



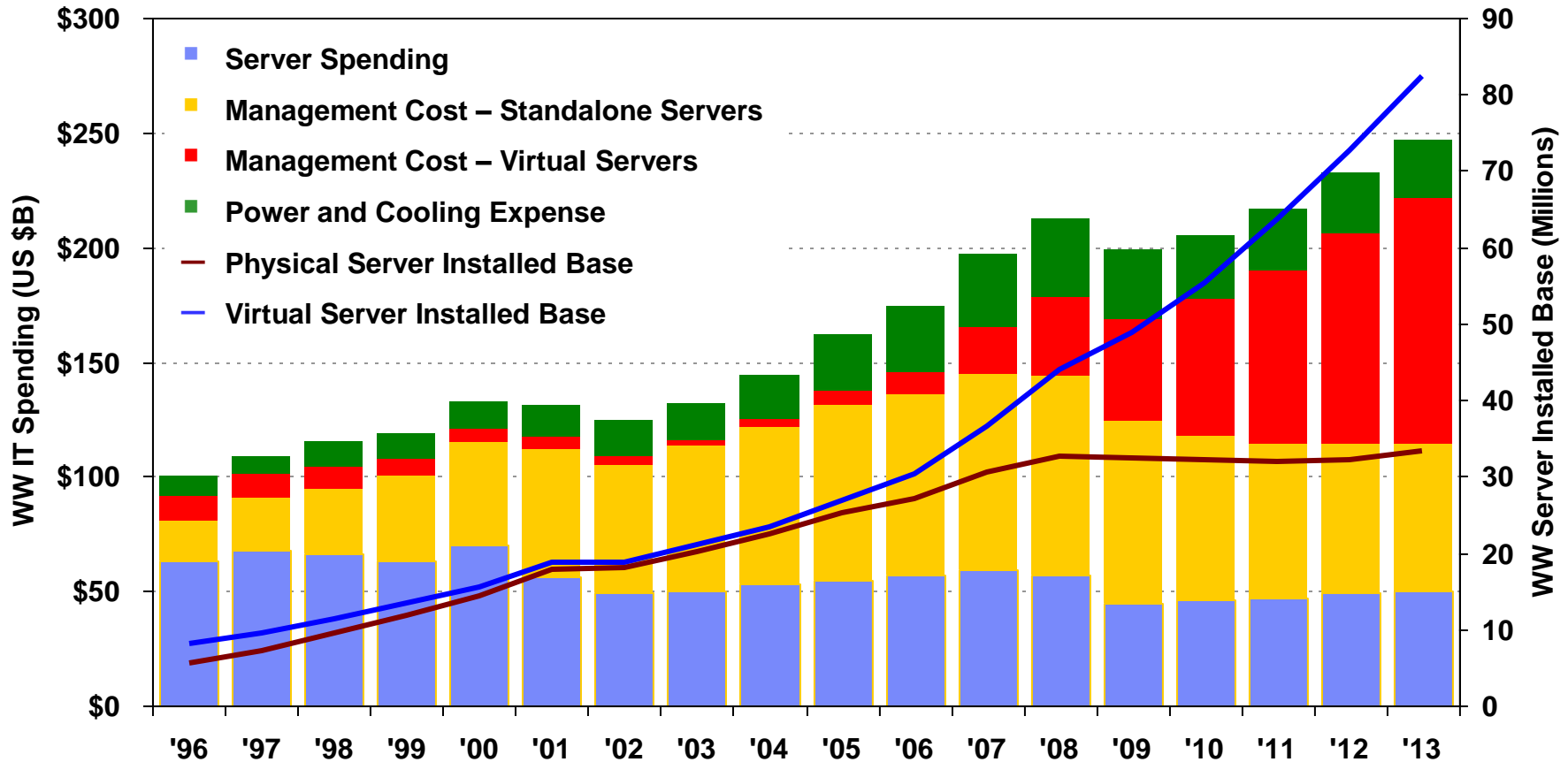
# zEnterprise Software Strategy and Direction - Maximizing productivity, performance and ROI

Phil Weintraub,  
Vice President,  
North America zEnterprise Software Sales,  
IBM Software Group



# New economic model for the datacenter

## Management costs shift to virtualized servers



Source: IDC – “Three Data Centers – One Vision?”, March 2010

# IBM zEnterprise System: Capabilities for smarter computing



**An integrated system  
of systems that  
delivers freedom by  
design.**

## Designed for data

Integrates operational data and advanced analytics ...

... to deliver actionable insight within a timeframe that matters.

## Tuned to the task

Consolidates workloads and collapses infrastructures...

... to deliver superior economics to the business.

## Managed with cloud technologies

Flexible delivery of high quality services...

... for the convergence of enterprise computing and cloud computing.

