Oracle Database 12c

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Relational Database (RDBMS) Market

Market Size of $24B+ in CY2011 (1)
- Oracle leads RDBMS market with 48.8% share
- Oracle grew 18% growth, outperforming 16% avg
- Closest competitors lost market share

Market Growth Drivers
- Business Intelligence/Analytics & Big Data
- Cloud/Consolidation Initiatives to help reduce costs
- Emergence of Engineered Systems


(1) – Source: Gartner Group
Database Strategy

Deliver Market-Leading On-Line Transaction Processing, Data Warehousing and Big Data management solutions . . .

- With breakthrough advances in performance, scalability, high availability, data optimization, data security and ease of management

- With unique software innovations optimized for emerging hardware architectures, including Engineered Systems, to lower cost of ownership
Objectives
- Ensure billing accuracy
- Enhance customer service
- Predict data traffic trends

Solution
- 2009: Create new DW on Exadata V1 half-rack
- 2010: Move to full-rack Exadata V2
- 2011: Add full-rack Exadata X2-2
- 2012: Add full-rack Exadata X2-2

“Oracle Exadata Database Machine has overwhelmingly superior performance, with average data processing rates 8 to 20 times greater than other SK Telecom in-house systems.”
- Jin-hyung Lee, Manager, Network Engineering Department, SK Telecom

Benefits

<table>
<thead>
<tr>
<th>Extreme Capacity</th>
<th>Storage Savings</th>
<th>Capture Lost Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 TB/day</td>
<td>900 TB</td>
<td>$ Millions</td>
</tr>
</tbody>
</table>

- 1,000 TB to 100 TB
- 900 TB Raw / 100 TB Compressed
- 16-node RAC Cluster
- Spam Filtering

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Objectives

- Enable real-time enquiries against transaction data
- Process 20 million financial transactions/day
- Sub-second response time
- Zero data loss DR protection

Solution

- Two Quarter-rack Exadata V2 systems - Oracle Maximum Availability Architecture

Benefits

- Fast and Scalable Performance
- Zero Unplanned Downtime
- More Capacity
- Zero Data Loss DR Protection

"Our critical electronic payments service has been live on Exadata since early 2011 with 100% uptime. The service reliably processes the transfer of billions of Euros per week and achieves sub-second response times for online enquiries.” - Martin McGeough, Database Technical Architect

Pre-Exadata
4 ProdServers, 2 SANs

Exadata V2
Quarter Rack

Exadata V2
Quarter Rack

Active Data Guard
Synchronous Zero Data Loss

Electronic Payment System
Mixed workload, high volume OLTP and batch processing

Performance boost with no application change using Exadata Smart Flash Cache and Smart Scan

Zero RPO, 15 minute RTO
Auto block repair
Standby-first maintenance

Benefits

- Zero Unplanned Downtime
- More Capacity
- Zero Data Loss DR Protection

- Fast and Scalable Performance

2011

<540ms response

20 million transactions/day

Exadata test system
## OLTP Consolidation

### Objectives
- Support 400% growth in customer facing applications
- Eliminate bottlenecks in Manufacturing and Planning
- Consolidate to reduce costs

### Solution
- 2012: Consolidate 12 servers onto two Half-rack Exadata V2 systems

### Benefits
- Faster Month End Reports
- 99.95% Uptime
- 4x Growth
- Data Center Cost Savings

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Exadata V2 DB Consolidation</th>
<th>Pre-Exadata 12 Prod Servers</th>
<th>Exadata V2 Dev/Test/Local Standby</th>
</tr>
</thead>
<tbody>
<tr>
<td>4x Growth</td>
<td>5 Prod Databases</td>
<td>Oracle E-Business Suite</td>
<td>Tape backup</td>
</tr>
<tr>
<td>Data Center Cost Savings</td>
<td>Archived Data</td>
<td>Advanced Supply-Chain Planning</td>
<td></td>
</tr>
<tr>
<td>“Consolidation on Exadata reduced costs and eliminated critical performance bottlenecks in our Manufacturing and Planning systems”</td>
<td>High-Capacity Exadata Storage Servers</td>
<td>Hyperion Reporting</td>
<td>Data Guard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Garmin Connect custom app</td>
<td></td>
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- Up to 11X

- “Consolidation on Exadata reduced costs and eliminated critical performance bottlenecks in our Manufacturing and Planning systems”
  - Ed Link, Vice-President IT, Garmin

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Mainframe/SAP Consolidation to Exadata

**Benefits**

<table>
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<tr>
<th>Faster Application</th>
<th>Storage Savings</th>
<th>Operation Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. up to x100</td>
<td>50% (Advanced Compression)</td>
<td>125K$/Year</td>
</tr>
<tr>
<td>Avg. up to x20</td>
<td>1300GB to 680GB</td>
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“Exadata has high performance. Data Compression is also wonderful result. It is best consolidation database platform. Also, thanks to careful planning and verification, it was smooth without any major problems as a project.”

- Director, Integration system department

**Business Objectives**

- Reduce TCO
- Improve Operation and Maintenance Cost
  - Standardize the environment

**Solution**

- 2010: Project start Exadata V2 Quarter Rack
- 2012: Software Upgrade X2-2 SAP DB Consolidation

**Mainframe migration**

- Sales and Logistics
- Master Management
- Cost Management
- Sales Analytics (DWH)

**SAP Database Migration**

- SAP FI
- From Linux on VMware
- Consolidate 3 system landscape (TST, QAS, PRD)

**Migration (2012/08)**

- Oracle Exadata Quarter Rack
- 2Node RAC
- DWH used HCC, SAP used Advanced Compression

**Migration (2012/03-05)**
Database-as-a-Service

<table>
<thead>
<tr>
<th>Benefits</th>
<th>OPEX</th>
<th>ROI</th>
<th>Rapid Provisioning</th>
<th>Simplified Management</th>
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<tbody>
<tr>
<td>“As the business seeks more and more services on demand, we needed to provide a resilient platform and the Exadata provides us a consolidated platform for database services that can meet all those needs”</td>
<td>50–60% reduction</td>
<td>150% in 5 years</td>
<td>Months to Minutes</td>
<td>Two Oracle Homes</td>
</tr>
</tbody>
</table>

Business Objectives

- Cost Savings
- Rapid Provisioning
- Extreme Standardization

Solution

- Exadata for
  - Rapid, reliable deployments
  - Standardized environments

Exadata for
- Rapid, reliable deployments
- Standardized environments

Enterprise servers configured by CBA
Commodity clusters configured by CBA
Commodity clusters configured by Oracle
Oracle Database

Competitive Differentiators

- Single database for all workloads across all platforms & architectures
  - From single or clustered servers on different OS to range of engineered systems
- Key enabler for workload consolidation onto database clouds
  - RAC, Automatic Storage Management, Exadata Storage Server Software
- Single vendor support for integration of Big Data & Business Analytics
  - Big Data Appliance, Hadoop Connectors, Columnar Compression, Advanced Analytics
- Unique architecture to reduce downtime & eliminate idle redundancy
  - Maximum Availability Architecture including Golden Gate and Active Data Guard
Summary | Database

- Large & Growing RDBMS market is a key part of Oracle’s business
- Proven Leader in Transaction Processing, Data Warehousing and Big Data Management Solutions
- Enterprise-Class SLA proven for business applications:
  - OLTP/packaged applications (e.g. Oracle Applications, SAP, ISV)
  - Data Warehousing/Business Analytics and Big Data
- Large and loyal customer base that rely on Oracle Database
  - Oracle Database 12c continues innovation with Pluggable Databases and more
Hardware and Software Engineered to Work Together