Real Life Stories on Extreme Performance with In-Memory Database Technology

Presented at Oracle Open World
Dell TimesTen Use Case

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Environment from a Data Perspective
Data Environment

- Capture and consolidate
- Near real-time replication
- Large data volume
- High rate of change

Supply Chain Data Hub

Supply Chain Management System

Order
Pending Production
Build
Shipped
Delivered
Environment from an Application Perspective
Application Environment

- One-Stop-Shop for Order Status, Health and Issue Resolution
- Current order information
- Response times within seconds

Global Order Visibility - User Interface

- Basic Queries
- Advance Queries

Supply Chain Data Hub

- Order
- Pending Production
- Build
- Shipped
- Delivered

Sales
Customer Care
Distress Order Management
TimesTen Architecture Detail

MS Sharepoint User Interface

Basic Queries

Advance Queries

Failover

PL/SQL

Source
Database
Oracle 11g

Extract .net

Load ttBulkCp

Merge ttlsql

TimesTen
In-Memory
Database

Replication

Dell Power Edge M610
Oracle Enterprise Linux
96GB Ram
2 Intel(R) Xeon(R) CPU
L5520 @ 2.27GHz 4 core

Global Operations & Technology - I/T
Performance Statistics
Improved Query Performance

Query #1
- Physical DB: 8 min
- TimesTen: 1.4 sec

Query #2
- Physical DB: 4.6 min
- TimesTen: .8 sec

Query #3
- Physical DB: 7.5 min
- TimesTen: 5.05 sec

Query #4
- Physical DB: 7 min
- TimesTen: 1.15 sec

Legend:
- Physical DB
- TimesTen
Lessons Learned

- Adding more data doesn’t affect performance
- Use sql query to monitor memory usage
  - select temp_allocated_size, temp_in_use_size, temp_in_use_high_water from monitor;
- Check high water marks: temp_in_use_high_water

Scaling

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<th>Qry 2</th>
<th>Qry 3</th>
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Summary

Why TimesTen?

✓ Transparency
  ▪ Users get increased performance without change in user interface

✓ PL/SQL
  ▪ Maintain an identical API between our physical and in-memory database
  ▪ Developers do not have to learn a new language

✓ Response Time
  ▪ Significant increase in performance
Thank You