z Systems Strategy – Redefining Digital Business

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Evolution driven through co-creation with our clients

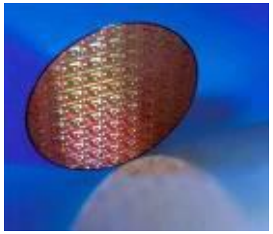
IBM System/360™

PR/SM Virtualization

CICS, DB2 & IMS

DB2
UNIVERSAL

BiPolar to CMOS



Parallel Sysplex

Capacity on Demand

Linux

Java

Java

IBM DB2 Analytics Accelerator

IBM z13

Analytics
Mobile
Security
Cloud
Social

z Systems: Integrated by Design

innovating from silicon through middleware

Linux

z/OS

z/VM

z/VSE

z/TPF

Java

Rational

WebSphere

Information Management

Tivoli

Lotus

Cognos

Semiconductor Technology

Microprocessor Design

Systems Design

Virtualization & Operating Systems

Compilers, Tools & Java Virtual Machine

Optimized Middleware

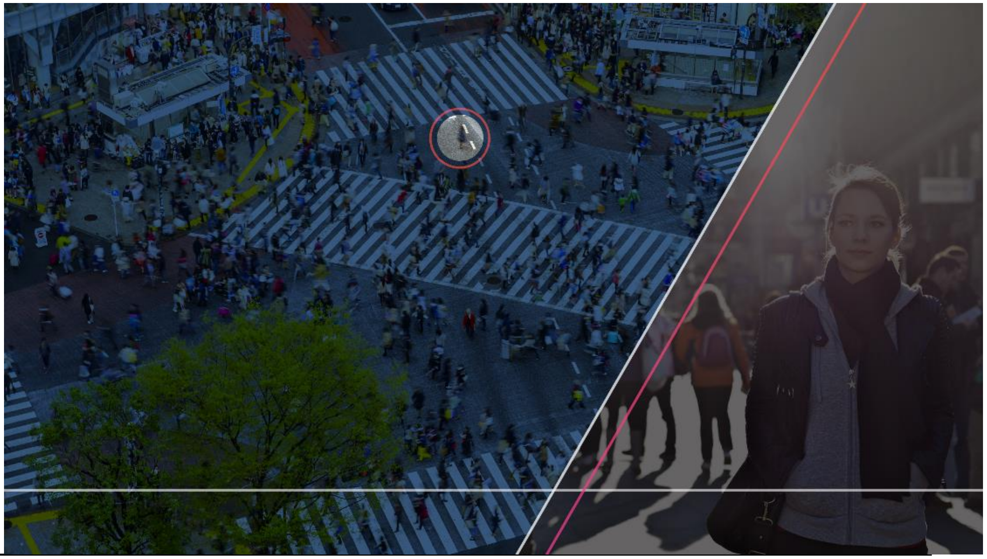
Organizations are exploiting the fundamental strengths of the mainframe today

- Transaction Processing
- Data Serving
- Mixed Workloads
- Operational Efficiency
- Trusted and Secure Computing
- Reliable, Available, Resilient
- Virtually Limitless Scale

The World is Changing……

Transforming how we act, interact and transact

Our Digital Footprint is expanding – 37x growth mobile transaction per user per day in the last decade



Consumers are empowered – Businesses need to get to a “Demographic of One”

