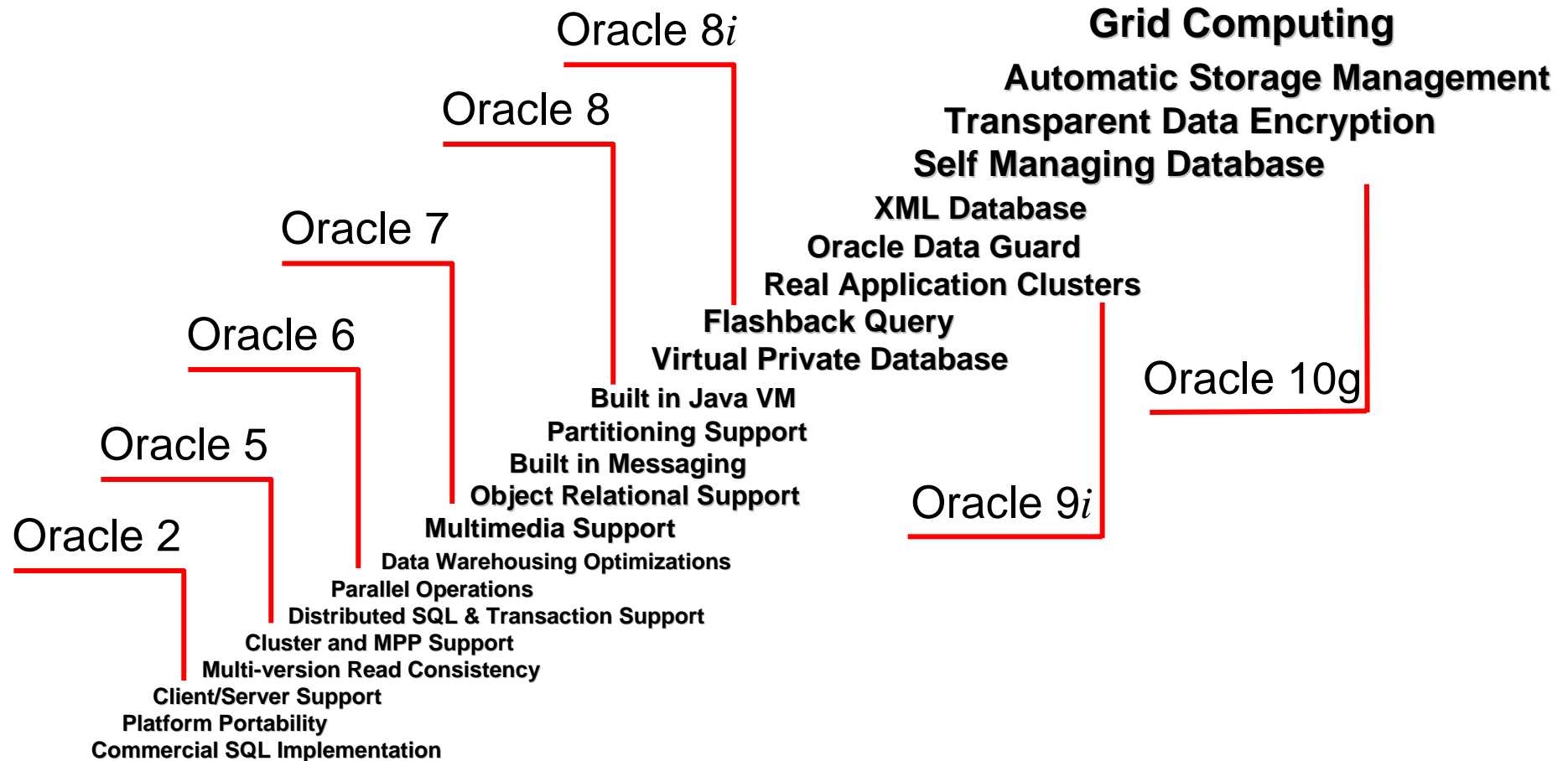




**Innovate Faster with
Oracle Database 11g**

Continuous Innovation

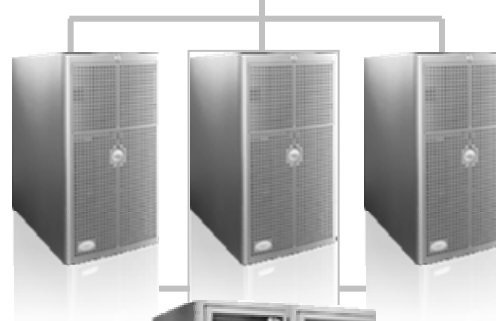


Grid Computing

Fusion Middleware



Real Application Clusters



Automatic Storage Management



Grid Control



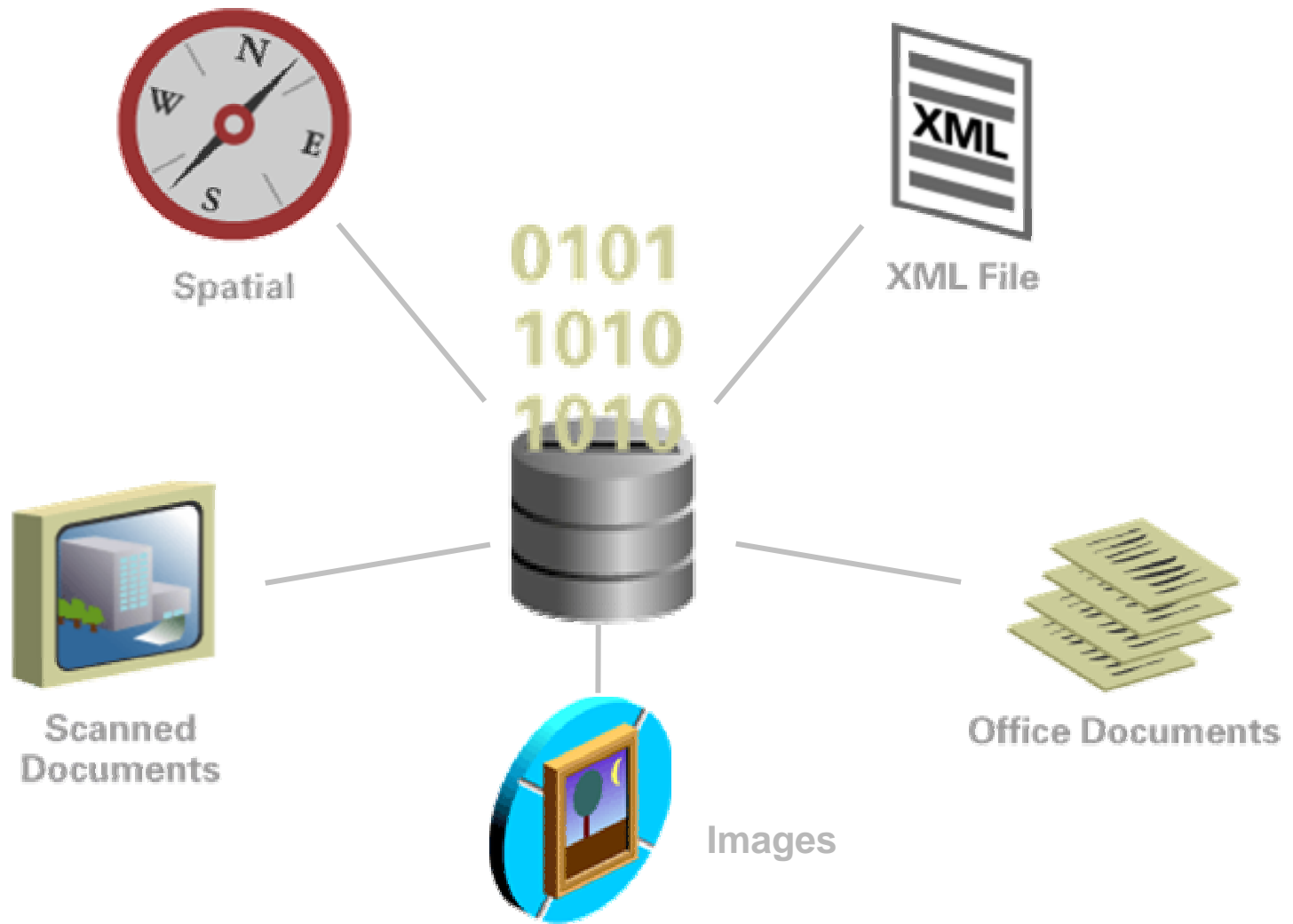
ORACLE



Enabling Innovation with Oracle Database 11g

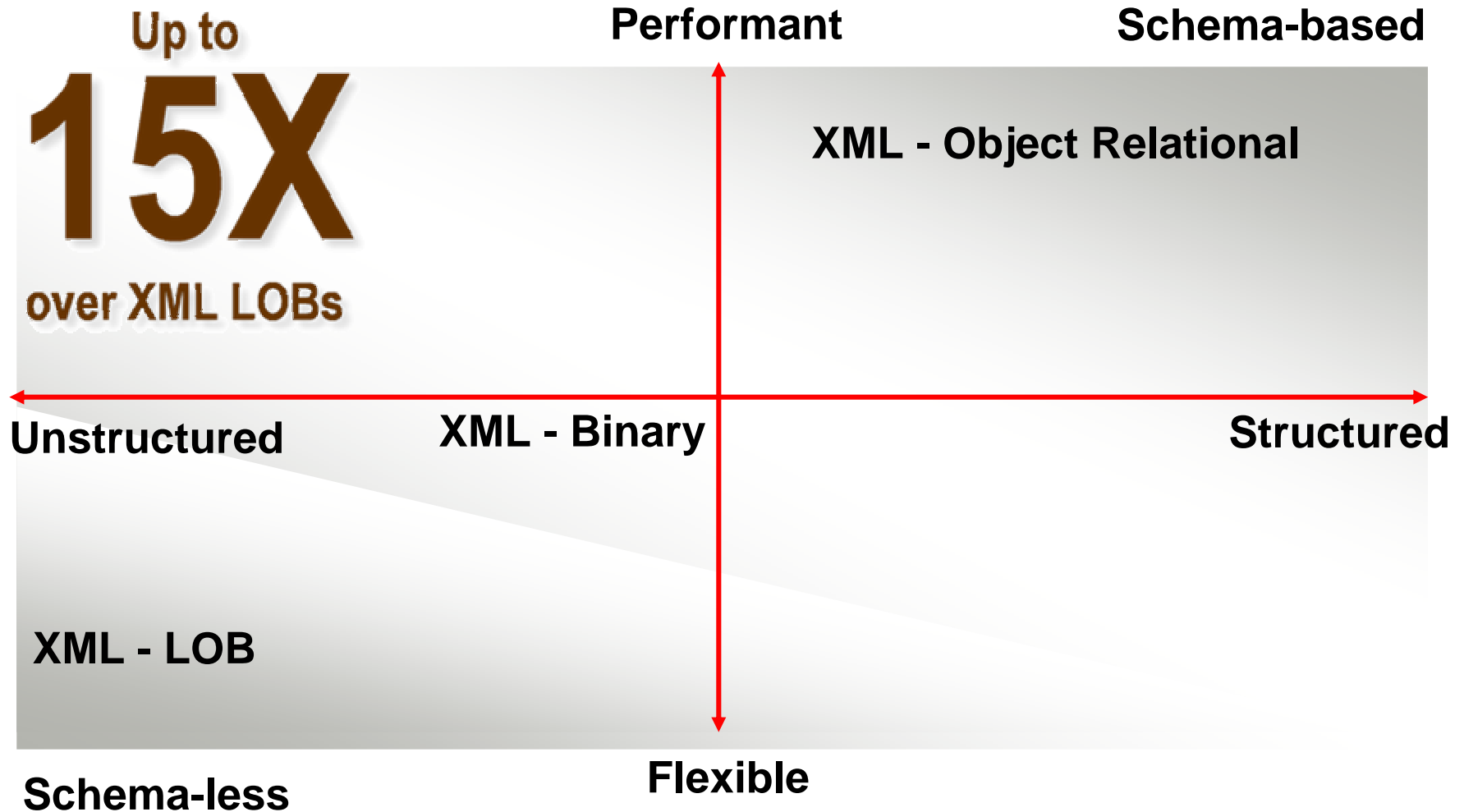
- Better business insight into all data types
- Managing data growth
- Higher quality of service at lower cost
- Manage increasing rate of change

