ORACLE

hroug

hrvatska udruga oracle korisnika

**Ferhat Dilman**
**Product Director for Database Options**
**South East Europe, Austria, Turkey**

# More Technical Sessions:

- 18-Oct, 10:00; Hall-4 Hotel Park
  - Oracle 11g M. Kobal & A. Vuksic
- 18-Oct; 11:00; Hall-4 Hotel Park
  - Oracle 11g M. Kobal & A. Vuksic
- 19-Oct; 11:00; Hall-6 Hotel Park
  - Audit Vault D. Pataric
- 19-Oct; 12:00; Hall-6 Hotel Park
  - Database Vault

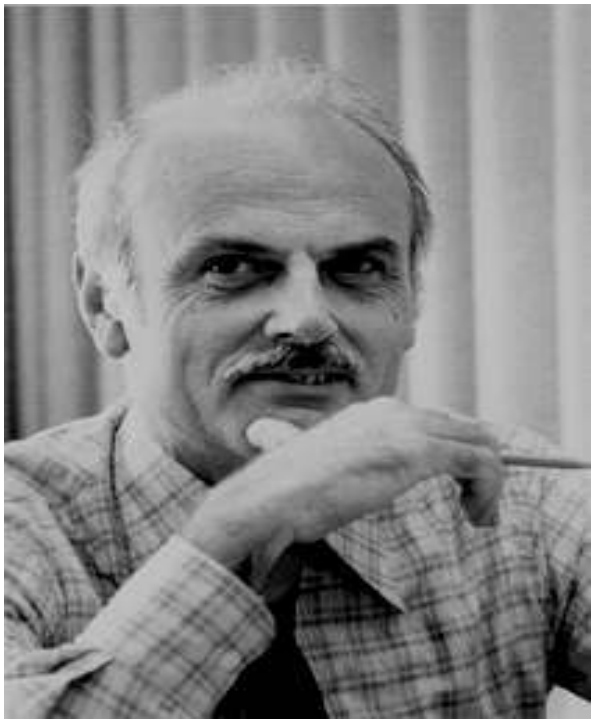
# Innovation

in·no·va·tion
[in-*uh*-**vey**-sh*uh* n] –noun

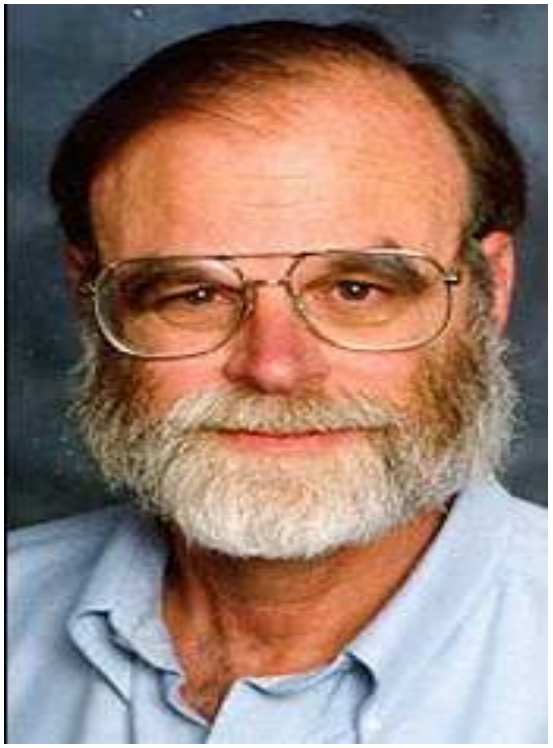
1. something new or different introduced
2. the act of innovating; introduction of new things or methods.

*Based on the Random House Unabridged Dictionary*

# Database Innovators
# Dr. Ted Codd and Dr. Jim Gray



Dr. E.F. (Ted) Codd
1923-2003
IBM Research



Dr. Jim Gray
1944 - ?
IBM, Tandem, Digital, Microsoft

# Unconventional

un·con·ven·tion·al
[uhn-kuh n-**ven**-shuh-nl] – adjective

1. not conventional; not bound by or conforming to convention, rule, or precedent
2. an unconventional artist; an unconventional use of material

*Based on the Random House Unabridged Dictionary*

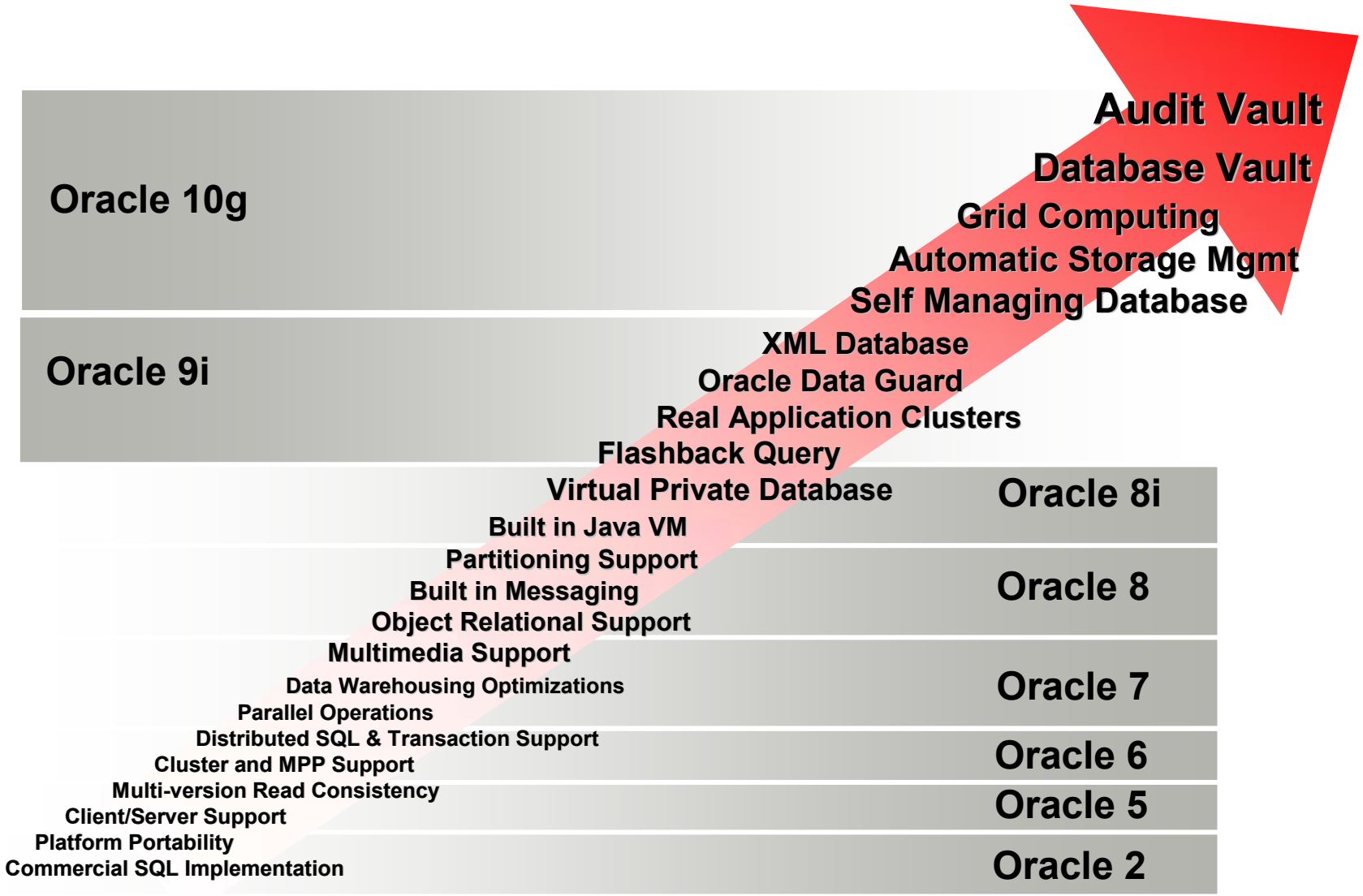
# Unconventional: Synonyms

- Eccentric
- Individualistic
- Idiosyncratic
- Atypical

***"I admire risk takers. I like leaders – people who do things before they become fashionable or popular. I find that kind of integrity inspirational."***

**Larry Ellison, 2003**

# Continuous Innovation



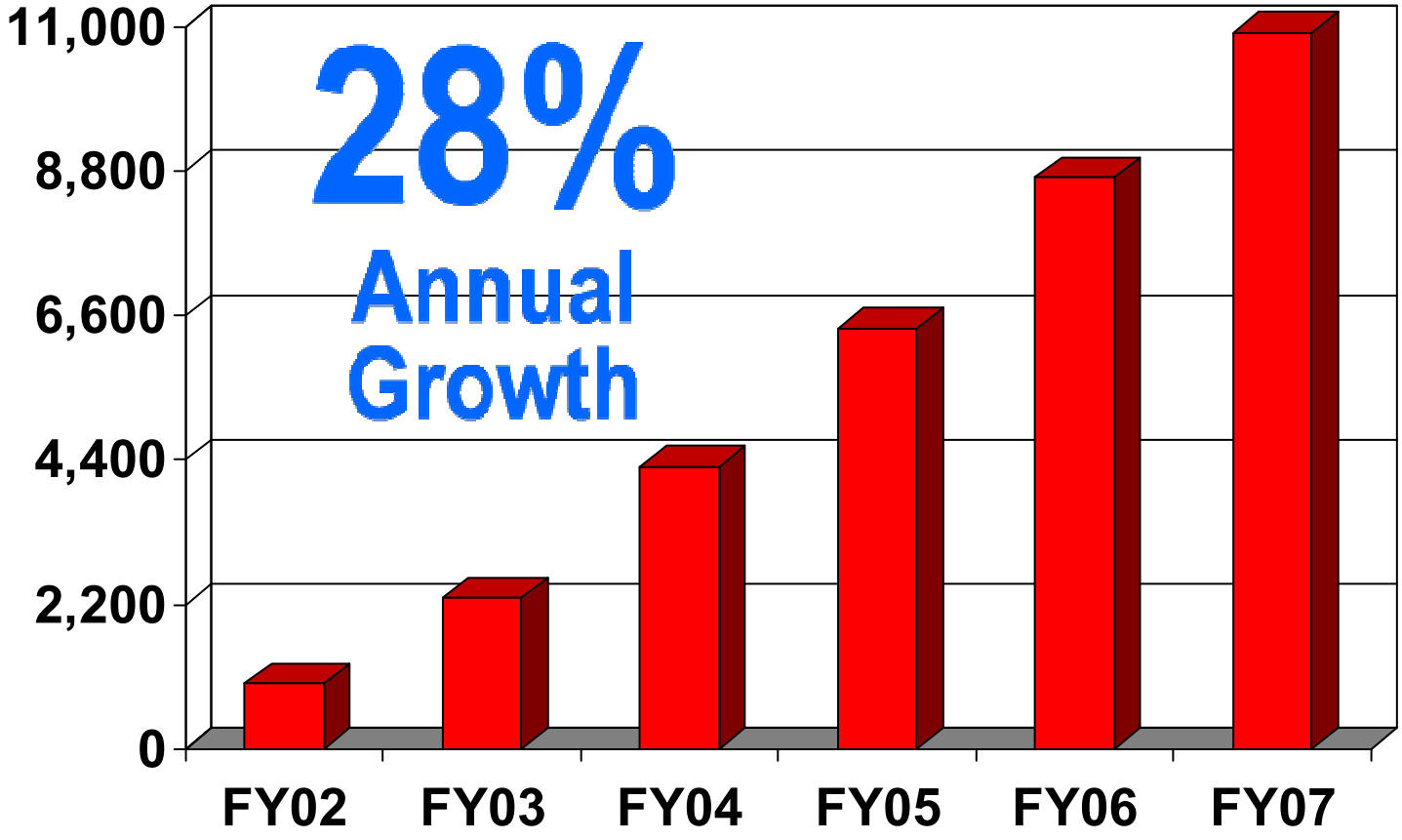
# Oracle: The Database Market Leader

- Overall database market share leader
- 275,000 customers
- Leader OLTP
- Leader Data Warehousing
- Leader on Linux
- Leader on UNIX
- Leader TPC-C OLTP Performance
- Leader TPC-H DW Performance
- Leader Price/Performance

# Leading in Innovation and Market Share

- Oracle has more database market share than IBM and Microsoft combined
- IBM and Microsoft don't publish audited database marketing number; marketing numbers only
- Oracle audited database revenue published with SEC as compared to competitors' marketing spin
- IBM database figures overwhelmingly coming from mainframe
- Microsoft allocated client access licenses to revenue

# Oracle RAC Adoption Growth



Overall customer satisfaction

**With Oracle Database**

over the past twelve months

**exceeds 92%**

2007 Oracle Global Executive Survey
22,000 Survey Respondents

# 190,000 Small and Medium Businesses Use Oracle

- Leader Price/Performance
- Standard Edition, Standard Edition One, Express
- Simplified installation
- Rapid application development environment
- Expanded distribution partners
  - Ingram Micro
  - CDW
  - Tech Data
  - Avnet
  - Dell

# When data problems get tough…

(and they will)

