



ORACLE 12C: MAKING THE IMPOSSIBLE POSSIBLE

TOP 5 REASONS TO UPGRADE TO ORACLE 12C

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Pythian's Oracle team has had the opportunity to explore, test, and assess every aspect of Oracle's latest database release – Oracle 12c, and we have to say it's very impressive. Oracle 12c is by far the most important Oracle release in the last 10 years. Its advanced capabilities promote better performance, increased scalability, and easier data management. For the enterprise, this translates into significant cost savings, reduced risk, and increased flexibility.

Below is a list we've compiled of the top five features and options that make upgrading worthwhile. While there are many good reasons to move to Oracle 12c, depending on your business goals and strategies, these are the most important ones for both large and small organizations.

1. PAVE THE WAY TO THE CLOUD WITH ORACLE MULTITENANT

A modern Oracle database infrastructure requires a new approach to agility and cost reduction. Cost benefits can be achieved through consolidation of resources and running multiple databases on the same server or cluster without sacrificing access, growth and optimization of each database. To take on the management issues and risks of consolidation, Oracle 12c multitenant provides a number of tools to lay a solid foundation for both private and public cloud deployments. In addition to traditional schema-level and VM-level consolidation, this database-aware virtualization technology saves on redundant memory resources and allows for dynamic resource management between databases, relocation of databases to other servers and patching and managing many databases as one.

At the same time, Oracle 12c offers the most flexibility for public cloud integration. Databases can be moved easily from on-premise containers to the cloud or vice versa. The new way of performing quick and thin clones of entire databases, together with the ability for live refreshes and self-provisioning, enable agile development and production cycles.

2. SIMPLIFY INFORMATION LIFECYCLE MANAGEMENT WITH DATA TIERING

The value of data changes over time. For example, a purchase completed today may need to be easily accessed in near real-time because it impacts other parts of the business. A purchase made in 2008, however, is more interesting from a statistical perspective and can be part of batch reporting.

Oracle 12c offers a data-tiering feature, which analyses data access patterns and moves data to different types of storage based on its usage. These rules can be applied as you define your database. Data that doesn't need to be accessed frequently, for example, can be compressed and then moved to slower storage. The ability to dynamically classify and move data simplifies information management, saves money on storage, and improves performance.

3. INCREASE PERFORMANCE ACROSS GLOBALLY DISTRIBUTED DATABASES WITH GDS

Before Oracle 12c, global load balancing was delivered through external hardware or software products, which was highly inefficient because of the lack of integration. The result was slow query times because of high demand or network latency from some databases, whereas other database resources would be underutilized.

With Oracle 12c, dynamic, global load balancing is now integrated, so that client connections and workload requests are automatically equalized across resources. You can run load balancing across clusters and geographies and between private and public clouds, which allows traffic to be distributed between facilities in real time. The result is significantly increased performance, higher availability, and improved resource utilization. Oracle 12c GDS is an exceptional workload management solution for large environments that have multiple locations with active replication, and large, distributed reader farms.

4. IMPROVE AVAILABILITY WITH APPLICATION CONTINUITY

Oracle has put a lot of effort into high availability for Oracle RAC, but until now, one nagging issue has remained: if a database server goes down, what do you do about in-flight data changes? How can an application even know a commit was successful?

Prior to Oracle 12c, DBAs could spend hours making changes to a database and would have to choose between committing these changes too early and possibly losing their work. With the Oracle 12c application continuity feature, they don't have to make that choice. All applications can seamlessly failover in case of a server failure – even when there are outstanding data changes. It does this by keeping a record of uncommitted changes and seamlessly replaying them in case of a failure – all of which is completely transparent to the application. The net effect is higher availability, improved productivity, and cost savings because applications can now handle server failures without complicated and expensive coding projects.

5. GAIN PERFORMANCE BENEFITS AND UNLOCK NEW ANALYTICAL INSIGHTS WITH IN-MEMORY

Oracle has improved their block storage format over the years, and now offers concurrency, row-level locking and more. However many queries are selecting, filtering or joining on only a few columns and the overhead of reading whole rows and discarding all other columns can become significant.

In addition to the proven block and row-based storage on disk, Oracle 12c offers the option to store data in-memory in a columnar format. The feature utilizes compression, bloom filters and vector operations to make this access path as efficient as possible. The Oracle optimizer knows when to use the columnar data store for defined objects or columns and will make use of the feature transparent to applications without any changes to SQL queries.

Not only does the Oracle 12c In-Memory option provide tremendous performance benefits to existing applications without modifications; it also allows users to run analytical reports quickly against their transactional databases in real-time without the delay that is introduced by periodically loading that data into a separate data warehouse. In addition to staying on top of software support and security updates, Oracle database 12c has a lot to offer for organizations looking to increase agility, manageability, performance and availability.

Clearly there are a lot of great reasons to upgrade to Oracle 12c. To find out how to maximize uptime and minimize risk through an upgrade plan, contact us at info@pythian.com or **1-866-798-4426** to speak with one of our Oracle experts.