for

BCCServices

NetApp Solutions for Oracle

HROUG, Rovinj Oct. 19th 2007

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Sales Manager Eastern Europe

Agenda

- NetApp and Oracle Partnership
- NetApp and Oracle Highlights
- NetApp Solutions for Oracle
  - Pain Points & solutions
    - Backup and Recovery
    - Data Protection and Retention
    - Application Development and Deployment
- Summary

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Oracle and Network Appliance®

11+ years of innovation driving down infrastructure costs AND increasing enterprise IT productivity

1995
First filer for Oracle DB sold

1997
Oracle certifies NetApp

1999
NetApp helps establish Oracle Storage Compatibility Program (OSCP)

2000
Oracle B2B Exchange selects NetApp

NetApp is Certified Solution Partner

2001
NetApp runs its core business on Oracle E-Business Suite

NetApp and Oracle Blueprints from Oracle Consulting

2002
NetApp deployment at Oracle: 500TB

Oracle NetApp Joint Escalation Team ONJET

Joint Center of Excellence (CoE) and professional services

2003
3000+ Oracle on NetApp customers in production

Linux competency center

2004
NetApp deployment at Oracle:
- over 2000 TB
- 9,500 Servers at Oracle Austin Data Center

Enterprise Grid Alliance

Oracle builds next Apps on NetApp storage

2005
NetApp deployment at Oracle:
- over 3200 TB
- 14,000 Servers

ONTAP 7G FlexVol & FlexClone deployed

NetApp runs Oracle ERP, CRM and HR

SnapValidator announced

EM Grid Control Integration

2006
NetApp deployment at Oracle:
- over 5500 TB
- 20,000 servers

OCS SnapLock Integration

SnapManager for Oracle Launched

5000+ joint customers

2007
NetApp deployment at Oracle:
- over 6900 TB
- 20,000+ servers

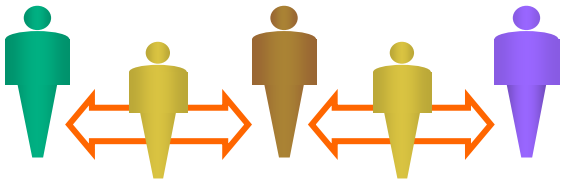
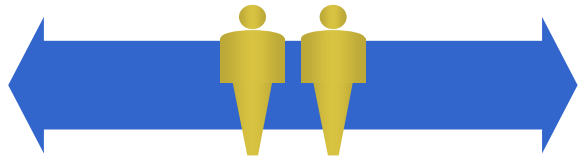
Oracle Enterprise Linux 4 Support

SnapLock Integration

Why Oracle Partners with NetApp

- **Dynamic storage architecture**
  - **Scalable to meet business needs**
  - **Leverage existing network infrastructure**
- **Meets database performance requirements**
- **Increase administrator staff efficiency**
- **Joint innovation, certification, and support**

The NetApp Unified Architecture Model

Competitors		NetApp
	**Platforms**	
Incompatible silos		**Compatible family**
	**Software & Processes**	
Incompatible software; different processes		**Unified software; Same processes**
	**Experts & Integration Services**	
Lots of experts and integration services		**Reduced training & service requirements**

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Oracle on NetApp Highlights

"NetApp has reduced the overhead necessary to perform storage-related management activities by 50%"

- **100% of…**
  - Oracle University
  - Oracle Demos DB & Applications
- **99% of…**
  - Oracle application development is on NetApp (1900TB)
  - Oracle OnDemand "Production Applications and DB" (1300 TB)
- **90% of all Oracle Linux-based systems run on NetApp**
- **50% of…**
  - Database development on NTAP
  - Oracle internal production is on NetApp

Average of 220TB+ managed per System Admin

Oracle Austin Data Center

Austin Data Center Stats

- More than 20,000+ servers
  - Largest Dell/Linux installation on earth
- Scaling at over 100 servers/week
- 6,400+ terabytes of NetApp storage
  - Largest NetApp single installation on earth
- Scaling at over 60TBs of storage each month
- Over 500 mission-critical customers' apps hosted on the premises
- Primary data center for 50,000+ Oracle users
- 2 acre of data center raised floor space

