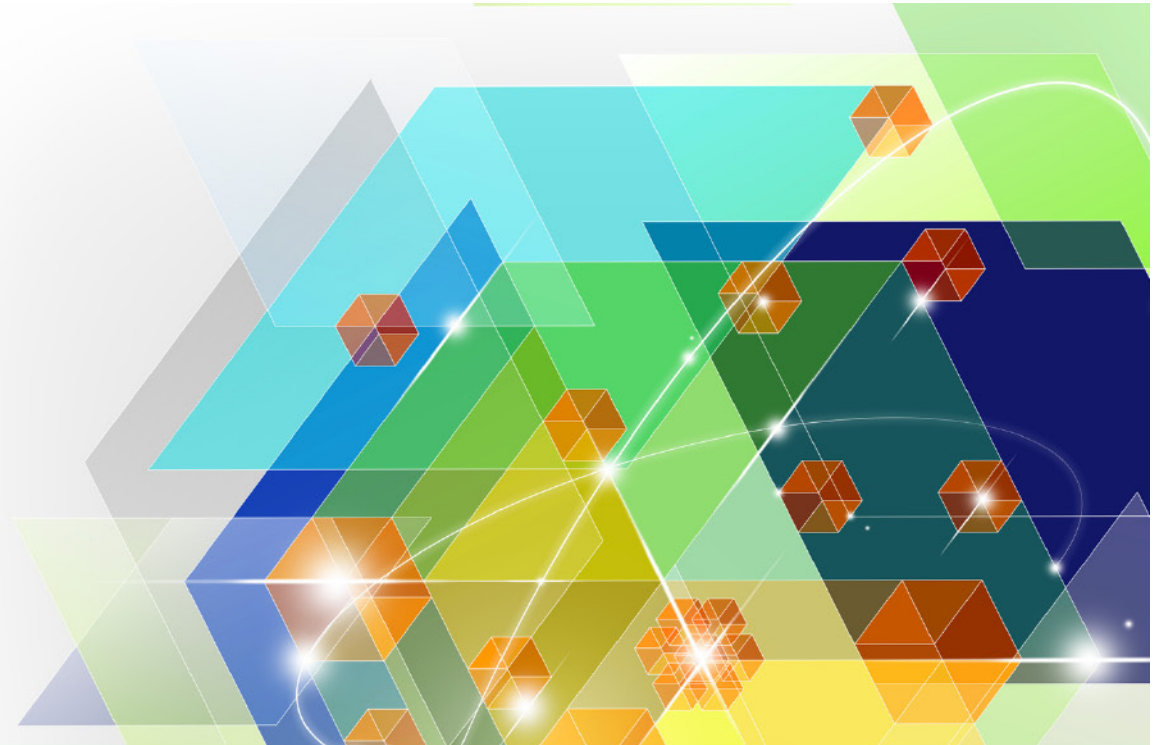




Experience freedom by design

Gary Trytell
System z Executive



Enterprise Computing Platform of the future

- Smarter Computing
- zEnterprise Announcement Update

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Notes:

Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.

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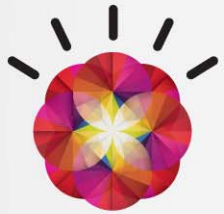
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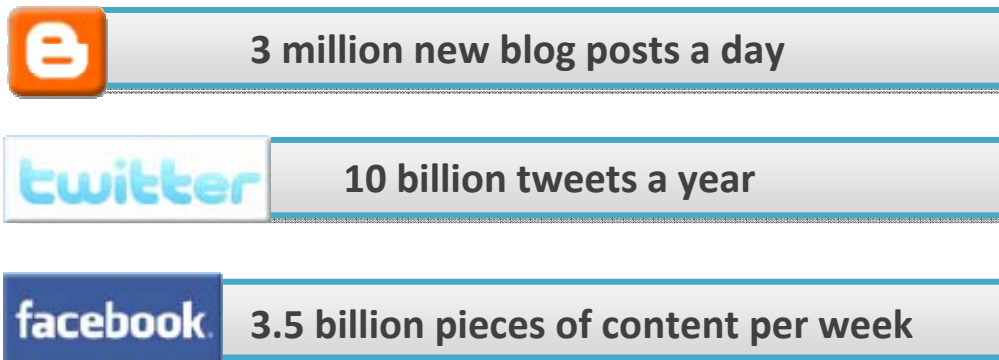


Smarter Computing



As our planet becomes smarter

We are seeing dramatic shifts that are changing the way the world works ... both business and society



Nothing is changing more than IT ...

The way it's accessed ...
Ubiquitously

The way it's applied ... for
insight

The way it's architected ...
Integrated & flexible

Enterprises are addressing the challenges that emerged during the last era of computing...