The market is moving, forcing businesses to transform

Explosion in transaction growth

driven by mobility and the Internet of Things

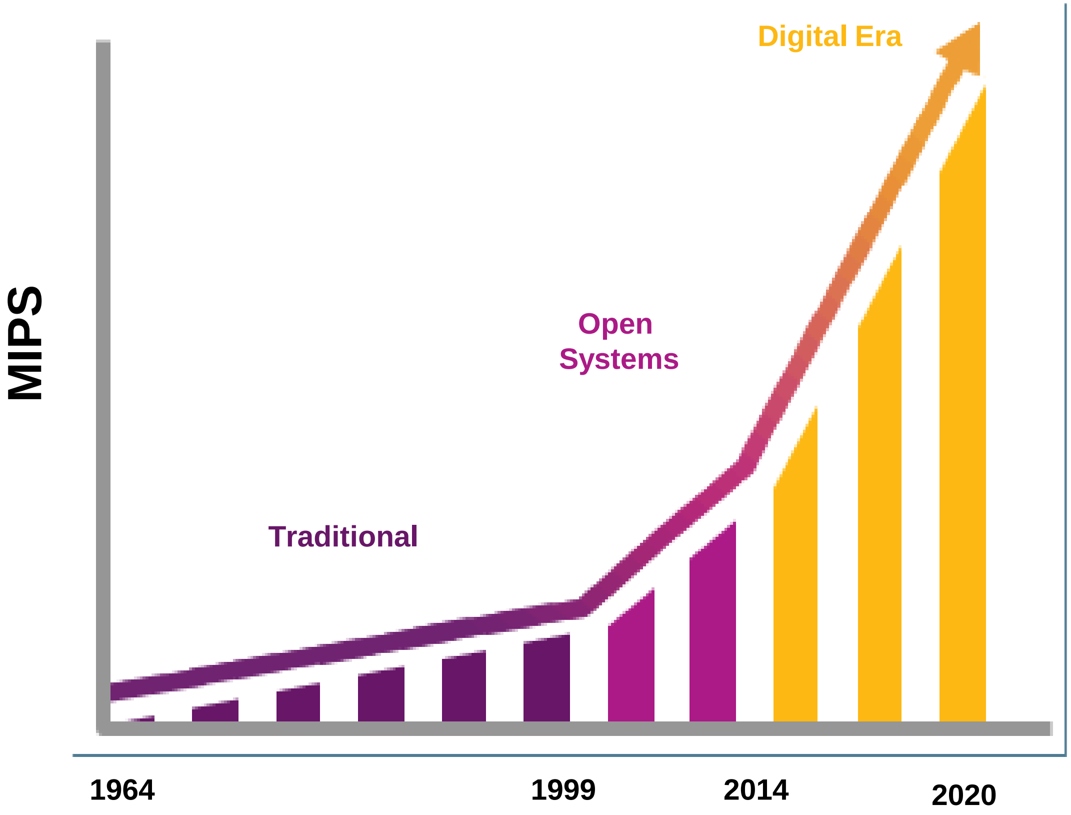
Analytics is moving to real time

to capture new opportunities at the point of impact

Hybrid cloud is the new standard

for delivering service, agility, trust and efficiency

New marketplace dynamics will drive hyper growth opportunity for the IBM Mainframe



Traditional Workloads

1964–2014

- Batch
- General Ledger
- Transaction Systems
- Client Databases
- Accounts payable / receivable
- Inventory, CRM, ERP

Linux & Java

1999–2014

- Server Consolidation
- Oracle Consolidation
- Early Private Clouds
- Email
- Java, Web & eCommerce

Digital Era-Cloud Analytics Mobile Social

2015–2020

- On/Off Premise, Hybrid Cloud
- Big Data & Analytics
- Enterprise Mobile Apps
- Security solutions

