INTRODUCTION

Companies originally chose AIX platforms because of the strength of IBM software and the robust platform on which it could run, and that choice served them well. However, in today's fast-changing business environment, you need a flexible, cost-effective IT infrastructure that is supported on a wide range of servers to handle any workload, from small to large to virtualized cloud deployments. The same advantages, in terms of reliability, security, and performance, that made AIX a good choice in the past are available today running cost-effective Red Hat Enterprise Linux on a breadth of hardware platforms.

Red Hat Enterprise Linux is supported across IBM's entire hardware and software portfolio, so a move to Red Hat does not require a change in your IBM deployment. In addition, Red Hat Enterprise Linux delivers a hardware and software ecosystem that goes well beyond the IBM portfolio to provide entirely new options and higher levels of flexibility. With Red Hat Enterprise Linux you have the unique ability to standardize on one operating system and choose the right hardware for your applications without sacrificing the RAS features of UNIX or replacing or completely retraining administrative staff. If you are currently running IBM AIX on POWER, you can incrementally migrate to Red Hat Enterprise Linux since IBM fully supports the operating system on POWER platforms, including the latest POWER7.

A decision to move Red Hat Enterprise Linux is a sound one and is proven by the momentum of migrations and reported benefits from enterprises that have migrated. Server operating system market share numbers point to the increased adoption of Red Hat Enterprise Linux. In addition, x86 servers now make up a majority of all server units shipped worldwide. This shift in market share has many implications and is affecting the availability of applications and device drivers on various operating systems. An increasing number of ISVs develop their applications on Linux first, giving you a broader choice of applications to run your business or organization.

This paper establishes why you should consider a migration as well as why Red Hat Enterprise Linux is the right choice once you make the decision to migrate.
WHY MIGRATE TO RED HAT ENTERPRISE LINUX

Enterprises consider migrating for a variety of reasons. Hardware needs to be refreshed to increase application performance, increase power and energy efficiency, or to reduce costs. With more powerful, energy-efficient, multi-core x86 servers, you might be consolidating to reduce footprint and TCO. You might be virtualizing the environment and require the ability to mix and match operating systems on shared servers to increase flexibility and lay the foundation for private cloud computing. Other issues that might cause you to consider migrating are:

- A need to standardize to decrease costs, decrease complexity, or increase compliance
- A requirement to increase and leverage the choice of hardware, applications, and peripherals
- A desire to move to commodity platforms without excessive retraining or replacing IT staff
- A mandate to adopt open standards-based platforms to quickly adapt to change and modernize the IT infrastructure for optimal support of virtual and cloud computing

Proprietary UNIX makes you increasingly vulnerable to cost increases and limits your options. This is particularly true for AIX, as it runs only on POWER processors. Some might consider Windows Server on x86, but that combination cannot always provide the level of scalability and performance that users are accustomed to on AIX/POWER servers. Fortunately, Red Hat Enterprise Linux provides the robustness and scalability of AIX and is supported on more platforms than Windows Server. You also have the choice to deploy on any of IBM’s hardware platforms. If you can easily migrate your workloads onto a platform that is just as capable as your current AIX system while improving your flexibility, lowering your costs, and standardizing on an operating system that supports your evolution from physical to virtual and cloud computing, why wouldn’t you?

Linux delivers substantial benefits

There are a number of substantial benefits that can be achieved by migrating from AIX to Red Hat Enterprise Linux. Two of the key benefits are reducing TCO and increasing deployment options. According to Harvard Research Group, “Customers that have migrated from proprietary UNIX systems to Linux are satisfied with the outcome based on the reduction in TCO, increases in operational responsiveness and efficiency, and improved ROI for IT infrastructure capital expenditures.”

Reduced TCO

Key factors that drive UNIX users to seek alternative operating systems are:

- high maintenance for legacy systems
- operational (system administration) costs
- large increases in cost when hardware leases expire or financial amortization ends

In fact, most studies consistently suggest that operational costs are often significantly higher than hardware, software, or maintenance costs. A recent IDC study found that Red Hat Enterprise Linux shops, averaging 174 systems and 422 users per administrator, incurred only $18,960 in annual IT labor costs per 100 users and recovered up-front subscription costs in as little as seven months.

With Red Hat Enterprise Linux, you pay only for subscriptions, not software licenses. Traditional software licenses incur an upfront cost and lose value over time. But with the subscription model, you pay as you go, and the value returns to you over the lifetime of the subscription in
the form of access to all of the shipping versions of the operating system, a steady stream of feature enhancements, proactive security updates, and additional hardware and software support. In addition, a subscription model helps reduce financial risk by offering predictable IT costs and access to the expertise of the leaders in Linux platform support and development.