32.6 million servers worldwide

- **85% idle** computer capacity
- **15%** of servers run 24/7 without being actively used on a daily basis



1.2 Zetabytes (1.2 trillion gigabytes) exist in the “digital universe”

- **50%** YTY growth
- **25%** of data is unique; **75%** is a copy



Between 2000 and 2010

- servers grew **6x** ('00-'10)
- storage grew **69x** ('00-'10)
- virtual machines grew **51% CAGR** ('04-'10)



Data centers have **doubled** their energy use in the past five years

- **18%** increase in data center energy costs projected



Internet connected devices **growing 42% per year**



Since 2000 security vulnerabilities grew **eightfold**

...while IT budgets are growing less than 1% per year.

The IT conundrum—meeting exploding demand for service on a flat budget

Incomplete, Untrusted Data: Always Guessing

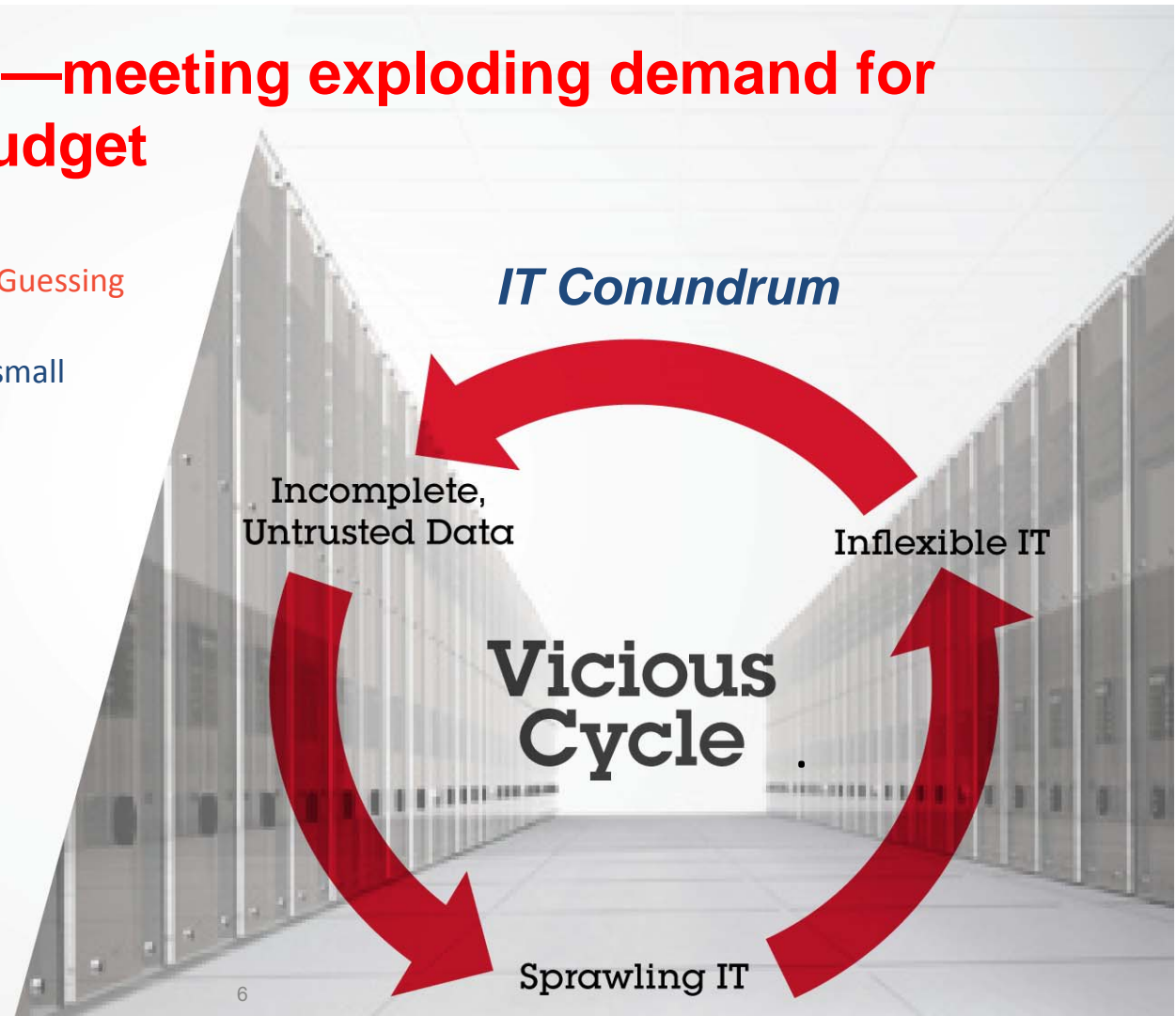
Decisions are made on incomplete data, big ideas are seen as risky, and small decisions aren't optimized.

