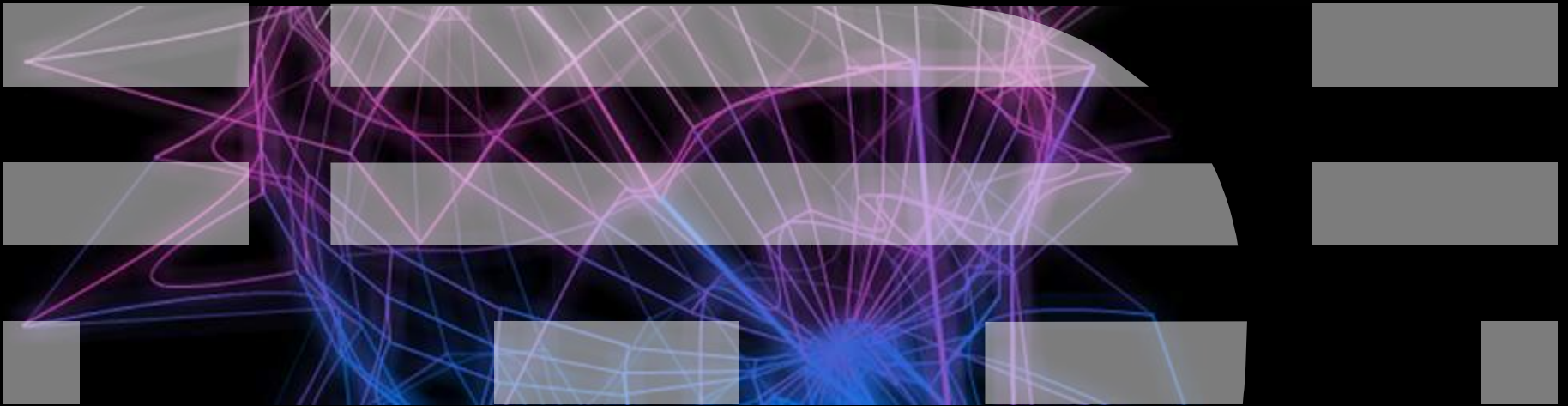


Approaches to Reduce Your Application and OLTP Costs



Smarter Planet solutions have diverse workloads

TRANSACTION PROCESSING AND DATABASE



*Keep up with exploding data
growth with fast
and secure
transaction handling*

BUSINESS INTELLIGENCE AND ANALYTICS



*Uncover
deeper insights
hidden among diverse
information sources*

BUSINESS PROCESS MANAGEMENT



*Respond to change more
efficiently while processing a
growing number of
transactions
and interactions*

Challenges of managing the growth of transactions and data

- Silos
- Performance
- Downtime
- Cost and complexity of scaling
- Staffing



A Smarter Planet demands smarter transaction processing and database systems

1. Integrity

2. Performance

3. Flexibility



Cost Efficiency

1. IBM ensures **business integrity** in face of rapid changes

Automatic recovery on transaction errors even under heavy loads

- Reduce costs by avoiding these risks
 - Lost customer trust due to “in-doubt” transactions
 - Damage to market reputation for non-compliance



90%

of Fortune 100 rely on
WebSphere Application Server

Systems need to survive network outages, power outages and application errors

- During outages – network or power
 - 100% recovery without error
- When the process state is in doubt
 - 2 phase commit

Only IBM

maintains consistent transaction integrity across all test scenarios.*



Singapore Land Transportation Authority



Business Challenges:

- Growing population
- Need to head off traffic congestion
- Maintain world-class business climate
- Recover lost revenue

Benefits:

- **80%** reduction in revenue leakage
- **2%** reduction in the lifecycle cost of fare processing system
- **2x** performance capacity to 20 million fare transactions per day
- Accommodate multiple fare card issuers

