

Make the Move from UNIX* to Linux*: Now is the Time

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Executive Summary

According to Gartner, support for Linux in the data center is growing rapidly, with data center Linux use doubling in 2006. Moreover, about 63 percent of Linux users are very happy, and 83 percent of data center managers expect to increase spending on Linux.

Linux Continues to Advance into the Data Center
Gartner, March 2006, #G00138277

For the past 15 years or more, UNIX* has established a history of solid reliability in the data center. It typically runs mission-critical applications, including back-end databases, and has a reputation for good performance, high reliability, proven scalability and trustworthy security. But these benefits come at a high total cost of ownership (TCO). UNIX generally requires expensive proprietary software and hardware as well as budget-draining annual maintenance costs. These expenses are a key factor in recent, wide-spread migrations to other platforms, specifically Linux*.

Today's IT professionals are making strategic investments in Linux, preferring its open architecture and low cost to the proprietary—and very expensive—UNIX platform. As an IT manager, you will see several opportunities to optimize your data center and control costs by migrating to Linux. You should give it serious consideration, especially if you:

- *Need to replace aging and expensive proprietary hardware*
- *Look for an operating system that is flexible and interoperates well with your other systems*
- *Can reduce TCO by consolidating applications or systems*
- *Want to deploy or upgrade large applications*
- *Have a UNIX maintenance contract that is expiring soon*
- *Are tired of being locked into using a single vendor*

Linux elevates enterprise computing: you get the power, reliability and scalability of UNIX, but you pay up to 75 percent less for it. You also get a system that supports your entire infrastructure, works with thousands

of applications and is the focus of developer efforts worldwide.

Linux: Better Performance, Greater Savings

As you plan your move to Linux, its flexibility gives you many deployment options. You could start slowly at the edge of your enterprise, migrating basic infrastructure services like e-mail and Web serving. Or, you could plunge in and use Linux to run enterprise applications and host databases. Whatever your preferences, Linux is equal to the task.

You want a server platform that can do it all: run your infrastructure services, support enterprise applications and host the database at the heart of your organization. What's more, you need a platform you can count on—one synonymous with reliability and security—that doesn't decimate your budget. A decade ago, you might have chosen UNIX, an operating system historically known for its dependability and data center supremacy. Now, UNIX is showing its age. It cannot run the latest generation of IT services without significant—and expensive—upgrades to its proprietary hardware and software. Thousands of organizations worldwide are rejecting these costly upgrades in favor of the open source computing model and Linux.

Why Linux? Linux is powerful, secure and reliable, and it is quickly becoming the operating system of choice for enterprise deployments. Companies start by implementing Linux for general infrastructure roles—such as Web serving and DNS/DHCP—and then move it to the core of the enterprise, where it supports mission-critical applications and databases in the data center. Linux also delivers new options for lowering costs.

Instead of pouring more money into expensive, proprietary UNIX servers, you could move to the much less costly—but extremely powerful—Intel* and AMD* processor-based servers supported by Linux. By linking x86 processors together through powerful virtualization software, you can actually build a system that is more powerful than UNIX at a lower cost. If you're still running UNIX, it's time to take a look at what Linux can deliver to your organization.

When it comes to Linux, the choice of vendor matters. Novell offers the only Linux distribution that has enterprise-ready solutions, spanning from the desktop to the data center, unified by common identity management and resource management tools. SUSE® Linux Enterprise Server from Novell® features the most advanced Linux technology available and can support the services, applications and databases that drive your business. What's more, SUSE Linux Enterprise Server is backed by a global, enterprise-class ecosystem that includes technical support, consulting services, training, certification and an extensive partner network. If you are ready to migrate from UNIX to enterprise-class Linux, there's no better choice than Novell.

