

# Taking “Green” Beyond the Hardware

# Agenda & Introduction

- **IBM / Red Hat Relationship**
- **Customer Story: The Bank of New Zealand**
- **Educating the Next Generation (zNexGen)**

# Red Hat / IBM Relationship

- Cross platform relationship founded in the late 90s (when Red Hat incorporated)
- Started releasing RHEL for System z in 2001
- Formal Linux on System z agreement & announcement in 2007  
(<http://www-03.ibm.com/press/us/en/pressrelease/21513.wss>)
- Red Hat has dedicated staff to System z  
(we haven't done this for any other H/W platform)

# Red Hat / IBM Relationship

- Global Linux Technology Centers
  - Development centers located around the world
  - Focus on all platforms (System z, xSeries, pSeries, etc)
  - Red Hat & IBM the #1 and #2 commercial contributors to Linux code

# 'Go Green' Enablement

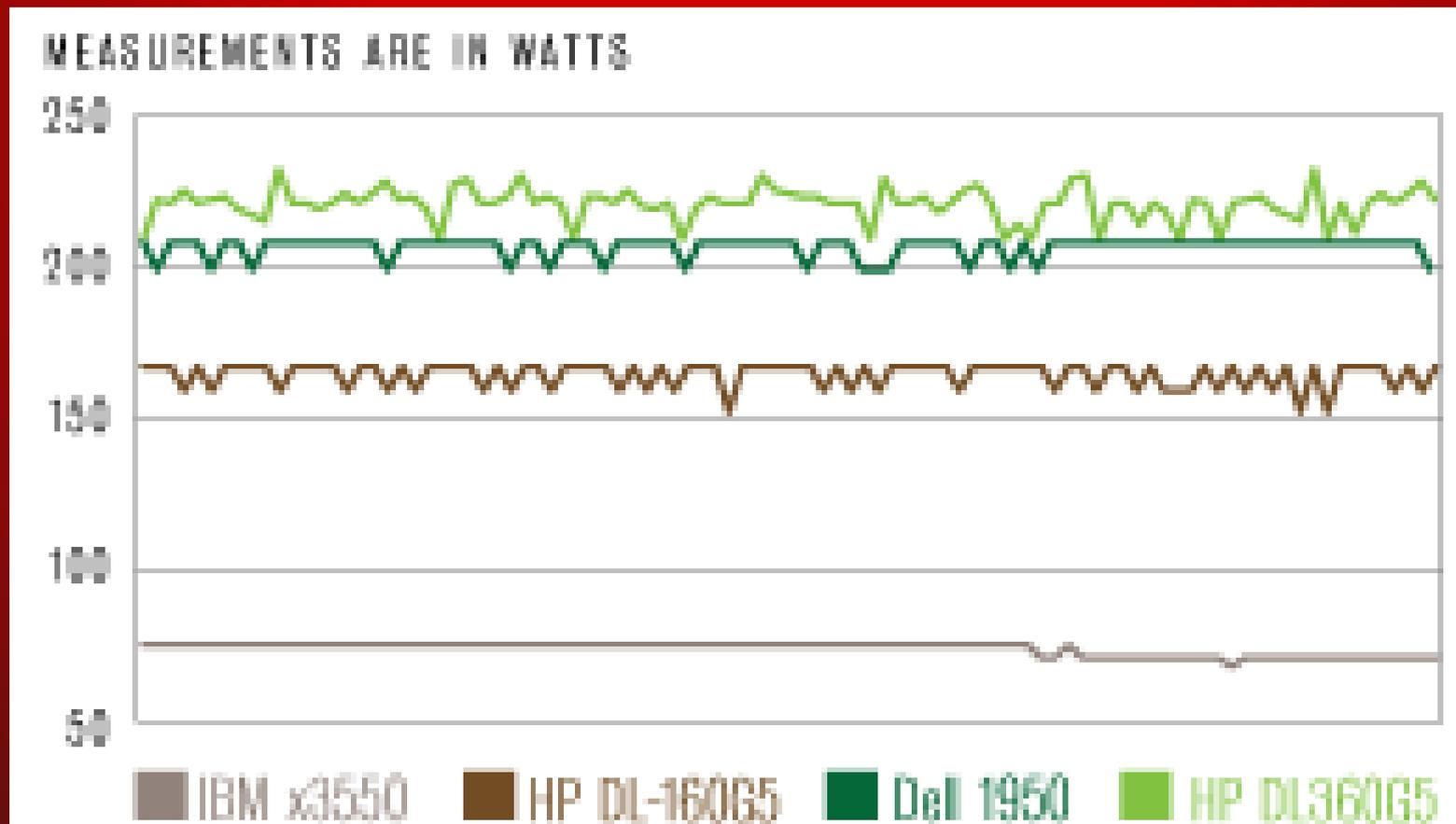
## IBM xSeries (x3350) and Red Hat

<http://www.networkworld.com/research/2008/060908-green-windows-linux.html?page=1>

