

# ORACLE REAL APPLICATION CLUSTERS

## KEY FEATURES AND BENEFITS

FOUNDATION FOR ORACLE'S  
ENTERPRISE GRID  
ARCHITECTURE

### FEATURES

- Clustered Managed Services for Automatic Workload Management
- Datacenter High Availability
- Run any packaged or custom application unchanged
- Scale out to 100 nodes
- Single image installation and management
- Included with Oracle Database 11g Standard Edition

### BENEFITS

- **24/7 availability** - Provide continuous uptime for database applications
- **On-demand scalability** - Expand capacity by simply adding servers to your cluster
- **Lower computing costs** - Use low-cost commodity hardware and reduce cost of downtime
- **World-record performance** - Runs faster than the fastest mainframe
- Foundation for grid computing

*Oracle Real Application Clusters (RAC) provides unbeatable fault tolerance, performance, and scalability with no application changes necessary. Oracle RAC is a cluster database with a shared cache architecture that overcomes the limitations of traditional shared-nothing and shared-disk approaches to provide a highly scalable and available database solution for all your business applications.*

*Oracle RAC provides the foundation for enterprise grid computing.*

Oracle's Real Application Clusters (RAC) supports the transparent deployment of a single database across a cluster of servers, providing fault tolerance from hardware failures or planned outages. Oracle RAC provides Oracle's highest level of capability in terms of availability, scalability, and low-cost computing. Oracle RAC supports mainstream business applications of all kinds. This includes OLTP, DSS, and Oracle's unique ability to effectively support mixed OLTP/DSS environments. This also includes popular packaged products such as SAP, PeopleSoft, Siebel, and Oracle E\*Business Suite, as well as custom applications.

Oracle RAC provides a single image installation and management. The DBA has a single point of control to install and manage a RAC cluster from the GUI interface or command line. Oracle Database 11g streamlines the install with automatic checks and fixes for missed pre-requisites for both the grid infrastructure (Oracle Clusterware and Automatic Storage Management) and Oracle RAC.

### High Availability

Oracle RAC provides very high availability for applications by removing the single point of failure with a single server. If a node in the cluster fails, the Oracle Database continues running on the remaining nodes. Individual nodes can be shutdown for maintenance while application users continue to work.

Fast Application Notification (FAN), enables end-to-end, lights-out recovery of applications and load balancing when a cluster configuration changes.

### Flexible Scalability

Oracle Real Application Clusters provides flexibility for scaling applications. To keep costs low, clusters can be built from standardized, commodity-priced processing, storage, and network components. When you need more processing power, simply add another server without taking users offline servers to gain horizontal scalability. Oracle Clusterware and Oracle RAC support up to 100 nodes in the cluster.

Applications never have to modify their connections as you add or remove nodes in the cluster. Oracle RAC 11g Release 2 introduces the single client access name

**ORACLE REAL  
APPLICATION CLUSTERS**

Oracle Real Application Clusters 11g enables the transparent deployment of a single database across a cluster of servers and provides the highest levels of availability and scalability. Nodes, storage, CPUs, and memory can be dynamically provisioned while the system remains online. Services levels can be efficiently maintained while lowering the total cost of ownership. Oracle RAC provides dynamic distribution of workload and transparent protection against system failures.

**RELATED PRODUCTS**

Oracle RAC One Node  
Oracle Clusterware  
Oracle Data Guard  
Part of the Maximum Availability Architecture

**RELATED SERVICES**

The following services are available from Oracle Support Services:

- Update Subscription Services
- Product Support Services
- OnlineDBA
- OnlineDBA for Applications

(SCAN) to allow clients to connect to the Oracle RAC database with a single address which includes failover and load balancing.

**Automatic Workload Management**

With Oracle Database 11g, application workloads can be individually managed and controlled defined as Services. DBAs control which processing resources are allocated to each Service during both normal operations and in response to failures. Users connecting to a Service are load balanced across the cluster. Performance is tracked on a per Service basis by the Oracle Database 11g Automatic Workload Repository facility. Thresholds on performance metrics can be set to automatically generate alerts when hit. Services are integrated with the Database Resource Manager, Oracle Streams, and the Scheduler.

To provide the best possible throughput of application transactions, Oracle Database 11g Universal Connection Pool for Java (UCP), OCI Session Pools, and ODP.NET connection pools provide intelligent load balancing for applications called Runtime Connection Load Balancing.

**Oracle Clusterware**

Oracle Database 11g includes Oracle Clusterware, a complete, integrated clusterware management solution available on all Oracle Database 11g platforms. This clusterware functionality includes mechanisms for cluster messaging, locking, failure detection, and recovery. For most platforms, no 3rd party clusterware management software need be purchased. Oracle will, however, continue to support select 3rd party clusterware products on specified platforms.

Oracle Clusterware includes a High Availability API to make applications highly available. Oracle Clusterware can be used to monitor, relocate, and restart your applications. With Oracle Real Application Clusters, Oracle Clusterware automatically manages all Oracle processes.

**Enabling Enterprise Grids**

Oracle RAC enables enterprise Grids. Enterprise Grids are built from standardized, commodity-priced processing, storage, and network components. The enterprise Grid enables you to consolidate applications into a cluster with Oracle Clusterware allocating the resources to the server pools running the components of the application such as the application server and the Oracle RAC database. Oracle RAC enables the Oracle Database to run on this platform and provides the highest levels of capability in terms of availability and scalability. Nodes, storage, CPUs, and memory can all be dynamically provisioned while the system remains online. Grid Plug and Play makes it easier to dynamically replace nodes in a cluster. This allows service levels to be easily and efficiently maintained while lowering cost still further through improved utilization. Oracle Database 11g dramatically reduces operational costs and provides the flexibility to make systems more adaptive, proactive, and agile.

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## Contact Us

For more information about Oracle Real Application Clusters, please visit [oracle.com](http://oracle.com) or call +1.800.ORACLE1 to speak to an Oracle representative.



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