IBM INFORMATION INTEGRATION
& GOVERNANCE SYMPOSIUM 2012

Delivering Trusted Information for Smarter Business Decisions

Moving With the Times…

Database Technology in Action

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05/01/2012

Disclaimer…

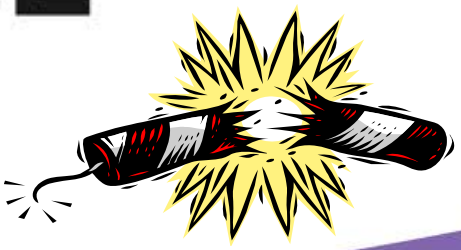
This presentation describes QBE's experience from a technical perspective only and does not necessarily reflect QBE's official position with regard to any operational or management decisions.

Two Important Principles

- “Horses for Courses” - Appropriate Use of Technology
- “Bang for Bucks” - Cost Effective Use of Technology
- DB2 Ticks Both Boxes…

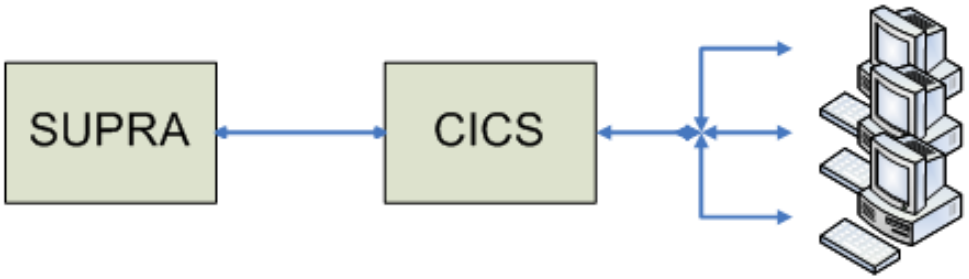
QBE

IBM DB2

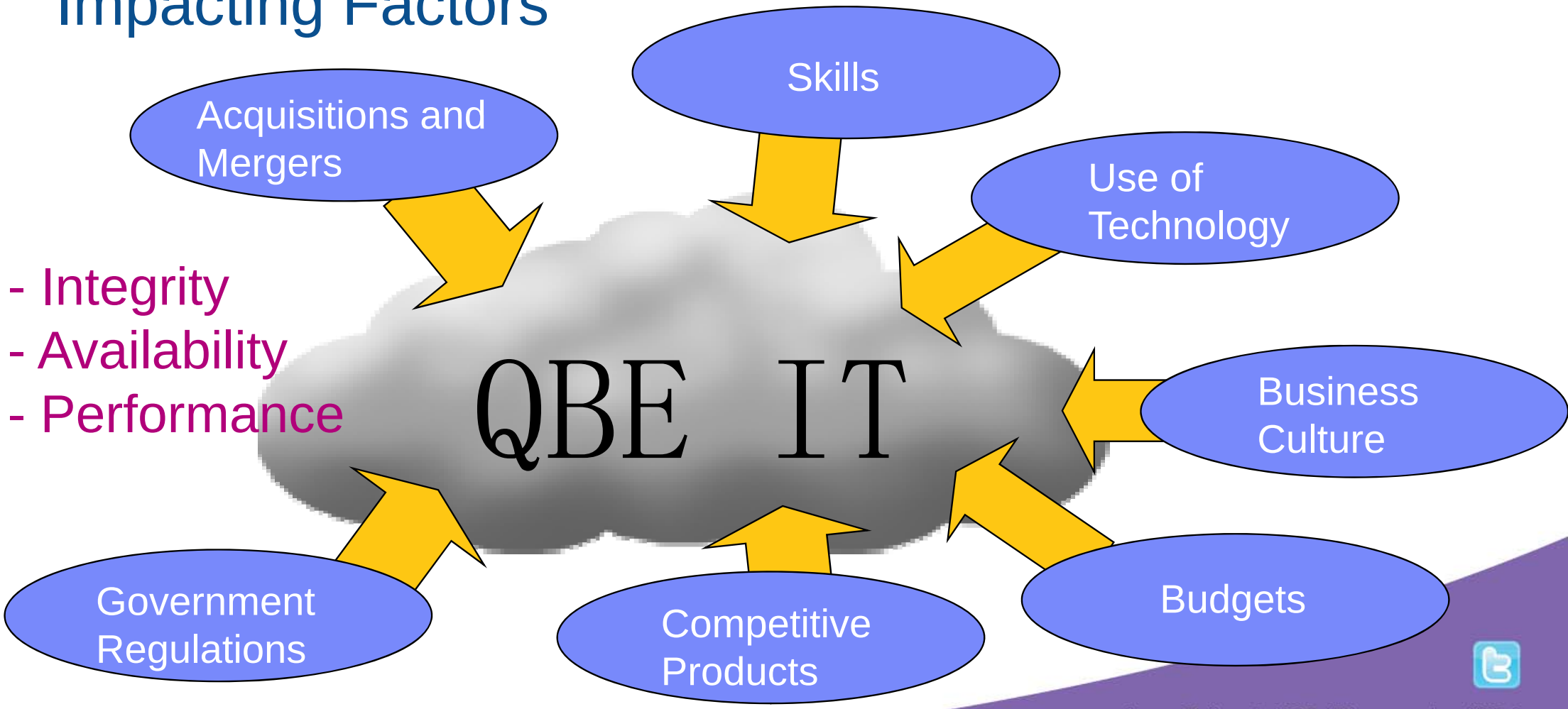


Historical Overview - Life was Simple

- MVS/SP
- Supra Network Database Engine
- CICS
- Green Screen
- SLA 8:00 – 20:00. Monday to Friday



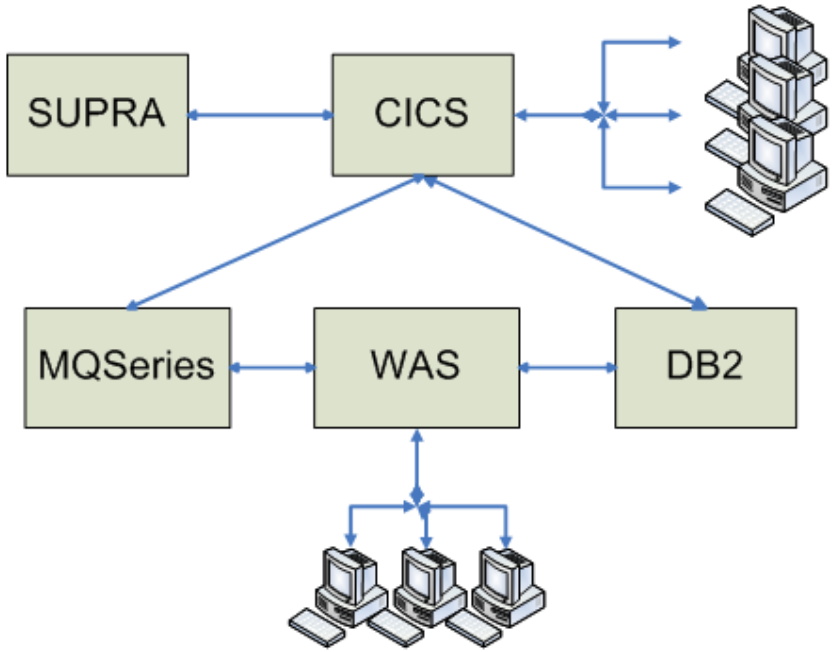
Impacting Factors



- Integrity
- Availability
- Performance

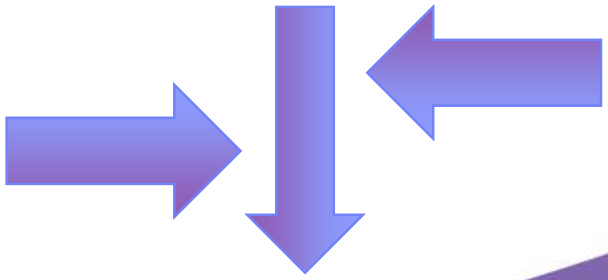
First Steps Engaging DB2 Technology

- Moving to the Web – c.change
- Changing Face of QBE's User Interfaces
  - DB2 for Z/OS (Dynamic SQL)
  - CICS to MQ-Series to Legacy Applications



