

## IBM @server iSeries™ and Linux®



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### Highlights

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- ***Combines the highly scalable, available and manageable foundation of the advanced iSeries architecture with the flexibility of Linux***
- ***Enables the consolidation of multiple standalone servers on up to 31 Linux partitions running on a single iSeries server***
- ***Provides virtual services to Linux partitions, including disk, tape, Ethernet, CD-ROM and DVD***

Today, many organizations are faced with the challenge of an explosively growing information technology (IT) infrastructure. All too often, this expansion happens on an ad hoc basis—adding new servers periodically as business needs demand. As a result, many companies are faced with a proliferation of Microsoft® Windows®-based servers—and the significant management challenges and costs that go along with them. Now, thanks to the powerful combination of the scalability, reliability and manageability of IBM @server iSeries servers and the flexibility of Linux, businesses can take advantage of a

new way to consolidate and manage these emerging workloads—at a greatly reduced cost.

With the iSeries, IBM customers can take advantage of the powerful functionality of Operating System/400® (OS/400®)—with the added benefit of being able to manage multiple Linux workloads from the same server. Thanks to the advanced logical partitioning (LPAR) capabilities of the iSeries, multiple Linux workloads can be combined with other e-business solutions—on a single server—so customers can support and manage all of their core business applications in one place. By leveraging LPAR, dynamic resource movement, capacity on demand capabilities, virtual storage, POWER4® processors<sup>1</sup> and 64-bit Linux distributions, iSeries servers can efficiently support the most demanding workloads.

In addition, Linux applications on the iSeries gain access to OS/400 data, files and applications, enabling customers to take advantage of next-generation, open source e-business



Linux applications to extend the power of their current OS/400 platform. In this manner, business can maximize their IT investment, leveraging current infrastructures to scale for future growth.

### **A strong foundation**

iSeries servers provide a reliable and scalable foundation with the flexibility to run multiple environments and quickly deploy new workloads. iSeries servers can simultaneously run OS/400, Linux, Microsoft Windows 2000®, Windows NT®, Lotus® Domino™ and ported UNIX® applications as well as application environments and languages such as WebSphere®, Java™ and highly efficient 5250 On-line Transaction Processing (OLTP). For this reason, the iSeries delivers a solid platform upon which to consolidate and run core business applications. And thanks to the superior management capabilities of the iSeries, administering Linux workloads on the iSeries is easier than ever.

### **Partitioning power**

Taking advantage of advanced LPAR technologies, customers can consolidate multiple standalone infrastructure servers on up to 31 Linux partitions on a single iSeries server—

dynamically moving processor and storage resources between individual partitions to support changing business demands. In addition, Advanced Virtual Ethernet technology on iSeries servers provides fast (up to 1Gbit/second), very secure connections among these virtual servers, for effective partition-to-partition communications.

### **Shared resource flexibility**

Linux and OS/400 partitions can also share virtual devices such as disk, tape, Ethernet, CD-ROM and DVD—all under the control of OS/400, which runs in the primary partition. By enabling partitions to share virtual devices, the iSeries can help minimize the hardware requirement for Linux environments. For this reason, businesses can begin to benefit from next-generation business applications on Linux with a minimal dollar investment.

In addition, LPAR enables businesses to create up to ten individual partitions (one OS/400 and nine Linux) on a single processor—for more effective sharing of processor resources. And with capacity on demand capabilities, customers can add permanent or temporary capacity to help decrease up-front processor costs by deferring the need to buy extra processing capacity until needed.

Upgrades—traditionally made in multi-processor increments—can be much more granular, enabling businesses to pay only for what they need, exactly when they need it, one processor at a time. What's more, customers can add Linux processors without incurring additional OS/400 license fees—for even greater savings.

Finally, centrally managed support for Linux partitions and devices means that customers can greatly increase the flexibility of their IT infrastructures—all while enjoying significantly reduced costs for managing and supporting those heterogeneous environments.

### **Virtualization of storage resources**

iSeries servers provide Storage Area Network (SAN)-like facilities for Linux partitions. Through storage virtualization, iSeries customers can manage OS/400, Linux and Windows 2000 disk resources from a single management system. iSeries can help protect the disk via RAID, and can add, move or delete disk space assigned to Linux. In addition, Linux partitions benefit from full OS/400 system

backup capabilities, and can utilize the iSeries tape devices for backup operations.

Storage virtualization helps businesses to increase storage asset utilization for lower total cost of ownership of their iSeries environments—while improving the reliability and availability of Linux and OS/400 workloads. In addition, this functionality can also result in improved performance for Linux applications. Because all disk drives on the iSeries can be used to service any partition,—including Linux partitions,—Linux applications should benefit from enhanced performance capabilities.

#### **Integration for easier deployment**

iSeries offers many points of integration that leverage OS/400 applications and data to support popular Linux applications. For this reason, Linux applications on the iSeries are able to access OS/400 data, files and applications, enabling businesses running OS/400 to tap into advanced Linux e-business applications—dramatically enhancing the capabilities of their OS/400 platform. Such applications include Apache Web serving, Samba file-and-print serving, Sendmail mail gateway services and Netfilter firewall support.

Taking advantage of these Linux applications to extend the capabilities of OS/400, iSeries customers can optimize their IT investment—leveraging current infrastructures to scale for future growth. In addition, iSeries offers customers the innovative capability to support these applications in one partition or multiple partitions, while running OS/400-based applications in other partitions—for even greater flexibility and cost reduction.

#### **Backed by IBM**

From end to end, IBM delivers value support for its customers with comprehensive technical service and support that helps customers learn about, choose, implement and use the right IT solution based on their unique business requirements. IBM experts can help with business and IT consulting, business transformation and total systems management services, as well as with customized solutions. IBM has a vast amount of experience to help customers develop their e-business infrastructure—experience that can provide peace of mind.

To complete its end-to-end solution for Linux on iSeries, IBM offers a portfolio of Linux services, including:

- *Service consultants to assess, design and implement the consolidation of Linux workloads including file-and-print serving, TCP/IP infrastructure serving, Apache and Samba*
- *Education and consulting offerings for Linux installation, partition configuration alternatives, and Linux and OS/400 application integration*
- *The IBM Linux Support Line, provided by IBM Global Services, for comprehensive, around-the-clock, enterprise-level remote usage and defect support*

In addition, through its strong commitment to Linux, IBM is working with leading independent software vendors (ISVs) to expand the set of Linux applications and solutions available for iSeries. IBM is also working closely with the open source community and with Linux distribution partners, Linux for iSeries is currently available from Red Hat, SuSE and Turbolinux.

## For more information

To learn more about Linux and iSeries, contact your IBM Marketing Representative, IBM Business Partner or visit,

**ibm.com**/eserver/iseries/linux



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<sup>1</sup> On iSeries Models 825, 870, 890.