Managing Change With Oracle Real Application Testing

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Top 3 DBA Activities

• Ongoing Administration
  • Challenge: Manage More with Less

• Performance Management
  • Challenge: Sustain Optimal Performance

• Change Management
  • Challenge: Preserve Order amid Change

Source: IOUG Nov 2006 Database Survey
Lifecycle of Change Management

- Make Change
- Set Up Test Environments
- Test
- Identify Patches & Workarounds
- Diagnose & Resolve Problems
- Provision for Production
- Diagnose & Manage Problems

Real Application Testing
Adaptive Change Assurance
Real Application Testing

- Technology benefits
  - Rapid technology adoption
  - Higher testing quality
- Business benefits
  - Higher agility
  - Lower risk & cost

Solution for the Agile Business
Real Application Testing

- **Product Components**
  - Database Replay
  - SQL Performance Analyzer

- **Change assurance for:**
  - Database and O/S upgrades
  - O/S migrations, i.e. Windows and Linux
  - Configuration changes, e.g., conversion from single instance to Oracle RAC, Oracle init.ora parameters, adding index
  - Storage changes, e.g. migration to ASM
Database Replay

Production

Capture

Test

Analysis & Reporting

Capture

Process

Replay
# Database Replay Comparison

- **Database *Time Machine***
- **Technology that can only be built by Oracle**

<table>
<thead>
<tr>
<th></th>
<th>Oracle Database Replay</th>
<th>3rd Party Load Testing Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Workload</strong></td>
<td>Real application workload</td>
<td>Artificial simulated workload</td>
</tr>
<tr>
<td><strong>Test Coverage</strong></td>
<td>100% of workflow</td>
<td>1-5% of workflow</td>
</tr>
<tr>
<td><strong>Test Effort</strong></td>
<td>• Simple app: days</td>
<td>• Simple app: weeks</td>
</tr>
<tr>
<td></td>
<td>• Complex app: days</td>
<td>• Complex app: months</td>
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Database Replay Demo shows:

- Capture of a production workload with minimal overhead
- Replay of the captured workload on a test system while maintaining the concurrency, timing, and transaction dependencies of the original workload
- Ability to alter the characteristics of replay, such as think time between successive user calls, with the help of several optional parameters
- Generation of reports to compare the performance of a capture with a replay or of one replay with another replay
## SQL Performance Analyzer Comparison

**Technology that can only be built by Oracle**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Oracle SPA</th>
<th>3rd Party SQL Testing Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture with low overhead</td>
<td>Yes</td>
<td>No, require explicit polling &amp; external storage</td>
</tr>
<tr>
<td>Test with production context</td>
<td>Yes</td>
<td>No, not integrated with optimizer</td>
</tr>
<tr>
<td>Transfer resolutions to production</td>
<td>Yes, integrate with SQL Tuning Advisor &amp; SQL Plan Management</td>
<td>No</td>
</tr>
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</table>
SPA Demo shows:

- Ability to identify SQL performance improvements and regressions resulting from a change for complete SQL workloads
- Integration with the SQL Tuning Advisor and SQL Plan Baselines to automatically tune regressed SQL
Test Effort Comparison
Application Tested: Oracle E-Business Suite

Time Taken (Days)

- Install & Setup
- Understand Application Usage
- Identify Key Transactions
- Generate Test Scripts
- Run Test

- Real Application Testing
- LoadRunner

Total Testing Time
- Database Replay: 2 weeks
- LoadRunner: 30 weeks
Demonstration
Real Application Testing Advantages

Real Application Testing

- Production workloads
- Complete workflows
- Days of development
- Automated
- Low risk

Traditional Testing Tool

- Artificial workloads
- Partial workflows
- Months of development
- Manual intensive
- High risk

2 Weeks vs. 30 Weeks
For More Information

http://search.oracle.com

database manageability

or

www.oracle.com/manageability
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