

# SUSE<sup>®</sup> Linux Enterprise 10 in Manufacturing

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# Simplify, Secure and Consolidate Your Enterprise from the Data Center to the Shop Floor

SUSE Linux Enterprise Server integrates the Xen hypervisor for virtualization, so you can organize your IT infrastructure just as your operations group organizes your production environment.

## Delivering Mission-critical IT Services within the Manufacturing Industry

As a manufacturer, you face an extremely challenging, competitive environment. Globalization, mergers and acquisitions and rapid innovation pressure you to drive new products to market faster and at lower costs. To maintain your competitive advantage and ensure sustainable growth in this environment, you need to:

- Reduce cycle times through better business processes
- Decrease time-to-market
- Increase security for collaboration and compliance
- Provide high-availability business infrastructure applications
- Allow authorized users secure, reliable, any-time-access to enterprise applications

SUSE® Linux Enterprise Server from Novell® enables you to deliver mission-critical IT services—with enhanced security and reduced costs—while improving data center reliability and performance.

## Introducing SUSE Linux Enterprise 10

SUSE Linux Enterprise 10 is the Platform for the Open Enterprise™. Novell designed SUSE Linux Enterprise to be the best-engineered, lowest-cost and most interoperable platform for enterprise computing. From the desktop to the data center, only SUSE Linux Enterprise 10 offers a complete open source platform for the mission-critical applications that drive your business.

The SUSE Linux Enterprise 10 platform comprises the following components:

- **SUSE Linux Enterprise Server.** *The most reliable, secure and scalable Linux operating system designed for the most critical data center workloads—such as your Oracle\* or SAP\* enterprise deployments.*
- **SUSE Linux Enterprise Desktop.** *The best Linux desktop operating system for businesses today. Its flexible design enables both fixed-function deployments and high-end computing—enabling you to use one operating system across your factory floor workstations and engineering departments. SUSE Linux Enterprise Desktop is the first Linux\* desktop to give the basic office worker complete office functionality, interoperability features and productivity improvements—providing you with a new, viable solution for substantially reducing desktop total cost of ownership (TCO).*
- **Novell Customer Center.** *One location to obtain support, updates and renewals for all your SUSE Linux Enterprise product subscriptions.*

Novell also offers a powerful set of tools (including YaST, AutoYaST, Novell AppArmor™ and Novell ZENworks® Linux Management) that simplify server administration, application deployments, application security and overall systems management. These tools reduce the cost of managing and integrating your network. In addition, SUSE Linux Enterprise Server integrates the Xen\* hypervisor for virtualization, so you can organize your IT infrastructure just as your operations group organizes your production environment based on demand. The result is higher levels of consolidation and server utilization.

## SUSE Linux Enterprise 10 Increases Benefits with Virtualization

Two major new developments will have a dramatic effect on virtualization technology

adoption. On the hardware side, x86 architecture-based microprocessor manufacturers have released a new generation of chips that support virtualization natively. On the software side, the open-source Xen hypervisor virtual machine technology has eliminated much of the performance impact associated with the mediation layer of full virtualization and software emulation. Xen also drives down the overall cost of virtualization.

