

# Break Free From High Database Costs

## Mark McConnell

*AP Sales Executive*

*Enterprise Data Management*

*IBM Software Group, Asia Pacific*

*email: [mmcconne@au1.ibm.com](mailto:mmcconne@au1.ibm.com)*



IBM Information  
ON Demand 2010



INFORMATION-LED  
TRANSFORMATION



LEAD  
THE WAY



IBM

January 21 - SINGAPORE • January 26 - MALAYSIA • January 28 - THAILAND

# Explosion in Data Volume & Velocity

**New Data → New Information!**

## Volume of Digital Data

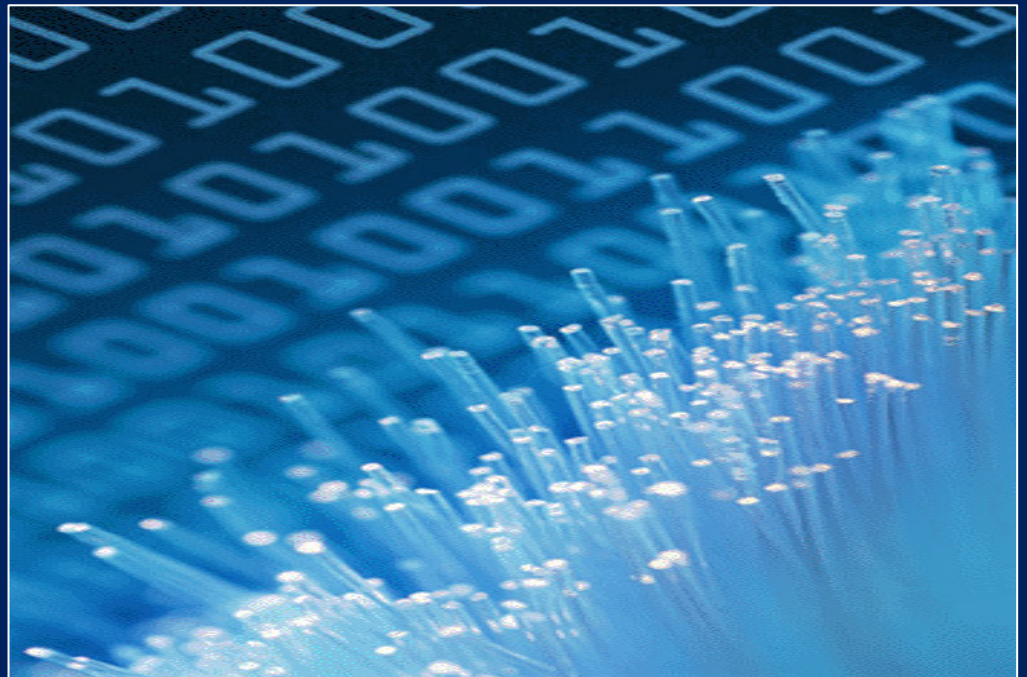
- 57% CAGR for enterprise data through 2010
- Machine generated data : Sensors, RFID, GPS..

## Variety of Information

- 80% of new data growth is unstructured content
- Emails, images, audio, video..

## Velocity of Decision Making

- Rapidly changing business climate
- Need to get ahead of the curve : predict issues and fix them