# …IT calls Oracle

# Innovation Challenges

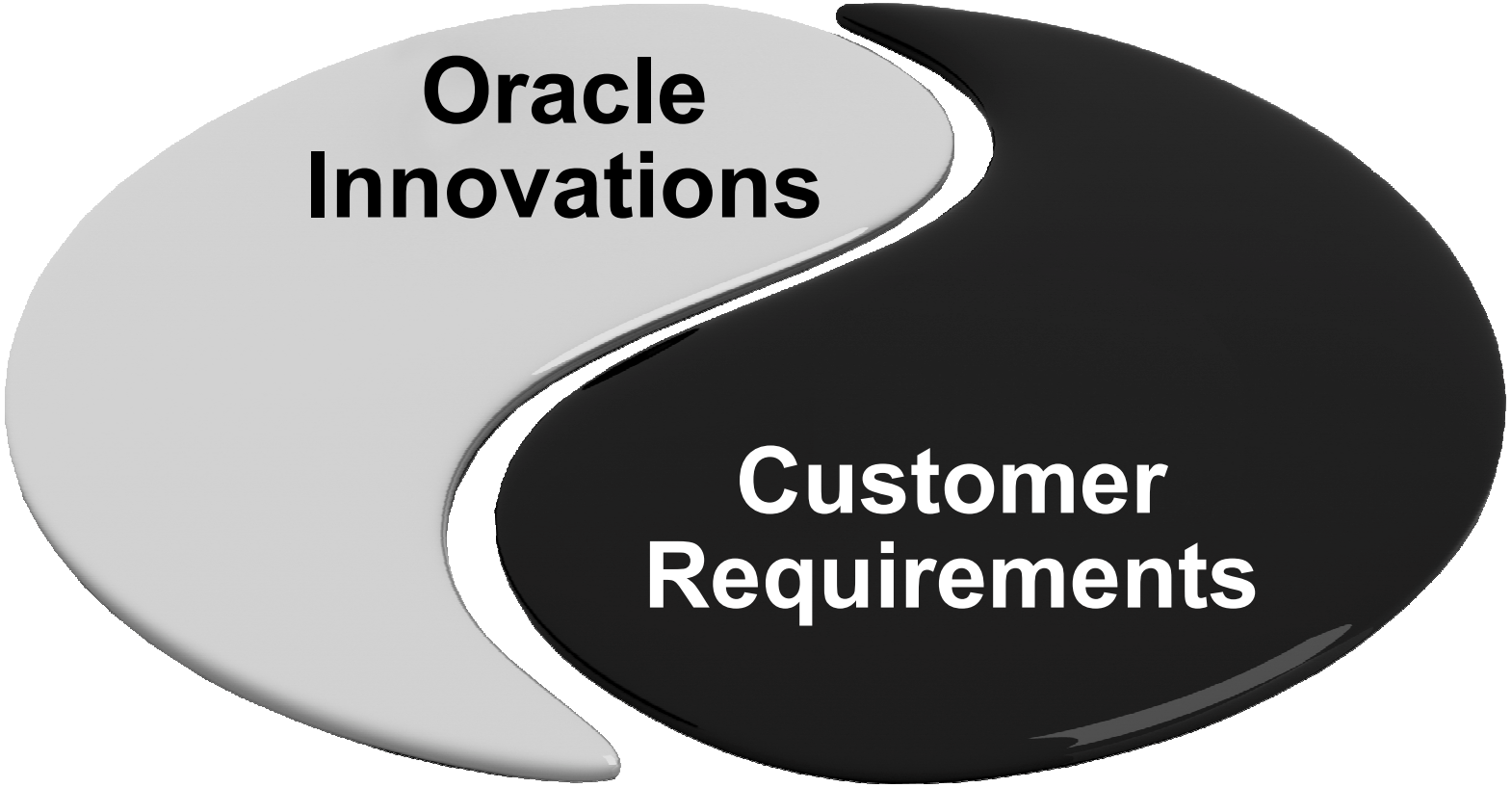
- Information is Changing
- More Consumers of Information
- Real-time Access Required
- Increasing Security and Compliance Requirements
- Higher Quality of Service at Lower Cost
- Pressure to Manage Increasing Rate of Change

# Real Innovations.

| | Oracle | IBM | Microsoft |
|---|---|---|---|
| Advance compression | ✓ | | |
| Online Upgrades and Patching | ✓ | | |
| Real Application Testing | ✓ | | |
| Data Guard | ✓ | | |
| Fast Files | ✓ | | |
| Total Recall | ✓ | | |
| Real Application Clusters Performance Management | ✓ | | |
| OLAP-based Materialized Views | ✓ | | |
| Continuous Query Notification | ✓ | | |

# Oracle Database 11g Highest Quality R&D

- Over 1500 developers and testers spread across eight development labs around the world
- 479 Development Projects
- Over 235,000 functional tests run daily on a grid of over 2000 processors
- Triple the number of cross-functional tests run versus Oracle Database 10g
- Over 15,000,000 hours of testing
- Exhaustive battery of security tests


Oracle
Innovations
Customer
Requirements

hp
invent
SMUCKER'S
QUALCOMM
amazon.com
McKESSON
Empowering Healthcare
YAHOO!
gasNatural
NOKIA
Connecting People
ELECTRONIC ARTS
Ordnance Survey
LUCASFILM
Ltd
WACHOVIA
monster.com
ALCOA
GIANT EAGLE
TOSHIBA
MasterCard
CISCO
bebo
Colgate
DELL
GEICO
eHarmony
Farecast
Know When to Buy
STARWOOD
HOTELS & RESORTS WORLDWIDE, INC.
Agilent Technologies
FIDELITY
NATIONAL FINANCIAL

# Oracle Runs the Largest Databases

## Meteorological Research

- 220+ Terabyte Oracle database
- World's largest database on Linux




## Website Personalization

- 500,000,000 unique users
- 200 Terabyte Data Warehouse

# The Best of the Web Use Oracle

## Online Retail Pioneer

- One of the largest data warehouses in the world
- Based on Oracle Grid

## Leading Online Career Network

- Multi-terabyte data warehouse for marketing
- Based on Oracle Grid

## America's #1 Relationship Service

- More than 15,000,000 Registered Users
- Moved to Oracle Grid

## Large Social Networking Site

- 31,000,000+ Users
- Runs on Oracle Grid

## Predicts Future Prices of Airline Tickets

- Analyzes 150 billion airline quotes
- Moved to Oracle Grid

# Every Industry Runs on Oracle

- Retail, Consumer Products & Entertainment
- Financial Services
- Insurance & Professional Services
- Healthcare & Bio Tech

# Every Industry Runs Oracle

Technology & Communications

Manufacturing & Transportation

Government & Public Sector

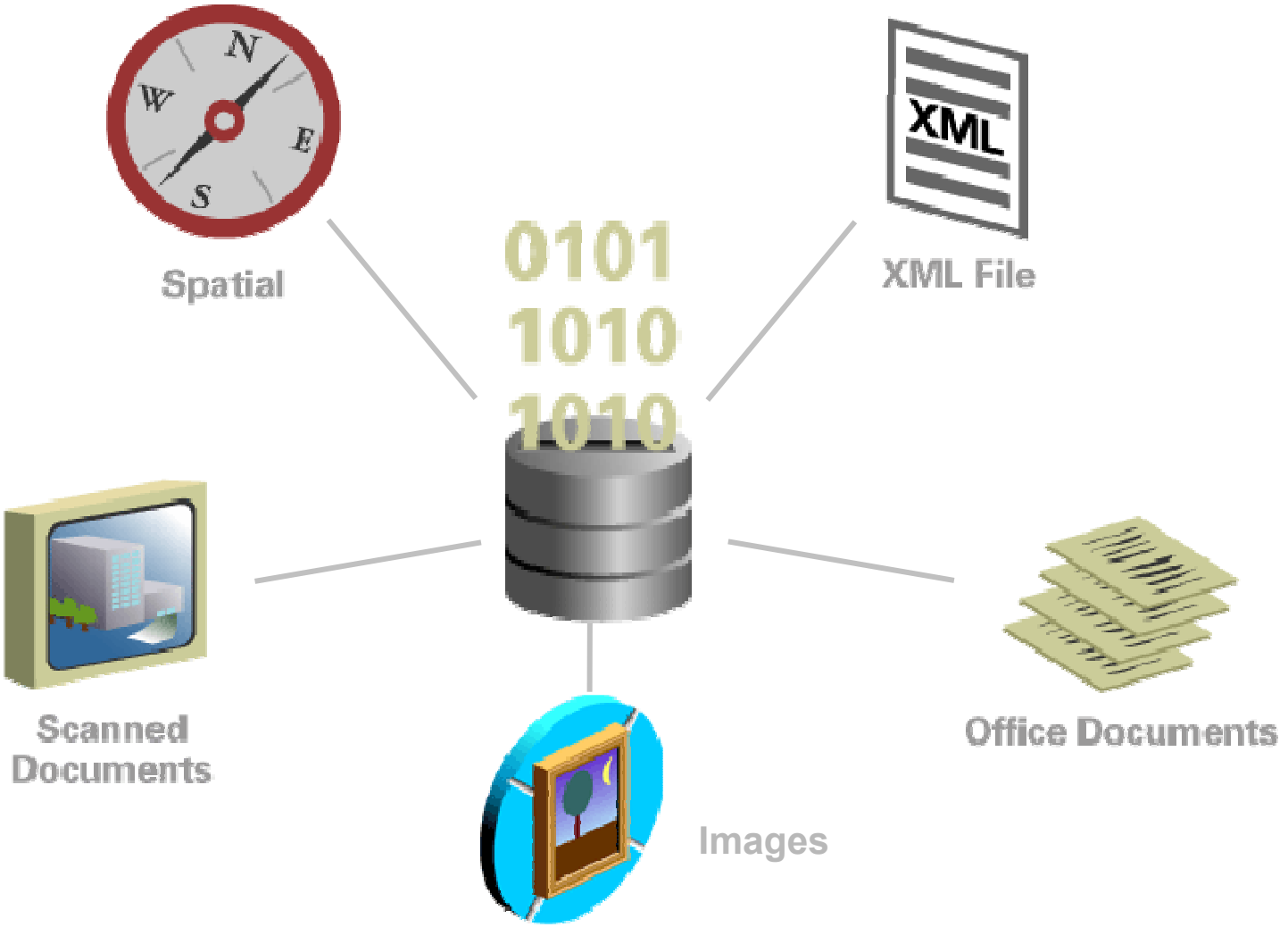
# The Oracle Database Upgrade Cycle

- Pundits predict no need for the new version
- IT executives file for future reference
- DBAs download the product
- User groups devour the new features
- ISVs discover new features
- Consultants implement new projects on new version
- The ecosystem then drives the upgrade

# Partners Committed to Oracle Database 11g in Record Numbers

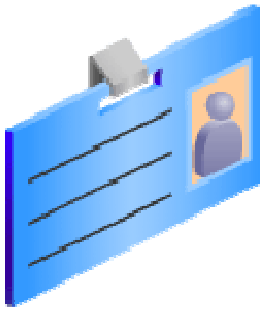
- Partners in Beta Program
  - 114 ISVs
  - 65 SIs
  - 36 Consulting Firms
  - 20 ASPs
  - 16 Resellers and 11 OEMs
  - 350+ Partners have previewed Oracle Database 11g
- Adoption
  - OEMs to support immediately
  - ISVs expect support within 3 months of GA
  - SI's and Consultants to provide support services in the first 6 months of GA
  - 3,000-4,000 partners attending Readiness Technical Briefing and Training
- Key Features that Attracted Most Attention
  - Development Platform
  - Real Application
  - Database Automation and Diagnostics
  - Database Security and Compliance

# Integrating Unstructured Data

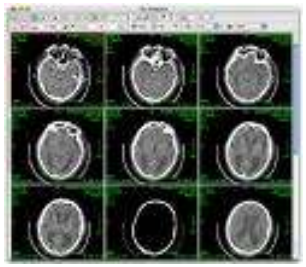


# New in Oracle Database 11g

## Critical New Data Types



RFID Tag Data Types



DICOM Medical Images

3D Spatial Support

# Managing Data Growth

Unstructured Data

Structured Data

Regulatory Compliance

Business Intelligence

Mergers Acquisitions

Data Consolidation

# Data Growth Challenges

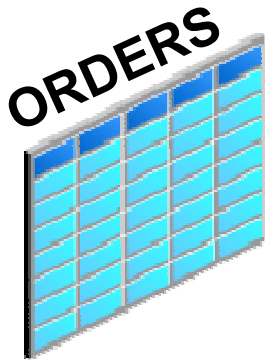
## Management Challenge

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

## Cost Challenge

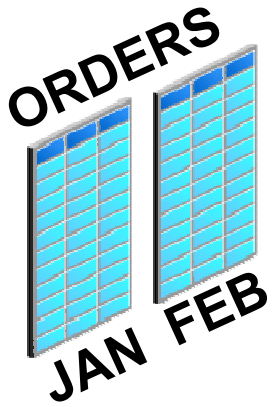
- Volume of storage required
- Overhead to manage
- Cost of of downtime