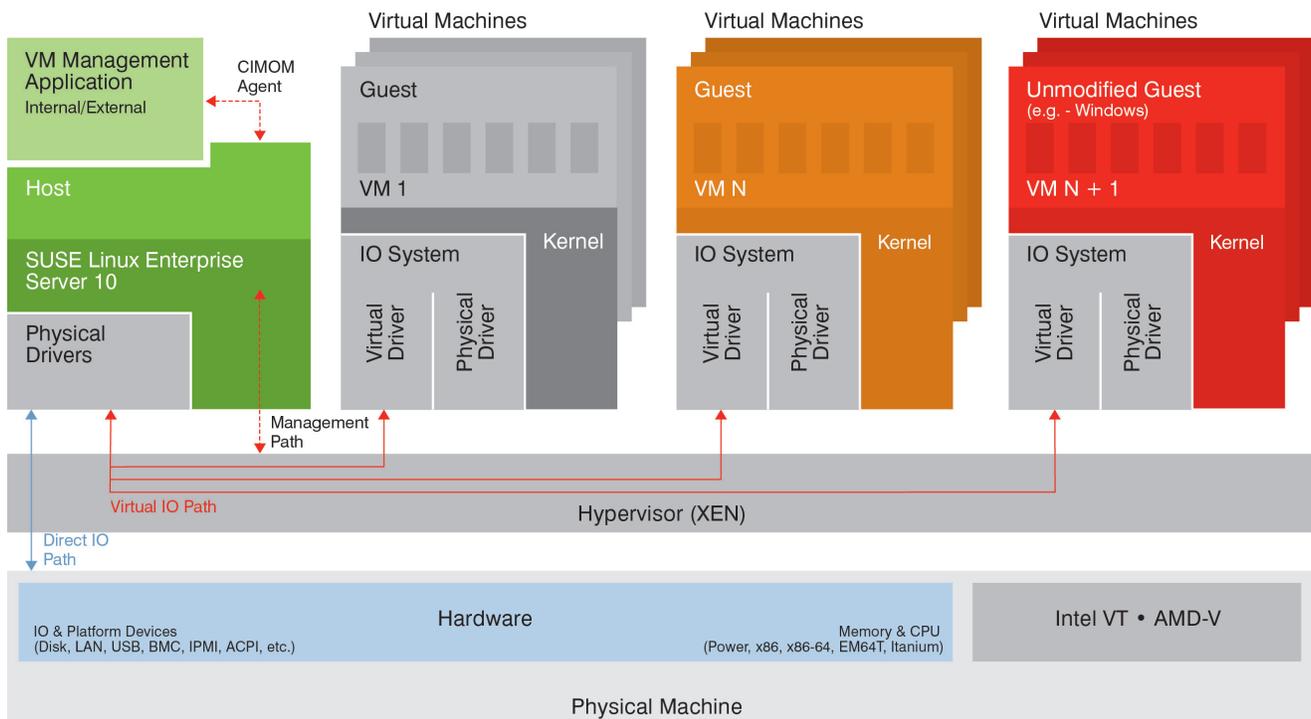
Novell expertise and technologies will play prominent roles in virtualized data centers. SUSE Linux Enterprise 10 continues to lead the way in data center virtualization, with support for both x86-based processors and mainframes. In addition, Novell is the first enterprise Linux vendor to ship Xen as part of its distribution.

Virtualization offers you impressive new levels of resource utilization and improvements in availability, manageability, scalability, performance and application security. By employing

virtualization technology, you can decouple software from hardware to pool IT resources. Although virtualization technology has many uses in corporate infrastructure computing, you can gain advantages in two main areas: consolidating hardware and increasing utilization of your compute capacity.

Like many manufacturers, you likely have an abundance of home-grown or legacy applications. You can now use virtualization to consolidate them on less expensive commodity hardware without having to rewrite old applications. You can simply run your applications as guests on your new hardware running SUSE Linux Enterprise Server. In addition, engineering environments have often over-extended computing capacity as a function of the application types and versions they are running. With virtualization technology, you can substantially increase compute-capacity utilization by using the same hardware to run multiple applications independently.

**SUSE Linux Enterprise 10 continues to lead the way in data center virtualization, with support for both x86-based processors and mainframes.**



**Figure 1.** The Xen architecture enables virtualized operating systems to talk directly to hardware, with minimal impact on performance.

# Manufacturers cannot afford to delay Linux deployment any longer. Highly competitive industries—such as retail and financial services—have embraced Linux as a way to stave off competitive pressures and re-think the way that IT will help grow their businesses.

**By choosing SUSE Linux Enterprise Real Time for your deterministic computing needs, you can configure a modular, rich system that helps you consolidate servers, reduce costs and consistently achieve high quality of service.**

You can also combine the Xen hypervisor offered in SUSE Linux Enterprise Server 10 with next-generation chips that support virtualization natively. For highly qualified environments, you can deploy as many fully virtualized machines as you need under one qualification.

## ***Introducing SUSE Linux Enterprise Real Time***

SUSE Linux Enterprise Real Time is an industry-standard, real-time version of Linux for Intel- and AMD-based multiprocessors. This platform, an enriched distribution of the SUSE Linux Enterprise kernel from Novell, provides you with guaranteed performance in time-critical environments for hardware-in-the-loop simulations, data acquisition or process control. Key features—including CPU shielding, kernel preemption, low latency and priority inheritance—help you achieve sustainable, hard real-time performance on Linux. You can also rely on capabilities that improve quality of service and enable a service-oriented infrastructure. These features include distributed shared memory, Xen virtualization and real-time cluster file systems, all of which SUSE Linux Enterprise Real Time enhances significantly with its low latency and deterministic processing.

By choosing SUSE Linux Enterprise Real Time for your deterministic computing needs, you

can configure a modular, rich system that helps you consolidate servers, reduce costs and consistently achieve high quality of service. SUSE Linux Enterprise Real Time also supports Concurrent's powerful NightStar\* tools for debugging and analyzing complex, time-critical Linux applications.

