

ORACLE DATABASE 10g ENTERPRISE EDITION

OVERVIEW



ENTERPRISE EDITION

- For enterprises of any size
- For databases up to 8 Exabytes in size.
- Either \$800 per Named User Plus (minimum of 25 Users per CPU).
- Or \$40,000 per CPU for unlimited use.
- Supported on all Environments
- Manages all Your Data
- Integrates all your Information
- Runs all your Applications
- Available all the Time
- Proven Security Assurance
- Quick to Install, Easy to Manage
- Built for the Grid

Oracle Database 10g Enterprise Edition is ideal for enterprises that need to support high volume on-line transaction processing and query intensive data warehousing applications. It provides proven scalability on all hardware configurations, and can be used to manage very large amounts of information, with the highest level of security assurance in the industry. Oracle Database 10g Enterprise Edition provides unique availability benefits that protect your data from costly human error, reduce the downtime associated with routine maintenance, and includes self-managing capabilities to help you lower your operational costs. As the first database designed for Grid Computing, you can use Oracle Database 10g Enterprise Edition to significantly reduce your infrastructure costs, through the efficient use of shared pools of low cost, standardized hardware components. With every release, Oracle furthers its commitment to grid computing, database automation and self-management capabilities.

Supported on all Environments

Oracle Database 10g Enterprise Edition is available on all Oracle's supported operating systems, including Windows, Linux and Unix, and is supported on all hardware configurations, from small single processor machines to high-end SMP environments. Cluster and Grid environments are also supported with the Oracle Real Application Clusters option.

Manages All Your Data

Oracle Database 10g Enterprise Edition supports all standard relational data types, as well as native storage of XML, Text, Documents, Images, Audio, Video and Location data. Additionally, complex spatial data can be added with the Oracle Spatial option.

Access to data stored is via standard interfaces such as SQL, JDBC, SQLJ, ODBC, OLE DB and ODP.NET, SQL/XML, XQuery, and WebDAV. Business logic deployed in the database can be written in both Java and PL/SQL.

Oracle Database 10g Enterprise Edition can store up to 8 Exabytes of data in a single database. Data currently stored outside of the database can be loaded in parallel, while data already stored in an existing Oracle Database can be transported

online across operating system platforms and added in bulk without the need to unload the data.

Once stored, all data can be transformed, indexed and summarized using powerful parallel operations. Business Intelligence applications will particularly benefit from the Enterprise Edition's unique bitmapped indexing and join capabilities, transparent query re-write to use pre-summarized data, and comprehensive parallel query operations, all which result in dramatic query performance improvements.

The Oracle Partitioning Option can also be used to simplify common administration operations in very large database environments, with support for Hash, Range, List, and Composite data partitioning strategies.

Integrates All Your Information

Oracle Database 10g Enterprise Edition supports distributed queries and transactions between two or more databases, and includes built-in support for connecting via ODBC to common 3rd party databases. In addition, Transparent Gateways to specific 3rd party databases are available, providing a highly optimized information integration solution. Oracle Database 10g Enterprise Edition also provides a built-in framework for capturing, staging and processing events in the database, such as those that are caused by data changes or created via business applications. These events, along with the associated data changes or application messages, can be automatically propagated to and applied by one or more consuming databases or applications, providing an integrated solution for message queuing and data replication. Oracle Database 10g Enterprise Edition can be used as the central coordinated data store in a replicated branch office environment, in conjunction with a local Standard Edition or Standard Edition One database. Peer-to-peer multi master replication is also supported between two or more Enterprise Editions of Oracle Database.

Runs All Your Applications

For demanding online transaction processing environments, Oracle Database 10g Enterprise Edition supports deployments of large numbers of users by utilizing unique row level locking and multi-version read consistency, allowing an application to quickly and easily scale from tens to tens of thousands of online users.

For Business Intelligence, Oracle Database 10g Enterprise Edition provides built-in analytical, statistical and modeling capabilities which may be directly accessed from any SQL based environment. These built-in capabilities may be further expanded with the use of the Oracle OLAP and Oracle Data Mining options, providing a high-performance OLAP calculation engine, and the ability to mine and score data in place.

