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

Presented at Oracle Open World

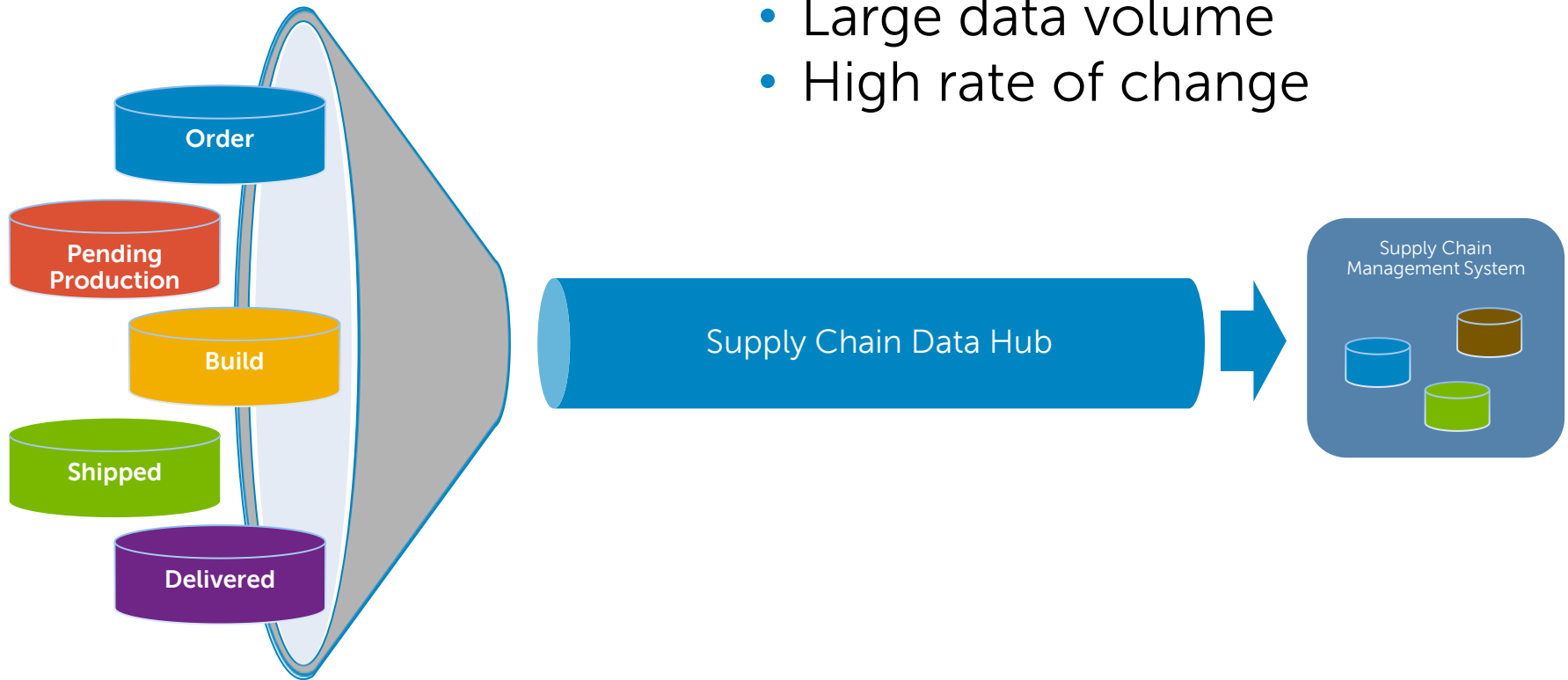# Dell TimesTen Use Case

Juan Garza

Dell Business Analyst

Environment from a Data Perspective

Data Environment

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

Order

Pending Production

Build

Shipped

Delivered

Supply Chain Data Hub

Supply Chain Management System

Global Operations & Technology - I/T

Environment from an Application Perspective

Global Operations & Technology - I/T

Application Environment

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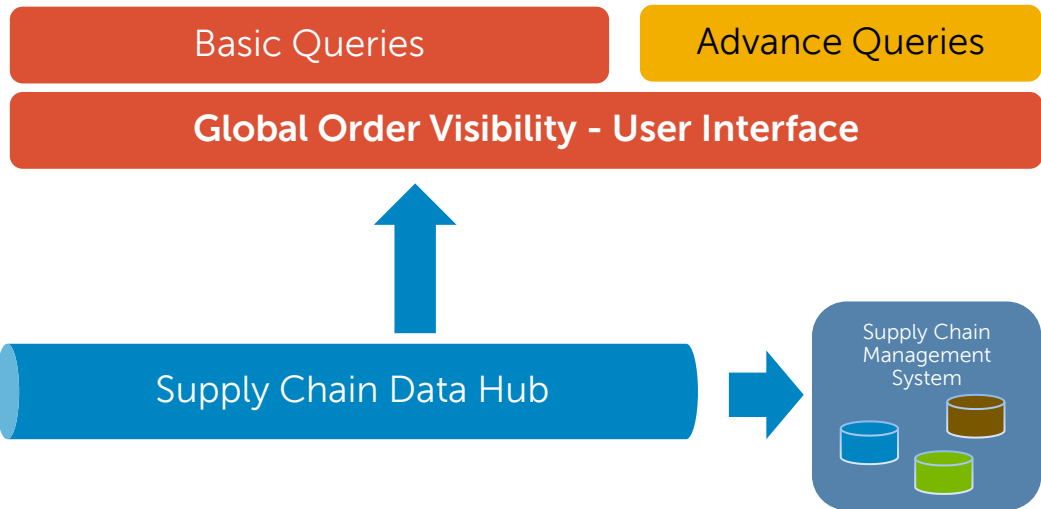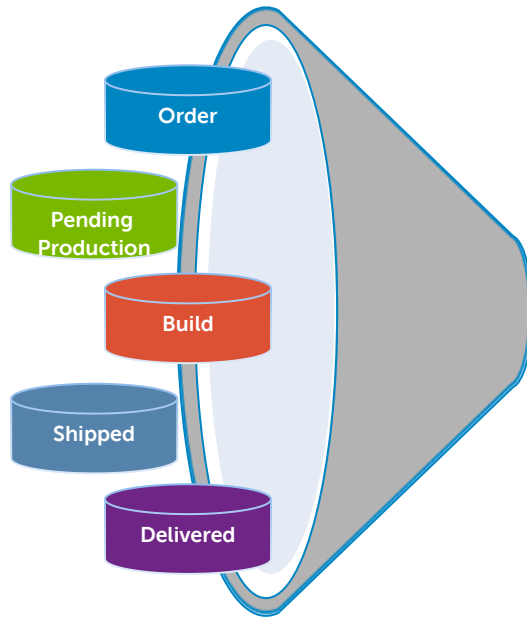- Current order information
- Response times within seconds

