Welcome to the
z Systems Tech Summit !

Track 3: Extending the mainframe to the
mobile enterprise

An end-to-end agenda for extending the mainframe to mobile

- Mobilizing the mainframe

- Modernizing mainframe applications for mobile and more

- Exposing mainframe applications and services to mobile

- Developing an IBM MobileFirst platform application for z Systems

- Optimizing applications and data for mobile workloads

- Client use cases and getting started with mobile and z Systems

Video: Mobile on z Systems

ibm.biz/zMobileVideo

Mobilizing the Mainframe

Track 3: Extending the mainframe to the mobile enterprise

Where we are in todays agenda

- Mobilizing the mainframe

- Modernizing mainframe applications for mobile and more

- Exposing mainframe applications and services to mobile

- Developing an IBM MobileFirst platform application for z Systems

- Optimizing applications and data for mobile workloads

- Client use cases and getting started with mobile and z Systems

Mobile is unleashing the 24x7 consumer and transforming business – client experience is the new benchmark

IBM

Banking and Financial Services	Travel and Transportation	Insurers	Retailers	Automotive
Deposit a check, move money, check balances instantaneously, track portfolio, get alerts, receive quotes, execute trades	Flight information to, reservation booking, seat assignments, check-in and streamline car rental process, hotel reservations	File claims, provide quotes, compare prices, enroll, view policies, capture data to develop new offerings	Delivering personalized offers for cross sell, up-sell and establishing customer loyalty through mobile	Enable mobile sensors for diagnostics and safety

The world's leading businesses depend on z Systems and mobile to provide new opportunities

92 of the top 100 worldwide banks[1]

23 of the top 25 US retailers[2]

10 out of 10 of the world's largest insurers[3]

23 out of 25 of the world's largest airlines[4]

90% Of mobile banking app users check account balances or recent transactions[5]

27% Of all 2014 Black Friday online sales were mobile[6]

73% Of insurers will offer mobile claims services by 2016[7]

44% Of travelers use mobile to research travel while traveling[8]

91% of surveyed CIOs said that new customer-facing applications are accessing the mainframe[9]

Mobile Is Changing Interactions And How Work Gets Done

People are transacting on mobile
- The average mobile phone user checks their phone 150 times a day

But the experience of mobile is not yet meeting expectations
- 80% of apps are used once then deleted

Mobile transactions are generating unprecedented amounts of data
- Global mobile data traffic will increase 26-fold between 2010 and 2015, reaching 6.3 exabytes per month by 2015

This data is helping organizations deliver new value
- By 2020, 90% of new passenger cars sold will have some form of vehicle mobile platform, up from 10% in 2012.

Mobile enterprises leverage this data, putting the right information into the right hands at the right times
- By 2015, 2/3 of the workforce will own a smartphone, and 40% of the workforce will be mobile

73% of CEOs

Are prioritizing investments in customer insights

82% of CMOs

Plan to increase the use of social media

74% of CIOs

Say mobile solutions are part of their vision for increasing competitiveness

70% of COOs

Identify supply chain visibility as the top challenge in delivering on their agendas

Transform the value chain to drive growth and ROI

Protect and manage the mobile infrastructure to optimize performance

IBM MobileFirst

Engage customers in context by leveraging mobile insights

Build and deploy mobile applications efficiently

Build
and deploy mobile applications efficiently
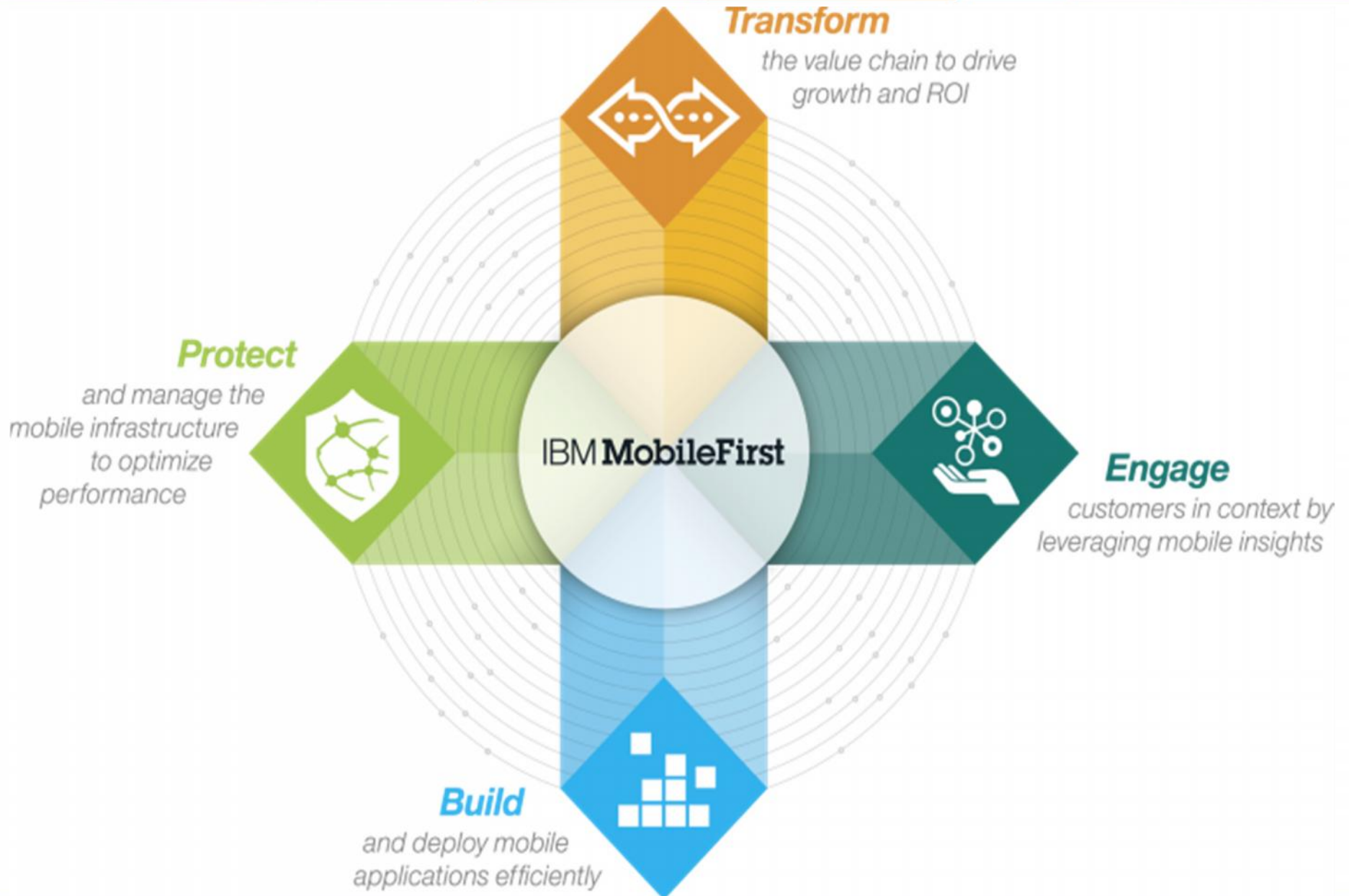
- Developing apps that integrate with information from z Systems data
- Customer demands drive need to rapidly develop, deploy and update apps with stability and compliance
- Deploy apps that access back-end systems with optimal performance

