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Aktuelles aus z/VSE, z/VM & Linux auf System z

inkl. der neuesten IBM Hardware Ankündigungen

GSE / IBM Frühjahrstagung, Nürnberg, April 2012

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DS6000	IBM eServer	System z10	zSeries*
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Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.

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The IBM Centennial

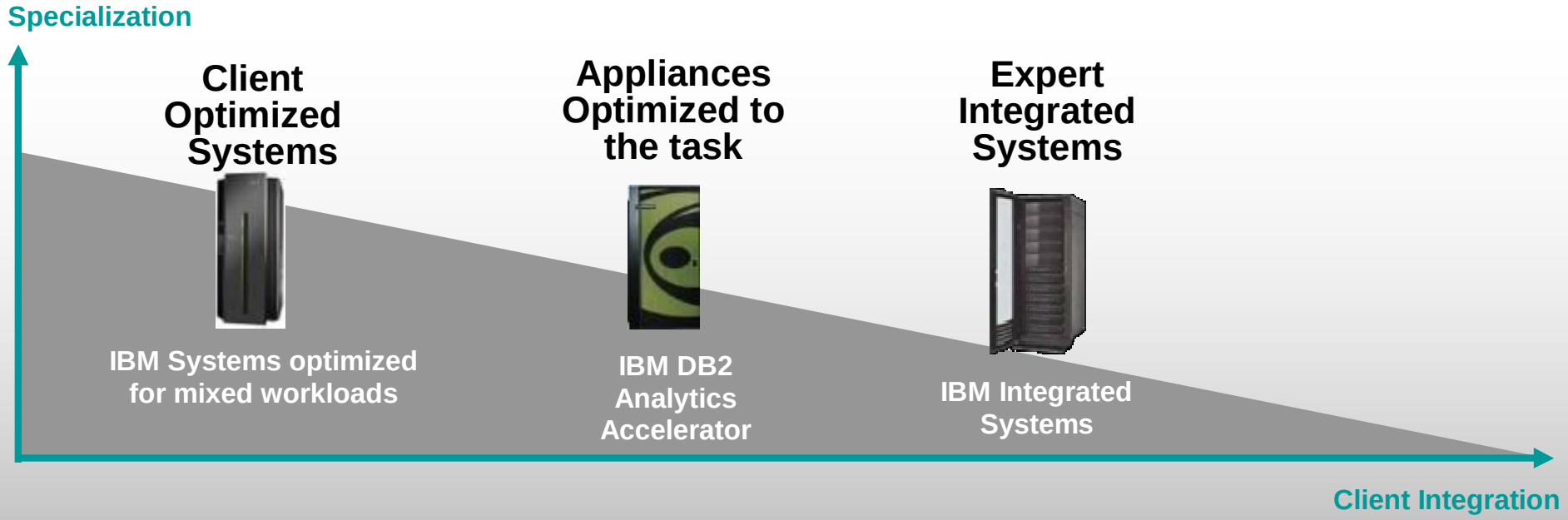
On June 16, 2011, IBM celebrated its 100th anniversary as a corporation.

On January 1, 2012, Virginia Rometty took over as new IBM CEO.

Agenda

- **IBM Hardware Announcements**
- **z/VSE**
- **z/VM**
- **Linux on System z**
- **New SoD on RDz UT**

IBM Workload optimized Systems – The continuous Strategy



Optimization Type	Components optimized to work together by design	Appliances focused on a single purpose or service	Complete factory-optimized systems for multiple services
Characteristics	§ Highly Flexible § Client-tuned and customized to exact needs § Support broadest range of workloads and services	§ Single-purpose focused for most simplicity § Factory-tuned to a specific task § Quickest time to value	§ Focused on selected workloads tuned at the factory § Flexible workload choice § Extensible and scalable

IBM zEnterprise System - Best in Class Systems and Software Technologies:

A system of systems that unifies IT for predictable service delivery

Unified management for a smarter system: zEnterprise Unified Resource Manager

- Part of the IBM System Director family, provides platform, hardware and workload management
- Unifies management of resources, extending IBM System z® qualities of service across the infrastructure

The world's fastest and most scalable system: IBM zEnterprise™ 196 IBM zEnterprise™ 114

- Ideal for large scale data and transaction serving and mission critical applications
- Most efficient platform for Large-scale Linux® consolidation
- Leveraging a large portfolio of z/OS®, z/VSE™, and Linux on System z applications
- Capable of massive scale up, 26 MIPS to more than 50 BIPS

Scale out to a trillion instructions per second: IBM zEnterprise BladeCenter® Extension (zBX)

- Selected IBM POWER7™ blades and IBM System x® Blades for tens of thousands of AIX®, Linux, and Windows applications
- High performance optimizers and appliances to accelerate time to insight and reduce cost
- Dedicated high performance private network

IBM zEnterprise System – **The Client optimized System**

What's New?

Embracing multi-platform, multi-operating environments with more management capability

IBM zEnterprise™ 196 (z196) and zEnterprise™ 114 (z114)

- Performance improvements for High Performance FICON for zEnterprise (zHPF)
- Updated GDPS® disaster recovery support for zEnterprise environment
- xDR extension to support z/VSE®
- And much more ….

zEnterprise Unified Resource Manager

- Operational Controls enhanced with auto-discovery and configuration support for storage resources
- Extending management functions with programmatic access (APIs)

zEnterprise BladeCenter® Extension (zBX)

- Now supporting AIX® 7.1 and Microsoft® Windows® 2008 R2 plus more releases of Linux® on IBM System x®
- New optional 1 Gbps dedicated network to server
- New to DataPower® XI50z firmware support

Announcing IBM PureSystems - Announced April 11, 2012

The first members of a new family of expert integrated systems with:

- ***Built-in expertise*** to address complex business and operational tasks automatically
- ***Integration by design*** to tune systems for optimal performance and efficiency
- ***Simplified experience*** from design to purchase to maintenance

IBM PureFlex System

Expert at: *sensing and anticipating resource needs to optimize your infrastructure*

- Factory integrated and optimized system infrastructure
- Integrated management
- Automation and optimization expertise

IBM PureApplication System

Expert at: *optimally deploying and running applications for rapid time-to-value*

- Expert designed, integrated and optimized application aware platform
- Platform patterns of expertise
- Simplified management with a single console

Simplified experience

Reduce time, effort and risk throughout the solution lifecycle

Starts at Acquisition: A continuum of value from building blocks to systems

IBM Flex System

Chassis
14 half-wide bays for nodes

Compute Nodes
Power 2S/4S*
x86 2S/4S

Storage Node
V7000
Expansion inside or outside chassis

Management Appliance
Optional

Networking
10/40GbE, FCoE, IB
8/16Gb FC

Expansion
PCIe
Storage

IBM PureFlex System

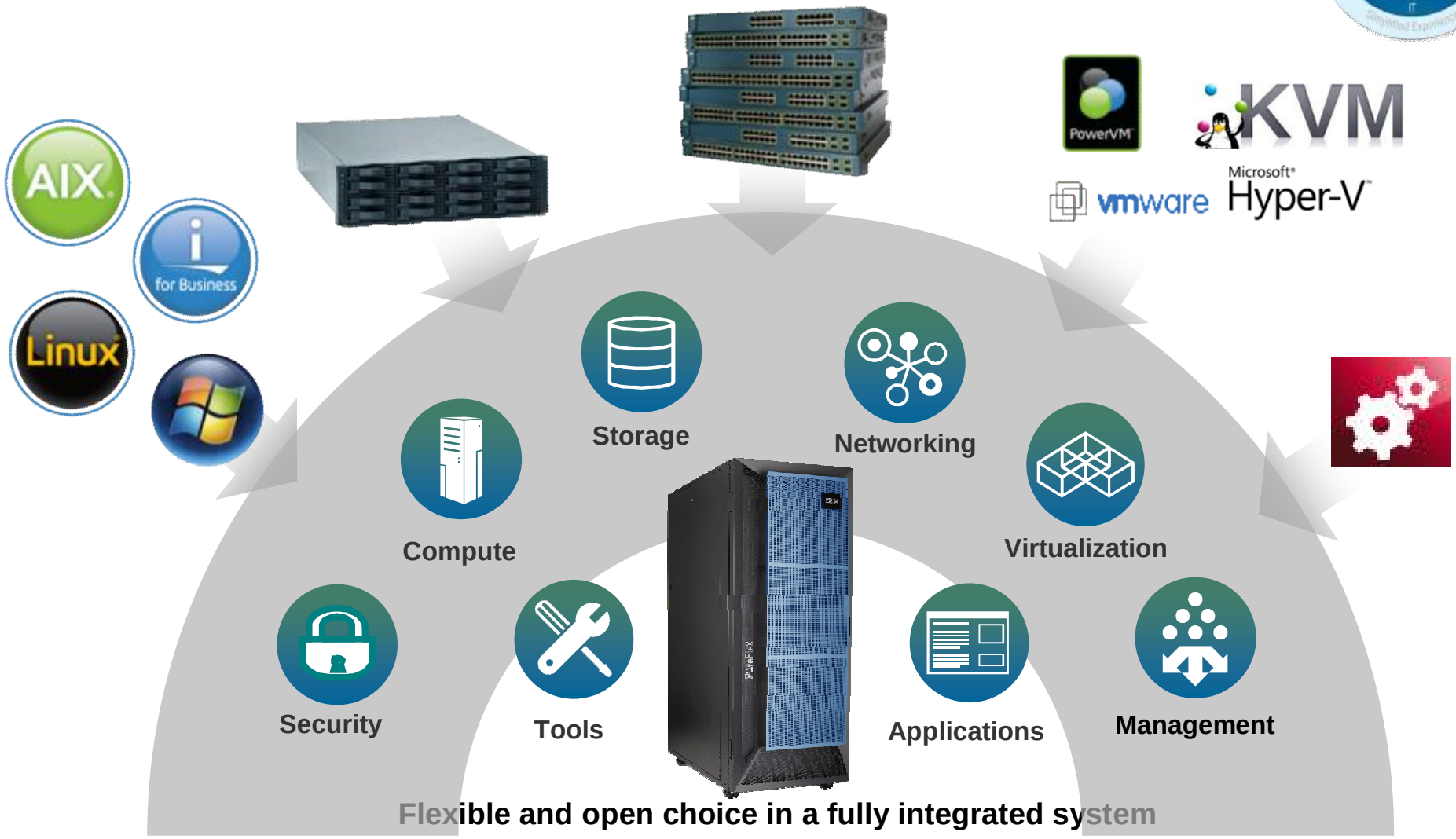
Pre-configured, pre-integrated **infrastructure systems** with compute, storage, networking, physical and virtual management, and entry cloud management with **integrated expertise.**