The all new IBM z13

Redefining enterprise IT for digital business

Transact at the scale and speed of mobile

Deliver insights at the point of engagement with integrated analytics

Ensure highest levels of security and trust through cloud

Over $1 billion investment with more than 5000 developers

Co-created with clients

Extending core strengths of the mainframe

The world’s premier data and transaction server

141 high-performance
cores delivering
40% more capacity

Simultaneous multi-threading
for up to 30% more
throughput

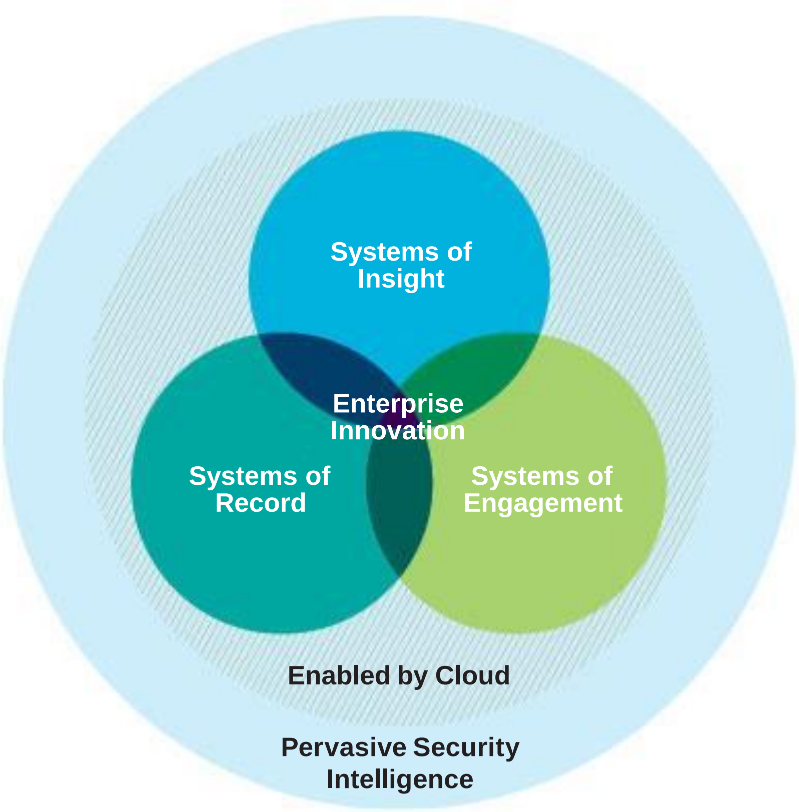
Single Instruction, Multiple Data (SIMD)
speeding complex
mathematical queries up to
80% with single instruction
multiple dataset

10TB memory
to eliminate I/Os for
up to 70% faster

320
Separate channels
of dedicated I/O

2x
The Cache and
I/O Bandwidth

z Systems help leaders take integrated approach to drive enterprise innovation and win in new era of IT


Systems of Insight
Enterprise Innovation
Systems of Record
Systems of Engagement
Enabled by Cloud
Pervasive Security Intelligence

IBM works with you to leverage existing assets, build and integrate:

Systems of Engagement

How are you harnessing Mobile to transform relationships with customers, employees and citizens?

Systems of Insight

How are you harnessing Big Data and Real Time Analytics for competitive advantage?

Systems of Record

How are you transforming your existing IT systems for the requirements of the new era?

Systems of Engagement

How are you harnessing **Mobile** to transform relationships with customers, employees and citizens?

Key Actions

Reimagine how business happens through **mobile**

Build your business to **personalize every interaction**

Design your system to enable the **highest levels of performance**

TRANSFORM ENTERPRISE OPERATIONS

- Tesco wanted to improve its warehouse operations and 3270 application
- IBM's MobileFirst approach leveraging mainframe assets and integration technologies to **accelerate time to value** in creation of iPad application
- **16 day ROI for the business!**

PERSONALIZE BANKING

- First National Bank needed to delivering mobile banking to 80% unbanked population of Africa
- IBM MobileFirst and z systems solution helped bank create a personalized mobile channel
- FNB **gained first-mover advantage in market and #1 spot for mobile banking**; ultra-low end-to-end response times of 30 milliseconds

HIGHER PERFORMANCE

- **61% better throughput, 36% faster response time, 17 to 37% lower cost** per transaction
- Serving mobile data directly from z/OS is **40% less expensive than exporting** to a system of engagement
- Consistently delivers **less than a second response time across millions of transactions a day**

Why IBM z Systems?

