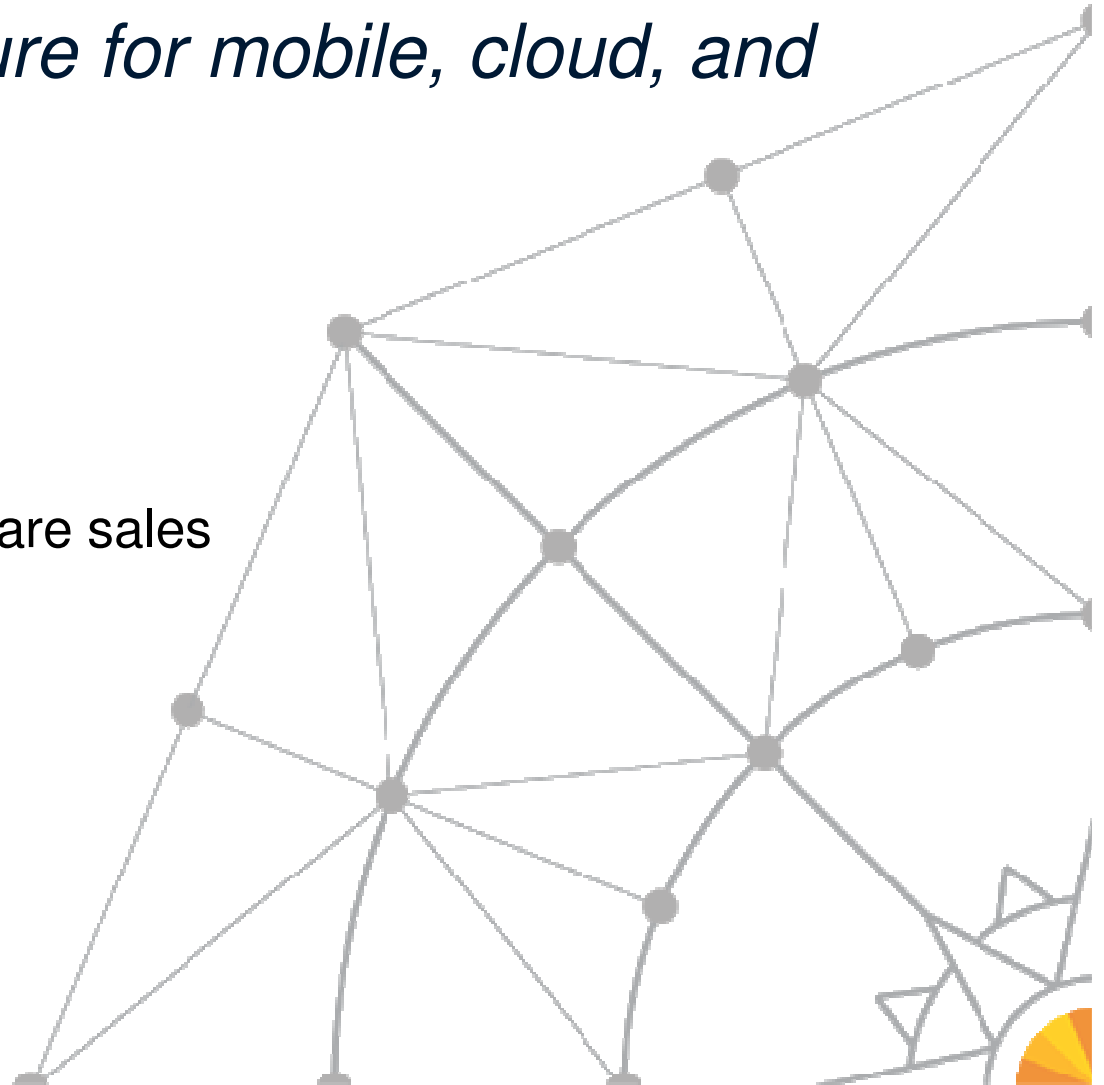


# New Q2 System z software announcements

*Building an infrastructure for mobile, cloud, and analytics solutions*

**Ray Jones**, VP System z software sales



# Celebrating 50 years of mainframe innovation

**71%** of global Fortune 500 companies use the mainframe

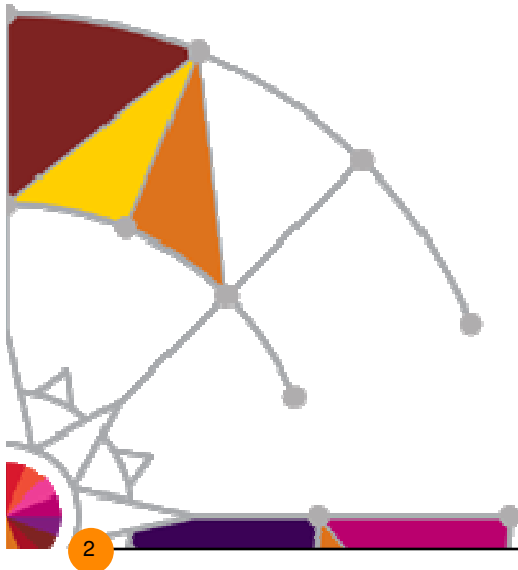
Mainframes process roughly **30 billion** business transactions per day, including most major credit card transactions and stock trades, and money transfers

It is estimated that **80%** of the world's corporate data resides or originates on mainframes

