

**RED HAT**  
**ON THE MAINFRAME**  
THE REASONS ARE COMPELLING



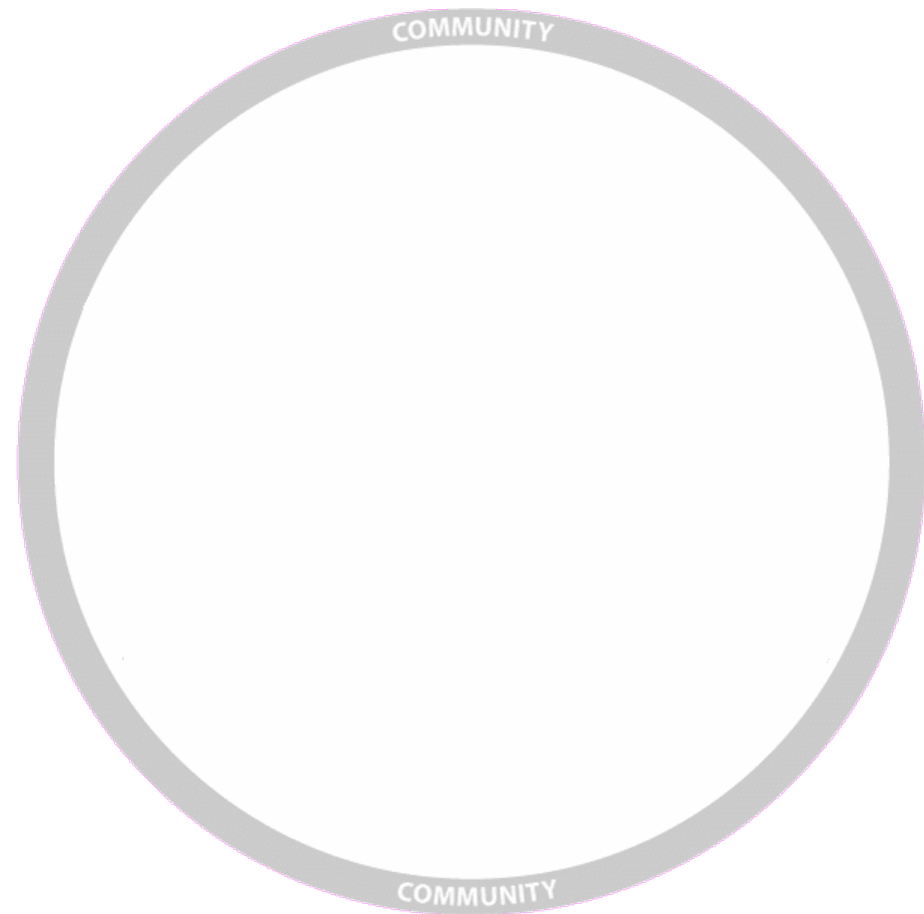
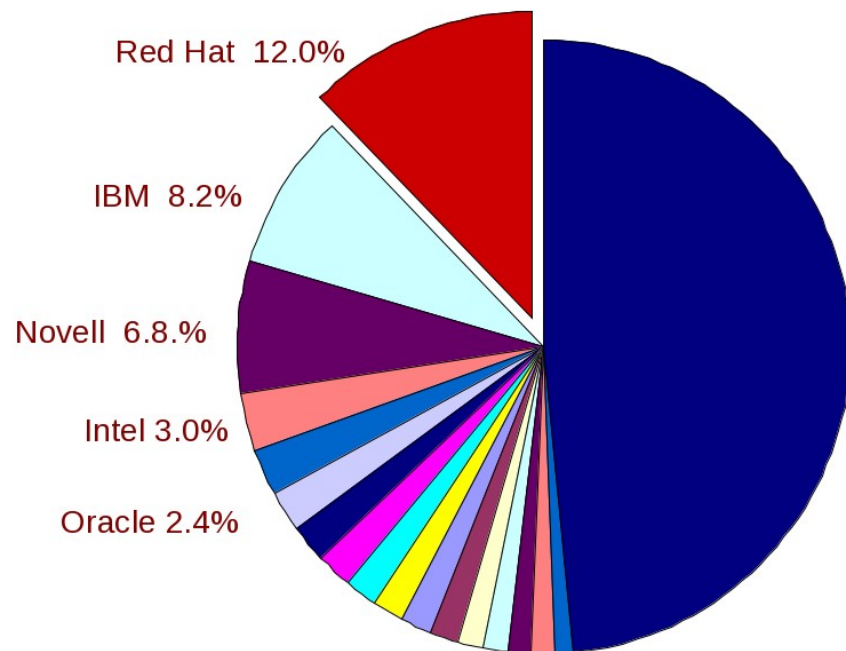
## NYC System z Executive Council

