The zEnterprise:
A Better Business Strategy

Paul R. Robichaux

NewEra Software, Inc.

MVS Project Keynote Address

Monday, February 4th at 9:30 – 10:30 am

Session Number - 12249

Location – Imperial A

Insert Custom Session QR if Desired.

SHARE
in San Francisco
2013

Abstract and Speaker

- One of the primary missions of those charged with the responsibility to enhance and sustain the operational availability and integrity of the zEnterprise is to maintain their currency in both overall IT Server Market Trends and changes that specifically impact the z/OS Environment. Such individual currency helps organizations to adapt their IT Strategies to best fit the need of business users and aids them in their long term effort towards reducing the Total Cost of z/Enterprise Ownership (TCO).

- This presentation will provide insight into:

  First, the High-End Server Market and its shift to "Hyper-Scale" class and the recognition currently being given to the likely long-term market share leader: is it IBM, HP, Dell, Oracle or another?

  Second, the High-End Server attributes that will determine the success or failure of the market leader over time as needs shift from Hardware to Management Concerns: Tools, Space and Power.

  Third, recent enhancements to old and/or the introductions of new z/OS Management Tools: zAware, The IBM Health Checker for z/OS, The Unified Resource Manager, z/OS System Management Facility, AUTORxx – A Parmlib Member, Runtime Diagnostics (RTD) and The Policy Management Agent (PAGENT).

- Paul R. Robichaux is CEO and co-founder of NewEra Software, Inc. He served as the Chief Financial Officer of Boole and Babbage for the ten years immediately preceding his co-founding of NewEra in 1990. He holds a BS in Accounting and a Masters in Business Administration from a Louisiana State University and is a Certified Public Accountant.

- The corporate mission of NewEra Software is to provide software solutions that help users avoid non-compliance, make corrections when needed and in doing so, continuously improve z/OS integrity.

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2013

Abstract and Speaker

Hello my name is Paul.

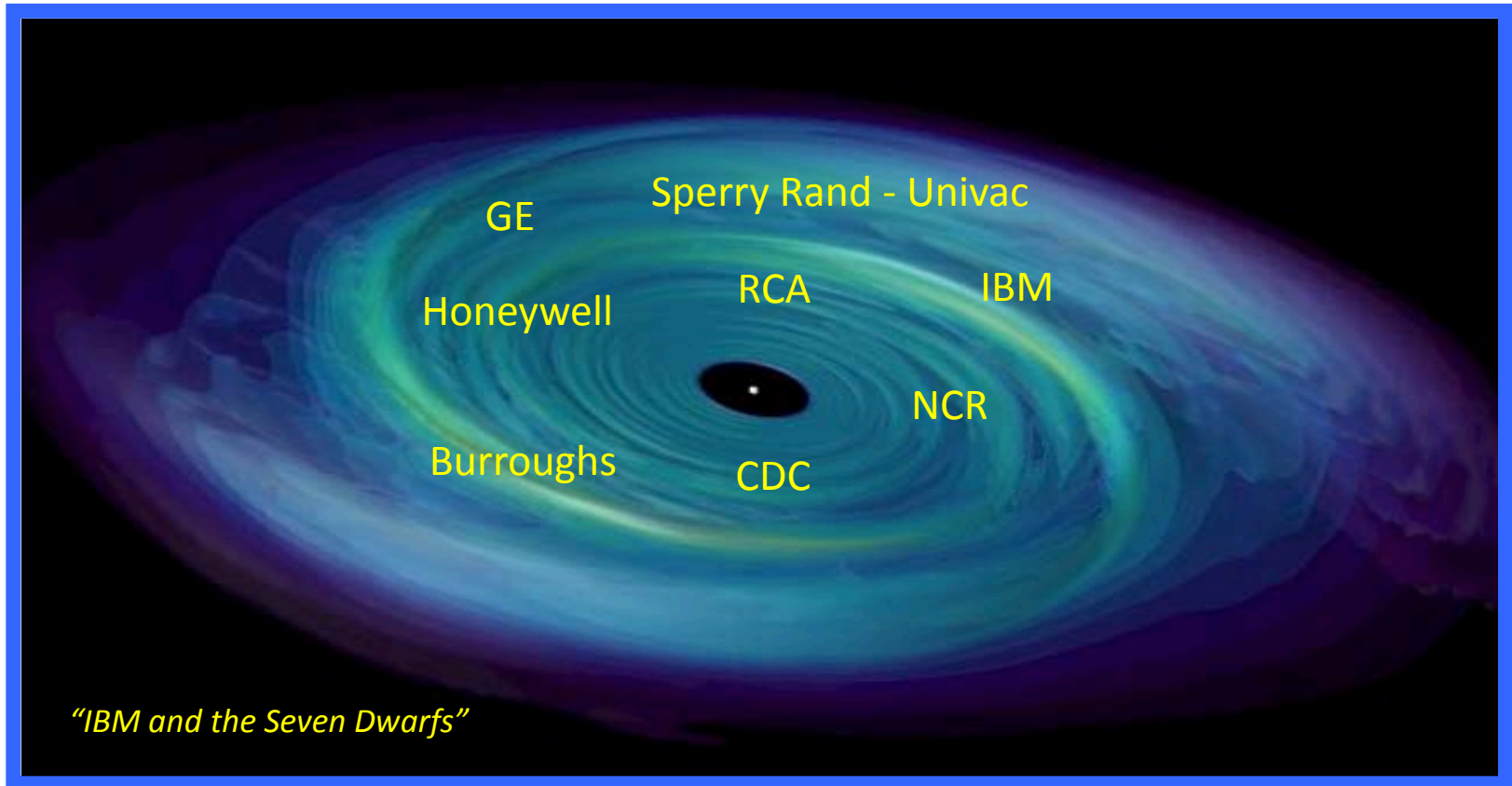*I'm a "Mainframer"*
and
very proud of it!

A Better Business Strategy

zEnterprise Management - Some Things Old are New Again!

Labels on image: GE, Sperry Rand - Univac, Honeywell, RCA, IBM, Burroughs, CDC, NCR

"IBM and the Seven Dwarfs"

[1] http://www.dvorak.org/blog/ibm-and-the-seven-dwarfs-dwarf-one-burroughs/

A Better Business Strategy

zEnterprise Management - The New Normal!

"IBM and the Three Bears"

[1] http://www.imadethatup.com/
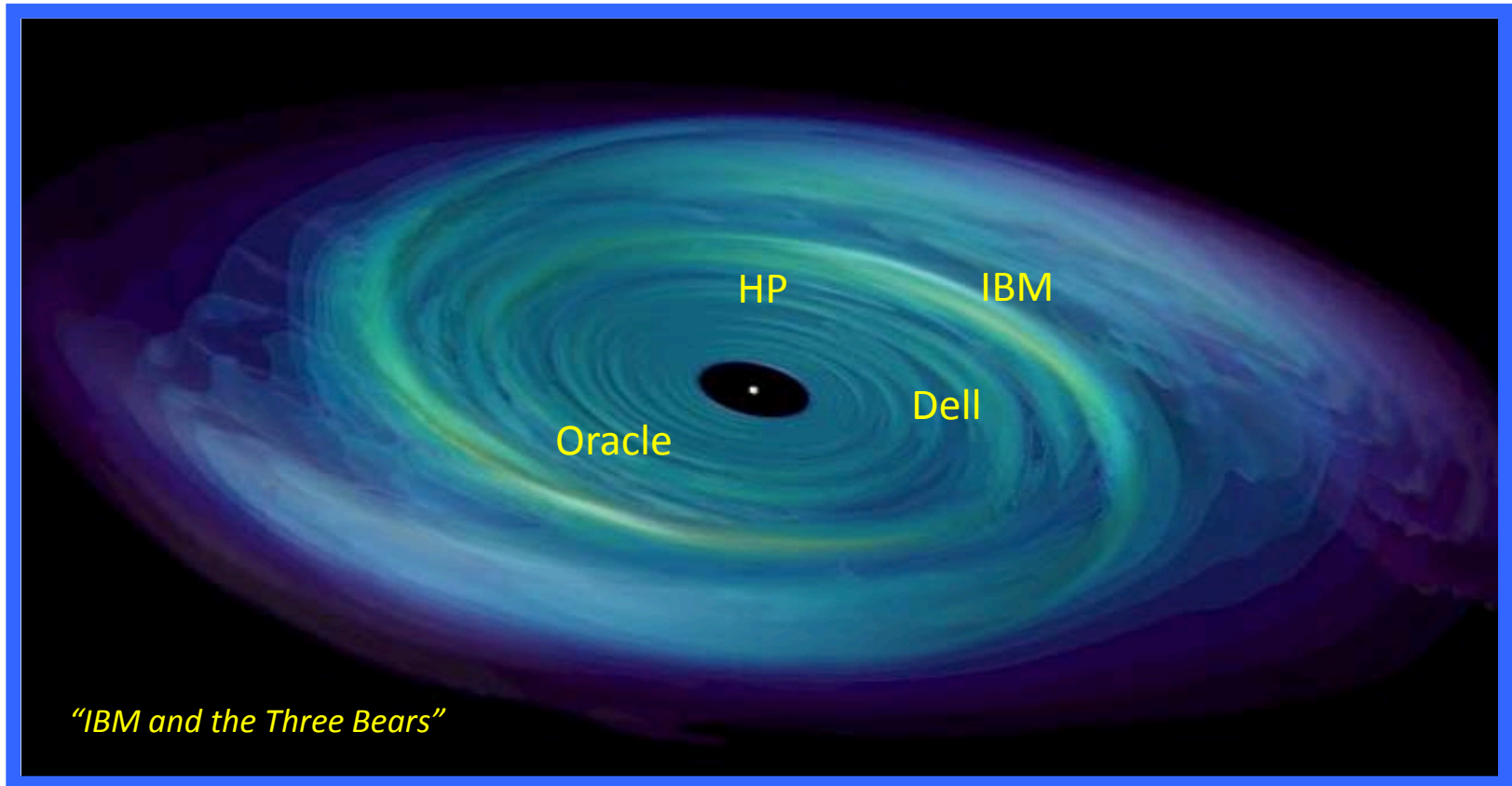
A Better Business Strategy

zEnterprise Management – In this Presentation you will find!

❑ *A Business Point of View*

- The Battle for the Server Market
- Some Things Old are New Again!
- Market Share Drivers, Response
- How are the Players Doing?
- Who is Best Positioned to Prevail?

❑ *The Next Generation System Management Tools*

- zAware
- IBM Health Checker for z/OS (HZS)
- The zManager (Formally URM)
- Runtime Diagnostics (RTD)
- z/OS Management Facility (z/OSMF)
- AUTORxx - a ParmLIb Member
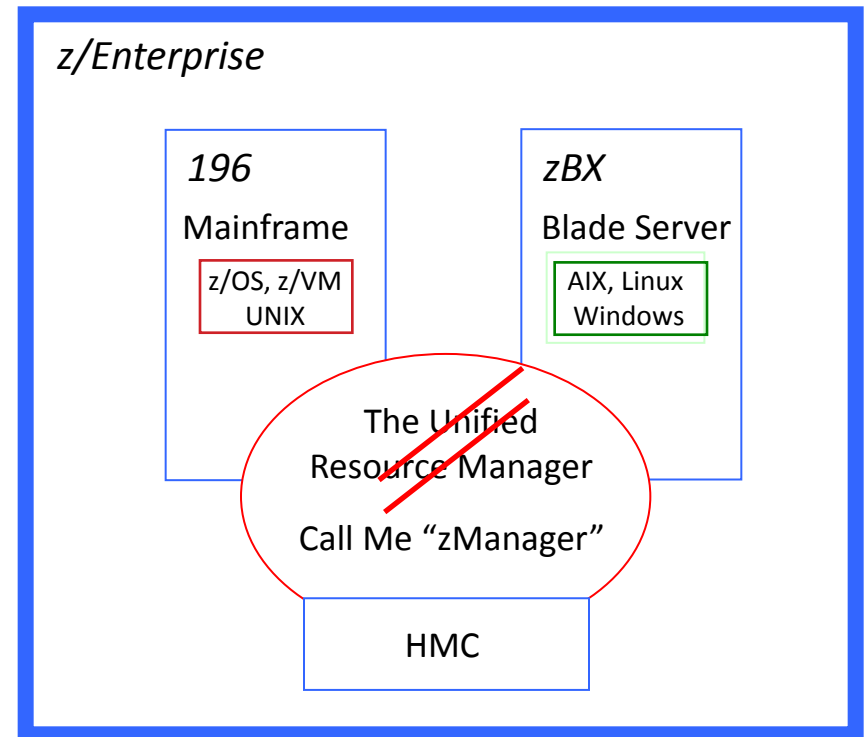- The Policy Management Agent (PAGENT)

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zEnterprise Management – Heads in the Clouds – Hyper-Scale Server [1]

❑ Hyper-scale servers are designed for large scale datacenter environments where parallelized workloads are prevalent. The form-factor serves the unique needs of these datacenters with streamlined system designs that focus on:

- Performance
- Energy efficiency
- Platform Density

❑ Hyper-scale servers forego the full management features and redundant hardware components found in traditional enterprise servers as these capabilities are accomplished primarily through software.

z/Enterprise

196
Mainframe
z/OS, z/VM
UNIX

zBX
Blade Server
AIX, Linux
Windows

The Unified
Resource Manager

Call Me "zManager"

HMC

[1] *Source: Starting Q3 2011, IDC began to track the new form-factor called hyper-scale/Hybrid servers.*

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zEnterprise Management – Little to Big Vs. Big to Little!