Protect
and manage the mobile infrastructure to optimize performance

- Protection of privacy and confidential information
- Policies for client-owned smartphones and tablets
- Visibility, security and management of end-to-end security
- Infrastructure complexity from multiple device platforms

Engage
customers in context by leveraging mobile insights

- Clients operate in a "4 screen" world
- Leverage mobile information to deliver deeper engagement
- Analytics on z Systems extending to mobile apps

Transform
the value chain to drive growth and ROI

- New process and business designs required for transformation opportunities
- Rapid and disruptive innovation shortening time to value requirements
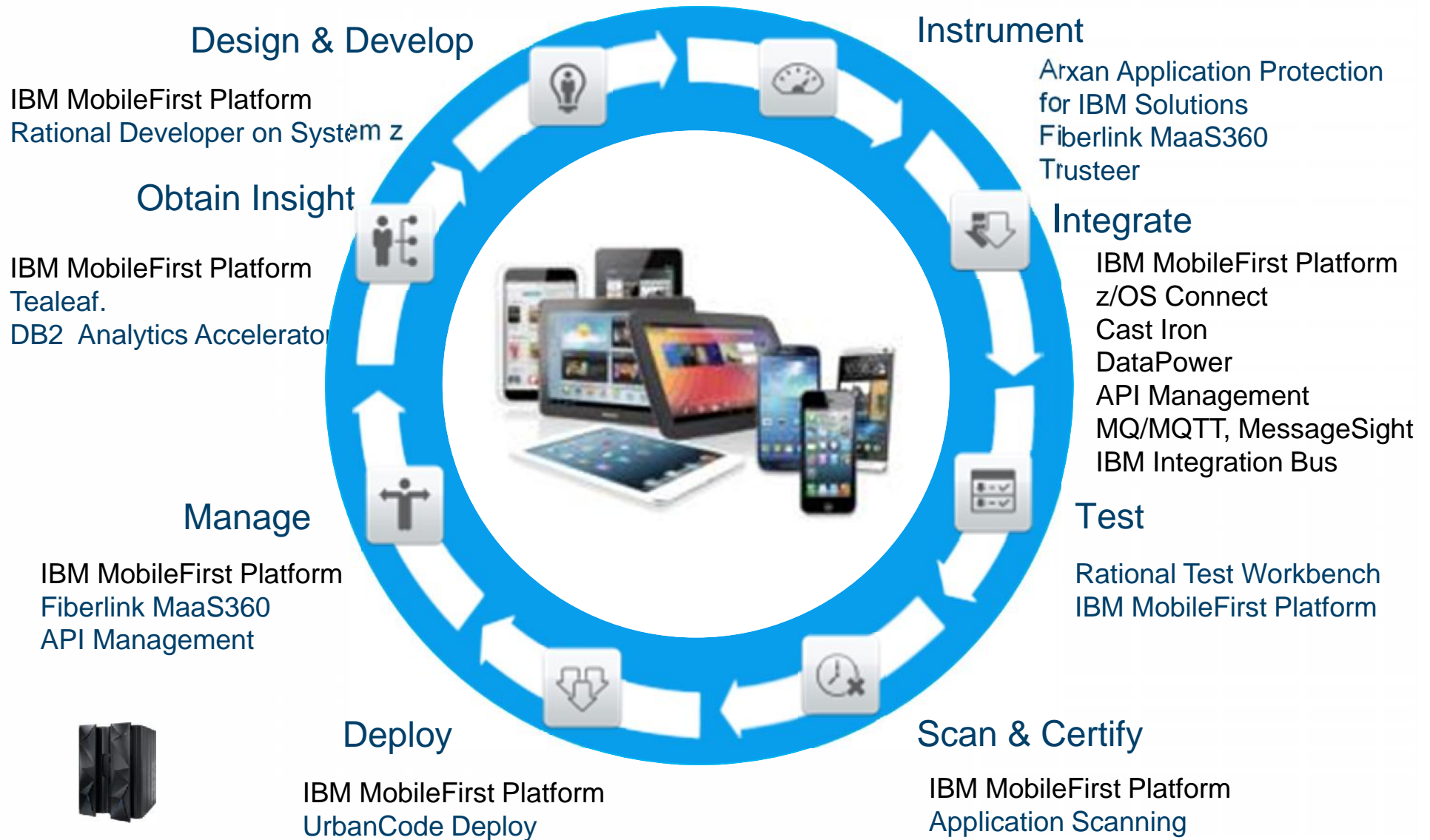
Build
and deploy mobile applications efficiently