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**Red Hat, Inc**

# Red Hat Development Model

## Community

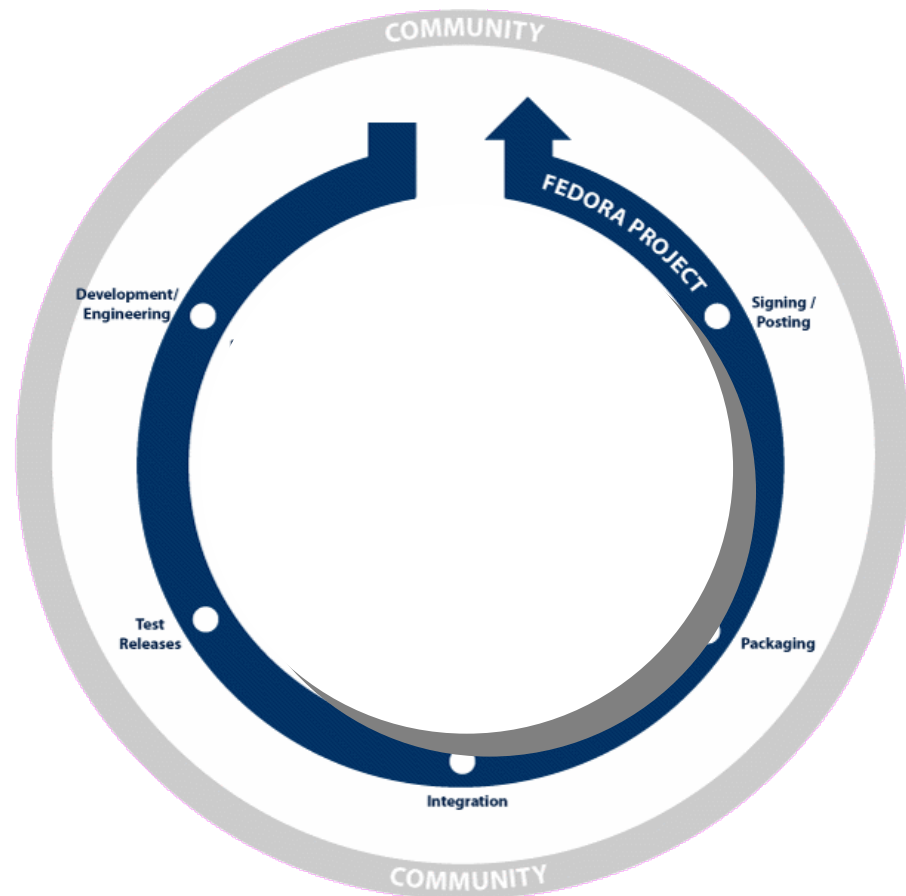
- Development with “upstream” communities
- Kernel, glibc, etc
- Collaboration with partners, IBM, open source contributors



# Red Hat Development Model

## Fedora

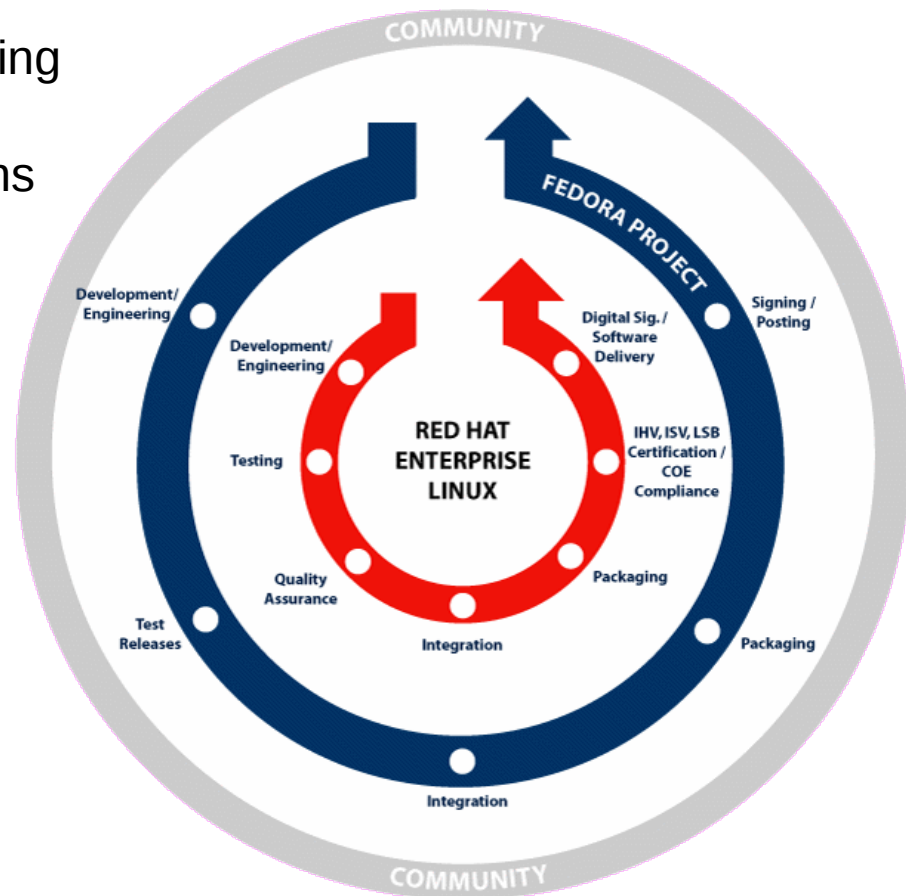
- Rapid innovation
- Latest technologies
- Community Supported
- Released ~6mo cycles



# Red Hat Development Model

## Red Hat Enterprise Linux

- Stable, mature, commercial product
- Extensive Q&A, performance testing
- Hardware & Software Certifications
- 7-10 year maintenance
- Core ABI compatibility guarantee
- Major releases 2-3yr cycle



