DB2 for WebSphere Application Server

a moment to break out of an IT comfort zone
Agenda

- Why DB2 for Websphere
  - Unique technical advantages
  - All-in-one single local support

- Why now
  - Oracle Compatibility in DB2
  - Better pricing, better performance
  - Market shift for Single Vendor complete offering
IBM Software Strategy - Componentize to optimize
Part of technical advancement in DB2 for WAS

- SQLj deployment in WebSphere Application Server
- PureQuery support in WebSphere Application Server
- DB2 trusted context support
- Extended DB2 data source support
- DB2 client reroute enhancements in WebSphere Application Server
- ....
Trusted Context - authorization from WAS to DB2

- **Motivation for trusted context**
  - Identity Assertion
    - Loss of identity at database
    - Diminished user accountability
    - Overuse of privileges by single id
  - Improper use of privileges
    - Use diverges from original intent

- **Trusted context has 3 attributes**
  - System authorization id
  - IP address or domain name
  - Data stream encryption

- **Together, WAS and DB2 enhance fine-grained access control**

- **EAL-4 Certification for both**
DB2 & Websphere

- **SQLj deployment in WebSphere Application Server**
  - Installation of SQLj applications from WebSphere Application Server administrative console.
  - Customization and binding of DB2 SQLj profiles from administrative console without the need to uninstall and reinstall applications.
Optimize performance - *Automatically*

- **DB2, WAS and Enterprise Workload Manager (EWLM) synergy**
  - Up to four times improvement in response time
- Virtualization automatically allocates work
- Application Response Measurement (ARM) **standard** provides the capability to measure the application response time

Exclusive for DB2 & WAS on System p
DB2 & IBM MQ

- Built in default function in DB2 and MQ for integration and calling each other

- Leverage for MQ for data replication across region
  - DB2 Q-Replication
Integrated Problem Determination and Monitoring

- **IBM Support Assistant (ISA)**
  - No charge serviceability workbench
  - Supports over 150 IBM offerings
  - Troubleshooting/diagnostic tools
  - Search for an answer to your question or problem
  - Access critical product information
  - Shortens time to resolve problems with automated data gathering and submission

- **End-to-end tracing, connection identification, workload correlation and monitoring**

**DB2 exclusive for WAS**
Local IBM HK WAS & DB2 Integrated Support Structure

Yvonne Lee
Manager, Software Support

Thomas Lo
Service Delivery Manager
OS Team

May Leung
Service Delivery Manager
Middleware Team

Mike Suen
Service Delivery Manager
Account Team

AIX & DB2 Advisor
Fred Ho

pSeries

iSeries

WebSphere

DB2

Kelvin Pon
DB2 Team Leader

MQ / WBI

Tivoli

Support are Cross-Trained with both
Websphere & DB2

9 skilled DB2 support
Why Now
Why Now: Market forced to single vendor solution
Why Now: Oracle Has Ratcheted Up Prices

- **June 2008** Oracle drastically increases the price of all their software
  - Increase range from 15% to 47%
  - Also affects maintenance bills

- **March 2009** Oracle increases the price of the Oracle Database by 33% on some platforms

- **July 2009** Oracle increases the price of pretty-much required Management and Tuning packs by over 40%

- **August 2009**: Doubled the price of Active Data Guard
Why now: Database market share turning point

**ORACLE CORPORATION**

Q1 FISCAL 2010 FINANCIAL RESULTS
SUPPLEMENTAL TOTAL SOFTWARE PRODUCT REVENUE ANALYSIS (1)
($ in millions)

<table>
<thead>
<tr>
<th></th>
<th>Fiscal 2009</th>
<th>Fiscal 2010</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Q1</td>
<td>Q2</td>
</tr>
<tr>
<td>DATABASE &amp; MIDDLEWARE REVENUES</td>
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<td></td>
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<tr>
<td>New software licenses</td>
<td>$906</td>
<td>$1,157</td>
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<td>Software license updates and product support</td>
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<td>Software Revenues</td>
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<td>AS REPORTED GROWTH RATES</td>
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<tr>
<td>New software licenses</td>
<td>27%</td>
<td>4%</td>
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<tr>
<td>Software license updates and product support</td>
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<td>Software Revenues</td>
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<td>CONSTANT CURRENCY GROWTH RATES (2)</td>
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<td>New software licenses</td>
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<td>12%</td>
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<tr>
<td>Software license updates and product support</td>
<td>22%</td>
<td>24%</td>
</tr>
<tr>
<td>Software Revenues</td>
<td>22%</td>
<td>19%</td>
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<table>
<thead>
<tr>
<th></th>
<th>Growth in USD</th>
<th>Growth Constant Currency</th>
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<tbody>
<tr>
<td>Database &amp; Middleware - reported by Oracle</td>
<td>-22%</td>
<td>-19%</td>
</tr>
<tr>
<td>all Database, incl. options</td>
<td>-24%</td>
<td>-21%</td>
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<tr>
<td><strong>core Database only</strong></td>
<td>-26%</td>
<td>-23%</td>
</tr>
<tr>
<td>Database options only</td>
<td>-21%</td>
<td>-18%</td>
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</table>
Why now: DB2 9.7 with Oracle compatibility capability

