zEnterprise Hybrid Computing in the Real World: Use Case Scenarios and Client References

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Objectives

zEnterprise Hybrid Computing Model Learning for Growth

- Introduce the IBM zEnterprise™ System and hybrid computing model

- Share the Design Points and Business Value for IBM's hybrid architectures and computing model

- Provide examples of internal hybrid computing use case scenarios, case studies, and proof points

- Client's hybrid computing use case scenarios and references

- IBM Global Client Center use case scenarios based on actual client case studies
  - Supporting both IBM clients and ISVs

- Provide a forum for questions and discussions

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zEnterprise Hybrid Architecture
A New Dimension in Computing
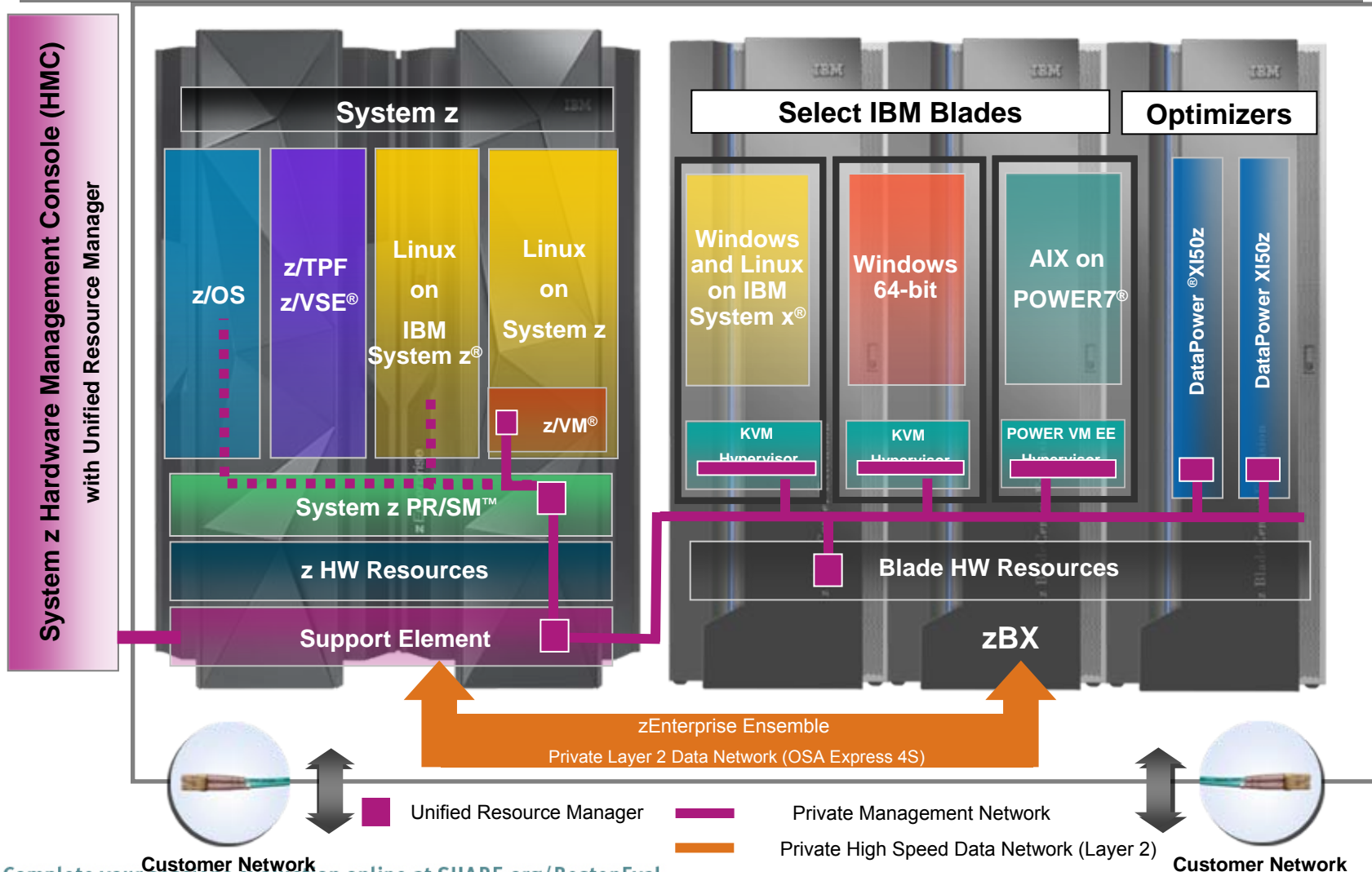
IBM zEnterprise System – Offering Overview

IBM zEnterprise EC12/BC12	**zEnterprise Unified Resource Manager**	**zEnterprise BladeCenter Extension (zBX)**
▪ Optimized to host large-scale mission-critical applications - database, transaction servers	▪ Centralized management extends Mainframe QoS and governance practices to distributed environments	▪ IBM Blades and appliances in dedicated, high performance private network

Hybrid Architecture Building Block Summary

IBM zEnterprise EC12 (zEC12)	IBM zEnterprise BC12 (zBC12)	Management Framework *Offerings*	Integrated Expert Systems® PureFlex	zEnterprise BladeCenter Extension zBX
The next generation of mainframe technology, more performance, more scale, more efficient		IBM **Flex System Manager**	**High Performance Fabric that supports all major distributed Operating Systems**	**A CI Offering that supports selected distributed Operating Systems**
		Unified Resource Manager		

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Positioning the IBM zEnterprise BladeCenter® Extension (zBX) Hybrid System

IBM zEnterprise®

Workload Optimized Systems

Features

- Multiple Mainframe OS Support.

- Multi-Architecture Distributed OS Support.

- Excellent Platform for workloads that favor mainframe servers and require cross-platform workload optimization.

- Strong Mainframe Governance extended to Hybrid resident workloads.

- *Converged Infrastructure* Architecture providing value for mainframe dependent workloads.

Best Fit: *Workloads that have current or emerging mainframe dependencies.*

zEnterprise Cloud
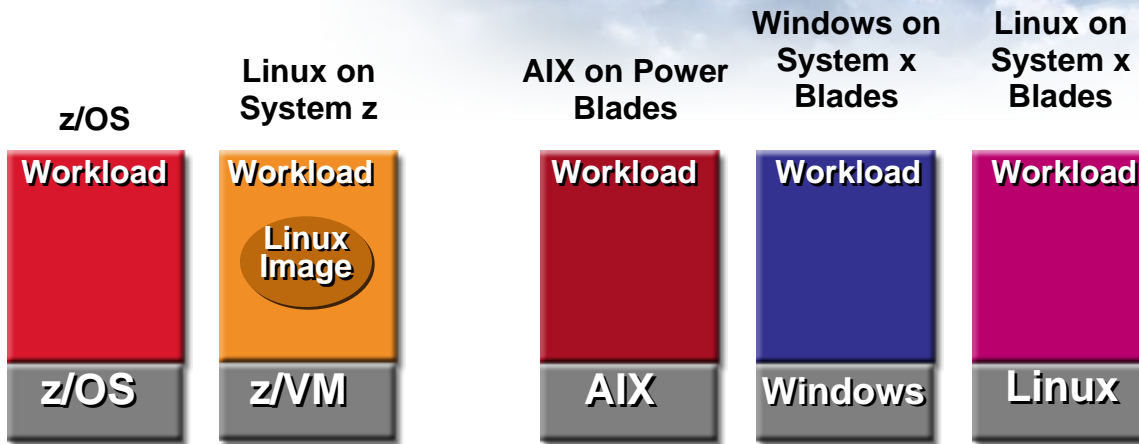## the *Broadest architectural support for private cloud*

Integrated Service Management

- Visibility
- Control
- Automation

Fit-for- Purpose strategy extended to the cloud

- Cloud management for multiple environments

- End-to-end Visibility, Integrated Control and Automation.

