



IBM System z Strategy and Direction – The Road to Smarter Computing

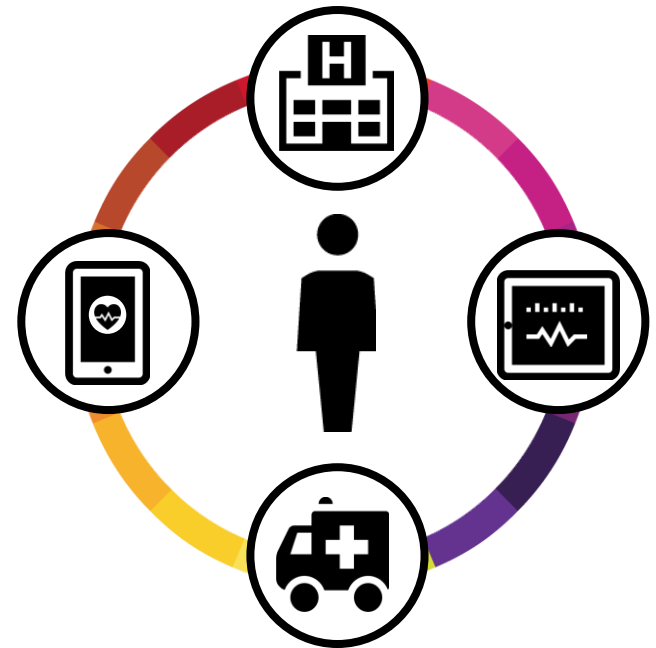
Greg Lotko, Vice President & Business Line Executive for System z,
IBM Systems & Technology Group



On a smarter planet, there are no clear boundaries of IT

“All clients are experiencing the phenomena of what we call ‘front office transformation’— social media, devices, mobility— all reshaping the way they want to engage their customers, and how they capitalize on Big Data and analytics.”

Ginni Rometty, President & CEO, IBM



CEOs believe technology will be at the forefront of driving change through 2015*

“71% of CEOs identify technology as the most important external force impacting their organizations”*



Is your infrastructure optimized for the greatest efficiency of all your applications and resources?

Does your infrastructure enable you to provide rich, actionable insight?

Are you leveraging new technologies – mobile, social, cloud – to deliver an excellent customer experience at every touchpoint?

*2012 IBM CEO Study



The real question

Will your infrastructure block or enable change?



Only 1 in 5

clients have highly
efficient IT infrastructures

allocating 50% more of their
IT budget to new projects*

* 2012 IBM Global Data Center Study



The world is changing. Is your infrastructure ready?

70% of IT budget is devoted to operations and maintenance¹

Connected devices will surge to 22 billion by 2020², with digital content rocketing to 8 zettabytes by 2015 (90% unstructured)³

The average IT infrastructure is attacked nearly 60,000 times every day⁴

The time is now to...

Exploit cloud to improve efficiency and speed time to market

Unlock the power of big data to deliver more actionable insight

Secure critical information to comply, reduce risk and protect

1 Source: IDC, Analyst Matt Eastwood, IDC Directions Presentation, 2011

2 Source: Forrester, BT 2020: To Thrive In The Empowered Era, You'll Need Software, Software Everywhere, January 2012

3 Source: IDC Predictions 2012: Competing for 2020

4 Source: 2012 Data Breach Investigations Report



Smarter Computing

The IT infrastructure that enables a smarter planet.

Cloud Ready

Public and Private and Hybrid
Pre-integrated and custom built
Optimized for any scale

Data Ready

Structured and unstructured data
Predictive, advanced and operational analytics
Optimized for any scale

Security Ready

Fully secured and best possible security
Fully built in and individual additions
Compliance and governance requirements



A comprehensive portfolio of systems to uniquely address your evolving needs



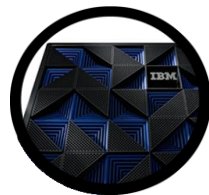
System z

Secure cloud
for data



Power Systems

Engine for
faster insights



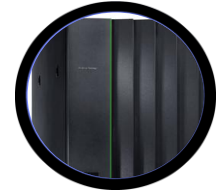
PureSystems

Integrated expertise
to improve the
economics of IT



System x

Redefining
x86 innovation



System Storage

Smarter solutions
for big data and cloud

IBM Software and Services

Smarter Computing: Tomorrow Ready.