IBM PureApplication System

Pre-configured, pre-integrated **platform systems** with middleware designed for transactional web applications and enabled for cloud with **integrated expertise.**

Integrated by design

Tightly integrated compute, storage, networking, software, management, and security



zEnterprise
Client Optimized Systems

- Multi-Architecture System for z/OS, z/VSE, AIX, Linux and Windows
- Centrally managed through the Unified Resource Manager
- Best fit when data or applications exist on System z and clients desire z governance

PureSystems
Expert Integrated Systems

- Multi-Architecture system for AIX, i/OS, Linux and Windows
- Centrally managed through Flex System Manager (FSM)
- Best fit when data and applications run on a combination of POWER and System x architecture

Today: The attachment of IBM zEnterprise and IBM PureSystems (via Ethernet) to gain benefits of simplified management and lower IT infrastructure costs for all workloads.

IBM's Tivoli service management platform allows for integration for improving delivery of business services.

In future: Tighter integration of these two systems. Today's investment in either will gain value over time.*

Agenda

- **IBM Hardware Announcements**
- **z/VSE**
- **z/VM**
- **Linux on System z**
- **New SoD on RDz UT**

z/VSE continues to demonstrate IBM's commitment

Hardware Support
More Capacity
Quality
z/OS Affinity
Interoperability
Protect Integrate Extend

z/VSE V4.3 - 4Q2010

- z196 toleration / exploitation
- 4-digit device addresses
- 24-bit virtual storage constraint relief
- IPv6/VSE as optional product

+ SoD: 64-bit virtual support

z/VSE V5.1 - 4Q2011

- z196 / z114 exploitation
- 64-bit virtual memory objects
- ALS to System z9 (and higher)
- Linux Fast Path (with z/VM)

+ SoD: CICS Explorer & LFP in LPAR

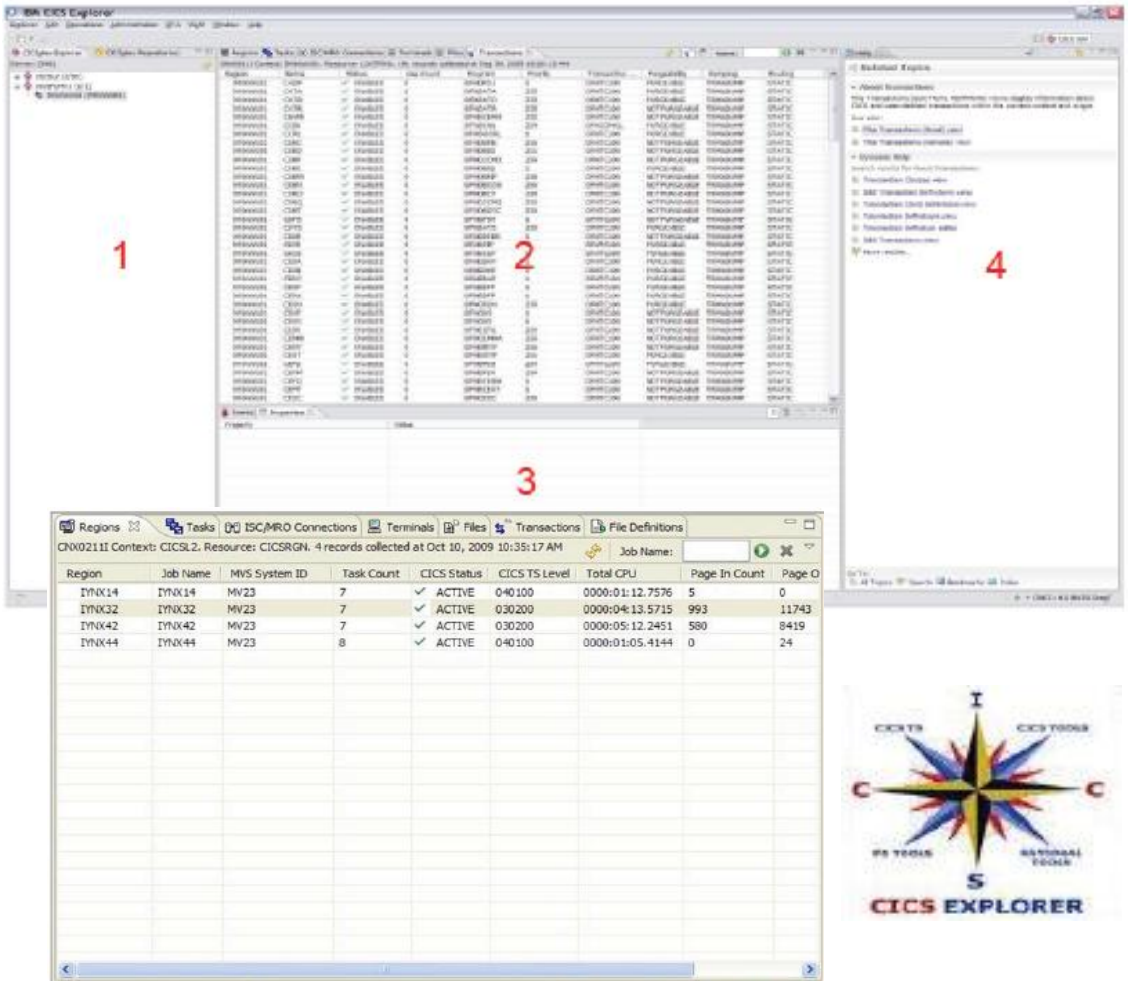
z/VSE V5.1.1 - 2Q2012

- 64-bit I/O for applications
- CICS Explorer support
- Linux Fast Path in LPAR
- Database connector

z/VSE support for IBM CICS Explorer – The “new face of CICS Transaction Server for VSE/ESA“

CICS Explorer

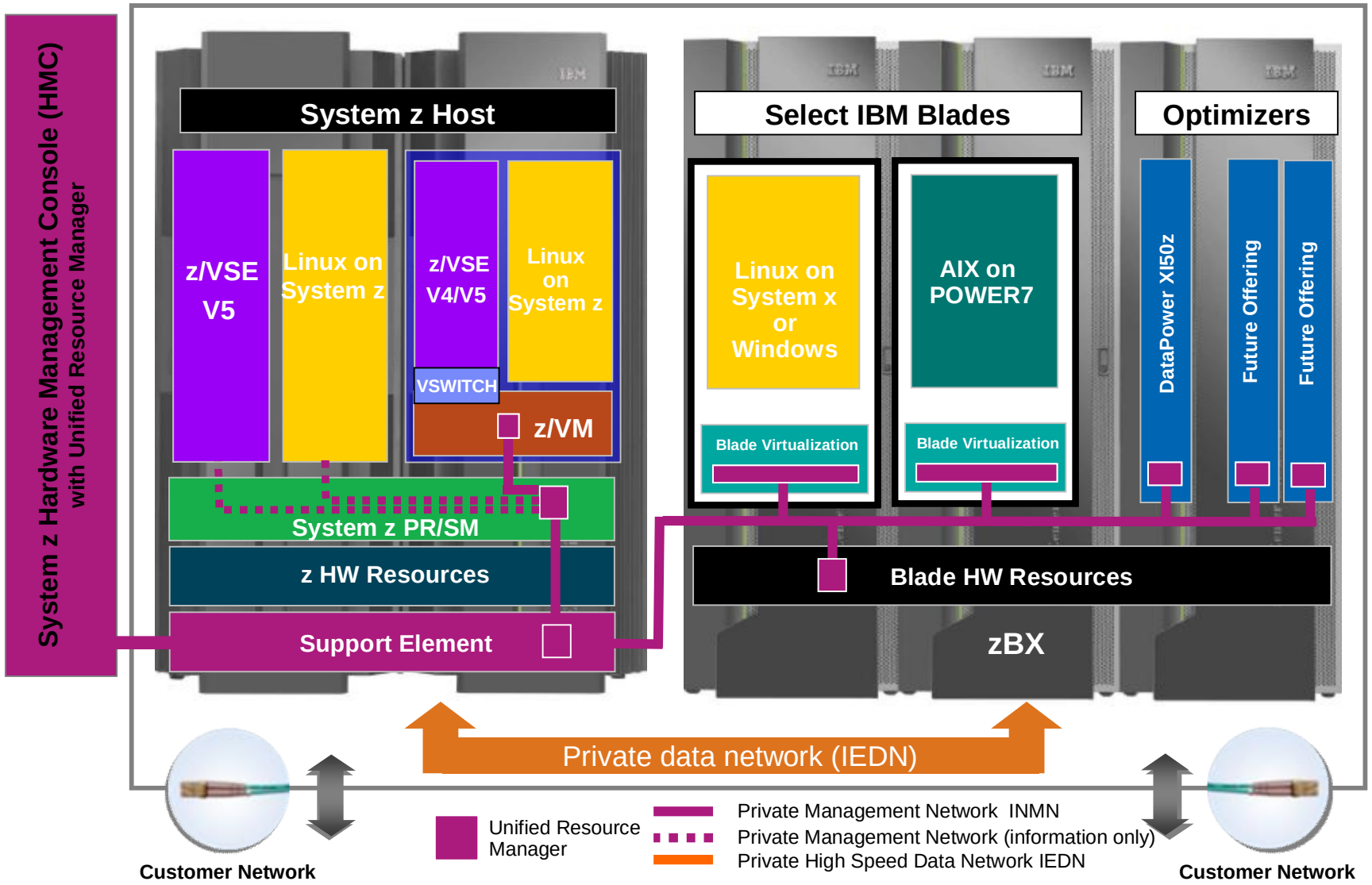
- New systems management framework for CICS TS
- Consists of client and server part
- Based on the Eclipse Rich Client Platform (RCP)
- Provides integration platform
- Scalable and intuitive way to monitor CICS systems
- Can be extended via plug-ins
- Client part of CICS Explorer common for z/OS and z/VSE
- Server part requires CICS TS and z/VSE 5.1