IBM MobileFirst
With z Systems:

- Quickly develop, test and deploy quality mobile apps across multiple applications on z Systems

- Seamlessly integrate rich mobile apps with z Systems

- Leverage existing z/OS transactions and data in new mobile applications

Design &Develop

Instrument

Obtain Insight

Integrate

Manage

Test

Deploy

Scan & Certify

Design & Develop

IBM MobileFirst Platform
Rational Developer on System z

Obtain Insight

IBM MobileFirst Platform
Tealeaf.
DB2 Analytics Accelerator

Manage

IBM MobileFirst Platform
Fiberlink MaaS360
API Management

Deploy

IBM MobileFirst Platform
UrbanCode Deploy

Instrument

Arxan Application Protection
for IBM Solutions
Fiberlink MaaS360
Trusteer

Integrate

IBM MobileFirst Platform
z/OS Connect
Cast Iron
DataPower
API Management
MQ/MQTT, MessageSight
IBM Integration Bus

Test

Rational Test Workbench
IBM MobileFirst Platform

Scan & Certify

IBM MobileFirst Platform
Application Scanning

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Building mobile apps on z Systems

1 **Advanced application development**
IBM MobileFirst Platform
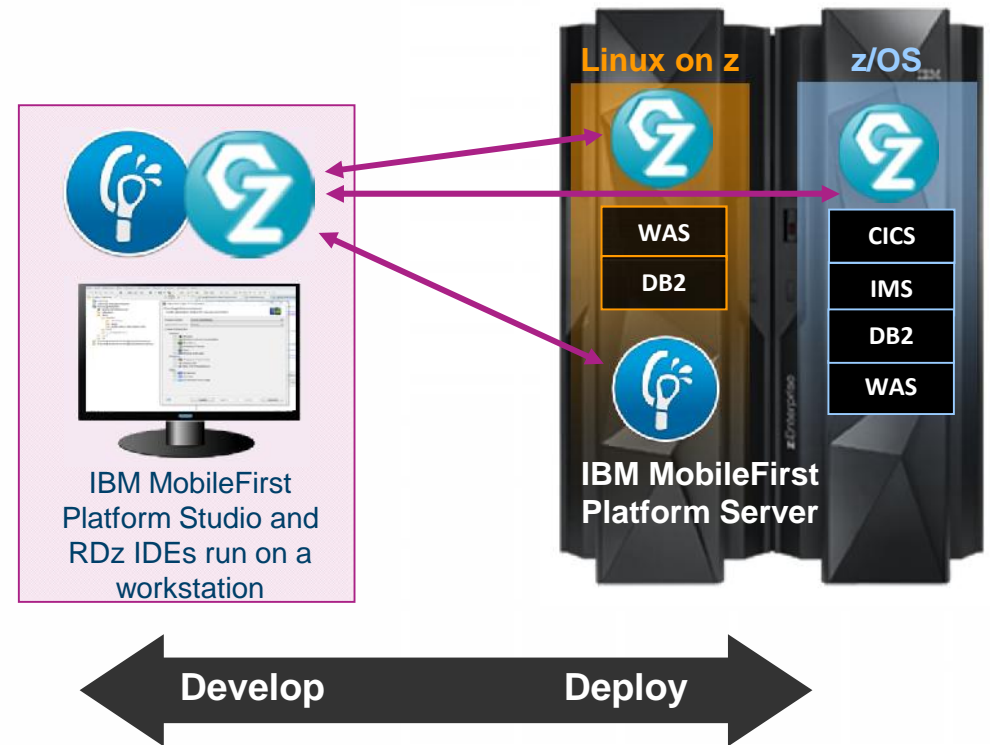IBM Rational Developer for z
Axian and AppScan

2 **Developer mobile tools with programming models**
WebSphere Application Server
Developer Tools for Eclipse

3 **Application determination for support of mobile**
Rational Asset Analyzer

Linux on z

z/OS

WAS

DB2

CICS

IMS

DB2

WAS

IBM MobileFirst
Platform Studio and
RDz IDEs run on a
workstation

IBM MobileFirst
Platform Server

Develop   Deploy

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Why build apps with z Systems Solutions?

Easily understand and extend z/OS applications for mobile

Rational Developer for System z (RDz) and Rational Asset Analyzer (RAA)

