Solutions on IBM @server xSeries

IBM @server xSeries 365 & Oracle Database 10g™

Highlights

- ***Second-generation IBM Enterprise X-Architecture™ hardware delivers outstanding availability.***
- ***Provides Oracle ® customers with exceptional performance for Oracle Database 10g™environments.***
- ***Flexibility to easily grow to meet user requirements.***
- ***Compact 3U 4-way server saves space, lowers costs and packs database-serving power for data centers.***
- ***Predictive and proactive systems management features help increase manageability and availability of servers powering Oracle solutions.***

IBM eServer xSeries 365

The IBM® eServer xSeries model 365 featuring the Intel Xeon Processor MP at up to 3.0GHz packs computing power in a rack-optimized 3U design – ideal for space constrained data centers. This is the second generation of IBM's groundbreaking Enterprise X-Architecture™ technology providing outstanding advances in performance, scalability and availability.

The x365 offers great reliability, availability, and performance with its quad-pumped 400MHz front side bus, Chipkill™ memory, Memory ProteXion, Memory Mirroring, and Active™ PCI-X card slots. When service is required the design of the x365 allows most components to be replaced without the use of tools. This translates into reduced downtime for access to your critical data

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 x365 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 x365 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 @server 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 helping lower system administration costs.

x365 Performance Leadership

Several innovations help to bring excellent performance to Oracle applications. The x365 takes advantage of the newest Intel® Xeon MP Processors that are controlled by

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
- Integrated 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 365
Performance
- Intel® Xeon™ MP Processors
- Enterprise X-Architecture™

Scalability
- XA-32 2nd generation chipset
- Compact 3U Design
- IBM RXE-100 Remote I/O

Availability
- Real Time Diagnostics
- Chipkill™Memory
- Memory ProteXion
- Active PCI-X™
- Light Path Diagnostics™

Systems Management
- IBM Director

IBM's XA-32 chipset - exploiting the latest in copper technology developed by the IBM Microelectronics Division. The XA-32 chipset contains advanced core logic that is the heart of the computer system.

This logic determines how the various key components (microprocessors, main memory, system cache, I/O, etc.) interact. Various industry benchmarks demonstrate how well the x365 performs with various applications.

x365 Scale-up, Scale-out

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.

Customers who have uncertain growth requirements should consider the x365. Oracle provides an economically priced Oracle9*i* database Standard License for single node 4-way Intel-based servers. One can start with a 2-way x365, then add additional processors (4 total) and memory (32GB maximum) as their requirements grow - thus maintaining their initial investment.

When growth or availability requirements require a muti-node configuration, however, the customer can add additional x365's to their configuration and upgrade their Oracle license to an Enterprise License and add the RAC component to allow their database to expand across multiple servers. Adding additional servers in the future as requirements dictate, not only maintains prior investments but also allows IT managers to better plan and maintain their IT budgets.

Numerous adapter slots are important for Oracle implementations because of the external connections required of the database server(s). The Server Backbone Network, Local Area Networks and Storage Area Networks require multiple connections for each network to enable high throughput and help minimize the risk of downtime due to adapter failure.

The RXE-100 Remote Expansion Enclosure gives the x365 12 additional Active PCI-X slots connected via a high-speed interconnect. This unit provides the capability to add I/O slots accommodating additional growth requirements without paying for a new system.

IBM eServer xSeries 365

x365 Availability

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

The x365 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.

The x365 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, 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.

When a server hardware malfunction occurs, Light Path Diagnostics minimizes downtime by isolating the failed component and illuminates an LED light path that leads directly to the part that needs replacing. This minimizes time-consuming diagnostic testing and costly downtime.

x365 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 it is 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 x365 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/x365.html

IBM eServer xSeries 365

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