

# Novell® Nterprise™ Linux Services

[www.novell.com](http://www.novell.com)

---

REVIEWERS GUIDE



**Novell.**

# Table of Contents

Novell Nterprise Linux Services

---

2	— QUICK PROFILE	8	— WHAT CAN I DO WITH NTERPRISE LINUX SERVICES?
3	— SYSTEM REQUIREMENTS	9	— NOVELL NTERPRISE LINUX SERVICES FEATURES
3	— OVERVIEW	12	— BENEFITS
4	— LINUX MARKET FACTS	13	— INSTALLING NTERPRISE LINUX SERVICES
6	— NOVELL AND LINUX	16	— SUMMARY
7	— WHO USES NOVELL NTERPRISE LINUX SERVICES?	16	— ABOUT NOVELL

# Quick Profile



Novell® Nterprise™ Linux Services provides a set of open, cross-platform services that improve communication, simplify and automate network management and allow workers to be productive regardless of where they happen to be. It offers a compelling new choice for businesses that want the benefits of a fully supported Linux platform, and demonstrates the continued commitment of Novell to the concept of open source and the practices surrounding it. Novell Nterprise Linux Services includes: personal file management, secure identity management, print services, internet messaging and calendaring, collaborative Web communication via virtual office and system management services.

## Product

Novell Nterprise Linux Services

## Announce date

June 24, 2003

## Availability

December 18, 2003

## Key Features

- **Novell eDirectory™ and DirXML®.** Comprehensive network resource management for people, files, applications and devices. DirXML allows usernames, passwords and user information to be stored, accessed and passed from one directory to another.
- **Virtual Office.** Self-service and collaboration capabilities, ensuring the work experience follows users wherever they choose to work. It enables team collaboration through shared folders, chat, calendar, discussions and shared favorites.

- **Novell iFolder®.** Personal file management that lets users' critical business data securely follow them, from client to client, no matter where they go.
- **iPrint™.** Print services that let users easily print from any location to any location over the Internet.
- **NetMail®.** Internet messaging and calendaring that promote productive collaboration, while easily scaling to match customer growth.
- **iManager™.** Web-based management for simplifying and reducing the costs of managing business system platforms.
- **Novell Resource Management™.** Software management for desktops and servers powered by Ximian® Red Carpet™.

## Pricing

- **Novell Nterprise Linux Services One-User e-License:** \$59

- Upgrade Novell Nterprise Linux Services One-User e-License: \$31
- Novell Nterprise Linux Services One-User Annual Upgrade: \$12
- Novell Nterprise Linux Services One-User Term Upgrade: \$22

*Novell customers with NetWare® upgrade protection on maintenance agreements will receive Nterprise Linux Services for no additional charge.*

### Availability

- Novell Authorized Reseller™ and Solution Providers
- Through Novell Direct Sales
- Novell Upgrade Site—<http://www.novell.com/licensing/upgfulfill>

### Additional Information

<http://www.novell.com/products/linux/>

## SYSTEM REQUIREMENTS

### System Hardware Requirements

- Server-Class Computer
- Pentium® II Processor (Pentium 4 at 1.5 GHz recommended)
- 512 MB RAM (1 GB recommended)

**NOTE:** *The RAM amounts shown here are for system components only. The Novell Nterprise Linux Services service components you install might require additional RAM. Be sure to complete the planning instructions found in the Novell Nterprise Linux Services Overview, Planning and Implementation Guide for each component you install.*

- 30 GB Free Disk Space

**NOTE:** *The disk space amounts shown here are for system components only. The Novell Nterprise Linux Services service components you install (such as File Services) will require additional disk space.*

### System Software Requirements

Any one of the following operating systems:

- SUSE® LINUX Enterprise Server 8
- Red Hat® Enterprise Linux AS 2.1
- Red Hat Enterprise Linux ES 2.1

Novell eDirectory 8.7.x is also required. It is included with Novell Nterprise Linux Services and is installed by default.

## OVERVIEW

Consider these findings...

- A report by leading independent research and advisory firm Financial Insights predicts that Linux spending will have a compound growth of 46 percent, soaring from \$393 million today to \$1.8 billion in 2007. "Though Linux spending remains small relative to other capital market technologies, it is on the cusp of surging," explains Damon Kovelsky, a Financial Insights analyst in the Capital Markets group. "Leading-edge firms have already demonstrated its viability and cost-effectiveness in trade order management systems (TOMS) and grid computing. We think that over the next 12 months it will start to snowball as more firms look to use and implement Linux." (Source: IDC/Financial Insights news release, October 21, 2003)

- In a Forrester Research survey, the biggest concern in using Linux was the lack of enterprise support. (Source: "The Linux Tipping Point," Forrester Research, Inc., March 2003)

The reality is companies want Linux—but they want Linux to include reliable services and support. With the first release of Novell Nterprise Linux Services, Novell delivers tried and tested network services on the Linux operating system backed with world-class service, support and training.

