

# System z Update July 28<sup>th</sup> 2009 Analyst Call



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# Agenda

## State of the Business

- Red Hat Corporate Overview
- Revenue growth
- Updated market share (through CY2008)
- Updated Red Hat percentage of new workload sales

## Current & Future Strategy

## Customer Stories

# State of the Business





## Headquarters: Raleigh, NC

- Founded 1993 - IPO 1999
- Operates in 27 countries
- 65 offices
- Engineering in:
  - Raleigh, NC
  - Westford (Boston), MA
  - Mountain View, CA
  - Minneapolis, MN
  - Toronto, Canada
  - Raanana, Israel
  - Beijing, China
  - Pune, India
  - Brno, Czech Republic

Year ended February 2009

- Revenue: \$653 million
- Employees: ~3,000





# Red Hat Product Portfolio

## INFRASTRUCTURE

Red Hat Enterprise Linux  
- Server  
- Client  
Red Hat Enterprise Linux Advanced Platform  
Red Hat Enterprise MRG  
Red Hat Enterprise Virtualization

## MIDDLEWARE

JBoss Enterprise Application Platform  
- Web Server  
JBoss Enterprise Communications Platform  
JBoss Enterprise SOA Platform  
JBoss Enterprise Data Services  
JBoss Enterprise Portal Platform  
JBoss Enterprise BRMS  
JBoss Enterprise Frameworks  
JBoss Hibernate, JBoss Seam, JBoss jBPM,  
JBoss Rules  
JBoss Developer Studio

## MANAGEMENT

Red Hat Satellite  
JBoss Operations Network  
Red Hat Directory Server  
Red Hat Certificate System  
Red Hat Enterprise Virtualization Manager for Servers/Desktops

## SERVICES

Red Hat Consulting  
Red Hat Support Services  
Red Hat Training

# Why Open Source?

## **Strategic elimination of vendor lock-in**

OSS naturally creates multiple vendors

## **Improved security**

Proven security through better technology & threat response record

## **Auditability**

Customers and industry can verify standards adherence, quality & flexibility

## **Cost reduction in multiple dimensions**

Hardware; system administration; compute transactions/watt; license management

## **Solution Ecosystem**

OEM and ISV suppliers across the IT industry are focusing on delivering OSS solutions

## **Technology**

All leading software technology development today is being done under the OSS model



# Proprietary

# Open Source

Oracle/IBM Portal, Oracle BPM, ILOG JRules

BEA WebLogic, IBM Websphere

BEA AquaLogic, IBM ESB, IBM EII

IBM Websphere MQ, Tibco EMS

eDirectory , SunOS

Data Synapse, Platform

EMC PowerPath

Veritas Storage Suite

VMware Virtualization

AIX, HP-UX, Solaris

Veritas Cluster Suite

JBoss Portal Platform, JBoss jBPM,  
Rules Framework

JBoss Enterprise Application Platform

JBoss Enterprise SOA Platform, Enterprise Data Service  
Platform, JBoss Operations Network (management)