Sprawling IT: More Cost

Every IT investment leads to more sprawl which drives up infrastructure and management costs.

Inflexible IT: Reactive

Inflexibility of infrastructure limits integration across silos and responsiveness to customer demands.





Any enterprise can reverse the IT conundrum by **designing, tuning and managing** their IT infrastructure in the new era of IT we call **Smarter Computing**.



Smarter Computing is an IT infrastructure that is designed for data, tuned to the task and managed in the cloud.



Designed for data: Big Data

Remove barriers to harnessing all available information and unlock insights to make informed choices.

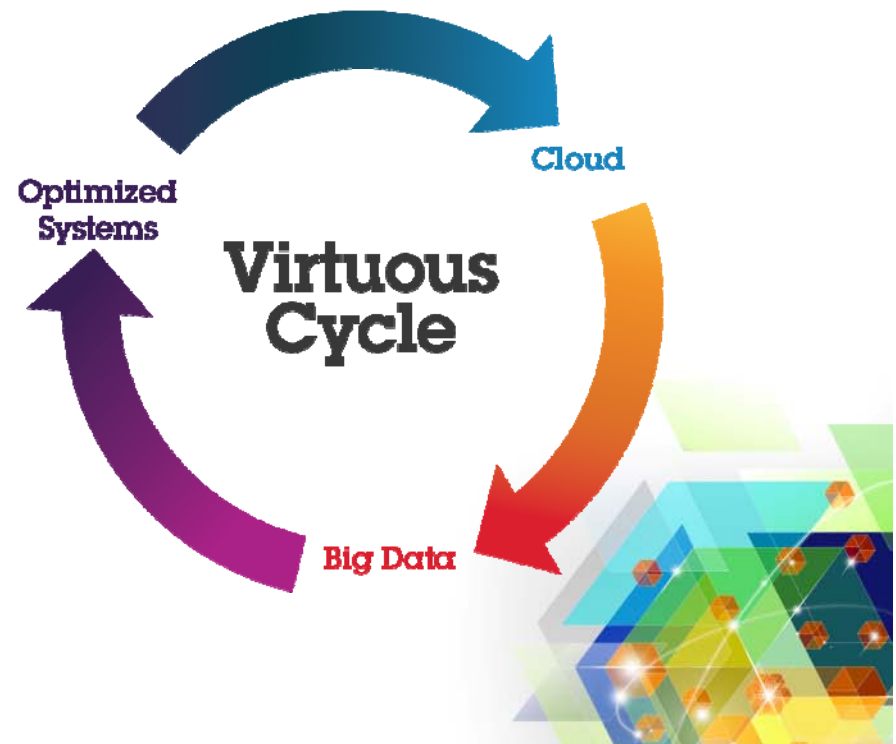
Tuned to the task: Optimized Systems

Remove financial barriers by driving greater performance and efficiency for each workload.

Managed in the Cloud: Cloud

Remove barriers to rapid delivery of new services and reinvent business processes to drive innovation.

Smarter Computing



On a **Smarter Planet**, successful enterprises are taking a new approach to designing their IT infrastructure to create **new opportunities**.



Create new markets in a fraction of time

Univerista di Bari

Reduced time to market for fishermen and farmers with cloud-based solution for real-time trading.



Deliver new services more quickly

Citigroup

Reduced provisioning times from 45 days to 20 minutes, improving ability to deploy new banking services to clients.



Identify new trends before competition

Acxiom

Improved capacity five-fold with no new floor space with cloud-based model improving customer retention and capturing new business.



Utilize IT resources more efficiently

City of Norfolk

Improved storage performance by 40% and cut power consumption in half, enabling it to deploy automated parking systems and police in-car video surveillance.



The 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 in a Cloud

Flexible delivery of high quality services...