Flexibility and Options

As an open source technology, Linux gives you considerable flexibility in implementing solutions that best meet your specific requirements. Linux works with thousands of applications and is the focus of developer efforts worldwide. Best of all, you get this flexibility and interoperability while lowering your costs. According to leading analysts, Linux is reliable and scalable enough for many workloads that have traditionally been relegated to high-end, proprietary UNIX hardware and software solutions. Linux delivers significant benefits, ranging from low hardware and software costs to interoperability and openness. For many UNIX users, Linux is a logical choice for the following reasons:

- *Linux offers a clear and open roadmap.*
- *Linux is reliable, secure and stable, and provides enterprise-class scalability and performance—capabilities enabling it to take over roles previously dominated by UNIX.*
- *Within the next few years, Linux will match UNIX in terms of functionality.*
- *The similarities between the UNIX and Linux operating environments simplify application migration and IT staff training.*
- *Linux has the support of the entire open source community, which is committed to the security and viability of the platform. Have you ever had to wait weeks on end for your UNIX vendor to provide the latest support pack or security patch to fix an OS bug? With Linux, you might wait only a couple of days—or even hours. The open source community can deliver with lightning speed the updates that take traditional organizations multiple development cycles to release.*
- *The number of independent hardware vendors (IHVs) and independent software vendors (ISVs) supporting Linux has grown dramatically. Hardware vendors supporting Linux include IBM, HP, Dell and Fujitsu Siemens, and software vendors include BMC Software, IBM Software Group, McAfee, Oracle, SAP, Software AG, Symantec/Veritas and many others.*
- *Linux provides you with a wide choice of hardware vendors and Linux distributors. Although UNIX is marketed as an open system, the reality is that you are usually tied to a particular hardware vendor. Linux is truly an open system.*

Because every organization is different, it's difficult to predict exact expense reductions or return on investment (ROI) levels that will result from a UNIX-to-Linux move. However, x86 machines or clusters that provide performance equivalent to the UNIX systems they replace can cost up to 75 percent less. Linux also slashes hardware maintenance costs. Annual maintenance for Linux hardware can be 90 percent less than for the previously deployed UNIX hardware.



“With our previous UNIX environment, we never had capacity on demand, so we ended up paying too much overhead just to be prepared for two days a month. With our SUSE Linux Enterprise/ IBM zSeries environment, we can handle periodic increases in transaction volumes without constantly paying for excess capacity.”

Kenneth J. Kucera
Senior Vice President and CIO
First National Bank of Omaha

Read the whole story:
www.novell.com/success/fnb_omaha.html

Linux is powerful, secure and reliable, and it is quickly becoming the operating system of choice for enterprise deployments. Companies start by implementing Linux for general infrastructure roles—such as Web serving and DNS/DHCP—and then move it to the core of the enterprise, where it supports mission-critical applications and databases in the data center.

annual software license/maintenance fees are typically up to 60 percent less for the Linux operating system and software.

Enterprise Deployments

Considerable savings are compelling many organizations to move from UNIX to Linux. Most of these companies complete their migrations during major IT milestones, switching platforms as they upgrade hardware or key software, or when they renew maintenance. So, how exactly are these businesses using Linux? Just as they used UNIX—to support infrastructure services, enterprise applications and mission-critical databases throughout the organization.

Historically, Linux was generally used in the lighter-weight infrastructure software segment—such as file/print, office productivity applications, and Web servers. Increasingly, Forrester’s clients are deploying Linux to handle the heavy-lifting tasks of the high performance technical computing (HPTC) and mission-critical business applications from vendors like SAP and Oracle. Leading independent software vendors (ISVs), server systems vendors, and professional services are optimizing their Linux solutions for more complex line-of-business mission-critical environments.

Finally, although commercial Linux and the applications that run on Linux are not free,

