Glenn Anderson, IBM Lab Services and Training

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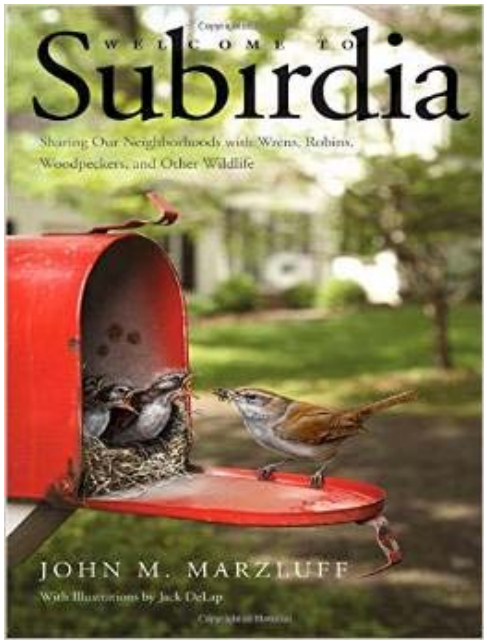
The Sysprog's Guide to the Customer Facing Mainframe: Cloud / Mobile / Social / Big Data

Summer SHARE
August 2015
Session 17794



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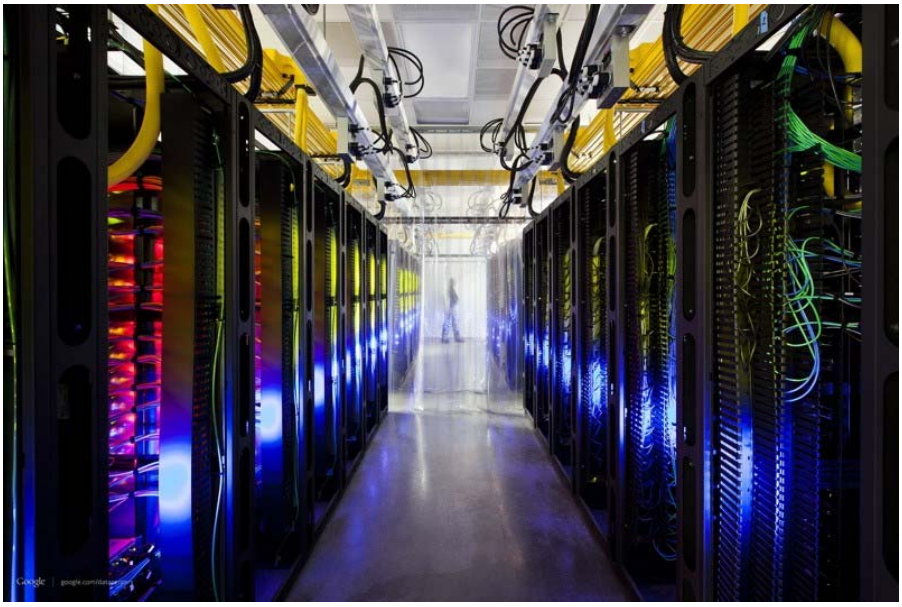

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The business environment is shifting…

The Customer-Facing Mainframe

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Systems of Record / Systems of Engagement

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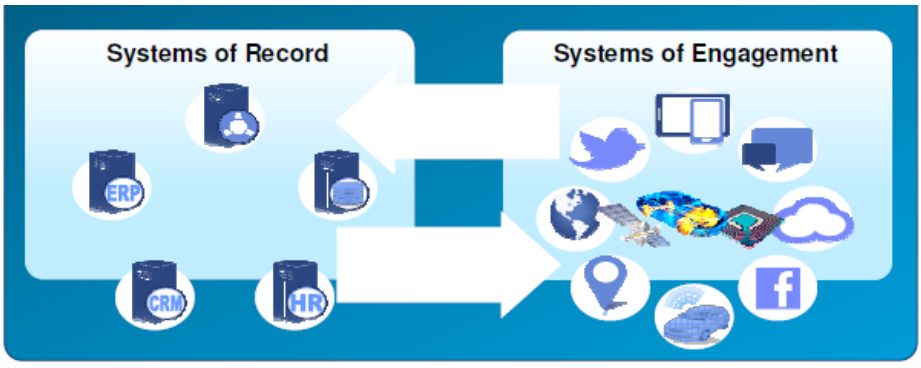
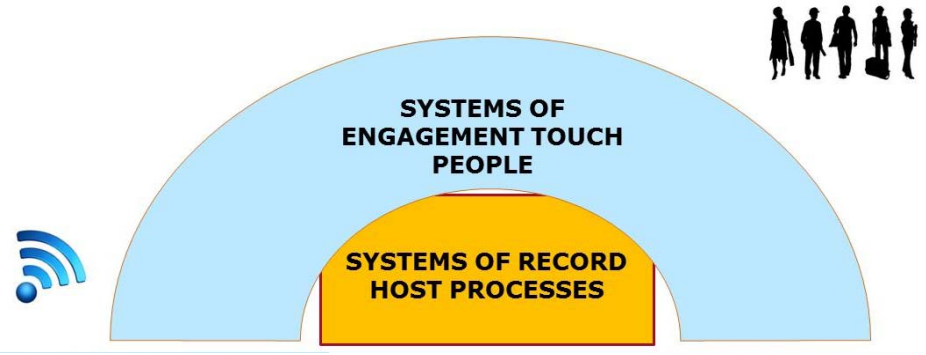
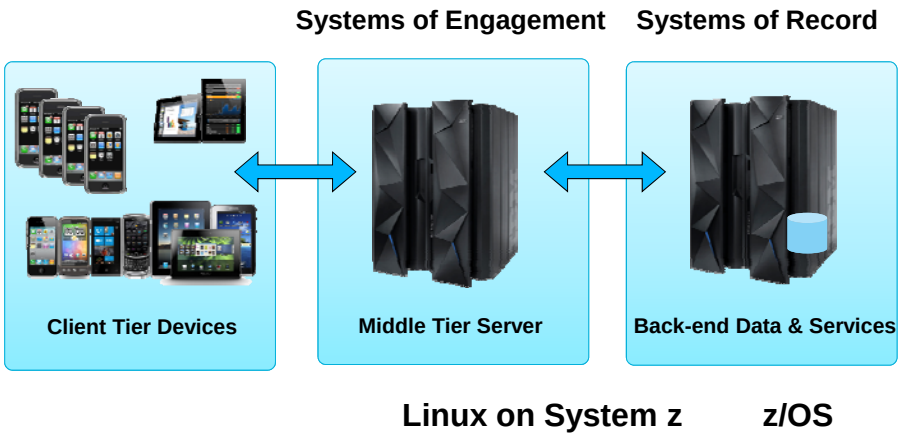