## **Why Now is the Time for Linux in Manufacturing**

Drivers such as the Internet boom, Y2K, the growth of enterprise resource planning (ERP) and the lack of wide-area networks (WANs) led to decentralized infrastructures and excess operational costs. These costs rise as you factor in underutilized servers and redundant support organizations deployed at each site. To a manufacturer looking to make your business lean, this is unacceptable.

To innovate and get your products to market faster than ever before, you need to reduce operational costs and automate management—even at remote sites—while increasing security and ensuring agility. This means making smart choices in base infrastructure technology. Manufacturers cannot afford to delay Linux deployment any longer. Highly competitive industries—such as retail and financial services—have embraced Linux as a way to stave off competitive pressures and re-think the way that IT will help grow their businesses. Manufacturers have lagged behind this wave but can now leverage the proven successes of their counterparts in these industries.

Numerous leading-edge manufacturers are using Linux throughout their enterprises—from the data center to the shop floor. By replacing costly UNIX\* or Microsoft\* Windows\* deployments with Linux, you, too, can significantly reduce costs and improve system performance. Following is a closer look at specific areas where Linux can provide you an advantage.

## **Replacing UNIX with SUSE Linux Enterprise Server**

Manufacturers have many areas of opportunity for UNIX replacement because they often run numerous legacy applications. These may be older, home-grown enterprise applications established before enterprise-wide enterprise resource planning (ERP) systems, or they may be green-screen applications used on the shop floor or in warehouse environments. These applications typically run on UNIX, and if you upgraded any of these as recently as five years ago, you likely did so on UNIX. The problem is that you kept the high cost associated with UNIX. Today, you can eliminate those excess hardware costs and high maintenance fees by deploying low-cost, high-performance commodity hardware running a highly stable and scalable enterprise-class Linux operating system. If you are considering migrating home-grown or legacy applications to Linux, there are many skilled Novell partner consultants who can help with the move. For specialized in-house or heavily customized applications, the similarity of Linux to UNIX helps to reduce the complexity of application re-writes.

In addition, many essential but simple application deployments—including Web, e-mail, file and print—are still running on UNIX in manufacturing enterprises today. By migrating your application infrastructure to Linux systems, you can achieve the same levels of performance, reliability, scalability and security with much lower annual investment.

Many mission-critical enterprise applications—such as ERP, customer relationship management (CRM), product life cycle management (PLM) and enterprise databases—

require a robust, data center-grade operating system. SUSE Linux Enterprise Server is the number one Linux operating system for the mainframe today. It is the best-engineered, most secure and most scalable enterprise-class Linux operating system on the market. SUSE Linux Enterprise Server has achieved evaluation assurance level 4+ (EAL 4+) security certification and is the Linux operating system of choice for the top supercomputer in the world, the IBM\* Blue Gene of Lawrence Livermore National Labs. You can deploy Linux on all major enterprise hardware architectures, including x86 and x86-64 servers, clusters, blades, grid environments and mainframes. For new deployments or IT initiatives, Linux is often the preferred operating system.

## **Replacing Windows with SUSE Linux Enterprise Server**

Although replacing Windows servers and desktops requires slightly different considerations from that of UNIX replacement, the virtualization technology possible with SUSE Linux Enterprise Server makes the prospect of running Windows-based applications on Linux servers viable and economical.

You should consider moving from Windows to Linux in the following areas:

- *File and print servers*
- *Web servers*
- *E-mail servers*
- *Shop floor servers*
- *Engineering desktops*
- *Desktops for sales support functions, such as customer service representatives and accounts payable/receivable managers*



**“With Novell, we are able to deliver enterprise Linux solutions at mid-market realities. We built a solution for Success Apparel based on the principles of virtualization, open technology and disaster recovery—everything needed to survive as a business in the 21st century.”**

### **Francis Poeta**

*President*  
P&M Computers



**“We operate in an industry with small margins, so any savings from technology goes straight to the bottom line. Because our new environment is so much more stable and manageable than before, we have more time to spend finding new ways for technology to make a difference to our business.”**

**Steve Golub**  
*Manager of Operations*  
Success Apparel

### **Success Apparel Realizes Significant Benefits by Moving from Microsoft Windows to SUSE Linux Enterprise Server**

Based in New York, Success Apparel is a leading children’s apparel manufacturer, selling merchandise to a variety of retailers, including Wal-Mart, Target, Kohl’s and JCPenney. Before moving to a new corporate location, Success Apparel sought a new and reliable infrastructure to accommodate a smaller data center. Success Apparel consulted with P&M Computers, Inc., a Novell Gold Partner in New Jersey specializing in Linux, who suggested creating a virtual infrastructure with SUSE Linux Enterprise Server and VMware\*.