Another area where you can garner savings by migrating to Red Hat Enterprise Linux is lower operational costs. Because Red Hat Enterprise Linux is broadly available as a market-leading platform, the skills to support Red Hat Enterprise Linux are a sought-after skill set given the popularity and prevalence of the platform. Concepts to support Red Hat Enterprise Linux are taught as part of the standard computer science curriculum at many higher-learning institutions. There are many Red Hat Enterprise Linux administrators in the market, and they command lower salaries. An article in IBM Systems Magazine states, “staffing engineers and administrators is far less expensive on Linux than it is on AIX.” In addition, elementary and secondary schools, as well as governments around the world, are running Red Hat Enterprise Linux on their desktops and server environments in order to reduce TCO. Compare this to the number of IBM AIX systems running in these environments, and it’s easy to see where skilled administrators will be focused in the future.

“With Red Hat’s commodity model, we were able to spread the load over multiple machines and reduce our overall spend by approximately 80 percent. And these savings don’t take into account the reduced maintenance costs of moving to the Red Hat platform, which is easier—and therefore cheaper—to maintain. We’ve achieved tremendous cost, reliability, and availability benefits, but in the end it all comes back to the fact that we now have choices when it comes to deploying hardware and software,” said Mok Choe, CTO, Union Bank, N.A.

Increased choice

In a world where the only constant is change, it’s critical to have the choice to implement the most efficient and cost-effective solutions available, while reducing complexity. Because Red Hat Enterprise Linux runs on more platforms than any other operating system, you have unparalleled choice in hardware deployment options. Red Hat Enterprise Linux is supported on the following major platforms:

- IBM System x, System z, and POWER systems
- HP ProLiant, Integrity (Red Hat Enterprise Linux 5), and BladeSystem
- Dell, Cisco, Fujitsu, Fujitsu Siemens, Hitachi, Intel, Lenovo, NEC, SGI, Tyan, Unisys, and others

In addition, applications that are certified to run on Red Hat Enterprise Linux also run unmodified on Red Hat supported hypervisors, including KVM, VMware, Microsoft Hyper-V, and IBM PowerVM, further enhancing the flexibility of your environment over IBM AIX. For example, AIX 7.1 WPAR storage partitions are supported only on IBM storage. Fortunately, many proprietary features, such as multipath I/O, are available on Red Hat Enterprise Linux. You can also run Red Hat Enterprise Linux on PowerVM on POWER systems, as well as any other IBM server platform.

Increased choice doesn’t mean increased complexity when you standardize on Red Hat Enterprise Linux, as Citigroup Global Markets, Inc. discovered. Citigroup standardized on Red Hat Enterprise Linux across AMD, Intel, and System z platforms. Red Hat Enterprise Linux releases for each hardware architecture are built the same, consistently sharing the same package manifests and update schedules. This greatly simplified Citigroup’s environment, since a single Citigroup internal platform definition can be released for both x86 and IBM System z platforms, thus minimizing their internal security certification process.

### References

3. Median expected salary for Linux administrator is $85,708 and $90,538 for Unix as of 04/2011. [www1.salary.com/Linux-Administrator-Salary.html](http://www1.salary.com/Linux-Administrator-Salary.html)

Outstanding flexibility, scalability, and reliability

Today, many enterprises are migrating core enterprise applications from expensive proprietary platforms or older x86 servers to Red Hat Enterprise Linux on multi-core, standards-based x86 servers. For example, the new Intel Xeon Processor 7500 series is now available in systems that are designed for Red Hat Enterprise Linux and are scalable to 108 cores, 2 TB RAM, and 16 I/O slots. Red Hat works with hardware vendors and Intel to deliver complementary software support features to make hardware advances in scalability, flexibility, reliability, and power management available to users at an extremely competitive cost point. In addition, Red Hat works with IBM to optimize Red Hat Enterprise Linux on Power and System z platforms.

The reliability of the operating system is evident in the number of companies and organizations that rely on Red Hat Enterprise Linux to run their mission-critical applications, including SalesForce.com, the NY Stock Exchange, and the U.S. Department of Defense. In addition, the latest release from Red Hat, Red Hat Enterprise Linux 6, includes features that make it an exceptional operating system for core enterprise applications:

- **Scalability**—Support for up to 4,096 CPUs and 64 TB of memory
- **Self healing**—Automatic isolation of defective CPUs and memory
- **Increased performance and energy efficiency**—Improved hardware awareness that allows the kernel to take better advantage of multi-core and NUMA architectures, and when possible, consolidate tasks to fewer CPU sockets to reduce power consumption
- **Resource management**—Resource controls via cGroups that provide the ability to reduce resource contention, improve overall system performance, and help applications meet service level agreements
- **Virtual machine migration**—Integrated hypervisor that allows applications to move from physical to virtualized environments independently of underlying hardware