Red Hat Enterprise MRG Messaging

Red Hat Directory Service, Certificate System

Red Hat Enterprise MRG Grid

Multi-path I/O

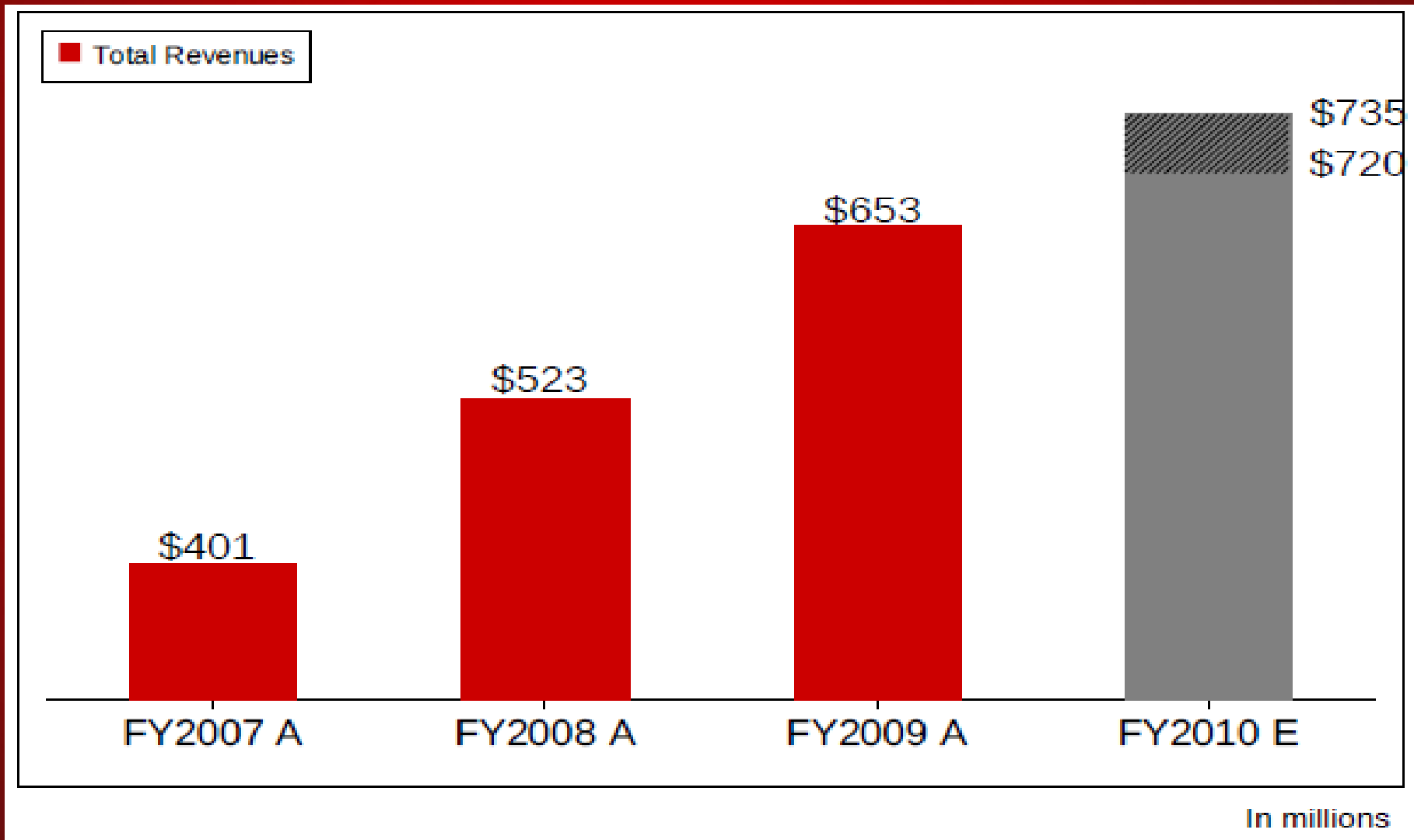
LVM, CLVM, Global File System

Red Hat Enterprise Linux

Red Hat Enterprise Linux, Red Hat Enterprise MRG  
Red Hat Satellite (management)

Red Hat Cluster Suite

# Red Hat Annual Revenue





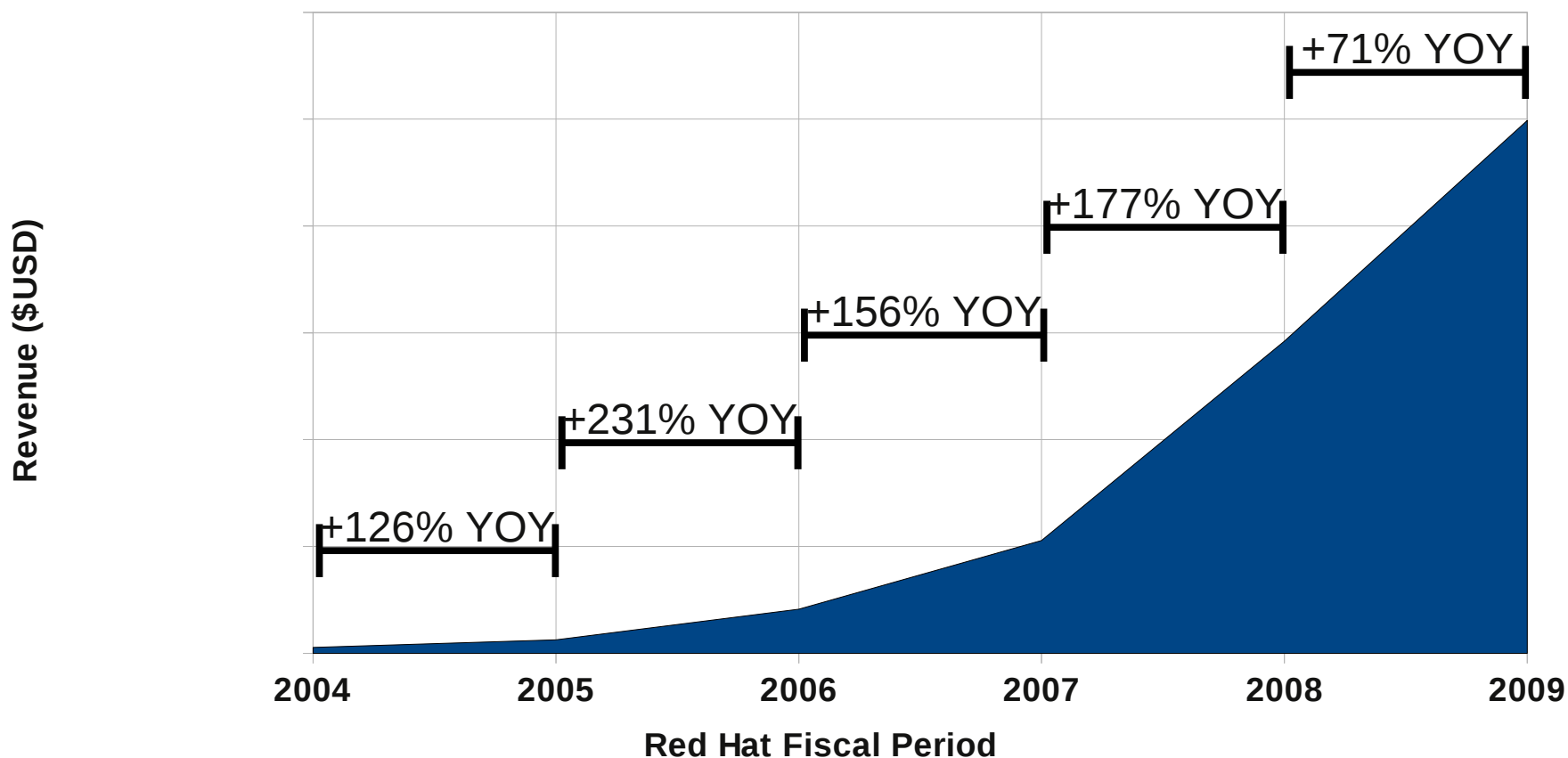
# Red Hat Joins the S&P 500

- On July 24th Red Hat (NYSE: RHT) became one of the S&P 500 companies
- The S&P 500 is widely regarded as one of the best measurements of the US equities market. It includes 500 leading companies of the U.S. economy including J. P. Morgan, GE, IBM, and Google. Investors use the index to build a diversified portfolio of stocks that best mirrors the US markets.
- The inclusion in the index is based on Red Hat's strong viability and position of relevance in the marketplace.