Server Hardware Platforms	Windows Server 2008 Power Draw	SUSE Enterprise Linux 10 Power Draw	Red Hat Enterprise Linux 5.1 Power Draw	Average Linux Power Draw	Windows Server 2008 percentage of Average Linux Power Draw	Windows Server 2008 percentage of lowest Linux Power Draw
<b>Quiescent test with operating system Power Savings settings applied</b>						
IBM x3350	71.8	73.1	71.7	72.4	99.17	100.14
Dell 1950	200.7	207.5	205.7	206.6	97.14	97.57
HP DL-160 G5	*	165.6	160.3	163.0	n/a	n/a
HP DL-360 G5	232.0	223.2	221.1	222.2	104.43	104.93
<b>Quiescent test with operating system Power Savings settings applied</b>						
IBM x3350	73.7	73.4	72.9	73.2	100.75	101.10
Dell 1950	220.4	209.2	205.4	207.3	106.32	107.30
HP DL-160 G5	167.7	165.6	164.3	165.0	101.67	102.07
HP DL-360 G5	239.1	238.0	233.7	235.9	101.38	102.31

# 'Go Green' Enablement

SYSCON showed Red Hat uses less power at idle (<http://virtualization.sys-con.com/node/808417>)



# **Customer Story: The Bank of New Zealand**

# Bank of New Zealand

- Employs 5000 staff
- Acquired by NAB group in 1992
- >2 million accounts
- 700k customers
- ~100 retail banking products
- 185 Branch Sites
- 300 IT Staff
- First Computer 1966 (an IBM 360/30 with 16k memory)



# Our Key IT Challenges

## Data Centre's

- Power – Cant get enough power (now monitoring watts)
- Space – One server in -> One server out
- Moving out of our Wellington Data Centre (Production)

## Focus on IT Costs

- Challenged with keeping IT costs flat
- Less appetite for IT spend during a downturn

## Corporate Values

- Carbon Neutral as an organisation by 2010
- Aligning our IT infrastructure with our corporate 'green' values

# The Amazing Race Programme

**THE AMAZING RACE**  
CHANGE PORTFOLIO

WHEN: 30 SEPTEMBER, 2008

**024** DAYS   **12** HOURS   **40** MINUTES   **28** SECONDS

**RACE HOME**   **STRATEGY**   **DIRECTION**   **REPORTING & COMMUNICATIONS**   **GOVERNANCE**

## THE AMAZING RACE

The Business Technology Services (BTS) mission is to deliver an optimal technology environment, which has embraced the Kaizen philosophy and removed waste and unwarranted cost.

The Amazing Race Programme is two-bound focused. It is divided into 9 concurrent sub-programmes, each with multiple projects. Every project is required to deliver a financial return within this financial year. The portfolio of projects must realise their benefits across this year to achieve the desired results.

<b>VIEW</b> Applications Doug Jacobs	<b>VIEW</b> Middleware Kim Arnold	<b>VIEW</b> Dev & Testing Environments Jerry Newman
<b>VIEW</b> Information management Andrew Mori	<b>VIEW</b> Distributed Systems Kim Arnold	<b>VIEW</b> NZ Infrastructure Mike Whang
<b>VIEW</b> Tele communications Aaron Toddlegese	<b>VIEW</b> Client Hardware Aaron Toddlegese	<b>VIEW</b> Process Murray Coulter

Learn more about our smaller costs savings scheme, [Amazing Race Passports](#).

