Red Hat Update for IBM System z

Session ID: zQV18

Speaker Names: Shawn Wells

Authorized
IBM. | Training

Intro

- Shawn Wells <swells@redhat.com>
  W/W Lead, Linux on System z

- Brad Hinson <bhinson@redhat.com>
  Sr. Support Engineer
  Lead, System z Special Engineering Group

Agenda

- About Red Hat, Inc

- Tech Update
  - Today *(RHEL 5.2)*
  - Tomorrow *(RHEL 5.3 and beyond)*
  - Fedora Activities *(someday soonish)*

- What'd Red Hat do in Q3? What's planned for Q4?

- Upcoming Pricing Promotions

58 OFFICES IN 26 COUNTRIES

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Denver
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Marlton
Mountain View
New York
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Westford

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São Paulo
Mexico City

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Brno	Amersfoort
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Nanterre	Stockholm
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Frankfurt	Cambridge
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Mumbai
New Delhi
Pune
Tokyo
Seoul
Kuala Lumpur
Singapore
Sri Lanka

How is RHEL Developed?

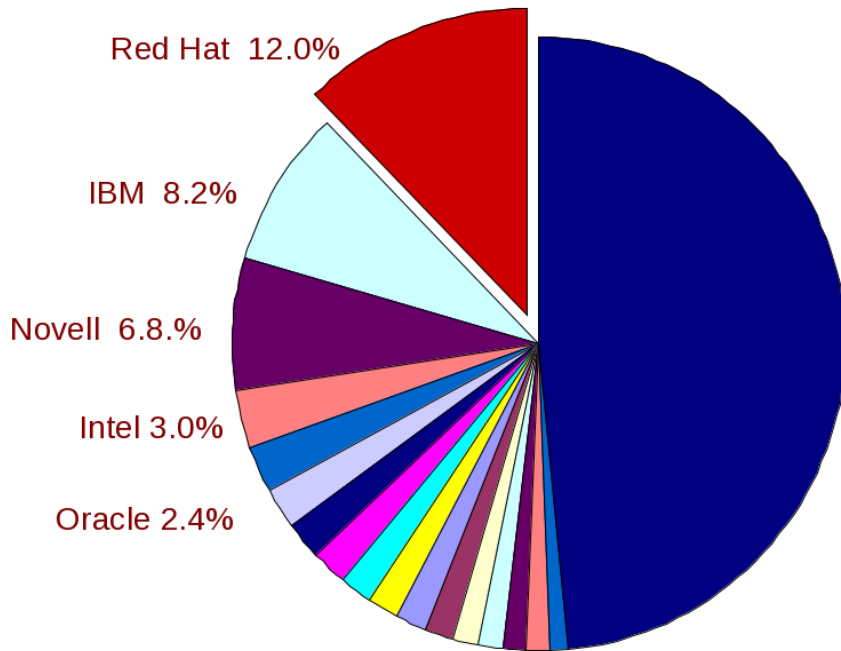
Pie chart:
- Red Hat 12.0%
- IBM 8.2%
- Novell 6.8.%
- Intel 3.0%
- Oracle 2.4%
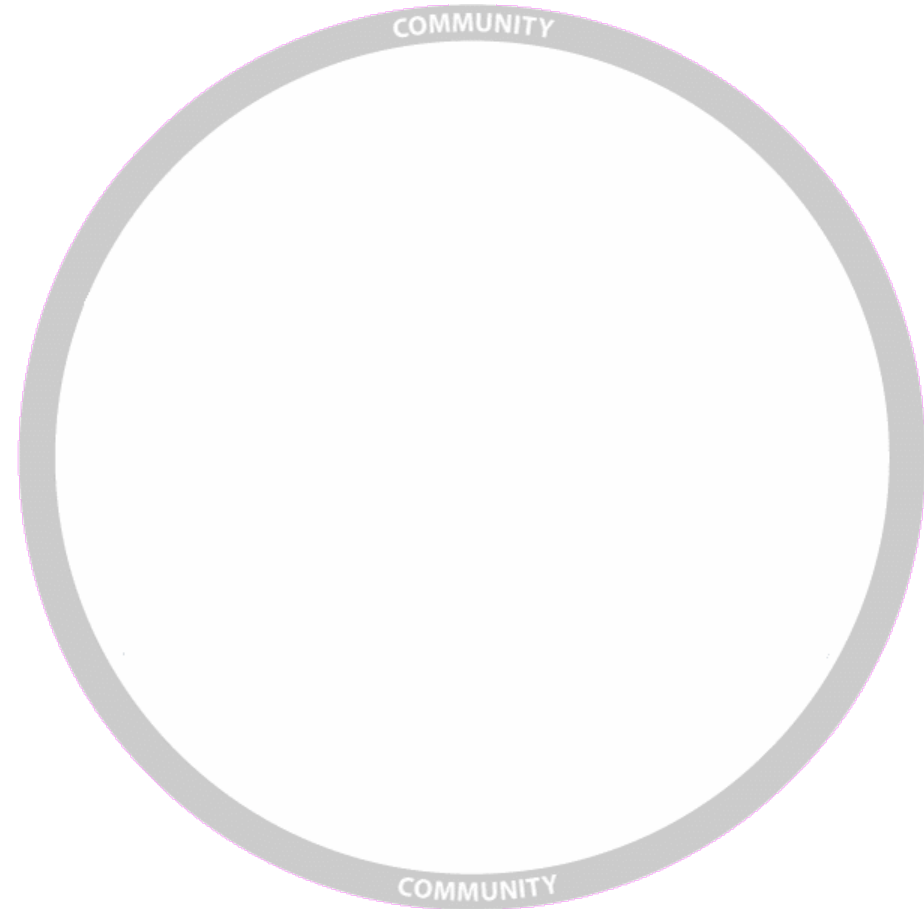
COMMUNITY
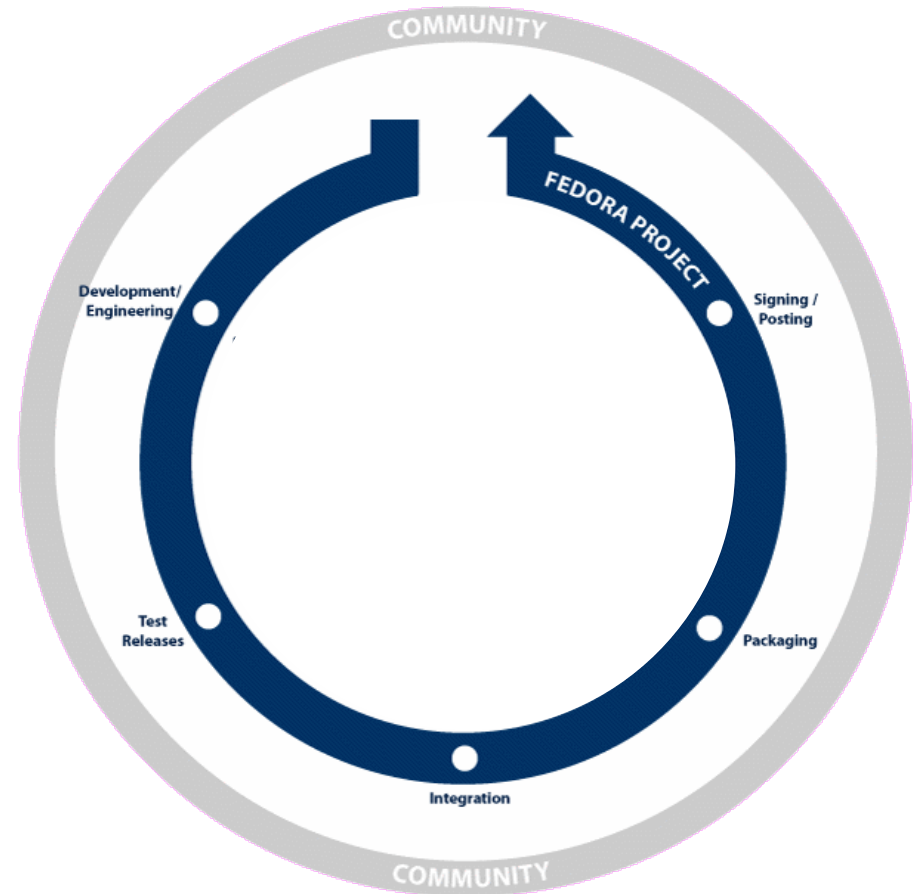
How is RHEL Developed?

