

Next Era of Computing and IBM's Commitment to System z

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Strategic Priorities for System z.

Enhance ... Optimize ... Expand:



Operational analytics capabilities

Dynamic and efficient shared hybrid computing infrastructure

Capacity, throughput to handle high-volume mobile workloads

Qualities of service for multi-tenant, centrally managed workloads, ie., clouds

Intelligent, secure data vault with auditable protection

Continuous availability innovations

Efficient at Scale

Operational Analytics

Cloud, analytics and mobile aren't simply remaking computing... ...they are revolutionizing business models

Mobile & Social



Cloud



Analytics



Reshape Customer Experiences
Reduce Costs
Capture New Business

Security



Business and IT face significant challenges in all of these areas

Analytics



85% indicated that most of the source data for driving operational analytics **resides on the mainframe**

Mobile



Enabling mobile as a new channel and **connecting to back-end data** is among the **top three concerns** of global CIOs

Cloud



Enterprises see **private cloud as the on ramp** to cloud for the next 24 months

Security



External threats are rated as a big challenge with **two-thirds of CIOs expected to spend more on security** over the next two years

Redefining the art of the possible on a smarter planet

Analytics



- **Financial institutions** detect fraudulent money laundering activities
- **Insurers** discover suspicious claims before payment to minimize loss
- **Retailers** boost revenue through discovery of customer buying behaviors

Mobile



- **Banks** offer mobile applications for anytime, anywhere banking services
- **Education institutions** provide real-time access to university information systems to improve the student experience
- **Local governments** expand and coordinate city services through citizen-centric applications

Cloud



- **City Governments** ensure effective administration of citizen services
- **Universities** provide students virtual desktops with flexible, reliable and secure access
- **Insurers** rapidly develop and provide new offerings at lower costs

Security



- **Retailers** ensure compliance with Payment Card Industry (PCI) data security standards
- **Financial institutions** manage security keys and ensure availability and protection of sensitive information
- **Healthcare** payers and providers secure patient data and comply with HIPAA

Organizations that embrace this technological shift are reshaping the value they deliver through improved services



What if you could empower the general public to create citizen-centric applications with access to years worth of city data?

Self-service secure cloud portal and mobile applications enrich civic life



What if you could more quickly and nimbly enrich the customer experience with increased product personalization?

Core-banking solution establishes a single source of customer information



What if various city departments could act and respond as a single, coordinated unit to deliver citizen services?

Analytics-driven system assesses, analyzes and responds more quickly to citizens



What if you could create the ultimate security environment, including an enterprise-wide encryption service?

Cryptographic coprocessors secure 2B transactions / month with enterprise-wide encryption services

zEnterprise is the ultimate for cost and efficiency



- **Energize your enterprise** applications through integration, embedded analytics and enterprise mobile optimization
- **Save money** through consolidation on Linux with and an efficient cloud delivery model
- **Secure it all** with confidence on a trusted and resilient infrastructure



An Integrated
Data & Analytics
Engine



Efficient, Agile
Cloud Computing
Foundation



Sophisticated
platform for
Mobile Computing



Ultimate in
Trusted Security
& Resiliency

The new IBM zEnterprise EC12 gives you more

More Performance

25% performance boost per core running at **5.5 GHz**

50% more capacity for traditional workloads

30% improvement for SAP workloads

2X increase in RAIM memory



More Value

45% improvement in Java workloads

25% more configurable cores for client use

\$0.70 / day per virtual Linux server

50% lower TCA for Oracle Enterprise database solutions

zEC12: A Smarter Computing infrastructure that is Cloud Ready, Data Ready and Security Ready, enabling a Smarter Planet™ for today and tomorrow

zEnterprise: An Integrated Data & Analytics Engine

57%

Our data is **scattered** in too many places (top response)

89%

Above all else, our data must be **secure** (tied for top response)

89%

When we access data it should appear as a **single source** of the truth (tied for top response)

Data Ready:

Enterprise data hub

High-volume secure and reliable transaction processing

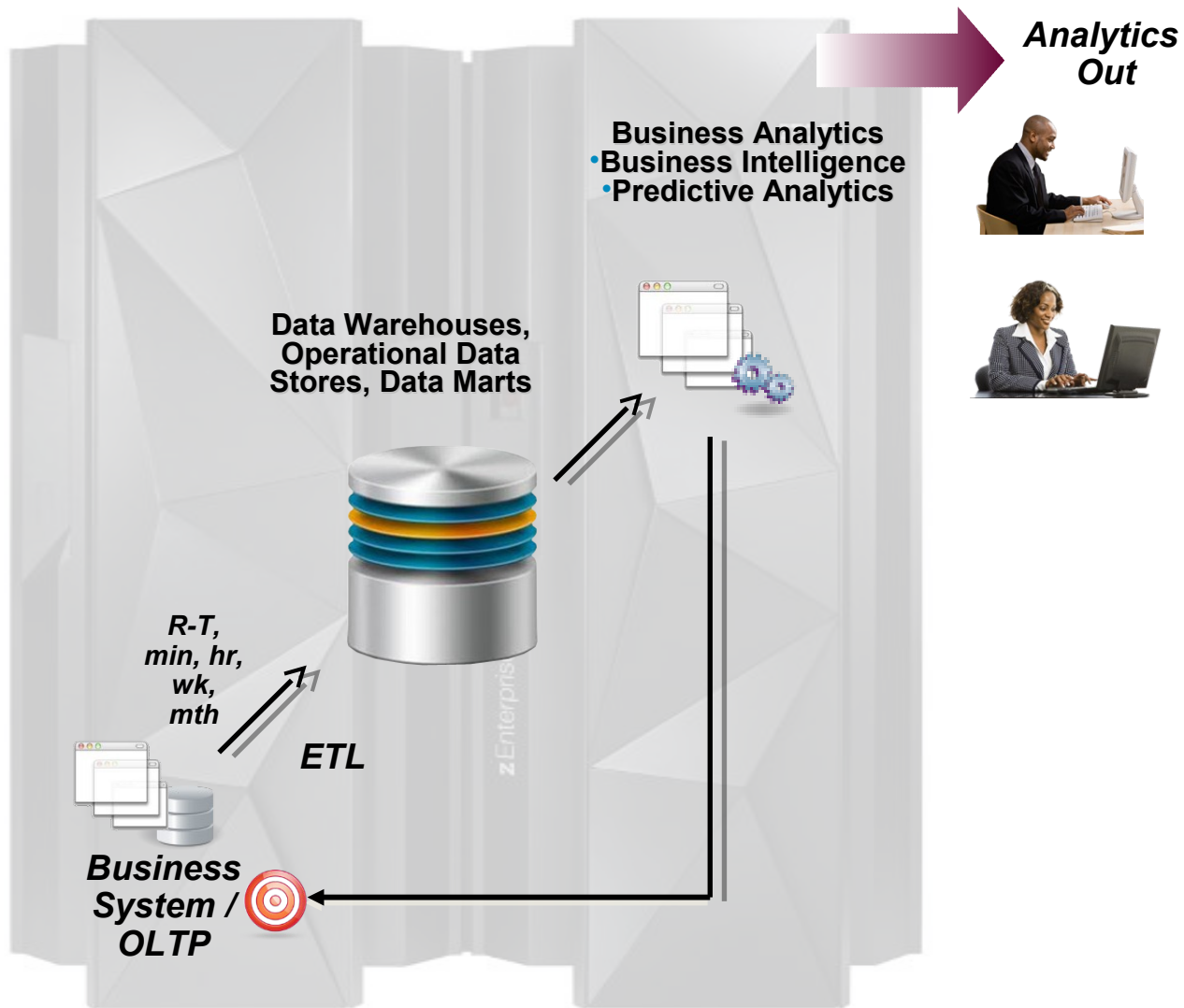
Integrated, real-time operational analytics

Enterprise data repository that integrates operational analytics into the fabric of your business for accelerated insight

What Sets zEnterprise Apart for Business Analytics?

zEnterprise: An end-to-end, integrated, rock-solid foundation for business analytics

Customer Interaction



The zEnterprise Analytics System 9700 with the DB2 Analytics Accelerator beats the competition head to head