By moving from a Windows environment to SUSE Linux Enterprise Server running VMware, Success Apparel consolidated its servers by more than 50 percent. Consolidation greatly reduced the company’s total cost of ownership, significantly reduced the amount of space needed in its data center and freed up considerable amounts of time for IT staff to concentrate on other projects. Consolidation also reduced administration time by 25 percent since the IT staff no longer needed to install regular patches and re-boot servers.

### **Making an Impact with SUSE Linux Enterprise in Manufacturing**

Whether you run your company’s internal Web site, customer portal, ERP system or Oracle database, Novell can help you reduce cost and complexity.

#### ***In Your Corporate Data Center***

You’re now on the other side of the globalization wave that led to your company’s aggressive expansion. Today, you’re focused on IT resource rationalization throughout your enterprise without compromising application uptime and IT security. You require the flexibility and agility that will take you into the future, allowing you to grow your infrastructure in proportion to your business needs. As a manufacturer, you are especially vulnerable to IT risk given the large number of access points you have extended to various networks. For this reason, security-minded IT professionals in your enterprise are constantly burdened with patching systems and

implementing costly countermeasures against threats to corporate data and information assets. Novell helps you reduce costs, improve system performance and utilization and increase security and management through a combination of software and services designed for today’s data center needs. If you are still running your edge servers and infrastructure workloads on UNIX, then you should consider switching to SUSE Linux Enterprise Server, especially since typical UNIX-based systems are expensive and inflexible, with applications tied to specific hardware. 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. In addition, if you are considering a refresh of your ERP systems, this is an ideal 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.

### ***In Your Design and Engineering Environment***

Like many manufacturers, you are always looking for ways to decrease the cost and increase the speed with which you design and engineer your products. In other words, you need to shrink the product life cycle. The applications your engineers use and the infrastructure they employ largely determine their cost-to-speed ratio. Your IT managers likely do not make infrastructure decisions that coincide with engineering priorities. Although most IT managers are continuously looking for ways to increase IT utilization in the data center, this objective has not traditionally aligned with engineering's need for application speed and isolation. Engineers have been turning to Linux for years as a high-performance, low-cost alternative for their high-end computing needs. If you are not driving the IT decisions for your engineering environment, it's time to engage with your engineering peers in a dialogue. Everyone benefits when engineering is covered with the same enterprise solution guarantees that extend to all other parts of the enterprise.

Engineers have been turning to Linux as a high-performance, low-cost alternative for their high-end computing needs.

#### ■ **Computational Servers and Clusters.**

*SUSE Linux Enterprise Server is a proven, mature Linux solution designed specifically to meet the demands of large enterprises and their specialized design and engineering departments. The solution meets these requirements by delivering UNIX-like performance and reliability on commodity blades and servers as well as high-end SMP hardware. It supports 64-bit processing, clustering and other high-performance, high-availability technologies. With scalability to 1,024 CPUs, more than 10 TB of physical memory, an automated installation system (AutoYaST), remote administration (Novell ZENworks Linux Management) and world-class, enterprise-level support, SUSE Linux Enterprise Server is the operating system of choice for high-performance computing. Furthermore, with the new capabilities*

**SUSE Linux Enterprise Server is the operating system of choice for high-performance computing.**

### **Phoenix Contact Achieves Increased Database and SAP Performance with SUSE Linux Enterprise Server**

Phoenix Contact manufactures electrical connections and automation technology and is one of Germany's most successful medium-sized enterprises. Seeking to improve its database platform, the company migrated its Oracle databases to run on SUSE Linux Enterprise Server. The results were impressive—substantially improved database availability and a drastic increase in the system's price/performance ratio. When looking to implement an enterprise-

wide ERP system Phoenix Contact selected SAP running on SUSE Linux Enterprise Server from Novell.

The migration to SUSE Linux Enterprise Server has been a turning point for Phoenix Contact. The company has dramatically improved its system performance and reduced administrative workload and costs significantly compared to the company's previous UNIX solution.



**“Our Oracle databases used to run on PA RISC servers. Now SUSE Linux Enterprise Server offers the same performance on Intel-based standard hardware. The price difference between these two alternatives is truly immense.”**

**Dietmar Stein**

System  
Phoenix Contact

## With SUSE Linux Enterprise Desktop, your engineers can work from a single, UNIX-like workstation with the added security afforded by Linux.