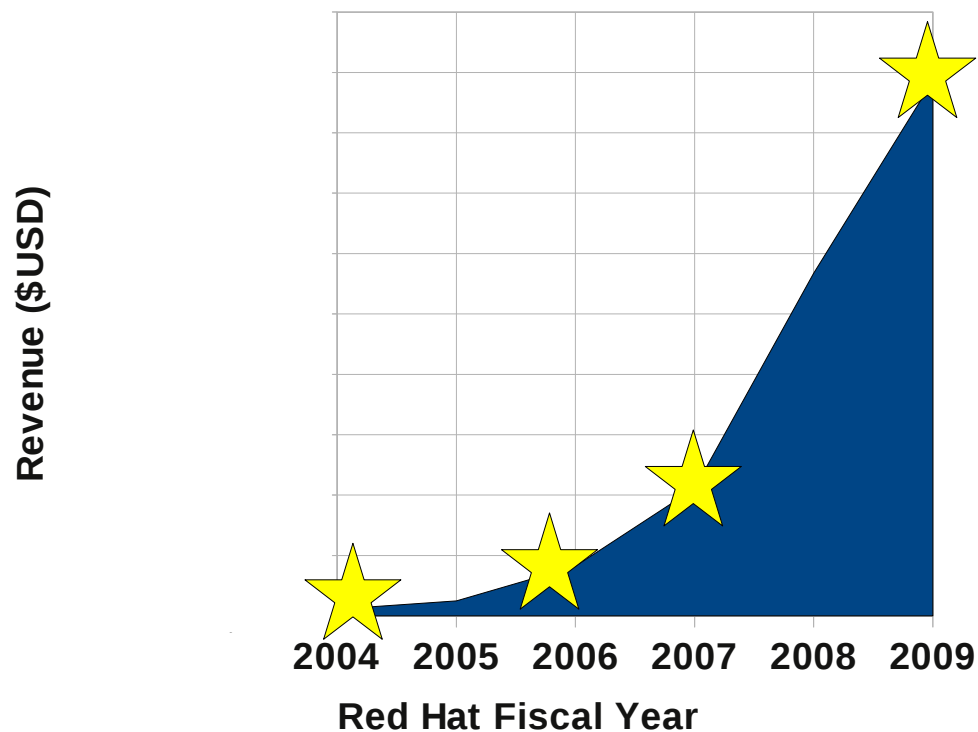
# Red Hat System z Revenue

System z Platform Revenue  
Red Hat Enterprise Linux Subscriptions



# Historical Events

System z Platform Revenue  
Red Hat Enterprise Linux Product



2004: First RHEL for System z sale

Late 2005: Dedicated System z Sales, Engineering and Support teams formed

June 2007: IBM exclusively selects Red Hat to re-launch global Linux on System z efforts [1]

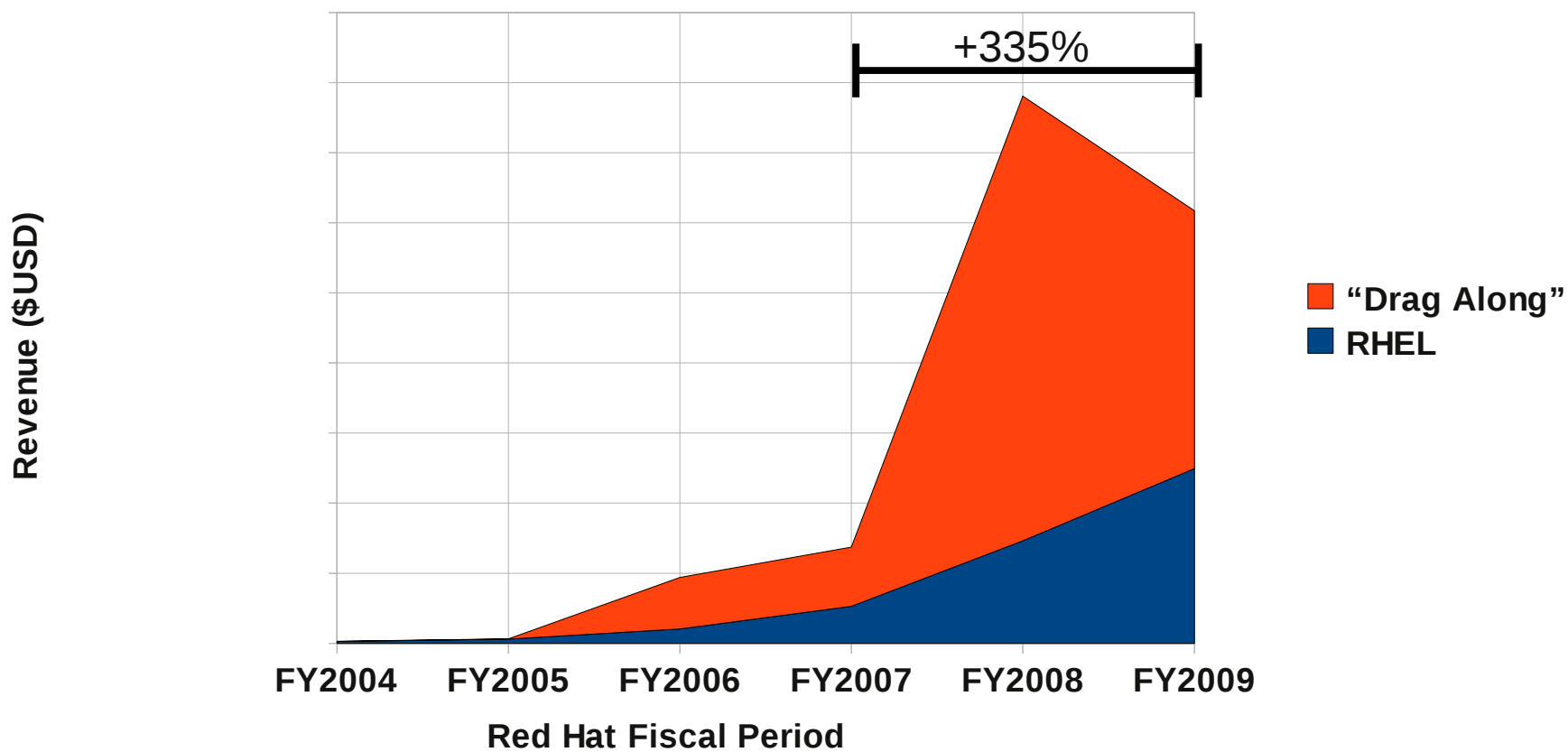
IBM pays for Red Hats Common Criteria evaluation, in which RHEL5 became the highest government rated Linux operating system (exceeding both SuSE and z/OS)

April 2009: Co-Funded 55 day Global System z executive tour through APAC and EMEA (55 days, 18 cities, 10 countries)