*Elapsed Time To Complete BI Day
Fixed Execution Test*

Hours to Complete Workload



**Pre-integrated
Competitor –
Current Quarter
Rack Technology**

**Analytics System 9700
zEC12 (2 CP+2 zIIPs)
with DB2 10 + Analytics
Accelerator**

- Driving analytics against transactional data on a centralized, highly available and scalable platform
- Eliminate data transfer costs and accelerate decision making through ETL avoidance
- Dynamic routing for most efficient fit for purpose execution architecture
- A single paradigm for data security, logging, access and backup/recovery

Study based on preliminary measurements and projections using BI Day Tests. Performance numbers may vary based on workload profiles and capacity of machine



zEnterprise: A Holistic Cloud Computing Platform

80%

Of enterprises consider security the #1 inhibitor to cloud adoptions

48%

Of enterprises are concerned about the reliability of clouds

33%

Of respondents are concerned with cloud interfering with their ability to comply with regulations

Cloud Ready:

Elastic, virtually limitless expansion

Shared everything design

Secure hybrid computing with centralized management

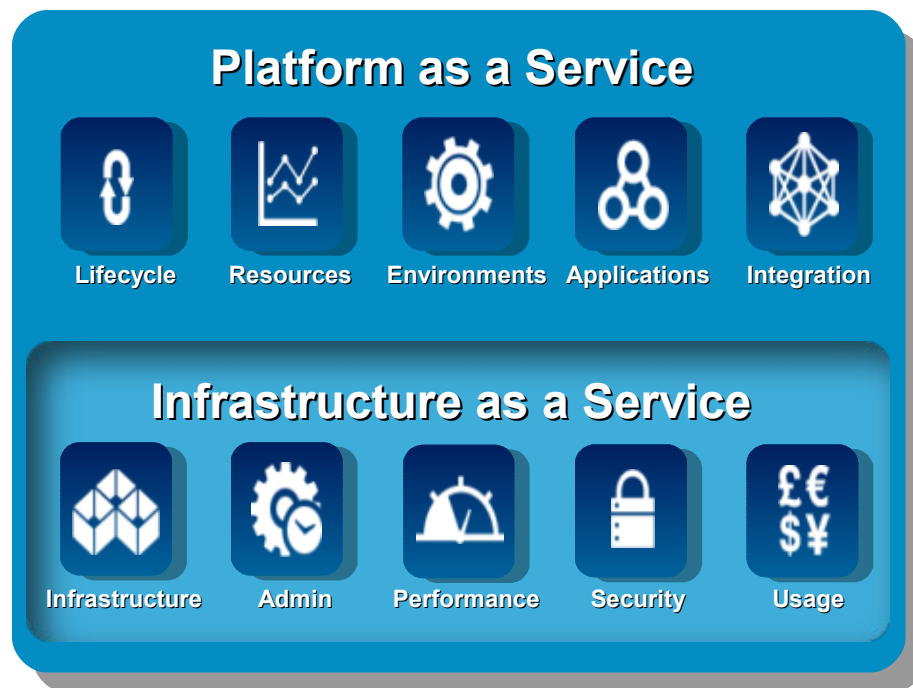
Built on open industry standards

Integrate, automate and orchestrate on a highly secure, scalable and agile enterprise cloud

IBM provides necessary cross-platform building blocks to achieve savings in Cloud-enabled Data Center

IBM SmartCloud Foundation

- **Comprehensive** set of offerings
- **Optimized patterns** of adoption
- **Heterogeneous** environment support
- Interoperate based on **open standards**



- Speed infrastructure delivery from 45 days to 20 minutes
- Improve server to administrator ratio from 10:1 to 100:1



Exploiting Cloud Service Management Roadmap on System z provides significant business value day one and increased value over time

CIO / IT Executive

Infrastructure Teams

1 Self Service Delivery and Management

“I need to reduce my capital costs, lower utilization, and gain accountability for resource usage”

Virtualization Management

Operations Teams

2 Virtualization Optimization

“I am not gaining benefits of virtualization: image sprawl, compliance, lack of visibility”

Image Management

Dev & Operations Teams

3 Workload Optimized Cloud

“I need to standardize and optimize applications to deliver faster”