Simple wizards for mobile to z/OS integration

RDz

Interaction of z Systems components for mobile

RAA

End to end tooling for mobile and enterprise components of z/OS applications

Rational Team Concert and UrbanCode Deploy

✓ Common Eclipse-based IDEs for all types of mobile development

✓ Develop and test z Systems mobile applications anywhere, anytime

✓ Manage all types of code from JavaScript to COBOL

✓ Lifecycle Integration Adapters to leverage third-party tools

Connecting mobile apps on the zEnterprise

1 **Mobile protocol connectivity to z Systems applications**
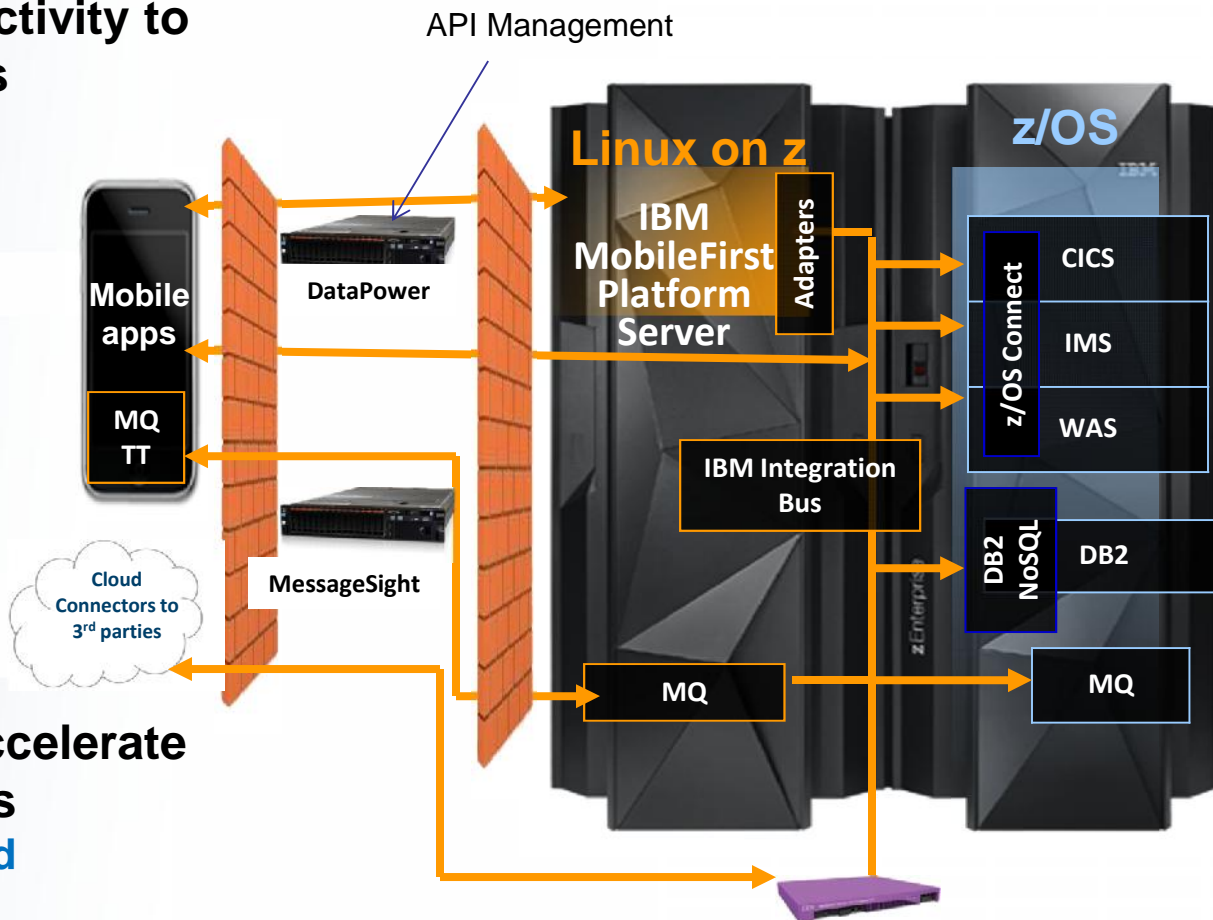z/OS Connect
API Management
DB2 NoSQL

2 **Extending enterprise apps to mobile**
IMS Mobile Feature Pack
CICS Mobile Feature Pack

3 **Scalable services to accelerate and enrich mobile apps**
IBM Bluemix Mobile Cloud Services

API Management

Mobile apps

MQ TT

DataPower

MessageSight

Cloud Connectors to 3rd parties

Linux on z

z/OS

IBM MobileFirst Platform Server

Adapters

IBM Integration Bus

z/OS Connect

CICS

IMS

WAS

DB2 NoSQL

DB2

MQ

MQ

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Unmatched scale to support millions of transactions per day

Why connect apps to z Systems solutions?

Optimal mobile throughput and response time to mobile devices

IBM MobileFirst Platform on Linux for z

Direct interface from mainframe to mobile

z/OS Connect

Easily create, publish, manage and socialize API's for the enterprise

API Management

Leading SaaS enterprise applications

Cast Iron
DataPower

Advanced web protocol support with high performance

MQTT
MessageSight

Superior ESB environment for integrating mobile traffic

IBM Integration Bus

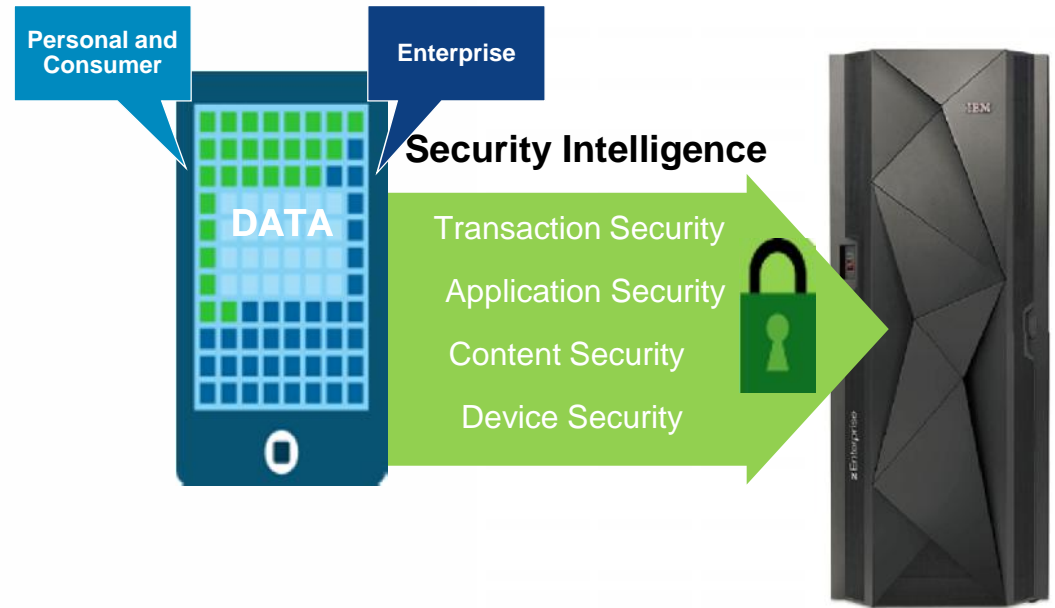**Complete Integration Solutions**

Protect and manage the mobile infrastructure to optimize performance

IBM MobileFirst

With z Systems:

- Instrument applications with security protection from mobile to back-end systems

- Secure mobile transactions from customers, partners and suppliers

- Preserve native device experience without compromising security

- Separate personal and business data

- Provide intelligent access based on risk and location

Personal and Consumer

Enterprise

DATA

Security Intelligence

Transaction Security

Application Security

Content Security

Device Security

Enterprise Applications and Cloud Services

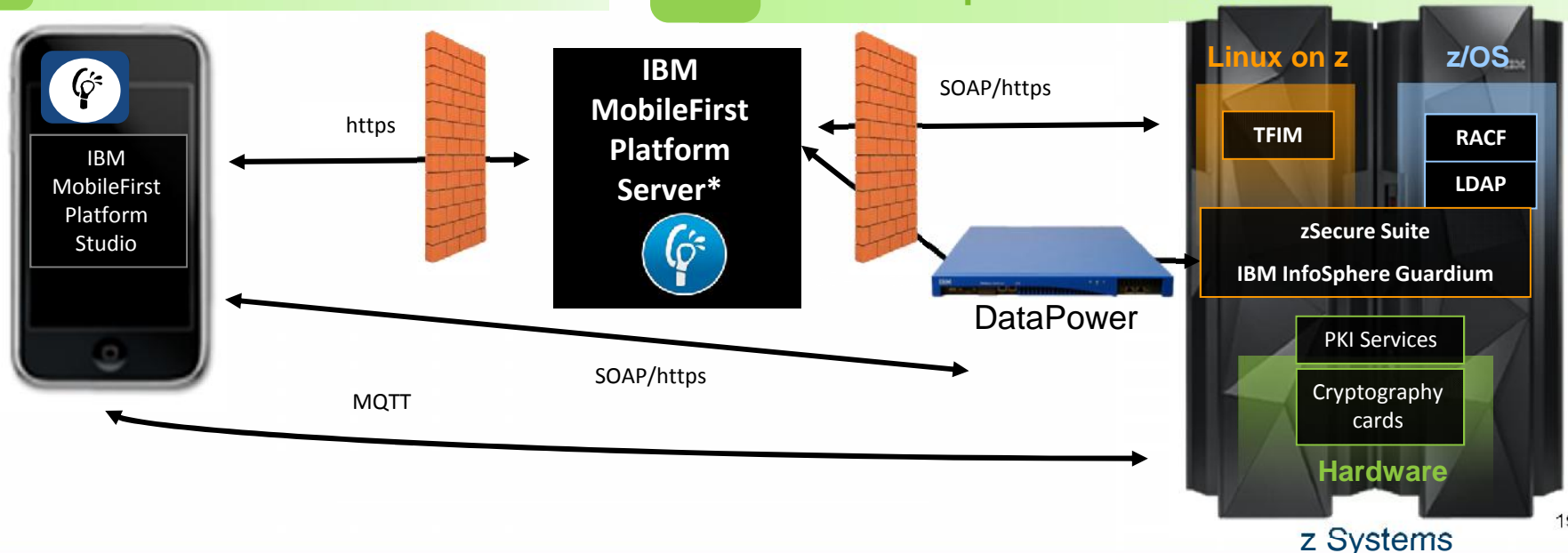# Securing mobile apps for sensitive data on z Systems

1 **Unified management and security control for mobile devices**
Fiberlink MaaS360
Trusteer

2 **Enforce web and mobile security policies**
IBM DataPower
IBM CastIron

3 **Protect against fraudulent and unauthorized access**
IBM Security Access Manager for Mobile
Arxan Application Protection for IBM Solutions

4 **Security foundation for z Systems mobile workloads**
IBM Security zSecure Suite, RACF, LDAP,
IBM Security QRadar SIEM,
IBM InfoSphere Guardium

IBM MobileFirst Platform Studio

https

IBM MobileFirst Platform Server*

SOAP/https

DataPower

SOAP/https

MQTT

Linux on z

TFIM

z/OS

RACF

LDAP

zSecure Suite

IBM InfoSphere Guardium

PKI Services

Cryptography cards

Hardware

z Systems

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Why secure apps with z Systems Solutions?

Highest Level of security for operating system, hardware, applications and database

zEnterprise System, z/OS, DB2 for z/OS, IMS, CICS, PKI Services, Cryptography.

Easily authenticate and authorize mobile users connecting to mainframe

IBM Security Access Manager

Monitor real-time vulnerabilities in applications, databases, and operating systems on the mainframe

IBM Security zSecure

IBM InfoSphere Guardium for z/OS

IBM Security AppScan ,

✓ **End-to-end Security**

✓ **Real-time Security Intelligence**

Click here to see how to detect fraud in a mobile transaction

UK's saving and mortgage **Nationwide** transformed from legacy core systems to a modern, real-time, multi-channel banking system

Protect
and manage the mobile infrastructure to optimize performance

Challenges

Nationwide knew that it needed to transform its service offerings to embrace new channels and personalized products. Customers demanded an always-on, multi-channel banking system

Solution

Used DB2 for z/OS to enable to operate in real-time and across multiple channels with resiliency and stability for managing millions of accounts. Used IBM security tools to manage different levels of access rights with ease.