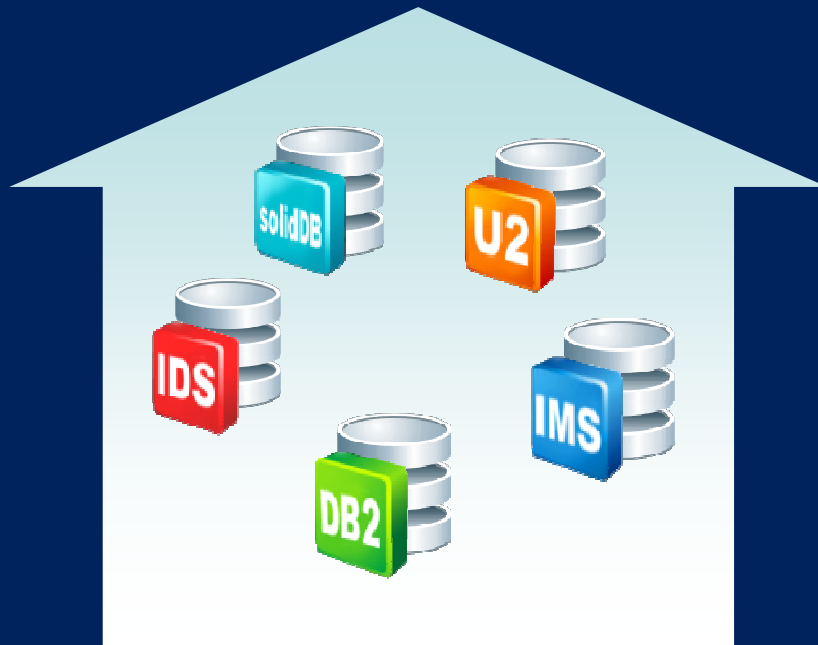


# IBM Data Management Software

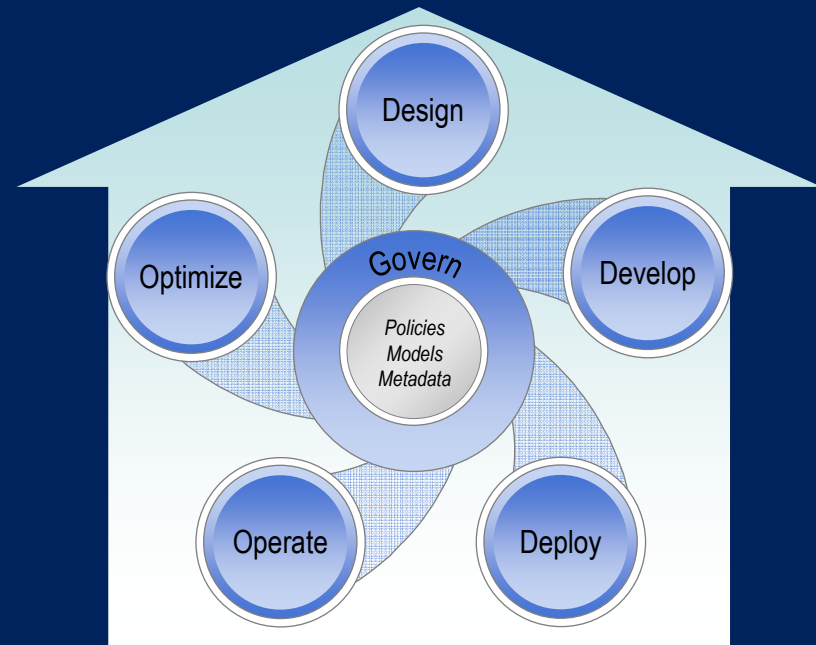
**Smarter**

**Faster**

**Leaner**



**Database  
Innovations**



**Integrated  
Data Management**

# DB2 9.7 for Linux, Unix & Windows

*Break free from higher cost DBMS*



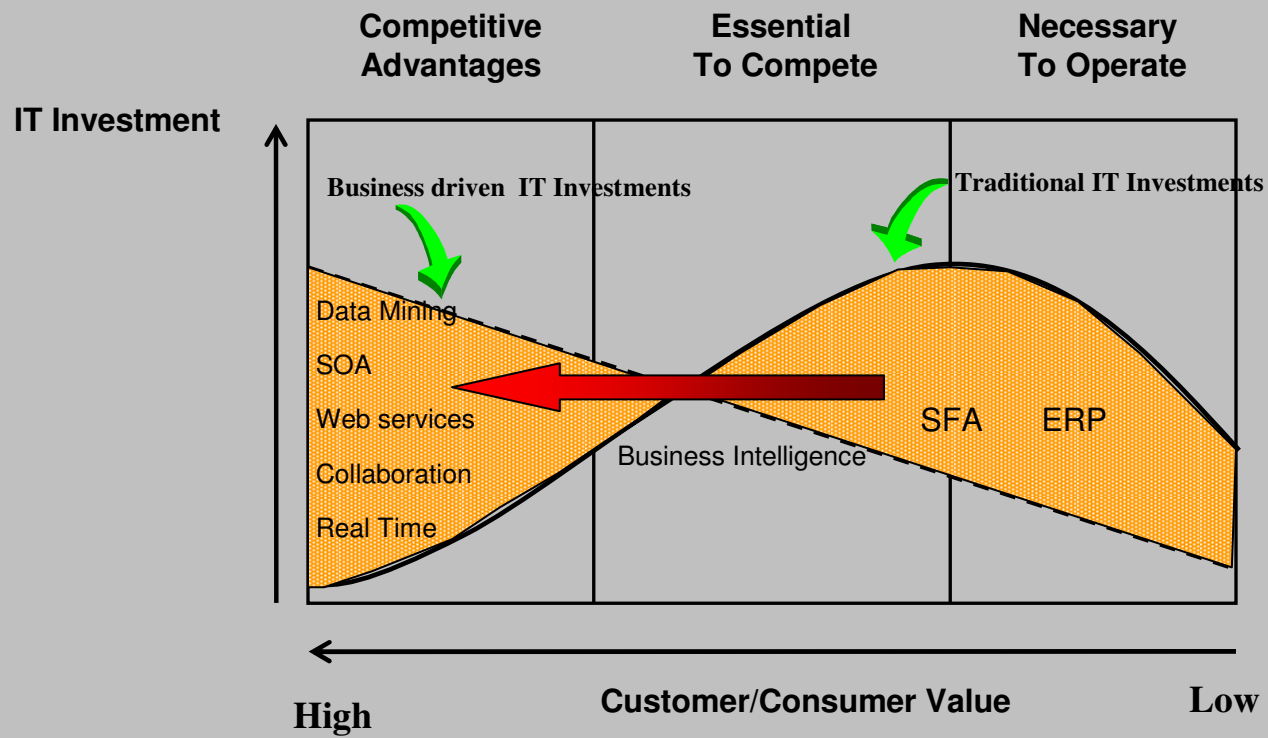
**Easier Move to DB2**

**Low Operational Costs**

**Reliability**



# The IT Expense Curve





April 29, 2009

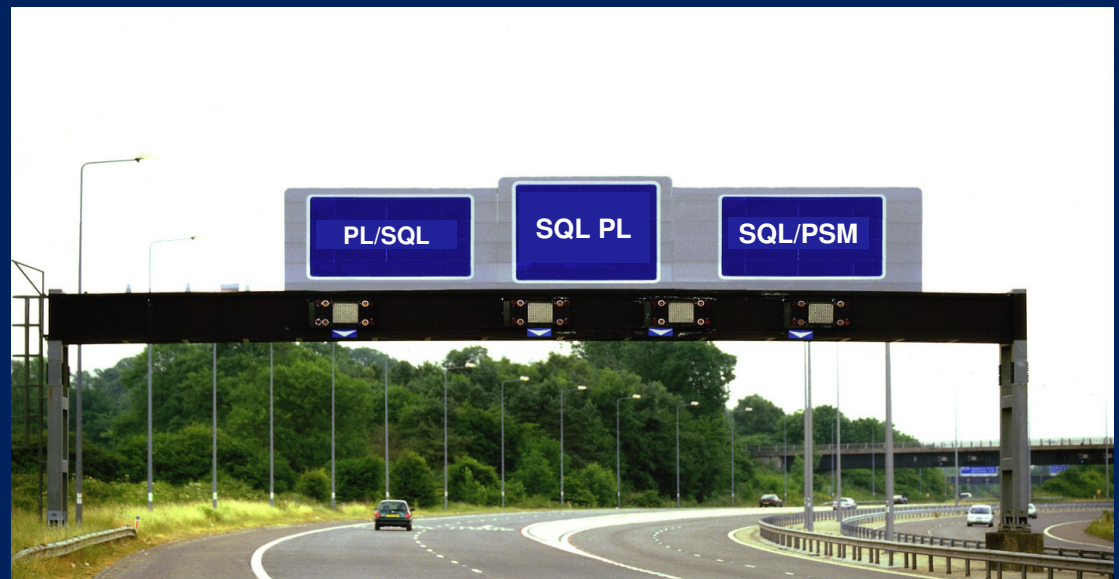
# “IBM DB2 9.7 Shakes Up the DBMS Market With Oracle Compatibility”

*“The Oracle compatibility feature will enable Oracle applications to run natively on DB2. In discussions with Gartner, reference customers tell us that DB2 runs 95% or more of Oracle specific functionality found in SQL statements and natively runs PL/SQL, Oracle’s stored procedure language. This native functionality is not an emulator, nor does it require changes to the application code (other than the 5%, which is mostly minor functionality, not found in many applications). Any provider offering applications that run with the Oracle DBMS can easily port it’s application to IBM’s DB2...”*

*– Donald Feinberg, Gartner VP Distinguished Analyst*

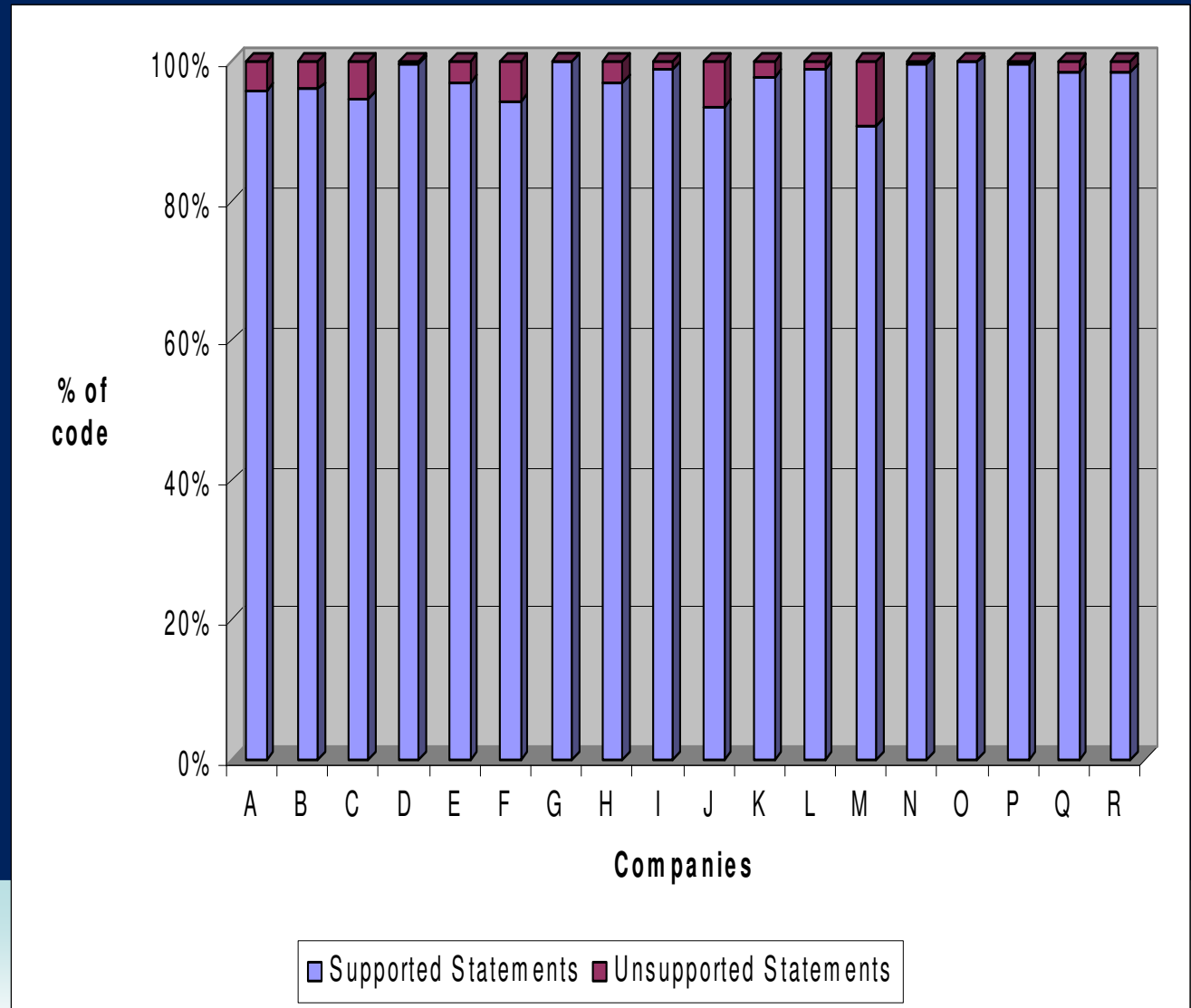
# Use Oracle SQL Skills with DB2

- DB2 supports PL/SQL syntax
- Easy for developers to use DB2
- Easy for applications to use DB2
  
- DB2 supports:
  - SQL PL
  - SQL/PSM
  - PL/SQL
  - Packages
  - Built-in packages
  - JDBC



# Percentage of Supported PL/SQL Statements

- **Variety of participants:**
  - Different industries
  - Different solutions
  - Different app sizes
  - Different countries
- **PL/SQL supported:**
  - > 750,000 lines of code
  - Average: 98.43%



# What This Means...

- Oracle Database developers enjoy:
  - Being able to use their Oracle Database skills with DB2
  - Being able to easily enable their applications and solutions to work with DB2
- Existing DB2 developers enjoy:
  - Being able to use the packages and built-in packages that Oracle Database developers have traditionally enjoyed
  - Being able to use 'weak typing' if they so choose
  - Being able to write code that uses the new locking behavior

