

**VERITAS™**

**Scalability and Efficiency:**

**On-Premises & Cloud Backup and Restore  
Taken to the Next Level**

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# Oracle Data Protection

1 Top DB Backup/Recovery Challenges

2 Oracle Popular Backup Methods

3 Introduction to **Veritas Copilot**

4 Veritas **CloudPoint** (8/2/2017)

# Oracle Data Protection Challenges



# Backup/Recovery Top Challenges

- Poor Performance
- Impact on Productivity
- Management complexity
  - “Backups need constant management”
- Growing Data Volumes –
  - “My backups are running too long. I Cannot Complete Backups.”

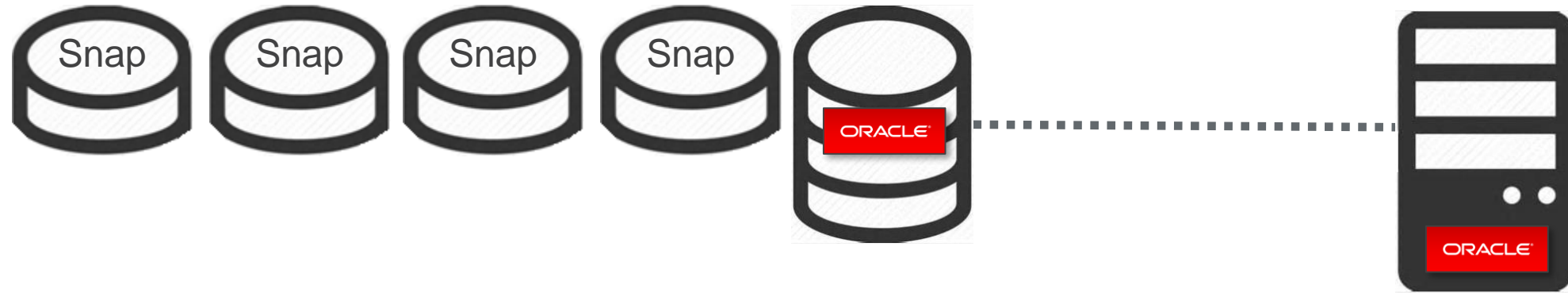
# Oracle Protection Methods Overview



# Continuous Data Protection (CDP)

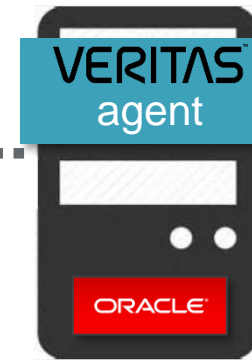
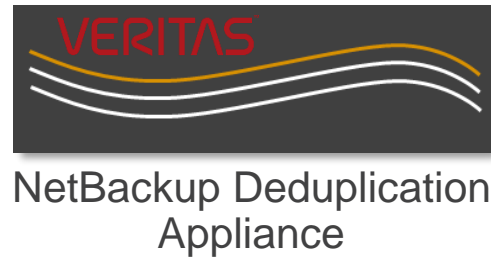
- Holy Grail of Data Protection
- Typically a Very Expensive
  - Reserved for < 25% of databases in an environment

# Storage Snapshots



- Typically Adopted Due to RMAN Taking Too Long
- Fast (near-instant)
- Can be difficult for DBA self-service (RMAN visibility, recovery granularity, mileage varies)
- Does not protect against physical corruption (stored on same storage)
- Lacks RMAN Intelligence (DB Validation, etc.)

# Oracle Agent Installed on Database Server



Oracle database agent (SBT) installed on server

- Oracle database agent installed on Oracle server
  - Considered a “streaming” backup
  - RMAN is used but data not stored in RMAN format
  - Full and incremental backups
- Database server-based deduplication optionally supported
  - Oracle agent can be configured to deduplicate data before transfer to backup destination
- Requires Recurring Level 0's.
- Takes Too Long - Not Enough Time in the Day



