

The Novell® Migration to Linux*: Real Business Value

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Linux* Business Value

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Novell is migrating many of its data center servers and all employee desktops to Linux. This document explains the business value that prompted the change, details surrounding the move to Linux and ways Novell can help you make a similar migration.*

Like any other company today, Novell® is always on the look-out for ways to boost productivity, maximize efficiencies and provide customers with the best possible products and services—and do it profitably. While each part of an organization has its own struggles, a key challenge in IT is cost.

In May 2003, Nicholas G. Carr, an editor-at-large for the *Harvard Business Review*, stated simply, “the greatest IT risk facing most companies is more prosaic than a catastrophe. It is, simply, overspending.”¹

Carr suggested further that the solution is for IT buyers “to throw their weight around, to negotiate contracts that ensure the long-term usefulness of their PC investments and impose hard limits on upgrade costs.” And if that doesn’t work, Carr concluded, it’s time to explore other options, including open source.

Novell did just that, embracing open source internally from the top down, from the CxOs and the strategy makers to the employees at the desktop. Novell set out to revolutionize its entire IT infrastructure to take advantage of all Linux* has to offer while integrating the strengths of NetWare® and the rest of the Novell product suite. In short, Novell saw Linux as an opportunity to improve its operations and finances while expanding and improving its products and services.

Linux and the Bottom Line

If the problem with IT was overspending, Novell looked to Linux to stop it. Initial forecasts showed considerable savings opportunities by

- Moving core services such as Web and firewall services—as well as some file and print services—to Linux, eliminating licensing fees while providing more reliability
- Integrating ZENworks® Linux Management (formerly Red Carpet Enterprise) within Novell

ZENworks 6.5, giving IT administrators a single solution for all their NetWare, Windows* and Linux management

- Using an operating system that is optimized for efficient performance, which enables Novell to sidestep forced hardware upgrades and maximize their investments in legacy systems
- Taking advantage of the security and reliability of open source code, eliminating much of the work that goes into monitoring, validating and applying Microsoft* patches

¹ “IT Doesn’t Matter,”
Harvard Business Review,
May, 2003

The next step was to validate the forecasts. Novell performed three return on investment (ROI) analyses: (1) using Linux on targeted data center servers, (2) replacing Microsoft Office with OpenOffice.org and (3) migrating from Windows to Linux on the desktop. The analyses were based on the following:

- 800+ data center servers
- 5,000 Linux desktop users
- 90 percent of the workforce using OpenOffice.org
- Reducing the variety of operating systems in the data center, centering on NetWare and Linux

Savings in the Data Center

Novell quickly calculated the savings they could look for in the data center and found the following:

- Cost advantages for Linux and open source solutions over Windows and UNIX* servers
- Cost savings in Web, application, edge, database and several file and print servers
- Cost advantages across server sizes—from small, one-way servers to large, four-way servers, and from two-to-eight GB of RAM
- Three-year cost savings in a typical 10-server environment, ranging from approximately \$200,000 to \$250,000 as compared to competing platforms such as HP-UX*, Windows and Sun Solaris*
- Significantly reduced costs associated with patch and service management to prevent worms and viruses

Savings on the Desktop

Calculating the cost savings from replacing Microsoft Office with OpenOffice.org was straightforward: multiply the licensing costs by the number of machines. But the interesting part of the study concerned the hidden costs of migration, or in this case, the *absence* of hidden costs.

The study showed the following:

- Document formats did not need to be converted *en masse*, they could be updated in many cases simply by opening the document using OpenOffice.org.
- The cost of interchanging documents from external parties using Microsoft Office was insignificant.
- Installation was simple, no special expertise was needed.

Training requirements were minimal due to the similar functionality to Microsoft Office tools, and users experienced a rapid learning curve.

As users migrated from Windows to Linux as their desktop operating system, Novell found that

- Options such as “going-forward” migration and dual-boot capabilities significantly improve ROI.
- Flexible choices that preserve access to all the applications users need allow the organization to determine the best migration path for each application.
- The ability to upgrade machines immediately or on their normal refresh cycle enables any organization to achieve the optimum balance of support and hardware costs.

- The payback period for Novell is 34 months in a typical global enterprise of 10,000 users, with \$2 million per year saved in Microsoft Windows and Office licensing fees.