Novell Nterprise Linux Services provides a set of open, cross-platform services that improve communication, simplify and automate network management and allow workers to be productive regardless of where they happen to be. It offers a compelling new choice for businesses that want the benefits of a fully supported Linux platform, and demonstrates the continued commitment of Novell to the concept of open source and the practices surrounding it. With this release, Novell combines several of its key network technologies and most popular services and delivers them on the Linux operating system. Supported Linux versions include the latest versions from SUSE and Red Hat. Novell Nterprise Linux Services include personal file management, secure identity management, print, Internet messaging and calendaring, a collaborative Web experience via virtual office and system management services.

Novell Nterprise Linux Services provides organizations flexibility and choice in selecting and implementing network services that are cost

effective and based on open standards. Companies seeking to implement or augment network services can deploy Nterprise Linux Services in a standalone environment or seamlessly integrate them with NetWare or other platforms using Novell eDirectory. Novell Nterprise Linux Services provides flexibility for heterogeneous networks and enables incremental and smooth migration for companies adopting open source solutions.

Nterprise Linux Services continues the Novell tradition of providing enterprise-class services that are reliable and secure with low cost of ownership. Hardware and support costs are held to a minimum while productivity and satisfaction for users, business partners and customers is increased. Novell Nterprise Linux Services enables companies to leverage investments in current systems while gaining the advantages of the latest network technologies.

#### LINUX MARKET FACTS

The emergence, growth and establishment of Linux as an accepted (and required) platform for companies has been quantified and described in several recent analyst studies and press reports. A sample of the findings and commentary is as follows.

- Goldman Sachs recently examined Linux growth in a report entitled "Fear the Penguin." Goldman analysts concluded that Linux will grab an increasing percentage of the key market for operating system software in corporate data centers. (Source: "The Big Guys Latch Onto Linux," BusinessWeek, March 3, 2003)

- Linux is the other hot commodity with 49.8 percent growth in factory revenues, year-over-year, while unit shipments grew 51.4 percent year-over-year. "Linux servers generated \$743 million in the quarter, demonstrating their traction in the worldwide server marketplace as they take on more and different types of workloads from other types of servers," said IDC research vice president Vernon Turner. "Linux servers have demonstrated six consecutive quarters of year-on-year revenue growth, proving that they are not a flash-in-the-pan technology." (Source: *IDC Worldwide Quarterly Server Tracker, November 2003*)
- "Linux has been growing and growing and growing, both in revenues and units, rather consistently," said Jean Bozman, an IDC research vice president. Despite SCO Group's legal attacks on the open source operating system, "It looks like people are just buying them anyway... This is accelerating," Bozman said. (Source: *"Analysis: Linux Marches On," Network World, April 8, 2003*)
- But Linux is looking more and more like a sliver of Kryptonite that's working its way under Microsoft's cape. It has Microsoft flummoxed precisely because it's not like any of the company's previous foes. "We're used to competing with products and companies," says James E. Allchin, the group vice-president who runs Microsoft's Windows\* business. "It's different than anything else we've dealt with before. Our experience is different," says Jeffrey R. Davis, the global technical lead at Amerada Hess Exploration & Production, who manages 400 Linux servers by himself. "It takes fewer people to manage the Linux machines than Windows machines." (Source: *"Pecked by Penguins," BusinessWeek, March 3, 2003*)
- According to market research firm IDC, Linux is projected to grow at a compounded annual growth rate of 14% between 2002 and 2007. (Source: *IDC, "Worldwide Linux Operating Environments Forecast and Analysis, 2002-2007: Transitioning to Mainstream," September 2003*)
- This trend is confirmed by Forrester Research, which found that 72% of 50 respondents at USD \$1 billion+ companies are planning to increase their Linux usage over the next two years. The Forrester survey also found that more than half of the interviewees planned to replace other operating systems with Linux. (Source: *"The Linux Tipping Point," Forrester Research, Inc., March 2003*)
- According to CIO Research, 64% of 375 companies surveyed are using open source, with a key driver being lower total cost of ownership (TCO). "CIOs say the greatest benefits from using open source are lower total cost of ownership, lower capital investment and greater reliability and uptime compared to their existing systems. IT executives report that open source provides greater flexibility, control and faster, cheaper application development." (Source: *"Open Source Gains Momentum," CIO Research, December 3, 2002*)

## NOVELL AND LINUX

The Novell Linux strategy, which was announced at BrainShare® 2003, is rooted in a commitment to deliver a complete range of Linux-related services, products and solutions to the market. A key benefit of the strategy is the availability of Novell software and services to new, prospective customers who are running Linux and not NetWare.

Novell began building solutions for Linux in early 2000, when it made its flagship eDirectory technology available on Linux. Over time, all of the services associated with the NetWare operating system will migrate to Linux. The final outcome of this migration is a network service environment from Novell that supports Linux or NetWare. Customers who desire to move to Linux will be able to do so with Novell support and guidance, without giving up the NetWare network and network-based services they have come to depend on to keep their businesses running.

Novell Linux consulting, technical support and training services, including the recently announced Novell Certified Linux Engineer program, round out the Novell Nterprise Linux Services solution. Novell Consulting, delivers direction-setting offerings such as strategy and return-on-investment analysis as well as implementation and migration services. Novell Certified Linux Engineer program will combine certified expertise on Novell Linux offerings with Linux Professional Institute (LPI) certification recommended as prerequisite knowledge. Novell is also empowering its top channel partners to provide this same quality support to the customers they serve.

