

**IBM TotalStorage®**



**Fortify your Linux investment with  
IBM TotalStorage**

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**IBM Systems Group**

## **Overview**

Linux has much to offer today's business environment, and storage is a natural component of a well-designed, Linux-based e-business infrastructure. IBM TotalStorage can fortify your Linux investment in addition to helping you cut costs, consolidate infrastructure and position your organization for the new on demand world – with the strength and reliability you need to manage your data.

## **The Demand for Linux**

We are living in uncertain economic times, and the rising cost of traditional software is causing greater scrutiny of budgets. At the same time, IT organizations are demanding higher levels of reliability and scalability and trying to avoid proprietary solutions. The on demand world requires companies to adopt a new computing architecture that allows them to leverage existing assets, take advantage of IT resources outside their companies, while managing their increasing complexity. Welcome to Linux – your ticket to consolidated heterogeneous, complex, widely distributed IT infrastructures. Linux brings freedom of choice to help integrate business process across the enterprise and with partners, suppliers, and customers. One of the basic ideas of the ondemand computing environment is that any application can run on any processor, and servers and storage can be part of a resource pool<sup>1</sup>. It is the very essence of adaptive architecture – and is enabled by Linux.

Linux can be a strategic piece of the computing future as it builds the path to an adaptive IT infrastructure. Few operating systems have experienced such explosive growth. From its beginnings in university laboratories and home computers, Linux has grown into a significant option for enterprises looking for ways to replace or update their server infrastructure with less expensive architectures that are more cost effective and equally reliable. Linux also gives customers another operating system alternative to Microsoft.

In addition to flexibility, Linux brings to IT infrastructures its emphasis on security and protection of IT assets. It can mean investment protection for UNIX skills and applications.

Linux is ready for its role as a key player in the enterprise, and Linux-enabled storage is a requirement for all servers running Linux, regardless of the hardware infrastructure they rely on. As Linux adoption penetrates the datacenter, storage becomes an important component, as it is a fundamental part of this integrated and flexible IT infrastructure. Data is the currency of the digital economy and thus needs to be secure, safe, protected against disaster, and most important,

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<sup>1</sup> “The Linux Tipping Point,” Forrester Research, 2003

available when needed. Reliability is key when dealing with data – buildings or machines can be replaced, but losing data may represent losing business.

Superior reliability, scalability, security, and performance are not new requirements for IBM's storage portfolio, which has comprehensive Linux support today. And IBM has plans for even stronger Linux support as new products and solutions are launched.

## **Linux needs storage**

Linux is an enabler for effective server consolidation, which has been the reason for many successful deployments of Linux. Storage consolidation resonates very well with the value of server consolidation, as the key objective of storage consolidation is to achieve higher efficiencies and better ROI through end-to-end business and infrastructure optimization. Storage consolidation can be even more effective in a Linux-based IT infrastructure. Linux enables rapid deployment with reliable operating system support. Management of Linux-based infrastructures leverages existing UNIX skills, which can reduce administrative costs. Linux is at the core of an on-demand solution as the operating system of choice for platform independence.

Many organizations have been experimenting with Linux for its stability and leverage of existing hardware and UNIX expertise. These customers are seeing real Linux benefits and have been expanding their pilots into production environments, and this is when strong storage architecture to support the Linux workloads is required. An IT infrastructure is not complete if it does not have storage plans to support it. Storage not only provides the elementary data repository support but also supports strategies for business continuity with data protection and disaster recovery capabilities. IBM storage supporting a Linux environment is designed to provide a secure and reliable infrastructure along with backup and recovery and disaster tolerance capabilities, supported by leading edge storage management tools. In addition, organizations with aging IT infrastructures can realize major performance improvements, efficiencies and economies as they consolidate server and storage together.

IBM can deliver high-end direct-attached storage, networked storage, and tape libraries enabled to run with Linux subsystems and certified with an ever-growing number of independent software vendors (ISVs). The TotalStorage Proven™ program has a number of program participants that deliver Linux-enabled solutions. IBM TotalStorage products can be a key element of the certification of Linux applications including business-level solutions that support ERP, CRM and other environments.

## **IBM TotalStorage complements Linux**

Companies that are buying Linux and storage are looking at:

- Keeping up with ever growing data volumes
- Replacing aging infrastructures
- Deploying new applications
- Investing in a new IT architecture
- Investing in server purchase for expansion
- Upgrading existing applications
- Implementing or upgrading disaster recovery plans

A common denominator for all organizations is the need for IT cost control, meaning that IT objectives must be met without adding staff or with unpredictable budgets. This is a key benefit of Linux, which promotes predictable TCO and allows the use of existing IT skills around UNIX and UNIX-based applications. But perhaps most important than cost is the reliability that IBM storage products can bring to your Linux environment.