Consolidating All Your Data



New in Oracle Database 11g

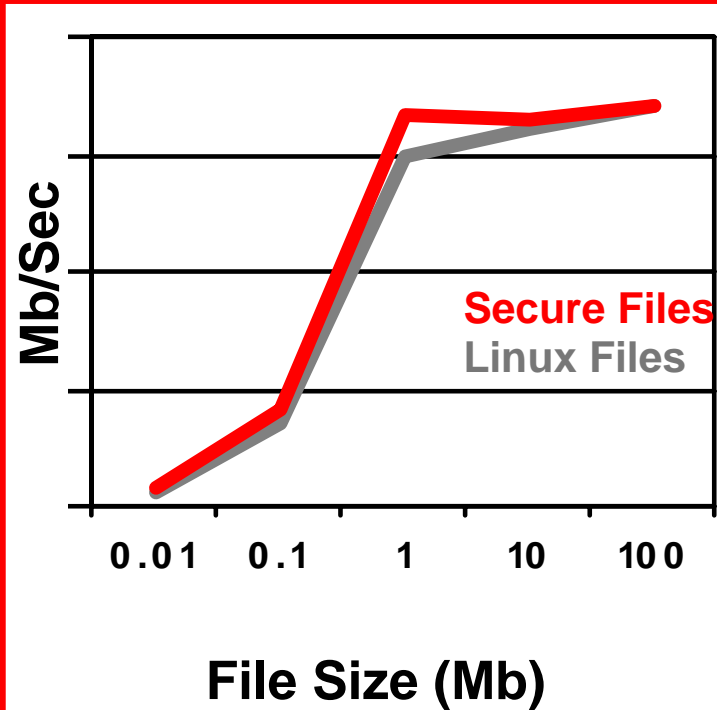
Extended XML Support with Binary XML



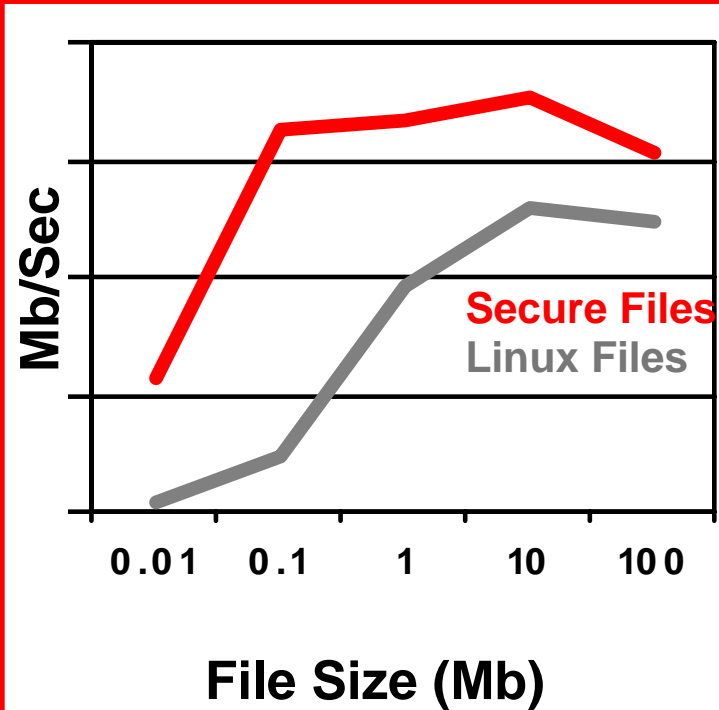
Oracle Secure Files

Breaking the Performance Barrier...

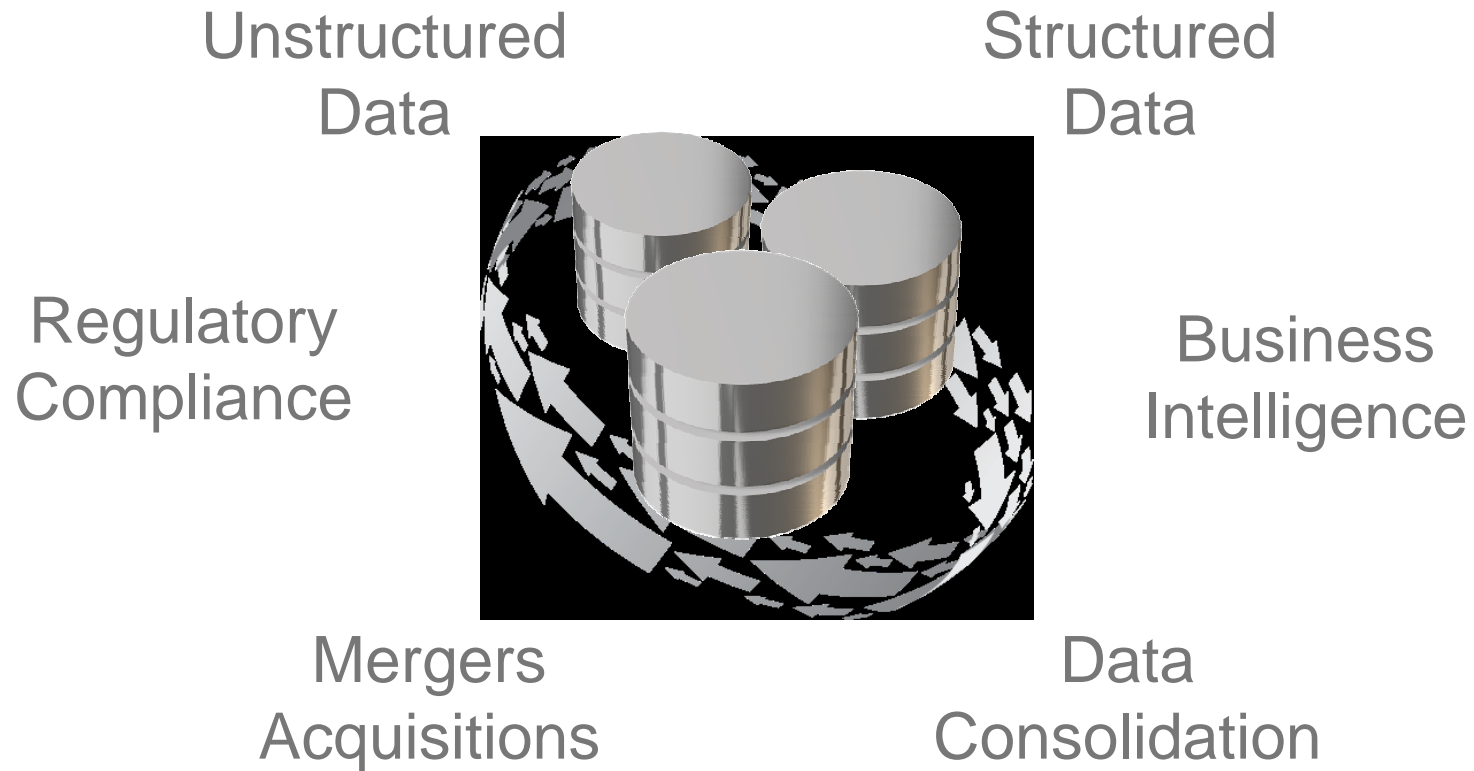
Read Performance



Write Performance




Managing Data Growth



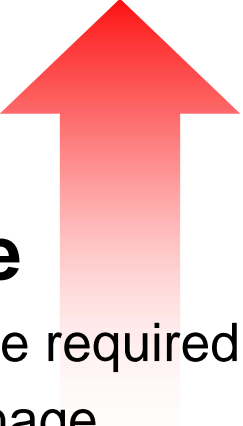


Data Growth Challenges

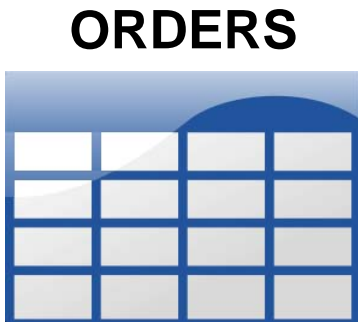
Management Challenge

- 
- Query performance
 - Duration of basic data operations
 - Availability of data