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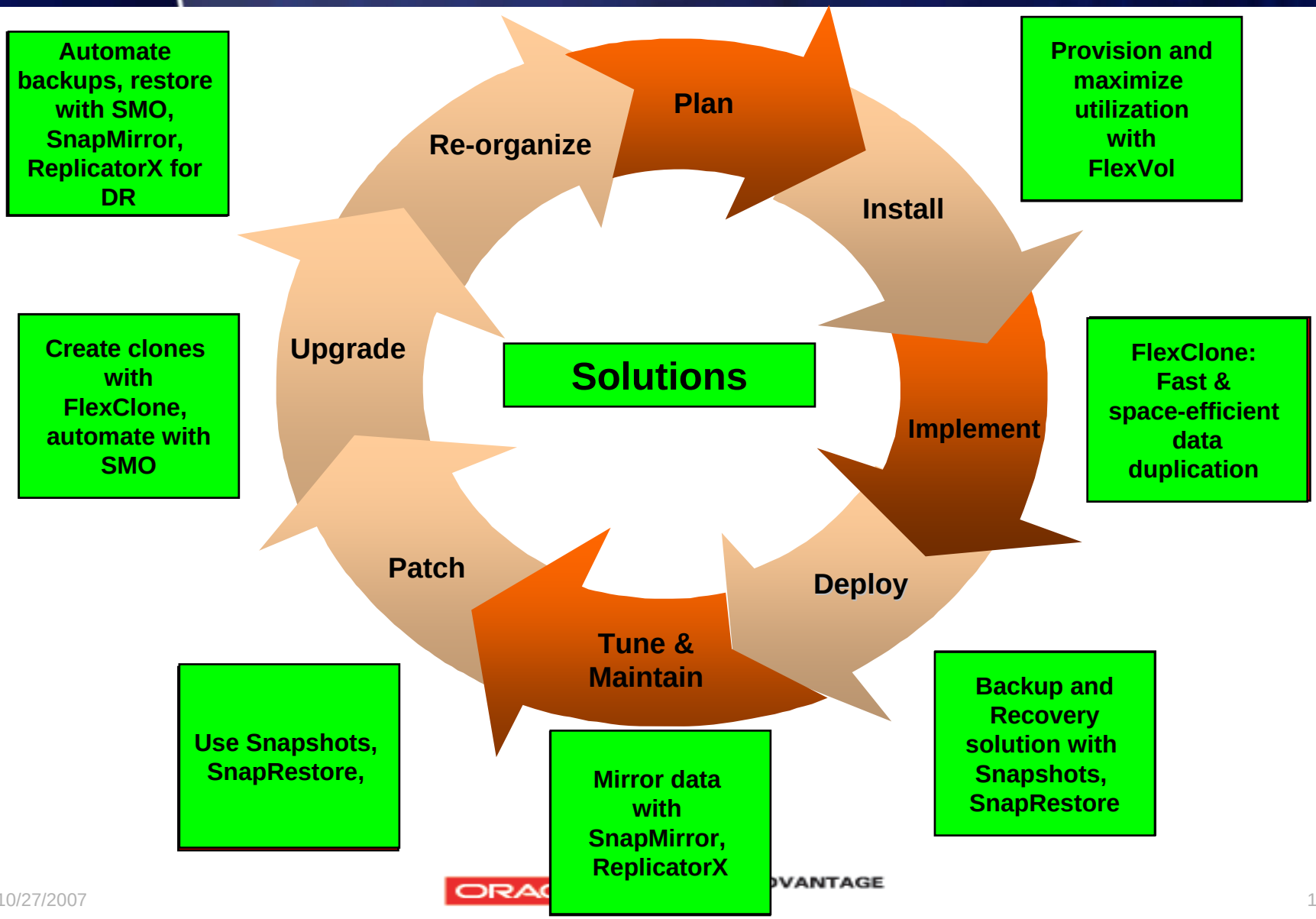
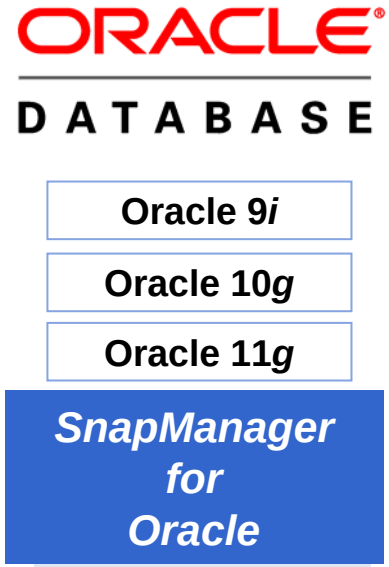
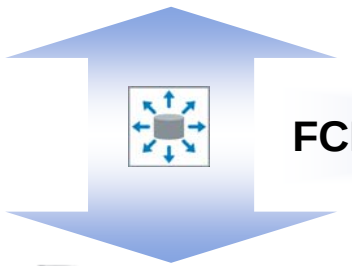
Oracle Applications Lifecycle