As part of SUSE Linux Enterprise 10, Novell is delivering SUSE Linux Enterprise Real Time to offer guaranteed, ultra-low latency and repeatability to manufacturers.

*afforded by the Xen hypervisor included in SUSE Linux Enterprise Server, engineering can finally explore ways to optimize its compute-capacity utilization.*

- **Engineering Desktops.** *SUSE Linux Enterprise Desktop offers a much-awaited solution for engineers who have spent years working from dual workstations. Engineers typically have two workstations—one for design or engineering tools running on UNIX or Linux—and one for their office tools (e-mail, calendaring and office suite) usually running on Windows. Maintaining UNIX desktops and Windows licenses is quite expensive, and both systems require excessively expensive hardware. Moreover, engineers often share your company's intellectual property through e-mail collaboration, which may be more vulnerable to malicious attacks when run through your Windows office and e-mail environment. With SUSE Linux Enterprise Desktop, your engineers can work from a single, UNIX-like workstation with the added security afforded by Linux. SUSE Linux Enterprise Desktop offers many new features that will excite your engineers, such as:*

- High-end video driver support with enhanced 3-D graphics
- Office interoperability
- Hardware plug-n-play
- Multilevel security
- Mobility
- Systems management
- Software development tools
- The ability to create clean-room environments

*SUSE Linux Enterprise Desktop comes with Novell AppArmor application security, YaST and AutoYaST installation tools as well*

*as Novell ZENworks Linux Management for remote patch and update management.*

- **Engineering Laboratory Simulations.** *As part of SUSE Linux Enterprise 10, Novell is delivering SUSE Linux Enterprise Real Time to offer guaranteed, ultra-low latency and repeatability to manufacturers. Engineering labs leverage the newest technologies for virtual prototyping and validation testing of new products. Many simulation programs, tests and process control systems require an ultra-low latency operating system in order to ensure realistic simulations or continuous data capture. Technologies such as dual-core multiprocessors and distributed computing in the engineering lab have impacted data latency. SUSE Linux Enterprise Real Time provides guaranteed, deterministic quality of service for real-time applications.*

Below are some examples of how manufacturers have been deploying both SUSE Linux Enterprise Server and SUSE Linux Enterprise Real Time in their design and engineering environments.

### Areas to Consider SUSE Linux Enterprise 10 for Design and Engineering

- **Computer-aided Engineering.** *Manufacturers in the automotive, aerospace, defense and machinery industries use computer-aided engineering (CAE) to create higher-quality products through faster and more complete design iterations. With CAE, they can ensure their products comply with the ever-increasing regulatory demands that affect their designs. However, computer-aided engineering tools rely heavily on memory, computing power, and graphics capability to run complex computations. SUSE Linux Enterprise Server helps you successfully use CAE tools, allowing your design teams to:*
- Easily take advantage of spare computing cycles

- Increase and manage scale-out capacity to deal with computational requirements derived from more complex testing
- Increase scale-up capacity to capture whole models with visualization and simulations

*With SUSE Linux Enterprise Server, your IT managers can quickly and easily provide engineers with an operating system that scales with more processor power, greater amounts of memory, and faster graphics capabilities. In turn, your engineers can now focus on designing better products without worrying about whether the computing infrastructure can accommodate their needs.*

- **Virtual Simulation.** *Hardware-in-the-loop (HIL) simulation offers you a highly realistic simulation of equipment in a virtual operational environment. In order for these simulations to be realistic, they require a real-time operating system that guarantees deterministic processing in sub-second intervals. Novell offers SUSE Linux Enterprise Real Time to meet the needs of these specialized simulation programs.*
- **Electronic Design Automation.** *In today's Electronic Design Automation (EDA) indus-*

*try, there is constant pressure to design smaller and more complex integrated circuits, printed circuit boards and field programmable gate arrays. Electronics manufacturers are in a race to bring their products to market more quickly and sell them for less. The high cost of proprietary platforms, combined with growing performance limitations, has caused design engineers and EDA software vendors to adopt commercial enterprise Linux distributions. In fact, for the EDA market, Gartner, Inc. predicts that "Linux growth is projected to continue to be quite robust ... at the expense of UNIX and NT operating systems."*<sup>†</sup>

*Novell makes all of the cost and performance advantages of Linux available to the EDA environment while providing a stable, well-managed and fully-supported enterprise platform. This includes making the latest Linux technology available in consistent, controlled, enterprise-ready distributions; providing a complete and mature ecosystem of service and support; offering a full stack of Linux products; and dedicating resources and talent to the specialized needs of the EDA industry.*

**With SUSE Linux Enterprise Server, your IT managers can quickly and easily provide engineers with an operating system that scales with more processor power, greater amounts of memory, and faster graphics capabilities.**