Cost Challenge

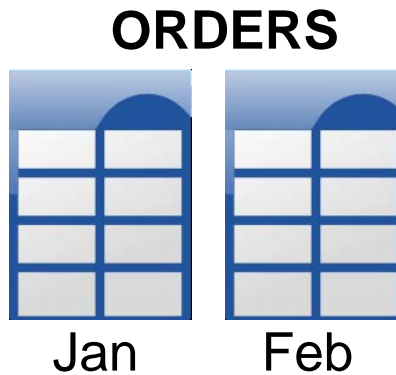
- 
- Volume of storage required
 - Overhead to manage
 - Cost of of downtime

Benefits of Partitioning



Large Table

Difficult to Manage

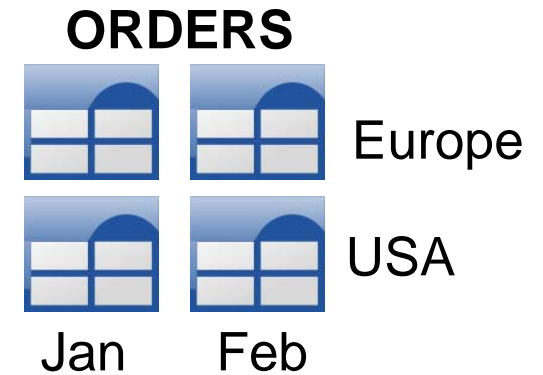


Partition

Divide and Conquer

Easier to Manage

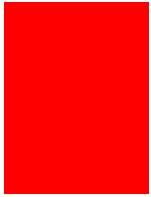
Improve Performance



Composite Partition

Higher Performance

Match business needs



New in Oracle Database 11g

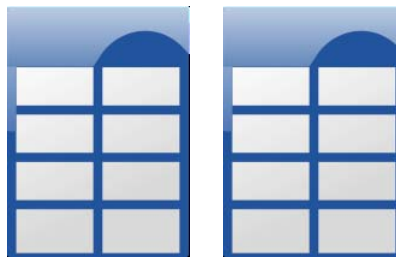
Partition Advisor



ORDERS



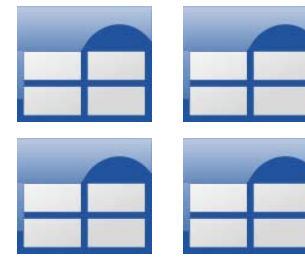
ORDERS



Jan

Feb

ORDERS



Europe

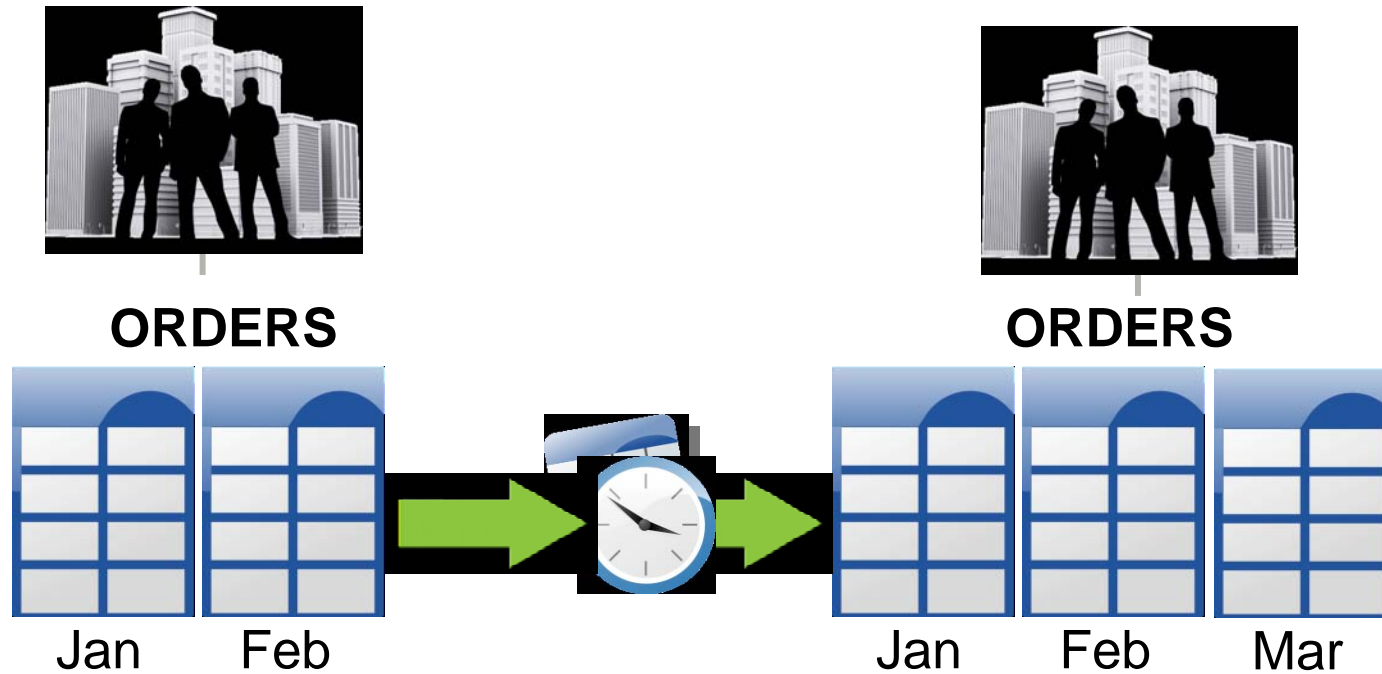
USA

Jan

Feb

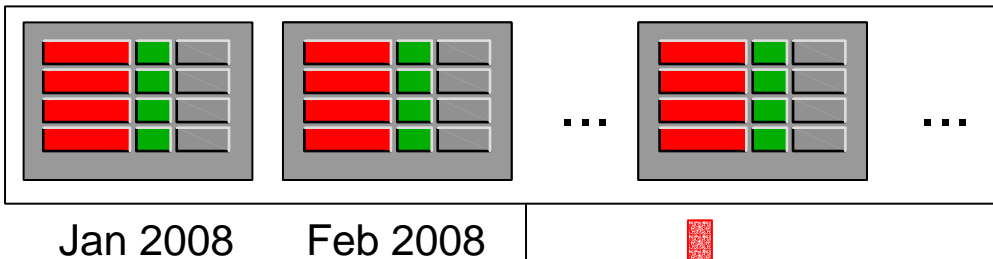
New in Oracle Database 11g

Automated Partitioning: Interval



Before Reference Partitioning

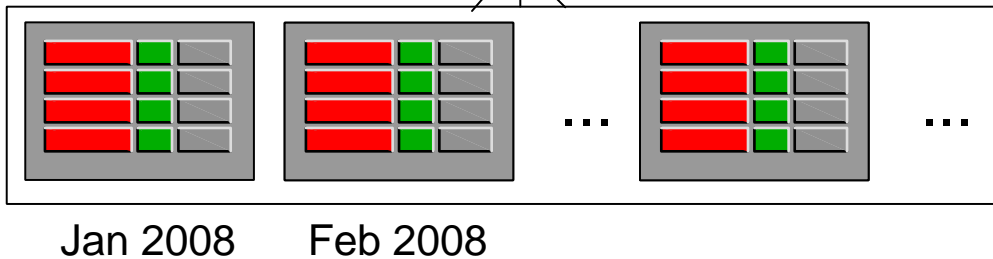
Table ORDERS



- RANGE(**order_date**)
- Primary key **order_id**

- Redundant storage of order_date
- Redundant maintenance

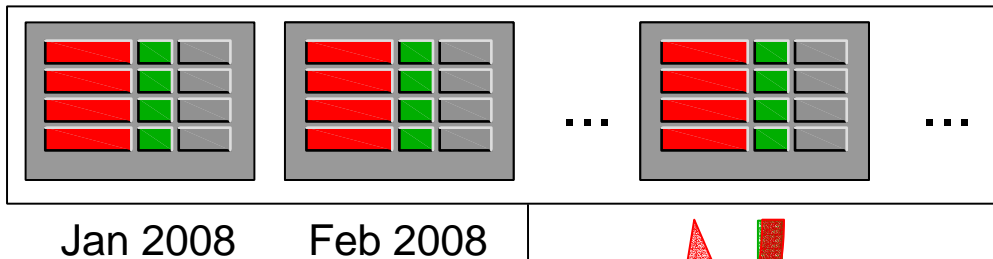
Table LINEITEMS



- RANGE(**order_date**)
- Foreign key **order_id**

With Reference Partitioning

Table ORDERS

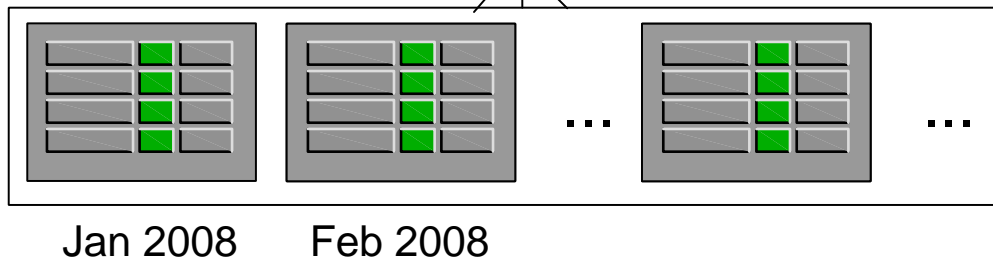


- RANGE(`order_date`)
- Primary key `order_id`

PARTITION BY REFERENCE

- Partitioning key inherited through PK-FK relationship

Table LINEITEMS



- RANGE(`order_date`)
- Foreign key `order_id`

Composite Partitioning