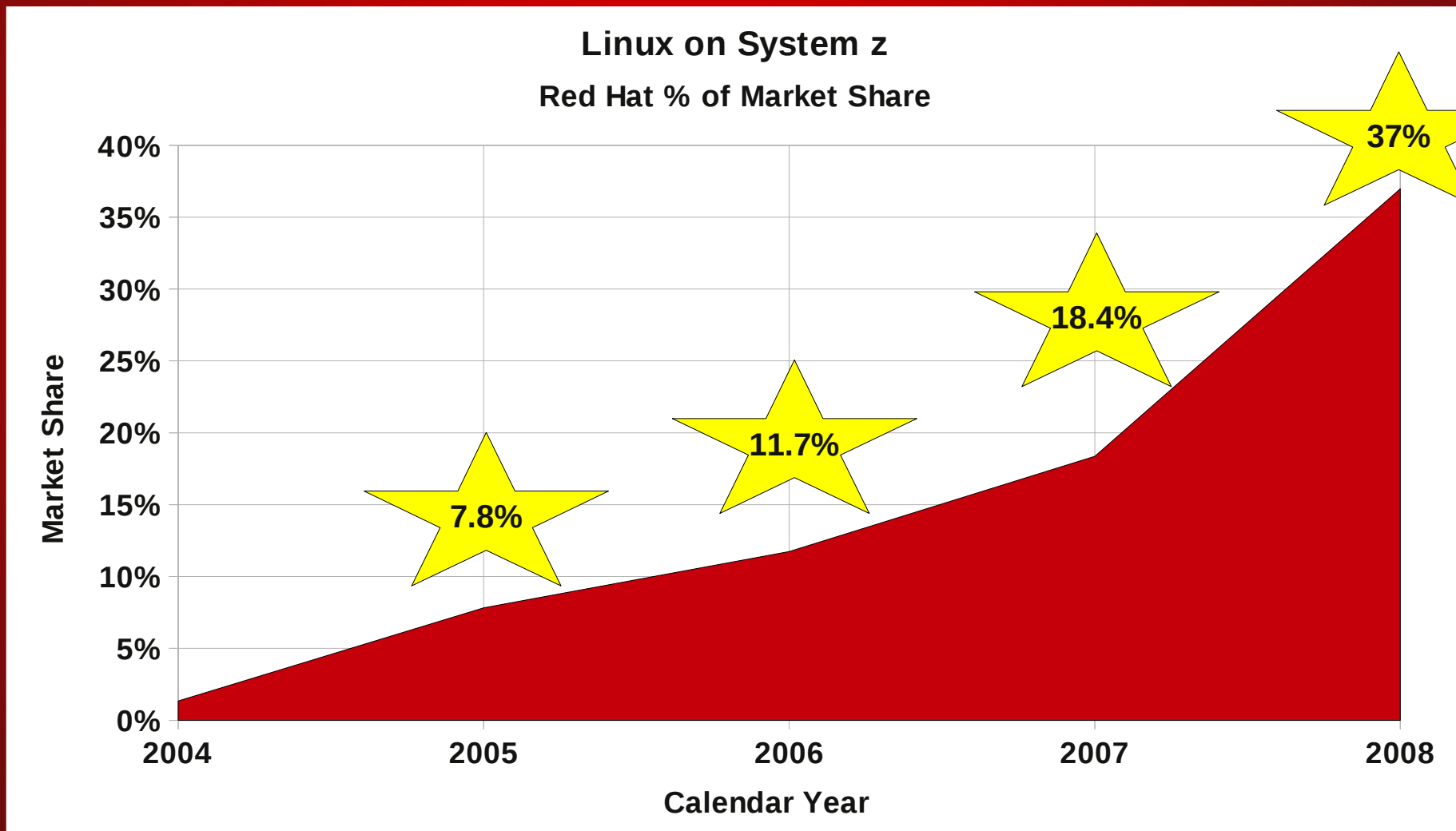
[1] <http://www-03.ibm.com/press/us/en/pressrelease/21513.wss>

