Achieving Data Driven Business Advantage with Oracle Optimized Storage

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Growth in Data Diversity and Usage

2.7 Zettabytes of data by end of 2012 and growing…

Enterprise
Exponential year over year growth

Big Data
Multi petabyte
Sites now common

Regulation
300 Exabytes in archives by 2015

Mobile
#1 Internet access device in 2013

Social Business
$30B/year in commerce by 2015

Cloud
80% of new applications and their data
Storage in the Optimized Data Center

- Storage Management Growing more Complex
- No Optimizations Between Software and Storage
- Single Application Storage Islands
- Lack of Scalability and Predictable Performance
- Low Storage Efficiency
- Large and Expensive Systems Integration
Complex IT

IBM WebSphere

Oracle Database

redhat

vmware

cisco
cal
technologies

EMC

Symantec

Storage Integration

Application Integration

Data Center Integration

ORACLE
Storage Challenges

Corporate Databases

Big Data

Cloud

Compliance
Storage Challenges with Corporate Databases

- Budgets consumed by legacy applications
- More data sources drive up complexity and integration costs
- High administrative overhead limits the growth and capabilities IT departments
- Bottom line improvements only through cost reductions
Improving Database Storage Unlocks Value

- Tighter integration between hardware and software lowers costs
- Smaller storage footprint reduces data center complexity
- Higher performance improves the customer experience
- Lower storage complexity and costs frees resources to grow the business
Oracle Storage for Oracle Database
Hardware and Software Engineered to Work Together

Need: Solution for Database Intensive Applications

Solution: SuperCluster, Exadata & Bid Data Appliance

Oracle Optimized Storage:
• OLTP accelerated with parallel query offload and Flash
• Fast access to non-Oracle Database 11g
• Highly parallel architectures efficiently support many VMs
• Data warehouses optimized with Hybrid Columnar Compression
• Integrated solution with fast interconnects and connectivity with legacy storage
Storage Challenges

- Corporate Databases
- Big Data
- Cloud
- Compliance
Storage Challenges with Big Data

• Faster analytics drives greater processing and I/O requirements
• Greater volume and variety of data can increase costs
• Slow analytics = lost opportunities
• Broader analytics and data reuse requires new storage models
Improving Big Data Storage Increases Insight

- Increase analytics power and storage capacity independently
- Dynamically optimize multiple analytics workflows
- Dramatically reduce the cost of maintaining historical data
- Accelerate analytics and uncover new opportunities
Oracle Storage for Big Data

Need: Fast, High Speed, Cost-effective Storage

Solution: ZFS Storage Appliance (ZFSSA)

ZFSSA Highlights:

• High-capacity appliance has great $/TB metric
• High performance design utilizing Solid State Drives
• High-throughput for more efficient server utilization
• High-speed back end connections to Exadata, Exalytics & Big Data Appliance
• Hybrid Columnar Compression for data warehouses
• Heterogeneous Unified Storage Appliance with enterprise data services, protocols and redundancy
Storage Challenges

- Corporate Databases
- Big Data
- Cloud
- Compliance
Storage Challenges with Cloud Computing

- Greater scale and variety creates heavy, randomized I/O loads
- Massive numbers of VMs lead to storage inefficiency
- Rapidly changing demands makes consolidation difficult
- Management complexity reduces flexibility and business agility
Improving Storage for Cloud Increases Efficiency

- Versatile storage systems enable storage standardization
- Storage optimized for VM clients increases efficiency
- Effective consolidation reduces the number of systems
- Simple, insightful management improves delivered performance
Oracle Storage for Cloud Computing

Need: Scalable capacity with performance and maximum client independence

Solution: Pillar Axiom with Storage Domains

Oracle Optimized Storage:
- Simplified IT with modular capacity and performance
- Efficient consolidation and fine-grain service level optimization with 3 storage tiers, and 5 QoS levels
- Hybrid Columnar Compression for data warehouses
- Up to 64 physical domains for maximum security
- Automated tiered storage archiving for scalable content libraries
Storage Challenges

Corporate Databases

Big Data

Cloud

Compliance
Storage Challenges with Compliance

• Large size and rapid growth increase disk-based archive migrations

• Lifetime retention requires constant monitoring

• Very low reuse puts a premium on minimizing OPEX
Improving Archival Storage Reduces Risk

- Expandable capacity and long media life reduce migrations
- Multi-tier archives maximize performance
- High data integrity and automated multi-site replication reduces risk of data loss
- Automated storage tiering lowers OPEX
Oracle Storage for Compliance

Need: Expansive capacity, high data permanence, extremely low cost

Solution: StorageTek Enterprise Tape

Oracle Optimized Storage:
- High-speed access from disk-based tiers
- Simple administration with automated migration
- Disaster recovery with automatic remote copies
- High data integrity and 30 year media
- 200x less power and cooling than disk based archives
Oracle Storage for Regulation and Compliance

• Oracle Integration
  – Archiving of Hybrid Columnar Compressed data

• Storage Efficiency
  – Application transparent data access
  – Automated, tiering and multi-site data protection

• Storage Performance and Scale
  – Scalable to Exabyte capacity

• Price/Performance and TCO
  – 30 year media life with no off-line energy use
  – Low administration, policy driven archiving
Simplify Storage in the Optimized Data Center

Today’s Storage can Enable Strategic Advantage

- Dynamic Storage Aligns Data Access to Business Priorities
- Application-Aware Storage and Storage-Aware Applications
- Fast Access from Multi-Applications to “Big Data”
- Rapid, Flexible Virtualization and Cloud Deployments
- Extreme Storage Efficiency and Consolidation
- Automated Archives
Simplify IT with Oracle Optimized Storage

Oracle Software Runs Faster and More Efficiently on Oracle Storage
# Oracle Optimized Storage

Developed for Data Centers, Optimized for Oracle Software

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To Learn More

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