Touching People / Hosting Processes



How System z Fits



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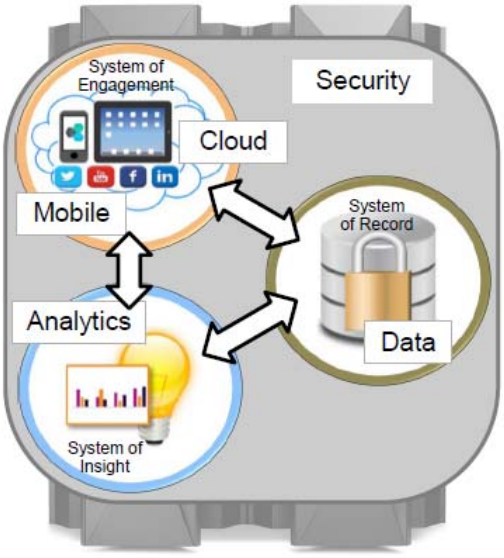
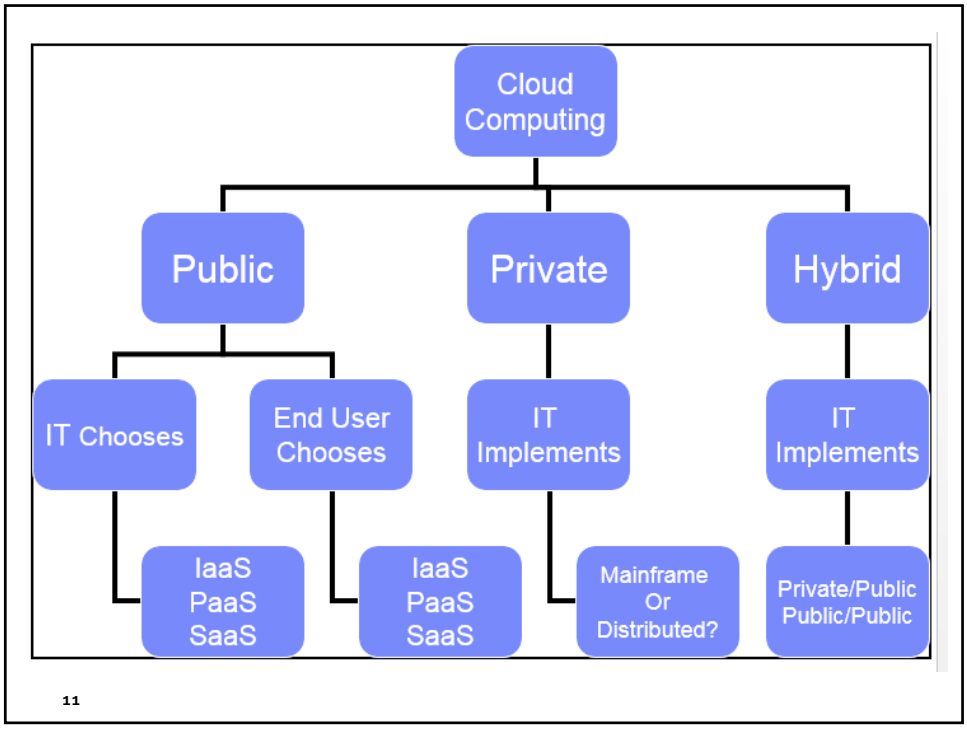


Cloud……



What are the Characteristics of Public Cloud Computing?

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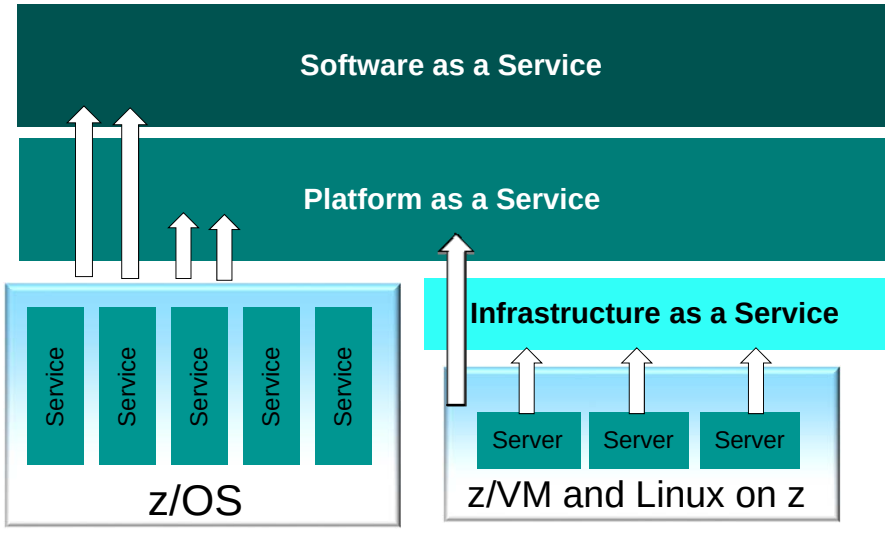
- **On-Demand Self Service**
  - **Pick services you need, when you need them**
- **Broad Network Access**
  - **Available over network through thin or thick clients**
- **Resource Pooling**
  - **Resources are shared, serving multiple consumers**
- **Rapid Elasticity**
  - **Capabilities provisioned, in some cases automatically**
- **Measured Service**
  - **Pay only for what you use**

What do people mean when they say "cloud computing?"

