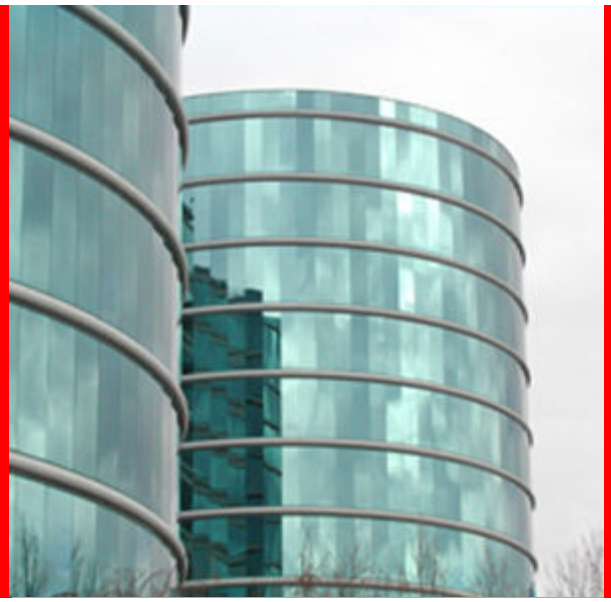


ORACLE

ORACLE THIRTY YEARS 30

OpenWorld 2007 Overview

Mark Townsend
VP, Database Product Management

The Content

- 11 Keynotes
- Over 1,600 sessions – over 42 tracks
  - 160 customer sessions
  - 150 partner sessions
- 5 Special Programs
  - Oracle Develop
  - Hyperion
  - Agile
  - JD Edwards Program
  - Utilities Program (A super track)
  - PartnerNetwork Forum
- 350+ Demos in the DEMOgrounds
- 450+ Partners participating in the 2 Exhibition Halls and hotels(kiosks)

Database Sessions

- 150+ Sessions
  - 100 Database OpenWorld Sessions
  - 50 Database Oracle Develop Sessions
    - PL/SQL, Java/JDBC, PHP, APEX, SQL Dev, .NET and Windows, Embedded, XML DB, Spatial, Multimedia, …
  - Security and Manageability have additional allocations
  - 40+ IOUG and Partner database presentations
- Excellent Customer Participation
  - 68 Sessions have customer co-presenters
    - Up from 38 last year
    - 78 individuals from 49 companies

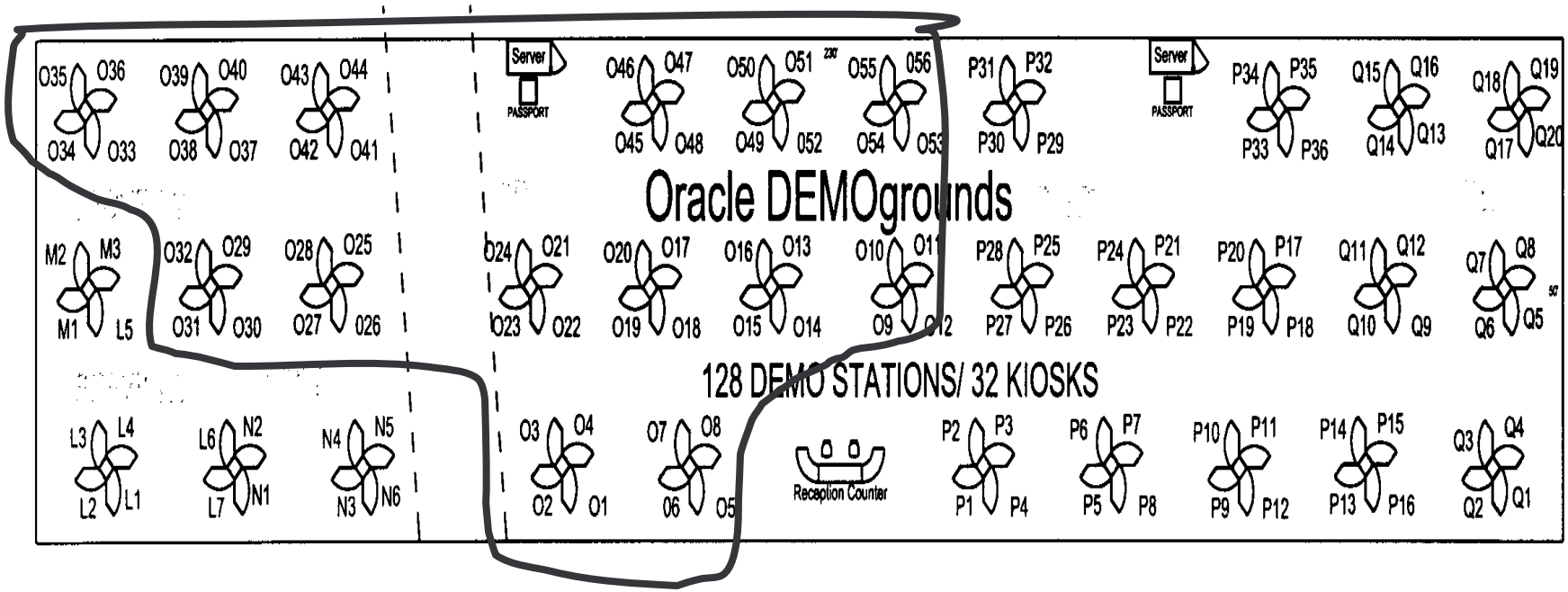
Big Name Customers and Partners

- AAA Michigan
- Alcoa
- Allstate
- aMaDEUS
- Amazon
- Bayer
- British Airways
- British Telecom
- Burlington Coat Factory
- Caterpillar
- CERN
- Cummins
- Dell
- EDS
- Fiducia IT AG
- General Electric
- Intel
- Merrill Lynch
- Nike
- Nokia
- PG&E
- PricewaterhouseCoopers
- Progressive Insurance
- Schering-Plough
- Sprint
- Starbucks
- Starwood Hotels

Oracle OpenWorld Venue Map

Database Demos

- 56 Database Demos
- Moscone West



OpenWorld Goes Green

- “Virtual” Collateral Rack
  - Minimizes need to distribute paper collateral
  - Link to collateral pieces emailed to participants when their badge is swiped at demo stations
- Reduced Agenda and Show Directory print run by 40%; offering electronic version
- Recycled carpets, paper for collateral
- Recycling badges, banners
- Hybrid limos for execs

Other Programs

- No Slide Zone
  - Series of Q&A sessions with top Oracle Experts
    - e.g. Angelo, Leng, Juan, Vipin,Tom Kyte
  - In Yerba Buena Theatre
- Inside Innovation
  - Cutting-edge products, technologies, and concepts sure to change the way we live, work, and play from some of Oracle's most innovative customers.
    - Moscone West booth 3116
    - Moscone North Lobby

Some of the Announcements

- OWI
- OVS
- OITC
- 11gR2

Survey Results

What Version of Oracle Are You Using?

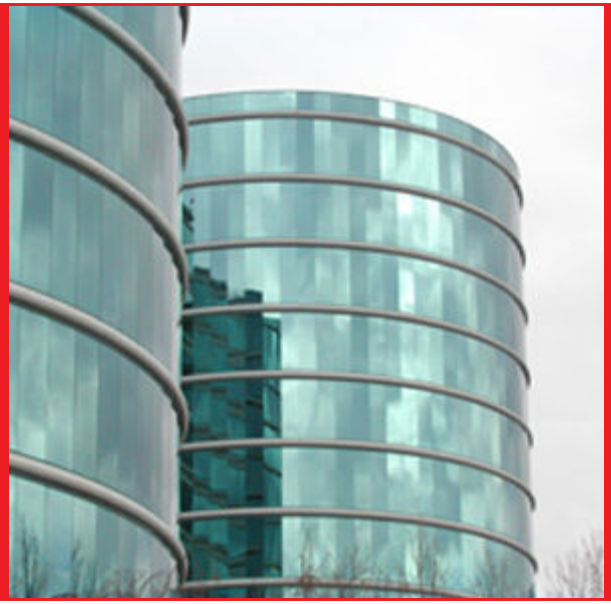
Version	%
Oracle Database 10g R2	39%
Oracle Database 10g R1	15%
Oracle 9i R2	23%
Oracle 9i R1	14%
Oracle 8.x or earlier	8%
Total	100%

What Other Databases are You Using?

Database	%
IBM DB2	10%
Microsoft SQL Server	30%
MySQL	5%
N/A	45%
Other	10%
Total	100%

What Development Environment are You Using?

Development Environment	%
Other	25%
Toad / SQL Editors	15%
Oracle SQL Developer	14%
Oracle JDeveloper 10g / 11g Preview	11%
Oracle Forms	10%
MS visual Studdio / .NET	7%
Eclipse	5%
Other Java IDE	4%
Test Editor / VI	4%
Oracle Application Express	3%
Borland Jbuilder	1%
NetBeans	1%
Total:	100%