In addition, Novell is looking to save money through fewer vulnerabilities and stronger security on the Linux desktop. In her article "Linux and Windows Security Compared," analyst Stacey Quandt examines issues ranging from separation of the kernel and user space to patch management, concluding that "an operating system based on open standards and open source enables interoperability, improves bug detection and fixes, and is superior to a model of security through obscurity." (*NewsForge*, May 25, 2004)

ICSA labs estimates that each time an enterprise experiences a severe virus encounter, it requires approximately 24 person days to recover, with

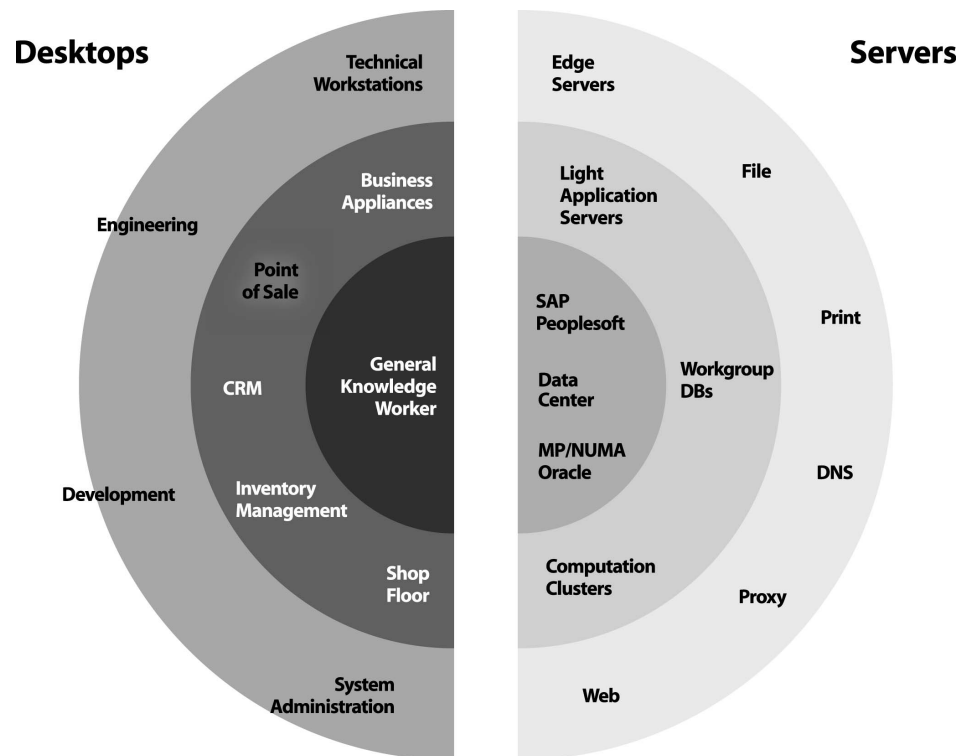
an average direct cost of almost \$100,000.

Today, most of these severe virus encounters happen on Windows, which makes a full Linux desktop environment very appealing (*ICSA Labs 9th Annual Computer Virus Prevalence Survey 2003*).

LINUX: READY FOR PRIME TIME

Linux isn't just for hobbyists anymore. Linux has had high-profile success in nearly every industry and segment of the economy. According to IDC, Linux is growing at 14 percent per year², which is faster than any other platform. Businesses of all sizes are embracing Linux, including large businesses which are usually very conservative with long-term business goals. According to Forrester Research, 72 percent of 50 respondents at \$1 billion+ companies will increase their Linux usage.³

Figure 1. Like many companies, Novell is adopting Linux first in the more technical areas of the enterprise (the outer rings) and moving on to adopt it in the more difficult, business areas (inner rings).



² "Worldwide Linux Operating Environments Forecast and Analysis, 2002-2007: Transitioning to Mainstream," *IDC*, September 2003.

³ "The Linux Tipping Point," *Forrester Research*, March 2003.

One of the reasons for this phenomenal growth is that Linux is almost universally regarded as one of the industry’s most robust and stable operating systems, which allows companies to maximize the availability of applications and the productivity of the workforce. Linux makes efficient use of hardware resources, so companies can extend the useful life of legacy systems. Security is relatively easy to manage; with the Linux kernel separated from the user space, a global community of open source developers can collaborate to find and fix vulnerabilities upfront.