- **Cloud computing is a model for service delivery**
- **Eliminate the confusion, and make any cloud conversation a specific, useful discussion, by answering these three questions:**
  - **Where is the service coming from? (public, private or hybrid)**
  - **What kind of service is it? (IaaS, PaaS, SaaS)**
  - **Which characteristics of the cloud service delivery model are important to you? (what is the problem you are trying to solve?)**

IaaS, PaaS and SaaS on z Systems private cloud



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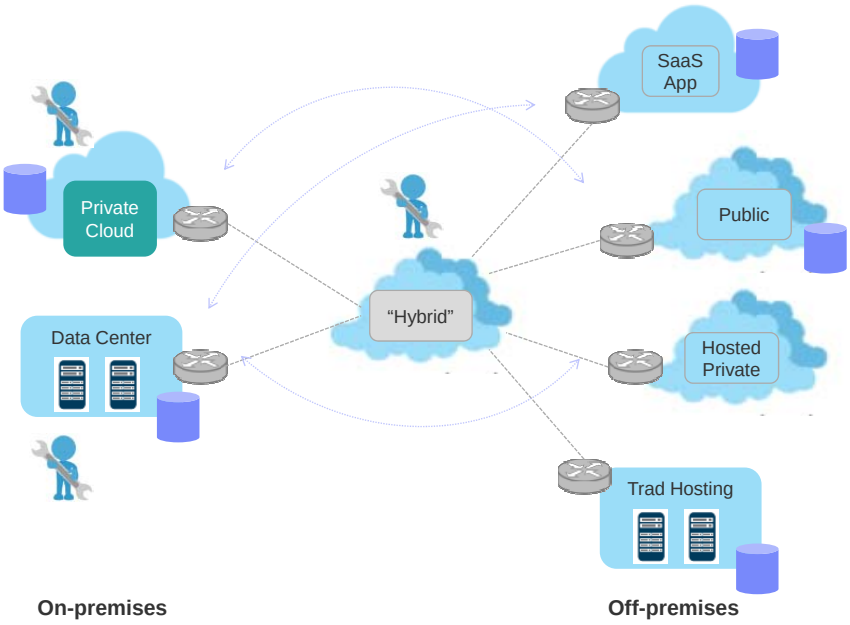
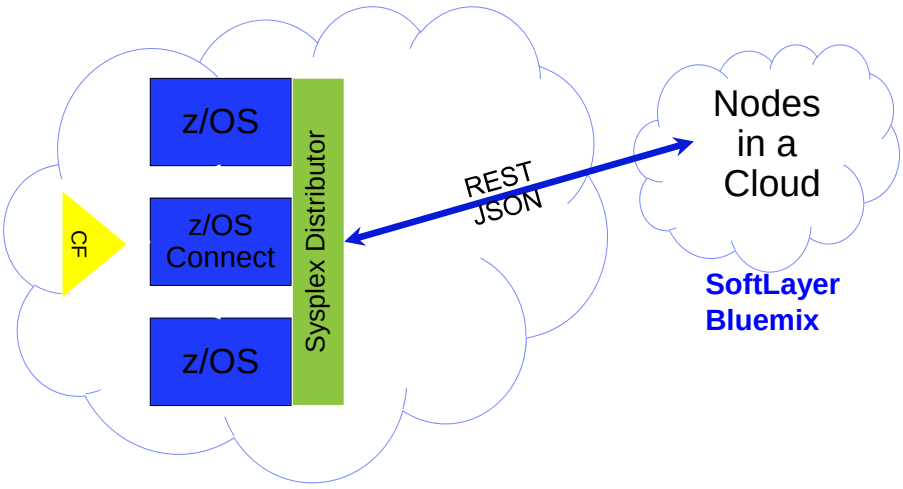
The hybrid cloud reality