# Traditional Backup and Sweep

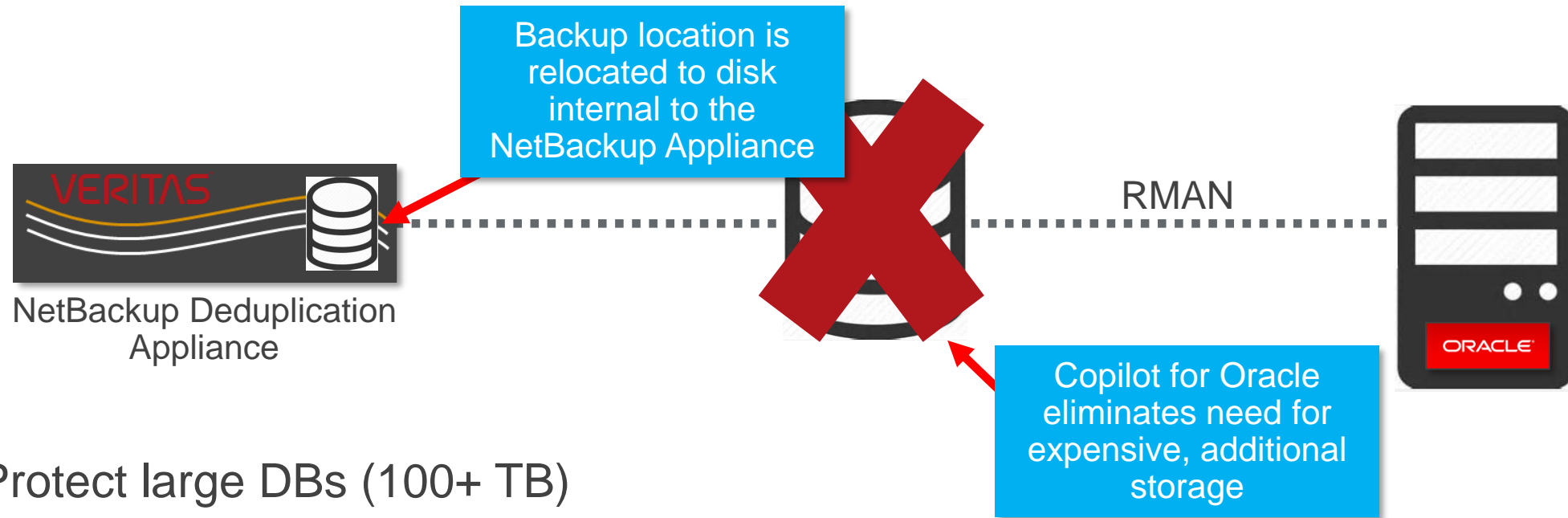


- Need to acquire additional storage for RMAN (or Data Pump) target
- DBA manually writes backup (or export) to separate disk location
- Backup admin sweeps data to backup destination
- Separate administrators perform uncoordinated process (DBA & Backup)
- No Visibility to DB Copies in the Backup System
- Requires Recurring Level 0's
- Takes Too Long - Not Enough Time in the Day

# The Way Forward

Veritas Copilot for Oracle

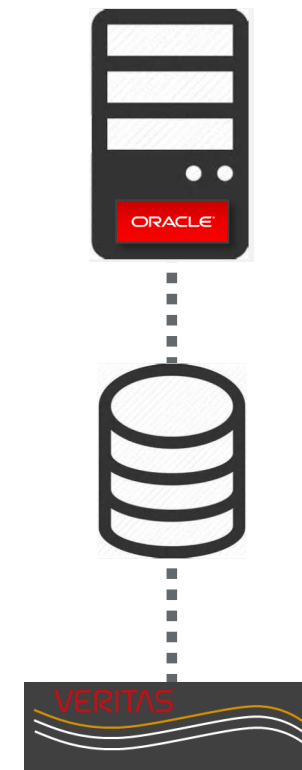
# Integrated Backup to Disk and Sweep: Copilot for Oracle