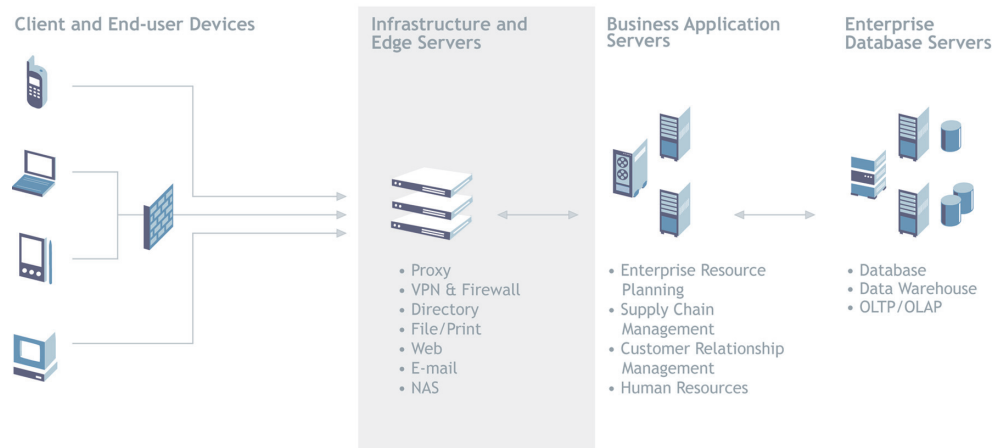


Figure 1. Linux deployment in the enterprise

Edge Computing and Infrastructure Services

Your business depends on its “edge” servers, the ones that connect users to the Web, e-mail, storage, files, printers and other key infrastructure services. If your company—like many others—originally deployed these services on the UNIX platform, it may be time for a change. Savvy IT professionals are rapidly moving to Linux for edge-computing and infrastructure workloads. Linux delivers a significant cost advantage over UNIX. It has become the reference platform for enterprise computing and is the current focus of widespread developer efforts. Linux is also compatible with thousands of existing applications and brings security, reliability and affordability to edge computing. Linux currently supports the following infrastructure services and workloads:

- Web servers
- Firewall
- DNS servers
- DHCP servers
- File/Print servers
- Mail servers
- Proxy
- Caching
- VPN
- WAP
- VoIP gateway
- Directory
- Security
- Load balancing
- NAS

“Why Choose Linux On A Mainframe?”
Forrester Research,
January 17, 2007

By migrating to Linux, you can deliver the same set of Web and edge services (Apache, DNS, Samba, CUPS, SMTP and more) to your end users, with the same levels of performance, reliability, scalability and security—but at much lower levels of annual investment. Savings of up to 80 percent for hardware, maintenance and software expenses are not uncommon.

Linux can be deployed on all the major enterprise hardware architectures, including x86 boxes, clusters, grid environments and mainframes. For new deployments or IT initiatives, Linux is often the preferred operating system. If you are still running your edge servers and infrastructure workloads on UNIX, then you should consider switching to Linux. You'll be able to replace your expensive UNIX boxes and infrastructure with a rugged enterprise-class operating system that delivers reliability, scalability and security—and saves you money.

Enterprise Applications

Mission-critical applications factor heavily in your organization's day-to-day operations and overall success. These include applications for enterprise resource management, supply chain management, customer relationship management and proprietary internal systems. In many cases, you can now deploy these same applications on Linux without sacrificing performance, security or reliability. By switching to Linux, you'll be able to transition your IT infrastructure from expensive high-end architectures to lower-cost commodity-based machines. You'll save anywhere from thousands of dollars to potentially millions of dollars annually. In addition, Linux can easily scale up or scale out to meet your present and future requirements. Today, Linux is supported for many large-scale applications, such as those of commercial database vendors—including Oracle and IBM—and critical corporate applications like SAP*. For many vendors, Linux has become the reference platform for database development; this

means that new applications are developed first for Linux architectures and then ported to other platforms.

It's no surprise that because of the expenses associated with maintaining UNIX deployments, IT directors everywhere are adopting Linux for enterprise application loads. By migrating their application infrastructure to Linux systems, they can achieve the same levels of performance, reliability, scalability and security with much lower levels of annual investment. In many cases, switching to Linux is trivial because most ISVs providing applications on UNIX deliver Linux versions of their applications as well. For specialized in-house or heavily customized applications, the similarity of Linux to UNIX helps to reduce the complexity of application rewrites. And in today's market, there are many skilled consultants who can work with you to move your applications to Linux.

Many companies are now considering a refresh of their enterprise resource planning (ERP) systems, since the last major upgrade likely took place in the year 2000. If you're considering this refresh, it is also a good time to examine the underlying operating system for your ERP applications. By moving to Linux, you can save significant money on both software and hardware.

SAP customers can even receive integrated support for both SAP applications and SUSE Linux Enterprise Server directly from SAP. Through a strategic partnership with Novell, SAP officially recommends SUSE Linux Enterprise Server as a preferred platform for customers who want to deploy SAP applications on Linux.

Mission-critical Relational Databases

Relational databases sit at the heart of every enterprise, providing mission-critical data that drives the business. Naturally, your IT department deploys enterprise databases on the best servers and the most robust



“We had more than 10 years of experience with UNIX, so moving to Linux was a logical step. The transition was relatively easy, since our employees could use their existing skills with very little re-training required.”

Matthias Heidegger

Head of Data Center
FRITZ EGGGER GmbH & Co.