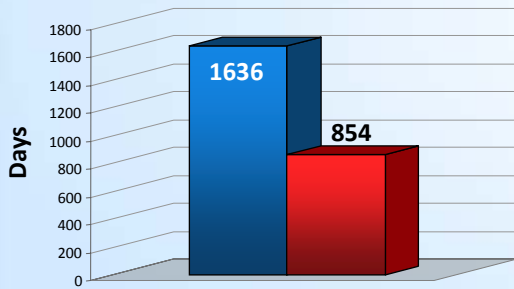
2. Trusted performance

IBM has an unmatched record for benchmark leadership

TPC-C performance leadership

Days of TPC-C-C Leadership

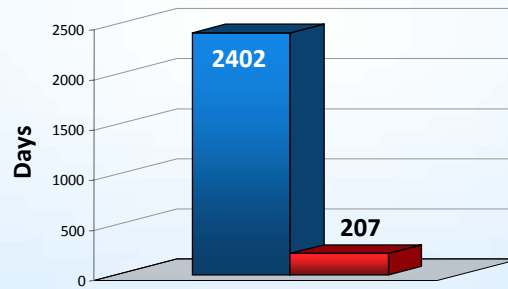
Since Jan, 2003



SAP SD performance leadership

Days of SAP 3-Tier SD Leadership

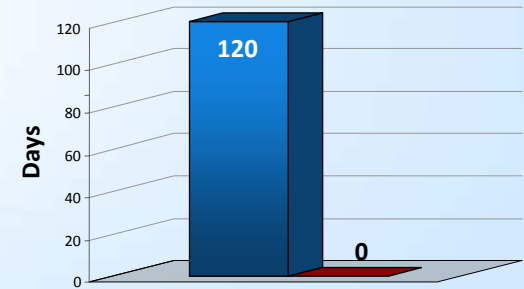
Since Jan, 2003



SPECjEnterprise2010 performance leadership

Days of SPECjEnterprise2010 Leadership

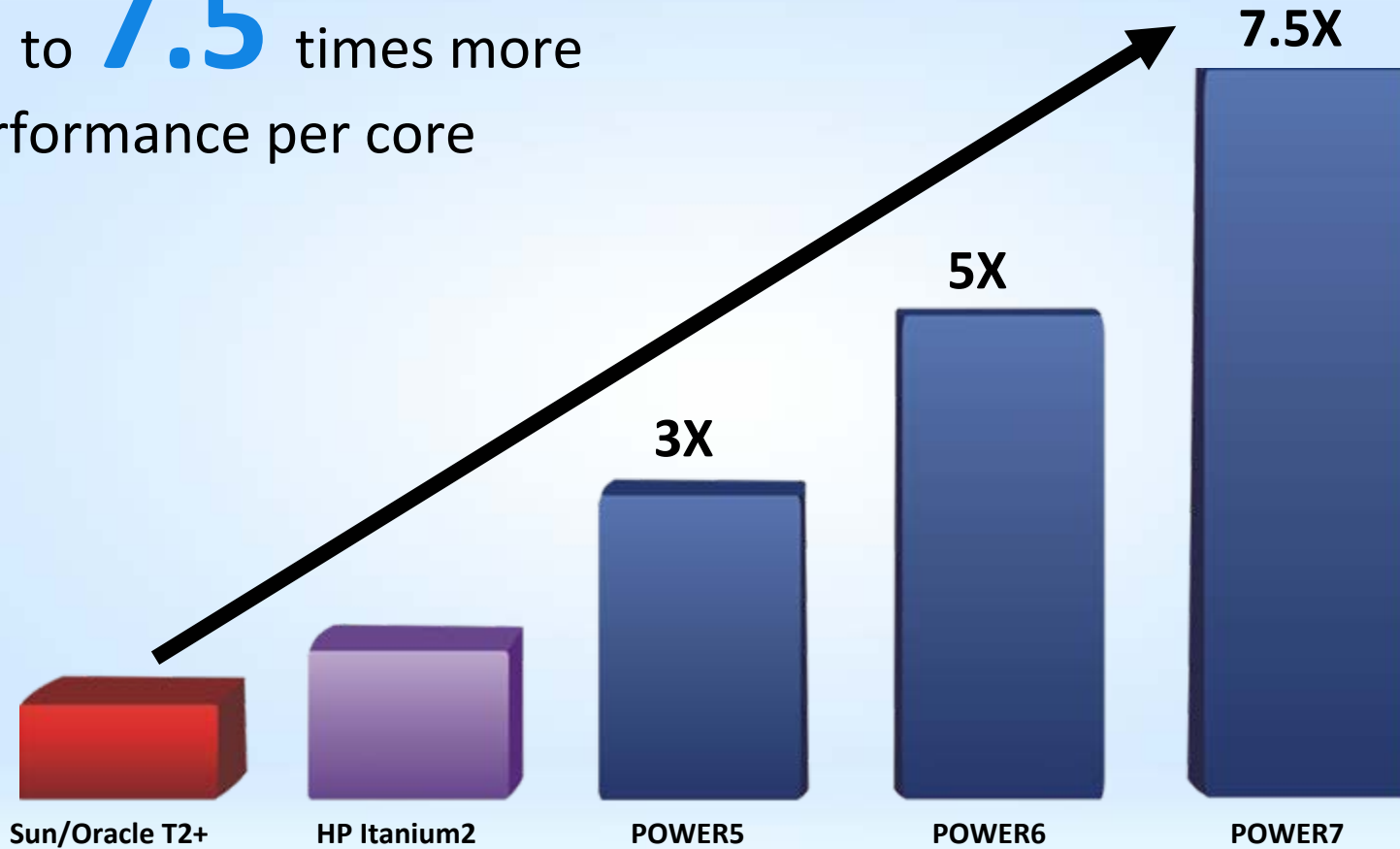
Since Jan 1, 2010



■ IBM
 ■ Oracle

More TPC-C performance per core than anyone else

3 to **7.5** times more performance per core



Leading performance for mission critical business applications

WAS optimizations for POWER7 – Better performance

IBM WebSphere Application Server 7

1 JVM
AIX TL4
64 bit
16 threads



IBM Power 750
8 cores



3920

Transactions/sec

6.8x

More work

Competitive application server

1 JVM
Solaris
64 bit
16 threads



Sun T5140
8 cores



570

Transactions/sec

Scalability for today's workloads

Consistent high performance across a spectrum of workloads

■ Elastic Scaling with Distributed Caching

- Deliver faster response times
- Increase user satisfaction
- Scale various apps with a **single solution**
- Simplify deployment with a purpose built appliance for common, data-oriented scenarios