SnapManager for Oracle Overview



- Provides easy-to-use GUI
- Integrates with the host application
- Automates complex manual effort
  - Backup/Restores
  - Cloning
- Tight integration
  - RMAN
  - Automated Storage Manager (ASM)



NetApp Storage Systems

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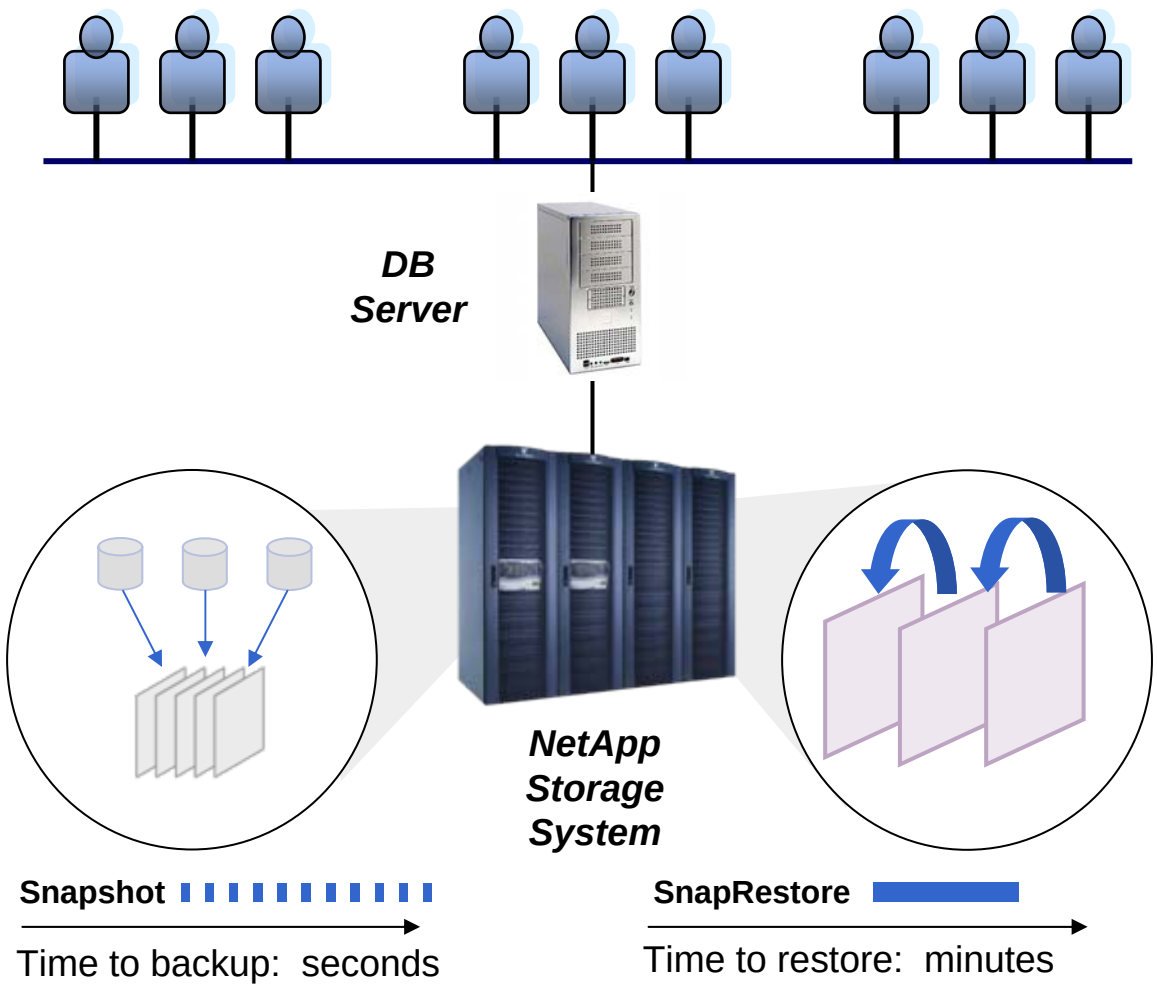
SnapManager for Oracle