The Novell commitment to providing services on Linux is underscored by recent acquisitions, partnerships and product announcements.

A summary of these is as follows.

- **Acquisitions.** In August 2003, Novell acquired Ximian, the leading provider of desktop and server solutions that enable enterprise Linux adoption. Ximian specifically provides Linux desktop and application management solutions such as Red Carpet which enables secure self-service software distribution and updates throughout a network. Red Carpet is a customizable solution that automates the central management of software on workstations and servers running a variety of Linux distributions.

In January 2004, Novell acquired leading enterprise Linux technology company SUSE. This enabled Novell/SUSE LINUX to become the world's largest supplier of desktop-to-server Linux solutions and technical support and the only major vendor that can offer most of the various pieces of a Linux stack. The combined company can deliver Linux on the server and the desktop, as well as delivering applications and support to make deploying Linux safe and simple. "We chose SUSE LINUX because they are a clear market leader in Linux technology for the enterprise," said Jack Messman, chairman and CEO of Novell. "With this acquisition, Novell will be the only billion-dollar software company with a Linux distribution and a worldwide ecosystem around it. A worldwide technical

staff of more than 600 has been trained to support Linux. The acquisition of SUSE LINUX completes our technology stack from the desktop to the server.”

- **Partnerships.** IBM agreed to license Novell Nterprise Linux Services when the SUSE agreement was announced in July 2003. SUSE LINUX has had an existing relationship with IBM which Novell will extend and enhance for support of SUSE LINUX on the IBM eServer\* platform. HP and Dell have also licensed the Novell technology for resale to their customers. The Novell extensive global sales and channel programs, proven and reliable technical support capabilities, as well as ongoing Novell and SUSE LINUX relationships with key partners like Oracle, SGI, Fujitsu-Siemens, Intel, AMD, SAP, HP and others, provide a powerful business network to promote more rapid Linux adoption around the globe.
- **Products.** In addition to Novell Nterprise Linux Services, Novell has ported Novell eGuide, Novell iFolder, NMAS\*, DirXML, ZENworks® for Servers and eDirectory to the Linux platform and they are all available today. Novell has also announced that GroupWise® client and server services running entirely on Linux will be available first half of 2004.

What the Novell strategy means for companies implementing Linux is summarized in the following analyst statement. “Novell can bring enterprise credibility as well as necessary support services to

Linux distributions that have struggled to rebuild much of the support infrastructure that Novell already has in place. It’s the raw potential of the Linux market opportunity that is exciting here. Novell technology, strength in distributed computing architectures and expertise in integration and ongoing management of complex environments could be combined with the strengths of its partners to open up new end-to-end solutions.” (Source: “NetWare Services for Linux,” *IDC Insight, July 2003*)

#### WHO USES NOVELL NTERPRISE LINUX SERVICES?

Novell Nterprise Linux Services provides value across the entire spectrum of possible organizations. It allows the 80% of Fortune 500 companies that rely on NetWare to adopt and expand Linux services, taking advantage of standards-based and open source solutions. At the same time, organizations that are non-NetWare can also implement powerful and secure network services with state-of-the-art directory management and enterprise-level support. The target market for Novell Nterprise Linux Services covers all segments of the existing NetWare market plus any organization that has adopted or is considering adopting Linux. Market segments include small, medium and enterprise businesses, government and educational institutions and dynamic or distributed organizations. Organization types and typical uses for Novell Nterprise Linux Services are as follows:



ORGANIZATION TYPE	NETWARE IMPLEMENTATION
Small Businesses	Connects users, provides printing, Web access, file sharing, collaboration tools, messaging and all networking services needed by a small company.
Dynamic Organizations	NLS with eDirectory easily accommodates large fluctuations in organizations for temporary projects, seasonal changes, corporate mergers and acquisitions, etc. Modular nature easily scales up or down.
Distributed Organizations	Management of multiple resource types over widely distributed geographical areas is possible through single interface. Accommodates remote and branch offices as well as multi-national offices.
Medium-size Companies	NLS supports medium-size companies with minimum hardware requirements being cost effective and easy to manage.
Enterprise Companies	Augments existing network services and provides for orderly adoption of Linux technology. Provides strong infrastructure with large compliment of additional services that are standards-based, Web-centric and open source.
Government	Provides high levels of security and easy management for structured government organizations. Government agencies are adopting Linux as a secure and low cost alternative to expensive vendor-lock solutions.
Educational Institutions	Already well established in educational institutions, Linux provides computing power and a rich selection of applications. Novell Nterprise Linux Services with eDirectory adds solid user and resource management for large numbers of faculty and students.