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

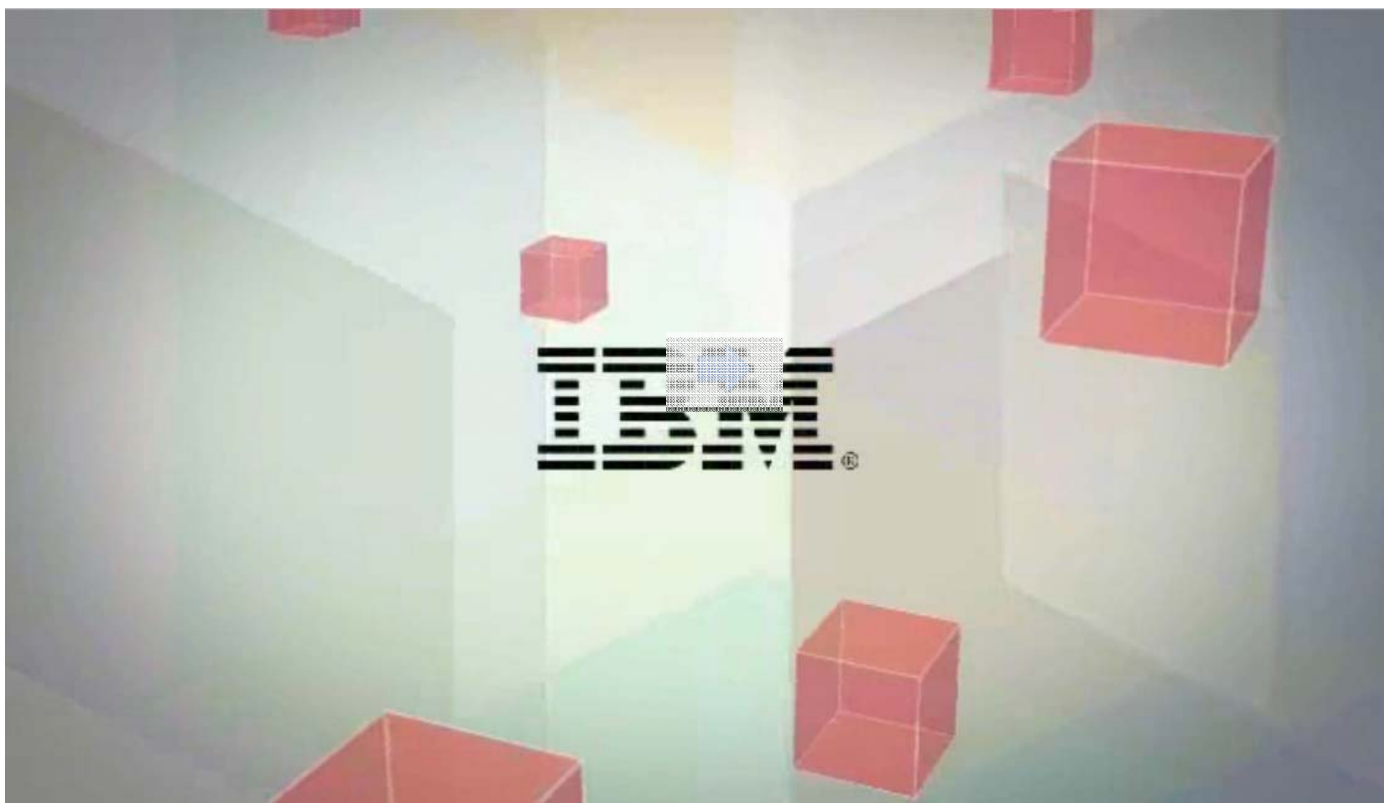


Introducing IBM zEnterprise 114 (z114)