# Low Operational Costs



Unparalleled Automation

→ **Lower administration costs**

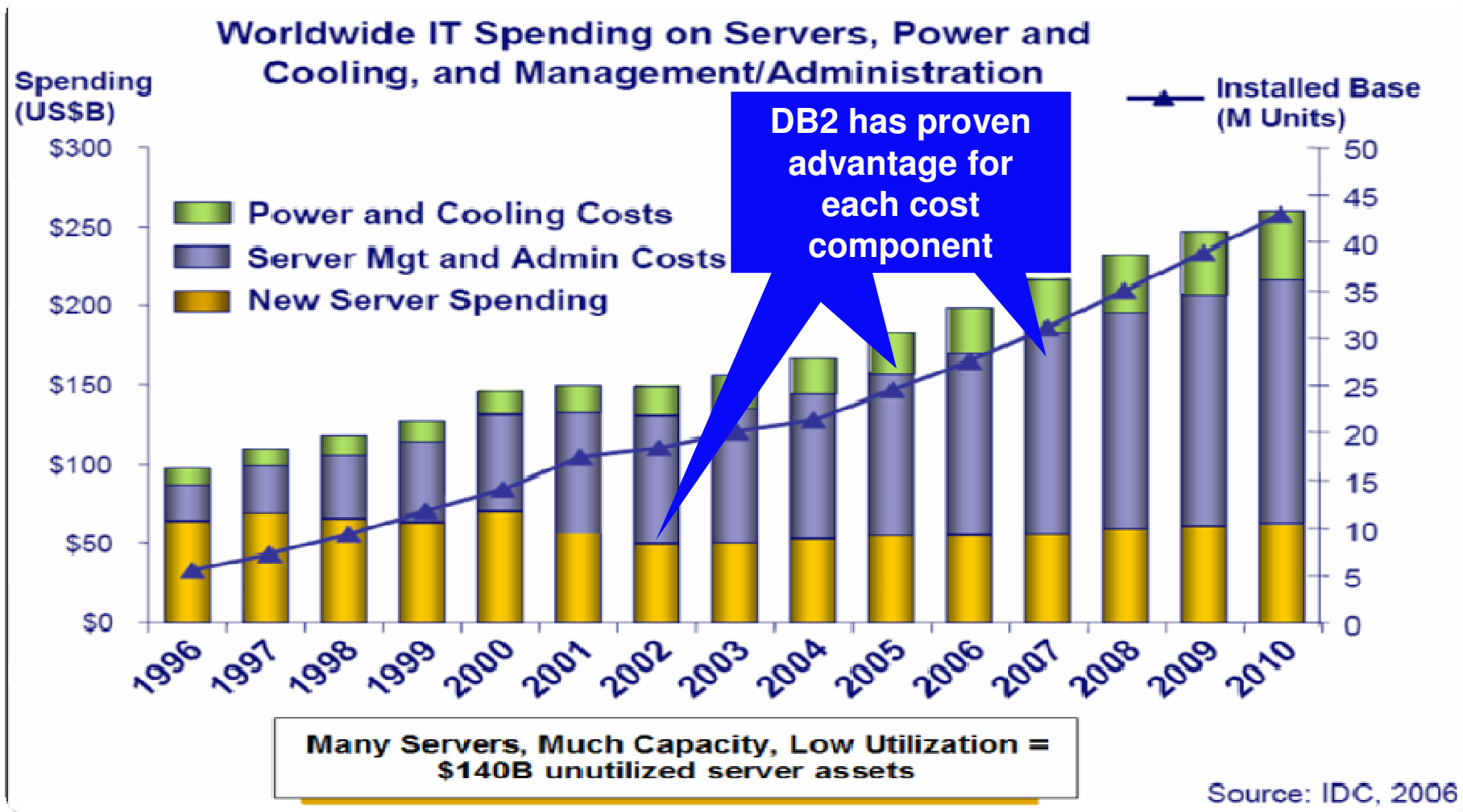
Deep Compression

→ **Lower storage costs**

Industry-leading performance

→ **Lower server costs**

# Where is DB2 Focused? Cost Reductions





# The Current IT Storage Climate



*“Storage hardware is steadily increasing as a percentage of IT budgets. Backup and recovery was the second most important driver of spending...and is the No. 1 issue keeping CIOs awake at night”*



*Global spending on the data center **power and cooling** in 2007 was roughly **equivalent to spending on servers***

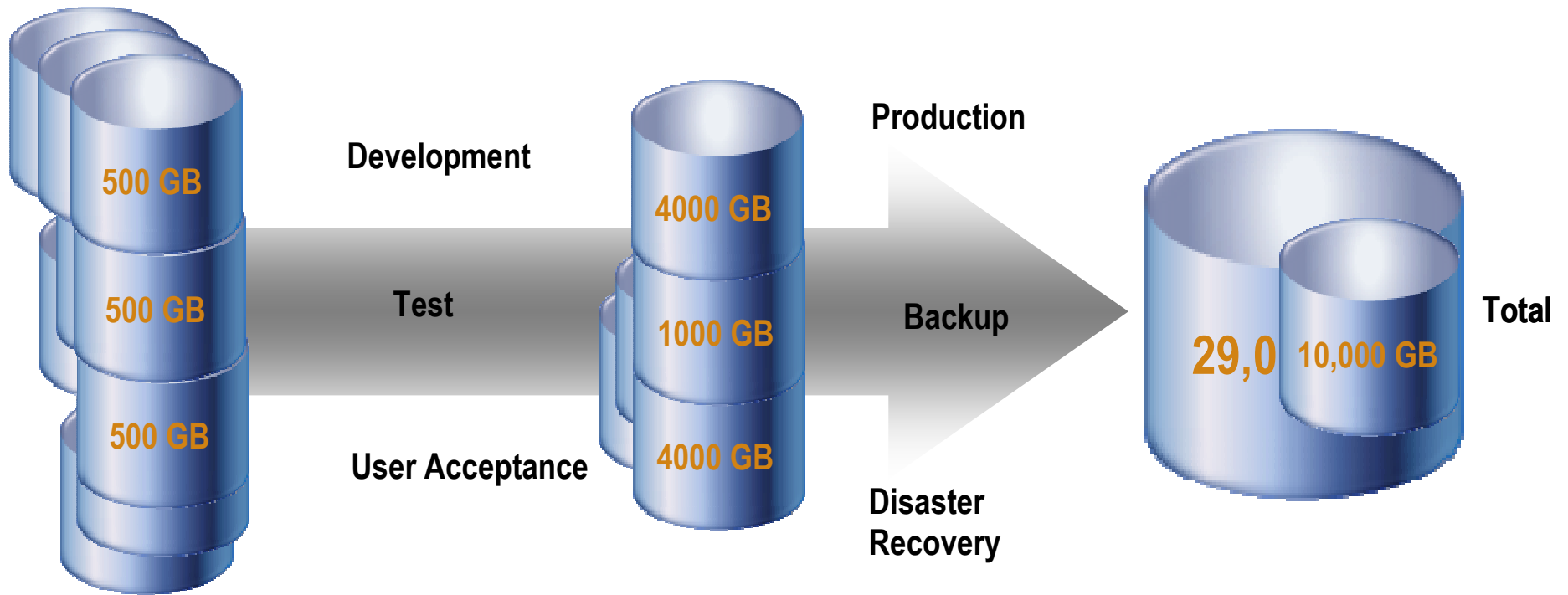


*Half of the world’s data centers will face an **acute power shortage** by the end of 2008*



**Facebook: \$1 Million A Month in Power Costs**

# DB2 Dramatically Slashes the Database Burden Rate



**Total Storage for 4TB DB**  
 Without compression = 29TB  
 With 65% compression  $\cong$  10TB

## What Customers are Saying About DB2 Compression?



*"With the new compression technology in DB2 Viper, we realized an **80% improvement in space savings** for our most critical tables in our data warehouse. We were even more pleased with this technology when we found that Viper's compression capability helped us **process queries to the database an average of 40% faster than before.**"*

- Donny Ledbetter, Senior DBA



*"We are **saving anywhere between 60 to 65% in storage** and we've actually found **the performance has improved.**"*

- Bashir Khan, Director Business Intelligence



*"We're seeing **compression rates up to 83%** on the Data Warehouse. The projected **cost savings are more than \$2 million initially with ongoing savings of \$500,000 a year.**"*

- Michael Henson, Database Delivery Services



*"We needed a database that represented the future and DB2 9 is the future. DB2 9 compression capabilities are key in helping **reduce the size of our databases—in one case by up to 83%**. This ultimately helps us **minimize storage costs and increase performance.**"*

- Jean Holley, CIO

# How Does Archiving Impact Cost?

*Makes production databases more efficient and lowers cost*

*“Moving inactive data to another instance or archive system not only makes production databases more efficient, but it also lowers cost.”*

*“Large databases also drive up hardware cost, database license cost, and general administration effort.”*

Noel Yuhanna, Forrester Research

“Database Archiving Remains An Important Part Of Enterprise DBMS Strategy”, 8/13/07

FORRESTER®

# Lower Costs with Smart Administration



It's hard to believe, but we only have 3 DBAs supporting over 100 instances of DB2.”