Fulfills Statement of Direction:

“IBM intends to provide CICS Explorer capabilities for CICS TS for VSE/ESA, to deliver additional value.“

z/VSE exploitation of IBM zEnterprise - IEDN to zBX



Press on z/VSE

zJournal: April/May 2011

The z/VSE Fast Path to Linux on System z

by Ingo Franzki, Karsten Graul

Print this article

TRANSLATE

< Previous Page 1 2 3 4 Next Page >

April 6, 2011

Linux on System z has been an important part of z/VSE's Protect, Integrate and Extend (PIE) strategy for many years. It:

- Protects customers' enormous cumulative investment in their core z/VSE applications
- Integrates z/VSE systems and applications into a heterogeneous IT environment
- Extends z/VSE's capabilities with features and functions provided by Linux on System z or other platforms.

Linux on System z provides many useful functions that z/VSE doesn't provide. It offers WebSphere, Java, DB2 Universal Database, a rich set of development tools, and a growing selection of packaged applications. On the other hand, z/VSE provides excellent, cost-effective capabilities to run traditional workloads such as CICS transactions or batch jobs.

To allow easy integration of z/VSE with other systems and applications, z/VSE provides a huge set of so-called connectors that allow access to various types of z/VSE data and applications from remote applications

Clipper Group: Sep 2011

THE CLIPPER GROUP
Navigator™
Navigating Information Technology Horizons℠

Published Since 1993 Report #TCG2011031LI September 6, 2011

IBM Continues Extension of z/VSE — More Function for Midrange Mainframe Users

Analyst: Stephen D. Bartlett

Management Summary

Long, long ago in a land far, far away, and way before the *Web-year* became the standard unit of time in the IT industry (actually it was in Washington, D.C., in the mid 1960's), there was a young sales rep who worked for a very large, prestigious computer company. In that young sales rep's briefcase were two binders, fairly thick, but manageable: one contained detailed descriptions and important elements of all the hardware products that his company sold and similarly the other contained all the company's software. For the most part, those binders contained all the building blocks required for almost any enterprise, public or private, to create, operate, and maintain an extensive information system to support their diverse missions. That is not to say that there weren't at least seven other companies whose sales reps could make the same claim as our young rep, but the other vendors' solutions were not as durable, as history demonstrated.

Fast forward, if you will, to the present. That large, prestigious company remains, but that company's products and services are far, far larger than whose descriptions could be contained within a few binders. Moreover, this company is surrounded, and we also would have to say intermeshed and interconnected, with numerous other vendors that now constitute this industry, one that seems to be expanding and being redefined almost exponentially. In the early 1950s, the most common unit of computer input and data storage was a hole in a paper card 7-3/8 by 3-1/4 inches (approx. 187.3 by 82.6 mm); now it is most often a digital stream that flows between end points located almost anywhere in the world and transmitted through or stored in a cloud of immeasurable dimensions. Every facet of our lives is influenced or touched by this phenomenon; one could argue that our modern culture could not exist without it. The constructs of the IT universe are manifold and their taxonomy is large and dynamic. However, not a week goes by in which some player in this mash up does not declare to have invented something new.

Thus, is there any wonder that something can easily get lost in the morass of information that surrounds this industry, even within the more limited universe of the IBM Corporation? For instance, let's stipulate that computer operating systems are a fairly erudite subject, but nevertheless an absolutely essential element of the IT universe and, as it turns out, one can count the developers and distributors of such on your two hands. (Let's not split hairs by arguing for the mega-multiple authorship of Linux.) Let's just count those that officially run on IBM server families. There is *AIX* and *IBM i* on *Power Systems*, *Linux* (from various distributors) on each family, Microsoft *Windows* on *System x* servers, and *z/OS*, *z/VM*, *z/TPF*, and *z/VSE* on System z. It would be no surprise if z/VSE is only vaguely familiar; it seems to have become the stepchild, but not a homely one, lost in the hyper-universe dominated by z/OS and Linux on zEnterprise systems. This seems to have become a dilemma for not only IBM but for its loyal z/VSE customers as well, but should they be concerned? We think not, but if you want to know why, then please read on.

IN THIS ISSUE

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z/VSE Support for IBM Mainframe Servers

IBM Servers	z/VSE V5.1	z/VSE V4.3	z/VSE V4.2	z/VSE V4.1 (out of service)
IBM zEnterprise z196 & z114	a	a	a	a
IBM System z10 EC & z10 BC	a	a	a	a
IBM System z9 EC & z9 BC	a	a	a	a
IBM eServer zSeries 990 & 890	r	a	a	a
IBM eServer zSeries 900 & 800	r	a	a	a

On June 14, 2011, IBM announced withdrawal of service for Multiprise 3000 (7030-H30, -H50, -H70), to become effective December 31, 2012.

Please note:
- z/VM V6 requires System z10 technology (or higher)
- SUSE SLES 11 requires System z9 technology (or higher)
- Red Hat RHEL 6 requires System z9 technology (or higher)
- SoD: z/OS V2 – when available - will require System z9 technology (or higher)

z/VSE Support Status (as of April 2012)

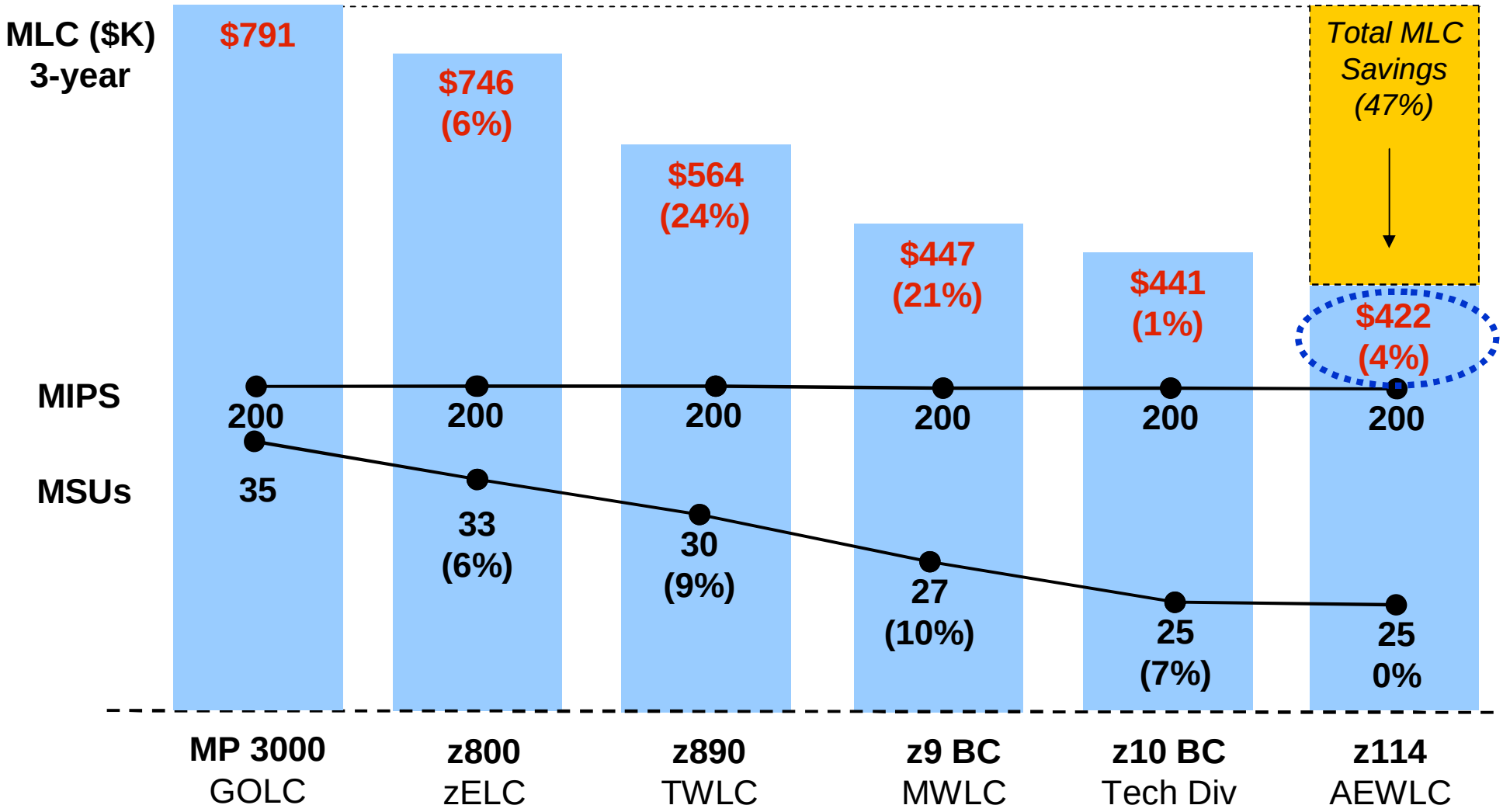
VSE Version and Release	Marketed	Supported	End of Support
z/VSE V5.1	a	a	**tbd**
z/VSE V4.3	06/30/2012	a	**tbd**
z/VSE V4.2	r	a	**10/31/2012**
z/VSE V4.1 [2)]	r	r	04/30/2011
z/VSE V3.1 [1)]	r	r	07/31/2009
VSE/ESA V2.7	r	r	02/28/2007

