

## INSIGHT

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### Microsoft and Novell Reach Sweeping Agreement on Windows/SUSE Linux Enterprise Coexistence

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## IDC OPINION

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On November 2, 2006, Microsoft and Novell agreed to work together to improve interoperability between Microsoft Windows and SUSE Linux Enterprise. IDC highlights the following:

- ☒ This agreement between Microsoft and Novell plays to enterprise sensibilities — about patent indemnification from Microsoft legal action when Windows and Linux are deployed together and about improved everyday interoperability between the Windows and Linux operating systems, which in turn will reduce operational costs associated with special programming, custom coding, and maintenance of that special code.
- ☒ This is a big step for Microsoft and, indirectly, for Xen technology deployed on SUSE Linux Enterprise in the race to catch up to VMware's rapidly growing server virtualization deployments. While there is nothing to prevent an enterprise from deploying VMware in the future, there may be less need to deploy VMware in SLES/Microsoft sites once Microsoft and Novell deliver solutions in which Windows can run as a guest running on top of the SUSE Linux operating system — or in which SUSE Linux can run as a guest on top of the Windows server virtualization platform in Longhorn Server.

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## IN THIS INSIGHT

This IDC Insight analyzes the agreement between Microsoft and Novell to improve interoperability of Microsoft Windows and SUSE Linux operating environments where they coexist within customers' IT infrastructures. The companies announced that they will develop technology solutions that allow the two operating environments to work better in side-by-side deployments in customer sites. This Insight encapsulates the news itself and presents several avenues of further discussion about its ultimate implications for the industry and for end users.

## SITUATION OVERVIEW

On November 2, 2006, Microsoft and Novell announced an agreement to work together to improve interoperability between Microsoft Windows and SUSE Linux Enterprise. The announcement included legal protections that will allow both companies to share technologies without infringing on Microsoft's patents and intellectual property (IP) — by building a "bridge" between the proprietary source and open source that allows these worlds to continue with their current licensing and development models but in a way that allows them to "handshake" enough to improve interoperability. The companies agreed to protect each other's customers by providing a patent "covenant" that ensures legal protection for IT sites in which their products are deployed together — and agreed to extend those protections until 2012.

The companies have been working for six months to hammer out the legal protections associated with collaborating — and making proprietary-source and open source products work "better together." The companies will also work on software solutions that ensure that the side-by-side software environments they offer will be managed in a more holistic way. To that end, they will launch a joint virtualization research lab where technicians from both companies will "architect and test" new software solutions that include Windows and SUSE Linux Enterprise running together in the same computing environment. Although Microsoft will retain the one-company-developed sourcing model and Novell will leverage the open source model of development, the focus of the announcement is about deployments of Windows and SUSE Linux Enterprise in the same sites. Microsoft has also agreed to promote the acquisition of SUSE Linux Enterprise, in cases where mutual customers specify Linux, and distribute approximately 70,000 certificates a year for SUSE Linux Enterprise Server maintenance and support to customers.

Financial terms of the deal were disclosed in a subsequent announcement on November 7, 2006. Microsoft will make a \$240 million up-front payment to Novell for SUSE Linux Enterprise Server subscription certificates, which Microsoft may use, resell, or distribute over the term of the agreement. Microsoft will also make a \$108 million up-front net payment for use of Novell patents. Microsoft will spend \$60 million total over five years to market Linux and Windows virtualization scenarios and will also spend \$34 million total over five years for a sales force to market the combined offering. Novell will make payments of at least \$40 million over five years to Microsoft based on percentages of Novell's Open Platform Solutions and Open Enterprise Server revenues. In addition, Microsoft agreed that for three years, it will not enter into an agreement with another Linux distributor to encourage adoption of Linux/Windows virtualization solutions through a Linux subscription certificate program.

Key points of collaboration for Microsoft and Novell will fall into three main areas.

- ☒ Virtualization, where the two companies will work on building a virtualization solution for Windows and SUSE Linux
- ☒ Web services, for managing physical servers and virtual servers, including federation of Microsoft Active Directory and Novell eDirectory managed objects

- ☒ Document format compatibility between Microsoft Office and OpenOffice, focused around development and distribution of "translators" to convert content from one format to the other

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## **What Each Vendor Gains**

What does each party gain from the agreements? Novell gains the ability to run Windows guests on Linux hosts (via virtualization), bringing a wealth of applications to Linux deployments. Microsoft gains the ability and opportunity to install Windows on Linux footprints — as well as a royalty stream from Novell, which agreed to pay a portion of all Linux license revenue it receives. This will place SUSE Linux Enterprise in a favored position with respect to other Linux distributions, although Red Hat Linux is far more widely used worldwide.

