Migrating from HP-UX to Red Hat Enterprise Linux with Confidence

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Red Hat Enterprise Linux Adoption Increasing

Many migrating to x86

Many from UNIX migrate to x86 and Red Hat Enterprise Linux

Server OS trending to Linux

Red Hat 60% of paid Linux

97% server units shipped worldwide

More applications, hardware, and device drivers on Red Hat Enterprise Linux
Preferred by ISVs, Deploy with Confidence

- Deploy on multiple platforms with performance & reliability/availability features of enterprise UNIX
- Retain IT staff and skills
<table>
<thead>
<tr>
<th>Why Migrate to x86 and Red Hat Enterprise Linux</th>
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</thead>
<tbody>
<tr>
<td>Increase choice of hardware, software, peripherals</td>
</tr>
<tr>
<td>Hardware refresh</td>
</tr>
<tr>
<td>Need to quickly adapt to change</td>
</tr>
<tr>
<td>Running Oracle, SAP, or SAS</td>
</tr>
<tr>
<td>Migrate to commodity, but retain skills</td>
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</tbody>
</table>
Reduce TCO

Lower-cost system admin

Skills taught in all education levels

Used in governments around the world

Subscription only

- Access to all shipping versions
- Steady stream of enhancements
- Proactive security updates
- Additional hardware/software support

Predictable IT costs

“With Red Hat’s open source subscription model, we can scale up and down easily without worrying about price per CPU creating unexpected extra costs.”

-- Antonio Mastrolorito, Chief IT architect, Lufthansa Cargo
Increase **Choice**

- 1000's of software and hardware vendors
- One of the largest technology certification ecosystems in the world

**Red Hat Enterprise Linux** certified on broad portfolio of platforms — from desktop to mainframe

- Apps certified on RHEL supported on KVM, VMware, Hyper-V
- Application isolation with cGroups, SELinux sandboxes
Outstanding Benefits

**SCALABLE**
- Systems to 108 cores, 2 TB RAM, 16 I/O slots
- Designed to scale to 4096 cores and up to 64 TB RAM
- Industry benchmarks show near-linear scaling to 64+ cores.

**Flexible**
- Resource management: cGroups
- Integrated hypervisor
- Migrate VMs regardless of hardware

**Reliable**
- Self healing, automatic isolation of CPU/RAM
- Improved hardware awareness multi-core & NUMA
- Energy efficient power management features
Community-Based Innovation

Innovative technology with unmatched availability, security, scalability

Subscribers

25% Linux kernel changes

12.4%
6.9%
5.8%

Engineering & collaboration benefit everyone!
Innovation With Stability

Poised to change with the times

Delivers stability you need

User collaboration driven changes

Demand on servers

Cloud

More security

More apps

More creativity

More data

More end points

Re-image IT to grow & compete

More flexibility

More apps

More end points

More security
The **Strongest Future**

- Adoption rising: **mainframe**
- Technologies often available first
- Silicon prototyped: **Intel Xeon**, **MIPS**, **ARM**, more
- Cloud foundation: **Amazon Web Services**, **Fujitsu**, **IBM**

Strong industry support & commitment
A More Personal Relationship

- Maintenance, support, information for entire lifecycle
- Work with people who write and test code
- Leverage Red Hat expertise for planning, testing, migrating, maintaining, upgrading

License/support/maintenance agreements

Contact only when broken

Subscription Model

Contact encouraged!
Long-Term, Worldwide Support

New technology delivered at no additional cost

Up to 10 years support

On-going service & support

Access to unique knowledge, technical experience, global portal
Similarity to HP-UX

- POSIX compliant APIs
- Similar tools
- All major HP-UX application supported
- Retain investment in skills — quickly transfer skills to Red Hat Enterprise Linux
  - Red Hat Training
  - Red Hat Strategic Migration Guide
  - IBM technical resources for Linux programmers and system admins
  - Linux Journal
# Similar Tools

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Red Hat Enterprise Linux</th>
<th>Similar to HP-UX</th>
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</thead>
<tbody>
<tr>
<td>Package Management</td>
<td>RPM Package Manager, front-end with Yum</td>
<td>Software Distributor (SD-UX), traditional package management commands</td>
</tr>
<tr>
<td>Auto Installer</td>
<td>Kickstart</td>
<td>Ignite-UX and Software Package Builder</td>
</tr>
<tr>
<td>Logical Volume Manager</td>
<td>LVM, LVM2 (snapshots)</td>
<td>Logical Volume Manager (LVM or VxVM)</td>
</tr>
<tr>
<td>Software Updates</td>
<td>Software Updater</td>
<td>Update-UX and SoftwareAssistant (SWA)</td>
</tr>
<tr>
<td>Default GUI</td>
<td>Gnome</td>
<td>Gnome</td>
</tr>
<tr>
<td>Init Scripts</td>
<td>System V style for start, stop, checking services</td>
<td>System V style, ksh, bash</td>
</tr>
<tr>
<td>General Admin Tools</td>
<td>vmstat, top, iostat, netstat</td>
<td>Same</td>
</tr>
<tr>
<td>Military-Grade Security</td>
<td>Common Criteria Certification (EAL 4+)</td>
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## Similar Tools (Continued)