Smarter Computing with IBM zEnterprise

Cloud Ready

Efficiency at scale

Provides a highly secure and scalable enterprise cloud for efficiently running multiple critical applications

Data Ready

Operational analytics

A secure and scalable enterprise data repository that integrates operational analytics for accelerated insight

Security Ready

Ultimate security

Delivering unmatched security for critical business processes, applications and data

IBM zEnterprise EC12: The next-generation in hybrid computing



The **ultimate secure** foundation that enables your enterprise to improve service to customers using **data** and **cloud** capabilities.



Technology innovations in IBM zEnterprise EC12



5.5 GHz chips

the industry's fastest with 25% faster engines and 50% more capacity (vs. z196) and 2x more cache

Flash Express

improves performance, availability at critical times like market open

IBM zAware

increases availability as a self-learning integrated analytics solution

Cryptography

built into each GP core / processor and IFL

Non-raised floor

now offered using overhead power and cabling support

zEnterprise EC12: An optimized design

Comprehensive integration for information-centric computing



A cloud-ready infrastructure speeds time to market and improves efficiency

A cloud-ready infrastructure enables...

60%

of CIOs ranked cloud computing as high priority in their visionary plans up from 33% in 2009¹

80%

of new apps will be deployed via the cloud²

An efficient, scalable, secure infrastructure

Improved speed and flexibility

New sources of business innovation and value

1 Source: 2011 IBM CIO Study

2 Source: IDC Predictions 2012: Competing for 2020

The foundation for cloud computing



Hybrid computing

zBX Model 003
workload-
awareness
resource
optimization

zManager

integrates
multiple
platform
resources

Linux on z

reduces
complexity
and costs for
1000s of apps

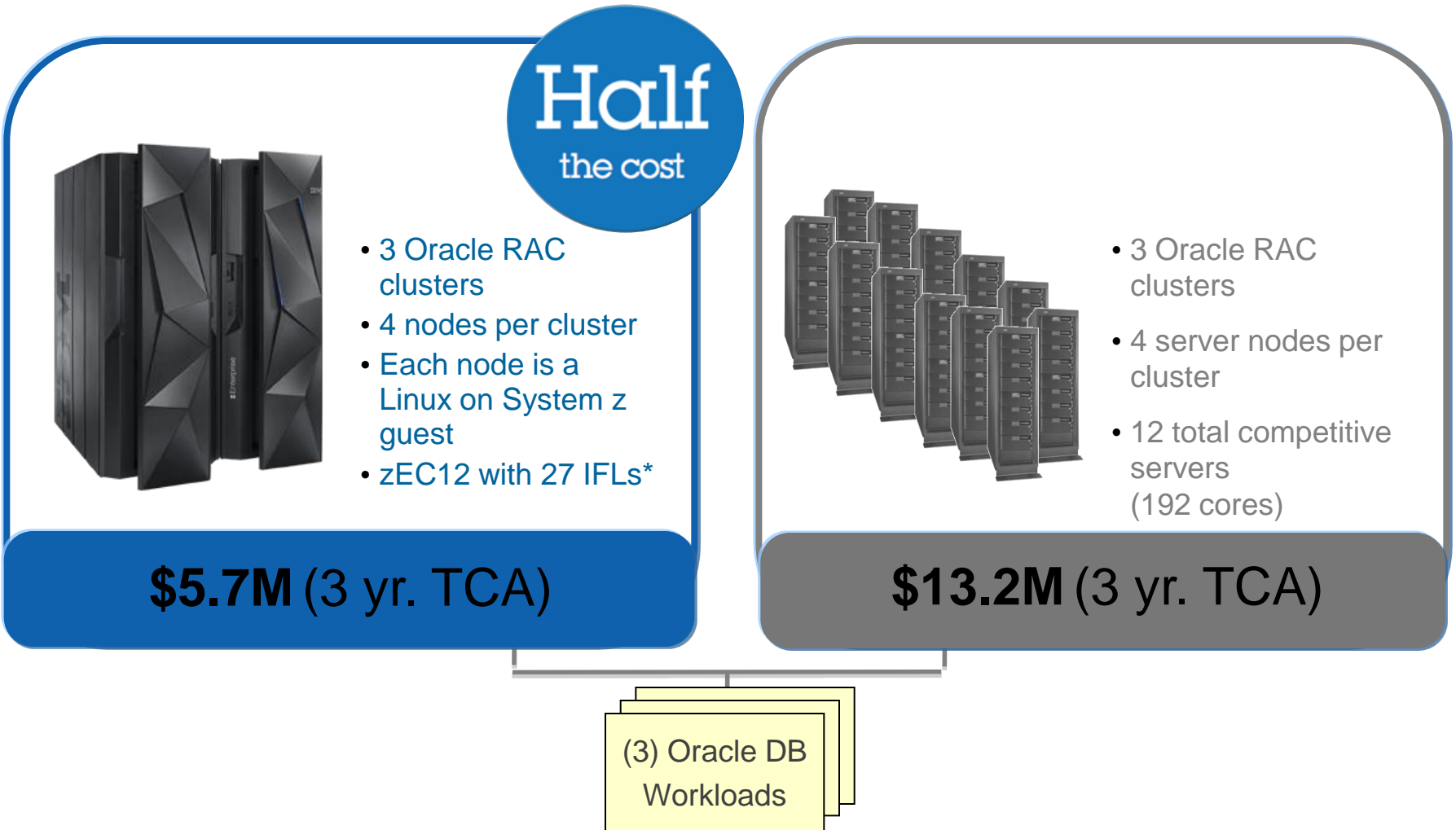
Partition architecture

available and
resistant
partition for
private cloud



"We built a custom heterogeneous private cloud environment by leveraging the IBM zEnterprise System ... For the first time we are harnessing real-time traffic data providing actionable insights, improving the transportation system and driving experience."