<sup>†</sup> "Forecast: Electronic Design Automation, Worldwide, 2004–2009," Nancy Wu and Laurie Balch (2004)

## Audi AG Uses SUSE Linux Enterprise Server to Optimize Designs in Shorter Timeframes

Audi AG, one of the world's leading prestige car manufacturers, has more than 52,000 employees and produces and sells more than 829,000 vehicles annually. To accelerate design cycles and minimize physical prototyping costs, Audi makes extensive use of CAE and runs several large clusters of servers for high-performance computing. With engineers always striving to improve the detail and accuracy of modeling, there is constant pressure on the IT system to deliver more computing power.

Audi adopted SUSE Linux Enterprise Server for two separate solutions: one in crash simulation and one in aerodynamics and computational fluid dynamics. The improved price-performance delivered by SUSE Linux Enterprise Server running on a 64-bit architecture helps Audi run more detailed computational models within shorter timeframes. Design cycles can now include greater detail and more iteration, enabling engineers to optimize their designs without delaying the production start of new vehicles.



**"As well as reducing complexity on the software side, our choosing Linux means that we can select the best generic hardware from competing manufacturers—so we can achieve much better price-performance."**

**Hans-Ulrik von Bülow**  
CAE-Methods  
Audi AG



“SUSE Linux Enterprise Server gave us great Opteron support right out of the box and will simplify our migration path with a better price and improved performance. We are heavily invested in Linux. Many of the other vendors we work with are excited that we’ve chosen SUSE Linux because they like working with the kernel. We haven’t found any hardware that isn’t compatible with SUSE Linux Enterprise Server.”

**Mike Broxterman**  
Staff IT Engineer Manager  
Qualcomm CDMA Technologies

## QUALCOMM Reduces Hardware Costs, Doubles Performance and Frees up IT Staff with SUSE Linux Enterprise Server

QUALCOMM CDMA Technologies (QCT), a QUALCOMM business unit, is the world’s largest provider of 3G chipset and software technology. QCT decided to move much of its CDMA development to a 64-bit Linux platform to improve the performance of its EDA applications.

By migrating its EDA environment to SUSE Linux Enterprise Server on a 64-bit platform,

QCT has reduced its hardware costs by more than 50 percent while doubling performance. A clean kernel simplifies customizations and has helped the company reduce the time spent on patches by nearly 50 percent, freeing up IT staff for more important projects. The ability to work in a 64-bit environment helps the company produce chips significantly faster and with the highest quality.

### ■ Scientific Research and Development.

*In a similar fashion, pharmaceutical, bio-tech and chemical companies are constantly looking for ways to accelerate research and development, improve data management and enable collaborative research. To achieve these objectives, IT decision-makers in these companies rely on their hardware and application providers for much of the technological innovation without much consideration for the impact that an operating system can have. SUSE Linux Enterprise 10 offers companies in the scientific industries the most cost-effective, secure and scalable operating system for both server and desktop computing for their R&D labs. In addition, since SUSE Linux Enterprise Server is the first to support virtualization-enabled chipsets, enterprises in these highly regulated industries can now deploy multiple instances of their software per re-qualified guest.*

### On the Factory Floor

As a manufacturer, your success greatly depends upon the processes performed on the factory floor. By deploying SUSE Linux Enterprise Server on the shop floor, you gain the same efficiency you’ve realized in the data center and you add a low-cost, highly reliable operating system with all the additional security features you require.

### ■ Server-based, Thin-client Computing for the Shop Floor.

*Most of your shop floor employees do not need the majority of features found in a thick client. And like many manufacturers, your organization may be striving to cut down on the risks of vulnerability and viruses inherent in thick-client usage. A server-based, thin-client solution moves applications and the entire desktop experience to a server-based computing model with thin-client devices or re-deployed PCs operating as thin clients. This solution meets your organization’s specific functional needs while providing greater security on the factory floor at a lower cost. Manufacturers are employing SUSE Linux Enterprise Server and SUSE Linux Enterprise Desktop as robust solutions to deliver the reduced set of applications required by assembly line or warehouse workers.*

### ■ Real-Time Linux for Process Control and Test and Measure.

*As with hardware-in-the-loop simulations, many of the process control and testing systems you have deployed on the shop floor require the deterministic quality-of-service features provided by a real-time operating system. SUSE Linux Enterprise Real Time offers manufacturers the highest performance real-time Linux for these applications.*

## On the Desktop

The best way to think about introducing Linux on the desktop is to consider the various segments of desktop users within your enterprise. Novell defines five types of desktop users: fixed function, transactional, technical, basic and power users. In manufacturing, these segments translate into the following types of users: shop floor or warehouse users, sales support, engineers, field sales and users in finance or accounting.