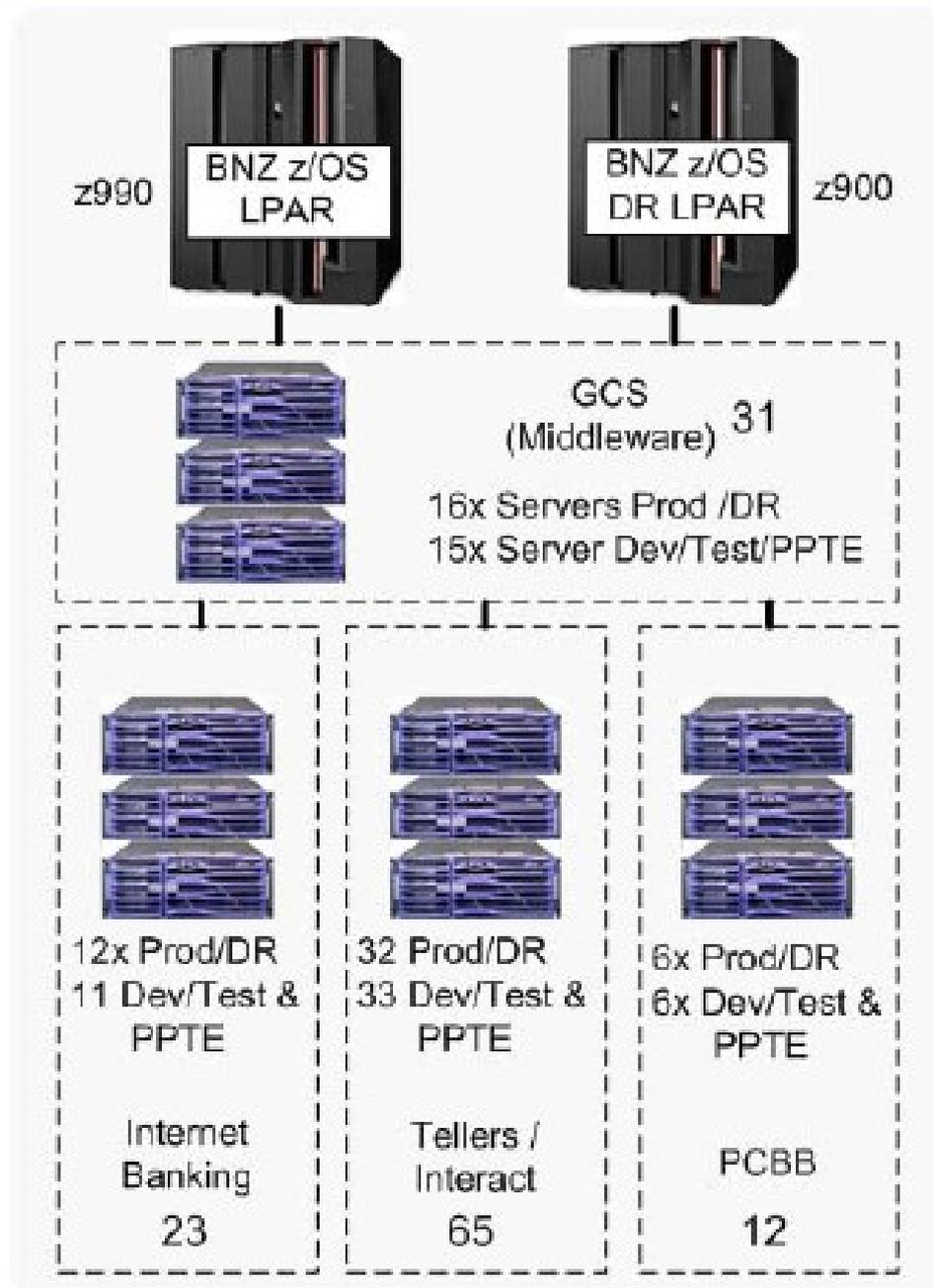
## z/Linux Project – Front End Systems

- Repatriate back to NZ (reduce support costs)
- Consolidate the physical footprint
- Reduce power consumption
- Reduce carbon footprint
- Look to simplify where possible

# BNZ z/Linux History

Aug 07	- Proof of Concept of Process Server as replacement to ROMA middleware - IBM Forum conference in Wellington
Oct 07	- Initial Due diligence carried out for a move to the z/Linux platform
Dec 07	- Websphere Process Server software stack verified for performance - Purchased Z9-EC + DS Enterprise Storage DS8100
Jan 08	- z/Linux Project Officially launched
Feb 08	- Held joint IBM / BNZ design workshops - Purchased Z10-EC + DS Enterprise Storage DS8100
Mar 08	- GCS Team (Middleware) run Proof of Concept on the z Platform
Apr 08	- Application teams start to build Dev, Test & Pre-Prod Lpars on the z9
Jun 08	- Staff training for the Enterprise Storage / replication
Jul 08	- GCS went into production on the z10 for a couple of non tier-1 apps
Dec 08	- z Platform standup complete. (Ready for tier-1 applications)
Mar 09	- Tellers and Interact applications in Production
May 09	- Internet Banking applications in Production
Oct 09	- PCBB application in Production?

# Front End Systems – Hardware View



- Total of 131 Servers
- Mix of Small, Medium and Large Sun Servers - e10K, v440, 280R
- Not a large consolidation but is high value, high visibility.
- Various version's of Solaris.