Read the whole story:

www.novell.com/success/fritzegger.html



“Linux gives us a reliable platform for business software. As a data center provider, customers depend on us to deliver high performance solutions. We can implement solutions faster and less costly with SUSE Linux Enterprise Server than we could with UNIX.”

Michael Gebauer

Solution Architect
Siemens IT Solutions and Services

Read the whole story:

www.novell.com/success/siemens.html

Here are just a few of the leading ISVs that provide software applications that run on Linux:

- Arkeia
- BEA*
- BMC Software
- Computer Associates
- Egenera
- IBM Lotus*
- IBM Tivoli*
- IBM WebSphere*
- Legato
- Lutris
- Metrowerks*
- MySQL*
- Oracle
- PolyServe*
- Progress Software
- Quadratec
- SAP
- Sendmail
- Software AG
- SteelEye
- Sybase*
- Symantec/Veritas
- Tarantella
- Teamware
- TIBCO
- Trend Micro
- VMware*

| | 2005 | 2006 | 2007 | 2010 | 2005–2010 CAGR |
|--------------|---------------|---------------|---------------|---------------|----------------|
| Linux (paid) | 3.18M | 3.84M | 4.33M | 6.7M | 16.1% |
| UNIX | 3.24M | 3.15M | 3.10M | 3.09M | -1.0% |
| Windows | 16.42M | 18.90M | 21.50M | 30.90M | 13.5% |
| Others | 2.86M | 2.31M | 1.87M | 1.62M | -10.7% |
| Total | 25.70M | 28.20M | 30.80M | 41.50M | 10.1% |

Figure 2. Installed base of server and host operating systems (Source: Worldwide Client and Server Operating Environments 2007–2010 Forecast and Analysis, IDC, February 2007)

operating systems. It's no surprise, then, that data serving consumes a significant portion of your IT budget and resources.

Historically, enterprise databases have been deployed on UNIX, OS/2* and Windows*. Now, Linux delivers the same—or better—reliability, security, performance and scalability at a fraction of the cost.

With the maturation of Linux into an enterprise-class operating system, IT executives now have a choice for database deployments. Linux is supported by almost all of the major commercial database vendors, including Oracle and IBM. In situations where a commercial database is not required, robust open source alternatives, like MySQL and PostgreSQL, are also available on a Linux platform.

In fact, as Linux has grown in enterprise deployments, new releases are now being developed first for Linux architectures and

then ported to other platforms. Because of the substantial cost associated with maintaining UNIX hardware and software, IT directors everywhere are adopting Linux for enterprise database workloads. When you migrate your database from UNIX to Linux, you'll see the following benefits:

- **Lower server costs.** *Linux runs on cost-effective x86-based servers and delivers at least the same performance as UNIX through extremely fast processing.*
- **Lower lifecycle costs.** *With Linux, there's no need to pay UNIX-level hardware maintenance and you can add or subtract servers as needed. There's also a lower cost of hardware and software availability (20 percent on Linux as compared to 100 percent on UNIX).*
- **Better utilization of assets.** *You can move Linux servers to where they are needed, eliminating stranded capacity and over-provisioning.*

Supported Hardware:

- AMD
- Dell
- EMC
- Fujitsu Siemens Computers
- HP
- IBM
- Intel
- Network Appliance
- SGI
- Sun
- Unisys

Supported Chip Architectures:

- AMD 64
- IBM POWER
- IBM S/390
- IBM System z
- Intel Itanium
- Intel64
- x86

Supported Databases:

- IBM DB2
- MySQL
- Oracle 8
- Oracle 9i
- Oracle 10g
- Oracle RAC
- PostgreSQL

Supported Cluster File Systems:

- OCFS 2
- PolyServe
- Veritas

- **Improved operational efficiency.** *With Linux, you have one place to install and manage software and only one set of file systems to back up.*

By moving from UNIX to Linux, organizations have seen savings of up to 80 percent in their hardware, maintenance and software expenses. If savings of this magnitude are appealing, now may be the time to free yourself from the shackles of a proprietary UNIX platform and move to the open source computing model and Linux.