<u>*Doing the Math!*</u>

- *Over Last 20 Years:*
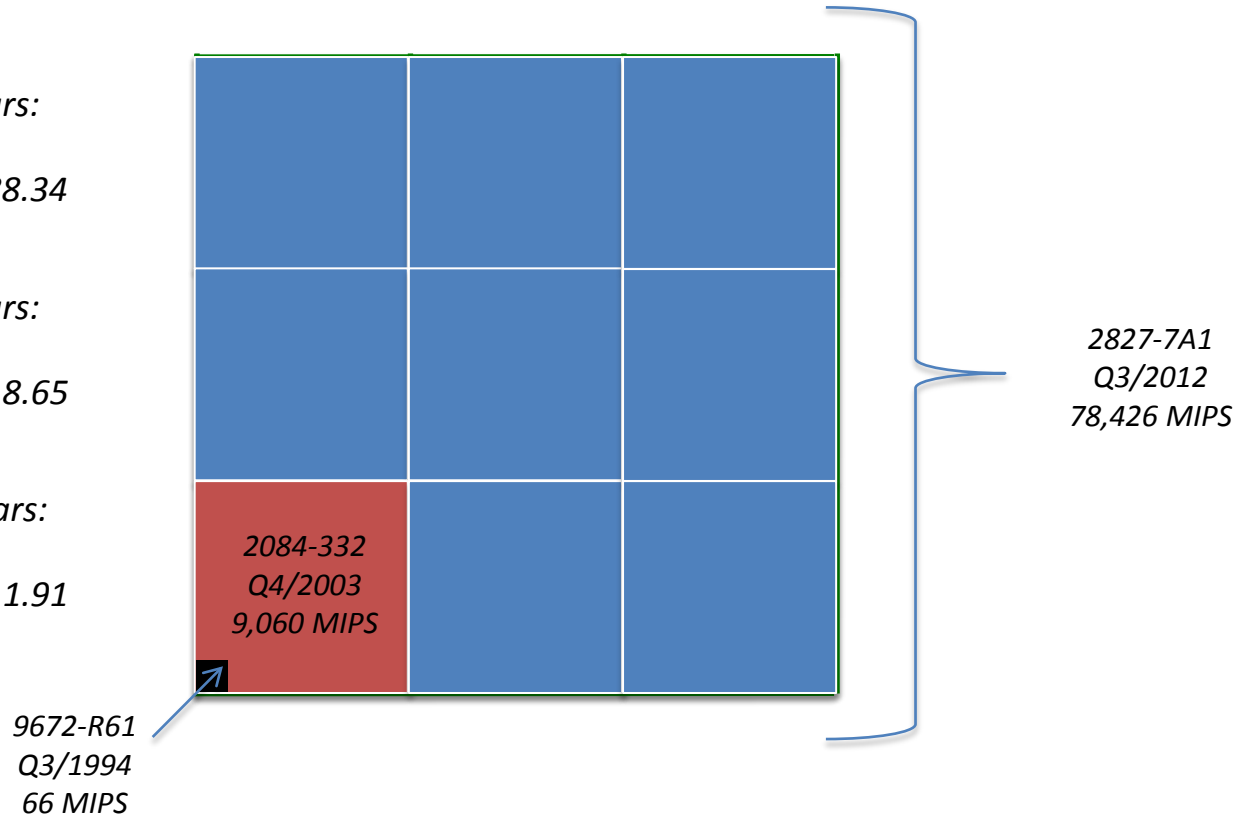
$$\frac{78,426}{66} = 1,188.34$$

- *Over Last 10 Years:*

$$\frac{78,426}{9,060} = 8.65$$

- *Over Next 10 Years:*
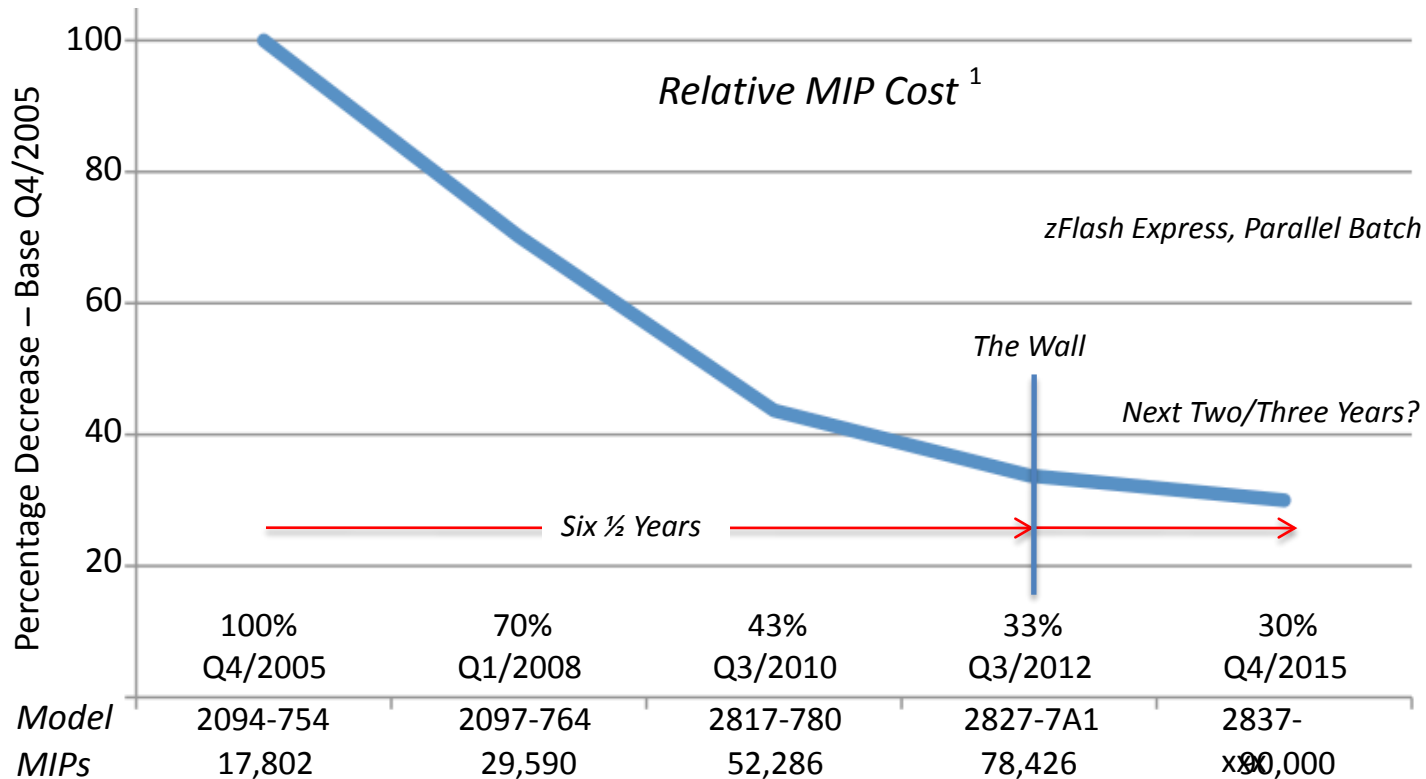
$$\frac{150,000}{78,426} = 1.91$$

2827-7A1
Q3/2012
78,426 MIPS

2084-332
Q4/2003
9,060 MIPS

9672-R61
Q3/1994
66 MIPS

[1] *Source:http://www.tech-news.com/publib/pl9672g, pl2084, pl2094, pl2097, pl2817 and pl2827 all .html*

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zEnterprise Management – Hasn't it always been about "Reads and Feeds"?

Relative MIP Cost [1]

zFlash Express, Parallel Batch

The Wall

Next Two/Three Years?

Six ½ Years

Percentage Decrease – Base Q4/2005

	100% Q4/2005	70% Q1/2008	43% Q3/2010	33% Q3/2012	30% Q4/2015
Model	2094-754	2097-764	2817-780	2827-7A1	2837-
MIPs	17,802	29,590	52,286	78,426	x90,000

[1] *Source:http://www.tech-news.com/publib/pl2084, pl2094, pl2097, pl2817 and pl2827 all .html*
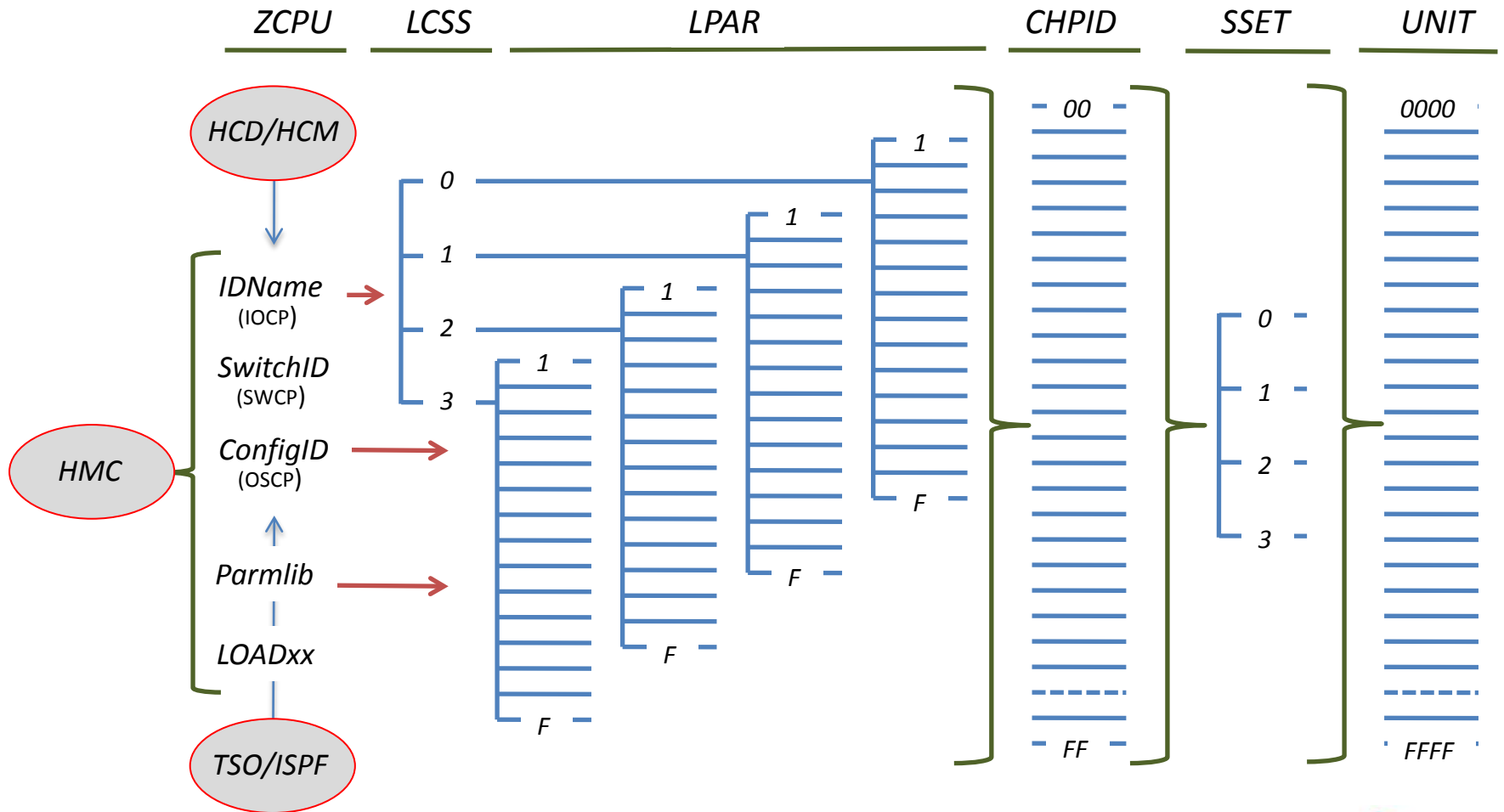
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zEnterprise Management - zEC12 and V2R1 - It can be complicated!