# IBM zEnterprise System

*A System of Systems that unifies IT for predictable service delivery*



## *IBM zEnterprise 196 (z196)*

The Next generation of mainframe technology, more performance, more scale, more efficient

## *zEnterprise Unified Resource Manager*





Centralized management of heterogeneous resources for simplification and resiliency

## *zEnterprise BladeCenter Extension (zBX)*

Integrated IBM POWER7® blades, IBM x86 Blades\* and High-performance optimizers and appliances

# IBM Software for System z

## Smart Computing for Smart Businesses

Scalability	Availability	Security	Flexibility
			
<p>On Dec 23rd, 2010, VisaNet processed on System z an average of almost <b>24,000 transactions a second</b> during the busiest minute of the year</p>	<p>IBM solutions enabled Fiserv to grow and meet our business needs without paying a lot to support that infrastructure. Other platforms can grow but cost a lot more, and <b>in terms of availability they are still trying to catch up with System z</b></p>	<p>The intelligence and flexibility gained with a new fraud solution has dramatically <b>improved Westpac New Zealand's ability to identify—and ultimately neutralize—new fraud schemes as they emerge</b></p>	<p>As a result of the solution, local businesses have <b>decreased time-to-market, minimized transportation costs, and can quickly and accurately assess demand</b>, increase profits and avoid waste.</p>

# z/OS Release 13 – Scalable and Secure

## z/OS V1.13

- Shorter batch windows
- Faster application programming
- Early warning for system issues
- Improved I/O performance
- Scalable encryption
- Better control for system backups

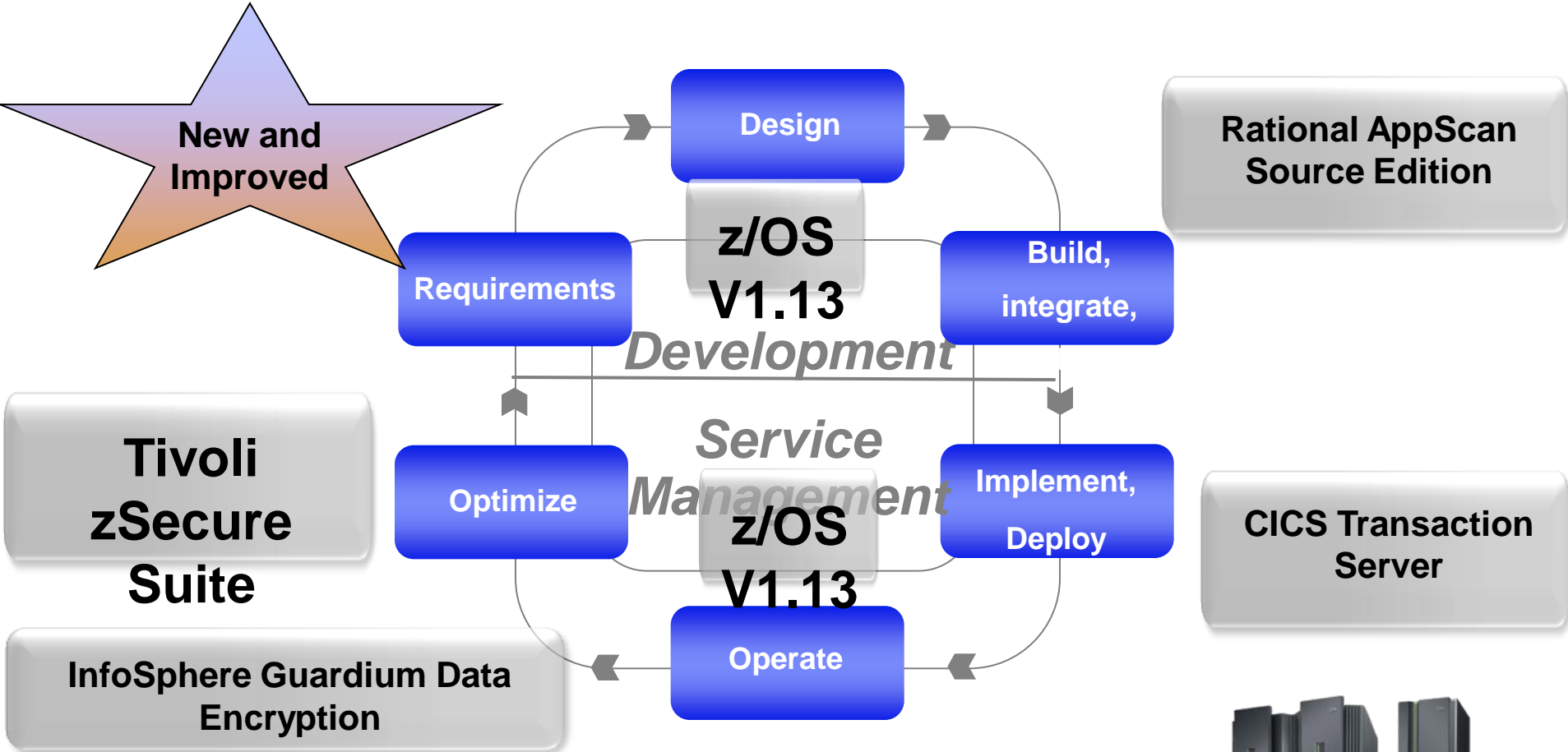
## z/OS Management Facility V1.13

- Easy and fast image deployment
- Better storage management
- Easy to maintain secure network connections