# Benefits of Partitioning




**Large Table**

Difficult to Manage

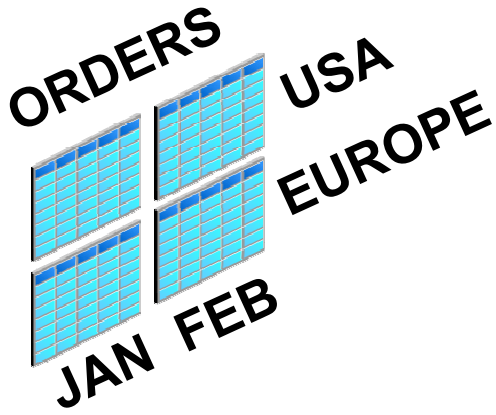



**Partition**

Divide and Conquer

Easier to Manage

Improve Performance




**Composite Partition**

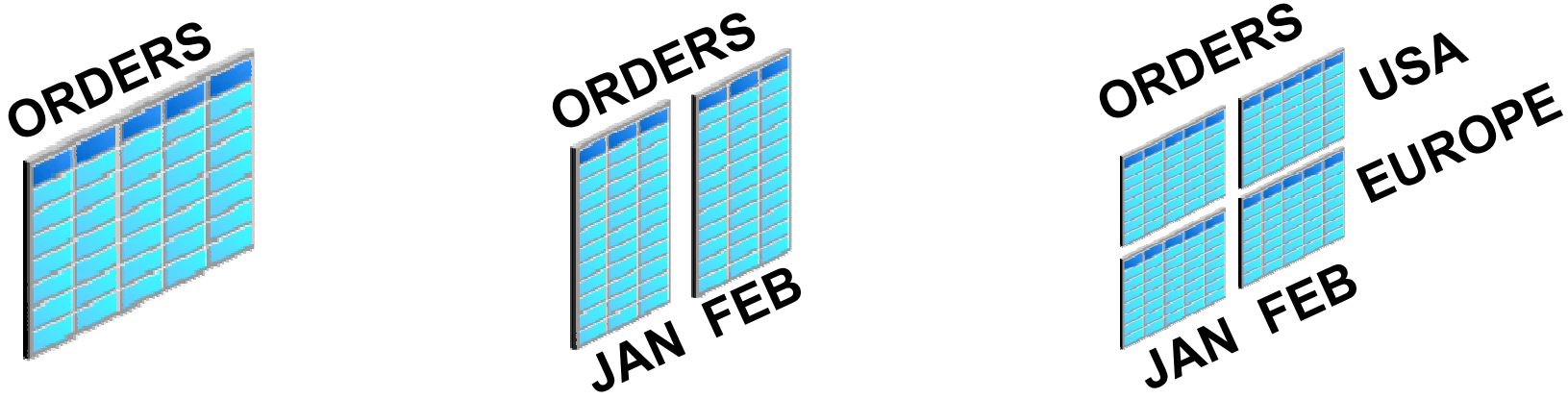
Higher Performance

More flexibility to match business needs

**Oracle Customers Have 100,000s of partitions in their databases**

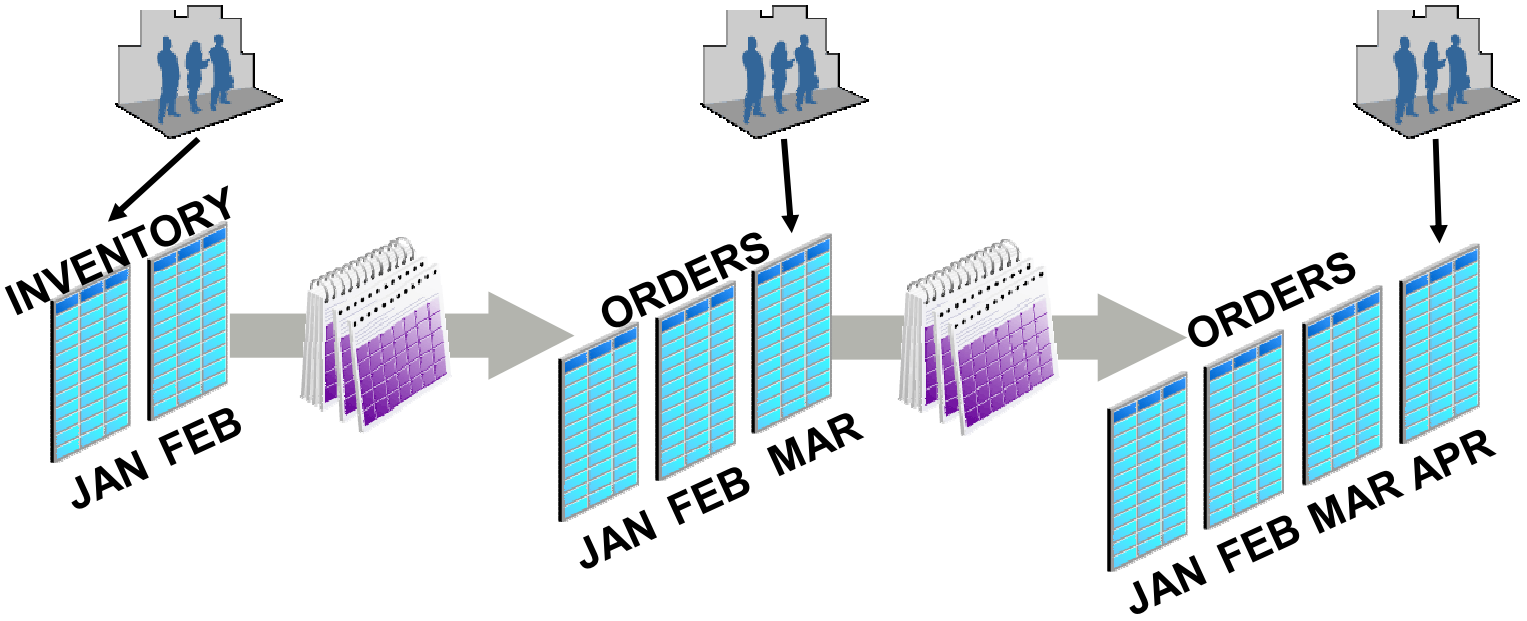
# New in Oracle Database 11g

## Partition Advisor



# New in Oracle Database 11g

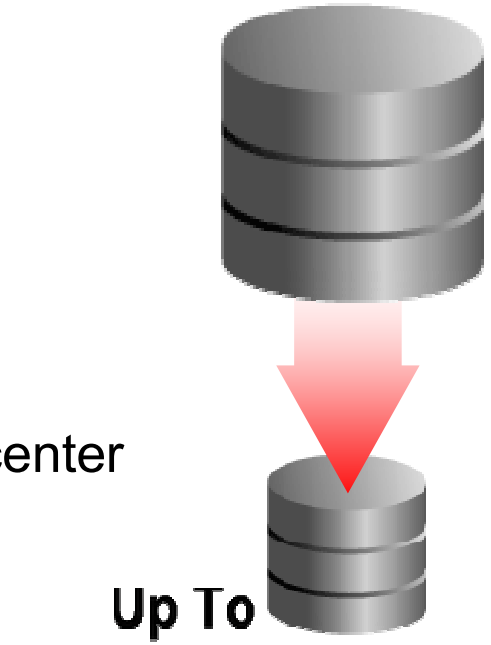
## Automated Partitioning: Interval



# 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

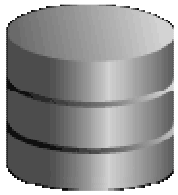


# Traditional Storage Approach

## All data resides on single storage tier

High Performance
Storage Tier
= $72 per Gb

Active



All data on active
= $972,000!