## WHAT CAN I DO WITH NTERPRISE LINUX SERVICES?

Novell Nterprise Linux Services provides services for both users and administrators. A summary of services available in this product release is listed below with specific feature detail about each service in the following section:

USER SERVICES	
File Services	NLS provides several levels of file access and file services for users. <b>Novell iFolder</b> provides file synchronization between multiple user clients and a centralized repository. Novell iFolder ensures that files from any client are always backed up and available—automatically. <b>SAMBA services</b> provide CIFS file emulation making a Linux server appear as a Windows server and files are transferred using standard Windows file management tools. <b>Novell NetStorage</b> provides network and Web access to various file services, including NetWare, Novell iFolder and SAMBA services.
Print Services	Users are able to locate, configure and print to printers anywhere on an organization's network using <b>Novell iPrint</b> technology. Print drivers are installed and printers located at any site can be mapped locally for Windows application access.
Messaging	NLS includes multiple options for e-mail and messaging. <b>Novell NetMail 3.5</b> is a scalable, high-performance e-mail and calendaring system that is based on Internet-standard messaging and security protocols. Users can access e-mail using any POP or IMAP client or Web browser. The <b>GroupWise Collaboration Client 6.5</b> adds support for mobile access devices.
Virtual Office	Novell Nterprise Linux Services can be configured to create a complete "virtual office" for end-users that provides file and application access, printing and team communication and collaboration using a standard Web browser from any point on the Internet. <b>Novell Virtual Office</b> provides users consistent access as well as self-help and self-service options in a portal environment. <b>Novell Virtual Teams</b> provides Internet chat, shared folders and team calendar, discussions, favorites and Web pages.

*continued on next page*

MANAGEMENT SERVICES	
Directory Services	More than just an LDAP data store, <b>Novell eDirectory</b> is the identity foundation that links users and their access rights with corporate resources, devices and security policies. eDirectory is uniquely capable of meeting the demands of large-scale, high-end directory deployments. It offers the compatibility, security, reliability, scalability and manageability required for internal and Internet deployments supporting millions of identities.
Identity Management	In addition to eDirectory, NLS includes other identity management tools. The <b>DirXML Starter Pack</b> synchronizes user data, passwords and account information between disparate applications and systems with eDirectory, Windows NT* and Microsoft Active Directory*. <b>Novell Linux User Management (LUM)</b> is a directory-enabled application that simplifies and unifies the management of user profiles on Linux-based platforms. <b>Novell Modular Authentication Services (NMAS)</b> provides enforced identity verification through smart cards, tokens and biometric devices. <b>Novell eGuide</b> provides not only quick access to directory information but enables self-service for users to update personal identity information.
Administration	Novell Nterprise Linux Services includes several administration tools to simplify and streamline the management of network resources. <b>iManager</b> is a comprehensive browser-based administration tool for management of all network resources; other tools include <b>eGuide Administrator</b> , <b>Novell iFolder Management Tool</b> and <b>WebAdmin</b> .
Software Management	NLS includes <b>Ximian Red Carpet</b> which enables users to easily view and procure available software packages as well as subscribe to distribution channels and receive updates.

## NOVELL NTERPRISE LINUX SERVICES FEATURES

Novell Nterprise Linux Services is the first services suite from Novell for the Linux platform. It includes a number of powerful network services that organizations will find very useful including file, print, messaging, directory and management services in an integrated package that runs and will be supported on the SUSE LINUX Enterprise Server and Red Hat Enterprise Linux distributions. Nterprise Linux Services is enterprise-ready software that allows organizations to economically replace Windows servers and extend traditional NetWare services to the Linux platform, while maintaining the security, reliability and functionality Novell products are known for.

FEATURE	DESCRIPTION
<b>eDIRECTORY AND DIRXML</b>	
Novell eDirectory	Novell eDirectory is the worlds most open, extensible and scalable full-service directory. eDirectory manages everything on a network including people, devices, hardware, applications and the relationships between them. eDirectory establishes and maintains security of network resources and becomes a repository of business intelligence. It is not platform, location or hardware dependant. Features include hot continuous backup, dynamic groups, enhanced LDAP authentication methods, event publishing via LDAP and enhanced transport layer security (TLS) support. Management can be accomplished using Web-accessible utilities and role-based administration is provided.
DirXML Starter Pack	DirXML is a bi-directional data sharing service that leverages Novell eDirectory to distribute new and updated information across directories, databases and critical applications on the network and across firewalls to partner systems. DirXML makes automatic changes based on business rules and preserves authoritative data sources. Novell Nterprise Linux Services includes the DirXML engine and DirXML drivers for eDirectory, Windows NT and Microsoft Active Directory. DirXML translates directory data and events into XML format.