zEC12: Lowest TCA for Linux consolidation of Oracle databases



* IBM Internal Study

TCA includes hardware, software, maintenance, support and subscription. Workload Equivalence derived from a proof-of-concept study conducted at a large Cooperative Bank.

zEC12: Better energy usage control in the data center

The New York Times

Power, Pollution and the Internet

6-12%

average utilization rates of servers

30x

the amount of energy wasted in a typical data center vs. energy needed

1 data center

on average can use more power than a medium-sized town

95%+

utilization rate with IBM System z

50%

more capacity with same energy footprint as z196

30,000

mega-watt hours of energy saved with IBM's data center consolidation

20%+

additional energy savings with optional HV DC power and water cooling



Cloud ready.

IBM zEnterprise EC12 delivers efficiency at scale.

66% better scaling advantage for an SAP cloud solution over competitive environment

TCA of less than \$0.70 per day per virtual server¹

Manage tens of thousands of virtual servers in a single system

Linux consolidation of Oracle workloads deliver over 1/2 the cost vs. the competition



A data ready infrastructure delivers more actionable insight

A data ready infrastructure enables...

83%

of CIOs ranked business intelligence and analytics as high priority in their visionary plans¹

48%

The estimated increase in digital content from 2011 to 2012²

Actionable insights on operational data

Maximum availability of business insight

Managed risk for business operations

¹ Source: 2011 IBM CIO Study

² Source: IDC Predictions 2012: Competing for 2020

Intelligent decision making with real-time insights



zEnterprise Analytics System

provides a single point of support for end-to-end analytics solutions

IBM DB2 Analytics Accelerator v3

integrates near real-time data modeling for insight

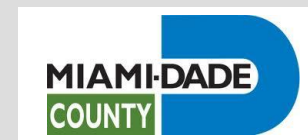
Cognos for Linux and z/OS

simplifies and speeds delivery of intelligence to users

SPSS scores transactions

detects fraud using real-time analytics

“The move to System z enabled a complete transformation in our ability to deliver analytics on a large scale.”