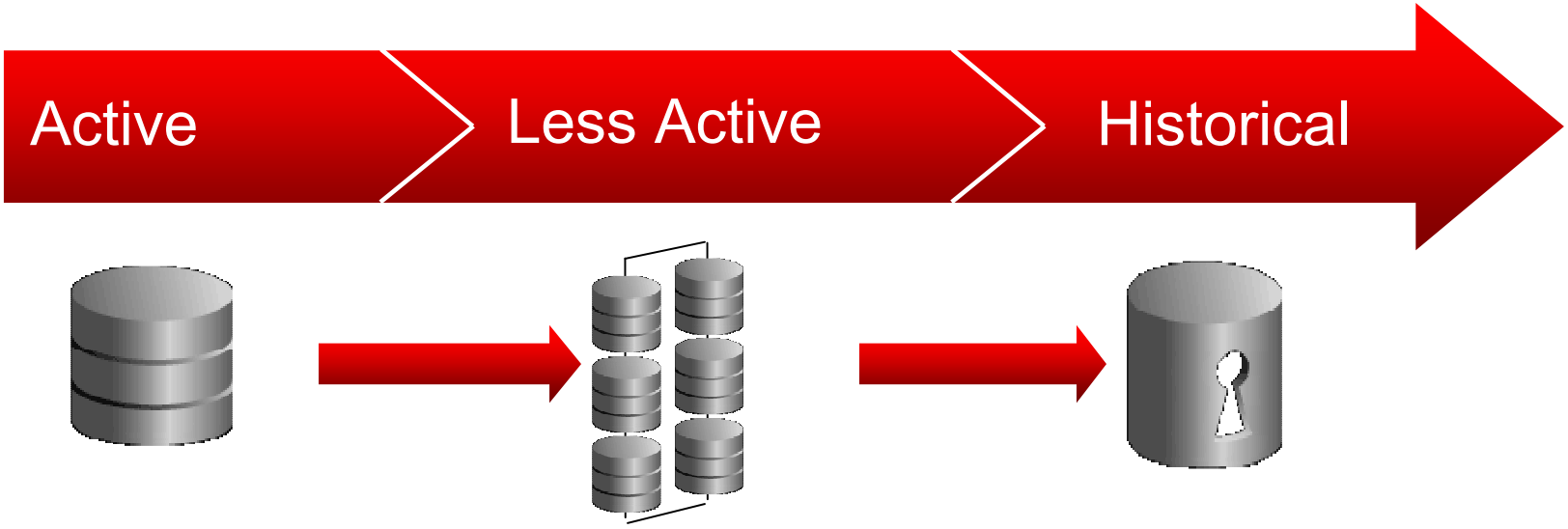
# Information Lifecycle Management

## 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



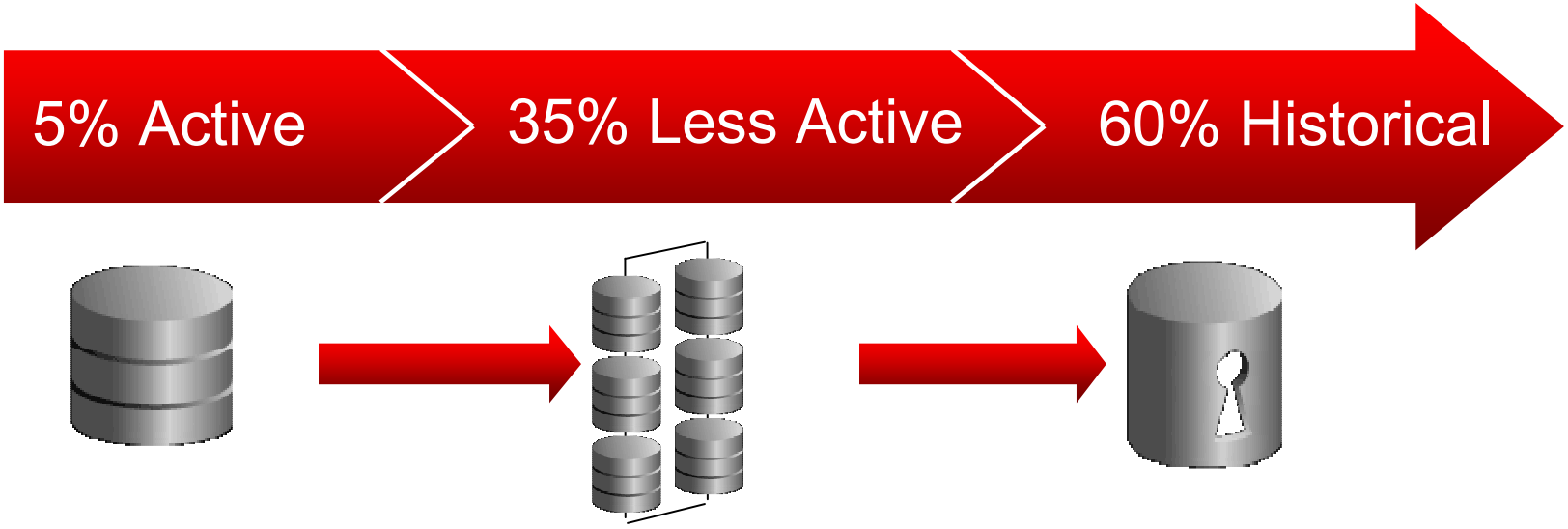
# Information Lifecycle Management

## Move data onto appropriate storage tier

High Performance Storage Tier = $72 per Gb

Low cost Storage Tier = $14 per Gb

Read only Storage Tier = $7 per Gb



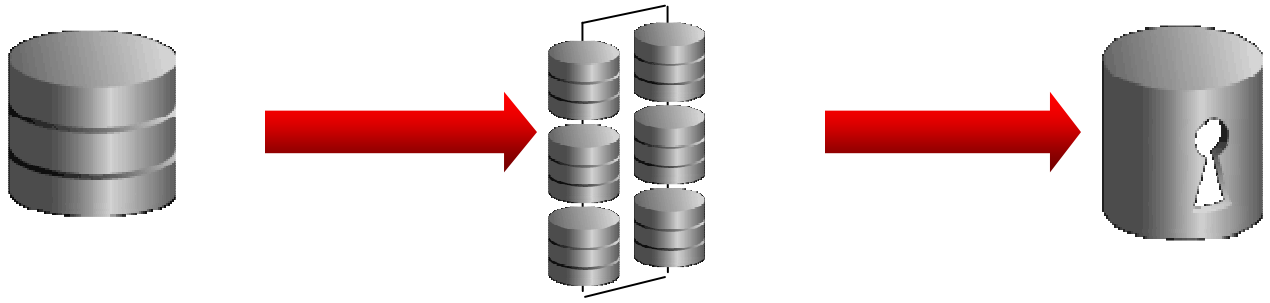
# Information Lifecycle Management

## 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



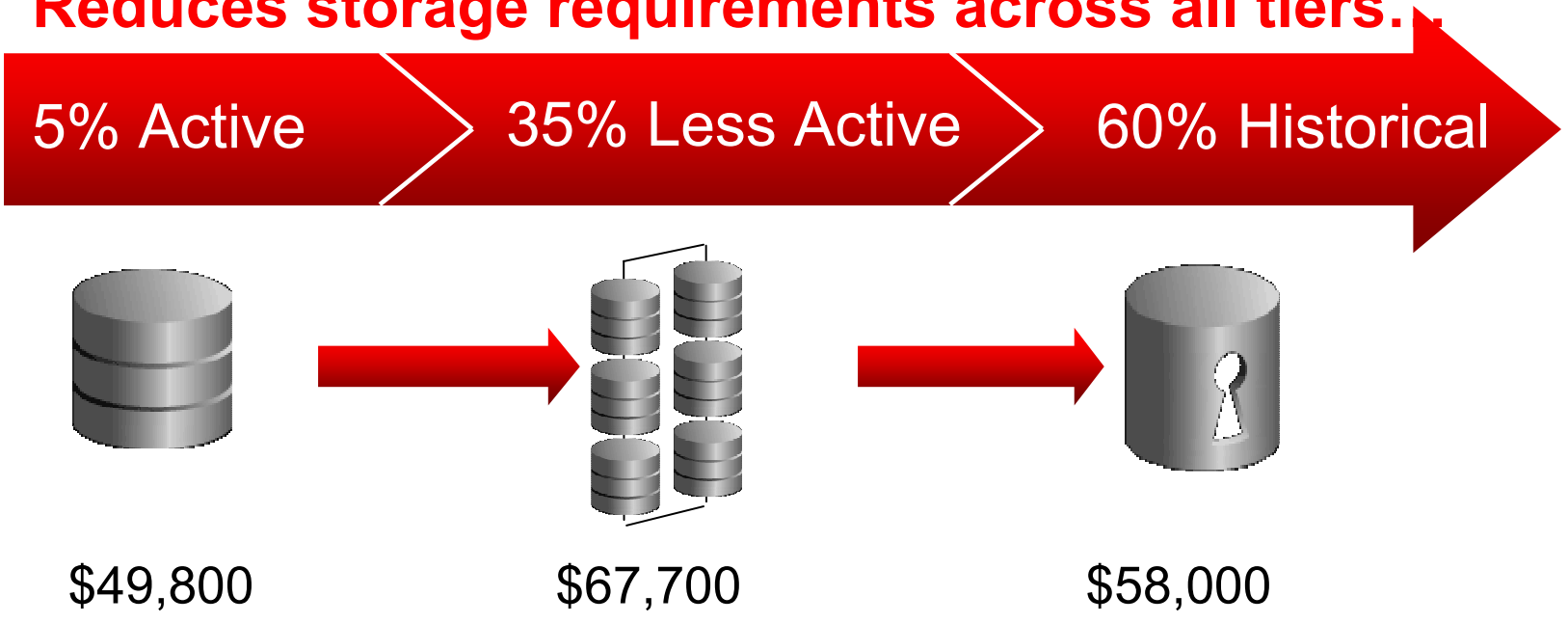
$49,800

$67,700

$58,000

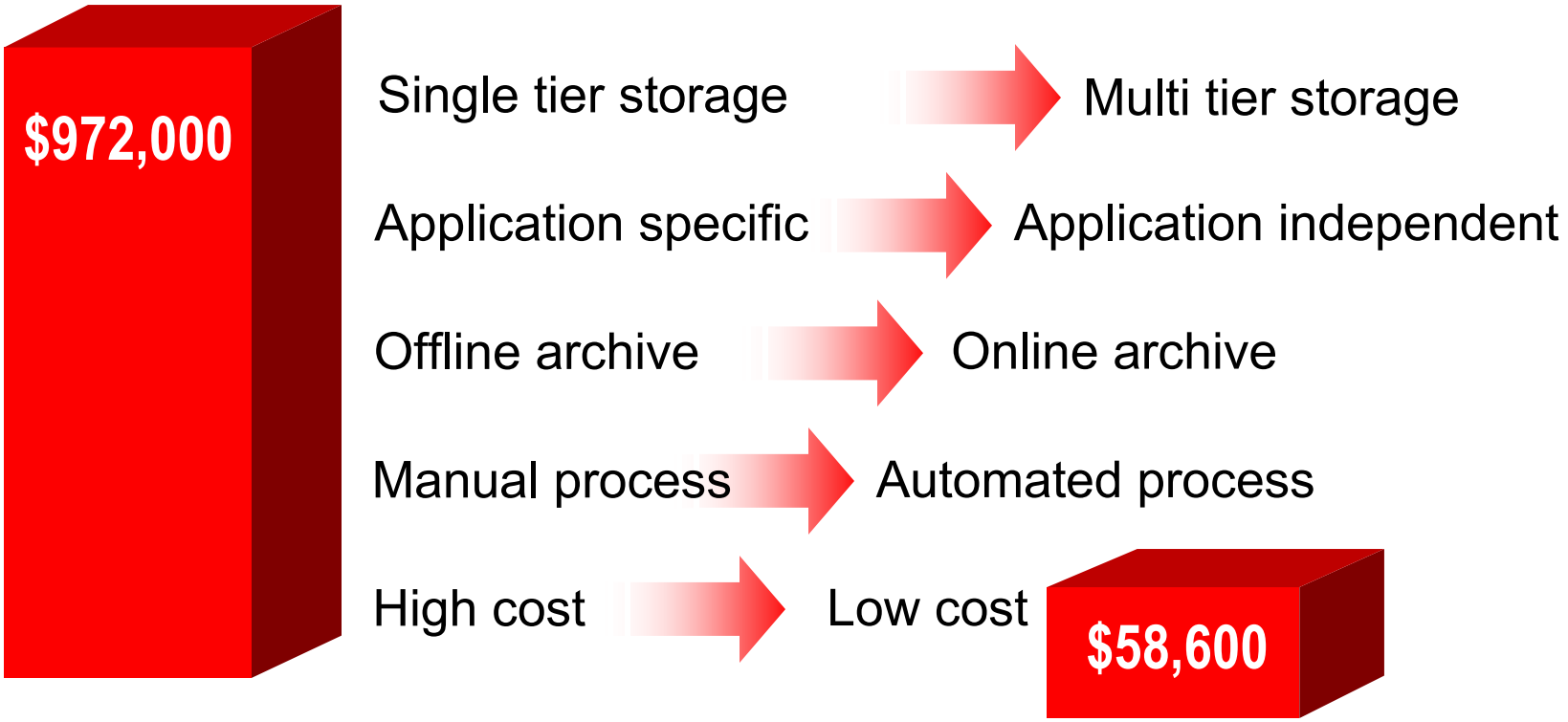
# Advanced Compression

**Reduces storage requirements across all tiers…**



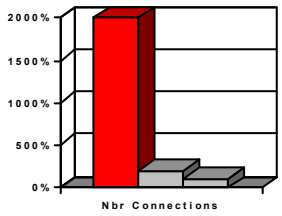
# Why Oracle Database 11g?