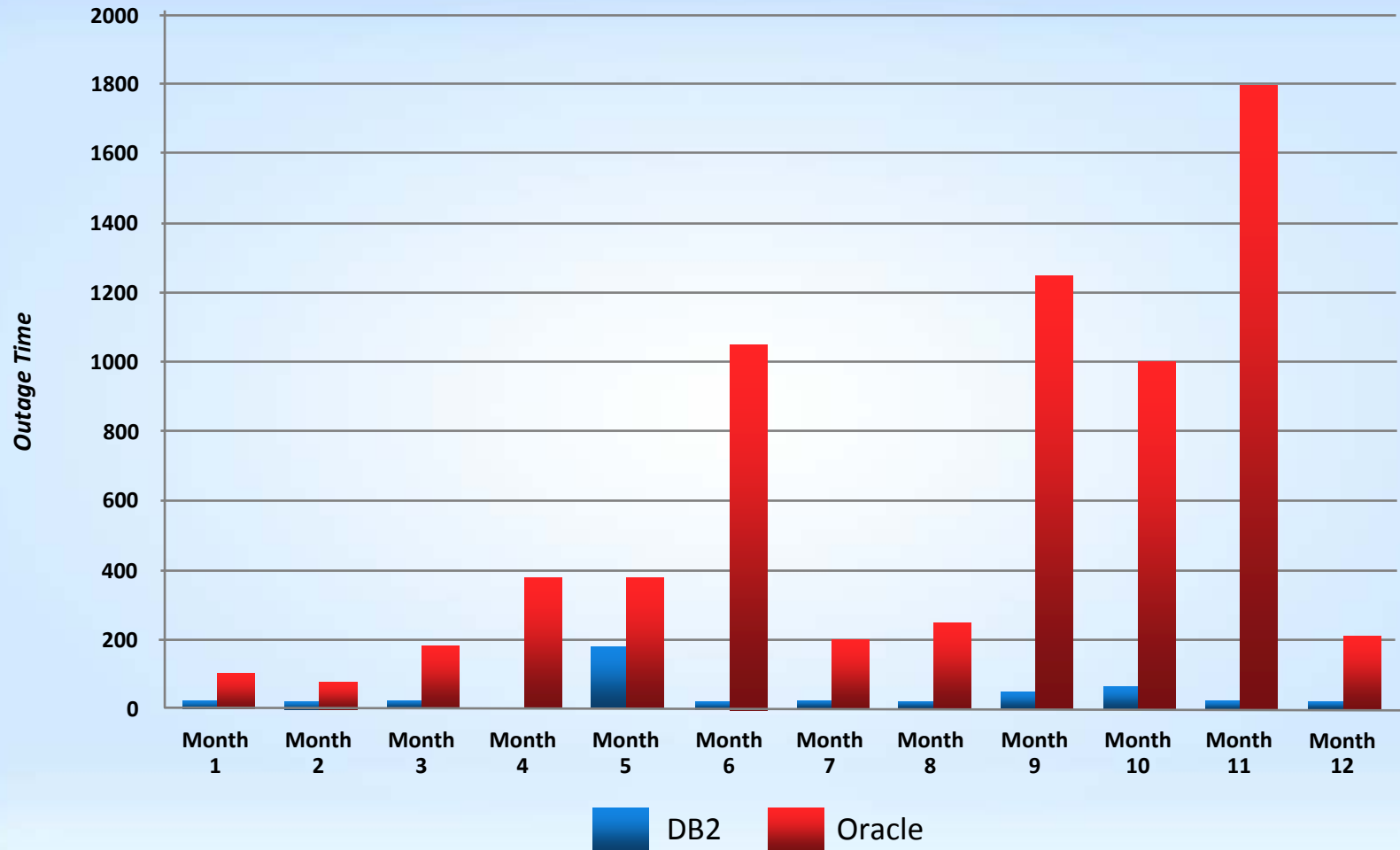
■ pureScale technology

- Add / remove database capacity on demand
- True application transparency



Highest levels of reliability for critical business systems

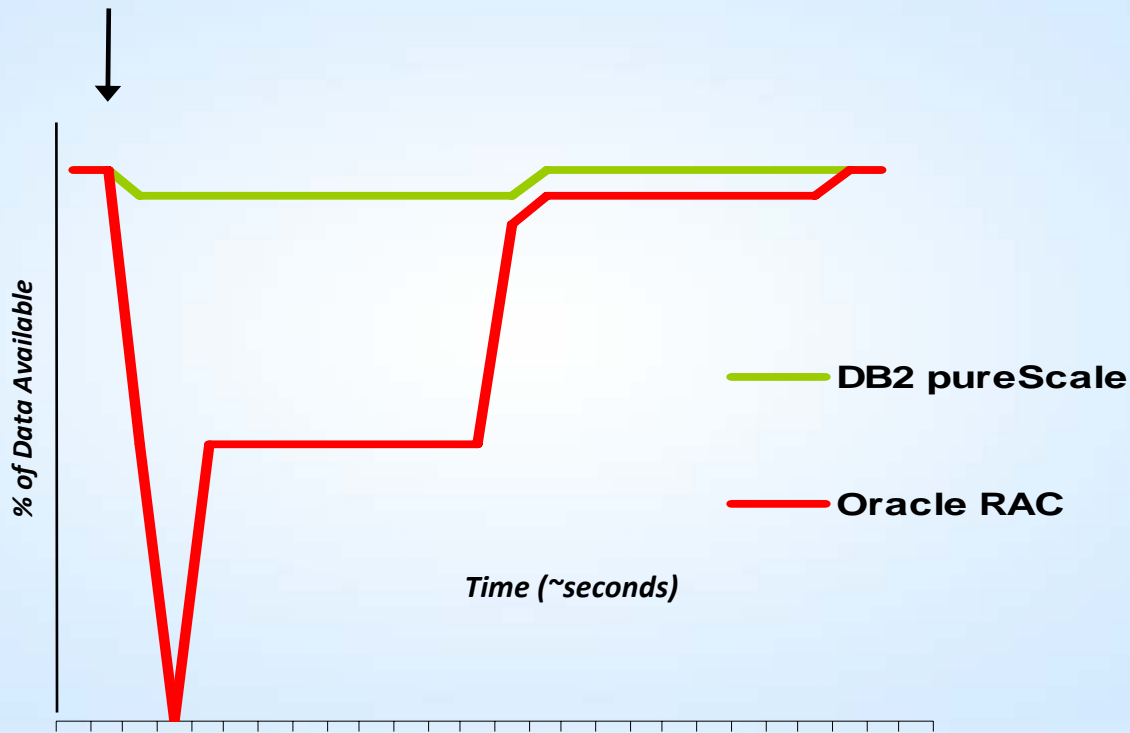
Normalized monthly outages



Highest levels of availability for critical business systems

Data availability after node failure

Node Failure



Coca Cola Bottling Company Consolidated



Business Challenges:

- Reduce database costs
- Optimize performance and manageability
- Manage adoption of Unicode standard as part of a big SAP upgrade

Benefits:

- **40%** smaller database
- **65%** faster performance
- **40%** less storage
- **Lower** software license and maintenance costs