# Red Hat System z Revenue

System z Platform Revenue  
Red Hat Enterprise Linux + Layered Products

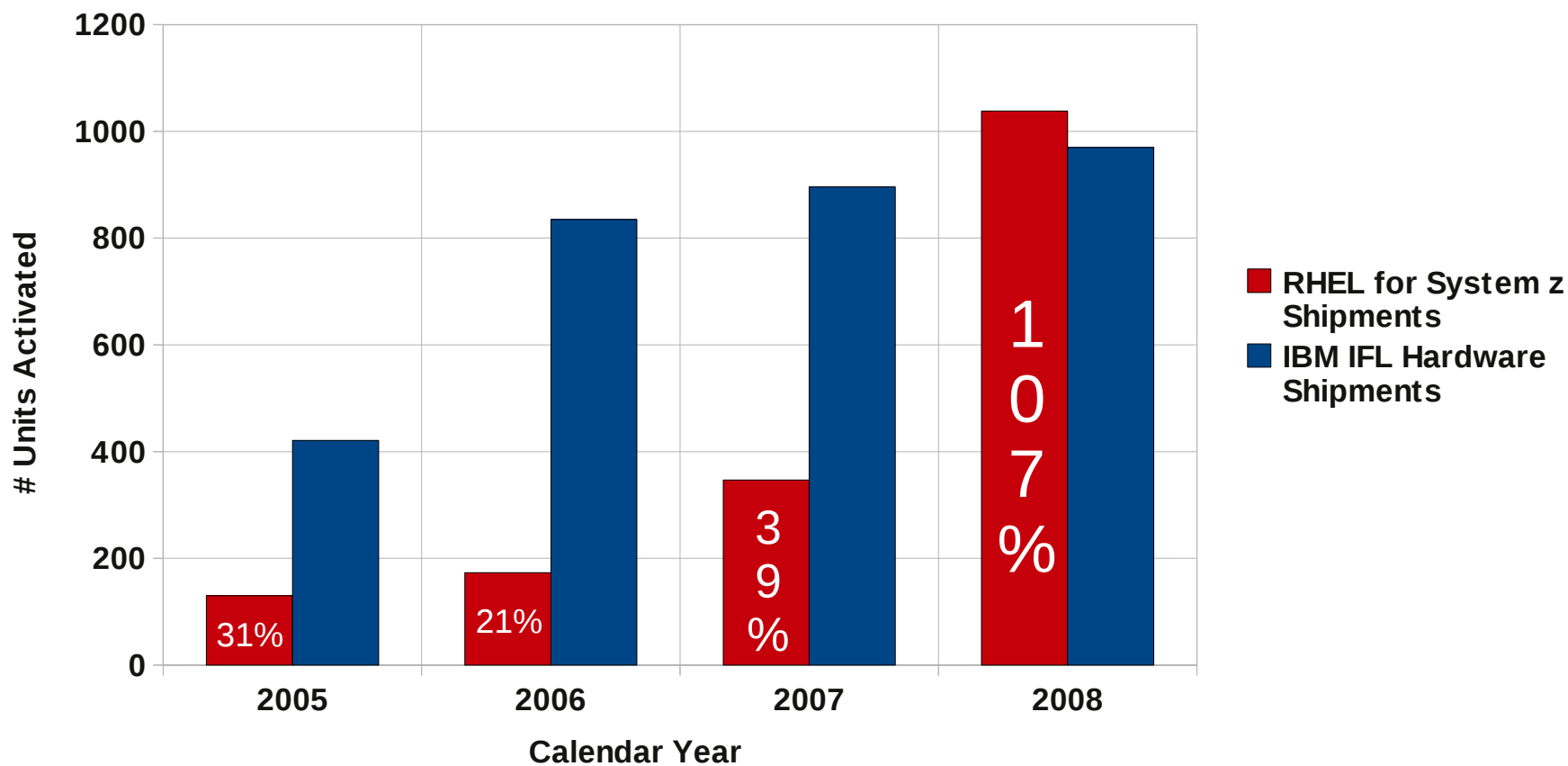


# Red Hat System z Market Share



# Percentage of New Workload

Global System z IFL Sales  
Calendar Years 2005 - 2008



# Future Strategy



# Red Hat / IBM Relationship

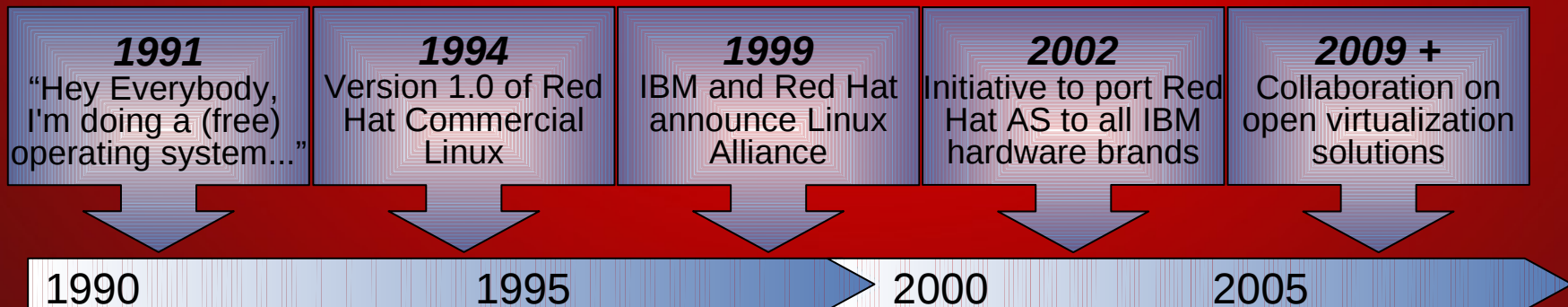
## Red Hat and IBM



10 Years of Collaboration

- **10 years of joint development**
  - Platform support
  - Innovative feature development
  - Usability
- **Ongoing collaborative projects**
  - Open virtualization
  - Open Client for Linux
  - Linux Test Project, Real Time, System Tap
- **IBM runs Red Hat...  
...Red Hat runs on IBM**

***Two industry leaders working as one to maximize the Linux advantage***





# Emergence of Competitive Advantage

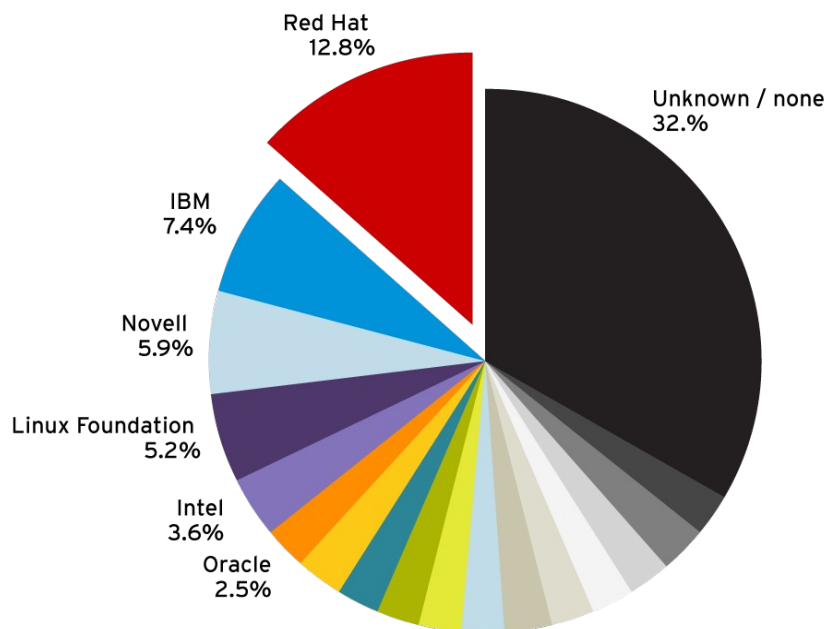


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graph TD; A[Emergence of Competitive Advantage] --> B[Internal Sources of Change]; B --> C[Some firms have greater creative and innovative capability];
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**Internal Sources  
of Change**

**Some firms have greater  
creative and innovative  
capability**

# Emergence of Competitive Advantage



Source: <http://lwn.net/Articles/247582/>

## Internal Sources of Change

Some firms have greater creative and innovative capability

- LVM2, md - maintained
- KVM virtualization- developed and maintained
- Kernel 2.6 Audit subsystem - written and maintained
- ipsec - maintained
- crypto - maintained