***z/OS - Most scalable and secure operating system on the planet***



# Security for the Enterprise Lifecycle



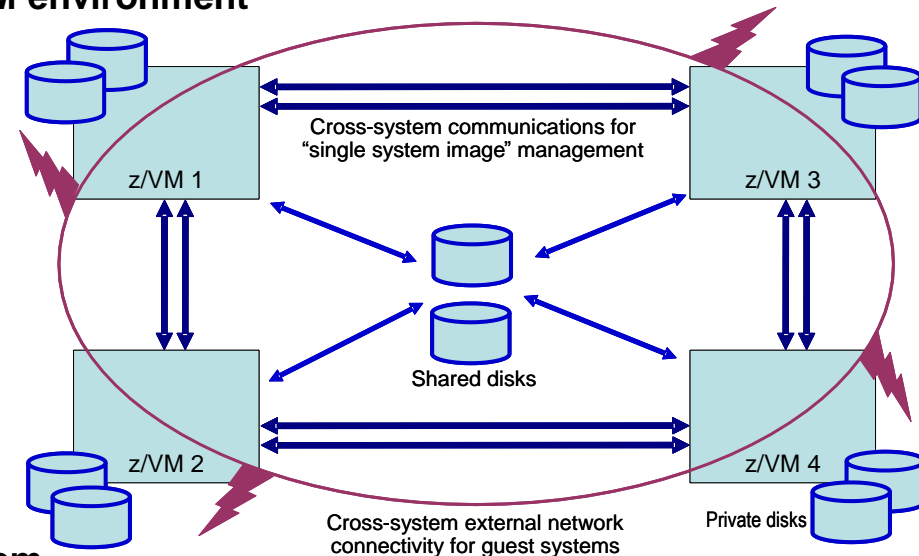
*System z – the most secure system on the planet*



# z/VM Statements of Direction

## Clustered Hypervisor Support and Guest Mobility

- Clients can cluster up to four z/VM systems in a **Single System Image (SSI)**
- Provides a set of shared resources that can be used by both z/VM and hosted virtual machines, with full awareness of sharing by the clustered z/VM systems – be they on the same and/or different z10 servers
  - Directory, minidisks, spool files, Virtual Switch MAC addresses
- Helps simplify systems management for a multi-z/VM environment
  - Single user directory
  - Cluster management from any system
    - Apply maintenance to all systems in the cluster from one location
    - Issue commands from one system to operate on another
  - Built-in cross-system capabilities
  - Service consolidation: run one copy of service virtual machines for the cluster
  - Resource coordination and protection: network and disks
- Dynamically move Linux guests from one z/VM system to another in the cluster via **Live Guest Relocation**
  - Helps reduce planned outages; enhances workload management
  - With z/VM: dynamically move work to available resources and dynamically move resources to work



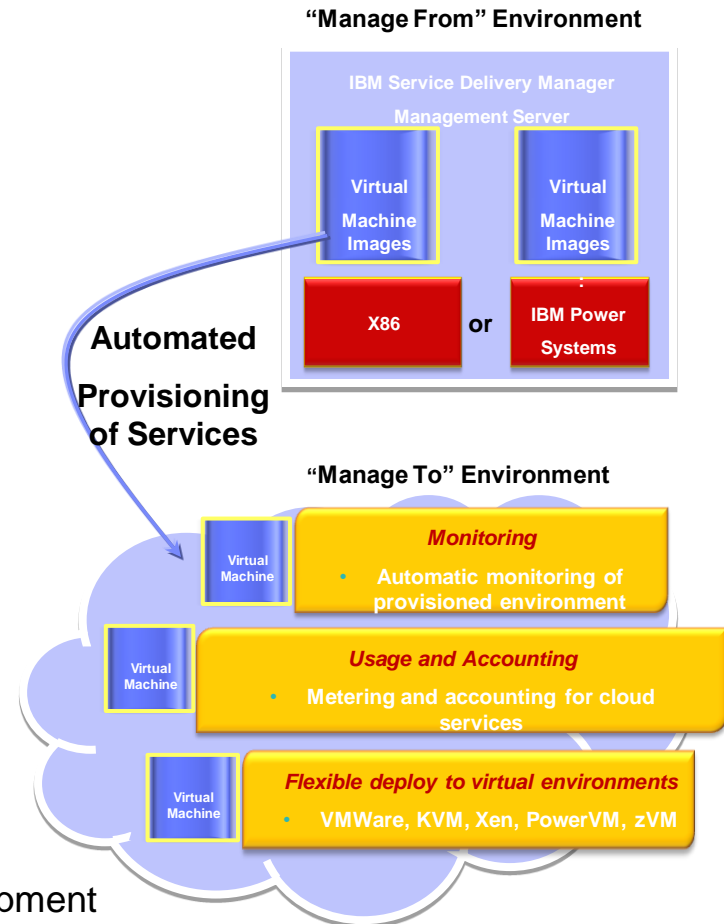


# IBM Service Delivery Manager

A pre-integrated software stack, deployed as a set of virtual images, that automate IT service deployment and provide resource monitoring, cost management, and high availability of services in a cloud

## Benefits of IBM Service Delivery Manager

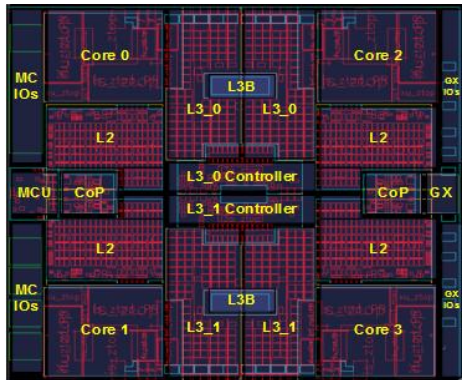
- **Leverage existing hardware** - allows businesses to leverage existing hardware while reducing capital expenditures and generate greater ROI
- **Improved time to value** - Reduces the amount of integration work required to deploy a cloud by offering a pre-bundled and integrated service delivery software stack
- **Accelerated deployment** - Automated image deployment, cross connection and activation of components. Allows clients to shorten deployment times.
- **Reduce complexity** - Self service, standardization and automation simplify use and minimize errors



