



IBM eServer® xSeries® with Enterprise X-Architecture™



x445 Endorsements & Reviews

What are they saying about this next-generation server?



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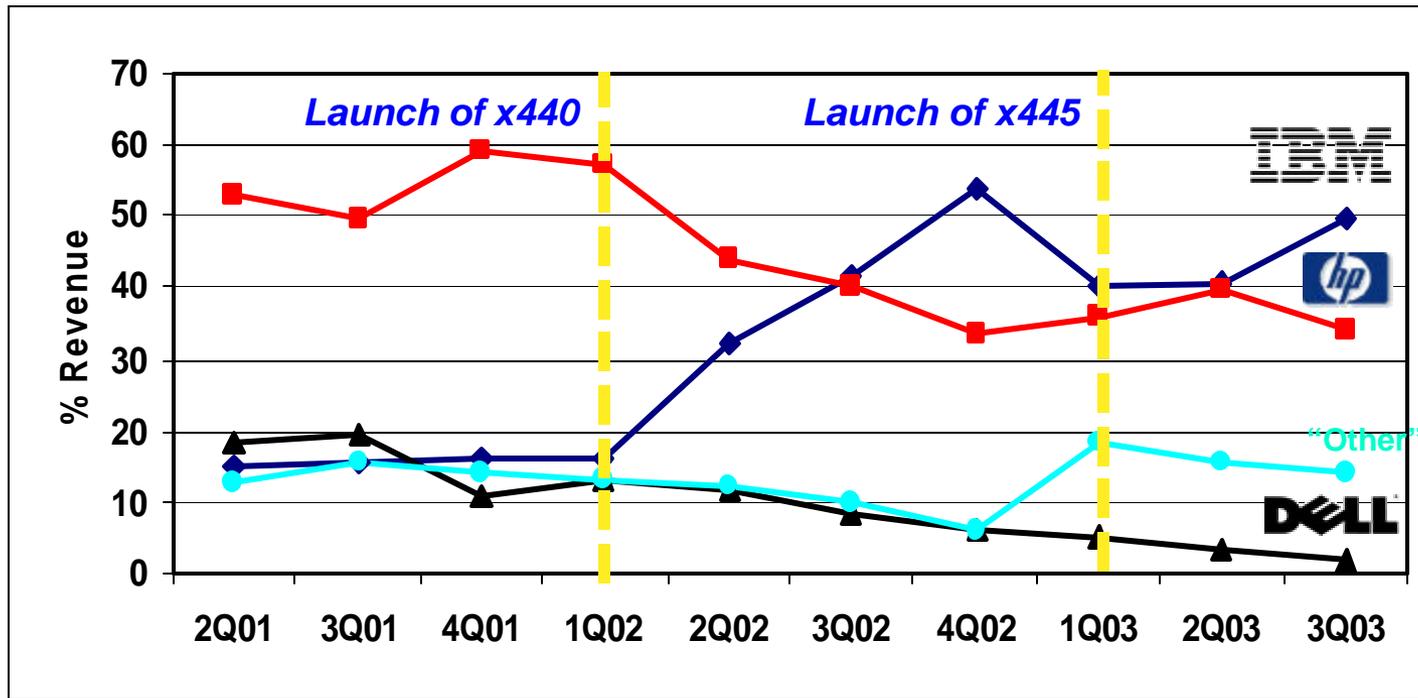
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Our biggest endorsement: OUR CUSTOMERS!!

#1 Market Share Worldwide in 8-ways for FIVE CONSECUTIVE QUARTERS !!

- Catapulted from #3 to #1 in 8-way worldwide market share after only 2 quarters
- 50 #1 benchmarks in 2 years including TPC, SAP, Siebel, Citrix, and Oracle.
- Four major industry awards including PC Expo Overall Best of Show, PC Magazine Technical Excellence Award, and Network World Best Enterprise Server of 2002.



*Source: IDC Quarterly Server Tracker, 2003 Q3



Customer Endorsement of the x445



Dr. Ng Yan Hong, Senior Lecturer, School of Inform-Communications Technology, Singapore Polytechnic

"We are extremely excited about the introduction of the IBM eServer x445. With its superior price-performance and promise of XpandOnDemand scalability, we realized early that no other system but the x445 could satisfy our high-performance research needs today and into the future. With the Enterprise X-Architecture and the x445, IBM is truly extending its technology leadership in industry-standard servers by offering pay-as-you-grow scalability, industry-leading price-performance, and extended memory availability, which caters to both SMP and cluster environments for our research in Bioinformatics. The versatility of x445 provides us with a SMP platform on the one hand, to support the E-Cell research project, and on the other hand, giving us a master-slave cluster configuration to speed-up our research effort in Virtual High Throughput Screening (VHTS). With the x445, we will be able to advance our bioinformatics research works confidently on one of the most advanced and versatile industry-standard servers in the world."