On August 2, 2011, IBM announced withdrawal of service for CICS/VSE V2.3, DL/I DOS/VS V1.10, and DL/I VSE V1.11, to become effective October 31, 2012.

[1)] z/VSE V3 is 31-bit mode only. It does not implement z/Architecture, and specifically does not implement 64-bit mode capabilities. z/VSE is designed to exploit select features of IBM System z10, System z9, and zSeries hardware.
[2)] z/VSE V4 is designed to exploit 64-bit real memory addressing, but will not support 64-bit virtual memory addressing

MLC Price Performance across HW Generations for z/VSE

** 200 MIPS example for a typical z/VSE stack*



* MLC savings will vary significantly by customer - actual customer configuration must be priced out to be accurate.

* A typical z/VSE stack includes z/VSE CF, CICS TS, VTAM, TCP/IP, DB2, Ditto, Cobol, HLASM

Agenda

- **IBM Hardware Announcements**
- **z/VSE**
- **z/VM**
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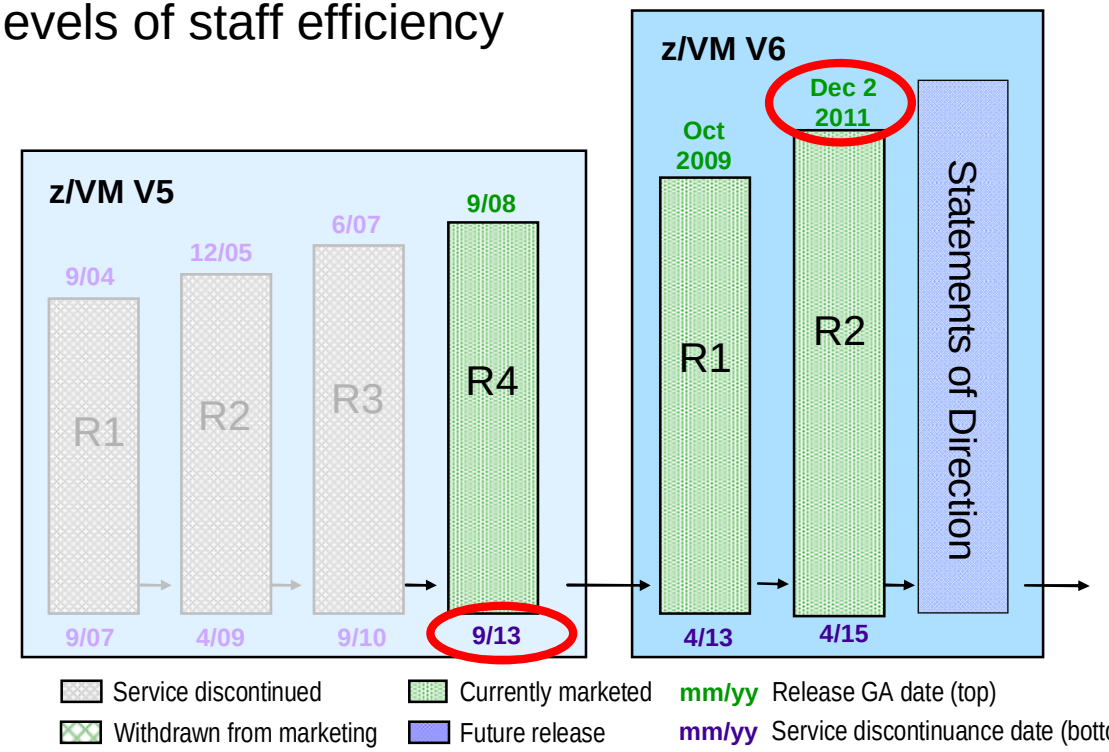
z/VM Release Status

z/VM: helping clients "do more with less"

Higher core-to-core consolidation ratios
Higher levels of resource sharing and utilization
Higher levels of staff efficiency



Future enhancements:

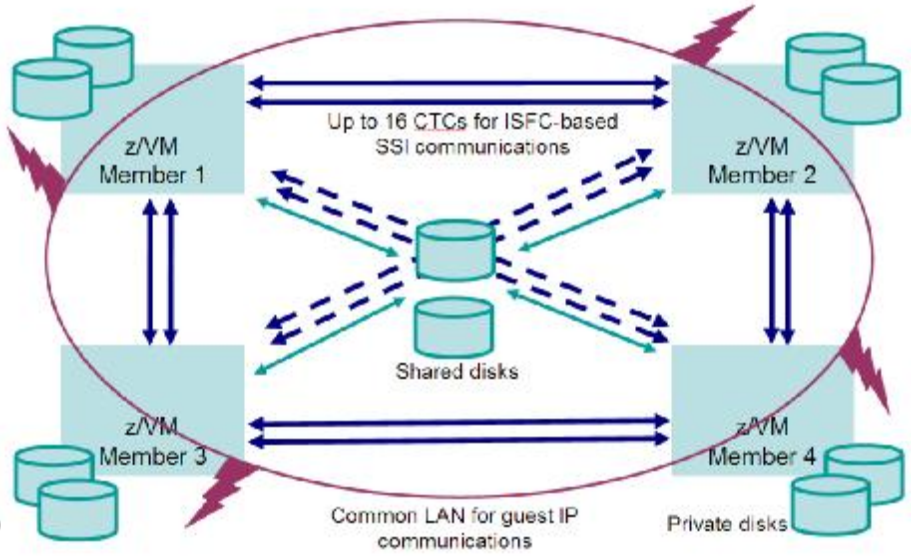
- **Hardware and I/O**
- **Ensemble management**
- **z/OS and Linux synergy**
- **Single System Image**
- **Virtualization**
- **Networking**
- **Security**

IBM received EAL 4+ certification of z/VM V5.3 from the German Federal Office of Information Security (Bundesamt für Sicherheit in der Informationstechnik) for conformance to the Controlled Access and Labeled Security protection profiles (CAPP and LSPP) of the Common Criteria standard for IT security, ISO/IEC 15408. z/VM V6.1 is currently undergoing evaluation against OSPP with the labeled security extention at EAL 4+.

z/VM V6.2

Single System Image, Clustered Hypervisor, Live Guest Relocation

- Provided as an optional priced feature
- Connect up to four z/VM systems as members of a **Single System Image** (SSI) 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



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

z/VM V6.2 - More Enhancements

- **Processor and Performance**
  - Scalability and Performance Enhancements
  - Advances in Processor Performance
  - z/CMS
  - CPU Measurement Counter Facility Host support*
  - XRC timestamps*
  - Hyperswap improvements*
- **Networking**
  - VSWITCH: Multiple access ports per guest
  - TCP/IP Enhancements – Stack, FTP, SMTP, LDAP
  - NETSTAT OSAINFO
- **Security**
  - Access controls for dedicated devices
  - MAC Support for Virtual Consoles
  - RACF Protected Users
  - SSL Server Reliability and Scalability*
  - System SSL FIPS 140-2 Compliance*
  - Client Certificate Validation for z/VM Telnet*
- **zEnterprise Unified Resource Manager support***

PTFs available for z/VM V6.1 and – in some cases – also for z/VM V5.4

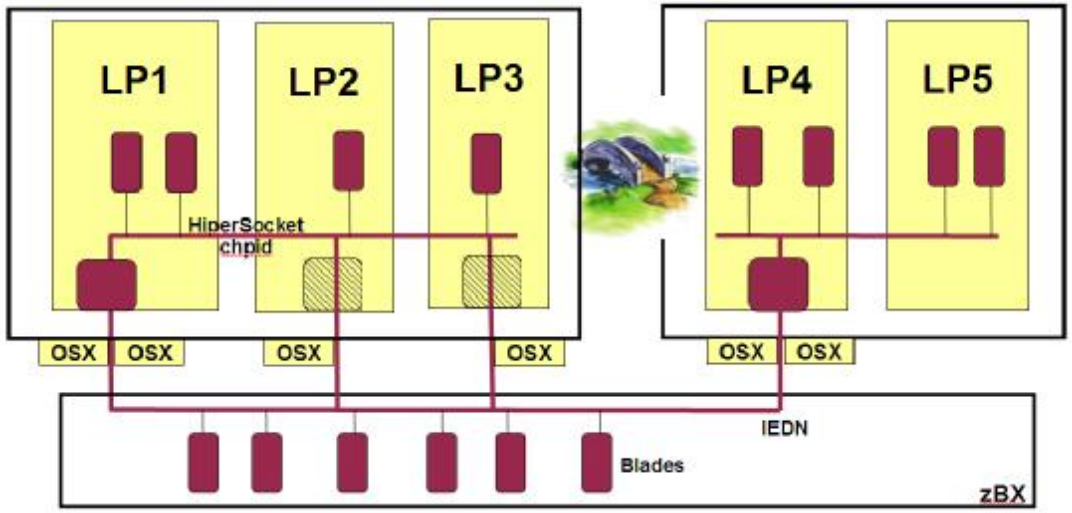
HiperSocket VSWITCH Integration with zEnterprise IEDN

