Neue Lösungen mit Linux on System z

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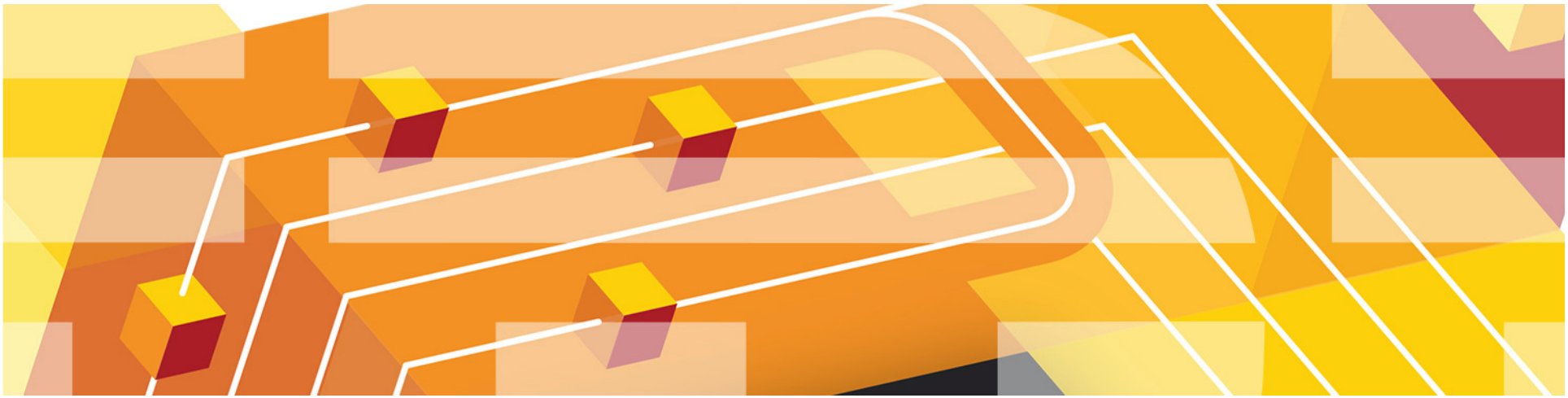

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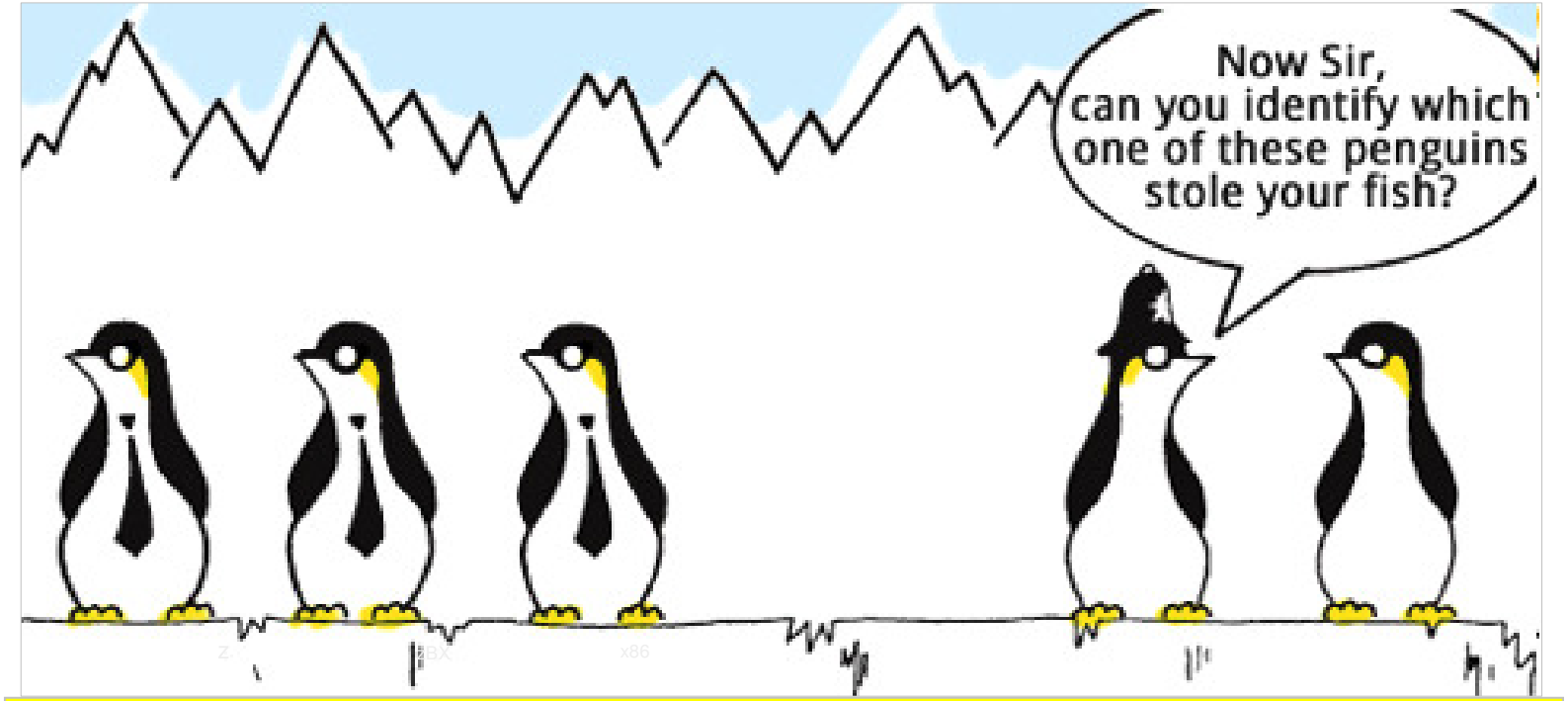
IT dynamics today

Globalization and Globally Available Resources

Billions of mobile devices accessing the World Wide Web

Real-time Information sharing and Process Interaction

Rise of social networking and social computing



The penguins **(Linux operating systems on different architectures) all look the same**
and have the same Linux kernel source**.**

But they have **different personalities**, **qualities**, **features** and **options** derived from their underlying architectures.

Open Source and Linux drives business critical applications

The growth and expansion of Linux as a mature, cost-effective alternative for business-critical workloads

Linux *continues to enable new ways of doing business*

Edge and Web Infrastructure

- Community Driven
- Internet Enabled
- Worldwide Volunteers

Typical Applications

- E-mail Servers
- Apache
- Lightweight database
- DHCP
- HPC

Application and Data Serving

- Open Industry Driven
- Open elements of IT industry join existing community
- Linux adoption in the enterprise accelerates

- e-Business Applications
- Application Servers
- Mission critical database
- Dynamic Business Models

Business-Critical Enterprise Workloads

- Competition Driven
- Accepted as mature, open, lower-cost alternative for hosting DB, BI, ERP, CRM in business-critical environments
- Linux is a permanent presence in the datacenter

- Next-generation workloads
- Virtualization / consolidation
- Cloud and dynamic infrastructure
- New business models

1991 – 2004 | 2005 – 2006 | 2007 – 2013

Linux on System z has a Continuous Focus on Characteristics the Workload Benefits from

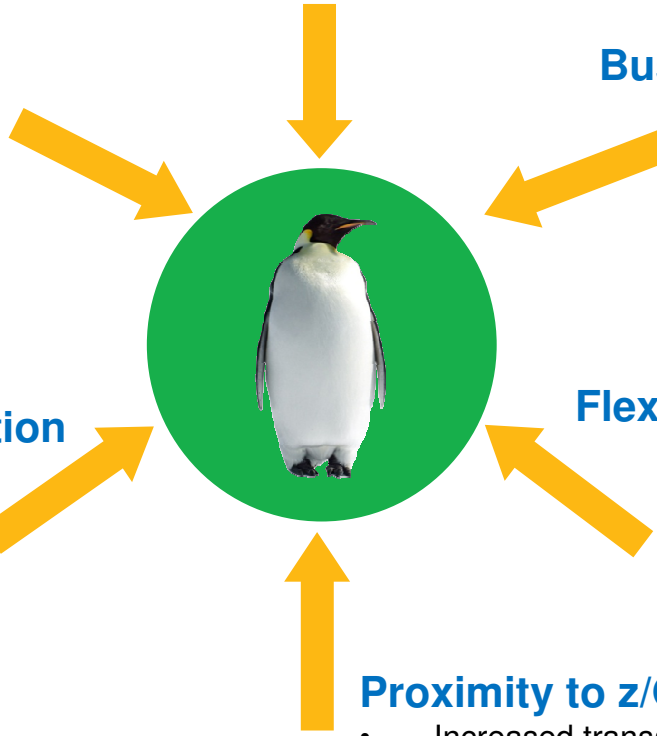
Linux is Linux … but System z provides unmatched values to Linux workloads

Security Capabilities:

- Privacy,
- Regulatory requirements, Identity management, Common Criteria Certification, Image Isolation,
- Cryptographic Acceleration,
- Centralized Authentication,
- Physically secure communications with HiperSockets™ and Guest LANs

Consolidation Capabilities:

- Server, Network, Storage, Staff, Skills, Utilities, Environmental, Applications Hosting of different workloads at the same time



Business Resiliency Capabilities:

- High Availability,
- Disaster Recovery, Serviceability, Reliability,
- Storage failover (HyperSwap™), Data replication (XRC, PPRC)

Operational Simplification Capabilities:

- Virtualization,
- Simulation,
- Single Point of Control,
- Single System Image,
- z/OS Similarities/Synergies,
- Resource Sharing

Flexibility / On demand Capabilities:

- Mixed Workloads: Scale-up & scale-out,
- Rapid server (de)commissioning,
- Idle Servers don't consume resources

Proximity to z/OS managed Data:

- Increased transaction throughput, HiperSockets
- Shared data access
- Integrated storage management

zEnterprise Industry Solutions for a Smarter Planet

Smarter Planet® – Industry Solutions

Banking

- IBM Financial Transaction Manager on zEnterprise
- SAP Bank Analyzer on zEnterprise
- IBM Core Banking Solution on zEnterprise
- FSS Business Intelligence and Data Analytics Solution
- IBM Smarter Analytics™ Anti-Fraud Infrastructure for zEnterprise

Insurance

- IBM Smarter Analytics: Anti-Fraud, Waste and Abuse Solution for Insurance
- IBM Genelco® Insurance Administration Solution
- IBM zEnterprise Insurance Integration Hub

Government / Smarter Cities®

- IBM zEnterprise Starter Edition for Cloud for Government
- IBM Intelligent Operations Center for Smarter Cities
- IBM Smarter Infrastructure for Social Services - Curam on zEnterprise
- IBM Enterprise Asset Management (Maximo) for Government

Healthcare / Life Sciences

- IBM Smarter Analytics Signature Solution: Anti-Fraud, Waste and Abuse
- IBM Health Plan Integration Hub

Retail

- IBM zEnterprise Smarter Analytics for Retail

New solutions Linux-based solutions

More than 1400 New and Upgraded Applications added for z/OS and Linux

Added over 90 New ISV Partners in 2012

- **z/OS**
  - Over 1,080 New or Upgraded applications
  - More than 4,400 total z/OS applications
- **Linux**
  - **Over 400 New or Upgraded applications**
  - **More than 3,000 total Linux applications**

The New Evolution of the IT Infrastructure

LARGE Infrastructure

SMALL Infrastructure

Less Space
Less Power
Less Admins
More Efficient

x86 RACK Systems	x86 Blade Center Systems	IBM zEnterprise
15 kw/m²	Energy Use[1]	1.5 kw/m²
20x more Expensive	Software Licenses[2]	95% Less Cost
38%	Executive Satisfaction[3] Survey	90%

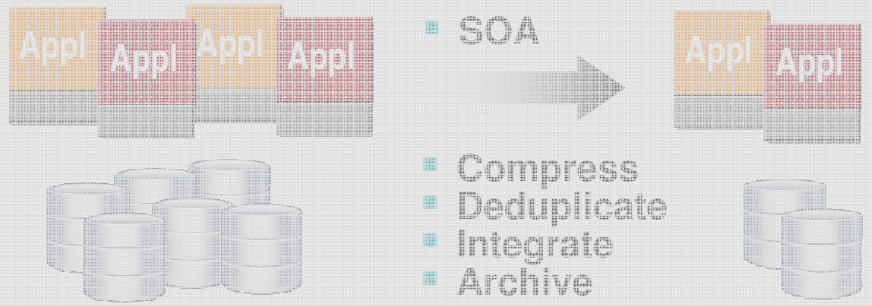
[1] Montpellier PSSC Green Data Center Benchmark; [2] Baldor Case Study; [3] Solitaire Interglobal: Comparing Virtualization Alternatives