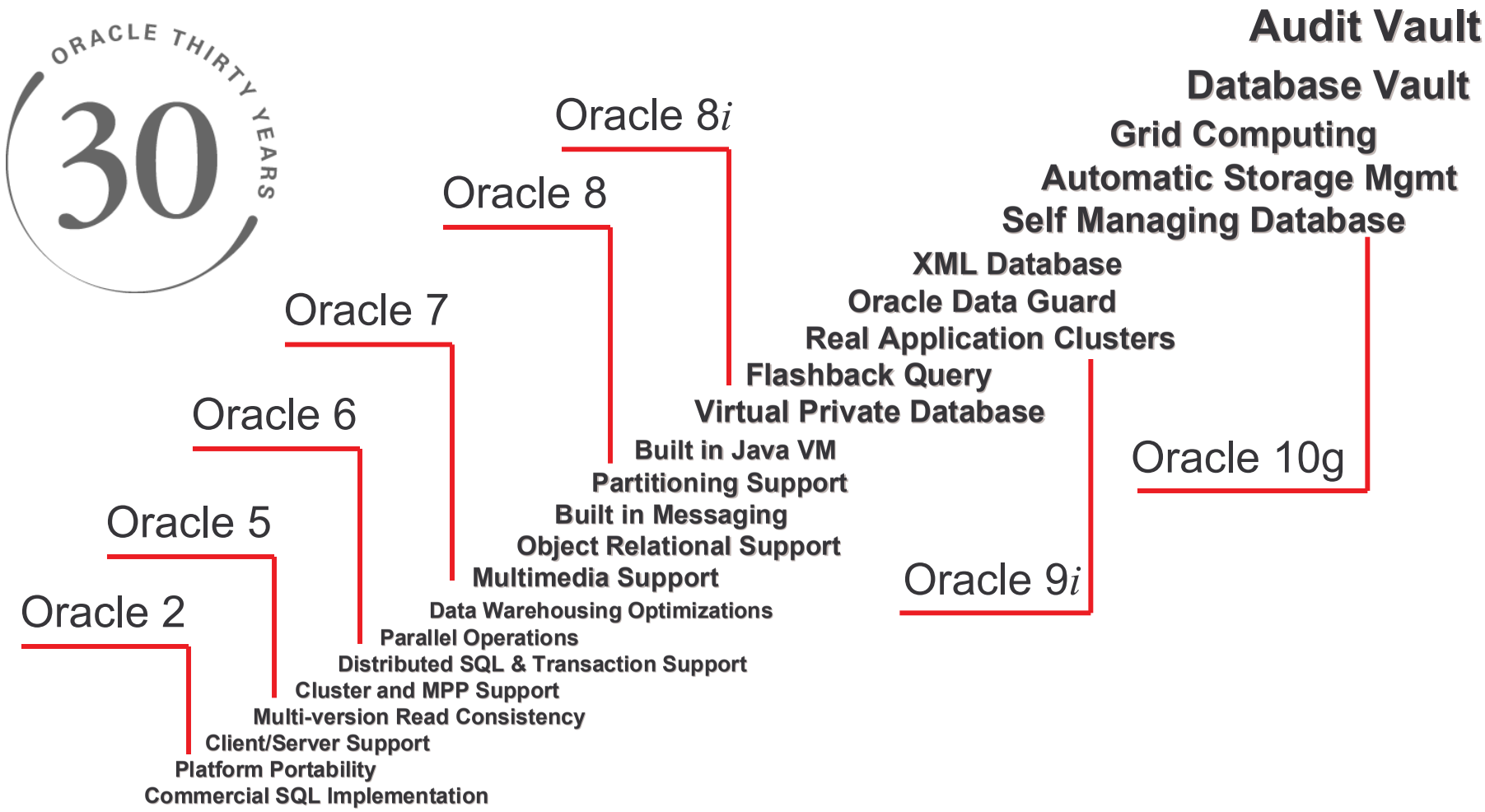


ORACLE®

Oracle Database 11g Overview

Mark Townsend
Vice President, Database Product Management

Continuous Innovation

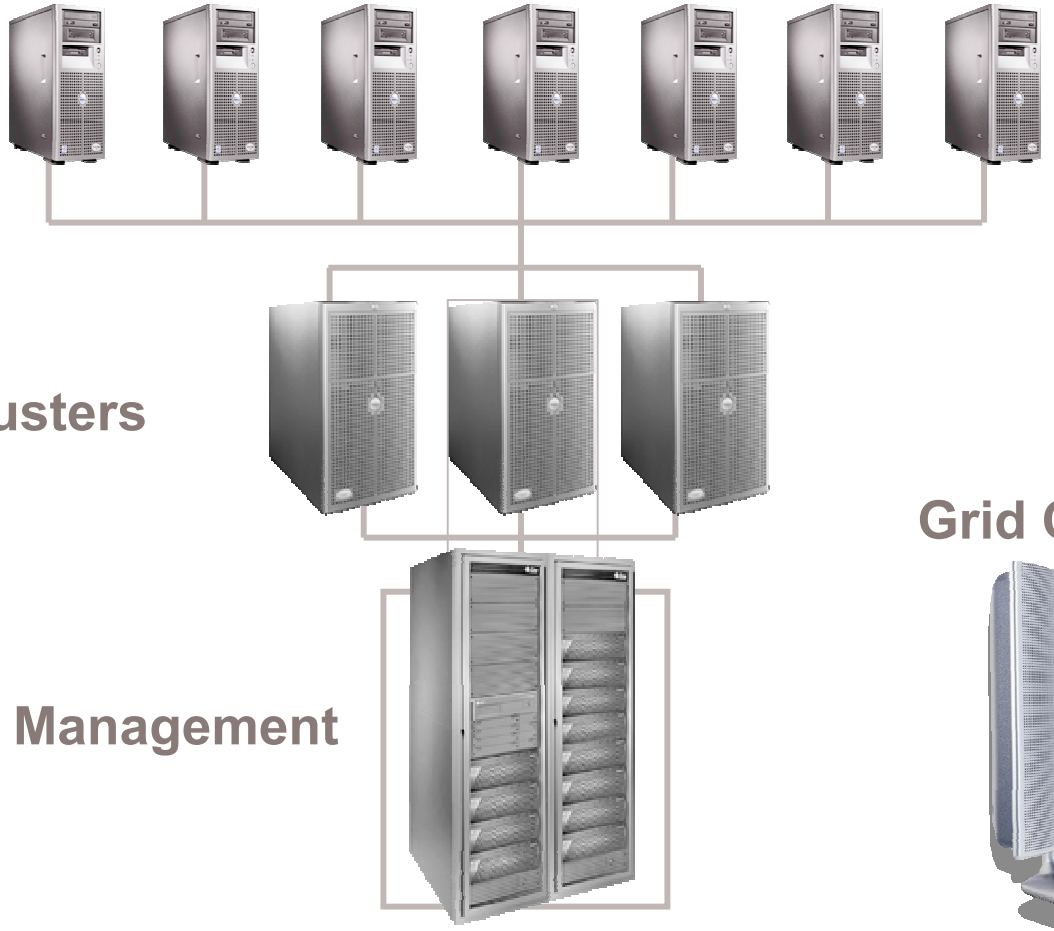


Grid Computing

Fusion Middleware

Real Application Clusters

Automatic Storage Management

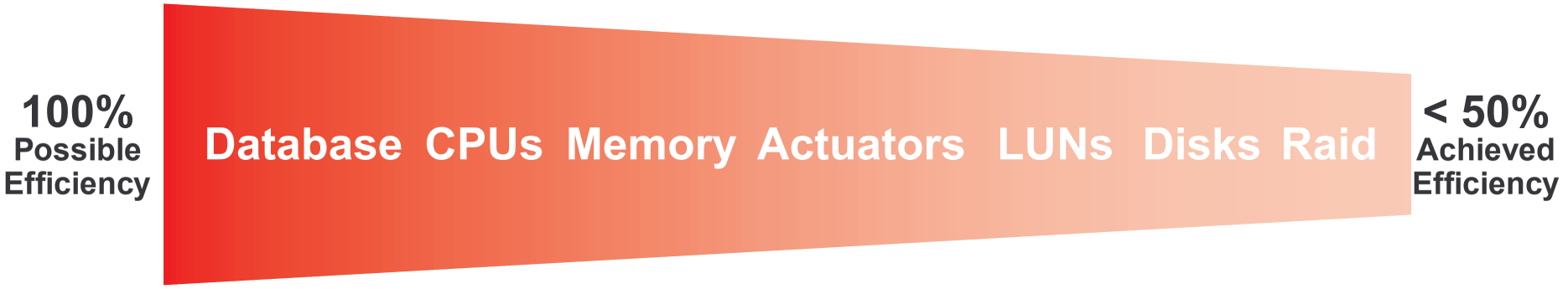


Grid Control

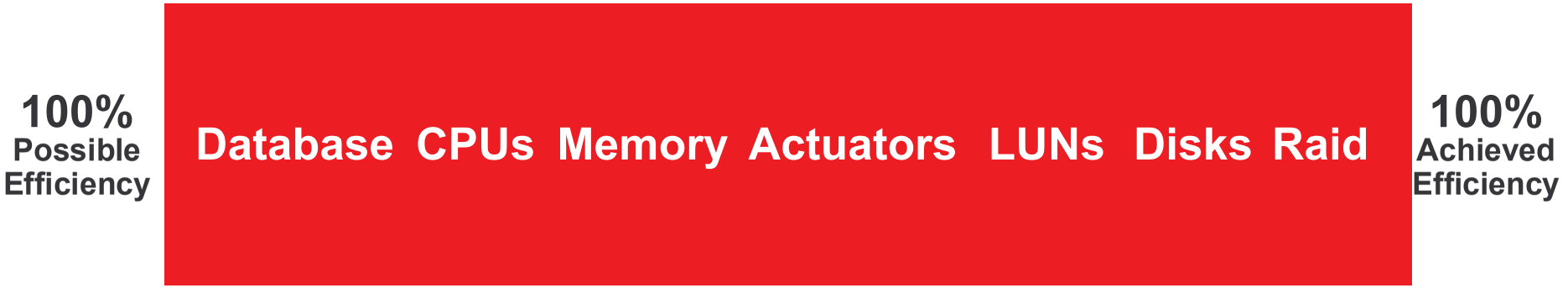
Oracle Multi-Terabyte DW Customers

Sizing Data Warehouses

An unbalanced configuration



A balanced configuration

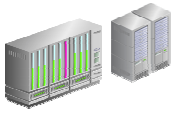


Full Range of DW Solution Options

Custom

- Flexibility for the most demanding data warehouse
- Benefits:
  - High performance
  - Unlimited scalability
  - Completely customizable
  - Industry-leading database and hardware

ORACLE DATABASE ENTERPRISE EDITION



- Partitioning
- RAC

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ORACLE DATABASE ENTERPRISE EDITION

- Partitioning
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Reference Configurations

- Documented best-practice configurations for data warehousing
- Benefits:
  - High performance
  - Simple to scale; modular building blocks
  - Industry-leading database and hardware
  - Available today with HP, IBM, Sun, EMC/Dell

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ORACLE DATABASE ENTERPRISE EDITION

- Partitioning
- RAC

Oracle Optimized Warehouse

- Scalable systems pre-installed and pre-configured: ready to run out-of-the-box
- Benefits:
  - High performance
  - Simple to buy
  - Fast to implement
  - Easy to maintain
  - Competitively priced

ORACLE DATABASE ENTERPRISE EDITION

- Partitioning
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ORACLE DATABASE ENTERPRISE EDITION

- Partitioning
- RAC

Pre-configured, Pre-installed, Validated

Flexibility

Availability

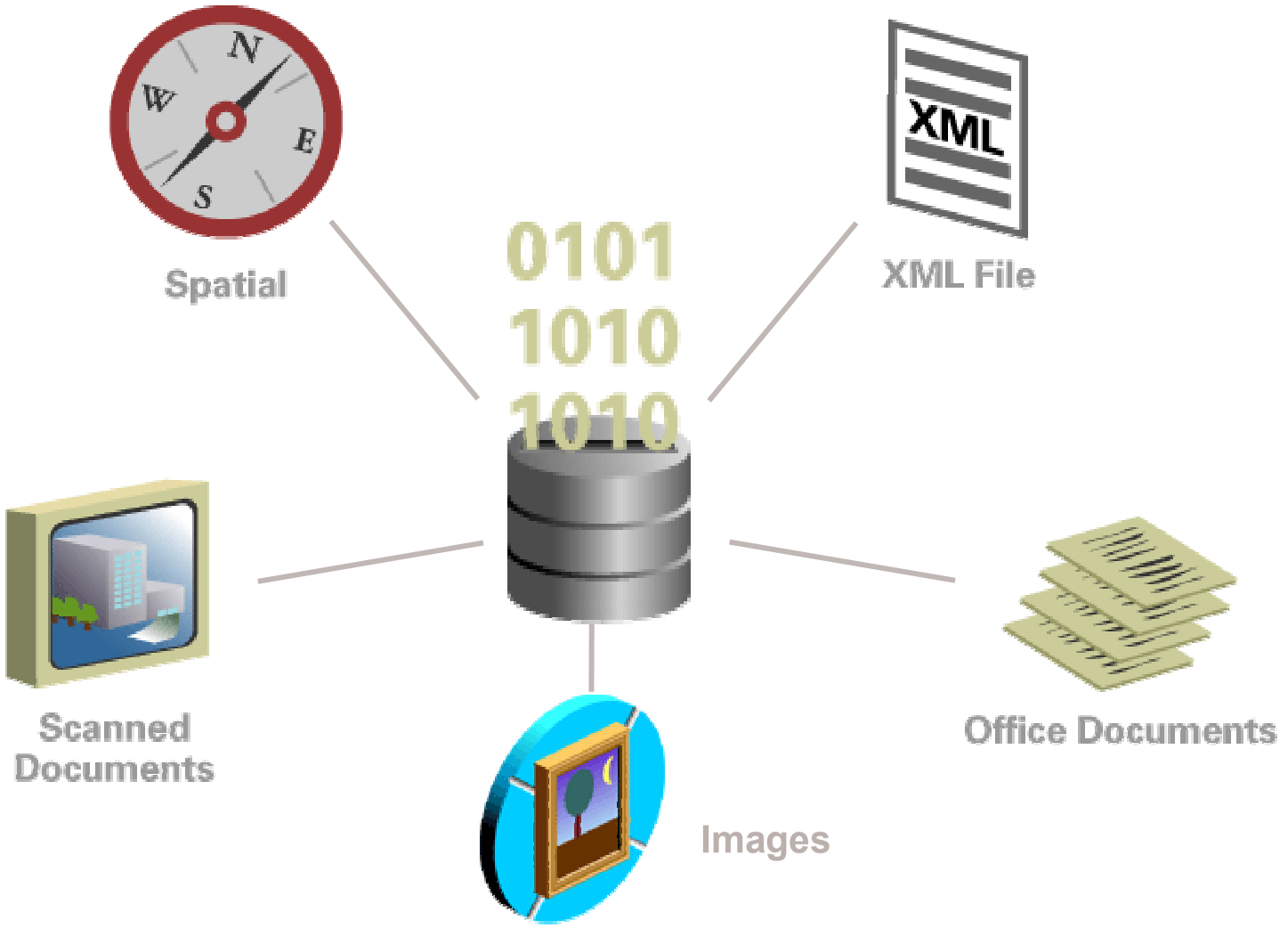
Partner	Reference Configurations Available	Optimized Warehouse
DELL™ EMC² where information lives	✓	✓
hp invent	✓	Soon
IBM	✓	✓
Sun microsystems	✓	✓


ORACLE®
DATABASE
11g

Enabling Innovation with Oracle Database 11g

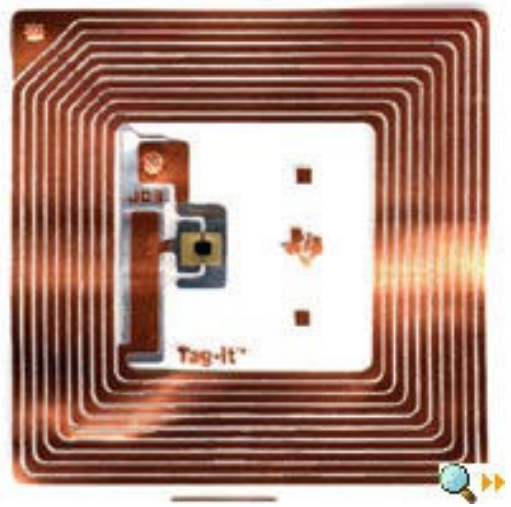
- Better business insight into all data types
- Managing data growth
- Higher quality of service at lower cost
- Pressure to manage change

Integrating Unstructured Data

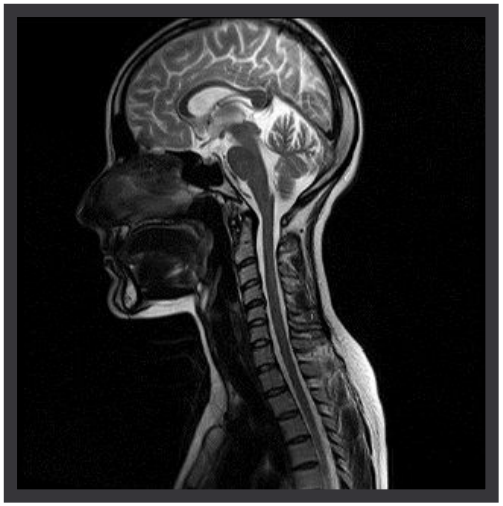


New in Oracle Database 11g

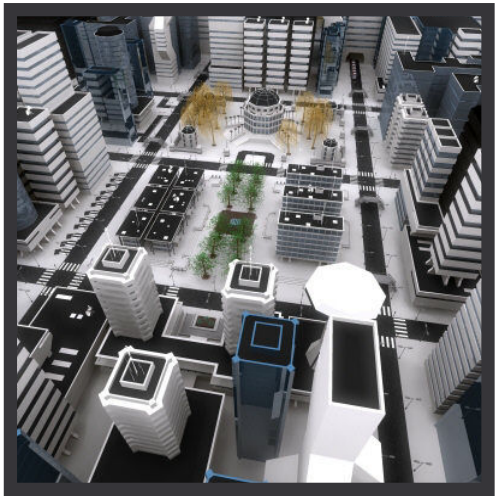
Critical New Data Types



RFID
Data Types



DICOM
Medical Images



3D Spatial
Images

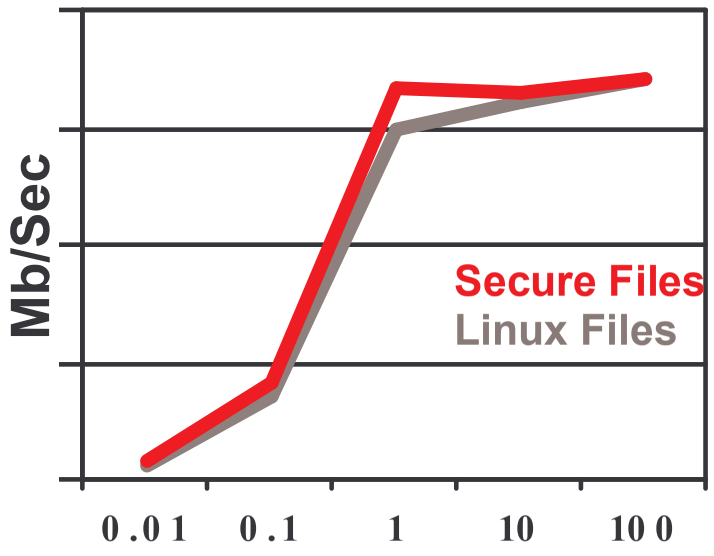
ORACLE®

3D Spatial Demonstration

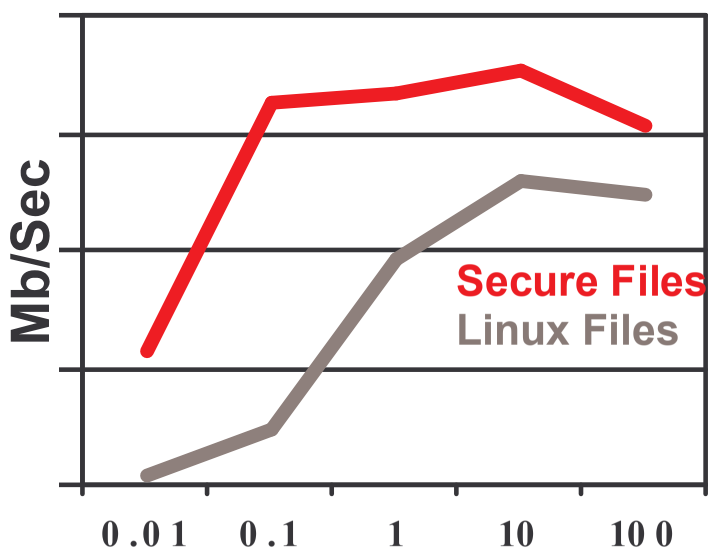
Oracle Secure Files

Breaking the Performance Barrier…

Read Performance

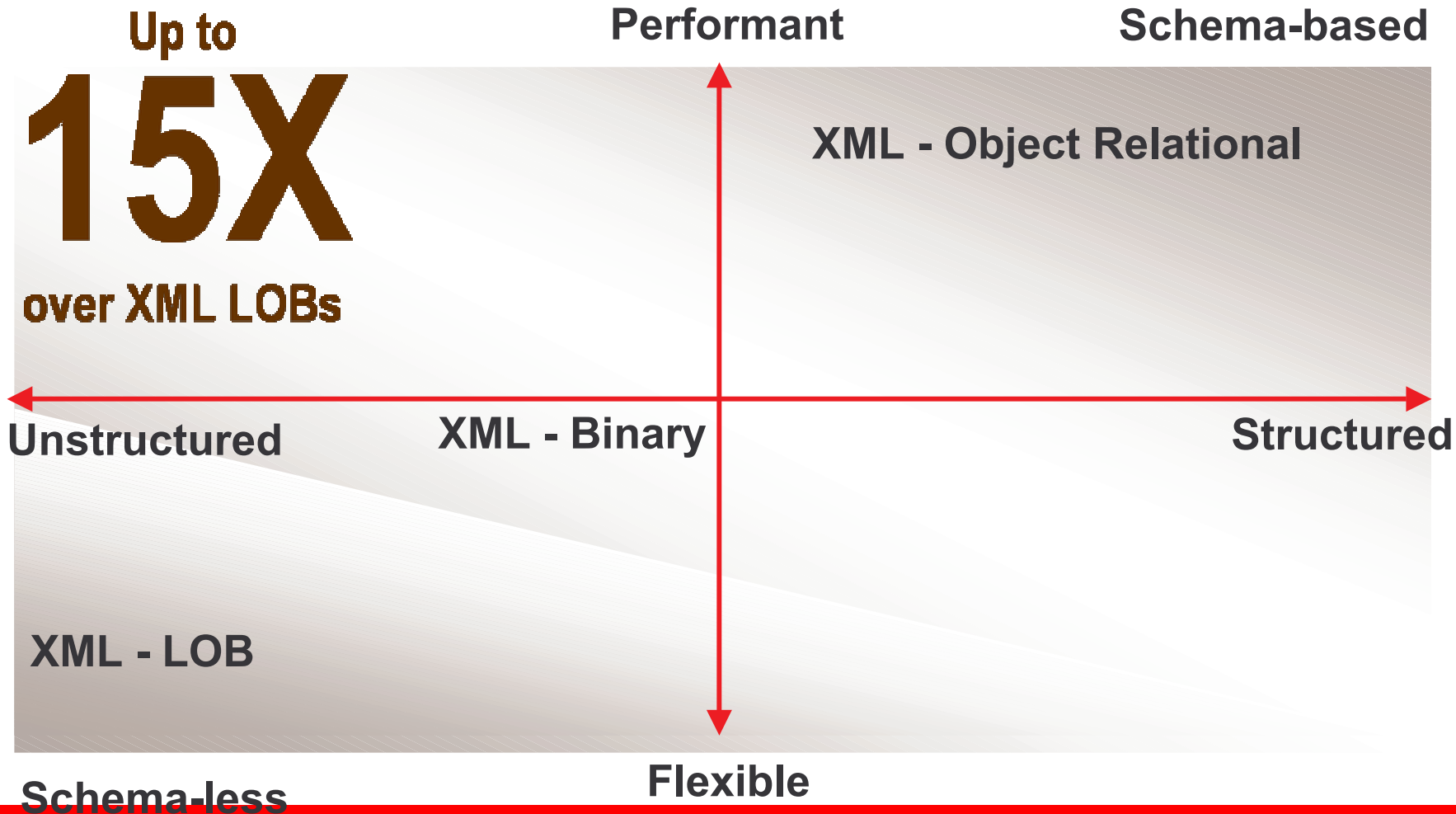


Write Performance



New in Oracle Database 11g

Extended XML Support with Binary XML



Enabling Innovation with Oracle Database 11g

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

Managing Data Growth

Unstructured Data

Structured Data

Regulatory Compliance

Business Intelligence

Mergers Acquisitions

Data Consolidation

Data Growth Challenges

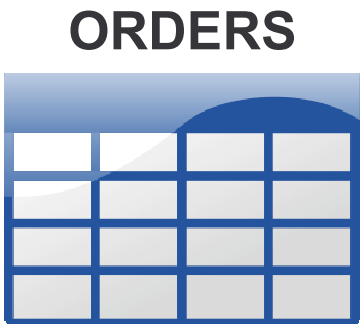
Management Challenge

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

Cost Challenge

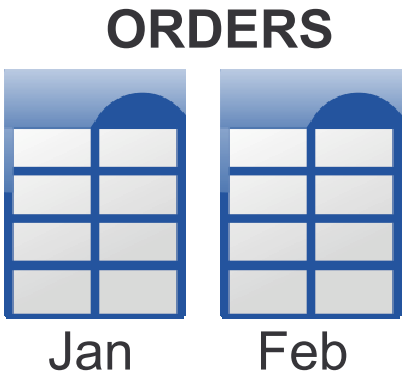
- Volume of storage required
- Overhead to manage
- Cost of of downtime