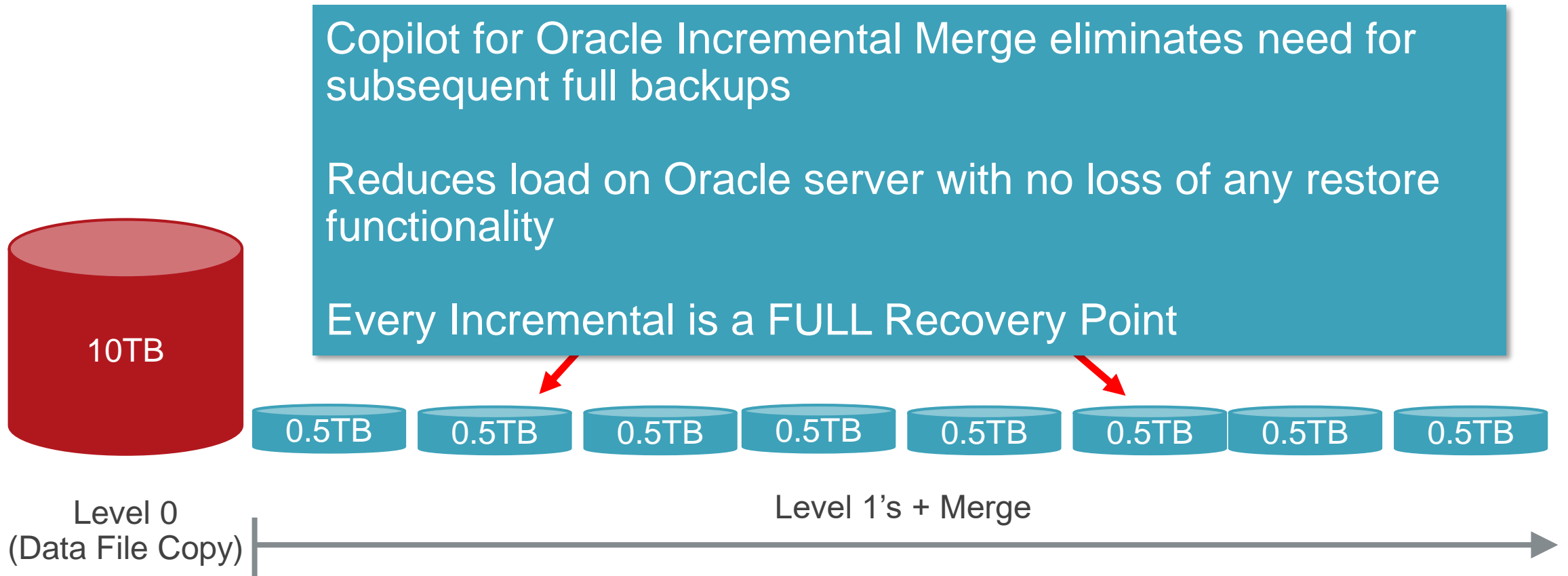
- Protect large DBs (100+ TB)
- RMAN Validation
- DBA Controls Workflow
- Access to All DB Copies
- Cut storage costs (appease storage team)

# Copilot for Oracle

- Oracle Native Technology
  - Flash Recovery Area (FRA)
  - Block Change Tracking
  - Incrementally Updated Backups
  - RMAN Block-Level Consistency Checks
- Veritas' Contribution
  - RMAN Run Block Automation
  - Snapshots on Separate Storage
  - Storage Tiering (older backups moved to lower cost infrastructure)
  - Instant Recovery
- The Result:
  - Unique “Incremental Forever” Oracle Backup
  - A logical full backup, level 1 processing.
    - Significantly reduces backup impact on the Oracle server
    - Reduces network overhead