Sales

Customer Care

Distress Order Management

Basic Queries

Advance Queries

Global Order Visibility - User Interface

Order

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Supply Chain Data Hub

Supply Chain Management System

Global Operations & Technology - I/T

TimesTen Solution Architecture

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TimesTen Architecture

Sales

Customer Care

Distress Order Mgmt

Basic Queries
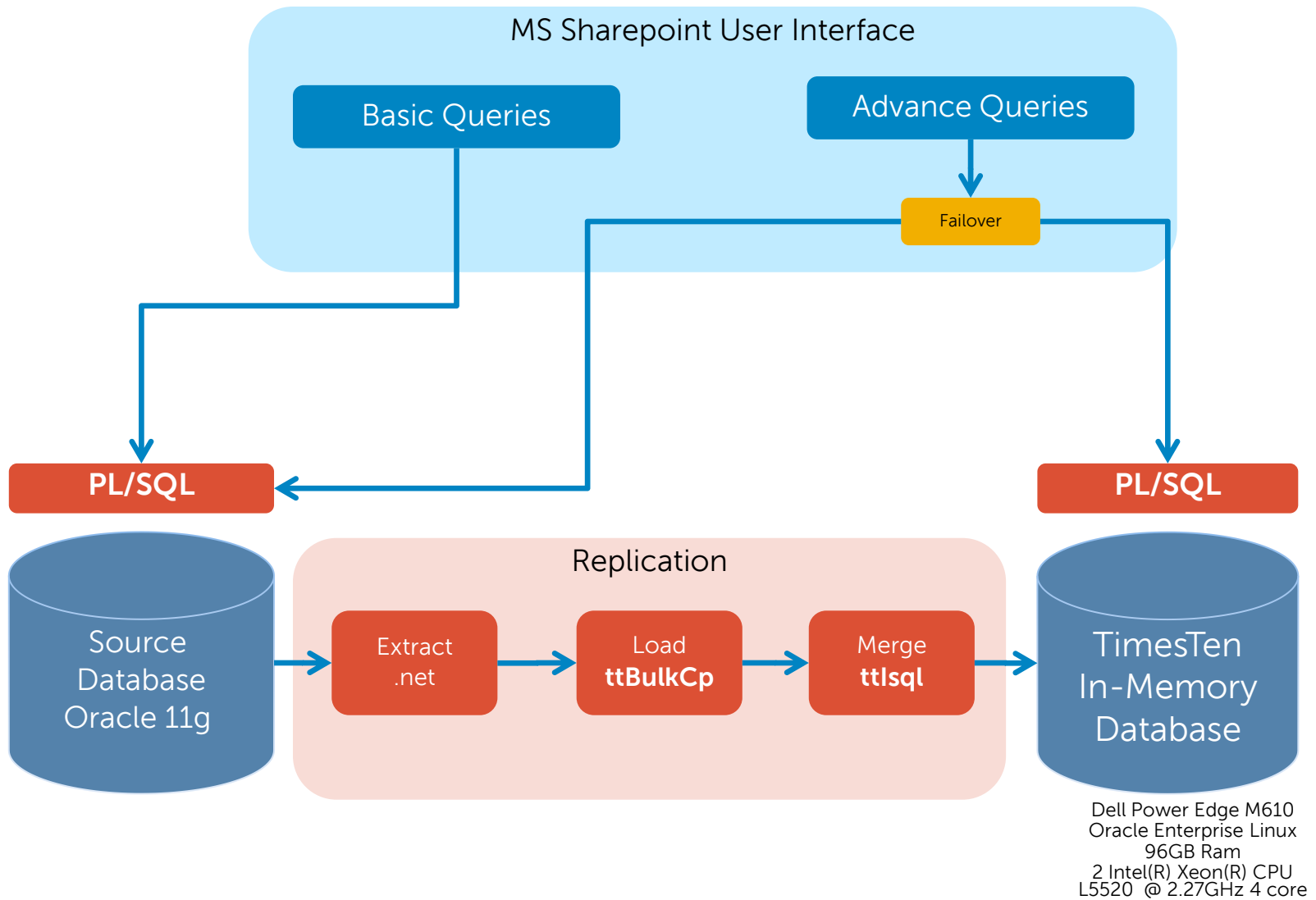
Advance Queries

Order Visibility User Interface

PL/SQL

Replicator

Oracle TimesTen In-Memory Database

Order

Pending Production

Build

Shipped

Delivered

PL/SQL

Supply Chain Data Hub

Supply Chain Management System
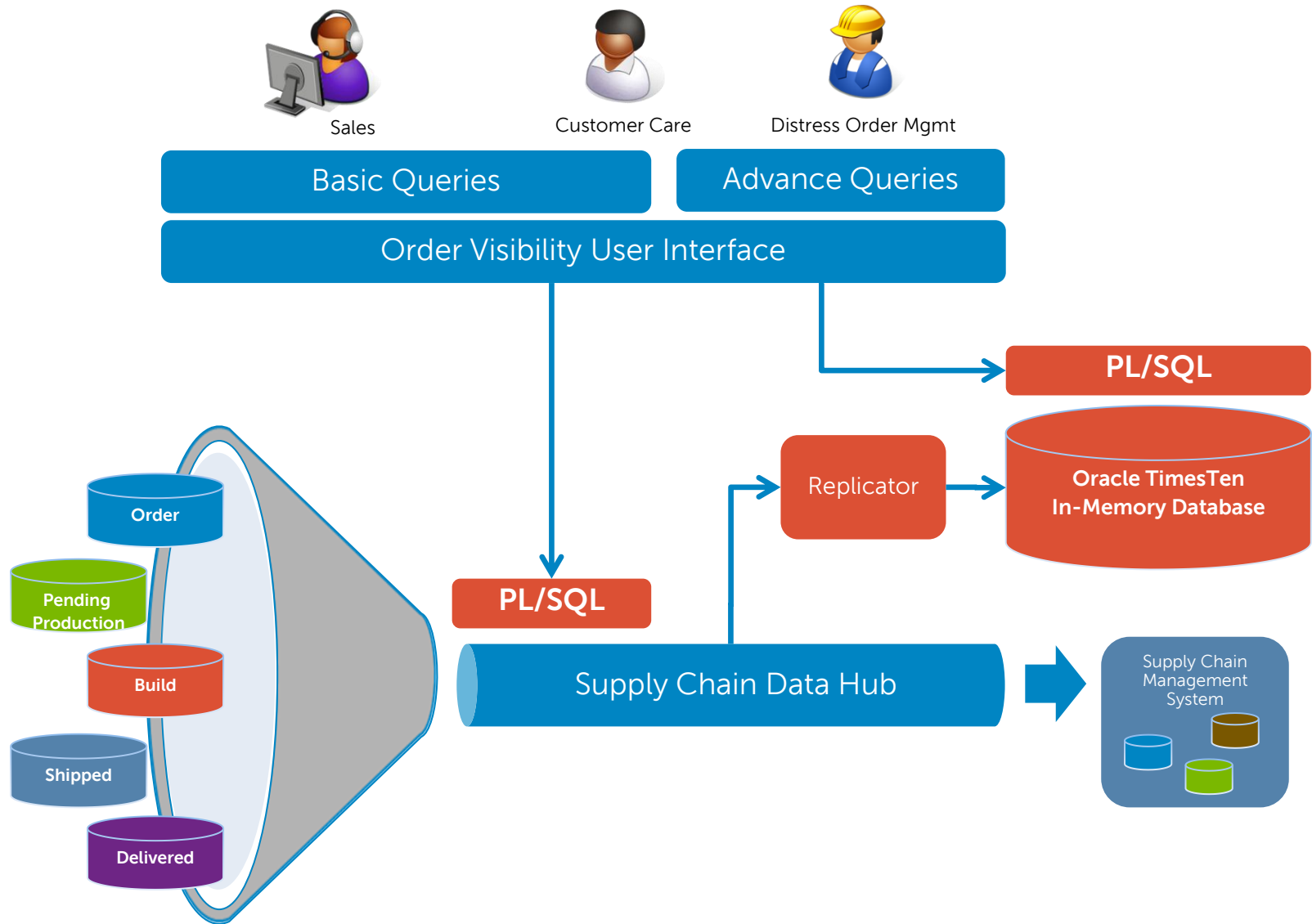
TimesTen Architecture Detail

