# IBM Enterprise Linux Server and the System z Solution Edition for Enterprise Linux

November 2009

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| DB2* | System z* | z10 | |
| FICON* | System z9* | z10 BC | |
| GDPS* | System z10 | z10 EC | |
| | | z/OS* | |

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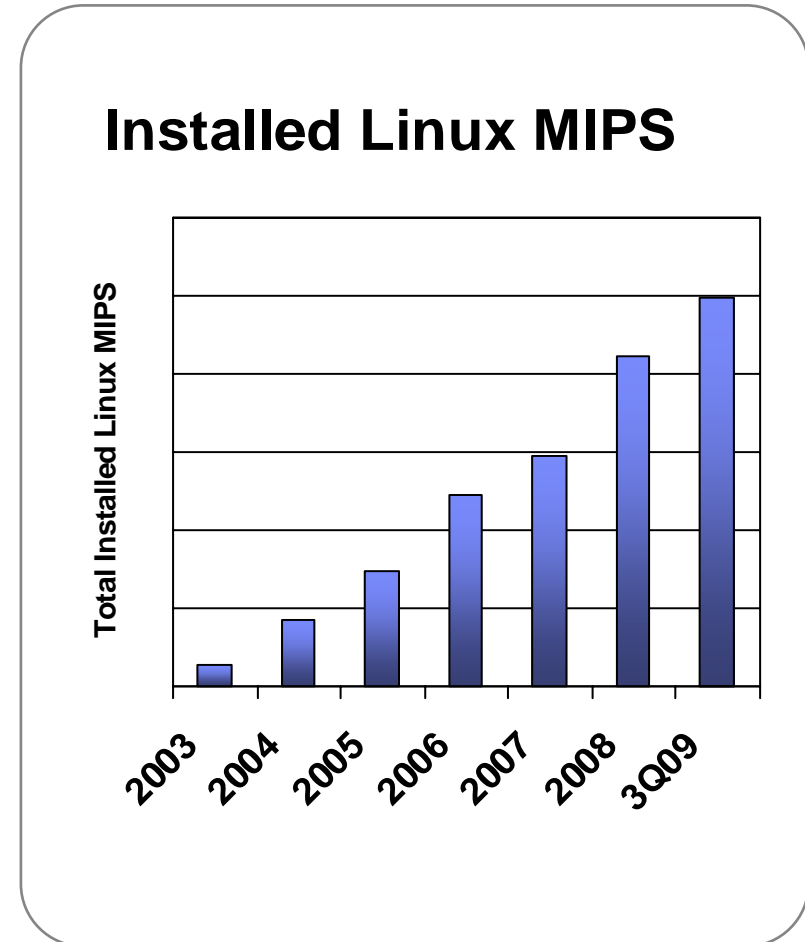
# Reed Mullen

**IBM** System z Consolidation and Virtualization Leader

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# Client Adoption Drives Linux Success
## *Installed Linux MIPS at 50% CAGR\**

- **The momentum continues:**
  - Shipped IFL engine volumes increased 62% from 3Q07 to 3Q09
  - Shipped IFL MIPS increased 100% from 3Q07 to 3Q09

- **Linux is 16% of the System z customer install base (MIPS)**

- **70% of the top 100 System z clients are running Linux on the mainframe**

- **>3,000 applications available for Linux on System z**

**Installed Linux MIPS**

Total Installed Linux MIPS

2003  2004  2005  2006  2007  2008  3Q09

* Based on YE 2004 to YE 2008.   © 2009 IBM Corporation

# Linux on System z Business Perspective
## *A Convergence of Market Forces*

1. The adoption of virtualization for consolidation is now the industry norm
   – Clients are looking to take the next step – very large scale consolidation
   – But there are challenges:
     - Questions over the scaling of x86 virtualization solutions
     - Speculation over the longevity of some UNIX® offerings

2. Linux on System z has strong acceptance in the market
   – High level of adoption from existing mainframe clients
   – Bringing new clients to the System z platform
   – Underpinning technologies are designed for very large scale computing with the highest Qualities of Services

➔ The convergence of two forces:
   – Linux on System z is the ideal platform for clients looking for a large scale consolidation solution

# Introducing New IBM Offerings for Large Scale Consolidation

| The Enterprise Linux Server | System z Solution Edition for Enterprise Linux |
|---|---|
| A dedicated IBM System z server for large-scale Linux workloads | Additional capacity on an installed IBM System z server for large Linux workloads |