Apple partnership

To transform enterprise mobility with best in class business applications, strong security device management and enterprise-grade support

Leverage z assets

z/OS Connect and APIM with z helps drive quick time to value and digital business success by leveraging data, services, and APIs on mainframe

80%

Enterprise data is on mainframe

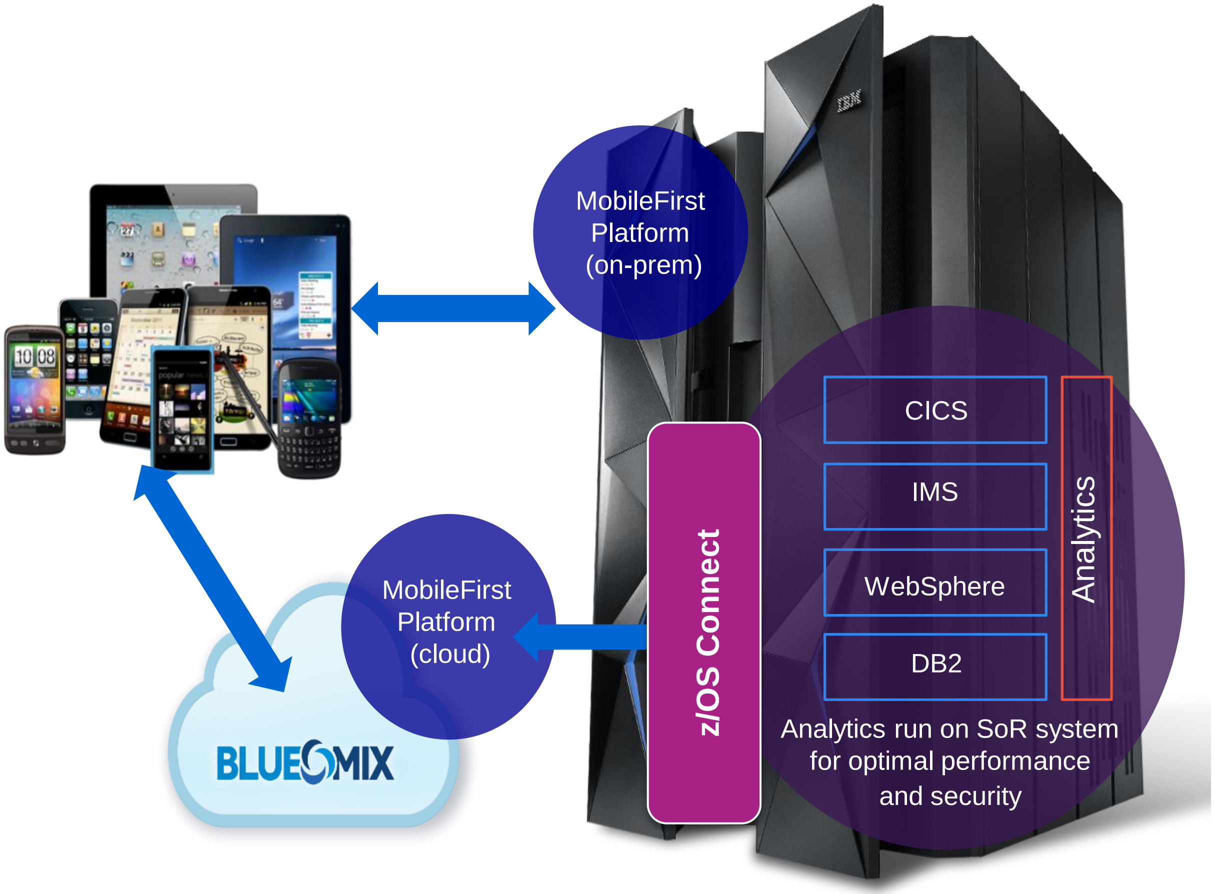
A leader

In worldwide Mobile Application Development (IDC)

91% new apps

Are connecting to the mainframe

z13 is designed for growth of the mobile app economy


MobileFirst Platform (on-prem)
MobileFirst Platform (cloud)
BLUEMIX
z/OS Connect
CICS
IMS
WebSphere
DB2
Analytics
Analytics run on SoR system for optimal performance and security