**~70%** of all enterprise transactions touch a System z

**55%** of all enterprise applications need the mainframe to complete transactions

**1.1 million** CICS transactions, every second, every day

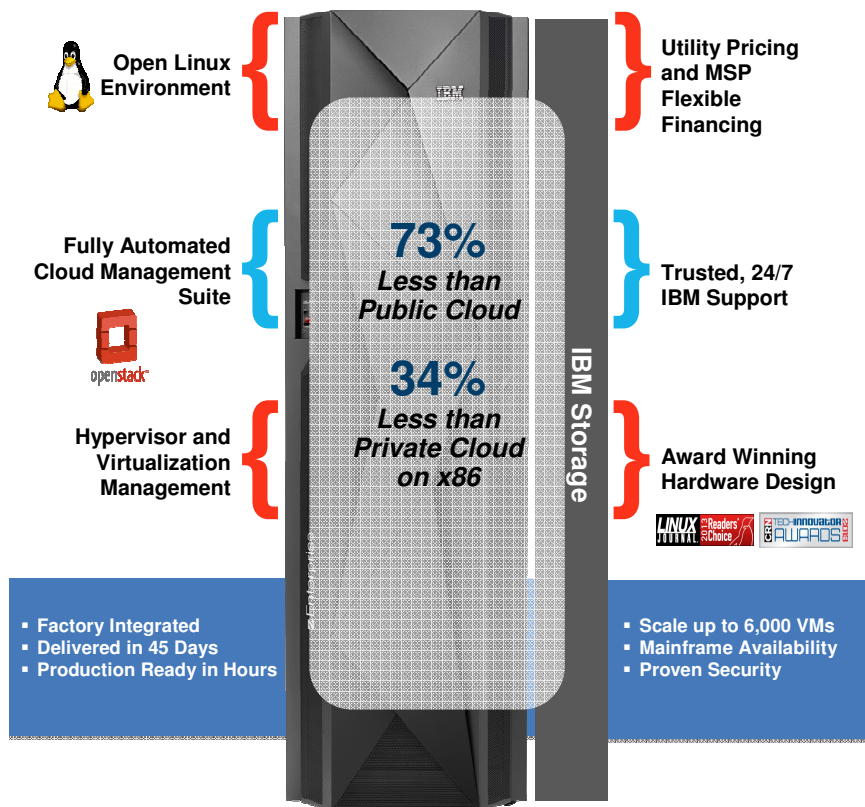


# Ongoing Investments in Linux & Cloud Solutions



## IBM Enterprise Cloud System

Trusted Cloud. Better Economics. Simply Delivered. Rapid deployment of public, private and hybrid cloud



## IBM Tivoli Advanced Storage Management Suite

Suite of solutions for rapid backup/recovery, report management, and tape allocation



## IBM Utility Pricing for System z

Flexible pay-as-you-grow pricing for the enterprise cloud system and more



## IBM Service Management Suite for z/OS

Offers a single point of control for a broad range of system management functions