Fedora

– Rapid innovation

– Latest technologies

– Community Supported

– Released ~6mo cycles

How is RHEL Developed?

Red Hat Enterprise Linux

– Stable, mature

– Q&A / performance testing

– Hardware & Software Certifications

– Core API compatibility guarantee
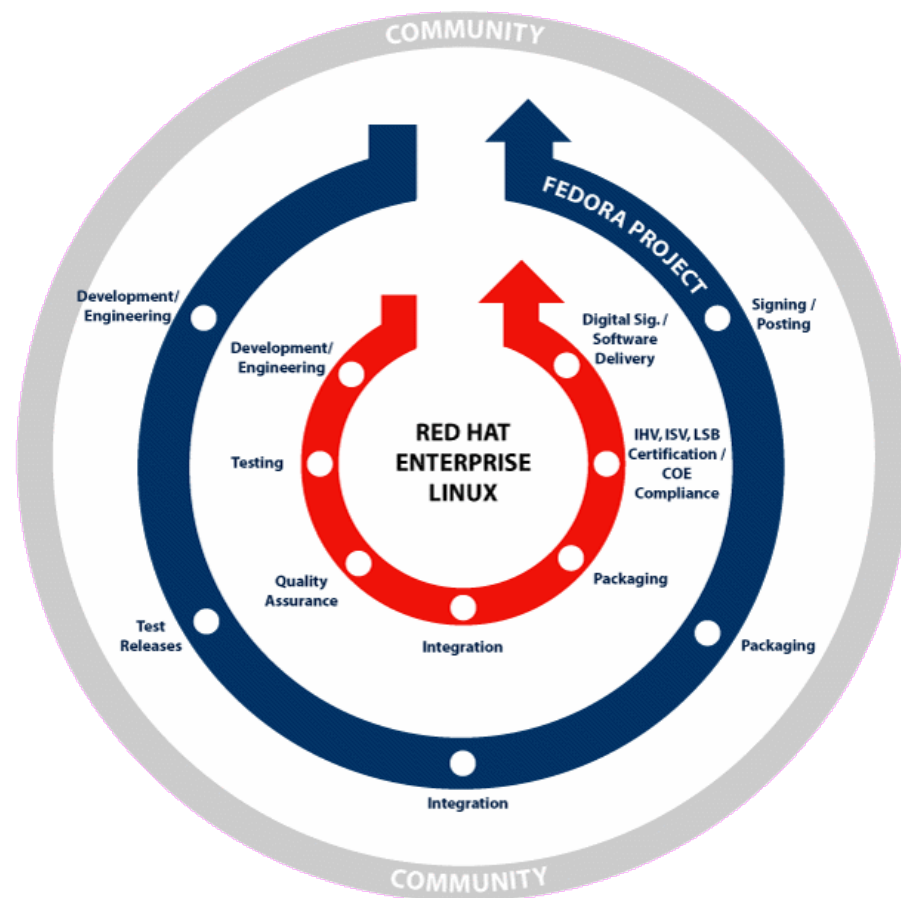
Extended Product Lifecycle

	Years 1 - 4	Yr 5	Yr 6,7

Production 1   Production 2   Production 3

	Production 1	Production 2	Production 3
Security Patches	X	X	X
Bug Fixes	X	X	X
Hardware Enablement	**Full**	**Partial**	**None**
Software Enhancements	X		

Certify Once, Deploy Anywhere

Applications

Red Hat Enterprise Linux

One API, One Certification

| Dedicated Servers | Virtual Servers | On-demand Clouds | Desktop, Mobility |

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Dedicated Servers	Virtual Servers	On-demand Clouds	Desktop, Mobility
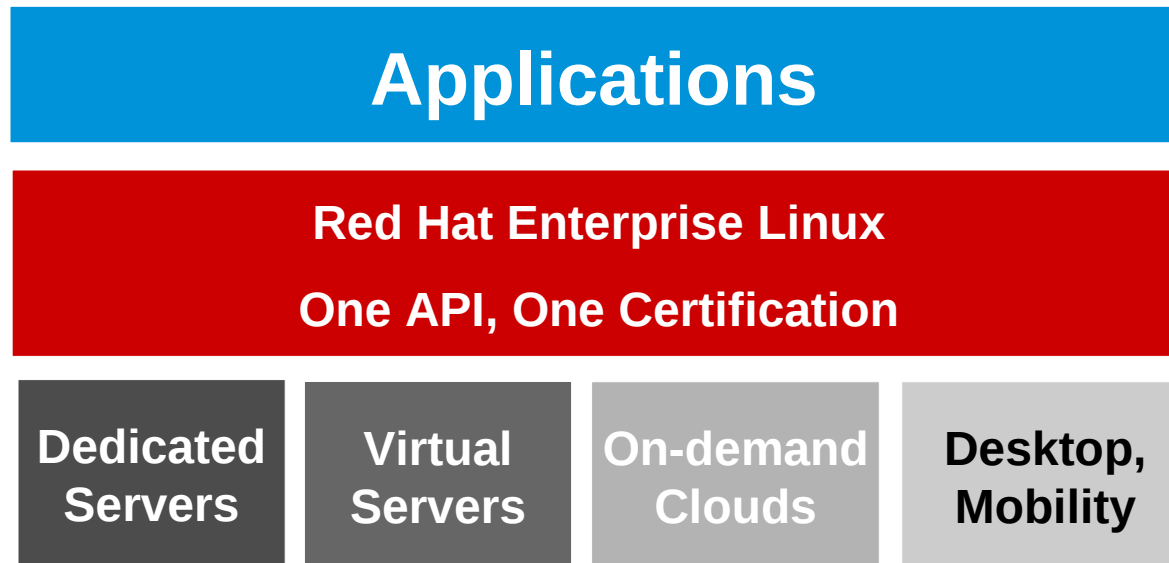
Example Laptop to Mainframe Partners:

MySQL   **TMaxSoft**

MicroFocus Cobal   **SAP**

Red Hat Subscription Model

- No Upgrade Costs

- No Client Access Fee

- Unlimited Support Incidents

For System z:

– Priced Per IFL

– Unlimited VMs per IFL

Customers can consolidate

subscriptions *to or from* other

platforms

Red Hat Enterprise Linux Subscription

S U P P O R T	PREMIUM	24x7 Phone/Web 1 Hour SLAs
	STANDARD	Phone/Web 1-4 Business Hour SLA
	BASIC	Web Support. 2 Day SLA

Security, Bug Fixes
Regular H/W & S/W Updates

Hardware & Application Certifications

Stable Application Interfaces

Upgrades to New Versions

Product Source & Binaries

Red Hat Support Model

C O N S U L T A N T S

T E C H   A C C N T   M G R S

Level 3: Special Engineering
Custom Patches, Code Re-writes, Interim Patches, Application Redesign

Level 2: Advanced Support
Reproduce Problems, Grouped via Skillsets

Level 1: Front Line Support
Known Issues, Initial Troubleshooting, Everyone is minimum RHCE

Support via Red Hat

Red Hat & IBM Support Model

CONSULTANTS

TECH ACCNT MGRS

Level 3: Special Engineering

Custom Patches, Code Re-writes, Interim Patches, Application Redesign

Level 2: Advanced Support

Reproduce Problems, Grouped via Skillsets

Level 1: Front Line Support

Known Issues, Initial Troubleshooting, Everyone is minimum RHCE

PARTNER TAM

Level 2: Advanced Support

Reproduce Problems, Category Specialists

Level 1: First Responders

Basic Support

Support via Red Hat

Support via IBM

Tech Update - RHEL5.2

- Support for z10

- Dynamic CHPID reconfiguration

- Improved "ssh -X" with VPN during installation process

- Better network performance with skb scatter-gather support

- Implementation of SCSI dump infrastructure

Tech Update - RHEL5.2

- **Accelerated in-kernel Crypto**

  - Support for crypto algorithms of z10

  - SHA-512, SHA-384, AES-192, AES-256

- **Two OSA ports per CHPID; Four port exploitation**

  - Exploit next OSA adapter generation which offers two ports within one CHPID. The additional port number 1 can be specified with the qeth sysfs-attribute "portno"

  - Support is available only for OSA-Express3 GbE SX and LX on z10, running in LPAR or z/VM guest (PFT for z/VM APAR VM64277 required!)

Tech Update - RHEL5.2

- **Large Page Support**

  – This adds hugetblfs support on System z, using both hardware large page support if available, and software large page emulation (with shared hugetblfs pagetables) on older hardware

- **skb scatter-gather support for large incoming messages**

  – This avoids allocating big chunks of consecutive memory and should increase networking throughput in some situations for large incoming packets

Full Release Notes At: redhat.com
http://www.redhat.com/docs/en-
US/Red_Hat_Enterprise_Linux/5.2/html/Release_Notes/s390x/index.html

Tech Update – RHEL5.3 and beyond

- NSS

- CPU Affinity

- ETR Support

- [COMMITED] Device-multipath support for xDR
  - RHT BugZilla: 184770
  - IBM LTC 18425-62140

Tech Update – Fedora Activities

Fedora is Red Hat's bleeding edge, an incubator for new technologies and features

Fedora sets our direction for Red Hat Enterprise Linux, and gives you a good idea of what will be in our next RHEL release (... and in other Linux distros, too)

Fedora 8; http://fedoraproject.org/wiki/Releases/8/FeatureList
Fedora 9; http://fedoraproject.org/wiki/Releases/9/FeatureList
Fedora 10; http://fedoraproject.org/wiki/Releases/10/FeatureList

Fedora 8,9,10 = RHEL6

Tech Update – Fedora Activities

- "In Place" Upgrades: `preupgrade`

  - Will download files needed to upgrade,
  - Store them locally on disk
  - Reboot you into the installer
  - Not a true in-place upgrade (yet)!