Strategies to Improve Value and reduce Complexity and Costs

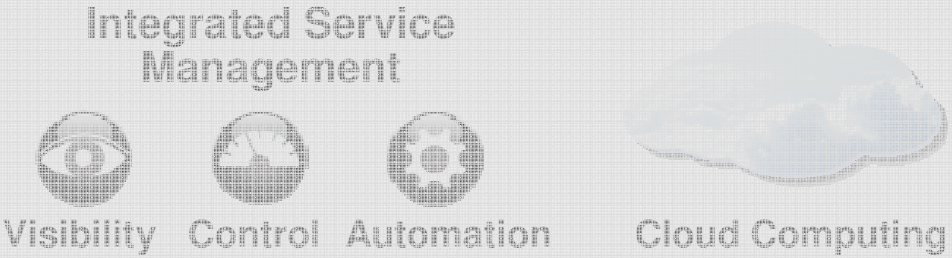
Optimize the Overall IT Environment

- **Simplify Hardware Infrastructure**

- **Integrate Redundant Software and Data**



- **Improve Service Delivery**

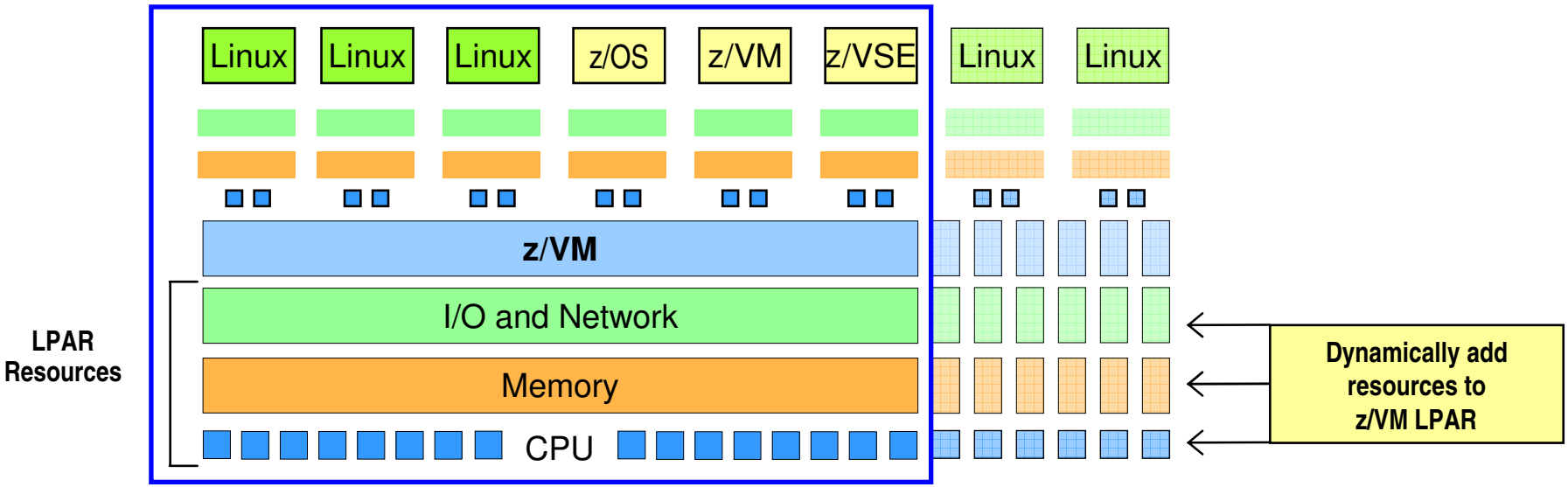


Virtualization – platform integration

Virtualization for different workloads on the same layer

z/VM 6.2 Function Enhances System Availability

- **Users can non-disruptively add memory to a z/VM *LPAR***
  - **Additional memory can come from: *a)* unused available memory, *b)* concurrent memory upgrade, or *c)* an LPAR that can release memory**
  - **Memory *cannot* be non-disruptively removed from a z/VM LPAR**
- **z/VM virtualizes this hardware support for *guest machines***
  - **Currently, only z/OS and z/VM support this capability in a virtual machine environment**
- **Complements ability to <u>dynamically</u> add CPU, I/O, and networking resources**

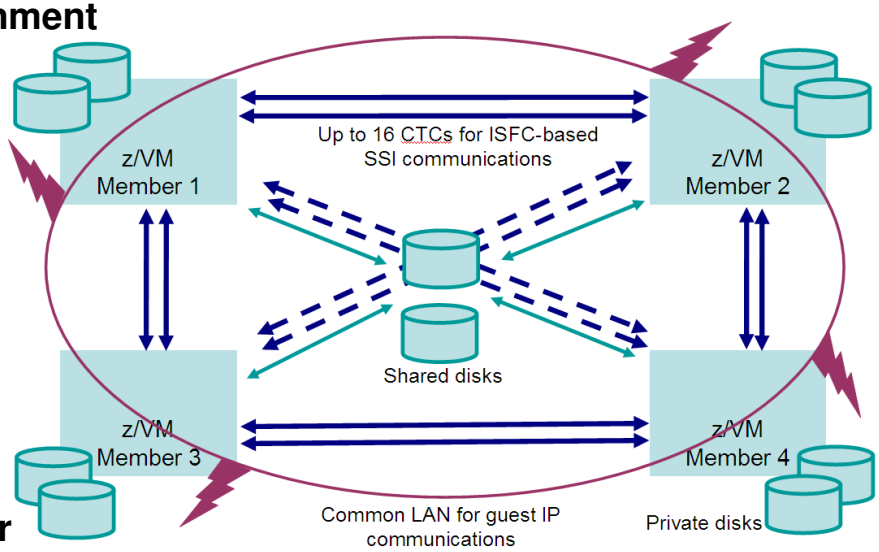


Smart economics: non-disruptively scale your z/VM environment by adding hardware assets that can be shared with every virtual server

z/VM V6.2 - Available since Dec, 2011

Single System Image, Clustered Hypervisor, Live Guest Relocation

- **Single System Image (SSI) - connect up to four z/VM systems as members of a cluster**
- **Provides a set of shared resources for member systems and their hosted virtual machines**
  - Directory, minidisks, spool files, virtual switch MAC addresses
- **Cluster members can be run on the same or different z10, z196, or z114 servers**
- Simplifies systems management **of a multi-z/VM environment**
  - Single user directory
  - Cluster management from any member
    - Apply maintenance to all members in the cluster from one location
    - Issue commands from one member to operate on another
  - Built-in cross-member capabilities
  - Resource coordination and protection of network and disks



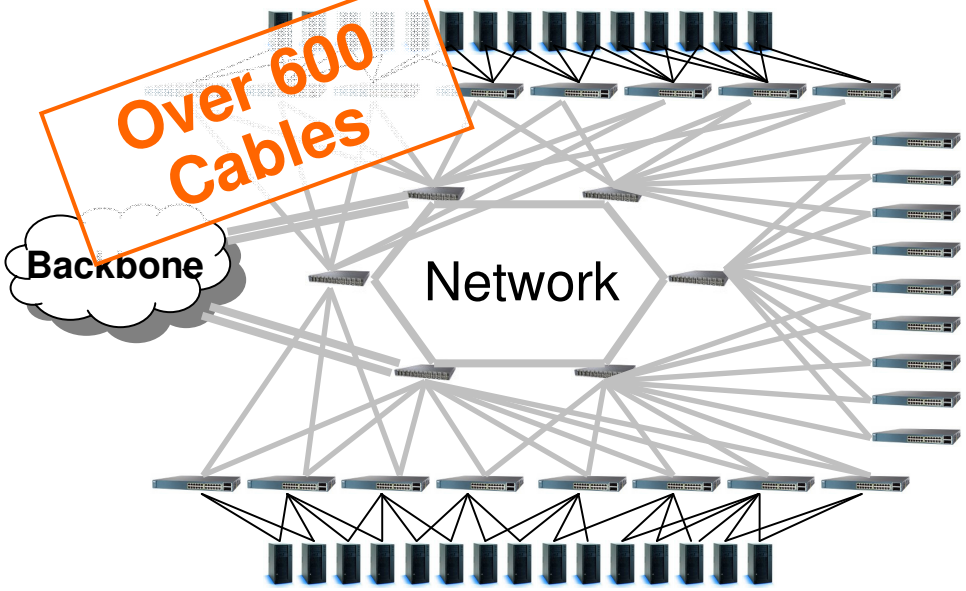
- **Live Guest Relocation (LGR) – Dynamically move Linux guests from one z/VM member to another**

  Reduce planned outages; enhance workload management
  - Non-disruptively move work to available system resources **and** non-disruptively move system resources to work
  - When combined with Capacity Upgrade on Demand, Capacity Backup on Demand, and Dynamic Memory Upgrade, you will get the best of both worlds

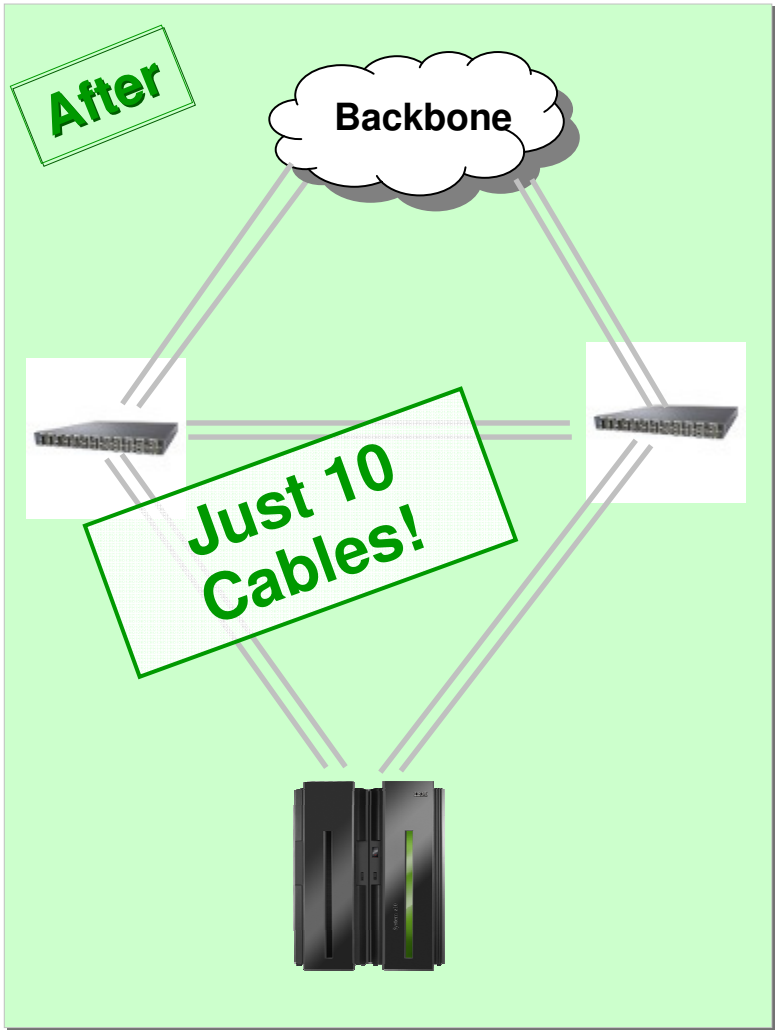
Insurance Company Consolidated 292 Servers to a z10

Before

3560E-24TD	8
3560E-24TD	17
3560E-12D	6
50 Ft UTP Cable	584
10GB Eth Fiber Cable	60

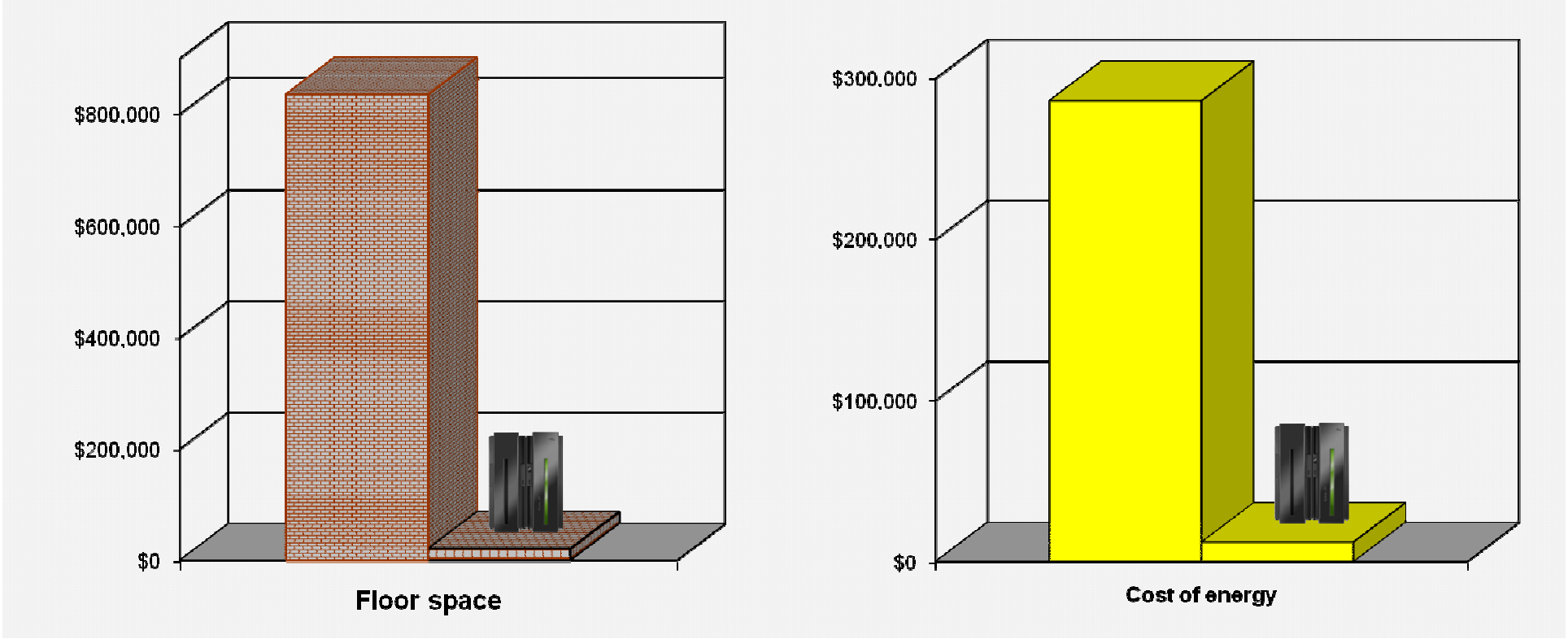


The diagram only shows **30** of **292** servers



Data is based on real client opportunity and on internal standardized costing tools and methodologies.
Client results will vary by types of workloads, technology level of consolidated servers, utilization factor, and other implementation requirements. Savings will vary by client.

Insurance Company Reduced Energy Requirements 95% by Consolidating 292 Servers to a IBM System z10®



OEM Server environmentals are derived from IDEAS International.

Annual cost calculation

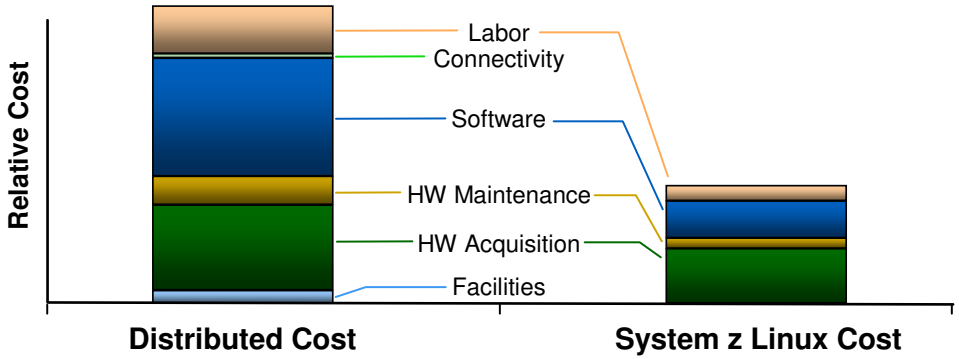
- Floor space cost calculated with a rate of $29 per square foot per month
- Energy cost calculated with a rate of $0.12 per Kilowatt

Prices are in USD. Prices may vary in other countries.
Data is based on real client opportunity and on internal standardized costing tools and methodologies.
Client results will vary by types of workloads, technology level of consolidated servers, utilization factor, and other implementation requirements. Savings will vary by client.