- **Database cloning**
  - Ability to clone consistent copies of online databases
  - GUI support for cloning
  - Added support for context sensitive cloning
- **Increased footprint of platforms and protocols**
  - Support for additional flavors of Unix
    - SuSE 9, RHEL3/4 U3+, Solaris 9/10
  - 32-bit and 64-bit
  - NFS, iSCSI and FCP for various Unix platforms
  - HP-UX and AIX (NFS)
  - (Refer to compatibility matrix for specific details)
- **Product hardening**
  - Increased product stability and usability
  - Improved performance by utilizing snapshot vs. safecopy
  - Increase performance when dealing with high number of archive logs
- **Database cloning to remote hosts**
  - Ability to clone consistent copies of to remote hosts
  - Previously clones were assigned to the host (with SMO) that initiated the cloning request
- **Increased footprint of platforms and protocols**
  - HP-UX and AIX support across NFS, iSCSI and FC

  (Refer to compatibility matrix for specific details)

SnapManager for Oracle Automates Backup and Recovery



- **Backups in seconds**
- **Snapshot copies verified**
- **Near instantaneous restores**
- **Dramatically shortened recovery with automated log replays**
- **Automated recovery tasks**

Benefits:

- Extremely fast and efficient
- No performance degradation
- Accurate data restore and recovery
- Reduce downtime from outages
- Automation reduces errors and saves time

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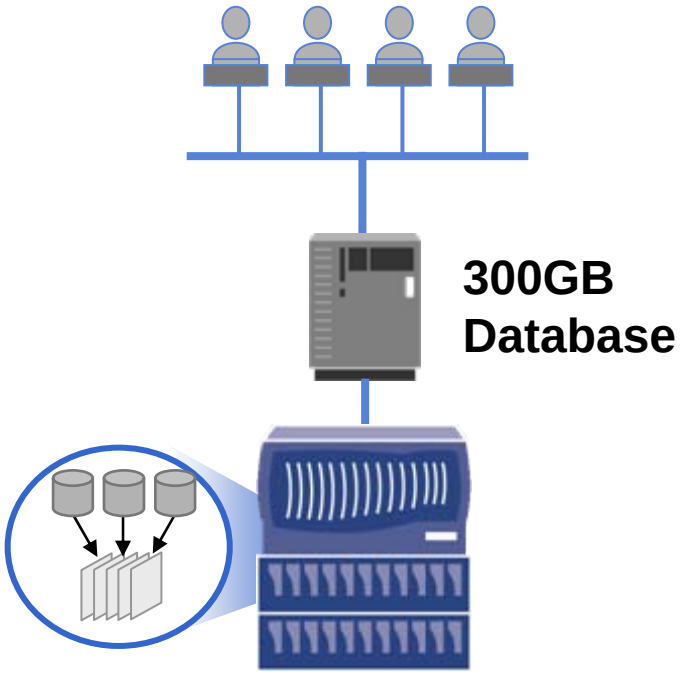
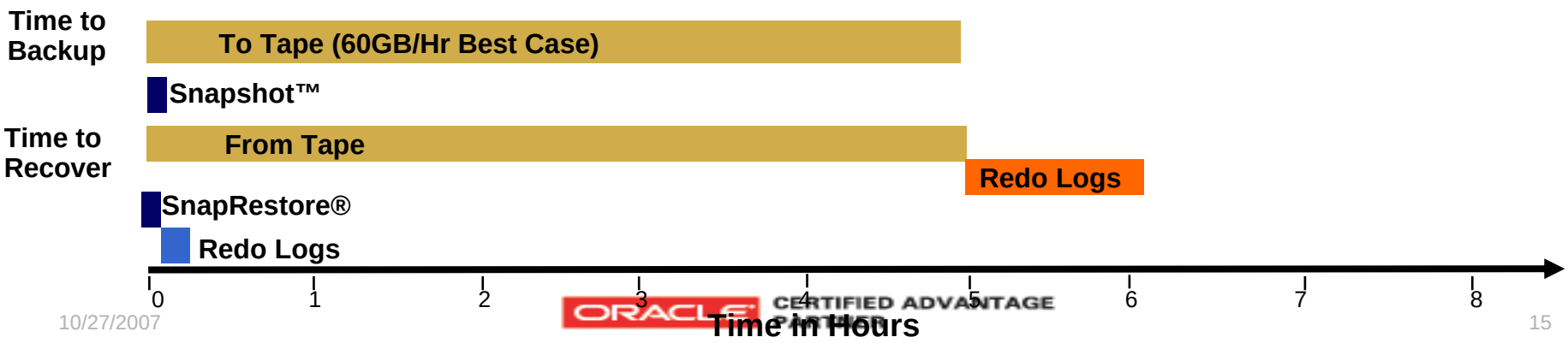
Backup and Recovery with Snapshot and SnapRestore