Benefits

24/7 availability to support anytime, anywhere banking services, shorter time-to-market for new accounts, and ample scalability to support Nationwide's ambitious growth plans.
.

Engage
customers in context by leveraging mobile insights

IBM MobileFirst
With z Systems:

- Quickly create and deploy personalized mobile campaigns and gain insights with analytic information from z Systems

- Maximize brand value by integrating the physical and digital experiences of mobile customers

- Receive timely, informative and interactive information to support decision-making, regardless of location.

1 **Informative and interactive business intelligence**
IBM SPSS and Cognos Solutions on Linux on z Systems
Next Best Action Solution on z

2 **Complex queries in seconds**
IBM DB2 Analytics Accelerator for z/OS

3 **Visibility into the customer mobile experience to optimize app design**
IBM Tealeaf

DB2

DB2 Analytics Accelerator for z/OS

Mobile apps

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Transform
the value chain to drive
growth and ROI

IBM MobileFirst

Can Help You:

- Design new engagement models placing the customer first

- Use cost-effective workload mobile pricing on z Systems for competitive advantage

- Use Linux on z solutions to build new business models that drive revenue

In essence,
Reinvent Business with Mobile

Transform your mobile apps with z Systems

1 Collaborate with IBM mobile experts and design new z Systems mobile innovation

IBM MobileFirst Studios

2 Develop cost-effective mobile solutions with z Systems
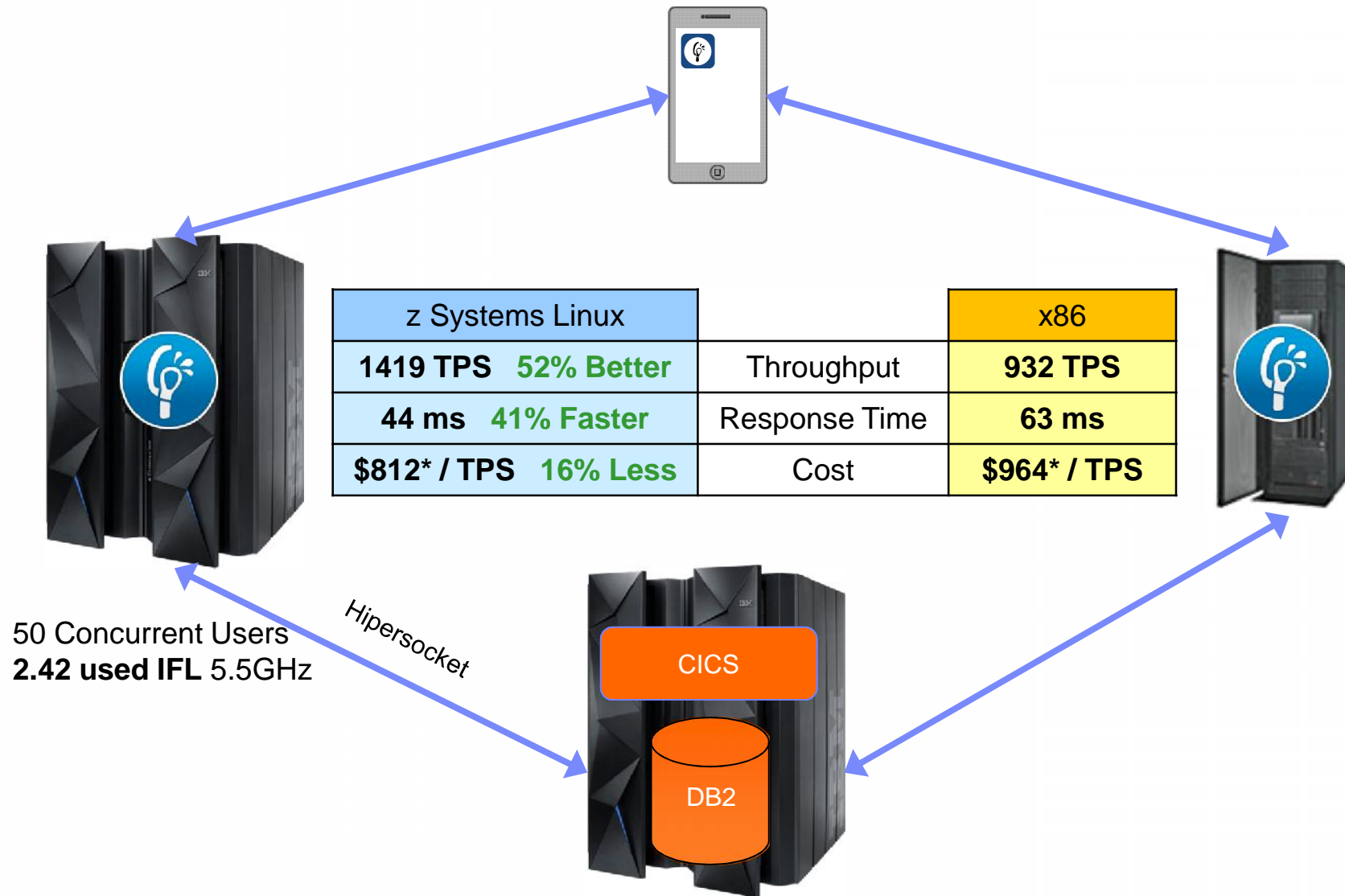
IBM Workload Pricing on z Systems