**Bringing the zEnterprise hybrid
computing model to clients of all sizes**



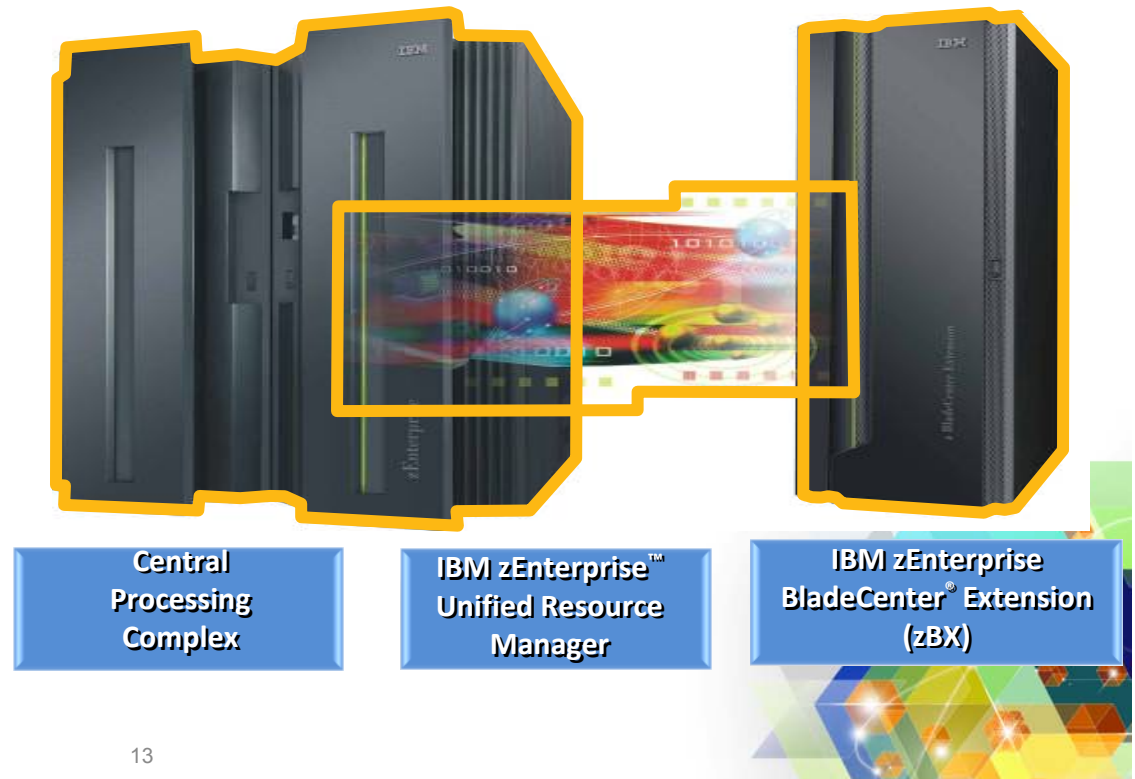
Video – z plan



In July 2010, the IBM zEnterprise system introduced the first hybrid computing technology enabling clients to:



- Optimize the deployment of workloads by utilizing the best fit technology and operating environment
- Deploy enterprise private clouds that are ready for mission critical applications
- Establish a common management infrastructure for both mainframe and distributed-systems
- Take actionable insight based upon real time analytics



Introducing the IBM zEnterprise 114

Bringing hybrid computing to a broader set of businesses



IBM zEnterprise 114 (z114)

The next generation midrange mainframe delivering extensive growth options, flexibility, efficiency and improved price performance.

zEnterprise Unified Resource Manager

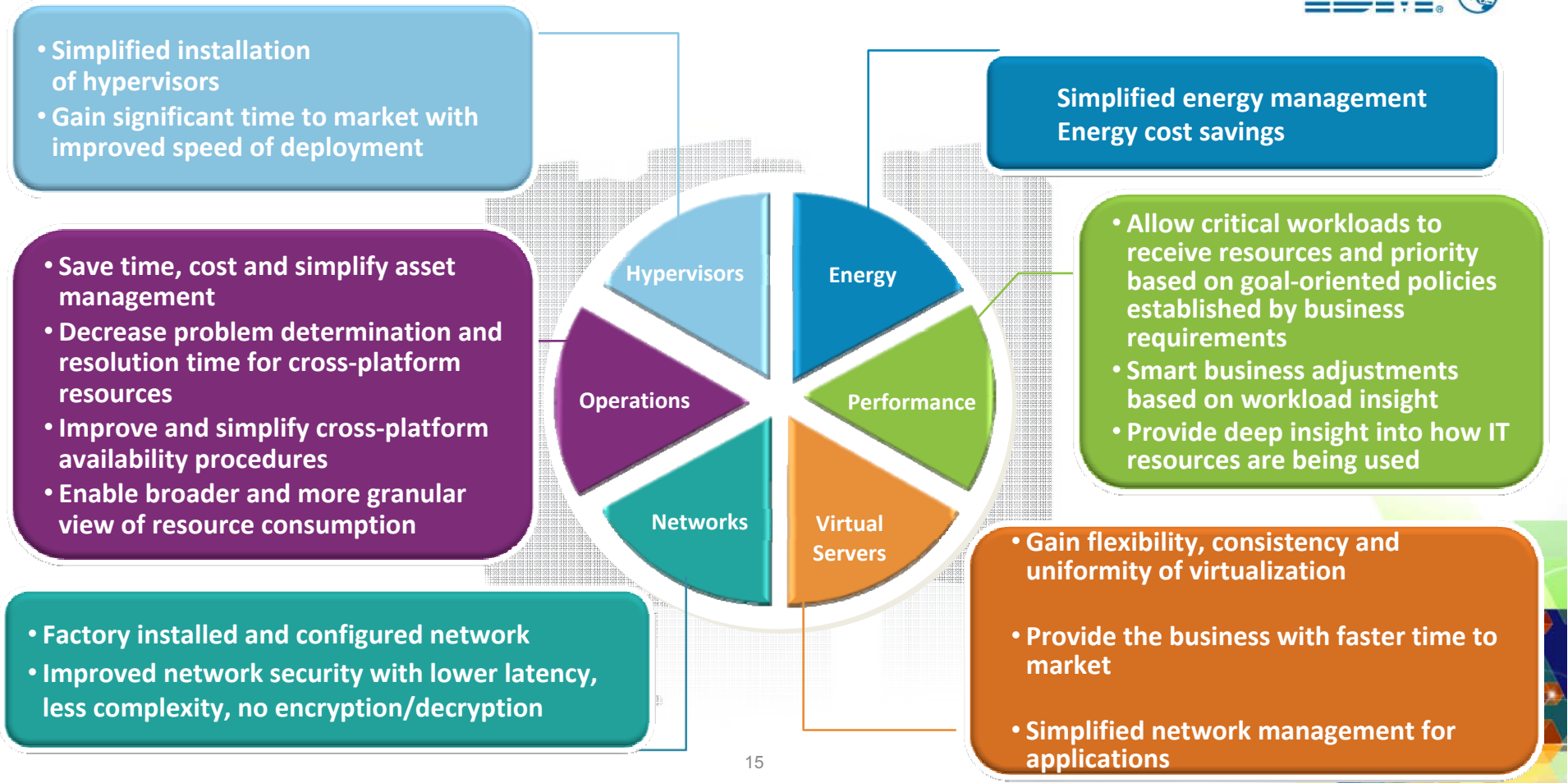
Centralized management of heterogeneous resources for simplification and resiliency