3. **Dynamic flexibility** to help you stay ahead of your competition



Efficient Delivery of Innovative Products

Industry's Broadest Support for Standards

Flexibility of Choice for Various Workloads

Easily respond to future needs



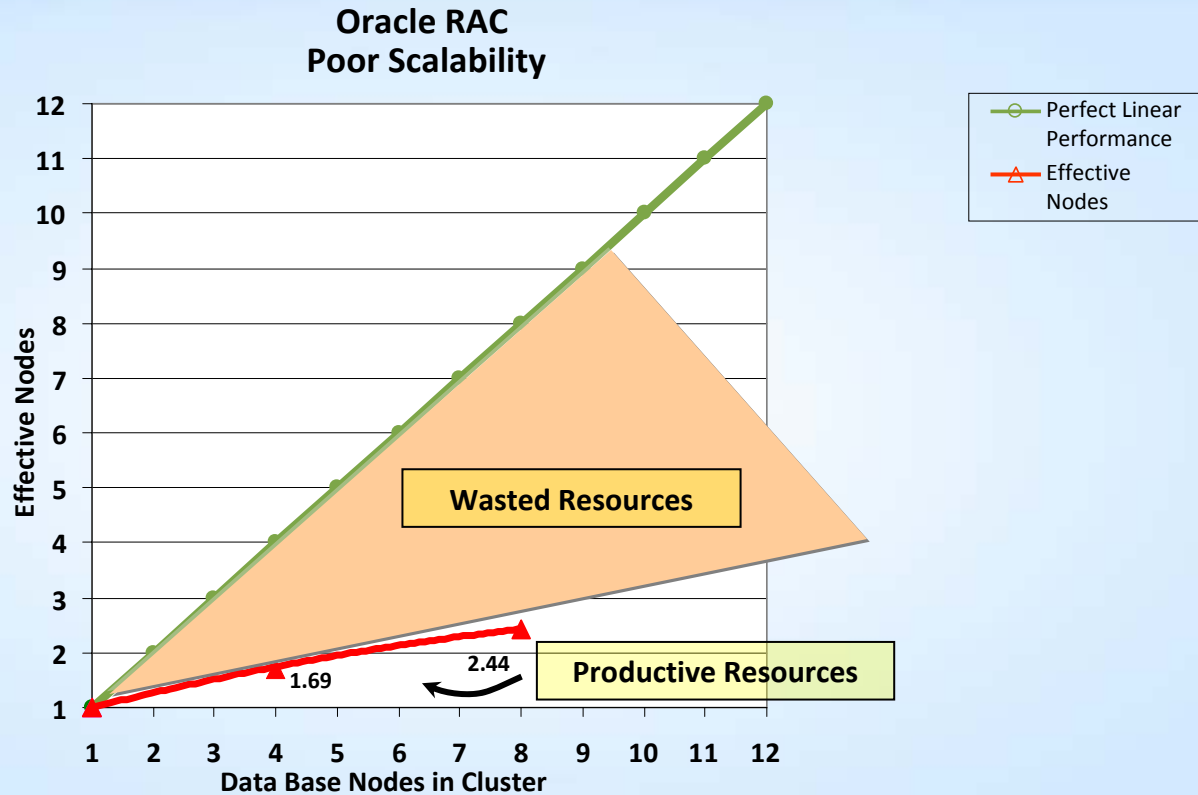
Free your IT staff to innovate

