Oracle Database 10g Release 2

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Oracle Database 10g

Momentum

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Oracle: #1 RDBMS Vendor Overall

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Source: IDC March 2005. Worldwide RDBMS 2004 Vendor Shares

Oracle Runs Most of the World's Largest Databases

- The world's largest commercial database runs Oracle
  - 100 TB DW at Yahoo!
- The world's largest commercial UNIX DW runs Oracle
- The world's largest commercial Linux DW runs Oracle
  - 24.7 TB DW at amazon.com (#6 biggest DW in world)
- Oracle powers nine of the world's top 10 UNIX OLTP systems
  - 16 TB DB at US Patent Office is #1

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Source: Winter Corporation, September 2005, http://wintercorp.com/VLDB/2005_TopTen_Survey/TopTenWinners_2005.asp

RAC Adoption Rate Growing…

Source: Oracle Internal Reporting, Q4-FY'05

RAC/Grid Customer Trends

- Growing uptake of Oracle's integrated Grid stack
  - Drivers: eliminates cost & mitigates business risk
- Data Warehouse deployments shifting from SMP to Grid
  - Drivers: cost effective scale-out performance
- Use of RAC/Grid as a consolidation platform
  - Drivers: increased business performance – this is sometime a by-product. increasingly, however, customers are recognizing the value.

Oracle #1 RDBMS Vendor on Linux

Source: Gartner DataQuest May 2005, based on New Licenses Sales

Unbreakable Linux

- Oracle Linux kernel team makes contributions to open-source
- Oracle provides first line support for Red Hat and Novell/Suse Linux
- Oracle is leading database for Linux with 81% market share
- Oracle powers 100% of all Linux DW and OLTP db's measured in the Winter 2005 Top Ten program
  - Oracle runs biggest Linux DW at 24.7 TB and biggest OLTP DB at 4 TB

Oracle Database 10g Release 2

New Features

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Oracle Database 10g Release 2 – Delivers

- A timely release for installed base upgrade
  - Announced at OW in December
  - July – Linux x86
  - August – Solaris, HP, AIX
  - Sept – Windows
- A high-quality, stable release
- Continued focus on Grid Computing
- Key new features to the market

Infrastructure Grid

Application Server Clusters

Real Application Clusters

Automatic Storage Management

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Infrastructure Grid

Application Server Clusters

Real Application Clusters

Automatic Storage Management

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Automatic Storage Management

- Database file system providing clustered volume management
- Integrated into the Oracle kernel
- Simplifies and automates disk management
- Lowers the TCO

ASM – How it Works

Automatic Storage Management

- No volumes: just a pool of storage
- Partitions total disk space into uniform sized megabyte units

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Automatic Storage Management Performance

- World record TPC-H 3TB result of 59,435.7 QphH@3000GB
- Price performance ratio of $114.00/QphH@3000GB
- SunFire E25k with 72 1.2GHz UltraSparc IV on Solaris 10, Oracle Database 10g and Automatic Storage Management (ASM)
- Jan 31, 2005

Oracle Database 10g Release 2 – Automatic Storage Management

- Improved ease-of-use and configuration
- Enhanced data provisioning
  - Support transportable tablespaces
- Enhanced storage virtualization
  - Support multiple databases in a cluster
  - Support databases at multiple release levels

Oracle Database 10g Release 2 – Data Provisioning

- Online Transportable Tablespace
- Full Database Transport Within Same Endian Platforms
- Improved Oracle Streams Performance and Manageability
- Tablespace Repository

Infrastructure Grid

Application Server Clusters

Real Application Clusters

Automatic Storage Management

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Oracle Database 10g Release 2 – Real Application Clusters

- Improved Robustness
  - Cluster Verification Utility
  - Improved OCR, Voting Disk resilience
- Oracle Clusterware for integrated application availability
- Load Balancing Advisory
- Certified to 100 nodes
- Improved performance

Oracle Clusterware

- Provides unified framework for managing applications and database using the same HA infrastructure

Highest Data Protection for Lowest Cost

ASM Mirroring
Storage Failure Protection

Flash Recovery Area
Corruption Protection

Flashback
Human Error Protection

Data Guard
Site Failure Protection

Fault Tolerant Standby

- **Fast-Start Failover** implements automatic failover to a standby database
  - Triggered by failure of Site, Hosts, Storage, or Network
  - Works with and supplements RAC server failover
- Failover occurs in seconds
  - Comparable to cluster failover
- Original production site automatically rejoins the configuration after recovery

Oracle Secure Backup

Coming !

- Oracle Secure Backup is a low cost alternative to complex tape backup products
- Fastest & Best integrated backup for Oracle Database
  - Oracle9*i* and 10*g* database backup using RMAN
  - Easy management using Enterprise Manager
  - Encrypted backups
- Central Management of network backups
  - Scales to low 100's of servers

Ÿ Replaces Legato LSSV (LSM) bundle

Oracle Database 10g Release 2 – Transparent Data Encryption

- Transparent Data Encryption
  - Includes Key Management
  - Transparent to applications
  - Helps Address Privacy and Regulatory compliance

Management and Monitoring

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Oracle 10g Grid Management One-half to one-tenth the cost

- Self-Managing Database
  - AWR
  - ADDM
  - SQL Tuning Advisor
- OEM Grid Control
  - Grid-wide operations
  - Scale from one to hundreds of systems with little incremental cost

Business Challenge – How to Scale DBA's to the Grid ?