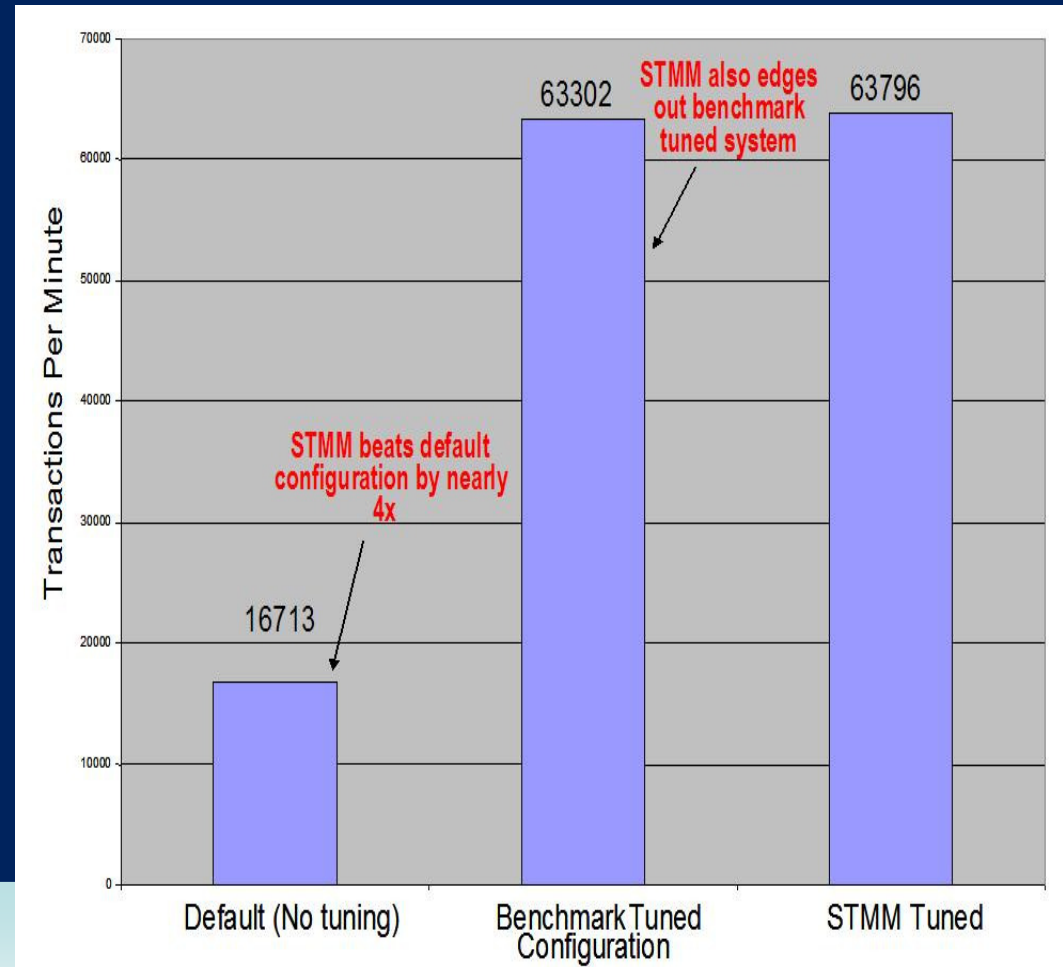
—Phil Kilgore, Director of Technical Services

- Automatic features:
  - DBA-free statistics collection
  - DBA-free health monitoring
  - And more
- This means that DBA shifts to:
  - Focus on higher-value projects
  - Respond quickly to new needs
  - Deliver new capabilities faster



# Let DB2 Tune Itself, Focus on Your Business

- Self Tuning Memory Manager
  - Configures DB2 without needing a DBA
  - Get your system running quickly in minutes with little skills or training
- Let DB2 tune itself
  - Focus on your business, not database management
- Easy configuration
  - Configuration Assistant
  - Automatic Storage
  - Wizards and advisors



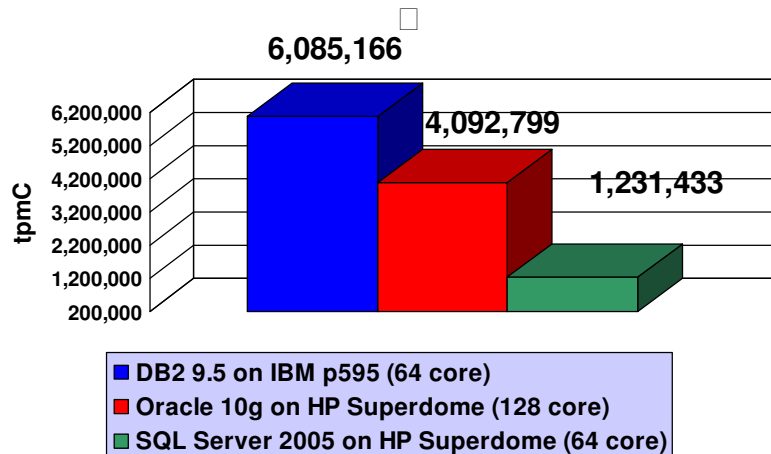
# Proven Performance Maximizes your Investments



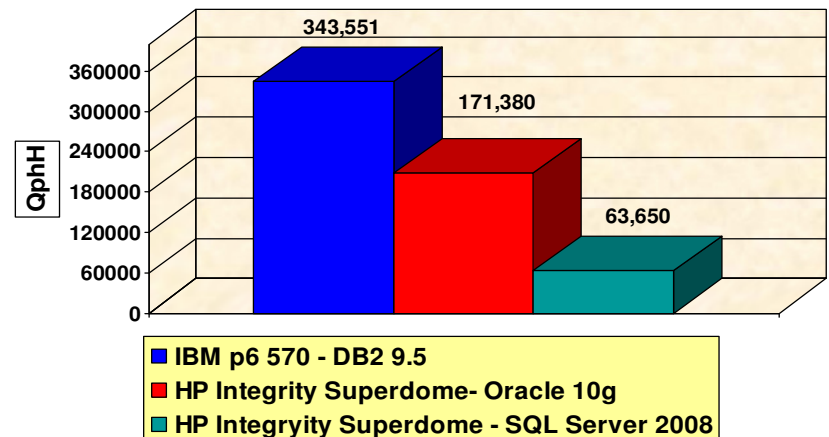
“In comparison tests with both Oracle Database and Microsoft SQL Server, IBM DB2 continually demonstrated a better price-to-performance ratio.”

—Benjamin Simmen, Zurich Financial Services

**Top TPC-C Performance**



**TPC-H 10 TB BI Benchmark**



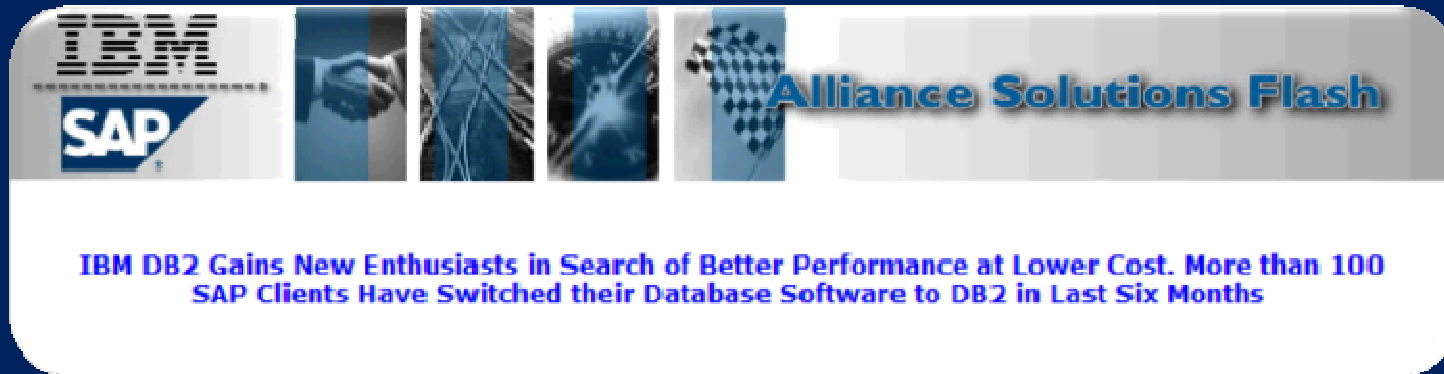
- **50% Faster than Oracle Database**
- **5X Faster than SQL Server**
- **Lower server costs for transactional systems**
- **solidDB available for extreme speed**

- **65% Faster than Oracle Database**
- **5X Faster than SQL Server**
- **Lower server costs for BI systems**
- **DB2 powers InfoSphere Warehouse**

**Lower server costs → Lower software license costs → Lower software maintenance costs**



# DB2 is THE Database for SAP



The banner features the IBM logo on the left, followed by four small square images: a handshake, a network of lines, a globe, and a checkered flag. To the right of these images is the text "Alliance Solutions Flash".

**IBM DB2 Gains New Enthusiasts in Search of Better Performance at Lower Cost. More than 100 SAP Clients Have Switched their Database Software to DB2 in Last Six Months**

**"...we have observed a 40% cut in response times with DB2..."**

*—Peter Boegler, SAP IT*

**SAP**



National  
Defence

Défense  
nationale

"DND is a large and dynamic SAP implementation that is in a constant state of enhancement and expansion. We have **two DBAs that currently manage 100 SAP instances (and growing)**. We are often called upon to create a new instance to support our project and deliver in less than 24 hours. **This level of productivity and quick response would not be possible without the automated features of DB2 LUW** and the very tight integration with the SAP Cockpit, which we use extensively."

— Carm Germano, Manager IM/IT Operations

# Reduce Risk with Improved Security and Audit Features

- ❑ 44% of IT staff cited authorized access as key security challenge
- ❑ Top challenge for 43% of CFOs is governance, controls, and risk management

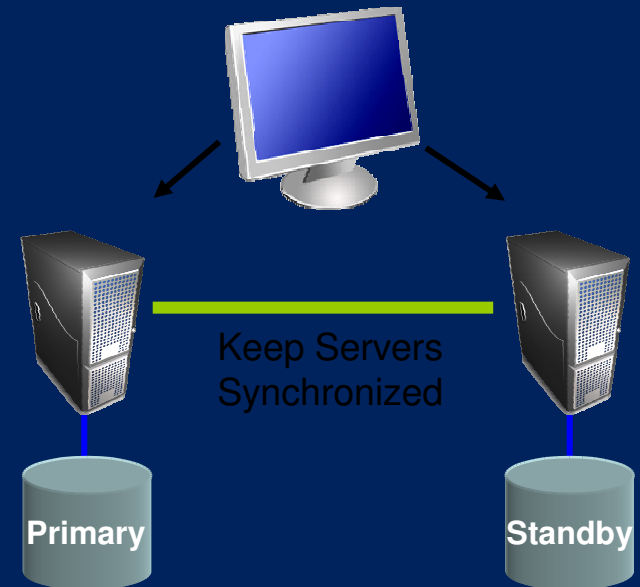
- Understand risks and security issues
  - Auditing redesigned for fast performance
  - Easily find out Who, What, Where, When, and How you may have a breach
- Reduce risk of unauthorized access
  - Precise Control
  - Encryption
  - Label-Based Access Control (LBAC)



“IBM is a definite leader in heterogeneous data integration...”  
—Naomi Rafael, Melbourne Health

# Robust Operation with High Availability

- Ultra-fast (seconds)
- Manage planned and unplanned outages
- Easy to add
  - No rewrite of your application
  - No specialized hardware
  - Setup in only minutes with graphical wizard
  - Systems can be in different locations



“One of the major advantages of DB2 is that we get a disaster recovery solution for our SAP system with HADR at no extra cost.”