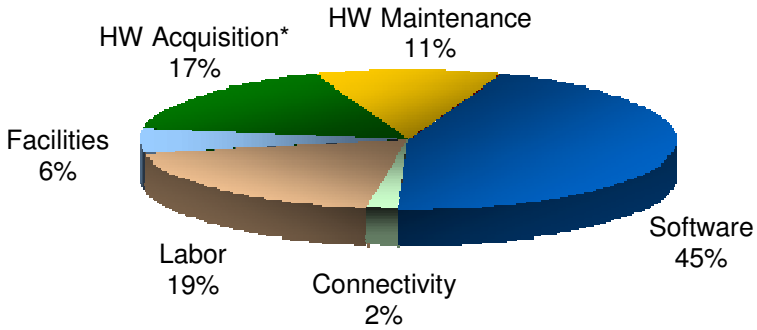
IBM Consolidation: 3900 servers to Linux on System z

Similar distributed workload vs. System z Linux results in potential 60-75% Gross Costs Savings

Operating Cost: Distributed vs. Mainframe



Potential Savings: Categories as a % of Gross Savings



* HW Acquisition compares server/disk refresh of distributed environment to the cost of acquiring new mainframes/storage

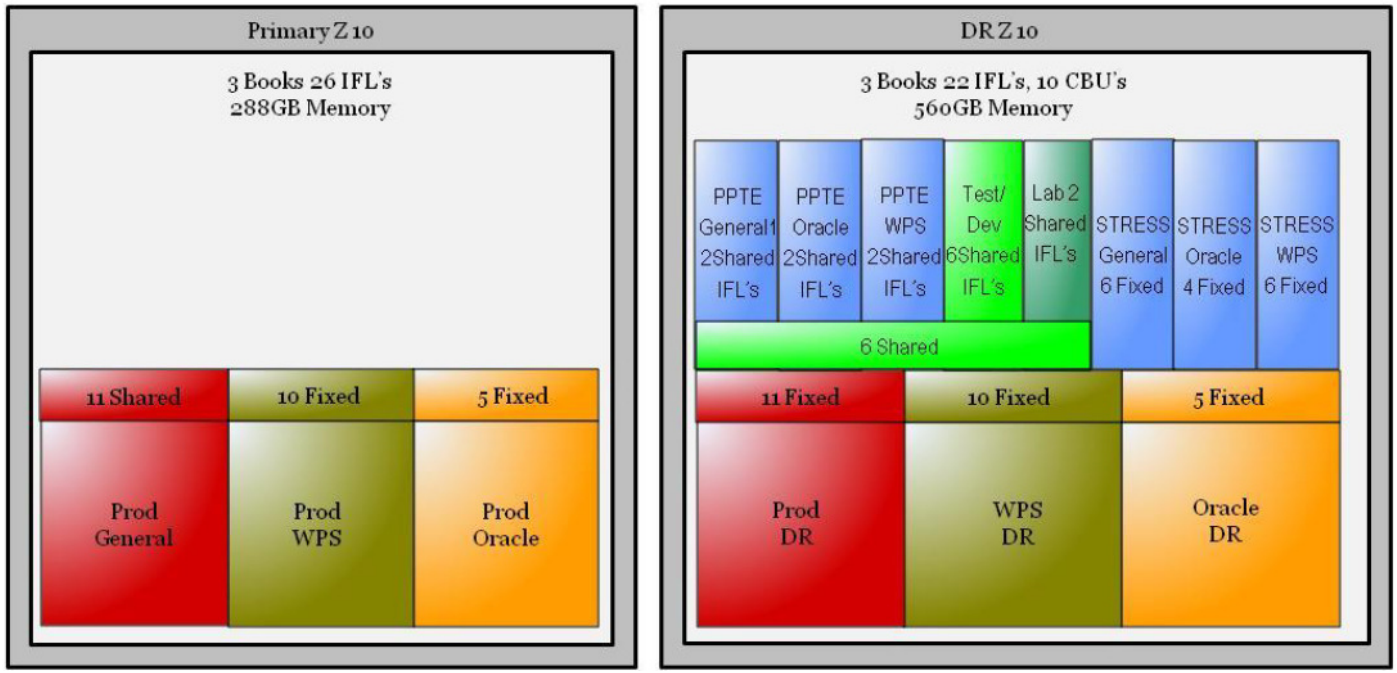
Dramatic Simplification

Unit	Distributed	System z Linux	% Reduction
Software Licenses	**26,700**	**1,800**	**93%**
Ports	**31,300**	**960**	**97%**
Cables	**19,500**	**700**	**96%**
Physical Network Connec-tions	**15,700**	**7,000**	**55%**

Results will vary based on several factors including # of servers and work load types

Bank of New Zealand

- Consolidated 200 Sun servers down to one System z10 running Red Hat Enterprise Linux
- Reduced data center footprint by 30%, heat output by 33%, and power consumption by close to 40%
- Only one administrator needed per 200 virtual servers
- New environments are deployed in minutes, not days



Baldor Electric

An international electrical equipment manufacturer slashes ongoing management costs and drastically improves flexibility with SAP and Linux on the mainframe

- The Challenge
  - Over 8,000 employees in 28 facilities across the globe, rapidly expanding business, overworked IT staff
  - **UNIX and Windows environment sprawling fast and difficult to manage, driving 5-8 outages per year**
  - **Downtime cost Baldor hundreds of thousands of dollars**
- The Solution
  - **A single System z10 mainframe, with 50 virtual servers**
  - **Consolidated 6,000 ft^2 of data center to just 900 ft^2**
  - **Novell SUSE Linux Enterprise Server**
- The Benefits
  - Baldor estimates the solution paid for itself in months by avoiding the cost of planned and unplanned outages
  - Overall IT spend slashed by 45%
  - Reduced energy consumption by 80%

*"We chose Linux over UNIX or Microsoft Windows because we wanted to **standardize on an operating platform that would run on any kind of hardware**."*

*"SUSE Linux Enterprise Server Priority Support for SAP gives us a **single point of contact** for our support issues."*

*"It's clear that we made the right decision to move to a mainframe environment and we find that **SAP runs much better on Linux than any other platform**."*

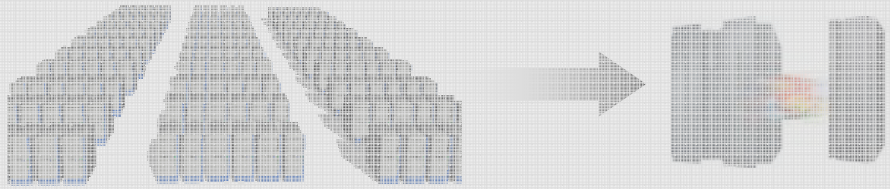
Mark Shackelford,
Vice President of Information Services
Baldor Electric

http://www.novell.com/success/baldor_electric.html
http://www-306.ibm.com/software/success/cssdb.nsf/CS/DNSD-6K9H7V

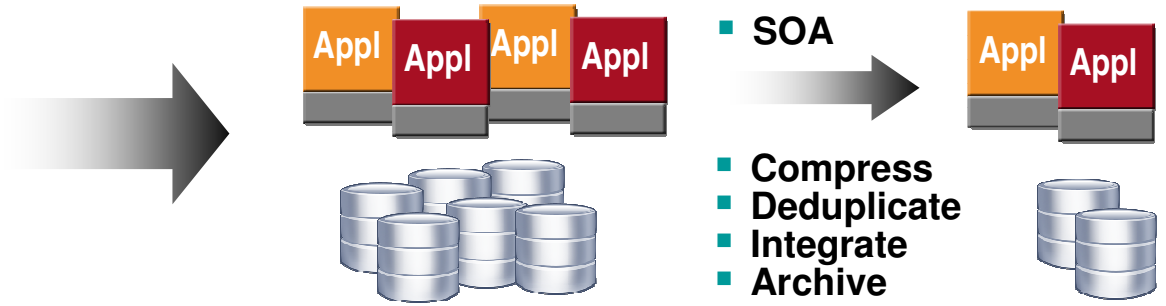
Strategies to Improve Value and reduce Complexity and Costs

Optimize the Overall IT Environment

➢ Simplify Hardware Infrastructure

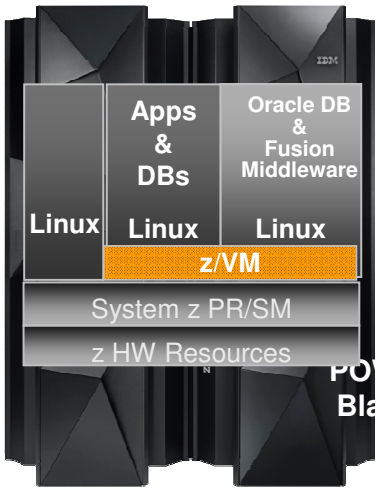


➢ **Integrate Redundant Software and Data**



➢ Improve Service Delivery

Deploy Oracle Software to the “Best Fit” Technology



Oracle software deployments (incl. consolidations) **with an Enterprise Linux Server (ELS) provides an excellent price performance.**

- From an Oracle licensing perspective 1 ELS core = 1 core from distributed server
- Less operational efforts
- High levels of security and availability

Business Connexion – **South Africa**

- **ICT services to the financial sector, government, … and more**
- **Approximately 50 virtual Linux servers; flexible environment for hosted services; high performance for Oracle databases**
- **Enabled competitive pricing for client services**

Sparda Datenverarbeitung eG – **Germany**

- **IT provider for approximately 4.2 million customers**
- **Runs a number of very large Oracle databases, where the virtual Linux server requires 30 GB memory and ~350 GB storage**
- **Eperienced >99% availability, which proves the Linux reputation**

The economics of Linux on zEnterprise 114

- Consolidate an average of ***30 distributed servers*** or more on a single core, or ***hundreds*** in a single footprint.
- Deliver a virtual Linux server for approximately ***$500 per year*** or as little as a ***$1.45 per day per virtual server*** (TCA)[1]

TCA Analysis:

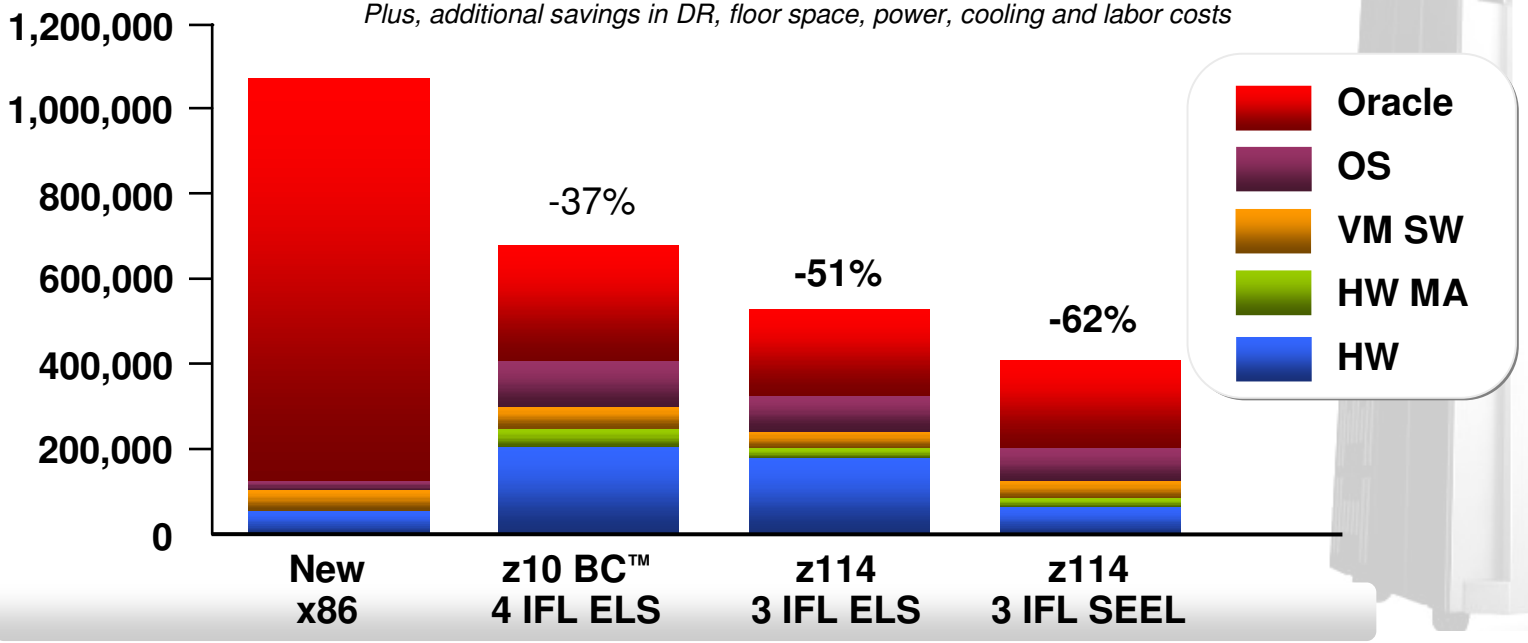
Consolidate 40 Oracle server cores onto 3 Linux cores on z114

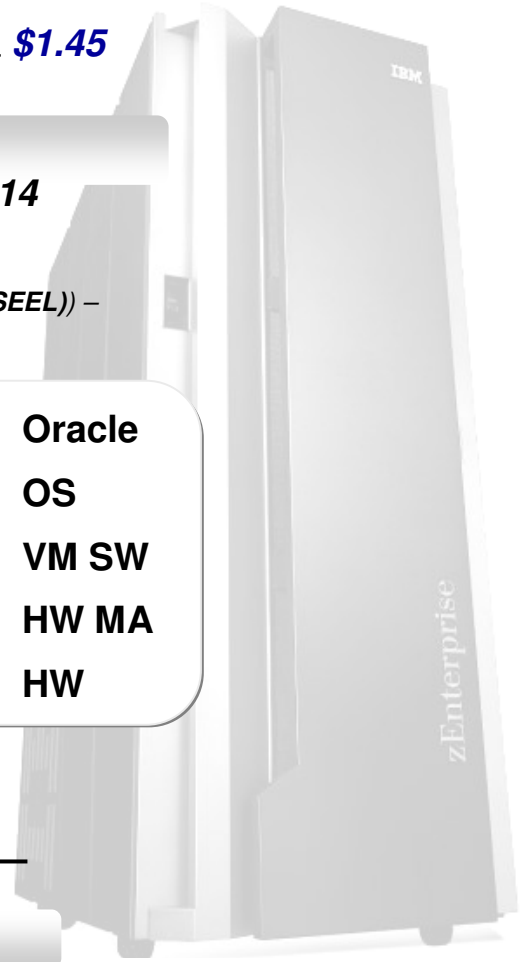
Lower acquisition costs of hardware and software vs. distributed servers

*– **up to 51% less than Nehalem**[2] in new footprint (**Enterprise Linux Server (ELS)**) –*

*– or **up to 62% less** when adding to existing footprint (**Solution Edition for Enterprise Linux (SEEL)**) –*

Plus, additional savings in DR, floor space, power, cooling and labor costs





[1] Based on US Enterprise Linux Server pricing. Pricing may vary by country. Model configuration included 10 IFL cores running a mixed workload averaging 31 virtual machines per core with varying degrees of activity. Includes zEnterprise hardware and z/VM virtualization software. Does not include Linux OS or middleware software.