Serving mobile data directly from z/OS is 40% less expensive than exporting to a system of engagement

Handle **high numbers of secure transactions simultaneously** – can easily handle "100 Cyber Mondays' worth" of e-commerce transactions daily

Bluemix, APIM and z/OS Connect to easily and securely leverage z/OS based services for greater flexibility and innovation

Apple IBM iOS Apps help you change the nature of work

Real-time encryption of all mobile transactions at any scale

Systems of Insight

How are you harnessing **Big Data and Analytics** for competitive advantage?

Key Actions

Scale your unique expertise by **bringing analytics to the data**

Harness, create and monetize **insights** from structured and unstructured data

Build a **data-rich, analytically driven** enterprise

INTEGRATE TRANSACTIONS AND DATA

- Kenya Power consolidate data from ten key operational sources to provide a single view of enterprise data on z System .
- This new infrastructure will use advanced IBM analytics to enable Kenya Power to **study and compare real time and historical data to better monitor business operations and trends, and anticipate future electrical needs**

MAXIMIZE VALUE OF BIG DATA

- Banca Carige needed to quickly extract actionable insights from big data and identify market opportunities in order to adapt or expand its offering to meet demand
- IBM's solutions **enabled 1000+ users to simultaneously get high-speed analytics on real-time data and reduce the time to deliver the insight** needed to develop and release new marketing campaigns from months to weeks

REAL TIME ANALYTICS

- Petrol wanted to improve customer service and satisfaction in order to drive greater revenue.
- By implementing IBM DB2 Analytics Accelerator to support high performance queries and IBM SPSS for predictive analytics, **they Increased retail sales revenue through point-of-sale improvement, suggest-sell insight**

Why IBM z Systems?

15,000
IBM analytics consultants

IBM DB2 Analytics Accelerator (IDAA)
Up to **2000x** acceleration factor

z13 can deliver insights up to **17x faster and** with **13x better** price performance than closest competitor