Complete your sessions evaluation online at SHARE.org/SanFranciscoEval
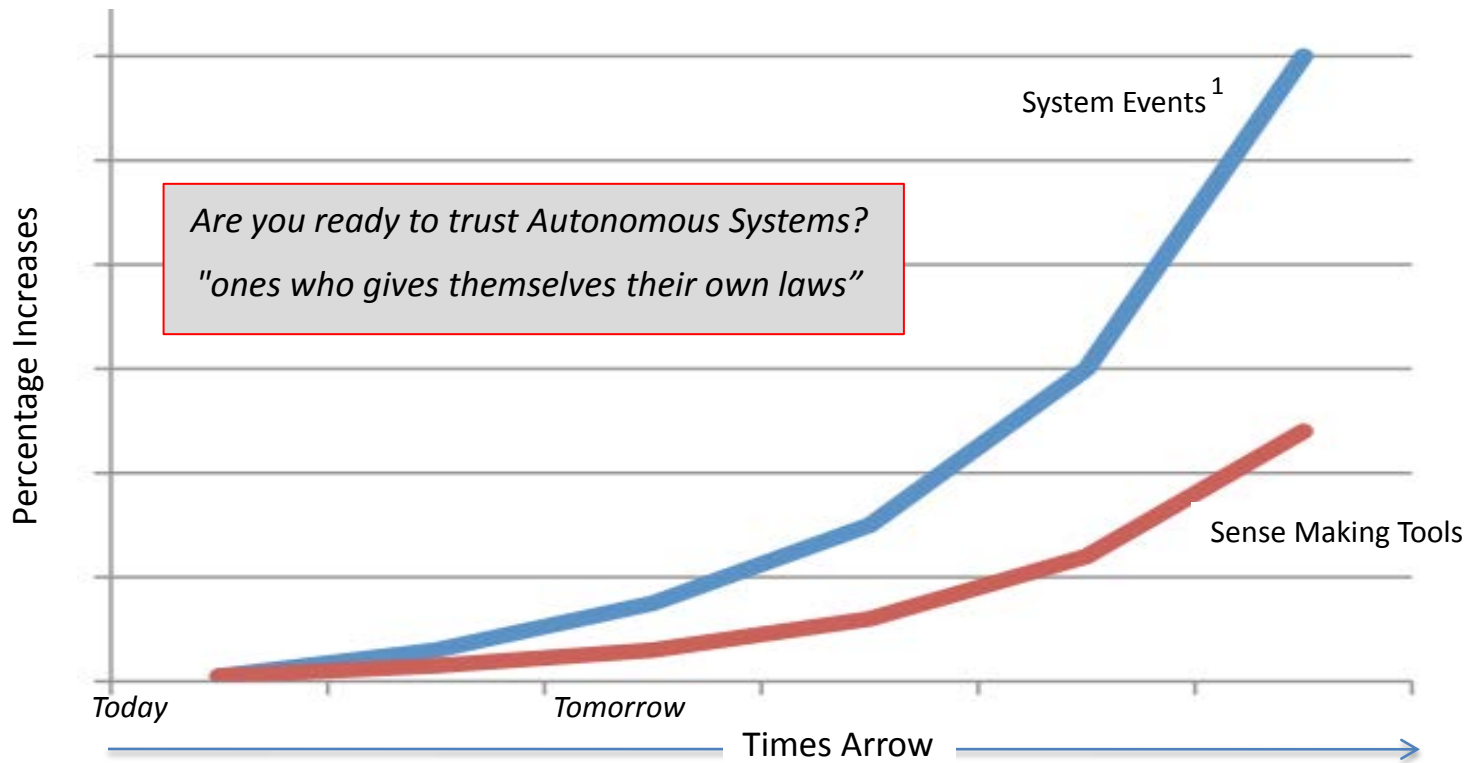
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zEnterprise Management - Economic Drivers – Total Cost of Ownership (TCO)
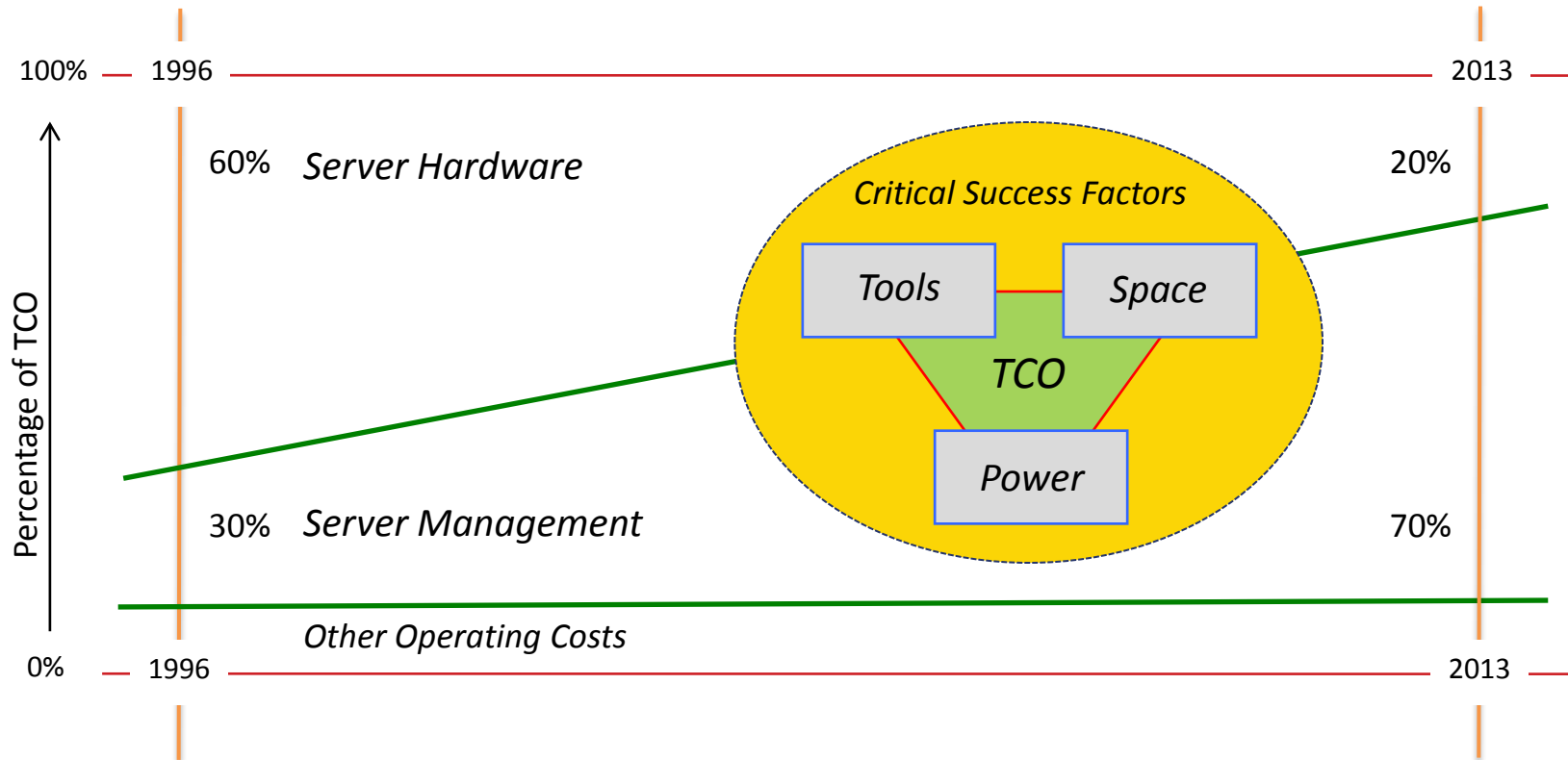
[1] *Source: Dr. John Shedletsky – IBM Technical World – San Francisco – April, 2012*

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zEnterprise Management - Tools help us make sense of it all, right?

System Events [1]

Are you ready to trust Autonomous Systems?

"ones who gives themselves their own laws"

Percentage Increases

Sense Making Tools

Today

Tomorrow

Times Arrow

[1] *More than 40,000 unique message IDs are defined for z/OS and the IBM software that runs on z/OS systems. In a College Dictionary (Abridged) there are 50,000 - 70,000 words*

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zEnterprise Management – Investing in Tools that ensure our z/OS Future!

❑ On October 4, 2006 IBM announced, in a press release, a $100 Million System z Platform Simplification Initiative. This announcement, in part the z/OS V1R8 introduction, foretold the coming of the Next Generation of z/OS Management tools.

❑ These Next Generation Tools appear to have the following positive attributes:

- ✓ Low or No Cost Entry Points
- ✓ Predictive Analytics
- ✓ Making Sense out of z/OS Events

❑ Many of these rolled out as incremental enhancements to the Base Control Program.

Topical Area	Total	V1R13			V1R12		
		Add	Del	Chg	Add	Del	Cng
IPL Unit Address	3	1	-	2	-	-	-
IPL Parms - LOADxx	1	-	-	-	1	-	-
ParmLib Members	5	2	-	-	2	1	-
ParmLib Keywords	45	22	1	-	21	1	-
TCP/IP Components	17	10	-	-	7	-	-
JES2	7	2	-	1	1	-	3
JES3	5	1	-	3	-	-	1
VTAM	14	-	-	1	12	-	1
CICS - SIT and CSDS	13	1	-	4	1	-	7
DB2	1	1	-	-	-	-	-
Health Checker	39	16	-	-	23	-	-
HCD/HCM	8	6	-	-	2	-	-

[1] *Source: NewEra White Paper - A Brief Look at What's New in V1R12 and/or V1R13 – 9/01/2011*

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zEnterprise Management - Economic Performance – Key Players

HP (30)	Dell (15)	Oracle (6)	IBM (30)
1 Down 10% in 2011 and 23% in most recent quarter. Lenovo a Threat? ↓	Still growing but pace has slowed. Large enterprise revenues up 5%. ↑	Shrinking, plan to give up on unprofitable businesses. ↓	High-end leader, business very profitable. Growth is modest. ↑
2 Disclosure of apparent accounting fraud latest humiliation of tech giant. ↓	PC eroding, enterprise division not enough to support company, use cash to acquire growth. ↓	Better-than-expected software sales help tech giant beat expectations ↑	Risk to exceeding 2015 projections: global slowdown, delayed or cancelled projects. ↑

Global Market Factors:
- ☑ Slowing Growth - CEO Uncertainty
- ☑ Falling Margins – Hardware Price Increase
- ☑ Share gains for low-cost providers
- ☑ Questionable Macroeconomic Trends

Strategies:
- ☑ HP - Cleanup the Acquisition Mess
- ☑ Dell - Work with Hedge Funds, go Private
- ☑ Oracle - Acquire SaaS Clouds - Eloqua
- ☑ IBM - Stay the Course, Invest in Tools

[1] *SHARE 08/12 - Financial Times – Friday, June 1, 2012 and (xx)Percentage Market Share – Q3 2011 - IDC*
[2] *SHARE 02/13 – SJMN 12/19/2012 and Business Insider 11/2012 and http://seekingalpha.com/article/302020 & 821141*

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zEnterprise Management – Relative Stock Market Performance - Last Six Months [1]

12/19/12   Open: $195.69   High: $196.45   Low: $195   Close: $195.08

ORCL, IBM, DELL, HPQ relative performance chart from June 2012 to December 2012.