zEnterprise BladeCenter Extension (zBX)

Integrated IBM POWER7 blades, IBM System x blades, and High-performance optimizers and appliances



Continuing Value using the Unified Resource Manager



zEnterprise technology designed for small and mid-sized businesses



¹ Relative capacity and performance compares at equal software levels as measured by IBM Large System Performance Reference (LSPR) workloads using z/OS® 1.11, Results may vary

² The z114 will exhibit up to 25% increase for CPU intensive workload as provided by multiple C/C++ compiler level improvements when going from z/OS 1.09 to z/OS 1.12

Up to **18%** Improvement for traditional z/OS workloads ¹

Up to an **ADDITIONAL 25%** Improvement in CPU intensive workloads via compiler enhancements²

Up to **12%** Total capacity improvement ¹

Scales From **26 - 3100 MIPS**

Up to **130** available capacity settings

From **1-10** configurable cores for client use includes CPs, IFL, zIIP, zAAP, and ICFs

From **0-2** IBM provided spare cores

Up to **256 GB** RAIM fault tolerant memory

Fully Upgradeable from the IBM System z10 Business Class™ (z10 BC) & IBM System z9® Business Class (z9 BC); and to the z196 M15



Built to support future data center design, modernization and efficiencies



- More performance and capacity within the same energy envelope as the z10 BC
- Supports raised floor and non-raised floor configurations
- Improved installation flexibility with overhead cabling option
- Reduced footprint depth by 9" (22.8 cm) compared to z10 BC
- Optional high-voltage DC power input



Simplify and reduce cost with IBM zEnterprise



- An Integrated system of multiple architectures for optimizing the deployment of multi-tier workloads
- Creating a single point of control for management and administration to reduce operational overheads by up to 80%, including:
 - ▶ Power and Facilities
 - ▶ Labor
 - ▶ Software Licenses



• Based on IBM analysis of a large Financial Services company Datacenter. See details on ibm.com/systems/zenterprise/
• Deployment configurations based on IBM studies and will vary based on workload characteristics. Price calculations based on publicly available US list prices, prices will vary by country.

System z Software and Smarter Computing

Supporting Smarter Computing through new workloads



Big Data

Data Warehousing and Analytics

- Integrating and transforming data to ensure trusted information for the business
- Help organizations better understand, anticipate and shape business outcomes

Mult-platform Development and Transaction Processing

- Accelerate agility with intelligent application development and management

Business Process Management

- Agile processes and decisions to optimize business performance

Optimized Systems

Virtualization and Optimization

- Consolidation to reduce cost, complexity and help align IT resources

Risk Management

- Reduce application downtime to help lower costs and improve productivity

Cloud

Cloud Computing

- Cloud Applications to Elevate Business Performance



Continued Investment in System z software for zEnterprise

Information Management

Strong information management platform built for business workloads

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

- NEW!** Preview- IBM Smart Analytics Optimizer V2
- NEW!** IBM InfoSphere Guardium Data Encryption for DB2 and IMS Databases, InfoSphere Classic Federation for z/OS, InfoSphere Classic Change Data Capture for z/OS. InfoSphere IMS Replication for z/OS
- 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!** IBM Solution Edition for Cloud Computing
- 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 DFSMSshm™
- NEW!** IBM Security zSecure suite
- NEW!** IBM Tivoli Workload Automation
- NEW!** IBM Multi-site Workload Lifeline v1.1



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 XI50 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

Lotus

Productivity and Collaboration Portal, Connections, Lotus® Notes Domino®, Sametime

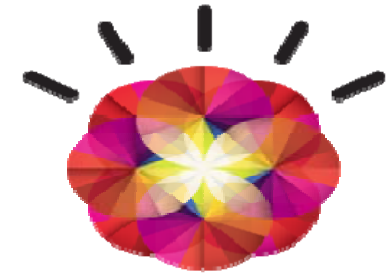
- NEW!** IBM Lotus Connections
- NEW!** IBM Lotus Quickr™ for Domino
- NEW!** IBM WebSphere Portal for z/OS and Linux on System z

Linux on IBM System z

An ideal platform for enterprise-class IT optimization and cloud computing



Smarter computing based on an IT infrastructure that combines Linux[®] with the industry-leading IBM System z[®] and the out-standing IBM z/VM[®] virtualization technologies for server and workload consolidation, new Linux workloads and cloud at an attractive price.