  – Benefit

  - The longest part of an install is when packages are downloaded to the local machine
  - Pre-Upgrade downloads and stores packages locally, while the machine is running/in production
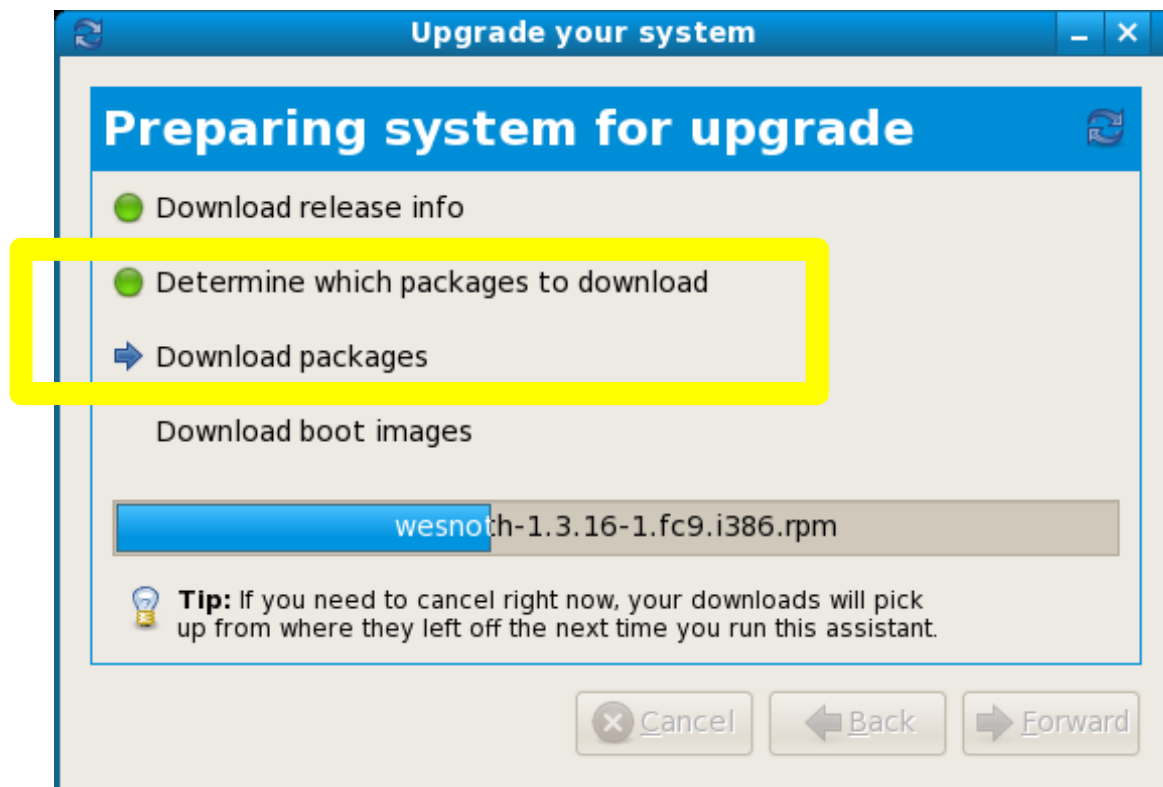 - Reboot directly into the installer

Tech Update – Fedora Activities

- "In Place" Upgrades: `preupgrade`
  - Select target version
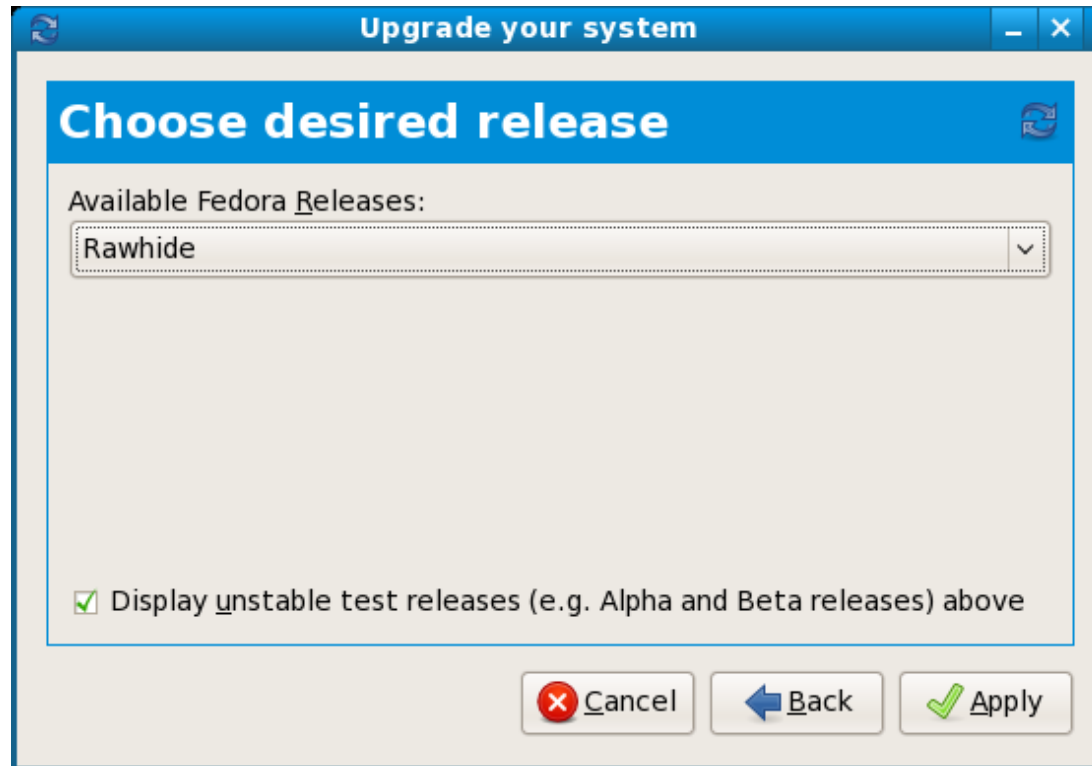
Tech Update – Fedora Activities