- Two-dimensional partitioning schemes
- Extensions in Oracle Database 11g

	Range	List	Hash
Range	11g	9i	8i
List	11g	11g	11g

- e.g. List-range:
 - Partition by country, then by week
 - Partition by line-of-business, then by week

New in Oracle Database 11g

Advanced Compression

Compress Large Application Tables

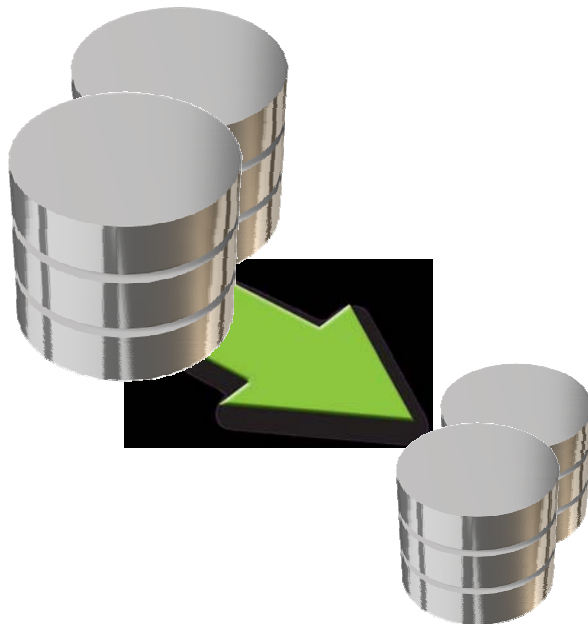
- Transaction processing, data warehousing

Compress All Data Types

- Structured and unstructured data types

Typical Compression of 2-4X

- Cascade storage savings throughout data center



Up To

4X

Compression



Table Compression Syntax

OLTP Table Compression Syntax:

```
CREATE TABLE emp (  
    emp_id NUMBER  
    , first_name VARCHAR2(128)  
    , last_name VARCHAR2(128)  
) COMPRESS FOR ALL OPERATIONS;
```

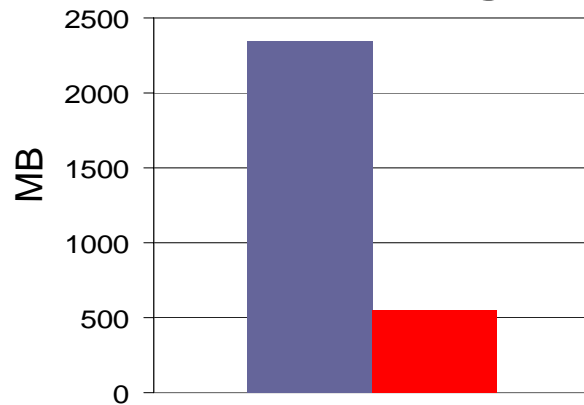
Direct Load Compression Syntax (default):

```
CREATE TABLE emp (  
    emp_id NUMBER  
    , first_name VARCHAR2(128)  
    , last_name VARCHAR2(128)  
) COMPRESS [FOR DIRECT_LOAD OPERATIONS];
```

Real World Compression Results

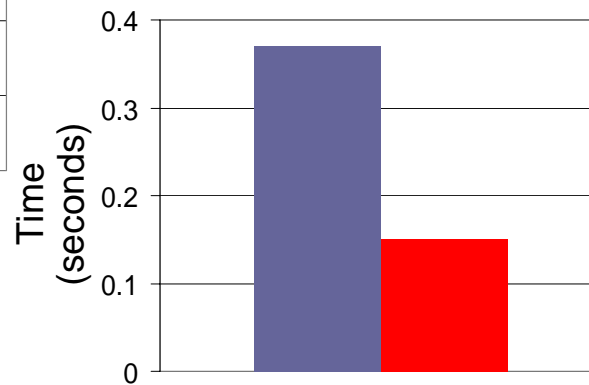
10 Largest ERP Database Tables

Data Storage



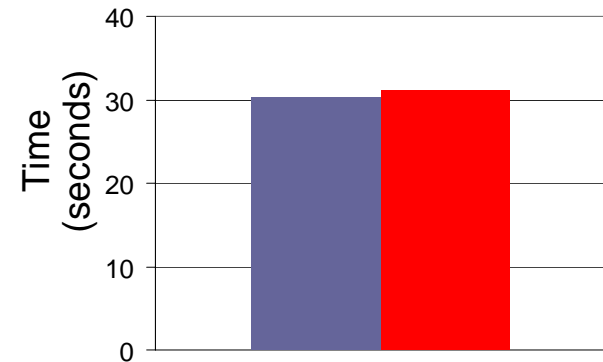
3x Saving

Table Scans



2.5x Faster

DML Performance



< 3% Overhead

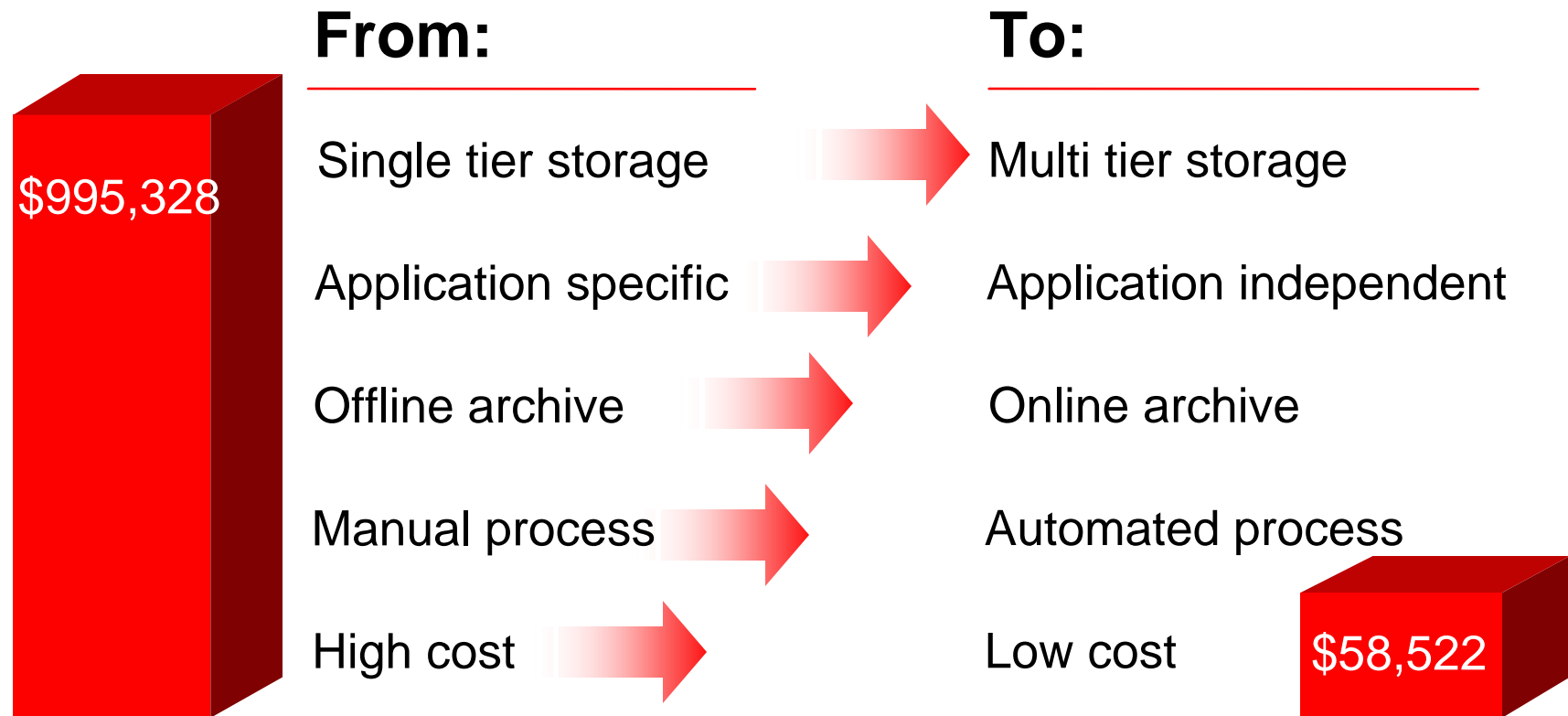
Information Lifecycle Management

Managing Storage Costs



Why Oracle Database 11g?