# Fedora for System z

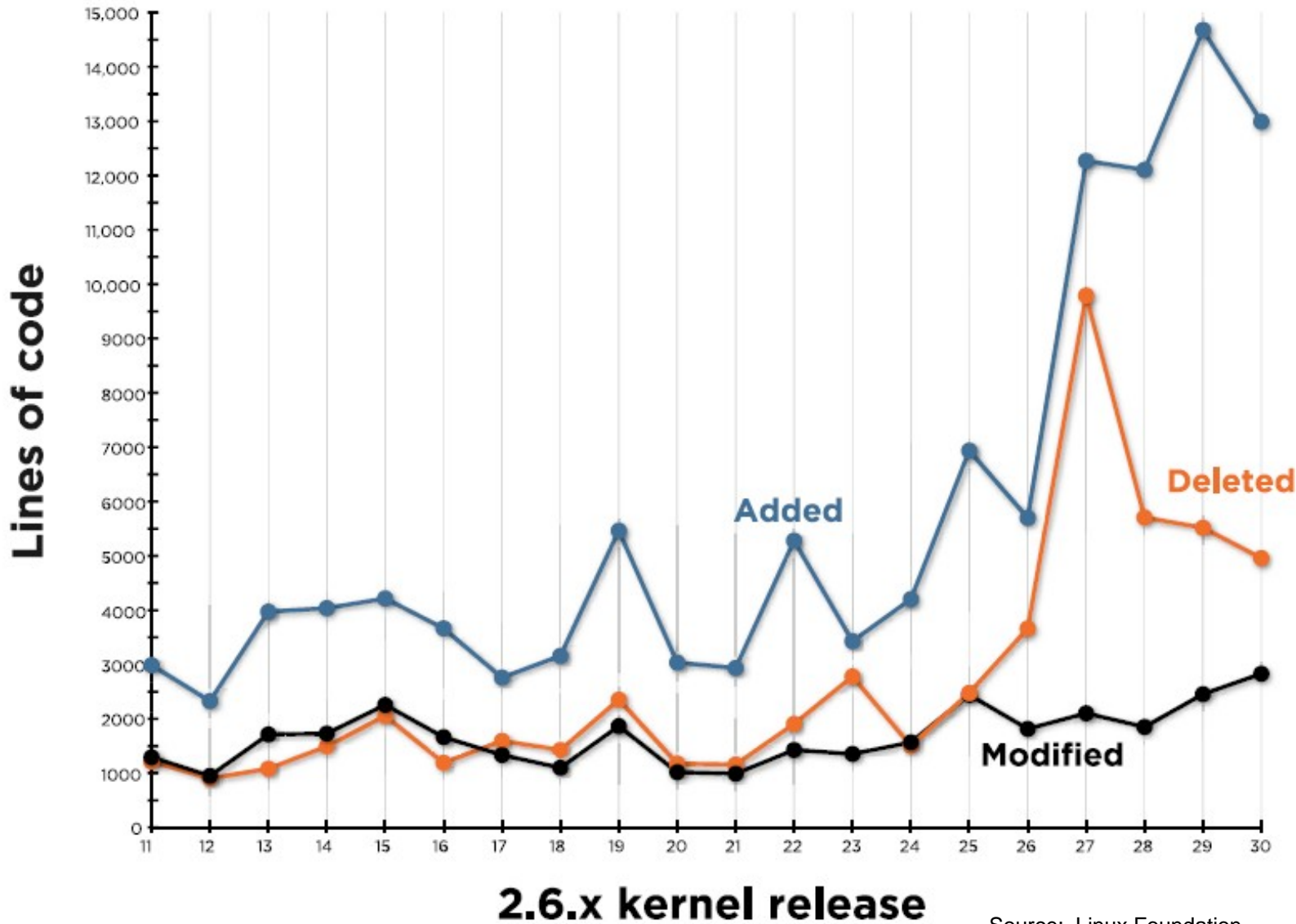
Opens Linux on System z development to entire Open Source community, not just IBM, Red Hat, and Novell.