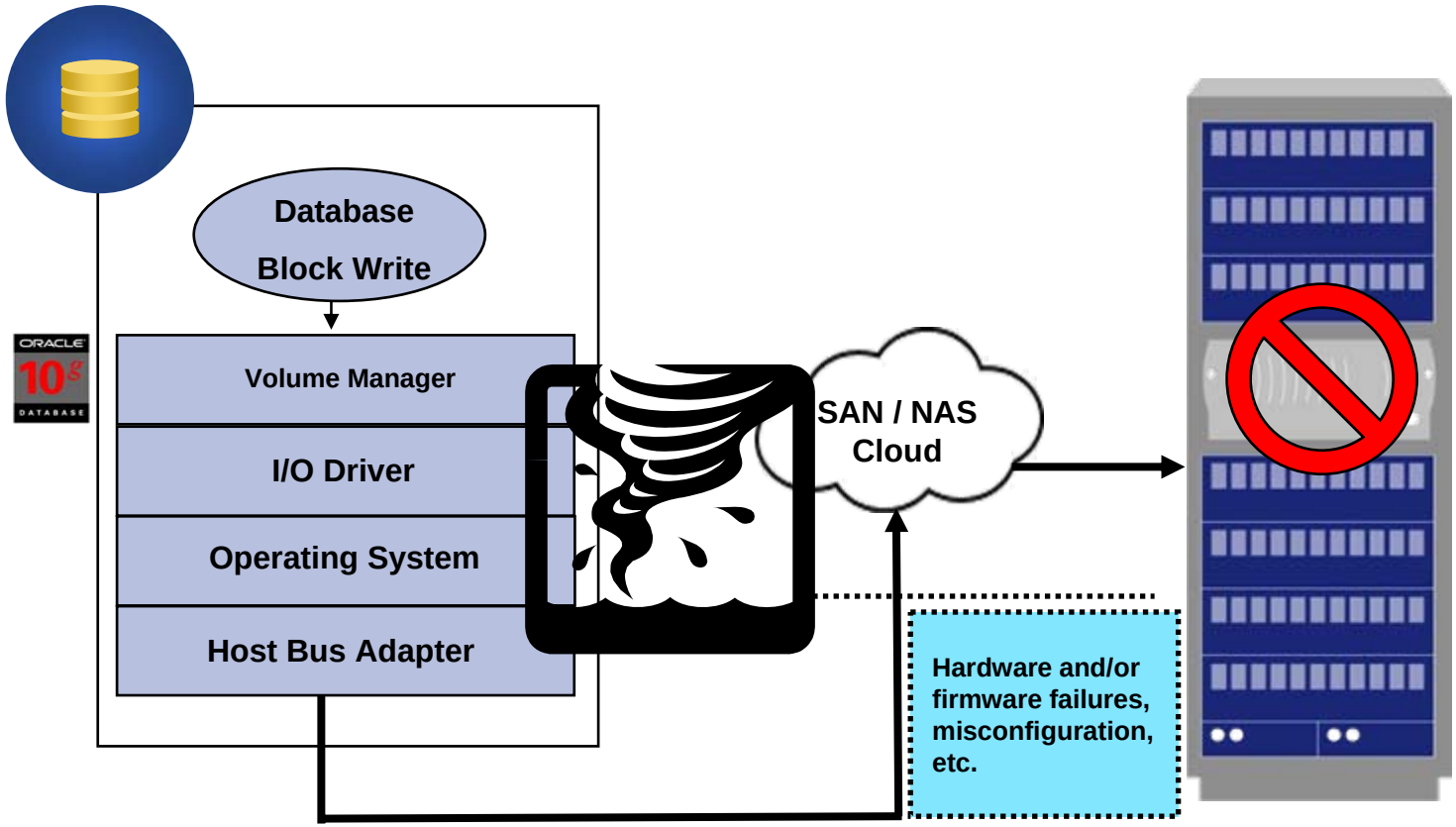


- Significant time savings
- Stay online
- Reduce system and storage overhead
- Consolidated backups
- Backup more often