MS Sharepoint User Interface

- Basic Queries
- Advance Queries
- Failover

PL/SQL

PL/SQL

Replication

- Source Database Oracle 11g
- Extract .net
- Load **ttBulkCp**
- Merge **ttIsql**
- TimesTen In-Memory Database

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

Performance Statistics

1/3/2012

Improved Query Performance

Minutes

8 min	4.6 min	7.5 min	7 min

| Query #1 | Query #2 | Query #3 | Query #4 |

10 min
0 min

Seconds

10 sec

5.05 sec

1.4 sec
1 sec
.8 sec
1.15 sec

.01 sec

Physical DB
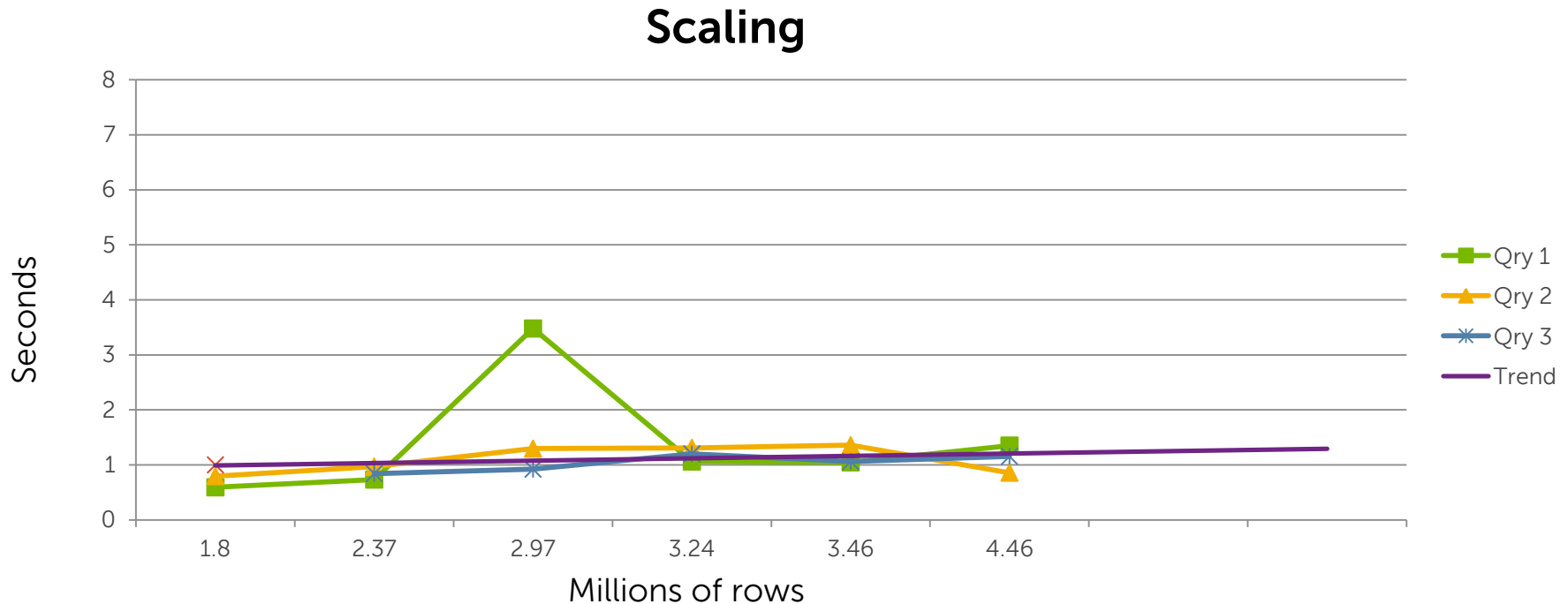TimesTen
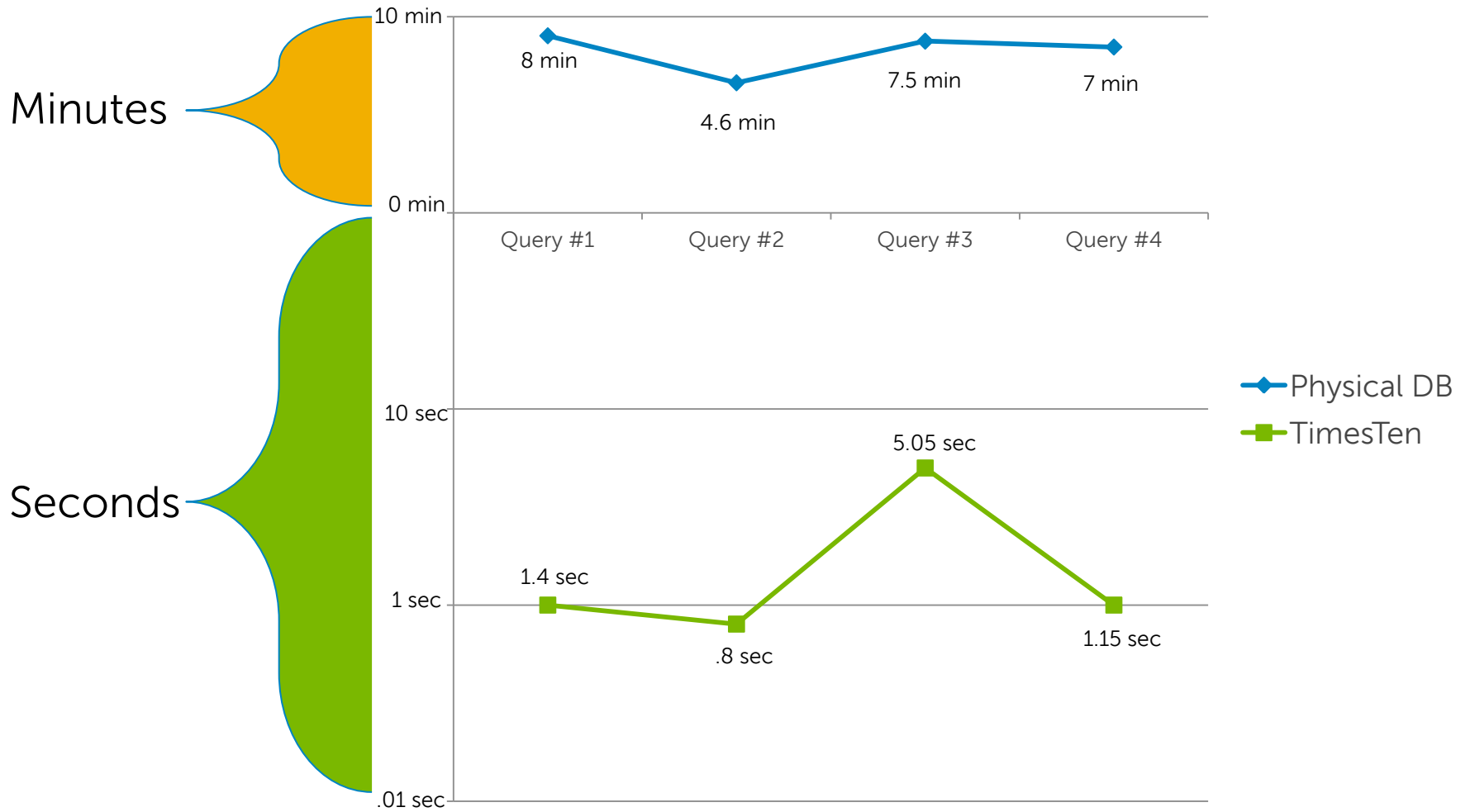
Lessons Learned

- 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

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

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