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

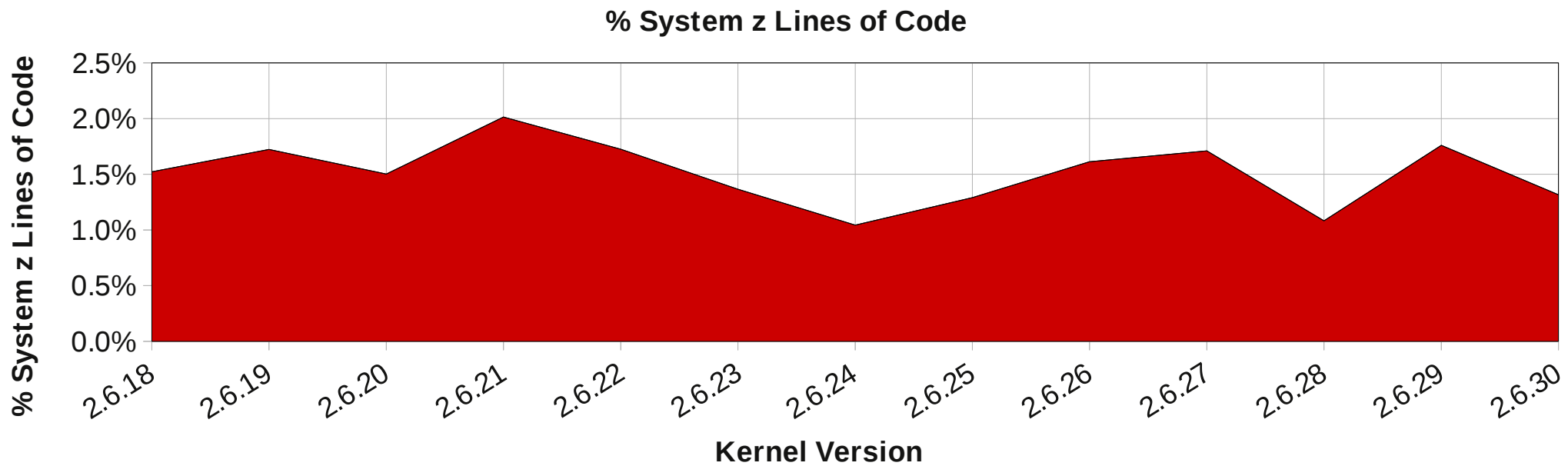
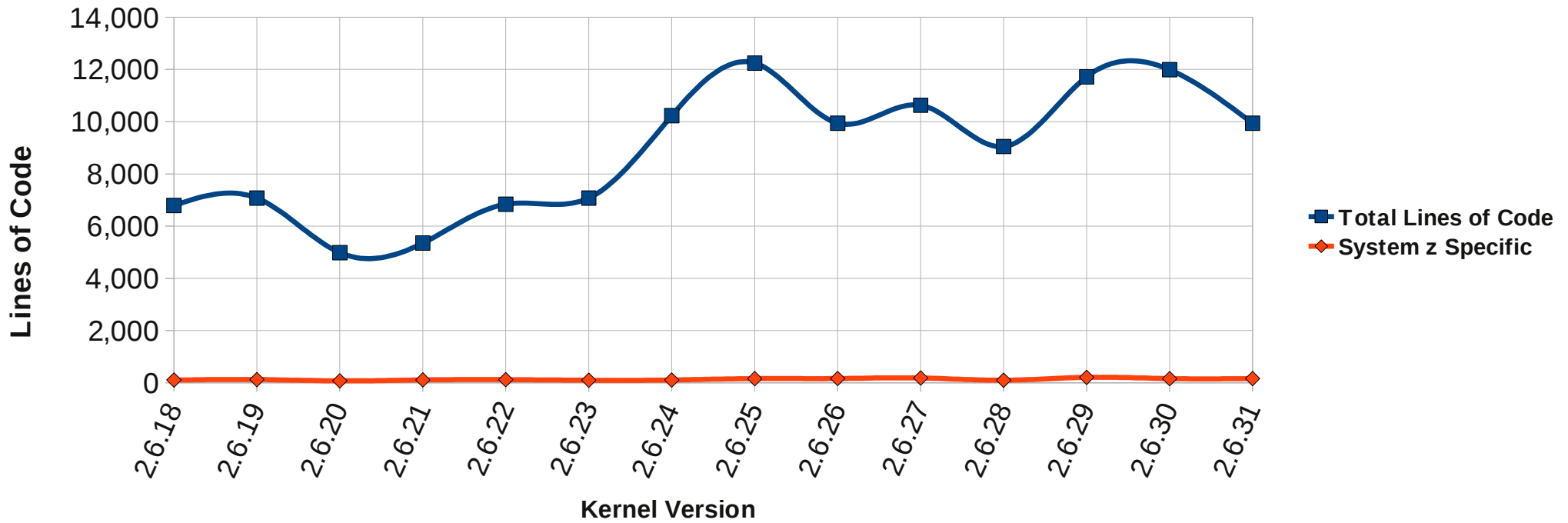


# Linux Kernel Development: Rate of Change

Average: 6,422 lines added, 3,285 lines removed, and 1,687 lines changed every day for the past 4 1/2 years.