PM46988 – Available since April 13, 2012

New

- **Virtual Switch bridge between Ethernet LAN and HiperSockets**
  - zEnterprise IEDN (OSX) connections
  - Guests can use simulated OSA or dedicated HiperSockets
  - VLAN aware
  - One HiperSocket chpid only
- **Full redundancy**
  - Up to 5 bridges per CEC
  - One bridge per LPAR
  - Automatic takeover
  - Optionally designate one “primary”
    - Primary will perform “takeback” when it comes up
  - Each bridge can have more than one OSA uplink

Intra-CEC LPAR to LPAR communication



z/VM Support for System z High Performance FICON (zHPF)

VM65041 – Available since April 13, 2012

- Enable z/VM guests to use High Performance FICON for System z (zHPF)
  - Different I/O model
  - Single and multiple track I/O
- Requires host and control unit compatibility
  - Consult a storage specialist for details
- z/OS and Linux provide exploitation

z/VM V6 Statements of Direction* - Announced Oct. 2011

- **New functions:**
  - ✓ HiperSockets VSWITCH Integration with IEDN
    - zEnterprise IEDN (OSX) connections
  - HiperSockets Completion Queue
    - Transfer HiperSockets messages asynchronously
  - ✓ High Performance FICON
    - Enable z/VM guests to use zHPF; z/OS and Linux on System z provide exploitation
  - Support for GDPS / PPRC 3.8
    - Disk subsystem preemptive HyperSwap
- **Withdrawals:**
  - Stabilization of Performance Toolkit RMFPMS agent
    - Performance Toolkit processing of the output from Linux rmfpms agent, part of the z/OS RMF PM offering, will no longer be updated
    - Support for the Linux rmfpms agent was already withdrawn, but continues to be available as-is
  - Withdrawal of HMC non-ensemble z/VM System Management
    - z/VM V6.2 is the last release of z/VM that will be supported by the non-ensemble z/VM System Management functions of the System z10, z196 and z114
  - Withdrawal of Cross System Extension (CSE)
    - The VMSSI feature replaces the functions provided by CSE and brings additional value such as autonomic minidisk cache management and a single point of maintenance

* All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represents goals and objectives only.

z/VM V6.2 Education

z/VM-Schulung:

- z/VM 6.2.0-Update Course
  - Course Code: ZOVME2DE
  - Vom 10.-13. September 2012 in Mainz

z/VSE-Schulungen:

- Firma Integrata AG:
  - "z/VSE Betriebssystem-Grundlagen und JCL" (Sem.-No 5085)
- Lattwein GmbH:
  - Ausbildung für VSE-Operator, VSE-Entwickler und VSE-Systemprogrammierer
    - VSE-Grundausbildung
    - Seminare für fortgeschrittene Systemer

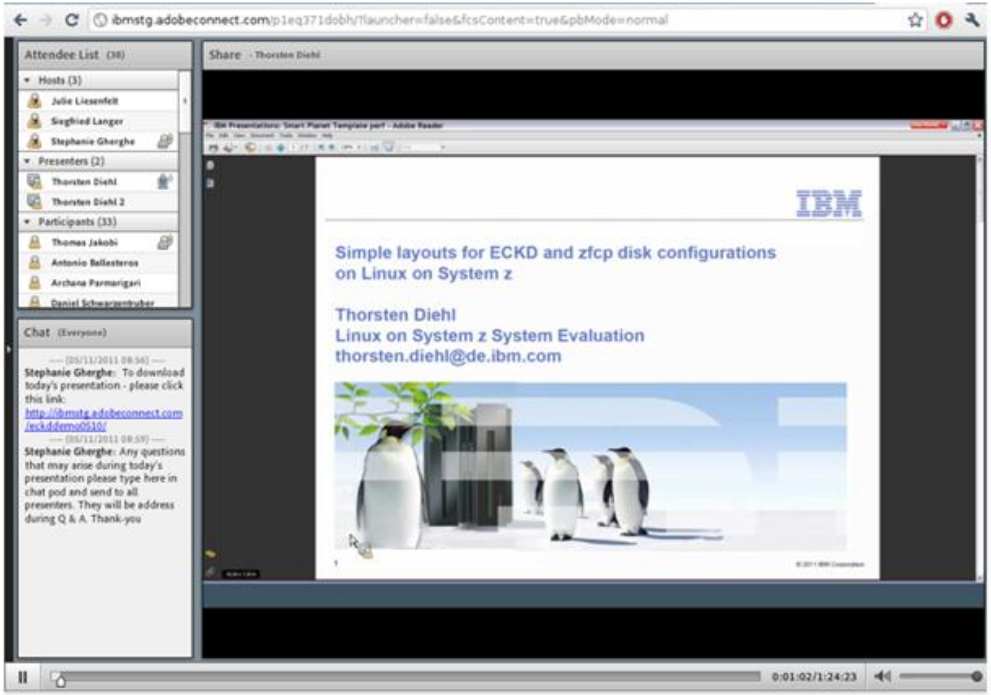
Live Virtual Classes for z/VSE, z/VM and Linux on System z

www.vm.ibm.com/education/lvc/

IBM offers education on a variety of z/VM, Linux on System z and z/VSE topics in the form of 'Live Virtual Classes' (LVC) available on the Internet for Customers, Business Partners and IBMers

The day of the LVC broadcast, you can see the charts and listen to the speaker 'live'. In addition, you are able (and are encouraged) to ask questions of the speaker during a Q&A session following the prepared presentation.

* The day following each LVC, we post the the charts in PDF format.
* Shortly thereafter we provide a replay where you can read the charts, hear the recording and the Q's and A's in MP3 Format
*. You are welcome to read the charts or listen to the replay without registration when you can't participate 'live' or even if you wish to hear it all again.



Press on z/VM and Linux on System z

New

EDISON Group
89 Fifth Avenue, 7th Floor
New York, NY 10003
www.TheEdison.com
212.367.7400

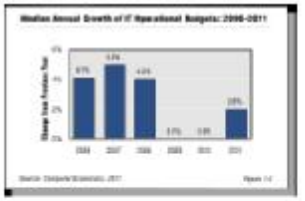
White Paper

Using Linux on z/VM to Meet the Challenges of the 21st Century

Problem Statement

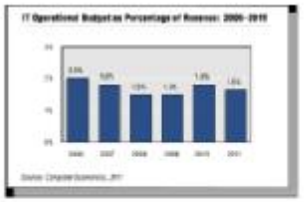
The challenge that confronts IT professionals in today's environment is to maintain current service levels using existing equipment without increasing budget demands.

The chart indicates that IT budgets, on average, have been reduced significantly since 2008. In addition, many businesses are managing the integration of existing systems with those of merged and acquired partners, and trying to position themselves for future challenges.



However, there was a slight increase in median IT operational budgets to 1.8 percent last year; these budgets have fallen since 2006. This indicates that organizations are restraining IT spending.

These cost factors are driving many enterprise computing decisions towards IT consolidation and centralization. As a result, decision makers are taking a hard look at the total cost of ownership (TCO) and the total value of ownership for enterprise computing.



IT hardware costs, as measured by $/performance, have come down significantly with the adoption of new x86-based hardware technologies. The associated software and operational costs, on the other hand, continue to rise, and these costs dominate the TCO. An alternative solution is required – one that focuses on IT cost reduction and maintains current service levels.

Solution

Successfully meeting these 21st century challenges contributes significantly to profitability and positions the organization for future growth. Adding to operational efficiency are improved hardware performance; server and desktop virtualization; declining storage costs; cloud computing; outsourcing and offshoring; data center

