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ORACLE® 11g
DATABASE

Oracle Database 11g:
The Top Features for DBAs and Developers
by Arup Nanda 🔺

In this multipart series, learn how important new features such as Database Replay, Flashback Data Archive, Edition-based Redefinition, and SecureFiles work via simple, actionable how-to's and sample code. (Updated for Release 2!)

Change, although constantly present, is seldom risk-free. Even if the change is relatively minor (creating an index for example), your goal is probably to predict its precise impact as accurately as possible and then take appropriate action.

Many new change assurance (or "Real Application Testing," as Oracle calls it) features in Oracle Database 11g bring that dream closer to reality. The Database Replay tool, for example, allows you to capture production database workload and replay it in a test (or even the same) database to assess the impact of change. Or consider SQL Performance Analyzer, which predicts the performance impact of changes to SQL before they are made. (In my opinion, this Real Application Testing functionality alone justifies the upgrade.) After this process, Edition-based Redefinition (introduced in Release 2) enables patching and updates of data objects while the application remains online.

Overall, Oracle Database 11g makes database infrastructure far more efficient, resilient, and manageable. For example, very compelling new features in the realm of partitioning ease the design and management of partitioned tables immensely.

In this series (as in the previous series focusing on Oracle Database 10g), you will learn how these new features work via simple, actionable how-to's and sample code.

Enjoy the series, and the release!

Database Replay Explore Database Replay, the new tool that captures SQL statements and lets you replay them at will.	**Partitioning** Learn about Referential, Internal, and Virtual Column partitioning; new sub-partitioning options; and more.
Edition-Based Redefinition It's revolutionary: Patch or update your application's data objects while the application remains in uninterrupted use (in Release 2 only).	**Schema Management** Add columns with a default value easily and explore invisible indexes, virtual columns, and read only tables.
Patching and Upgrades, RAC One Node, and Clusterware Learn how to enable a single name for the cluster, enable HA for a single-instance database, place OCR and voting disks on ASM, and more (in Release 2 only).	**Data Warehousing and OLAP** Get a tour of new features in these areas, including Cube Organized MVs, a new Analytic Workspace Manager, Query Rewrite extended to subqueries and remote tables, and more.
PL/SQL Performance Explore in-lining of code, "real" native compilation, PLS timer, use of simple integer, and more.	**PL/SQL: Efficient Coding** Triggers that fire several times at different events and ability to force triggers of the same type to follow a sequence are some new gems.
Transaction Management Get an introduction to Flashback Data Archive and explore Enterprise Manager's LogMiner interface.	**Security** Learn about Tablespace Encryption, case-sensitive passwords, data masking, and other features.
SQL Performance Analyzer & Real-Time SQL Monitoring Learn how to accurately predict changes on the actual SQL statements issued against your database - plus, monitor SQL performance in real time.	**Oracle Exadata Simulator** Predict how your statements will behave in Oracle Exadata Database Machine using any Oracle Database 11g Release 2 EE database (using SQL Performance Analyzer).
SQL Plan Management Use bind variables that pick the right plan every time and ensure a new execution plan is perfect before it's used.	**Manageability** Explore automatic memory management, multicolumn statistics, online patching, and more features.
SQL Access Advisor Get advice about optimal table design based on actual use of the table, not just data.	**SQL Operations: Pivot and Unpivot** Present information in a spreadsheet-type crosstab report from any relational table using simple SQL, and store any data from a crosstab table to a relational table.
Backup and Recovery Explore Data Recovery Advisor, do parallel backup of the same file, create and manage virtual catalogs, and undrop tablespaces.	**Resiliency** Explore Automatic Health Monitor, Automatic Diagnostic Repository, and other new resiliency features.

Automatic Storage Management	Compression
Learn about new SYSASM role, variable extent sizes, and other ASM improvements.	Support for data compression is nothing new in Oracle Database, but 11*g* takes the concept to a new level with Advanced and Hybrid Columnar Compression.
Caching and Pooling	**Data Guard**
Explore SQL Result Cache, PL/SQL Function Cache, and Database Resident Connection Pooling.	Query the physical standby database in real time without shutting down recovery, just for starters.
SecureFiles	**And Don't Forget...**
Explore next-generation LOBs: LOB encryption, compression, deduplication, and asynchronicity.	`COPY` command, Export/Imports, Data Pump and SQL*Plus improvements, Scheduler email notification, and more.

Arup Nanda has been exclusively an Oracle DBA for more than 12 years with experiences spanning all areas of Oracle Database technology, and was named "DBA of the Year" by Oracle Magazine in 2003. Arup is a frequent speaker and writer in Oracle-related events and journals and an Oracle ACE Director. He co-authored four books, including *RMAN Recipes for Oracle Database 11g: A Problem Solution Approach* .