IDC believes that one of the factors driving Microsoft's selection of SUSE Linux Enterprise is Novell's ownership of a network directory technology, eDirectory, which can be linked to Microsoft's Active Directory to support end-to-end management of business objects throughout the enterprise. Another factor was Novell's willingness to negotiate regarding technical collaboration about its directory management technology and format interchange, regarding its intellectual property, much of which is not derived from Linux open source. Novell has its own patent portfolio and supports a mixed-source environment where open source and proprietary source solutions work together. Although Microsoft, Novell, and HP shared the stage during the November 2 press conference in San Francisco, others were noticeably absent from the event: Red Hat, which competes with SUSE Linux Enterprise, and Sun Microsystems, which had reached an earlier interoperability agreement with Microsoft in April 2004 designed to improve Web services across the Microsoft and Sun platforms co-deployed in large customer sites. However, the Microsoft press release includes quotes from Open Source Development Labs (OSDL), which manages the Linux operating system kernel, IBM's Software group, Dell, Intel, and AMD, spanning many of the large vendors supporting Linux in the enterprise.

### ***Protection from Patent Infringement***

Microsoft CEO Steve Ballmer made it clear that SUSE Linux Enterprise, when paid for by Novell's customers, would be protected from a patent perspective, but he also said that no such statement could be made where other Linux distributions are deployed. That is related to the "patent covenant" reached between Microsoft and Novell, which protects contributors to SUSE Linux, or independent open source developers, from patent infringement claims by Microsoft related to mixed-product deployments. Novell CEO Ron Hovsepian said Novell was honored to have been selected as the Linux partner for Microsoft. Hovsepian said he believed customers could find "peace of mind" by avoiding legal concerns in multioperating system deployments. Ballmer repeated those two points in his summary later on.

### ***Coopetition in a Changing Landscape***

Simply stated, this is a deeply influential relationship that has the potential to massively change the IT landscape in ways that will emerge for years to come. To put this announcement into perspective, this may well be the most important initiative

undertaken by Microsoft in the past five years. Nevertheless, this agreement opens up numerous questions that will take months to fully understand and even longer to see the practical absorption and implementation of this new landscape.

IDC has closely watched the maturation process within Microsoft as the company has come to grips with the reality of open source software — a competitive force that is here to stay. IDC notes that we no longer hear any rhetoric from Microsoft dismissing open source software or disparaging it as being bad for the industry in one way or another. Instead, the focus today is on competing with Linux from a technology and business value perspective — and evolving into a competition model.

The strongest driver for the deal is the rapid adoption of virtualization software. Given Microsoft's current positioning in the virtualization space, this deal may be a concession to reality. In many cases, Microsoft has been forced to share server real estate with Linux through Linux VMs positioned right next to Windows VMs aboard ESX Server. The coming wave of virtualization — including the introduction of Xen hypervisors in more operating systems — and more enablement of hardware-based virtualization and paravirtualization leads to the question of how Windows is going to coexist with Linux. If coexistence via side-by-side deployments on the same server platform is to occur, then Microsoft wants to have a say in how it will happen. In this agreement, Microsoft does have that say — and a recommended partner, Novell, that is agreeing to develop software components that will be optimized to work well with Windows and not to interfere with Microsoft Windows intellectual property.

In a world of virtualized hardware, where Windows and Linux coexist on many server platforms, this could raise questions about whether SUSE Linux Enterprise is now a favored distribution. It also poses a challenge to the open source community and its model for software development — in which all contributors get a right to innovate and a right to access whatever code is created within the open source community. For example, there is an open community-based effort in paravirtualization supported by VMware, IBM, Red Hat, XenSource, and others, known as paravirt-ops that supports multi-platform interoperability for paravirtualization. Microsoft develops its code in-house, publishes application programming interfaces, and shares source code with some of its software partners (e.g., Citrix). However, it does not publish its source code in an open source model. Importantly, the "bridge" being built between Microsoft technology and open source technology does not impinge on the open source GPL licenses, both companies said, but it keeps Microsoft code an arm's length from the need to share code with the open source community driving Linux operating systems.