## IBM Linux & Cloud Centers

Accelerating cloud & open source adoption on zEnterprise

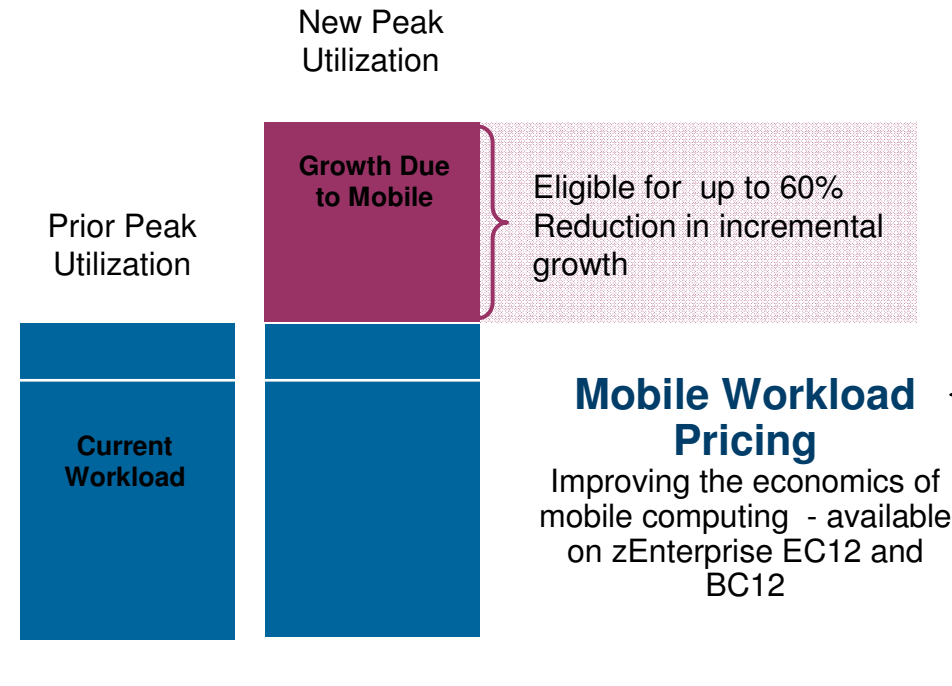
## Citi: Pioneering innovative solutions with the original cloud

- With extensive virtualization, one of the first to develop the original cloud and now extending innovative services like “money for health expenses”

Connecting over  
**200 million people**  
**in 160 countries**



# Mobile solutions for the Enterprise



## IBM IMS Mobile Feature Pack

Discover, model, enable, and publish services, based on trusted IMS assets, for mobile and cloud applications



## Worklight 6.2 with SmartCloud Analytics

Measure application usage statistics and other data now on zlinux



## MobileFirst Offerings

Enabling the building of enterprise applications for System z



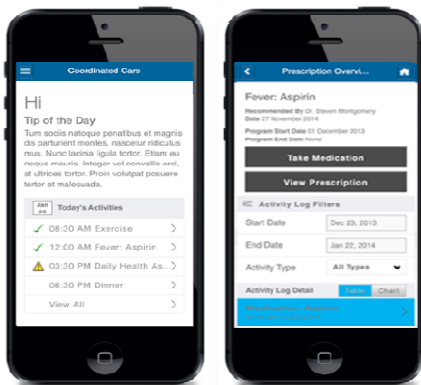
# Ready made solutions for building mobile apps



## ReadyApps

Core industry functionality to accelerate development and launch of your mobile properties.

- Leverage tested reference code base
- Based on Worklight
- API enabled



## Integrated MobileFirst platform (SOD)

Delivering a new Worklight offering consisting of the following components:

- IBM Worklight Foundation
- IBM Worklight Quality Assurance
- IBM Worklight Application Scanning

*Implementing a full mobile delivery lifecycle*



## IBM MobileFirst Studios

18 IBM MobileFirst studios to help customers accelerate mobile initiative

- Jumpstart mobile app development



## Mobile Workload Pricing for z/OS

*Improves the cost of growth for mobile transactions processed in System z environments such as CICS, IMS and DB2*

- **An enhancement to sub-capacity pricing**
  - *Normalizes the rate of transaction growth*
  - *Mitigates the impact of Mobile on MLC charges where higher transaction volumes cause a spike in machine utilization*
  - *Works like an MSU “off-load” from a software pricing perspective, similar to Integrated Workload Pricing, not a defined price discount*
- No infrastructure changes required (i.e. no separate LPARs) ... rather an enhanced way of reporting sub-capacity MSUs
- Available to all enterprises running an zEC12 or zBC12 that meet the Mobile workload tracking requirements