## Managing data growth



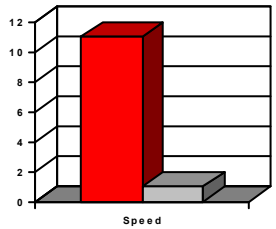
# Faster Performance

## Database Resident Connection Pool



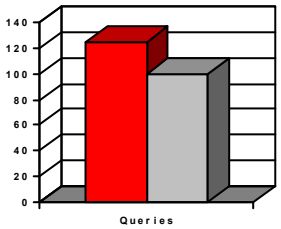

**Up to 20 x connections**

## Java Just-In-Time Compiler



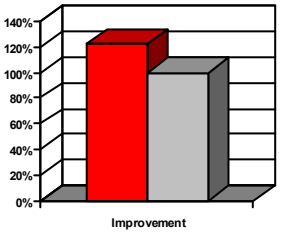

**Up to 11 x Faster**

## Query Result Caching



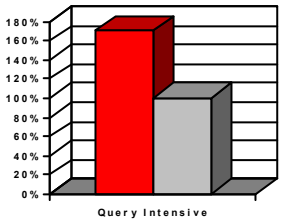

**Up to 25% Faster**

## Client Side Caching



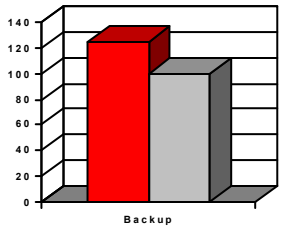

**Up to 22% Faster**

## RAC Performance Enhancements



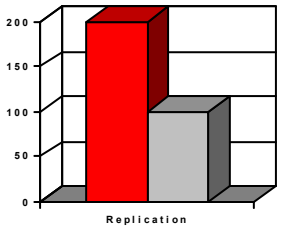

**Up to 70% Faster**

## Oracle Secure Backup



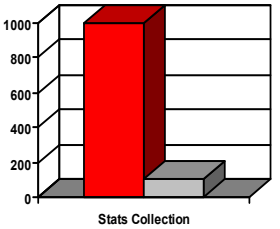

**Up to 25% Faster**

## Oracle Streams Enhancements




**Up to 2 x Faster**

## Optimizer Stats Collection




**Up to 10 x Faster**

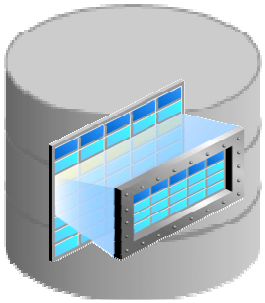
# Security and Compliance

## Encrypt Data in Database

**New in Oracle Database 11g…**

**Tablespace level encryption**

**Hardware based master key protection**



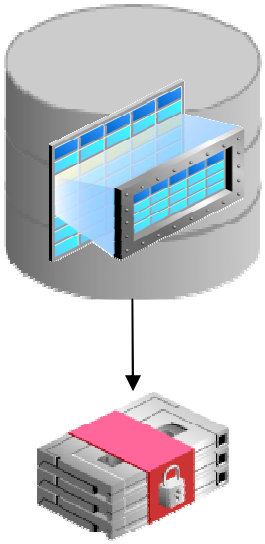
Transparent Data Encryption

# Security and Compliance

## Encrypt Backups

**New in Oracle Database 11g…**

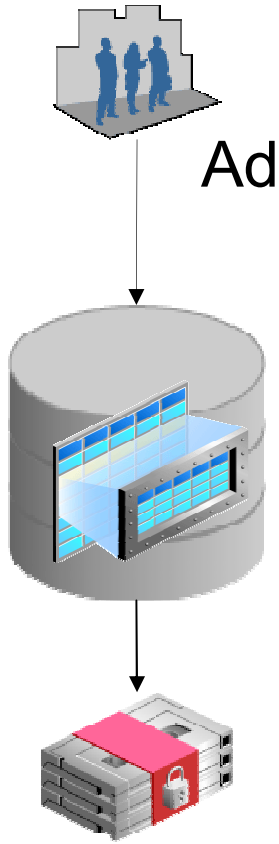
**Backup compression**



Oracle Secure Backup

# Security and Compliance

## Strongly Authenticate and Authorize End Users



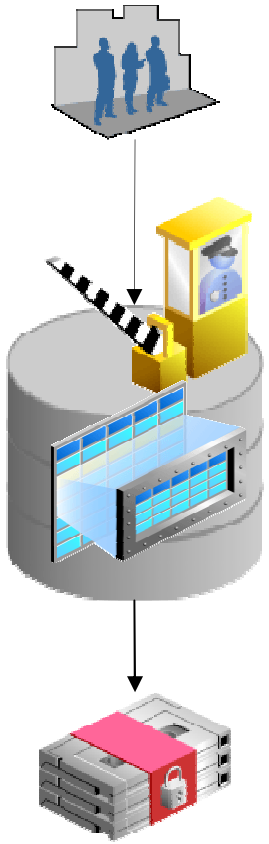

**New in Oracle Database 11g…**

**Kerberos authentication**

**Strong passwords**

# Security and Compliance

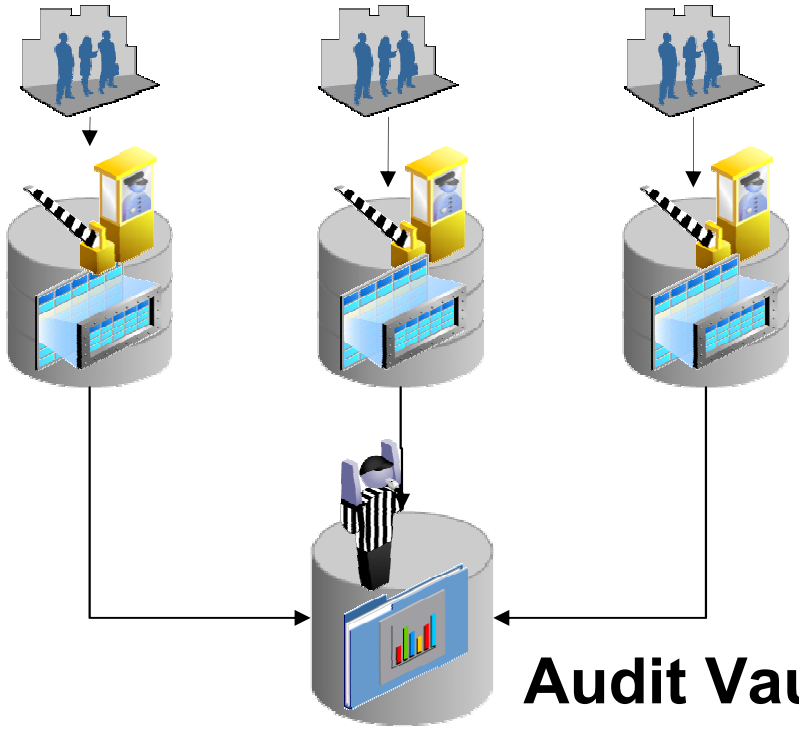
## Add Multi-factor DBA Controls



Database Vault

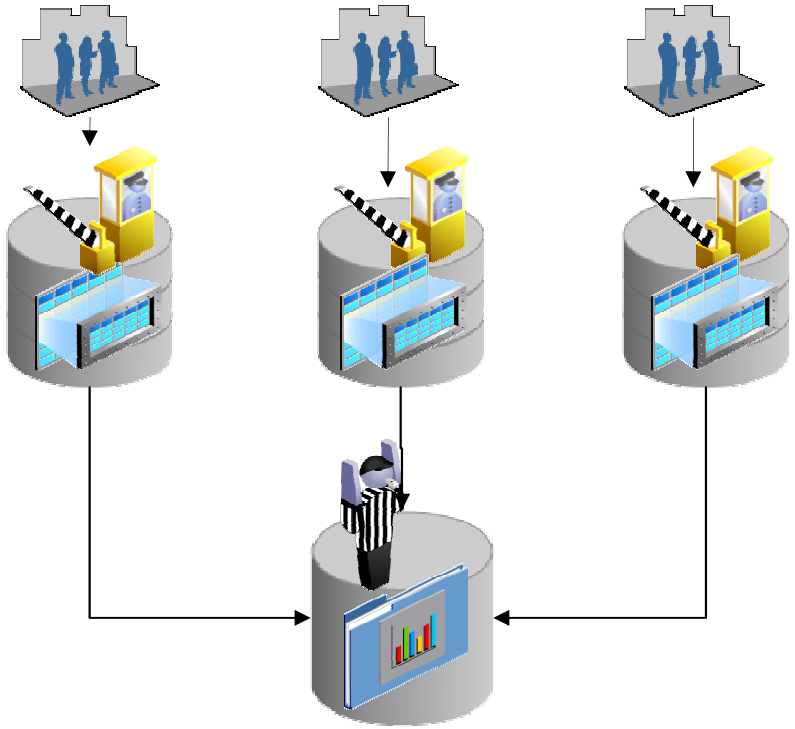
# Security and Compliance

## Consolidate and Monitor Audit Information



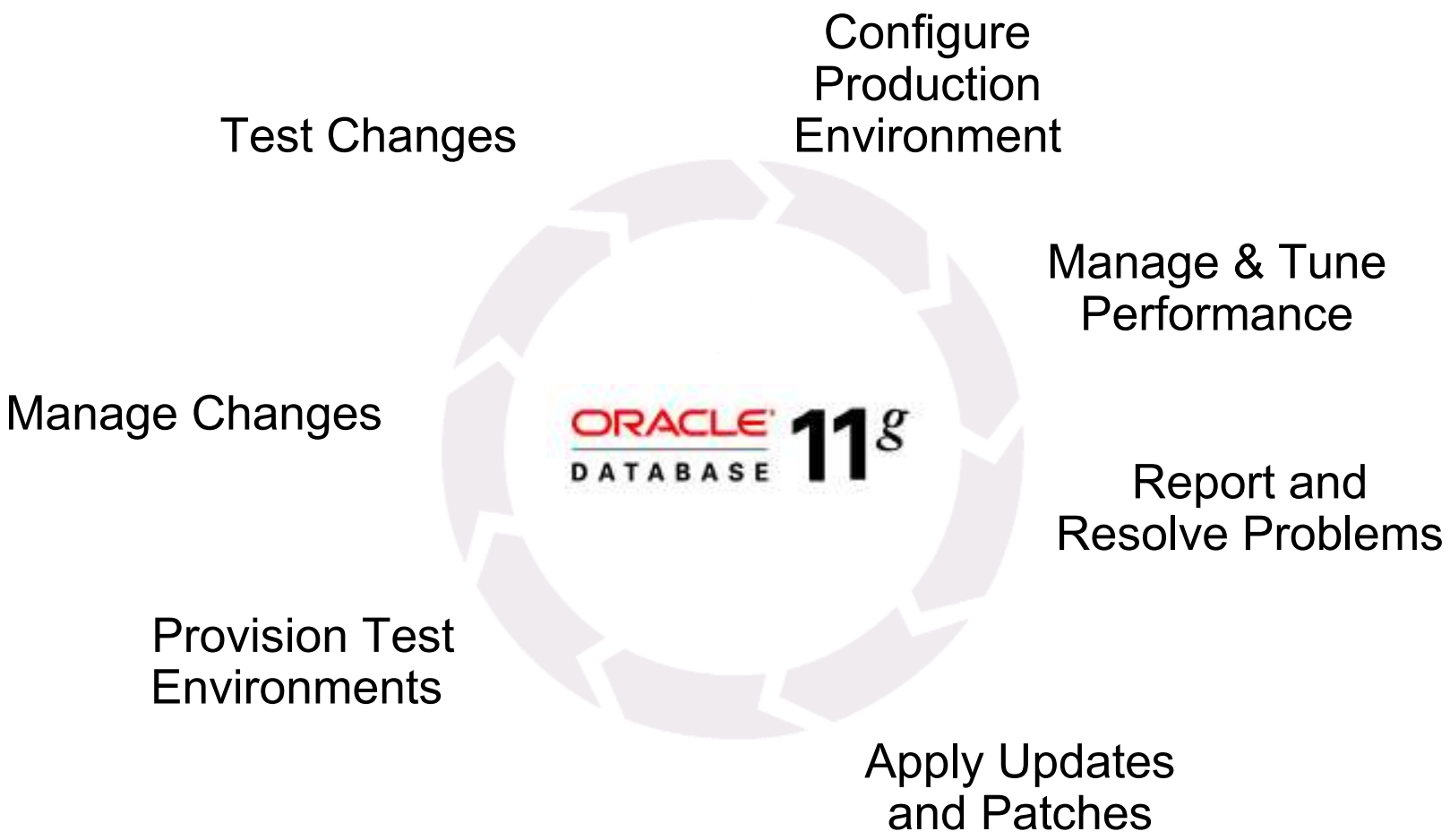
# Security and Compliance

## Consolidate and Monitor Audit Information



**Oracle Configuration Pack**

# Lifecycle of Change Management

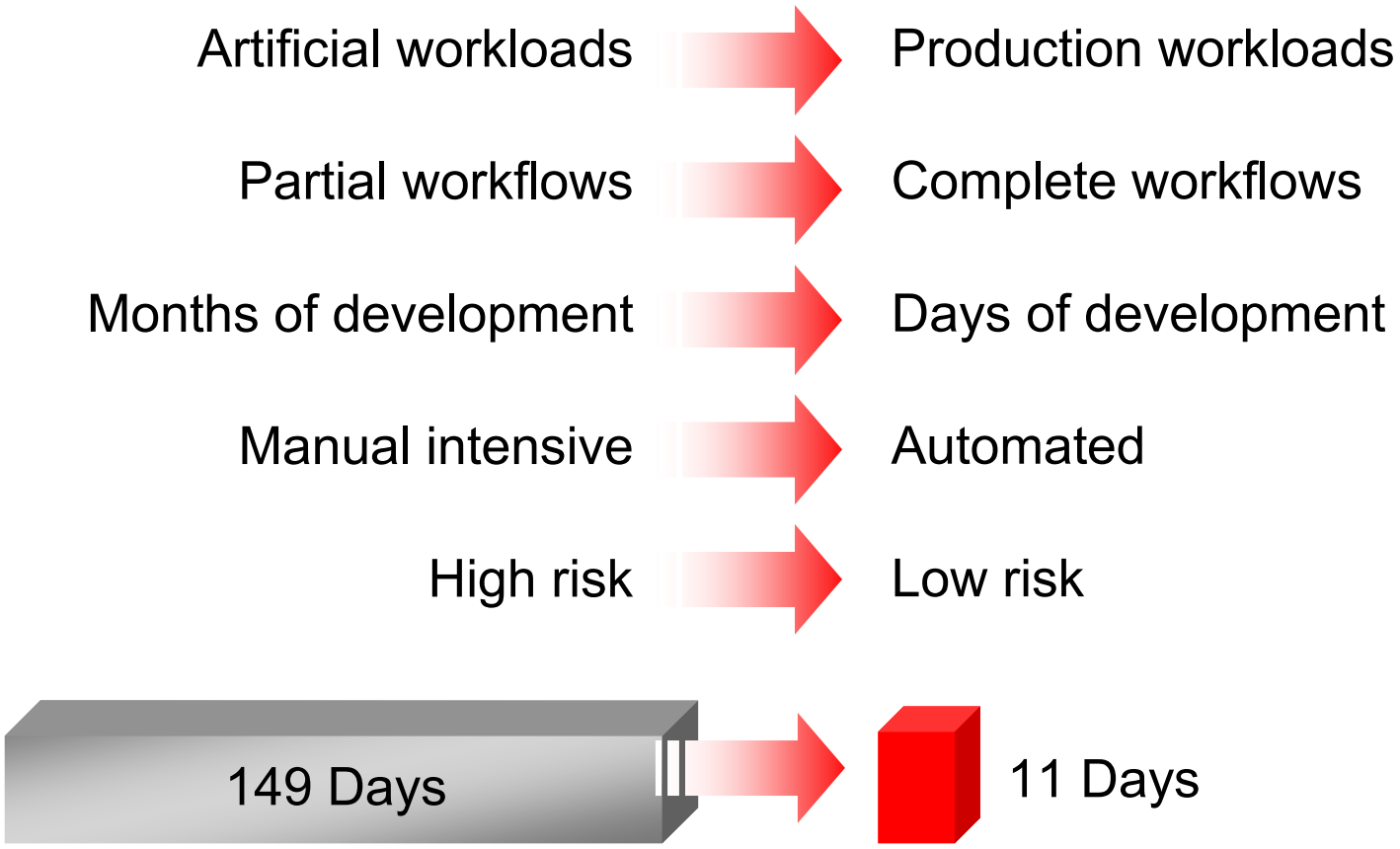


# Real Application Testing

## Preserve Order Amid Change

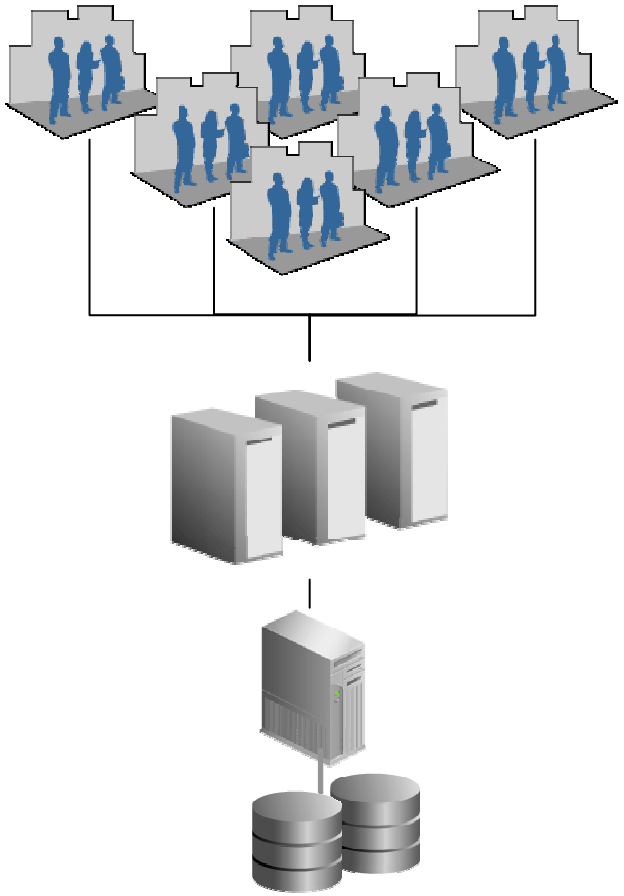
# Oracle Real Application Testing

## Innovate Change Faster



# Application Testing Today

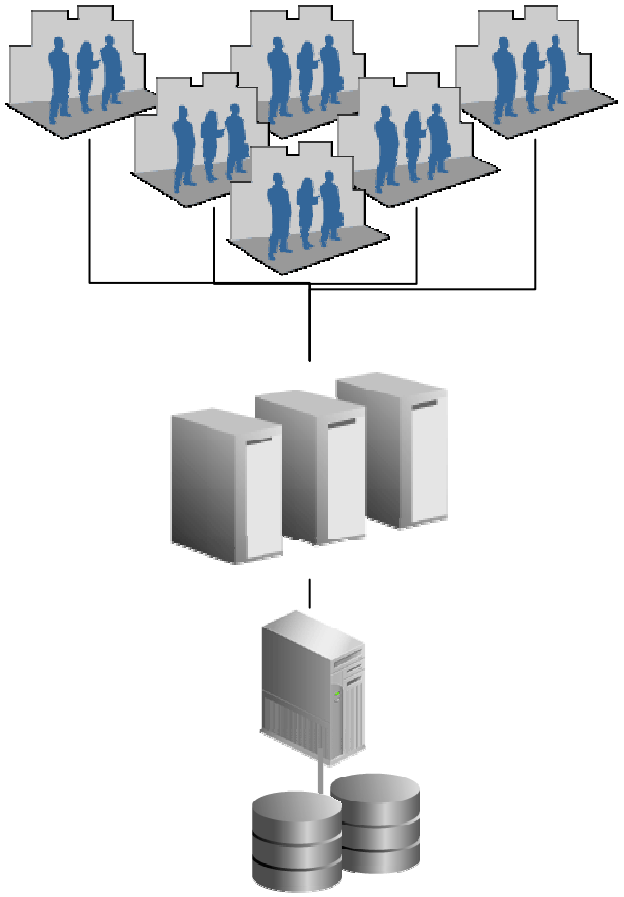
## Production – 1,000s of Real Online Users