Highlights

- Simplified IT infrastructure inside a single IBM System z
- Highly scalable, flexible and secure, sharing all system resources
- Tight integration of workloads
- Business continuance that help minimize revenue loss due to downtime
- Smarter computing at an attractive price — pay less as you run more

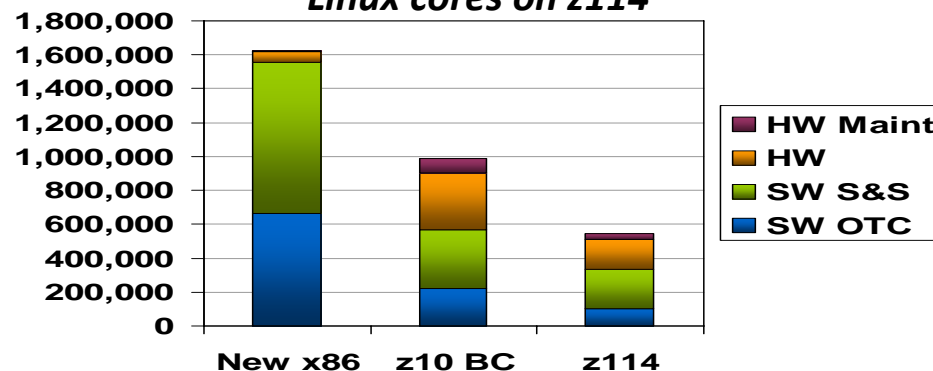


Linux on zEnterprise for Consolidation to Reduce Cost



- Lower acquisition costs of hardware and software vs. distributed servers – **60%** less than Nehalem*
- Reduce floor space by up to **90%** compared to distributed servers*
- Reduce labor costs by up to **70%** compared to distributed servers*
- **\$500 per year** per virtual server (TCA)*

Consolidate 40 Oracle server cores onto 3 Linux cores on z114



“Even without factoring in the maintenance and support costs - which would be considerable for a large estate of physical servers - we found that running a virtualized Linux environment on **System z would be somewhere between 30 and 50 percent less expensive than a distributed architecture.**”

-- Ted Mansk, IT Director, BCBSM

* Distributed server comparison is based on IBM cost modeling of Linux on zEnterprise vs. alternative distributed servers. Given there are multiple factors in this analysis such as utilization rates, application type, local pricing, etc., savings may vary by user.

Bank of New Zealand



- Consolidated 200 Sun servers down to 1 IBM System z10 running Red Hat Enterprise Linux
- Reduced data center footprint by 30%, heat output by 33%, and power consumption by close to 40%
- Only one administrator needed per 200 virtual servers
- New environments are deployed in minutes, not days



IBM Software for System z



Enables hybrid and cloud environments for Smarter Computing

- **Designed to handle all variety of workloads including**
 - Multi-platform Development
 - Transaction Processing
 - Virtualization and Optimization
 - Risk Management



IBM Software for System z

Managing service delivery and provisioning for Cloud



Cloud and Lifecycle Management for zEnterprise

Deliver Cloud benefits thru standardization, automation and virtualization of services

Business Value:

- Achieve visibility and control in the cloud environment with service automation, provisioning, management, security and change
- Tailor your cloud environment to business and workload requirements
- Provide Service usage for financial accounting

- Service automation (TWS/SA)
- Provisioning (TSAM)
- Monitoring and management (OMEGAMON)
- Security (zSecure)
- Financial accounting (TUAM)



System z has had virtualization for years



Extending data and analytics capabilities



- The z114 supports the IBM Smart Analytics Optimizer for query performance **up to 80X faster**
- The IBM Smart Analytics System 9600 for the z114 creates a new entry point for advanced analytics on System z



“Direct access to operational data as it happens, as the data is created, is really becoming vital. System z is a dream platform to deliver that”

Providing customers Integrated Service Management with API support



- **Statement of Direction¹ - 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 Direction¹ - 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.







zEnterprise





- Market Positioning



System z improves IT efficiency across industries.* IBM

*Based on Dr. Howard Rubin Study

-  **44%**
lower cost per credit card transaction
-  **31%**
lower IT spend per consumer loan
-  **25%**
lower cost per mega watt hour produced
-  **24%**
lower cost per hospital bed

-  **20%**
lower cost per airline passenger
-  **26%**
lower cost per new vehicle
-  **25%**
lower cost per retail store
-  **23%**
lower cost per barrel of oil