- "In Place" Upgrades: `preupgrade`
  - Determines which packages needed to upgrade, downloads them
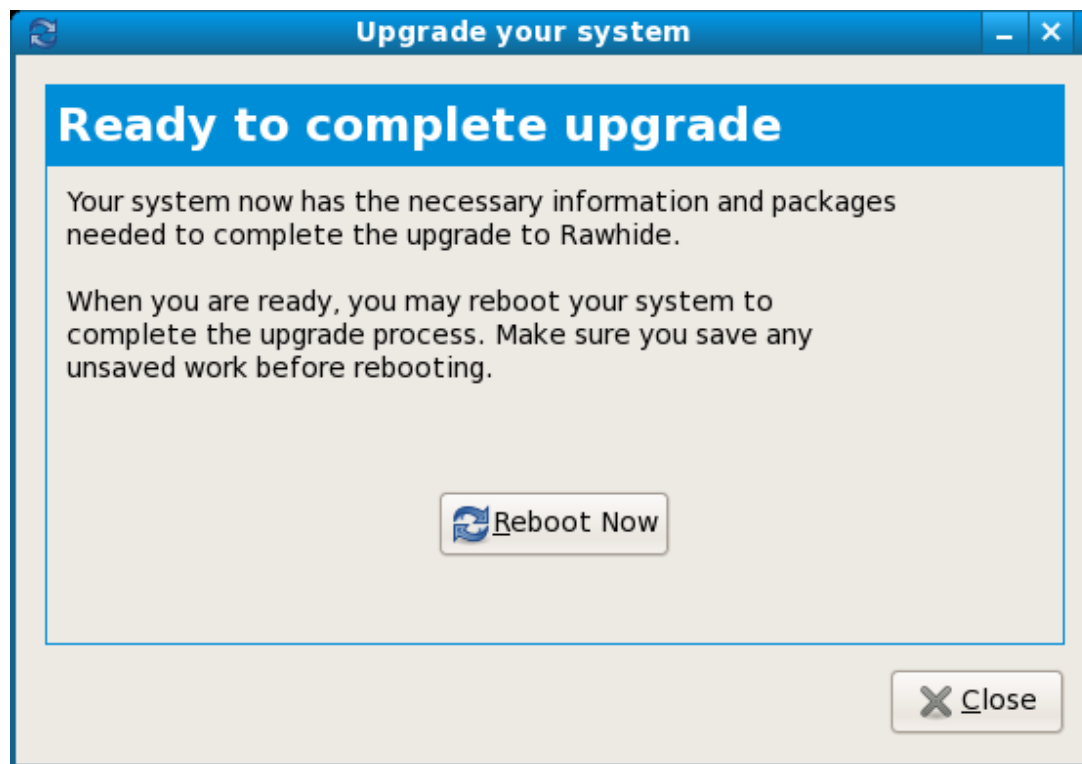
Tech Update – Fedora Activities

- "In Place" Upgrades: `preupgrade`
  - Downloads new initrd & kernel images

Tech Update – Fedora Activities

- **"In Place" Upgrades:** `preupgrade`
  - User reboots, brought into installer

Tech Update – Fedora Activities

- **gnome-control-center**

  - It is **<u>not</u>** YaST (yet)
  - It is a unified GUI for package management and system configuration
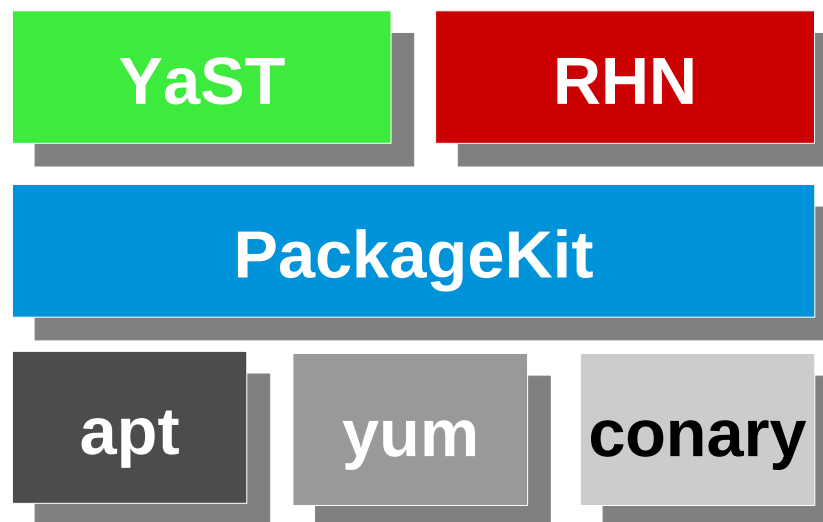
  - Benefit

    - Progress towards a YaST-like tool in RHEL (currently we have the `system-config-*` GUIs/TUIs)