Note: zVM Managed from Environment under development

## IBM Compilers Exploit System z for Maximum Performance

- Compilers exploit new hardware instructions introduced by System z
- Code generated by the compilers is highly tuned for System z
- Boost in performance of applications running on System z



### z/OS XL C/C++

### Enterprise COBOL for z/OS

### Enterprise PL/I for z/OS

### 135 new / changed instructions

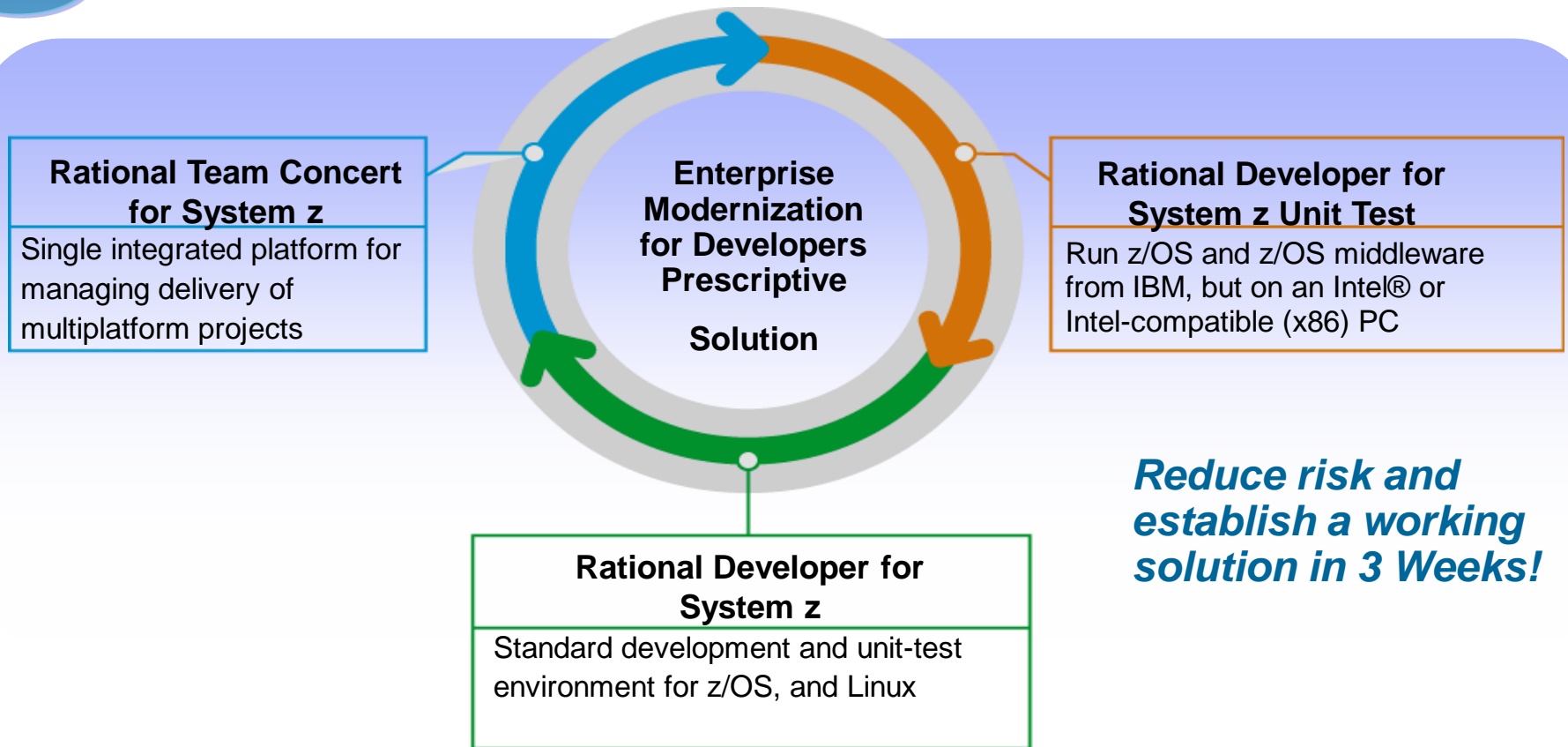
### **NEW!** z/OS XL C/C++

- Up to 5% improvement on applications
- Metal C optimization
- Portability enhancements for multiple languages
- Productivity enhancements for complex applications

# Enterprise Modernization for Developers Prescriptive Solution Service Offering

**New!**

Establishing a modern, integrated, and collaborative application lifecycle management infrastructure







- ✓ Establish a modern, high-productivity development platform
- ✓ Simplify initial install and configuration via specific project plan and check lists
- ✓ Common use case scenarios & integrations.
- ✓ Implements a field-tested usage model, targeting a small, focused team of developers to ensure successful deployment