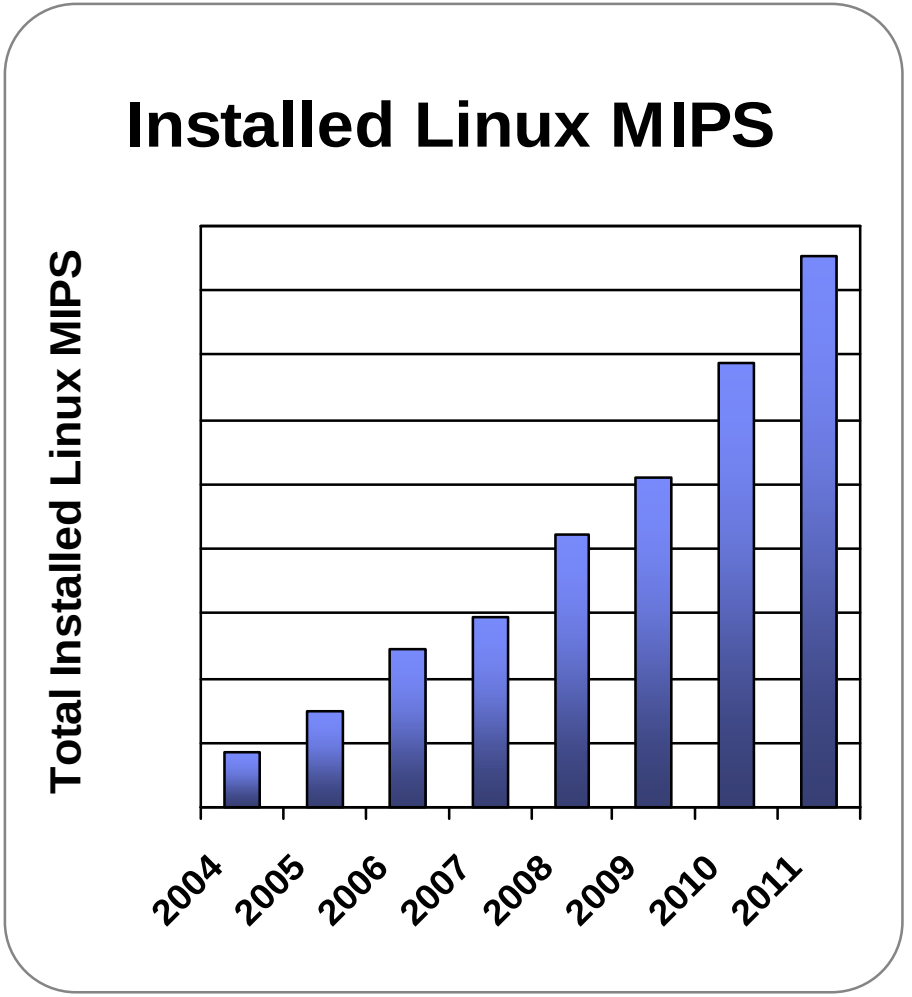
Source:
http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=SA&subtype=WH&htmlfid=ZSL03160USEN

Agenda

- **IBM Hardware Announcements**
- **z/VSE**
- **z/VM**
- **Linux on System z**
- **New SoD on RDz UT**

Linux success in the market continues

- 20% of total installed MIPS are Linux
- Installed IFL MIPS increased 24% in 2011
- 35% of System z customers have IFL's installed
- 66% of the Top100 System z customers are running Linux on the mainframe
- More than 3,000 applications are available for Linux on System z
  - Over 370 new or upgraded applications for Linux in 2011



Enterprise Linux Distributions for System z

The table below shows IBM tested Linux environments. IBM remote technical support for these environments is provided when you obtain a Support Line contract. You may also find support for these environments by contracting with a third party provider.

Hardware Platform and Operating System Software Compatibility 64-bit environment				
Release	**zSeries**	**System z9**	**System z10**	**zEnterprise**
SLES 9 (*)	✓	✓	✓	✓ (2)
SLES 10	✓	✓	✓	✓
SLES 11	✗	✓	✓	✓
RHEL 4 (*)	✓	✓	✓	✓ (1)
RHEL 5	✓	✓	✓	✓
RHEL 6	✗	✓	✓	✓

(1) RHEL 4.8 only. Some functions have changed or are not available with the z196, e.g. the Dual-port OSA cards support to name one of several.
(2) SLES 9 SP4 + latest maintenance updates only. Some functions have changed or are not available with the z196,
(*) Also available as 31-bit distribution.
Note: The listed distributions are 64-bit distributions, they all include the 31-bit emulation layer to run 31-bit software products.

For information on which HW is supported by:

- Red Hat: https://hardware.redhat.com/hwcert/index.cgi
- SUSE: http://developer.novell.com/yessearch/Search.jsp
- System Storage: http://www.ibm.com/systems/support/storage/config/ssic/index.jsp

Linux on System z distributions - Status as of April 2012

SUSE Linux Enterprise Server 9 (GA 08/2004)
Kernel 2.6.5, GCC 3.3.3, Service Pack 4 (GA 12/2007),
end of regular life cycle

SUSE Linux Enterprise Server 10 (GA 07/2006)
Kernel 2.6.16, GCC 4.1.0, Service Pack 4 (GA 05/2011)

SUSE Linux Enterprise Server 11 (GA 03/2009)
Kernel 2.6.27, GCC 4.3.3, Service Pack 1 (GA 06/2010), Kernel 2.6.32
Kernel 3.0.13, GCC 4.3.4, Service Pack 2 (GA 02/2012)

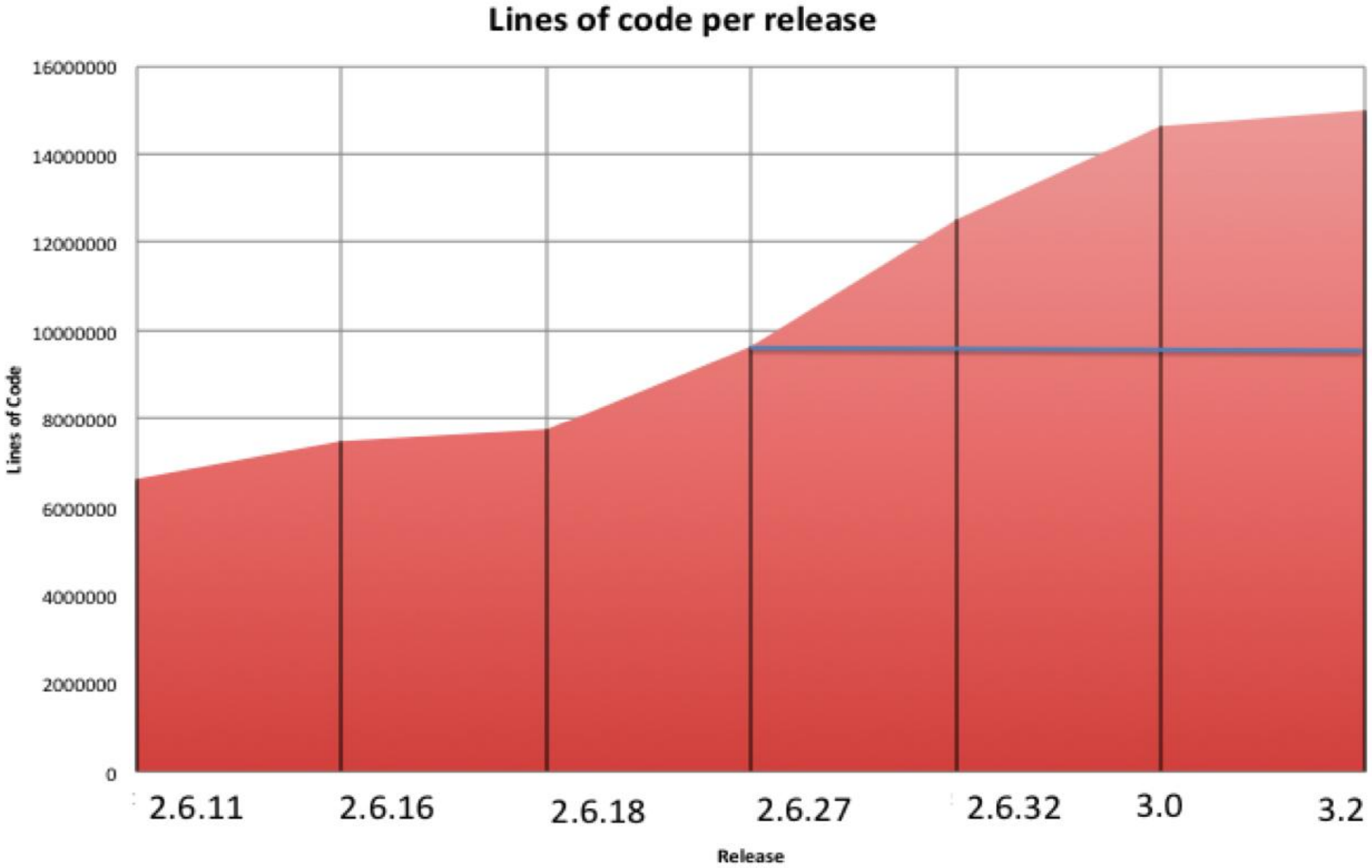
Red Hat Enterprise Linux AS 4 (GA 02/2005)
Kernel 2.6.9, GCC 3.4.3, Update 9 (GA 02/2011),
end of regular lifecycle

Red Hat Enterprise Linux AS 5 (GA 03/2007)
Kernel 2.6.18, GCC 4.1.0, Update 8 (GA 02/2012)

Red Hat Enterprise Linux AS 6 (GA 11/2010)
Kernel 2.6.32, GCC 4.4.0, Update 2 (GA 12/2011)

Others
Debian, Slackware,
Support may be available by some third party

Why is it important to stay current?



SUSE Linux Enterprise Server for IBM zEnterprise and zBX

If you own this...

You get these...

Honoring 10 years of customers' loyalty to SUSE Linux Enterprise Server for System z, SUSE makes the following offering to all SUSE Linux System z customers:

New!

Free Basic Subscription of SUSE Linux Enterprise Server for x86-64 for unlimited use with all IBM zBX hardware.

- *Only available to registered SUSE customers with active subscription for SUSE Linux Enterprise Server for System z. This is available for existing subscriptions and new purchases.*
- *Additional support services for SUSE Linux Enterprise Server on zBX are also available as special promotion offering from SUSE or, alternatively, can be added via IBM service agreements.*

A Basic Subscription for SUSE Linux Enterprise Server includes Code Maintenance, such as patches, fixes and security updates.

