



Real Time Linux

In today's global economy, profits are made and lost in a fraction of a second. To beat your competition, you need systems that are as fast and as responsive as you are, and deliver consistently and reliably, no matter what. The world around you may be unpredictable, but your mission critical applications don't have to be. When milliseconds matter, enterprises choose Real Time Linux from Novell®.

Real Solutions for Your Business Challenges

Success in the financial services industry—or any industry, for that matter—depends on your ability to sense and respond quickly to new information and changing market conditions. And if you can react more quickly than your competitors, you have a distinct advantage. We know your profits and losses are made in microseconds, so we built Real Time Linux solutions to reduce latency and deliver consistently high quality of service when it matters most—all the time.

A Fully Integrated Low-latency Solution

Our Real Time Linux solution includes SUSE® Linux Enterprise Real Time, a fully supported, real-time operating system specifically engineered to reduce the latency and increase the predictability and reliability of your time-sensitive mission-critical applications. It enables you to respond more rapidly and increases the availability of your critical

processes. It also ensures you meet your service level agreements—even under heavy system loads—and improves hardware utilization so you can maximize revenue opportunities and lower infrastructure costs. The solution also includes debugging and analysis tools that enable you to non-intrusively identify resource bottlenecks and optimize systemwide performance.



■ Solution:

Real Time Linux

■ Product:

SUSE Linux Enterprise Real Time



“We have to deliver real time market data at not only today's message rates, but also tomorrow's. We chose to go with Novell and their Real Time Linux solution because of its performance, scalability, and development roadmap.”

Emilio Mercado

Vice President,
Institutional Datafeed Products
Thomson Financial

Other Linux vendors can only offer a general-purpose OS with some real-time characteristics. We've built our Real Time Linux solution from the Linux kernel upward and have now integrated it into our desktop-to-data center platform, SUSE Linux Enterprise.

Real Time Linux from Novell uses SUSE Linux Enterprise Real Time (with SUSE Linux Enterprise Server) to deliver:

- Lower latency
- Greater reliability
- Greater predictability
- Improved hardware utilization
- Greater visibility
- Investment protection

Benefits of Real Time Linux

Our Real Time Linux solution is based on the latest open source real-time technologies and delivers the following benefits:

- **Lower latency.** *Running your time-sensitive mission-critical applications on SUSE Linux Enterprise Real Time reduces latency and gives you the time advantage you need to make profits or cut losses ahead of your competitors. A fully preemptible real-time kernel allows you to specify which processes take priority over previously uninterruptible operating system processes, such as spinlocks and hardware and software interrupts. With these innovative capabilities, you can execute your time-critical operations ahead of all others, without any delay.*
- **Greater reliability.** *Applications running on SUSE Linux Enterprise Real Time are more reliable under heavy system loads than the same applications running on a general-purpose operating system, increasing the availability of your mission-critical applications. Now you can ensure that you meet quality of service targets and service level agreements by shielding key hardware resources from extraneous threads and processes. Your high-priority processes continue to run, regardless of the overall load on the system.*
- **Greater predictability.** *When you shield key system resources for high-priority processes, you can ensure greater predictability of your time-sensitive*

applications. And if your high-performance calculators and trading or risk management algorithms require synchronized precision and timely completion of intermediate computations, you can run them on SUSE Linux Enterprise Real Time to ensure greater predictability and improve overall performance.

- **Improved hardware utilization.** *Our Real Time Linux solution enables you to increase capacity and lower hardware costs. Because applications running on SUSE Linux Enterprise Real Time are more reliable and predictable, even under heavy system loads, over-provisioned systems can now safely be run at higher average utilization, effectively increasing capacity and/or lowering hardware costs.*
- **Greater visibility.** *Performance bottlenecks can be difficult to pinpoint precisely. It is also difficult to maximize responsiveness due to system latencies that might be inherent in an application's architecture. Using our Real Time Linux solution, you can non-intrusively analyze the run time behavior of time-sensitive applications and easily identify resource bottlenecks, targeting specific areas of code for improvement.*
- **Investment protection.** *Real Time Linux from Novell helps you avoid vendor lock in and protect your investments. You benefit from our integration of the open source community's latest real-time technologies into our enterprise desktop to data center platform, SUSE Linux Enterprise, and you can choose from a number of different support vendors. You can also redirect scarce internal resources to your core business operations instead of supporting and maintaining your own custom low-latency platform.*

Innovative, Integrated Technology

Our Real Time Linux solution includes the best-in-class products you've come to expect from Novell—SUSE Linux Enterprise Real Time.