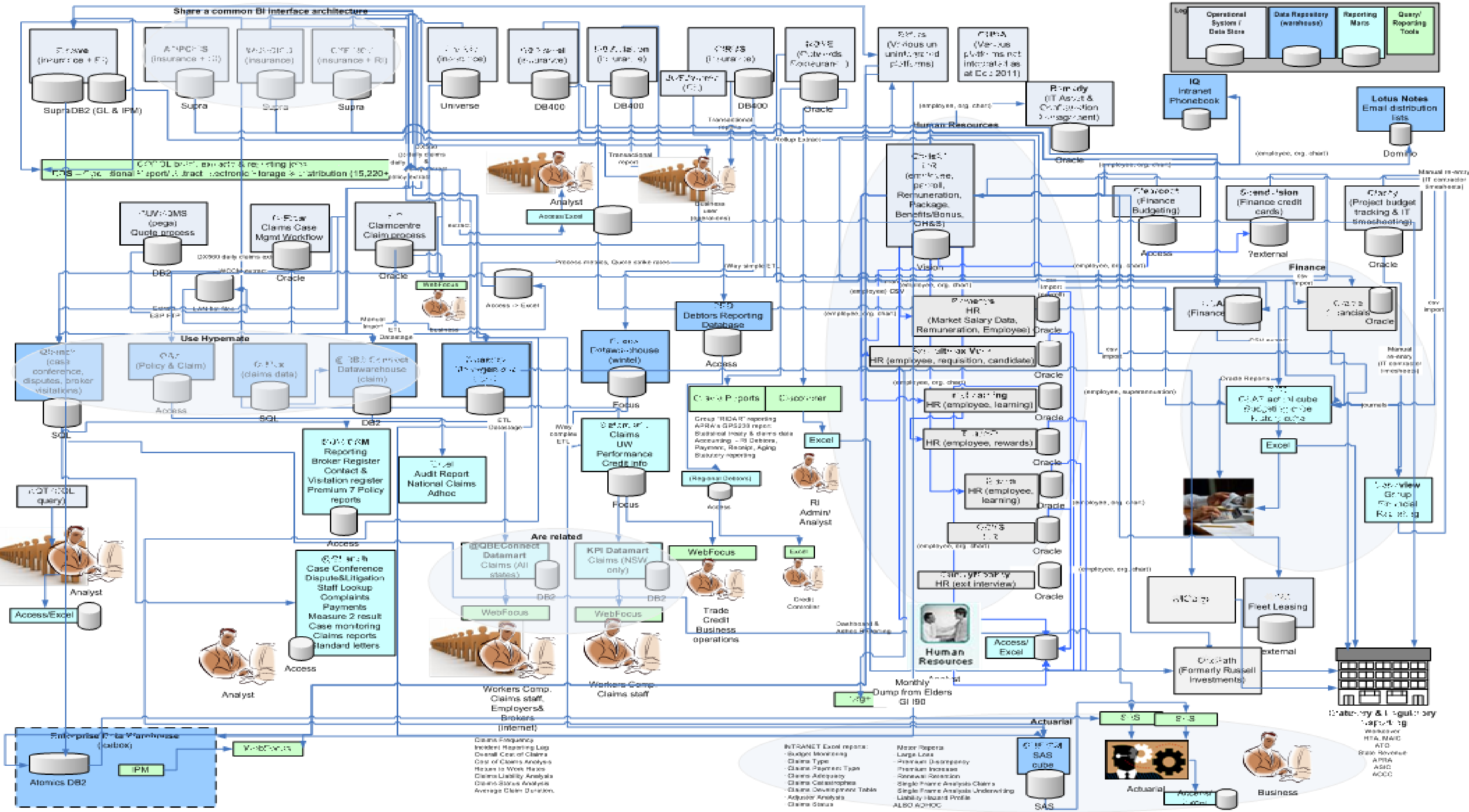
OLTP Consolidation

- Multi-Faceted Business Processes
  - Leveraging Functionality from Diverse Components (Pega, OCS, Claims Centre, Dialogue, etc.)
  - DB2, Oracle, SQL Server, Legacy Applications - all need to communicate seamlessly to provide a business transaction
- MQ, Message Broker - Enterprise Services Bus (ESB)
- Migrating Functionality from Legacy Systems to DB2
- Warehouse Feeds from Multiple Disparate Applications



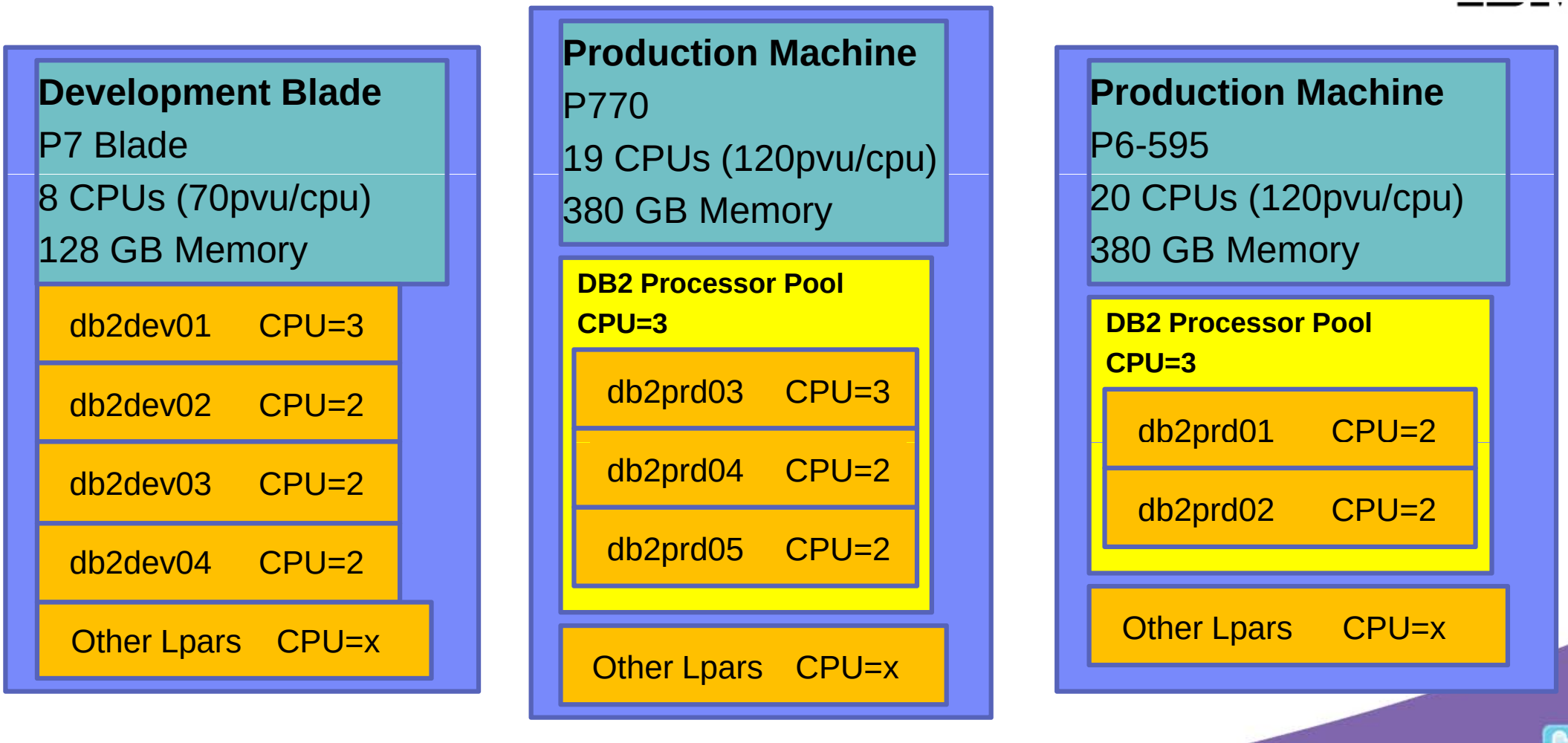
Historical Overview – Now

- 20 Years Later…
  - System Z, i90, P770, EMC
  - Z/OS, AIX, Linux, i90, Windows Server
  - Supra, DB2 for Z/OS, DB2 for LUW, Oracle, SQL Server, DB400
  - MQSeries, WebSphere Application Server, Message Broker
  - DataStage
  - Pega Systems (Business Rules)
  - Guidewire Claimcentre
  - BMC Remedy