Available all the Time

Oracle Database 10g Enterprise Edition provides unique capabilities to ensure the availability of your mission critical applications. Oracle's Real Application Clusters (RAC) option supports the transparent deployment of a single database across a cluster of hardware servers, providing fault tolerance from hardware failures or

planned outages. Oracle Database 10g Enterprise Edition also builds-in unique Fast-Start Fault Recovery technology that automatically bounds database crash recovery to a number of seconds, making recovery time fast and predictable, and improving your ability to meet availability service level objectives.

Oracle Database 10g Enterprise Edition provides unique data protection capabilities. The automated storage management capabilities built into Oracle Database 10g mirrors data across available storage devices for protection against storage failure. New built-in data validation algorithms have been implemented in conjunction with common storage devices, eliminating a large class of failures caused by corruption. Automatic backup to and recovery from a disk based recovery area is provided, ensuring backups are always readily available, eliminating the likelihood of operator error and improving recovery time. The automatic merging of fast incremental backups into existing backup images is also provided with Oracle Database 10g Enterprise Edition, significantly reducing the time required for online backups, and minimizing the storage needed for daily backup operations.

Oracle Database 10g Enterprise Edition also provides a suite of unique Flashback capabilities that help administrators easily diagnose and undo the effect of human errors including changes to a single row, changes made by a rogue transaction, all changes made to one or more tables (including the dropping of a table), and all changes made to an entire database. With Oracle Database 10g Enterprise Edition, the time needed to correct a human error equals or is less than the time it took to make the error, revolutionizing recovery from the most common cause of data loss.

Oracle Database 10g Enterprise Edition also includes proven Data Guard technology to protect your site from crippling events such as a power outage or natural disaster. You can use Oracle Data Guard to set up and automatically maintain multiple remote standby copies of your production databases, and then with a single mouse click, fail over processing from the production environment to these standby databases, greatly reducing downtime in a disaster situation. Oracle Database 10g Release 2 introduces Fast-Start Failover for rapid and automatic failover to standby databases, without requiring manual intervention.

Oracle Database 10g Enterprise Edition is also designed to protect your mission critical business operations from the impact of routine maintenance. New hardware, memory and storage can all be added and used by Oracle Database 10g Enterprise Edition without the need to re-start your systems. In the database, tables can be relocated or have their storage type changed, new indexes can be added or rebuilt, and columns can be added, dropped and renamed, without any interruption to the end-users' ongoing access to the data. Oracle Database 10g Enterprise Edition also supports rolling upgrades of database and operating system patches and releases, enabling true 24x7 operations for your enterprise.

Proven Security Assurance

The Oracle Database provides the strongest security available in the industry today. Over the past decade Oracle has successfully completed 17 independent security evaluations. Data consolidation, privacy requirements and government regulations

such as HIPAA require sophisticated security features. Oracle Database 10g Release 2 delivers industry leading security features such as fine grained/row level security, column security, fine-grained auditing, data encryption, key management, proxy authentication, application context and secure application roles. These are in addition to commonplace security features such as auditing, password complexity checks, database roles, stored procedures and functions.

Oracle Advanced Security protects privacy and confidentiality of data over the network by addressing data sniffing, data loss, replay and person-in-the-middle attacks. All communication with an Oracle Database can be encrypted with Oracle Advanced Security. Oracle Advanced Security also provides strong authentication solutions for Oracle Database 10g. Oracle Label Security provides an ideal solution for customers who need to protect private or sensitive information. Based on multilevel security technology, Oracle Label Security restricts access to data using sensitivity labels and security clearances.

For enterprise wide management, user accounts and authorizations can be managed centrally with Oracle Database 10g enterprise user security and Oracle Identity Management, eliminating the need for individual database user schemes and making it easy to manage user authorizations across an entire organization.