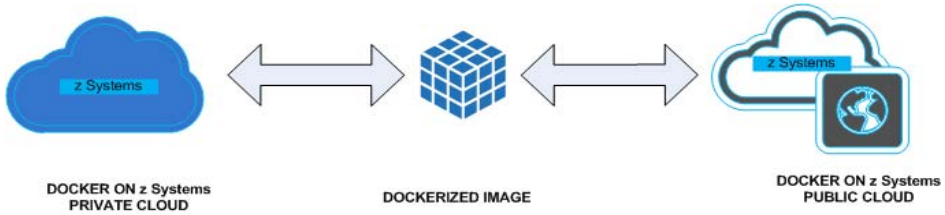
z/OS in a Hybrid cloud



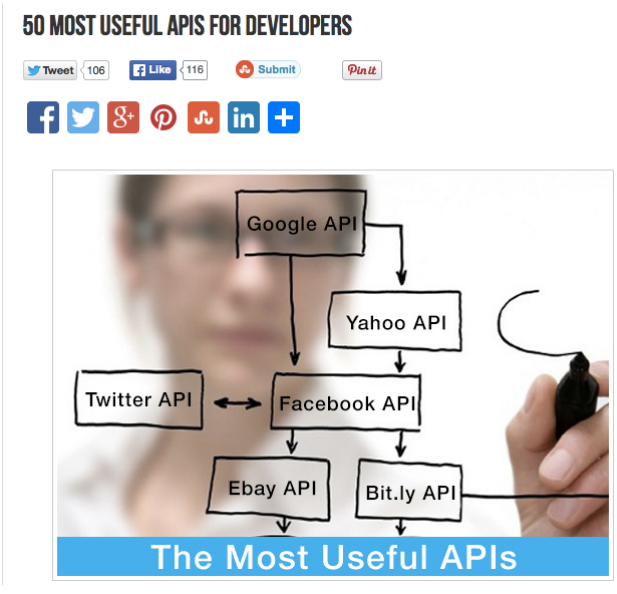
Application and run-time deployment

DevOps Hybrid Cloud : Docker Architecture on z Systems

- **Container technology provides an easy way to make applications more mobile in a hybrid cloud**
- **IBM and the Open Container Project**



The emergence of the 'API Economy'



Mainframe as a service – API economy

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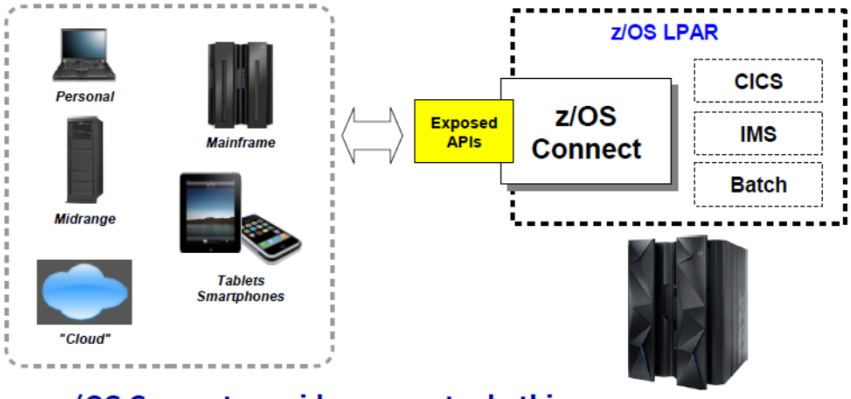
Another use-case for z/OS Connect is as a standard gateway into the z/OS LPAR to expose programs as a service:



z/OS Connect provides a way to do this with a single entry point (HA *is* possible) and common protocol (REST/JSON)

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Mobile……

Typical mobile environment

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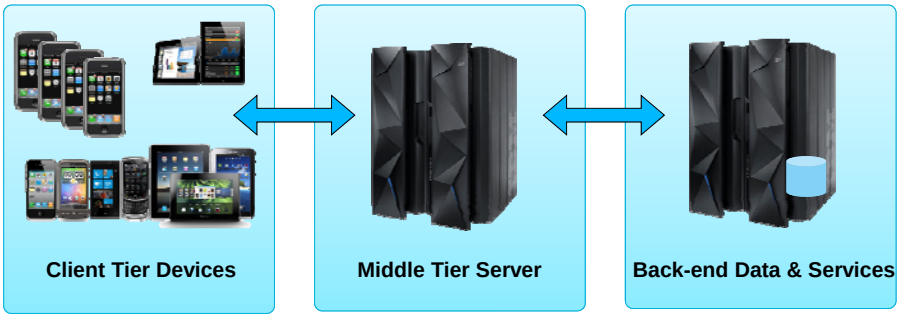
Systems of Engagement | **Systems of Record**