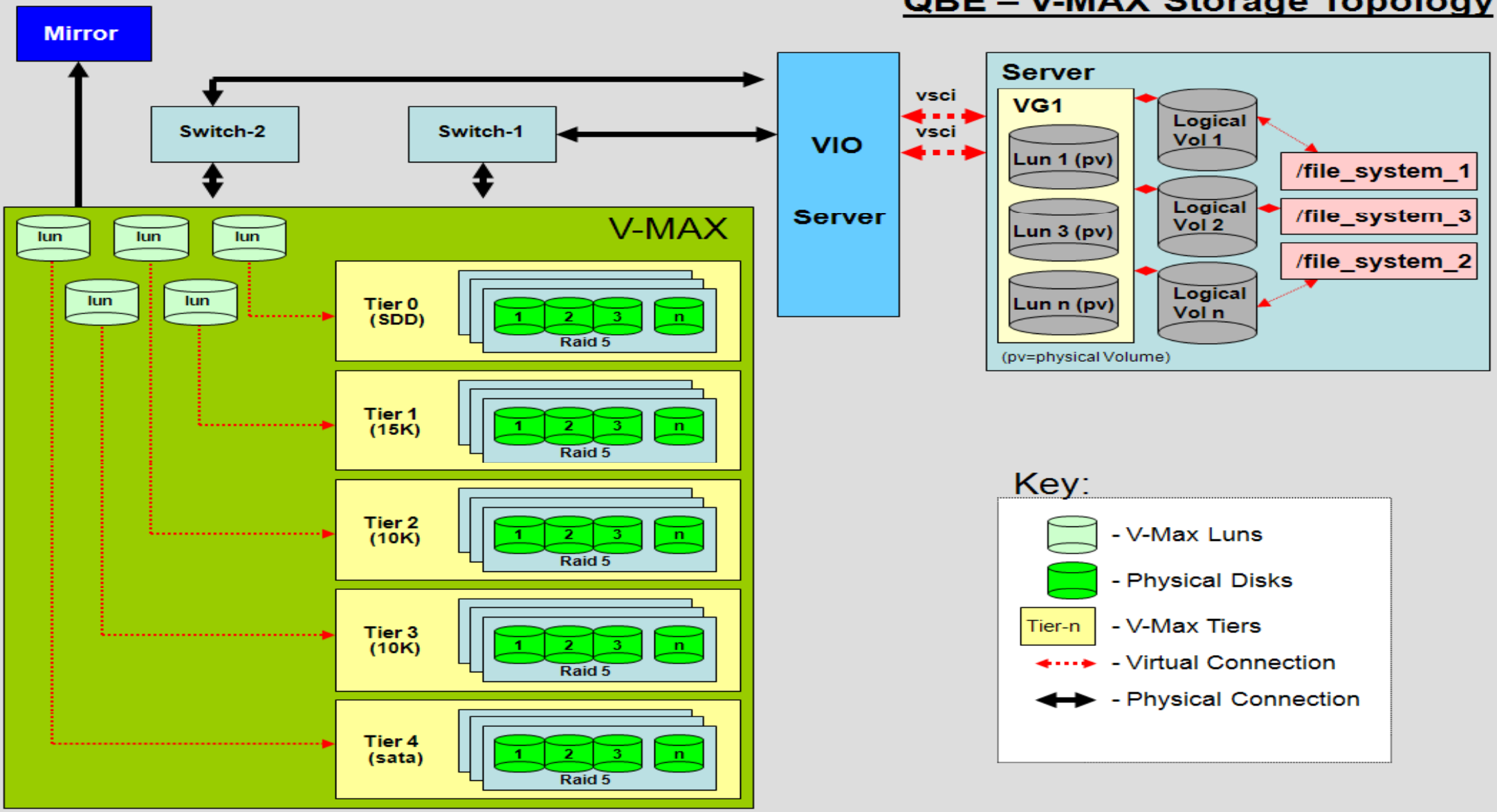

Share a common BI interface architecture
Operational System / Data Store
Data Repository (warehouse)
Reporting Marts
Query/ Reporting Tools
SupraDB2 (GL & IPM)
Supra
Universe
DB400
Oracle
IQ
Intranet
Phonebook
Lotus Notes
Email distribution lists
Domino
Human Resources
Analyst
Access/Excel
(pega)
Quote process
DB2
Claims Case
Mgmt Workflow
Claimcentre
Claim process
WebFocus
Access -> Excel
Use Hypermate
(Policy & Claim)
Access
(claims data)
SQL
Datawarehouse
(claim)
Datawarehouse
(wintel)
Focus
Debtors Reporting Database
Discoverer
Excel
RI
Admin/
Analyst
HR (employee, requisition, candidate)
HR (employee, learning)
HR (employee, rewards)
HR (exit interview)
Vision
Finance
Oracle
7external
(Finance credit cards)
(Project budget tracking & IT timesheeting)
Reporting
Broker Register
Contact &
Visitation register
Premium 7 Policy
reports
Audit Report
National Claims
Adhoc
Claims
UW
Performance
Credit info
Case Conference
Dispute&Litigation
Staff Lookup
Complaints
Payments
Measure 2 result
Case monitoring
Claims reports
Standard letters
Are related
@QBEConnect
Datamart
KPI Datamart
Claims (NSW only)
Trade
Credit
Business
operations
Credit
Controller
Workers Comp.
Claims staff,
Employers&
Brokers
(internet)
Workers Comp.
Claims staff
Monthly
Dump from Elders
GI I90
Human
Resources
Access/
Excel
Fleet Leasing
external
(Formerly Russell
Investments)
Actuarial
SAS
SAS
cube
Business
Enterprise Data Warehouse
(Datbox)
Atomics DB2
IPM
WebFocus
Claims Frequency
Incident Reporting Log
Overall Cost of Claims
Cost of Claims Analysis
Claims Liability Analysis
Claims Status Analysis
Average Claim Duration
INTRANET Excel reports:
Budget Monitoring
Claims Type
Claims Payment Type
Claims Adequacy
Claims Catastrophes
Claims Development Table
Adjuster Analysis
Claims Status
Motor Reports
Large Loss
Premium Discrepancy
Premium Increase
Renewal Retention
Single Frame Analysis Claims
Single Frame Analysis Underwriting
Liability Hazard Profile
ALSO ADHOC
APRA
ASIC
ACCC
ATO
(employee, org. chart)
Manual re-entry
(IT contractor timesheets)
Journals
Process minutes, Quote conke rates
Transactional
report
Rollup Extract
ETL
Datastage
Manual
import
Analyst

Delivering More with Less – DB2

- zSeries - DB2 for Z/OS
  - Large Binary Objects
  - XML
  - Compression
  - Enhanced SQL Functionality (MQT, Star Joins)
- pSeries - DB2 for LUW
  - Virtualised Power Processors (P6, P7 and Blade Centre)
  - HADR – High Availability
- xSeries – DB2 for LUW
  - Intel Processors (xSeries)
  - Data Partitioning Feature
  - Active/Active High Availability Cluster
- iSeries