Workload Optimized Patterns

4 Cloud Enabled Data Center

“I need to optimize & orchestrate services across domains”

Self Service Automation
Usage Metering and Chargeback

SmartCloud

Cloud Ready for Linux on z

Common Cloud platform built on an open standards reference model



International Organization for Standardization



openstack
CLOUD SOFTWARE

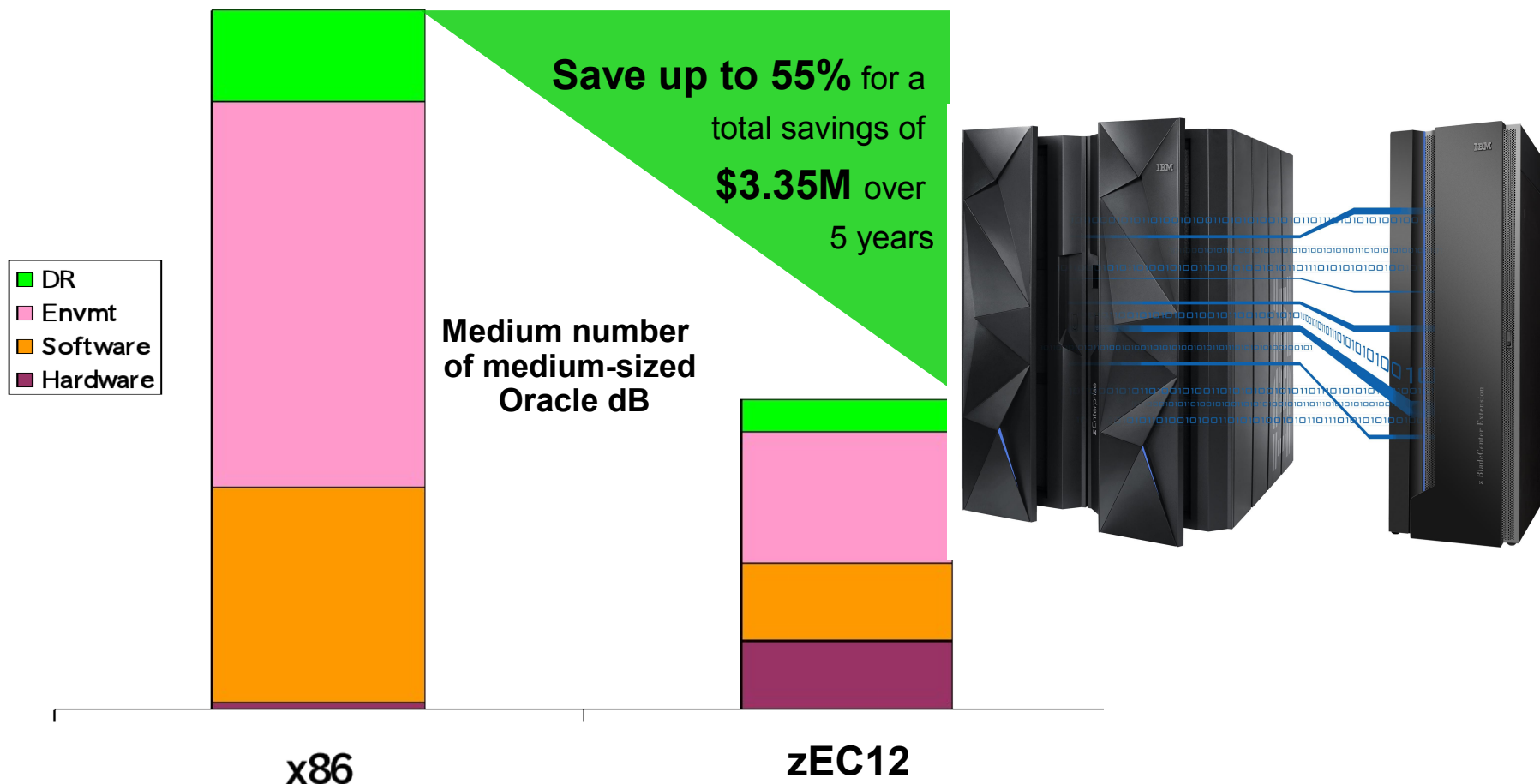


Advancing open standards for the information society



Enterprise Linux Server: a cost busting consolidation platform

Consolidate hundreds of distributed workloads onto a single system to improve efficiency and reduce costs to reinvest in new business capabilities