- ext3 - Written and maintained
- vfs- Written and maintained
- Kernel 2.6 Virtual Memory manager - Written and maintained

# Emergence of Competitive Advantage

## External Sources of Change

- Changing Customer Demand
- Changing Prices
- Technological Change

## Internal Sources of Change

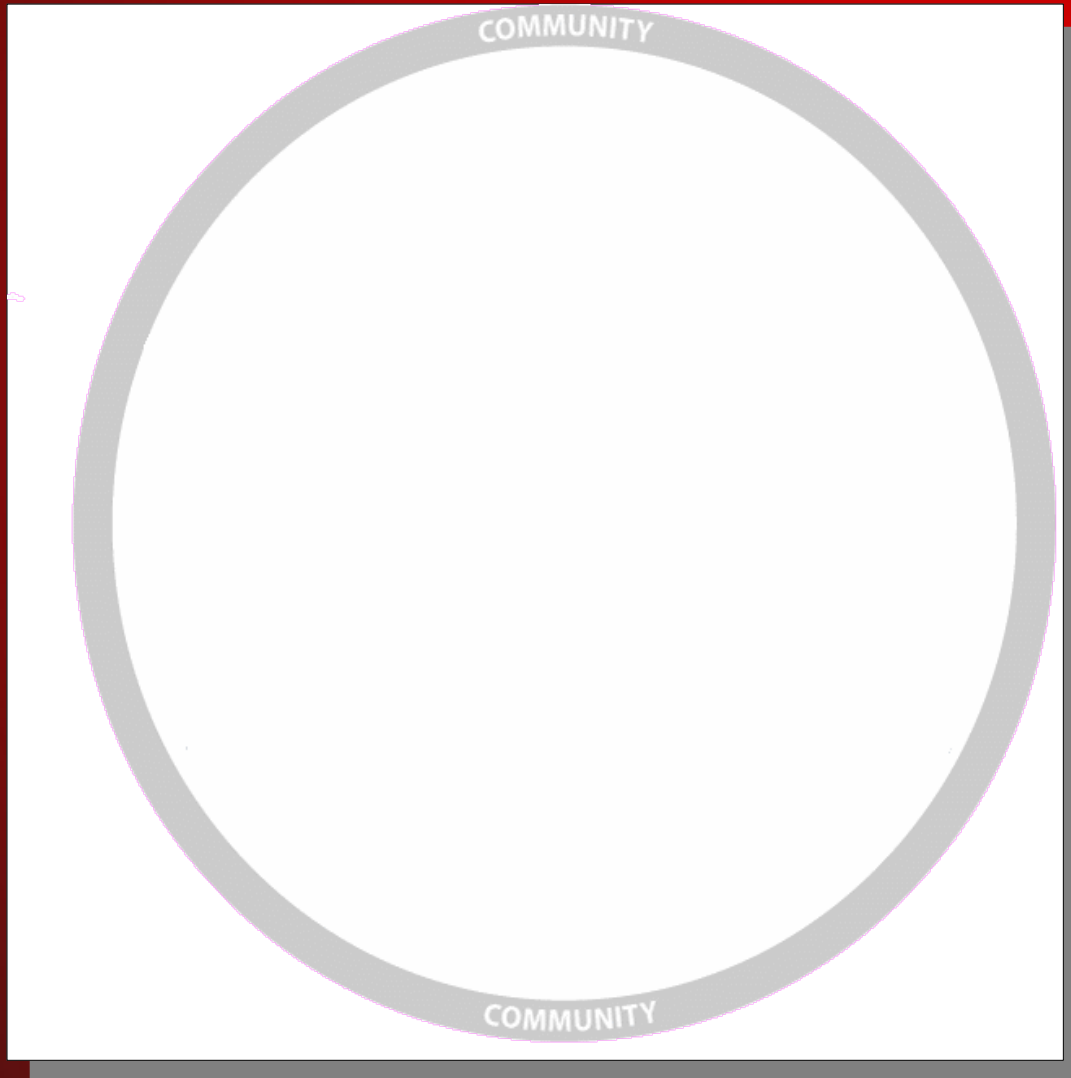
Some firms have greater creative and innovative capability