- **Offerings include**
  - System z IFLs[1]
  - 16 GB of memory per IFL[2]
  - Hardware maintenance for three to five years
  - z/VM® virtualization software package with three to five years of subscription and support
  - Minimum of three 4-Port FICON® cards and two 4-Port OSA cards (ELS ONLY)
  - Clients can optionally add more memory or I/O connectivity

  z/VM V5 or V6 Base Product and features:
  - DirMaint
  - Performance Toolkit
  - RACF Security Server
  - RSCS

- **Supported with new promotions from Linux Development partners Novell and Red Hat**

- **Very competitive pricing**
  - Competitive TCA with scalable Linux and UNIX alternatives
  - Total Cost of Ownership and Qualities of Service that blow away the competition
  - Pricing starting at under $2,000 per virtual server for large-scale consolidations[2]

6

(1) Entry configurations for ELS are: 6 IFLs for z10 EC, 2 IFLs for z10 BC
(2) Subject to maximum server configurations
(3) Calculations based on IBM and client experiences. Results can vary.

TCA (hardware, virtualization software, memory, maintenance)
Entry configuration for EC machine may vary by country
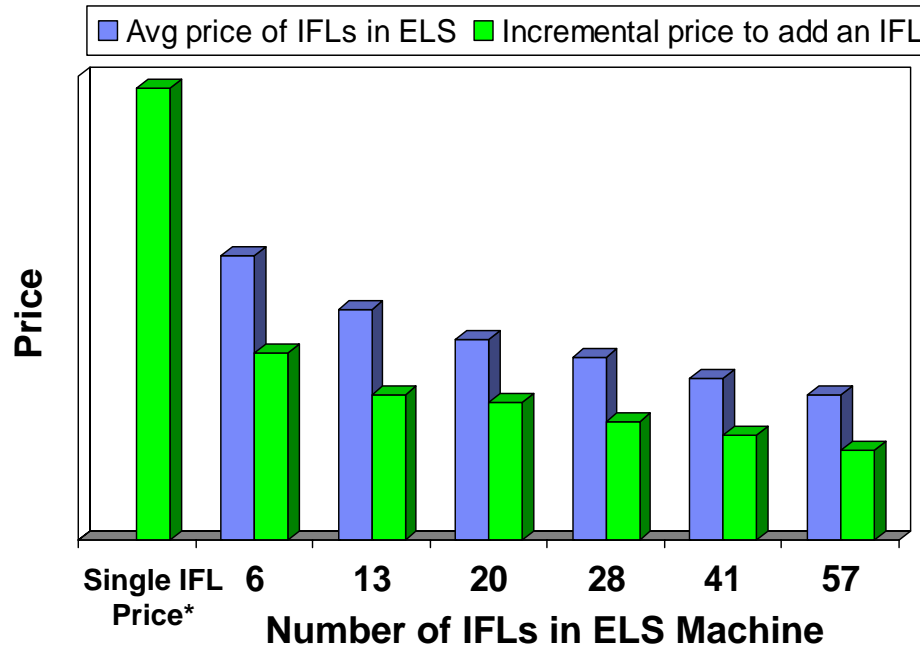
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**IBM**

# IBM Enterprise Linux Server
## *Transforming the Economics for Large Scale Consolidation*

### Enterprise Linux Server (z10 EC)
### Price per IFL
Includes: IFL, 16 GB memory, z/VM,
3 years maintenance and S&S

**The new Enterprise Linux Server dramatically reduces the marginal cost of scaling for consolidations**

- The average cost of consolidation declines significantly as the scale of consolidation increases

- The marginal price of an incremental IFL can be as much as 80% less than the single IFL price

- You don't have to buy big to save big!

■ Avg price of IFLs in ELS  ■ Incremental price to add an IFL

**Price**

Single IFL   6      13     20     28     41     57
Price*

**Number of IFLs in ELS Machine**

Note: participation and pricing may vary by country.

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## *Unprecedented Economies of Scale for Consolidation on Linux on System z*

\* Based on July 2009 pricing for IFL ($75K) and memory ($2250/GB) with discounted software and hardware maintenance for 3 years.