Building on a Linux Foundation

Novell believes in the value of open source for its customers and its own internal operations, which is why Novell has reinvented itself as a

leading supplier of Linux-based solutions and services—as well as a leading user of Linux within its own enterprise.

Novell recognizes the strategic importance of Linux to forward-thinking companies seeking to cut costs while becoming more competitive and responsive. That’s why Novell has taken on the challenge of creating enterprise-class solutions, consulting services, documentation and support for Linux. Beginning with the acquisitions of Ximian and SUSE® LINUX and the development of Novell Nenterprise™ Linux Services, Novell became the first and only \$1+ billion company to offer structured, end-to-end solutions and support that take all the guesswork and worry out of deploying Linux—from the desktop to the data center.

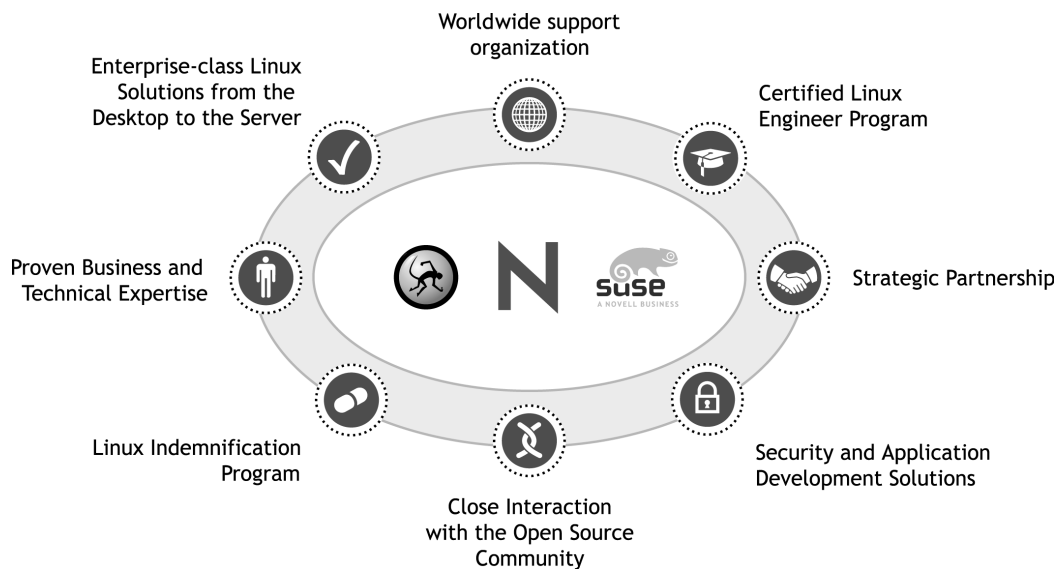


Figure 2. Novell is the only vendor to provide a full range of industry-leading Linux services worldwide.

Success in the Linux market depends on knowing the open source world inside and out: the business opportunities, technical challenges, cultural barriers, best practices and much more. To achieve that depth and breadth of knowledge—and to provide its customers with the best products and consulting services for making their own Linux migration—Novell decided to transform its enterprise into a data center-to-desktop Linux environment. The goals are aggressive for the next year, which includes

90 percent of Novell employees moving to OpenOffice.org.

As a part of this transformation, Novell created fully structured and documented methodologies to enable migration planners to continuously validate their progress and refine their methods. These processes are cyclical, so that lessons learned in any individual open source deployment can be carried back into the planning process for future migrations. As a result of this strategy, Novell has developed a set of “best practices” that pave the way to a successful Linux migration, both for itself and for its customers.