Based on preliminary measurements and projections comparing Oracle DB on x86 2 chip 8 core 2.13GHz blades vs. zBC12 and ELS solution edition pricing. Subject to change and results may vary based on numerous factors.

zEnterprise: Sophisticated System for Mobile Computing

76%

Of CIOs are investing in mobile security

\$534B

Dollars in mobile transactions by 2015

67%

Of CIOs are investing in mobile application virtualization



Mobile Ready:

Build and connect to back end systems

Secure and manage with the highest level of security

Extend and transform capabilities to mobile devices

Connecting backend systems to mobile devices to turn each interaction into an opportunity

Why System z and mobile?

- ✓ System z is an expert in transaction processing with the ability to handle volumes of critical data
- ✓ System z secures the data for mobile processing from mainframe to mobile device
- ✓ System z is the perfect environment for developing a mobile, cloud, and analytics integrated solution



System z

A sophisticated platform for mobile computing

IBM MobileFirst Platform is shaping enterprise mobility



1

The Broadest
Portfolio of
Mobile Solutions

2

The Deepest Set
of Services Expertise

3

New Industry Partnerships
and Resources for
Developers

IBM MobileFirst Platform offers:

Native, web, or hybrid app development

Tools to build & test high quality apps for many devices

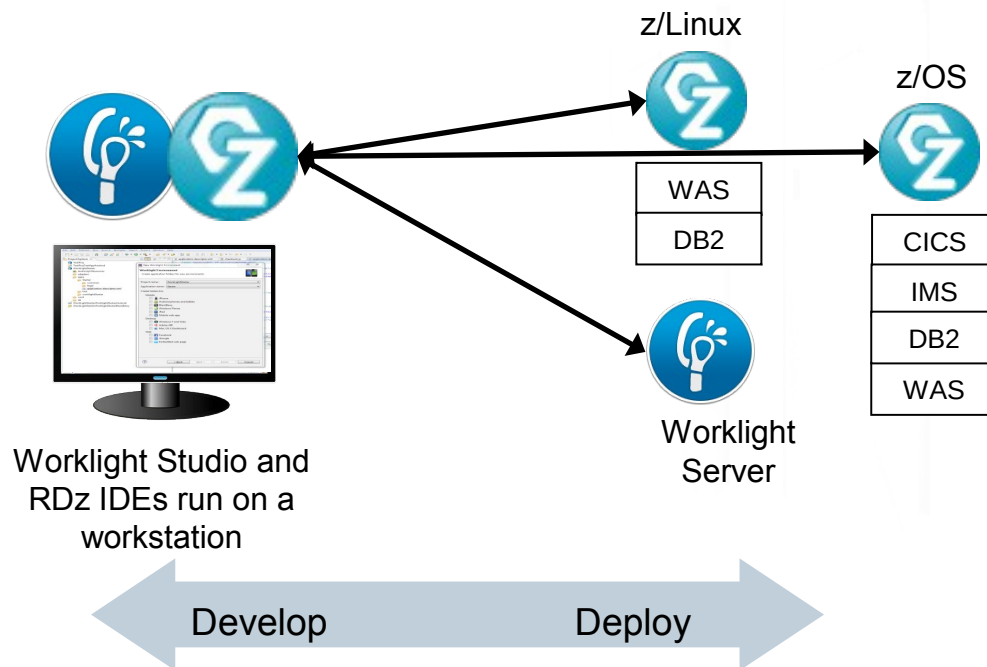
Management, security, continuous delivery & distribution of apps

Easy connectivity to existing data & services for mobile usage

On-premises or managed service delivery

Building mobile apps on the zEnterprise

- **Eclipse-based IDE for creating mobile applications** with IBM Worklight Studio integrated with Rational Developer for z (RDz)
- **Developer mobile tools with programming models** and web support with WAS Developer Tools for Eclipse (WDT)
- **Enterprise mobile application development for WebSphere** Application Server with Rational Application Developer (RAD)
- **Determine which apps need to be modified to support mobile** with Rational Asset Analyzer