With SUSE Linux Enterprise Desktop, you benefit in the following areas:

- Cost
- Power
- Manageability
- Usability and interoperability
- Security

And, SUSE Linux Enterprise Desktop is an ideal solution for the following users in a manufacturing organization:

- **Factory/warehouse workers.** *As a factory or warehouse workstation, SUSE Linux Enterprise Desktop offers simplified management and remote control as well as application level security, a built-in firewall and lock-down features for increased security of highly sensitive information.*
- **Sales and sales support representatives.** *The usability and productivity features incorporated into SUSE Linux Enterprise Desktop offer customer service representatives and field sales personnel unique advantages. These features provide important productivity and interoperability enhancements, including desktop-wide integrated search, advanced 3-D graphics, animated desktop navigation (such as single-command tiling of applications and multiple desktop environments), interoperability with Microsoft Office\*; plug-and-play, enhanced mobility features and multimedia*

## The features in SUSE Linux Enterprise Desktop will transform the way your office workers interact with their desktop environments.

*support. In essence, the features in SUSE Linux Enterprise Desktop will transform the way your office workers interact with their desktop environments. They will have a more enjoyable experience while improving their efficiency and productivity.*

- **Engineers.** *The performance and interoperability features in SUSE Linux Enterprise Desktop offer engineers the ability to finally consolidate their desktop PCs with their engineering workstations. This consolidation not only produces substantial cost savings in terms of freed up hardware and reduced license costs, but also greatly impacts an engineer's daily productivity. By consolidating on one workstation engineers can be more responsive and also potentially become truly mobile.*

**SUSE Linux Enterprise Desktop offers simplified management and remote control as well as application level security, a built-in firewall and lock-down features for increased security of highly sensitive information.**

## Why Manufacturers Should Choose Novell for Linux

### Novell Support

Novell provides organizations of all sizes with the technical services they need to define and achieve their specific objectives. Our professional and customizable services are customer-focused—not product-driven—and backed by more than 20 years' experience in building and supporting technical solutions for multivendor, global enterprises. Regardless of the platform mix in your environment, our global technical support team—the largest offered by any Linux vendor—provides the support you need. From award-winning self-support options to management partnerships with Novell, we will help you find the level of support that meets your needs and fits your budget.

# Only SUSE Linux Enterprise Server offers an open, scalable, high-performance solution that comes with application security,

## Supporting your critical applications

Many of the software applications that you run today are supported on SUSE Linux Enterprise Server. Examples include:

- SAP
- Oracle
- Siebel
- WebSphere
- Symantec/Veritas
- VMware
- BEA
- Egenera
- mySQL
- Legato
- IBM Tivoli
- IBM Rational
- Cadence
- Synopsys
- Mentor Graphics
- UGS
- QAD
- CA / Netegrity
- Abaqus
- Fluent
- CD-Adapco
- Cape Systems
- Open Terra

The entire SUSE Linux Enterprise 10 platform is backed by the award-winning Novell global support team, which has a proven track record of excellence:

- *Ranked number one for support by VARBusiness*
- *Achieved Support Center Practices (SCP) Certification—the only Linux vendor to do so*
- *Received Service and Support Professionals Association (SSPA) Star Finalist Award 2005*
- *Resolves 65 percent of all calls within five minutes*
- *Staffs 11 major global support centers, with 800 Linux-trained engineers available 24x7x365*

All products inside of SUSE Linux Enterprise 10 also seamlessly integrate with Novell Customer Center so that customers and partners can easily manage their subscriptions and support entitlements. This integration ensures uninterrupted access to software updates and security patches.

## Global Ecosystem of Partners

With more than 1,300 members in the Novell Technology Partner program, we offer a robust network of industry partners who stand ready to help you get the most from your Novell investment. Of the technology partner products available today, more than 1,800 are certified on SUSE Linux Enterprise and 2,400 are certified on other Novell products. We have long-standing partnerships with leading independent hardware and software vendors, and we have forged partnerships with prominent open source independent software vendors.

## Conclusion

SUSE Linux Enterprise is the Platform for the Open Enterprise. It includes SUSE Linux Enterprise Server, which is designed to handle mission-critical workloads that will allow you to significantly reduce infrastructure total cost of ownership (TCO) from the data center to the shop floor. Developed and backed by Novell, only SUSE Linux Enterprise Server offers an open, scalable, high-performance solution that comes with application security, virtualization and integrated systems management across a full range of hardware architectures. In addition, SUSE Linux Enterprise Desktop is the best desktop Linux operating system for businesses today. Developed and backed by Novell, it provides market-leading usability and seamless interoperability with existing computer systems deployed in a manufacturing enterprise.