# DB2 10

## Customers seeing reduced costs, simplified workloads through proven technology



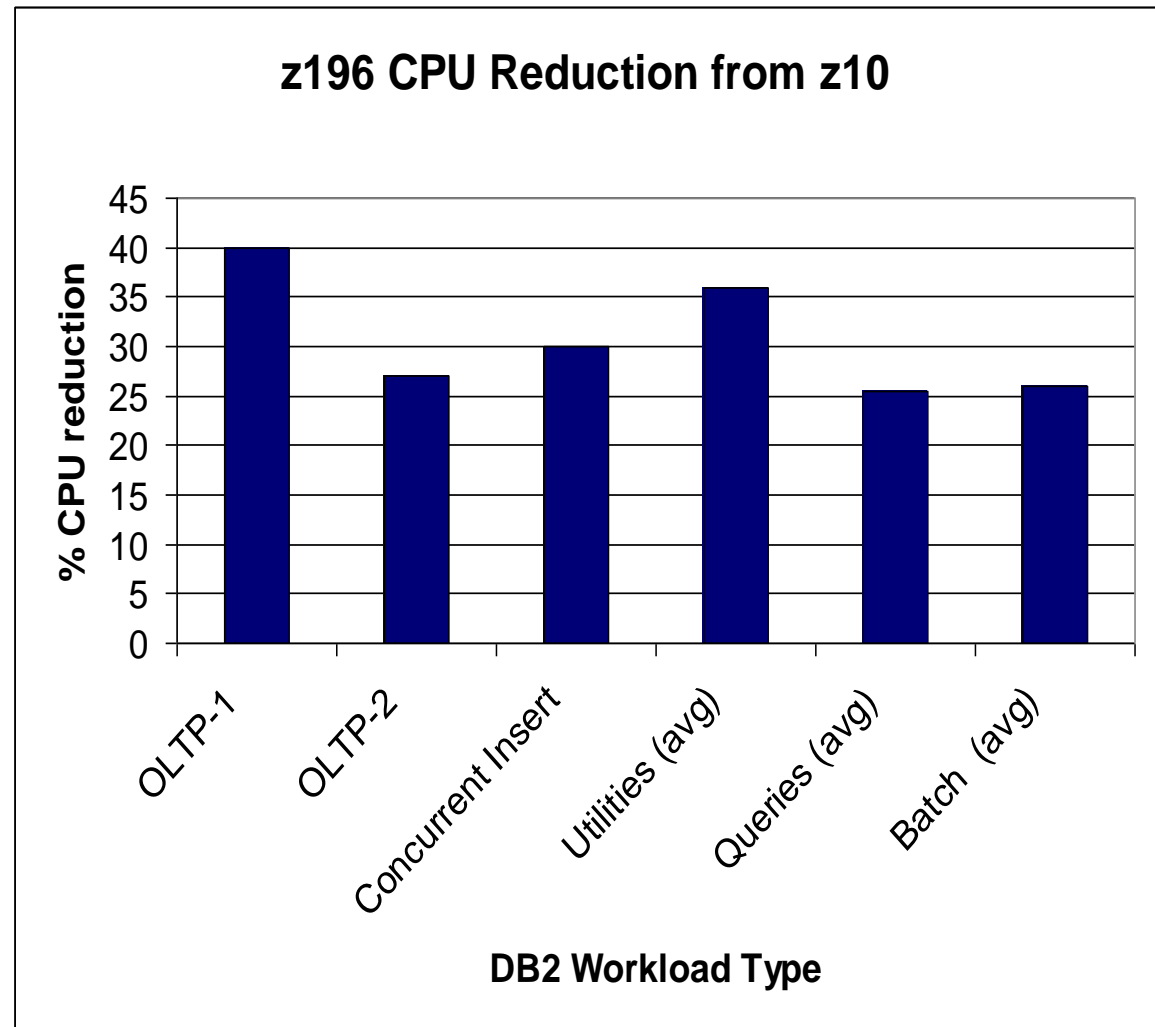
Reduced Costs	Simplified Workloads	Proven Technology
<p>“Based on the performance metrics from our controlled test environment, we see a significant amount of CPU and Elapsed time savings. This release has many features that will help bring down our operating costs.”</p> <p><b>Morgan Stanley DB2 Team</b></p> 	<p>“With DB2 10 able to handle 5-10 times as many threads as the previous version, the upgrade will immediately give the bank some much-needed room for future workload growth while simultaneously reducing their data sharing overhead.”</p> <p><b>Paulo Sahadi - Senior Production Manager, Information Management Division at Banco do Brasil</b></p> 	<p>“Every single SQL statement we have tested has been better or the same as our current optimal paths – we have yet to see any significant access path regression. We had to spend a lot of time tuning SQL with DB2 9, but we expect that to disappear when we upgrade to DB2 10.”</p> <p><b>Philipp Nowak, BMW DB2 Product Manager</b></p> 
<p>“The new temporal functionality in DB210 for z/OS will allow us to <b>drastically simplify</b> our date-related queries. In addition, we’ll be able to <b>reduce our storage costs</b> by using cheaper storage for inactive rows and reduce our processing cost by having DB2 handle data movement more efficiently than the custom code we’ve written to do the same work in the past”</p> <p><b>Large Insurance Company - DB2 10 Beta Customer</b></p>	<p>The biggest improvement for us was the enhancement regarding SAVE DATA support. We force customers to run their CPU-intensive queries in batch and in prior releases they failed after running for hours just because the table already existed and there were minor differences in the column definition”.</p> <p><b>Walter Janissen- ITERGO Informationstechnologie GmbH</b></p> 	<p>The new audit capabilities in DB2 10 will allow tables to be audited as soon as they are created, which is an obvious benefit for the business and will reduce costs and simplify our processes”</p> <p><b>Guenter Schinkel -Postbank Systems AG</b></p> 

For more customer references visit

<http://www-01.ibm.com/software/data/db2/zos/testimonials.html>

# DB2 and zEnterprise 196

- **CPU reduction in all types of DB2 workloads**
  - Larger processor cache (1.5MB L2 per core, 24MB L3 per chip, 129MB L4)
  - Various types of DB2 9 and 10 workloads show 20% to 40% DB2 CPU reduction compared to z10 processors.