Quick to Install, Easy to Manage, Easy to Develop

The screenshot shows the Oracle Enterprise Manager 10g Database Control console for a 2 Node RAC cluster. The main dashboard displays the following information:

- General:** Status is Up, Up Instances 2/2, Availability (%) 100.0 (last 24 hours), Cluster dlab_cluster, Time Zone EST, Database Name pacrac, Version 10.1.0.2.0, Oracle Home /ade/vkapur_pacrac/oracle.
- High Availability:** Last Backup Jan 28, 2004 8:14:10 PM, Archiving Enabled, Flashback Logging Enabled.
- Space Usage:** Database Size (GB) 0, Problem Tablespaces 1 (Not Configured), Segment Findings 0, Policy Violations 0.
- Diagnostic Summary:** All Policy Violations 0.
- Alerts:** Critical 1, Warnings 3.

| Severity | Target Name | Target Type | Category | Name | Message | Alert Triggered | Last Value | Time |
|----------|-------------|------------------|---------------------------------------|--|-------------------------------------|-------------------------|------------|-------------------------|
| x | pacrac | Cluster Database | Tablespaces Full (dictionary managed) | Tablespace Space Used (%) (dictionary managed) | Tablespace [SYSTEM] is 100.00% full | Jan 28, 2004 3:22:29 PM | 98.56 | Jan 28, 2004 8:52:29 PM |

Figure1. Oracle Enterprise Manager 10g Database Control for a 2 Node RAC cluster

Oracle Database 10g Enterprise Edition provides a very quick install on all environments. Out of the box, your database is pre-configured for production usage, complete with automated space, storage and memory management, automatic backup and recovery, and automatic optimizer statistics management. The built-in Enterprise Manager 10g Database Control console provides a web-based interface that shows at a glance, the status of your database and cluster environment, and allows database administration actions from any browser connected to your system.

Oracle Database 10g Enterprise Edition includes Oracle's unique HTML DB capabilities, an online development environment built directly into the database that allows developers to quickly build database applications using nothing more than a Web browser.

Oracle Database 10g Enterprise Edition is a part of the family of Oracle Products. The following related editions are also available

- Oracle Database 10g Standard Edition
- Oracle Database 10g Standard Edition One
- Oracle Database 10g Personal Edition

Oracle Database 10g Enterprise Edition with Oracle Real Application Clusters option also takes full advantage of Oracle's built-in clusterware solution, removing the complexity of having to install and configure third-party clusterware. The automatic storage management capabilities efficiently stripe the data stored across the available disks, ensuring optimal performance, and removing the need for third-party volume managers or cluster file systems.

As well as the built-in self-managing capabilities, additional automated administration capabilities are available that further streamline operations and reduce operational cost. The Oracle Diagnostics Pack provides a comprehensive set of automatic performance diagnostics and monitoring capabilities built into the database, while the related Oracle Tuning Pack offers an easy-to-use solution that automates the complex and time-consuming task of application tuning. The Oracle Change Management Pack analyzes the complex dependencies associated with application change and automatically performs the required database changes, reducing errors, while the Oracle Configuration Management Pack reduces the labor associated with managing multiple database deployments, by automating installation, patching and database cloning and keeping system configurations under control through best practice policies and extensive change tracking.

For ease of development, Oracle Database 10g Release 2 furthers Oracle's support for the Windows platform with tight integration with Visual Studio, and Common Language Runtime stored procedures.

Built for the Grid

Grid Computing is the coordinated use of a large number of low-cost servers and storage devices acting as one shared computer resource. As the first database designed for the Grid, Oracle Database 10g Enterprise Edition allows you to adopt Grid Computing in three easy steps, with minimal investment, zero disruption, and fast return on investment:

- Through standardization on low-cost servers and storage,
- Via dynamic provisioning of all your databases and application servers
- By the end-to-end automation of day-to-day management tasks, allowing a single administrator to simultaneously handle hundreds of servers

Oracle Database 10g Enterprise Edition and the Oracle Real Application Clusters Option make it easy for you to install and configure a database environment that leverages these low cost hardware servers, including the dynamic provisioning of resources and balancing of workload across your environment to meet defined service levels. The automatic storage management capabilities allow you to utilize low-cost storage, while still providing the highest levels of data protection and performance. And the self-managing capabilities in Oracle Database 10g automate the management of your operations on the Grid.

With Oracle Database 10g Enterprise Edition, the benefits of Grid Computing are real: increasingly flexible, self-managing systems, better availability, performance and scalability at a lower cost.