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# IBM Enterprise Linux Server – z10 BC Pricing
## *Enterprise-Class Linux Virtualization in a Smaller Footprint*

**Enterprise Linux Server**
**Average Price Per IFL for BC Machine**
(Includes IFL, Maintenance, Memory, I/O Connectivity, z/VM)



Approximately $50K per IFL

Average Price Per IFL

Number of IFLs Per System

2    4    6    8    10

Note: participation and pricing may vary by country.
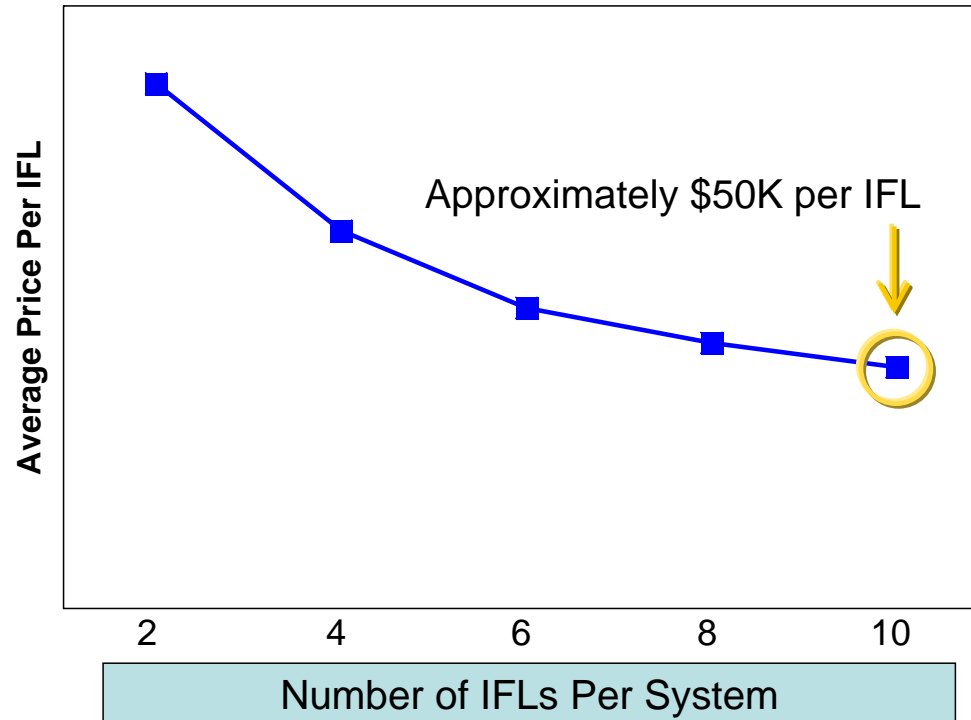
# System z Solution Edition for Enterprise Linux
*Pricing Overview*

- **The focus of SE for EL is to capture large-scale virtualization and consolidation opportunities, not to change the economics of adding a small number of IFLs to an existing machine**

- **For qualifying large-scale Linux consolidation opportunities, the incremental pricing for SE for EL is similar to the incremental pricing characteristics of the Enterprise Linux Server**

- **Significant discounting is available for the sale of multiple IFLs on System z10 EC and BC machines**

- **Refer to your System z playbook for details**

Note: participation and pricing may vary by country.

## Value Proposition Summary
## IBM System z Solution Edition for Enterprise Linux and The Enterprise Linux Server

Leverage the ability of Linux on System z to **consolidate UNIX and x86 processor cores** to unleash significant IT cost savings opportunities

- **People Costs** – increase the productivity of the IT staff
- **Software Costs** – reduce software license fees by consolidating a large number of virtual machines per System z core
- **Energy Costs** – dramatic reduction in power usage
- **Facilities Costs** – reduce floor space with dense server consolidation on System z
- **Networking Costs** – consolidate networks inside the box too

# IBM System z Solution Edition for Enterprise Linux and the Enterprise Linux Server – *Competitive Perspective*

- **x86 virtualization solutions have some hidden and some not-so-hidden issues**
  - Physical server sprawl is needed to scale a virtualized x86 environment – typically with linear, per-machine pricing
  - x86 virtual machine sprawl can be difficult to manage, causing operational complexity
  - Ineffective capacity planning can result in failure to meet service level agreements
  - Limited core-to-core consolidation ratios and virtual machine mobility requirements can lead to costly software fees
  - x86 systems do not have a heritage of robust security support
  - Duplication of hardware is needed for disaster recovery