High Degree of Automation



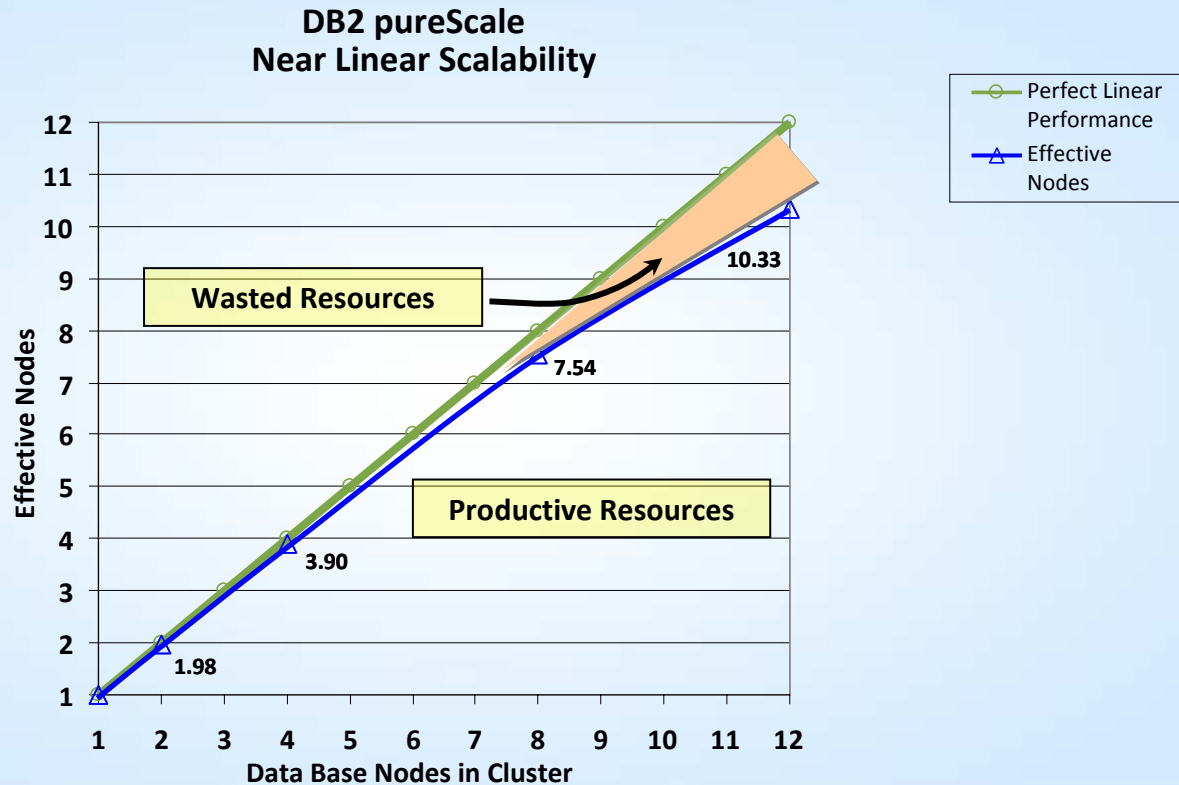
Why DB2 pureScale is better than Oracle RAC

Throughput efficiency declines as you add nodes to Oracle RAC



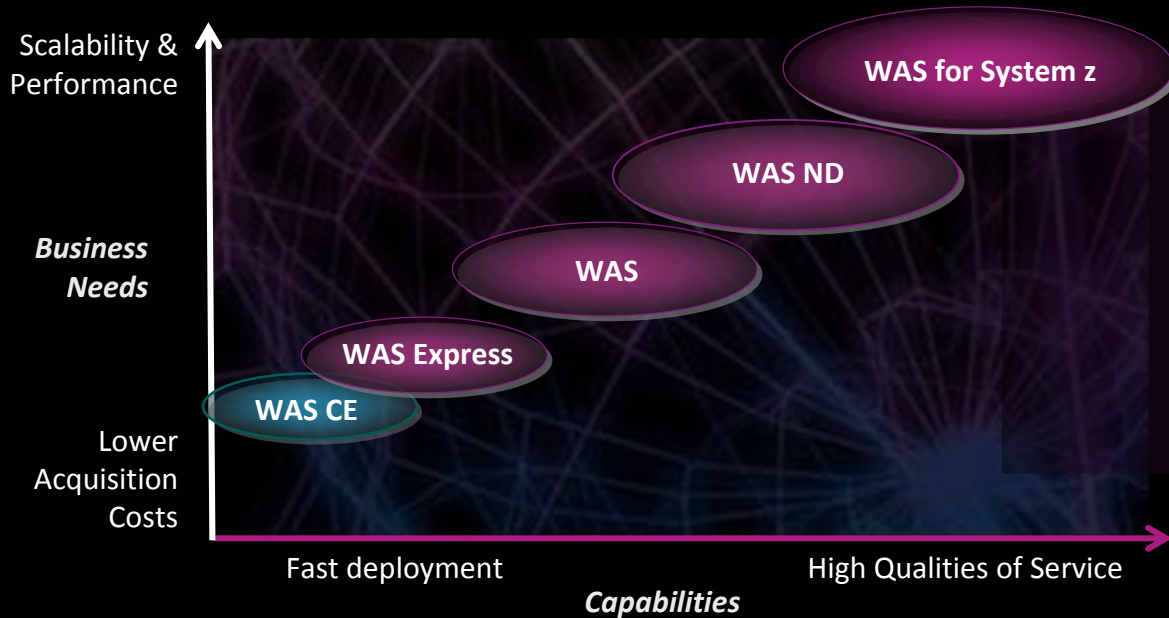
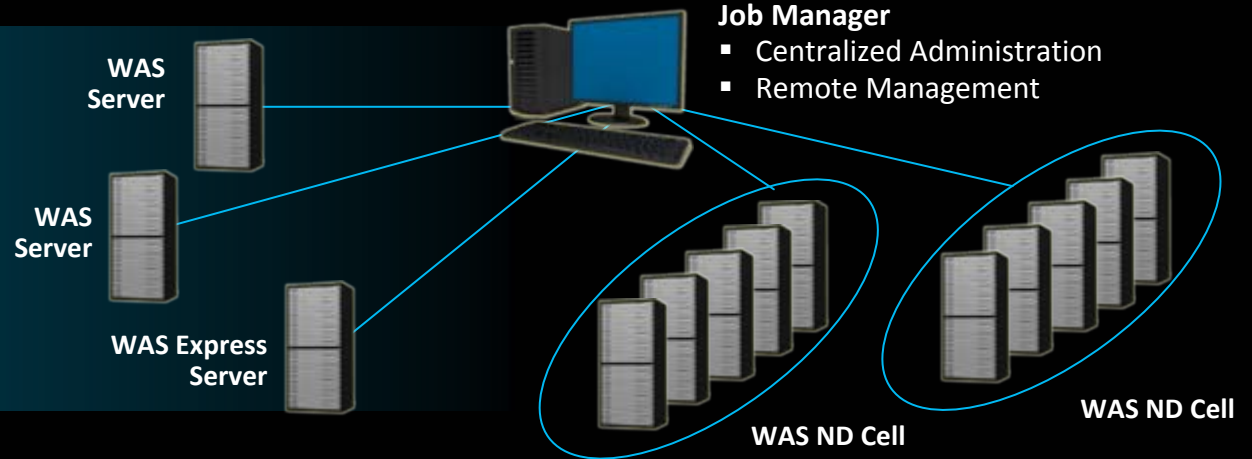
Why DB2 pureScale is better than Oracle RAC

