Solutions on IBM @server xSeries

IBM @server xSeries 455 & Oracle Database 10g™

Highlights

- ***IBM's next-generation high-performance industry-standard server designed to support 4 to 16-way Intel® Itanium®2 processors.***
- ***Provides Oracle ® customers with exceptional performance for Oracle Database 10g™environments.***
- ***Flexibility to easily "scale-up" or "scale-out" to meet future requirements.***
- ***Active Memory,™Hot-Add, Hot-Swap capability delivers OnForever™ availability for mission-critical database applications.***
- ***Predictive and proactive systems management features help increase manageability of servers powering Oracle solutions.***

IBM eServer xSeries 455

The IBM® eServer xSeries 455 embraces On Demand computing to help businesses quickly respond to market changes. The x455 is the culmination of groundbreaking IBM Enterprise X-Architecture™ technologies that provide outstanding advances in performance, scalability and availability.

In fact, the x455 is a 2nd generation IBM 64-bit server to incorporate the full scope of mainframe inspired technologies delivered via the Enterprise X-Architecture™ blueprint. This exceptional server design helps make industry-standard components like I/O and memory work better together, while also utilizing a flexible building-block approach to scalability that allows customers to 'pay as they grow'.

The challenge that Oracle® Database customers are facing today is to build an infrastructure that is highly available, yet scalable enough to meet the demands of a dynamic business environment. The x455 is an ideal answer for customers choosing the Intel® processor-based platform for their Oracle implementations on Microsoft® Windows® or Linux® operating system environments. Through exceptional performance, pay as you grow scalability, and numerous OnForever™ availability features, the x455 is helping set a new standard for Intel processor based servers powering Oracle Databases.

IBM and Oracle Relationship

IBM and Oracle have maintained an extremely strong technology relationship since 1986. Oracle solutions today are available across the breath of the IBM eServer product brand. IBM engineers are located on site at Oracle to work directly with Oracle engineers on testing and optimizing Oracle products on IBM. This association has resulted in a large worldwide install base running mission critical solutions in leading Fortune 500 corporations.

IBM's commitment to providing accurate solution sizing/configuration assistance is realized through three International Competency Centers based in San Mateo, California; Montpellier, France; and Tokyo, Japan. These centers provide configuration assistance, sizing tools, education, hands-on workshops, customer briefings, and develop sales related technical documentation. The scope of these centers covers the range of Oracle products from the database to applications over a number of releases. The continued investment by IBM in these centers demonstrates that running your Oracle products on IBM can provide benefits for years to come.

ORACLE DATABASE 10g

Oracle Database 10*g*™

Clustering is one technology that is used to create an enterprise grid infrastructure. Simple clusters have static resources used for specific applications by specific owners. Enterprise grids, which may consist of multiple clusters, are dynamic resource pools shareable among different applications/users. Oracle Database 10*g* delivers full clustering, workload management and datacenter automation for flexible, dynamic enterprise grid computing. Therefore, Oracle infrastructure software can be built on low-cost servers with high levels of scalability and quality.

Businesses no longer have to invest in expensive headroom for spikes in performance but rather purchase what they need, then scale as required.

Oracle's newest version offers many advantages including:

Automatic Storage Management
Oracle Database 10*g* manages storage by being able to efficiently add/remove devices online while reducing constant I/O tuning.

Cluster Workload Management
Provides hands-free allocation of servers based upon user defined rules including failover and routing of service requests.

Integrated Clusterware
This easy to install and manage software scales to a large number of servers to meet enterprise needs.

Oracle Enterprise Manager
Provides end-to-end enterprise grid infrastructure management from user provisioning to application and software/patch management, while lowering system administration costs.

x455 Performance Leadership

Designed to provide extensive flexibility and scalability for Oracle databases, the x455 delivers 4 to 16-way SMP power to the industry-standard, 64-bit server market.

Oracle and IBM are perfectly aligned to enable you to make a small initial investment then grow as the needs of the business grows.

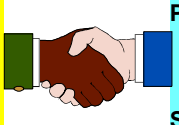
Oracle Database 10*g*

Performance
- System Provisioning
- Workload Management

Scalability
- Automated Storage Management
- Intergrated Clusterware

Availability
- End-to-end Tracing
- Predictive Behavior Reports
- System Health Checks
- Best Practice Advisories

Systems Management
- Deployment Automation
- Centralized Management Console



IBM @server xSeries 455

Performance
- Intel® Itanium®2 Processors
- Enterprise X-Architecture™
- XceL4™ Server Accelerator Cache

Scalability
- XA-64 2nd generation chipset
- Modular XpandOnDemand™
- IBM RXE-100 Remote I/O

Availability
- Active Memory™ Mirroring
- Memory ProteXion™
- Hot Swap & Hot Add Memory
- Active PCI-X™
- Light Path Diagnostics™

Systems Management
- IBM Director

Built on the proven chipset logic of the 32-bit x445, the x455 helps customers more easily exploit the benefits of 64-bit data addressing. Combined with memory mirroring, hot-swap, and hot-add capability, the x455 helps instill confidence in the deployment of 64-bit Windows® and Linux platforms making it ideal for enterprise Oracle applications.