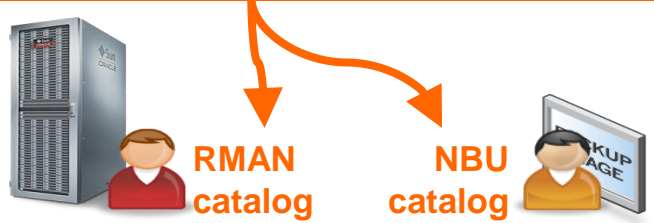
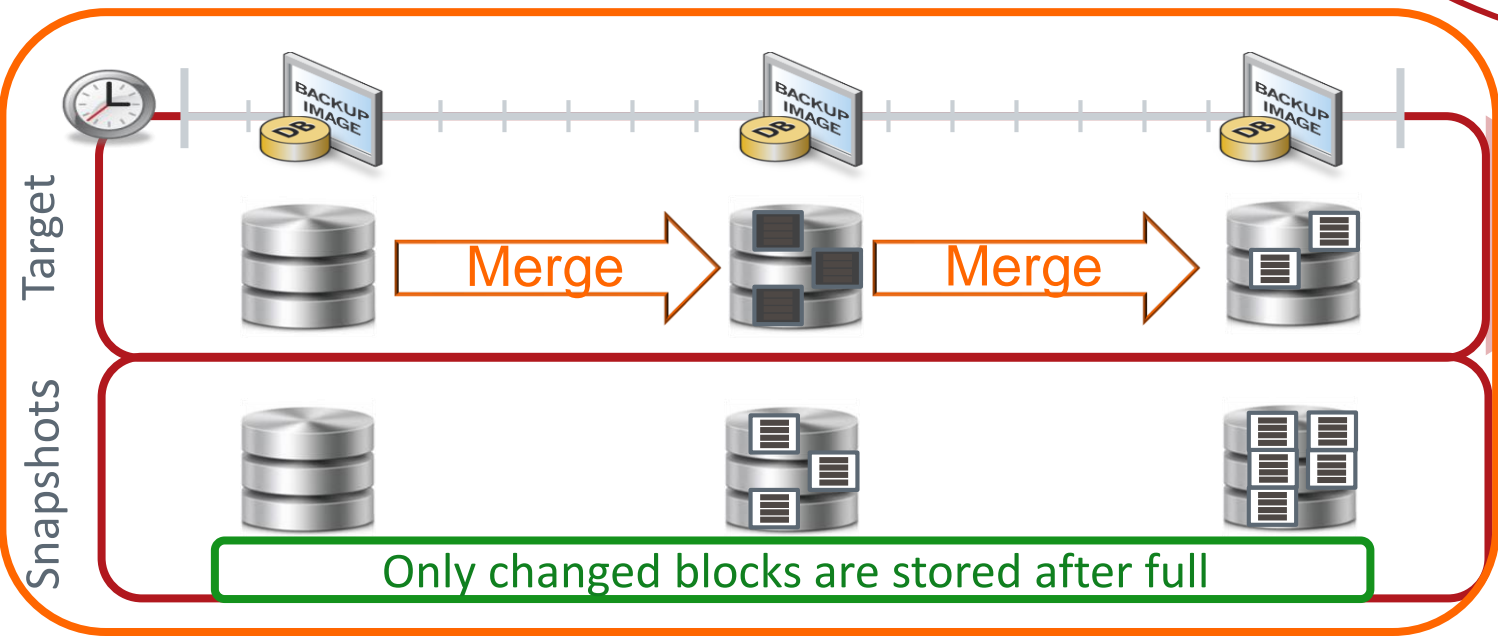
# Traditional Recurring Full vs. Incremental Merge



# Automated "Incremental Forever" Full Recovery Points - Illustrated



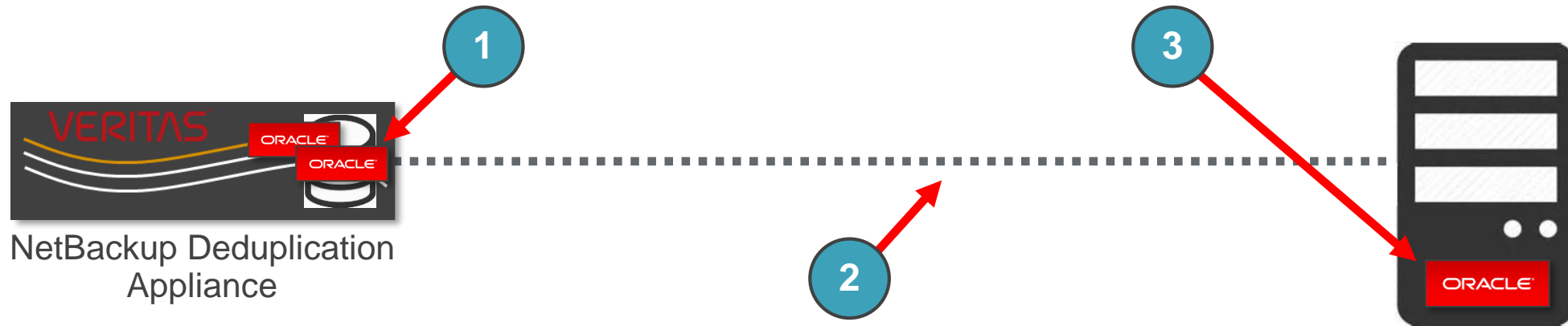
Database System



# Copilot for Oracle Advanced Features

Copilot for Oracle Instant Recovery

# Copilot for Oracle Instant Recovery Process



1. Oracle “backup to disk” image is cloned
  - No changes to original backup image ever occur
  - Any RMAN full/incr backup images located on backup disk can be used
2. Cloned image is exported to Oracle server over NFS
  - Oracle redo log group is cleared
3. Oracle database is mounted, open and fully accessible