### ***Interoperability Cited as a Customer Benefit***

The business benefits to customers are clear — improved interoperability between products colocated at the same IT sites and relief from Microsoft patent infringement worries. Several large customers were present at the event, including Goldman Sachs and the city of Seattle, both of which have deployed Windows and Linux in their networks. However, the technology and industry implications were not crystal clear from the moment of announcement. It will likely take time for all of the details of the announcement to be fully understood and the impacts to be assessed. Questions will quickly arise over what this means for other Linux distributions not covered by the

agreement — especially Red Hat, the largest Linux distributor worldwide, along with such popular distributions as Debian, Asianux, TurboLinux, MandrakeSoft, and others.

## **FUTURE OUTLOOK**

IDC expects that virtualization has, to some extent, already brought interoperability into question. Microsoft has already said that its forthcoming Microsoft server virtualization software (Viridian) will support Linux guest operating systems — and the rapid growth of VMware ESX virtualization software from EMC's VMware business unit has meant that Windows and Linux are often seen in side-by-side deployments on x86 servers.

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### **Competitive Reactions Are Likely**

Indeed, VMware is likely to study this agreement between Microsoft and Novell very closely — both for its implications for VMware's virtualization solutions and for a guide to what kinds of collaborations VMware can consider to address the challenges posed by two large software vendors strengthening their multi-OS virtualization solutions. If successful, the inclusion of hypervisors in both Microsoft Windows and SUSE Linux operating environments eliminates one of the big reasons why customers choose VMware — a single virtualized platform that can run all their operating systems and applications. Of course, the agreement only includes Windows and SUSE Linux Enterprise, and does not include other operating systems such as Red Hat or Solaris. The deployment of these hypervisors will put more pressure on VMware to become the "virtualization management company," moving up the stack from its base of providing hypervisor capabilities. Of course, VMware is already broadening its offerings moving in the direction of providing more datacenter-wide virtualization capabilities.

Likewise, other providers to the Linux world, notably Red Hat, can be expected to demonstrate their value in the enterprise space in a variety of dimensions, either through agreements with commercial software vendors or solutions developed by Red Hat and the open source community. Sun's virtualization strategy already includes support for both VMware Infrastructure 3.0 and Xen, and includes elements of side-by-side deployments of Solaris x86, Linux, and Windows on its x86-64 Opteron-based servers. In some ways, this could be viewed as confirmation of the Sun contention that virtualization should be in the OS (containers) and that the Sun approach is actually more efficient because the customer is reducing not just hardware but also OS footprints. That said, Sun still needs to gain visibility for Containers and get the technology viewed as an alternative virtualization solution by customers.

Looking forward, IDC expects virtualization to increase, with more virtualization software products, such as Xen, being incorporated into operating systems, hypervisors (Intel VT and the AMD Virtualization) being built into x86 processors, and paravirtualization solutions from a wide array of vendors. IDC notes that although Linux runs on virtualized RISC hardware, Windows does not; so the side-by-side scenario does not yet exist on RISC platforms.

Interoperability can also be determined by its presence at multiple levels of the software technology "stack" — at the operating-system level, the middleware level, the management level, the applications level, and the presentation level. Each level brings its own set of challenges, but there is no one-size-fits-all solution to interoperability. Instead, each customer workload can benefit from interoperability, but the degree of interoperability also determines the ease with which data is transferred from one system to another — that is, the seamlessness with which that occurs.

Behind the scenes, it appears that large customers, including the U.S. federal government, Goldman Sachs, and others, have lobbied for more interoperability in networks of Windows and Linux servers. (IDC notes that the same customer pressures were drivers in the earlier Sun-Microsoft deal in 2004.) IDC server data shows that Windows and Linux are the two most rapidly growing segments of the worldwide server market by operating system. Together, Windows and Linux servers accounted for more than \$5.7 billion of the \$12.3 billion in servers shipped in 2Q06, the quarter ending June 30, 2006. Operational costs (Opex) associated with deployment of Windows and Linux in the same sites have caused concerns among these large customers that they are acting as system integrators, writing custom code to make these deployments work better. This announcement appears to have been responsive to that kind of feedback from large customers.

Finally, there are a few questions we should address. First, why not Red Hat? We believe Novell is a better partner from Microsoft's perspective because both companies believe in the value behind patents and intellectual property. By comparison, Red Hat believes in open source and in open source only. In IDC's opinion, and for these reasons, Red Hat would be totally unable to enter into a deal like this, just as Microsoft was once totally unable to do what it completed today, just a few years ago, before virtualization shifted the landscape.