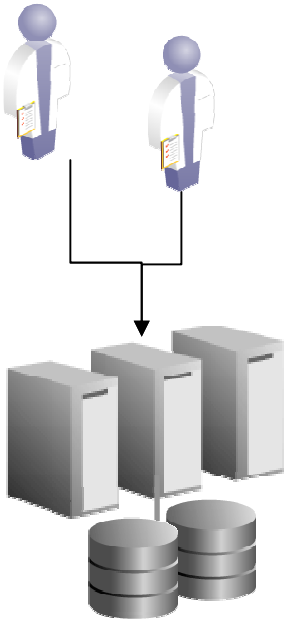
**PRODUCTION**

# Application Testing Today

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



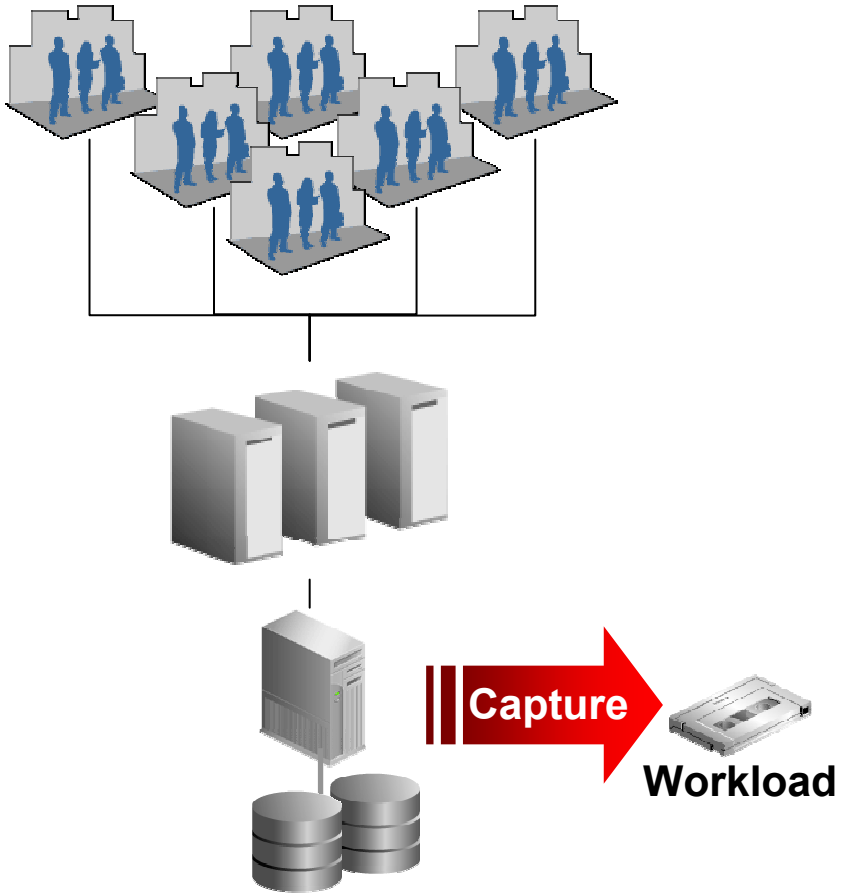
PRODUCTION



TEST

# Real Application Testing

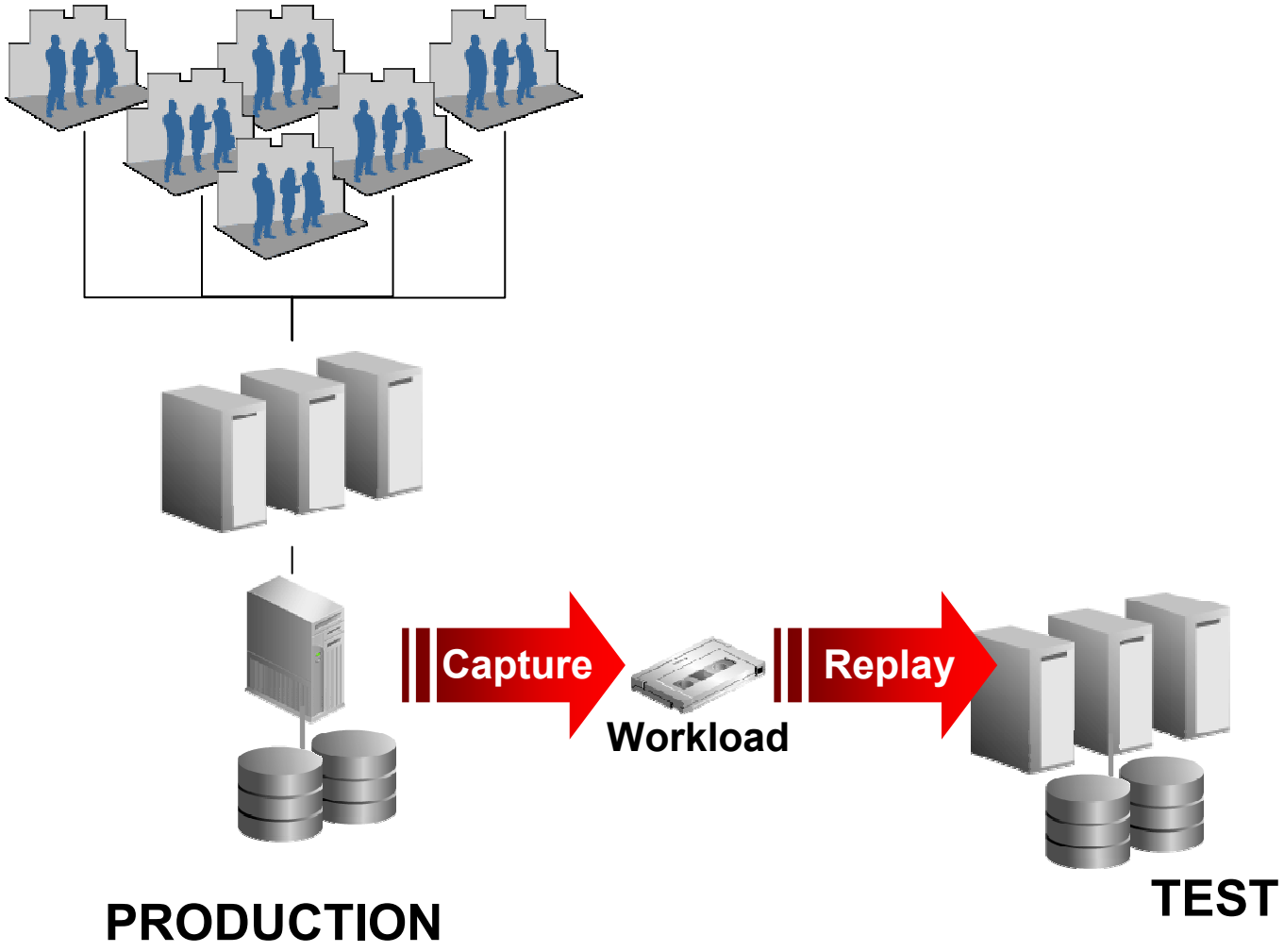
## Workload for 1,000s of Online Users Captured