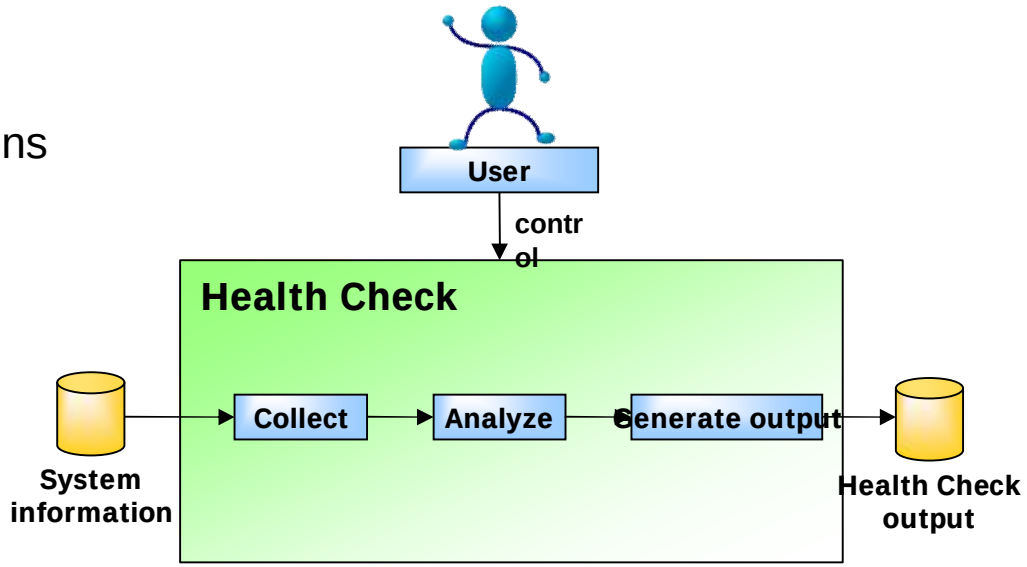
A Priority Subscription for SUSE Linux Enterprise Server includes Basic Subscription deliveries plus 24x7 Support services delivered by the Technical Services organization.

Linux on System z Health Checker

New

Motivation

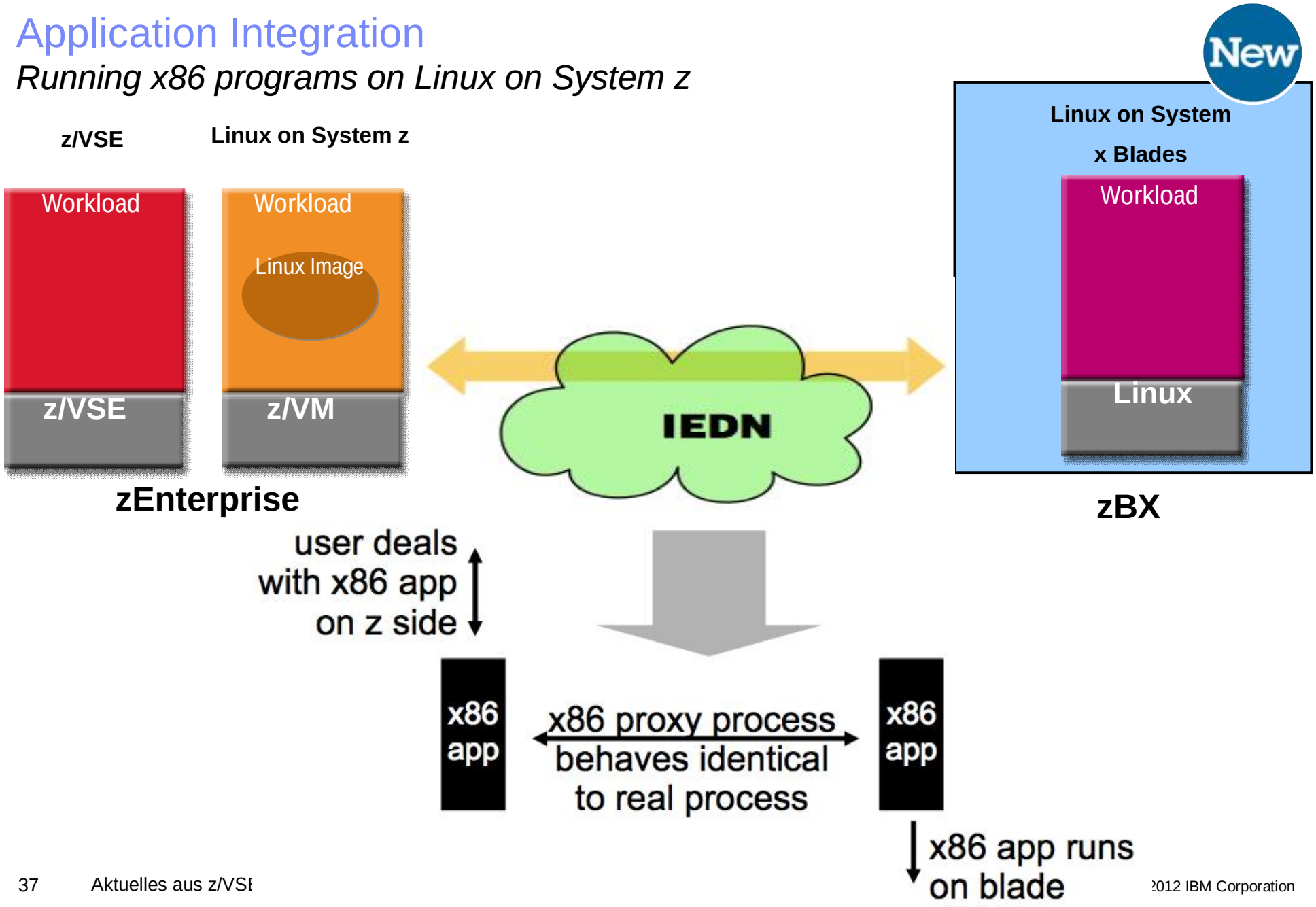
- Make Linux expert knowledge available to a wider audience
  - Provide detailed messages
  - Allow users to make informed decisions
- Prevent problems
  - Outages
  - Performance degradation
- Extend health care across IBM mainframe operating systems
  - z/OS Health Checker
  - z/VSE Health Checker
  - Linux on System z Health Checker



- Download from: http://lnxhc.sourceforge.net/
- User's Guide: http://www.ibm.com/developerworks/linux/linux390/documentation_dev.html

Application Integration

Running x86 programs on Linux on System z



Application Integration

Running x86 programs on Linux on System z

New

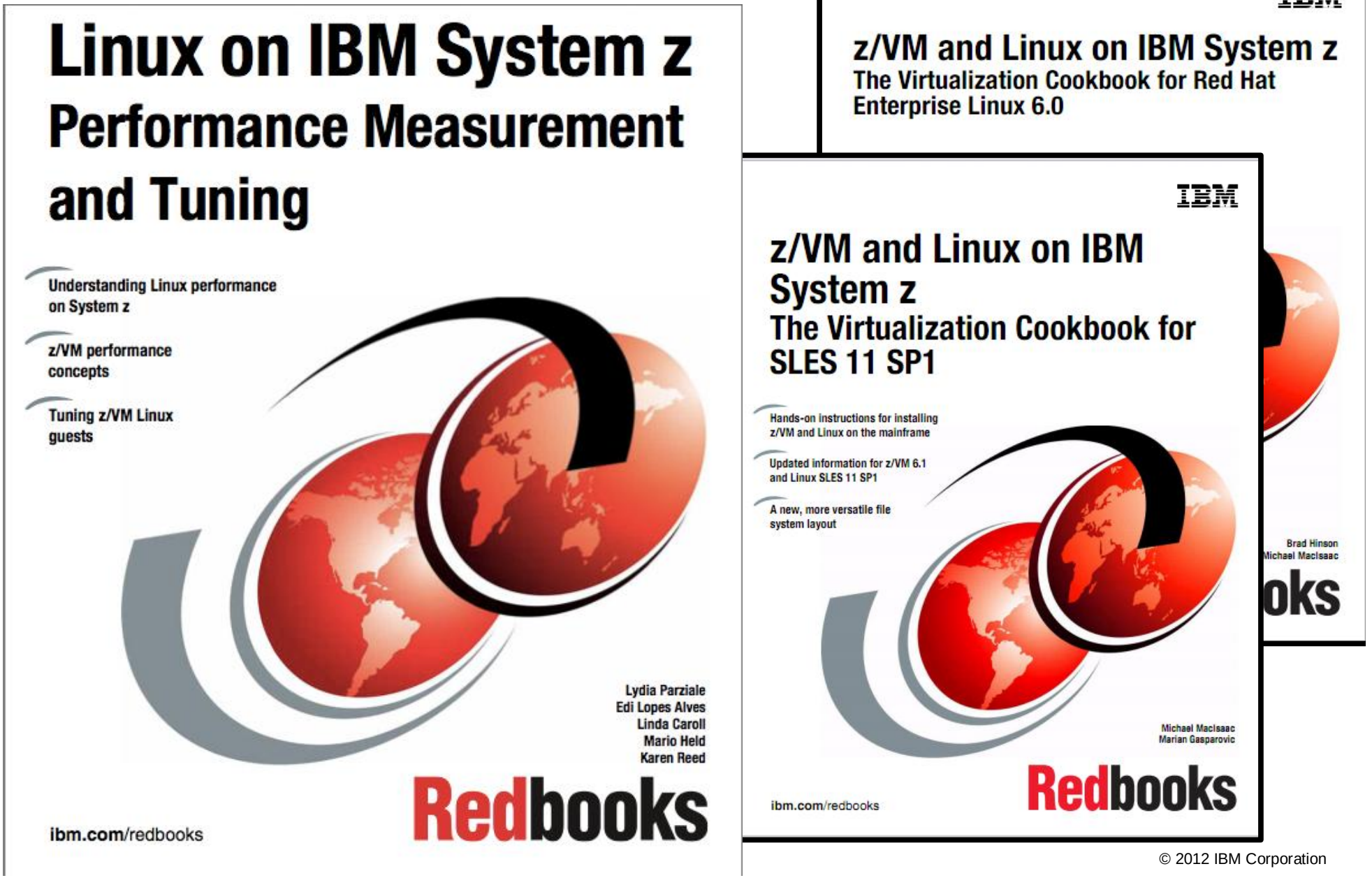
- **Technology Study provided on developerWorks**
  - binary only
  - targetting SLES 11 SP1 and RHEL 6.1
  - free of charge
  - Linux on System z—Linux on x86 only
  - uses IEDN for z—x86 communication

