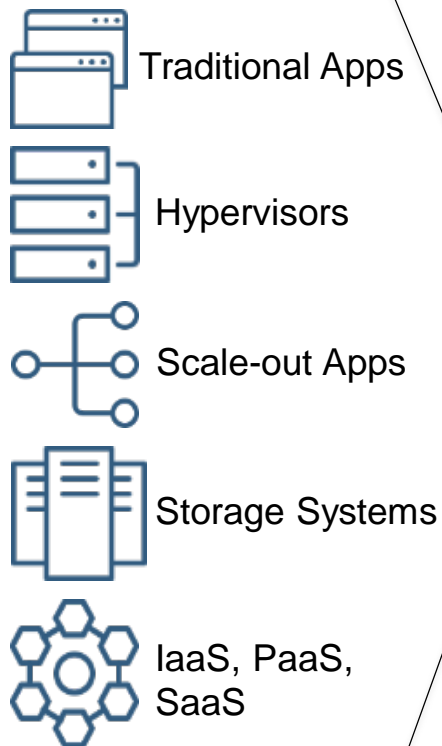
- End to end orchestration
- Performance of mounted data





# What We Need in Data Protection

## Data Sources

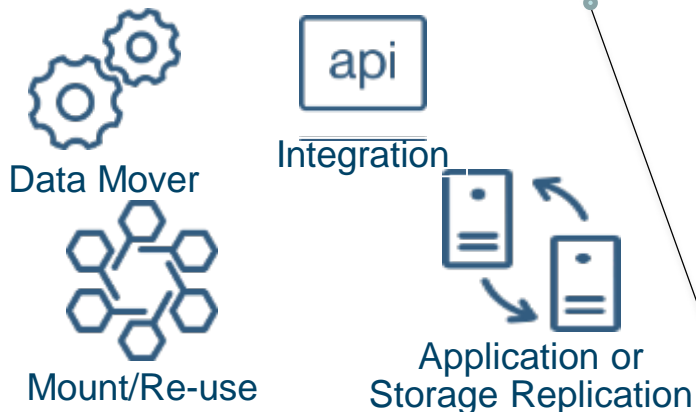


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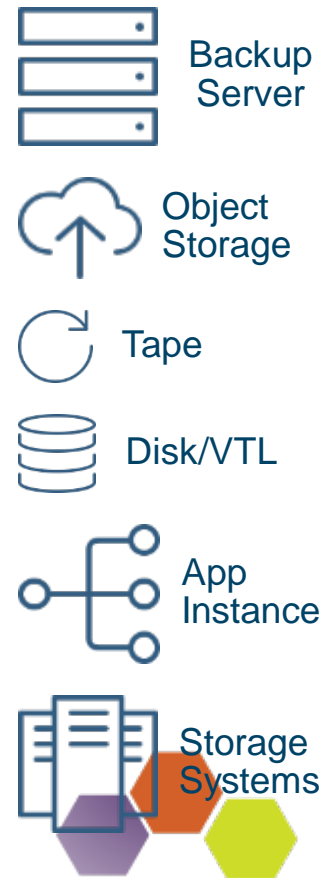
## Key Capabilities

- Software-defined solutions
- Simplicity
- Orchestration
- Central catalog
- Central reporting
- Self-service
- Complete data functions

## Data Functions



## Data Sinks





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**Thank You!**