Novell: The Right Choice for Linux

However you choose to deploy Linux in your enterprise, you need a Linux distribution—and vendor—you can rely on. The optimal vendor will deliver all of the following:

- *An enterprise-ready Linux distribution that supports complex high-end applications*
- *An operating system that is flexible and interoperates with your existing heterogeneous infrastructure*
- *Value-added software and tools to simplify Linux deployment and management*
- *A comprehensive support ecosystem—including technical support, consulting, training, certification and partnerships—to support you before, during and after migration*

Novell is the vendor that best meets these criteria, combining the world's most advanced Linux technology with more than 20 years' experience in enterprise-ready software, support and services. SUSE Linux Enterprise Server from Novell is a high-powered Linux distribution for enterprise computing. It works with thousands of applications and provides the foundation for secure, reliable and cost-effective solutions. For all of these reasons—and an unmatched support ecosystem—Novell is the clear choice to help you reap the benefits of open source computing and expand your use of Linux.

To see if your applications already run on SUSE Linux Enterprise Server, visit: www.novell.com/partnerguid

Enterprise-ready Linux

SUSE Linux Enterprise Server is an enterprise-quality server designed to handle mission-critical workloads in the data center. It offers an open, scalable, high-performance data center solution that comes with application security, virtualization and integrated systems management across a full range of hardware architectures. Supported and certified by the world's leading hardware and software vendors, SUSE Linux Enterprise Server is backed by award-winning Novell technical support and a global ecosystem of partners and services. SUSE Linux Enterprise Server is deployable as a general-purpose server or can be tailored to run a variety of specialized workloads, and it offers seamless interoperability with your existing data center infrastructure. With SUSE Linux Enterprise Server, your business can dramatically reduce costs while deploying the most secure and reliable data center server on the market.

With advanced memory management and processor support, native POSIX Thread Library (NPTL) and advanced I/O capabilities, SUSE Linux Enterprise Server rivals UNIX systems in performance and scalability for large-scale server deployments:

- *SUSE Linux Enterprise Server shows great performance on systems with multicore processors*
- *SUSE Linux Enterprise Server is massively scalable—it scales to 1,024 processors and supports up to 10 TB of RAM.*
- *SUSE Linux Enterprise Server supports the latest network-acceleration technologies to gain network performance for I/O intensive applications (Intel QuickData Technology).*



“Oracle has made a long-term commitment to enabling Linux adoption in the enterprise, so mac can be confident that SUSE Linux Enterprise Server is a sound investment for the future.”

Eduard Puchner

CIO
mac

Read the whole story:

www.novell.com/success/mac.html



“With Oracle 10g on SUSE Linux Enterprise Server, we have a cutting-edge solution that provides the stability and reliability our users demand, with a relatively low cost of ownership.”

Manuel Machado

Information Systems Manager
for Engineering Faculty
University of Porto

Read the whole story:

www.novell.com/success/feup.html

Open source technologies—including Linux—are constantly evolving. Novell is a Linux vendor that will be ahead of the curve when it comes to product quality and open source innovation.



“Linux—and in our case SUSE Linux Enterprise—is developing into a standard platform for air navigation services applications.”

Alexander Schanz
Head of Linux Competence
and Service Centre (LCSC)
DFS Deutsche Flugsicherung GmbH

Read the whole story:
www.novell.com/success/dfs.html

¹ IDC, UNIX Migration: Market Analysis and End-User Survey Results

Open source technologies—including Linux—are constantly evolving. Novell is a Linux vendor that’s already ahead of the curve when it comes to product quality and open source innovation. And, with hundreds of talented open source engineers, Novell contributes heavily to key open source projects, including the Linux kernel, Linux-HA (Heartbeat v2), Xen*, GCC, YaST, Mono®, the GNOME and KDE desktops, Novell Evolution™, Novell AppArmor™, Mozilla*, OpenOffice.org and Samba.

Interoperability and Flexibility

Almost all data centers have some combination of Linux, UNIX and Windows operating systems. Each year about 20 percent of the UNIX installed base migrates to Linux, another UNIX platform, or Windows. Between 600,000 and 650,000 UNIX systems are migrated each year, and more than 80 percent of the migrated UNIX systems end up on Linux and Windows.¹

As a data center director, you desire as much interoperability among systems as you can get. If you migrate your UNIX platforms to SUSE Linux Enterprise Server, you receive all of the benefits of the best Linux platform

on the market and achieve far greater interoperability with your Windows systems.