# Copilot for Oracle – Platform Introduction

- Form Factor:
  - Physical
  - Virtual (Q3 2017)
- Converged Data Protection Platform
  - Purpose-built
  - Integrated Storage - tuned and benchmarked performance
  - Hardened with Intrusion Prevention System (better than selinux)
- Optimized for Oracle (via Copilot)
- Deployment:
  - Run as a dedicated DB protection platform



# Veritas CloudPoint

Flexible Snapshot Management for The Cloud and Beyond

# Veritas CloudPoint Basics

- Snapshot-based backup for Cloud & On-Prem. platforms
  - Application Consistent for Oracle 12c
  - Avoids homegrown solutions, which break easily
- Multi-Cloud Visibility and Orchestration (cloud-to-cloud replication, etc.)
- Auto-Deletion, based upon expiry policies
- RESTful API for DB/App. Integration
- Support for AWS, Microsoft Azure & Google Cloud
  - Other cloud platforms on roadmap.

# Veritas & Oracle

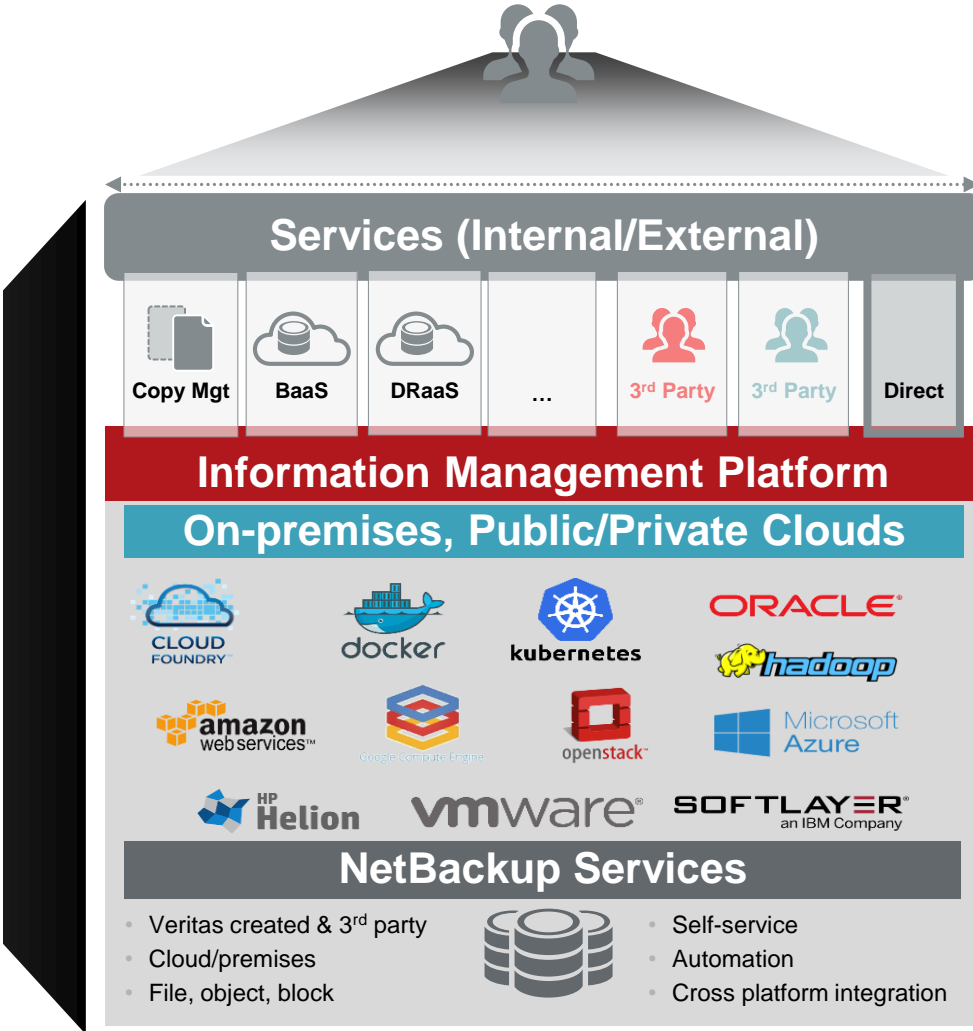
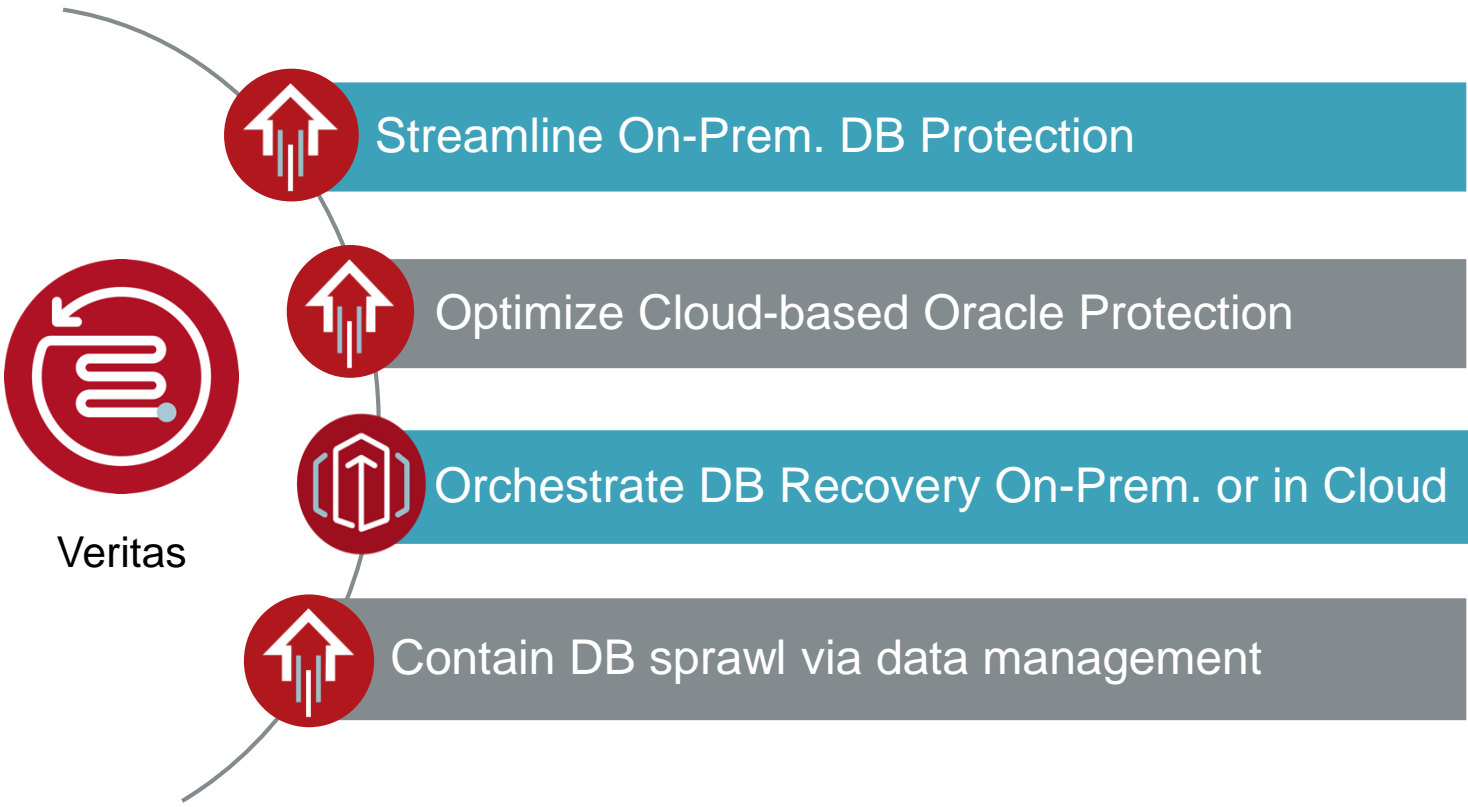
On-Premises and Cloud Deployments

# Cloud Investments

# Supporting Customers for the Future ... And Beyond



**Singular Information Platform**  
**Driven through Integration**



# VERITAS™

## Thank you!

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