- Flexibility to adapt to changes in workload requirements.

z/OS

Workload
z/OS

Linux on System z

Workload
Linux Image
z/VM

AIX on Power Blades

Workload
AIX

Windows on System x Blades

Workload
Windows

Linux on System x Blades

Workload
Linux

zEnterprise zEC12/BC12

zEnterprise BladeCenter Extension (zBX)

Cloud Intersect for the zEnterprise zBX Hybrid System

- **Setup** the cloud management environment
  - Understand the environment - TADDM , zEnterprise Discovery Sensor (GA 2Q/2013)
  - Insure security – Tivoli® Data and Application Security , Tivoli Identity and Access Assurance
  - Create a service catalog – Tivoli Service Automation Manager
  - Set up billing – Tivoli Usage and Accounting Manager
- **<u>Automate</u>** service provisioning and enable self service
  - Self serve portal for service requests – Tivoli Service Automation Manager
  - Obtain or automate approvals - Tivoli Service Automation Manager
  - Provision resources – Tivoli Provisioning Manager , IBM Systems Director
- **Manage** the services to maintain service levels
  - Monitor systems/services – ITCAM family , ITM zEnterprise Monitoring Agents
  - Automated Operations, HA, DR – Tivoli Service Automation (Application Manager & z/OS)
  - Track changes to the service - TADDM
  - Root cause analysis of problems – ITCAM family
  - Managing workloads – Tivoli Workload Scheduler
  - Predictive analytics to improve service – ITCAM family

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Examples of Typical Customer Profiles for the zEnterprise Hybrid Computing Environment

- Clients with multi-tier business applications such as SAP or Core Banking where the data base tier is DB2® for z/OS® and the application servers are on distributed platforms such as UNIX® for the application tier and x86 for the presentation tier

- Clients with multi-tier business applications where the data base runs on Linux for System z and the application servers are on distributed platforms

- Clients with a mainframe as well as a sprawl of older UNIX and NT servers running on competitive platforms

- Clients with a data base on DB2 for z/OS® and possibly data marts on distributed platforms who need to accelerate query performance

- Clients extending their mainframe applications to support web serving

- Clients implementing a Service-Oriented Architecture (SOA) to extend or re-use existing mainframe assets
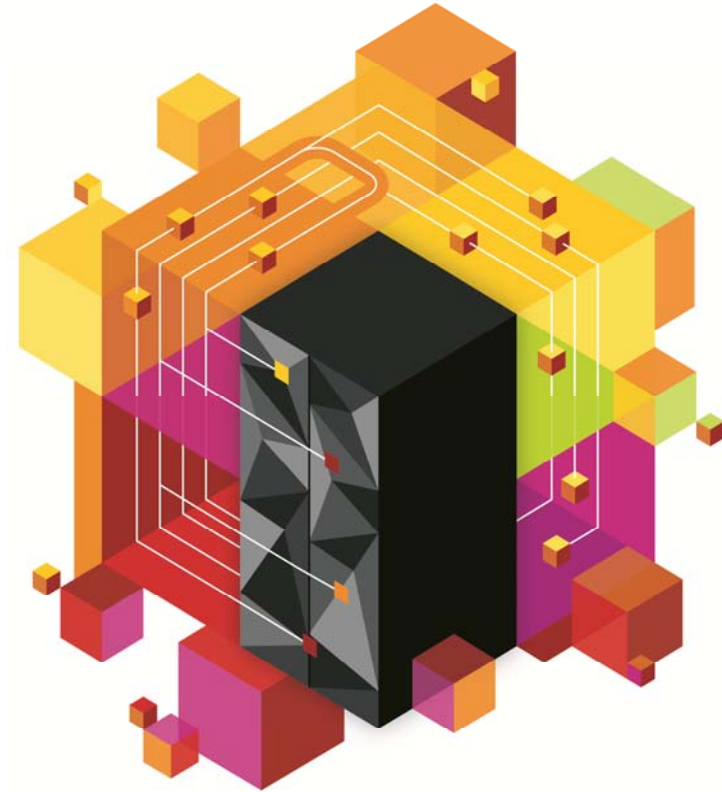
Client Use Case, Profiles and References
zEnterprise Hybrid Computing Model

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University of Palermo
Deploying a powerful hybrid solution from IBM

The need

The University of Palermo wants to maintain its leading position among European institutions by providing students with rapid access to a rich set of online services, delivered reliably and at low cost.

The solution

Working with IBM Business Partner Ricca S.r.l., the university implemented an efficient hybrid solution based on an IBM® zEnterprise® 114 server with IBM zEnterprise BladeCenter® Extension (zBX) – x86 Linux.

The benefit

Streamlined operations help the university keep up with leading European institutions. Increased computing power boosts the speed of online services.

Saved 30 percent on energy consumption.

UNIVERSITÀ DEGLI STUDI DI PALERMO

L'Univercittà
unipa.it

"We have significantly reduced administrative effort, and only need one person to manage our entire data center environment. This has allowed us to re-allocate our resources to more valuable areas of our business, such as developing and improving online applications for our students."

Benedetto Vassallo
IT Systems Manager
University of Palermo

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Health Insurance Institute of Slovenia (ZZZs)

- **Environment prior to zEnterprise**
  - Hub for health insurance claims
    - System z with z/OS, DB2, WAS, and CICS®
  - DataPower XS40 used to secure access to system

- **Challenges / Goals**
  - High security requirements to protect sensitive data
  - Integration with state controlled health insurance applications
  - Integration with private health insurance agencies
  - Migrate existing solution without interruption to service

- **Environment with zEnterprise**
  - IBM zEnterprise 196 and zBX
  - IBM DataPower XI50z replaced XS40
  - IBM DataPower XI50z now acts as security gateway

- **Benefits**
  - XI50z deployment benefits from secure 10 Gbps IEDN
  - XI50z blades managed by Unified Resource Manager
  - Straight forward migration from XS40
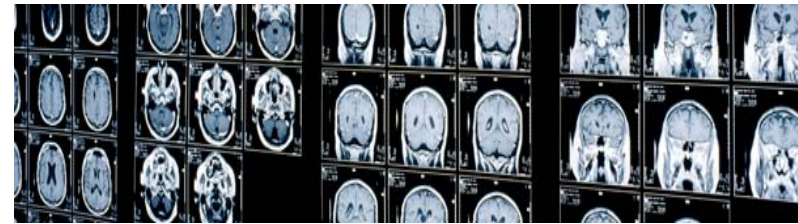
With System z, Organizations Can…
Modernize delivery - of Healthcare insurance services

The Health Insurance Institute of Slovenia (ZZZS)

The CHALLENGE:
Existing systems were costly, resource intensive and time consuming

The SOLUTION:
Modernize to an integrated paperless system that integrates healthcare insurance, billing and statistical systems

Why it matters:
Instant access to healthcare information enables faster treatment and increases productivity of healthcare professionals

Integrating multiple systems removes administration overheads

An integrated and modular system allows future expansion for e-receipt and electronic card to be made efficiently and seamlessly

http://www.youtube.com/watch?v=0eCMxZYra3c
http://www.youtube.com/watch?annotation_id=annotation_708456&feature=iv&src_vid=0eCMxZYra3c&v=KFhZwe_bu6U

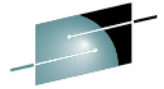Complete your sessions evaluation online at SHARE.org/BostonEval

Health Insurance Institute of Slovenia
Enabling new heterogeneous computing capabilities while preserving mainframe investments

The need

HIIS's introduction of an online application for medical insurance placed significant demand on the existing infrastructure. HIIS wanted to upgrade its mainframe to ensure reliable operation of all its mission-critical systems, while maintaining continuity for its legacy applications.

The solution

HIIS replaced its existing IBM® System z10 Enterprise Class with the new zEnterprise™ 196. It uses the zEnterprise BladeCenter® Extension to support select IBM blade servers and workload optimizers, and zEnterprise Unified Resource Manager to provide cross-platform management tools for the entire zEnterprise ensemble.

The benefit

Maintains continuity for applications, ensuring that there is no interruption to key business processes.

Provides an efficient, high-performance platform for mission-critical applications, helping HIIS maintain high levels of service.

Offers a highly secure and stable environment for processing and managing patient information

"In terms of financial value, IBM zEnterprise System was the most rational decision for us: It gives us a platform for all the services we need in the future, providing more computing resources for less money."

—*Samo Fakin, CEO, HIIS*

Solution components:
- IBM® zEnterprise™ 196
- IBM zEnterprise BladeCenter® Extension
- IBM zEnterprise Unified Resource Manager
- IBM DataPower® X150z

ZSP03538-USEN-00

Marist College

The need
To advance its reputation as a technology leader, Marist College needs to provide students, faculty and industry partners with cutting-edge computing systems, capable of supporting diverse needs.

The solution
Marist upgraded to the next generation of mainframe technology, deploying the IBM® zEnterprise® 114, featuring an IBM zEnterprise BladeCenter® Extension and powerful virtualization technology.

The benefit
Hybrid design extends the power and reliability of the mainframe, bringing multiple platforms into a single solution for greater flexibility, helping meet the diverse needs of researchers and students.

Solution components
Hawardware
●●
IBM® zEnterprise® 114
●●
IBM zEnterprise BladeCenter®
Extension (zBX)
●●
IBM zEnterprise Unified Resource
Manager

Software
●●
IBM AIX®
●●
IBM z/OS®
●●
IBM z/VM®
●●
IBM Cognos®
●●
IBM DB2® for z/OS, DB2 LUW
●●
IBM SPSS® Modeler
●●
SUSE Linux Enterprise Server
●●
Red Hat Enterprise Linux

"With the IBM z114 at the heart of our enterprise computing center, we have the perfect platform for advancing research in all kinds of fields, and for helping educate our students for success."

Dr. Roger Norton
Dean of the School of Computer Science and Mathematics
Marist College

http://public.dhe.ibm.com/common/ssi/ecm/en/zsc03162usen/ZSC03162USEN.PDF

Izumiya Supermarket Chain

The need
As part of Izumiya's a three-year management plan in 2012, one of the important initiatives is the logistics reformation. As the consumers life style changes, Izumiya is reconstructing purchase and supply systems for better freshness of merchandise, displaying more food in the evening and reformation of store operations which will provide better merchandise that meets customers' expectations. The Information System Department set the goals of "Revolution to Low Cost Structure" and "Operational Reformation" to pursue the mid-term management plan around this logistics reformation.