[2] Distributed server comparison is based on IBM cost modeling of Linux on zEnterprise vs. alternative distributed servers. Given there are multiple factors in this analysis such as utilization rates, application type, local pricing, etc., savings may vary by user.

The Home Depot - SAP on System z

- Second largest retailer in the United States with over 1800 stores, 300,000 employees

- Near continuous operations
- Moving application servers to Linux on z for easy provisioning and fast disaster recovery
- Flexible use of resources allows them to add capacity without disruption, and dynamically change priorities based on time of day, or application

"Continuous availability and manageability are the design principles of our IT architecture. We're proud of our ability to fail-over without data loss in a very short period of time. The improved availability and disaster recovery capabilities delivered by running the SAP applications on Linux for System z provide an extra layer of insurance against potentially damaging and expensive outages."

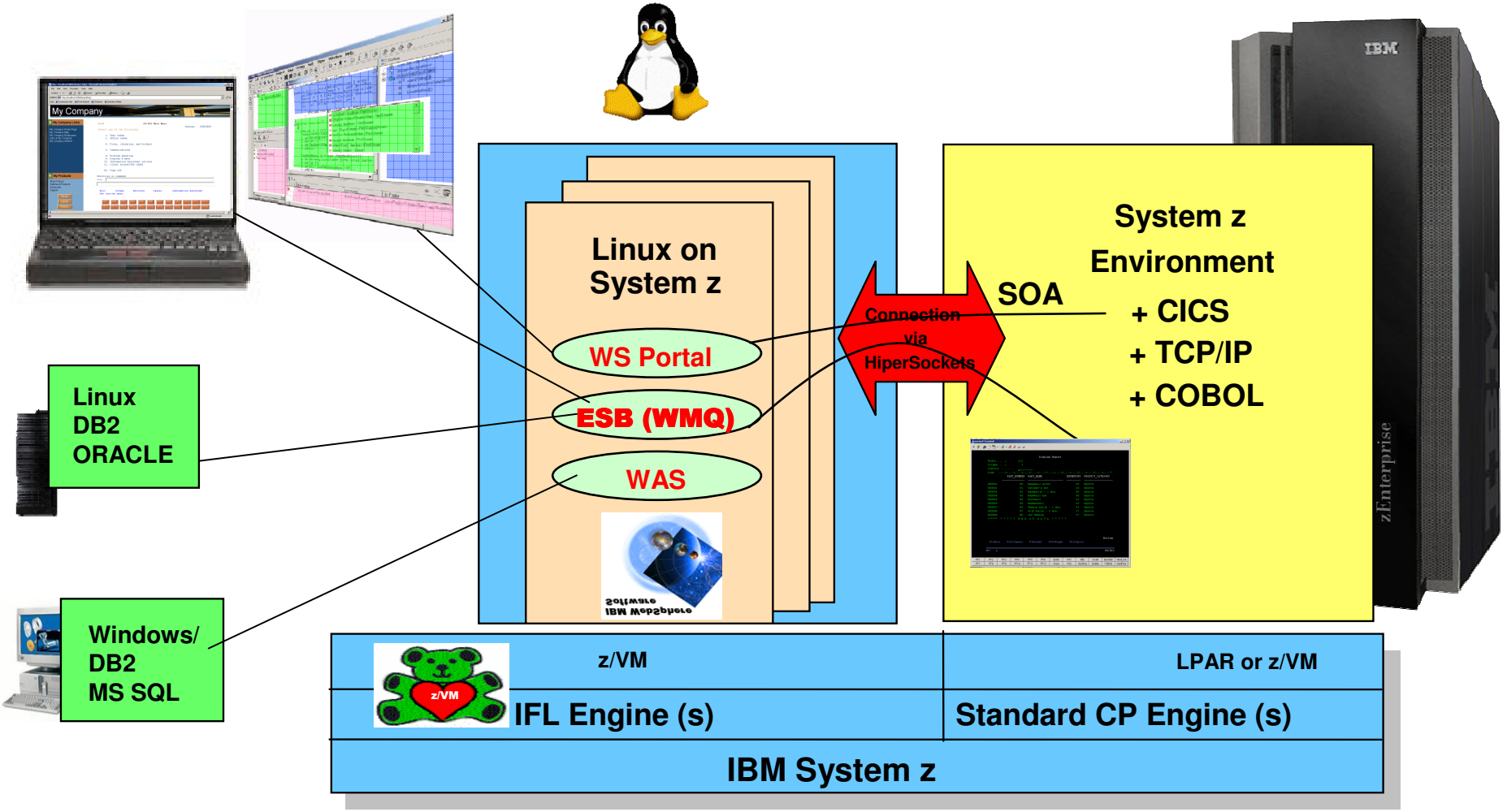
Clifford W. Gum; SAP Technical Architect, The Home Depot

Benefits:

- **Scalability to support over 1 Billion transactions/year**
- **Ability to support SAP and Business warehouse, enables access to P&L, and daily sales targets**
- **Low TCO**
- **Low unit cost /work**
- **Low staffing costs**
- **Faster time to market for new offerings in stores**

Linux on System z as Central Integration Point

Enterprise Service Bus (ESB) integrates applications high performant between platforms
- integrates, routes, aggregates and communicates based on rules and events



NYS Dept Of Taxation And Finance – Case Study

Modernizing applications to enable real-time insight with System z

What's Smart:

- Deployed an SOA solution that leveraged existing assets
- Delivers faster execution
- Easily adaptable and fast to implement
- Open to new technologies

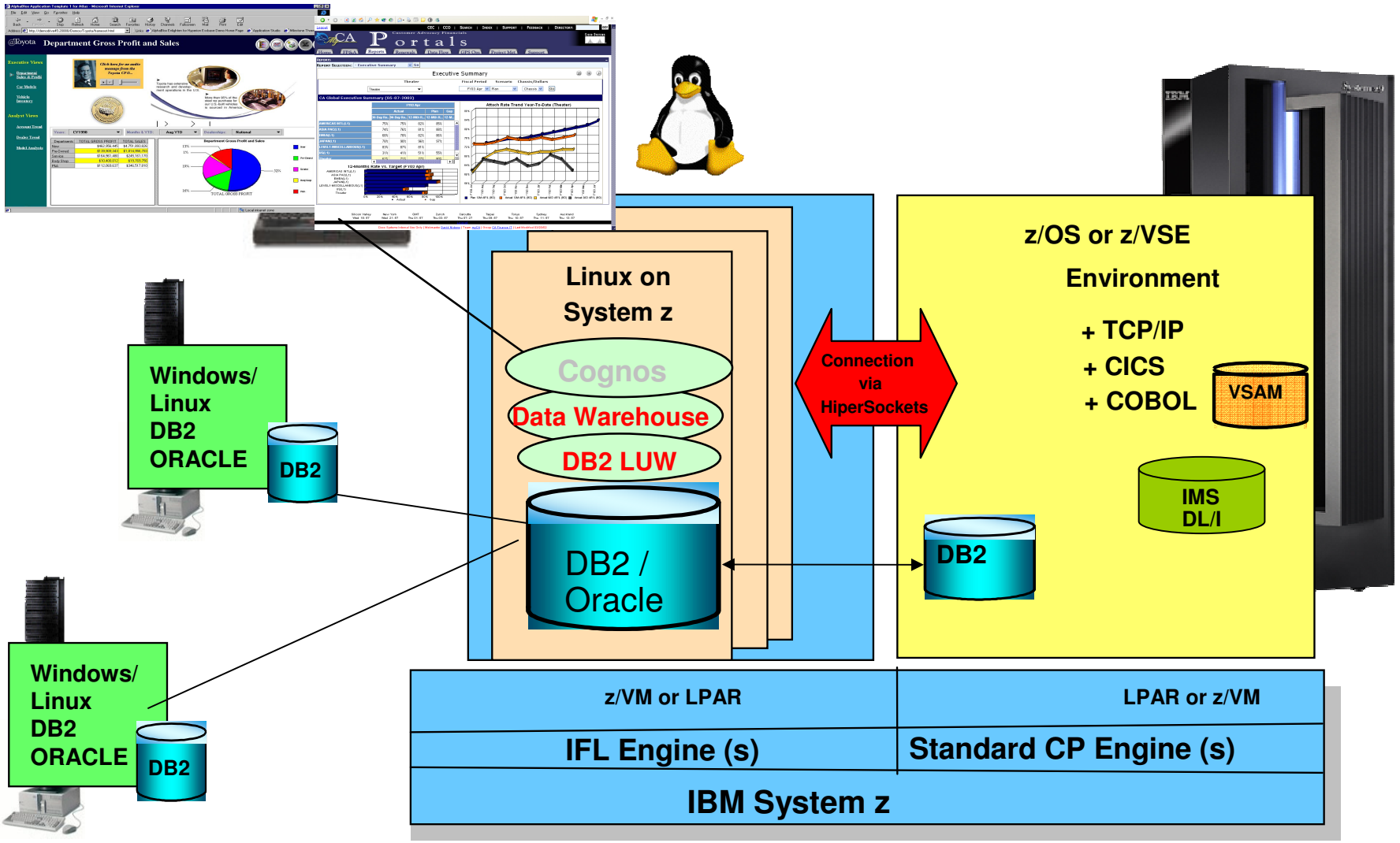
Business Value:

- A single view of constituent data
- Cross-agency integration
- High Quality of Service
- New revenue generating opportunities

The new SOA infrastructure provides the needed structure to meet public sector demands of servicing the constituent needs along with the needs of the business.

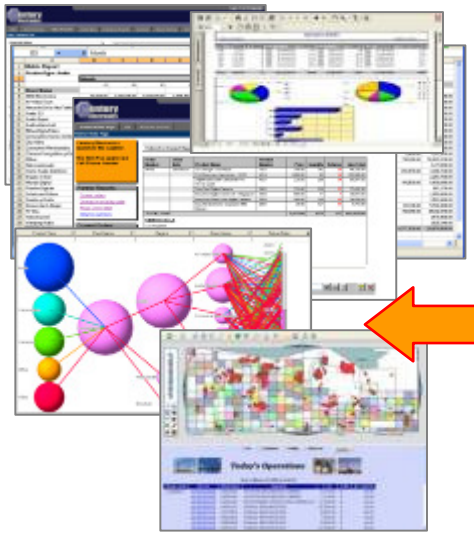
Linux on System z as Data Warehouse and BI

Integrate, Consolidate, Evaluate, Decide,
Explore Business Intelligence (BI)