PRODUCTION

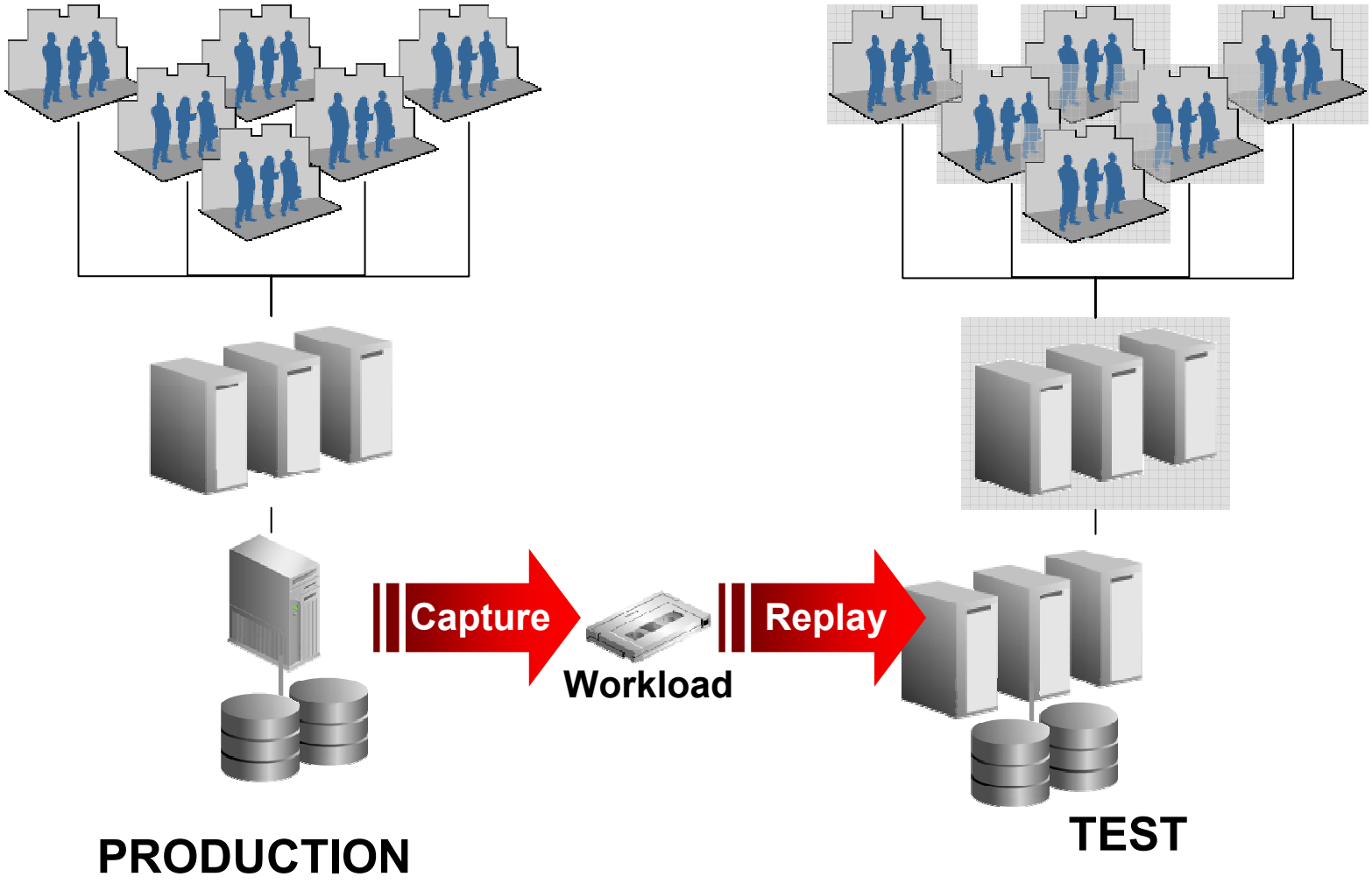
# Real Application Testing

## Workload for 1,000s of Online Users Replayed

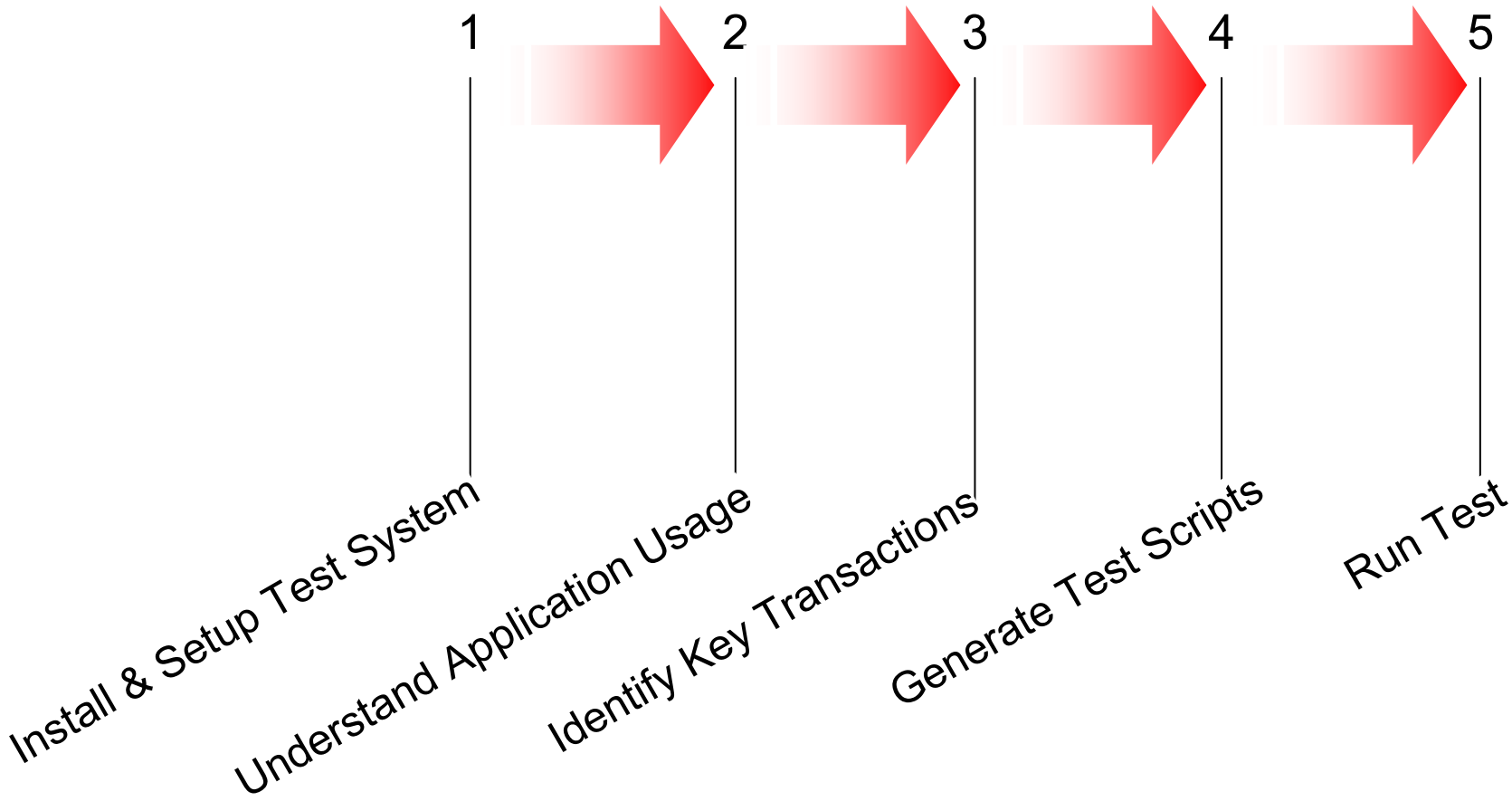


# Real Application Testing

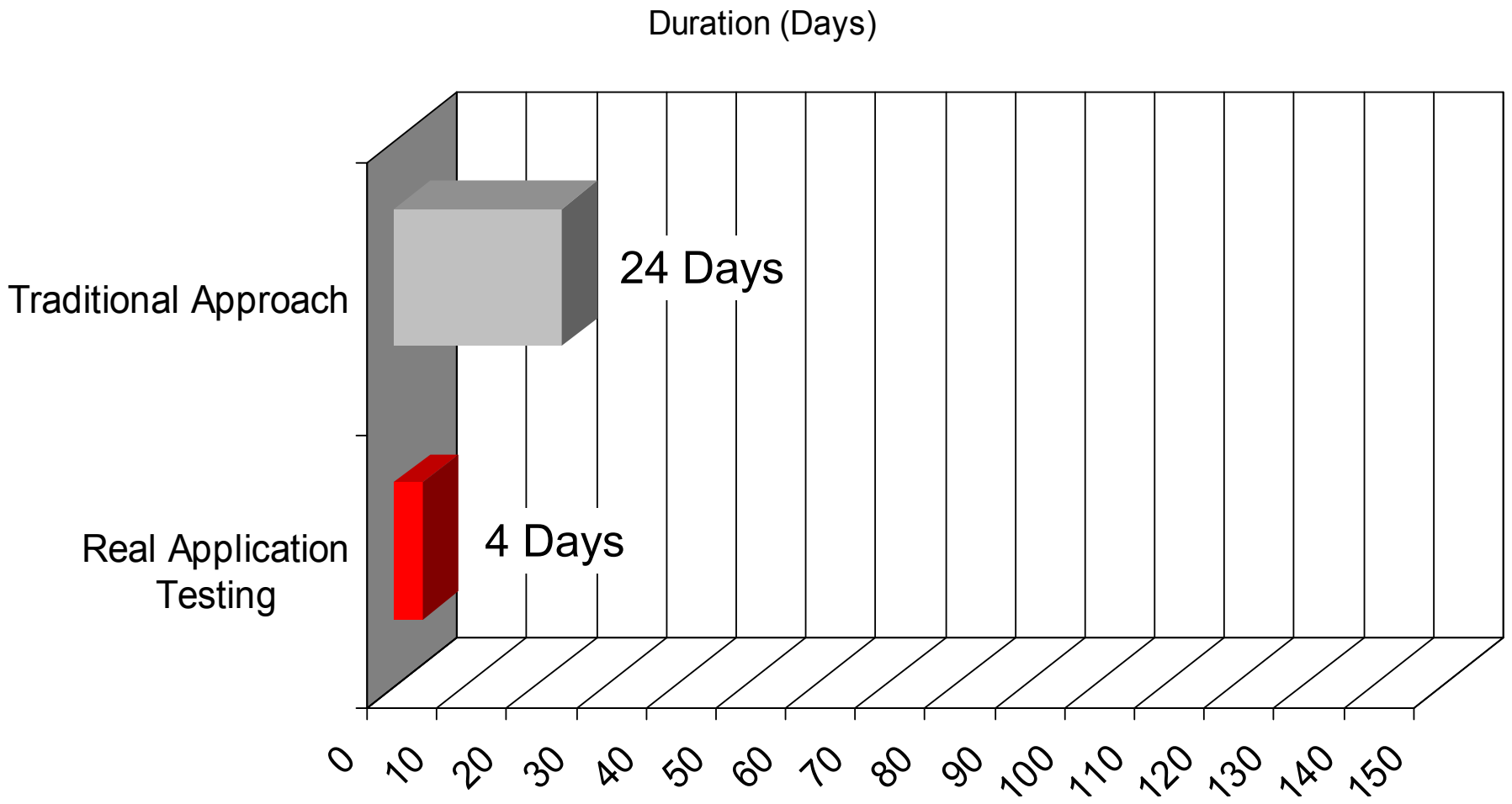
## Test your system changes at product levels