Supported and certified by the world's leading hardware and software vendors, SUSE Linux Enterprise is backed by award-winning Novell technical support and a global ecosystem of partners and services. With SUSE Linux Enterprise, manufacturers can dramatically reduce costs while deploying the most secure and reliable platform from data center servers, engineering clusters, SMPs or a shop floor workstation.

SUSE Linux Enterprise 10 is backed by a seven-year lifecycle guarantee. When you choose SUSE Linux enterprise, you're subscribing to the best-engineered Linux platform in the world and to regular updates through the Novell Customer Center.

Contact us today to learn more. Visit [www.novell.com/industries/manufacturing](http://www.novell.com/industries/manufacturing) or call 1 800 529 3400 to set up a meeting with a Novell sales representative.

## The Benefits of SUSE Linux Enterprise Server

When you choose SUSE Linux Enterprise Server, you get the following benefits:

- **A cost-effective data center solution.** *SUSE Linux Enterprise Server enables virtualization and offers wide-ranging hardware compatibility, integrated management, and flexible subscriptions, making it the industry leader in lowering the total cost of owning and managing your data center and shop floor.*
- **Powerful, integrated security.** *Only SUSE Linux Enterprise Server comes with integrated security to provide ironclad protection for your systems and processes—at no extra cost.*
- **Superior performance and reliability.** *SUSE Linux Enterprise Server delivers UNIX-like performance and reliability on commodity blades and servers as well as high-end mainframes.*
- **Best-engineered server.** *SUSE Linux Enterprise Server is the best-engineered server available for your rigorous data center and shop floor quality assurance processes.*
- **Essential business services.** *SUSE Linux Enterprise Server offers out-of-the box support for more than 1,000 open source applications, including Web application servers and databases as well as file, network, print and security services. In addition, 1,300 partners provide 1,700 applications that are certified to run on SUSE Linux Enterprise Server and span a broad range of horizontal and vertical markets.*
- **Flexible, easy-to-use management tools.** *SUSE Linux Enterprise Server offers significant IT savings with a set of intuitive management resources, including AutoYaST for automated installation and Novell ZENworks Linux Management for easy remote administration.*
- **World-class support.** *SUSE Linux Enterprise Server is backed by the award-winning Novell global support team with a proven track record of excellence.*

## The Benefits of SUSE Linux Enterprise Desktop

When you choose SUSE Linux Enterprise Desktop, you get the following benefits:

- **All-in-one desktop solution.** *Novell maintains one of the industry's largest Linux desktop development teams to deliver an all-in-one solution that includes an office suite (OpenOffice.org 2.0 Novell Edition); a Web browser (Mozilla\* Firefox\*); a collaboration suite (Novell Evolution™); instant messaging (Gaim instant messenger); file organization (Novell iFolder® file and access management) and multimedia support for Adobe\*, Macromedia\* and RealNetworks\*.*
- **Market-leading usability.** *SUSE Linux Enterprise Desktop was designed with the end user in mind, making the system intuitive and easy to navigate from the outset. New usability features include an enhanced user interface, redesigned menus and tightly integrated applications.*
- **Seamless interoperability with existing enterprise systems.** *SUSE Linux Enterprise Desktop operates seamlessly with existing IT systems, allowing organizations to leverage their existing investments. This means that SUSE Linux Enterprise Desktop readily coexists with Windows, Mac, UNIX and other operating systems.*
- **Easy remote administration.** *SUSE Linux Enterprise Desktop includes tools such as AutoYaST automated installation system and Novell ZENworks Linux Management that make it easy to remotely access, administer, control and configure end-user workstations*
- **Network standards support.** *Improved network support allows users to continue using their current network and provide the same standards for security, including Novell eDirectory™ and Active Directory\*. In addition, new wireless network capabilities allow users to easily utilize available wireless networks.*

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- **Powerful, integrated security.** Only SUSE Linux Enterprise Desktop comes with an integrated personal firewall and Novell AppArmor support for application security—at no extra cost.
- **Open source innovation.** Novell is a significant contributor to many open source

*projects making SUSE Linux Enterprise Desktop an ideal launch environment for innovations such as Beagle® integrated search, Banshee™ music management, F-Spot photo library management and Tomboy note-taking application.*



Contact your local Novell Solutions Provider, or call Novell at:

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