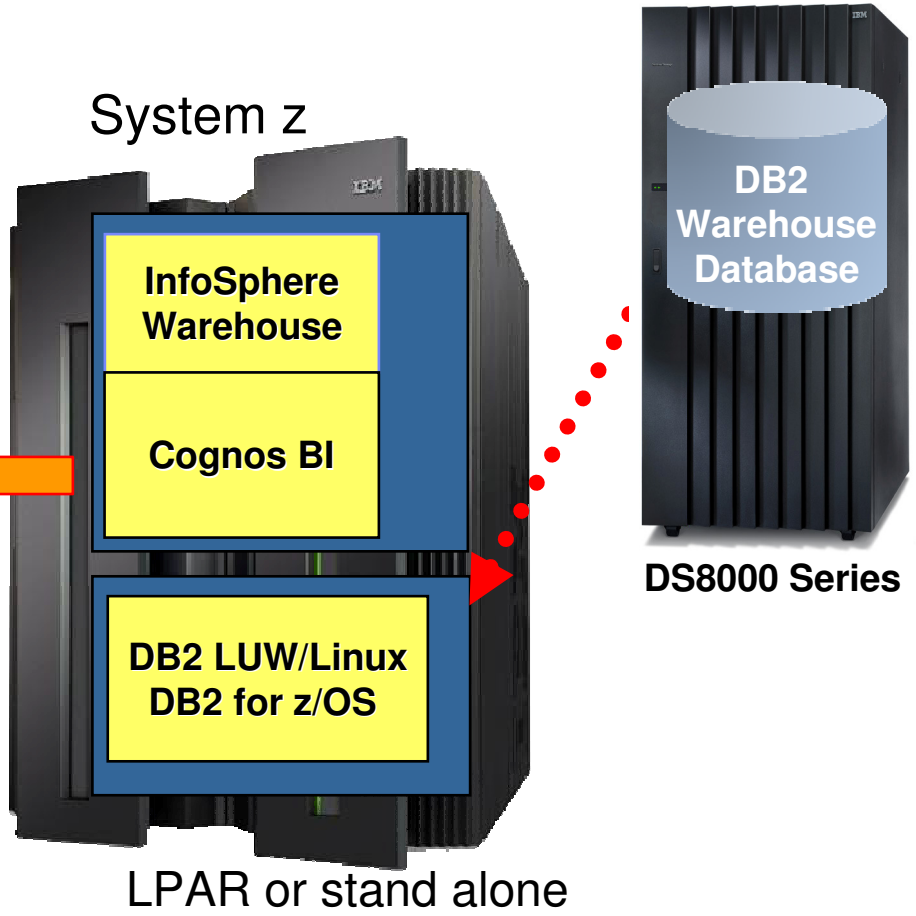


IBM Smart Analytics System

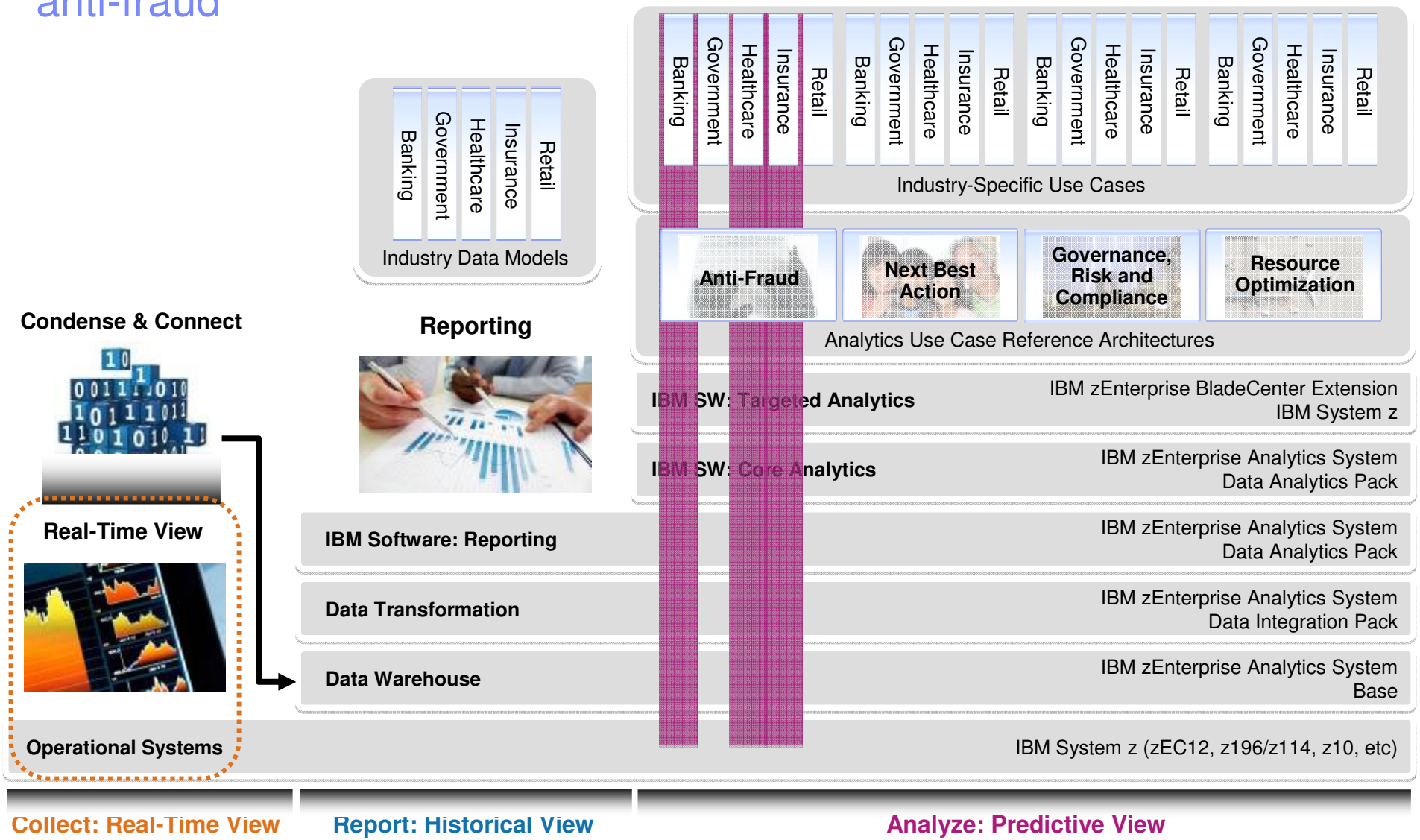
Building an end-to-end BI environment on System z



IBM Smart Analytics System -z



A “taste” of how we’re positioning System z for analytics – including anti-fraud



IBM Enterprise Content Management Solutions

Enterprise Content Management (ECM) manages unstructured information

– Capture it, index it, store it, and route it electronically through business processes

– Analyzing it and deleting it are new capabilities

IBM ECM includes one of more of approx. 40 different software products

– E.g. FileNet or IBM Content Manager

Most components run on Linux on System z.

IBM is the *only* ECM solution provider who provides an ECM solution for System z.

Russian Hydrometeorological Research Institute - Russia

World Data Center is the world's largest publicly available archive for hydrometeo-rology monitoring data. The solution enables them to collect, process, store and disseminate information digitally. The client can now consolidate different media types and has a simplified data access.

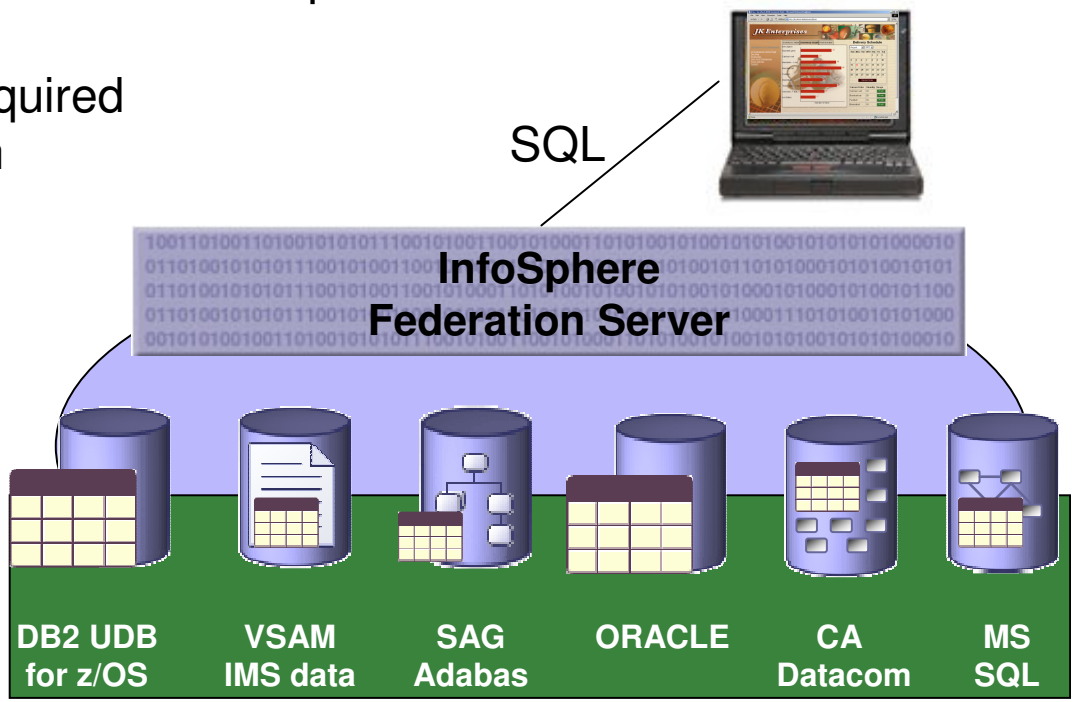
IBM case study

Large Healthcare Insurer – USA

FileNet and Content Manager OnDemand are used with DB2, InfoSphere and Cognos to support the business processes for the Integrated Health Management initiatives. The solution brings together data from disparate sources and creates an enterprise data warehouse that can be used for data mining and forecasting.

InfoSphere Federation Server for Linux on System z
InfoSphere Classic Federation Server for z/OS

- Integrating at the data layer – Federation of data
  - Read from and write to federated data sources using a single SQL
  - Standards-based access via JDBC, ODBC, or Call Level Interface
    - Including for VSAM and foreign databases!
  - Multithreaded with native drivers for scalable performance
  - Metadata-driven means...
    - No mainframe programming required
    - Fast installation & configuration
    - Ease of maintenance
  - Works with existing and new...
    - Mainframe infrastructure
    - Application infrastructure
    - Toolsets



IBM Intelligent Operations Center for Smarter Cities provides integrated insight…

- **Leverage** real-time visibility of cross-city data to optimize cost efficiencies
- **Anticipate** and proactively manage problems to mitigate impact to services and citizens
- **Coordinate** cross-agency operations with business and citizen participation to drive economic prosperity and enhance citizen involvement

One platform, many use cases

- Organization-wide dashboards
- Domain analytics
- Event and KPI management
- Geospatial mapping
- Data modeling and integration
- Simulation and visualization
- Cross-department collaboration
- Situational awareness
- Incident management
- Alerts and directives

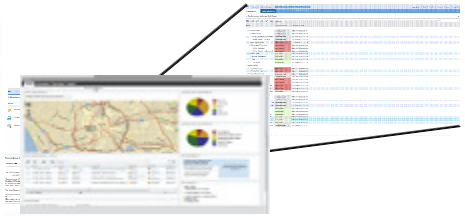
…within a particular service area or managing across many services

Intelligent Operations Center

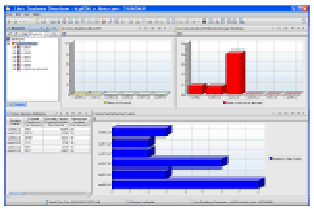
Incident Mgmt.

Context info

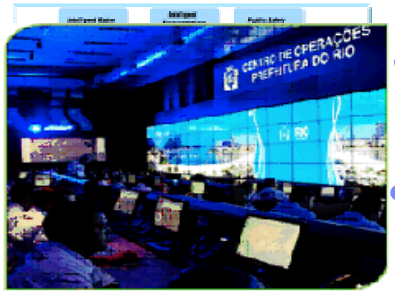
Incident relation detection



Detail Information



Integrated Monitoring



Intelligent Operations Center

Take actions

Roles & Access

History reporting

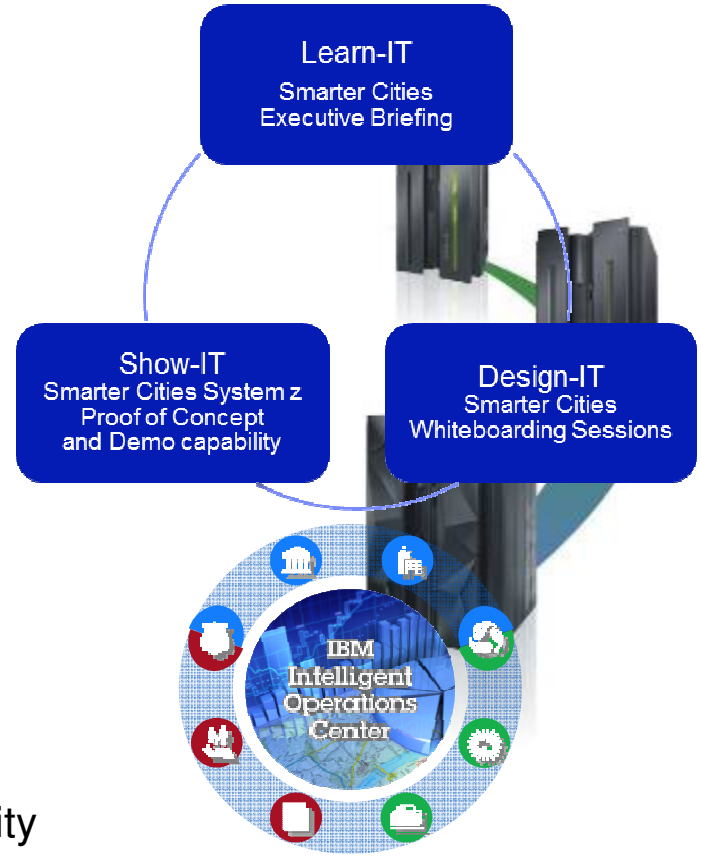
Emails

Operations Protocols

Intelligent Operations Center for Smarter Cities on System z Services

New Smarter Cities Center of Competency

- Overview
  - Virtual center made up of IBM Certified Architects and Specialists, and Subject Matter Experts
  - Providing consulting, briefings, and other services to **drive System z sales**
  - Contact: ccenter@us.ibm.com
- IOC Services offered by the Smarter Cities CoC
  - Executive Briefings
  - Demo's
    - Local in Poughkeepsie (US), Montpellier (France)
    - Remote from either location *(with VPN access)*
  - IOC Planning Workshop: how to go forward?
  - Proof of Concepts / Benchmark: prove solution suitability
  - Contacts:
    - Client Center Poughkeepsie: Clara Shults-Toulan (Briefings/Demos)
      ccenter@us.ibm.com (Workshop/PoC)
    - For Europe in Client Center Montpellier: Guillaume Hoareau



The Value zEnterprise System brings to IOC and Smarter Cities

- **Targeted Market Opportunity**
  - **Over 250 State/Local/ Provincial Installed System z Accounts**
    - 85% of Installed MIPS are current (N, N-1) indicating customers value System z and are strategically growing workloads
    - Significant number of accounts have Linux® for System z installed, growing MIPS 30% - 40% per year on average
  - Government IT Provider seeking to provide service to multiple agencies or geographies
- **Smart Infrastructure for the Smarter Cities**
  - IOC Entry on IBM zEnterprise BladeCenter® Extension (zBX) provides flexibility and capability to grow with Linux on System z and IBM zEnterprise 114 (z114)
  - Secure Consolidation providing individual agency Isolation
  - Capacity offerings to allow maximum elasticity, accommodating spikes and lulls
  - Inherent Reliability and High Availability
  - Security of Data
  - Ability to provision use cases by agency quickly without major re-investment in infrastructure
  - Integrated, virtualized and manages workload optimized fit
    - Data and high I/O run on System z
    - Compute Intense run on Power®
    - Niche application on Windows run on x86 Blades

- **Unique ability to bring City Operations and Social Services into an integrated, simplified infrastructure while providing**
  - Single source of secured data to protect assets and citizens
  - Analytic capability on consolidated data fed from all sources across the city, county or province

Reliable and Scalable Business Collaboration

Imagine the Possibilities on zEC12

Lotus Domino

\+ TREND MICRO

Lotus Sametime

Lotus Quickr

Lotus Connections

Lotus offers solutions to deliver:

- Exceptional web experience
- Social Software
- Collaboration
- Messaging

IBM's Smarter Computing Transformation

Highest average TCO savings achieved – $780 per server per month – with migrations from UNIX to Linux on System z.

Gruppo API – Italy

The migration of Lotus Domino, the corporate email system, worked extremely well. Over a two week period, 1,200 user email boxes were moved to System z without interruption of service to users.

Article on Mainframezone.com

BG-Phoenics – Germany

Email is still highly important; using Linux makes it cost−effective to run this service on the ultra-reliable z196 server with the efficiencies of virtualization on System z.

IBM case study

Service provider Benelux

Business challenge:

A service provider in the Benelux region wanted a solution that would help the company to do the following:

- Achieve economies of scale by simplifying the heterogeneous distributed computing architecture.
- **Use its business intelligence tools as an individualized communication channel with its stakeholders (clients, business partners, shareholders).**

Solution:

IBM helped the client build intelligence architecture by leveraging the scaleable capabilities of its information to increase service. The solution enables also the client to:

- Reduces data content of the data warehouse
- Reduces number of queries
- Redesign and re-implement the data warehouse: expensive and time-consuming and high risk (business continuity) option
- Reconsider the computer architecture.