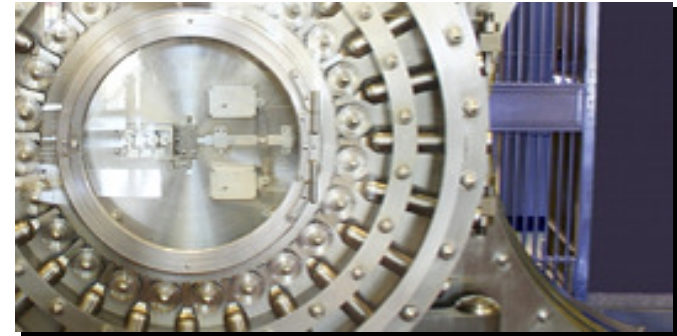
—Gustav Elias, Austrian Railways

# Introducing DB2 pureScale



# Critical IT Applications Need Reliability and Scalability

- **Local Databases are Becoming Global**
  - Successful global businesses must deal with exploding data and server needs
  - Handling change is a competitive advantage in today's IT landscape



*Customers need a highly scalable, flexible solution for the growth of their information with the ability to easily grow existing applications*



- **Down-time is Not Acceptable**
  - Any outage means lost revenue and permanent customer loss
  - Today's distributed systems need reliability

## IT Needs to Adapt in Hours...Not Months



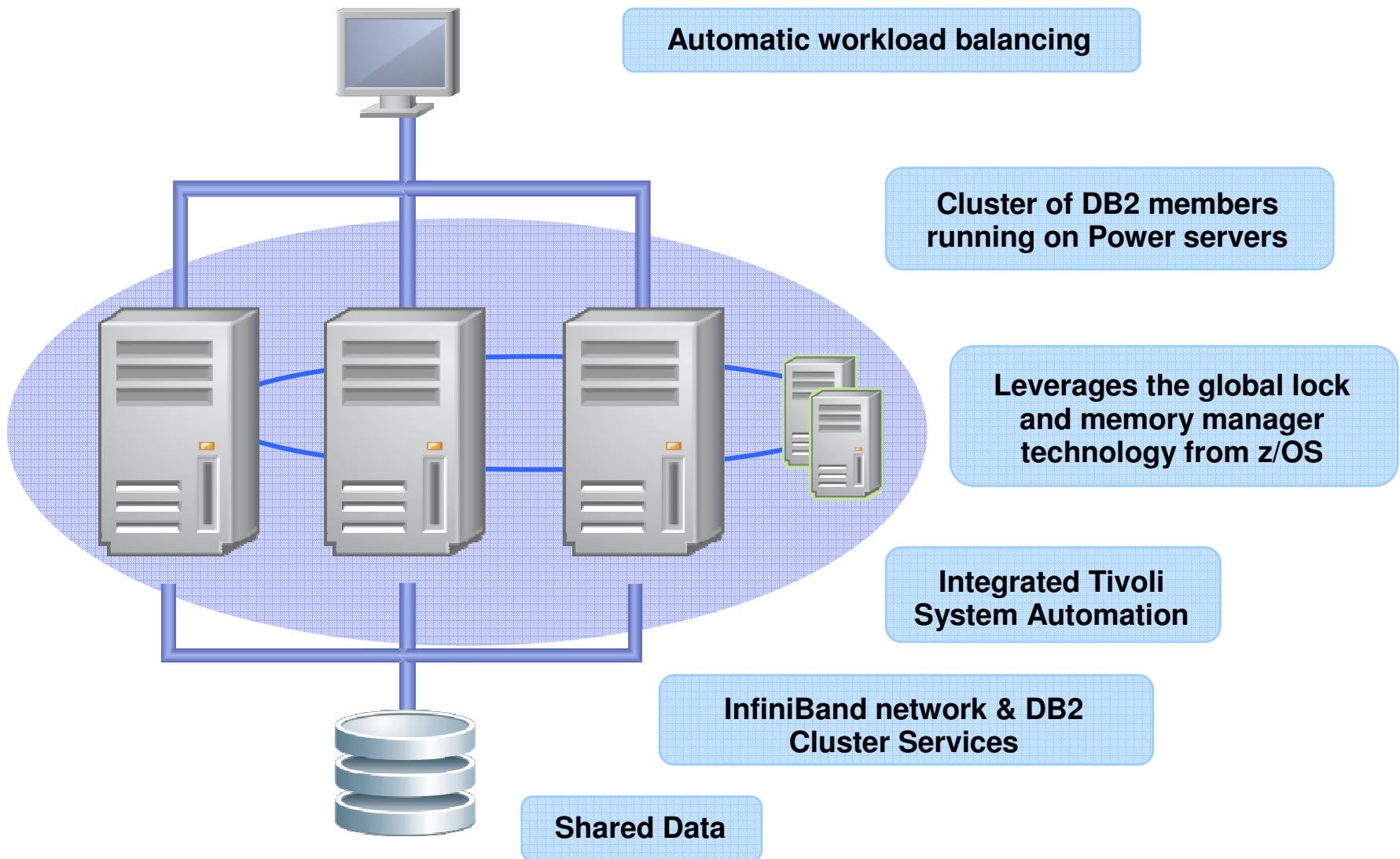
- **Dynamic Capacity is not the Exception**
  - Over-provisioning to handle critical business spikes is inefficient
  - IT must respond to changing capacity demand in days, not months

*Businesses need to be able grow their infrastructure without adding risk*

- **Application Changes are Expensive**
  - Changes to handle more workload volume can be costly and risky
  - Developers rarely design with scaling in mind
  - Adding capacity should be stress free



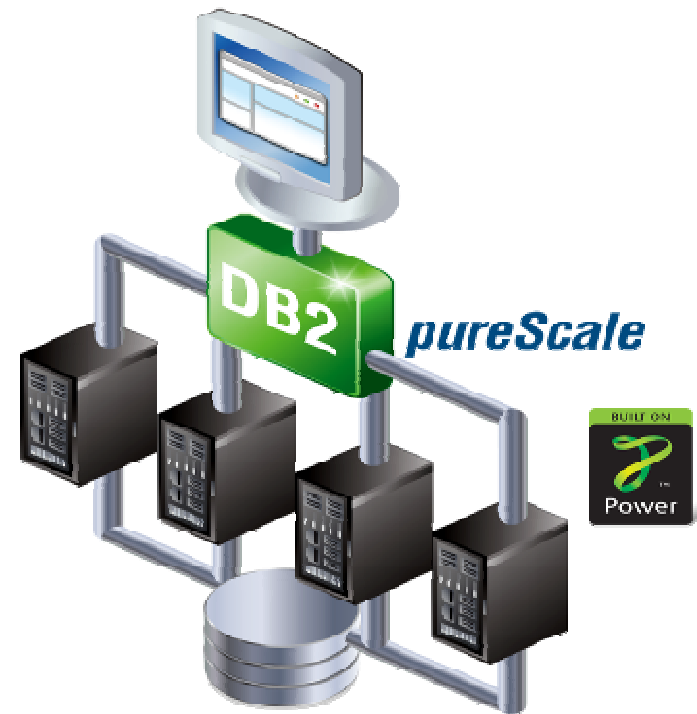
# DB2 pureScale Architecture





# DB2 pureScale

- **Unlimited Capacity**
  - Buy only what you need, add capacity as your needs grow
- **Application Transparency**
  - Avoid the risk and cost of application changes
- **Continuous Availability**
  - Deliver uninterrupted access to your data with consistent performance