- **Virtualization.** *SUSE Linux Enterprise Server supports bi-directional virtualization with Microsoft* Virtual Server 2005 R2, Windows Server 2003 R2 and Windows Server 2008. Because of this interoperability, you can run SUSE Linux Enterprise Server on Windows Server 2008 and Windows Server 2008 on SUSE Linux Enterprise Server.*
- **Heterogeneous systems management.** *WS-Management provides you with interoperability for managing mixed environments of SUSE Linux Enterprise and Windows*
- **Directory/Identity federation.** *You will benefit from improved identity interoperability and improved access control between Microsoft and Novell products and IT resources managed with either Novell eDirectory™ or Microsoft Active Directory*. Your authorized users can seamlessly access Web-based systems whether their user accounts principally reside in Novell eDirectory or Microsoft Active Directory.*
- **Committed partnership.** *A recent interoperability agreement between Novell and Microsoft ensures that SUSE Linux Enterprise and Windows solutions will work well together into the future. You can be certain that Windows and SUSE Linux Enterprise will cooperate to help your business grow.*

A recent survey from PSB Associates Inc. shows how much IT managers appreciate the interoperability agreement between Novell and Microsoft:

The Survey Says:

In late November, independent research firm Penn, Schoen & Berland Associates Inc. conducted a survey on Windows Server and SUSE Linux Enterprise interoperability, jointly commissioned by Microsoft and Novell. The survey involved 201 interviews with IT executives, managers or staff whose primary job is in a formalized IT department, or who perform IT functions in a non-IT department but who have significant technology purchasing authority. Organizations had to have at least 500 PCs to participate in the survey. Some highlights includes:

| Do you agree with the statement below? | % Agree All Users | % Agree Mixed Windows and SUSE Users |
|---|-------------------|--------------------------------------|
| I want platform providers to improve the interoperability of their systems | 97 | 100 |
| I want tools that make it easier to manage IT environments that have both Windows and Linux | 92 | 98 |

Figure 3.

Migrating your UNIX systems to SUSE Linux Enterprise enhances flexibility and interoperability in your IT environment, but that’s just the beginning. Such a move also allows you to consolidate your systems and reduce the number of platforms through the Novell desktop-to-data center strategy. UNIX does not play well in the desktop space, and Windows is not able to meet the RAS requirements of a mission-critical workload typically reserved for UNIX. SUSE Linux Enterprise can fill both needs.

Value-added Software

Companies that choose a basic Linux operating system typically have to find, download and integrate dozens of additional programs to get the enterprise functionality they want. Companies that choose SUSE Linux Enterprise Server get the whole package.

Integrated Security

Today’s enterprises are expected to be 24x7 operations. Maximizing uptime can mean the difference between winning and losing business. SUSE Linux Enterprise Server greatly improves the probability that your systems will remain up and running. SUSE Linux Enterprise Server has long provided a multitude of security-related services, ranging from antivirus programs to network firewalls. It provides something extra with the inclusion of Novell AppArmor, its enterprise-class application security solution. AppArmor protects the operating system and its applications from the harmful side effects of attacks, malicious applications and viruses. So whether an attack originates internally or externally, SUSE Linux Enterprise Server ensures server integrity, reduces administration costs and prevents downtime-related business losses.



“The key benefit of running the same operating system on all our machines is that it enables us to realize cost savings, not just in terms of software licensing, but hardware, too. SUSE Linux Enterprise gives us complete independence in our choice of hardware vendor, so we can always buy the best-value machines at any given time. What’s more, Linux offers very high performance on standard x86 processor technology, so we do not need to invest in more expensive proprietary chipsets.”

Norbert Diehl

Head of IT
MTU Aero Engines

Read the whole story:
www.novell.com/success/mtu.html



“The Novell team behind SUSE Linux Enterprise has a strong focus on stability and security, making the platform extremely well-suited to the business environment. It is reassuring for us and for our customers that Novell ships SUSE Linux Enterprise Server with a seven-year warranty. And with SUSE Linux Enterprise, we can complete patches and upgrades in minutes, not the hours typically required by other operating systems.”