Benefits:

- The ability to serve multiple users with the very simple architecture from this PoC.
- **An application that does not require a redesign to accommodate its growth in data volumes or in terms of users.**
- **Scalability to a more complex architecture without increased hardware complexity.**

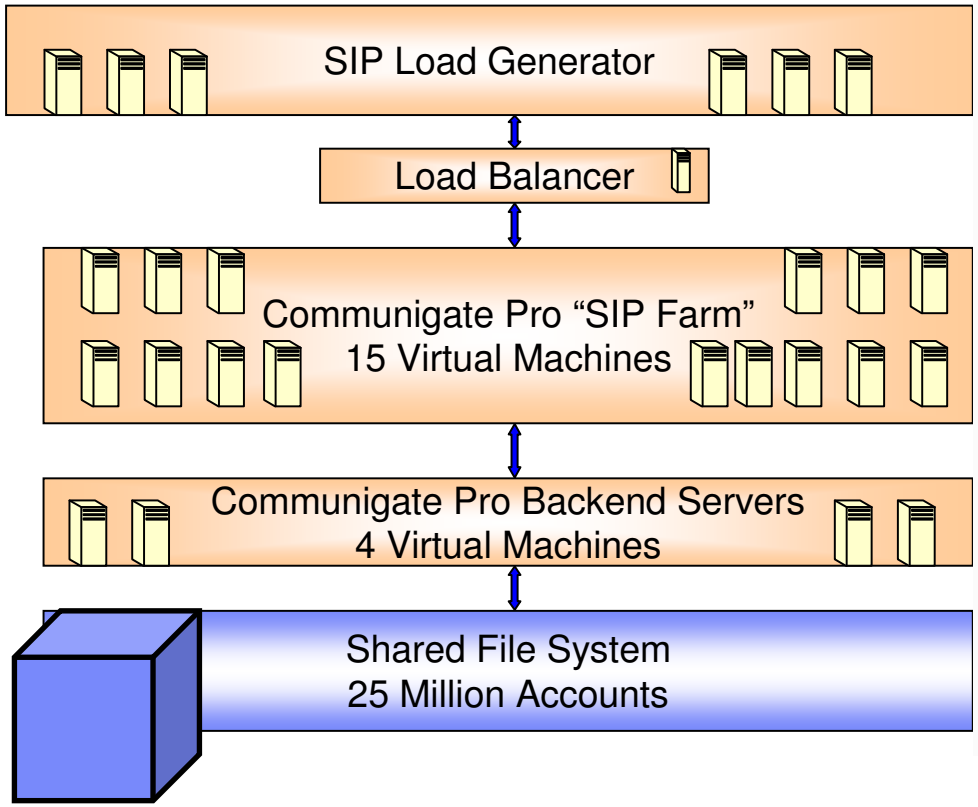
Solution components:

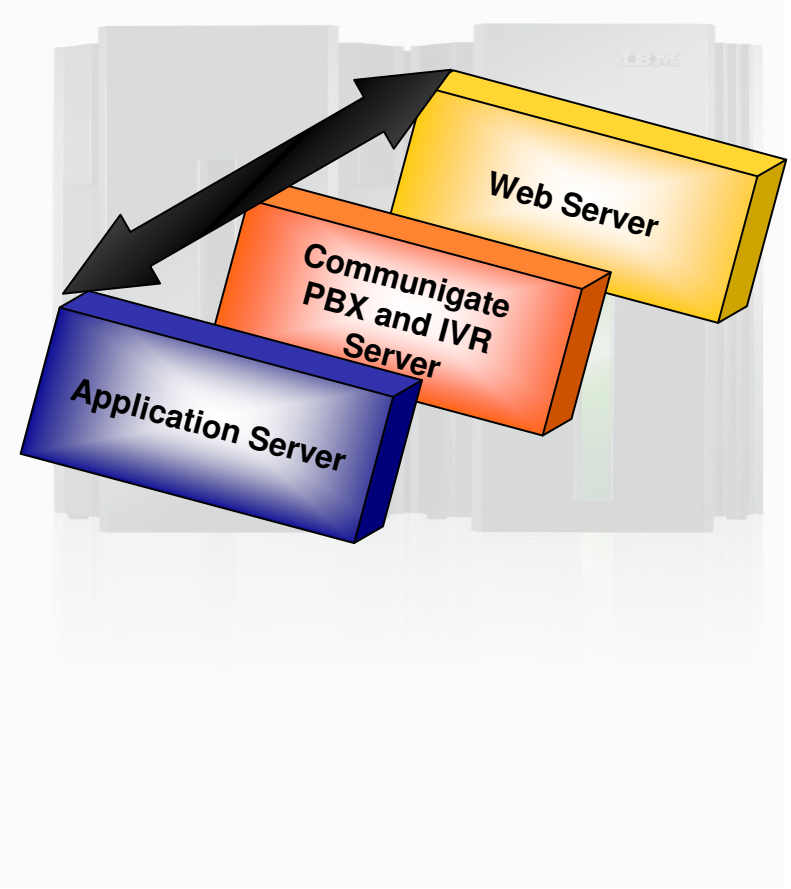
- ***IBM System z10 EC***
- *IBM Information Management* ***Cognos 8 BI***
- ***DB2 9 for Linux*** *UNIX and Windows*
- *WebSphere Application Server for* ***Linux on z***
- *Novell SUSE Linux*

Register for more information at:
ibm.com/software/sw-events/teleconference/P701489M19013R36.html

VoIP, Communigate Pro Running on Linux System z

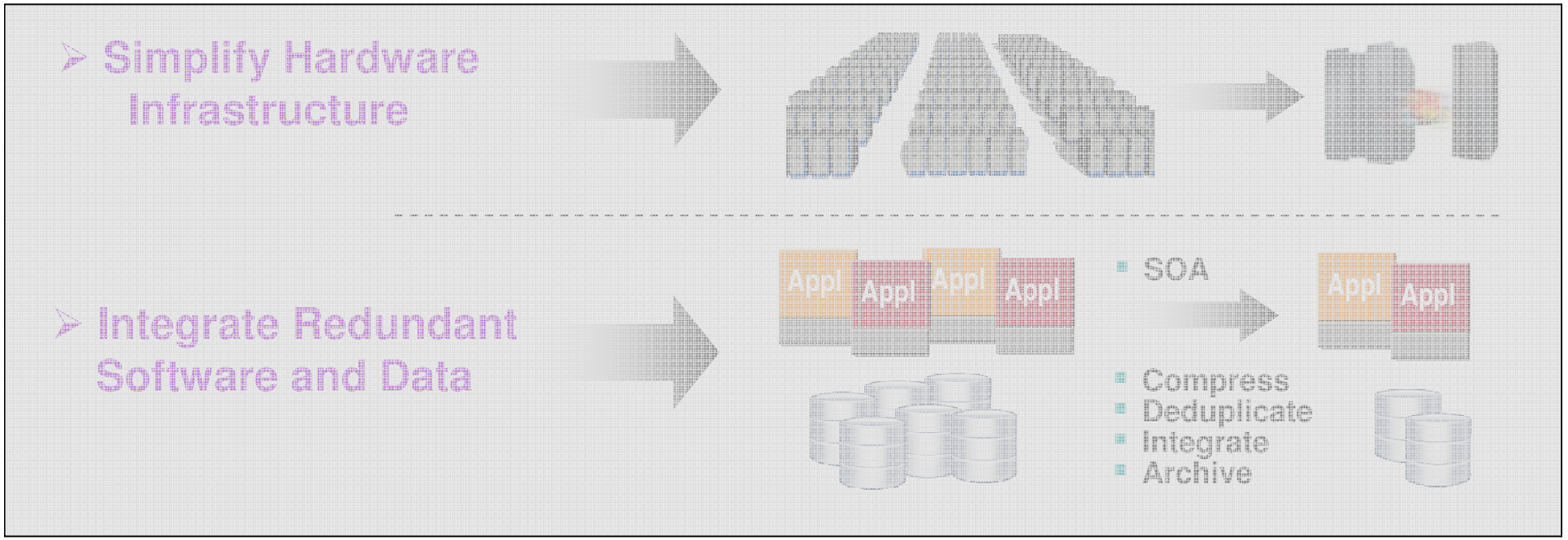
- Server Test **25 Million Subscribers**
- Largest VoIP Benchmark in Industry
- Brand New Customer to System z





Strategies to Improve Value and reduce Complexity and Costs

Optimize the Overall IT Environment



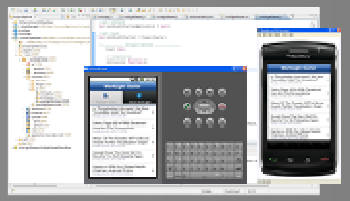
Improve Service Delivery

Integrated Service Management

Visibility **Control** **Automation**

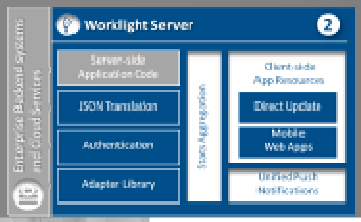
Cloud Computing

IBM Worklight Server - Mobile cloud Platform integration



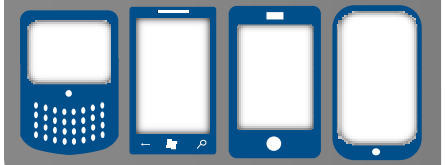
Worklight Studio

The most complete, extensible development environment with maximum code reuse and per-device optimization



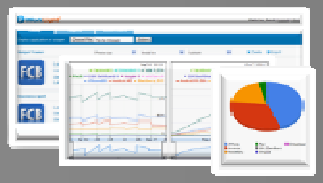
Worklight Server

Mobile middleware offering unified push notifications, version management, security and integration



Worklight Runtime Components

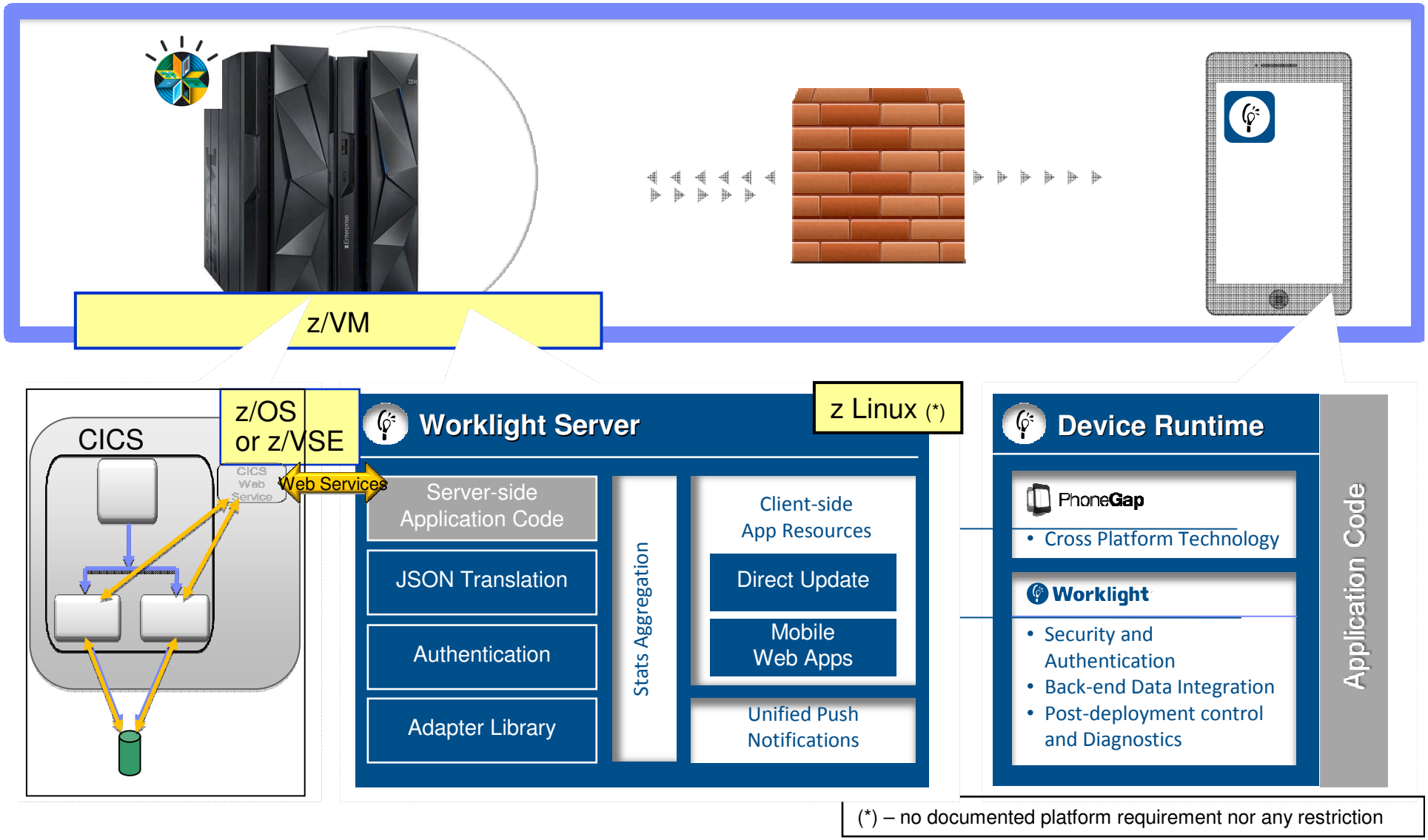
Extensive libraries and client APIs that expose and interface with native device functionality and the Worklight Server



Worklight Console

A web-based console for real-time analytics and control of your mobile apps and infrastructure

IBM Worklight Server – System z Implementation Topology



(*) – no documented platform requirement nor any restriction

Air Canada: Perfecting the art of self-service. How self-service helped an airline transform their brand

"With our multi-channel platform, we have reduced our check-in cost by 80%. What used to take us six to eight weeks to push a new release, now we are able to do in 72 hours. Everything that has to do with development in testing, we at least saved 50% of the time."

— Patrice Ouellette, Director of Customer Solutions and Innovations, Air Canada

Challenges

Air Canada put itself in the shoes of its customers and asked, "Why are we doing this? Why is that process like this? Why is it taking so long?" in order to determine what it could do to innovate and make it simpler for them.

Solution

- Multi-channel Mobile customer experience leveraging iPhone, Blackberry and Mobile Web interfaces that use a common back-end services layer built on SOA principles
- Mobile Applications supporting 3 LOBs: *Air Canada*, *Air Canada Cargo, and Air Canada Vacations*

Benefits

- Approximate 80% reduction in per-check-in cost compared to traditional counter check-in
- Greater than 50% reduction in time required to launch new services or channels through the reuse of existing service assets
- Increased customer loyalty by virtue of more compelling and "stickier" self-service options like real-time notification

ING Direct creates a “bank branch in your pocket”

Challenges

ING Direct was looking to take mobile development in-house and improve their mobile offerings to drive more business through the mobile channel. This was especially critical to ING Direct US as they are an online-only bank.