*continued on next page*

FEATURE	DESCRIPTION
<b>VIRTUAL OFFICE</b>	
<b>Virtual Office</b>	<p>End-users are provided powerful Web-based resource sharing and collaboration tools through Novell Virtual Office and its components. Virtual Office components include Virtual Teams (discussions, chat, team favorites, shared folders and calendar), eGuide, iPrint, Novell iFolder, Web Search, Web Mail and Password Management. Portal-like Virtual Office features provide users with a centralized and personalized view of all resources and collaborative activities.</p>
<b>Virtual Teams</b>	<p>Virtual Teams provides specific Web-based applications for group communication and collaboration. End-users can create or join a virtual team where each member of the team has common access to team resources.</p> <p>Virtual Team components include:</p> <ul style="list-style-type: none"> <li>• Shared folders—Provides common file and directory access to any member of the team</li> <li>• Internet chat—Internet chat or instant messaging allows users to engage in real-time, online dialog using a responsive and intuitive interface</li> <li>• Team calendar—Gives team members the ability to track team events and activities</li> <li>• Team discussions—Allows team members to participate in online threaded messaging by posting queries and comments and monitoring message board discussions</li> <li>• Team favorites—A collection of addresses and resource locations pertinent to team objectives</li> <li>• Team public Web page—Creates a system generated Web page that provides a select view of team documents and information to be made available to individuals outside the team</li> </ul>
<b>Novell eGuide</b>	<p>Novell eGuide is a Web application that enables quick searching for names, addresses, fax numbers and e-mail addresses stored in Novell eDirectory, as well as in multiple data sources across the Web. These sources include virtually any other LDAP-compliant directory to which access rights are available. eGuide also generates group lists and organizational charts and allows users to manage their own personal directory information.</p>
<b>FILE ACCESS</b>	
<b>Novell iFolder</b>	<p>Novell iFolder provides data synchronization technology that enables users to access updated information for any device from any location. In effect, Novell iFolder provides a virtual, centralized file repository through the Internet. Each time a user device activates the Novell iFolder client, the files at both the client and server are checked for updates and any new changes are synchronized over standard HTTP Internet connections. Novell iFolder employs state-of-the art security to ensure that Novell iFolder files can only be accessed by authorized parties. Login to Novell iFolder requires a user ID and password which is enforced by Novell eDirectory and files are transmitted using encryption based on a pass phrase that only the user knows and has access to.</p> <p>Novell iFolder features include:</p> <ul style="list-style-type: none"> <li>• Transparent and intelligent file updates</li> <li>• Automatic backup of local files</li> <li>• Increased bandwidth efficiency</li> <li>• Convenient file access from anywhere through a standard Web browser</li> <li>• Secure file encryption and protection via pass-phrase identification</li> <li>• Support for Windows XP/2000/NT/Me/98/95 client platforms</li> <li>• Browser-based server administration from any location</li> <li>• Server pooling for distributed support of thousands/millions of users</li> <li>• Billing and management reporting</li> </ul>

*continued on next page*

FEATURE	DESCRIPTION
<b>FILE ACCESS CONTINUED</b>	
<b>NetStorage</b>	<p>NetStorage provides secure Internet-based access to files and folders on Linux and NetWare servers using either a browser or Microsoft Web Folders (Microsoft's implementation of WebDAV). NetStorage authentication uses Novell eDirectory to provide secure access, so Internet-based access is as secure as accessing files from within the network. Key features include:</p> <ul style="list-style-type: none"> <li>• Internet standards support (HTTP, HTTPS, HTML, XML and WebDAV)</li> <li>• Drive mapping support</li> </ul>
<b>PRINTING</b>	
<b>Novell iPrint</b>	<p>Novell iPrint enables printing to any printer on the Internet from any client including Linux. Using Internet Printing Protocol (IPP) and Novell Distributed Print Services* (NDPS) technology, iPrint allows users to browse for available printers via an online map, automatically download and configure drivers, and print to the printer as if it were local.</p> <p>iPrint features include:</p> <ul style="list-style-type: none"> <li>• Printer Auditing—Track who printed, to what printer and how many pages</li> <li>• Local LPT port redirection—Redirect a local printer port to an iPrint printer (similar to Capture functionality in QMS-based printing)</li> <li>• SNMP support—Novell Remote Manager, iManager and SNMP monitors can receive out-of-paper, toner low, busy and other printer messages</li> <li>• Terminal server support—iPrint client supports a terminal server environment</li> <li>• User install—Power users can install iPrint printers on Windows workstations for Internet access</li> </ul>
<b>MAIL AND MESSAGING</b>	
<b>Novell NetMail</b>	<p>Novell NetMail 3.1 is a full-featured, easy-to-deploy e-mail and calendaring system that simplifies the complexities and lowers the costs of deploying a traditional in-house e-mail system. NetMail easily integrates with Microsoft Outlook* or any client that supports POP3 or IMAP4 including Outlook Express, Novell GroupWise 5.5 EP, or GroupWise 6, Lotus Notes* R5, Netscape Messenger*, Eudora*, Mulberry*, PINE* and others. Handheld device support includes Palm* and Pocket PC.</p>
<b>GroupWise Collaboration Client</b>	<p>The GroupWise Collaboration Client provides an intuitive user interface for access to mail and calendaring information from multiple sources. Using this client, access is provided to NetMail 3.5 account messages, as well as messages from any POP3, IMAP4, or NNTP account. Calendaring information is accessible from iCAL or CAP sources. Multiple accounts can be configured.</p>
<b>NOVELL RESOURCE MANAGEMENT</b>	
<b>iManager</b>	<p>iManager provides Web-based access to Novell eDirectory with the ability to manage the directory and all associated resources and applications including Apache, Tomcat, DNS, DHCP, FTP Server, iPrint and any other devices or objects that are configured to be managed by eDirectory.</p>
<b>NetWare Remote Manager</b>	<p>NetWare Remote Manager gives administrators the ability to manage NetWare servers from any location on the Internet. Once securely authenticated, access is provided to server processes and statistics, volume/directory/sub-directory inventory features and the GUI server console.</p>
<b>Ximian Red Carpet</b>	<p>Ximian Red Carpet is a Linux client administration tool that enables software management and updates as well as workstation configuration. Features include:</p> <ul style="list-style-type: none"> <li>• Presentation of available software</li> <li>• Notification and alerts of software updates</li> <li>• Dependency detection and conflict resolution between existing or downloadable applications</li> <li>• History with tracking of installation, removal and upgrades</li> <li>• Customizable user permissions to restrict or allow package installation, removal, updating, or viewing</li> </ul> <p>Ximian's intuitive user interface organizes new versions of installed packages in all subscribed channels and lets users perform updates with a single click.</p>