Tech Update – Fedora Activities

- ## PackageKit

  - Abstraction layer for YUM, apt, conary, etc
  - Provides a common set of abstractions that can be used by GUI/TUI package managers

YaST	RHN
PackageKit	
apt	yum	conary

What'd Red Hat do In Q3? (June-Aug)

- Finalized "Linux on System z Workshop," 2-3 days hands-on with specifics of RHEL for System z

  - <u>NOT</u> just an "install lab"

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- 2008 System z World Tour

  – In 33 Days: Melbourne, Sydney, Canberra, Queensland, Chennai, Madrid, Barcelona, Stuttgart, Milan, Boeblingen, Munich, Paris, Stockholm

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- Continued with staff restructuring around System z

  - It's the only hardware platform we have <u>dedicated</u> resources assigned

What'd Red Hat do In Q3? (June-Aug)

- **Bank of New Zealand Reference**
  - One of the top 50 largest banks in the world
  - Offices in 4 continents, 15 countries
  - First production z10 in Southern Hemisphere

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  – One of the top 50 largest banks in the world

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  – First production z10 in Southern Hemisphere

  – Workloads:
    - SWIFT ($10B/day)
    - PCBB ($4M/day)
    - Teller Applications
    - Online Banking

What'd Red Hat do In Q3? (June-Aug)

- **Bank of New Zealand Reference, Cont**
    - Goal to be carbon neutral by 2010
    - Consolidated 131 SUN servers (E10Ks, v440s, v280Rs)

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- **Bank of New Zealand Reference, Cont**
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  - Consolidated 131 SUN servers (E10Ks, v440s, v280Rs)

	SUN	RHEL & z10	
Power (kW/hr)	36	22	38% less
Heat (kBTUs/hr)	110	74	33% less
Space (Racks)	6.5	4.5	31% less
Carbon Emissions	66	40	39% less

# What's planned for Q4? (Sept-Dec)

- System z Staff Expansion (targeting EMEA and APAC)

- Another World Wide Tour

- Finalize Reference Architectures for RHEL
  - Will be made available at www.redhat.com/z

- Creation of Reference Architectures for JBoss on System z

- .... any ideas? swells@redhat.com

Other Noteworthy Topics

- Red Hat Network
  - <u>Live Demo</u> during zLP07, Tuesday @ 8AM, Miranda 3

Satellite
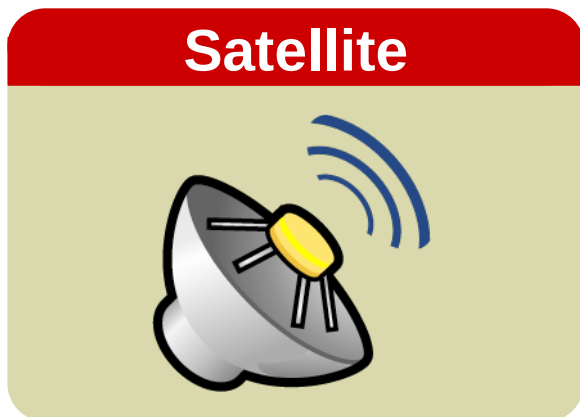
- How to
  - Automate software updates
  - Provision guests on s390, **<u>and</u>** distributed from the same tool
  - Version control configuration files
  - Perform basic monitoring

Other Noteworthy Topics

- **SELinux & Linux Security**
  - zLS01, Tuesday @ 1:30, Miranda 3

  - What's SELinux?

  - How can I create labeled security between processes, users, data files, and the network?

Upcoming Pricing Promotion

50% off MSRP for all RHEL IFL Subscriptions for the z10 BC

Upcoming Pricing Promotion

50% off MSRP for all IFLs for the z10 BC

- Only applies for z10 BC

- Will run for 6 months

- No "term limit" -- can purchase any subscription term (1yr, 4yr, 10yr, etc)

- Includes L1-L3 support by Red Hat
  – Can be purchased through IBM or Red Hat

#1

IN VALUE.
AGAIN.

RED HAT NAMED #1 SOFTWARE VENDOR FOR VALUE.

FOUR YEARS RUNNING.

APPENDIX

Bank of New Zealand

- The following information has been completely stolen from Bank of New Zealand's presentation at IBM Interaction at Queensland, Australia