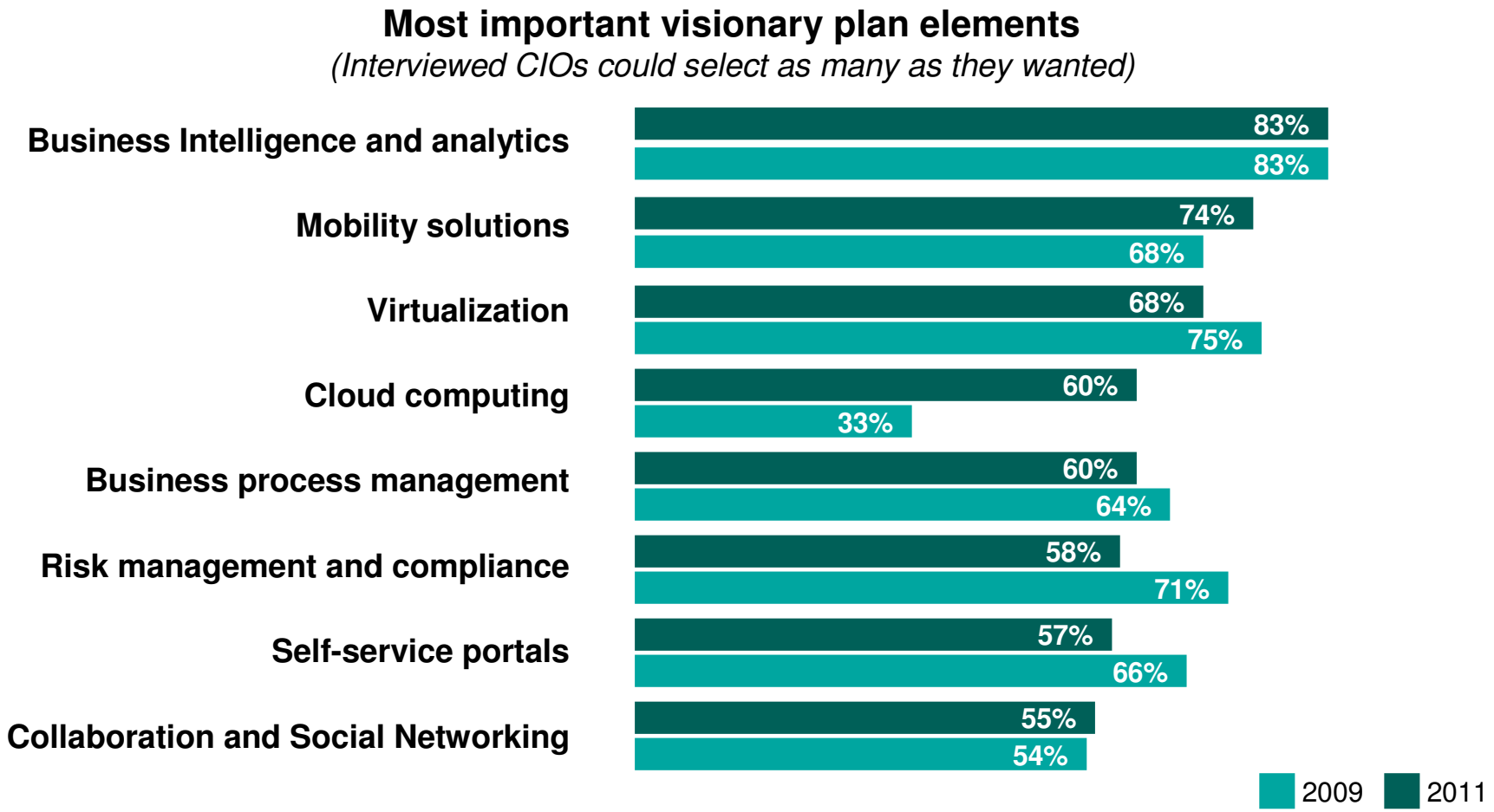
Solution

ING Direct US chose IBM Worklight to develop and manage their consumer mobile applications. They leveraged functionality that originated from their mobile web site in a way that is seamless to the end user, and they use device features to implement unique mobile capabilities, such as camera-based remote check deposit. Their applications are available in both the Apple App Store and Android Market.

Benefits

- New customer experience with mobile as the channel
- Creates new revenue generation opportunity
- Simplify consumer experiences
- Re-use existing mobile-optimized web content
- Support multiple mobile platforms consistently on a tight schedule

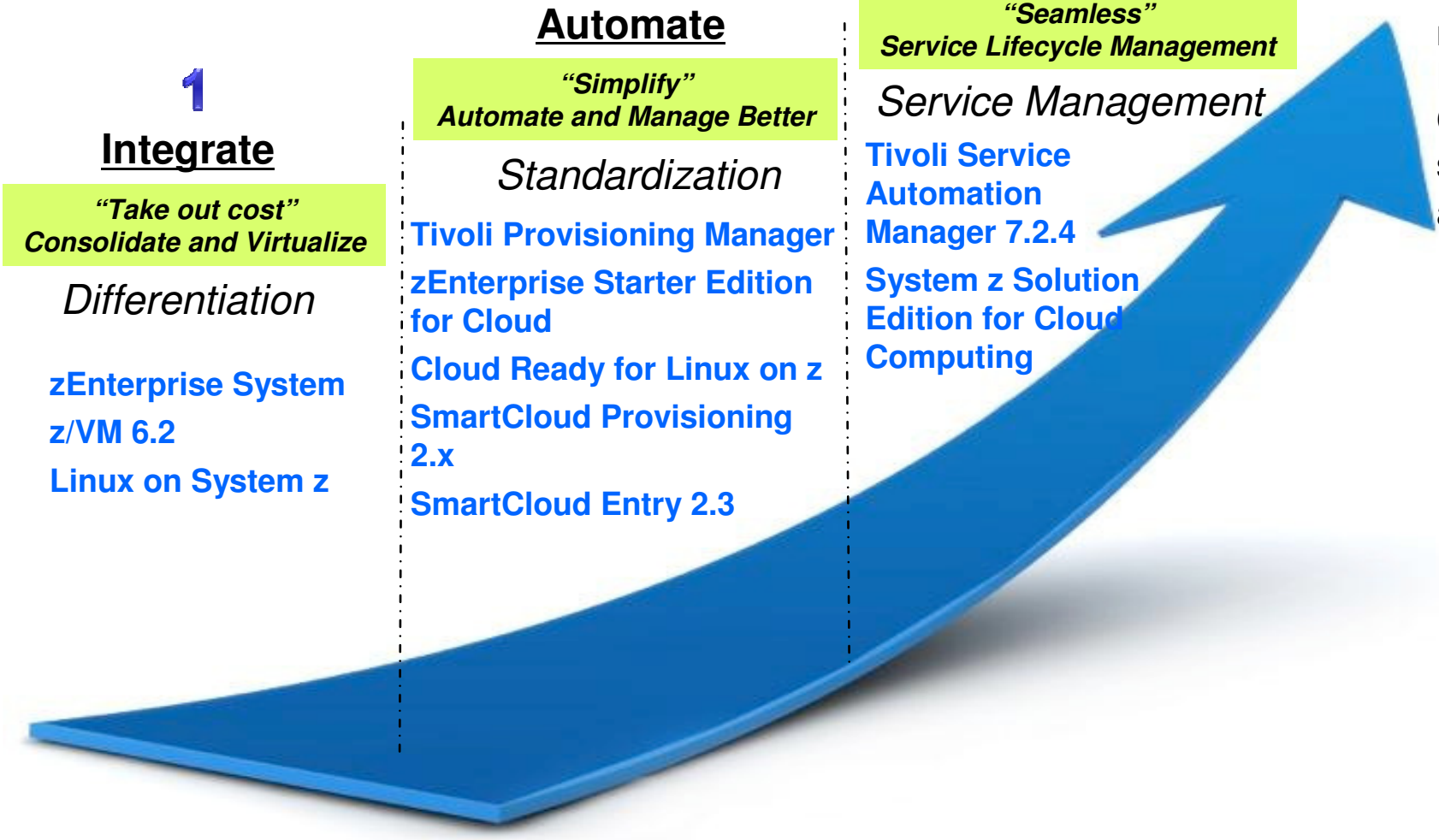
CIO plans today: business intelligence and analytics remain at the top, with cloud computing moving into the top four



Source: 2011 CIO Study, Q12: "Which visionary plans do you have to increase competitiveness over the next 3 to 5 years?"(n=3,018)

Develop a Cloud Infrastructure with System z

Linux on System z Cloud Roadmap



1 Integrate

"Take out cost"
Consolidate and Virtualize

Differentiation

zEnterprise System
z/VM 6.2
Linux on System z

2 Automate

"Simplify"
Automate and Manage Better

Standardization

Tivoli Provisioning Manager
zEnterprise Starter Edition for Cloud
Cloud Ready for Linux on z
SmartCloud Provisioning 2.x
SmartCloud Entry 2.3

3 Orchestrate

"Seamless"
Service Lifecycle Management

Service Management

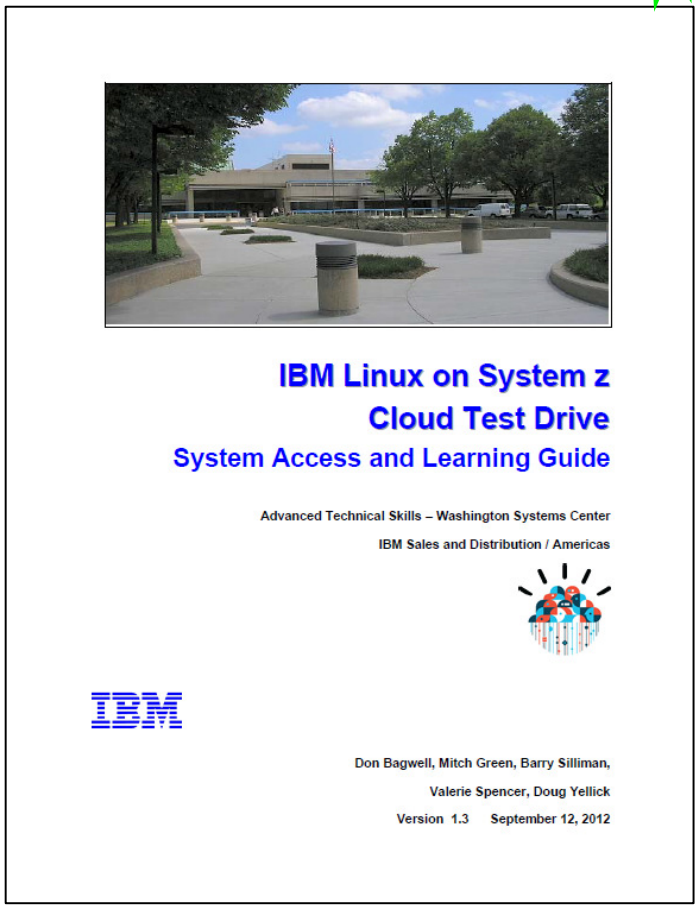
Tivoli Service Automation Manager 7.2.4
System z Solution Edition for Cloud Computing

NEW!

Modernize System z by moving to Private Cloud in a stepwise approach

Cloud Test Drive with Linux on System z

- Up to 90 days, free of charge, access to up to 3 Linux on z servers under z/VM
- Hands-on experience with Cloud, Linux on z, z/VM, Tivoli Provisioning Manager (TPM), and a selection of 5 system images based on SUSE or Red Hat
    1. SLES 11 SP1 Base
    2. RHEL 5.8 Base
    3. SLES 11 SP1, DB2 9.7 Fixpack 5, WAS 8.5, IBM HTTP Server 8.5
    4. RHEL 5.8, DB2 9.7 Fixpack 5, WAS 8.5, IBM HTTP Server 8.5
    5. SLES 11 SP1, Oracle 11gR3, WAS 8.5, IBM HTTP Server 8.5
- Simple remote access over the internet to zEnterprise in the IBM Washington System Center in Gaithersburg, Maryland
- Customize your own Linux cloud with your own secure data
- Guided exercises for training



http://techsales5.austin.ibm.com/tsna/techxpress.nsf/request.html

Conclusion:
Linux on z drives innovation and Best Fit solutions

- Leverage classic strengths of the System z
  - High availability
  - High i/o bandwidth capabilities
  - Flexibility to run disparate workloads concurrently
  - Requirement for excellent disaster recovery capabilities
  - Security
- Shortening end to end path length for applications
  - Collocation of applications
  - Consolidation of applications from distributed servers
  - Reduction in network traffic
  - Simplification of support model
- Consolidation Effect
  - Power requirements
  - Software costs
  - People Costs
  - Real Estate
  - Workloads requiring EXTREME Flexibility

Winter 2012/2013

IT Management

CIOs See Significant Savings With Enterprise System z Consolidation

by Bill Moran in Enterprise Executive

Over the last few years, consolidation has assumed new forms, including data center consolidation and server consolidation.

Data center consolidation involves combining many data centers into one. Frequently, the data centers in question are located in different countries. Colgate-Palmolive, for example, has successfully consolidated 50 data centers worldwide into one. (For a detailed report, see www-935.ibm.com/services/us/cio/ciostudy/pdf/colgate01.pdf.)

You can correct x86 server sprawl by consolidating x86 servers. Servers running Windows can be virtualized, thus allowing each Windows application to have its own copy of the operating system. This eliminates the problems that can occur when several applications attempt to share one copy of Windows.