# z/Linux Environmentals

	Distributed Model	Z based Platform	
Power (kWhr)	36	22	38% less
Heat (kBTUs /hr)	110	74	33% less
Space (Racks)	6.5	4.5	31% less
Co2 (Tonnes)	66	40	39% less*



# **Partner Enablement**

## **Integrating Red Hat & IBM Technology Into Partner Solutions**

**Management Services**

JBoss

Network Srvcs

Exchange

Red Hat

Red Hat

Windows

**Virtual Environment**

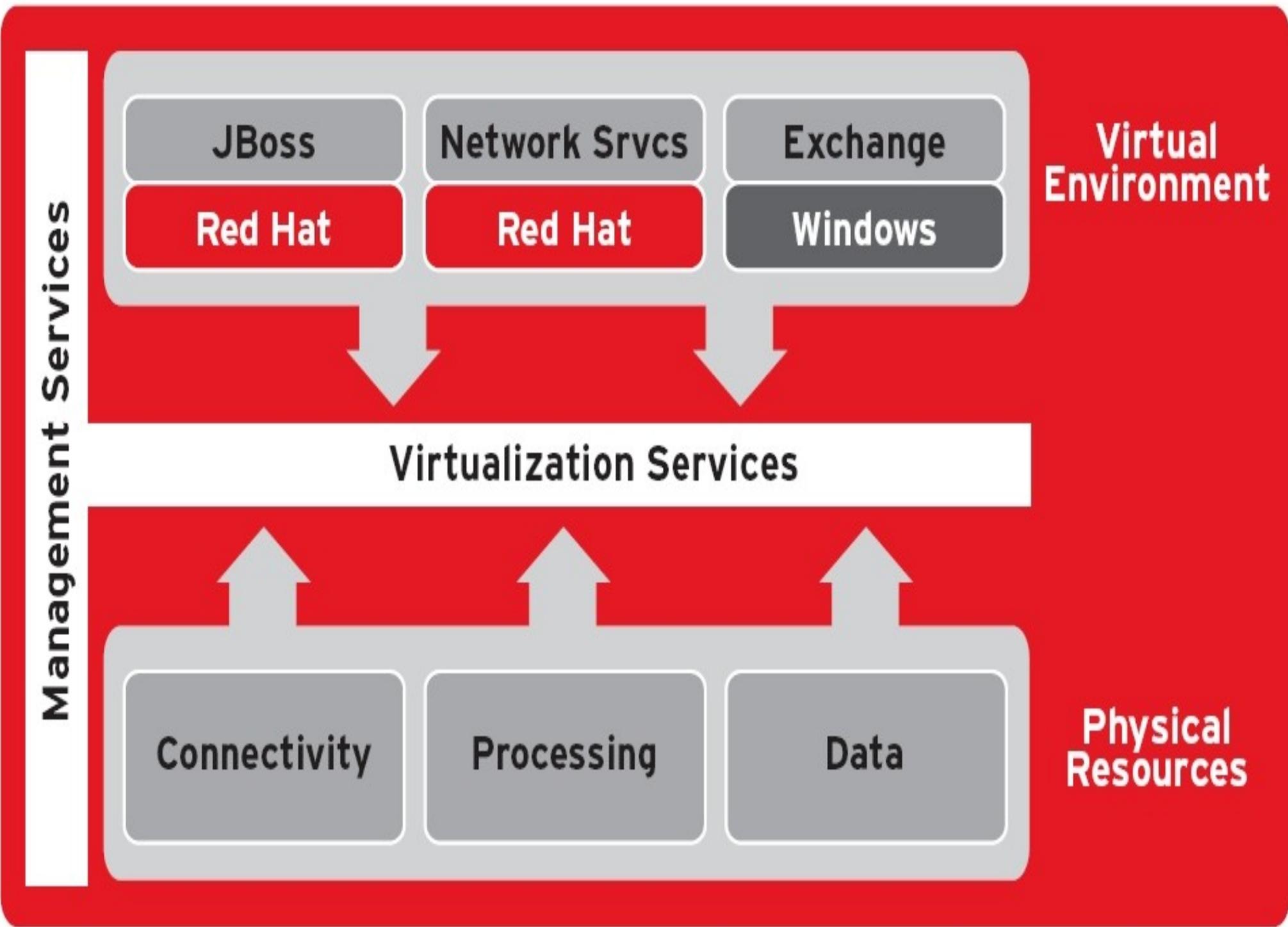
**Virtualization Services**

Connectivity

Processing

Data

**Physical Resources**



Management Application

CIM Provider

C

Python

Perl

OCaml

libvirt

xen

kvm

qemu

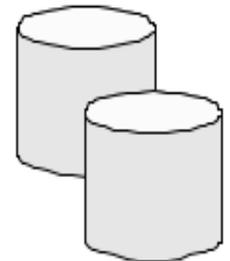
OpenVZ

LXC

LDoms

Storage

hypervisor



# **Educating the Next Generation (zNexGen)**

# Red Hat & IBM Academics

## Destination z & IBM Academic Programs

- Joined Destination z (forum of System z business partners)
- Free RHEL to IBM Academic Partners
  - Marist College
  - Binghamton
  - NCCU
  - San Diego State



# Questions?