[1] *www.nasdaq.com – Relative Performance – IBM, HPQ, ORCL, DELL*

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zEnterprise Management – Relative Stock Market Performance - Last Nine Months[1]

[1] *www.nasdaq.com – Relative Performance – IBM, HPQ, ORCL, DELL*

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zEnterprise Management - Economic Performance – Key Players - The HP Story[1]

Hewlett-Packard (NYSE: HPQ)

- The "value" story
  - Forward P/E of 5.2x, forward EV/EBIT of 5.6x
  - FCF yield of 10.7% using LTM FCF before share-buybacks and acquisitions
  - $6.3B in share-buybacks and dividends in LTM, equal to 162% of FCF
- Growth through acquisitions has not paid off
  - $36.9B spent on acquisitions since 2007, equal to 82% of FCF
  - Despite acquisitions, LTM cash-flow from operations is 7% less than it was in 2007
  - Total debt at 1Q12 was $30B, up 70% from 1Q10
  - Acquisitions track record: Compaq impairment, EDS restructurings, Palm write-off, Autonomy revenue implosion
- HPQ's businesses are struggling
  - PCs: LTM operating income down 5% YoY; cannibalization from mobile computing
  - Printers: LTM operating income down 28% YoY; fall in inkjet printing
  - IT services: LTM operating income down 23% YoY; lack of Itanium support from Oracle, falling government spending, competitive pressures
  - Servers/networking: LTM operating income down 19% YoY; fall in UNIX market
- Lack of strategy, as evidenced by 3 CEOs since 2006

[1] *http://www.businessinsider.com/jim-chanos-hp-thesis-2012-11*

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zEnterprise Management – Relative Stock Market Performance - Last Month
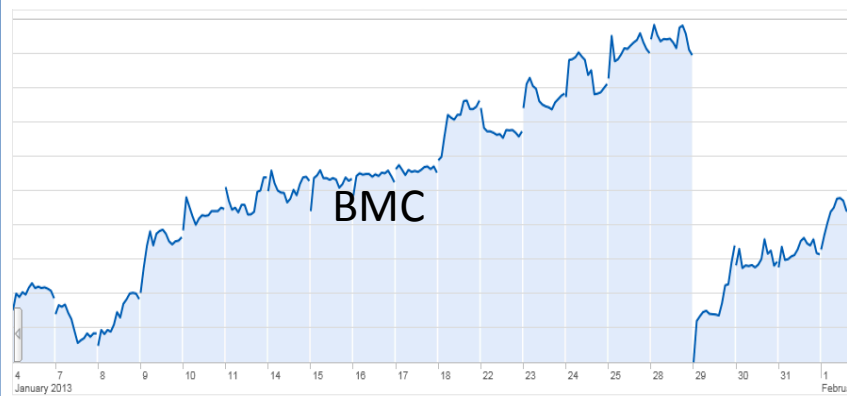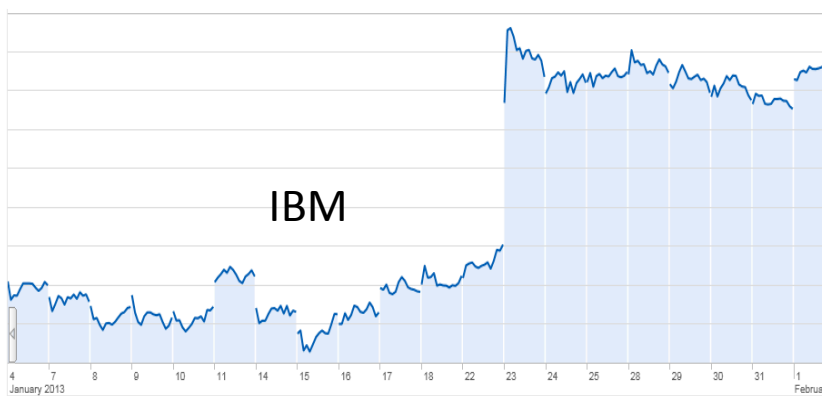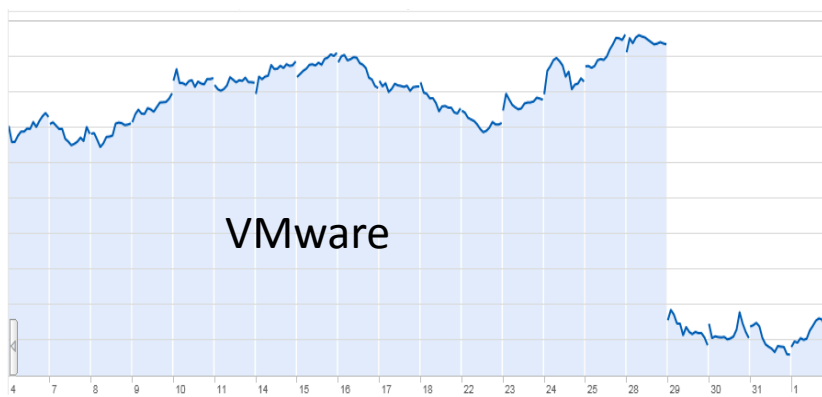
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zEnterprise Management – Heads in the Clouds – Hyper-Scale Challengers [1]

Market Capitalization: Common Share Price X Common Shares Outstanding
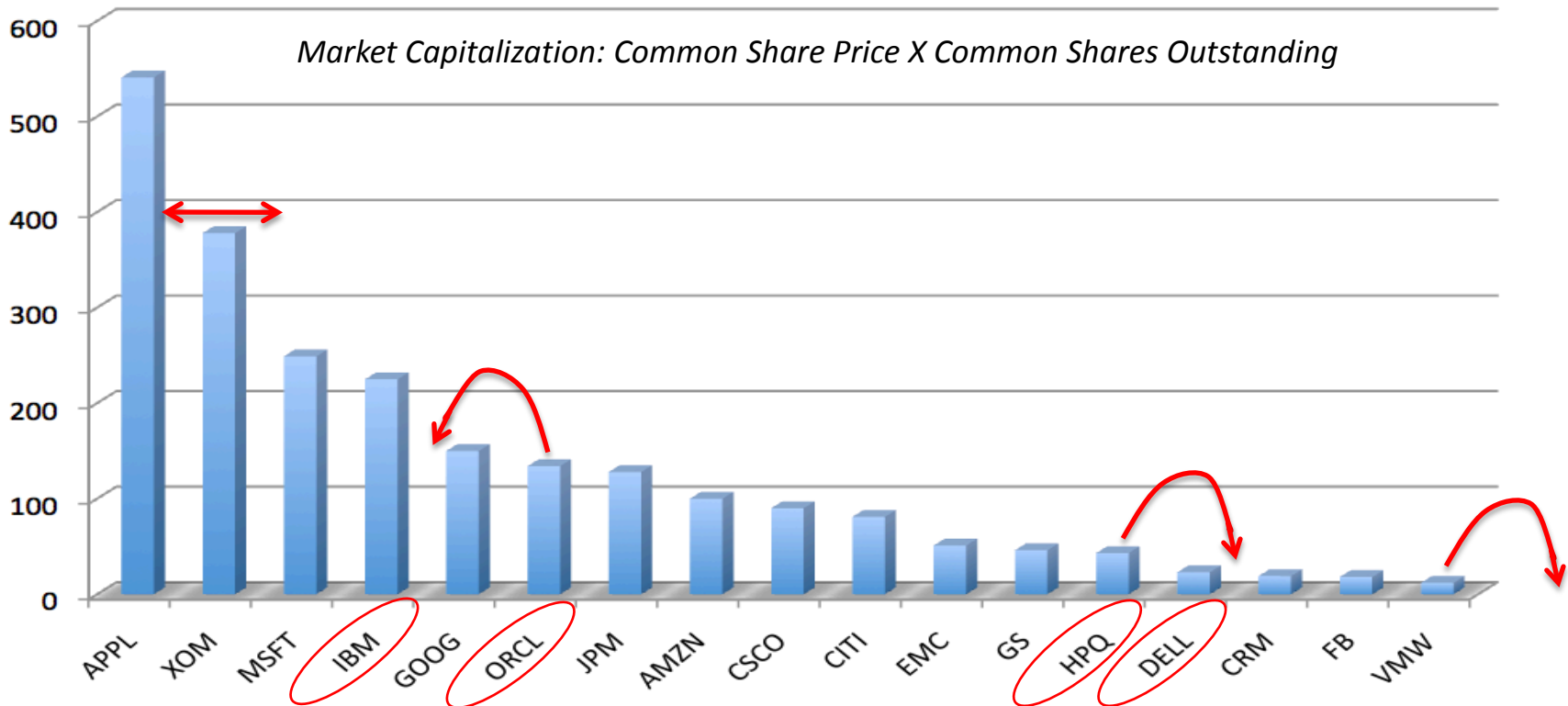
[1] *www.nasdaq.com - Financial Results – APPL,XOM,MSFT,IBM,GOOG,ORCL,JPM,AMZN, CSCO, CITI,EMC,GS,HP,DELL,CRM,FB,VMW*

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zEnterprise Management - Economic Performance – Key Players - The IBM Story [1]

Virginia M. Rometty, President and CEO
Samuel J. Palmisano, Chairman of the Board

At Least $20 Operating EPS

Key Drivers for 2015 EPS Road Map

Revenue Growth
A combination of base revenue growth, a shift to faster growing businesses and strategic acquisitions.

Share Repurchase
Leveraging our strong cash generation to return value to shareholders by reducing shares outstanding.

Operating Leverage
A shift to higher-margin businesses and enterprise productivity derived from global integration and process efficiencies.

$3.32 $1.81 $11.67 $13.44

2000 2002 2010 2011 2015

[1] *Source: IBM 2011 Annual Report - http://www.ibm.com/investor/pdf/2011_ibm_annual.pdf*

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zEnterprise Management - The IBM Health Checker for z/OS - It's Free!

IBM Health Checks for z/OS – The Check Inventory [1]
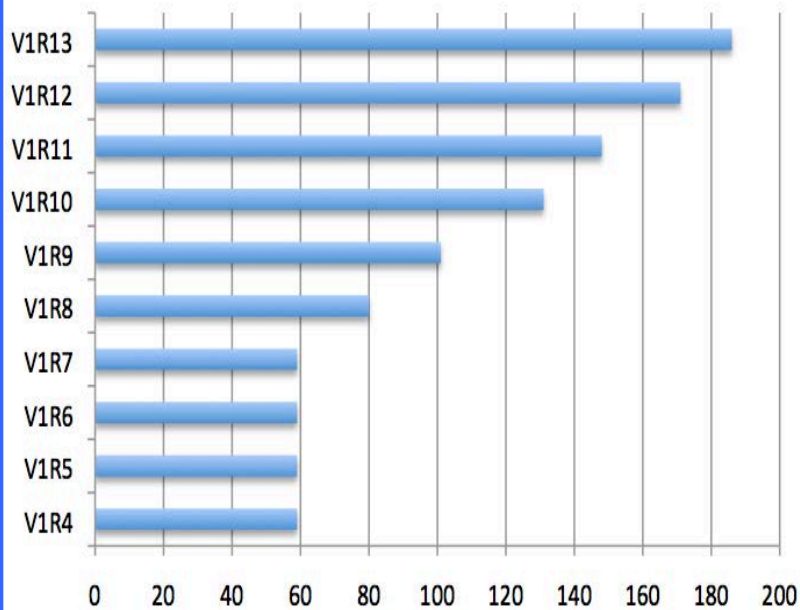
IBM Health Checks for z/OS – HZS Overview

z/OS LPAR

| HZS Framework | RACF
Access Control Facility |

RACF Checks:
- RACF_SENSITIVE_RESOURCES
- RACF_IBMUSER_REVOKED
- RACF_OPERCMDS_ACTIVE
- RACF_FACILITY_ACTIVE
- RACF_TAPEVOL_ACTIVE
- RACF_TEMPDSN_ACTIVE
- RACF_TSOAUTH_ACTIVE
- RACF_UNIXPRIV_ACTIVE
- RACF_GRS_RNL_ACTIVE
- RACF_ICHAUTAB_NONLPA
- RACF_AIM_STAGE
- RACF_UNIX_ID
- MY_INSTALLATION_HEALTH_CHECK   [2]
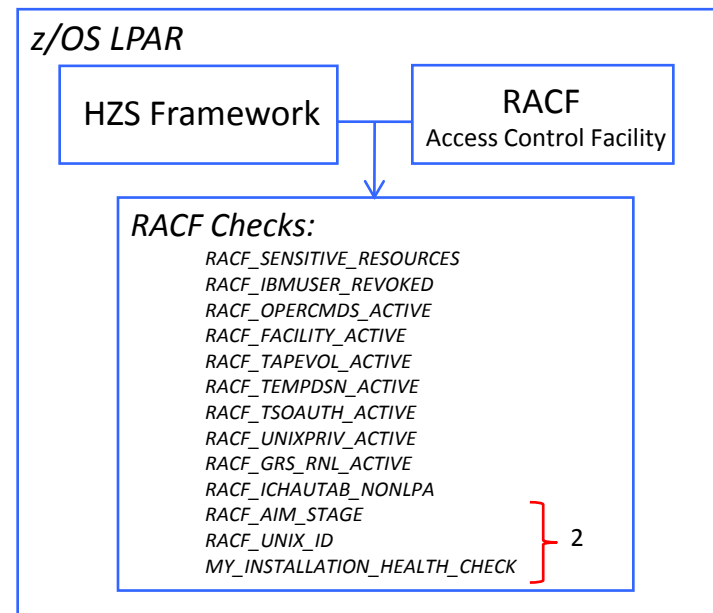
[1] *IBM Health Checker for z/OS V1R13 User's Guide - SA22-7994-12*
[2] *Mark Nelson, z/OS Security Server (RACF) Design and Development - APAR OA37164*

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zEnterprise Management – Checks Vs. Predictive Failure Analysis[1] (PFA)!