Benefits of Partitioning



Large Table

Difficult to Manage

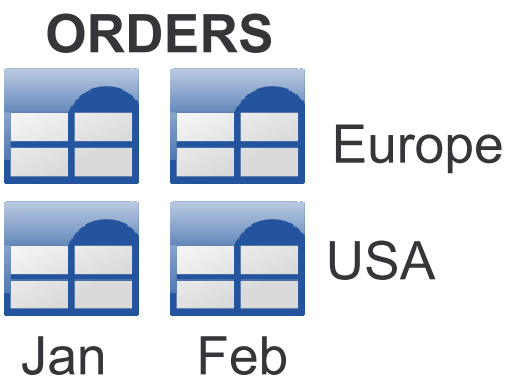


Partition

Divide and Conquer

Easier to Manage

Improve Performance



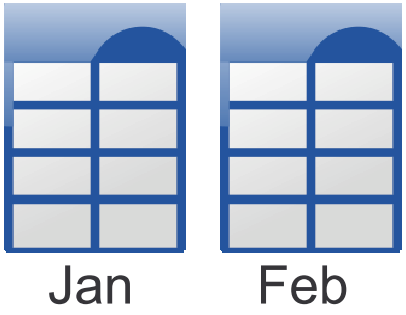
Composite Partition

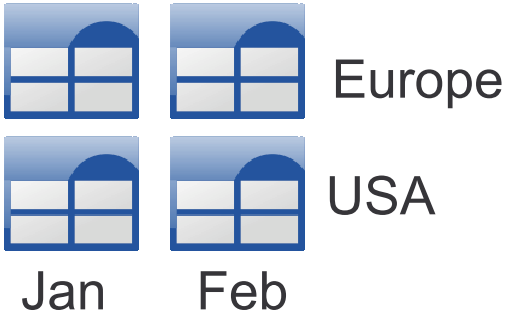
Higher Performance

More flexibility to match business needs

New in Oracle Database 11g

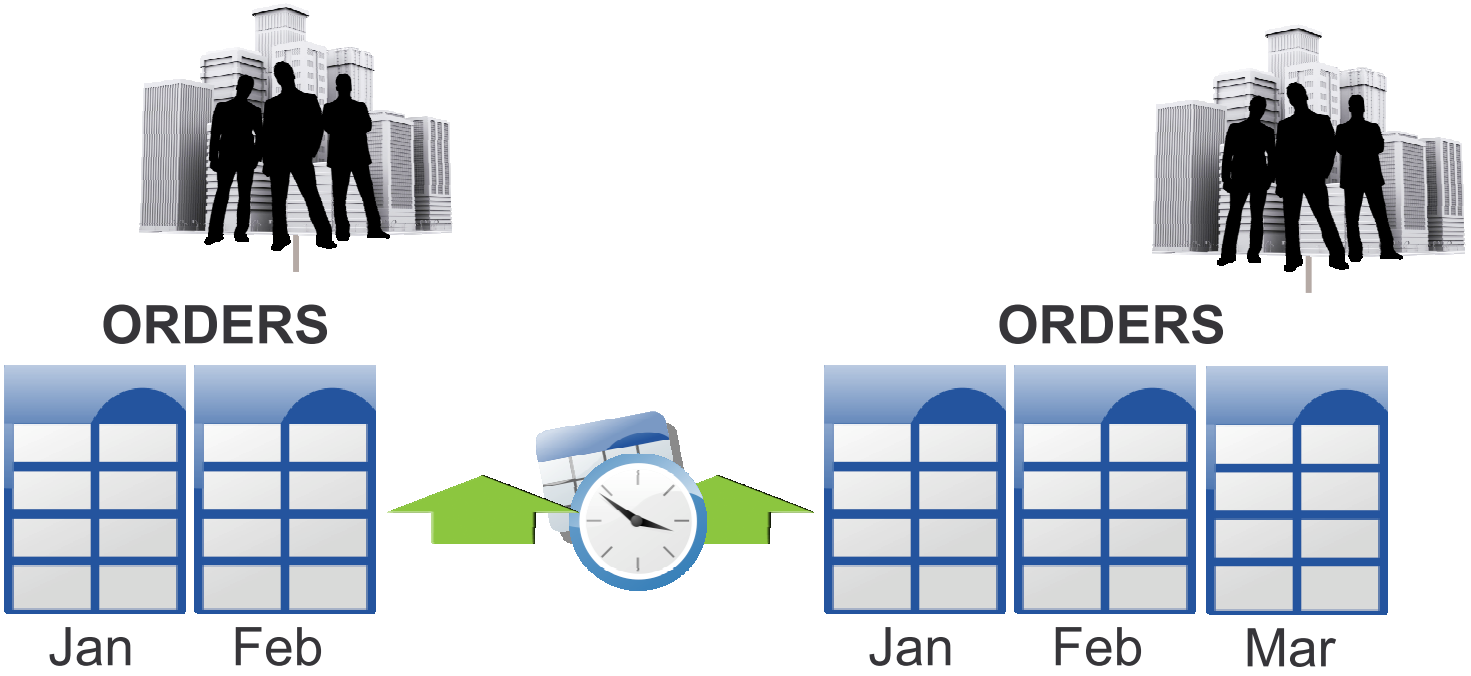
Partition Advisor





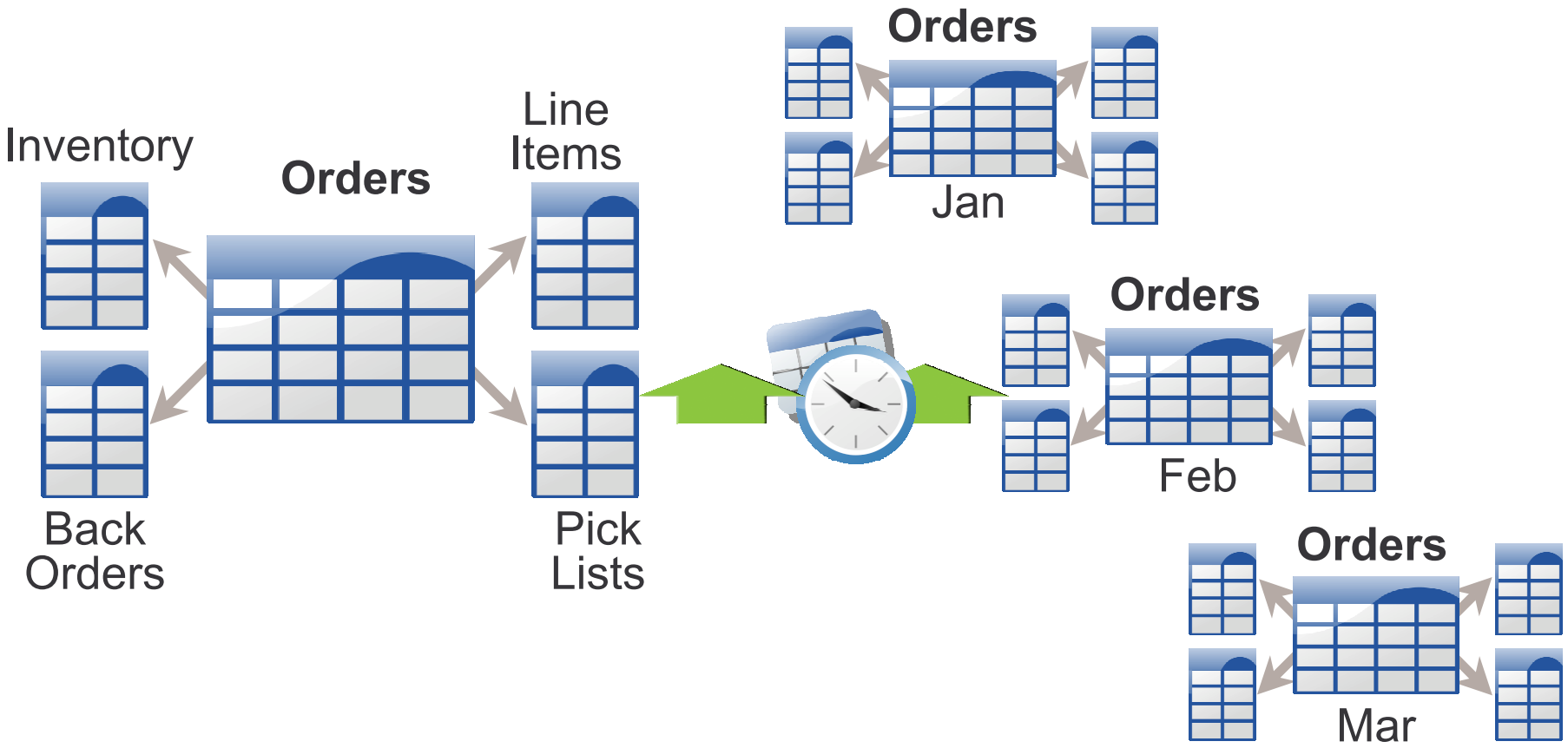
New in Oracle Database 11g

Automated Partitioning: Interval



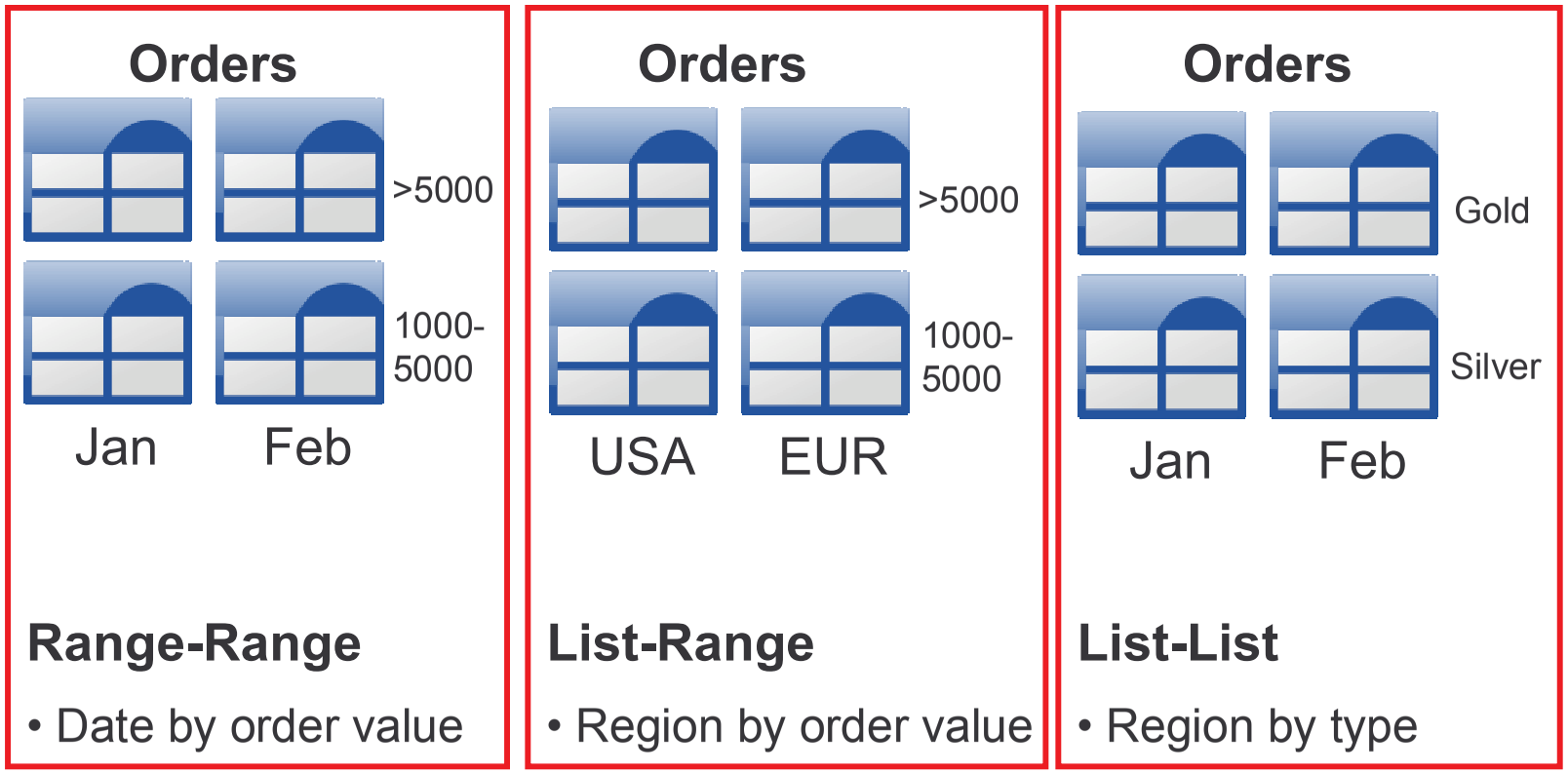
New in Oracle Database 11g

Automated Partitioning: Reference



New in Oracle Database 11g

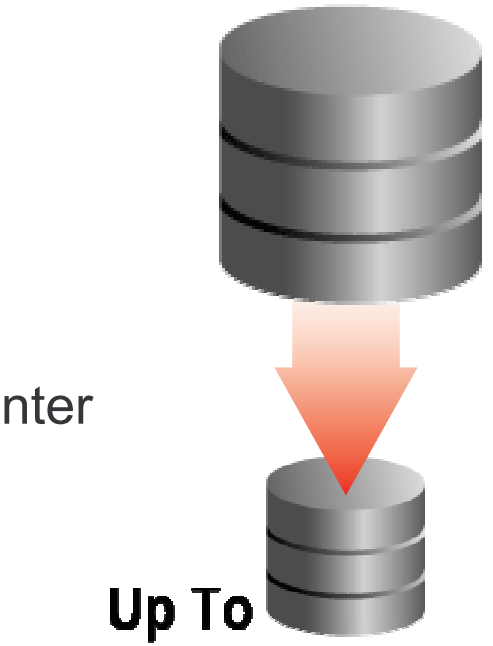
Business Driven Partitioning: New Composite