## Visa: Enabling commerce for billions of consumers

- As one of the largest electronic payments networks, it created an innovative electronic payment system using mobile point-of sale technology that enables everyone, everywhere

**7 trillion dollars in  
payment volume**





# Analytics solutions from problem detection to log analysis

## PREDICT

OMEGAMON & NetView w/ IBM  
zAware  
IBM Cloud Analytics - Predictive  
Insights

## SEARCH

IBM Cloud Analytics - Log Analysis z/OS  
Insight Packs

## OPTIMIZE

Capacity Management Analytics (CMA)



### z/OS Syslog Insight Pack - CICS Log Support

Analyze large volume of log data  
Match log file with alerts and metrics

Real-time streaming of z/OS  
logs to log analysis server

Quickly search and visualize  
errors

Linking search results to  
best practices

# A secured infrastructure for cloud, mobile & analytics solutions

zEnterprise delivers trust and confidence  
with unmatched security and reliability

## Highest

assurance level of security with  
Common Criteria certification (EAL 5+)

## Enterprise Key Management

across mainframe and distributed

## Encryption

of data at rest, in flight,  
and in use

## IBM Security zSecure SSE



Prevent malicious  
attacks with enhanced  
security intelligence  
and compliance  
reporting, with up to  
**70% savings**

## IT Analytics

to spot potential failures and  
capacity needs before they occur

**99.999%**

design point for application  
availability

## Zero Second

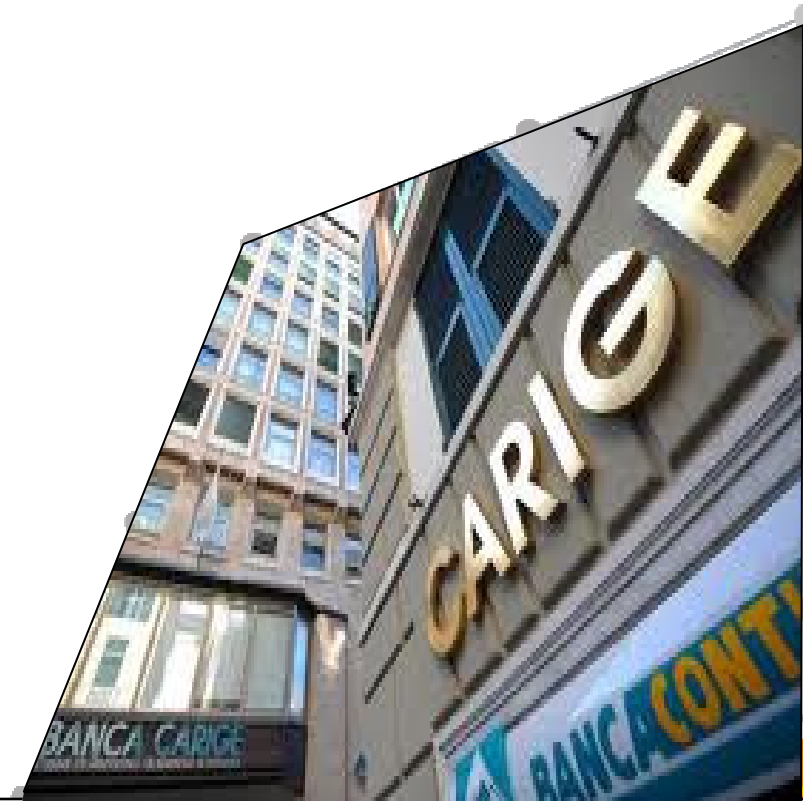
recovery point objective  
across thousands of miles

# Banca Carige: Providing superior customer service by on a secure platform



Built an analytics environment and new mobile banking service providing round-the-clock availability and high security