Howard Rubin Video



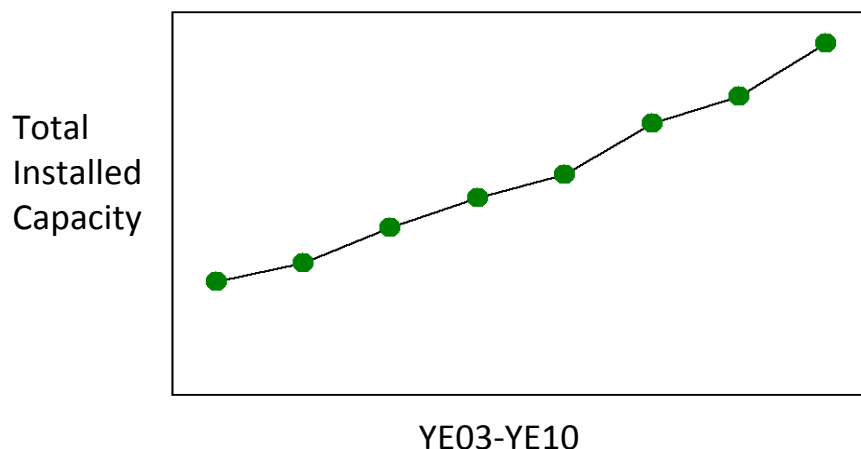
Understanding technology investment



System z marketplace momentum



System z Install Base



“... zEnterprise 196 ... allows us to continue to grow and expand our business... the ability to manage workloads on select Power and System x servers as if they were a mainframe [will]... further simplify our IT architecture and reduce costs.”

– David Wade, CIO, Primerica

34

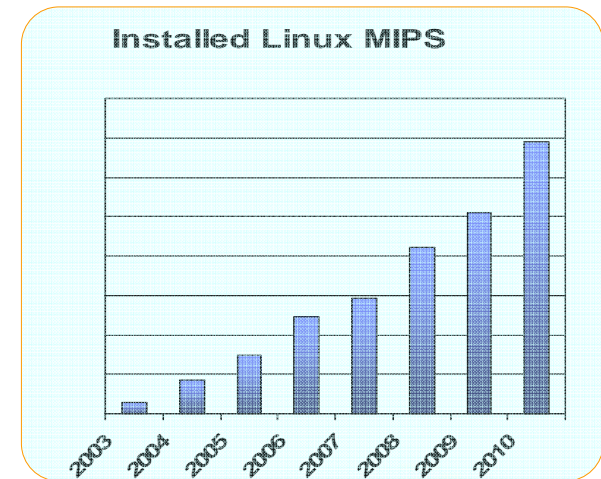
percent MIPS growth in 1Q11, following 58 percent MIPS growth in 4Q10 – the highest growth in a decade



Linux on IBM System z is for real

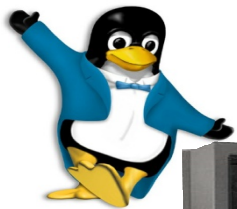


- **The momentum continues:**
 - Shipped zIFL volumes and installed zLinux MIPS increased 35% in 2010 compared to 2009
 - zLinux penetration in 1H11 exceeded all of 2010
 - Over 1 in 5 System z engines installed globally is zLinux
 - New System z clients grew almost 70% in 2010 --- over half were zLinux only
- **Cumulative total IFL Engines Shipped 11,315**
- **32% of System z customers have IFLs installed**
- **64% of the Top 100 System z clients are running Linux on the mainframe**
- **> 3,000 applications are available for Linux on System z ***
- **Two Linux partners: Novell SUSE and Red Hat**



* ISV Enablement – data as of YE10

Australia & New Zealand – Enterprise Linux Server



zEnterprise z114 – Configuration and Pricing

- 2 x Linux core's & 48 GB memory
- 4 x 10GB Ethernet ports & 8 x FCP ports
- zVM 6 (including 3 years Support & Subscription)
- 3 years Hardware Maintenance

Purchase price of **AUD \$330,000 ex GST**



Customers Select z to Meet These Critical Business Needs



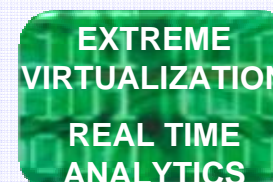
High business growth



Continuous business operations



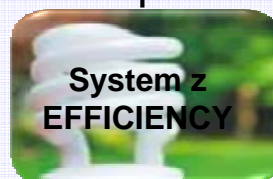
Flexibility and speed to respond



Reduce business risk



Green strategy
Running out of energy and space



Secure Cloud Services





Thank you!

**ibm.com/systems/au/z/
ibm.com/systems/nz/z/**