Managing data growth





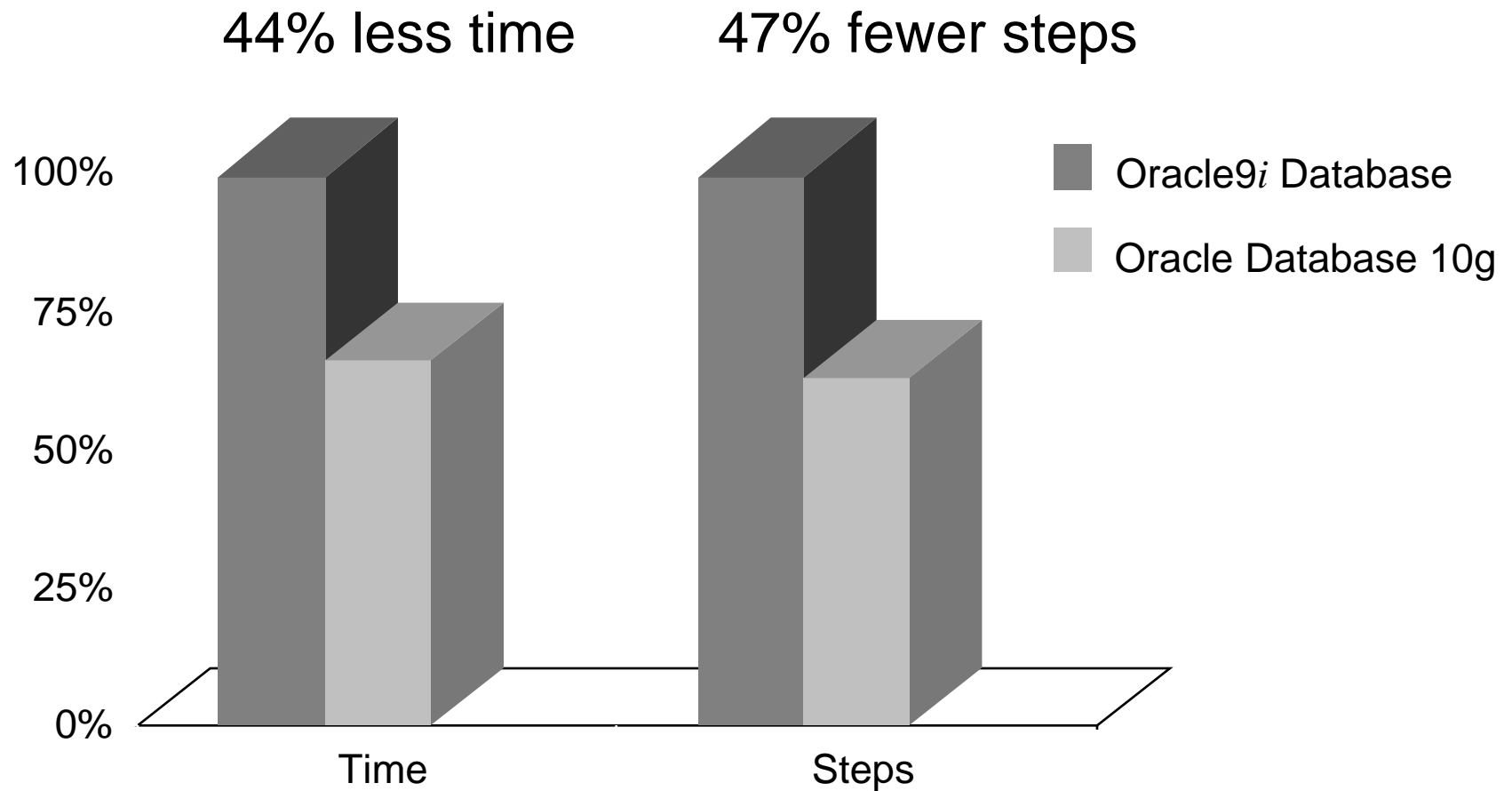
Quality of Service Challenges

All at lower cost

- Faster performance and easier scalability
- Higher availability of access to information
- Greater data security and compliance

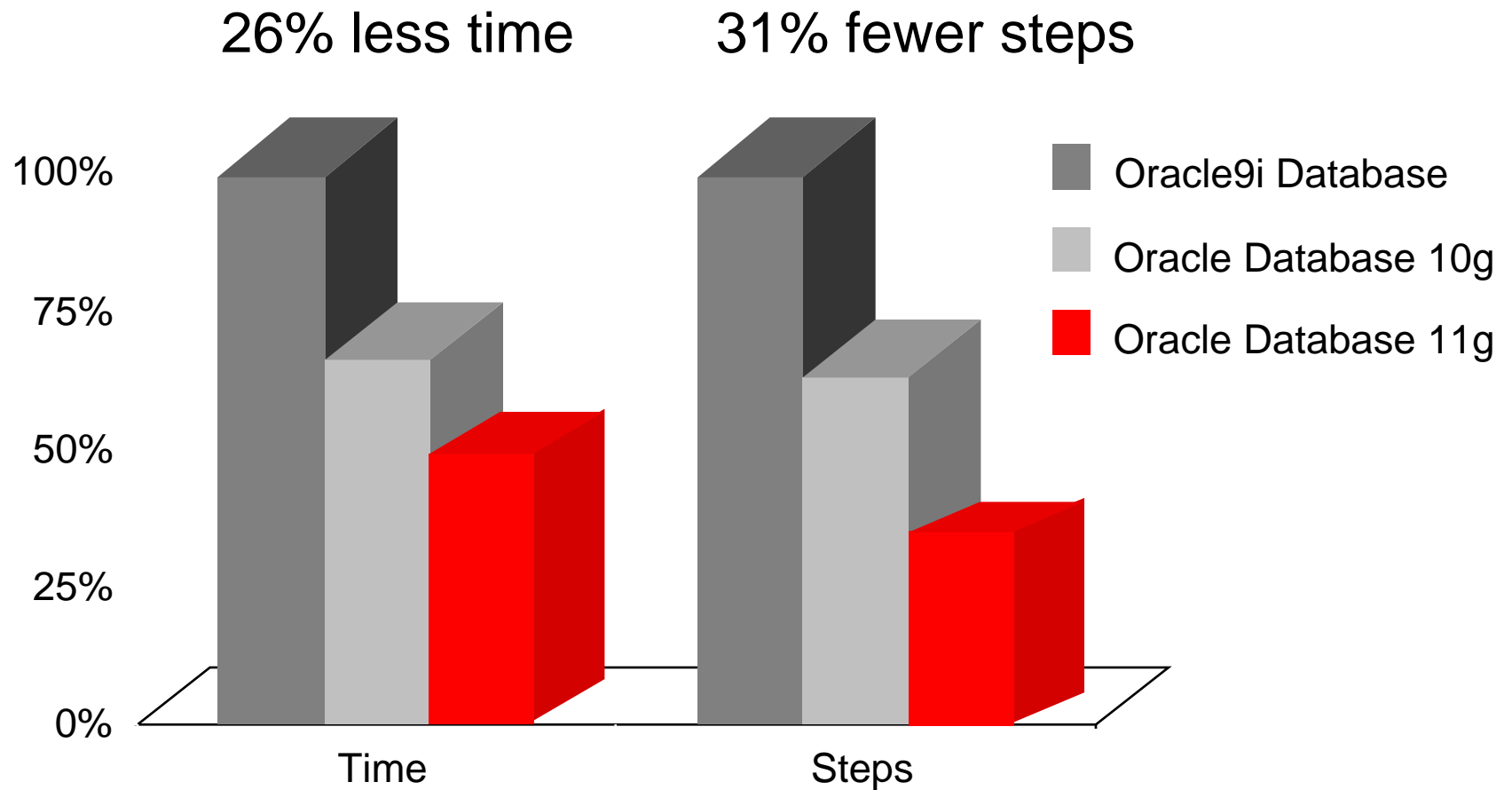
Oracle Database 10g vs Oracle9i Database

Reducing time and complexity



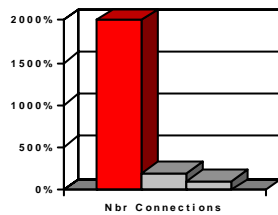
Oracle Database 11g vs Oracle Database 10g

Reducing time and complexity even more...