Raising the bar in analytics at dramatically lower costs

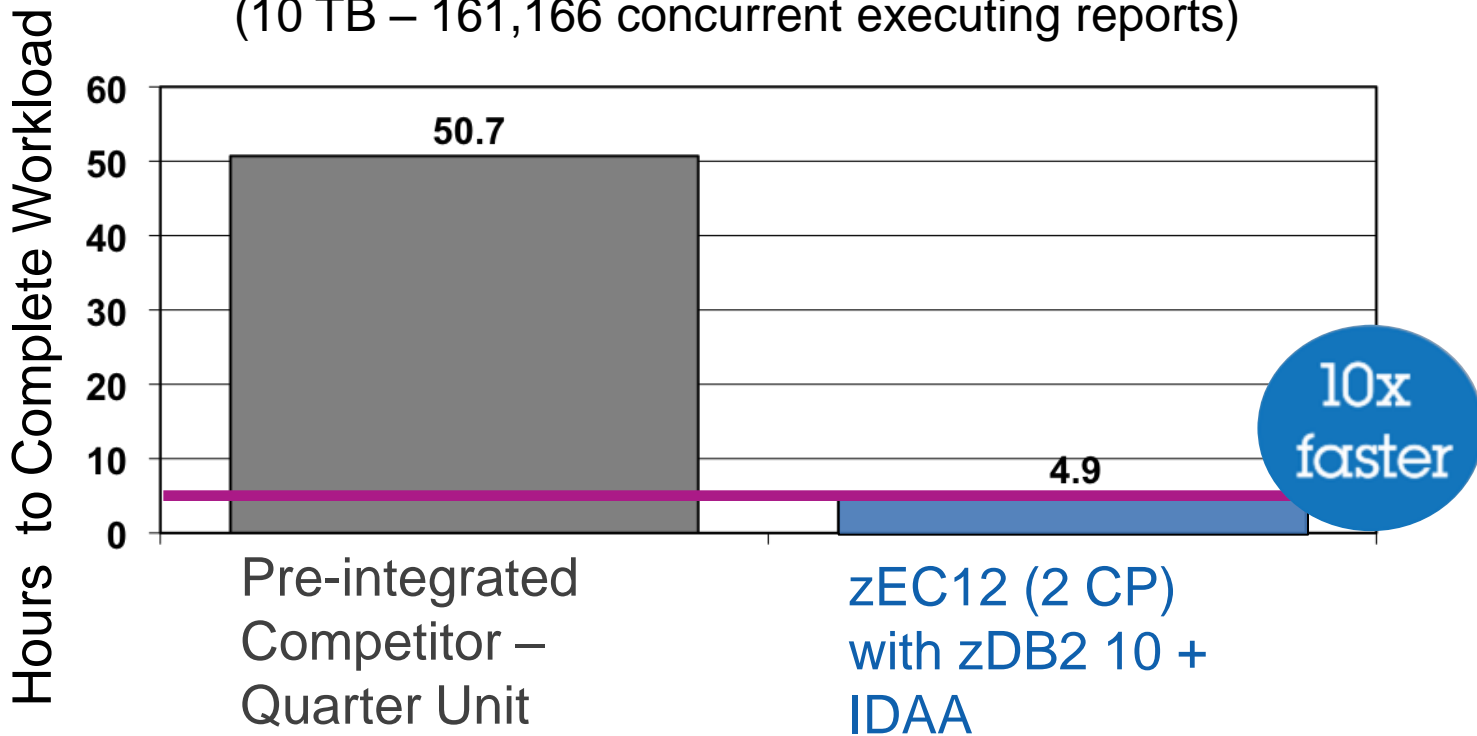
IBM DB2 Analytics Accelerator V3

- High-Performance Storage Savers
- Incremental Update
- Query Prioritization
- High Capacity
- UNLOAD Lite



A typical day for analytics workloads

Elapsed Time To Complete BI Day Fixed Execution Test
(10 TB – 161,166 concurrent executing reports)





Data ready.

IBM zEnterprise EC12 delivers operational analytics.

Zero enterprise
data loss

Manage data
growth up to 50
TB with linear
response times

Process complex
queries up to
2000x faster¹

A design point of
99.999%
availability for data
and applications



A security ready infrastructure helps comply, reduce risk, and protect

A security ready infrastructure enables...