**Proven underlying technology reduces risk**



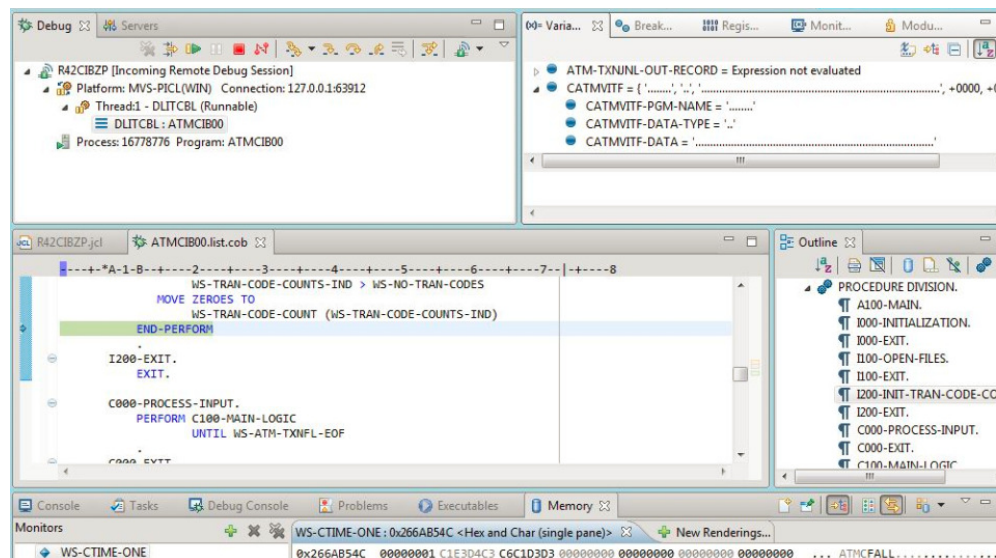
# Solutions designed for application developers, testers and managers

## IBM Integrated Solution for System z Development



A complete solution to accelerate the development of applications that include System z components. The trial is a free, cloud-based, hands-on environment that allows you to develop and test z/OS applications in a guided "tinker, test, and try" sandbox environment\*.

\* z/OS test and development powered by Rational Development and Test Environment for System z



## Rational Developer for System z



Create, maintain, and quality-assure z/OS applications quickly and efficiently with enhanced tools for developing, debugging, and unit testing

## Rational Developer for the Enterprise



Do fast and efficient multi-language / multi-platform development with this significantly enhanced suite of Integrated Development Environments

## IBM Continuous Integration for System z



Provides a complete solution for planning, automating, and monitoring application quality, testing and deployment. Includes test virtualization to simplify test environments and enables testing earlier and more often.

# Build an Enterprise infrastructure for Mobile, Web, and Cloud Applications

## IBM WebSphere Liberty z/OS Connect

Rapid and secure enablement of web,  
cloud and mobile access to z/OS assets

Discover z/OS assets  
Simplified connection  
Auditing and chargeback

**Embedded in z/OS middleware:**  
CICS, IMS, WebSphere Application Server  
Batch, UNIX applications

## IBM WebSphere Application Server for z/OS v8.5

Adopting a continuous delivery model to deliver new features and function for mobile and cloud applications



## IBM CICS Transaction Server for z/OS v5.2

Service agility to integrate mobile capabilities and broaden the web programming model



## IBM Operational Decision Manager for z/OS v8.6

Capture, automate and govern frequently occurring, repeatable business decisions



## IBM MQ for z/OS v8.0

Deliver a flexible service-enabled business via integration of heterogeneous applications



## IBM Transaction Manager Value Unit Edition 13

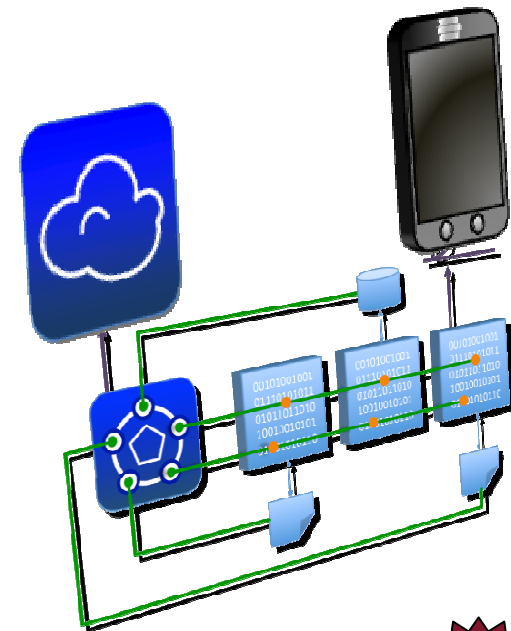
Discover, model, enable, and publish services, based on trusted IMS assets, for mobile and cloud applications