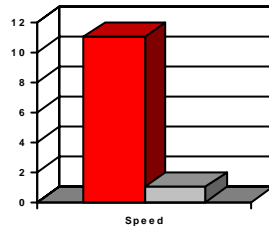
Faster Performance

Database Resident Connection Pool



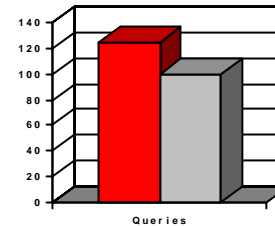
Up to
20 x connections

Java Just-In-Time Compiler



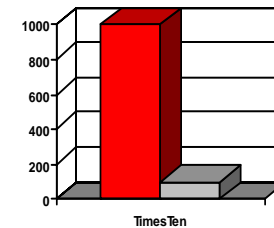
Up to
11 x Faster

Query Result Caching



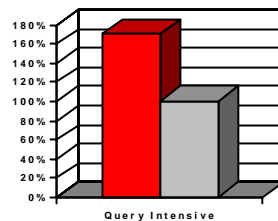
Up to
25% Faster

TimesTen Cache



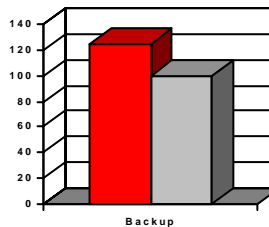
Up to
10 x Faster

RAC Performance Enhancements



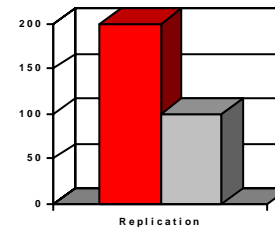
Up to
70% Faster

Oracle Secure Backup



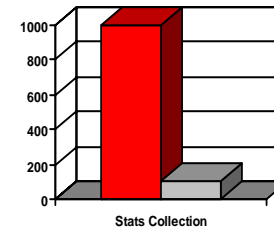
Up to
25% Faster

Oracle Streams Enhancements



Up to
2 x Faster

Optimizer Stats Collection

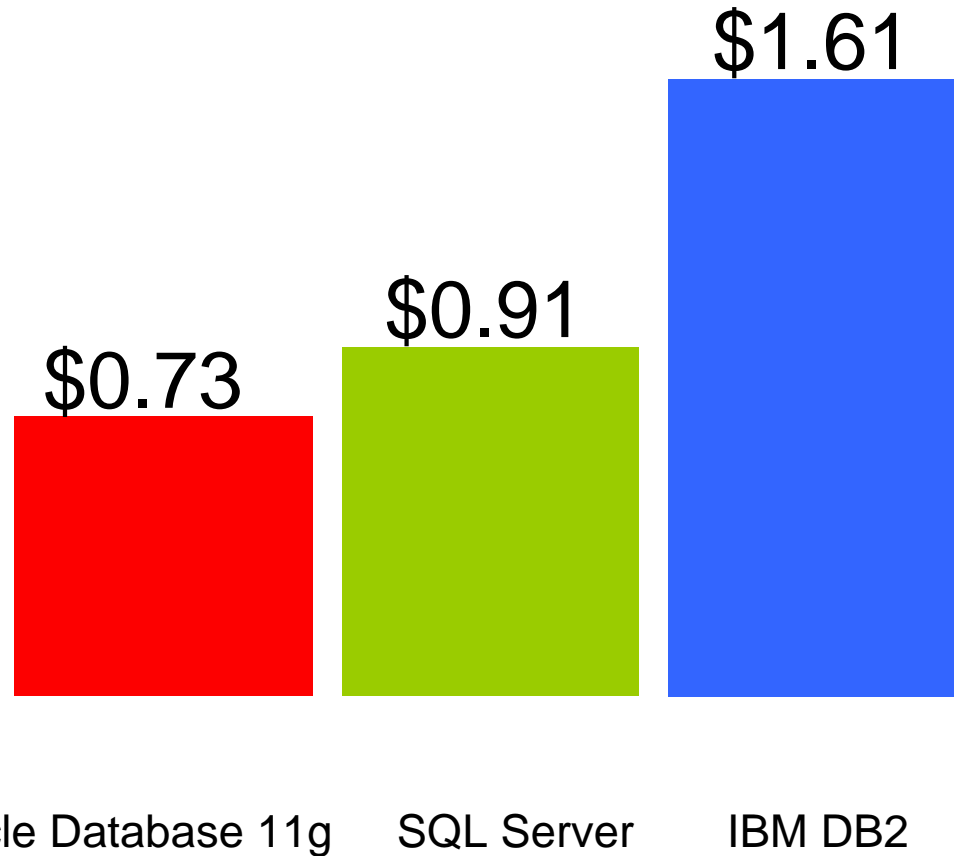


Up to
10 x Faster



For Price / Performance

New world record TPC-C benchmark



Oracle Database 11g

SQL Server

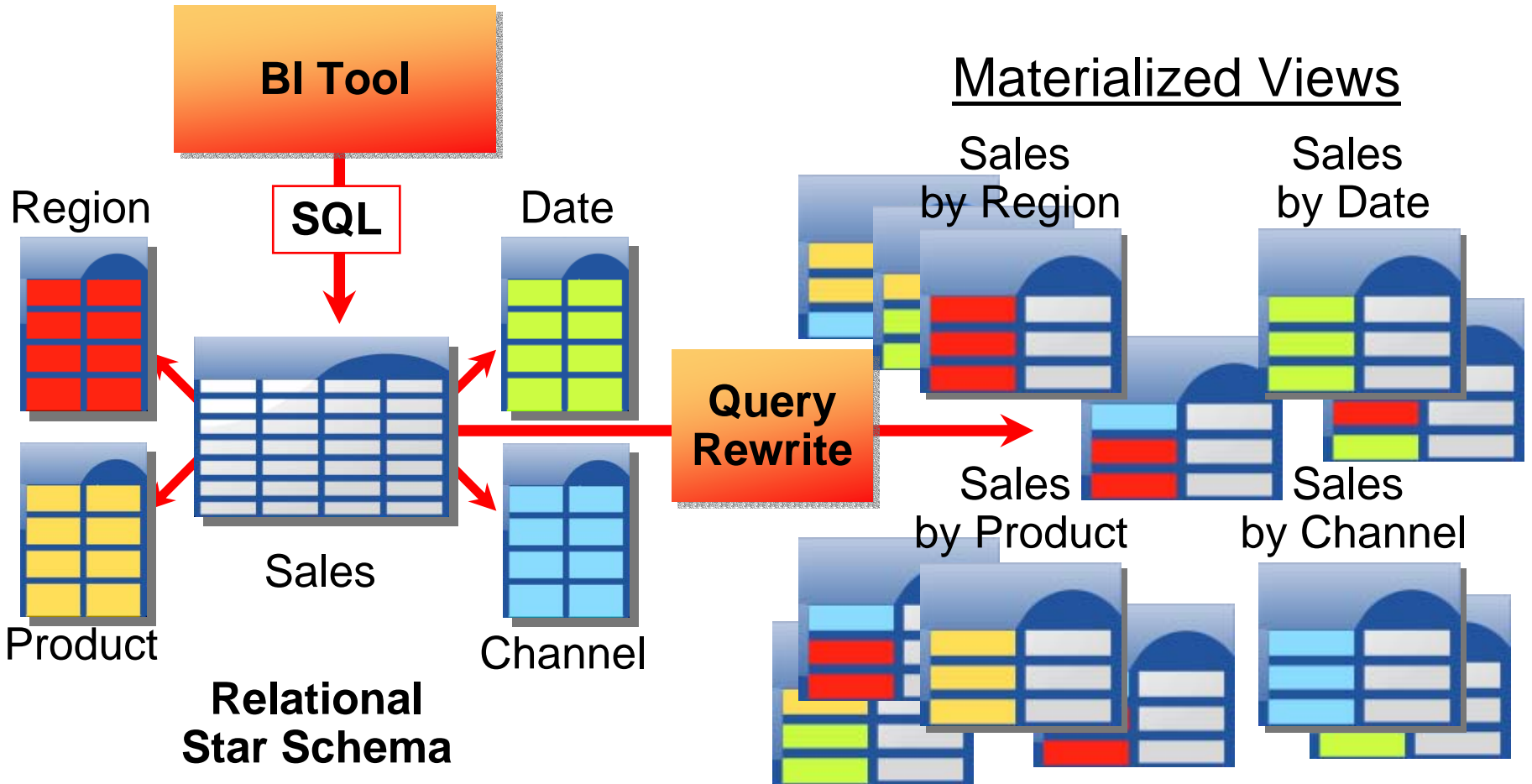
IBM DB2

ORACLE

Source: Transaction Processing Council, As of September 18, 2007: :HP ProLiant ML350, 102,454 /tpmC, @ \$0.73/tpmC, Oracle Database 11g Standard Edition One running Microsoft Windows, available 12/31/07. Dell PowerEdge 2900,69,564 tpmC, @ \$0.91/tpmC, Available 03/09/07. HP ProLiant ML350, 18,661 tpmC, \$1.61 tpmC, available 12/15/05