Community-based innovation

Red Hat Enterprise Linux is designed with large datacenters and virtualization in mind. Red Hat’s world-class engineering organization works in collaboration with industry leaders, the open source community, and Red Hat subscribers to create and test innovative technologies that provide unmatched availability, security, and scalability. A Red Hat subscription provides an enterprise-class application platform that evolves with your business and the fast-moving computing industry. It allows you to leverage the unique and leading position Red Hat has in the open source development community, as well as Red Hat’s strong industry relationships. Through these relationships, Red Hat combines industry and community innovation with its enterprise platform products, aligning customer and partner road maps. This means you can migrate to a manageable, reliable, flexible, and secure IT infrastructure that your business demands.

Red Hat is the leading commercial contributor to the Linux kernel, JBoss Community, and countless other open source projects. Because Red Hat is the world’s leading open source provider, your subscription allows you to leverage Red Hat’s involvement in other open source initiatives, as well as its relationships with the software and hardware vendors you rely upon.
Red Hat believes that communicating with other developers in the community provides an amazing starting point for solving the next generation of problems. One person or company doesn’t have to develop alone any longer—it’s likely someone else has started on the same problem or is at least minimally interested in refining the same ideas. Red Hat’s approach is to be open source first, not after—open source is viewed as a necessity to facilitate the worldwide collaboration needed to develop next-generation solutions.

Red Hat leverages a unique process to deliver Red Hat Enterprise Linux. First, all development is done in the open, and changes are tracked upstream to make sure you’re not locked in to one vendor. Next, major versions are created by taking a snapshot in time and freezing development. Once this happens, all packages and tools are integrated and stabilized, the release is tested and tuned with hardware and software vendors, and then the release goes into a maintenance life-cycle where new features are introduced, bugs are fixed, etc.

When considering a change in platform, consider this: 25% of the changes to the Linux kernel in 2010 were contributed by Red Hat (12.4%), IBM (6.9%), and Intel (5.8%), making up a total of over 47,000 contributions. That’s an incredible amount of engineering, collaboration, and commitment toward innovation that can benefit everyone, not just one company.

Yes, there’s a lot to be said about long-term stability, which Red Hat provides for every release of the operating system. However, the computing world is changing faster than ever before, and a Gartner report states that “CIOs must re-imagine IT to support growth and competitive advantage.” Consumer-driven trends, such as mashups and social media, are making their way into corporate use. Gartner is also advising CIOs to get involved now in adopting tablets in the enterprise. And more applications and data are moving to the cloud. As the number and variety of end-points grow, the demand on your servers, your flexibility, and your creativity increase exponentially. It’s becoming clear that to stay competitive, you need the ability to quickly change with the times, and the only operating system and development community that is poised to support you in this effort is Red Hat Enterprise Linux.

The strongest future and the favored platform for cloud

Red Hat has a strong future ahead of it. As quoted in an article for InternetNews.com, Jim Zemlin, the executive director of the Linux Foundation said, “What makes Linux so great is that there are so many self-forming communities around Linux that use a single kernel to address so many different market segments.” Linux is the only operating system that is across the spectrum of servers, desktops, mobile devices, and embedded consumer devices, while still also maintaining a consistent kernel. This broad development community and stability enables an intersection of ideas that enhances the strength of the entire Red Hat Enterprise Linux ecosystem.

The market numbers show Red Hat Enterprise Linux adoption on the rise around the world, and many ISVs as well as startups are developing on it. Because it is easily available, open source, and has a flexible subscription, cloud providers are building new technologies on Red Hat Enterprise Linux, and most silicon is prototyped with support for Linux. Linux is also a building block across silicon platforms, including Intel x86, ARM, and MIPS.

In addition, as cloud offerings mature, more companies will begin deploying private or hybrid clouds. A recent Gartner survey of CIOs revealed that a large number of CIOs expect to run a majority of IT in the cloud or on SaaS technologies. Red Hat is at the forefront of the cloud movement and has been working with Amazon EC2 (much longer than Solaris), IBM, Fujitsu, and others for quite some time to provide cost-effective, reliable cloud services.
A more personal relationship

IBM’s business model for AIX is based on licenses, support, and maintenance agreements. Such traditional models only allow you to contact IBM when something goes wrong. A Red Hat subscription, however, delivers high-quality software and maintenance along with information and support services that span the entire application infrastructure lifecycle. Red Hat encourages contact, but not just when there’s a problem. It is a truly collaborative and consultative relationship. When you engage in the Red Hat support process, you will often work with the people who write and test the software and oversee the open source development of the underlying technologies. You can also contact Red Hat to leverage the expertise of its people during all phases of planning, testing, migrating, maintaining, and upgrading your infrastructure.