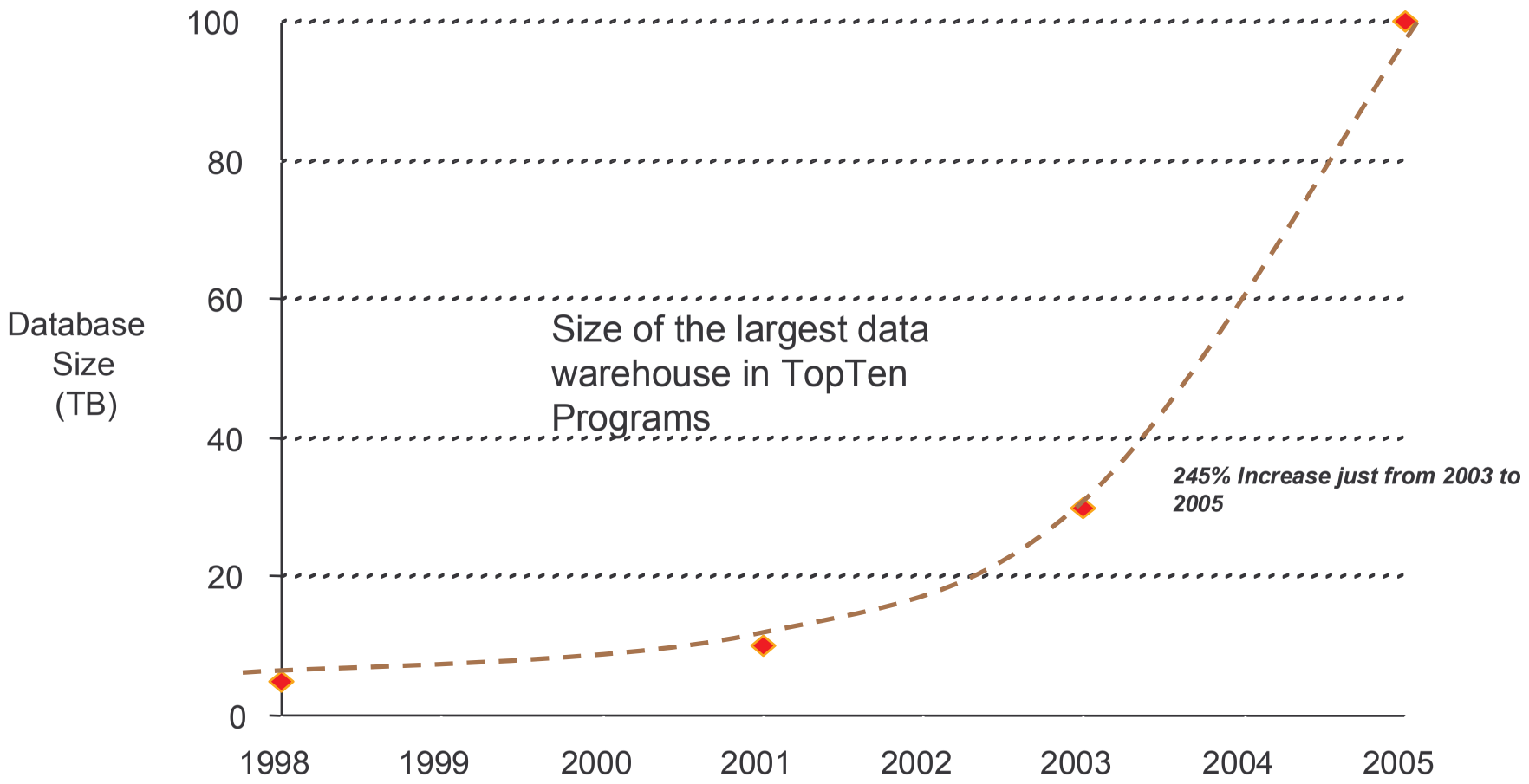
New in Oracle Database 11g

Advanced Compression

- **Compress Large Application Tables**
  - Transaction processing, data warehousing
- **Compress All Data Types**
  - Structured and unstructured data types
- **Typical Compression of 2-3 X**
  - Cascade storage savings throughout data center



Growing Data Volumes



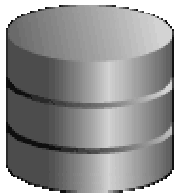
Source: 2005 TopTen Program, November 2005 © Winter Corporation, Waltham, MA, USA

Traditional Storage Approach

All data resides on single storage tier

High Performance
Storage Tier
= $72 per Gb

Active



All data on active
= $972,000!

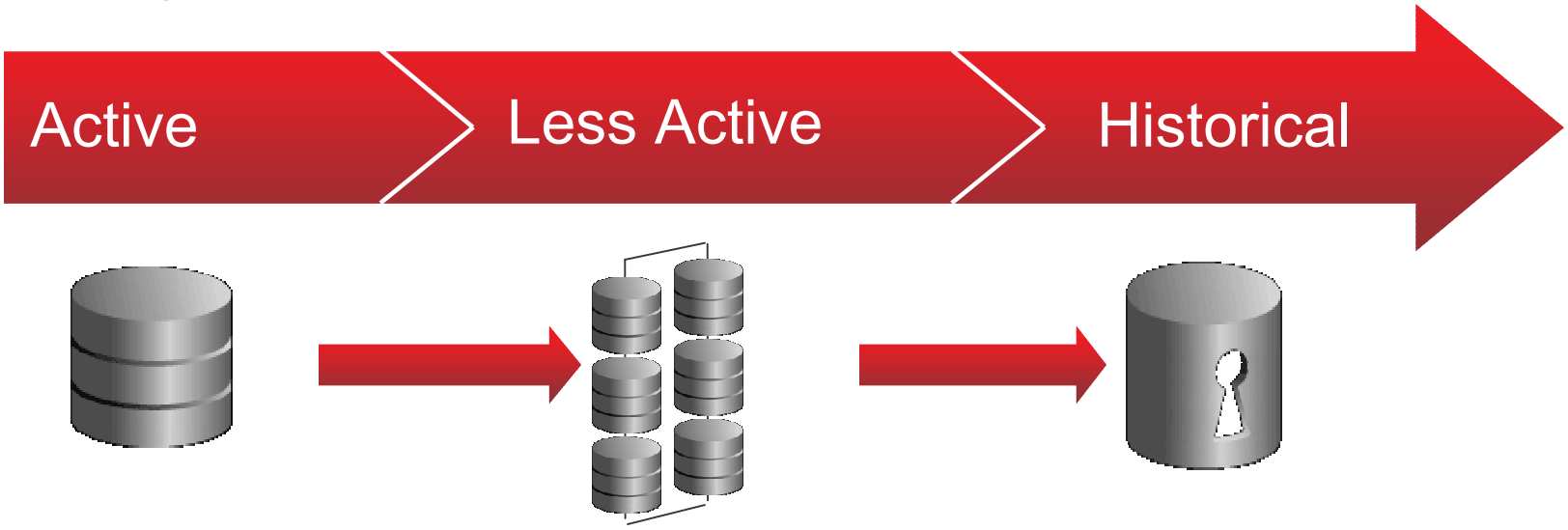
Information Lifecycle Management

Partition data onto appropriate storage tier

High Performance Storage Tier = $72 per Gb

Low cost Storage Tier = $14 per Gb

Read only Storage Tier = $7 per Gb



Information Lifecycle Management

Move data onto appropriate storage tier

High Performance Storage Tier = $72 per Gb

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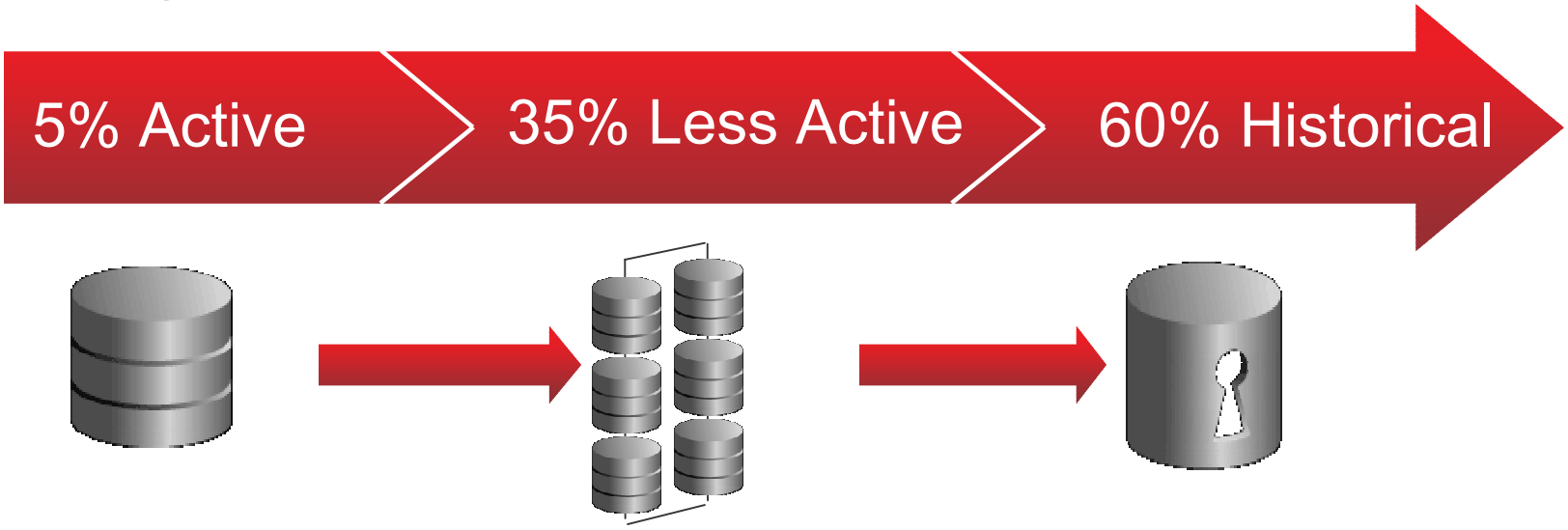