- **Service on best-can-do basis only**
  - Q&A via functional email ID
  - production support to be discussed based on customer demand

- **Direction of future development depends on feedback from the field**

More Information:
http://www.ibm.com/developerworks/linux/linux390/applint.html

New Redbooks: redbooks.ibm.com



Sparda Datenverarbeitung eG chooses IBM zEnterprise

"Oracle has been consolidated on this platform; we are using right now only Oracle on the z196 platform"

Bernd Bohne, Sparda-Datenverarbeitung e.G., Manager, Central Systems

"Over the years, the mainframe transformed from traditional workloads, quite simple, to a universal platform for new workloads as well.

And we see a lot of new applications that are coming to this platform.

Especially for Linux, it's perfect.

The z/Enterprise platform is perfect for consolidating Linux workloads because of the high I/O bandwidth, business continuity with capacity backup features.

- Watch and listen to

§ Bernd Bohne, Sparda-Datenverarbeitung e.G., Manager, Central Systems
§ Marie Wieck, IBM, General Manager, Application Integration Middleware
§ Steve Mills, IBM, Senior Vice President & Group Executive, Software & Systems

ibm.com/systems/z/resources/sparda_bank_video.html

Agenda

- **IBM Hardware Announcements**
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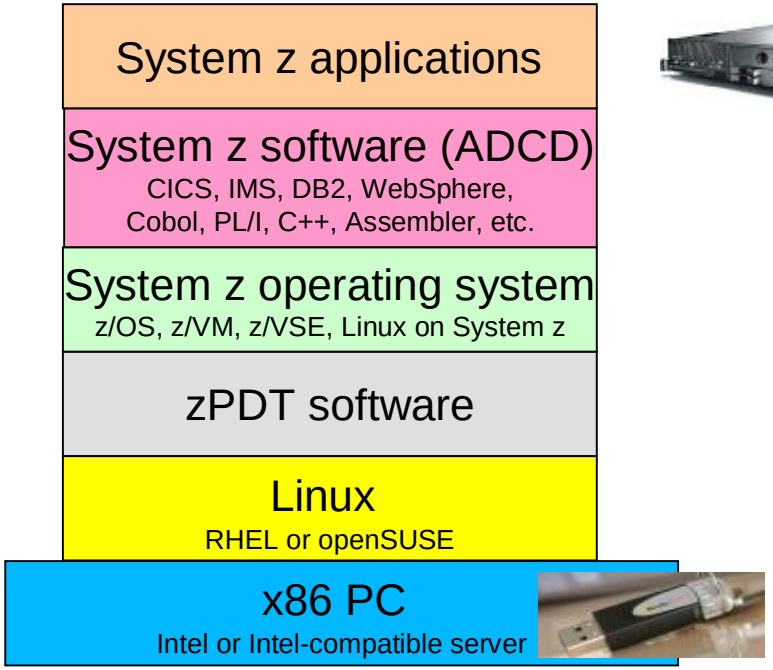
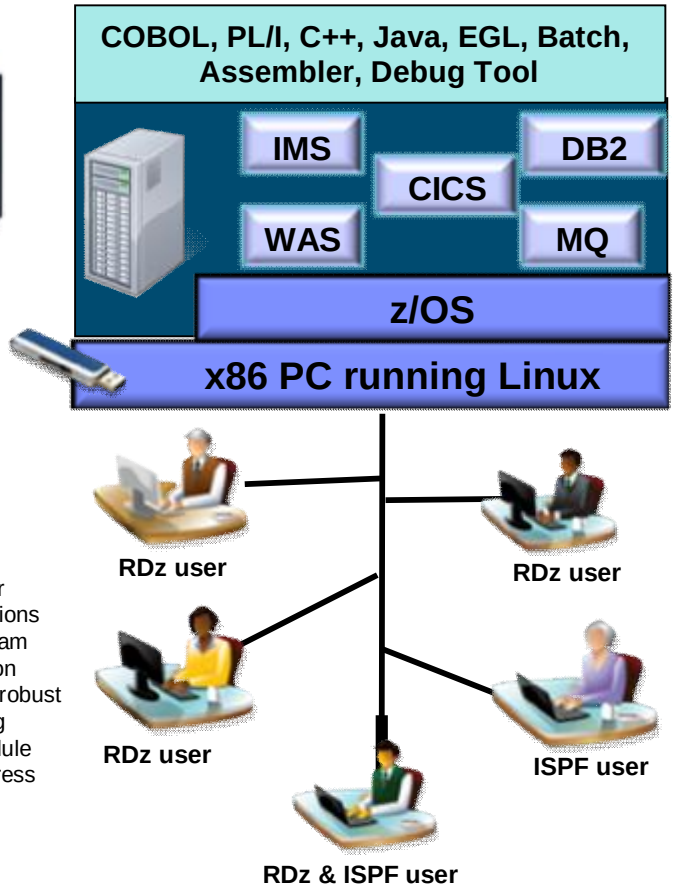
zPDT and RDz UT – System z Application Development on Intel

zPDT = System z Personal Development Tool

zPDT technology consists of a 1090 USB security hardware key and some software that enables System z architecture on Intel



RDz UT = Rational Developer for System z Unit Test



Note: RDz UT is licensed only for development and test of applications that run on IBM z/OS. The Program may not be used to run production workloads of any kind, nor more robust development workloads including without limitation production module builds, pre-production testing, stress testing, or performance testing.

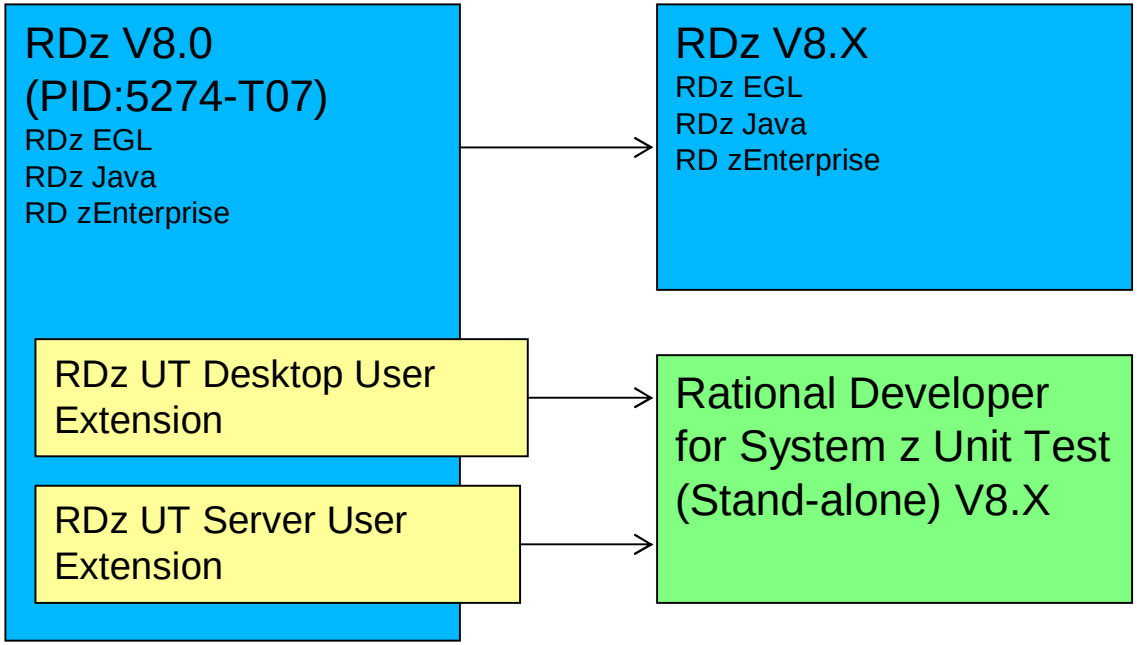
zPDT is for application development, test, and demo of System z applications

zPDT is available to ISVs only!

RDz UT is for application development, unit test, and function test of System z applications

RDz UT is available to anyone, but for z/OS only!

New: Statement of Direction on RDz UT



RDz Unit Test (Stand-alone) V8.X

- **No RDz license required (use for development, test, demo, internal education & training)**
  - **use from RDz, ISPF, or other vendor product**
- Desktop and Server configurations
- Licensed per user
- License server option with shared USB key

Statement of Direction*: In Rational Developer for System z Unit Test, IBM intends to support additional System z operating system levels such as z/OS 1.12 and z/OS 1.13. Additionally, IBM intends to expand access to the zPDT and RDz UT technology by providing more flexible licensing options, including the ability for users to license the technology stand-alone. Providing a stand-alone purchase option provides the opportunity for IBM to deliver additional operating system support on a more flexible schedule in future deliverables.

(*) All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.