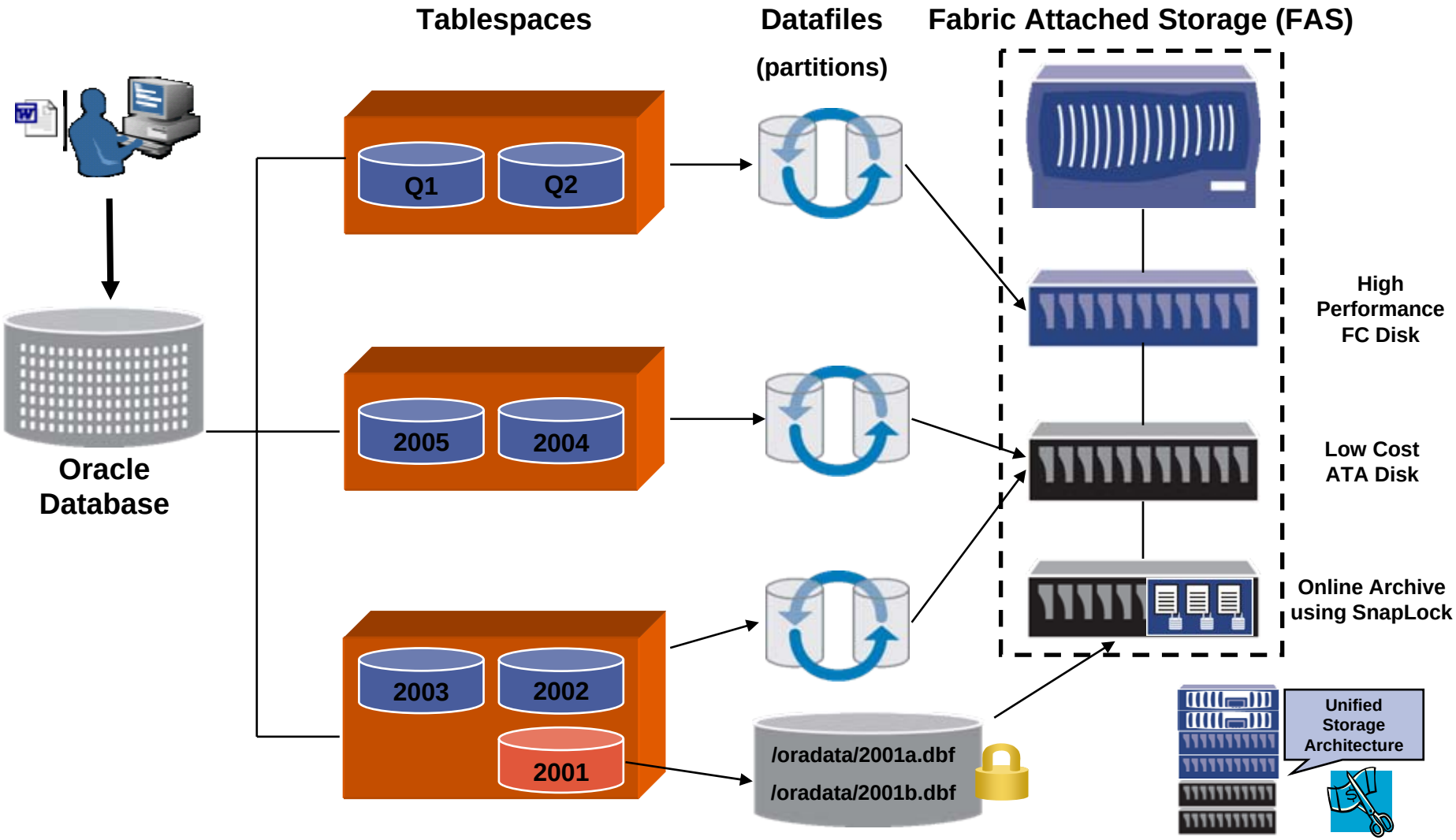
SnapValidator Protects Against Oracle Block Corruption