# Linux Kernel Lines of Code



# Current Hypervisor Model

**GUEST**

**GUEST**

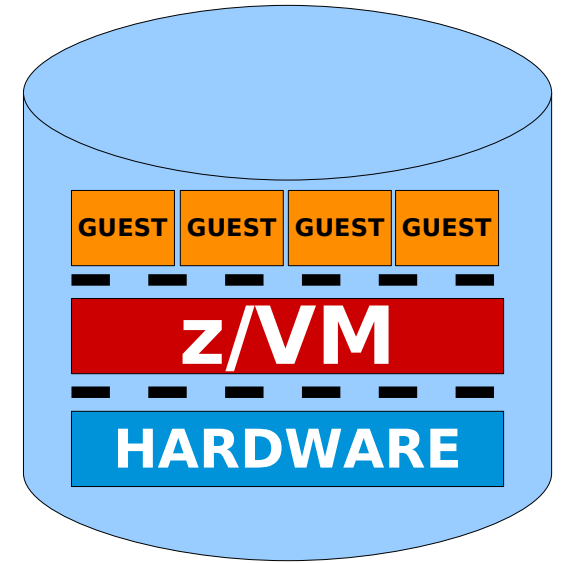
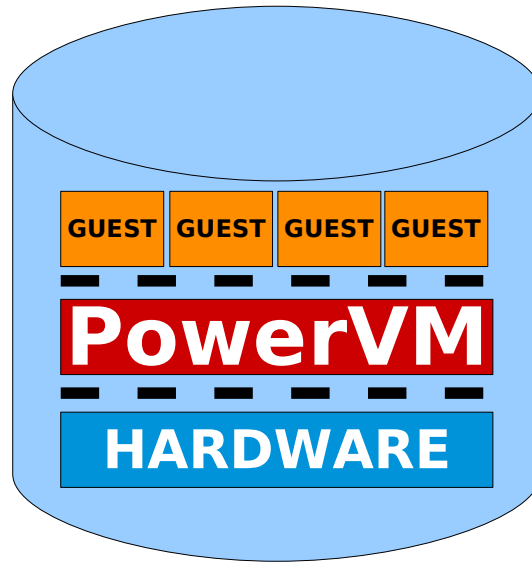
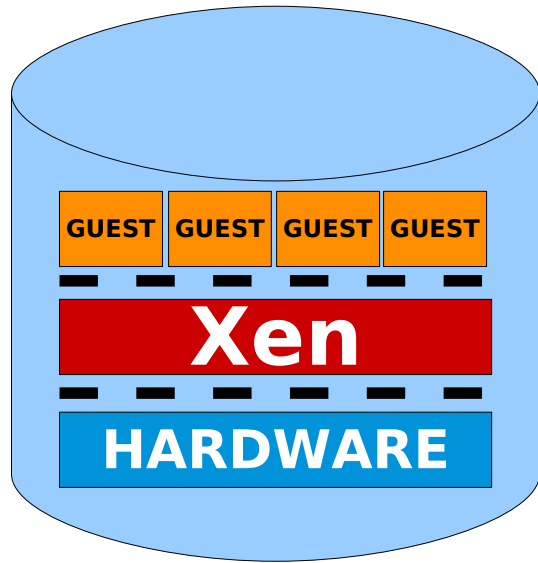
**GUEST**

**GUEST**

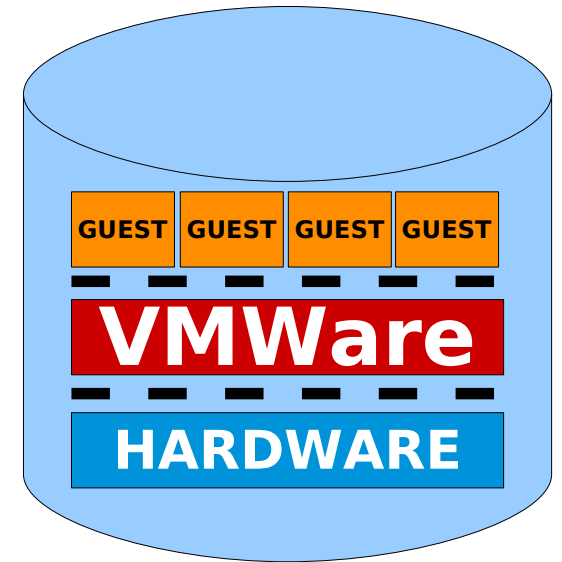
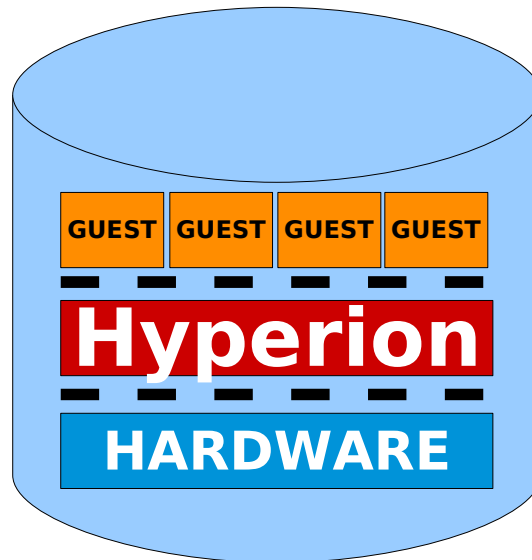
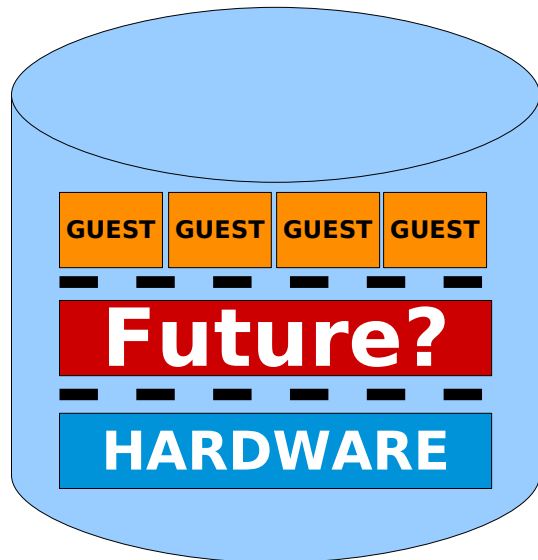
**HYPERVISOR**