Near-linear scale-out efficiency of DB2 pureScale



Host all sizes of workloads with a high degree of automation
 Grow easily while focusing staff on high value tasks

*Centrally managed
 multiple servers and
 deployment cells*



*Infrastructure that
 tailors to business and
 technical needs*

IBM provides the leading systems for SAP environments

- Smarter systems are optimized for SAP environments
 - Joint SAP and IBM teams optimize systems
 - Lower costs and risk by using WebSphere together with SAP NetWeaver

- IBM's SAP Initiatives Team has worked with 400+ leading SAP customers
 - Over 130+ joint WebSphere and SAP customer references globally

- DB2 is easy to administer in SAP environments
 - IT staff perform all DB2 admin tasks from the SAP tools.
 - DB2 automates reorgs, tuning, statistics collection, backups, etc.

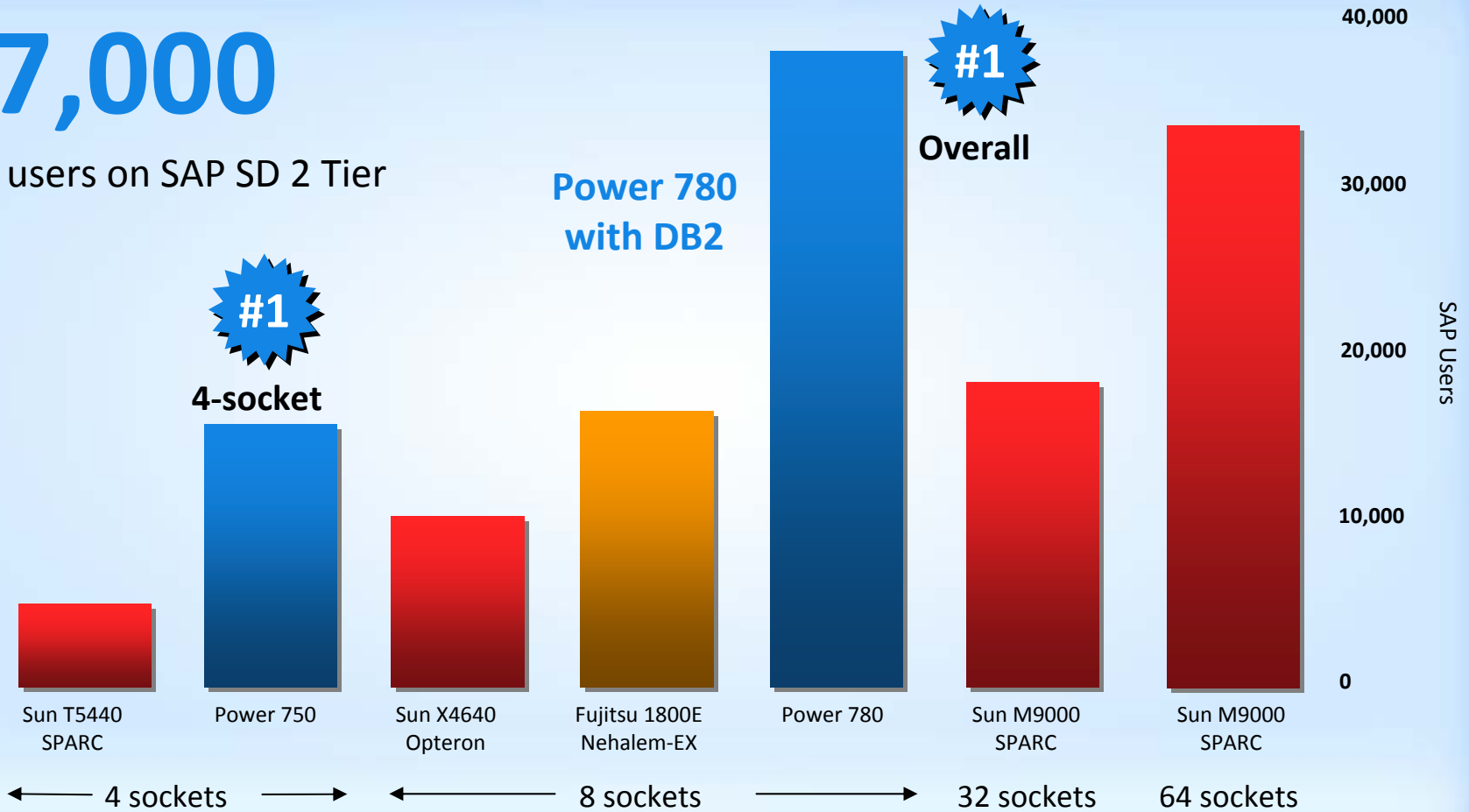
- IBM systems offer more efficient storage
 - DB2 offer strong advantages when it comes to minimizing storage