Long-term, worldwide support

One of the greatest benefits of Red Hat’s subscription-based support model is long-term, enterprise-class, worldwide support. Yes, the operating system is open source and brings with it all of the benefits of open source collaboration and innovation, but it’s also backed by the support you need to run your business applications with the confidence that help is available when you need it. The subscription model lets Red Hat create a true relationship with you before there’s a problem. That means low-cost, high-value, reliable computing.

Each version of Red Hat Enterprise Linux is supported for up to 10 years, providing a stable platform for enterprise applications. New technology is delivered throughout the lifecycle when it is mature and thoroughly tested and includes support at no additional cost.

Subscriptions include ongoing service and support, which helps keep systems secure, reliable, and up-to-date. Subscriptions also include access to unique knowledge and technical expertise from Red Hat’s Global Support Services and engineering teams, as well as access to a global customer portal. The customer portal provides a single point of entry to access product knowledge, such as document and video content, downloads, case management, security updates, subscription management, and proactive planning tools such as use cases and solutions.

Red Hat must absolutely provide superior support to keep enterprises renewing their support contracts. Numerous service awards and an increasing number of subscriptions are proof of Red Hat’s commitment to support excellence. Red Hat was a top-three finalist in the HDI Team Excellence Awards:

“The top three finalists of HDI’s Team Excellence, in either Internal or External, demonstrate to our support industry peers that the teams have achieved high levels of excellence in the three categories of people, process and technology, making Red Hat a leading-edge company in the support industry. Because of the history of HDI’s Team Excellence award winners and the quality of teams they represent, Red Hat is joining an elite group of companies that share in the excellence they have developed through their support teams, generating through their entire organization.” Sophie Klossner, executive director of Membership at HDI

SIMILARITY OF RED HAT ENTERPRISE LINUX TO IBM AIX

Red Hat Enterprise Linux shares a number of similarities to IBM AIX, making it easier to migrate your enterprise AIX workloads to Linux. Red Hat Enterprise Linux includes tools that are very similar to AIX tools, offers similar infrastructure tools, and is administered similarly to AIX. Since both the Red Hat Enterprise Linux and AIX platforms use POSIX-compliant APIs, porting time is, if necessary, greatly reduced. In addition, any open source software used with or supported by the AIX platform is generally available as part of or for Red Hat Enterprise Linux, which speeds the migration and training process.
Similar tools

Many of the same tools used to manage AIX are similar to tools in Red Hat Enterprise Linux. This similarity makes Red Hat Enterprise Linux a logical choice over Microsoft Windows Server because you can retain your current administrative staff and limit the amount of training needed.

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Red Hat Enterprise Linux</th>
<th>Similar to AIX functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Package management</td>
<td>RPM Package Manager—RPM packages help automate software management; can be front-ended with Yum to make it easier to maintain groups of systems.</td>
<td>Installp; AIX 7.1 finally introduces AIX Graphical Installer</td>
</tr>
<tr>
<td>Auto installer</td>
<td>Kickstart</td>
<td>AIX Network Installation Management (NIM) and mksyb</td>
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<td>Logical volume manager</td>
<td>LVM, LVM2, LVM2 supports snapshot and extend volume on-the-fly capability</td>
<td>SMIT, Mklv/crfs</td>
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<td>Software updater</td>
<td>Software Updater</td>
<td>Service Update Management Assistant (SUMA)</td>
</tr>
<tr>
<td>Software updates management</td>
<td>Red Hat Network and Satellite provide more automations</td>
<td>SUMA and Fix Level Recommendation Tool (FLRT)</td>
</tr>
<tr>
<td>Default GUI</td>
<td>Gnome</td>
<td>CDE, KED</td>
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<td>Installer</td>
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<td>Provisioning</td>
<td>Red Hat Network Satellite</td>
<td>Profile Manager</td>
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<td>Configuration tools</td>
<td>Linuxconf</td>
<td>SMITTY</td>
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<td>Free software package repository</td>
<td>EPL</td>
<td>IBM AIX Toolbox</td>
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<td>Init scripts</td>
<td>System V-style init scripts for starting, stopping, checking standalone services, ksh, bash</td>
<td>System V style, ksh, bash</td>
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<td>General administration tools</td>
<td>vmstat, iostat, netstat, route, ifconfig, traceroute, ping, nisookup, chroot</td>
<td>Same</td>
</tr>
<tr>
<td>Military-grade security</td>
<td>SELinux (EAL)</td>
<td>Trusted AIX (7.1)</td>
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<tr>
<td>Native multipathing</td>
<td>Included</td>
<td>Included</td>
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<td>Dynamic tracing</td>
<td>SystemTap, SystemTap GUI simplifies writing SystemTap scripts and visualizing kernel events</td>
<td>probevue dynamic tracing</td>
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<tr>
<td>Resource management</td>
<td>Resource Management</td>
<td>WPARs</td>
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<tr>
<td>High availability</td>
<td>High Availability Add-On</td>
<td>Cluster Aware AIX in AIX 7</td>
</tr>
<tr>
<td>File systems</td>
<td>ext2, ext3, ext4, ReiserFS, FAT, ISO 9660, UDF, NFS, support for encrypted file systems</td>
<td>JFS, JFS2, ISO 9660, UDF, NFS, SMBFS, GPFS, support for encrypted file systems</td>
</tr>
</tbody>
</table>
Software