**HARDWARE**



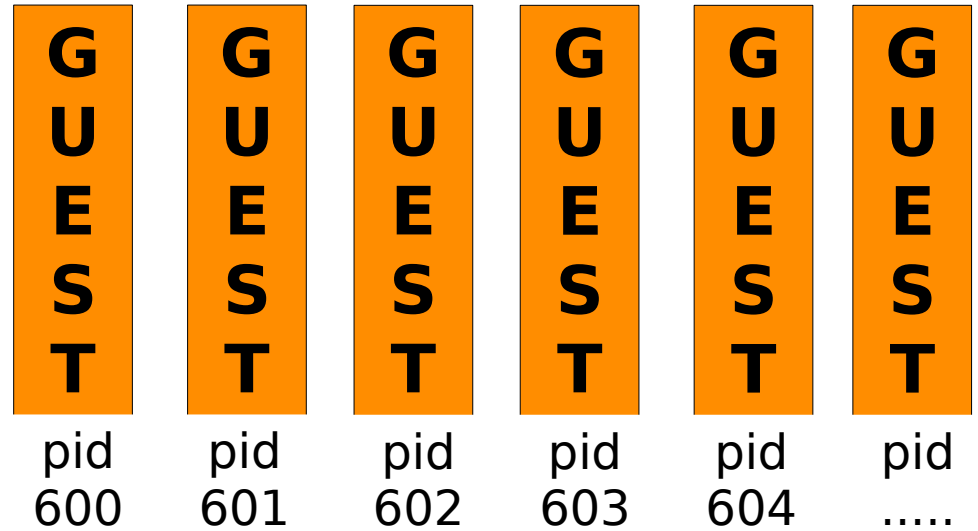


## Common Management?



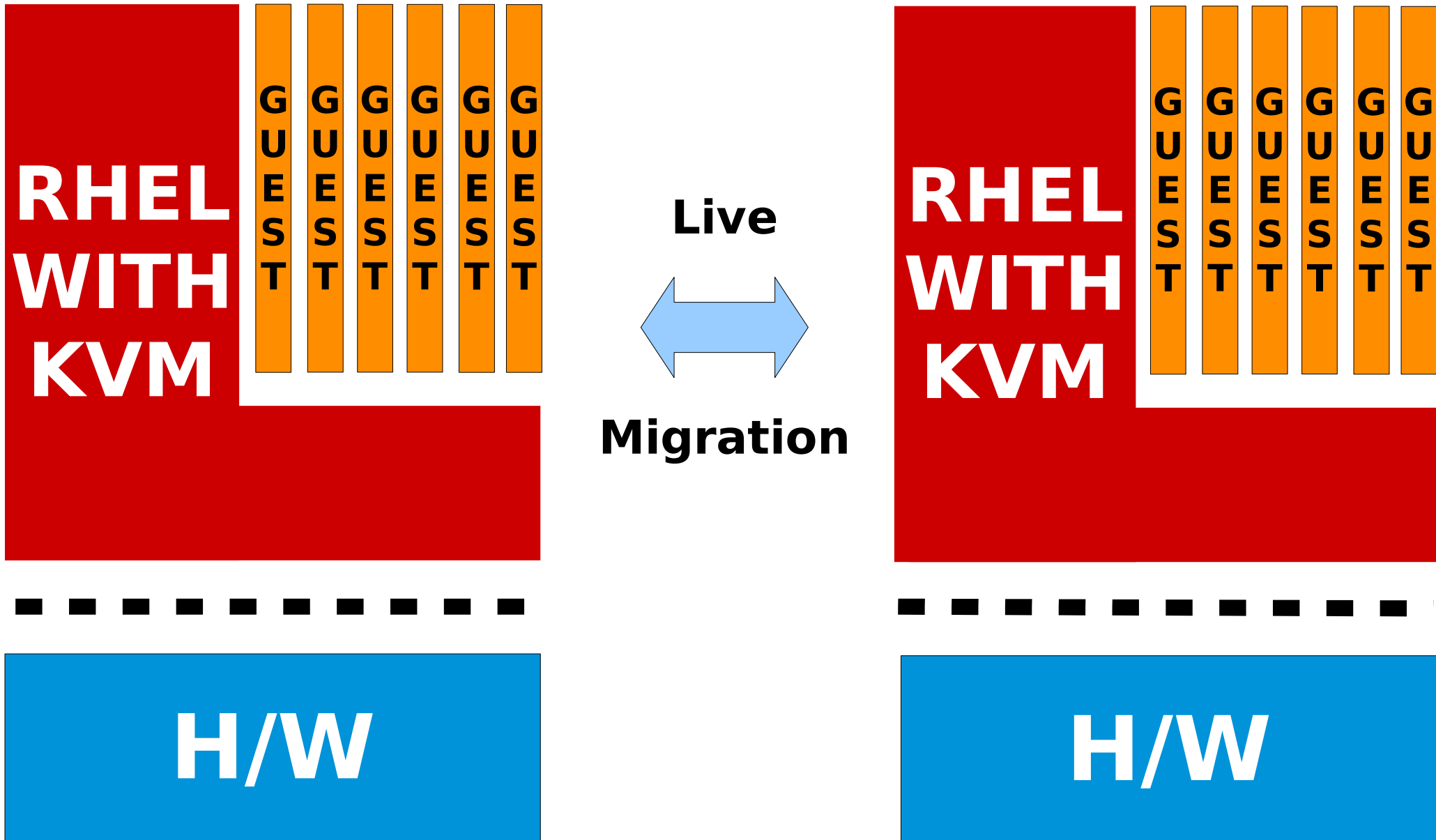
# Evolving the Model

**RHEL  
WITH  
KVM**



**HARDWARE**

# Evolving the Technology



# Common Management

**MANAGEMENT APPLICATION**

C

Python

Perl

CIM Provider

**LIBVIRT**

Xen

KVM

QEMU

LXC

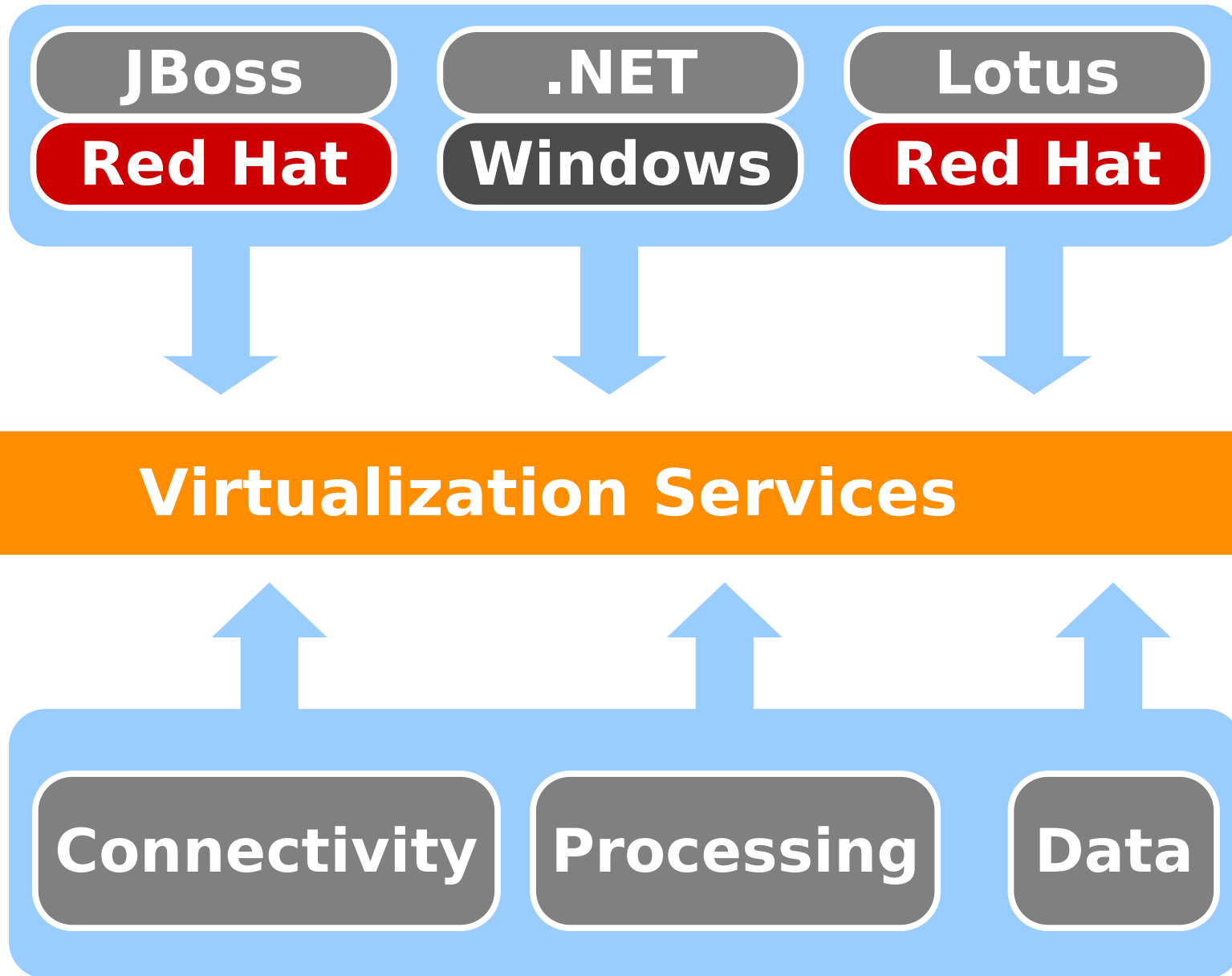
OpenVZ

VirtualBox

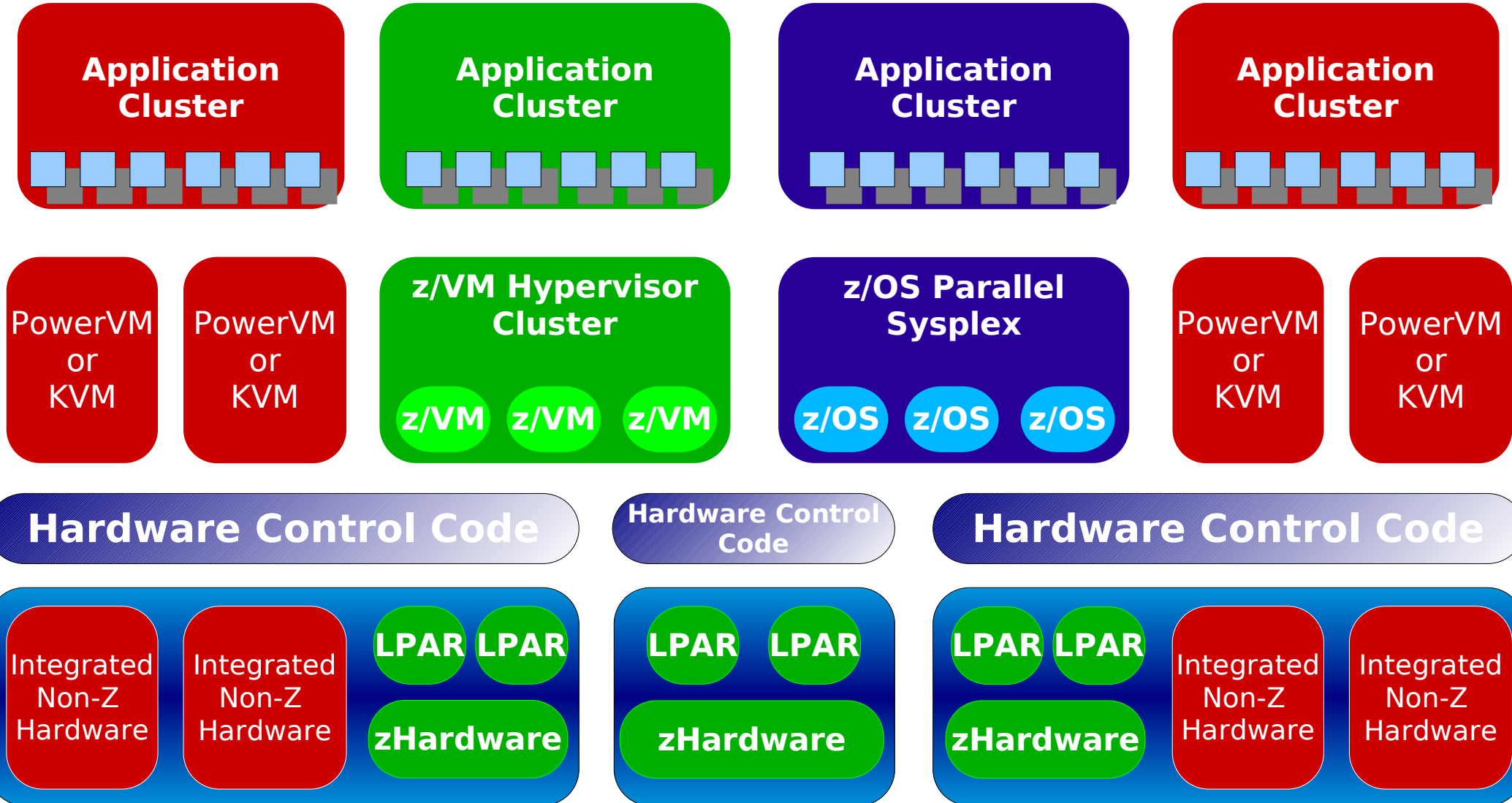
LDOMs

**HYPERVISOR**

# “Cloud Computing”



# Enterprise Virtualization Management Software



# Contact

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# Appendix



Kernel Version	Total Lines of Code	System z Specific	% System z
2.6.18	6,791	105	1.55%
2.6.19	7,073	124	1.75%
2.6.20	4,983	76	1.53%
2.6.21	5,349	110	2.06%
2.6.22	6,840	120	1.75%
2.6.23	7,075	98	1.39%
2.6.24	10,231	108	1.06%