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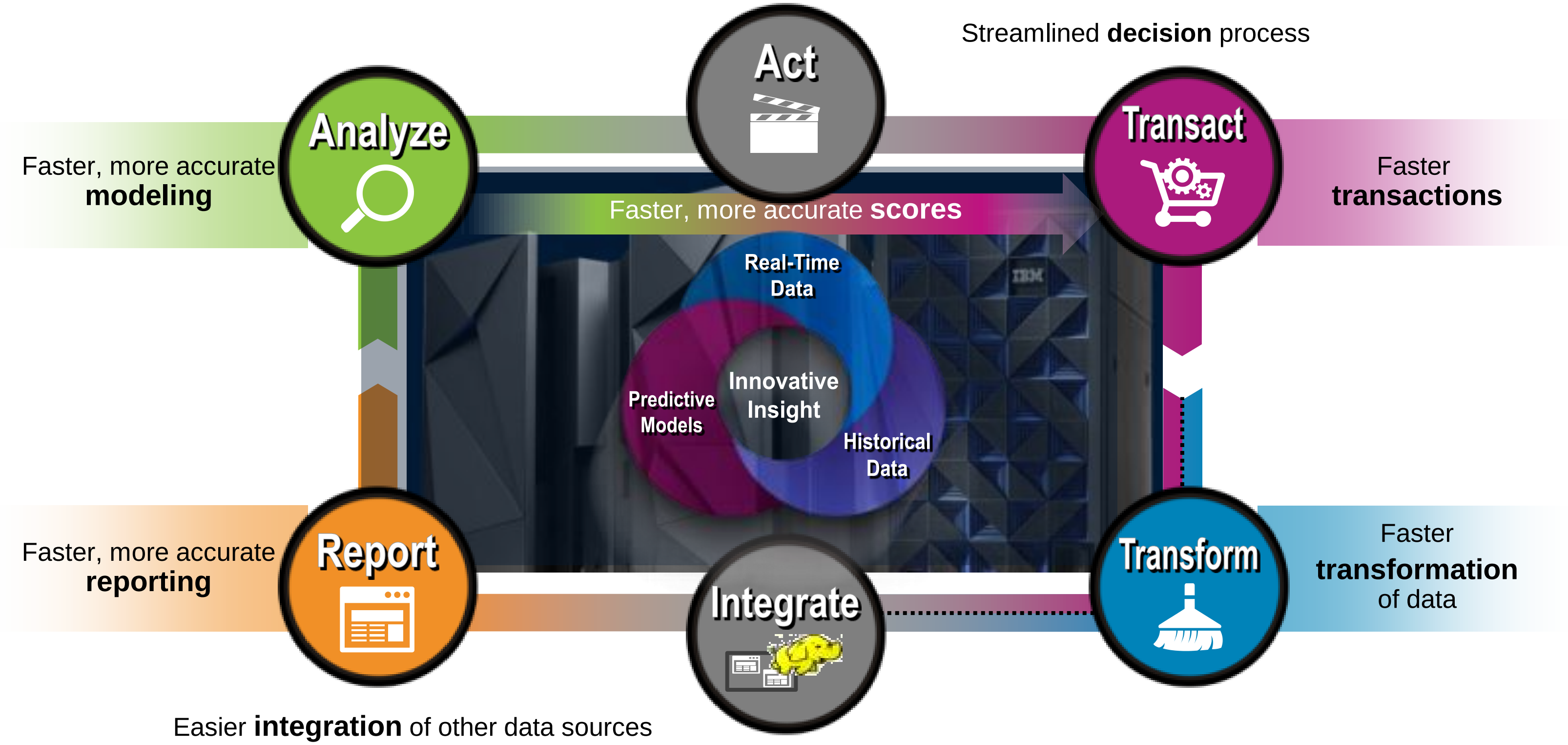
$24B
Invested in Big Data & Analytics capabilities

#1
Ranking for Big Data & Analytics vs. 70 competitors (wikibon)

z Systems vision, strategy and technology to fuse transactions and Analytics


Act
Analyze
Transact
Report
Integrate
Transform
Real-Time Data
Predictive Models
Innovative Insight
Historical Data
IBM

Streamlined **decision** process

Faster, more accurate **modeling**

Faster, more accurate **scores**

Faster **transactions**

Faster, more accurate **reporting**

Faster **transformation** of data

Easier **integration** of other data sources

- DB2
- CICS
- IMS
- IDAA
- InfoSphere
- Cognos
- SPSS
- CPLEX
- ODM/BPM
- SCA-LA
- CMA
- zAware

Best of class integrated data life cycle management for: Generating customer insights, fighting fraud and financial crimes, …

Enabled by cloud

How are you enabling innovation, speed, scale and improved economics with **Cloud**?

Key Actions

Build a **cloud environment** to manage growth in mobile and new channels

Leverage hybrid **cloud development** environments to accelerate application composition

Enhance your infrastructure via **private cloud** to **free up resources** for innovation

MANAGE GROWTH WITH CLOUD

- Sicoob largest credit union system in Brazil needed flexible, secure and scalable IT infrastructure for 24x7 mobile access for 2.5 million members
- Enabled **growth of 600 percent in mobile**, **200 percent in internet**, and **60 percent in in-branch transactions**; avoids USD 1.5 million electricity costs/yr

ACCELERATE INNOVATION WITH RAPID DEVELOPMENT

- Clients need a development environment to quickly design and support new services
- IBM's BlueMix services and integration with z enables rapid development across a hybrid cloud environment
- **New application composition reduced from hours to minutes**

DRIVE EFFICIENCY TO REINVEST

- Nationwide Insurance wanted to future-proof its IT environment while reducing operating costs.
- IBM's System mainframes running Linux enabled virtualized development and open standards.
- **$15M in anticipated savings over three years with web hosting costs lowered by 50%**

Why IBM z Systems?