- **Enterprise Linux Server provides a superior scale-up system architecture for scale-out x86 applications**
  - Dynamically expand your system "on demand" – add capacity when you need it, not any sooner, not any later
  - Enjoy superior operational capabilities for greater levels of command and control
  - Total Cost of Ownership economics favor server virtualization on ELS, especially when factoring in disaster recovery and server technology refreshes

**Consolidate more and spend less with IBM System z**
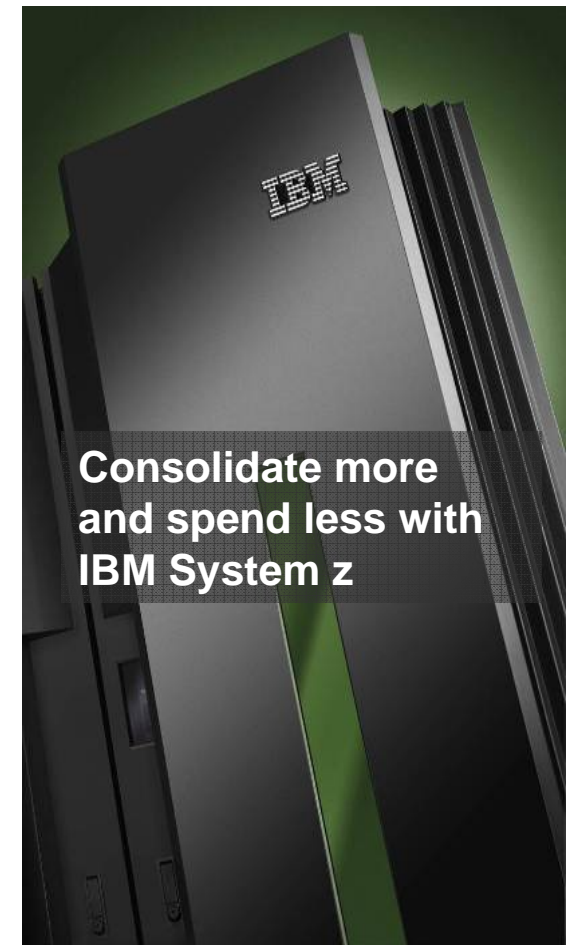
# IBM System z Solution Edition for Enterprise Linux and the Enterprise Linux Server – *Next Steps*

- **Introduce IT organizations to the compelling business value of hosting virtual servers on System z with z/VM and Linux**
- **Identify customers who:**
  - Spend too much money on x86 and UNIX server and networking sprawl
  - Struggle to host I/O and data-intensive workloads in virtual servers with acceptable levels of performance, scalability, availability, capacity planning, or disaster recovery
  - Are experiencing or projecting IT growth and want a better way to manage that growth
- **Target "Fit for Purpose" workloads that leverage the strengths of IBM System z**
  - High I/O bandwidth
  - Rock-solid system security
  - Cost-effective disaster recovery
  - Hosting a large number of mixed workloads on the same machine
  - Database and data serving applications like Oracle are a particular "best fit" for Linux on System z
- **Partner with Novell and Red Hat for client engagements and new Linux pricing options developed for the Enterprise Linux Server and Solution Edition for Enterprise Linux**

# New Sales Kits

## IBM System z Solution Edition for Enterprise Linux

- **IBM:**
  http://w3.ibm.com/sales/support/ShowDoc.wss?docid=G801340M04672E81&infotype=SK&infosubtype=S0&node=doctype,S0|doctype,SKT|brands,B5000|brands,B5T00&appname=CC_CFSS

- **BPs:**
  http://www.ibm.com/partnerworld/wps/servlet/ContentHandler/zSolLinux

## IBM Enterprise Linux Server

- **IBM:**
  http://w3.ibm.com/sales/support/ShowDoc.wss?docid=Z079904J61976Z84&infotype=SK&infosubtype=S0&node=doctype,S0|doctype,SKT|brands,B5000|brands,B5T00&appname=CC_CFSS

