

IBM @server i5 and Linux



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 servers based on Microsoft® Windows®—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™ family of servers and the flexibility of Linux®, businesses can take advantage of a new way to simplify their IT infrastructure and expand their application environment—with the potential to greatly reduce cost.

With the @server i5 server, IBM clients can take advantage of the powerful functionality of i5/OS® (the latest generation of Operating System/400®)—with the added benefit of being able to

Highlights

- ***Combines the highly scalable, available and manageable foundation of the advanced iSeries family architecture with the flexibility of Linux***
- ***Provides virtual services to Linux partitions, including disk, tape, Ethernet, CD-ROM and DVD***
- ***Enables the consolidation of multiple standalone servers on up to 254 Linux partitions running on a single @server i5 server***
- ***Featuring the new IBM @server i5 server, the latest member of the iSeries family, the IBM Virtualization Engine and POWER Linux***

manage multiple Linux workloads on the same server. Thanks to the IBM Virtualization Engine systems technologies: advanced logical partitioning (LPAR), Capacity on Demand, virtual storage, and virtual Ethernet, the **@server i5** supports multiple Linux workloads which can be combined with other e-business solutions on a single server. Now customers can support and manage all of their applications in one place. By leveraging IBM Virtualization Engine, POWER5® processors¹ and 64 bit POWER Linux distributions, **@server i5** servers can efficiently support the most demanding workloads.

In addition, Linux applications gain access to i5/OS data, files and applications, enabling customers to take advantage of next-generation, e-business Linux applications to extend the power of their current applications. In this manner, businesses can maximize their IT investment, leveraging current resources and skills to scale for future growth.

A strong foundation

iSeries family servers provide a reliable and scalable foundation with the flexibility to run multiple environments and quickly deploy new workloads. **@server i5** servers are capable of simultaneously running i5/OS, AIX 5L®,

Linux, and Microsoft Windows® (via Integrated xSeries Server or xSeries Adapter) operating systems as well as application environments and languages such as WebSphere®, Lotus® Domino, Java™ and highly efficient 5250 Online Transaction Processing (OLTP). For this reason, the **@server i5** delivers a solid platform upon which to simplify an IT infrastructure, lower risk, drive down costs and drive up productivity in today's on demand world. And thanks to its integrated management capabilities, administering Linux workloads on the iSeries server is easier than ever.

Partitioning power

Taking advantage of advanced LPAR technologies, clients can consolidate multiple standalone infrastructure servers on up to 254 Linux partitions on a single **@server i5** server—automatically moving processor and dynamically moving storage resources between individual partitions to support changing business demands. In addition, advanced Virtual Ethernet technology provides fast (up to 1Gbit/second), very secure connections among these multiple operating environments, for effective server-to-server communications.

Shared resource flexibility

Linux and i5/OS partitions can also share virtual devices such as disk, tape, Ethernet, CD-ROM and DVD—all under the control of i5/OS. By enabling partitions to share virtual devices, the **@server i5** server can help minimize the hardware requirement for Linux environments. For this reason, businesses can quickly and easily deploy Linux operating system-based applications by leveraging the I/O resources, skills, and best practices they already have.

In addition, LPAR enables businesses to create up to ten individual partitions on a single processor—for more effective sharing of processor resources. And with Capacity on Demand capabilities, customers can add permanent or temporary capacity when they need it, helping to decrease up-front processor costs by deferring the need to buy extra processing capacity. 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, clients can add processors for Linux applications without incurring additional i5/OS license fees—for even greater savings.

Finally, with @server i5 servers, businesses can centrally manage their consolidated hardware resources across multiple operating environments—increasing the flexibility and helping to reduce their costs for managing and supporting those heterogeneous environments.

Virtualization of storage resources

@server i5 servers provide Storage Area Network (SAN)-like facilities for Linux partitions. Through storage virtualization, clients can manage i5/OS, AIX 5L, Linux and Windows disk resources from a single management system. @server i5 servers 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 i5/OS system backup capabilities, and can utilize the @server i5 tape devices for backup operations.

Storage virtualization helps businesses to increase storage asset utilization for lower total cost of ownership of their @server i5 environments—while improving the reliability and availability of Linux and i5/OS workloads. With the @server i5 server, i5/OS can manage all of the disk drives for multiple operating environments, including Linux partitions. Virtual storage spaces, which are provided to each Linux partition, automatically span all the disk drives on the

@server i5 server and are centrally managed—resulting in improved performance and lower costs.

Integration for easier deployment

@server i5 servers offer many points of integration that leverage i5/OS applications and data to support popular Linux applications. For this reason, Linux applications on the iSeries are able to access i5/OS data, files and applications, enabling businesses running i5/OS to tap into advanced Linux e-business applications—dramatically enhancing the capabilities of their i5/OS platform. Such solutions include applications based on WebSphere® Application Server and DB2® UDB as well as e-commerce, electronic funds transfer, and warehouse management applications.

Taking advantage of these Linux applications to extend the capabilities of i5/OS, clients can optimize their IT investment—leveraging current infrastructures to scale for future growth. In addition, @server i5 servers offer clients the innovative capability to support these applications in one partition or multiple partitions, while running i5/OS operating system-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 clients with comprehensive technical service and support that helps clients 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 clients develop their e-business infrastructure—experience that can provide peace of mind.

To complete its end-to-end solution for Linux on @server i5 servers, IBM offers a portfolio of Linux services, including:

- *Service consultants to assess, design and implement the consolidation of Linux workloads including file-and-print, TCP/IP infrastructure, Web, and security serving.*
- *Education and consulting offerings for Linux installation, partition configuration alternatives, and Linux and i5/OS application integration*
- *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 **@server** i5. IBM works with the open source community, Red Hat™, Inc. and Novell, Inc. to deliver Linux distributions for IBM's POWER technology-based servers including the **@server** i5 and **@server** p5.

For more information

To learn more about Linux and **@server** i5, contact your IBM Marketing Representative, IBM Business Partner or visit, **ibm.com/eserver/series/linux**



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