The Solution
Izumiya is consolidating more than 100 Unix servers to an IBM zEnterprise114 system with an IBM zEnterprise BladeCenter Extension (zBX) to construct the next generation system infrastructure for their 100th anniversary in 2021.

The Benefit
Izumiya seeks to integrate more than 115 distributed servers to promote evolution of the lower cost structure.

The server installation area will be reduced from 1,800 sq. ft. to 180 sq. ft.

IT system and administration cost will be reduced by 20%.

Hardware:
BladeCenter PS701 Express, BladeCenter running OS – AIX

System z, System z: zEnterprise 114 (z114)

Software:
AIX, z/OS

http://www.youtube.com/watch?v=4Ro53V_0VPE

Algar Telecom gives its growing business a signal boost
With a reliable, secure IBM platform that supports growth and better service delivery

Business need

To meet increased demand from a growing customer base, Algar Telecom needs strong, flexible IT systems that deliver high availability and reliability for a diverse range of telecommunications services.

The Solution

Algar Telecom consolidated more than 90 standalone servers to Linux virtual servers running on IBM® z/VM® on a single IBM zEnterprise® 196 server, featuring the IBM zEnterprise BladeCenter® Extension.

The Benefit

Provides a reliable, flexible platform for core business systems that has
• cut data center costs by 70 percent
• reduced maintenance effort by 65 percent
• boosted operational efficiency by 30 percent

"We have completely transformed our infrastructure and the way in which we manage it with the IBM zEnterprise System… With our core business applications running on the most reliable and secure platform in the marketplace, we can deliver better service to more customers and focus on growing a better business."

Rogério Okada, IT Manager
Algar Telecom

Algar Telecom Case Study

- "We invited a number of technology vendors to make proposals, and IBM's offering stood out as the only solution that gave us everything we wanted in one integrated package," notes Okada.

- "The IBM technology was completely new to us, but we clearly recognized the huge value that it could bring to our operations. Even as a first-time customer, we had confidence that the solution would be the right fit for our needs."

- "Our overall maintenance and support effort has been reduced by at least 65 percent"
  - "We needed six people to maintain our old infrastructure, and now we have just two people looking after the new IBM environment. We have reallocated the surplus staff to more strategic roles, where they can focus on higher-value work that helps drive the business forward."

- Rogério Okada concludes: "We have completely transformed our infrastructure and the way in which we manage it with the IBM zEnterprise System. We estimate that our operational efficiency has increased by at least 30 percent as a result. With our core business applications running on the most reliable and secure platform in the marketplace, we can deliver better service to more customers and focus on growing a better business."

http://www-01.ibm.com/software/success/cssdb.nsf/CS/ARBN-97Y2MB?OpenDocument&Site=eserverzseries&cty=en_us

Banca Carige Group
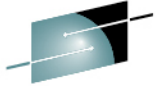
The need
Banca Carige wanted to identify gaps in the market, then adapt or expand its offering to meet customer demand. To achieve this, the bank needed a way to quickly extract actionable insights from its big data.

The solution
The bank embarked on its "big data project". As a first step, Banca Carige implemented IBM® DB2® Analytics Accelerator on a new IBM zEnterprise® EC12—enabling rapid query response time.

The benefit
IBM DB2 Analytics Accelerator helps over 1,000 business users to get fast access to vital insights—informing the development of new products, services and strategies to grow the business.

http://www.youtube.com/watch?v=cG5vUiFj5G0

"We wanted to be sure that our chosen solution could deliver in three fundamental areas—function, cost and time,"

"Within the time criterion, we evaluated competing solutions for their development, deployment and response times."

"The first step in the big data project was to create a secure analytics platform to deliver data-driven insights to business users across the group—helping them make better decisions about everything from product development to special offers and promotions."

"Thanks to IBM DB2 Analytics Accelerator for z/OS, we can extract true business value from our big data."

IT Governance Director, Banca Carige

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BG-Phoenics
zEnterprise Helps Client Achieve Strategic Vision

- **Environment prior to zEnterprise**
  - Applications on multiple platforms
  - Database on DB2 on z/OS

- **Challenges / Goals**
  - Reduce operational complexity
  - Increase flexibility
  - Reduce cost

- **Environment with zEnterprise**
  - Two zEnterprise 196 systems - each with zBX and 5 IFL's
  - Two POWER7 and System x Blades per zBX
  - One ensemble for workloads on z/VM® and zBX
  - DB2 on z/OS
  - Lotus Notes Common Store (zBX)
  - Tivoli Enterprise Management Console (zBX)

- **Benefits**
  - Combines the best features of three architectures: Mainframe, UNIX and x86
  - Cost reduction based on "best fit" platform selection
  - Single point of control with Unified Resource Manager

BG-Phoenics
Combining simplicity with performance and flexibility

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Technology · Connections · Results

The need

BG-Phoenics runs numerous multi-tier applications and workloads, requiring it to maintain multiple architectures. The company wanted to simplify and integrate its diverse infrastructure to reduce costs and ensure high quality of service. The key challenge was to achieve this while maintaining the flexibility and optimization of the existing multi-platform approach.

The solution

BG-Phoenics added an IBM zEnterprise BladeCenter Extension (zBX) with two IBM POWER7® processor-based blade servers and two Intel Xeon processor-based blade servers to each of its IBM zEnterprise 196 servers. The entire ensemble is controlled using IBM zEnterprise Unified Resource Manager.

The benefits

The zEnterprise System supports BG-Phoenics' vision of being hardware-agnostic, enabling it to choose the best architecture for each requirement.

Standardized tools and virtualization will deliver significant operational cost savings and enable faster time-to-market.

With centrally managed and optimized platforms, BG-Phoenics can be far more responsive to changing client requirements.

"A key driver for adopting zBX was to have the same method for implementing new servers across AIX, Linux and Microsoft Windows."

—Randolf Sigmund, Team Leader Operating Systems/Systems Management, BG-Phoenics

Solution components:

- IBM® zEnterprise™ 196
- IBM zEnterprise BladeCenter® Extension
- IBM zEnterprise Unified Resource Manager
- IBM BladeCenter PS701
- IBM BladeCenter HX5

External Link to IBM Case Study

DocNumber-USEN-00

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Thaler Multi-Tier Core Banking Application

- **Environment prior to zEnterprise**
  - Thaler Core Banking available on z/OS®
  - Thaler Front End only supported on distributed servers

- **Challenges / Goals**
  - Multiple server platforms to run Thaler solution
  - Increase flexibility
  - Reduce operational complexity
  - Improve performance

- **Environment with zEnterprise**
  - zEnterprise with zBX
  - Thaler Front End runs on zBX with POWER blades

- **Benefits**
  - Simplified management of end-to-end solution
  - Tighter integration of Thaler data and applications
  - Performance benefits of fast private network

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zEnterprise with zBX results exceed expectations
Thaler multi-tier core banking application

The Thaler multi-tier core banking application has been re-evaluated on IBM zEnterprise BladeCenter Extension (zBX) hybrid integrated infrastructure. Yet again the results returned were extraordinary and far exceeded expectations from both IBM and Callataÿ & Wouters. These tests provide further tangible proof of the true modular end-to-end solution of Thaler on System z and the further evolution towards industrialization, that both parties are firmly committed to. These results show that Thaler on z/OS is ideally positioned as the solution to assist banks in reducing costs and helping them meet their future ambitions.

Renaud Winand - Head of Product - Callataÿ & Wouters

Nova Ljubljanska Bank (NLB)
Data Warehouse and Business Analytics

- Environment prior to zEnterprise
  - Heterogeneous information systems
  - Part of data warehouse on IBM DB2 for z/OS®
  - Multiple data marts on Microsoft® Windows®

- Challenges / Goals
  - Performance issues with data warehouse
  - Performance issues impacting batch
  - Growing analytics and reporting requirements
  - Missing regulatory reporting deadlines

- Environment with zEnterprise
  - IBM zEnterprise 196 and zBX
  - IBM Smart Analytics Optimizer V1
  - Linux on System z
  - Upgrading to IBM DB2 Analytics Accelerator powered by Netezza

- Benefits
  - Improved query performance
  - Users able to access information more quickly
  - Increased flexibility

zEnterprise Hybrid Technology Benefits NLB

"The IBM DB2 for z/OS is a secure and highly available repository for the bank's data. High-performance specialty processors have significantly improved query response times as compared to our previous solution. The new zEnterprise hybrid technology is highly scalable and flexible which means that our users are now able to access the information they need more quickly," added Aleš Levstek, chief information officer of NLB (Nova Ljubljanska Bank), a large bank in Slovenia.