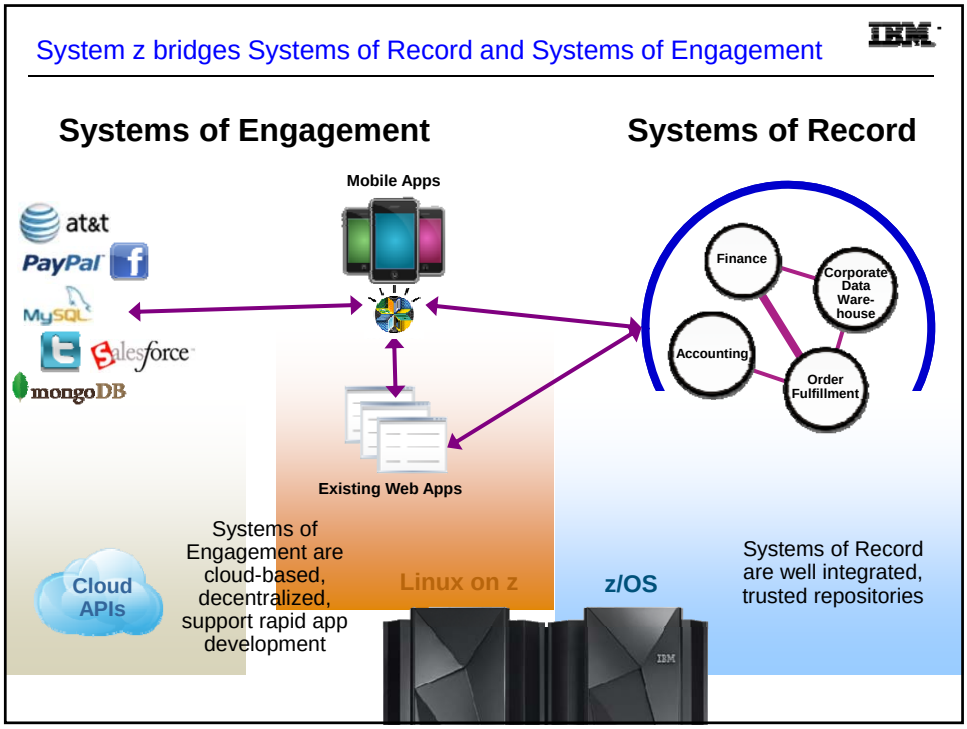


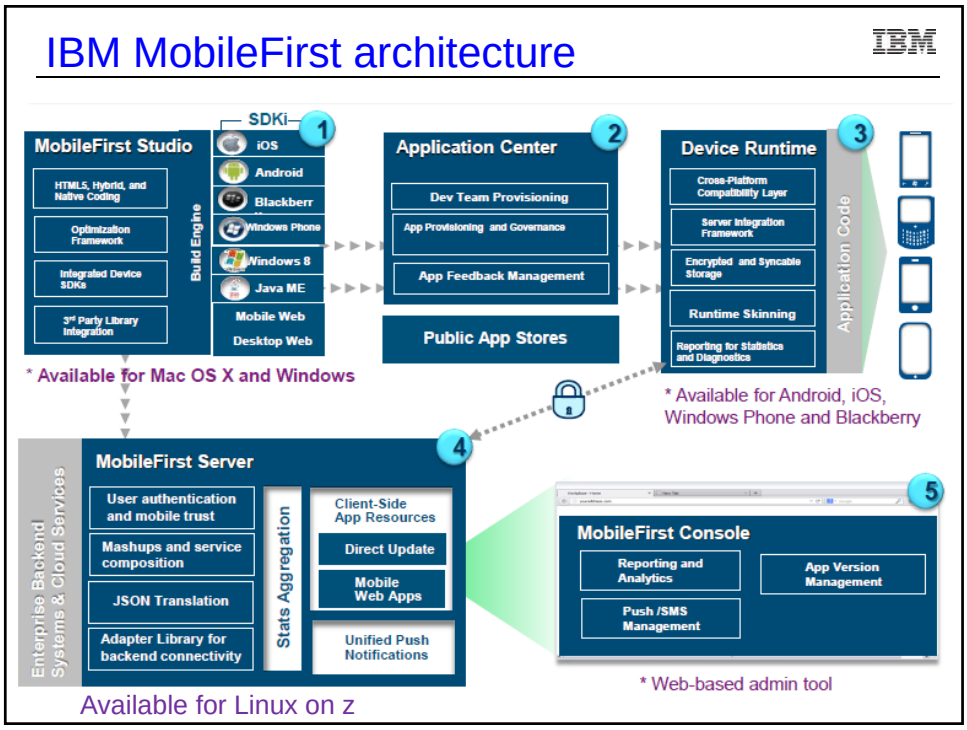
Client Tier Devices | **Middle Tier Server** | **Back-end Data & Services**

- OS Device Variety
- Screen size variety
- Various Smartphones
- Tablets

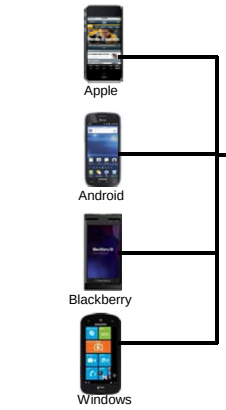
- Web Application Server
- Mobile Application Runtime Server
- Security components
- Back-end access services
- Caching to back-end services

- Databases and Data sources
- Transactional services



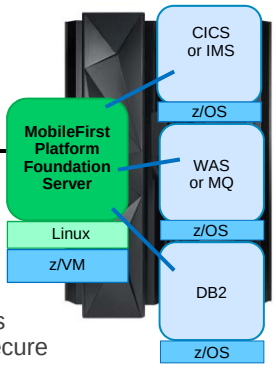


MobileFirst running on Linux on z



Mobile protocol connectivity with core z Systems applications including CICS, IMS, TPF, MQ, WMB and DB2

JSON



IBM MobileFirst Platform

- Simple to maintain
- Secure
- Standards-based
- Easier and faster to develop apps
- Includes adapters that provide secure connectivity to back-end systems

JSON stands for JavaScript Object Notation

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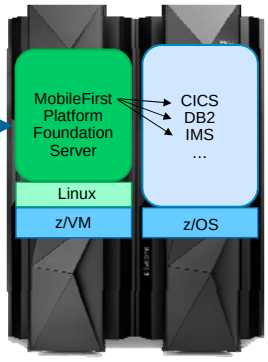
Extend mainframe-based apps to mobile users

IBM MobileFirst Platform Foundation Studio

Develop

Test

Deploy



- MobileFirst Platform Foundation Studio includes tools for mobile application development, with programming models and web support
- Fully integrated into the RDz Eclipse-based platform

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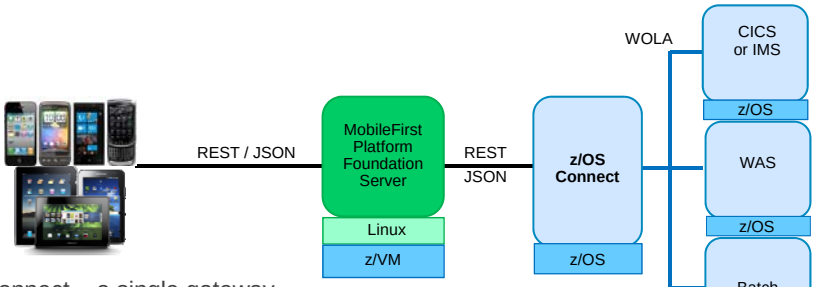
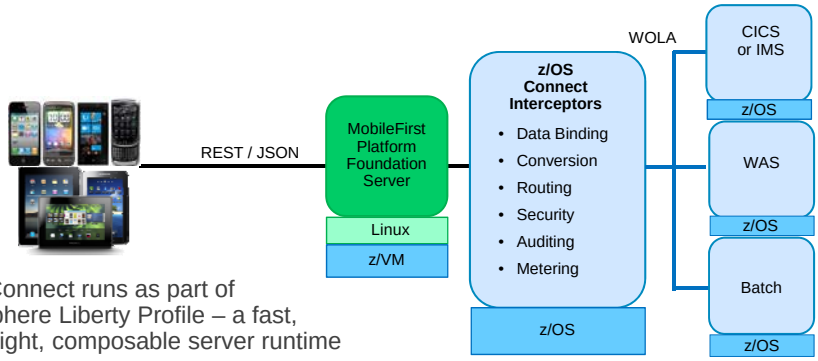
MobileFirst and z/OS Connect