Jan Aril Sigvartsen

CEO
WebDeal

Read the whole story:
www.novell.com/success/webdeal.html

High Availability Storage Infrastructure

As data volumes grow, organizations need effective data-storage management solutions to ensure business continuity and data integrity. Traditionally, that need was met by proprietary data systems, which came at a high price. Today, SUSE Linux Enterprise Server 10 addresses enterprise storage needs by being the first enterprise-class Linux server to deliver a fully integrated High Availability Storage Infrastructure composed entirely of open source components, at no additional cost. SUSE Linux Enterprise Server 10 is the only enterprise Linux server to bind multi-node failover (Heartbeat v2) with a clustered file system (Oracle Cluster File System 2, or OCFS2) and a “cluster aware” volume manager (Enterprise Volume Management System, or EVMS).

High Availability and Clustering

SUSE Linux Enterprise Server 10 is designed for mission-critical use and minimal downtime. With its high-availability features, your IT administrators can rely on Hotplug services; change hard disks, processors and other periphery at runtime; and use the administration console to configure clustered-server deployments. SUSE Linux Enterprise Server 10 is the only enterprise-class Linux server to:

- Ship a fully integrated, multi-node, high-availability solution at no extra cost. Heartbeat v2 is part of SUSE Linux Enterprise 10 and supports up to 16 nodes (tested case) simultaneously.
- Allow the integrated cluster software to be easily installed and configured, using the YaST setup tool.
- Provide cluster-aware multipath fault tolerance for a wide variety of industry-standard storage subsystems.

SUSE Linux Enterprise Server was the first enterprise-class Linux distribution to fully support Xen 3.0 virtualization on x86-based architectures. Virtualization on commodity

hardware means that you can improve server utilization by increasing the number of applications a server runs and leveraging excess data center capacity at peak times, a technique also called utility computing or “on-demand” computing. You can also free servers by migrating disparate workloads onto virtual machines, redeploying the liberated server resources to other projects. With SUSE Linux Enterprise 10 Service Pack 1, Novell further increases its virtualization advantage over other operating systems by providing an unlimited number of guest operating systems at no extra charge.

Simplified Administration

Novell delivers the best Linux system management capabilities on the market, integrating unique management tools that drive down your cost to deploy, update and manage Linux throughout its lifecycle and address the challenges emerging in today's data center:

- YaST, the administration, configuration and deployment tool integrated in SUSE Linux Enterprise, is used to configure every aspect of the server. If you are adding users or configuring applications—such as DNS, Apache Web servers, Samba file-shares or Xen virtual servers—YaST is there to help. As an open source solution, many third-party companies have provided YaST “plug-ins” so that you can easily administer their applications, too. For example, SUSE Linux Enterprise Server 10 ships with YaST plug-ins for both SAP and Oracle applications and databases.
- AutoYaST is an extension to YaST that automates installation to a large number of machines. AutoYaST saves a tremendous amount of time because installations can be performed in parallel and without user intervention.
- SUSE Linux Enterprise seamlessly integrates with Novell Customer Center so that customers and partners can easily manage their subscriptions and support

entitlements. This approach ensures uninterrupted access to software updates and security patches.

- SUSE Linux Enterprise has adopted the open common information management (CIM) standard as a vendor-independent framework for system management. This allows other CIM-enabled system management solutions to easily work with SUSE Linux Enterprise Server systems.
- As enterprise networks grow, Novell ZENworks® Linux Management can be used to augment the YaST tools and provide centralized control of any Linux system in the enterprise. ZENworks Linux Management can provide desktop lock-down, imaging, remote control, inventory and software management, efficiently managing systems and lowering IT costs.
- ZENworks Orchestrator and ZENworks Virtual Machine Management from Novell provide high-level virtualization management capabilities—another advantage for SUSE Linux Enterprise. ZENworks Orchestrator allows you to manage a group of physical servers—not just Novell servers—and virtual machines in a data center. ZENworks Virtual Machine Management provides for failover of failed VMs in some scenarios, live migration for paravirtualized guests, a host-based management interface for VM management, saving and restoring of paravirtualized guests, automatic balancing of VMs across physical nodes, a well-designed management interface for the whole of the data center, and cross-platform VM management. The ZENworks Virtual Machine Management tool is interoperable with VMware® ESX, and it can manage VMware ESX 3 VMs when the customer has VMware's Virtual Center installed. Overall it can manage virtual machines from Xen, Microsoft and VMware.

Novell is also the only Linux vendor with an array of advanced networking services and cross-platform identity and access management solutions. These solutions—combined

with an integrated service-oriented architecture (SOA) environment—can help you rapidly expand your use of Linux into complex business applications.