\$5.5M

The average total
organizational cost of
a data breach¹

68%

The increase in the cost
of lost data in 5 years²

Data security and integrity

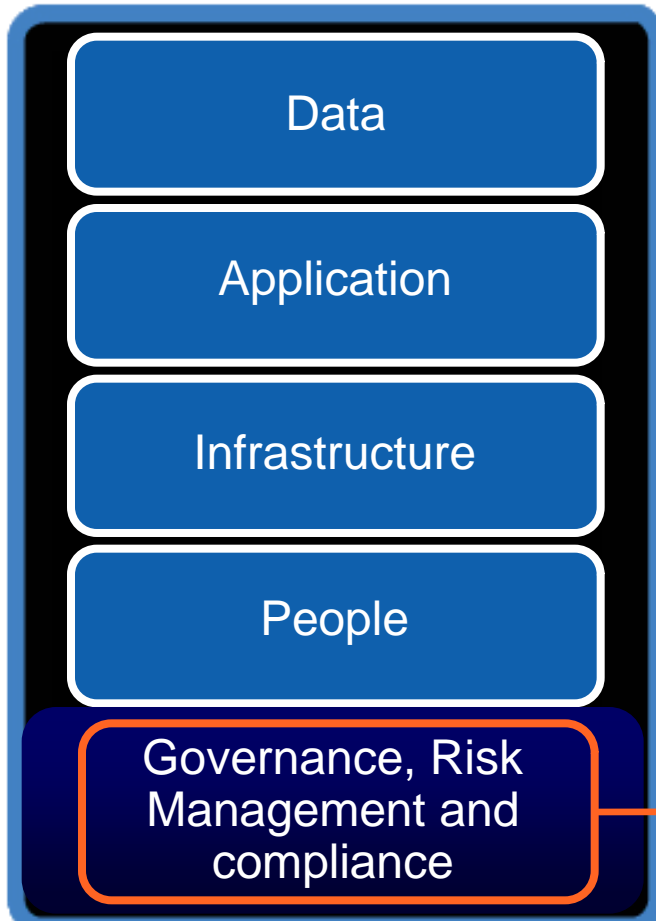
Trusted identity and access
management

Minimal overhead to meet
compliance requirements

¹ Source: 2011 Cost of Data Breach Study: United States, Ponemon Institute LLC, March 2012

² Source: Computerweekly.com, 2011

System z delivers trusted security to address your challenges of cost, complexity and compliance



- Encryption of critical data, at rest and in flight
- Early detection of application vulnerabilities and Isolation of workloads
- A fully secured virtual pool of resources as a foundation for enterprise clouds
- Complete user authentication, access control, audit and management

Build the ultimate
foundation
for IT security.

Build a strong foundation for IT security



Crypto Express4S

digital signature
cryptography
protects data

Enterprise PKCS #11 Coprocessor

meets regulatory requirements with enhanced digital signature

New EMV support

for credit and debit cards

Security zSecure suite

integrated security events enhance security intelligence



“... Encryption on zEnterprise is critical to our company success to allow us to protect customer privacy data while it is stored on our mainframe and while it is exchanged with other parties for processing.”



Security ready.

IBM zEnterprise EC12 delivers ultimate security.

Deliver **EAL5+**
highest level of certification
for general purpose
servers

Process **>17,500**
0 SSL transactions per
second

Save up to **70%** in
security audit and
compliance overhead¹

96 out of the top
100 worldwide
banks use System z

¹(Source: based on zSecure)

Optimized for zEnterprise EC12

Storage, software, services, financing



Services

- Accelerate IBM zAware implementation in a z/OS environment with [IBM zAware Enablement Starter Kit](#) and [Implementation Services for System z - zAware](#)
- Speed private cloud ROI with [IBM Server Implementation Services for Cloud – Linux on z/VM](#)

Financing

- Defer zEnterprise payments for six months
- IBM Global Financing's Fair Market Value (FMV) lease lowers TCO



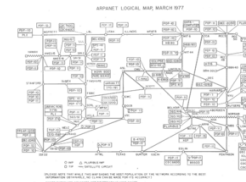
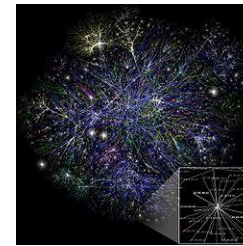
IBM zEnterprise EC12: The foundation for a secure cloud for data

- Vast quantities of structured data
- Large-scale transaction throughput
- Centrally serves multiple mixed workloads
- Securing the most critical IT services
- Operational analytics embedded in the business transaction



Efficiency at scale. Operational analytics. Ultimate security.

Lasting technologies continuously innovate and advance while preserving core values





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