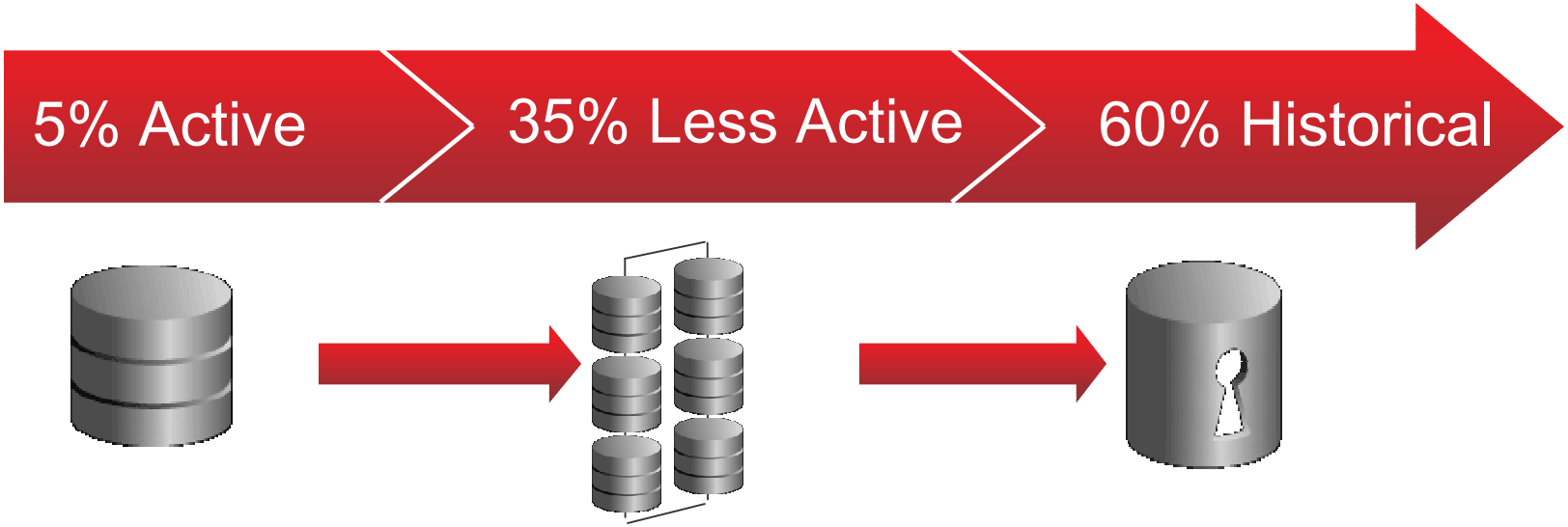
Information Lifecycle Management

Reduce storage costs accordingly

High Performance Storage Tier = $72 per Gb

Low cost Storage Tier = $14 per Gb

Read only Storage Tier = $7 per Gb



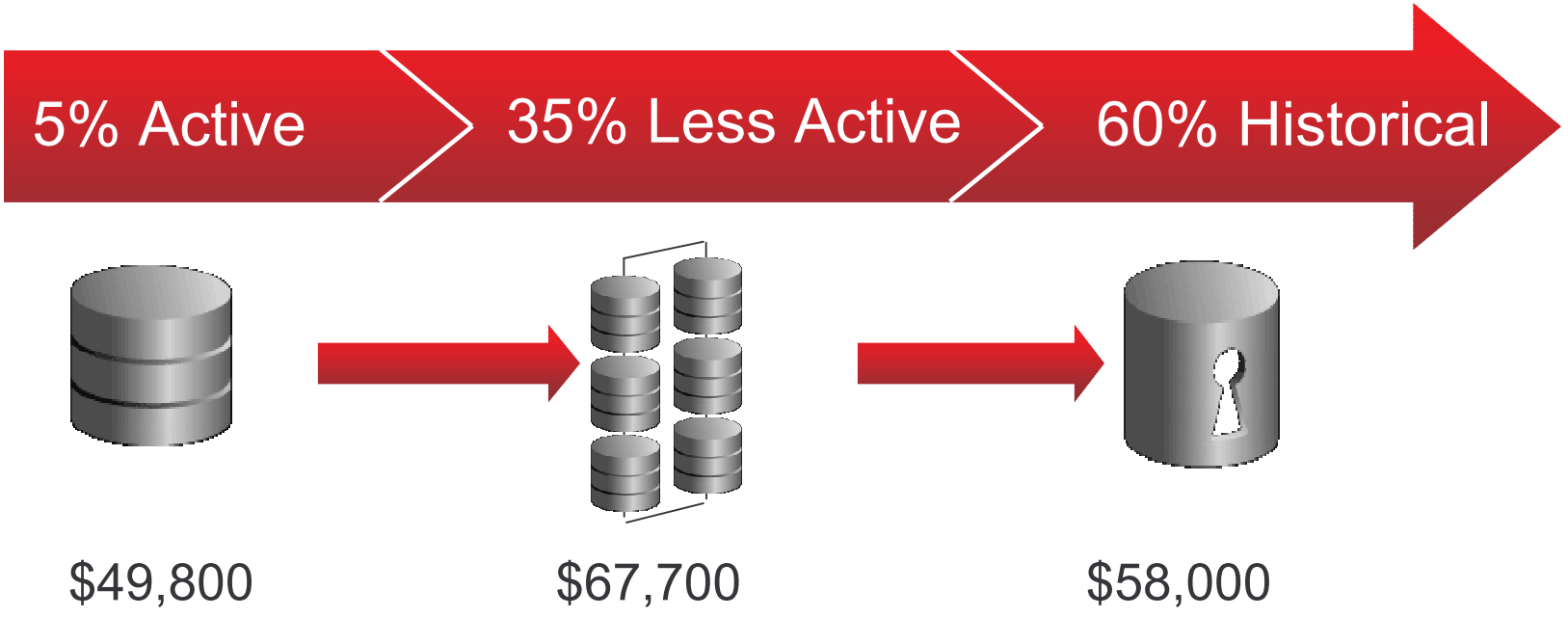
$49,800

$67,700

$58,000

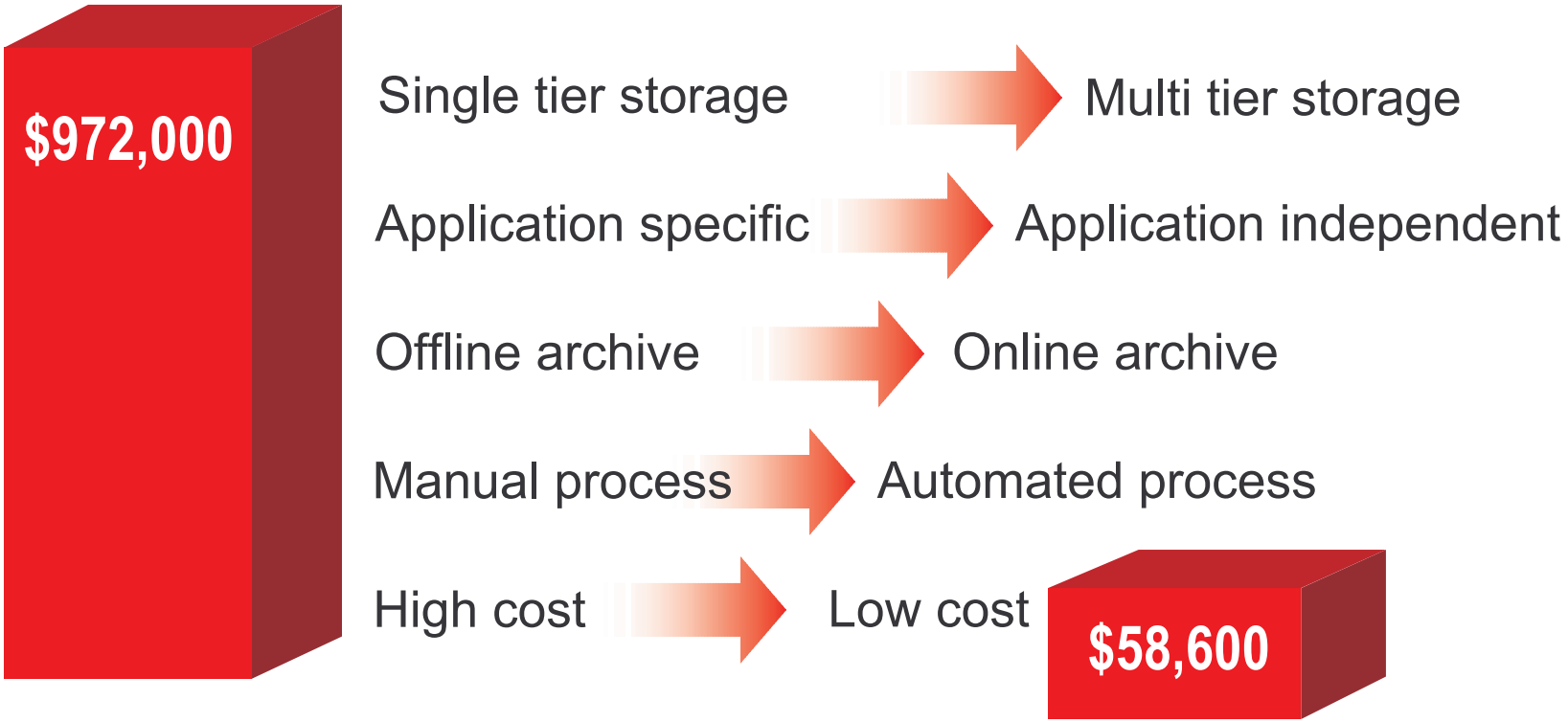
Advanced Compression

Reduces storage requirements across all tiers…



Why Oracle Database 11g?

Managing data growth



Enabling Innovation with Oracle Database 11g

- Better business insight into all data types
- Managing data growth
- Higher quality of service at lower cost
- Pressure to manage change

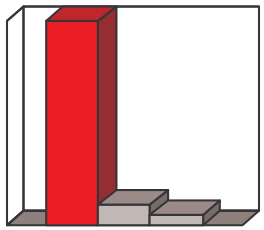
Quality of Service Challenges

All at lower cost

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

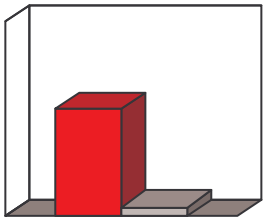
Faster Performance

Database Resident Connection Pool



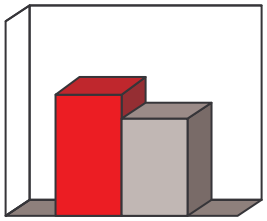
Up to
20 x connections

Java Just-In-Time Compiler



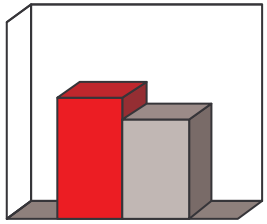
Up to
11 x Faster

Query Result Caching



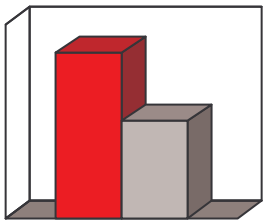
Up to
25% Faster

Client Side Caching



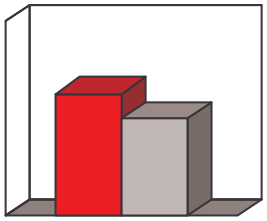
Up to
22% Faster

RAC Performance Enhancements



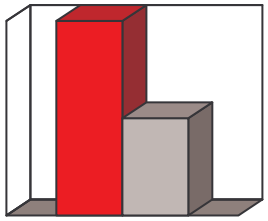
Up to
70% Faster

Oracle Secure Backup



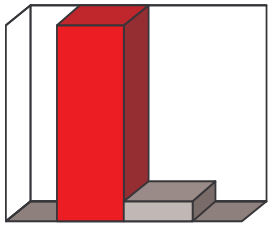
Up to
25% Faster

Oracle Streams Enhancements



Up to
2 x Faster

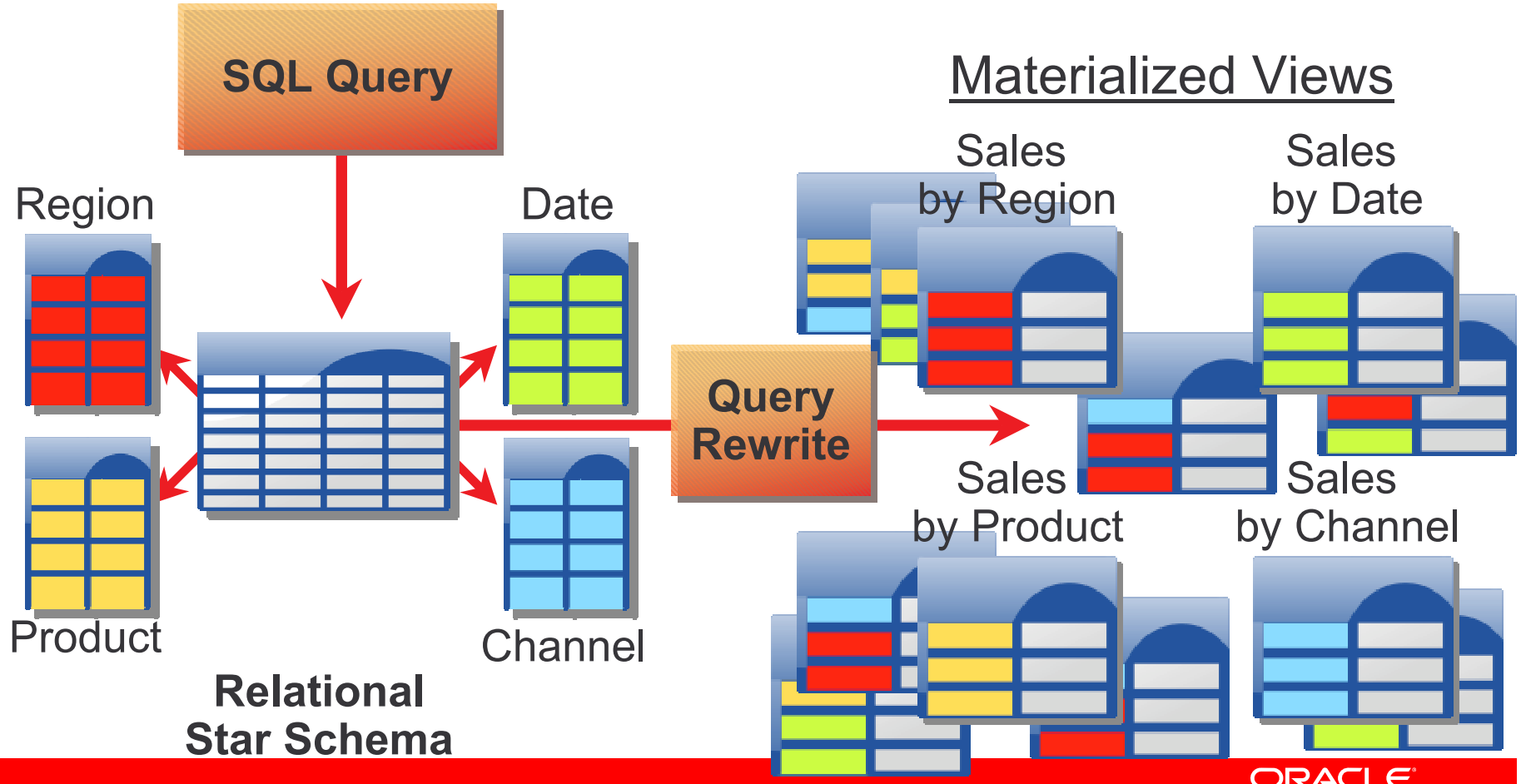
Optimizer Stats Collection



Up to
10 x Faster

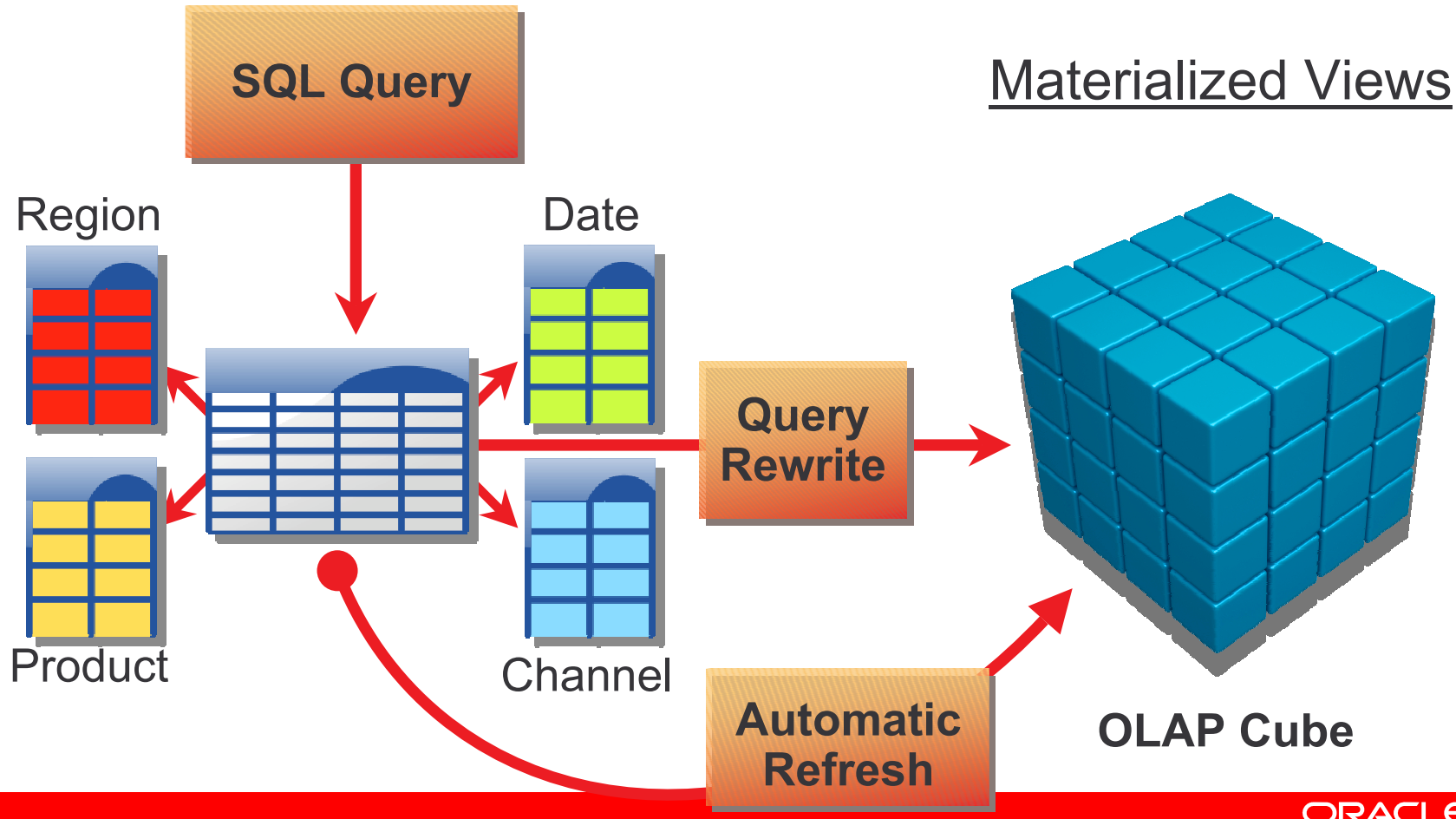
Materialized Views

Typical Architecture Today



New in Oracle Database 11g

Cube Organized Materialized Views



Why Oracle OLAP?

Faster. Simpler. Better insight.

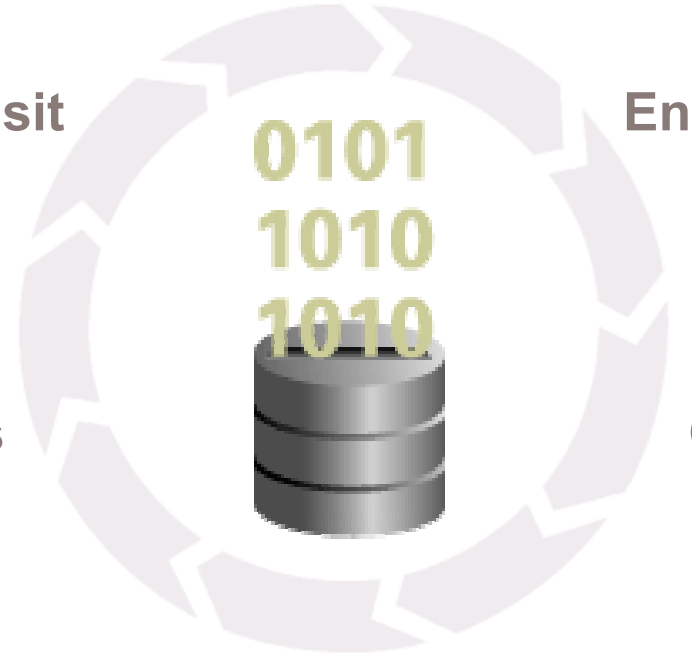
Complex OLAP API	→	Transparent SQL Access
Hundreds of summary MV's	→	One OLAP Cube
Complex Data Refresh	→	Simple, Fast Data Refresh
Fast Query Performance for **Some** Summaries	→	Fast Query Performance for **All** Summaries
2/3 use Materialized Views	→	**All** of them benefit from OLAP