Resource “heterogeneity” among means differential impact

Some firms faster and more effective in exploiting change

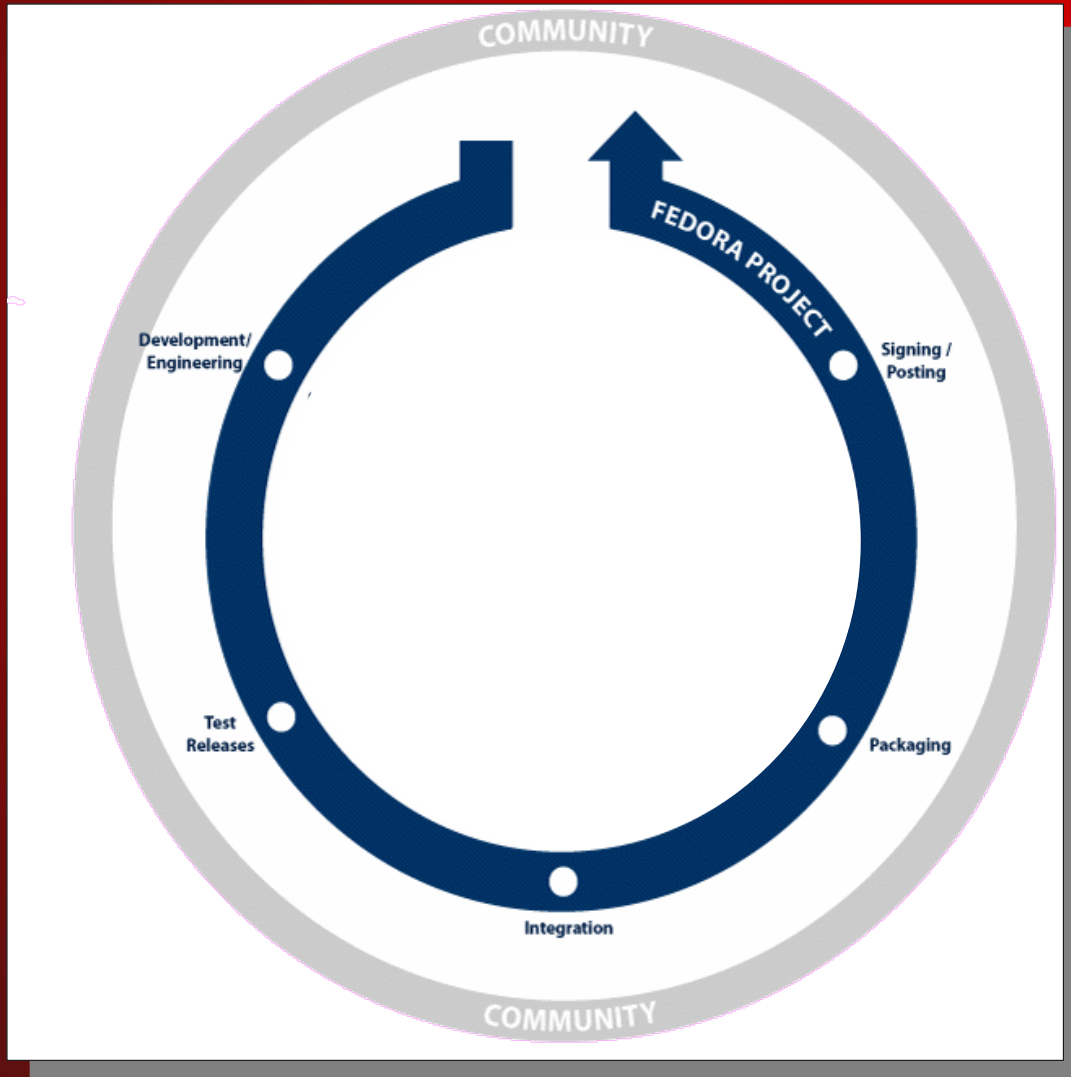


# Red Hat Development Model



- Collaboration with open-source communities; individuals, business partners, customers
- Kernel, firewall, apache, etc

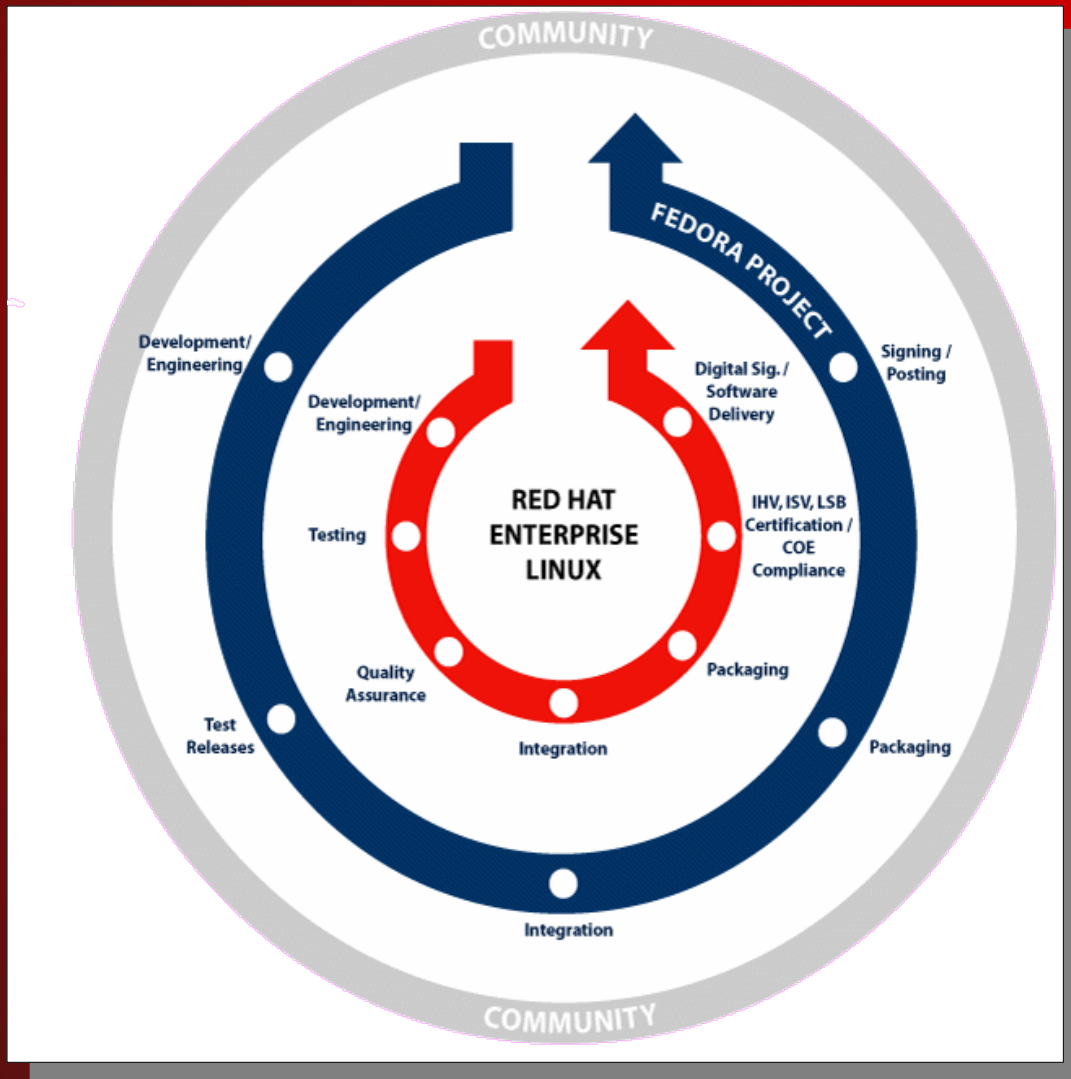
# Red Hat Development Model



## FEDORA

- Bleeding edge
- Sets technology direction for RHEL
- No commercial support
- Released in ~6mo cycles
- Fedora 8,9,10,11 = RHEL6

# Red Hat Development Model



## Red Hat Enterprise Linux

- Commercially Viable
- Q&A, tested
- H/W + S/W Certifications
- 7-10 year support
- Major releases 2-3yr cycle

# Fedora for System z



Opens Linux on System z development to entire Open Source community, not just IBM, Red Hat, and Novell.