continued on next page

FEATURE	DESCRIPTION
<b>NOVELL RESOURCE MANAGEMENT</b> CONTINUED	
Linux User Management (LUM)	Linux User Management (LUM) is a Novell eDirectory-based service for Linux systems that allows Linux users to leverage eDirectory as a user account management solution. Linux User Management lets administrators require users who are accessing PAM-enabled services, such as login or ftp, on the NLS server to authenticate through eDirectory. LUM also allows administrators to create Linux user objects in eDirectory for Windows users who will access Samba file services on an NLS server.
SAMBA	SAMBA is a suite of tools that allows the Microsoft SMB/CIFS networking protocols to work with Linux computers. Samba provides Windows-like file authentication and print services from a Linux server. With NLS, SAMBA users are created in eDirectory with home directories and the appropriate file access rights.
<b>WEB SERVICES</b>	
Web Services	The Apache Web Server 2.0.48 and Tomcat Servlet Container 4.1.28 are included with Novell Nterprise Linux Services. Both are installed by default and used by products such as eGuide, iManager, Novell iFolder, iPrint and Virtual Office.

## BENEFITS

Novell Nterprise Linux Services is a timely product for today's enterprise companies.

It provides a solution that is both cost effective and current with the latest technology trends and developments. The primary benefits are that companies implementing Novell Nterprise Linux Services can standardize on open source solutions which are more flexible, less costly to implement and maintain, and yet still receive world-class service, training and support.

Reasons to adopt Novell Nterprise Linux Services include the following:

- **Lower Total Cost of Ownership.** Open source Linux solutions lower TCO through reduced licensing and maintenance fees. Fewer people can manage more resources. Development is less expensive and hardware requirements are reduced.
- **Lower Capital Investment.** Since Linux system requirements are less than for Windows or UNIX® operating systems, less expensive and

repurposed hardware can be used to provide the same level of computing power. In general situations, more users/applications/services can be satisfactorily implemented, serviced and maintained for less investment.

- **Improved Reliability.** The adoption rate of Linux in enterprise organizations and the successful deployment of mission-critical applications underscores the fact that Linux is a reliable alternative to high-end platforms. Novell Nterprise Linux Services provides the same levels of reliability and security that have long been associated with Novell NetWare.
- **Enhanced Application Development.** With the wide availability of open source solutions and the abundance of development talent, valuable solutions can be implemented quickly and effectively at low cost. A wide assortment of open source applications already exist and movements are in process where most major software vendors are supporting Linux.

- **Simplified Administration.** The integration of networking services for Linux with Novell eDirectory provides powerful yet simple administration. Access to file, print and application resources as well as users and groups is controlled through a common, intuitive, graphical interface using a secure, distributed, established directory service.
  - **Flexibility.** Organizations are free to incrementally adopt Linux while providing users with the same levels of access to networking resources.
- Nterprise Linux Services enables mixed environments with support of cross platforms and disparate applications and services.
- **Current Technology.** According to CIO Magazine research, executives indicate that open source will be their dominant server platform within five years. Novell Nterprise Linux Services enables companies to remain abreast of the latest IT developments and position their services to keep current with state-of-the-art technologies.

## INSTALLING NTERPRISE LINUX SERVICES

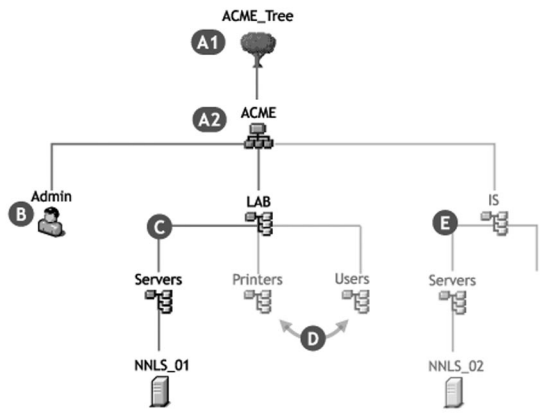
For basic Novell Nterprise Linux Services setup, refer to the *Novell Nterprise Linux Services Lab Guide* which details quick and simplified setup in a specific configuration for testing and evaluation. The following steps are an **overview** of the Novell Nterprise Linux Services installation process:

STEP	DESCRIPTION
Setup a Linux Server	<p>Install and configure a Linux server using SUSE LINUX Enterprise Server 8, Red Hat Enterprise Linux AS 2.1 or ES 2.1. Make sure the server has:</p> <ul style="list-style-type: none"> <li>• the gettext RPM installed</li> <li>• an assigned static IP address</li> <li>• an active IP connection to the Internet</li> </ul> <p><b>IMPORTANT:</b> <i>Novell requires that Novell Nterprise Linux Services be installed on a server that contains only a newly installed operating system with its accompanying utilities, etc.</i></p>
Workstation Available	<p>If testing iPrint or GroupWise Collaboration Client, have available a Windows workstation (95/98/ME/XP/NT/2000/2003). If you will be testing Novell iPrint, you will need a printer with an assigned IP address. If testing the GroupWise Collaboration Client, ensure that the Windows workstations do NOT have the full GroupWise client installed.</p>
Obtain NLS Image Files to create install CDs	<p>Download and verify the following files from Novell:</p> <ul style="list-style-type: none"> <li>• An eDirectory NICI foundation key file (*.nfk)</li> <li>• <i>Novell_Nterprise_Linux_Services_1.0.iso</i></li> <li>• <i>Novell_Nterprise_Linux_1.0_Companion_CD.iso</i></li> </ul> <p>Create two CDs from the above files:</p> <ul style="list-style-type: none"> <li>• Novell Nterprise Linux Services 1.0</li> <li>• Novell Nterprise Linux Services 1.0 Companion CD</li> </ul> <p><b>NOTE:</b> <i>Reviewers may obtain these from Novell press contacts.</i></p>
Insert and Mount CD	<p>From an access shell or terminal window on the NLS server as root user, mount the Novell Nterprise Linux Services 1.0 CD</p> <ul style="list-style-type: none"> <li>• SUSE—<code>mount /media/cdrom</code></li> <li>• Red Hat—<code>mount /mnt/cdrom</code></li> </ul>
Change to the Installation Directory	<ul style="list-style-type: none"> <li>• SUSE—<code>cd /media/cdrom</code></li> <li>• Red Hat—<code>cd /mnt/cdrom</code></li> </ul>

*continued on next page*

STEP	DESCRIPTION
Start Installation Script	Enter <code>./install/.sh</code>
RESPOND TO PROMPTS	
PROMPT	ACTION
Selection [install]:	Press Enter
Express install [no]:	Press Enter
Selection [finish]:	Press Enter
--More--	Using the Space key for scrolling, read the license agreement
Agree to the license (y/n):	Enter Y
Please select the NICI Foundation Key (.nfk) file [/mnt/floppy]:	Enter the path and filename to the NICI Foundation Key file obtained from Novell when downloaded above
Selection [New Tree]:	Press Enter
Enter the new tree name:	Enter <code>acme_tree</code>
Enter the eDirectory server port [524]:	Press Enter
Enter the FDN admin name with context (i.e., cn=admin.o=novell):	Enter <code>cn=admin.o=acme</code>
Enter the Admin password:	Enter a password you will remember
Re-type password:	Re-enter the same password
Enter the server context [o=acme]:	Enter <code>ou=servers.ou=lab.o=acme</code>
Enter the LDAP port number [389]:	Press Enter
<i>Various prompts</i>	Press Enter at each prompt until you see the prompt for the domain name of the NetMail server
Enter the e-mail address [admin_name@company_name.com]:	If you want to register for NLS updates, enter your e-mail address
<i>Web proxy server questions</i>	Answer the proxy questions for your Linux server
View summary information [yes]:	Press Enter and view the summary, or type n and press Enter
Do you want to make any changes? [no]:	Press Enter, or type y and press Enter to make changes
Save configuration file? [y]:	Press Enter or type n and press Enter.  <b>NOTE:</b> <i>This configuration file can be used to create an answer file for subsequent noninteractive installations.</i>
CONFIGURE eDIRECTORY	
Access iManager	In a browser, start iManager by entering the following URL:  <code>http://IP_or_DNS/nps/iManager</code>  where <code>IP_or_DNS</code> is the IP address or DNS name of your NLS server