- **BPs:**
  http://www.ibm.com/partnerworld/wps/servlet/ContentHandler/zLinuxES

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# Summary, Additional Resources, Contacts

| Pain Points | Spending too much money on energy, cooling, floor space, software license fees; Too many application outages; unable to increase staff productivity |
|---|---|
| Value proposition | Take out costs now: consolidate tens-to-hundreds of distributed workloads in order to lower costs and energy consumption; improve staff productivity and increase application availability |
| Client benefits | Reduce energy and floor space utilization up to 80% Linux-on-z/VM enables extremely high virtual-to-real CPU ratios: a) do more with less, b) save money on software fees; many clients report staff productivity boosts of 50% |
| Service Offerings | IT Optimization Factory – improve time to value and accelerate ROI with ECM-developed automated application migration offering for System z (discover, map, migrate, test) |
| Next steps | TCO analysis to demonstrate potential cost savings |
| Key resources Access URLs in slide show mode | System z Consolidation and Virtualization Sales Kit, Linux for System z Sales Kit, Linux on System z Wiki, z/VM 5.4 Sales Kit, z/VM 6.1 Sales Kit, How to engage a Cost & Value, Scorpion, Zodiac, RACE Study |
| Key Contacts | Carol Stafford, VP System z Sales (cstaffor@us.ibm.com), Reed Mullen, C&V Initiative Lead (mullenra@us.ibm.com), Nancy Scala, Brand Marketing (nancyscala@us.ibm.com), Gerald Hosch, Offering Manager (hosch@de.ibm.com), Katherine Grabarits, zChampion and zAtlas team worldwide contact (kathyg@us.ibm.com) |
| Links | Master System z Sales Kit, zChampion website: http://pokgsa.ibm.com/projects/a/applacement/zchampions.html |

# Patrick Quairoli

## Novell Technical Alliance Manager

# SUSE Linux Enterprise Consolidation Suite for System z for IBM SE Enterprise Linux

| SLE Consolidation Suite for System z for IBM SE EL **"Business Class" Basic** | SLE Consolidation Suite for System z for IBM SE EL **"Business Class" Priority** |
|---|---|
| - 2 IFL SLES for System z 3y Basic subscriptions (extend up to 4 IFL subscription)<br>- 2 User access to Novell Online Training Catalog Plus 2 VUE Training Vouchers<br>- 2 Mono Tools for Visual Studio licenses with 3-year subscriptions<br>- 2 IFL SUSE Linux Enterprise Mono Extension for System z 3-year subscriptions | - 2 IFL SLES for System z 3y Priority subscriptions (extend up to 4 IFL subscription)<br>- 2 User access to Novell Online Training Catalog Plus 2 VUE Training Vouchers<br>- 2 Mono Tools for Visual Studio licenses with 3-year subscriptions<br>- 2 IFL SUSE Linux Enterprise Mono Extension for System z 3-year subscriptions |
| $39,795.- | $56,322.- |

| SLE Consolidation Suite for System z for IBM SE EL **"Enterprise Class" Basic** | SLE Consolidation Suite for System z for IBM SE EL **"Enterprise Class" Priority** |
|---|---|
| - 4 IFL SLES for System z 3y Basic subscriptions<br>- 2 User access to Novell Online Training Catalog Plus 2 VUE Training Vouchers<br>- 2 Mono Tools for Visual Studio licenses with 3-year subscriptions<br>- 2 IFL SUSE Linux Enterprise Mono Extension for System z 3-year subscriptions | - 4 IFL SLES for System z 3y Priority subscriptions<br>- 2 User access to Novell Online Training Catalog Plus 2 VUE Training Vouchers<br>- 2 Mono Tools for Visual Studio licenses with 3-year subscriptions<br>- 2 IFL SUSE Linux Enterprise Mono Extension for System z 3-year subscriptions |
| $79,999.- | $113,053.- |

Initial promo period: 12 month, starting with FCS in January 2010
SLE Consolidation Suite for System z  offering is stackable, **may be purchased multiple times per IBM SE EL system**
**SLE Consolidation Suite for System z only available for incremental new IFL purchases**
**NOT transferable to non-IBM SE EL System-z machines, NOT available for renewal of existing IFLs**

**More information at: http://www.novell.com/mainframe/els**

Novell and IBM confidential – for internal use only

# SUSE Linux Enterprise Consolidation Suite for System z
# Value for Customers

## Customer Benefit

Based on SUSE Linux Enterprise Server for System z, the market-leading Linux operating system for IBM Mainframe (10 years of mainframe expertise!)