3 Accelerate the Mobile Transformation Journey with z Systems solutions
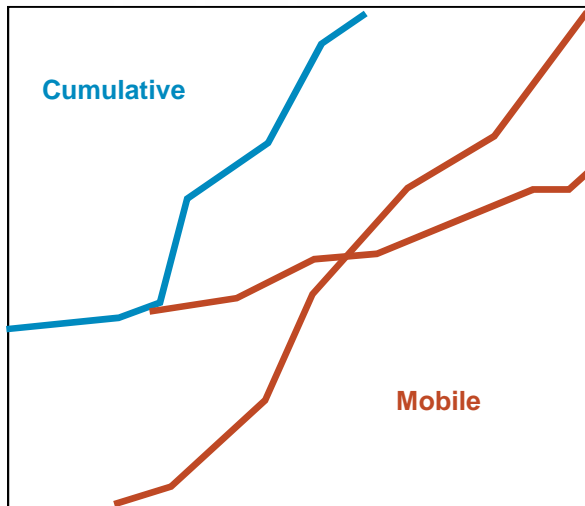
IBM Ready Apps

Linux on z Systems solutions

z Systems Linux			x86
1419 TPS **52% Better**	Throughput		**932 TPS**
44 ms **41% Faster**	Response Time		**63 ms**
$812* / TPS **16% Less**	Cost		**$964* / TPS**

Hipersocket

CICS

DB2

50 Concurrent Users
2.42 used IFL 5.5GHz

* 3-Year TCA for MobileFirst Platform Server (Front-end) for Prod + Dev/QA + DR. Rounded cores to 3 for the cost study.

Cumulative

Mobile
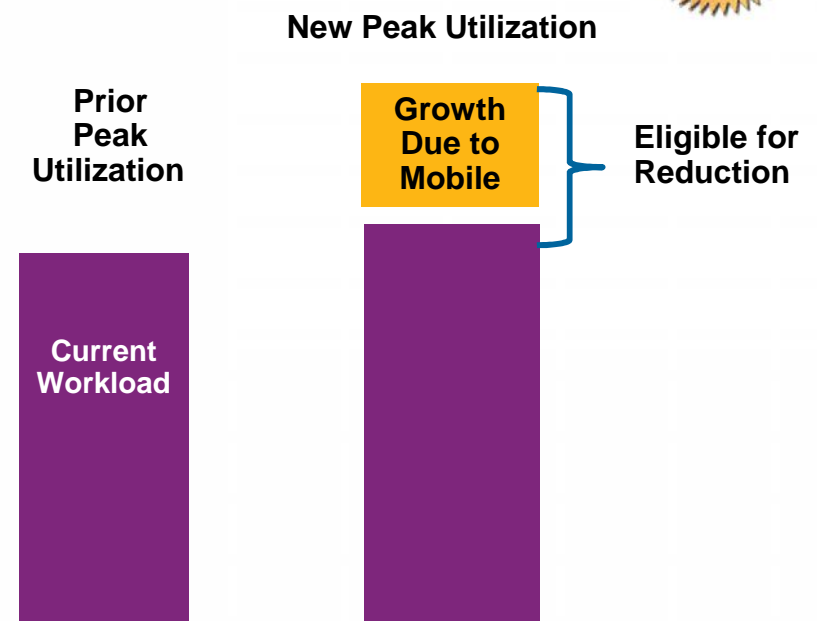
Large European bank

Increased mobile transaction volumes by **40%** from 2011 to 2013

Mobile Workload Pricing

NEW

New Peak Utilization

Prior Peak Utilization

Growth Due to Mobile

Eligible for Reduction

Current Workload

Industry first for pricing mobile workloads provides up to a **60% reduction** on the processor capacity reported for mobile transactions

Serving mobile data directly from z/OS is **38% less expensive** than exporting to a System of Engagement

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IBM MobileFirst with z Systems provides seamless connection to Systems of Record

BUILD and deploy to back-end systems to access mission critical data for enhanced customer experience

PROTECT critical data with military strength security solutions from app to mainframe

ENGAGE customers with the fastest analytics capabilities for the enterprise

TRANSFORM enterprise business with packaged mobile solutions and services

Up to **60%** improvement in mobile transaction throughput with z Systems

Deliver consistently less than a second response time across millions of transactions daily

*The world's premier data and transaction engine now enabled for the **mobile** generation*

- Performance, scale, intelligent I/O and security enhancements **to support transaction growth in the mobile world**

  - Extreme performance, scalability and lightning fast response time with new 22nm chip technology

  - Accelerated crypto based secure processing to support mobile transaction growth

  - 2x more cache, 3x more memory, 2x increase in channel speed, 2x increase in I/O bandwidth, flash enclosures enable enterprise pipe to support new mobile transaction volumes

Introducing IBM MobileFirst for iOS Solutions

Banking and Financial Services

- Mobile Wealth Advisor

- Digital Small Business Banker

Travel and Transportation

- Mobile Flight Crew

- Airline Pilot Planning
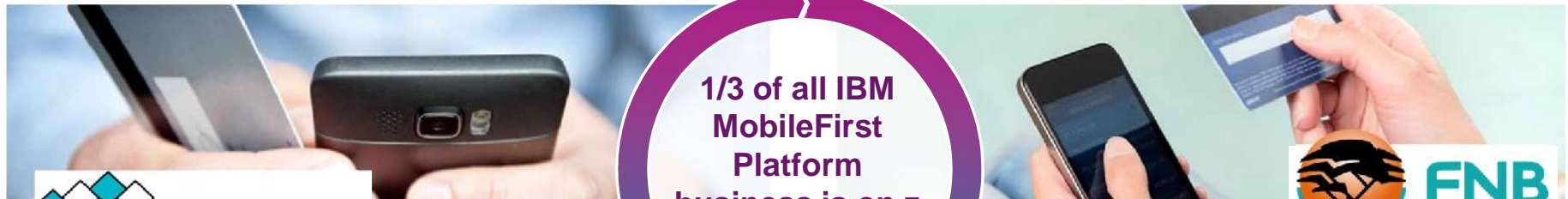
Insurance

- Mobile Sales Agent

Retail

- In-Store Associate

All built to use key data from the System of Record

z Systems Mobile is growing rapidly

1/3 of all IBM MobileFirst Platform business is on z Systems

BANCA CARIGE

"Running our mobile banking service on Linux on IBM zEnterprise® is another step forward in our continual evolution on the mainframe."