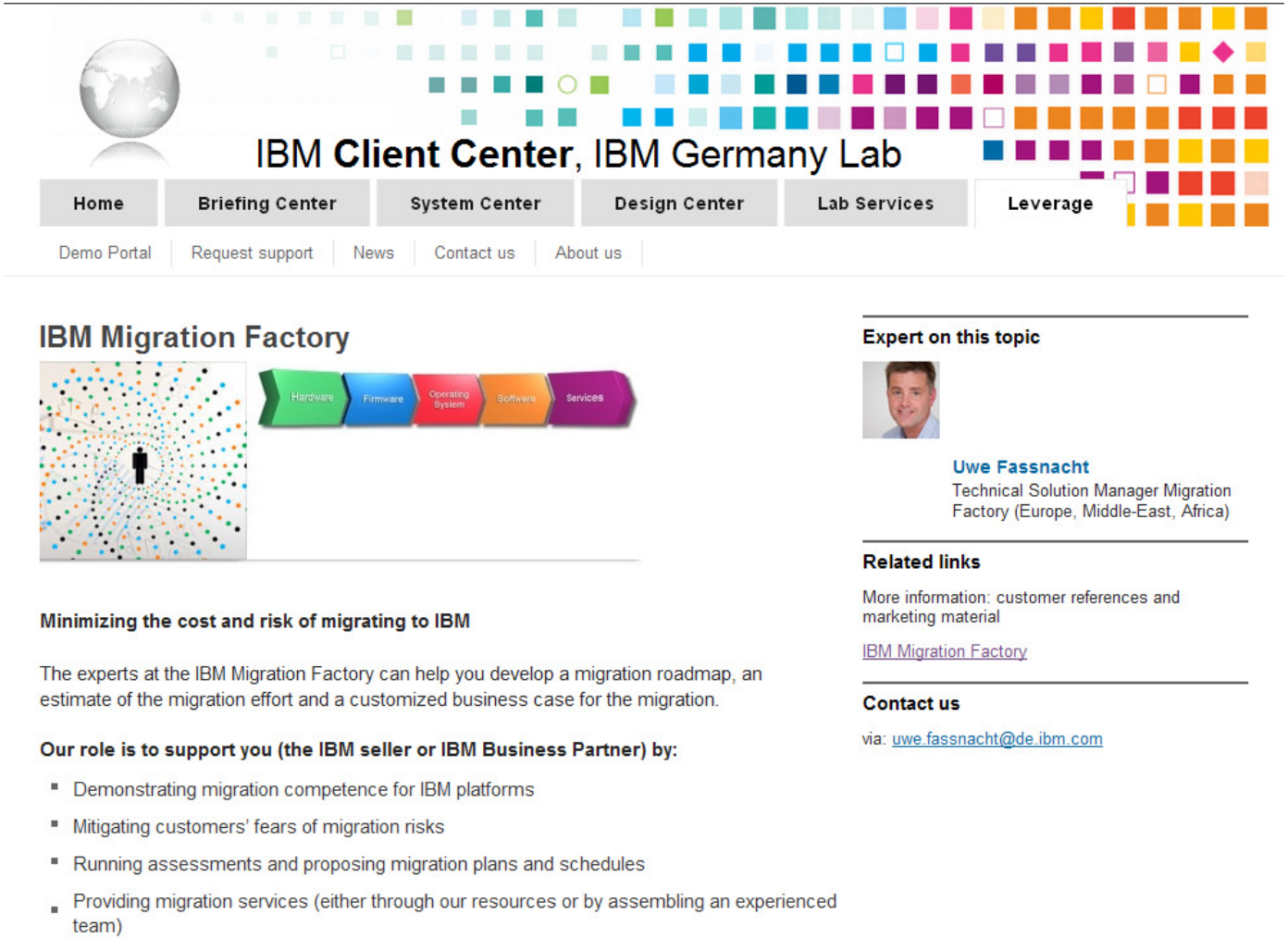
In the past, consolidating x86 servers on the mainframe required that either the workload be converted to z/OS or to Linux. It's relatively easy to convert UNIX servers to Linux servers and then consolidate them on a mainframe. Consolidating Windows servers onto the mainframe is more difficult because the conversion to Linux may be harder or even impractical.

Now, new technology on the mainframe has come to the rescue. By using the zEnterprise BladeCenter Extension (zBX), Windows servers can be consolidated onto a mainframe with no changes.

http://enterprisesystemsmedia.com/magazines/enterprise-tech-journal

IBM Chiphopper migration

- Helps ISVs to migrate between Architectures (i.e. Linux Intel to Linux on System z)



http://boedom1.boeblingen.de.ibm.com/bpl/depts/d3300/tmccweb.nsf/v17content/D928ACE245775013C1257A5A0043FBB3?OpenDocument

250+ Companies around the World have migrated Workloads (incl. Oracle Workloads) to System z over the past 18 Months

BANKS

- Banco Itau
- Bank of NZ
- Bank of Montreal
- [Peru]
- Bank of China
- Central Bank of Russia
- Industrial Bank of Korea
- Philippines Savings Bank
- [Germany]
- [Vietnam]

OTHER FINANCIAL INST.

- The Depository Trust & Clearing Corporation
- Allianz

GOVERNMENTS

- [Brazil]
- [Kazakhstan]
- [USA]

RETAILERS

TRANSPORTATION

- [Belarusian Railways]

HEALTHCARE

- Aurora Health Care
- BlueCross BlueShield Association
- UNC HEALTH CARE

HOSTING PROVIDERS

UTILITIES / ENERGY

- nationalgrid
- PETROL [Slovenia]

OTHERS

- [Gaming] [Brazil]
- [Russian Hydrometeorological Research Institute]
- [Manufacturer/USA]

Users of Linux on System z

Questions?

Wilhelm Mild

IBM IT Architect

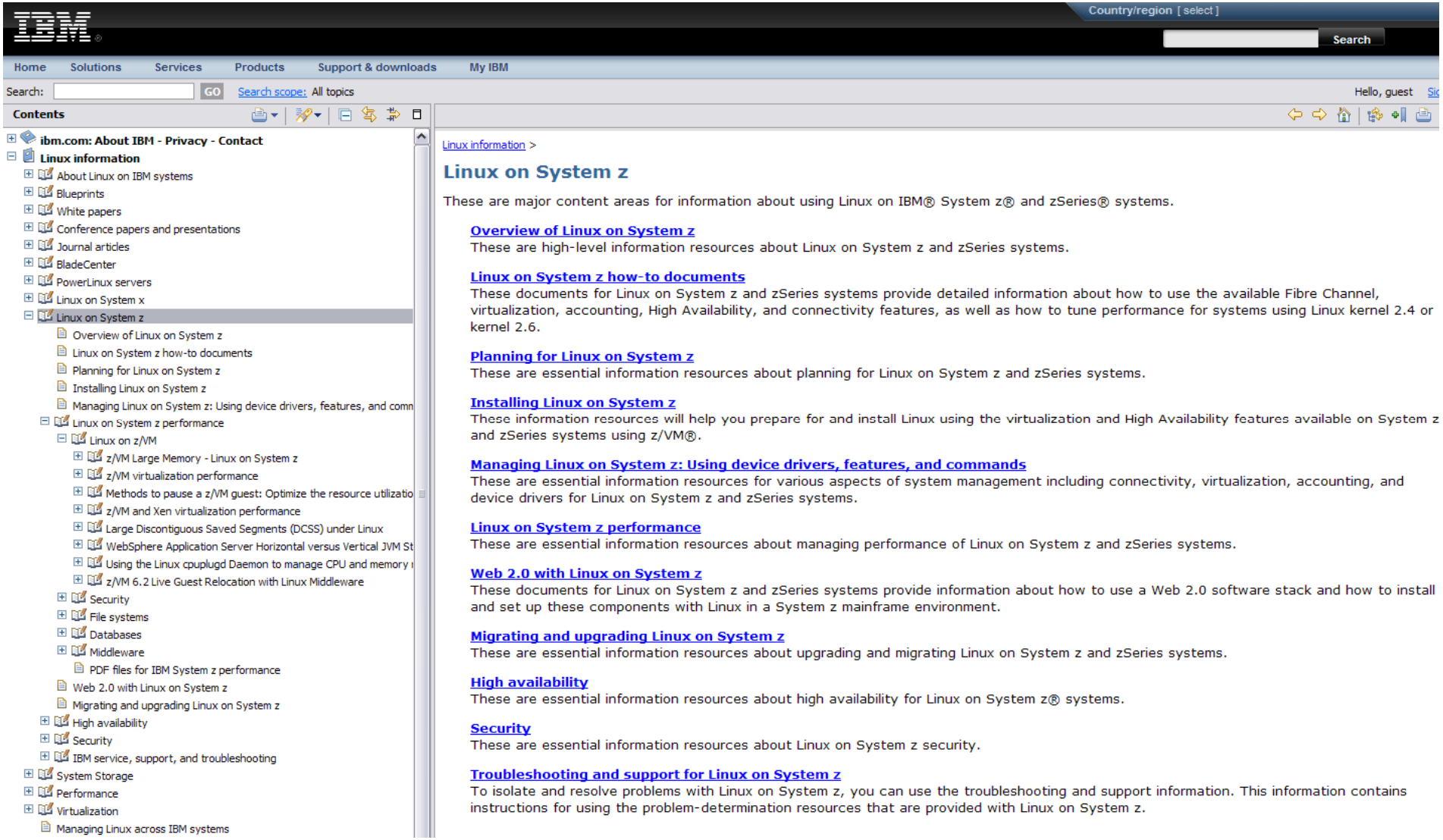
THE Open GROUP
Master
Certified IT Architect

IBM

IBM Deutschland Research & Development GmbH
Schönaicher Strasse 220
71032 Böblingen, Germany

Office: +49 (0)7031-16-3796
mildw@de.ibm.com

Linux on z documentation in the IBM Information Center



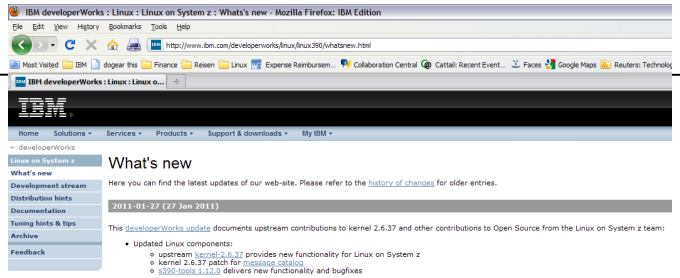
http://publib.boulder.ibm.com/infocenter/lnxinfo/v3r0m0/index.jsp?topic=%2Fliaag%2Fl0lgr00_2012.htm

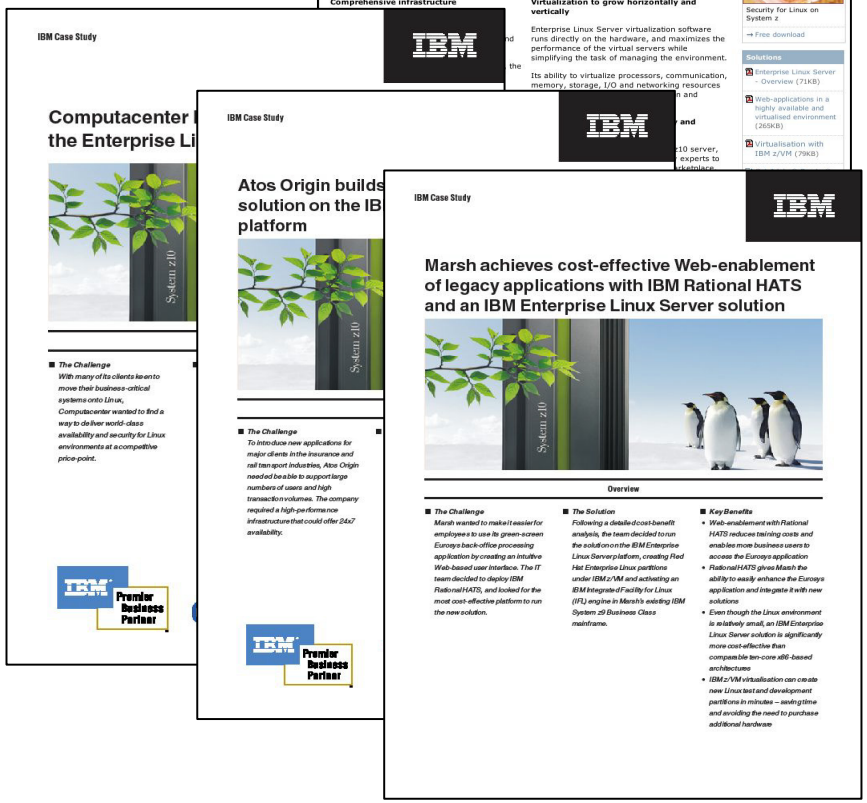
Linux on System z Information

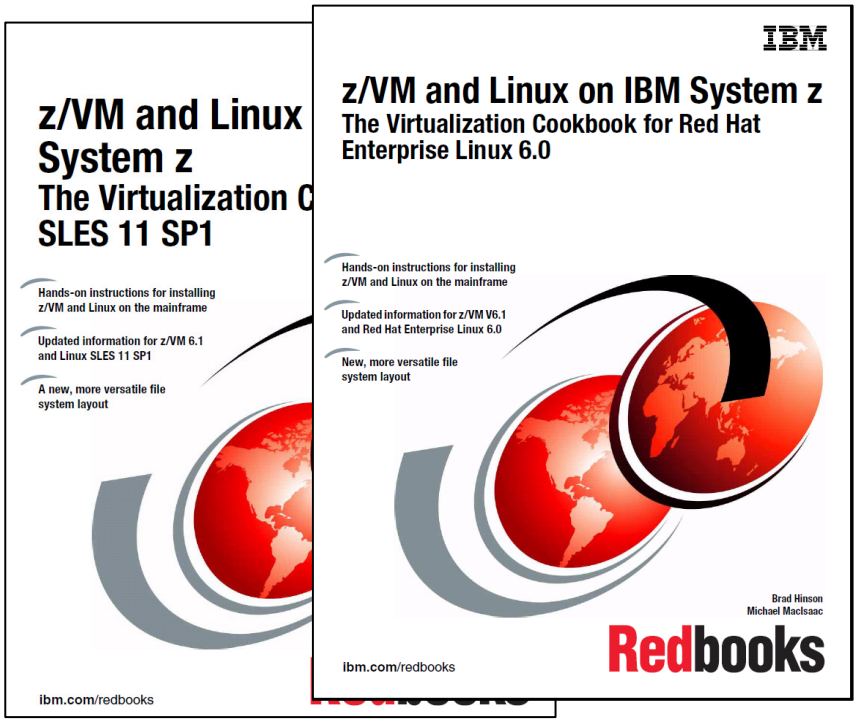
- Enterprise Linux Server information:
  http://www-05.ibm.com/de/promotions/els/

- IBM developerWorks – What's new
  http://www.ibm.com/developerworks/linux/linux390/whatsnew.html

- RedBooks
  http://www.redbooks.ibm.com/portals/linux







More information on zEnterprise

- IBM zEnterprise landing page: http://www.ibm.com/systems/z/hardware/zenterprise/index.html
- IBM zEnterprise 114 (z114): http://www.ibm.com/systems/z/hardware/zenterprise/z114.html
- IBM zEnterprise Events Landing Page: http://www.ibm.com/systems/breakthrough
- IBM software for zEnterprise: http://www.ibm.com/software/os/systemz/announcements
- IBM System Storage: http://www.ibm.com/systems/storage/product/z.html
- IBM Global Financing: http://www.ibm.com/financing/us/lifecycle/acquire/zenterprise/
- IBM Services for zEnterprise: http://www.ibm.com/services/us/gts/zenterprise/index.html
- IBM zEnterprise / System z Redbooks Portal: http://www.redbooks.ibm.com/portals/systemz