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<td>Native Multipathing</td>
<td>Included</td>
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</tr>
<tr>
<td>Dynamic Tracing</td>
<td>SystemTap</td>
<td>ktracer</td>
</tr>
<tr>
<td>High Availability</td>
<td>High Availability Add-On</td>
<td>HP Serviceguard</td>
</tr>
<tr>
<td>File Systems</td>
<td>ext2, ext3, ext4, ReiserFS, FAT, ISO 9669, UDF, NFS, support for encrypted FS</td>
<td>NFS, CDFS, PCFS, VxFS, UDFS, UFS, CFS</td>
</tr>
<tr>
<td>Development Tools</td>
<td>Compile with GNU tools on HP-UX, then move to Linux</td>
<td>GNU tools, HP developer tools, Eclipse</td>
</tr>
<tr>
<td>Networking</td>
<td>IPV4, IPV6</td>
<td>Same</td>
</tr>
<tr>
<td>Integrated Firewall</td>
<td>Netfilter</td>
<td>IPfilter</td>
</tr>
<tr>
<td>Cluster File System</td>
<td>GFS2 (Resilient Storage Add-On)</td>
<td>CFS (Serviceguard)</td>
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Intel and AMD

Collaborating on Nehalem-EX and beyond

Red Hat Enterprise Linux fully supported at announcement

Highly optimized to utilize latest virtualization and power management features

AMD-V & Opteron 6000 Series developed in collaboration with Red Hat

Red Hat Enterprise Linux takes advantage of AMD-V 2.0
HP and IBM

More Red Hat certified server models than any other vendor

"As time has progressed and our customer requirements are clear about stable and robust environments, Red Hat Enterprise Linux personifies all of that in all of Linux"
— Scott Farland, VP Industry Standard Servers and Software, HP

IBM

Tuned to support built-in performance of System z, x, Power

Run one OS over IBM's entire portfolio, major IBM software

IBM Cloud based on Red Hat Enterprise Linux
Cisco, Dell, Fujitsu

- Unified Computing System Virtual Interface Card integrated with KVM
- Creates logical network infrastructure for large-scale cloud
- Reduce cost and time, lower TCO
- Dell contributed to Red Hat Enterprise Linux 6 kernel
- Integrated device drivers, tight integration of storage, intelligent power management
- Guest on On-Demand Virtual System Service cloud
SAP and SAS

- Over 10 years
- Full-time engineering presence at SAP to optimizing and certify SAP applications on Red Hat Enterprise Linux
- Red Hat Enterprise Linux for SAP Applications
- SAP software in Red Hat test suite

- First Linux supported by SAS in 2002
- Both offer subscription-based model
- Mentoring SAS on tuning and file systems for optimal performance and throughput
- Red Hat uses SAS for regression testing
Migration Steps

- Examine existing infrastructure & determine equivalents
  - Compilers, APIs, utilities
  - Apache, sendmail, Gnome, DNS, provisioning, etc.
  - 3-5 weeks

- Determine equivalents for third-party apps
  - Symantec NetBackup runs on RHEL
  - Veritas Cluster supported or can use Red Hat Resilient Storage Add-On
  - Vast majority of business applications supported on Red Hat Enterprise Linux
  - 2-8 weeks
Migration Steps (Continued)

- Measure organizational readiness & overall migration risks
  - Server sizing, SLAs, server refresh cycles, skills gaps, training, IT processes & practices, IT governance, etc.
  - 3-5 weeks

- Develop strategic migration plan, roadmap, cost estimate
  - Produce detailed migration roadmap, scope of activities, detailed cost estimate
  - 3-5 weeks

- Implement plan & employ support strategies
  - Workshops, training, service offerings

- HP-UX to Red Hat Enterprise Linux

Strategic Migration Planning Guide
Migration Services and Skills Training

- Red Hat Migration Services
  - Decades of experience in FS, Healthcare, Telecom, Government
  - Maximize cost savings and efficiencies during transition
  - Speed time to production
  - Drive faster ROI

- Training
  - On-site and workshops provide fast knowledge transfer
  - Red Hat Dedicated Enterprise Engineers
  - Red Hat Consulting
  - Infrastructure Consulting Services
Migration Services and Skills Training

- **HP Red Hat Migration Service**
  - Streamline transition from RISC/UNIX to x86 and Red Hat Enterprise Linux
  - End-to-end services: Strategy, Design, Transition, and Operation

- **IBM Migration Factory**
  - Years of migration experience, experience with both AIX and Red Hat Enterprise Linux
  - Competitive server assessments, migration services, trade-in credits, etc.
NYSE Euronext Migrates and Saves

World's leading exchange group

Obtaining a high performing, low-cost global trading platform with virtually zero downtime

Migrate/integrate HP-UX, AIX, and Solaris platforms to simplify and optimize infrastructure

Red Hat Enterprise Linux on HP ProLiant servers, JBoss Enterprise middleware

A high-speed, low-cost platform, moved with no business interruptions. Capable of scaling for growth and delivering exceptional performance even in extreme trading scenarios
Lufthansa Cargo Migrates and Saves

One of the world's leading cargo carriers

Challenge
Create flexible global shipment infrastructure, integrate with existing components

Why Migrate
Needed a new, highly scalable, cost-efficient, and vendor-agnostic industry-standard platform

Solution
Red Hat Enterprise Linux, JBoss Enterprise Application Platform, Oracle Database

Benefits
A flexible platform that saves over 50% in software licensing; avoids vendor lock-in. The former mainframe application now runs on just 4 standard x86 CPUs.
It's Time to Migrate

- Red Hat offers sensible, low-risk alternative to HP-UX
- Red Hat Enterprise Linux is successfully replacing UNIX workloads across the enterprise and in the cloud
- Reduce operating costs
- Hardware vendor neutrality
- Increased flexibility
- A far better alternative to Microsoft Windows
  - Limited new training — retain investment in skills
  - Better scalability
  - Runs on more platforms, cloud platform of choice
- More information: www.redhat.com/migrate
- Schedule an assessment today

Red Hat Webinars:

Questions?