# Service agility and operational efficiency, with mobile and cloud enablement for CICS TS

## *IBM CICS Transaction Server for z/OS v5.2*

- Service agility to integrate mobile capabilities and broaden the web programming model
- Operational efficiency via security standards and automatic safeguarding of resources
- Cloud enablement to deploy, manage and execute multi-program applications
- Simplified development and maintenance via powerful programming and debug tools



### *What's new in IBM CICS Transaction Server for z/OS v5.2*

- ✓ *Enhanced Java support enabling portability of web applications into CICS*
- ✓ *Expanded policy thresholds and distributed security standards support*
- ✓ *Enhanced application lifecycle management and resource utilization*

# Best in class enterprise messaging solution for z/OS environments

## IBM MQ for z/OS v8.0

- Delivering a flexible service-enabled Business via integration of heterogeneous applications
- Rapid, reliable, simple, secure exchange of data across applications, systems and services
- Simplify development via functionally rich, easy-to-use and consistent messaging layer
- Respond to peaks in transaction workloads through scaling capabilities such as clustering



### What's new in IBM MQ for z/OS v8.0

- ✓ *Exploit System z capabilities to improve manageability and performance*
- ✓ *Improved throughput, scalability and operational tasks*
- ✓ *Enhanced security, increased connectivity, and support for new standards*

# Driving Mobile and Cloud Growth on IMS

## *IBM Transaction Manager Value Unit Edition 13*



- Provides an alternative and attractive pricing option for clients whose Mobile and Cloud apps access IMS assets through qualified Java or SQL workloads.
- Supports big data analytics; IMS log data can participate in IBM Machine Data Analytics, delivering insight to aid capacity planning, log analysis, and IT analytics.
- Allows Java application development and deployment in IMS dependent regions via a JDR resource adapter.



### ***What's new with the IMS Value Unit Editions:***

- ✓ *Also available for IMS Transaction Manager 12*
- ✓ *IMS TM VUE and IMS DB VUE are both included as the Mobile Workload Pricing (MWP) Defining Programs*
- ✓ *Addresses skills & TCO, and delivers continued ROI on clients' IMS investment*



# Tackling HIV in Ghana



Partnership

- A technology-intensive project to eliminate mother-to-child transmission of HIV in the African nation using the mainframe to capture, store, and retrieve data from clinics, offices and remote sites

Plans to cut transmission to

**> 20% by 2020**



 **HALKBANK**

> Üreten Türkiye'nin Bankası

 **HALKSİGORTA**

 **HALKEMEKLİLİK**

 **HALKPORTFÖY**

 **HALKGYO**

 **HALKYATIRIM**

 **Fintek**

 **HALKLEASING**

 **KREDİ KAYIT  
BÜROSU A.Ş.**

 **HALKFAKTORİNG**

 **Kobi**  
GİRİŞİM SERMAYESİ YATIRIM ORTAKLIĞI



 **HALKBANK**

 **bileşim**

 **BANKALARARASI  
KART MERKEZİ**



- More than 850 Branch Offices
- A Bank and a lot of Agencies in the Foreign Country
- More than 14 Subsidiaries
- More than 15000 Employees

# Transaction Size



<b>Number of Branch Offices</b>	<b>&gt; 850</b>
<b>Number of ATMs</b>	<b>&gt; 2.500</b>
<b>Number of POSs</b>	<b>&gt; 75.000</b>
<b>Number of Customers</b>	<b>&gt; 17 million</b>

<b>Number of Daily Transactions</b>	<b>&gt; 25 million</b>
<b>Number of Daily Transactions on Peak Days</b>	<b>&gt; 60 million</b>
<b>Number of Daily Batches</b>	<b>&gt; 13.000</b>
<b>Average Transaction Response Time</b>	<b>&lt; 0,08 sec.</b>
<b>Average INDB2 Time /Commits</b>	<b>&lt; 0,02 sec.</b>
<b>Number of Daily Total SQL Calls</b>	<b>&gt; 2,5 billion</b>
<b>I/O Response Time</b>	<b>&lt; 0,002 sec.</b>