2.6.25	12,243	160	1.31%
2.6.26	9,941	163	1.64%
2.6.27	10,628	185	1.74%
2.6.28	9,048	99	1.09%
2.6.29	11,718	210	1.79%
2.6.30	11,989	160	1.33%
2.6.31	9,939	162	1.63%

# OLIO CARLI

**CHALLENGE:** Olio Carli has more than 40 years mainframe computing experience, but needed to stay agile as they grow.

**SOLUTION:** Performance is paramount, so their solution included 6 virtualized instances of Red Hat Enterprise Linux 5 running on IBM z/VSE and z/VM, a DB2/Udb database, Ware Place and Tomcat—all on an IBM zSeries 9 Business Class mainframe.

**RESULT:** Their entire order processing process—from credit card validation to order processing to distributor notification—takes less than one second.



IBM

# CITY OF RECIFE

**CHALLENGE:** As a government agency, Emprel needed to control costs while still providing efficient, modern services to constituents.

**SOLUTION:** Emprel is an early adopter and government hosting provider, running a wide range of applications on the mainframe since 2002.

**RESULT:** In addition to Enterprise Linux, Emprel also deploys JBoss middleware on System z, taking advantage of the full open source stack.



IBM

# SALT RIVER PROJECT

**CHALLENGE:** SRP needed to upgrade their mainframe—and wanted greater flexibility, manageability, and performance than their HP-UX solution could provide.

**SOLUTION:** They migrated to Red Hat Enterprise Linux 5—using Red Hat Network Satellite for management—running on IBM System z.

**RESULT:** SRP was able to consolidate workloads, improve performance, save money, and enjoy stable and reliable management via RHN. Red Hat technical support and training brought their staff up to speed quickly.



IBM