Data Security Challenges

Protect data and monitor access

Encrypt data at rest

Encrypt data in transit



Encrypt backup data

Control User Access

Control DBA Access

Consolidate & Audit activity

Ensure Secure Deployments

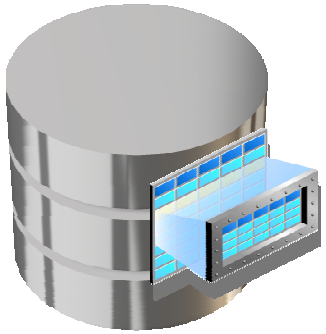
Security and Compliance

Encrypt Data in Database

New in Oracle Database 11g…

Tablespace level encryption

Hardware based master key protection



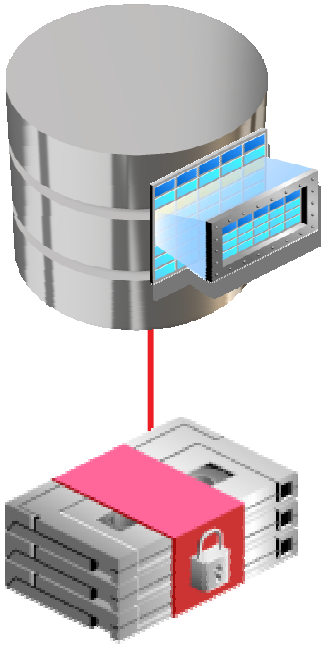
Transparent Data Encryption

Security and Compliance

Encrypt Backups

New in Oracle Database 11g…

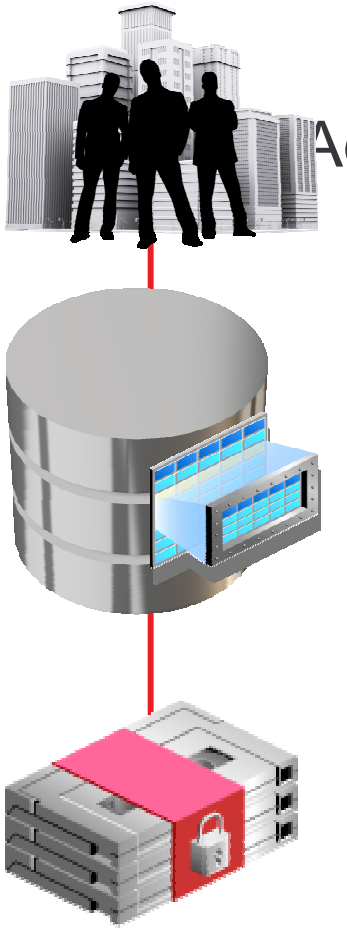
Backup compression



Oracle Secure Backup

Security and Compliance

Strongly Authenticate and Authorize End Users



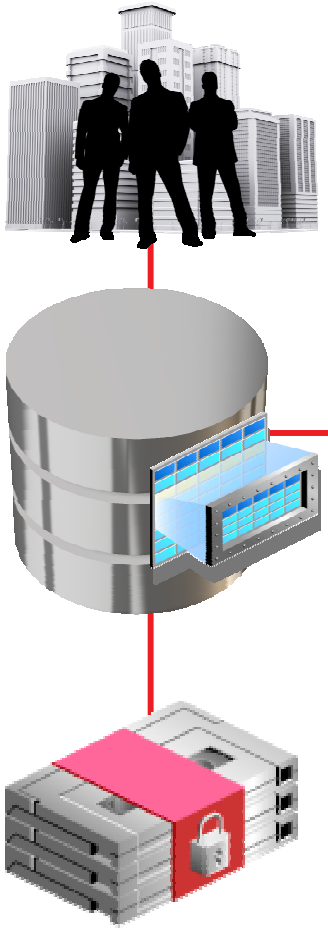
Advanced Security

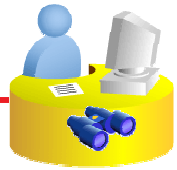
New in Oracle Database 11g…

- **Kerberos authentication**
- **Strong passwords**

Security and Compliance

Add Multi-factor DBA Controls

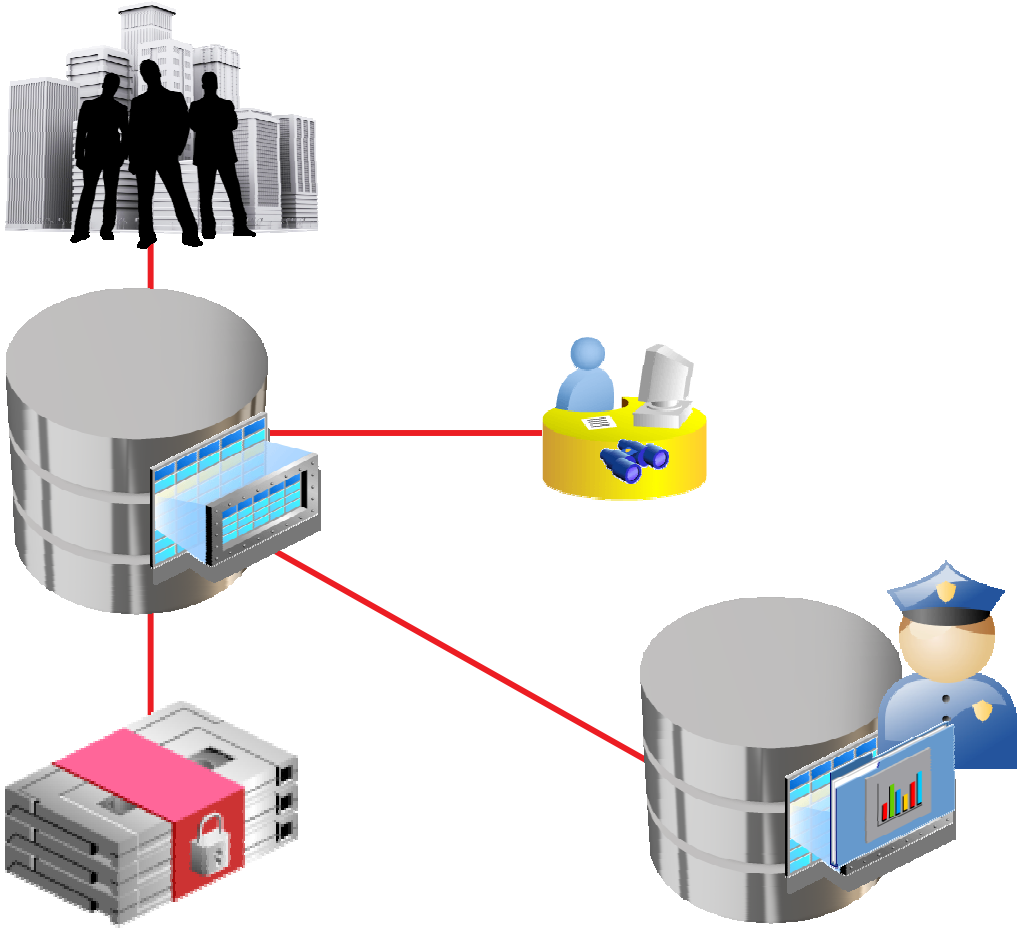




Database Vault

Security and Compliance

Consolidate and Monitor Audit Information



Audit Vault

Database Availability Challenges

Protect from planned and unplanned downtime

Server Failure

Storage Failure

Data Protection

Site Failure

Human Error

System Changes

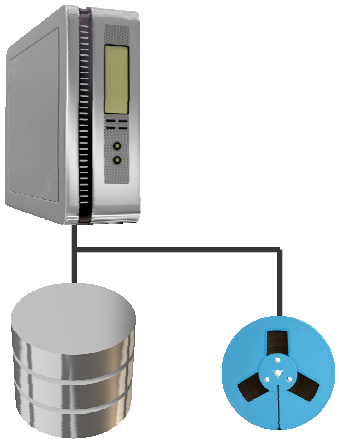
Table Changes

Oracle Recovery Manager

Protect Against Data Loss

New in Oracle Database 11g…

Data Recovery Advisor

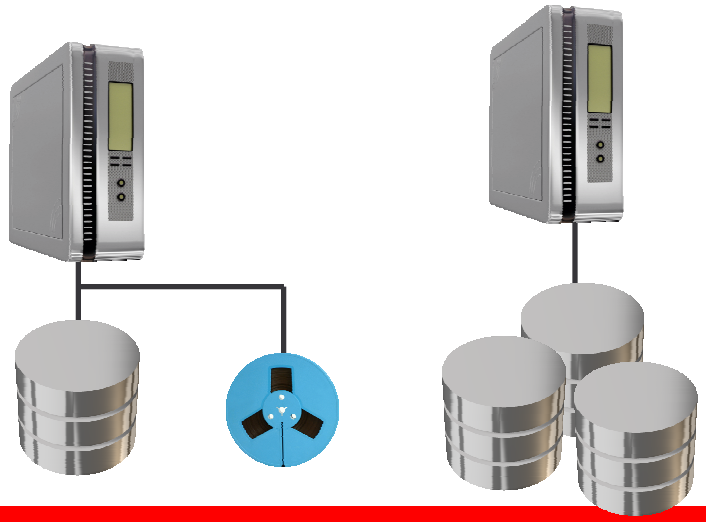