# IMS: Powering the World's Large Enterprises



## IBM Announces IMS 12 Beta (QPP)

### Reduced Costs

Up to 5% out of the box MIPS savings  
Up to 30% savings on network support

### Improved Productivity

Up to **50%** faster deployment of IMS  
resource definitions and changes

### Improved Performance

Database logging up to  
**2x** faster

*.....and  
much  
more...*

*"IMS Callout, ODBM, and the SOAP Gateway allow us to keep data in distributed systems in sync with that in the legacy IMS systems, helping maintain inventory control."  
– Steve Clanton, IT Transactional Services, Caterpillar*

2 billion  
production  
transactions  
running daily

### Great new offer!

IMS 11 customers can get IBM  
Mashup Center Version 2 for free

**IMS 11: Open for enterprise-scale business**



## CICS Transaction Server V4.2 enhances events, Java development, connectivity, management, and scalability

- **Events:** including system health events to warn of potential problems
- **Java:** including 64-bit, multithreaded JVM, optimized for zEnterprise
- **Connectivity:** including option to offload Web services parsing to zAAPs
- **Management:** including cross system transaction tracking capabilities
- **Scalability:** including threadsafe and 64-bit exploitation



# Scaling with Java Applications

## Java 6.0.1

### zEnterprise and Java 6.0.1: Engineered Together

- Up-to 2.1x improvement to Java throughput
- Reduced footprint
- Tighter integration with z/OS facilities
- Improved responsiveness in application behavior
- Extends Enterprise applications to mobile devices

### J9 R2.6 Virtual Machine

- Significant enhancements to JIT optimization technology
- zEnterprise exploitation of instructions and new pipeline
- New Balanced GC policy to reduce max pause times
- Default GC policy changed to gencon

### z/OS Unique Enhancements

- JZOS 2.4.0
- z/OS Java unique security enhancements

### Performance

- **2.1x** improvement to multi-threaded workload
- **1.93x** improvement to CPU-intensive workload





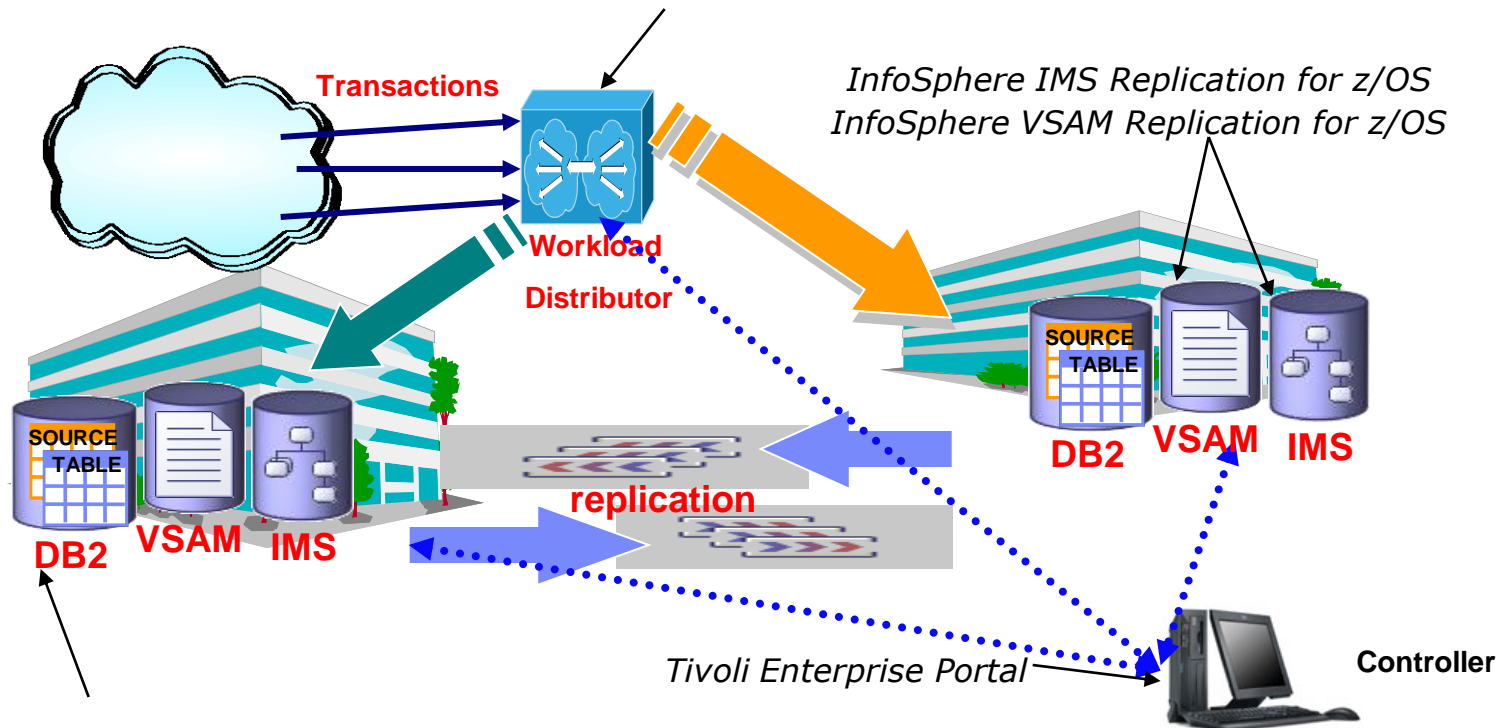
## WebSphere Application Server offers unique capabilities for z/OS now and in parallel with business needs