Static Analysis – Rule Comparison	Dynamic Analysis – Mathematical

z/OS Configuration · ? · Times Arrow

+ · − · History · Trends · Times Arrow
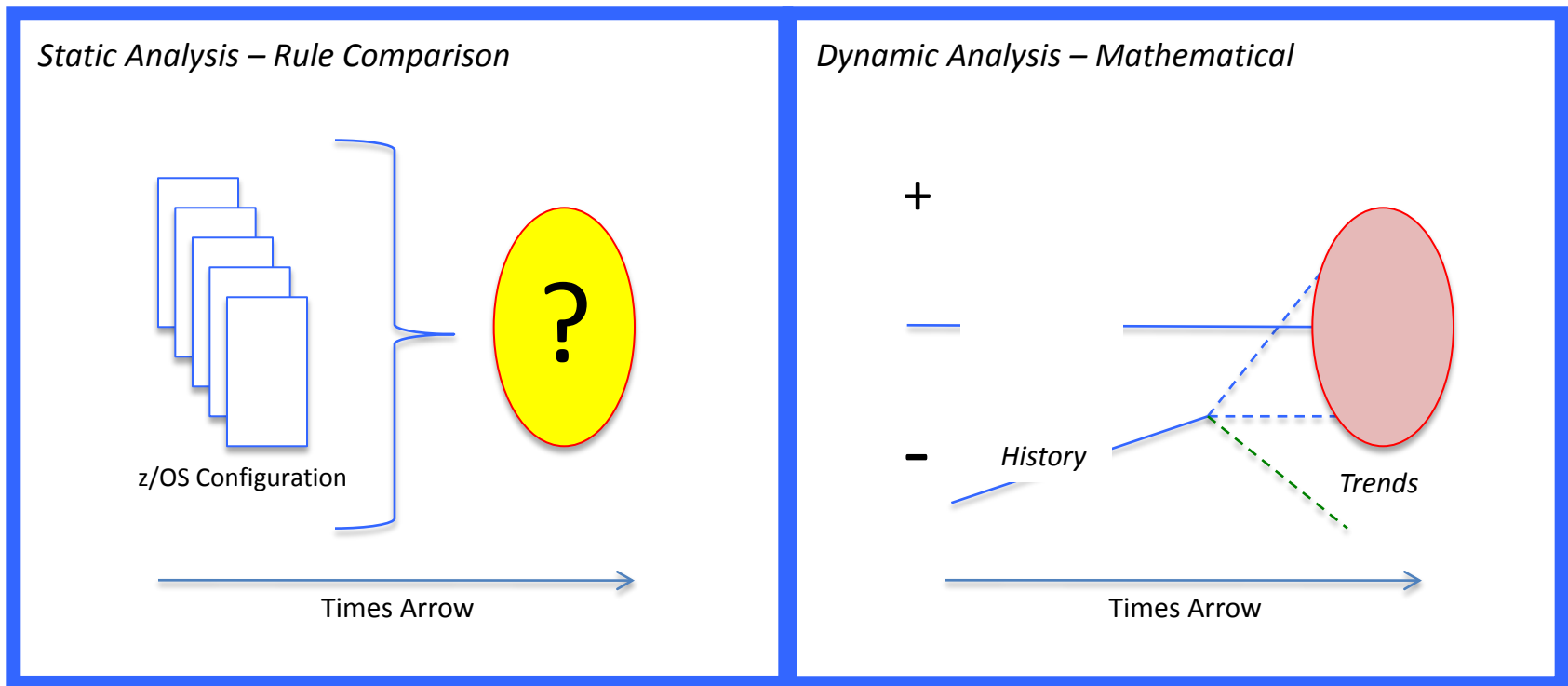
[1] *http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp?topic=/com.ibm.iea.zos/zos/1.11/Availability/V1R11_PFA/player.html*

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zEnterprise Management - Run Time Diagnostics - RTD - Not a Monitor[1]

❑ RTD provides an extended diagnostic mechanism that results in the convergence of the functional processes and source information provided by:

- ✓ Operator commands
- ✓ System log
- ✓ Message searches
- ✓ Address space and Task analyses

❑ RTD produces console and system log messages which can alert supporting personnel, and drive manual and/or automated responses when RTD detects a z/OS system troubled by "Soft Failures".

RTD is an MVS™ Subsystem – V1R12

Recommended Corrective Actions

`HZR0200I RUNTIME DIAGNOSTICS RESULTS`

RTD Analytics – An Address Space

Critical Messages

ENQ Contention

Address Spaces with high CPU

Local Lock Conditions

Task in TCB Loop

(Soft failures)
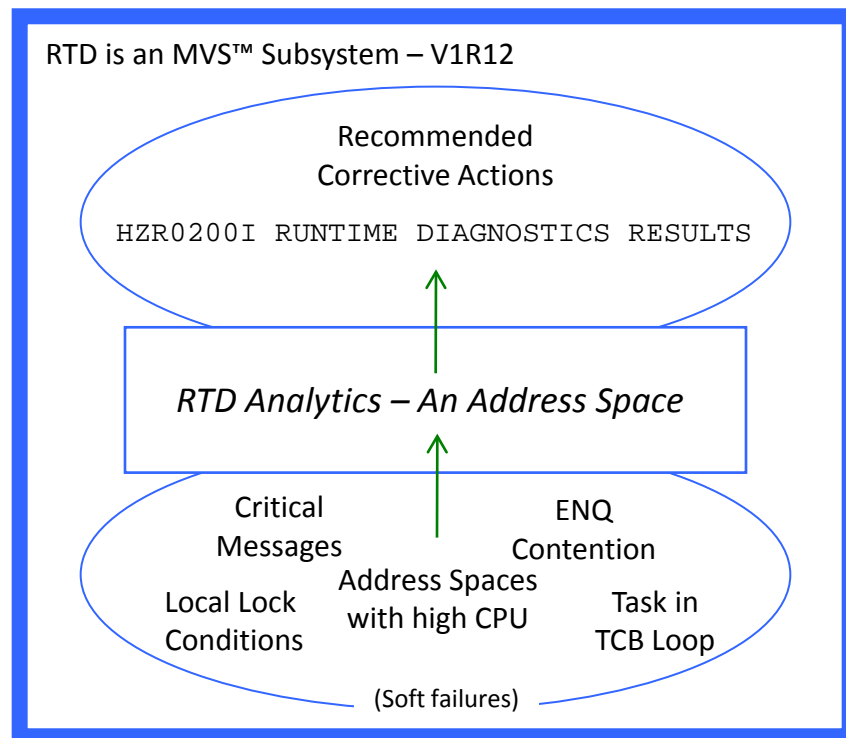
[1] *Source: z/OS V1R13.0 Problem Management V1R13 - G325-2564-08 - Part 2 Ch 4*

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zEnterprise Management - RTD[1] – Getting on Board – Predictive Failure Analysis

Auto Start — `V2R1` → Optional

`V1R12` → **RTD** *Run Time Diagnostics* → **PFA** *Predictive Failure Analysis*   **3rd Party** *Monitoring Tools and Processes*
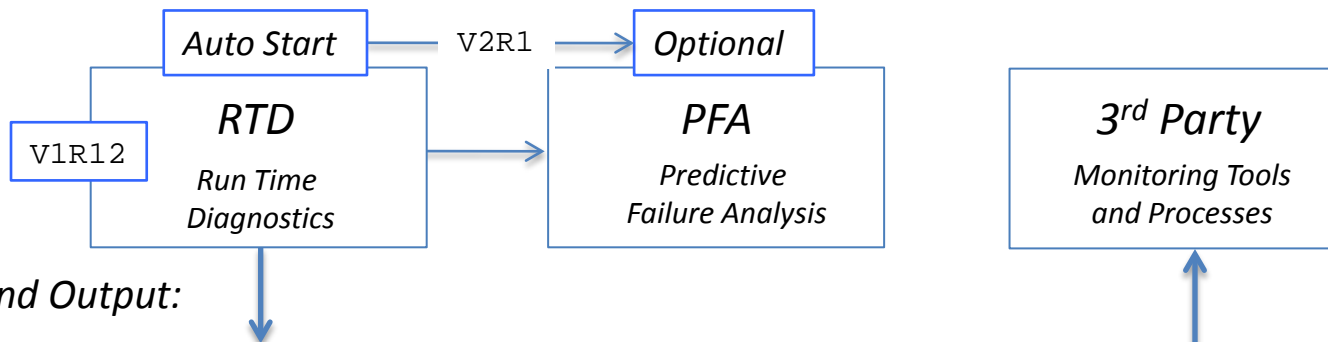
Display Command Output:

```
F HZR,ANALYZE
HZR0200I RUNTIME DIAGNOSTICS RESULT 692
SUMMARY: SUCCESS
 REQ: 002 TARGET SYSTEM: SY1        HOME: SY1        2010/12/21 - 14:32:01
 INTERVAL:  60 MINUTES
 EVENTS:
  FOUND: 02 - PRIORITIES: HIGH:02   MED:00   LOW:00
  TYPES: LATCH:02

EVENT 01: HIGH - LATCH        - SYSTEM: SY1        2010/12/21 - 14:32:01
LATCH SET NAME: SYSTEST.LATCH_TESTSET
LATCH NUMBER:3          CASID:0039   CJOBNAME:TSTLATCH
TOP WAITER - ASID:0039 - JOBNAME:TSTLATCH - TCB/WEB:004E2A70
TOP BLOCKER- ASID:0039 - JOBNAME:TSTLATCH - TCB/WEB:004FF028
  ERROR: ADDRESS SPACES MIGHT BE IN LATCH CONTENTION.
  ACTION: D GRS,AN,LATCH,DEP,CASID=0039,LAT=(SYSTEST.L*,3),DET
  ACTION: TO ANALYZE THE LATCH DEPENDENCIES. USE YOUR SOFTWARE
  ACTION: MONITORS TO INVESTIGATE BLOCKING JOBS AND ASIDS.
```

[1] *Source: z/U 04/2012 - zZS40: z/OS Problem Determination new technologies by Anuja Deedwaniya*

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zEnterprise Management - It can be complicated - zAware!
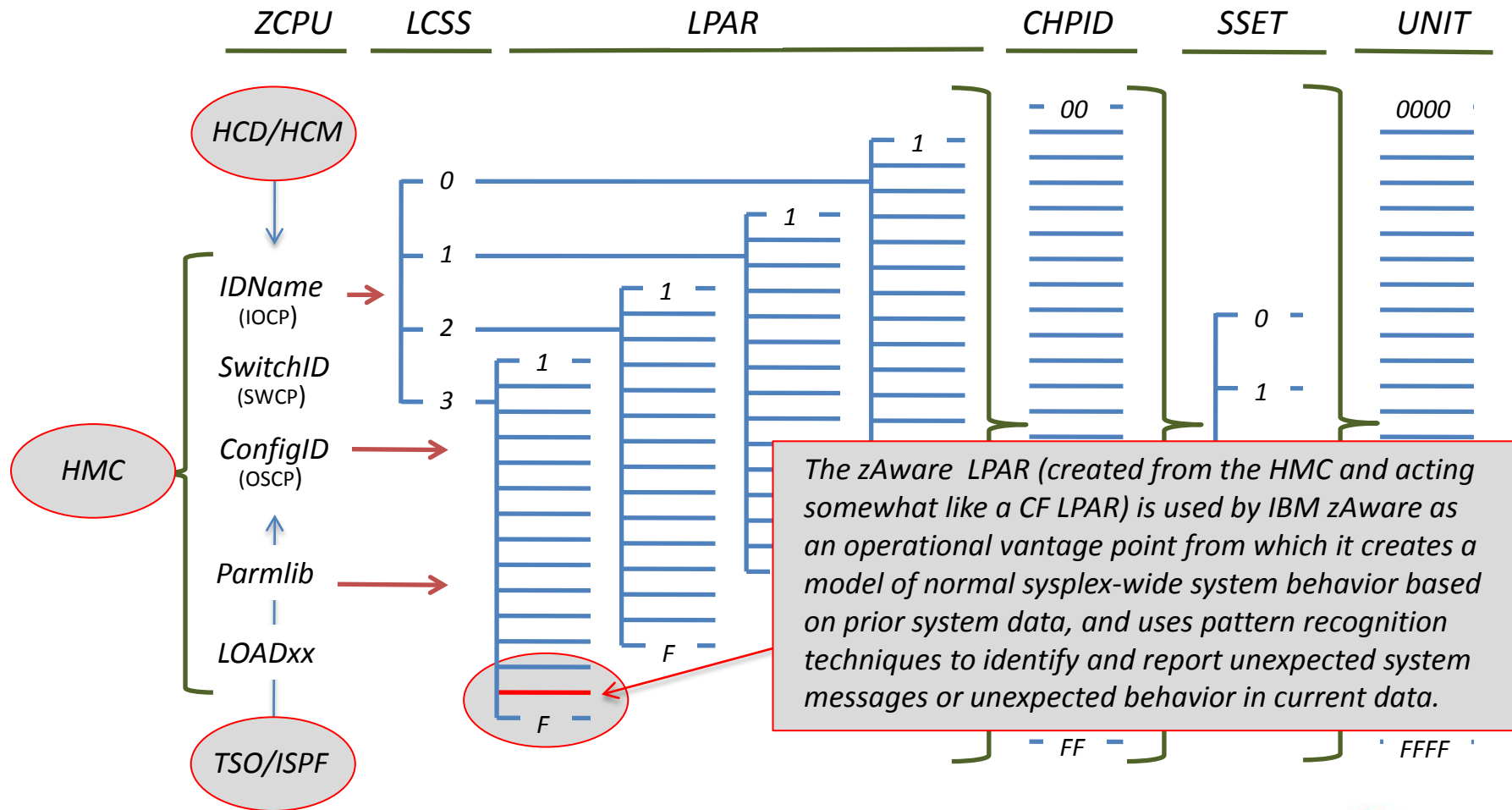
The zAware LPAR (created from the HMC and acting somewhat like a CF LPAR) is used by IBM zAware as an operational vantage point from which it creates a model of normal sysplex-wide system behavior based on prior system data, and uses pattern recognition techniques to identify and report unexpected system messages or unexpected behavior in current data.