### ***Microsoft and Novell Are Leveraging Their Collective "Footprint"***

The Microsoft-Novell agreement has the potential to have a wider effect in the enterprise given their shared focus on user-facing technologies: widely adopted directories that contain end-user ID information, content-formatting technologies associated with business documents, collaborative/groupware software, and a combined "footprint" of Novell and Microsoft product portfolios within the business units of many of the largest enterprises worldwide.

It is important also to note that this announcement is between two companies — not between Microsoft and the open source community at large. Companies can exchange patents and IP, which is happening here, but Microsoft cannot change the rules of open source development. It can only influence and work with one of the two biggest players in the Linux/open source space. It remains to be seen what OSDL's role will be as the Novell-Microsoft relationship evolves and produces Linux-Windows interoperability software solutions.

### ***Open Source Has Shifted the Landscape***

Open source models have, in effect, rocked the software world, given their proliferation and the new deployment patterns they have fostered. Microsoft is now convinced that Linux is here to stay — having studied the Linux phenomenon closely

via some in-house Linux interoperability labs for the past few years. Now, it has chosen to find a way to coexist more easily with at least one Linux distribution — SUSE Linux — while protecting the intellectual property (IP) that Microsoft has built up over a period of two decades.

The broader industry is clearly going to step back and digest the impact of this announcement. While some companies (competitors in particular) are likely to dismiss Novell's tactics and attempt to position it as a negative (e.g., to position it as a sell-out or perhaps as a way to insert proprietary control over Linux), we believe this initiative has legitimate and actionable potential to improve interoperability. And that, as always, is of primary importance to customers who have both types of operating systems installed at their sites. And the pressure to resolve operational issues is heating up. It's getting even more important with side-by-side deployments of Windows virtual machines and Linux virtual machines — often on the same x86 server platform, through the use of VMware, Xen, or now Microsoft software virtualization technologies.

Another question arises, What becomes of Novell as a result of this deal? By entering into this agreement, Novell gains a lifeline to an extremely well-funded partner with a vested interest in making sure that it is a viable company able to invest in the future of Linux. However, it also represents Microsoft's entrée into the open source community. If the company does not move quickly enough or in a way that Microsoft feels is in the best interest of the partnership, can it keep Microsoft from changing its status from partner to parent? This will be a risk.

Will the Linux community fracture as a result of this agreement? As we look forward over the next few years, there's a risk that as Microsoft and Novell work to increase compatibility and interoperability of their respective platforms, do other Linux providers move in a different direction, in an attempt to distance themselves from the work that Microsoft and Novell are attempting? Although this would be very difficult to do, in the context of the open source community, it could be a way for the other open source suppliers to create distance and differentiation. If this were to happen, it would represent a huge disservice to customers and to the progress that the open source movement has made to date.

## **ESSENTIAL GUIDANCE**

- ☒ Virtualization providers should monitor the new and evolving relationship between Microsoft Novell closely. Third-party companies may find that there are ways to leverage the work being done to connect Windows and SUSE Linux Enterprise with future products. Examples include enterprise applications that span both Windows and Linux, storage virtualization products, third-party system management products, and software solutions aimed at high availability and business continuity.
  
- ☒ Systems vendors are likely to support a portfolio of virtualization solutions from a variety of software providers as part of their software-partner programs. They can decide to embrace this approach or to explore ways to provide alternatives to the Microsoft-Novell solutions, perhaps working with SUSE competitors such as Red

Hat. They will likely also support the software solutions Microsoft and Novell will build in the federated directory and document-content interchange spaces.

- ☒ Customers will benefit from all of the above. They will benefit from the Microsoft-Novell solutions to the extent that they reduce operational costs associated with the proliferation and management of Windows and Linux virtual machines on their server platforms — and in their enterprise network. They can also start to demand similar attention to interoperability from other software providers — up and down the software stack.

## LEARN MORE

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### Related Research

- ☒ *Oracle Announces Support for Red Hat Linux* (IDC #204203, November 2006)
- ☒ *The Impact of Virtualization Software on Operating Environments* (IDC #203989, October 2006)
- ☒ *Worldwide Windows Client Operating Environments 2006–2010 Forecast: Vista Expands Windows COE Market Opportunities But Won't Accelerate Growth* (IDC #203733, October 2006)

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