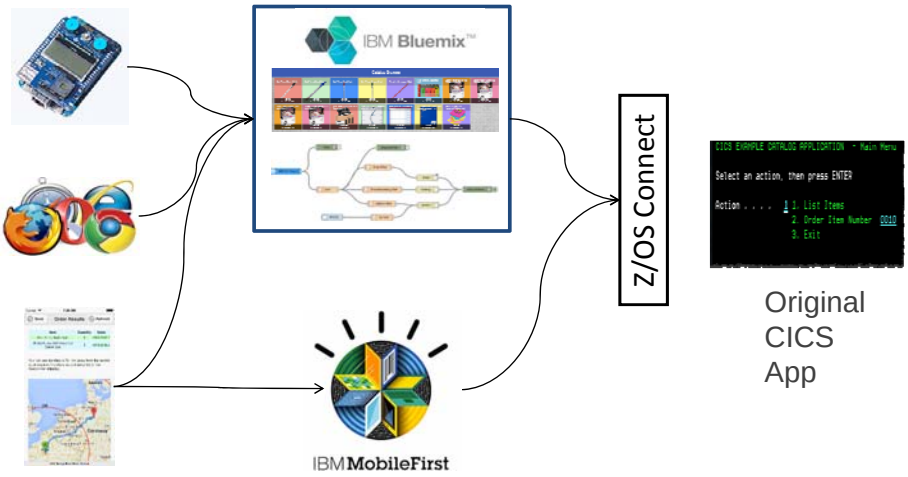
- z/OS Connect – a single gateway for mobile connectivity – provides protocol conversion
- Ships with WebSphere on z/OS, CICS and IMS – at no additional charge
- Integrated into z/OS services (e.g., WLM, SMF, etc.)

z/OS Connect Interceptors



- z/OS Connect runs as part of WebSphere Liberty Profile – a fast, lightweight, composable server runtime
- Low cost option – Java-based, runs on zIIPs
- Also includes additional logging, security and metering services, plus an API

From 3270 to z/OS Connect to Mobile App to Bluemix to IoT



Social……

Social Media Explained

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twitter	« I'm eating a donut »
facebook	« I like donuts »
foursquare	« This is where I eat donuts »
YouTube	« Here's a video of me eating a donut »
Instagram	« Here's a vintage photo of my donut »
Pinterest	« Here's a pretty donut recipe »
imgur	« Here's a viral picture of my donut »
LinkedIn	« My skills include donut eating »
Spotify	« Now listening to "Donuts" »
Google+	« I'm a Google employee who eats donuts »

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What is social business?

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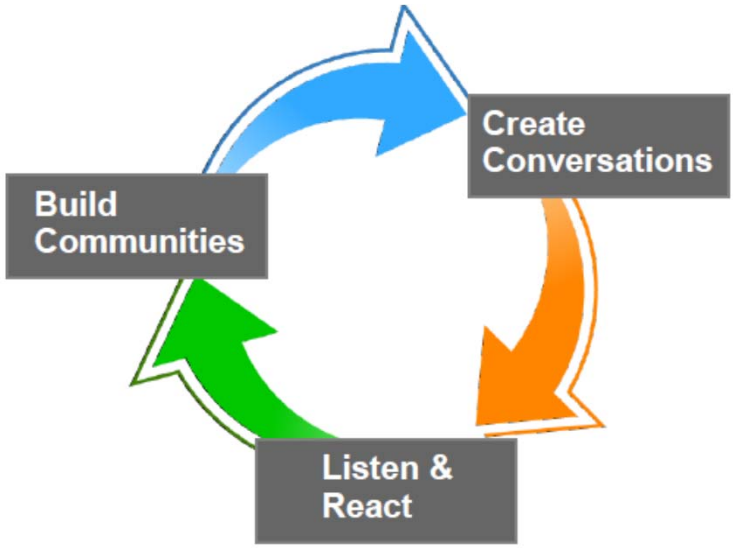
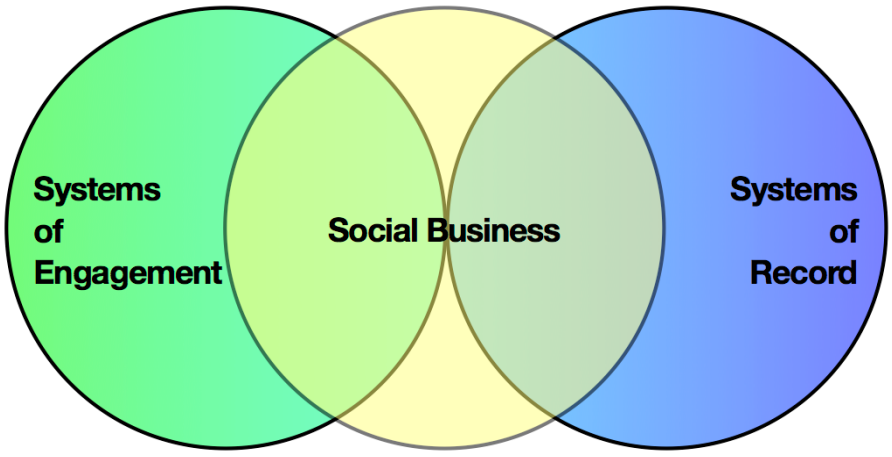
- **A lot more serious than getting a nice presence on Facebook or Twitter or Google+**
- **The application of social networking tools, ideas and culture to business roles, processes and outcomes**
  - **Collective intelligence**
  - **A new way of working**
  - **Understand market shifts**

Three elements of successful Social Business approaches



Spanning Systems of Record and Systems of Engagement



Collaboration software for Linux on System z

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IBM Connections
Social Software for Business

Empowers users to be more innovative and helps them collaborate & execute more quickly with dynamic networks of co-workers, partners and customers.