All of IBM’s major applications (Tivoli, WebSphere, Lotus/Domino, DB2) are supported on Red Hat Enterprise Linux, including on mainframes, so you can move to Red Hat Enterprise Linux as a first step and then replace hardware as needed. The differences between platforms are usually relatively minor and require a low degree of migration effort. In addition, thousands of leading ISV applications are certified on Red Hat Enterprise Linux, providing the choices you need to mitigate vendor lock-in by replacing applications that are AIX only. For those who are committed to the POWER platform, the options are excellent. PowerVM is supported on Red Hat Enterprise Linux 5 and 6 on POWER. You can also run x86 Linux applications on POWER with PowerVM Lx86.

Skills

AIX administrator skills can be quickly transferred to Red Hat Enterprise Linux, making it an ideal companion or replacement for AIX environments. You can preserve your investment in skills, and because Red Hat Enterprise Linux runs on nearly any platform, you can leverage these skills across all server platforms in the company. There are a variety of resources to help with this transition, including:

- Red Hat Training (discussed later in this paper)
- IBM: Technical resources for Linux programmers and system administrators: ibm.com/developerworks/linux
- Linux Journal: linuxjournal.com
MORE CHOICE—STRONG RELATIONSHIPS WITH HARDWARE AND SOFTWARE VENDORS

Red Hat maintains relationships with thousands of software and hardware vendors, as well as cooperative alliances with major hardware and enterprise software vendors. Red Hat works closely with processor manufacturers and platform vendors to help ensure that the products from both parties leverage the technological advantages of the other. This level of partnership delivers the increased choice, performance, flexibility, reliability, power management, and cohesive support that is required to help IT managers quickly respond to demands for rapid change and increased capacity. Through these relationships, Red Hat combines industry and community innovation with Red Hat products to deliver robust solutions your business can rely on, in one of the largest technology certification ecosystems in the world.

Intel

Red Hat and Intel have been working closely for many years to offer high-performance, low-cost alternatives to proprietary platforms. For example, Red Hat and Intel collaborated during the development of the Intel Xeon 6500 and 7500 Series processor and when the processors were announced, Red Hat Enterprise Linux was fully supported. The virtualization capabilities provided in Red Hat Enterprise Linux are highly optimized to utilize the latest features of the Intel Virtualization hardware. Red Hat Enterprise Linux is also optimized to deliver the full benefits of Intel Xeon power management enhancements.

“The combination of working together with hardware and software aspects had really allowed us to innovate in the open source community. Red Hat is a real strong partner and a trusted adviser for us to work with to ensure that as we build our platforms, we deliver the most compelling platforms in the marketplace.” Doug Fisher VP and GM, System Software Division at Intel.

AMD

AMD and Red Hat have been working together for years to optimize Red Hat Enterprise Linux for AMD Opteron processors. AMD industry firsts, such as x86_64 and live migration, were developed with and demonstrated on Red Hat Enterprise Linux. AMD’s new Opteron 6000 Series platform features AMD-V 2.0 technology, which is designed to help simplify virtualization solutions, enabling near-native application performance. AMD-V was developed in collaboration with Red Hat, and Red Hat Enterprise Linux takes advantage of AMD-V 2.0’s advanced technology features.

IBM

Red Hat has maintained a strong partnership with IBM for more than 12 years. Red Hat Enterprise Linux is tuned to support the built-in performance and RAS capabilities of IBM System z, System x, and IBM POWER systems, giving you the choice to deploy your applications utilizing a single, robust operating system. IBM has no preference for which operating system you run, so you can deploy the newest IBM servers and leverage the advantage of one operating system and subscription pricing. Red Hat Enterprise Linux takes advantage of the functionality of multi-core chips from Intel and AMD, as well as IBM’s new eight-core POWER7 processors to deliver optimal performance from each platform. In addition, Red Hat provides virtualization technology for IBM's cloud environment, and both companies use the other's solutions in house.
IBM’s commitment to Linux and Red Hat Enterprise Linux is very real. In fact, IBM contributes more changes to the Linux kernel than any other hardware vendor, outpacing Oracle’s contributions by more than three times. In addition, IBM and Red Hat are members of the Open Virtualization Alliance, which fosters the adoption of open virtualization technologies including KVM.