NLB Group

http://www-01.ibm.com/software/info/television/html/Y686511X24170Q05.html

EUROCONTROL Consolidates IT Environment into Virtual Hybrid Datacenter

- **Environment prior to zEnterprise**
  - One-server-one-application model
  - Multiple applications and servers
  - Rapidly growing data center

- **Challenges / Goals**
  - Improve operational efficiency
  - Reduce costs
  - Consolidate applications and servers

- **Environment with zEnterprise**
  - zEnterprise with Integrated Facility for Linux
  - zBX with Intel® Blades
  - Single virtual environment

- **Benefits**
  - Improved systems management
  - Increased flexibility and capacity
  - Higher availability

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zEnterprise Enables EUROCONTROL to Increase Flexibility

Huub Meertens, Head of the Support Engineering Section at EUROCONTROL, the European air traffic management organization in the Netherlands,, explains: " On our existing servers, the various applications operate independently on diverse platforms, based upon the one-server-one application model. The combination of IBM System z with Intel servers in an Ensemble configuration turns out to be the best solution for modernization of our IT infrastructure. Given our complex IT infrastructure with high safety and security requirements, reliability, scalability and management at a competitive price are very important. It is for these reasons that EUROCONTROL has opted for the IBM zEnterprise with zBX environment. The new heterogeneous virtual IT infrastructure will give us greater flexibility and scalability."

http://www.youtube.com/watch?v=9C-tM9m1imc&feature=youtu.be
http://www.youtube.com/watch?v=6yohat20whE&feature=youtu.be

Swiss Re Chooses DB2 Analytics on zEnterprise
Speed reporting of massive data and deliver critical insight to decision-makers

Business need

With 2.5 billion transactions and records dating back nearly 30 years, reinsurance company. Swiss Re needed a solution with the flexibility and capacity to manage its growing data workloads and analytics needs – while keeping a lid on IT costs.

Swiss Re needed a faster way to retrieve information that was seamless, transparent and deployable without costly downtime. It was critical that data could create a "single version of truth" across all Swiss Re locations, and that it could be managed from one application interface.

The Solution

Deploy IBM® zEnterprise™ System with IBM DB2® for z/OS® to perform data analysis and reporting from a central location, with IBM DB2 Analytics Accelerator — powered by IBM Netezza® technology to deliver faster responses to individual analytic queries.

The Benefit

Increases satisfaction among internal business users by speeding report generation by 70 percent through faster query response times with IBM DB2 Analytics Accelerator for z/OS.

Off-loads workloads, reducing processing costs. Implements transparently, without program modification, enabling fast and cost-effective installation.

Swiss Re

"We were surprised by the performance gain IDAA provided, as well as its ability to further boost the capacity of our IBM zEnterprise System. " –

Reto Estermann, Director, Information Technology,Swiss Re

http://www.ibm.com/software/success/cssdb.nsf/cs/JJAE-8SEVYN?OpenDocument

http://www.youtube.com/watch?v=xkcp_pJxT5E&feature=youtu.be

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SAP Industry Solution for Utilities Customer Scenario

- Environment prior to zEnterprise
  - Application server runs on Power Systems™
  - Current production performance is 60,000 – 80,000 bills / hour

- Challenges / Goals
  - Expect to add up to 30 million customers in the next 18 months
  - Require throughput greater than 150,000 bills / hour

- Environment with zEnterprise
  - z196 and zBX with POWER7 blades
  - Unified Resource Manager with dedicated network
  - z/OS 1.11 with DB2 for z/OS V10

- Benefits
  - Scalability – up to 426,000 bills / hour
  - Capacity to support growth in billing volumes
  - Reduced time to upload billing applications

External **Link to IBM SAP International Competency Center Technical White Paper**: **SAP for Energy Utility Companies using IBM zEnterprise System and DB2**

http://public.dhe.ibm.com/common/ssi/ecm/en/spw03017deen/SPW03017DEEN.PDF

SAP Industry Solution for Utilities Customer Benchmark Configuration

One Ensemble

1 Gbps

routeur 10GB/1GB

10 Gbps

zEnterprise

z196 2817-M32-716

LPAR - z/OS 1.11
100GB Memory
7 CP + 7 zIIP

DB2 v10

zBX – PS701

AIX 6.1 7CP – 54GB	SAP AS1
AIX 6.1 7CP – 54GB	SAP AS2
AIX 6.1 7CP – 54GB	SAP AS3
AIX 6.1 7CP – 54GB	SAP AS4
AIX 6.1 7CP – 54GB	SAP AS5
AIX 6.1 7CP – 54GB	SAP AS6
AIX 6.1 7CP – 54GB	SAP AS7
AIX 6.1 7CP – 54GB	SAP AS8+CS

10Gbps

FICON®

FCP

DS8800

DS8800
128 GB Cache

384disks
300 GB
15K RPM

Raid 5

8 FICONS 8Gb

HMC

1FC

Benchmark room

Shared printer

.200   dhcp   dhcp   dhcp   dhcp   dhcp

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IBM Sets World Record Running SAP Banking Solution on zEnterprise with DB2 10 for z/OS

[zEnterprise BladeCenter Extension delivered **59 million account postings per hour** in a 150-million-bank-account benchmark based on SAP for Banking]

Day processing and night processing performance improved **more than 3X** over previous results (which were already better than competitive results).

Actions

- Bring this to target clients: SAP core banking, SAP or any core banking opportunities

- Engage with Geo banking leaders or contact David Zimmerman, Martin Dvorsky or Michael Sheets for assistance.

- IBM Technical Brief for SAP 150 Million Accounts Measurement: External Link
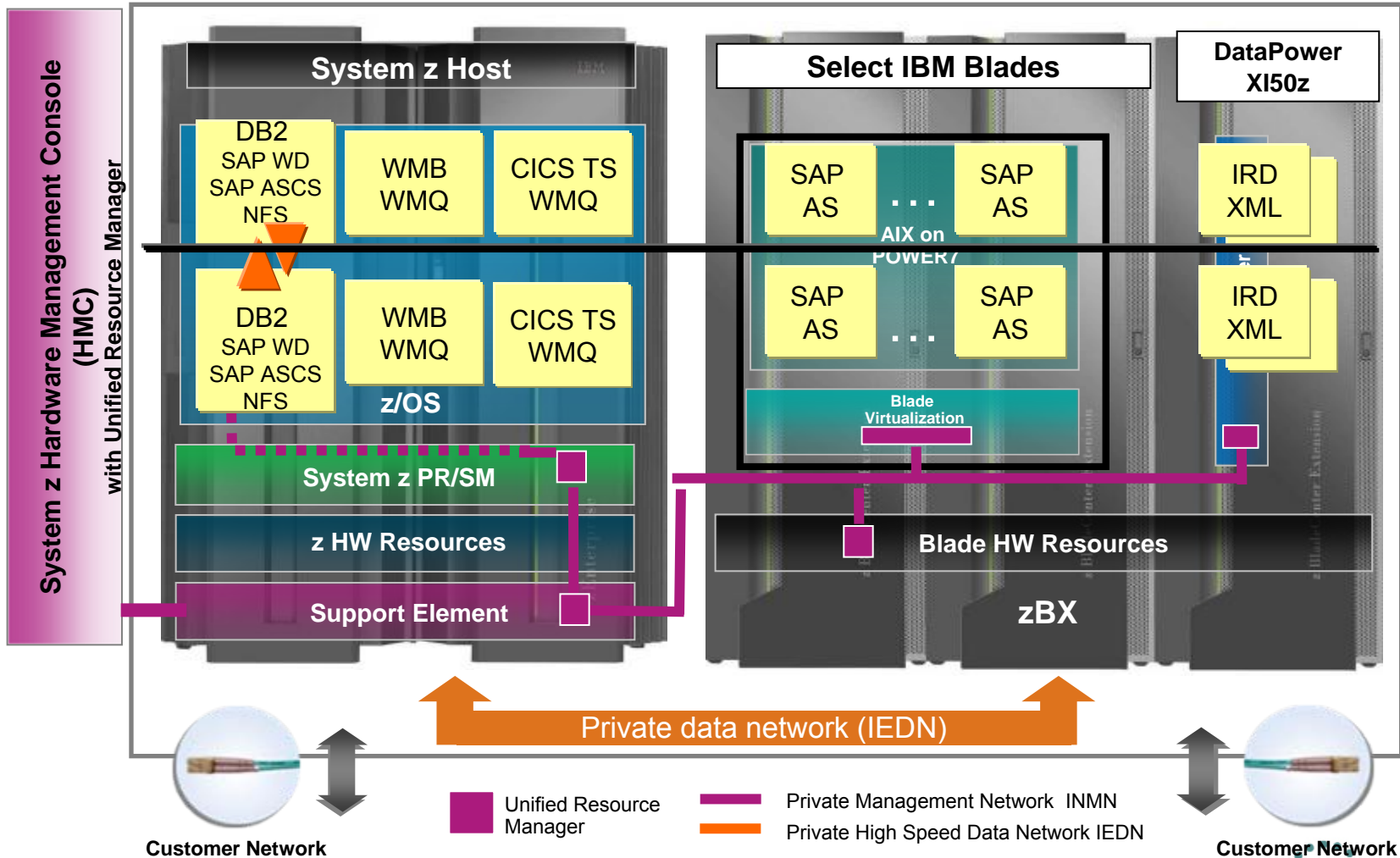
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SAP and Legacy Applications Scenario for a Large Banking Customer

- Environment prior to zEnterprise
  - SAP and legacy application access DB2 for z/OS
  - SAP accessed through SOA services invocation
  - Production volumes exceeding available capacity

- Challenges / Goals
  - Migrate legacy applications to SAP
  - Increase capacity by 5 – 10 X
  - Reduce infrastructure complexity