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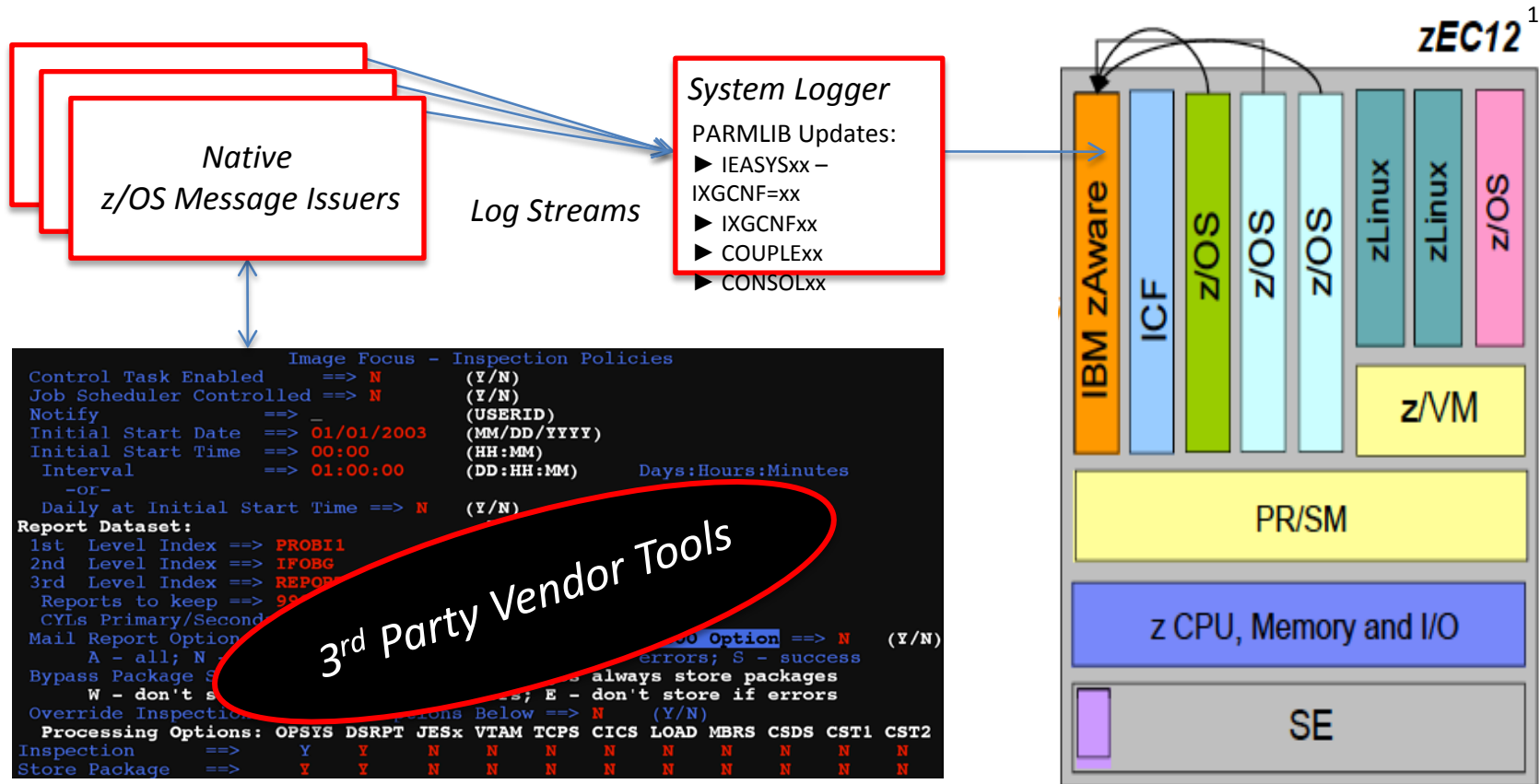*zEnterprise Management - zAware – Getting on Board – Using System Logger*

Native z/OS Message Issuers

Log Streams

System Logger

PARMLIB Updates:
► IEASYSxx – IXGCNF=xx
► IXGCNFxx
► COUPLExx
► CONSOLxx

zEC12 [1]

IBM zAware | ICF | z/OS | z/OS | z/OS | zLinux | zLinux | z/OS

z/VM

PR/SM

z CPU, Memory and I/O

SE

```
                  Image Focus - Inspection Policies
Control Task Enabled      ==> N      (Y/N)
Job Scheduler Controlled ==> N      (Y/N)
Notify                    ==> _      (USERID)
Initial Start Date   ==> 01/01/2003 (MM/DD/YYYY)
Initial Start Time   ==> 00:00      (HH:MM)
 Interval            ==> 01:00:00   (DD:HH:MM)    Days:Hours:Minutes
  -or-
 Daily at Initial Start Time ==> N  (Y/N)
Report Dataset:
1st  Level Index ==> PROBI1
2nd  Level Index ==> IFOBG
3rd  Level Index ==> REPOR
 Reports to keep ==> 9
 CYLs Primary/Second
Mail Report Option                            00 Option ==> N  (Y/N)
   A - all; N -                          errors; S - success
Bypass Package S                          s always store packages
   W - don't s              s; E - don't store if errors
Override Inspection           ons Below ==> N   (Y/N)
 Processing Options: OPSYS DSRPT JESx VTAM TCPS CICS LOAD MBRS CSDS CST1 CST2
Inspection    ==>    Y     Y    N    N    N    N    N    N    N    N    N
Store Package ==>    Y     Y    N    N    N    N    N    N    N    N    N
```

3rd Party Vendor Tools

[1] *z/U 04/2012 - zZS18: Smart Monitoring of z/OS with IBM zAware on zEC12 by Riaz Ahmad*

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zEnterprise Management - Health Checker - Getting on Board - SHARE SF Sessions

❑ 13108: Introduction to the Linux Health Checker
Monday**, February 4 - 3:00PM**
Franciscan C Ballroom Level
Speaker: **Stefan Raspl, IBM Germany**

❑ 12744: Configuring Health Checker for z/OS – Hands-on Lab
Tuesday, February 5 - 11:00 AM
Union Square 23-24
Speaker: **Gordon Daniel, NewEra Software, Inc.**

❑ 13118: Intro and Getting Started with the IBM Health Checker for z/OS
Tuesday, February 5 - 4:00PM
Franciscan C Ballroom Level
Speaker: **Marna Walle, IBM Corporation**

❑ 13084: PFA (Predictive Failure Analysis) and Runtime Diagnostics
Thursday, February 7, 2013: 11:00 AM-12:15 PM
Franciscan B, Ballroom Level (San Francisco Hilton)
Speaker: **Karla Arndt (IBM Corporation)**

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zEnterprise Management - zAware - Getting on Board - SHARE SF Sessions

- ☐ 12917: Experiences with IBM zEC12 Flash Express and IBM zAware Features
  Wednesday, February 6, 2013: 8:00 AM-9:00 AM
  Yosemite C, Ballroom Level (San Francisco Hilton)
  Speaker: **Mary Astley (IBM Corporation)**

- ☐ 13063: IBM zAware - Using Analytics to Improve System z Availability
  Wednesday, February 6, 2013: 9:30 AM-10:30 AM
  Imperial A, Ballroom Level (San Francisco Hilton)
  Speaker: **Garth Godfrey (IBM Corporation)**

- ☐ 13066: Setting up IBM zAware - Step by Step
  Wednesday, February 6, 2013: 11:00 AM-12:15 PM
  Imperial A, Ballroom Level (San Francisco Hilton)
  Speakers: **Garth Godfrey (IBM) and Thomas B. Mathias (IBM)**

- ☐ 12791: Improve Service Levels with Enhanced Data Analysis
  Thursday, February 7, 2013: 9:30 AM-10:30 AM
  Golden Gate 6, Lobby Level (San Francisco Hilton)
  Speaker: **Paul Smith (IBM Corporation)**

zAware Day

Complete your sessions evaluation online at SHARE.org/SanFranciscoEval

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zEnterprise Management - zAware Vs. HZS, PFA and RTD[1] – Is it a Smack-Down?

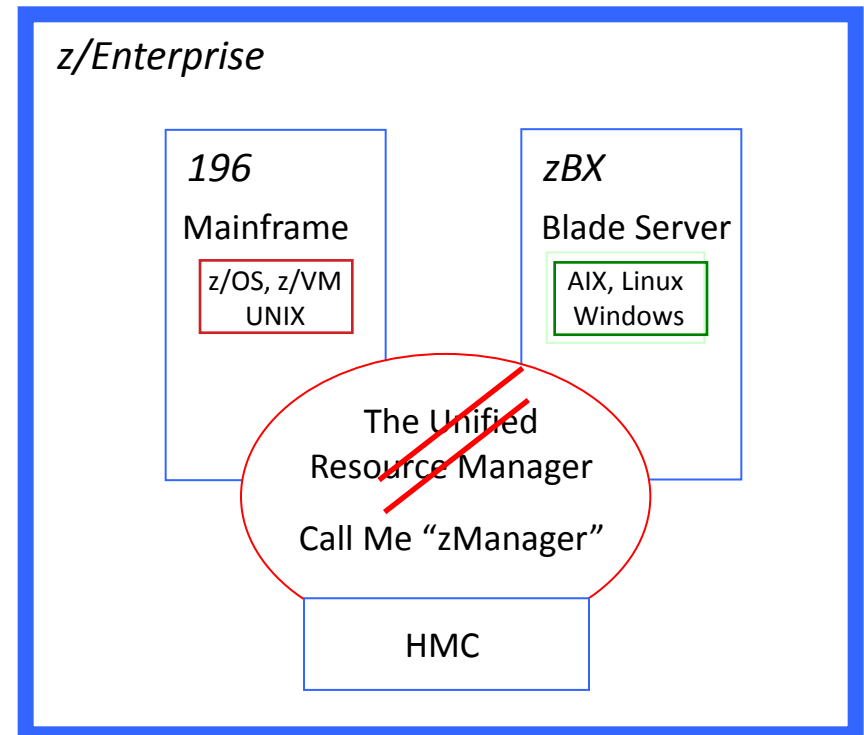| Solutions Available:		Rules based	Analytics / Statistical model	Examines message traffic	Self Learning	Method
- z/OS Health Checker	▪Checks configurations ▪Programmatic, applies to IBM and ISV tools ▪Can escalate notifications	✓				Rules based to screen for conditions
- z/OS PFA	▪Trending analysis of z/OS system resources, and performance ▪Can invoke z/OS RTD		✓		✓	Early detection
- z/OS RTD	▪Real time diagnostics of **specific** z/OS system issues	✓		✓		After an incident
IBM zAware	▪Pattern based message analysis ▪Self learning ▪Provides aid in diagnosing complex z/OS problems, including cross sysplex, problems that may or may not bring the system down		✓	✓	✓	Diagnosis Useful before or after an incident

[1] *z/U 04/2012 - zZS18: Smart Monitoring of z/OS with IBM zAware on zEC12 by Riaz Ahmad*

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zEnterprise Management - The Unified Resource Manager (URM)[1] - "zManager"

❑ The integration of a hardware platform that brings mainframe and distributed technologies together will, over time, replace individual islands of computing. These integrated resources are called Ensembles.

❑ Each Ensemble will be managed as a single, logical "Virtualized" system by the URM, through the HMC. The HMC will create and manage ensemble resources.