We Provide:

- IaaS, PaaS, and SaaS
- Private and Hybrid environments for the enterprise
- Outstanding performance and qualities of services

12 patterns

For key z Systems products, up to 80% reduction in multi-product deployment

32%

Superior cloud services at up to 32% lower cost than x86 and up to 60% less than public cloud alternatives

8,000

virtual servers per system, more than 50 per core

BlueMix

200 software and middleware patterns available to developers

IBM z Systems provide the infrastructure and services to support all dimensions of cloud service delivery

Private Cloud

z/OS and Linux on System z as the foundation of the most secure, scalable private cloud infrastructure

Linux on z and z/OS for Enterprise Private Cloud

IBM custom patterns for Linux on z Systems

Open Source Services and Cloud Management

Hybrid Cloud

Leverage BlueMix and interoperability with SoftLayer, AWS and other public cloud offerings to deliver easily consumable hybrid cloud environment. Create the next great killer app by rapidly assembling cloud services

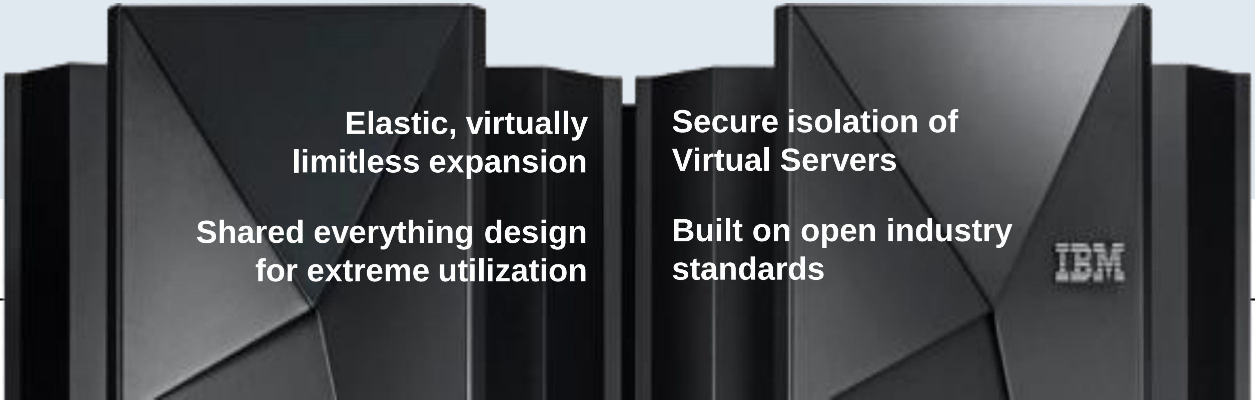
Hybrid Cloud Connect Test Drive

Bluemix with z

Public Cloud

Enables MSPs/CSPs to deliver differentiated mainframe-based service offerings

Enterprise Cloud System



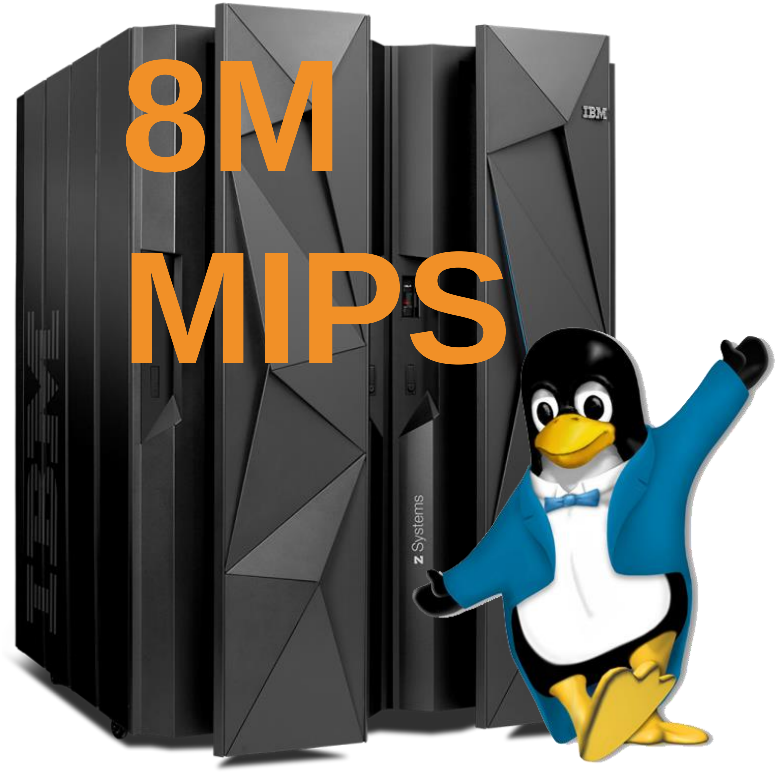
Elastic, virtually limitless expansion

Shared everything design for extreme utilization

Secure isolation of Virtual Servers

Built on open industry standards