Transforming the Data Center

Novell originally decided to move significant portions of the data center to Linux because of acquisition costs. The Information Services and Technology department (IS&T) simply could not afford to replace its aging hardware with proprietary UNIX servers. But there were other compelling reasons:

- Cost / Budget Pressure
 - Costs are lower—purchase, support and maintenance
 - Capital is lower—more services run on fewer, less-expensive boxes
 - Greater leverage with proprietary vendors
- Data and Security Concerns
 - Linux is not the current target of choice
 - Fewer backward compatibility issues
 - The community fixes problems
- Innovation
 - ISVs are investing in Open Source

- Scripting replaces programming—faster and easier
- Opens up possibilities for new IT processes

Migrating IT Services

Migrating basic IT services—network, Web, file, print, directory and so on—moves at a different rate than data center applications. Several years ago—long before Novell announced its corporate Linux strategy—the Novell IS&T staff was facing the same dilemma that many other IT organizations faced: aging hardware with little or no budget to replace it. The administrative staff had already nursed many of the RISC/UNIX servers to last well beyond their warranties. In some cases, this required restarting the hardware as often as once every other day. One by one, Novell began replacing many of these servers with Linux running on Intel hardware.

The first migrated servers were FTP running on HP-UX. Other early candidates were Oracle* databases, followed by Novell eDirectory™ and Web production servers. The entire Novell Web presence—external and innerweb—is now hosted on three Intel* servers running Apache/Tomcat on SUSE LINUX. Novell then developed Nterprise Linux Services, which IS&T now uses for identity management, resource management, and some file and print services. All of these well-planned migrations happened transparently—without any disruptions to user productivity.

Migrating Enterprise Applications

The benefits of Linux and open source in the data center have been so substantial that when considering any major system or application upgrade, Novell IS&T has adopted a strategy of “Linux unless it can’t be.”

When other departments in Novell acquire new software, IS&T requires that they investigate their Linux and open source options. If there is a viable

Linux version, it is the only version IS&T will support. Figure 3 shows the path that Novell is taking toward integrating Linux in the data center.

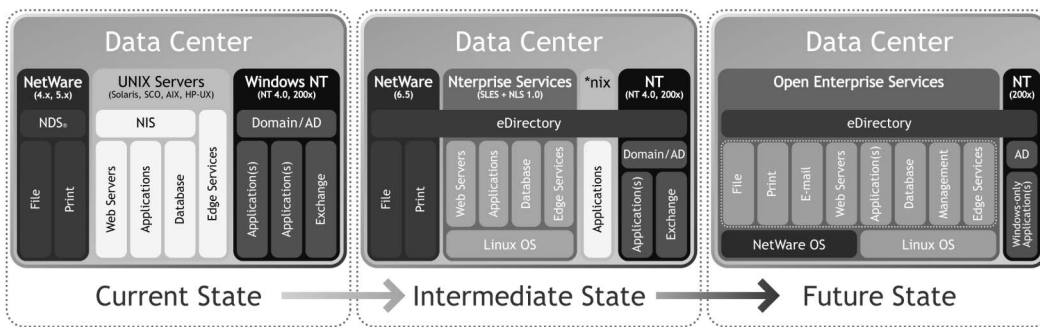


Figure 3. Novell began its data center Linux migration on an as needed basis.

Novell IS&T is also developing a road map for migrating other data center applications to Linux, including enterprise applications such as ERP, payroll, resource planning and expense reporting. These migrations are more complex and require additional planning and coordination across business units and geographies. Some applications are still not Linux-ready and require longer-term migration strategies or interim solutions. But Novell has proven the benefits of Linux in its own data center and is finding that broad Linux adoption is possible and worthwhile if it is well-planned and focused on business benefits and priorities.

Transforming the Desktop Environment

The Novell environment includes users that vary widely in technical expertise, organizational roles and application needs. Its 5,000+ users have approximately 12,000 workstations—more than half of which are laptops. The complexity of such an environment has given Novell ideal opportunities for testing a wide range of possibilities with Linux desktop adoption.

Novell mapped out a desktop migration strategy (see Figure 4) and set deadlines for the move:

- By July 2004, 90 percent of users will be using OpenOffice.org as their main productivity suite, and all new internal corporate documents, spreadsheets and presentations will be in OpenOffice.org formats.
- By October 2004, 50 percent of users will be on the Novell Linux Desktop.
- By the middle of 2005, the rest of the 5,000+ Novell users will have moved to the Novell Linux Desktop.