❑ Some of the benefits of the ensemble:

  ✓ Reduction of complexity
  ✓ Improved security
  ✓ Applications closer to needed data.

z/Enterprise

196 Mainframe

z/OS, z/VM
UNIX

zBX Blade Server

AIX, Linux
Windows

The Unified Resource Manager

Call Me "zManager"

HMC

[1] *Source: zEnterprise Unified Resource Manager: Building an Ensemble, SG24-7921-00*
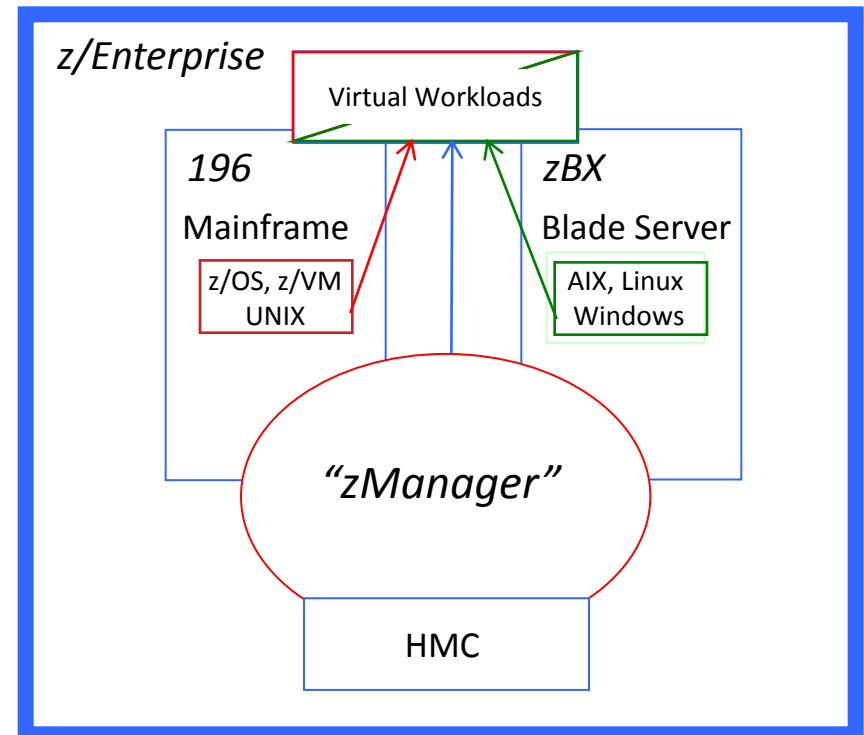
A Better Business Strategy

zEnterprise Management - "zManager" - Creating/Managing Virtual Workloads [1]

❑ The zEnterprise Ensemble is a highly virtualized heterogeneous system that can be managed as a single logical entity and where heterogeneous workloads can be deployed. Some characteristics of an ensemble are:

✓ A CPC, with/without zBX, is called a node.
✓ An ensemble can contain one to eight nodes.
✓ A node can be in only one ensemble.
✓ Dedicated net for management and data.

❑ An ensemble is managed as a single system by the Hardware Management Console (HMC). The HMC is used to create/manage ensemble resources.

z/Enterprise

Virtual Workloads

196
Mainframe

z/OS, z/VM
UNIX

zBX
Blade Server

AIX, Linux
Windows

"zManager"

HMC

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[1] *Source: zEnterprise Unified Resource Manager: Building an Ensemble, SG24-7921-00*

A Better Business Strategy

zEnterprise Management - HMC - Getting on Board - SHARE SF Sessions

- ❑ 12808: IBM System z Hardware Management Console (HMC) 2.12.0
  Monday, February 4, 2013: 4:30 PM-5:30 PM
  Franciscan B, Ballroom Level (San Francisco Hilton)
  Speaker: **Brian Valentine (IBM Corporation)**

  12255: The HMC is a Fantastic Feature of the zEnterprise
   but What Mistakes Are You Making Securing It?
  Tuesday, February 5 - 12:15 PM
  Plaza B - Speakers: **Schrager and Robichaux**

  12807: HMC Security Basics and Best Practices
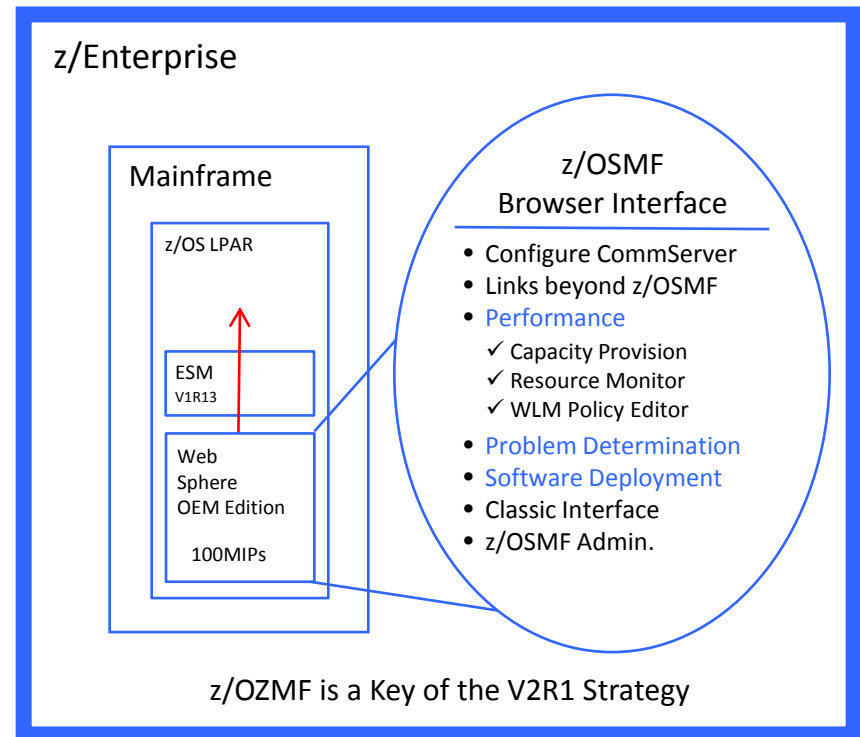 **Tuesday, February 5 - 3:00 PM**
  Franciscan D
  Speaker: **Brian Valentine (IBM Corporation)**

Complete your sessions evaluation online at SHARE.org/SanFranciscoEval

A Better Business Strategy

zEnterprise Management - z/OSMF - The z/OS Easy Button[1]

❑ The many z/OS interfaces (including HCM) that are available are foreign to users new to the platform. In most cases, manual tasks require extensive documentation and require years of z/OS experience to be productive.

❑ z/OSMF is a WEB 2.0 based application on z/OS with direct access to z/OS data and information, and a secure browser interface from the workstation.

❑ z/OSMF contains the GUIs and the application code. Everything is installed on the z/OS server. There are no client-side install requirements.
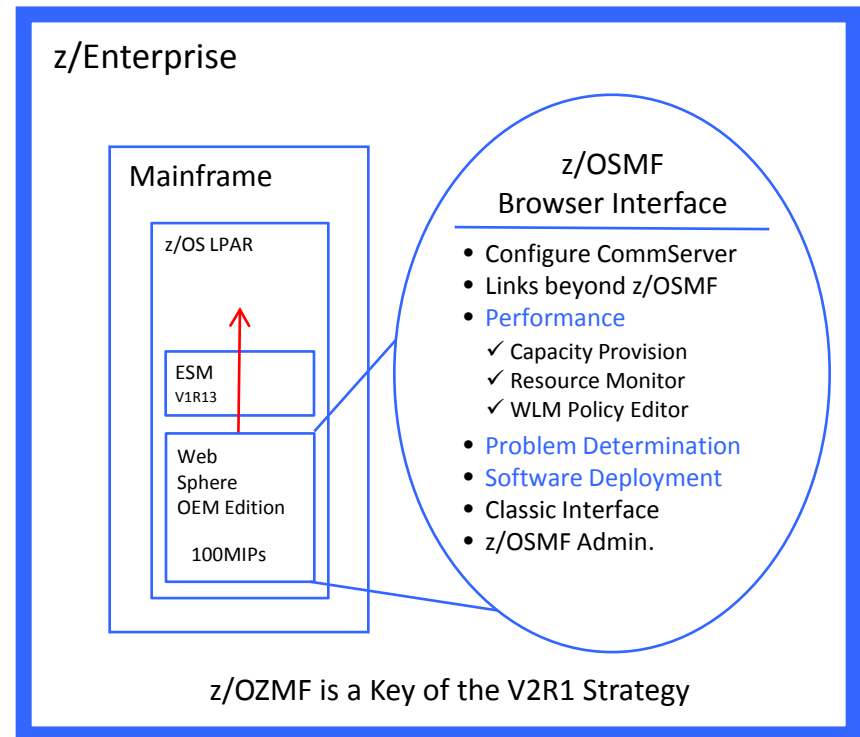
z/Enterprise

Mainframe

z/OS LPAR

ESM
V1R13

Web
Sphere
OEM Edition

100MIPs

**z/OSMF
Browser Interface**

- Configure CommServer
- Links beyond z/OSMF
- Performance
  - ✓ Capacity Provision
  - ✓ Resource Monitor
  - ✓ WLM Policy Editor
- Problem Determination
- Software Deployment
- Classic Interface
- z/OSMF Admin.

z/OZMF is a Key of the V2R1 Strategy

[1] *Source: z/OS Management Facility, SG24-7851-00*

A Better Business Strategy

zEnterprise Management - z/OSMF - The z/OS Easy Button[1]

❑ z/OSMF provides support for a modern, Web browser-based z/OS management console.

❑ z/OSMF helps system programmers to more easily manage a mainframe system by simplifying day to day operations and administration of a z/OS system.

❑ z/OSMF provides the intelligence needed to address the requirements of a diversified workforce, maximizing their productivity.

  ✓ Automation reduces the learning curve and improves productivity.

  ✓ Embedded assistance guides activities and simplifies operations.

z/Enterprise

Mainframe

z/OS LPAR

ESM
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100MIPs

z/OSMF Browser Interface

- Configure CommServer
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- Performance
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  - ✓ WLM Policy Editor
- Problem Determination
- Software Deployment
- Classic Interface
- z/OSMF Admin.

z/OZMF is a Key of the V2R1 Strategy

[1] *Source: SHARE Seattle, Session 2249 – Greg Daynes & Anuja Deedwaniya*
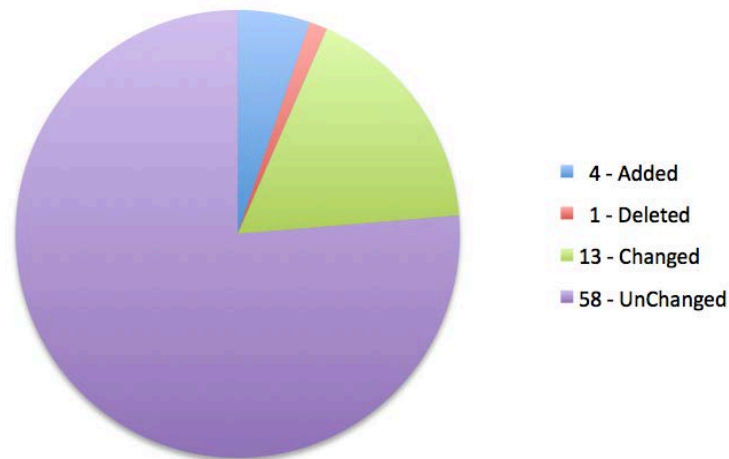
A Better Business Strategy

zEnterprise Management - The AUTORxx – New z/OS V1R13[1]

❑ In V1R13 a new parmlib member was added to define auto-reply policies. It can contain comments that provide message text for each WTOR and related rules.