- Environment with zEnterprise
  - z196 with zBX, DataPower X150z and POWER7 Blades
  - Latest functionality in DB2 for z/OS V10
  - CICS TS, WebSphere Message Broker, WebSphere MQ
  - Fully redundant architecture

- Benefits
  - > 10X increase in capacity
  - Online response time improvement of 2x – 3X
  - Dramatic reduction in batch processing
  - Simplified management of application components

**Internal [Link to presentation summarizing customer benchmark](#) :
SAP and Legacy Banking Solution on zEnterprise**

Integration of SAP and Legacy Applications
in a zEnterprise Hybrid Model

System z Hardware Management Console (HMC)
with Unified Resource Manager

System z Host

| DB2 SAP WD SAP ASCS NFS | WMB WMQ | CICS TS WMQ |

| DB2 SAP WD SAP ASCS NFS | WMB WMQ | CICS TS WMQ |

z/OS

System z PR/SM

z HW Resources

Support Element

Select IBM Blades

| SAP AS | . . . | SAP AS |

AIX on POWER7

| SAP AS | . . . | SAP AS |

Blade Virtualization

Blade HW Resources

zBX

DataPower XI50z

IRD XML

IRD XML

Private data network (IEDN)

Customer Network

Customer Network

■	Unified Resource Manager
■	Private Management Network INMN
■	Private High Speed Data Network IEDN

Additional zEnterprise Hybrid Use Cases

- **European Bank**
- **Foreign Tax Authority**

European Bank Modernization with zEnterprise

Business Need:
   To modernize and revitalize the existing mainframe-based core banking systems to deliver better service to customers and to meet new business objectives.

The Solution:
   A TCO study was done using the bank's own data, which proved that WebSphere Application Server workloads on z/OS had a better TCO than vendor solution. The Eagle team was key in demonstrating the best-in-breed for mainframe TCO because of an earlier program to replace the majority of client's ISV middleware with IBM solution.

The Benefit:
   Building on existing WebSphere applications the client was already running on System z. In addition to zAAP and zIIP investment, the client will run zBX DataPower XI50z and managed by the Unified Resource Manager.

   Rapid renewal of the client's core retail banking systems and help provide optimum customer service. This is achieved at a significantly lower cost than the complete replacement of the bank's core systems, which was previously planned.

Foreign Tax Authority
Chooses IZAS 9700 performance after DB2 for z/OS benchmark blows away competition

Business need:

Needed an urgent refresh of its data warehouse infrastructure. It had one of the largest vendor installed bases in the world, but the platform was obsolete, and operational problems were mounting. Users were complaining about performance and there was concern that information was not being used appropriately, which resulted in the loss of potential growth in tax.

Benefits:

Ready for tax collection and reduce tax evasion due to improved availability, long-term scalability, better performance and security, with long-term benefits to internal users, and eventually, to the taxpayer.

With Cognos BI, they will have powerful business analytics software to complement the faster response times for their data warehouse...

Note: IEAS – IBM zEnterprise Analytics System (formerly ISAS – IBM Smart Analytics System)

Foreign Tax Authority (2)

- IBM Data Warehouse Solution Components:
  - zEnterprise z196
  - zEnterprise Blade Extension with PS701
  - z/OS and Linux on System z with VM
  - DB2 10 for z/OS
  - DB2 for z/OS Utilities Suite V10
  - Query Management Facility (QMF) Enterprise Edition 10
  - DB2 Connect Application Server for Linux on System z
  - InfoSphere DataStage for Linux for System z
  - InfoSphere Warehouse for DB2 for z/OS System z
  - InfoSphere DataStage and QualityStage
  - Cognos BI 10 for Linux on System z

IBM Global Client Centers
zEnterprise Hybrid Case Studies

- Insurance Showcase
- Smarter Banking Showcase
- Architecture Reference: PeopleSoft Enterprise Human Capital Management Application

IBM Life and Annuity Insurance Showcase

- **Environment prior to zEnterprise**
  - IBM System z10®
  - Applications from multiple vendors IBM System p® and System x

- **Challenges / Goals**
  - Reduce IT complexity to process sales transaction
  - Transactions require multiple steps and web services calls
  - Transactions flow through multiple external routers / switches

- **Environment with zEnterprise**
  - zEnterprise 196 with zBX
  - Applications moved to System x and POWER7 Blades
  - Test and development Cloud for WAS portal development

- **Benefits**
  - Improved response time
  - Increased business flexibility
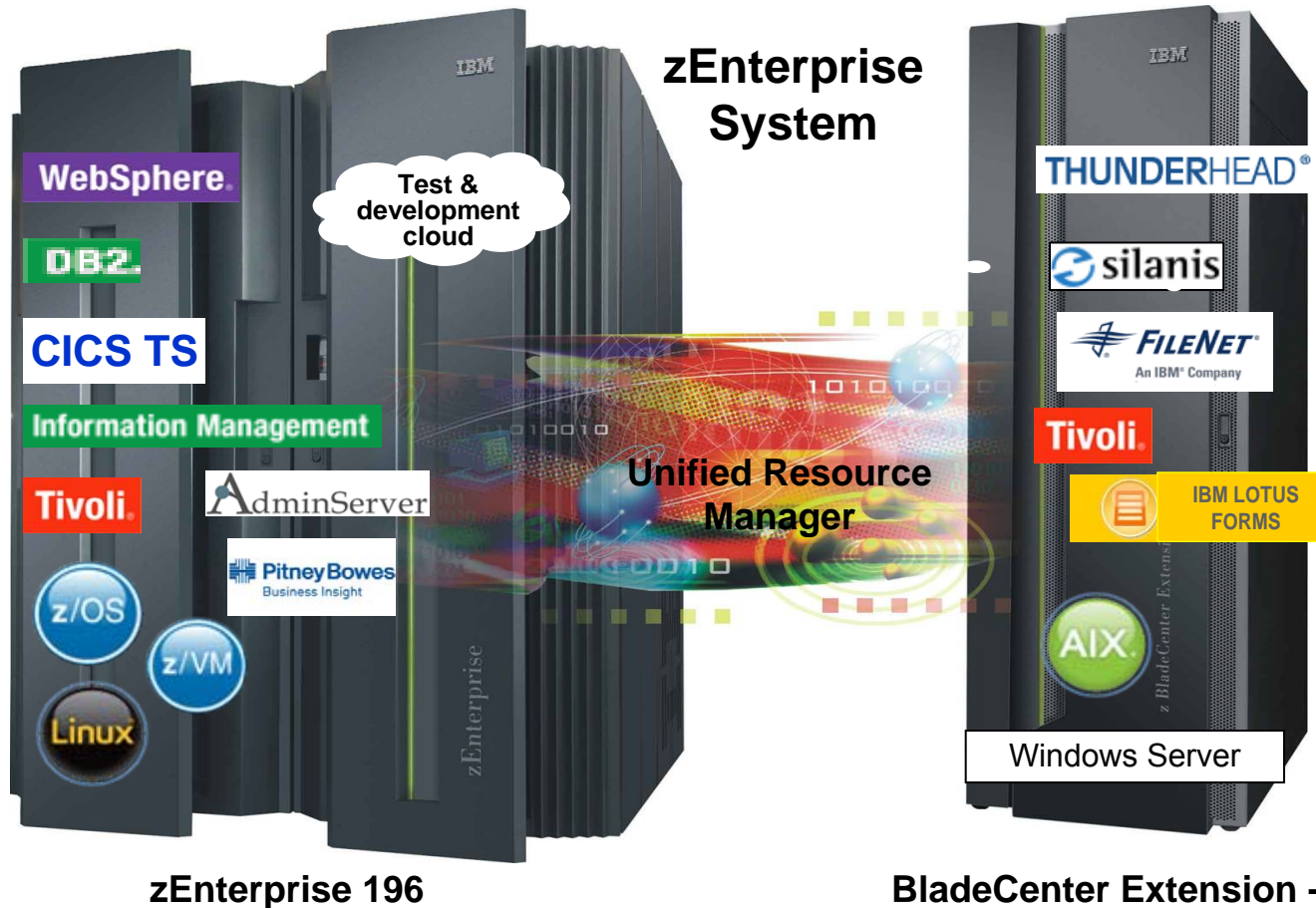 - Reduced operational complexity

External Link to Video: <u>Enhance the value of Straight through Processing (STP) with zEnterprise Hybrid Computing (Insurance Showcase)</u>

IBM Insurance showcase features the zEnterprise System as a cost effective hybrid computing foundation for improving business process development, integration and operational efficiency in insurance

zEnterprise System

WebSphere

Test & development cloud

DB2.

CICS TS

Information Management

Tivoli.

AdminServer

Pitney Bowes
Business Insight

z/OS

z/VM

Linux

Unified Resource Manager

THUNDERHEAD®

silanis

FILENET
An IBM® Company

Tivoli.

IBM LOTUS FORMS

AIX.