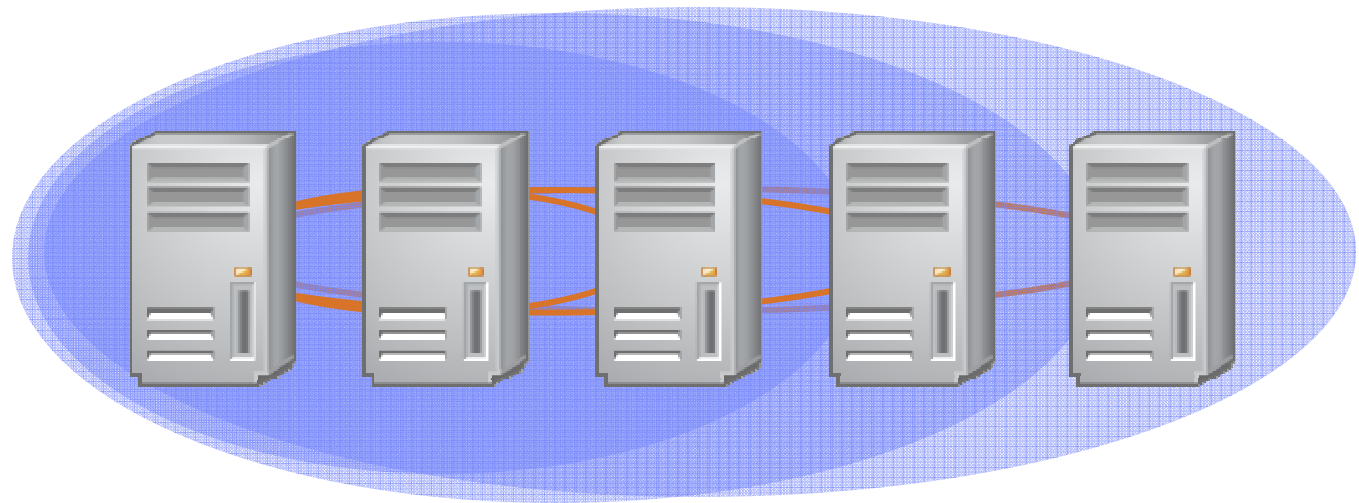
Learn how DB2 pureScale can help you reduce the risk and cost of meeting changing business demands

## Unlimited Capacity

- **DB2 pureScale has been designed to grow to whatever capacity your business requires**
- **Flexible licensing designed for minimizing costs of peak times**
- **Only pay for additional capacity when you use it even if for only a single day**

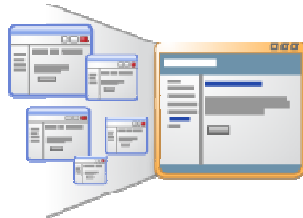
### **Solution:**

Use DB2 pureScale and add another server for those two days, and only pay for the days you use it.

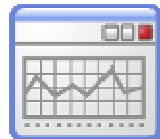


**Over 100+ node architecture validation has been run by IBM**

# DB2 pureScale is Easy to Deploy



Single installation for all components



Monitoring integrated into Optim tools



Single installation for fixpaks and updates



Simple commands to add and remove members

## Summary

- Understand where the REAL Costs of managing your information are.
- IBM continues to develop a portfolio of products that allow you to manage the cost, performance, availability and reliability
- With pureScale IBM introduces the first Mainframe class cluster solution for Unix
- With DB2 9.7 - You have real choice.

**Break Free Now !**



**Thank you!**

# BACK UP

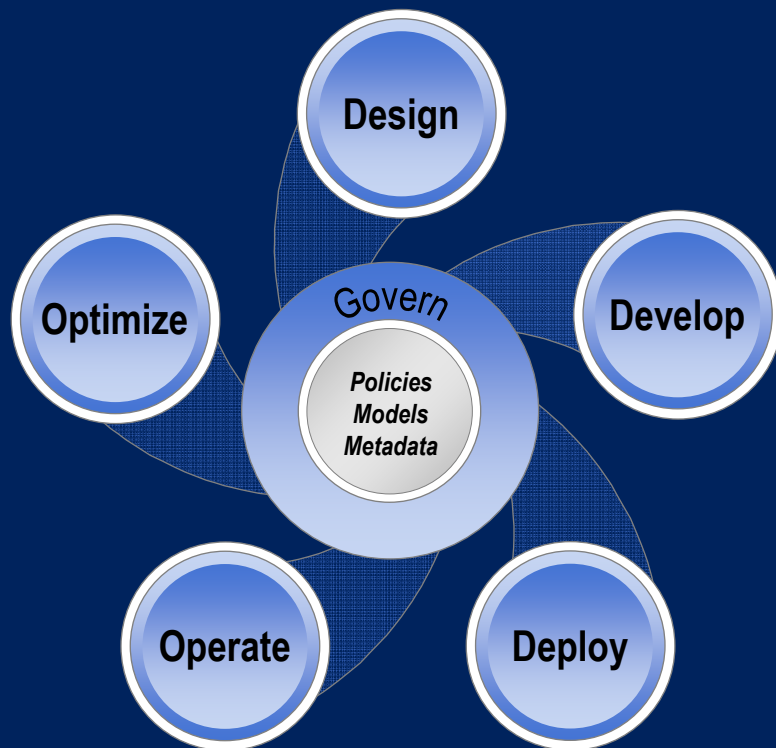
**INNOVATE,  
OPTIMISE  
AND PERFORM**  
FOR SMARTER  
BUSINESS  
OUTCOMES





# Integrated Data Management

*Managing data throughout the lifecycle*



- Deliver Value Across the Data Lifecycle
- Facilitate Collaboration & Efficiency
- Improve Service Levels
- Comply with Data Security, Privacy, & Retention Policies

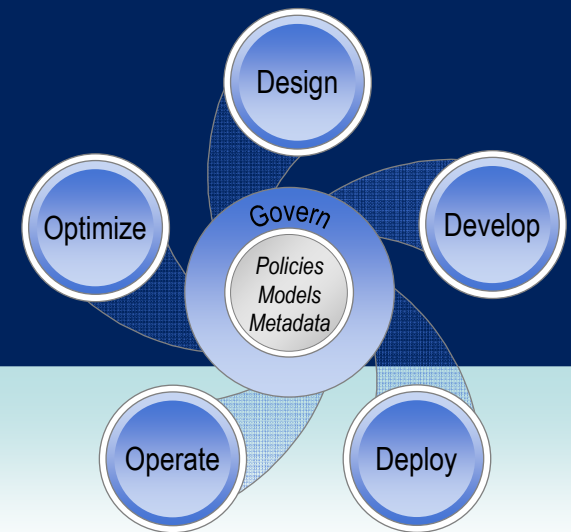
# Listen to What Business Partners Said...

*Fast Return on Investment, Faster Development*

*Easy to Learn and Use*

*“It took us **about a week to migrate the code** to the new environment. The money we’ve invested we got back in about one to two months, and our development will operate **up to 20 to 50% faster** than before.”*

*- Janick Bernet, Developer, Swiss ASP*



# Portfolio Investments

*Lowering end-to-end costs*

**Smarter  
Business Outcomes**



**End-to-end  
Capabilities**

*Financial  
Risk Insight*

*Workforce  
Optimization*

*Dynamic  
Supply Chain*

*Customer & Product  
Profitability*

*Multi-channel  
Marketing*

## **Business Optimization**

**Cognos.  
software**



Business Intelligence  
& Performance  
Management

**InfoSphere™  
software**



Trusted Information  
Management

**Informix.  
software**

**FileNet.  
software**



Data  
Management



Enterprise Content  
Management

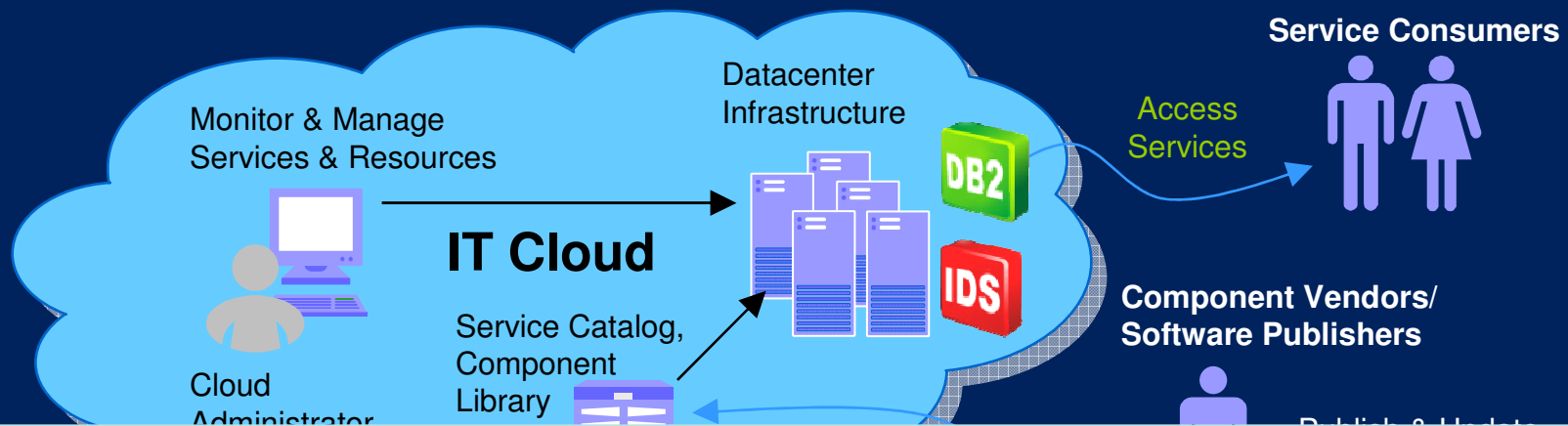
**DB2.  
software**

Information Infrastructure

# DB2 and IDS in the Cloud

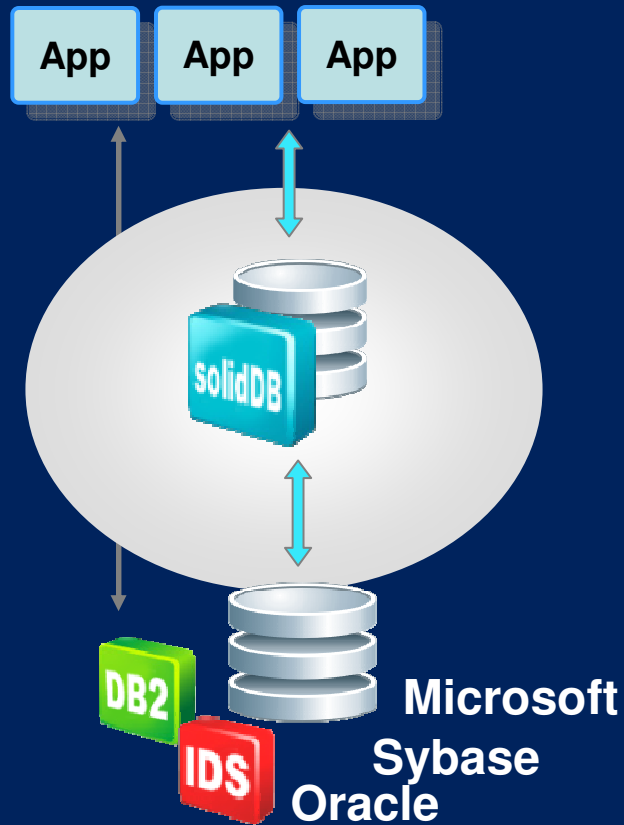
*Ease and speed of deployment*

- Partnership with Amazon Web Services
- Quickly get started using DB2 or IDS
- Pay as you go licensing model