IBM Worklight - an open, comprehensive and advanced mobile application platform to build, run and manage mobile applications

zEnterprise: A Trusted hub for Enterprise Data Security

55%

Of IT Executives that believe protection of data is paramount

60K

Average number of times per day an IT Infrastructure is attacked

\$5.5M

Average total organization cost of a data breach



Security Ready:

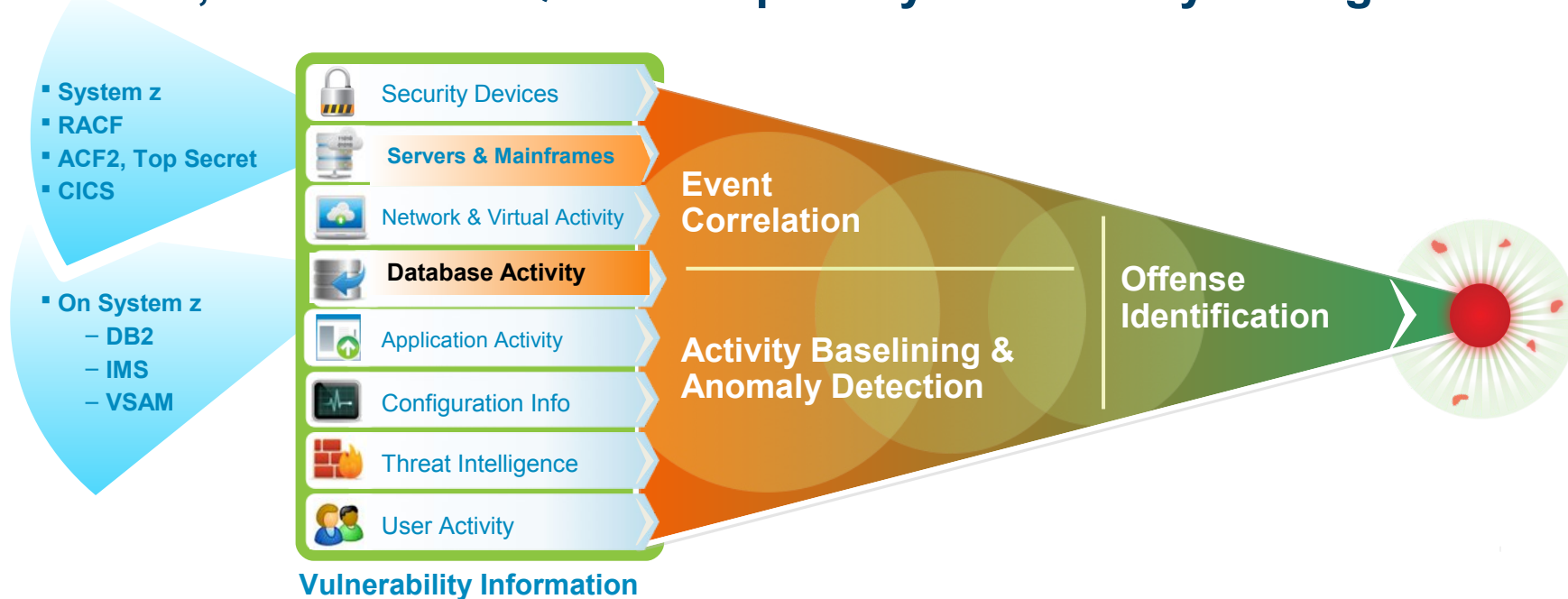
Ultimate data security protection

Built-in cryptography

Unmatched resiliency and availability

Trusted security and reliability for critical business processes, applications and data

zSecure, Guardium & QRadar improve your Security Intelligence



Extensive Data Sources

+






Deep
Intelligence

=







Exceptionally Accurate and
Actionable Insight

- ✓ Centralized view of mainframe and distributed network security incidents, activities and trends
- ✓ Better real-time threat identification and prioritization correlating vulnerabilities with Guardium and zSecure
- ✓ S-TAP feeds routed to QRadar via Guardium Central Policy Manager
- ✓ SMF data set feeds with zSecure Audit and Alert
- ✓ Produces increase accuracy of risk levels and offense scores, and simplified compliance reporting

zSecure complements QRadar Security Intelligence in the most challenging use cases