Home page
See what's happening across your social network

Profiles
Post updates to your board and find the people you need

Communities
Work with people who share common roles and expertise

Forums
Exchange ideas with, and benefit from the expertise of others

Files
Post, share, and discover documents, presentations, images, and more

Social Analytics
Discover who and what you don't know via recommendations

Wikis
Create web content together

Blogs
Present your own ideas, and learn from others

Activities
Organize your work and tap your professional network

Bookmarks
Save, share, and discover bookmarks

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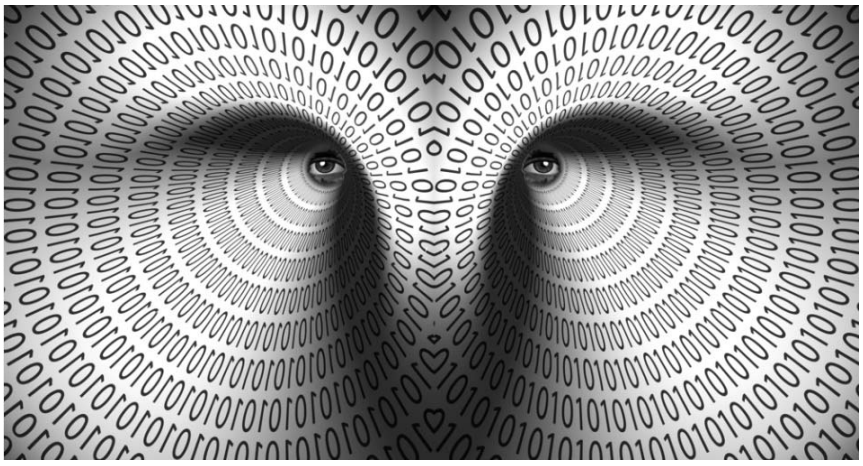
Big Data……



Technological immortality

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- "….each of us now leaves a trail of digital exhaust, an infinite stream of phone records, texts, browser histories and other information that will live on forever."

  - The Human Face of Big Data

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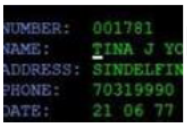
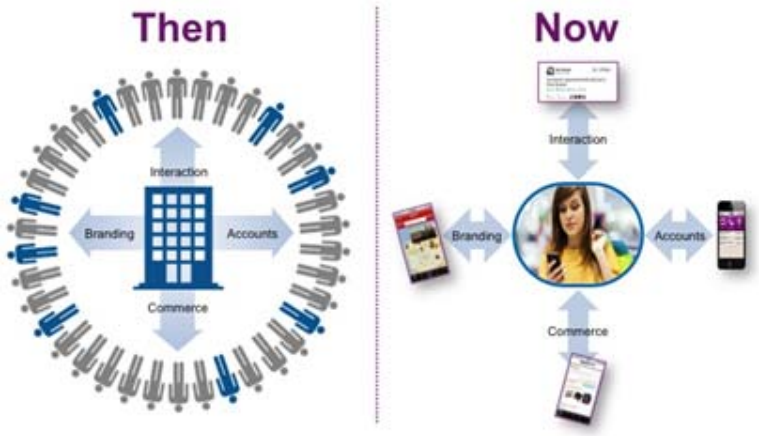
"We have lots of information technology. We just don't have any information."

Analyzing all the data about customers adds business value

Data Source	Analysis	Business Value
Traditional RDBMS 	Analyze all customer records across departments	Complete view of customer value to the company
External Data 	Analyze customer sentiment and experience	Attract and retain customers
Real Time Data 	Analyze customer data as it happens	Personalize customer interaction in real time

Customer experience: the demographic of one



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What does a big data platform do?

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Traditional IM

- Requirements based
- Top-down design
- Integration and reuse
- Technology consolidation
- World of DW and ECM
- Competence centers
- Better decisions
- Enterprise

"Big Data" Style

- Opportunity oriented
- Bottom-up experimentation
- Immediate use
- Tool proliferation
- "World of Hadoop"
- Hackathons
- Better business
- Marketing (+)

Gartner

What is Hadoop?

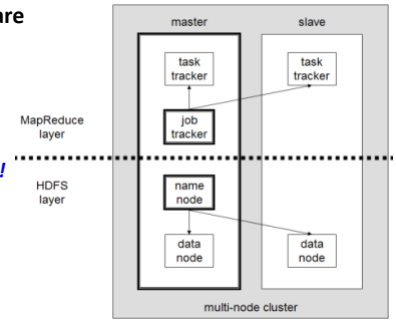
Hadoop is an open source software framework from the Apache Software Foundation that supports data-intensive highly parallel applications