- Expanded support for productivity enhancing programming models
- Faster time to value through a simplified and centralized product install
- Faster time to application development completion
- Enhanced security and governance capabilities
- Improved administration and migration capabilities
- Performance improvements
- Enhanced collocation

New!A graphic featuring a dark blue background with a pattern of glowing binary code (0s and 1s) in a lighter blue color. A large, light blue oval is centered over the image, containing the text "WAS V8" in white, bold, sans-serif font. In the top right corner of the graphic, there is a small, dark blue oval with a white starburst and the word "New!" in white.

## NEW! IBM GDPS/Active-Active for Continuous Availability

- Provides continuous availability for *two or more sites separated by unlimited distances*
  - Planned workload switch - **20** seconds from active site to standby site
  - Unplanned workload switch - **120** seconds from active site to standby site
  - Planned site switch - (9 \* CICS-DB2 and 1 \* IMS workloads) **20** seconds
  - Unplanned workload switch - **150** seconds



# Virtualization and Optimization - NEW APIs

**Consolidation, virtualization and energy efficiency to reduce cost, complexity and help align IT resources**

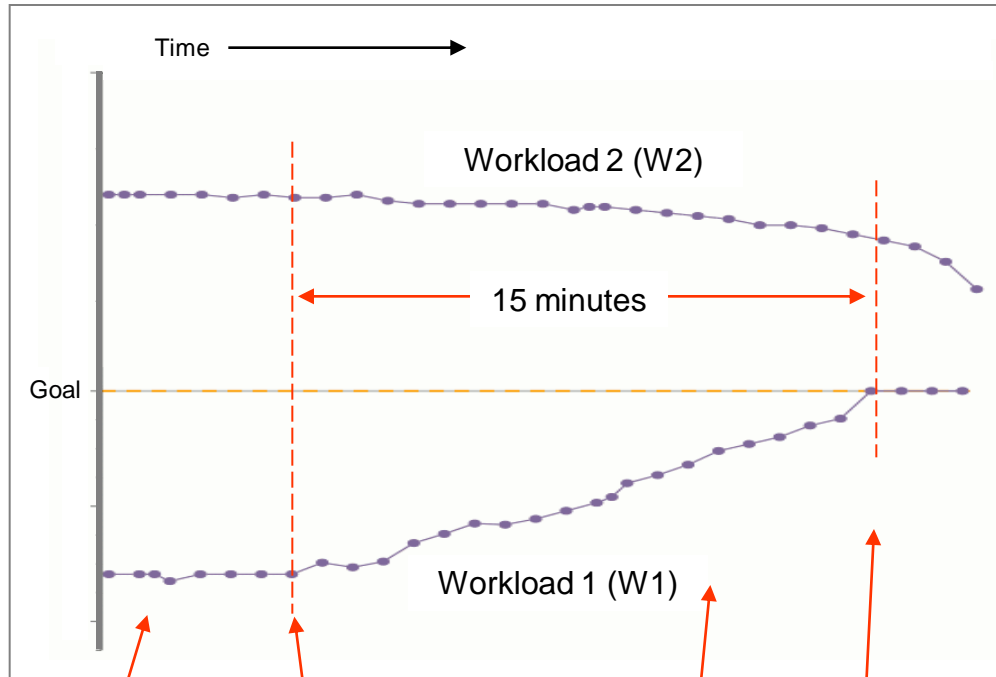
- **Statement of Direction<sup>1</sup> - Application Program Interfaces (APIs) for Unified Resource Manager**
  - Provide access to the same underlying functions that support the Unified Resource Manager user interface
- **Statement of Direction<sup>1</sup> - Tivoli Integrated Service Management for zEnterprise API Support**
  - Today, Tivoli products provide significant functionality that supports zEnterprise environments. Tivoli intends to provide additional capabilities made possible with Unified Resource Manager APIs.



<sup>1</sup> All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represents goals and objectives only.