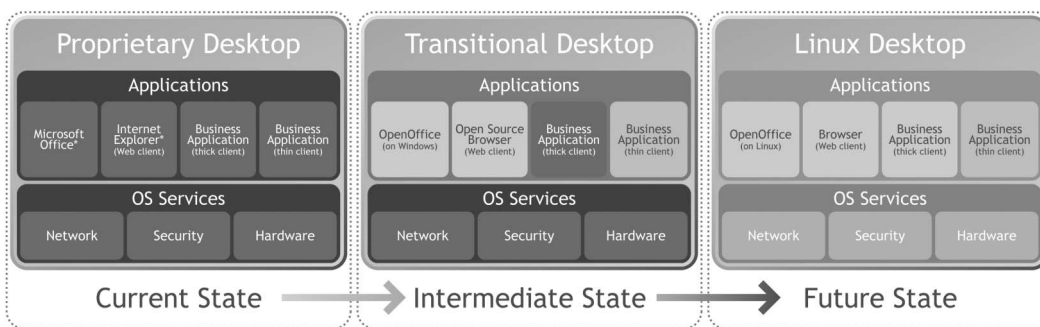


Figure 4. Novell phased its desktop transition by first migrating to OpenOffice.org and then to a full Linux desktop.

But the migration was not to be a pell-mell rush to meet deadlines. Novell executives gave IS&T two imperatives with its migration mandate:

1. Reduce licensing costs (mostly in the form of Microsoft licenses)
2. Don't break the business

License Management

The first phase in the migration to Linux on the desktop was to move from Windows Office products to open source tools, resulting in an estimated savings of \$750,000 per year—and this was simply by terminating the Microsoft Office licenses used at Novell. The expectation is that this figure will grow as Novell moves into the second phase of the migration, allowing Novell to terminate Windows and other expensive proprietary licenses.

OpenOffice.org Migration

To ease into the migration, IS&T started by moving from Microsoft Office to OpenOffice.org on Windows and following up with the migration to a full Novell Linux desktop.

The OpenOffice.org migration became a testing ground for the larger Linux migration. It had many of the same change management activities and requirements, for example, enterprise-wide communications, user training and support, and license management—but with much less risk and complexity. IS&T was able to develop its migration processes and use this “safe” project to understand how the business would react. It also eased users into the full migration. Now, when users migrate to the Novell Linux Desktop, they are already

comfortable with OpenOffice.org as their main productivity application suite.

Novell found that OpenOffice.org users needed to be trained in policies for sharing files. The Document Conversion team defined the standards for sharing documents inside and outside Novell and then submitted them to the executive steering committee for approval and enforcement. These standards are as follows:

- Use native OpenOffice.org file formats for internal collaboration
- Use PDF files for distributing read-only information to customers and the press
- Use Microsoft formats when collaborating with external vendors and partners who don't use OpenOffice.org

Whether or not to convert existing documents and templates to OpenOffice.org formats was also a concern. Team members on the Document Conversion team decided that mass conversion would not be necessary because OpenOffice.org can read Microsoft Office formats. Instead, the team created a decision tree to help users prioritize conversions. These priorities were based primarily on whether or not the document was in active use and whether or not it was a template.

Desktop Migration

Novell began its Linux desktop migration in mid 2003. IS&T recruited 160 users from all parts of the business to participate in an early adopter program. Their goal was to work through any issues and challenges of doing their job on a Linux desktop. Early on, it was a challenging

assignment: It was difficult to find basic tools such as hardware drivers (i.e., wireless), tools (i.e., CD burner) and applications.

With the combination of Novell, Ximian and SUSE LINUX, the environment has matured at an amazing rate. The drivers, tools and applications are widely available (Novell manages over 30 different standard images for current and legacy desktop/notebook platforms). Because of this rapid improvement, Novell senior executives were confident to set the 50 percent year-end goal.

An Applications team was created and tasked with determining the best route for migrating each business function to new, Linux-based and open source applications. Having canvassed user needs, the team evaluated and prioritized applications by asking three questions:

1. Is there a native Linux version of the existing application?

The simplest solution is a native Linux version of an existing application. For example, Novell iFolder®, iPrint, GroupWise® and other Novell desktop clients all run on Linux. Novell Nterprise Linux Services provides the back-end functionality, running natively on Linux servers. These native Linux applications offered planners the quickest and easiest migration path with little or no adjustment required as users moved from Windows to Linux.