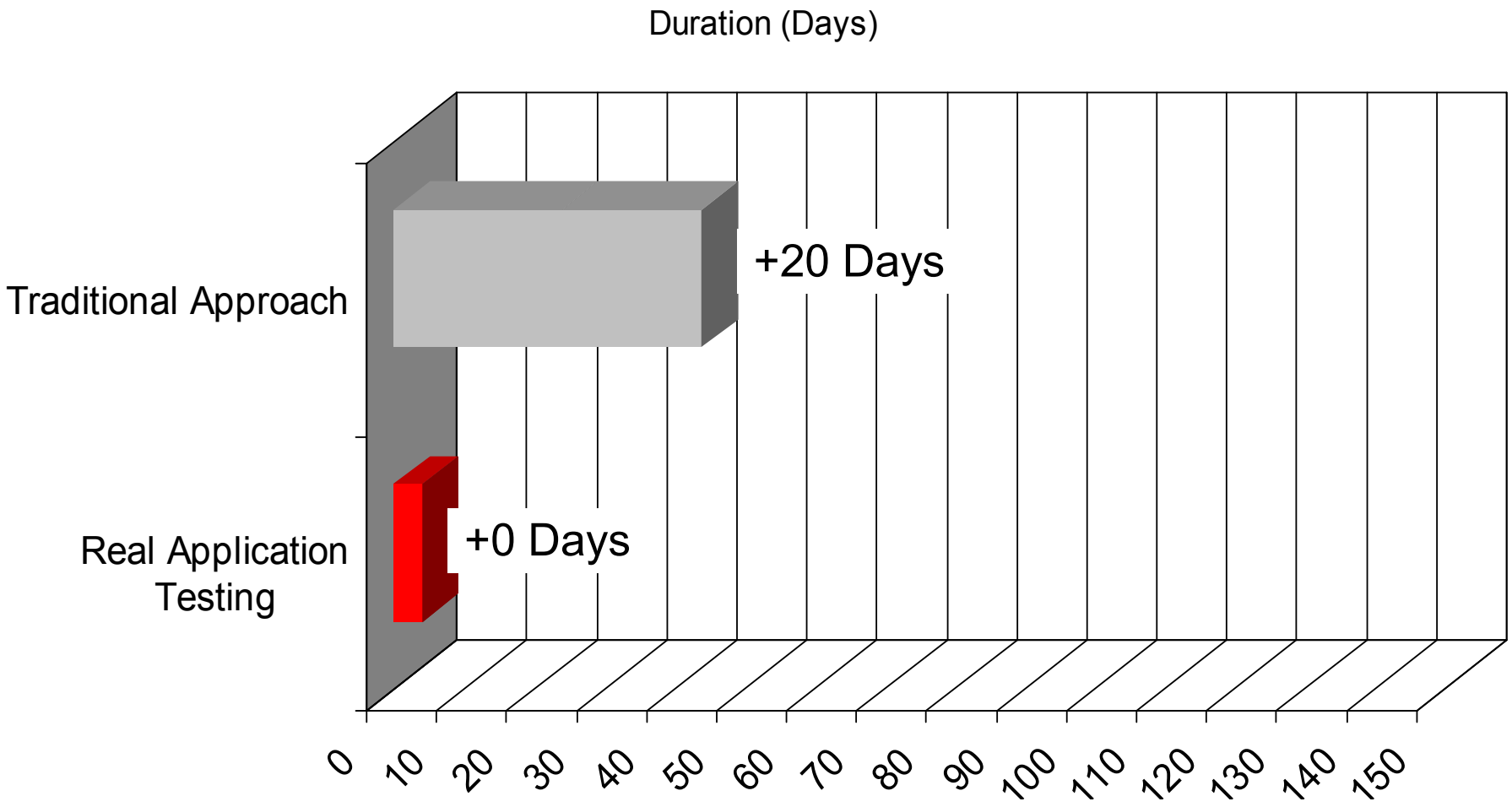
# Typical Steps in Test Phase



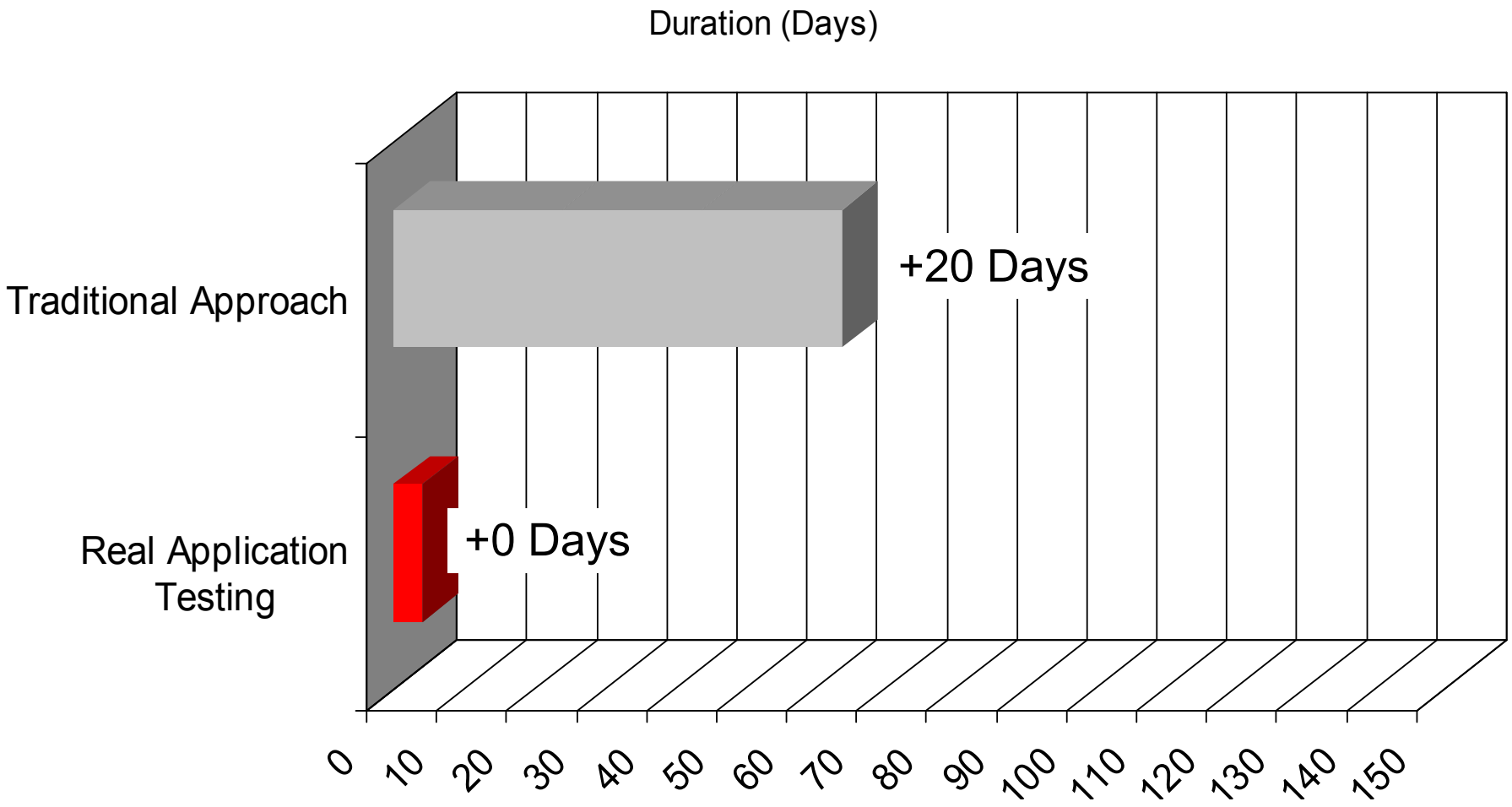
# 1: Install & Setup Test System



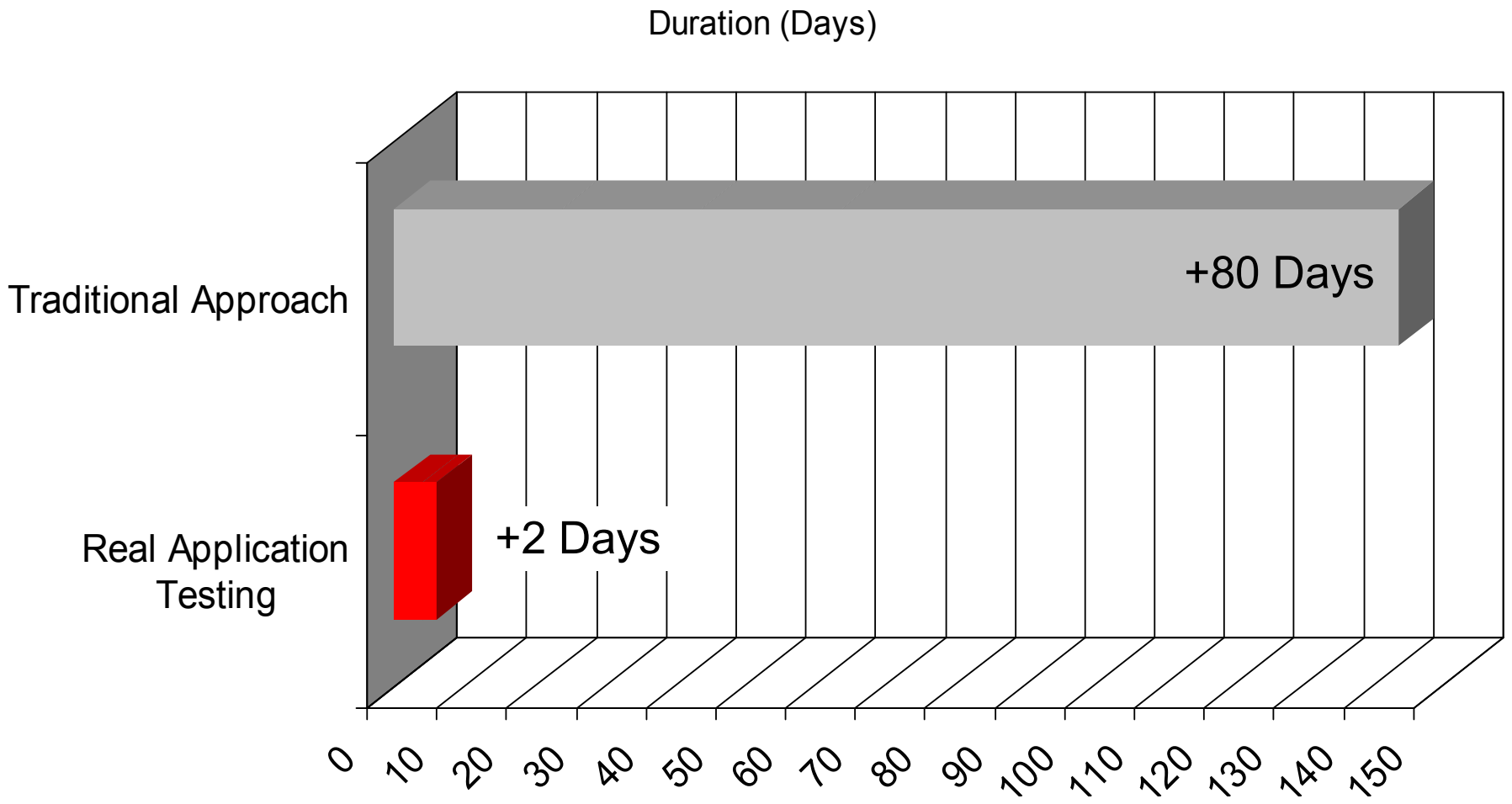
# 2: Understand Application Usage



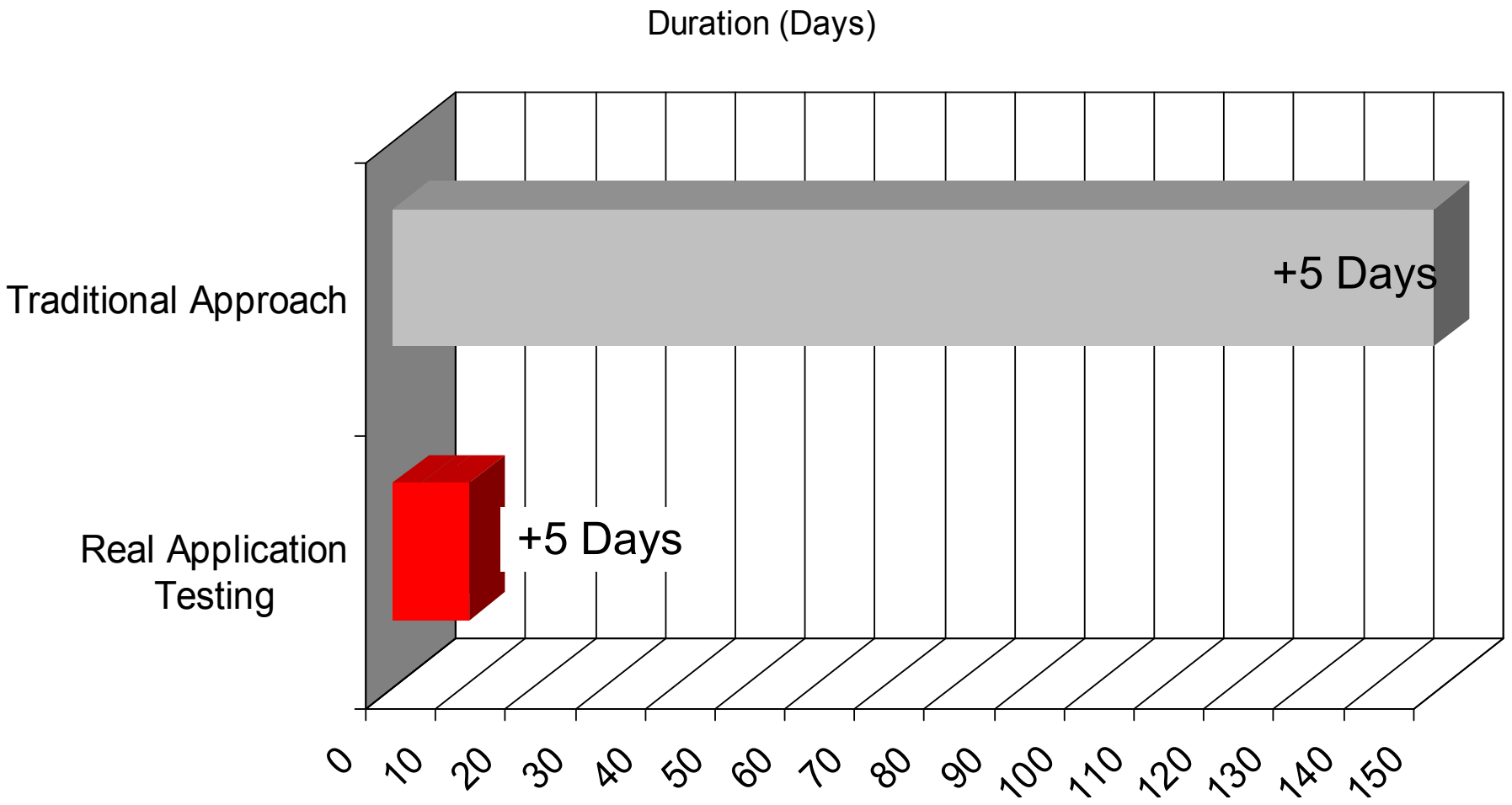
# 3: Identify Key Transactions



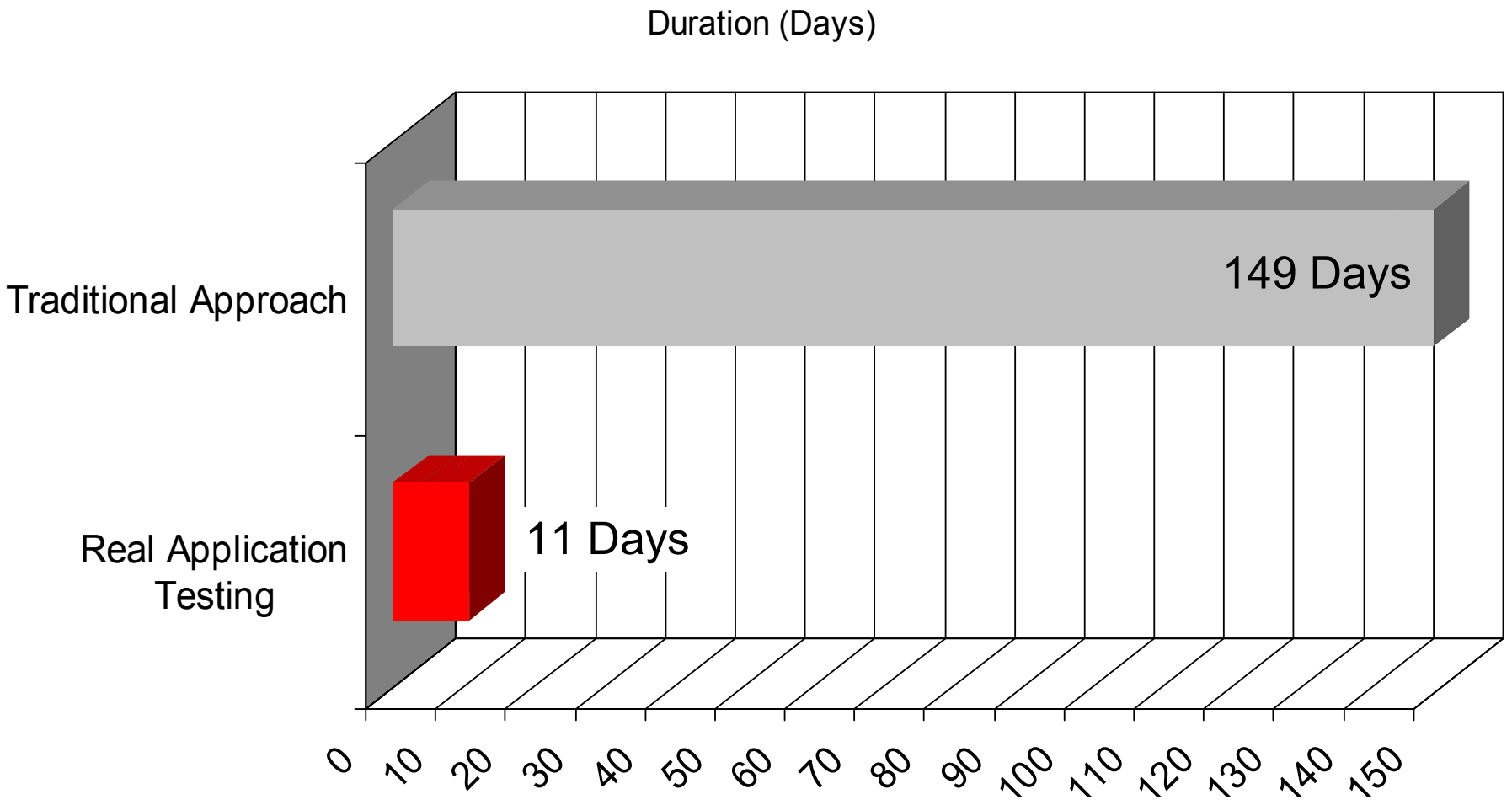
# 4: Generate Workload



# 5: Run Test Workload



# Innovate Faster



ORACLE