Oracle® Database



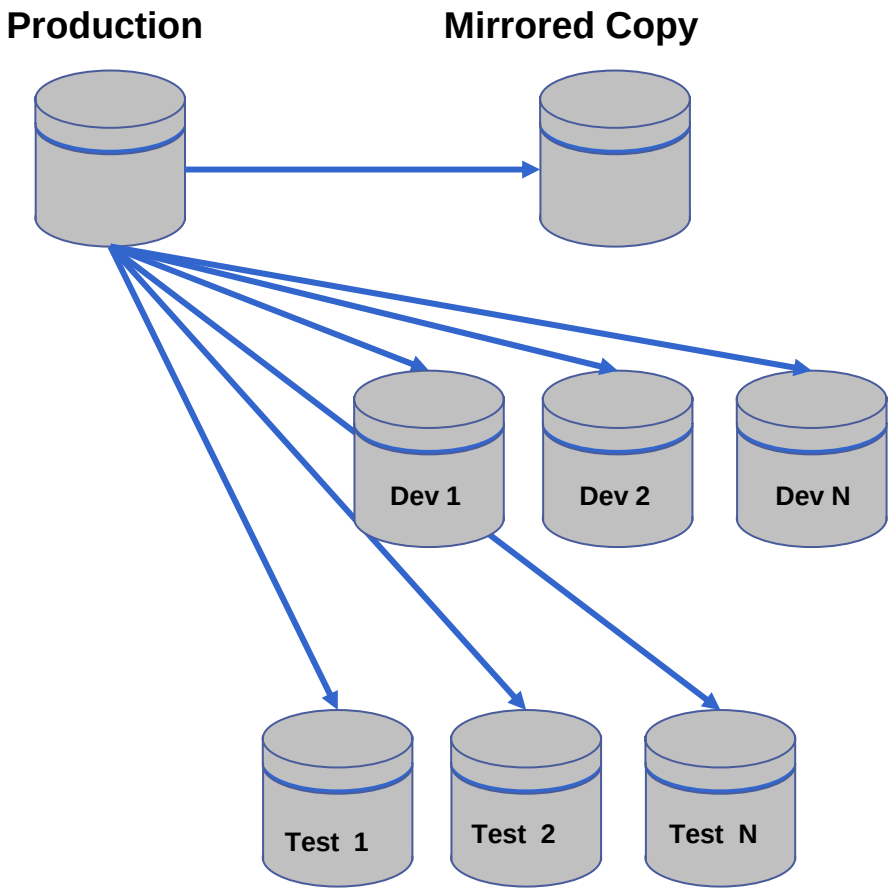
Data passes through many layers before reaching the storage subsystem. Corruption can occur at any point in the data path.

Archive and Protect Oracle Data with SnapLock



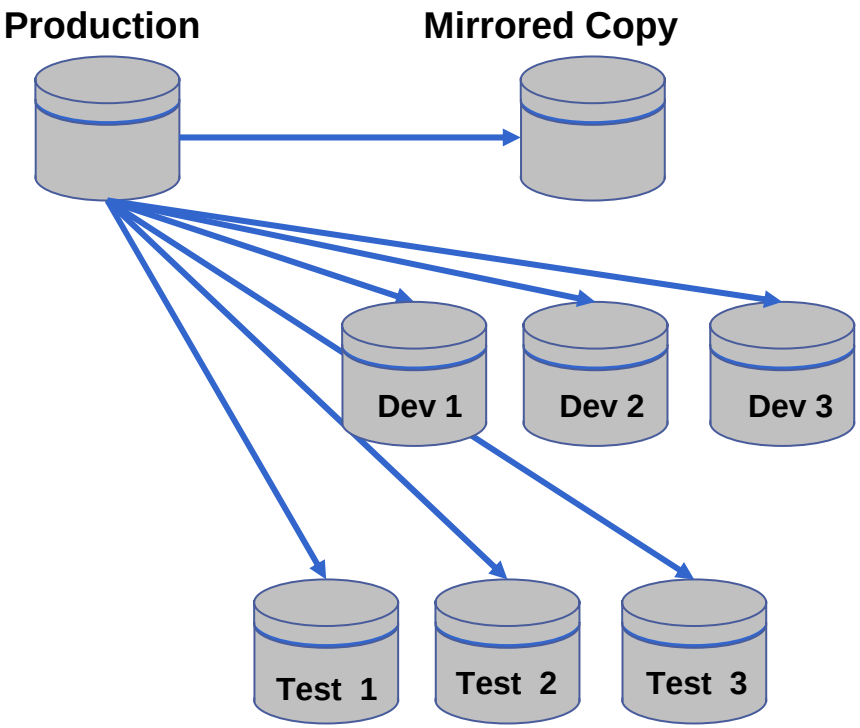
ORACLE CERTIFIED ADVANTAGE PARTNER

Traditional Approaches to Cloning



- **Copy**
  - Offline
  - Online (using a mirror or standby database, snapshots, and log-based consistent recovery)
- **Redirected restore**
  - From disk- or tape-
  - based backups
- **Challenges**
  - Limited storage resources
  - Long lead-time requirements