Windows Server

zEnterprise 196

BladeCenter Extension - zBX

*Significant management, performance, integration and cost benefits*

IBM Smarter Banking Showcase
## DataPower XI50z implementation

- Environment prior to zEnterprise
  - CICS/DB2 core banking applications
  - Multi-channel architecture
  - New channel to provide service to selected business partners

- Challenges / Goals
  - Speed to market
  - Performance and Security
  - Compliance with Service Level Agreements

- Environment with zEnterprise
  - IBM zEnterprise 196 and zBX
  - IBM DataPower XI50z provides integration, optimization and security

- Benefits
  - Able to deploy services more quickly
  - XI50z deployment benefits from secure 10Gbps IEDN
  - XI50z blades managed by Unified Resource Manager
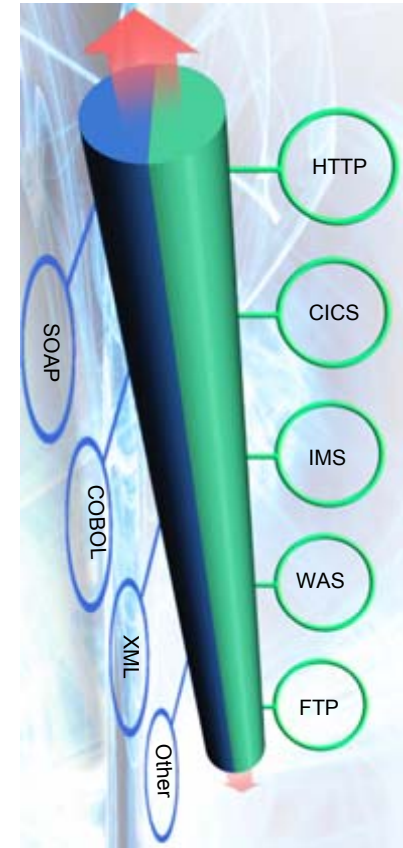
External Link to Video: Discover the value of zEnterprise for hybrid computing in banking (IBM Smarter Banking Showcase)

IBM Smart Banking showcase demonstrates zEnterprise System is a cost effective hybrid computing foundation for improving business process development and integration and operational efficiency in banking and FSS

zEnterprise System

zManager

DataPower XI50z

Windows®Server

zEnterprise 196

BladeCenter Extension - zBX
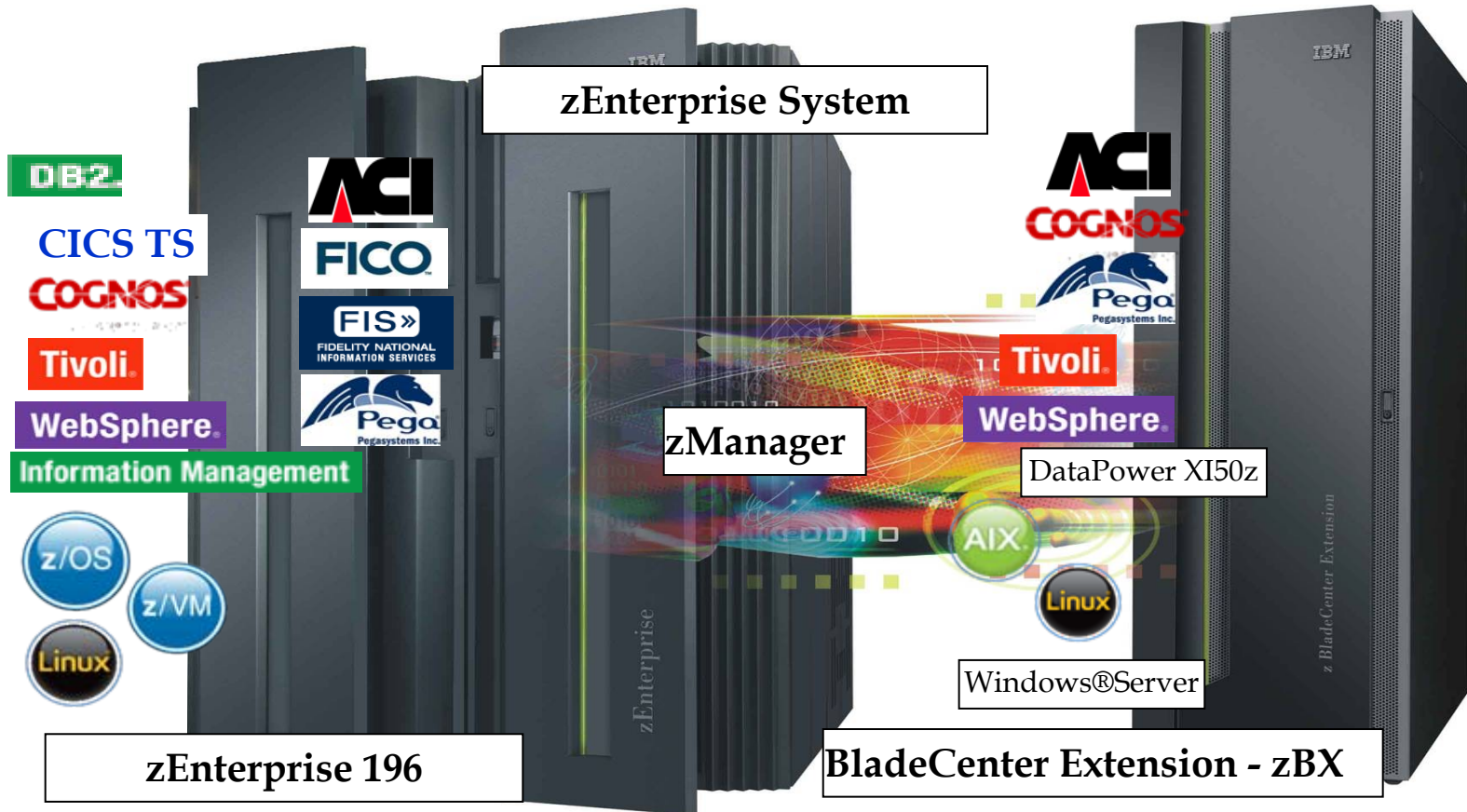
Significant management, performance, integration and cost benefits

Architecture Reference
PeopleSoft Enterprise on zEnterprise in Dallas

The need:

Since the 1990's, IBM System z® has provided PeopleSoft Enterprise customers the ability to run their applications on the most available, reliable, scalable, and secure platform. With the announcement of the IBM zEnterprise™ System, even prior concerns over the lack of support for the application server and web server functions of the PeopleSoft Enterprise architecture for the mainframe customer are no longer valid as IBM's new system of system architecture addresses this. The project addressed in this document was designed as an architectural reference in order to demonstrate the unique capabilities of the new zEnterprise architecture in a PeopleSoft Enterprise environment.

The solution:

The most widely used Peoplesoft Enterprise application, an online environment was chosen to showcase the enormous capabilities of the IBM zEnterprise 196 (z196) platform as the database server coupled with the IBM zEnterprise BladeCenter Extension (zBX) hosting the web server and application server. With this environment, the application server can communicate with the database server through the private 10GB Ethernet connection using DB2 Connect™

The benefits:

- PeopleSoft Enterprise applications benefited from the zEnterprise private network, especially the Self Service transactions.
- The private network connection between the application server and the database server offer consistent, high throughput and low response-time performance.
- Outstanding performance between the web server and application server since both processes are located in the same zBX configuration.
- System z is the platform of choice for PeopleSoft customers because of the z196 5.2 GHz processor running DB2 z/OS with RAS, scalability, and security QoS.

Architecture Reference
PeopleSoft Enterprise Human Capital Management Application
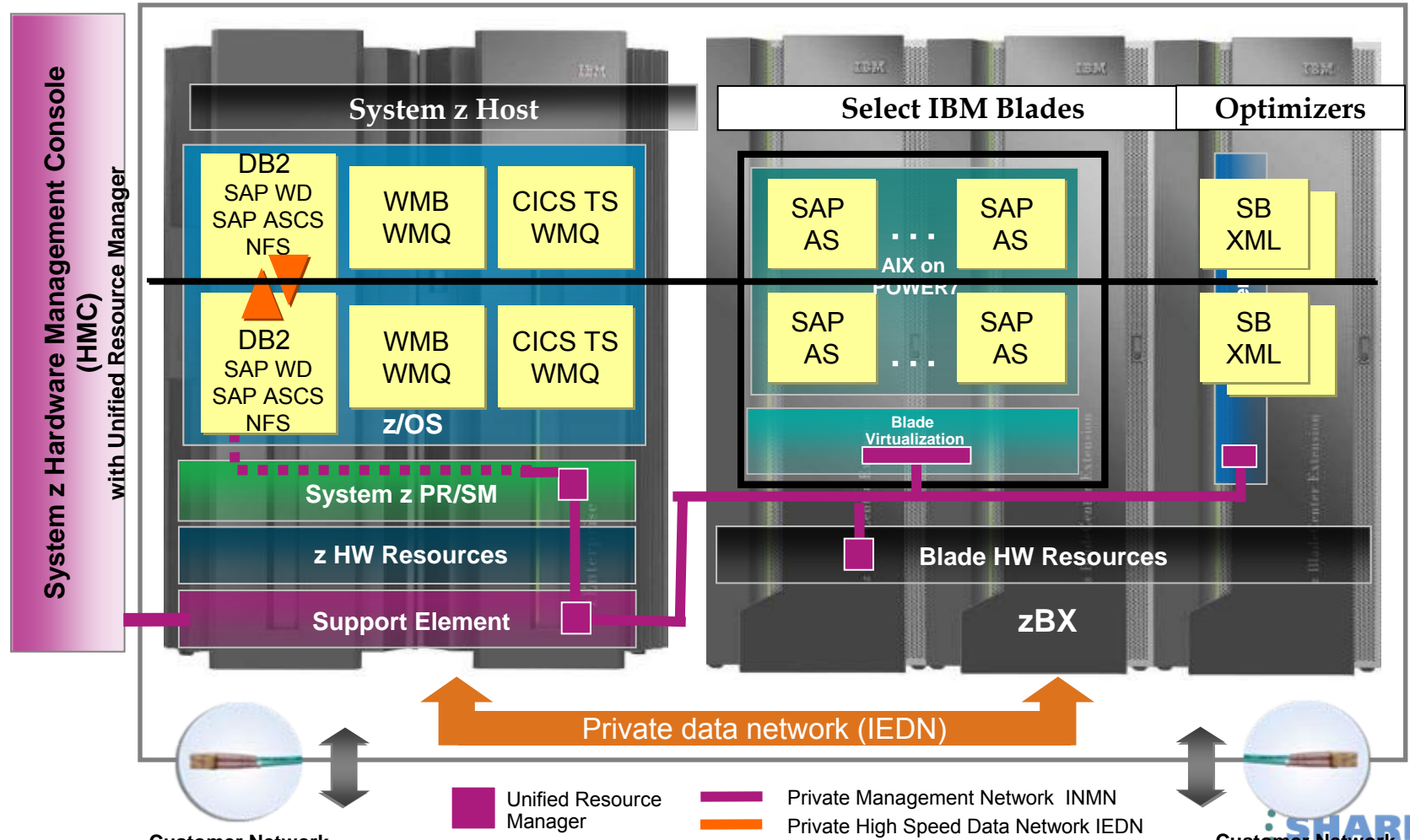