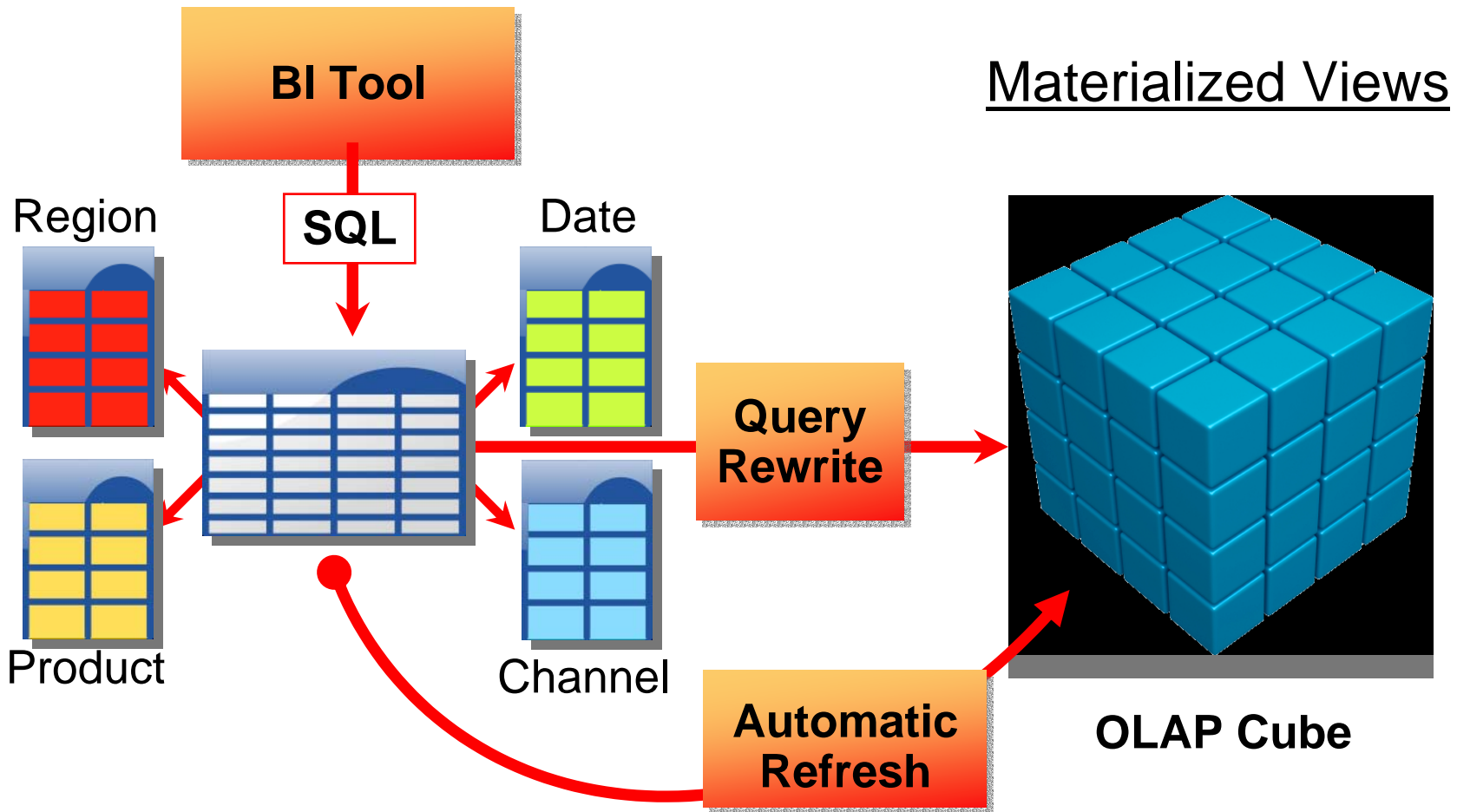
Business Intelligence Analysis

Typical Architecture Today



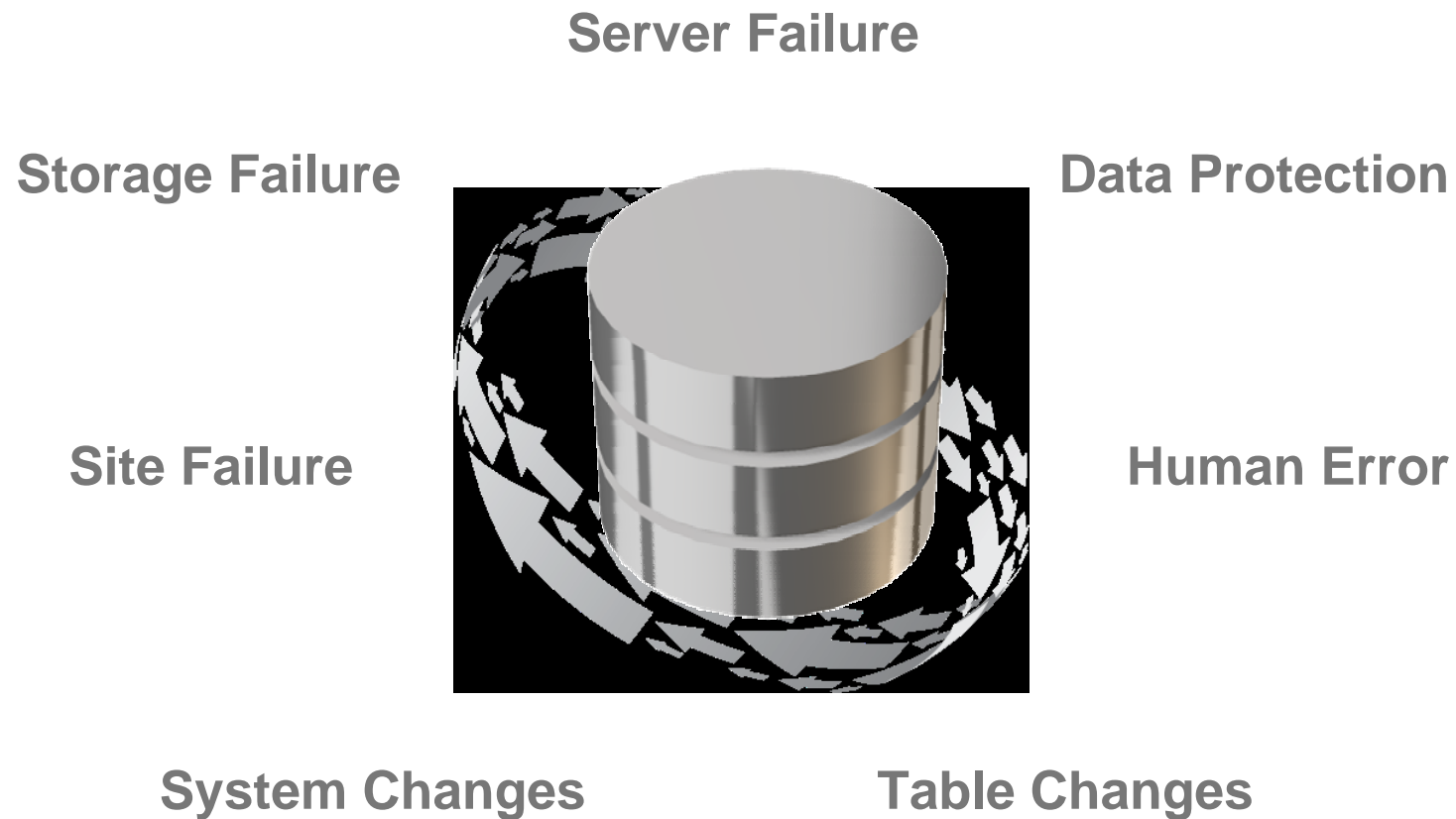
New in Oracle Database 11g

Cube-Organized Materialized Views



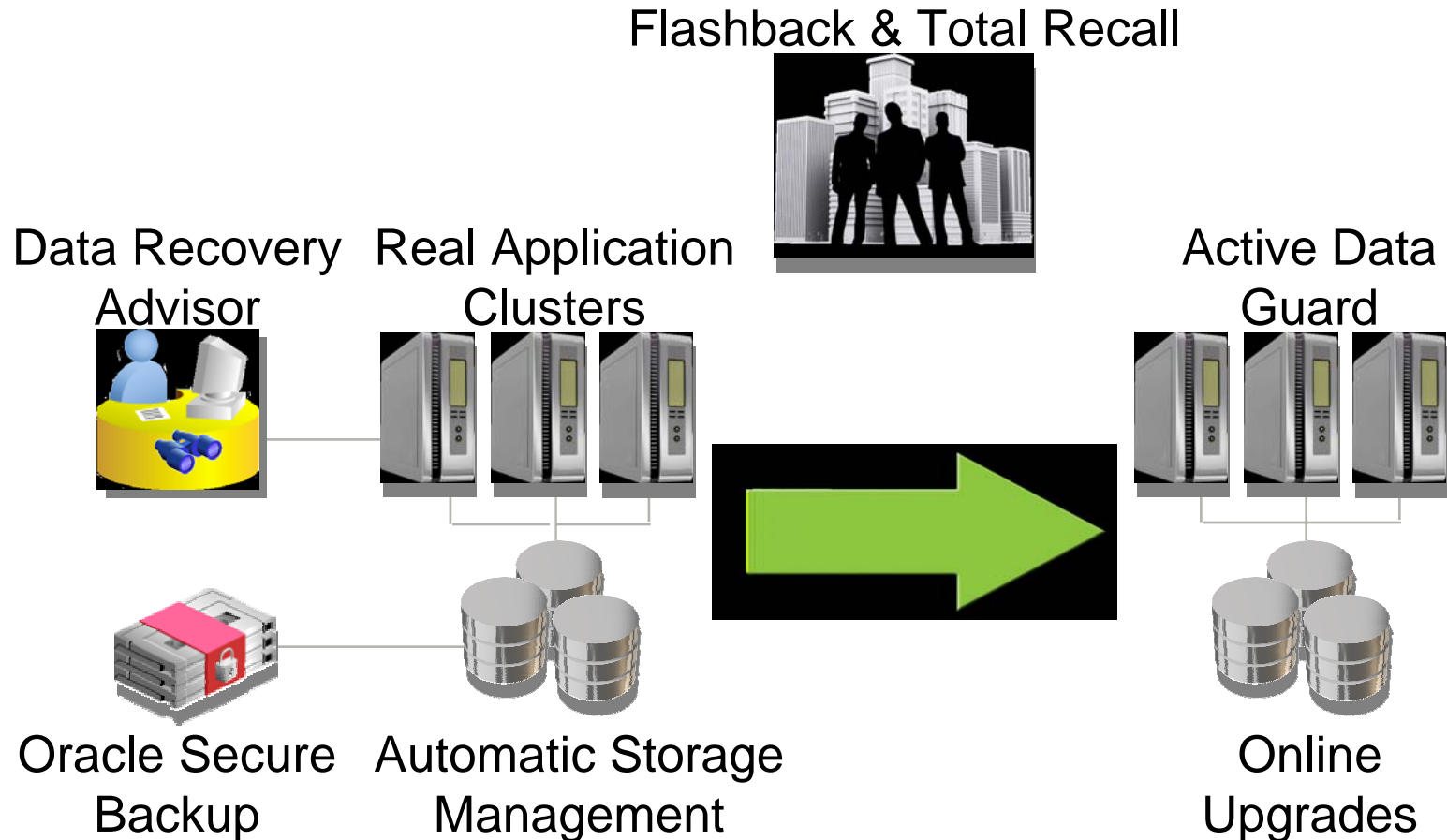
Database Availability Challenges

Protect from planned and unplanned downtime



Oracle Database 11g

Maximum Availability Architecture





Oracle Active Data Guard

Much More than Disaster Recovery



Why Active Data Guard?