More SAP performance than any system in the industry
 20% more performance, 1/4 the number of cores vs. Sun M9000

37,000

SAP users on SAP SD 2 Tier

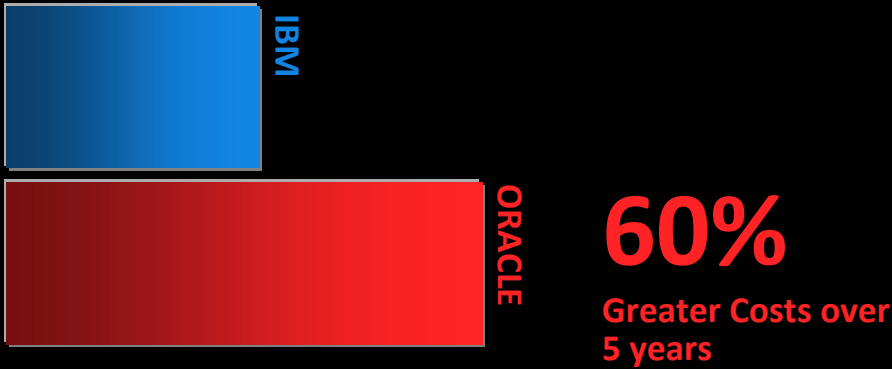


• IBM Power 780 certification number not available at press time and can be found at sap.com/benchmark. IBM Power System 780, 8p / 64-c / 256-t, POWER7, 3.8 GHz, 1024 GB memory, 37,000 SD users, dialog resp.: 0.98s, line items/hour: 4,043,670, Dialog steps/hour: 12,131,000, SAPs: 202,180, DB time (dialog/ update):0.013s / 0.031s, CPU utilization: 99%, OS: AIX 6.1, DB2 9.7; All results are 2-tier, SAP EHP 4 for SAP ERP 6.0 (Unicode) and valid as of 4/1/2010.

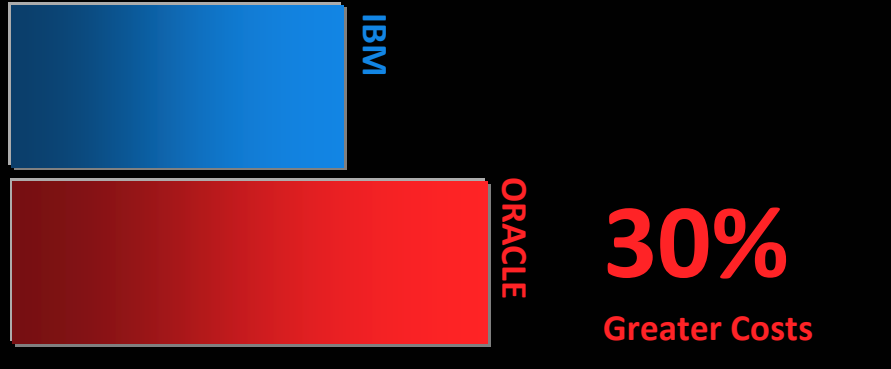
• Source: <http://www.sap.com/solutions/benchmark/sd2tier.epx> - See Power 780 benchmark details for more information

Optimized transaction processing and database systems maximize ROI

5-year costs for WebSphere Application Server and Oracle WebLogic Server¹



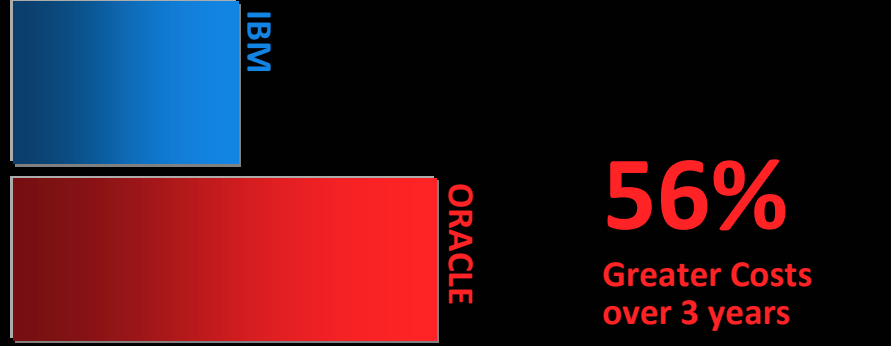
Storage costs for IBM vs. Oracle²



Price/Performance for WebSphere Application Server vs. competitive App Server³



3-year costs for DB2 and Oracle Database⁴



1 Source: Oracle technology global price list. Based on comparison of US Prices of single processor core, equivalent of 100 PVU's.