# solidDB Universal Cache

*Accelerates virtually all leading RDBMs for extreme speed*



## The New York Times

IBM Announces Industry's First Universal Database Cache

*"An industry first, **solidDB Universal Cache** relies on relational, in-memory database software to accelerate IBM's own DB2 and Informix Dynamic Server, as well as..."*

FORRESTER®

Forrester Research

*"Caching will be critical over the next 3-4 years with huge applications needing high performance."*

Noel Yuhanna Forrester Research  
August 2008

# InfoSphere Warehouse 9.7

*New Departmental Editions Lower Cost*



## ✓ Save Money

*Greater storage savings with enhanced Deep Compression*

## ✓ Uncover Opportunities

*Simplified analytics and expanded support for XML data*

## ✓ Move Now

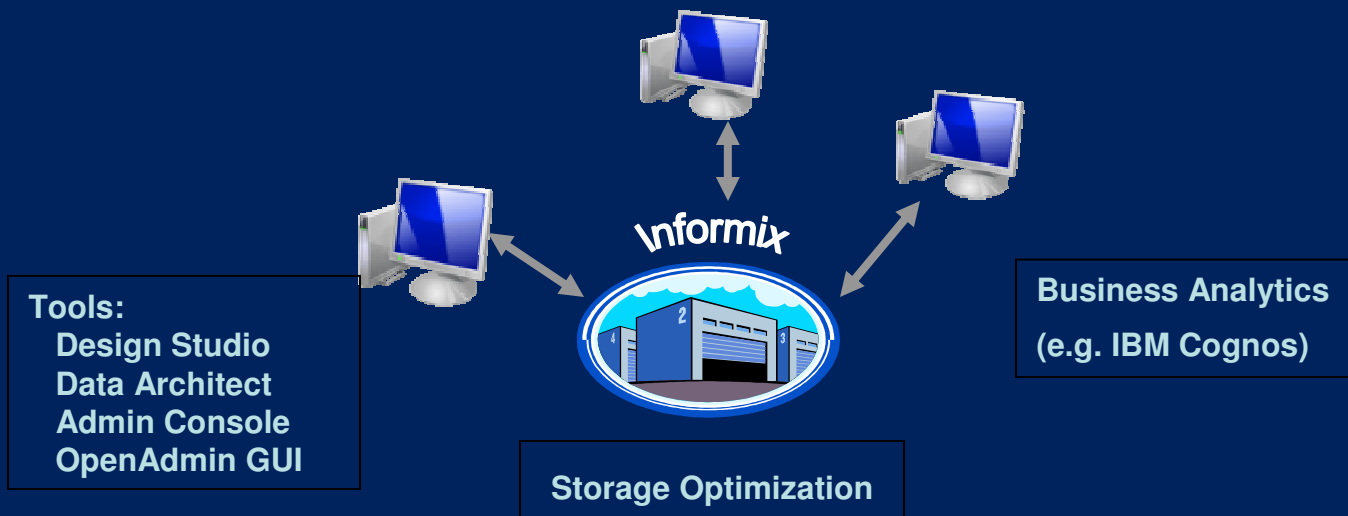
*New technology for rapidly deploying applications, including applications written for other database software*



# Informix Warehouse

*Delivering more value from existing IDS data assets*

- Optimized for Informix
- Create a warehouse in a day
- Utilize existing infrastructure
- Drag and drop design and deployment tools

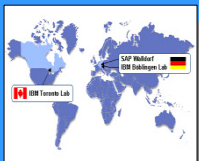


# SAP on DB2 – Long-term Joint Roadmap

*Tight integration lowers costs for customers*

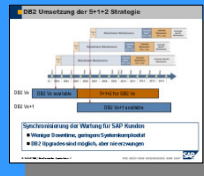
## DB2 Optimized for SAP Software

### Partnership



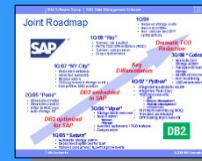
**Joint SAP + IBM teams and cooperation on all levels**

### Product Integration



**One Product, one maintenance strategy and all services**

### Technology Innovation



**Joint Technology plan with focus on SAP**

### SAP runs DB2



**> 1200 internal SAP systems on DB2 LUW**

***SAP and IBM DB2 – A Unique Partnership!***



# DB2 Optimized for SAP – The Roadmap

*Working together to deliver higher value at lower cost*



SAP Next

2010

DB2 Next

2009

2008

2007

2006

2005

1993

**2Q/08 NW 7.0 SR3**  
**3Q/08 NW 7.0 EhP 1**

- Turn-key HA & compression
- Performance Warehouse
- Integrated Workload Management
- Integrated MDC advisor

**DB2 Version 9.7**

- 360° Monitoring
- Even Deeper Deep Compression
- Near-0 Storage Admin
- BI query performance boost

**1Q/07 NW 7.0**

- Embedded database
- Unlimited scalability
- Minimal admin

**DB2 Version 9.5**

- Integrated & automatic HADR
- Integrated Flash Copy
- DPF Scaling Improvements

**2Q/05 NW 2004**

- Streamlined install
- Streamlined admin
- Auto storage EE

**DB2 Version 9.1**

- Storage limits removed
- Near-0 admin
- Compression

**DB2 Version 8.2.2**

- Automatic storage admin
- Deployment optimized for SAP
- Tailored concurrency & perf improvements

**DB2.**  
software

# SAP video

- Cue SAP / IT video

- [http://ibm.cppinfo.net/IBM-DB2\\_SAP/files/IBM\\_SAP\\_DB2\\_short\\_small.wmv](http://ibm.cppinfo.net/IBM-DB2_SAP/files/IBM_SAP_DB2_short_small.wmv)



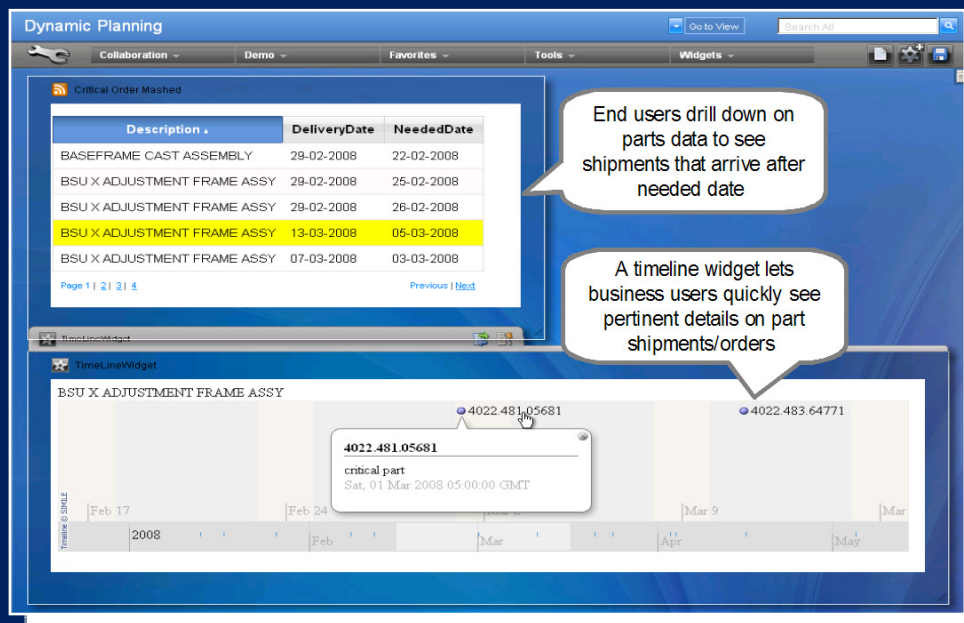
# Mashups: Immediate ROI

*Innovation to advance new technologies to simplify data access*

**\$400,000+ hard annual cost savings from first deployed Mashup**

## Solution:

Provided real-time manufacturing information for semiconductor supplier, mixing enterprise data and external data