Offers a very attractive initial subscription price (TCA)

On IBM SE EL BC allows for growth via entitlement to activate 2 additional IFL

Tailored for consolidation of .NET workloads on IBM SE EL systems, and provides .NET development plug-ins into Microsofts Visual Studio (develop on x86 and test and deploy on System z)

Includes a Novell training voucher to build up or extend Linux skills of IT staff

*Only available in conjunction with IBM Solution Edition for Enterprise Linux*

**EFiS Financial Solutions AG** runs **IBM System z Business Class with SUSE Linux Enterprise Server for System z**

*"We chose an IBM Enterprise Linux Server with a System z Business Class configuration, running SUSE Linux Enterprise Server for System z from Novell for the high reliability, advanced security, extreme scalability and high compute power this solution offers," said Ernst Bauer, Chief Operating Officer*

# Shawn Wells

Red Hat Worldwide System z Director

# *New* Pricing from Red Hat for Solution Edition Bundle

- Red Hat Enterprise *Managed*\* Linux
  - Premium (24x7) – 59% discount
  - Standard (12x5)– 58% discount
  - Sold per IFL

- Conditions:
  - 6 month promotion
  - No minimum purchase required, no limit on IFLs
  - Offer valid for EC and BC machines
  - Renewable at promotional prices

- Training Component:  RH290 Red Hat Enterprise Linux for Solaris Administrators MSRP:  $1,249  USD
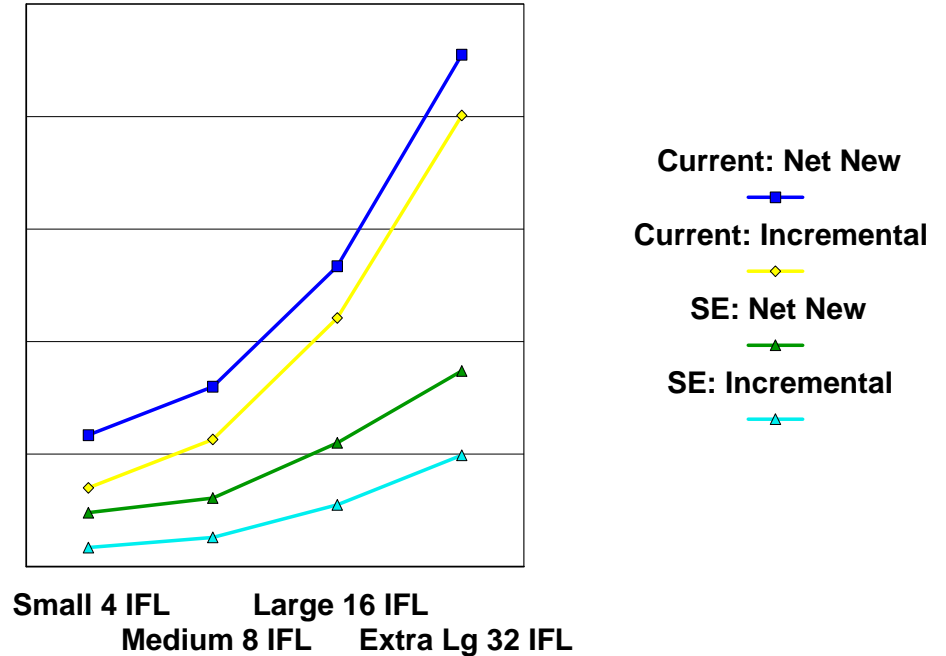
| # Students | Discount | Promo Code |
|---|---|---|
| 2 – 3 | 12.00% | 45912 |
| 4 – 5 | 14.00% | 45914 |
| 6 | SPECIAL BID | |

https://www.redhat.com/courses/rh290_red_hat_enterprise_linux_for_solaris_administrators