❑ Use AUTORxx to activate auto-reply processing. The default member AUTOR00 contains the policies suggested by IBM. You can modify AUTOR00 (Not Recommended), or define another to customize your policies.

```
notifymsgs(hc)
/********************************************************/
/* $HASP811 REPLY Y CONTINUE N TO TERMINATE PROCESSING  */
Msgid(?HASP811)Delay(30S) Reply(Y)
/********************************************************/
/* ANTU2220D FLASHCOPY. I TO INITIATE, C TO CANCEL      */
Msgid(ANTU2220D) Delay(60S) Reply(C)
```

76 MVS ParmLib Members in V1R13

- 4 - Added
- 1 - Deleted
- 13 - Changed
- 58 - UnChanged

z/OS = BCP, UNIX System Services & XML
BCP = Base Control Program (sometimes called MVS)

[1] *Source: MVS Initialization and Tuning Reference - SA22-7592-23 – See AUTORxx*
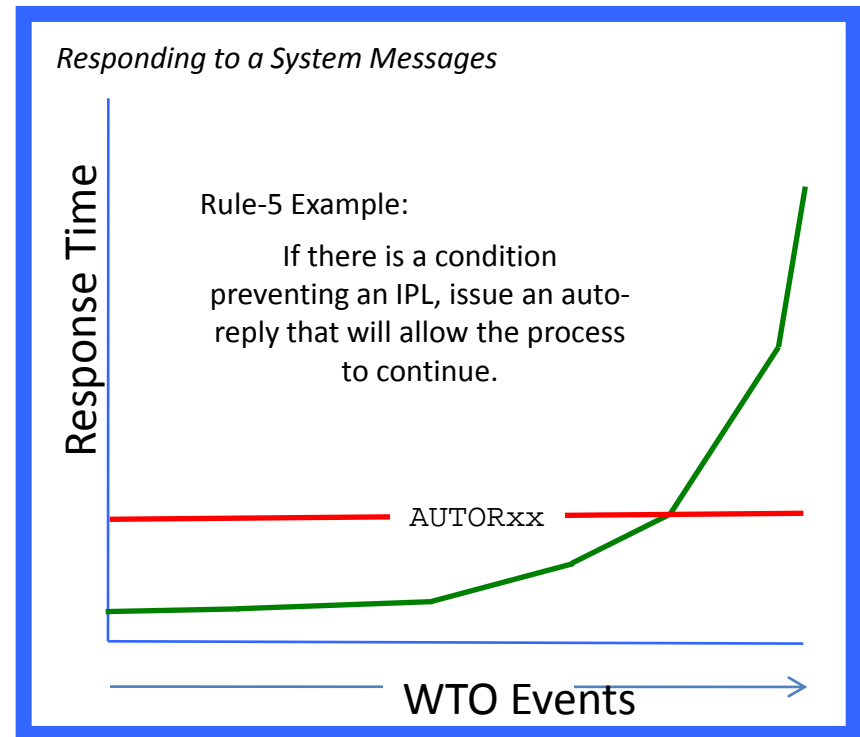
A Better Business Strategy

zEnterprise Management - The AUTORxx – New z/OS V1R13[1]

❑ `[NOTIFYMSGS({HC|CONSOLE})]`

   ✓ HC - indicates that the auto-reply notification messages only appear in the hardcopy log.

   ✓ CONSOLE - Indicates that the auto-reply notification messages are displayed on consoles receiving operator or system programmer information.

❑ Auto-Reply Processing Possibilities:

   ✓ Rule-1: Problem
   ✓ Rule-2: Recovery Issues
   ✓ Rule-3: Dynamic Change
   ✓ Rule-4: Confirmation
   ✓ Rule-5: Continue IPL
   ✓ Rule-6: Recommended Value

Responding to a System Messages

Rule-5 Example:

If there is a condition preventing an IPL, issue an auto-reply that will allow the process to continue.

Response Time

AUTORxx

WTO Events

[1] *Source: MVS Initialization and Tuning Reference - SA22-7592-23 – See AUTORxx*

A Better Business Strategy

zEnterprise Management - Is your Mainframe Safe? Fight back! [1]

❑ Identifying that scanning missions are underway can alert the security analyst as to what services or types of computers are being targeted for possible attack.

❑ Knowing what services are targeted allows an administrator to take preventative IPSec measures, e.g. installing patches, fire walling services from the outside, or removing services on machines which do not need to be running on them.

❑ Port Scan detection counts distinct destination IPs attempting to connect to a given Port within a certain time window.
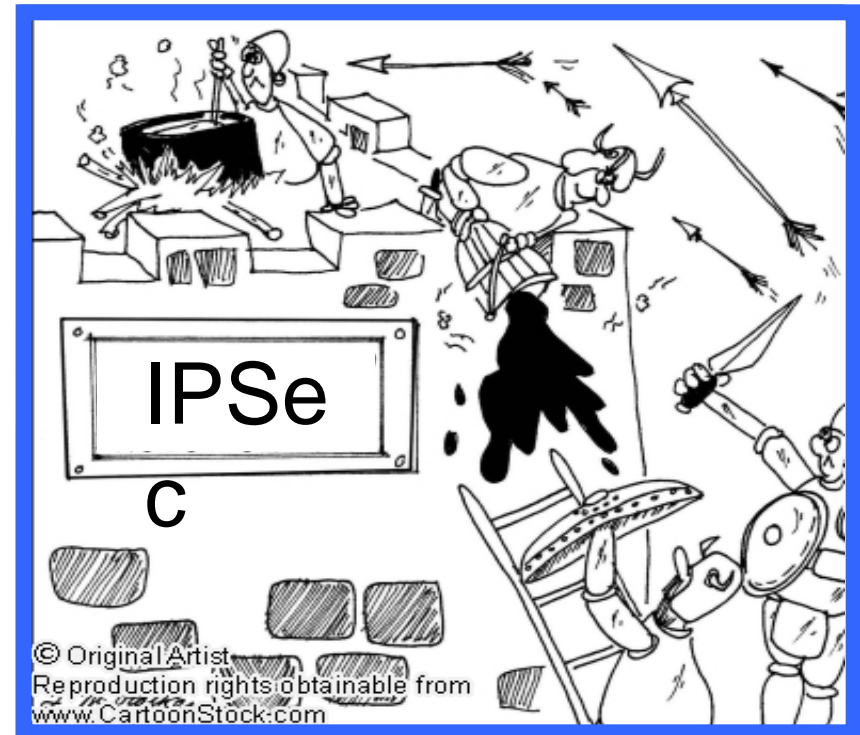
[1] *Source: Scan Detection By György J. Simon , Hui Xiong University of Minnesota, Rutgers University*
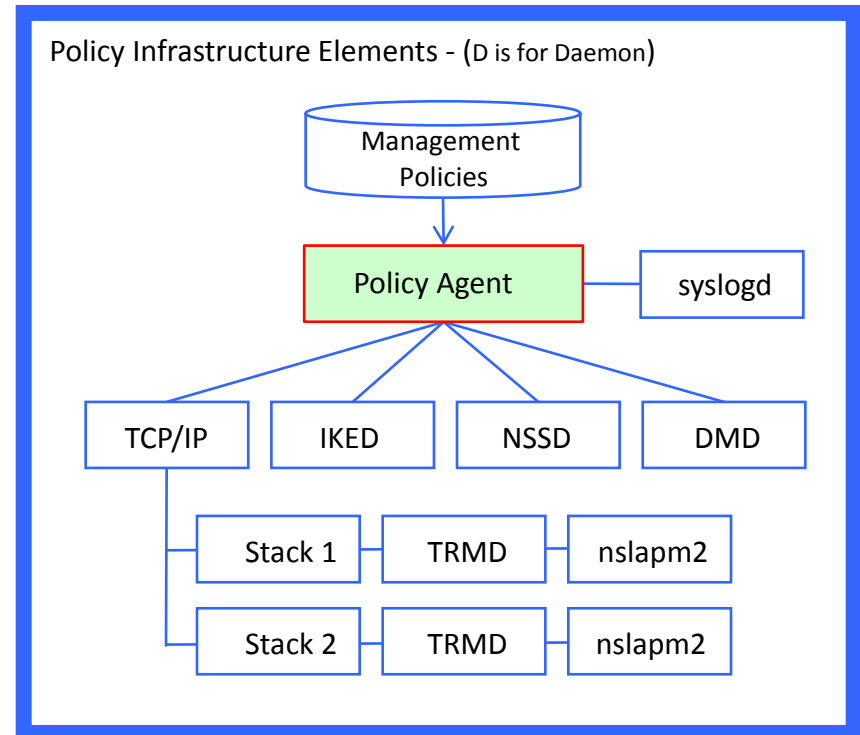
A Better Business Strategy

zEnterprise Management - PAGENT – The Policy Infrastructure[1]

❑ The Policy Agent, a z/OS address space, provides the policy infrastructure needed by the z/OS Communications Server. PAGENT can act in the following roles:

   ✓ Policy Server executes on a single system and installs policies of others
   ✓ Policy Client, retrieves remote policies from the Policy Server.

❑ Infrastructure Components:

   ✓ TRMD: Traffic Regulation Management
   ✓ IKED: Internet Key Exchange
   ✓ NSSD: Network Security Services
   ✓ DMD: Defense Manager
   ✓ nslapm2: a subagent used for reporting

Policy Infrastructure Elements - (D is for Daemon)

[1] *Source: Source: IBM z/OS V1R13 CS TCP/IP Implementation – 3/2012 Volume 4 - Security and Policy-Based Networking*

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A Better Business Strategy

zEnterprise Management – You can, You will make the difference![1]
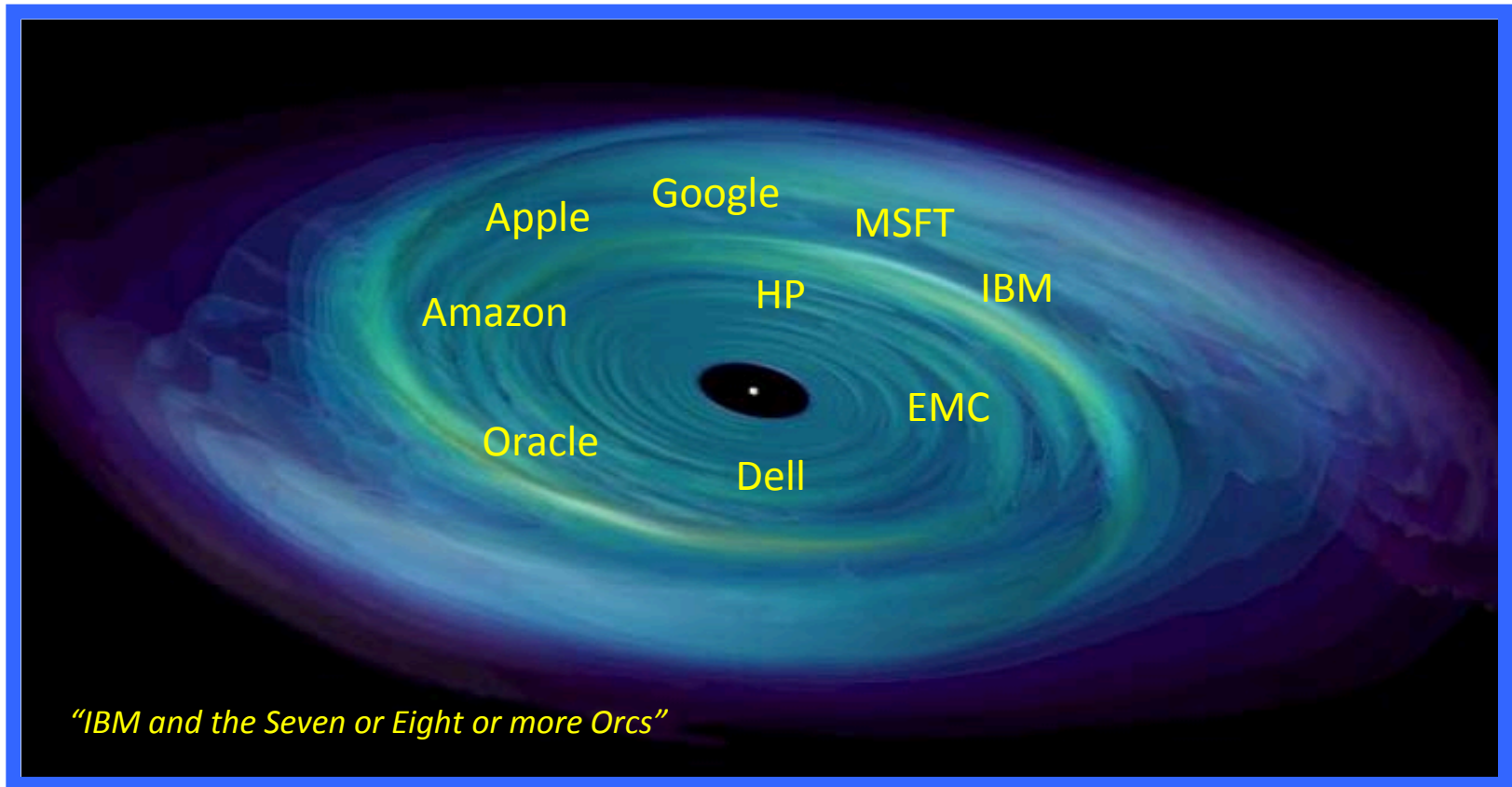
[1] *"There and Back Again" by Bilbo Baggins a Distinguished Hobbit*

That's it folks, all done!

zEnterprise Management - Session Evaluation - Session Number - 12249

The zEnterprise: a Better Business Strategy

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