PeopleSoft Enterprise on zEnterprise in Dallas
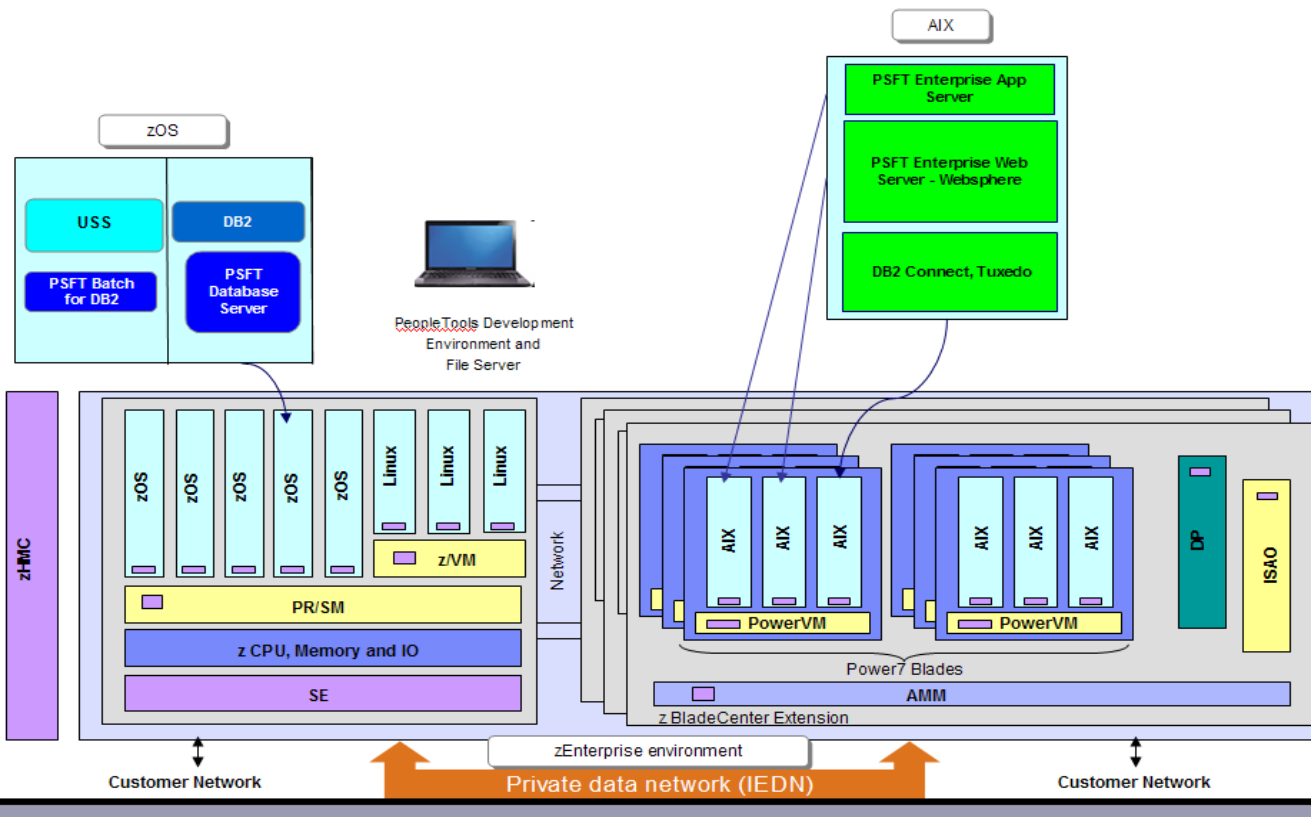
Solution Components:

- PeopleSoft Enterprise HCM Release 9.1 with PeopleTools Release 8.51
- The z196 was controlled by IBM z/OS® Version1.11
- The database used was IBM DB2 for z/OS Version 9.1
- IBM DB2 Connect Version 9.7 was used for communications over TCPIP.
- The zBX was controlled by IBM AIX® Version 6.1.
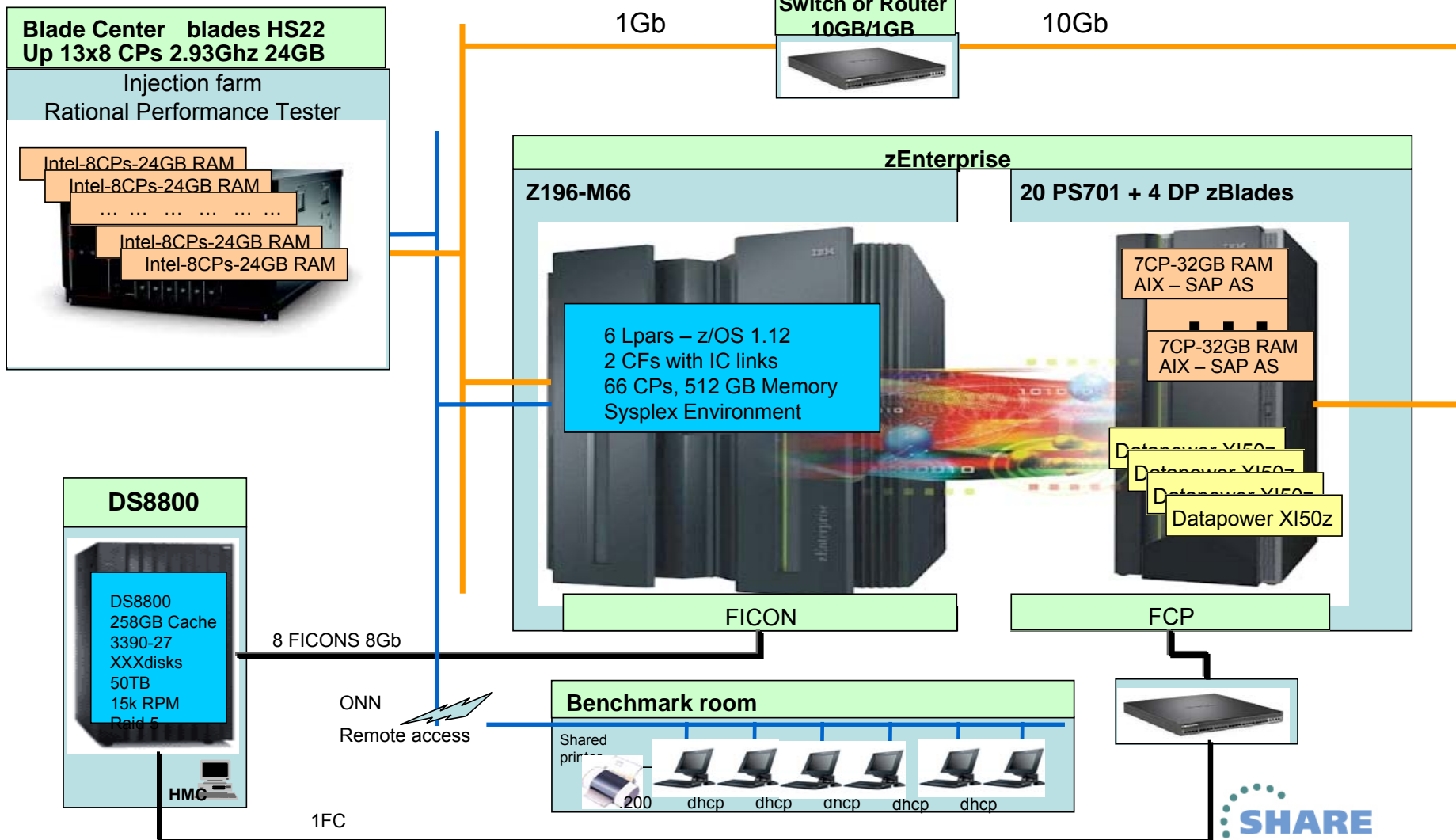
Large Banking Group Transformation

- **This large Banking Group**, distinguished by its extensive operations in several African countries but also spanning its activities outside the African continent with an emerging market focus. The three main pillars of their business are Personal and Business Banking "PBB".