“KVM provides effective price points, enhanced scalability, and performance capabilities that are well suited to IBM enterprise needs.” Jan Jackman, VP, Global Cloud Services, IBM Global Technology Services.

“Red Hat and IBM have collaborated for over a decade to optimize Red Hat Enterprise Linux and IBM platforms for the needs of our joint customers,” said Jean Staten Healy, director of worldwide cross-brand Linux strategy, IBM, “The combination of Red Hat Enterprise Linux 6 and IBM technology offers our joint customers even further improvements for mission-critical, virtualized and cloud deployments, especially when combined with our latest IBM hardware capabilities. Designed with scalability and performance, Red Hat Enterprise Linux 6 is an important new platform for the industry.”

“I think Red Hat Enterprise Linux 6 provides a very strong infrastructure for customers in all sorts of industries, and it will give them the security if you will, to know that it has the capacity to handle whatever they throw at it.” Bob Sutor, VP, Open Systems and Linux, IBM Software Group, IBM

HP

For more than 11 years, HP and Red Hat have partnered to provide powerful, integrated solutions that deliver the technical benefits of a robust UNIX-like operating system, the economic benefits of open source software, and the confidence that comes from buying systems, software, and services from HP. The combination of Red Hat Enterprise Linux and the versatile and powerful HP ProLiant and BladeSystem servers demonstrates outstanding performance across the industry’s most demanding and diverse workloads. Companies and organizations around the world see the value of the x86 and Red Hat Enterprise Linux as evidenced by the fact that Red Hat is the leader in Linux and HP is the leader in x86 servers8.

“Clients need operating platforms that can accommodate a full range of datacenter models,” said Scott Farrand, vice president, Infrastructure Servers and Software at HP. “Optimizing Red Hat Enterprise Linux 6 on ProLiant servers extends the power of open source to HP’s Converged Infrastructure allowing clients to automate, scale-up or virtualize their environments to best fit their business requirements.” Scott Farrand, VP, Industry Standard Servers and Software, HP

Cisco

Red Hat and Cisco collaborate to deliver solutions that help businesses to deploy mission-critical applications in a virtualized, high-performance, supported datacenter environment. Together, the companies offer next-generation computing by integrating the Cisco Unified Computing System Virtual Interface Card with KVM. This combination creates a logical network infrastructure, including large-scale cloud deployments, which can help to provide full visibility, control, and consistency of the network for virtualization without sacrificing performance, thus enabling IT managers to achieve new levels of IT efficiency. With the Cisco Unified Computing System’s simplified architecture and Red Hat’s centralized virtualization management, IT managers can reduce both the cost and time to deploy business applications, resulting in lower TCO.

"Red Hat and Cisco continue to raise the bar for what’s possible for IT with innovative new architectures, technologies, and capabilities." Lew Tucker, VP and CTO, Cloud Computing, CISCO

Dell

Dell and Red Hat work together to bring business-ready solutions to IT organizations. Recently, Dell partnered with Red Hat to deliver enhancements for Red Hat Enterprise Linux 6 to ensure it works optimally on all Dell servers. The two companies worked together to make Dell systems easier to deploy and manage with integrated device drivers, integrated Dell OpenManage, native PowerEdge, Red Hat Network Satellite hardware patch management, tight integration of storage, and intelligent power management.

"Red Hat Enterprise Linux coupled with Dell PowerEdge servers enables customers to build, manage and maintain an efficient datacenter while preserving flexibility and choice. The technology leadership delivered with Red Hat Enterprise Linux 6 on Dell platforms provides exceptional value over RISC alternatives. We have hundreds of Red Hat certified engineers on staff, focused on driving certification, innovations to the Linux kernel, and plowing that back into the community. We link our support organizations to make sure that customers receive the highest levels of support." Tim Mattox, VP Enterprise Product Management, Dell

Fujitsu

Building on a long-term partnership, Red Hat Enterprise Linux is available as a guest operating system on Fujitsu’s On-Demand Virtual System Service public cloud. Red Hat Enterprise Linux is an effective platform for the cloud with its broad base of developers and extensive ecosystem of certified applications that allow for flexibility, portability, and scalability. The combination of Red Hat Enterprise Linux and Fujitsu’s enterprise-ready On-Demand Virtual System Service offers a powerful infrastructure for the cloud with proven Red Hat technologies and enterprise-class support from Fujitsu, backed by Red Hat.