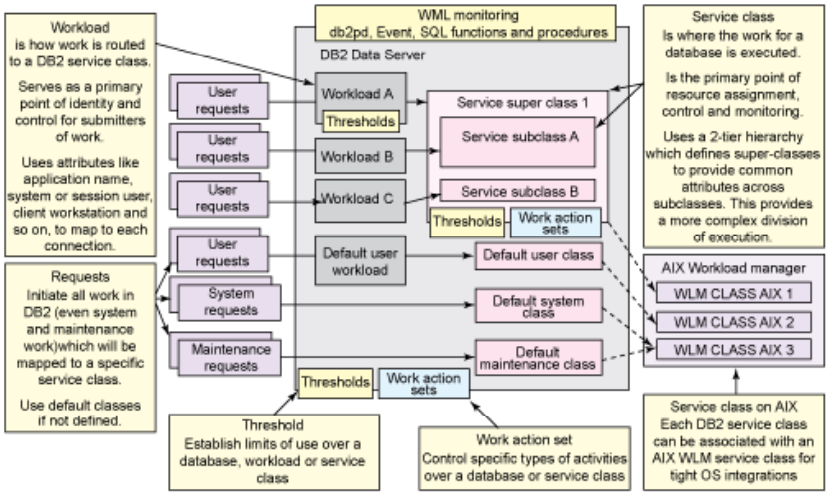


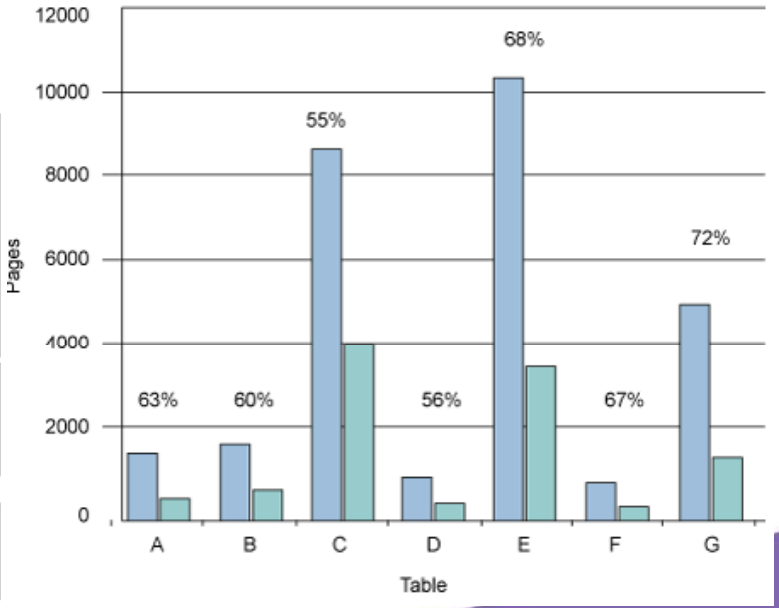
QBE – V-MAX Storage Topology



OLTP Consolidation – $oftware $avings...

- Enterprise Software Agreement
  - Virtualisation of CPUs Allows Leveraging of Pricing
  - Enterprise Server Edition to Advanced Enterprise Server Edition
    - •Workload Manager
    - •Compression





OLTP – Benefits

- Leveraged DB2 Product Licenses via AIX Virtualisation and Processor Pools
- DB2 Compression
  - Reduction of Disk Space
  - Reduction of Backup Times
  - Increased Transaction Throughput
  - More Effective Use of Memory
  - Reduction in Maintenance Window

- Utilising *WebSphere MQ* and *Message Broker* – Enabled Seamless Application Wide Connectivity
- Enables Business Interaction to Systems in a Cost Effective Manner

Does it Work Well Enough?

QBE wins brokers' award Number 10

19 September 2011

QBE has won the National Insurance Brokers Association (NIBA) General Insurer of the Year award for the 10th consecutive year.

The keenly contested award was made at the NIBA Convention opening ceremony in Sydney yesterday.

NIBA
National Insurance Brokers Association

QBE wins top insurer for 10th year in a row

The West Australian
September 19, 2011, 7:28 am

Recommend Tweet Email Print

The West Australian © QBE wins top insurer for 10th year in a row

QBE Insurance has been named top insurer by the National Insurance Brokers Association for a record 10th consecutive year.

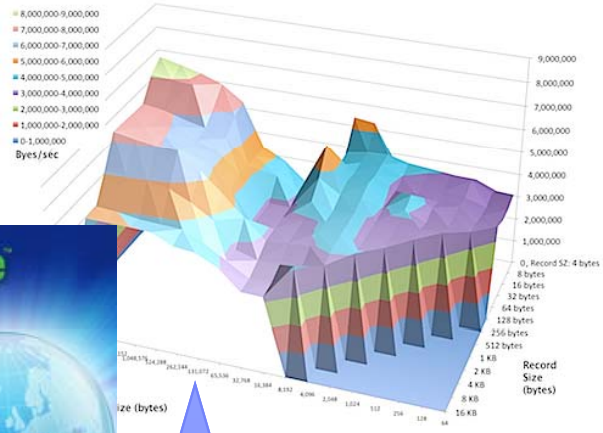
The company was voted best general insurer by NIBA Qualified Practising Insurance Brokers.

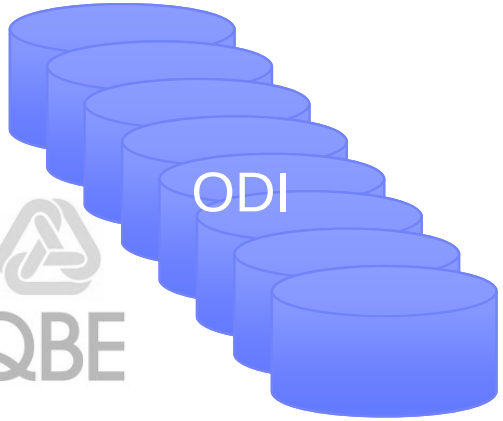
NIBA president David Duffield said brokers were asked to nominate the general insurer they considered performed best overall on the 10 most important service and product factors.

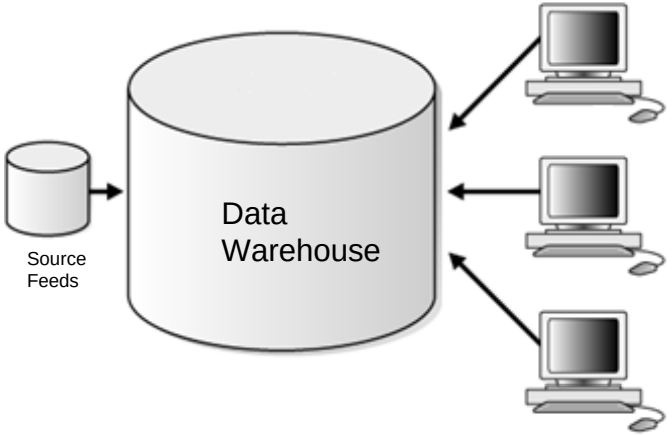
"Only national insurers operating in the broker market were eligible for inclusion in the award," he said.

"The ratings were analysed independently with the winner being the general insurer which received the highest number of nominations.