2. If a native version is not available, is there a native Linux application that offers equivalent functionality?

Linux versions of some applications are still in development. Certain applications—Microsoft applications, for example—may never run on Linux. In these

cases, a growing number of well-designed third-party or open source applications often provide a solid alternative. Migration planners assessed the functionality and usability of these alternative applications, chose applications that promised the easiest transition and greatest productivity, and initiated training and support programs to help employees make the transition.

3. If neither a native version nor an equivalent open source application is available, is there a viable interim solution?

In the few cases where no reasonable alternative existed, interim solutions were chosen to fill the gap until a permanent Linux solution could be implemented—a solution that matched up with all the required business processes. Depending on the need, these interim solutions included terminal services that emulate Windows in a Linux environment or dual-boot systems that allow Linux and Windows to coexist.

ACHIEVING A SUCCESSFUL MIGRATION

Any enterprise-wide migration requires advanced planning and well-coordinated communication. Only by understanding critical business processes, categorizing users, cataloging and prioritizing applications, and analyzing costs and benefits can a company identify the best opportunities and avoid potential pitfalls. And—with so many users involved—these opportunities must accurately reflect what users (and the business) are doing on a day-to-day basis.

As soon as Novell announced its internal initiative to migrate to Linux from the desktop

to the data center, top executives organized themselves into a cross-functional steering committee. This executive steering committee then defined a series of business “tracks” for each of the key functional areas deemed critical for a successful migration. Company leaders organized teams to manage each track and to ensure the attainment of critical mileposts along the migration path. Business tracks and team responsibilities were as follows:

- **External Communications**, to communicate the Novell migration strategy to customers and explain how it will benefit them.
- **Internal Communications**, to promote an *esprit de corps* around the Linux migration, provide ongoing progress updates and create feedback loops and user collaboration opportunities.
- **Applications**, to categorize user roles and application needs, develop a roll-out strategy and provide application support on the Novell Linux desktop.
- **Training**, to create training programs for new Linux and open source applications and provide how-to guides, FAQs and Web-based reference materials.
- **Solutions**, to create and document Linux and open source migration methodologies for OpenOffice.org, the desktop and the data center.
- **Desktop**, to install OpenOffice.org on Windows and define the Novell Linux Desktop, including standard applications and services, conversion tools and images, deliver deployment guides,

third-party tools, back-end services and FAQs and track migration progress.

- **Support**, to assign and train support personnel, develop support practices, create and maintain a knowledge base of problems and resolutions and filter bugs and fixes back into the open source community.
- **Document Conversion**, to create a strategy and provide resources for corporate-wide document and template conversion and make migrated documents available through knowledge repositories for OpenOffice.org applications.
- **Program Management**, to coordinate project tracks, maintain project plans, verify progress and report to migration and steering teams.

This strategy made it possible for multiple tracks to be executed in parallel for maximum speed and efficiency, while giving each team the autonomy needed to pursue the best solutions. Lines of authority extended down from the executive steering committee, which set the overall direction for the project. The Program Management team made sure that each team stayed on target and provided the support needed by other teams. Regular status reports ensured that milestones were being met and that problems were identified and escalated to the teams best equipped to solve them.

Key deliverables were organized by the Program Management team across different tracks, avoiding duplication of effort. For example, the identification of user roles and application needs had implications for the work done in virtually all the other tracks.

Program Management worked closely with the Applications team to establish standards for applications and roles and then communicated pertinent information to other teams. This coordinated effort also ensured a consistent experience for employees as they migrated.

This coordinated planning across business tracks produced a road map for deploying open source software in phases, both in the data center and on the desktop, in region-by-region and group-by-group roll outs. As a result, the Support team reports an average of only 10 support calls per day for Linux and two per day for OpenOffice.org, a number much lower than expected, thanks to the coordinated programs and tools created by the other migration teams.

Establishing Dialog and Managing Change

Changes to the desktop affect every user in a given organization at the most critical level: business productivity. At Novell, this meant risking the productivity of 5,000+ users. The executive steering committee mitigated this risk by creating the Internal Communications track. The work done by this team became vital to the migration project by communicating expectations, identifying user needs, fostering cultural change, documenting processes, and making training and support structures available.