QRadar target use case	zSecure Suite complementary capabilities
 Advanced threat detection	⊕ zSecure Alert detects unauthorized logons and attempts, user behavior in violation of security policy, and instances where your core systems may be at risk
 Malicious activity identification	⊕ Identify dangerous configuration changes before they can be exploited
 User activity monitoring	⊕ Tracks privileged user activities and abuse and enforces separation of duties
 Compliance reporting and monitoring	⊕ zSecure Audit technology creates standard and customized reports for worldwide regulations and standards such as PCI, SOX, STIG, and more
 Fraud detection and data loss prevention	⊕ zSecure Alert provides real time notification of anomalous user activity including inappropriate data access

InfoSphere Guardium complements QRadar Security Intelligence in the most challenging use cases

QRadar target use case	InfoSphere Guardium complementary capabilities
 Complex threat detection	<ul style="list-style-type: none"> ⊕ Alert on sensitive data access without affecting performance ⊕ Identify DB infrastructure vulnerability level for asset classification ⊕ Block and alert on suspicious data access
 Malicious activity identification	<ul style="list-style-type: none"> ⊕ Monitor all traffic to/from data repositories, including content and metadata ⊕ Identify anomalous behavior from end-users, privileged users, system IDs ⊕ Prevent malicious access to sensitive data
 User activity monitoring	<ul style="list-style-type: none"> ⊕ Monitor privileged and regular end-user data access activity in real time ⊕ Create policies that granularly restrict access ⊕ Alert on suspicious behavior
 Compliance monitoring	<ul style="list-style-type: none"> ⊕ Centralized and normalized granular audit of all data activities without impact to resources ⊕ Automation of audit report review process ⊕ Report templates for major regulations
 Fraud detection and data loss prevention	<ul style="list-style-type: none"> ⊕ Direct visibility into data traffic (metadata and content) ⊕ Policies for detection of fraudulent data access activity ⊕ Blocking and quarantining of users with suspicious data access patterns
 Network and asset discovery	<ul style="list-style-type: none"> ⊕ Automatically discover all databases, sensitive data, and its entitlements ⊕ Classify data for policy enforcement and alert on findings ⊕ Identify vulnerability posture for database infrastructure

Deep investments across the ecosystem to accelerate adoption of new zEnterprise technologies and Industry solutions



Poughkeepsie

CoC for Smarter Cities
IOC Showcase



Montpellier

CoC for FSS Industry Solutions
Smartbank
Insurance Showcase



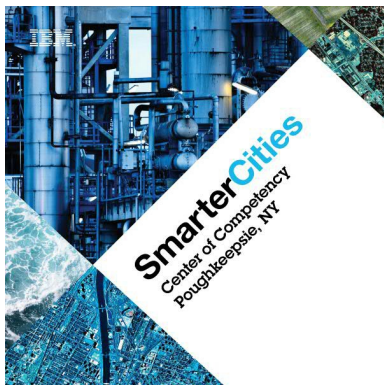
Gaithersburg

CoC for Cloud Technology
Cloud Test Drive
Wildfire Workshop



Boeblingen

CoC for Analytics
Demos for DB2 Analytics Accelerator &
Smart Analytics Accelerator Workshop



- Global investments in zEnterprise & Smarter Computing Client Design Center capabilities and resources
- Technical skills development and placement with new alliances between IBM, Universities and clients
- New ISVs, MSPs and Business Partners supporting the platform
- Migration and Implementation Services

A zEnterprise for Everyone

Freedom to choose the “right sized” mainframe to fit your needs

- 
- 1 Energize your enterprise** applications through integration, embedded analytics and mobile access
 - 2 Save money** through consolidation on Linux and efficient cloud delivery model
 - 3 Secure it all** with confidence on a trusted infrastructure

The secure cloud for data analytics and enterprise mobile optimization



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