Warehouse Management with IBM

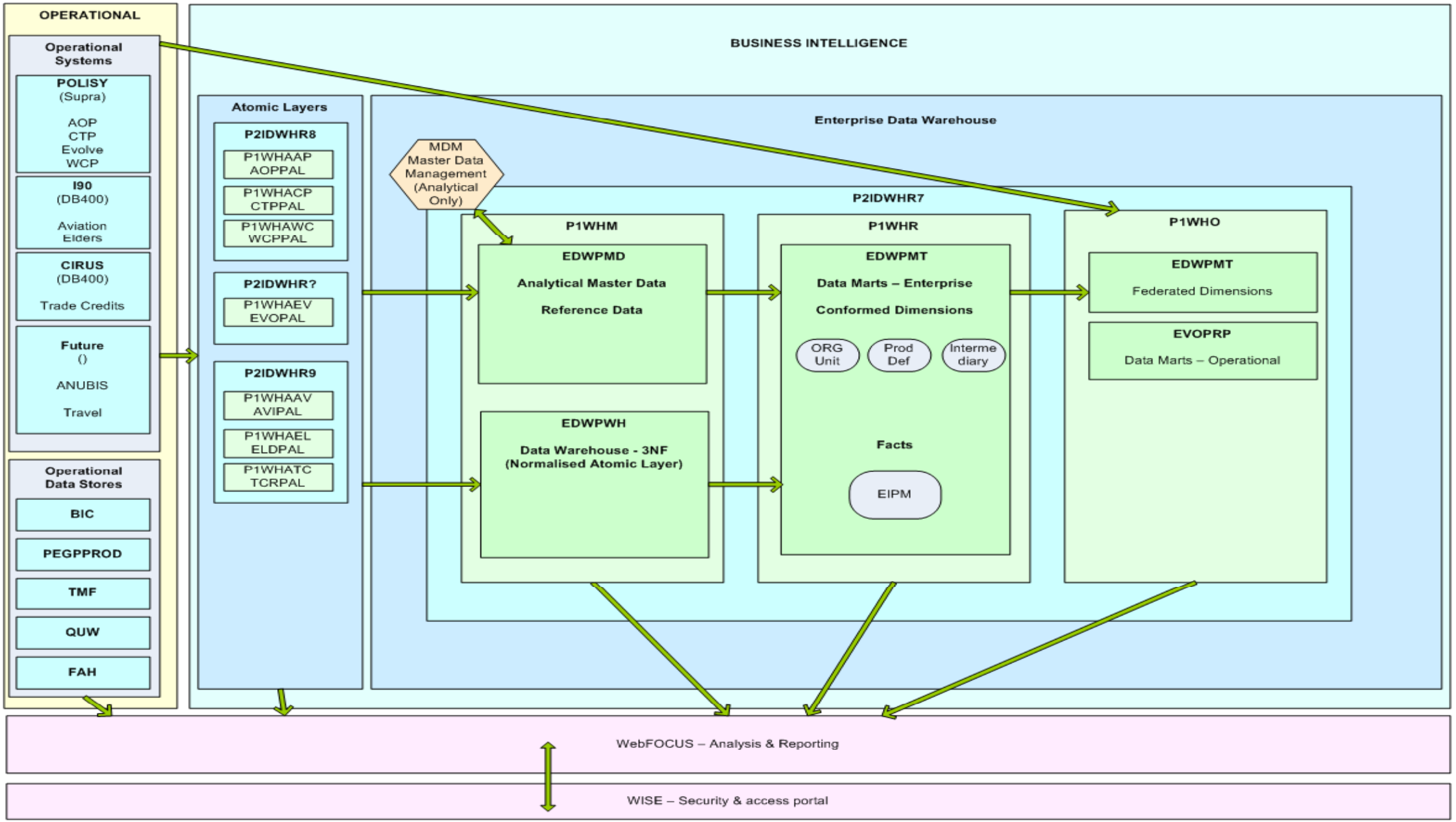






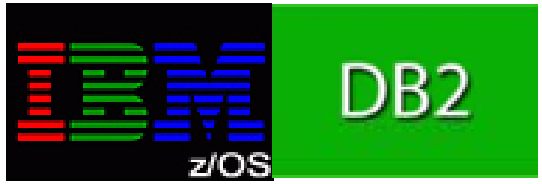
Star
Joins

twitter: Follow @ANZ_IM or mention #IIGS


OPERATIONAL
Operational Systems
POLISY
(Supra)
AOP
CTP
Evolve
WCP
I90
(DB400)
Aviation
Elders
CIRUS
(DB400)
Trade Credits
Future
()
ANUBIS
Travel
Operational Data Stores
BIC
PEGPPROD
TMF
QUW
FAH
BUSINESS INTELLIGENCE
Atomic Layers
P2IDWHR8
P1WHAAP
AOPPAL
P1WHACP
CTPPAL
P1WHAWC
WCPPAL
P2IDWHR?
P1WHAEV
EVOPAL
P2IDWHR9
P1WHAAV
AVIPAL
P1WHAEL
ELDPAL
P1WHATC
TCRPAL
Enterprise Data Warehouse
MDM
Master Data
Management
(Analytical
Only)
P2IDWHR7
P1WHM
EDWPMD
Analytical Master Data
Reference Data
EDWPWH
Data Warehouse - 3NF
(Normalised Atomic Layer)
P1WHR
EDWPMT
Data Marts – Enterprise
Conformed Dimensions
ORG
Unit
Prod
Def
Interme
diary
Facts
EIPM
P1WHO
EDWPMT
Federated Dimensions
EVOPRP
Data Marts – Operational
WebFOCUS – Analysis & Reporting
WISE – Security & access portal

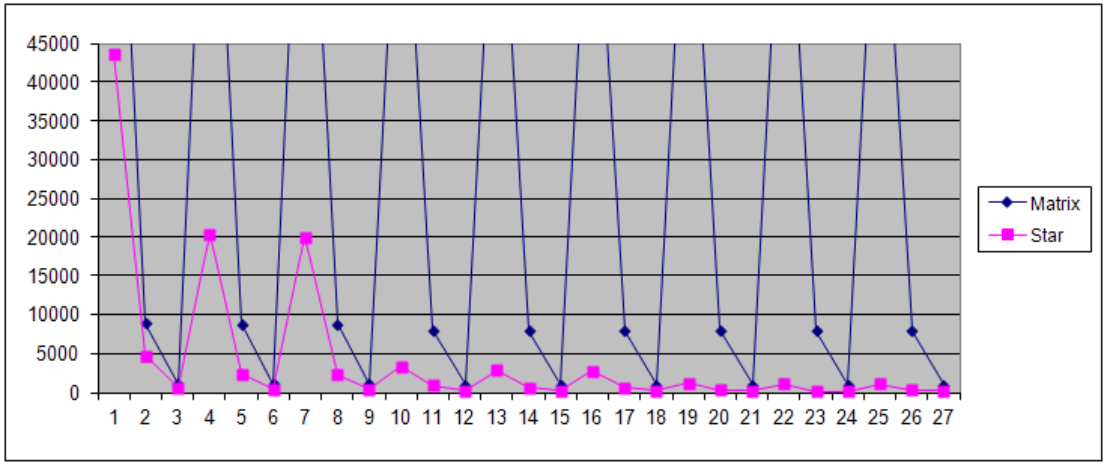
Leveraging DB2 Technology – zSeries

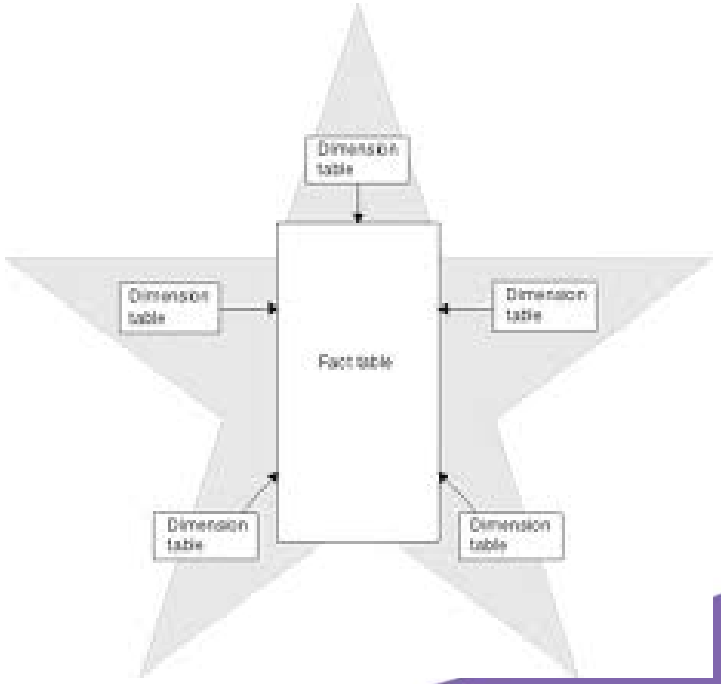
- SUPRA General Ledger in OLTP
  - Actual & Budgeted Figures
  - Viewed by Location, Branch, Accounts and Class of Business
  - 25 GB Data
  - Batch Process 18 Hours to Run – Inflexible and not Dynamic
- DB2 Solution Objectives Were to:
  - Reduce Size of Database
  - Remove the “18 Hour” Batch Process
  - Allow Dynamic Structure Changes
  - OLTP Interface to be as Quick as SUPRA (pre calculated!)
  - A Reasonably Big Ask!!!