“With the availability of Red Hat Enterprise Linux on our service, our customers can access the leading distribution of enterprise Linux in the world. Through our collaboration with Red Hat, we are able to provide this highly demanded service to our customers.” Chiseki Sagawa, president, Service Oriented Platform Strategy & Development Office at Fujitsu
SAP
The SAP and Red Hat global alliance delivers extraordinary business value. Red Hat and SAP have a decade-long technology and engineering collaboration program through the SAP LinuxLab, resulting in comprehensive product support for SAP applications on Red Hat Enterprise Linux. Red Hat engineers work with SAP to ensure that SAP products are optimized and certified on Red Hat Enterprise Linux. Red Hat maintains a full-time engineering presence at SAP to bolster the ongoing working relationship between the SAP LinuxLab and Red Hat product development. SAP-specific features are added to Red Hat Enterprise Linux—in Red Hat Enterprise Linux for SAP—including joint testing, problem resolution, ongoing performance work, and close cooperation around virtualization. One example of the collaboration is the ability in Red Hat High Availability Add-On (included in Red Hat Enterprise Linux for SAP) to start SAP services in a specific order when performing high-availability failover. Red Hat and SAP also have a cooperative support agreement to provide best-in-class support services for SAP on Red Hat Enterprise Linux. In addition, SAP has access to pre-release versions of Red Hat software, and Red Hat tests SAP software against development versions of Red Hat Enterprise Linux in a nightly test suite. This joint engineering and collaboration helps deliver solutions that reduce hardware costs, increase application performance, and reduce system administration overhead.

SAS
Red Hat Enterprise Linux was first supported by SAS in 2002. Since then, both companies have leveraged synergies that ultimately work to your advantage. Subscription-based models from both companies help you do more with less IT budget and offer world-class service and support. In addition, Red Hat is mentoring SAS engineering to achieve optimal performance and I/O throughput, resulting in excellent scalability in tests up to 64 cores on a single system. Red Hat also uses SAS solutions to validate new releases of Red Hat Enterprise Linux. The benefit of this joint collaboration is powerful and cost-effective analytics and business intelligence solutions for your business.

“Getting the best answer using the least resources with enough time to take action is really a constrained optimization problem—one which SAS and Red Hat understand. The TCO and performance of SAS Analytics on Red Hat Enterprise Linux is a game changer that allows our customers to more effectively leverage the power of analytics within the confines of today’s shrinking IT budgets.” Anne Milley, SAS Sr. Director, Analytic Strategy

MIGRATION STEPS
Migrating from AIX to Red Hat Enterprise Linux can be accomplished in five basic steps.

1. Examine the existing AIX infrastructure and determine the equivalent capabilities in the Red Hat Enterprise Linux ecosystem. For example: compilers, programming interfaces, utilities, Apache, sendmail, Gnome, DNS, provisioning, etc.

2. Examine third-party infrastructure and business applications and determine the equivalent capabilities in the Red Hat Enterprise Linux ecosystem. Determine the difficulty of porting in-house applications. Determine application dependencies. For example:
   - Symantec (Veritas) NetBackup and Tivoli Storage Manager run on Red Hat Enterprise Linux
   - Tivoli clone images can be used or replaced with Altriis Deployment Solution or similar
- Veritas Cluster can be used or replaced by Red Hat Resilient Storage Add-On (includes high availability), Power HA can be replaced
- Vast majority of business applications are supported on Linux

3. Measure organizational readiness and overall migration risk. This step examines additional technical and business details such as server sizing, service level agreements (SLAs), server refresh cycles, skills gaps, training, IT processes and practices, IT governance, etc. to measure organizational readiness and overall migration risk.

4. Develop a strategic AIX to Red Hat Enterprise Linux migration plan, including a detailed roadmap (including hardware/virtualization, etc.) and cost estimate. This step produces a detailed migration roadmap, scope of activities needed, as well as a detailed migration cost estimate for the entire migration project.

5. Implement the strategic migration plan and employ implementation support strategies. Red Hat Consulting offers a wide variety of workshops, training, and service offerings designed to help you implement their Strategic Migration Plan.

Red Hat provides an IBM AIX to Red Hat Enterprise Linux Strategic Migration Planning Guide that details the recommended process and suggested time lines for moving from AIX to Red Hat Enterprise Linux. It also provides information on common implementation and training standards and best practices. If you need help with the migration, Red Hat and partners also offer migrations services and training.

**Red Hat migration services**

Red Hat Consulting offers migration services to help plan and execute a migration to Red Hat Enterprise Linux. Red Hat consultants are field-tested Linux veterans who guide your staff through migration planning and new deployments of Red Hat Enterprise Linux. Red Hat consultants have decades of experience working with leading companies in financial services, healthcare, telecommunication, and government agencies around the world. Involving a consultant early provides valuable insight into migration best practices, enabling you to maximize cost savings and efficiencies as the transition progresses, speed time to production, and drive faster ROI.