<table>
<thead>
<tr>
<th>Oracle DBMS</th>
<th>DB2 9.7</th>
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<tbody>
<tr>
<td>Oracle Concurrency Control</td>
<td>No change</td>
</tr>
<tr>
<td>Oracle SQL</td>
<td>No change</td>
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<tr>
<td>Oracle PL/SQL</td>
<td>No Change</td>
</tr>
<tr>
<td>Oracle Packages</td>
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</tr>
<tr>
<td>Oracle Built-in packages</td>
<td>No Change</td>
</tr>
<tr>
<td>Oracle Built-in packages</td>
<td>No Change</td>
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<tr>
<td>Oracle JDBC</td>
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</tr>
<tr>
<td>Oracle SQL*Plus Scripts</td>
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</tr>
</tbody>
</table>

Changes are the exception. Not the rule.

THIS IS WHY WE CALL IT ENABLEMENT AND NOT PORT!

PL/SQL = Procedural Language/Structured Query Language
Utilize your existing Oracle development skill & application on DB2

- Why do you need DB2 development Skill?
- When you can use Oracle skill develop program on DB2.
- The database market has changed...

Gartner

Publication Date: 29 April 2009

IBM DB2 9.7 Shakes Up the DBMS Market With Oracle Compatibility

Donald Feinberg

A feature in the IBM DB2 9.7 that will enable users to more easily replace the Oracle database management system with the DB2 DBMS has important implications for the commercial, off-the-shelf software applications community.
Why now: New DB2 Active-Active scale out – DB2 pureScale

- Unlimited Capacity
  - Buy only what you need, add capacity as your needs grow

- Application Transparency
  - Avoid the risk and cost of application changes

- Continuous Availability
  - Deliver uninterrupted access to your data with consistent performance

Learning from the undisputed Gold Standard for reliability and scalability... System z
The Result

- 112 Members: 81% Scalability
- 88 Members: 87% Scalability
- 64 Members: 91% Scalability
- 32 Members: Over 95% Scalability
- 16 Members: Over 95% Scalability
- 2, 4, and 8 Members: Over 95% Scalability
DB2 now allow both Shared-disk or Shared-Nothing scale out design

-Shared-Nothing

DB2 Database Partitioning Feature
Balance each node with dedicated CPU, memory and storage

-Shared-Disk

DB2 preScale Feature
Balance CPU node with shared disk and memory
The most critical factor in the transaction efficiency appears to depend on two factors: memory handling and buffering.

DB2 on IBM System P improved performance with a synergistic alignment of memory handling optimizations in both DBMS and hardware.

The improved efficiency of the DB2 product on the System p is higher than the other, ranging from 15.1% through 37.0% on the transaction-based metrics and averaging 58.6% better on the query based metric.

DB2 always faster than Oracle on same server

Over 37% faster
DB2 require less administration than Oracle

- Collected over 2,354,000 data points covering over 4,100 systems
  - 650 AIX and 3,450 Intel-based production systems observed

- Reveals less DBAs required for DB2 vs. Oracle

- Reveal less downtime for DB2 vs. Oracle

- Reveals faster time to market

<table>
<thead>
<tr>
<th>Staff Discipline</th>
<th>DB2</th>
<th>Oracle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account management</td>
<td>0.1</td>
<td>0.1</td>
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<tr>
<td>Application management</td>
<td>0.5</td>
<td>1.4</td>
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<tr>
<td>Backup and archiving</td>
<td>0.1</td>
<td>0.7</td>
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<tr>
<td>Business recovery services</td>
<td>0.2</td>
<td>0.3</td>
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<tr>
<td>Database management and administration</td>
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<td>4.3</td>
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<tr>
<td>Disk and file management</td>
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<td>1.2</td>
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<td>HW and network configuration / re-configuration</td>
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<tr>
<td>HW deployment</td>
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<td>Operations</td>
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<td>7.2</td>
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<td>Planning and process management</td>
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<tr>
<td>Performance tuning</td>
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<tr>
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<tr>
<td>Security and virus protection</td>
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<tr>
<td>Service desk</td>
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<td>Systems research, planning and product management</td>
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<td>0.1</td>
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<tr>
<td>Traffic management &amp; planning</td>
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<tr>
<td>User administration</td>
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<tr>
<td><strong>Total staffing level</strong></td>
<td>16.0</td>
<td>27.9</td>
</tr>
</tbody>
</table>

DB2 requires 43% less DBA time

Read about it [here](#)
Thanks you