Customer Endorsement of the x445



Compagnie Générale de Géophysique

Jean-Yves Blanc, Ph.D., High Performance Computing Expert Compagnie Générale de Géophysique (CGG), France

"We are very excited by the introduction of the x445 and its promise of XpandOnDemand scalability. With the x445 IBM eServer xSeries is extending the technology by offering scalability up to 32-way SMP, increased L4 cache for faster performance, and extended memory availability to include hot-swap and hot-add memory. We are confident that our data processing applications will run extremely well on what appears to be one of the most advanced servers in the industry."

Analyst Review of the x445



Gordon Haff, Senior Analyst & IT Advisor, Illuminata, Inc. *IBM Builds Windows Scale One Block at a Time*

"IBM is making its presence felt on the playing field that Unisys enjoyed in virtual isolation until recently. ... Processor for processor, IBM appears to have reached parity with - or perhaps even exceeded - Unisys' 16-way system-level performance running Windows Server 2003 with its NUMA extensions.

IBM's building block design is also a more cost-effective way to start small and grow big with a single system than is Unisys' more traditional Big Box design. ... Given this common scenario, the ability of a system like the x445 to perform well at competitive price points all the way from 4-way up to 16-way is an appealing alternative to starting big or not at all.

Whether for buyers looking for a 32-bit x86 system as fast as any out there or for those looking to grow one system building block at a time, IBM has clearly arrived."

Analyst Review of the x445

Gartner

Jane Wright, Research Director, Gartner Research ***Review: IBM eServer xSeries 445 Server***

"The design and implementation of the eServer x445 demonstrate that IBM has adapted some key mainframe technologies on an IA-32-based system. As one of only two available servers in the market today that support 16 or more Intel 32-bit processors, the eServer x445 provides customers with a rare opportunity to consolidate a large number of Windows or Linux applications onto an enterprise class Intel-based server."

Press Review of the x445



Alan Zeichick, Principal Technology Analyst, InfoWorld

IBM Reaches Sweet 16

"In the realm of x86-based servers, I haven't yet found an Intel-based machine that's as powerful, resilient, and scalable as the eight-processor 2.8GHz Xeon MP-based x445.

IBM differentiates itself with robustness and reliability. Also tops is IBM's maintainability.

Applications from the likes of Oracle, SAP, and PeopleSoft need power, headroom, and servers that don't break. As Big Blue's high-end IBM x86 server, the xSeries 445 is a machine worthy of deployment anywhere you need an eight-way box -- with room to grow."

InfoWorld
GET TECHNOLOGY RIGHT

HARDWARE
IBM Reaches Sweet 16
Well-built and a talented performer, xSeries 445 scales out to 16 processors

BY ALAN ZEICHICK

IBM differentiates itself with robustness and reliability. Also tops is IBM's maintainability.

IBM xSeries 445
IBM.com

Category	Score
Performance	9
Scalability	9
Availability	9
Manageability	7
Serviceability	10

QUOTE: x445 is a well-designed and well-built for performance, high availability, and scalability to as many as 16 processors. The only shortcomings: limited slots and drive bays.

BOTTOM LINE: IBM's new x86-based flagship server is well-designed and well-built for performance, high availability, and scalability to as many as 16 processors. The only shortcomings: limited slots and drive bays.

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ISV Endorsements of the x445

- **Diane Greene, President & CEO, VMware, Inc.**

"A precedent was set with VMware ESX Server and the IBM x440 that fundamentally changed the industry. With this innovative solution, customers were able to more easily and effectively consolidate servers to realize lower costs and improve utilization. Now with the introduction of the x445, IBM takes it to the next level, extending its leadership in the industry-standard server market with a product that offers even greater XpandOnDemand scalability, higher performance, and increased availability. Combined with the advanced VMware Virtual SMP capabilities of VMware ESX Server, the x445 will empower customers to more efficiently manage their IT infrastructure, consolidate a greater variety of underutilized servers to further reduce cost, and create a truly dynamic, on demand business."

- **Dave Perkowski, Vice President of Systems Development, ARGO Data Resource Corp**

"ARGO Data was an early advocate of the IBM eServer xSeries 440 because of its vertical scalability, performance and high availability necessary to meet the demands of our financial services customers. With the introduction of the xSeries 445, IBM extends the capabilities of its flagship Enterprise X-Architecture platform with increased modular scalability and greater performance. The xSeries remains an exceptional fit with our middle office architecture, helping minimize transaction response times and optimize processor utilization, which is a huge benefit in the customer-focused banking industry. From our customers' point of view, by delivering 16-way today and 32-way in the future, the new x445 is a low-risk investment in their enterprise architecture, offering an affordable investment, vertical scalability, and enterprise-level performance from day one."

