



# DATABASE PERFORMANCE GOES SKY-HIGH ON THE ORACLE AUTONOMOUS DATA WAREHOUSE CLOUD



Let's start with two astounding facts about data: The world generates 2.5 quintillion bytes of new data every day. 90 percent of all data that exists was generated in the past two years.

This is putting immense pressure on businesses, which will spend 75 percent of their time on analytics by 2020, compared to just 25 percent in 2015. They will also spend a lot more money – one estimate forecasts a 375 percent rise in analytics spending by marketers in the next 5 years. IT teams have it worst of all with a huge amount of their time wasted on mundane maintenance activities. On top, 95 percent of database administrators continue to create and update databases manually. Data warehouse owners are finding it very hard to manage their data warehouse solutions. Business stakeholders want to focus their energies on deriving business benefits, rather than data warehouse administration and maintenance.

Technology companies are trying to resolve this challenge with an autonomous database on the cloud that runs itself for the most part. An example is a Platform as a Service Offering called Autonomous Data Warehouse Cloud (ADWC) from Oracle that leverages Machine Learning to drive, secure and repair itself automatically. Infosys has built multiple use cases by moving on-premise database workloads to the ADWC, exploiting its features to provide a superior experience to end users using Oracle Analytics Cloud. By eliminating the need for manual administration of databases, the solution produces several advantages for enterprises, as listed below:

**The power of self-driving:** By running operations such as provisioning, monitoring, backup, recovery, troubleshooting and tuning on its own, the solution eliminates manpower costs and improves productivity. Creating and migrating a database is really easy, and there is fourfold improvement in query execution time. Both compute power and storage ramp up or down automatically according to need, ensuring clients pay only for what they use. Thanks to the ADWC, enterprises can take performance and elasticity for granted.

**The assurance of self-security:** The solution lowers risk by securing itself against internal and external attack. All routine activities, from applying updates to encrypting data and intercepting leaks, are automated.

**The advantage of self-repair:** By proactively healing itself, the ADWC makes sure it is available 99.995 percent of the time, and is down for less than 2.5 minutes each month (including planned maintenance).

In benchmark studies done by Infosys Architects, the query performance of the cloud-based autonomous data warehouse was 10 to 15 times that of on-premise solutions, administrative costs were down by 80 percent and both error rate and risk were lower. Proof of Concept implementations for clients using heavy analytics further confirmed the benefits of deploying the solution. In particular, there was notable improvement in the throughput of Oracle Analytics Cloud.

The following use cases illustrate the benefit of adopting the Oracle ADWC solution.

Migration of an on-premise Oracle database to the autonomous data warehouse on the cloud: Oracle SQL Developer 18.1 was the chosen tool for migration along with a sample Oracle SH schema. The data used filled 1,058,884 rows in 8 tables.

The ADWC solution proved much faster at executing queries compared to on-premise hardware, taking only 0.355 seconds compared to 13.347 seconds.

Similar results were noted when migrating an on-premise BI apps data warehouse to a combination of ADWC plus Oracle Analytics Cloud where query execution time reduced from 3.345 seconds to 0.165 seconds.

In another PoC project, it was found that shifting a non-Oracle database, namely Amazon Redshift, to the ADWC was much easier.

As a key partner of Oracle, Infosys adds value by offering innovative platforms and services around Oracle products. Our near term goal is to build an analytics package using the ADWC that clients can readily download and deploy based on certain guidelines and run without any manual intervention.

Appreciating the role played by Infosys, Aalok Muley, Sr. Director, Database Product Management, Oracle, said, "Infosys has been proactive in getting their teams up to speed on the Autonomous Database Cloud offering. In addition to attending our hands-on workshops, Infosys has taken the initiative to acquire cloud resources to test out the Autonomous Data Warehouse Cloud. They have built compelling points of views around ADW performance, data migration, integration with OAC, and the competitive advantage over Redshift.

Infosys has created a Point of View document and go to market plan for its ADWC solutions. This can help customers create compelling business value and reduce complexity at the same time. Infosys is a leader in cloud consulting and implementation services and we are delighted to bring this expertise to our clients with Oracle."

## About the Author



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Charudatta is a Senior Principal Technology Architect with Infosys in Oracle practice managing the Oracle Technology stack which comprises of Oracle Infrastructure and Platform services. He has over 25 years of strong experience in technology , analysis, design, development and implementation of business applications. He works closely with customers to understand their business problems and providing technology oriented solutions demonstrated by POCs.

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