- The current production environment is a **mix of SAP and legacy applications** accessing a DB2 database on mainframe. During the past few months it has become apparent that the current architecture **will not be able to scale sufficiently** to meet the volume and throughput requirements for the medium (2012) and long term (2015)

- Therefore, the bank engaged a transformation plan expecting a growth of their SAP workload by 2015 and based on a new design for a co-located ESB and SAP system.

- **IBM zEnterprise** was selected to support this end to end service invocation for core banking spanning from CICS TS, WebSphere DataPower XI50z, WebSphere Message Broker, WebSphere MQ and SAP Financial Service Module Module using DB2 for z/OS as database server

Application components fits to zEnterprise integration

System z Hardware Management Console (HMC)
with Unified Resource Manager

System z Host

| DB2 SAP WD SAP ASCS NFS | WMB WMQ | CICS TS WMQ |

| DB2 SAP WD SAP ASCS NFS | WMB WMQ | CICS TS WMQ |

z/OS

System z PR/SM

z HW Resources

Support Element

Select IBM Blades

| SAP AS | . . . | SAP AS |

AIX on POWER7

| SAP AS | . . . | SAP AS |

Blade Virtualization

Blade HW Resources

zBX

Optimizers

SB XML

SB XML

Private data network (IEDN)

Customer Network

Customer Network

| | Unified Resource Manager | | Private Management Network INMN |
| | | | Private High Speed Data Network IEDN |

Test of customer workloads on up-to-date platform

Blade Center   blades HS22
Up 13x8 CPs 2.93Ghz 24GB

Injection farm
Rational Performance Tester

Intel-8CPs-24GB RAM
Intel-8CPs-24GB RAM
… … … … … …
Intel-8CPs-24GB RAM
Intel-8CPs-24GB RAM

Switch or Router
10GB/1GB

1Gb   10Gb

zEnterprise

Z196-M66   **20 PS701 + 4 DP zBlades**

7CP-32GB RAM
AIX – SAP AS

6 Lpars – z/OS 1.12
2 CFs with IC links
66 CPs, 512 GB Memory
Sysplex Environment

7CP-32GB RAM
AIX – SAP AS

Datapower XI50z
Datapower XI50z
Datapower XI50z
Datapower XI50z

DS8800

DS8800
258GB Cache
3390-27
XXXdisks
50TB
15k RPM
Raid 5

FICON   FCP

8 FICONS 8Gb

ONN
Remote access

Benchmark room

Shared
printer
.200   dhcp   dhcp   dhcp   dhcp   dhcp

HMC

1FC

SHARE
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# Strategy: Dynamic, Integrated, & Workload Optimized

- **IT Infrastructure Integration**
  - Business service workloads are inherently heterogeneous; deployed on heterogeneous system structures
  - A hybrid system is a heterogeneous virtualized platform, providing "One Infrastructure" Integration
  - Integration provides investment protection, reduction of complexity, improved resiliency, and lower cost of ownership

- **Intelligent and Dynamic IT Infrastructure Management**
  - Align the speed of IT execution with the pace of business; dynamic, automated, policy-based resource deployment and optimization
  - Respond to new business opportunities faster; provision, reallocate, and optimize infrastructure resources
  - Manage the infrastructure in accordance with customer specified workload service level objectives

Summary

- Recent product announcements extend the value of zEnterprise for hybrid computing

- Key workloads to exploit zEnterprise and hybrid computing include multi-tier business applications, IT Optimization, Data Warehouse and Business Analytics as well as Enterprise Modernization

- IBM Global Client Centers use case scenarios are based on actual customer implementations for use by System z technical sales and marketing

- The Systems Centers and Lab Services are supporting customer requests for benchmarks, proof-of-concepts and production-ready assistance
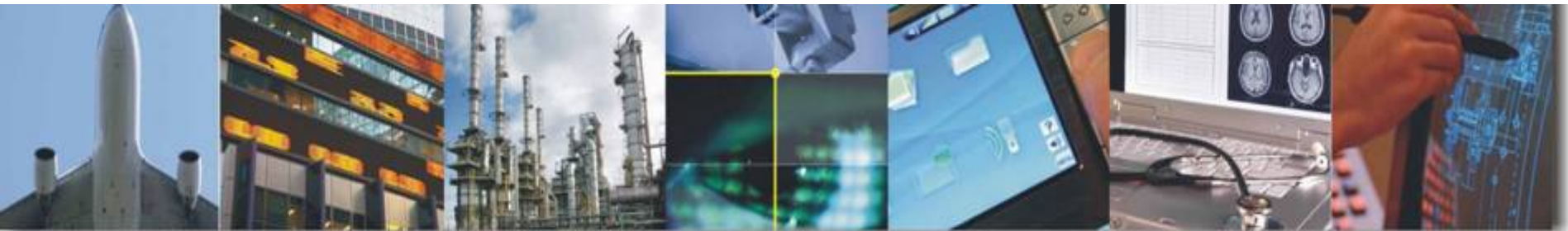
zEnterprise Hybrid Client References

Reference Account	Link
BG-Phoenics p7	Link to IBM Case Study
EUROCONTROL x86	Link to IBM Case Study Link to first youtube video Link to second youtube video
ZZZS (Zavod Za Zdravstveno) DataPower XI50z (aka Health Insurance Institute of Slovenia, HIIS)	Link to IBM Case Study Link to first youtube video Link to second youtube video
Algar Telecom x86	Link to IBM Case Study
Marist College p7 and x86	Link to IBM Case Study
EUROCONTROL X86 zBX	Link to IBM Case Study Link to first youtube video Link to second youtube video
Swiss Re IBM DB2 Analytics Accelerator	Link to IBM Case Study Link to youtube video

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zEnterprise Hybrid Client References

Reference Account	Link
IZUMIYA Linux x86 and P7	Link to Video in English http://www-01.ibm.com/software/success/cssdb.nsf/CS/ARBN-98DKUK?OpenDocument&Site=eserverzseries&cty=en_us Link to Press Release (English)
SAS Institute Linux x86 and P7	**Red**guide publication Taking Advantage of SAS in an IBM zEnterprise Multiplatform Environment
Nanjing Information Center P7	Nanjing Video– but only in Mandarin.
Banca Carige IBM DB2 Analytics Accelerator	Video available on Youtube Link to IBM Case Study
University of Palermo Linux x86	Link to IBM Case Study
Stuttgarter Versicherung x86	Link to Internal reference in CRDB
NLB (Nova Ljubljanska Bank) IBM DB2 Analytics Accelerator	client presented at IBM IOD customer event in 4Q' 2012 NLB Video

Resources & Links

- **zEnterprise**
  - http://www.youtube.com/watch?v=WjeBpMsjG8A&feature=relmfu

- **IBM PureSystems**
  - http://www.youtube.com/watch?v=RHuDZXYF_RA

- **Insurance Showcase**
  - http://www.youtube.com/watch?v=u8lB1i1yXrc

- **Smart Banking**
  - http://www.youtube.com/watch?v=Pcy9UDq67sM&feature=relmfu

- IBM zEnterprise System Technical Introduction, SG24-8050

- IBM zEnterprise EC12 Technical Guide, SG24-8049

- IBM zEnterprise BC12 Technical Guide, SG24-8138

- IBM System z Connectivity Handbook, SG24-5444

Shameless Plug

Session	Date/Time & Room	Speaker
zEnterprise Gets Even Better: Announce Overview	Monday @ 3:00pm R209	Greg Lotko
Enabling best of breed analytics with z Enterprise	Tuesday @ 9:30 R204	Carl Parris
Achieving Massively Parallel Analytics with IBM PureData System N2001	Tuesday @ 3:00 R204	Theresa Tai
IBM's Mobile Platform: Mobile for System z	Tuesday @ 4:30pm R200	Tony Duong
Establishing Cloud Environments on zEnterprise: Strategic Direction	Wednesday @ 9:30am R200	Kershaw Mehda
Practical Options for Building A Cloud (SHARE Live session)	Wednesday @ 1:30pm R200	David Rhoderick
Total Cost of Ownership Lessons from Customer Engagements	Thursday @ 11:00am R307	Innes Read David Rhoderick
What System z Can Do That Intel Can't	Thursday @ 8:00am R207	David Rhoderick
An in-depth look at zEnterprise Real Time Anti-Fraud Analytics with SPSS Modeler	Thursday @ 4:30 R207	Theresa Tai
IBM Mobile Platform Development Hands on Lab	Friday @ 8:00am R202	Tony Duong
Introduction to Managing Mobile Devices using Linux for System z	Friday @ 9:30am R200	Romney White

Thank You!

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