High throughput, batch processing

Designed to run on large clusters of commodity hardware

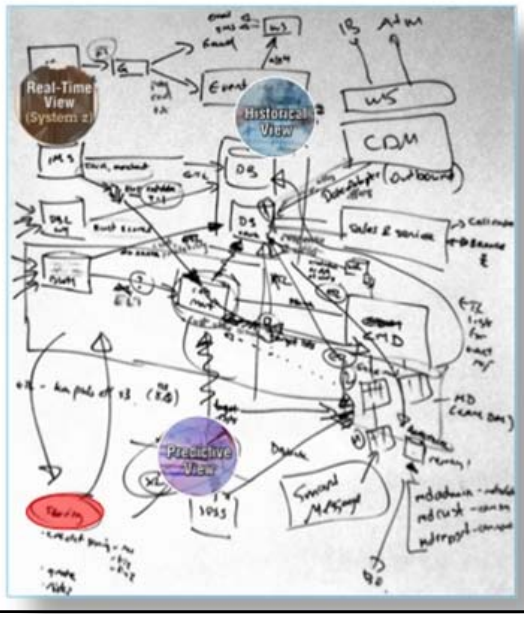
- Lots of cores – inexpensive cores working all the time
  - Processors fail – that's ok – just replace them
- Lots of redundant disks – really inexpensive disks
  - Disks crash – that's ok – just replace them

But nothing in Hadoop requires commodity cores and disks!



- Two main components
  - **Hadoop Distributed File System (HDFS)**
    - Self-healing, high-bandwidth clustered storage
  - **MapReduce engine**
    - A simple, powerful framework for parallel computation

Is this your data lifecycle?



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Big data and analytics on z Systems

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Data Store
DB2 for z/OS

Big Data (Hadoop)
InfoSphere BigInsights

Business Intelligence and Reporting
IBM Cognos Enterprise

Predictive Analytics, Modeling, Scoring
IBM SPSS

BLU Acceleration
DB2 LUW

IBM z Systems

DB2 Analytics Accelerator

Competitive Project Office

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Hadoop and z Systems

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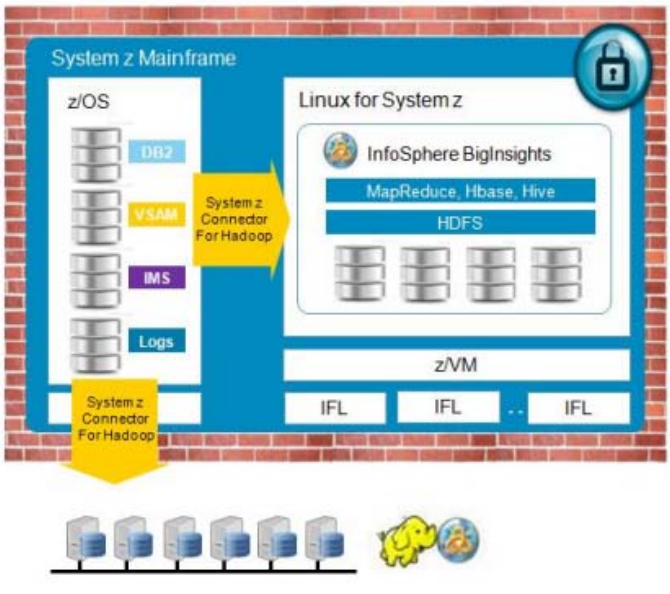

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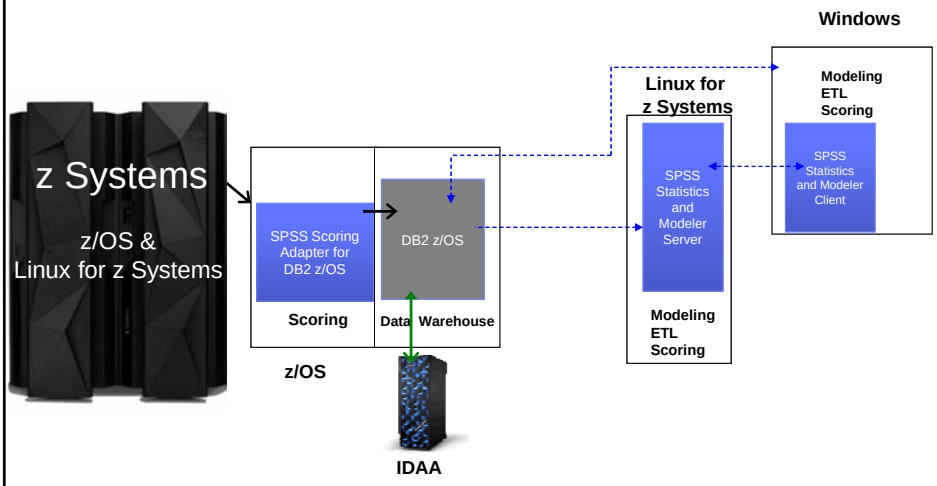
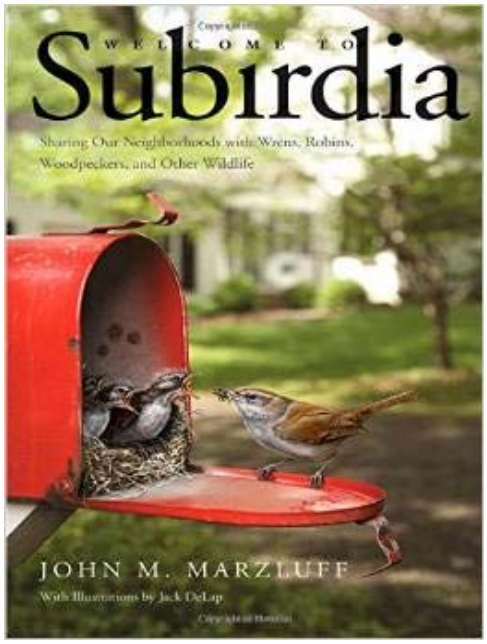
SPSS on z Systems Architecture





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The customer-facing mainframe