Linux on z Systems


IBM
z Systems
IBM

8M MIPS

28%

5 Year CAGR

27%

of all MIPS

40%

of all clients

80%

of our top 100 clients

Linux on z13: The open enterprise-grade solution

Enterprise-grade Linux

IBM GPFS **IBM zAware V2.0** **GDPS Virtual Appliance***

Unprecedented Linux Performance

10TB RAIM memory **SMT** **85 LPARs** **2x Faster I/O**

Enabling open source services

Cloud Manager with OpenStack V4.2

Open Source DB, Tooling & management support

node js

docker

PostgreSQL

redhat
KVM *
SUSE

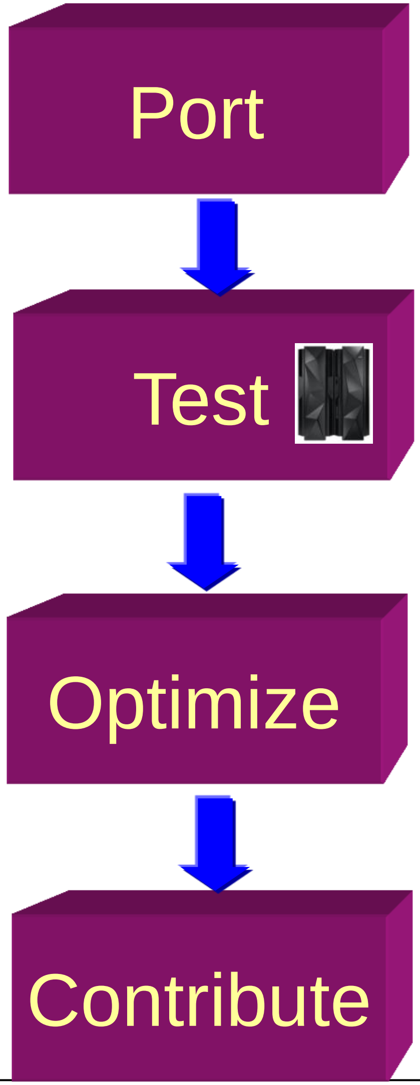
Expanding our Open Source Ecosystem

- Focusing on three major categories
  - Databases-Messaging
  - Dev Languages & Environments
  - Cloud Infrastructure

- Moving forward
  - Port and Test open source assets across above 3 categories onto Linux on z
  - Work with relevant communities to contribute System Z changes back into the open source project
  - *Desire input & critique with customers to understand new technologies to investigate*

- Partner with the ISVs to enable porting-testing-optimization-support for early 2015

- Engage distros in overall process for open source ecosystem enablement on Linux on z



IBM z Systems – Built for the Digital Era

Mobile
Analytics
Cloud
Security
Social

The foundation for **Mobile** and **Social** engagement

The **Analytics** engine for right-time insight

Superior service at lower cost through **Cloud**

A robust and **Trusted** infrastructure