**Current: Net New**

**Current: Incremental**

**SE: Net New**

**SE: Incremental**

**Small 4 IFL          Large 16 IFL**
**Medium 8 IFL      Extra Lg 32 IFL**

**\* Red Hat Enterprise *Managed* Linux is a pre-packaged bundle of RHEL plus provisioning and management entitlements to Red Hat Network (RHN), the Red Hat Systems Management utility.**
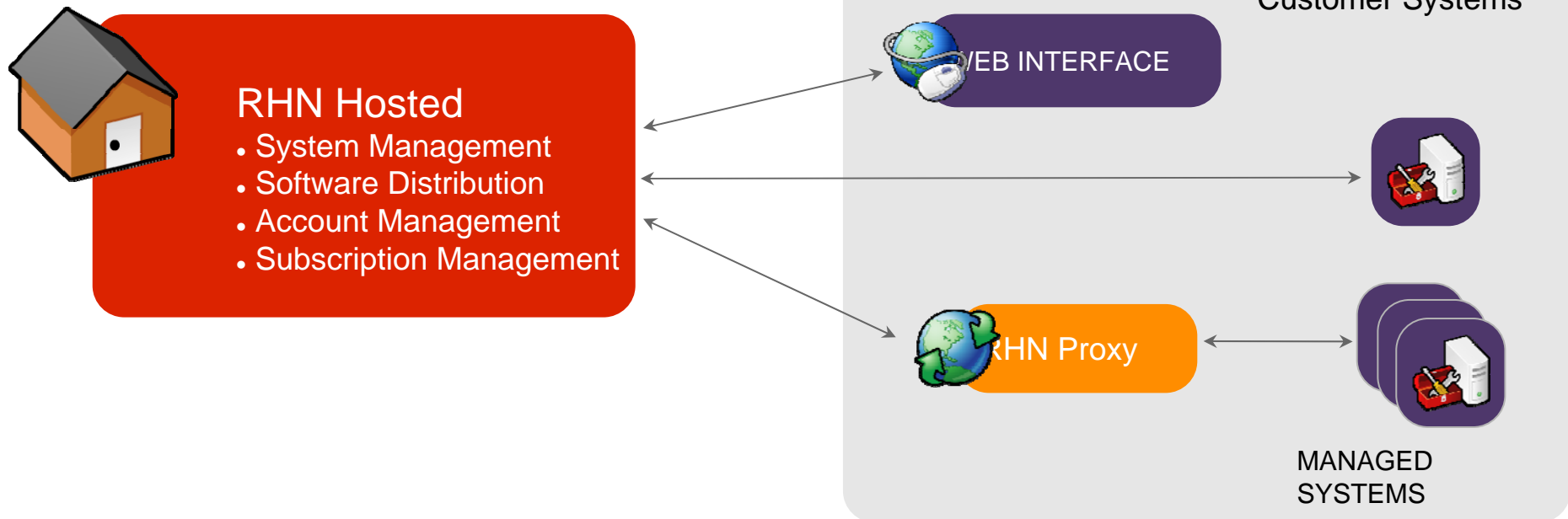
## Red Hat Network


RED HAT NETWORK
:: Enterprise Systems Management

- **Red Hat's modular, Web-based Linux management platform**
  - **Highly scalable solution**
  - **Integrates with existing platforms**
- **Modular approach**
  - **Updates – Management – Provisioning – Monitoring** Included with Red Hat SE Bundle
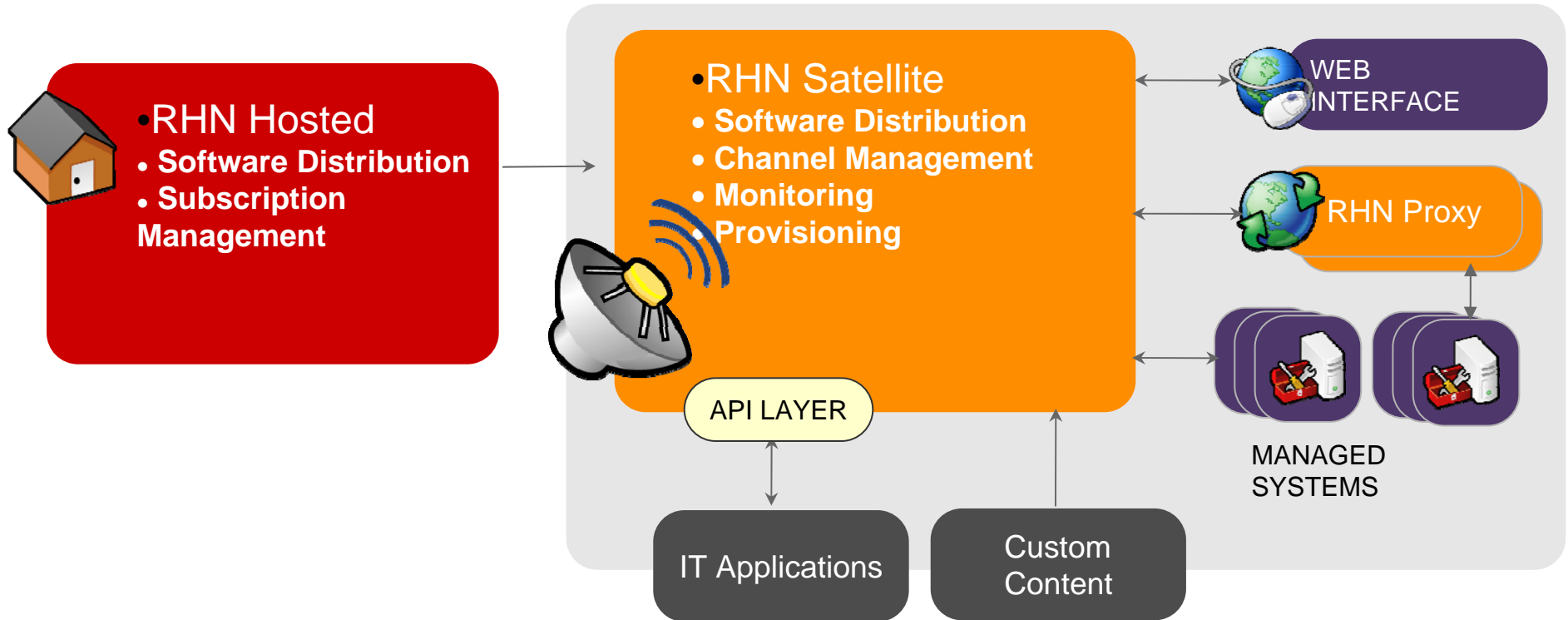