Automatic Storage Management

Protect Against Disk Loss

New in Oracle Database 11g…

- Preferred Mirror Read
- Fast Mirror Resync



Real Application Clusters

Protect Against Server Loss

New in Oracle Database 11g…

XA Transactions spanning multiple servers

Improved runtime connection load balancing

Flashback

Protect Against Human Error

New in Oracle Database 11g…

Flashback Transaction

Total Recall

Oracle Data Guard

Protect Against Site Failure

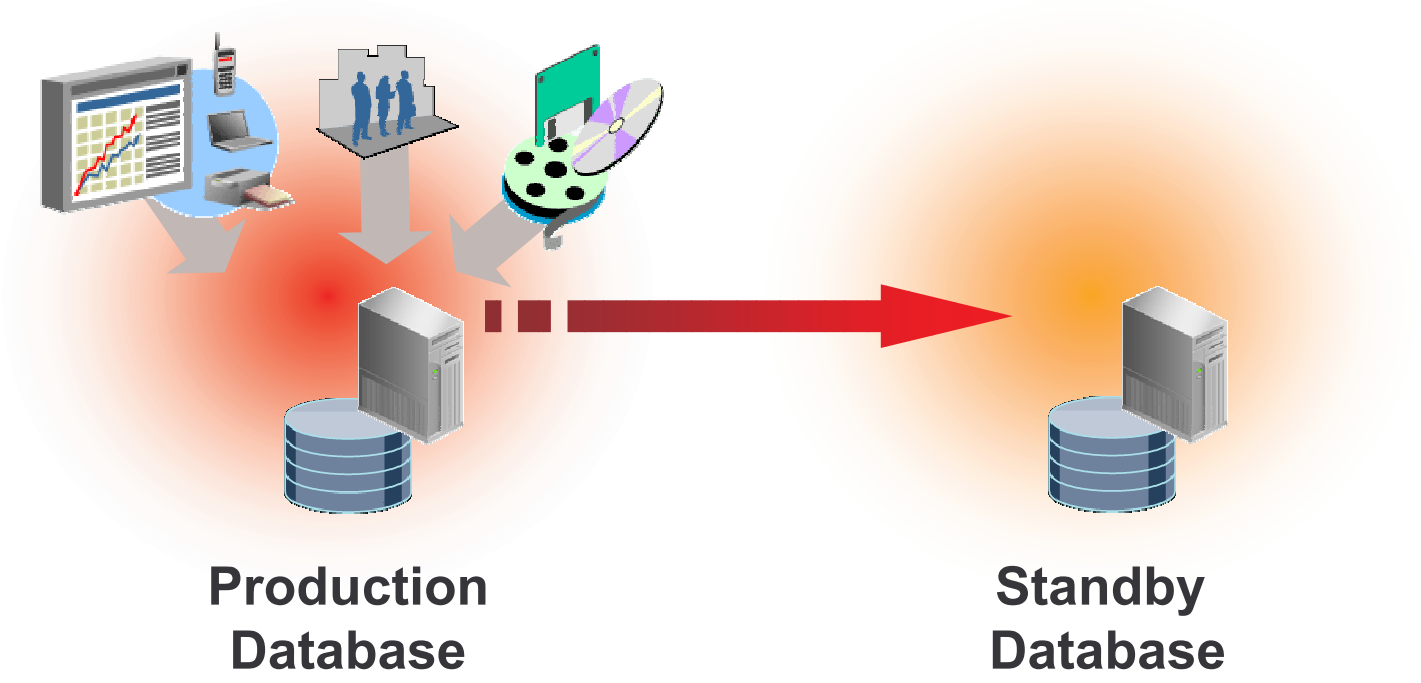
New in Oracle Database 11g…

Snapshot Standby

Readable Physical

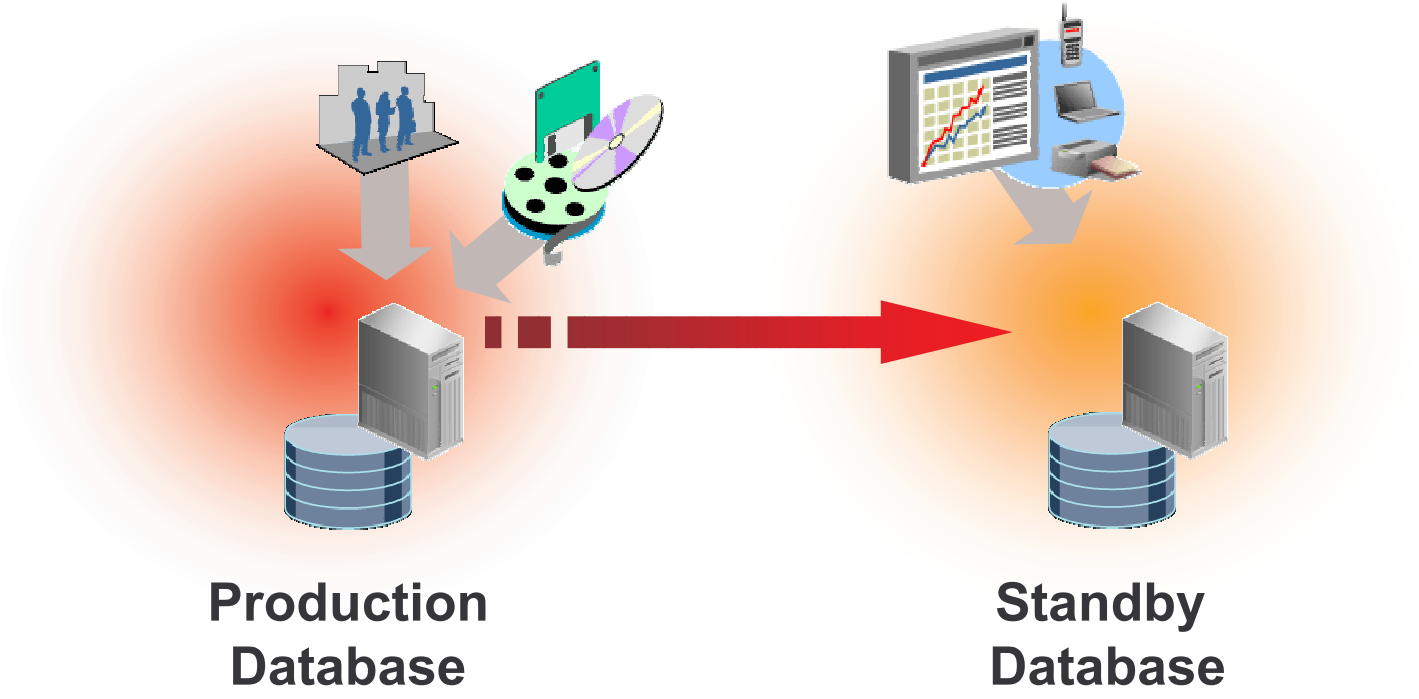
Disaster Recovery Challenge

Investment in Disaster Recovery only



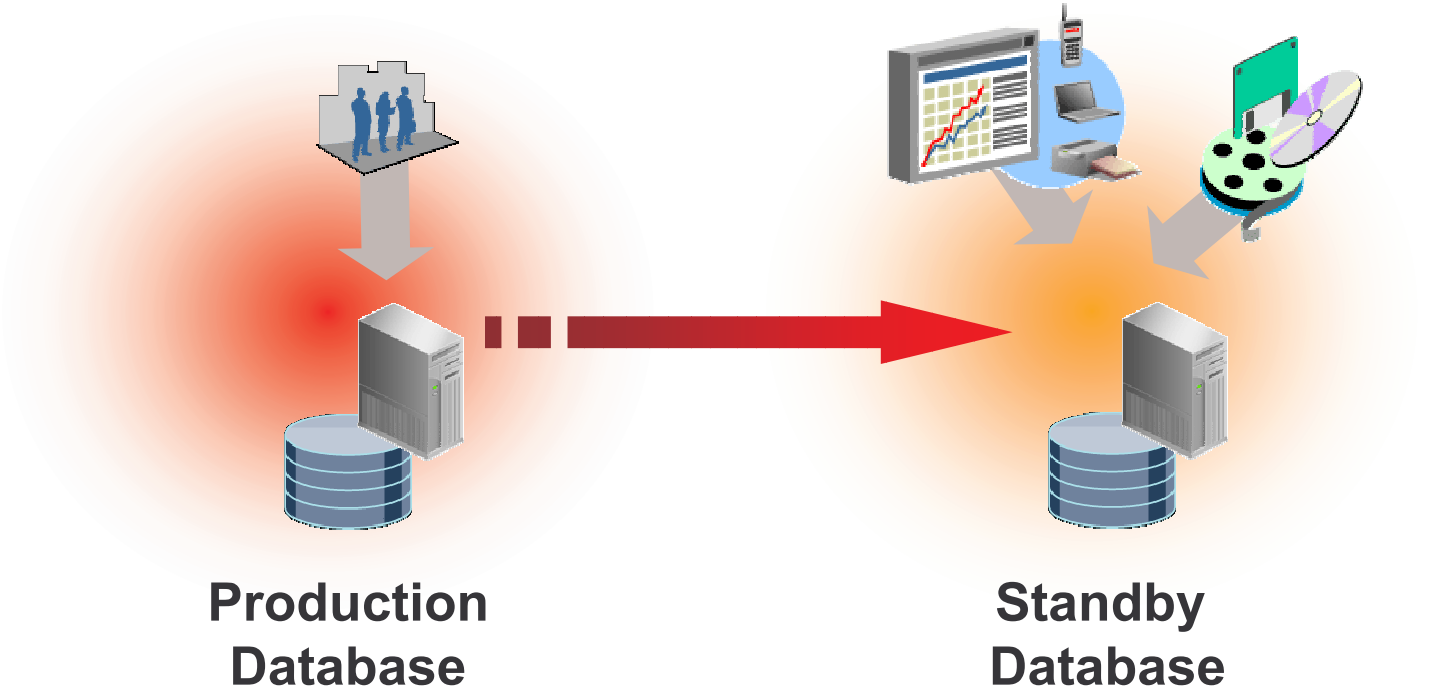
With Oracle Data Guard

Offload production reporting to standby



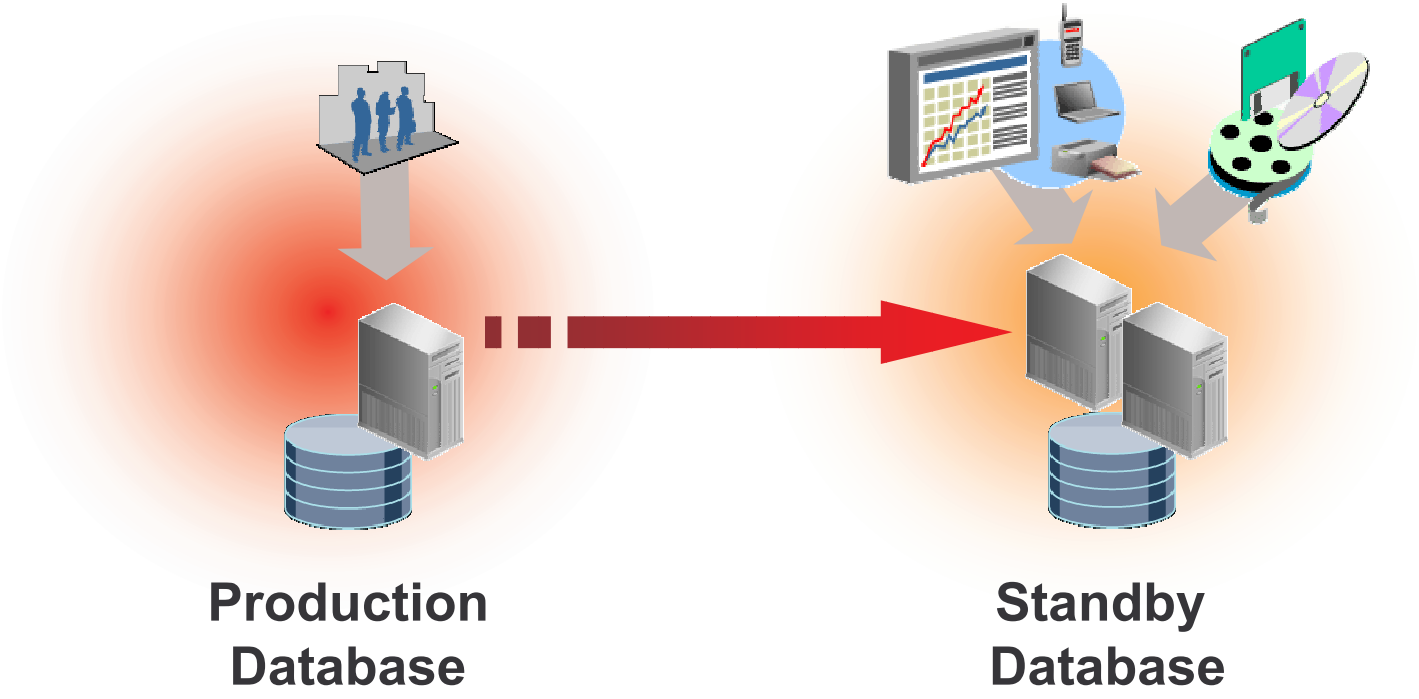
With Oracle Data Guard

Offload database backups to standby



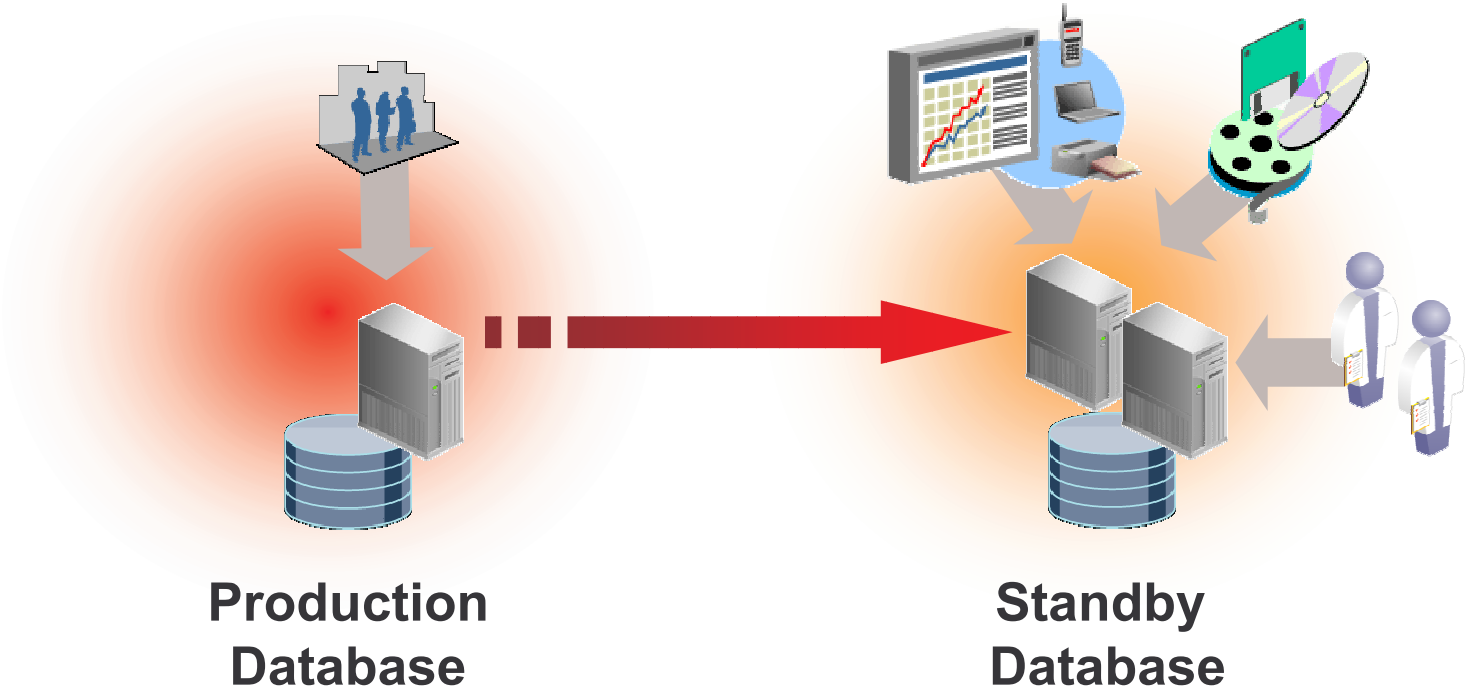
With Oracle Data Guard

Upgrades and changes



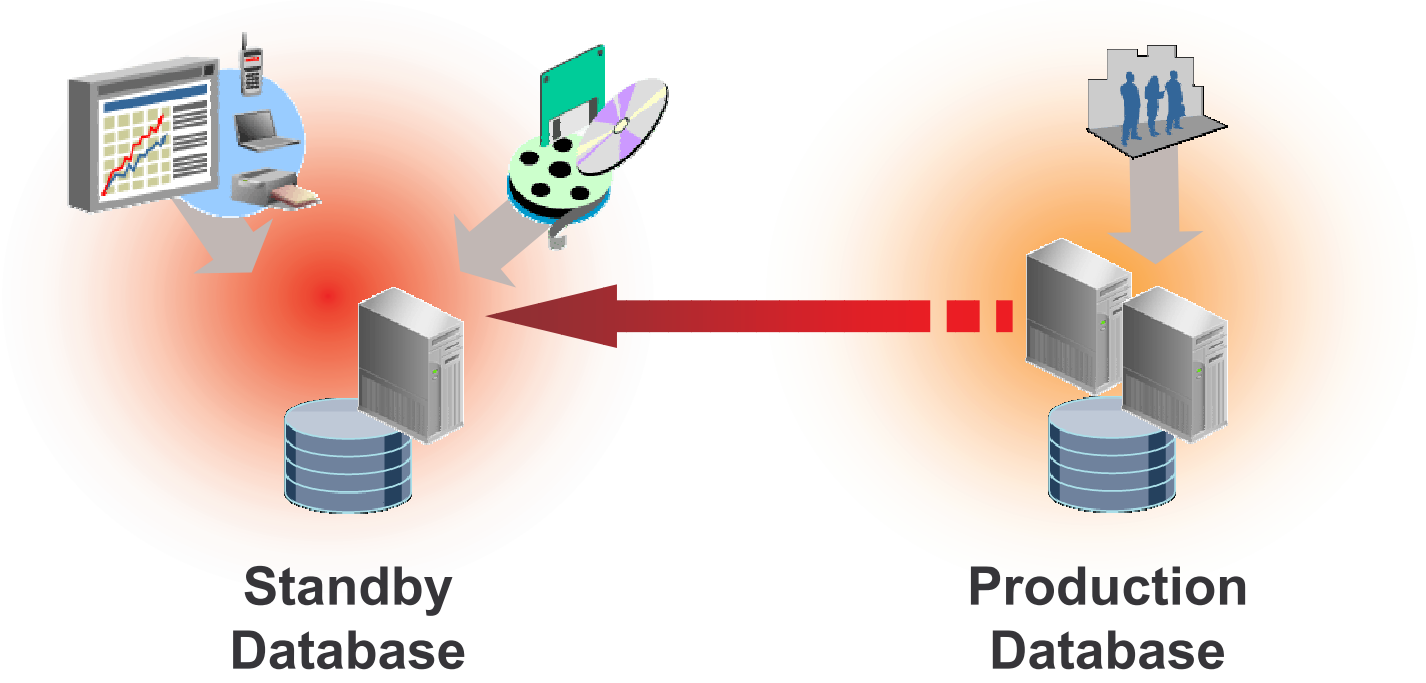
With Oracle Data Guard

Test our changes



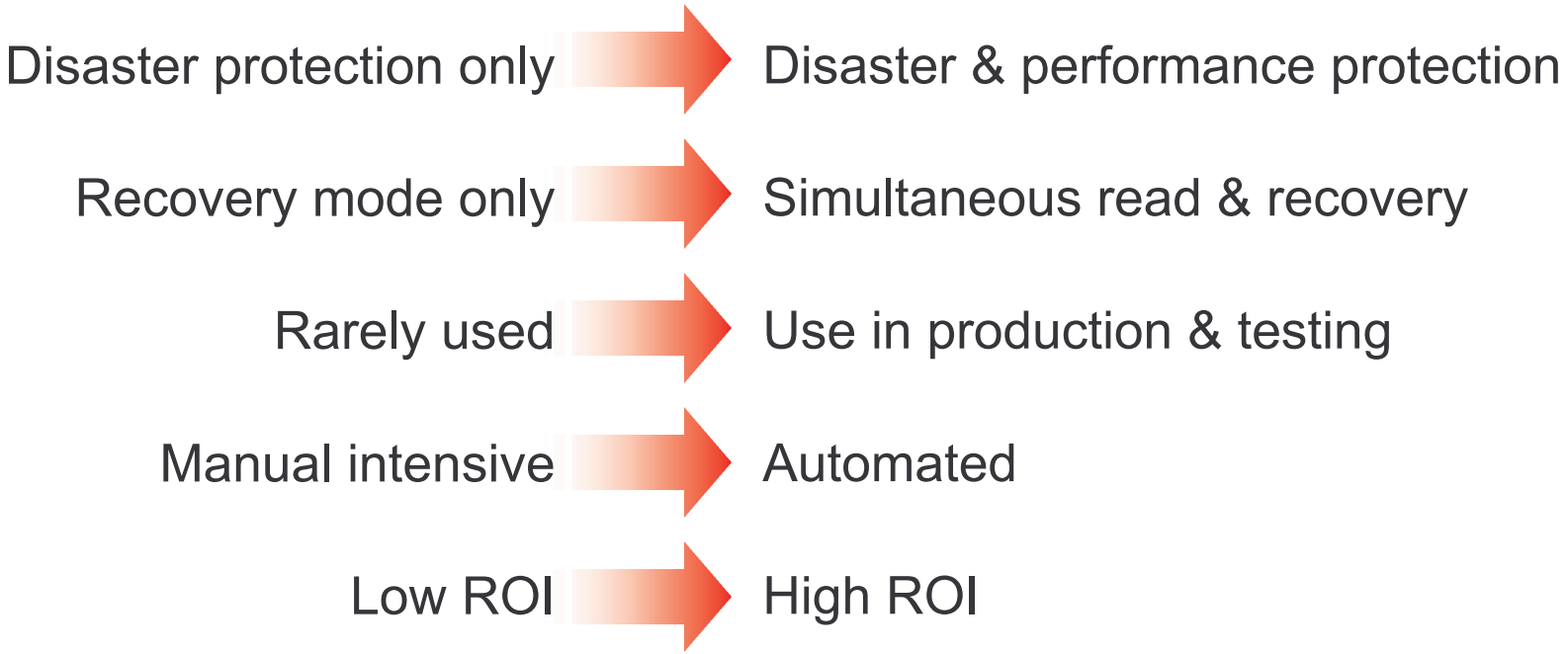
With Oracle Data Guard

Switchover to new production system



Why Oracle Data Guard?

Invest in Disaster and Performance Protection



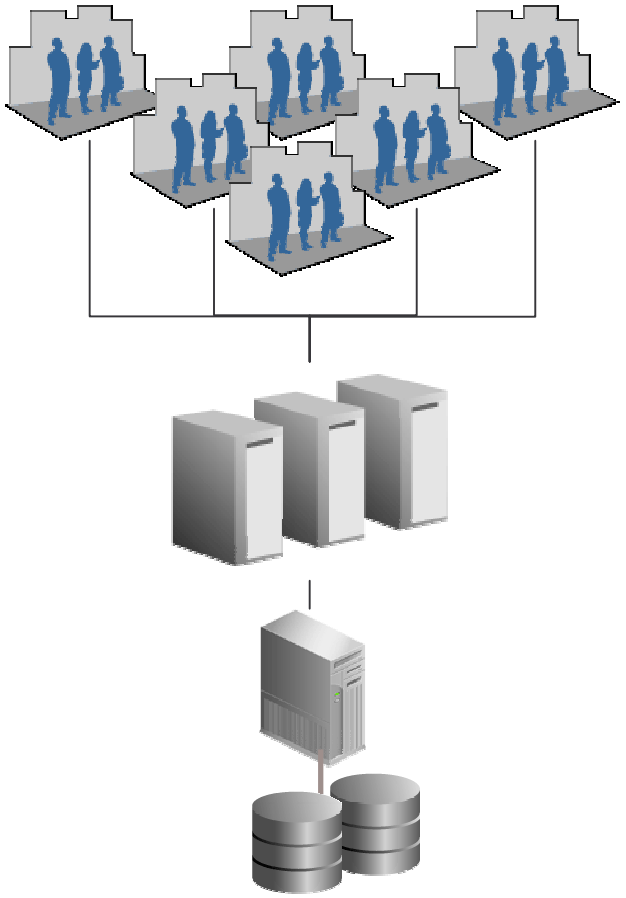
Enabling Innovation with Oracle Database 11g

- Better business insight into all data types
- Managing data growth
- Higher quality of service at lower cost
- Pressure to manage change