FNB
First National Bank

"The maturity flexibility of IBM zEnterprise makes it the ideal platform for achieving speed to market with mobile applications."

SICOOB

E.SUN BANK

renfe

BMW Group
BMW   MINI   Rolls-Royce
Motor Cars Limited

VISITING NURSE SERVICE
VNSNY
OF NEW YORK

FNB

Nationwide

HALKBANK

CITY AND COUNTY OF HONOLULU
STATE OF HAWAII

RCBC

Cloud and
API Economy

z/OS Tools

WebSphere Application Server

CICS on
Multiplatforms

MQ

z/OS Connect

IMS

API Management

IBM
MobileFirst
Platform

DataPower

CICS TS

CICS TG

DB2

z/Linux

z/OS
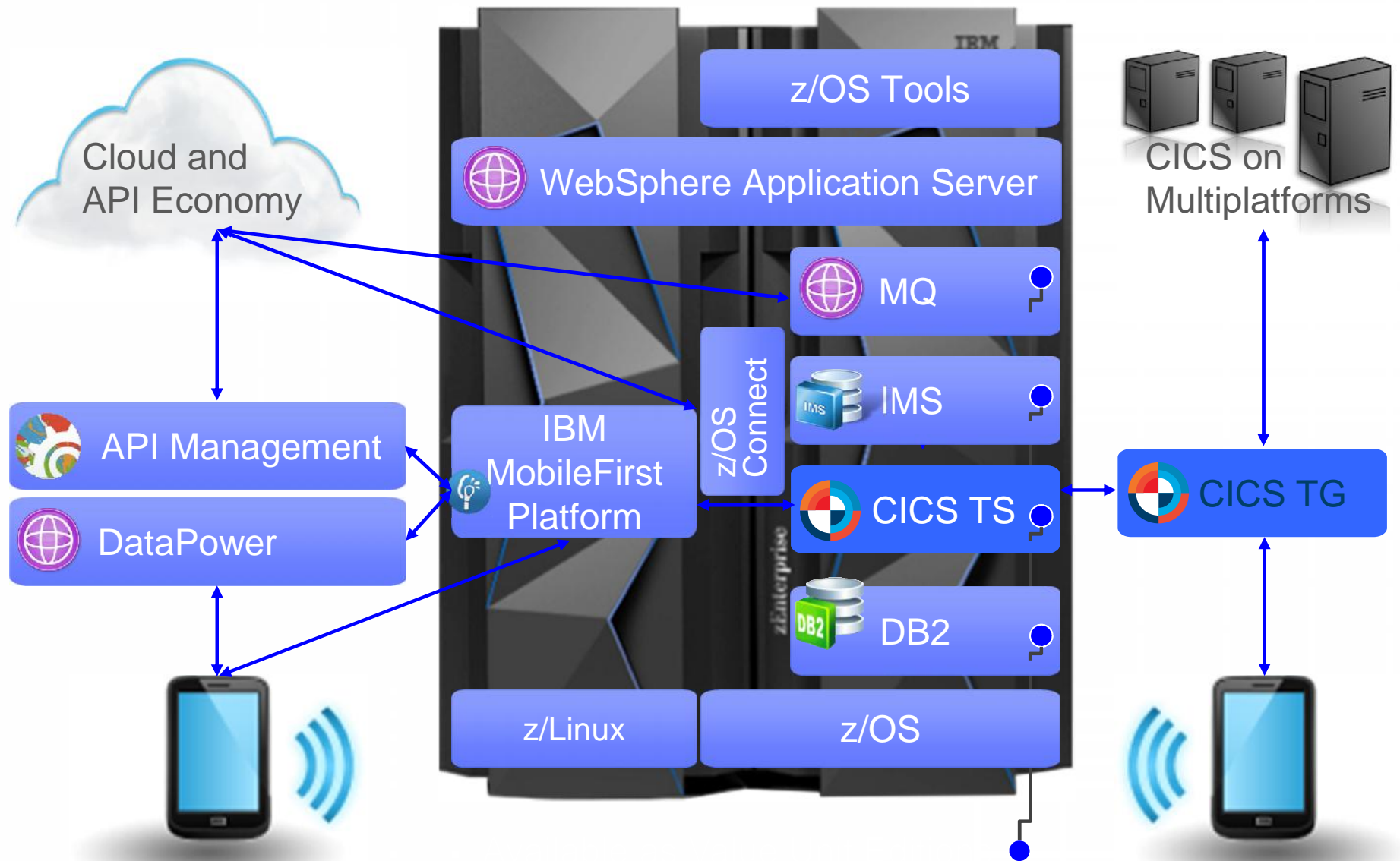
IBM MobileFirst offering portfolio

IBM

Recommend run on z

Industry Solutions

Banking | Insurance | Retail | Transport | Telecom | Government | Healthcare | Automotive

Codename: BlueMix

IBM & Partner Applications

GT Software Ivory Service Architect

IBM Remote

IBM Interactive

Mobile Application Management Services

MobileFirst Platform

Rational Tools for z (RDz). UrbanCode Deploy

MessageSight

Collaboration -- Portal, Connections, Notes traveller

Mobile Strategy and Planning Services

Endpoint Manager. Fiberlink Maas360

ISAM

TeaLeaf

AppScan

COGNOS Mobile

Management

Securi...

Analytics

zSecure

Strateg... Service...

...ent & Integration Services

DataPower

Devices ◆ Network... ...vers

Codename: BlueMix

Cloud & Managed Services

Enterprise Services for Managed Mobility

Thank You