Comprehensive Support Ecosystem

Linux gives you the technology advantage, and choosing Novell as your vendor gives you the business advantage. In fact, 80 percent of Fortune 500 companies are Novell customers. With Novell, you have an entire ecosystem of services focused on your success. Novell is the only vendor who provides all of these services for Linux today, giving you the edge over competitors:

- **Technical services and support.** *Novell has the Linux expertise to provide you with the confidence and peace of mind that should technical issues arise, you are being assisted by the industry's finest. Novell experts are standing by to provide you with the support you need, when you need it—online, on the phone or onsite. In addition to the highly trained and experienced Linux support teams in our global support centers, Novell has an expansive field team in every region of the world, ensuring the highest levels of availability and responsiveness.*
- **Business and IT consulting.** *Novell Consulting® is a team of highly skilled professionals with a mission to ensure you get the maximum value from your Novell investment. We help you minimize implementation time, reduce risk and get rock-solid performance.*
- **Training and certification.** *Novell Training Services prepares you and your technical staff with the education and expertise needed to take advantage of the growing business and career opportunities promised by the increasing adoption of Linux in the enterprise. From customized training to certification, advanced instruction and events, Novell Training Services delivers the full spectrum of training elements that contribute to your continued success.*



“We completed the implementation in a surprisingly short time-frame. It helped that SUSE Linux Enterprise Server ships with technologies that make it easy to install across large numbers of systems across a campus.”

Dr. James Murray

*Cluster Manager and Research Scientist
Centre for Astrophysics and Supercomputing,
Swinburne University of Technology*

Read the whole story:

www.novell.com/success/swinburne_university.html



“Support is absolutely critical for us because downtime at the wrong time of day will cost us a lot of money very fast. We have a heterogeneous environment with a lot of moving parts, so having access to immediate enterprise support from Novell is mandatory.”

Norbert Their

Manager of Server Systems
SIG

Read the whole story:
www.novell.com/success/sig.html

- **Extensive partner network.** *Novell has a broad technology partner network with more than 1,300 members, all of whom can help you deploy SUSE Linux Enterprise, no matter the size of your organization.*
- **Certified hardware and software.** *Certifications on or for an operating system are essential for productive and secure operation. Only the complete certification of a solution stack—that is, integrated certifications for hardware, operating systems and software—creates the type of data center security needed to run centralized applications. On the one hand, certifications minimize the risk of system failures. On the other hand, certifications ensure that in case a problem or disruption should occur, users can seek support from the source with the highest level of expertise: the original manufacturer.*

With options for businesses of all sizes, this comprehensive set of Linux-focused guarantees and programs enables you to deploy Linux successfully and with confidence.

Making the Move: Low Costs, Limitless Possibilities

Linux saves you money—lots of it—but it does more than that: it opens exciting new opportunities for growth. With the money you won't be spending on UNIX hardware, you can explore strategic initiatives, fund critical research or entice talented IT personnel. When you choose SUSE Linux Enterprise Server from Novell over UNIX, you get the best-engineered Linux from a vendor that can deliver a global ecosystem to surround it. You can deploy SUSE Linux Enterprise Server on servers that suit your budget. So it doesn't matter if it's commodity

“white boxes,” blades, racks, clusters or mainframes. SUSE Linux Enterprise Server supports the customer choice.

When you choose Novell, you get:

- *The most robust, scalable and powerful Linux platform on the market*
- *A data center solution that fits seamlessly into your existing environment*
- *Value-added software that simplifies deployment and management of your Linux infrastructure*
- *A broad selection of open-source and closed-source software optimized to run on a Linux platform*
- *Technical support available 24x7x365 from more than 800 support technicians*
- *A consulting organization to support you from design through implementation*
- *Training that can bring your IT staff up to speed on the latest technologies*
- *Thousands of partners who deliver appropriate hardware and software solutions*

Moving your infrastructure services, enterprise applications and essential databases to Linux is no longer a shot in the dark. Novell is here to help in whatever capacity you need, whether it's through enterprise-caliber software, superior support, a broad selection of services or all of the above. You deserve expertise and answers tailored to your company, and above all, you deserve a vendor that will exceed your expectations and be your partner every step of the way. Novell is that company—start planning your move to Linux today.

For more information, visit: www.novell.com/whynovell/

www.novell.com



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