Invest in Performance and Disaster Recovery

From:

Disaster protection only

Recovery mode only

Rarely used

Manual intensive

Low ROI

To:

Disaster & performance protection

Simultaneous read & recovery

Use in production & testing

Automated

High ROI

Data Privacy and Regulatory Compliance

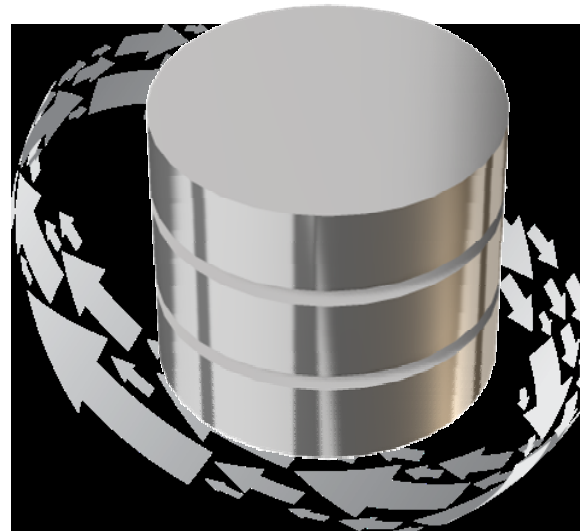
Database Security Challenges

Protecting Access to
Application Data

Database
Monitoring

Protecting Data-
at-Rest

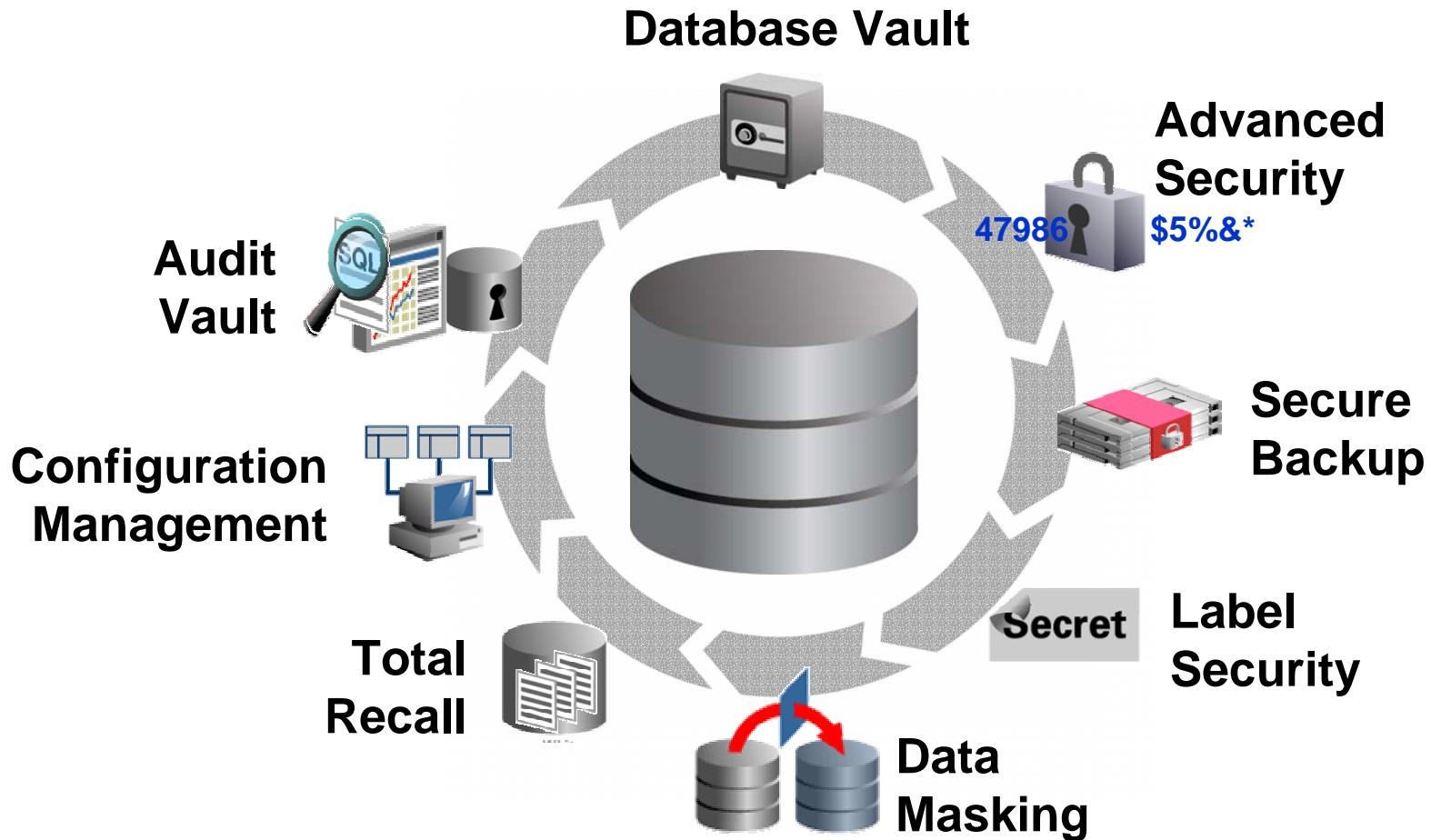
De-Identifying
Information for
Sharing



Data
Classification

Oracle Database 11g

Data Privacy and Regulatory Compliance





D E M O N S T R A T I O N



Oracle Audit & Database Vault
'Protecting Information'

Lifecycle of Change Management

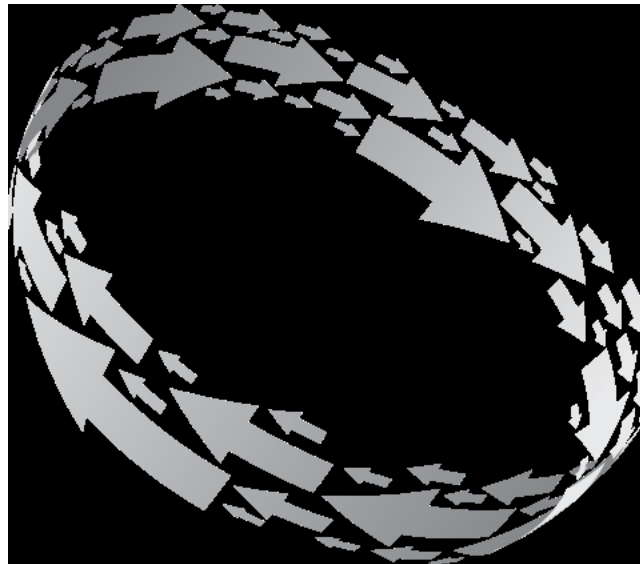
Manage & Tune Performance

Test Changes

Configure Production

Manage Changes

Resolve Problems



Provision Test Environments

Apply Updates and Patches

Oracle Real Application Testing

Preserve Order Amid Change



Why Oracle Real Application Testing?

Innovate change faster

From:

To:

Artificial workloads

Production workloads

Partial workflows

Complete workflows

Months of testing

Days of testing

Manual intensive

Automated

High risk

Low risk

149 Days

11 Days

How to Get on the Grid?

Best practice configurations



Maximum
Availability
Architecture

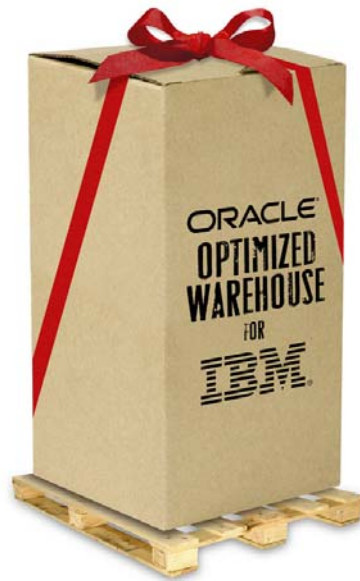


Oracle
Optimized
Warehouses

Consolidate using standard building blocks and reference architectures

Oracle Optimized Warehouses

Superior Customer Experience



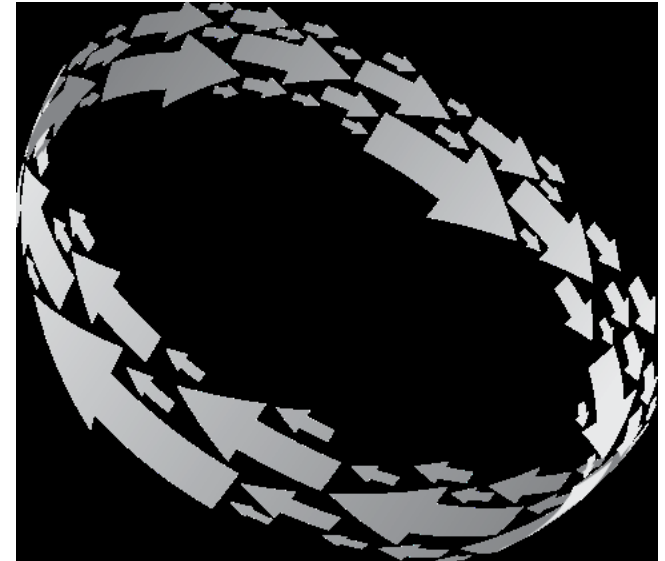
Oracle Optimized Warehouses

Superior System Performance



Innovate Faster

- Better insight into all information
- Manage the information lifecycle
- Meet service level objectives
- Lower IT costs
- Manage change with confidence





For More Information

<http://search.oracle.com>

oracle database 11g



or

www.oracle.com/database