Leveraging DB2 Technology – zSeries

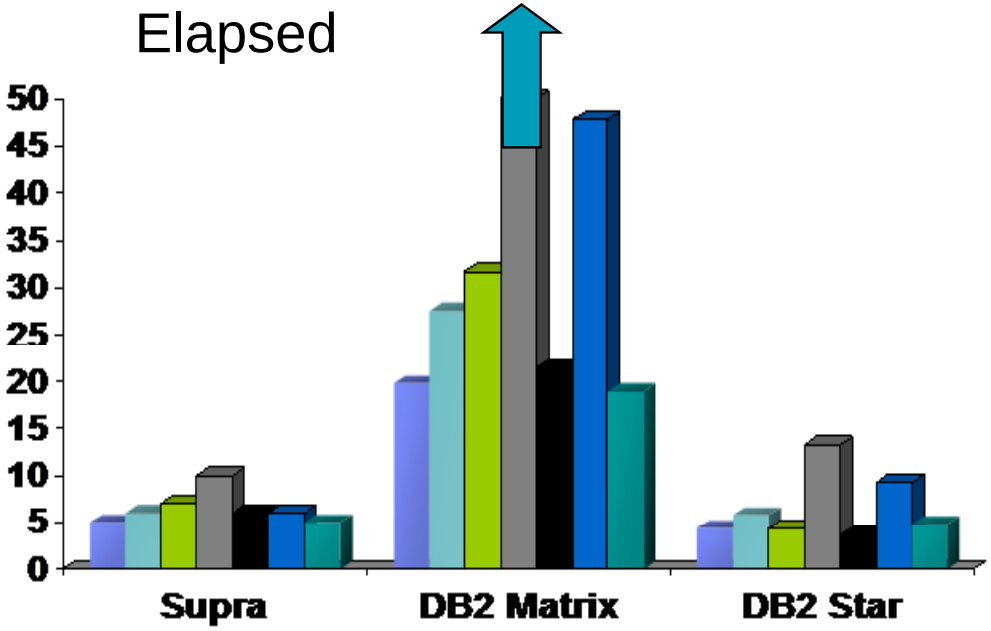
- Utilised DB2 Z/OS
  - Remodelled Table Structure
  - Utilised DB2 Z/OS Star Join Technology
  - Included Hardware Compression on the ZSeries Server



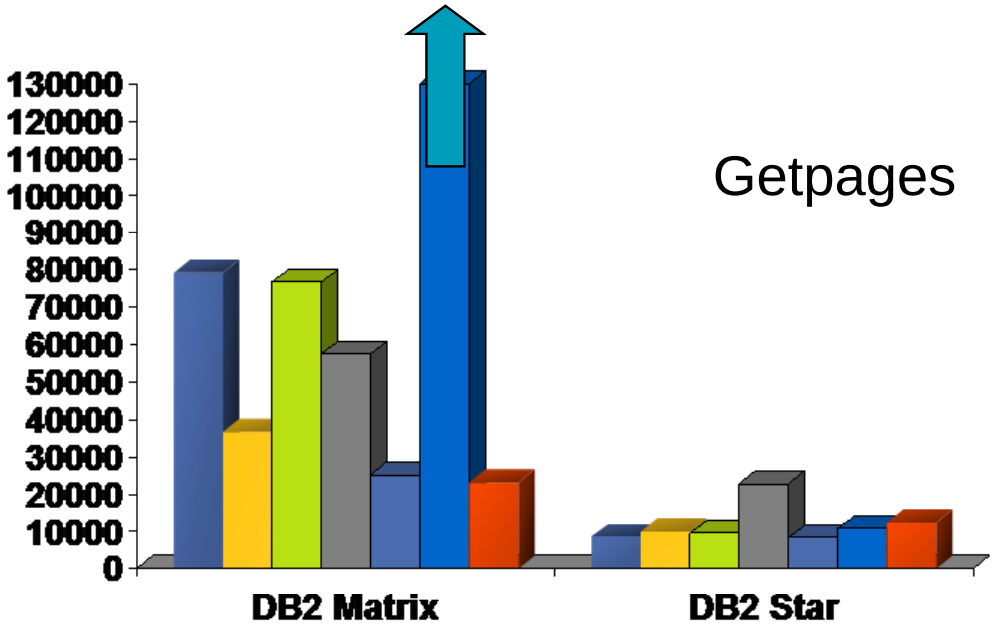


How it Performed:

Elapsed

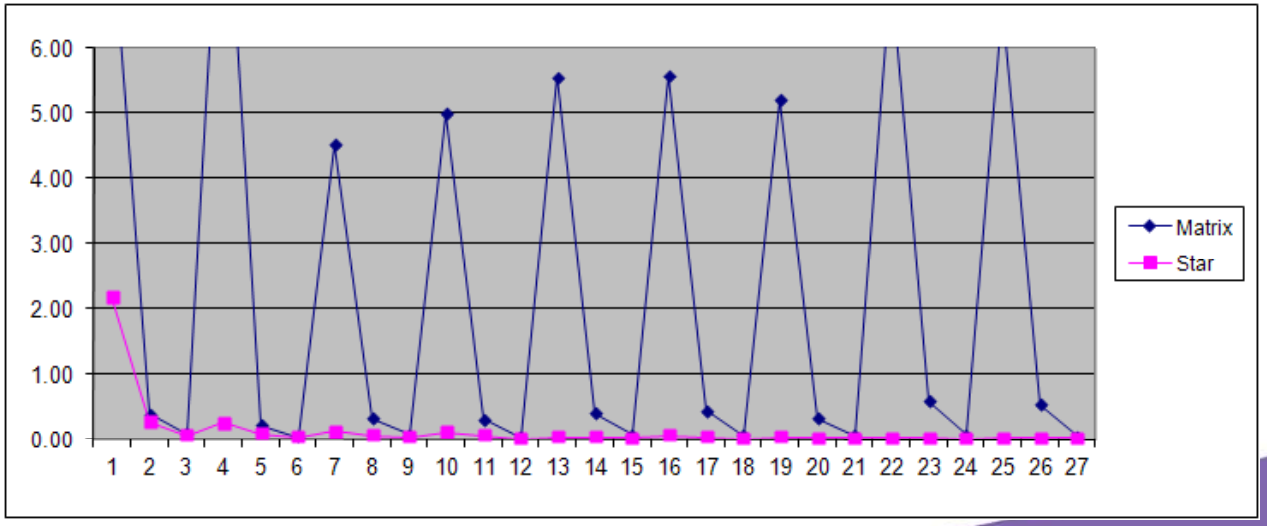


Getpages



Final Outcome

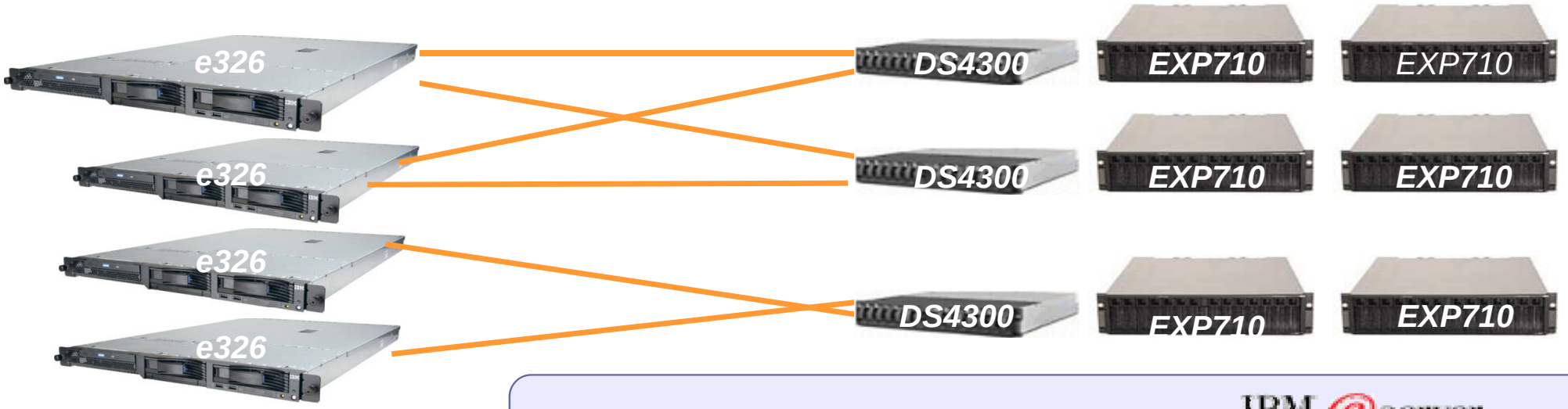
- Database Size – from ~25 GB to ~2 GB
- Online Structure Updates (No long batch processing)
- Very flexible – Multiple Year Views (not fixed)
- In Most Areas it Outperformed the SUPRA Legacy Solution