The Internal Communications track created a communications plan with four primary goals:

1. Create excitement about migrating to OpenOffice.org and the Linux desktop
2. Point employees to available resources for installing, learning and using the new software

3. Keep the entire organization up-to-date on the progress of the initiative
4. Provide an ad hoc means to channel feedback to the project team

To achieve these goals, the Internal Communications track created several communication “bridges” to deliver messages from upper management and planning teams to end users in each department. Novell knew it wasn’t realistic to send out high-level e-mails and expect users to act without further guidance and support. Programs needed to be in place to provide that support. In addition, employees were given opportunities to contribute their own ideas, thereby becoming active participants in creating a knowledge network that would help foster success at every level. Communication bridges supporting the migration included the following:

- **User advocates**, chosen to act as evangelists and mentors within their workgroups and departments, and to funnel employee ideas and concerns back to the migration teams.
- **Subject-matter experts**, appointed within each area of Linux and open source software to help identify existing content and develop new content for training and documentation.
- **Internal marketing efforts**, delivered through all the available channels to highlight the ideas of thought leaders, publicize migration successes and explain business benefits.
- **“The OpenZone,”** a site on the Novell innerweb providing progress reports, training materials and support, and encouraging

users to actively participate in an open, online forum.

- An “OpenMike” promotion, to reward employees for submitting Linux and OpenOffice.org tips.
- Training and support resources, put into place from the beginning of the migration project to help ensure early success while building knowledge for future improvements.

Novell will continue to add to and enhance these communication bridges. Overcoming resistance to change—and managing the fear, uncertainty and doubt that people naturally experience as they go through change—depends on complete and effective communication. By putting in place communication conduits, procedures, tools and owners throughout every level of the organization, Novell has created a powerful, interwoven structure for empowering employees and managing change.

Verifying Results and Refining Processes

Throughout the migration process, Novell polled users and verified results, ensuring that migration goals were being met. If planners uncovered a problem—for example, a Linux application that wasn’t meeting all the needs of certain user groups—planners investigated a range of potential solutions. Should users be trained differently? Would it be possible to modify the application? Could a different application provide a better fit? Migration planners evaluated the costs, risks and benefits of each approach using the same techniques that guided the overall project, resulting in ongoing

refinements that made it quicker, easier and cheaper to migrate each successive user group.

Minor adjustments to the implementation of OpenOffice.org and policies for using it helped maximize user satisfaction and productivity. It’s never good enough to simply drop in a new application and expect users to cope with any difficulties they encounter. In the same way, planners developed methods for verifying results and refining techniques for every migration track—from solutions through support. Of course, that’s a key to success in any business undertaking: find out what you’re doing right and keep doing it; find out what needs fixing and fix it.

Creating Migration Methodologies

One of the primary goals of the Linux migration was for Novell to develop methodologies—best practices and solutions—which could be used to help other companies with their own migrations. The solutions team took on this responsibility, actively participating and documenting every aspect of the project from the outset.

Novell also set up a knowledge base for capturing real-world project experience for everyone involved in the project. This information was used to improve the ongoing Linux migration at Novell and to create the best practices and solutions that would apply to the real experiences of Novell customers. Specifically, the knowledge base allowed the project team to:

- Gather feedback, issues and suggestions from employees throughout the enterprise using a variety of communication channels

- Track project status, determine dependencies and provide updates
- Capture business processes, application functionality and user reactions
- Analyze the fit/gap between proposed applications and existing processes, helping planners specify application modifications, process revisions and training requirements
- Define and document migration best practices

Novell now has a wellspring of proven methods to help customers make the transition to Linux—safely and effectively.

Learning from Experience

Exploring uncharted territory is risky, which is why Novell went ahead and mapped out the process.

As Novell moved to Linux, project team members carefully documented what worked and what didn't so they could ensure a smooth transition.

From their experience, Novell found the following critical areas required careful consideration:

cultural change, automated tools, enterprise-wide involvement and flexible training.

Cultural Change

Moving to Linux, whether on the desktop or in the data center, requires a new way of thinking.

Even the best software in the world cannot add value unless users embrace what it has to offer.

Novell management knew that fostering a cultural change was important, but they found it was even more vital than anticipated. Novell learned that

- Cultural change must be anticipated and leadership must be involved each step of the way and at all levels.