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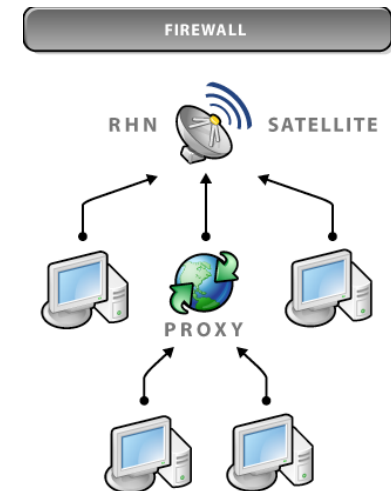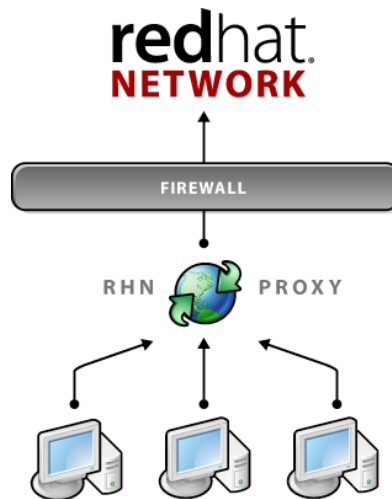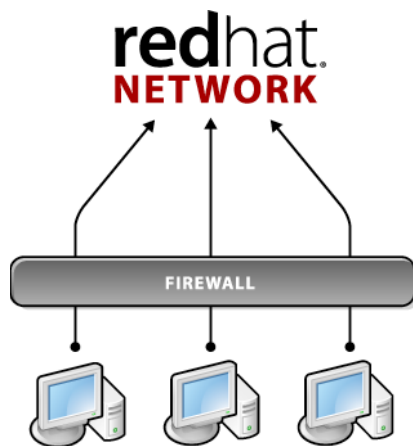
# Hosted Deployment Model

**RED HAT NETWORK**
:: Enterprise Systems Management

Customer Systems

WEB INTERFACE

## RHN Hosted
- System Management
- Software Distribution
- Account Management
- Subscription Management

RHN Proxy

MANAGED
SYSTEMS

- Quick setup is designed to enable management for small deployments
- All system information, profiles, and packages are stored in Red Hat's servers
- Each managed system connects across the Internet for all managed actions
- RHN Proxy can be added to lower bandwidth use by caching packages locally

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# Satellite Deployment Module

**RED HAT NETWORK**
:: Enterprise Systems Management

**•RHN Hosted**
- Software Distribution
- Subscription Management

**•RHN Satellite**
- Software Distribution
- Channel Management
- Monitoring
- Provisioning

WEB INTERFACE

RHN Proxy

API LAYER

MANAGED SYSTEMS

IT Applications

Custom Content

- Local database stores all packages, profiles, and system information
- Syncs content from RHN Hosted, can run disconnected from the internet
- Custom content distribution

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# Red Hat Contacts

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