# Infrastructure Information



**System z**

**Total MIPS**

**Memory on each machine**

**Number of LPARs on each machine**

**DASD**

**Total Storage Capacity**

**: 2 x z196-M32 713**

**: 24362 MIPS**

**: 224 GB**

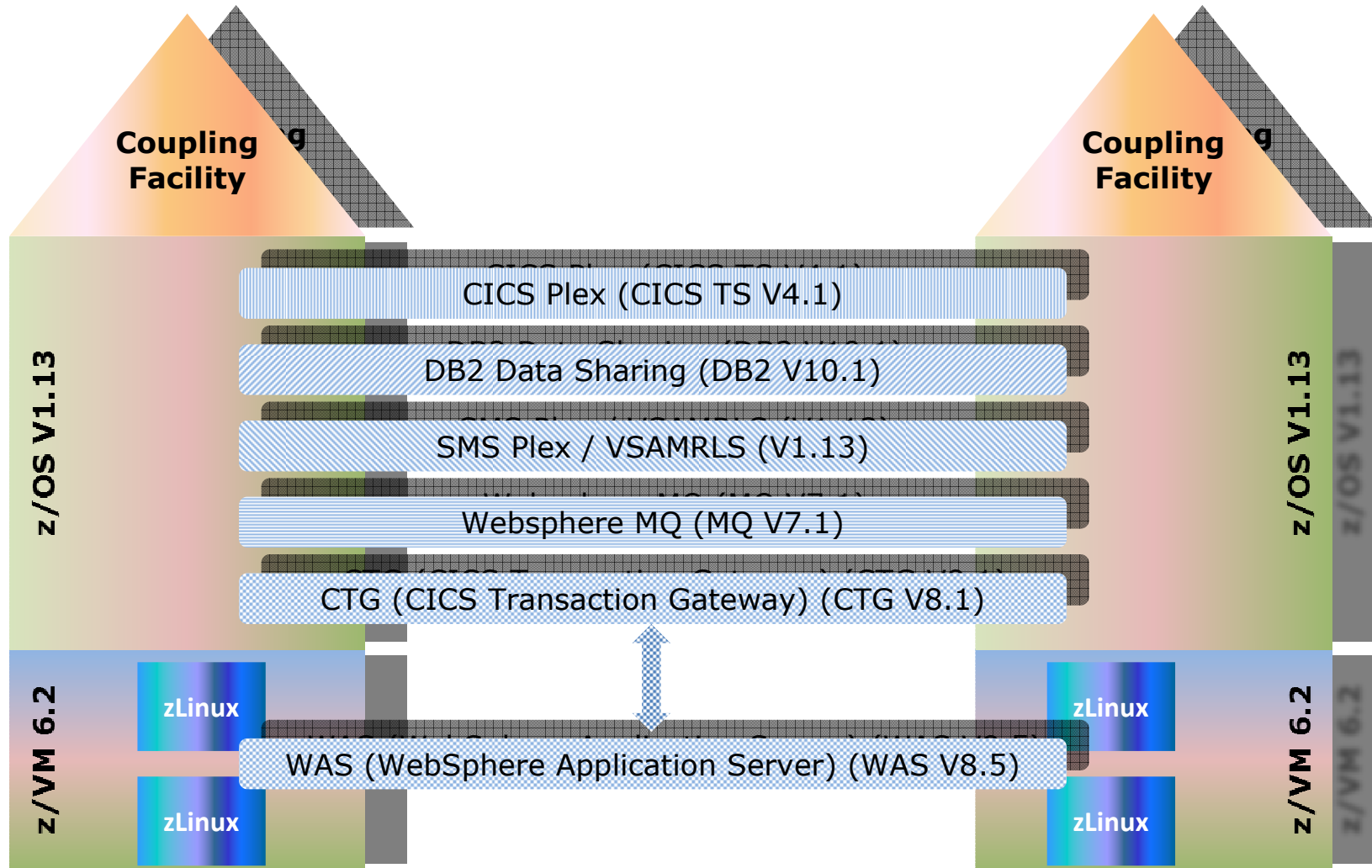
**: 8 LPARs**

**: 3 x DS8300 , 2 x ESS M800**

**: 83,5 TB**



# Topology of System z in Halkbank



## Why System z

Ready for

**IBM** | **DB2**

data server software

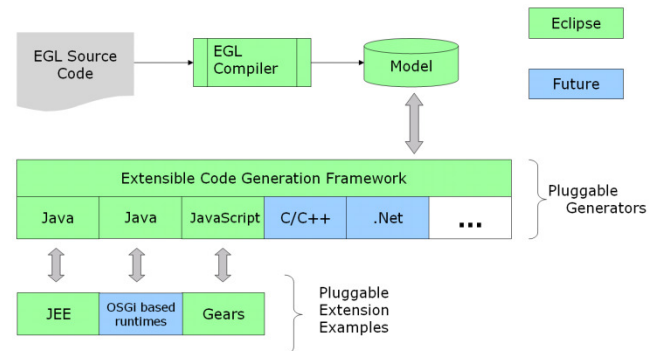


Websphere MQ

**As a bank, we must provide services that our customers trust to be available and secure at all times. For Halkbank, everything comes back to the reliability, stability and security of IBM® CICS® and DB2® on the IBM System z® mainframe: in more than 25 years of continuous operations, we have never had any unplanned downtime. This makes the mainframe an ideal platform for managing both the growth of our business and the development of new services as we tackle tomorrow's challenges.**



# Unified Development



**Software development for the mainframe and other platforms at Halkbank relies on IBM Rational® technologies. The bank uses Enterprise Generation Language (EGL) to develop its core banking applications, employing IBM Rational COBOL Runtime on z/OS systems to generate COBOL code from EGL, and IBM Rational Team Concert running on a distributed landscape to manage versioning and code build processes.**

**Using Rational products for all of our cross-platform development saves time, keep our lives simple, and gives us flexibility in the application development process.**



# Building on Solid Foundations

The WebSphere logo, consisting of the word "WebSphere" in white text on a purple rectangular background.The WebSphere logo, consisting of the word "WebSphere" in white text on a purple rectangular background.