Leveraging DB2 Technology – xSeries

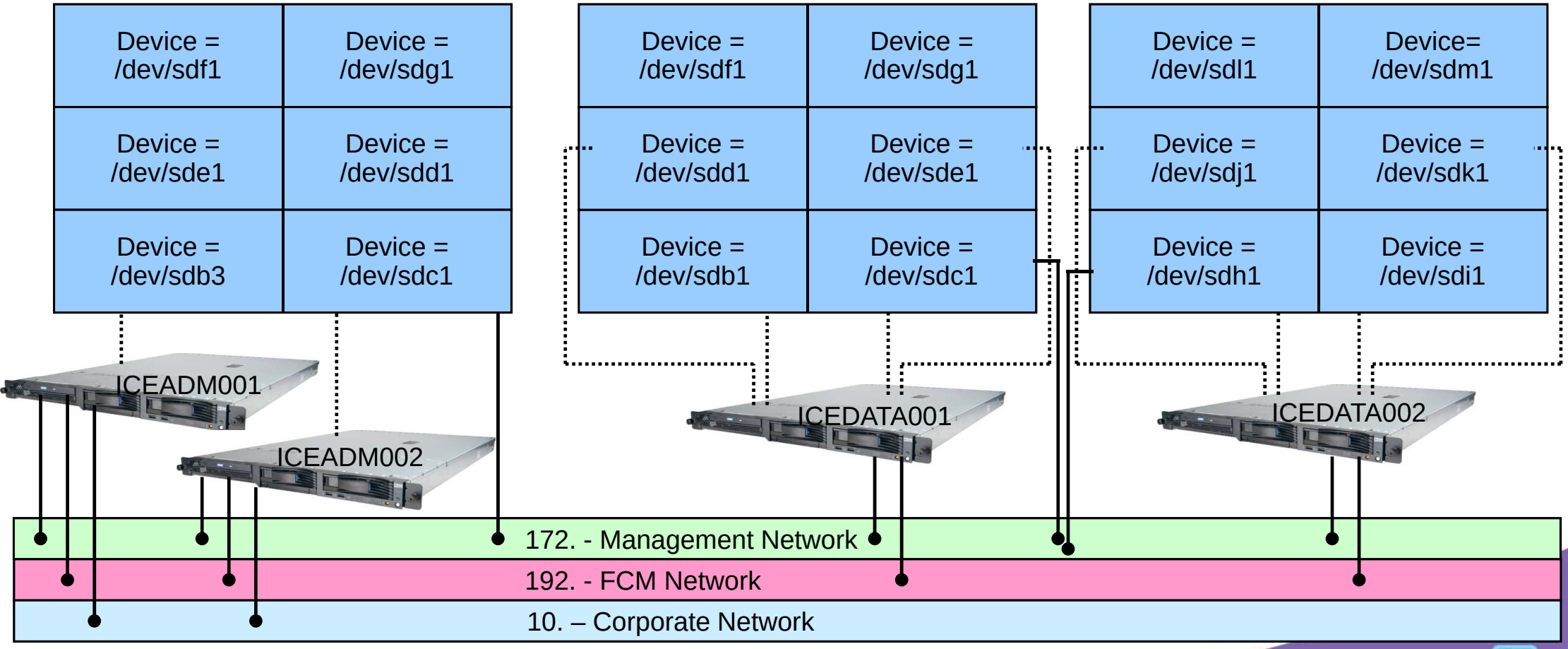
- **Build Ourselves" Option was a Non Starter**
  - High Profile Project : "Someone Else Can Build it"
  - SAN Wasn't Set Up for Dedicated Operation (Big Bucks…)
- **BCU for AIX Running on pSeries**
  - Required 2 x 4 Way BCUs
  - Less Flexible for Our Technology Fit
  - SLA Didn't Demand Higher Availability of pSeries
- **Our Choice : BCU for Linux Running on xSeries**
  - Less Expensive Option (Came in Well Below pSeries BCU)
  - Came in Considerably Below Our Own Build