The 64bit architecture of the x455, powered by Itanium2 microprocessors, provides nearly four times greater memory addressability than the 32-bit x445 (224GB versus 64GB), the x455 allows administrators to load the entire databases into main memory for extremely fast transaction processing and online queries.

For Oracle databases, the x455 can break through I/O bottlenecks associated with 32-bit server platforms, creating new opportunities for analyzing business operations. With data access latencies falling from milliseconds to microseconds, further supply chain optimizations and warehouse inventory analyses become practical even for smaller companies with aggressive plans for growth. When time-to-market is paramount, the x455 can extend server processing capabilities without requiring the adoption of new applications or IT skill sets.

x455 Flexibility

Scalability is critical to Oracle customers. Regular modifications to the server and storage infrastructure are required to address changing business needs and meet the increased workload requirements driven by database solutions.

With mainframe-inspired XpandOnDemand scalability for processors, memory, and I/O, the x455 can adapt as needs change in the future. Instead of purchasing extra capacity in large 8-way and 16-way systems, businesses deploying the x455 can buy only the performance capacity and I/O that's needed.

To increase I/O capacity, the optional RXE-100 Remote Expansion Enclosure provides up to 12 additional Active™ PCI-X slots for triple the I/O slots without the expense of a full system upgrade. In addition, hot-swap and hot-add capabilities for memory and I/O allow administrators to upgrade the system without shutting down - helping maintain high availability.

Numerous adapter slots are important for Oracle implementations because of the external connections required by the server. The Server Backbone Network, Local Area Networks and Storage Area Networks require multiple connections and adapters for

each network to enable high throughput and help minimize the risk of downtime due to adapter failure.

x455 Availability

Cluster solutions provide a reliable technique to help avoid server downtime. However, best practice strategies dictate that clustering is the last level of high availability protection. Best practice determines that the server hardware supporting Oracle database components must be equipped with advanced high availability features which include redundant components, failure sustaining memory and predictive failure analysis.

The x455 brings customers closer to OnForever™ availability through an impressive array of features designed to help minimize the risk of unexpected failures. These high-availability features are designed to help keep your servers running with outstanding uptime. This is a requirement of many global enterprises whose mission critical environment runs around the clock.

Customers using the x455 will be able to take advantage of incredible advancements in the memory subsystem to protect against memory failures. Active Memory, Hot-Swap Memory, memory mirroring, Chipkill™ memory and Memory ProteXion™ offer several lines of defense against downtime and represent an exceptional level of system availability.

The x455 also provides component redundancy and hot-plug replacement capabilities of fans, power supplies and disks. The risk of component failure is further reduced by Predictive Failure Analysis® (PFA) on processors, XceL4 cache, memory, fans, power supplies and disks, which warn administrators of problems before they occur. PFA is designed to allow corrective action can be taken before a hardware failure occurs.

Easy to Manage

A business' success can be dependent on how well their Oracle database application runs, whether it's supporting a traditional ERP deployment or an integrated e-business solution including CRM, it is critical that the server its running on supports proactive tools to manage this IT environment. Without these tools there can be devastating impacts on the bottom line.

xSeries systems management tools simplify—and in many cases, automate—performance planning, preventive maintenance, diagnostic monitoring and event responses to help maintain consistent, high levels of server productivity. As a result, xSeries servers help protect customers' businesses from the devastating effects of downtime, and help keep overall maintenance costs incredibly low – an important factor for Oracle database environments.

Oracle customers are able to take advantage of the award winning systems management capabilities of xSeries servers in part through IBM Director. With IBM Director version 4.2 as the core systems management tool, the x455 is easy to administer and manage in a mission-critical environment.

Key IBM Director extensions such as Scalable Systems Manager for flexible partitioning, Capacity Manager, Software Rejuvenation, Real Time Diagnostics, Process Control brings new levels of manageability to an Oracle solution environment helping to reduce total cost of ownership with improved return on investment through increased uptime.

For More Information

To learn more about Oracle and IBM eServer xSeries, contact your IBM Marketing Representative, IBM Business Partner, or visit the following web sites:

http://www.pc.ibm.com/ww/eserver/xseries/clustering/index.html

http://www.pc.ibm.com/us/eserver/xseries/x455.html

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