And Linux is here to stay. The META Group<sup>2</sup> “indicates that Linux currently commands 15%-20% of new server operating system (OS) shipments. By 2006/07, Linux Intel ("Lintel") will be on 45% of new servers (Intel will be on 95%+ of new servers). We believe that, beginning in late 2004, Microsoft (and its partners) will begin moving some of its (to-date) proprietary application enablers (e.g., .Net components) to the Linux environment; this will gradually include the major Microsoft back-office products, such as SQL Server, IIS, and Exchange. We also believe Microsoft will reprice and/or separate the Windows server OS (e.g., into kernel and "add-on" components), so it can be favorably compared against "free" Linux. As a result of Linux's growing market share, and the support of IBM, Oracle, HP, Dell, et al., we believe systems management, networking, application development, and applications in general will increasingly be available on Linux platforms during the next 12-18 months. In 2003, leading-edge users and even some "fast followers" will move to Linux. By late 2003, managing and administering Linux will be mainstream. Scalability to that of proprietary Unix OSs (e.g., AIX, HP/UX, Solaris) will take a couple more years.

Bottom Line: Widespread Linux adoption during the next five years will catalyze major changes in the IT industry landscape.”

IBM provides answers for the Linux environment from many angles – hardware, software, services, and a significant ecosystem of IBM Business Partners that

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<sup>2</sup> 09 December 2002, **The Linux Scenario, META Group**,  
Application Delivery Strategies, Enterprise Data Center Strategies, Server Infrastructure  
Strategies, Service Management Strategies

deliver specialized subject-matter expertise. More specifically, IBM storage fortifies Linux investments with:

- Pre-tested combinations of disk (high-end and mid-range), tape and networked storage for the major Linux distributors
- A clear strategy for deploying Linux in storage (from attachment to enablement and exploitation)
- Alignment with IBM eServer™ and software to offer the most appropriate combinations to serve a wide variety of customer needs, all exploiting the benefits of open source and heterogeneous environments made possible by Linux.

IBM TotalStorage products can support the majority of your storage needs for Linux-based e-business on-demand infrastructures, ranging from simple direct attached storage for servers running Linux to the enabling of advanced storage functionality, like Peer-to-Peer Remote Copy for Linux environments. IBM Storage presence in the infrastructure helps assure that the final solution is robust enough to support requirements for business continuity and efficiency. In addition, IBM storage is designed to deliver on the promise of openness and support for a variety of customer choices.

Let IBM TotalStorage products fortify your Linux investment with “Linux-ready” offerings that provides freedom of choice and options in selecting the right storage that works with main Linux distributions, as storage needs change along with the evolution of the Linux infrastructure.

What you need to know about Linux and storage

<b>You need storage ...</b>	<b>And Linux helps by....</b>	<b>IBM TotalStorage and Linux benefits</b>
<p>As you expand the IT infrastructure to accommodate business application needs within budget constraints.</p> <p>To meet IT objectives without adding or retraining staff.</p> <p>As you upgrade or replace storage to support growing data needs.</p>	<p>Linux can make substantial computing power available using familiar IT environment - either by reusing existing hardware infrastructure, or skills already in place, or by consolidating IT into more robust systems.</p>	<p>Linux brings excellent price-performance with increased flexibility and optimum attachment to IBM eServer offerings. IBM offers a wide range of servers and storage to fulfill the IT infrastructure needs at an attractive cost. IBM storage products deliver their unique functionality integrated with Linux.</p>
<p>To support your direction of avoiding investing in proprietary infrastructures that can lock a company to a single or limited number of vendors, or force you to pay a premium for proprietary operating systems with complicated licensing agreements.</p>	<p>Linux provides the ability to build highly capable high-end machines using commercial, off-the-shelf and open source software with easy attachment to a comprehensive portfolio of storage technologies.</p>	<p>Linux combines the reliability and scalability of UNIX systems with open source technology. IBM provides a complement to Linux with its hardware and software products and services, including storage devices with superb technology support.</p>
<p>As you protect UNIX investment in the IT infrastructure, both at application and skill levels.</p>	<p>Linux provides an easy migration path from commercial UNIX systems, including their attached storage technologies.</p>	<p>Linux is a low cost solution - no fees per server, and low migration cost from existing systems. IBM storage attachments are integrated with Linux-powered servers. Storage skills are protected in a Linux environment.</p>
<p>As you define your open source infrastructures applied to business-critical environments.</p>	<p>Linux is an open and secure platform. IBM demonstrates its Linux technology leadership through many initiatives and investment - including storage. IBM has a hundreds of Linux programmers supporting IBM products in the open source environment.</p>	<p>IBM's unique commitment to Linux provides a wide variety of servers, storage and software to fit most business needs. IBM's intention is to grow our storage support for Linux from simple attachment to full functionality and operating system feature exploitation.</p>

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For server products, consult <http://www.pc.ibm.com/us/compat/> for details.  
For TotalStorage Proven companies, consult <http://www.ibm.com/storage/proven>

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