Linux for System z now follows same development process as every other platform, allowing for faster Q&A, faster feature inclusion, and increased stability

Differentiation from Novell

# System z in Academia (zNexGen)



- Free RHEL to university partners
  - Marist College
  - Binghamton
  - NCCU
  - San Diego State
  - ... etc

Currently working on creating an Open Source Linux for System z curriculum for Academic partners and the larger community



# System z in Academia

## North Carolina Central



James E. Shepard, Founder

- Nations first public liberal arts college funded for African-Americans, located in Durham, North Carolina.
- With nearly 9,000 students enrolled, the historically black university is diverse. International studies and exchange programs attract exchange students from more than 12 countries, including Liberia, India, Senegal, Sierra Leone, Nepal, China, the Czech Republic, Nigeria, South Korea, Russia, the Dominican Republic, Mexico, and South Africa.

# APPENDIX: Customer Stories





# Bank of New Zealand

*A bank moves from SUN SPARC to System z10 with Red Hat Enterprise Linux to reduce their carbon footprint and address datacenter cost and capacity concerns*

## The Challenge

- A data center with 131 SUN SPARC servers was at capacity
- Bank of New Zealand needed to grow, reduce emissions and costs, become more open, and become carbon-neutral by 2010

## The Solution

- Consolidate 131 SPARC servers down to just 1 IBM System z10 mainframe (5 IFLs) running Red Hat Enterprise Linux

## The Benefits

- Bank of New Zealand reduced power consumption by close to 40%, heat output by 33%, datacenter footprint by 30%

*“Deploying IBM mainframes with Red Hat Enterprise Linux to address our carbon footprint and cost savings concerns was a very big deal, especially at the senior management level.”*

*Lyle Johnston  
Infrastructure Architect  
Bank of New Zealand*



# Handelsbanken

*Large European bank migrates from Novell SuSE, standardizes on Red Hat Enterprise Linux and z/OS for IBM System z10*

## The Challenge

- Maintain a highly resilient and secure network that scales based on business demands.

## The Solution

- A hybrid solution of utilizing z/OS and Red Hat Enterprise Linux on IBM System z10 servers

## The Benefits

- The bank's virtualized environment has helped to lower costs by minimizing the need for additional systems that require more energy and space, translating into a greener IT infrastructure

*“Most important for Handelsbanken is that we can achieve all the benefits of virtualized systems, while still maintaining a secure and flexible environment with high availability and reliability through Red Hat Enterprise Linux.*

*These elements are extremely important to our business, especially when running transaction-intensive applications. Red Hat Enterprise Linux on System z has helped us meet mission-critical needs for our organization”*



# City of Recife, Brazil

*Brazil City of Recife's computer technology organization finds long-term reliability with Red Hat Solutions*

## The Challenge

– Find a secure, stable platform to bring municipal tax, urban planning, health, education, budget, financial and shopping port systems online

## The Solution

– A hybrid solution of Red Hat Enterprise Linux for distributed and IBM System z platforms, combined with JBoss Application Server and IBM WebSphere.

## The Benefits

– Since implementing Red Hat solutions, the government has enjoyed an extremely stable platform, ISV compatibility and cost reduction for its management of over 2,000 machines

*“The adoption of Red Hat solutions allows us to ensure compatibility and the knowledge that we can install its solutions without concern.*

*Additionally, we didn't have to use Red Hat support, which in our Opinion is an excellent sign of stability and reliability”*

*Luis Siquera,  
Director of IT Infrastructure*



# EDB Nordics

*EDB implements Red Hat solutions for the reliability of in-house Mainframe computing*

## The Challenge

– Offer customers a standardized operating system for all Linux-based IT services, crossing financial services, retail, telecommunications and the public sector

## The Solution

– Red Hat Enterprise Linux on IBM System z running in LPARs

## The Benefits

– Via the System z LPAR feature, EDB is able to securely provide hosting to various customers across industries, each with their own security requirements

*“There are clear advantages to mainframe computing including high reliability, security and resource savings in the amount of energy and cooling capacity used to run an application.*

*We now utilize Red Hat Enterprise Linux for our in-house mainframe computing and we've experienced a rising demand among customers to whom we can offer Red Hat Enterprise Linux for IBM System z”*

*Helge Forberg  
Section Chief,  
Application, Automation and Support Systems*



# Fratelli Carli

*Italian olive oil manufacturer enhances performance with RHEL5 on IBM Mainframes*

## The Challenge

- Ensure the fast processing of customer orders by reducing system response times and maintaining consistent performance levels, even during peak periods

## The Solution

- 6 virtualized instances of Red Hat Enterprise Linux 5 running on IBM z/VM, DB2/UDB database, Ware Place and Tomcat, on IBM System z9 Business Class mainframe

## The Benefits

- Sub-second response times maintained for order processing

*“I like Red Hat Enterprise Linux because it is a standard Linux product much closer to the logic of a mainframe than other products. I am totally satisfied with this choice. Red Hat support is very competent and always available, and it has supported me very well in the completion of this complex project”*

*Marco Gardini  
Mainframe System Architect*



# Salt River Project

*Salt River Project migrates to Red Hat Enterprise Linux on IBM Mainframes for flexibility and performance*

## The Challenge

– Search for a replacement to proprietary software for their legacy IBM mainframe that could provide greater flexibility, manageability, and utilization opportunities

## The Solution

– Migrating from HP-UX to Red Hat Enterprise Linux with Red Hat Network Satellite on IBM System z

## The Benefits

– Experienced cost savings, boosted performance, stable and reliable management, consolidation and valuable technical support. Managing VMWare and x86 Linux from their IBM System z

*“When evaluating Linux mainframe solutions, we experimented with SuSE because it had an early relationship with IBM for that architecture, but Red Hat Had become very mature in the mainframe environment, too. Since we were already learning towards Red Hat in our distributed environment, choosing Red hat on the Mainframe coincided perfectly with our desire to have one corporate standard for Linux”*

*Kevin Masaryk  
Senior Linux/UNIX Administrator*