Lifecycle of Change Management

Application Testing Today

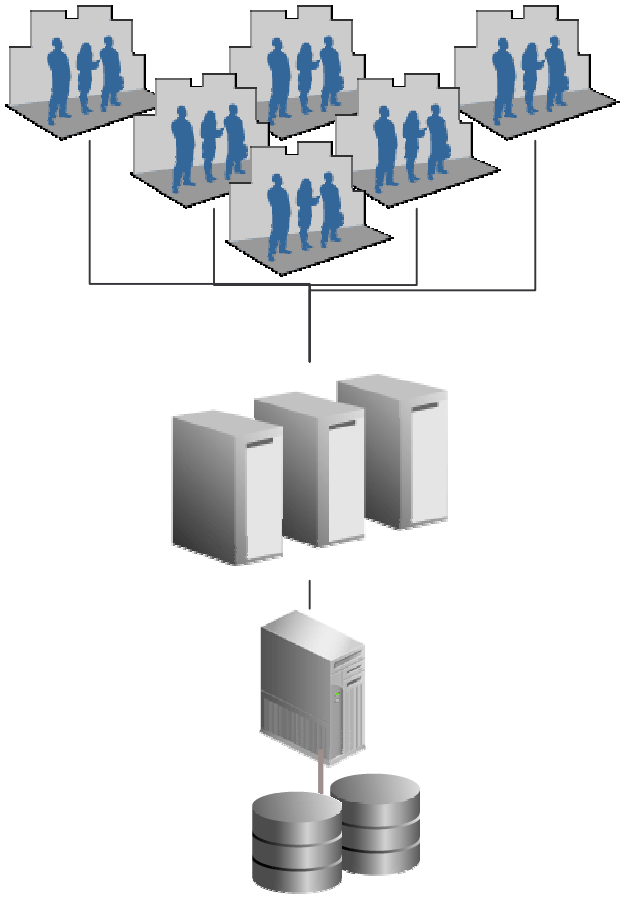
Production – 1,000s of Real Online Users



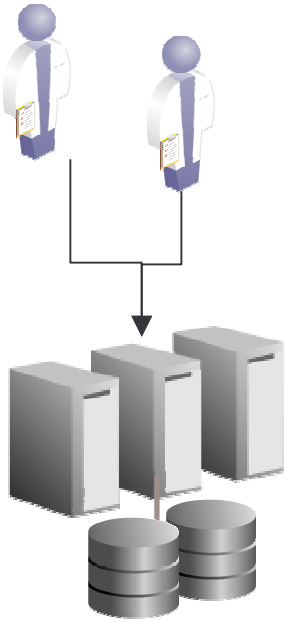
PRODUCTION

Application Testing Today

Test – 1-2 testers trying to be 1,000s of users



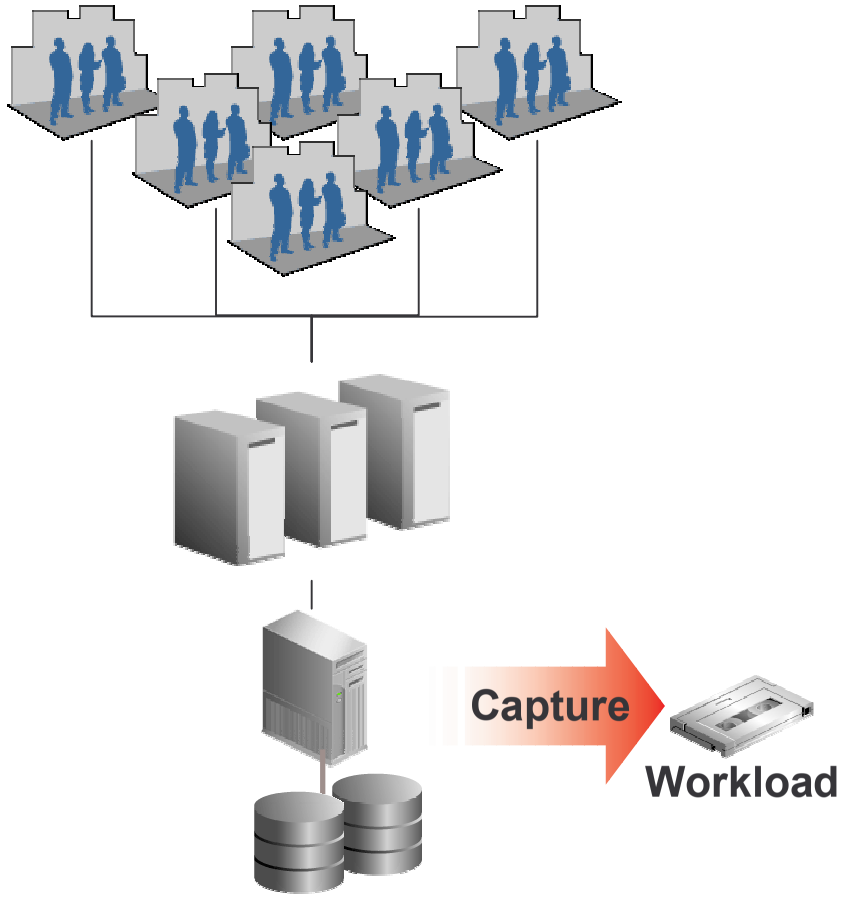
PRODUCTION



TEST

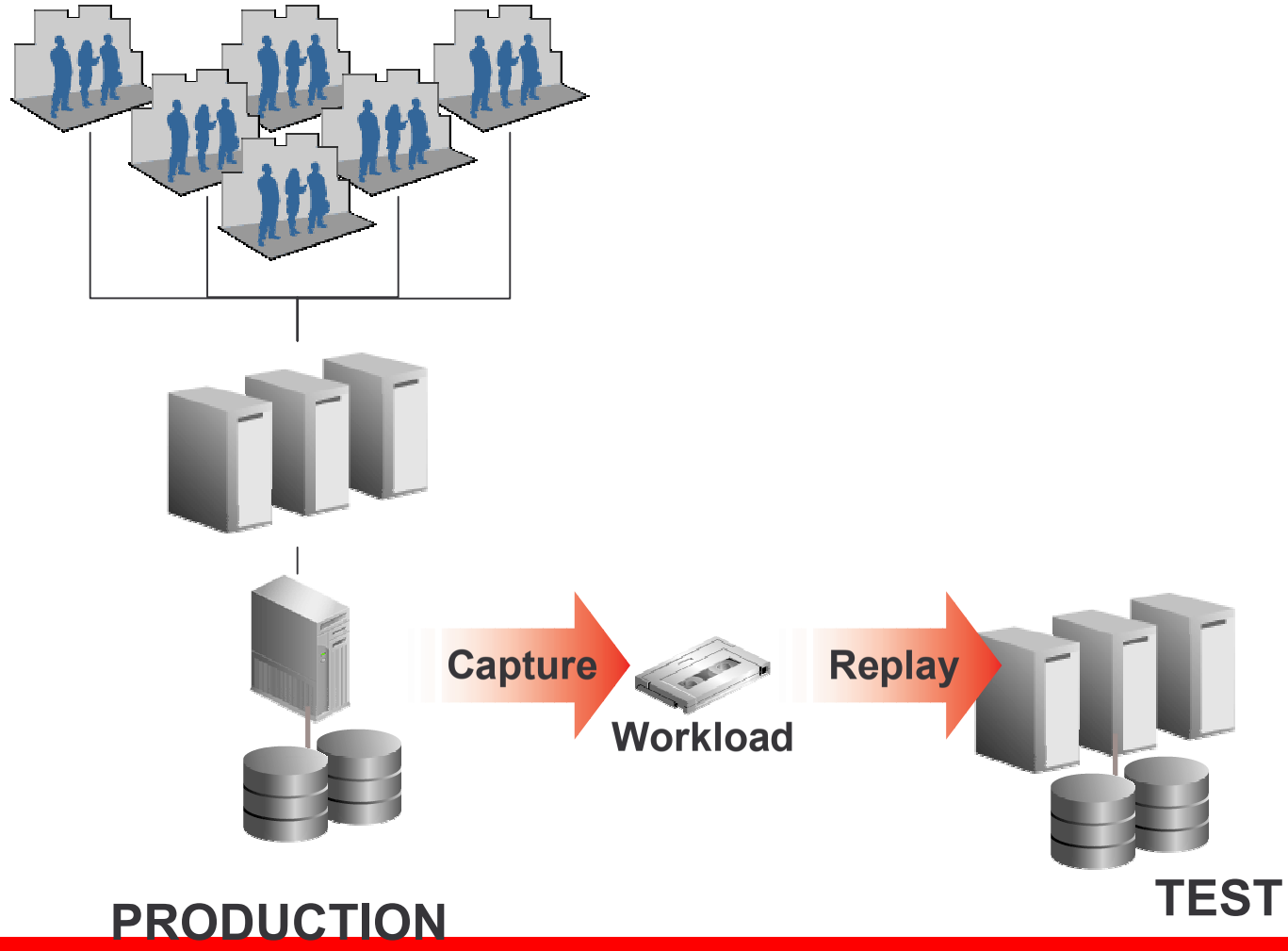
Real Application Testing

Workload for 1,000s of Online Users Captured



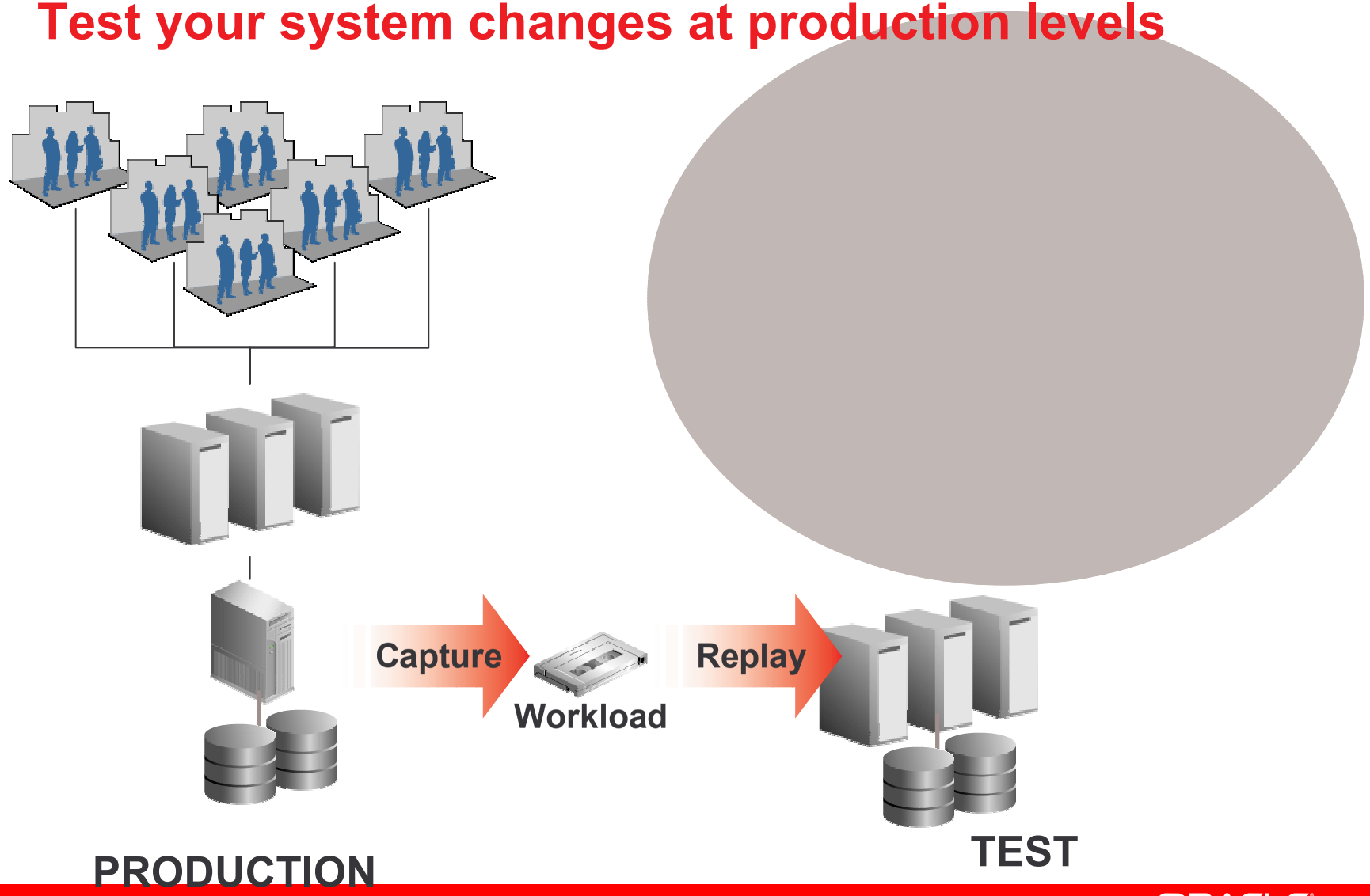
Real Application Testing

Workload for 1,000s of Online Users Replayed

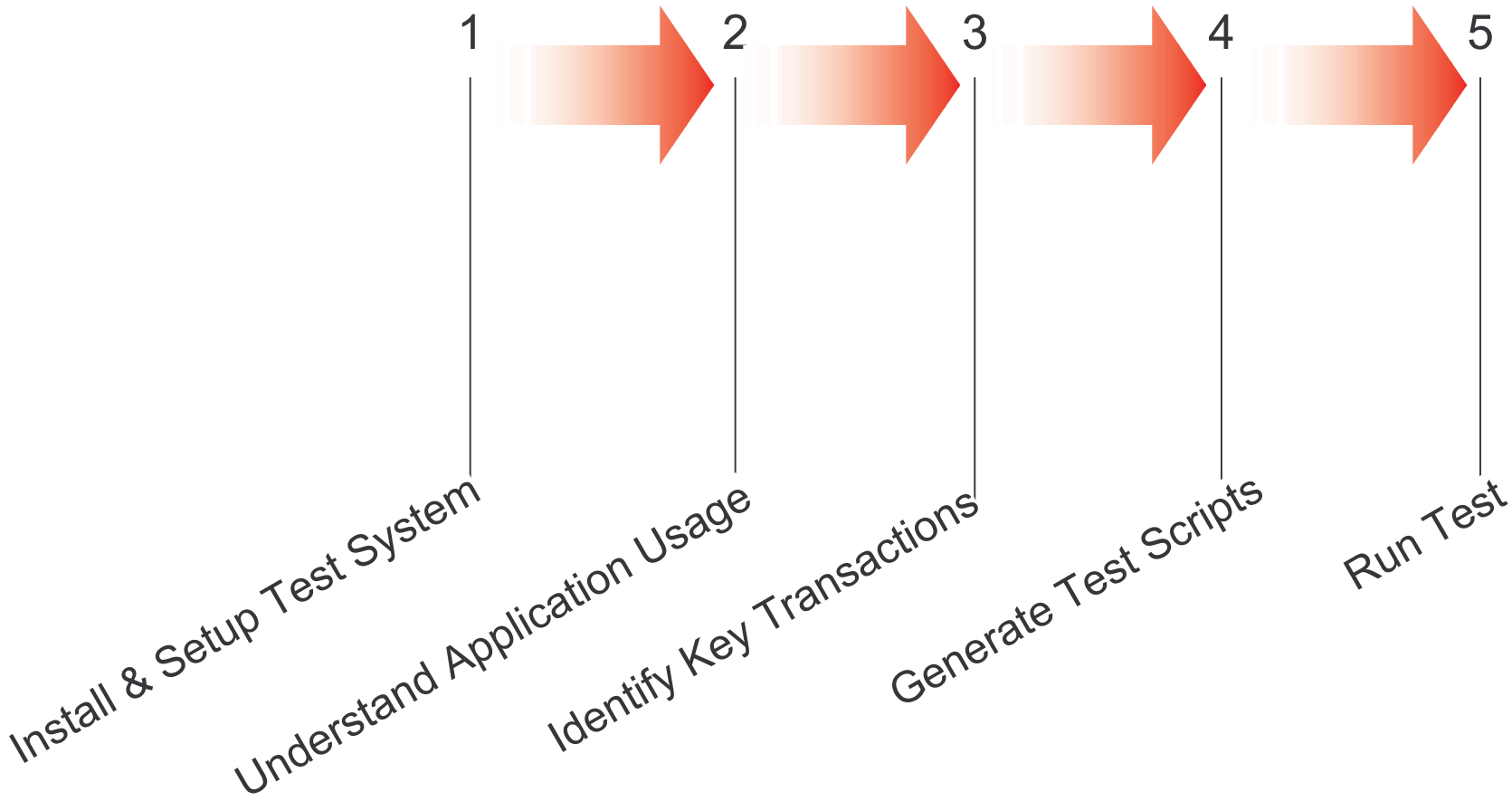


Real Application Testing

Test your system changes at production levels



Typical Steps in Test Phase



Oracle Real Application Testing

Innovate Change Faster

Innovate Faster

- Integrate enterprise information
- Manage the information lifecycle
- Meet service level objectives
- Lower IT costs
- Manage change with confidence

ORACLE® DATABASE 11g