DB2 on xSeries and DPF -

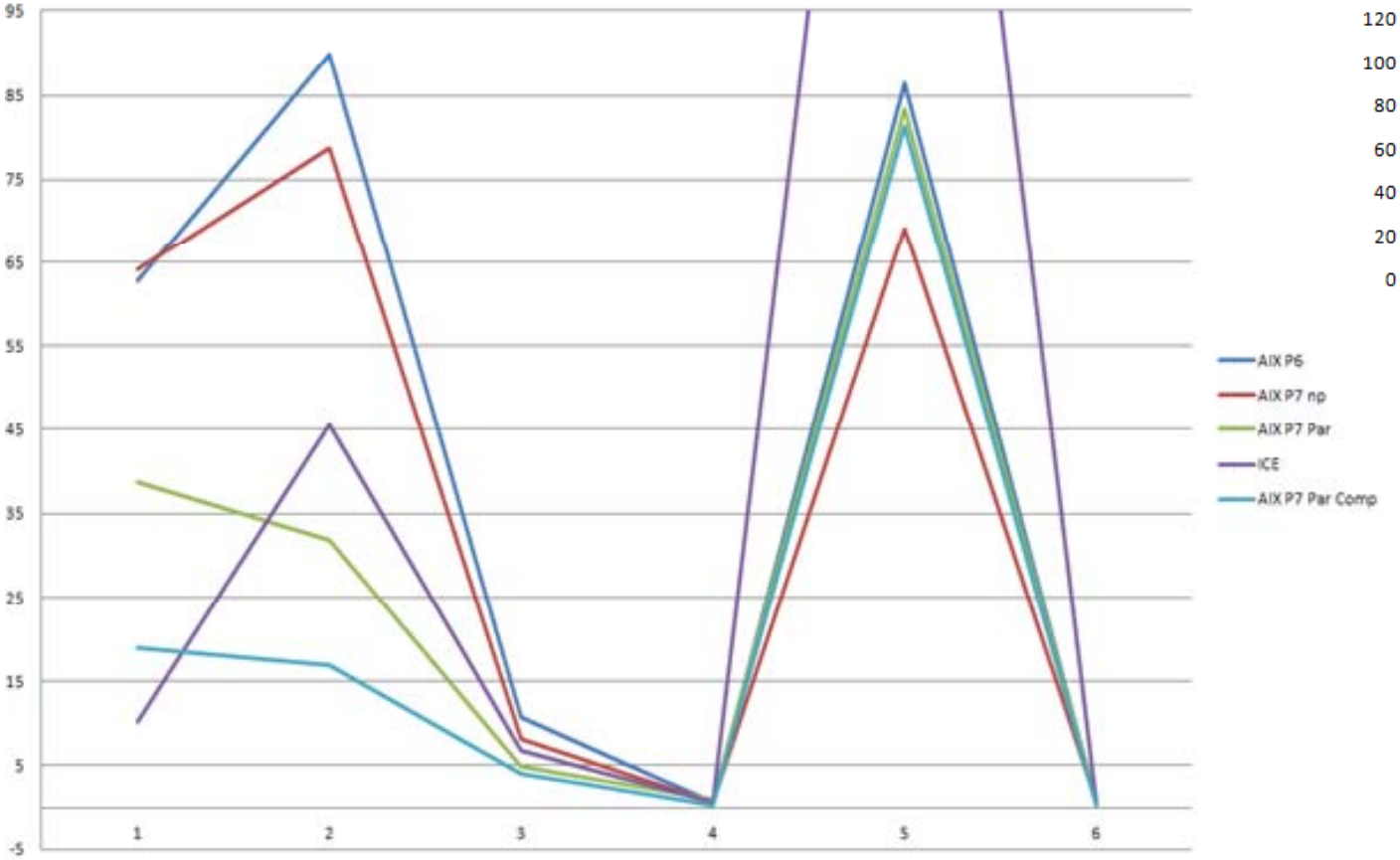


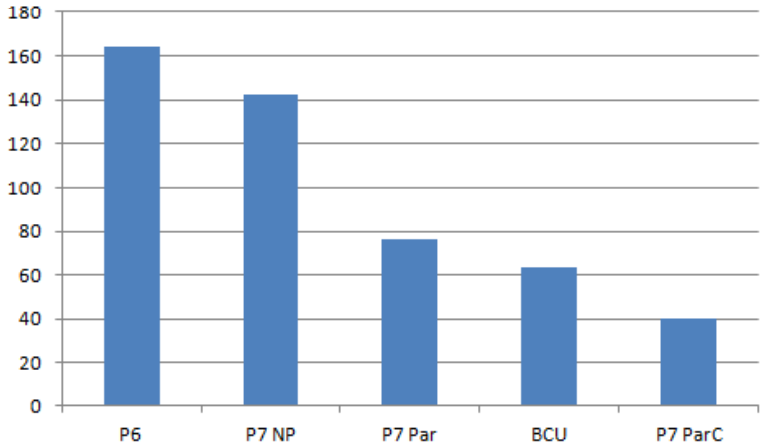
IBM eserver

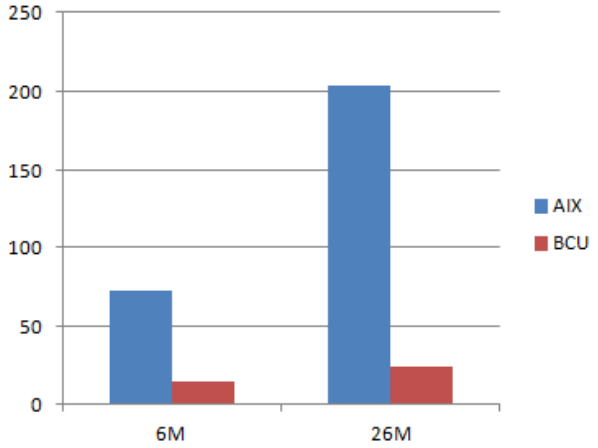
Processors	2 x 2.4GHz dual core AMD Opteron
Memory	2 x 2GB
Disk Controller	1 x Qlogic 2-Gbps 4-port Fibre Channel to PCI-X HBA
Disk Drives	2 x 73.4GB, 10K RPM, Ultra320 SCSI Hot-swap HDD



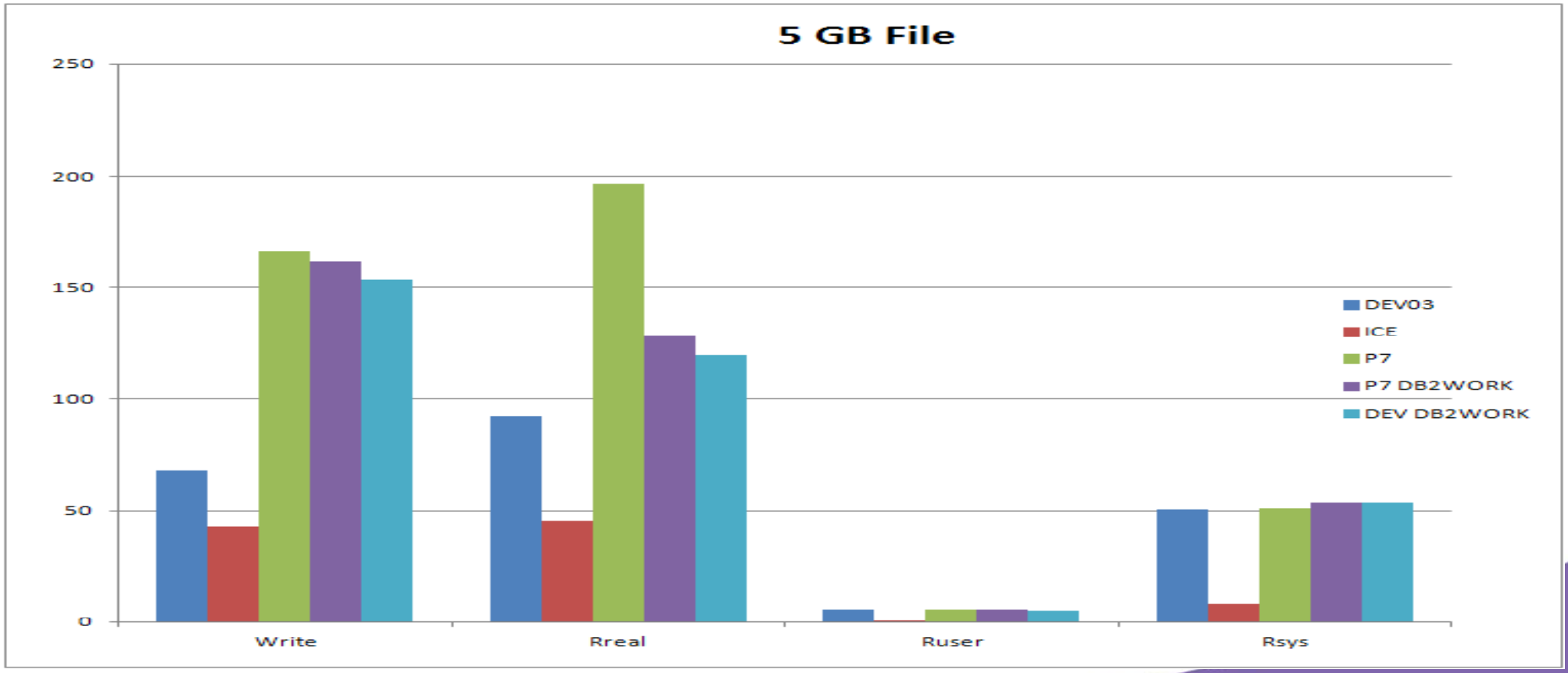
Comparative Query Performance







Disk I/O Performance - Gotcha



BCU Benefits

- Applied Both Horses for Courses and Bang for Bucks Principles
- No Virtualisation of Storage or CPU
- Highly Available Active/Active Cluster
- Scalable
- Exceptionally Cost Effective Utilising Commodity Hardware
- IBM Came, Installed it and it SIMPLY WORKED
- Fantastic Performance Straight Away

OLAP Consolidation – Terabyte Pricing

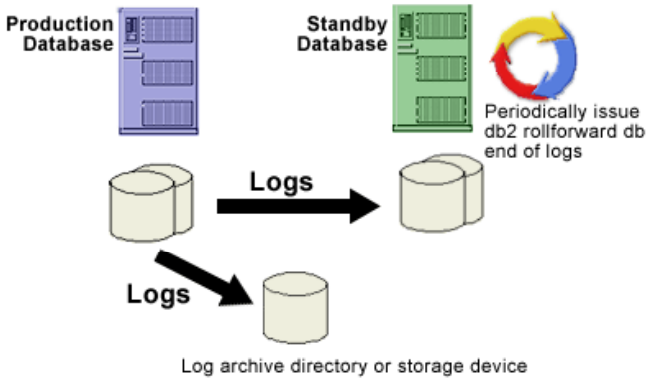
- Traditional PVU Pricing Does Not Leverage Business Value in the Warehouse Space
- Pricing based on Compressed Warehouse Data (excluding indexes!)
- Price Mapped to Data not the Hardware
- Allows Greater Predictability
- Simple to Understand and Transparent
- InfoSphere Warehouse
  - Enterprise Server Edition
  - Workload Manager
  - Compression
  - DPF
- A Smarter Way of Using Technology

OLAP Consolidation – Terabyte Pricing

- IBM x3850 M5
  - 32 Core 2.13GHz processors
  - 256GB Memory (can be expandable to 2TB)
  - 1.2TB Mirrored High IOPS Bus Adapters
- IBM DS3500 Storage
  - DS3524 plus EXP Shelf
  - 48 x 300GB 2.5in 15K 6Gb SAS
- Leveraging DB2 Technology with DB2 TB Pricing

DB2 High Availability

- HADR
  - HADR Setup Straight Forward
  - Cost Effective Approach to High Availability
- Log Shipping
  - How we Moved a 100GB Production Database to a Separate Server and Upgraded it in 10 minutes
  - Easy to Setup and Easy to Manage



Conclusions – Administration and Management

- DB2:
  - 260 Databases on LUW
  - Two DB2 Z/OS Subsystems
  - 7TB of Data
  - 3 Full Time
- Oracle:
  - 60 Databases
  - 26TB of Data (22TB of which is development data)
  - 4 Full Time

Conclusions

- DB2 Provides Cost Effective Data Management
- It is Stable, Flexible and Robust
- Multiple Flavours from Rock Solid Z/OS to Commodity xSeries
- Easy to Manage – Patching is a Breeze with Traditionally Less Vulnerabilities Than Oracle
- Simple Licensing Model
- Tuning is a breeze – no reliance on code change (MQT's, Access Paths, etc)
- Native Integration and Management of XML and SOAP
- Role Based Security and Easy Integration to LDAP
- Multipath Install and Independent of Operating System

Questions???

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