**Training**

Free skills assessments are available online to determine skill levels and necessary courses to familiarize your staff with the differences between AIX and Red Hat Enterprise Linux. IT staff can then use virtual training, if desired, to greatly reduce training costs and enable them to schedule instruction at their own pace. For example, The RHCSA Fast Track course is available for Linux and UNIX administrators. In addition, Red Hat offers:

- On-site training and workshops provide fast knowledge transfer
- Red Hat dedicated enterprise engineers to help you manage the project to its end, provide real-time guidance and recommendations, and help ensure time lines and goals are met
- Red Hat consultants are available to help deploy new systems and build IT staff confidence in new skills
IBM Migration Factory

Together, Red Hat and IBM have migrated many top-name businesses to Red Hat Enterprise Linux on IBM-based platforms, and the customers are very pleased with their migration decision. IBM offers the IBM Migration Factory to help move enterprises from RISC/UNIX to Red Hat Enterprise Linux on x86 or any of IBM’s other hardware platforms.

HP enterprise and technology services

HP offers a wide range of migration capabilities to help you successfully move business and mission-critical applications and databases to Red Hat Enterprise Linux on HP ProLiant servers. Red Hat Migration Services from HP help streamline the transition from RISC/UNIX to Red Hat Enterprise Linux, save time, and reduce costs. HP services encompass migration planning and execution to post-migration activities and detailed reporting and testing. HP also provides ongoing support services to help operate and continually improve the infrastructure.

MIGRATION SUCCESSES

Many large, known-name companies run their mission-critical applications/businesses on Red Hat Enterprise Linux. Here are a few recent case studies of a company that migrated from IBM AIX:

Verizon Communications Inc.—a global leader in broadband, wireless, and wireline communications services.

- Business challenge: Needed to migrate its systems to a highly reliable and stable platform that would scale with the growing computing infrastructure while simultaneously reducing costs.
- Reason for migration: Existing UNIX architecture lacked the ability to cost-effectively scale with the constant business growth.
- Solutions: Identified the need to migrate large IBM P systems running AIX to standardize on an open source operating system running on x86-based commodity hardware to achieve the required scalability, reduced costs, and equivalent performance. PeopleSoft and SAP applications migrated to Red Hat Enterprise Linux with Red Hat Network Satellite running on more than 300 Dell and HP x86 servers.
- Benefits: Migrating to Red Hat Enterprise Linux reduced costs, increased the ability to scale, prepared the architecture for future growth, and provided increased performance.
- For more information see redhat.com/customersuccess/verizon-red-hat-case-study

NH Hotels—a Spain-based major European hotel chain with 400 hotels in 25 countries. Each hotel has a local server that maintains all hotel operational applications, including those for reservations, financial systems, billing, printing, and email.

- Business challenge: Legacy IT platform had been constructed over many years, resulting in an array of server models from different manufacturers (HP, IBM, etc.), with different operating systems (UNIX, AIX, CentOS, Fedora, Ubuntu, and older versions of Red Hat Enterprise Linux).
- Reason for migration: Legacy, high-risk platform incurred high management costs and a large investment for maintenance. Needed to homogenize the entire hotel server infrastructure, ensure software maintenance, and centrally administer and manage at all terminals.
• Solutions: Red Hat carried out a full needs assessment and proposed a unified solution of Red Hat Enterprise Linux and a full range of management and monitoring tools, including Red Hat Network Satellite and OpenLDAP. These tools enable NH Hotels to manage the whole life cycle of the server, including automated installation, maintenance of the operating systems, patching, security alerts, configuration, and change management. In short, it allows a higher density of servers per administrator.

• Benefits: A new, unified operating system platform that is certified in accordance with industry standards and is hardware agnostic. Significant savings in support and maintenance, faster deployment of applications, and improved platform flexibility and scalability.

• For more information see redhat.com/customersuccess/nh-hotels-standardizes-and-automates-it-systems-with-red-hat

CONCLUSION

Now is the time to make the decision to migrate your business-critical AIX workloads to Red Hat Enterprise Linux. Enterprises have been migrating web server farms, web applications/portals, ERP systems, database applications, homegrown applications, and mission-critical applications to Red Hat Enterprise Linux for years. Migrating to Red Hat Enterprise Linux can help reduce operating costs and offers hardware vendor neutrality and increased flexibility for businesses and organizations large and small across the world.

For more information see redhat.com/migrate/unix_to_Linux
Red Hat was founded in 1993 and is headquartered in Raleigh, NC. Today, with more than 60 offices around the world, Red Hat is the largest publicly traded technology company fully committed to open source. That commitment has paid off over time, for us and our customers, proving the value of open source software and establishing a viable business model built around the open source way.