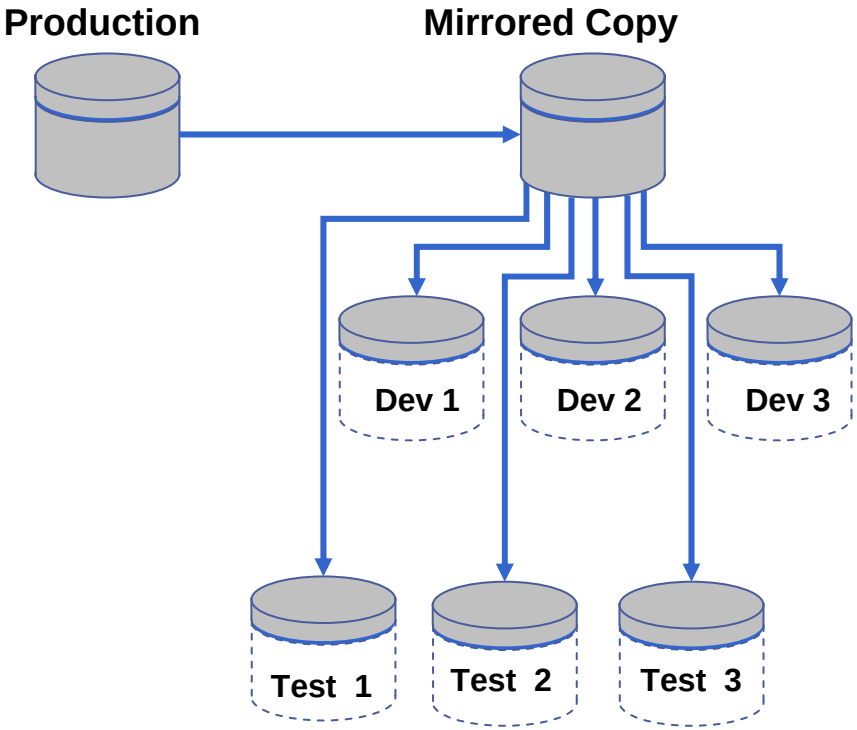
Traditional Approach: Application Development and Testing

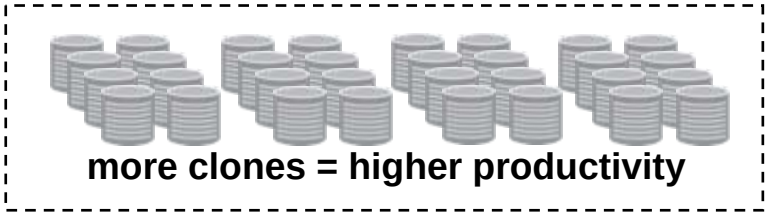


Production database	100GB
Mirror copy	100GB
Development copies	300GB
Testing copies	300GB
Total:	800GB

- 8x actual storage requirement
- Time consuming
- Resource overhead

NetApp Approach: Application Development and Testing





Production database	100GB
Mirror copy	100GB
Development copies	30GB
Testing copies	30GB
Total:	**260GB**

- Over 67% reduction in storage required
- Near instantaneous copies
- Negligible overhead
- Ability to have many more test and dev copies

Assumption: *up to 10% change in data in the test and dev environments*

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FlexClone Benefits at Oracle

"An incredible solution to our problem"

- **Thousands of Oracle developers needed clean, consistent individual copies of data on a daily basis**
  - Working on hundreds of products and projects
  - Generate 1000+ clones every night
  - Automation allows for routine disposal and creation of new clones
- **FlexClones broke the logjam associated with creating thousands of clones every week**
  - One command to create, expand, shrink volumes
  - Dynamic reclamation of unused space

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Summary

- Oracle and NetApp partnership based on reducing costs and complexity
- NetApp solutions for Oracle enable:
  - Automated backup and recovery
  - Cost-effective data protection and retention
  - Faster application development and deployment time to market
- Proven to lower TCO

NetApp®

for

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Thank You

BCC Services & NetApp