2 Source: IBM surveys of IBM clients using IBM DB2 and compression

3 Source: IBM testing: IBM WebSphere Application Server 7 - 1 JVM , AIX TL4, 64 bit, 16 threads vs. Competitive Application Server - 1 JVM, Windows 64 bit, 16 threads

4 Source: IBM testing: VALUE PROPOSITION FOR IBM DB2 9.7. Cost Savings Potential Compared to Oracle Database 11g

IBM pureScale Application System

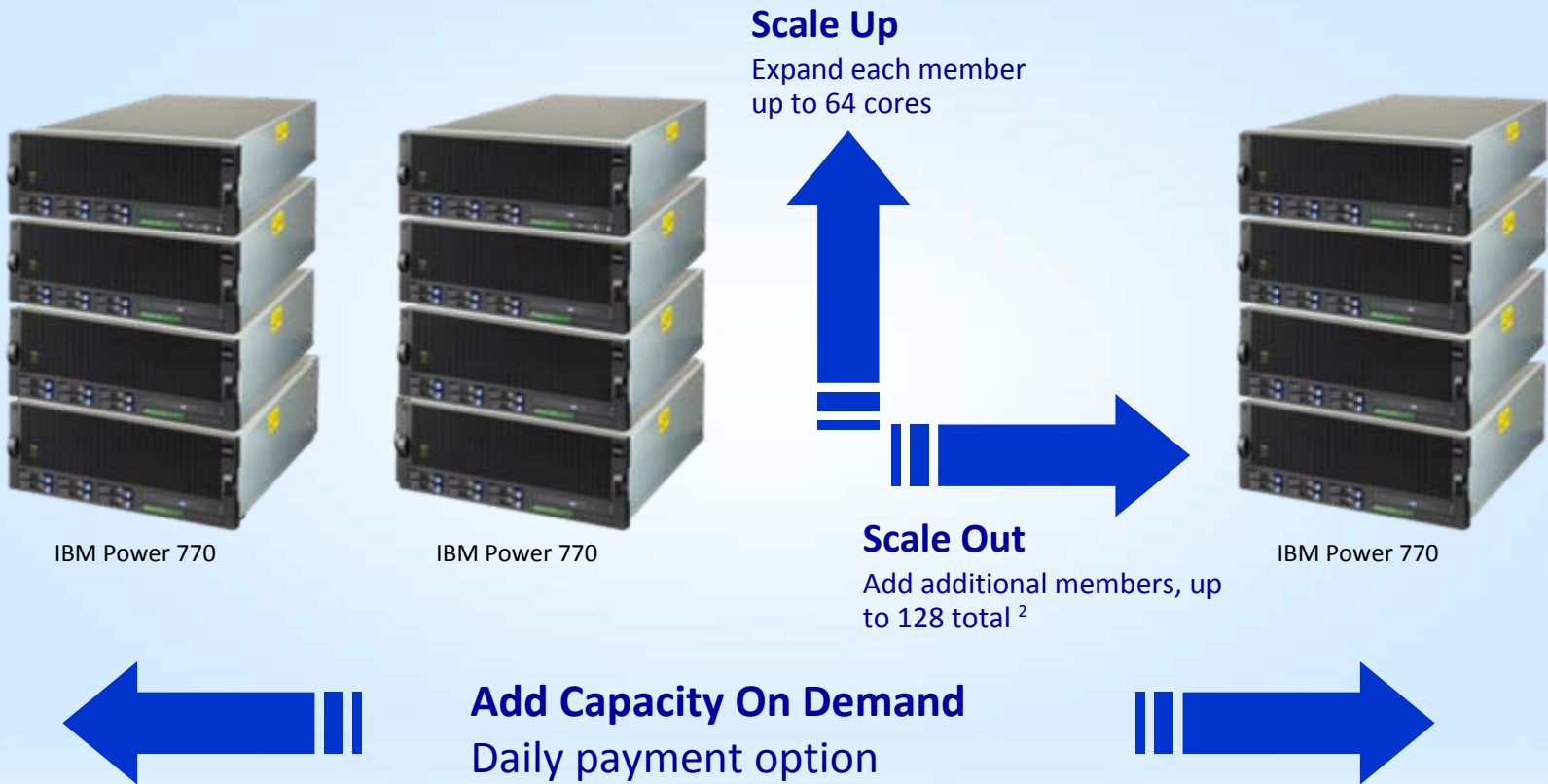
Transparently scalable and continuously available

- IBM Power 770 drives up to **90%** server utilization, lowers energy consumption **70-90%** – providing resiliency without downtime
- DB2 pureScale offers superior performance and scale-out efficiency
- WebSphere Application Server on POWER7 provides **6.8x** better performance than a competitive application server on Sun T5140



IBM pureScale Application System

Scale seamlessly, effortlessly from 8 cores up to 8,192 cores¹



Financial institution



Business Challenges:

- Need to efficiently manage disparate IT environment of various acquisitions
- Contain costs to support multiple systems management processes

Benefits:

- Reduced complexity of operations
- Lower management costs
- Single vendor simplified support and problem resolution
- Flexible access to services for their customers

Take action now!

No-charge offers to help you get started:

- Smarter Systems Consolidation Evaluation
- The Server Makeover Analysis
- Database Migration Analysis
 - Tool analyses PL/SQL, indicating out-of-the-box compatibility
 - Compatibility levels are typically greater than **90%**
- Application Server Migration Analysis
 - Typically migrate applications **2x** as fast
 - Typically migrate web services **3x** as fast



Thank You!

ibm.com/smarterystems



Simply put, IBM is making systems smarter.