ISV Endorsements of the x445

- **Mark Wright, President & CEO, Aurema, Inc.**

“The scalability, high performance and flexibility of the IBM eServer xSeries 445, together with the robust system resource management and reporting capabilities of ARMTech and Application Workload Manager, provide the essential building blocks for today’s on demand enterprise. The combination delivers our customers a cost-effective platform optimized for mission-critical availability and maximum server utilization without compromising application performance. Together, IBM’s x445 and Aurema’s resource management and reporting solutions bring new levels of productivity, efficiency and accountability to the on demand enterprise.”

- **Russell Shelton, Vice President of Marketing, SteelEye Technology, Inc.**

“The combination of SteelEye LifeKeeper running on IBM eServer x445 provides customers with a tremendous solution for establishing the highest levels of business continuity and disaster recovery capabilities required to support business critical Microsoft Windows and Linux applications. The new XpandOnDemand "pay-as-you-grow" scalability powered by Enterprise X-Architecture, coupled with the flexibility and ease-of-implementation of SteelEye LifeKeeper, enables customers to establish high availability cluster solutions that are capable of evolving to meet a broad spectrum of business, technical and performance requirements.“

- **Bob Sutor, Director of Marketing, IBM WebSphere Application Server and Tools**

“The x445 is another statement of technology leadership for IBM eServer xSeries. This server platform will offer WebSphere customers with new levels of performance and scalability for business-critical e-business infrastructure solutions. We are confident that the x445 will emerge as a server platform of choice for our WebSphere customers.”

ISV Endorsements of the x445

- **Joel Heinke, Director of PeopleTools Strategy, PeopleSoft, Inc.**
"PeopleSoft customers are looking for a computing solution that delivers the outstanding availability and scalability for their current and future needs. The PeopleSoft Pure Internet Architecture was designed with this in mind, and the x445 with its "pay-as-you-grow" building block design is a natural fit for customers requiring a cost-effective, high-performance solution on which to deploy their PeopleSoft applications."
- **David Jones, Senior Vice President of Corporate Development, Citrix Systems, Inc.**
"Citrix and IBM have enjoyed a close relationship since the late 1980s; in fact Citrix was founded by ex-IBM executives. The launch of the new xSeries 445 server provides a new and improved platform on which our mutual customers can deploy Citrix MetaFrame Access Suite solutions. When combined with the VMware product, Citrix and IBM solutions allow customers to use logical partitions for deploying multiple instances of the Citrix MetaFrame Presentation Server enabling superior performance and significant reductions in cost. The launch of the x445 extends this capability with new functionality and results in a superior platform for server consolidation."
- **Charlie Latch, Vice President of Corporate Alliances, i2 Technologies, Inc.**
"i2 supports the prospect of using Intel-based servers like the latest xSeries for enterprise scale application deployment. Because the x445 extends autonomic computing through advances in memory fault tolerance and systems management tools, we expect that our customers could benefit from improved scalability and performance to run their i2 solutions with utmost confidence."

ISV Endorsements of the x445

- **Sandy Carter, Vice President, Tivoli Marketing**

"Customers turn to IBM Tivoli intelligent management software to help them integrate, automate, and optimize the management of their critical IT infrastructures. These customers are constantly looking for ways to improve the performance and reliability of the key business services that they deliver to become more competitive. The new x445 and its focus on providing leading scalability and performance will create a powerful foundation for centralizing IT management and deploying the business applications essential for business success."

- **Janet Perna, General Manager, IBM DB2 Data Management**

"DB2 Universal Database will continue to push the performance envelope for databases within the industry-standard space when coupled with the IBM xSeries x445, the next generation scalable enterprise server powered by Enterprise X-Architecture. The flexible, single chassis 4-to 8-way node design for the x445 delivers XpandOnDemand scalability up to 32-way SMP, allowing customers to take full advantage of DB2 UDB's ability to scale. Now they can grow their DB2 UDB databases quickly without unnecessary up-front infrastructure investments. Together, xSeries and DB2 are laying the foundation for delivering e-business on demand."

- **Dave Dargo, Vice President, System Platforms Division, Oracle Corporation**

"The new IBM eServer x445 combined with Oracle9i Real Application Clusters provides our joint customers with flexibility, high availability, and scalability for their database infrastructure. Several key performance enhancements and future support for InfiniBand will appeal to Oracle customers, particularly those running mission-critical environments."

Enterprise X-Architecture™

Industry-Standard Servers for @business on demand™