*continued on next page*

PROMPT	ACTION
<b>CONFIGURE eDIRECTORY CONTINUED</b>	
<p>Create Context for Users and Groups</p>	<p>Create Organizational Unit containers as desired. Refer to NLS Lab Guide for more detail and additional options.</p> 
<p>Create eDirectory Users</p>	<p>Using the iManager interface, create eDirectory user objects as required</p>
<b>OTHER NLS OPTIONS</b>	
<p>SAMBA</p>	<p>Open source software that lets Windows users access NLS servers as they would a Windows file server. Download and install according to standard procedure on any Linux server.</p>
<p>NetMail</p>	<p>NetMail is automatically installed with NLS. To activate NetMail, use iManager to access NetMail Management and enable the appropriate users and groups.</p>
<p>GroupWise 6.5 Collaboration Client</p>	<p>From a Windows workstation, insert the Novell Nterprise Linux Services Companion CD. Browse to the Groupwise_Nterprise_Linux\win32 directory on the companion CD, run <i>setup.exe</i> and follow the prompts.</p>
<p>Novell iFolder</p>	<p>Start the Novell iFolder Management tool by entering the following URL in a browser Address field: <b>https://IP_or_DNS/iFolderServer/Admin</b> where IP_or_DNS is the IP address or DNS name of your NLS server</p>
<p>Virtual Office</p>	<p>Virtual Office is automatically installed as part of NLS. NetStorage, eGuide as part of Virtual Office and iPrint and NetMail are made available if they are installed on the same NLS server.</p>
<p>iPrint</p>	<p>To provide iPrint services for users, the following configuration steps are required:</p> <ul style="list-style-type: none"> <li>• Create an eDirectory context for printers</li> <li>• Create a print driver store</li> <li>• Create a Print Manager object</li> <li>• Create iPrint printer objects</li> </ul>
<p>NetStorage</p>	<p>NetStorage is automatically installed as part of Virtual Office and provides network and Web access to various file services including NetWare, Novell iFolder and SAMBA services.</p>
<p>eGuide</p>	<p>eGuide provides user access to information stored in eDirectory and other LDAP-compliant data sources and is automatically installed as part of Virtual Office in NLS.</p>



## SUMMARY

According to a recent survey conducted by *CIO Magazine*, executives indicated that within five years open source would be their dominant server platform. CIOs cited the greatest benefits from using open source as being lower total cost of ownership, lower capital investment, improved reliability and uptime, and more flexible, faster and cheaper application development.

Novell is embracing the emergence of Linux and open source software as key enabling technologies for enterprise solutions. With Novell Nterprise Linux Services, Novell delivers networking services on the fastest growing platform in the market today. Novell Nterprise Linux Services provides customers the open-source benefits of Linux combined with the powerful set of enterprise services previously only available on NetWare. This addition to Novell services offerings on traditional platforms gives customers choice and flexibility to address their complex deployment requirements. Backed by the entire Novell ecosystem including full customer support, education, developer support, certification and more, Novell Nterprise Linux Services gives customers a compelling new data center offering that has the same level of security, sophistication and reliability provided by the NetWare platform.

Novell Nterprise Linux Services provides a set of open, cross-platform services that improve communication, simplify and automate network management and allow workers to be productive regardless of who they are, where they are or what time of day it happens to be. It gives existing Novell customers the option to maintain their investment in NetWare, move to Linux or run their business-critical applications on both NetWare and Linux going forward. Novell Nterprise Linux Services demonstrates the continued commitment of Novell to the concept of open source and the practices surrounding it.

## ABOUT NOVELL

Novell, Inc. (Nasdaq: NOVL) is a leading provider of information solutions that deliver secure identity management (Novell Nsure™), Web application development (Novell exteNd™) and cross-platform networking services (Novell Nterprise), all supported by strategic consulting and professional services (Novell Ngage™). The Novell vision of one Net—a world without information boundaries—helps customers realize the value of their information securely and economically. For more information, call the Novell Customer Response Center at (888) 321-4CRC (4272) or visit <http://www.novell.com>. Press should visit <http://www.novell.com/pressroom>.

© 2004 Novell, Inc. All rights reserved. Novell, the Novell logo, NetWare, DirXML, GroupWise, NDPS, NetMail, Novell iFolder, Ximian and ZENworks are registered trademarks; BrainShare and Novell Consulting are registered service marks; eDirectory, exteNd, NMAS, Novell Distributed Print Services, Nsure, Nterprise, Red Carpet and the N logo are trademarks; and Ngage and Novell Authorized Reseller are service marks of Novell, Inc. in the United States and other countries.

\*Linux is a registered trademark of Linus Torvalds. Pentium is a registered trademark of Intel Corporation. Red Hat is a registered trademark of Red Hat Software, Inc. Active Directory, Microsoft, Outlook, Windows and Windows NT are registered trademarks of Microsoft Corporation. eServer, IBM and Lotus Notes are registered trademarks of International Business Machines Corporation. Netscape Messenger is a trademark of Netscape Communications Corporation. Eudora is a registered trademark of Qualcomm Inc. Mulberry is a registered trademark of Cyrusoft International, Inc. PINE is a registered trademark of the University of Washington. Palm is a trademark of Palm, Inc. UNIX is a registered trademark of X/Open, Ltd. SUSE is a registered trademark of SUSE AG. All other third-party trademarks are the property of their respective owners.

### **Novell Product Training and Support Services**

For more information about Novell's worldwide product training, certification programs, consulting and technical support services, please visit:

**[www.novell.com/ngage](http://www.novell.com/ngage)**

### **For More Information**

Contact your local Novell Solutions Provider, or visit the Novell Web site at: **[www.novell.com](http://www.novell.com)**

You may also call Novell at:

1 888 321 4272 US/Canada  
1 801 861 4272 Worldwide  
1 801 861 8473 Facsimile

**Novell, Inc.**  
1800 South Novell Place  
Provo, Utah 84606 USA

**[www.novell.com](http://www.novell.com)**

**Novell.**