Source: IOUG 2001 DBA Survey

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Oracle Database 10*g*
Self-Managing Database

- Automation of Routine Tasks
  - Automatic disk-based Backup and Recovery
  - Automatic optimizer statistics collection
  - Automatic Memory Management
  - Automatic Storage Management
- Built-in Intelligent Infrastructure
  - Code instrumentation
  - Workload repository
- Tools to Empower the DBA
  - Automatic Database Diagnostic Monitor
  - Automatic Tuning Optimizer
- Lots more …

Oracle Database 10g Release 2 – Improved Database Control

- Single Instance to RAC Conversion
- RAC Topology and Interconnect Monitoring
- High Performance Change Management Functionality
- Backup Reports
- Baselines
- New, Easier to Use Performance Screens and
- SGA-attach mechanism
  - Enables analysis of slow or hung systems

Oracle OEM 10*g* Grid Control

- Manages the Oracle Grid environment
- Scales to thousands of servers
- Application Service Level Management
  - Measure SLA's
- Configuration Management
  - Provisioning
  - Cloning
  - Patch Management

Automated Provisioning

Scale Out to More Systems and Minimal Incremental Cost

Over 20% of downtime attributable to human configuration errors

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Oracle Enterprise Manager 10g Release 2 – Improved Grid Control

- System Topology Viewer
  - Model applications, clusters, storage
  - Leveraged by all Grid Control subsystems
- Services Dashboard
  - Model business services
  - Define and monitor SLA
- Adaptive Alert Threshold
- Patch Distribution and Application

Oracle Database 10g Release 2 – Improved Job Scheduler

- Chaining
- Events
- Customized Calendars

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INFORMATION

Store and Search All Your Data

- Enhanced LOB performance
- Online local partitioned text indexes
- DICOM and JAI 1.1.2 Support
- Improved performance of Network and Topology Models
- Western Europe routing and geocoding
- EPSG Coordinate Systems
- Georaster Compression
- Industry's first XML Query Support

Oracle Collaboration Suite
Low-cost, easy Unified Messaging and Files

Oracle Ultra Search
Enterprise Search Solution

XML DB
Integrated Native XML Database

Oracle Text
Text management and search

Oracle Spatial
Location and Proximity Searching

Oracle interMedia
Multimedia management

Relational
Characters, Numbers, Dates, LOBs

Native XML Query support in the Database

- XML Query is emerging as the consensus query language for XML
  - Expected W3C Recommendation in 2006
- First mainstream commercial database release to support XML Query
  - Native = Fast, Efficient
- Can mix-and-match XML Query and SQL in same query

Oracle Database 10g Release 2 – Improved Data Warehousing

- Performance
  - Up to 5x improvement in sort performance
  - Up to 3x improvement in aggregate performance
- Partitioning
  - Increase maximum number of partitions per table from 64k to 1024K-1
  - Support ‘multidimensional’ partition-pruning
- Analytics
  - Support standard linear algebra libraries within PL/SQL
  - Enhancements to the SQL ‘model’ clause
  - Decision trees in Oracle Data Mining
- ETL
  - DML Error-logging

TPC-H 300G

- **27% Improvement 10.2 over 10.1, same hardware**

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Source: tpc.org, 10.2 benchmark used PowerEdge 6600/3.0GHz/4MB w/Oracle DB 10g R2, availability date Jan 8th 2006. 10.1 benchmark used same hardware w/Oracle DB 10g R1, availability date Sept 10th 2004,

Sort Performance Improvements

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Test details in “Sort Performance Improvements in Oracle Database 10*g* Release 2” by Mark van de Wiel, June 2005

Project Raptor

Coming !

- Database Development Productivity Tool
- Targets the DBA Developer
- Rich Client SQLPlus functionality
- Optimizes out-of-box experience
- Will distribute initially via OTN
- Requires no Oracle home; simple to install

Oracle HTML DB

- Quick assembly of reporting and data entry applications
- No programming or scripting
- Instant deployment on the Web
- Use the full power of Oracle Database 10*g*
- Addresses MS Access proliferation problem

Oracle Database 10g Release 2 – Other Application Development

- Client notification on table update
- Linux ODBC Driver
- JDBC 3.0 support, connection load balancing, XA Connection Caching
- SQL Regular Expressions - support for key Perl conventions
- Unicode 4.0 Support
- PL/SQL Compilation Versioning

Oracle Database 10g Release 2 – .Net Development

- Visual Studio Integration (delivery via OTN)
- Callout to Common Language Runtime
- ODP.Net Fast Connection Failover

Oracle Database 10g Release 2 - Summary

- Lowest Cost
  - Oracle Backup
  - Improved Sort
  - Streams Performance
  - Oracle Clusterware
- Highest Quality of Service
  - Rolling Upgrades
  - Fast-Start Failover
  - Transparent Data Encryption
- Easier to Manage

FY06 Initiatives

Project Audit Vault

Coming !

Enterprise Audit Sources

Oracle Database 9i R2

3rd Party Audit Sources

Oracle Database 10*g R2*

Oracle App Svr

Oracle Applications

Oracle Database 10g R1

Customer Reports (custom)

Partner Reports

Oracle Audit Vault Reporting

Project Data Vault

Coming !

Risks and Liabilities:

- SOX, HIPAA, SB1386 …
- Intellectual Property

QUESTIONS ANSWERS

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