## Performance Manager Lab Test

### Automatic Allocation Of CPU Resource



1. No performance management. W1 is underperforming, and W2 is overperforming.

2. Performance Manager is turned on. zManager detects W1 is underperforming.

3. Over time, zManager adjusts CPU resources, taking from W2 and giving to W1.

4. W1 reaches performance goal.

- zManager monitors virtual machine performance and automatically adjusts CPU resources as needed
- Considers priority and performance relative to service level agreement goals
- Reduces the need to over-provision CPU resources

# Hypervisor Setup And Configuration Lab Test

## Do-It-Yourself vs. Unified Resource Manager

DIY Tasks (per Blade)	Elapsed Time	Labor Time
Initial communication setup & education	6 min 26 sec	6 min 26 sec
Boot VIOS disc & install (creates LPAR for VIOS automatically)	37 min 59 sec	36 min
Configure VIOS networking	2 min 49 sec	2 min 49 sec
Create new storage pool for LPARs	35 sec	35 sec
Install VIOS service fixpacks	61 min 5 sec	20 sec
<b>TOTAL TIME</b>	<b>1 hr 48 min 52 sec</b>	<b>46 min 10 sec</b>

zManager Tasks (per Blade)	Elapsed Time	Labor Time
Add entitlement for a blade	90 min	92 sec
<b>TOTAL TIME</b>	<b>1 hr 30 min</b>	<b>1 min 32 sec</b>

97% reduction  
in labor time

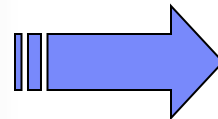
# Italian Utility Company Using SAP

***The Current: z10 + p595 AIX for SAP Central Instance and Application Servers, with DB2 for z/OS database, 60K bills per hour***



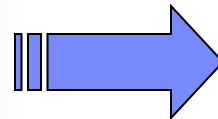
## Client Requirement

- *Achieve 200K bills per hour*



Provide up-to-date technology  
- z196+ p770

- ✓ Results: achieved **250K** bills per hour
- ✓ **70+%** improvement



Provide hybrid technology  
- z196+ zBX

- ✓ Results: achieved **430K** bills per hour
- ✓ **600+%** improvement

## Hybrid Computing Benefits:

- ✓ Over **600%** improvement in current configuration
- ✓ Hardware setup: implementation of zBX Power Blades in only **2 days**
- ✓ Very good linear **scalability** either on scale-up for DB2 on z, or scale out on pBlades on zBX
- ✓ **Low latency** due to the dedicated IEDN network

# Continued Investment in System z software for zEnterprise

## Information Management

**Strong information management platform built for business workloads**

*DB2, IMS, FileNet, InfoSphere Warehouse, InfoSphere Server, Cognos, SPSS, Optim™*

- NEW!** Preview- IBM Smart Analytics Optimizer V2
- NEW!** IBM InfoSphere Guardium Data Encryption for IMS Databases, InfoSphere Classic Federation for z/OS, InfoSphere Classic Change Data Capture for z/OS, IMS Replication for z/OS
- NEW!** IBM Smart Analytics System 9600 for z1
- NEW!** DB2 10
- NEW!** DB2 for z/OS Tools
- BETA!** IMS 12
- NEW!** Content Manager OnDemand for z/OS
- NEW!** FileNet
- NEW!** Case Manager
- NEW!** GDPS/Active Active

## Tivoli

**Visibility, control, security, and automation from System z across your business**

*IBM Service Management on System z, TSAM, System Automation and NetView for z/OS, TWSz, OMEGAMON*

- NEW!** SOD - Tivoli Integrated Service Management for z API Support
- NEW!** Tivoli Application Dependency Discovery Manager
- NEW!** Cloud and Lifecycle Management for zEnterprise
- NEW!** Preview - BM zEnterprise Cloud Starter Edition
- NEW!** NetView®
- NEW!** ITCAM for Transactions
- NEW!** Tivoli Asset Discovery for z/OS
- NEW!** Tivoli Application Management for zEnterprise
- NEW!** IBM Security Key Lifecycle Manager for z/OS
- NEW!** Tivoli Advanced Reporting and Management for DFSMSHsm™
- NEW!** IBM Security zSecure suite
- NEW!** IBM Tivoli Workload Automation
- NEW!** IBM Multi-site Workload Lifeline v1.1



## Lotus

**Productivity and Collaboration**

*Portal, Connections, Lotus® Notes Domino®, Sametime*

- NEW!** IBM Lotus Connections
- NEW!** IBM Lotus Quickr™ for Domino
- NEW!** IBM WebSphere Portal for z/OS and Linux on System z

## WebSphere®

**Application infrastructure, connectivity and dynamic business processes**

*WAS, CICS, BPM, WMQ, ESB, DataPower®, ILOG, Lombardi*

- NEW!** WebSphere Application Server
- NEW!** CICS
- NEW!** WebSphere Extended Deployment Compute Grid
- NEW!** Business Monitor for z/OS
- NEW!** Business Process Manager
- NEW!** IBM WebSphere DataPower Integration Appliance X150 for zEnterprise
- NEW!** WebSphere MQ File Transfer Edition for z/OS

## Rational®

**Application Development Tools and Software Delivery Platform**

*Compilers (C/C++, PL/I, COBOL), RDz, RTC*

- NEW!** Collaborative Lifecycle Management
- NEW!** Rational Virtual Developer Desktop
- NEW!** Rational AppScan Source Edition
- NEW!** Enterprise Modernization for Developers Prescriptive Solution Service Offering
- NEW!** Rational Automation Framework for WebSphere
- NEW!** Rational Developer for zEnterprise
- NEW!** Rational Developer for System z Unit Test Feature
- NEW!** z/OS XL C/C++ V1.13

# Thank you





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