- Detailed communication plans and strategies must be carefully created and executed.
- Affected departments need to be involved as early as possible.

Automated Tools

With many desktops to migrate, the need to automate the migration processes was immediately apparent. To meet this need, Novell developed a combination of automated tools and methodologies to move a Windows desktop to Linux as quickly and efficiently as possible. This made it possible for an IT person to migrate workstations without the user present. It also cut the per-desktop migration time from eight man hours (four hours for an IT administrator and four hours for the user) to one man hour (just the IT administrator). In the ROI analysis, this equated to a savings of \$1.75 million.

Enterprise-wide Involvement

To be successful, the entire organization must be involved early on in the process. Everyone affected needs to know how and why the migration will benefit them. Without this involvement, the project will be doomed before it is even started.

Flexible Training

As Novell moved different departments from Microsoft Office to OpenOffice.org and from Windows to Linux, it became apparent that a one-size-fits-all approach doesn't work for training. Some users preferred to learn on their own, while others needed specific tools or more attention.

The Training team needed to be flexible in providing a wide variety of tools and services for the needs

of different users, including FAQs, quick start cards, online Webcasts, user manuals, support forums and even some hands-on training. The important thing was giving users enough options that they could decide how much training they did or did not need to be comfortable working in their new environment.

Deploying Linux and Open Source Applications with Confidence

Backed by Novell experience and best practices, customer CIOs contemplating an enterprise-wide migration to Linux and open source can rest easier knowing that Novell has already gone down the path and overcome many of the obstacles. By analyzing opportunities, adhering to best practices and executing a well-developed migration plan, any enterprise can begin today to take advantage of Linux and open source software. And from that beginning, any enterprise can make an orderly transition toward Linux for most or all of its operations—while at the same time, turning employee resistance into enthusiastic support.

The key is doing all the groundwork and doing it right. Novell began with a solid strategic foundation to build choice, performance, savings and security into its technology future.

HELPING CUSTOMERS MIGRATE THEIR OWN ENTERPRISES

Novell is putting all its experience in migrating to Linux to work for its customers. Novell has developed proven solutions, best practices and consulting expertise to help any business identify their best opportunities and successfully migrate

to Linux and open source—whether it's a single server or the entire organization. Here are the reasons why Novell is the best choice as a partner to support your migration:

1. SUSE LINUX technology is the most secure and stable, enterprise-ready operating system for mission-critical applications.
 - The SUSE LINUX AutoBuild technology guarantees quick production of a quality-assured, uniform source code across all relevant hardware platforms.
 - SUSE LINUX has open APIs that allow customers and independent software vendors to integrate easily with the operating system.
2. Novell has “up the stack” services that sit on top of the operating system. Services developed over the last 20 years to work on NetWare—including file, print, messaging, collaboration, directory, resource management, security and application servers—now work on Linux as well.
3. Novell has a worldwide technical support organization offering 24/7/365 support—a relief to CIOs who want to know who will be there to back them up if problems occur. Novell has 650 Linux-trained support people—more than the entire employee base of other Linux distributors.
4. Novell offers true indemnification—not just the warranty protection offered by other distributors. The Novell indemnification program is backed in part by unique contractual and intellectual property rights owing to the

unique position of Novell in the historical ownership chain of UNIX and UnixWare*.

5. Novell has a large consulting staff with the credentials to help customers design their IT strategies to take advantage of Linux. The Novell migration plan and solution methodologies are based on real experience and solve not only Linux-related problems but business problems as well.
6. Novell service contracts allow customers to buy only as much technical support as they need and to integrate Linux support with their other support needs.
7. Novell already owns a rich set of desktop Linux products from both SUSE LINUX and Ximian.
8. Novell is the only company offering retail Linux products, including SUSE LINUX

Professional 9.1 for power users and SUSE LINUX Personal 9.1.

9. Novell has more resources and talent focused on delivering enterprise-class Linux than any other vendor.
10. Novell has the only channel program in the Linux market. It includes more than 3,500 active channel partners, more than half of which support Linux.
11. Novell offers Managed Services for Linux, which will help customers reduce IT costs while adding the value of Novell expertise in Linux administration.

For more information about the Novell commitment to Linux and strategies to help your enterprise migrate, visit www.novell.com/linux.

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