SUSE Linux Enterprise Real Time

SUSE Linux Enterprise Real Time is a fully supported, real-time operating system, specifically engineered to reduce the latency and increase the predictability and reliability of your time-sensitive mission-critical applications. SUSE Linux Enterprise Real Time is an extension to SUSE Linux Enterprise Server, and both are needed to implement our Real Time Linux solution. Customers that already have a current SUSE Linux Enterprise Server subscription need only purchase a SUSE Linux Enterprise Real Time subscription. Otherwise, you will need to purchase a SUSE Linux Enterprise Server subscription, in addition to your SUSE Linux Enterprise Real Time subscription.

SUSE Linux Enterprise Real Time 10 SP2 is based on the 2.6.22 Linux* kernel and delivers real-time performance through the open source community's latest real-time patch set—CONFIG_PREEMPT_RT, CPU shielding and assignment, high-resolution timers, adaptive locking, Precise Timing protocols, and support for OpenFabrics Enterprise Distribution (OFED) 1.3, the latest open source software stack that enables the implementation of unified high-speed interconnects based on InfiniBand and 10-Gigabit Ethernet.

Comprehensive Service and Support for your Real Time Solution

Novell offers a complementary set of enhanced technical support, training and consulting services to help you take full advantage of our Real Time Linux solution.

Technical Support

In addition to installation and technical support offered via the Web and by phone as part of an annual SUSE Linux Enterprise Real Time subscription, we offer our customers both dedicated and shared support engineering and account management services. Novell will assign named individ-

uals, full time or part time, onsite or remote, to deliver an enhanced level of service. More information about Novell Premium Service™ packages, as well as a variety of other high-end services, can be found at: www.novell.com/services/premium

Training

Novell also provides custom training services to customers who have purchased a Real Time Linux solution. Training consultants will create a plan that specifically addresses your real-time operating system and low-latency environment, and then deliver relevant, customized training either on-site or at some other preferred location. More information is available at: www.novell.com/training/pep/custom_training.html

Consulting

Novell offers a wide range of custom consulting services for Real Time Linux. The Novell Consulting® Unified Delivery Process follows the ITIL framework of Service Strategy, Service Design, Service Transition and Service Operation to ensure that the right Real Time Linux solution is deployed to your production environment, meeting the unique requirements of your business. From Real Time Linux assessments, planning and solution architecture, to application porting and performance optimization, Novell Consulting can help you with your Real Time Linux solution. More information is available at: www.novell.com/consulting

Comprehensive Ecosystem

In the Real Time Linux market, Novell collaborates with a wide range of leading industry partners that provide market data feed handlers, high speed messaging middleware, real time Java, high speed fabrics and interconnects, and tools. Companies like Wombat, Tibco, 29West, Sun, IBM, Mellanox, Voltaire, Cisco, AMD and Intel, are working closely with Novell to ensure

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Reduce latency and increase the reliability and predictability of your time-sensitive mission-critical applications with Real Time Linux from Novell.

“Sun and Novell are working together to port and optimize Sun’s Java Real-Time System to SUSE Linux Enterprise Real Time. In addition, we expect this collaboration to extend the benefits of the Real-Time Specification for Java (RTSJ) to a mainstream Linux distribution and address the growing demand for predictable standards-based computing in industries such as aerospace, financial services, industrial automation, telecommunications and scientific research.”

Laurie Tolson

Vice President, Client Software Group
Sun Microsystems, Inc.

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that joint customers receive optimized, and fully supported low-latency solutions.

Now is the Right Time for Real Time Linux

Real-time processing is increasingly being recognized as a source of competitive differentiation. Competitive pressures and resource constraints are prompting companies worldwide to seek standards-based, low-latency operating platforms. You need an open source, enterprise-quality real-time

solution. You want a platform that offers low-latency, reliability and deterministic performance—irrespective of load—so that you can respond quickly, ensure high quality of service and meet your service level agreements. You are seeking an affordable and flexible solution that does not lock you into using a single vendor for the foreseeable future. You need Real Time Linux from Novell. Learn more today at: www.novell.com/linux/realtime



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

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