Bank of New Zealand
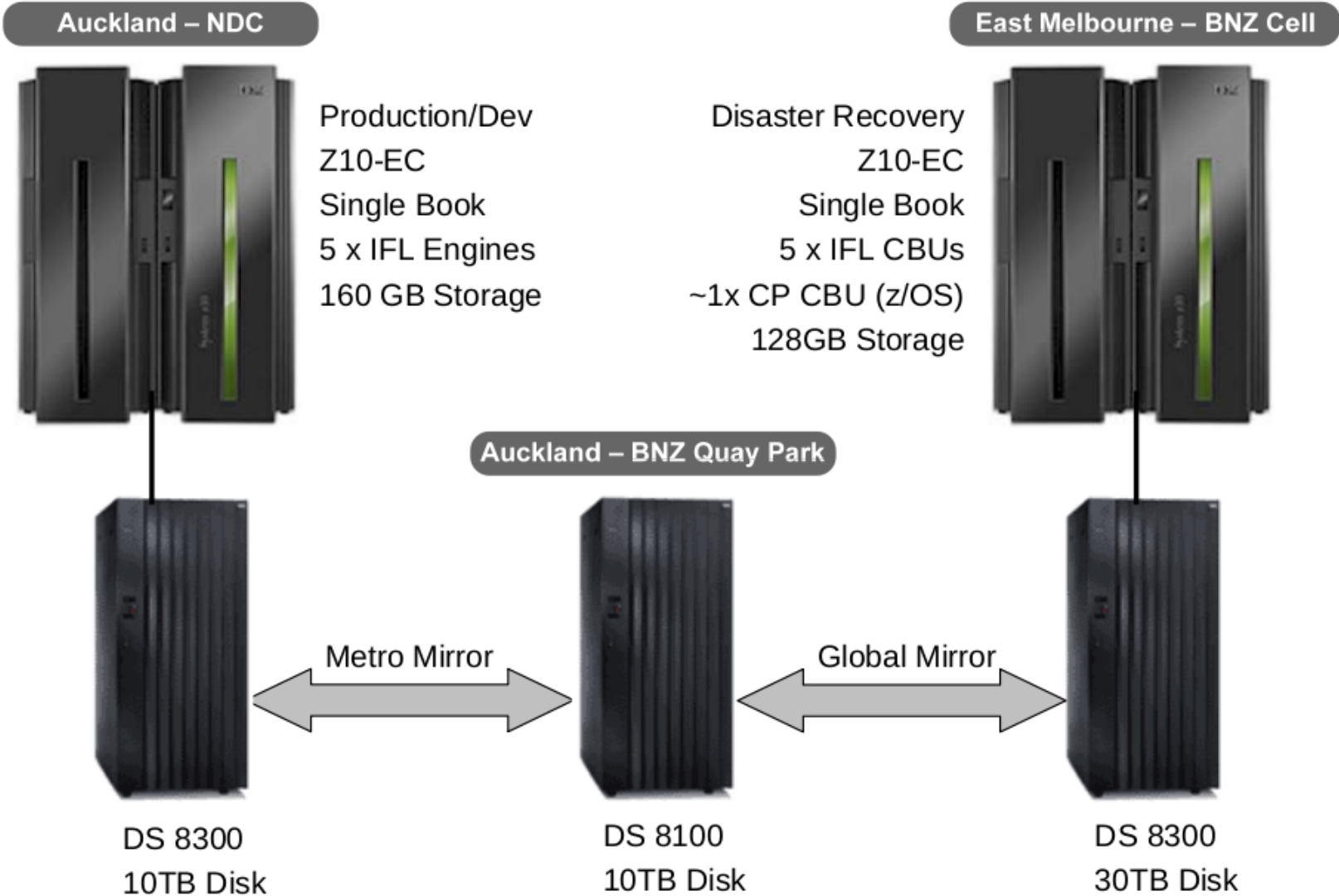
- August 2007:   PoC started

- October 2007:   Business Case Justification

- December 2007:   WAS loaded. Bought z9-EC + DS8100

- February 2008:   Purchased z10 EC + DS8100 Joint design mtgs with IBM

- July 2008:   z10 went production for non tier-1 apps

- March 2009:   Tellers & Interact went production

- May 2009:   Internet banking went production

Bank of New Zealand

Workloads

- Internet Banking & www

    – In house java app using Vignette content management

- Interact

    – CRM app in java, on top of IBM BTT framework

- TCS

    – Teller application, using IBM BTT

- PCBB

    – Internet Business Banking. Custom C and C++

- GCS

    – Integration layer. XML over MQ front end. ROMA and DataStorageTX

Bank of New Zealand

Auckland – NDC

Production/Dev
Z10-EC
Single Book
5 x IFL Engines
160 GB Storage

East Melbourne – BNZ Cell

Disaster Recovery
Z10-EC
Single Book
5 x IFL CBUs
~1x CP CBU (z/OS)
128GB Storage

Auckland – BNZ Quay Park

Metro Mirror   Global Mirror

DS 8300
10TB Disk

DS 8100
10TB Disk

DS 8300
30TB Disk

Bank of New Zealand

- Base VM Config:

  – 2x virtual CPUs

  – 512MB RAM

  – 4x 1024MB swap volumes (z/VM VDISKS)

  – 4x MOD9's

- Kickstart instead of cloning, using RHN Satellite

  – Version controls host name, network config, disk partitioning, packages, etc

  – Bash post install script to setup monitoring & backup

- Takes about 20min to provision guests

  – Built entire teller dev environment in 2hrs. 35 servers.

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