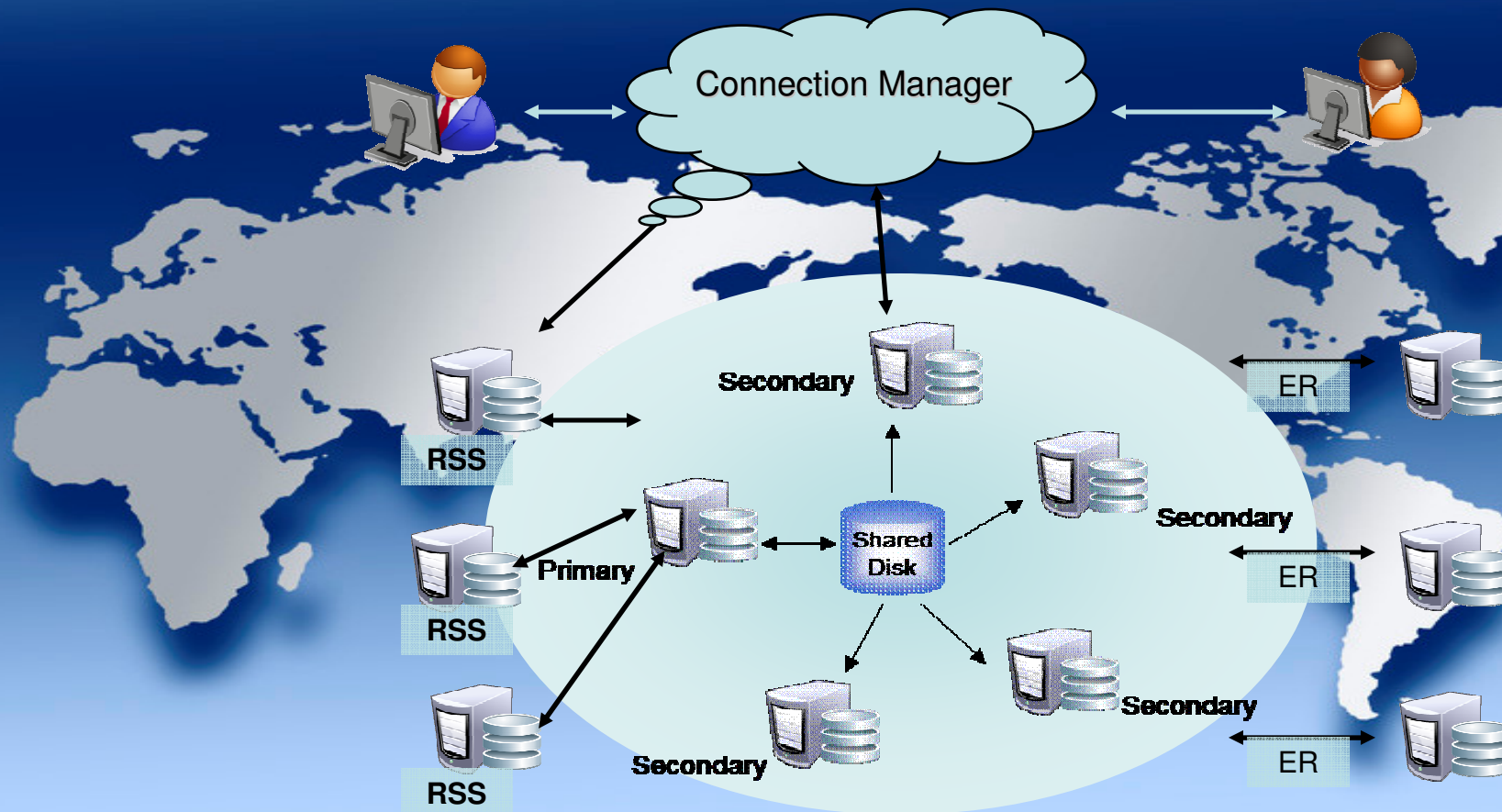
Enterprise Mashups of information from supplier's ERP system and semiconductor manufacturer's portal



# MACH 11: Active Data Clusters

*Innovation for affordable and reliable scale up or scale out*

- ✓ Scale Up or Scale Out
- ✓ Change dynamically
- ✓ Shared disk or remote replicas

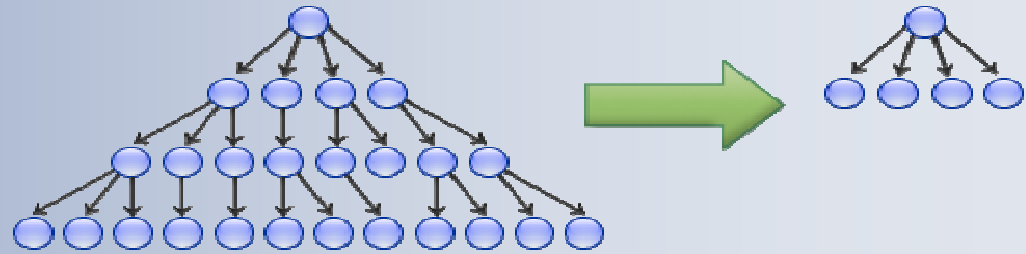


# Compression

*Innovation to Reduce Costs and Improve Performance*

## Index Compression

Automatic,  
Multiple Algorithms



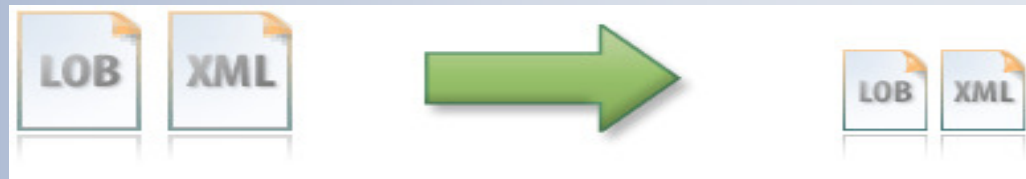
## Temp Table Compression

Automatic



## LOB & XML Compression

Intelligent

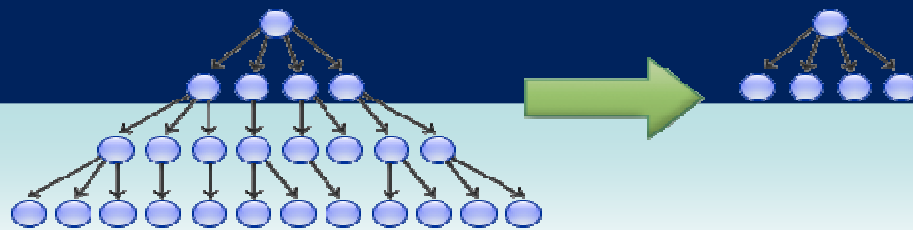


# SunTrust Saves \$2M with Compression

*Innovation with real results - spend less on storage*

*“We're seeing **compression rates up to 83%** on the data warehouse tables. The projected cost savings are more than **\$2 million initially** with **ongoing savings of \$500,000 a year**”*

— Michael Henson, SunTrust Bank, Inc.



# Cobra customer Video

- [ftp://dvsftp.atlanta.ibm.com/Gordon\\_Green/IDUG\\_2009/IDUG\\_2\\_4x3\\_Review.wmv](ftp://dvsftp.atlanta.ibm.com/Gordon_Green/IDUG_2009/IDUG_2_4x3_Review.wmv)
- Reaction to Cobra
  - “It’s great!”
  - “Makes life simple”
  - “We can use all of our DBAs”
  - “This will allow us to Break Free ...”
  - Etc.

# Openbravo

- Customer on stage
- Angle – migration of PL/SQL code
  - Ease of migration
  - Impact on their development
  - Easy



# Openbravo ERP

*Open source web-based ERP system*

- Developed by Openbravo
- Millions of downloads
- Used in over 50 countries



## Currently supported RDBMS

- Oracle & PostgreSQL

## Database Size

- 520 tables
- 400+ PL/SQL routines / triggers

# Migration to DB2 Cobra

*~ 6+ MONTHS*

1. Map schema and data
2. Translate PL/SQL  
*Missing built-in functions & packages*
3. Translate SQL in application code  
*1000's of untyped expressions*
4. Concurrency problems
5. Test and Tuning



*1 WEEK*

1. Map schema, data and SQL
  - **Native support**
  - **99% of SQL compatible**
  - **156 of 158 procedures natively supported**
2. Run your shared code
  - **Native support**
3. Test and Tuning

**With DB2 Cobra, no porting required for new releases**



# IBM Data Management Community

- **User group momentum**

- Lively community activity at worldwide events in April and May
- 240 informative sessions



International DB2 User Group



International Informix User Group

- **XML Challenge**

- 20 countries / 50 workshops / 300 colleges
- Global winners from six countries



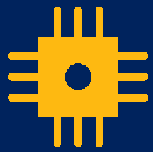
- **Academic Initiative**

- Growing DB2 footprint in universities
- Informix on Campus introduction

**IBM Academic Initiative**  
[ibm.com/academicinitiative](http://ibm.com/academicinitiative)



# The World is Getting Smarter



Our world  
is becoming

**Instrumented**



Our world  
is becoming

**Intelligent**



Our world  
is becoming

**Interconnected**



# The Opportunity for Progress is Clear



**10%**  
REDUCTION IN  
ENERGY COSTS

## Utility Networks

Pacific Northwest  
National Lab



**20%**  
LESS  
TRAFFIC

## Traffic System

Stockholm,  
Sweden



**90%**  
LOWER COST OF  
THERAPY

## Smart Healthcare

ActiveCare  
Network



# IBM Data Management

*Powering a Smarter Planet*

New  
Intelligence



Green &  
Beyond

Dynamic  
Infrastructure