**We want to extend our mainframe environment by deploying Integrated Facility for Linux (IFL) engines to run virtual instances of SUSE Linux Enterprise Server hosted on IBM z/VM®.**

**We needed to standardize our application server landscape, and we decided to use IBM WebSphere® Application Server on Linux on the mainframe. This platform gives us a great degree of flexibility and scalability, with lower infrastructure costs than for the equivalent distributed environment. Also, we can include Linux-based systems in the mainframe disaster recovery solution, which reduces complexity and cost.**





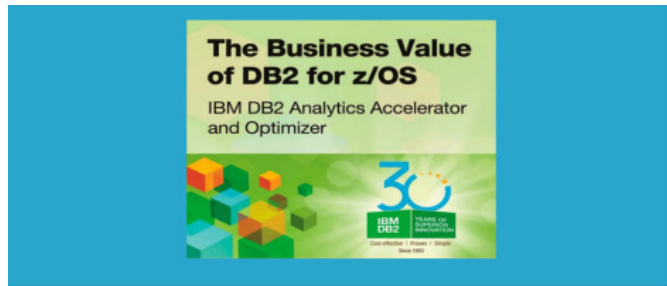
## Automated Security



**Data security is vital for Halkbank, which has relied on IBM RACF® to control system access rights for more than 25 years. Recently, we deployed IBM Security zSecure™ Suite to simplify the management of security .**

**Using zSecure, we can automatically remove unused definitions, and we can also delegate control over user access rights to a team on the business side that is responsible for security. This reduces the strain on the IT team, saving us significant time and effort, and it gives control back to the people who best understand the organizational structures.**

## z is for analytics



**For business and regulatory reporting, Halkbank uses a large data warehouse based on DB2 for z/OS to consolidate and prepare data sourced from operational databases. Large queries and reports run as overnight batch jobs; we have recently deployed IBM DB2 Analytics Accelerator to speed up reporting.**

**We wanted to improve the performance for complex analytic queries – both in order to support rapid and accurate decision making, and in order to meet deadlines for regulatory reporting, where we face penalties of tens of thousands of dollars for late reporting. We expect to be able to move 70 percent of our queries to DB2 Analytics Accelerator, accelerating queries, reducing our DB2 licensing costs on the mainframe, and freeing up processing resources for other workloads.**

## Stable platform in times of change



**As mobile banking grows in popularity, Halkbank is building new capabilities on trusted technology. Mobile banking is a fast growing channel for Halkbank. As for all other channels, we run the transactions themselves on our CICS and DB2 for z/OS systems, which helps to ensure the highest levels of performance, availability and security.**

