

Oracle broadens the audience for Automated Transaction Database

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Ovum view

Summary

Oracle is continuing its rolling thunder of releases for the Autonomous Database with the release of a new deployment choice for Oracle Autonomous Transaction Processing – dedicated deployment (ATP-D). It will bring Autonomous Transaction Processing within reach for customers whose policies mandate a dedicated environment for their transaction databases in the Cloud. It will also add Oracle's low-code application development tool Application Express (APEX), a feature that will appeal to the 500,000-developer base already using it. With the release, Oracle takes another step forward in broadening the appeal of ATP-D. While still available only in the Oracle Public Cloud, we believe the ultimate goal will also entail bringing it to Oracle Cloud at Customer, making ATP-D accessible for those organizations whose policies rule out public cloud deployment. Having a dedicated, single-tenant version, is the first requirement for getting there.

Extending the Autonomous Database for dedicated deployment

Ovum's *2019 Trends to Watch: Big Data* stated that "Oracle's foray into self-driving databases, where database administrators (DBAs) set basic parameters such as cluster size and service level agreements (SLAs) and leave the driving to the database, is the beginning of a trend." Autonomous databases bring self-securing, self-tuning, and self-patching, eliminating the need for DBAs to perform non-value-added housekeeping.

Adding machine learning (ML) is the next logical step after automating the operations of a database to make them autonomous. Databases make a good target for applying ML because there is more than ample data to draw on to train and feed models, and there are benefits to be had by eliminating non-value-added tasks for DBAs. Last year, Autonomous Transaction Processing (ATP) was introduced as the second autonomous database offering following the Autonomous Data Warehouse (ADW). Among the innovations introduced by ATP is the use of expert systems and reinforcement learning to optimize indexing, data summaries, columnar vector-processing formats, and parallelized workloads, tasks that otherwise take about a quarter of the DBA's time according to Oracle.

The announcement now is for a dedicated deployment choice for Oracle's ATP. It makes a logical addition to the product line because it addresses a constituency not currently served by Oracle's existing multitenanted, serverless offerings. It eliminates the "noisy neighbor" problem for databases with applications that have extremely demanding performance consistency requirements. The physical isolation will be attractive to organizations such as financial institutions, where internal policies prohibit their data being comingled in an environment that also houses data from other firms (e.g., competitors). The customer will also have more control over software versions, density, and provisioning.

How ATP-D compares with existing serverless deployments

The new dedicated deployment choice delivers a self-service dedicated cloud within the public cloud. Organizations can use the dedicated deployment choice to separate out lines of business (LOBs) and project teams into distinct private working areas that align with corporate governance requirements. Once the working areas are defined, the organization turns access over to those groups, who are then

able to operate in a completely self-service manner. The organization gets all the benefits of cloud simplification, while their data is retained in an area protected with added layers of isolation, separated from other tenants – and if necessary, separated from other LOBs or line organizations within the enterprise. Besides complete physical storage isolation, ATP-D provides private IP networking, secure connections using transport layer security (TLS) credentials, and customization of software image lifecycle to align with application lifecycle. Unlike the original deployment choice, which is serverless (meaning it transparently handles database placement on underlying compute servers and any movement over time as necessary), dedicated deployment customers control their own resource provisioning. In effect, this makes sizing more akin to operating within an on-premises data center, where capacity planning is a key factor; however, because the dedicated capacity comes from a public cloud, there are few hurdles to instant expansion if the customer decides to grow the footprint.

Another difference with the serverless choice is in sizing and service terms: while serverless had no minimums or maximums, the dedicated edition has a minimum term of one month, currently with a \$15,000 minimum dedicated infrastructure charge (we expect that Oracle will subsequently price more aggressively). In practice, the dedicated deployment customers will be those with sufficient volume to make such an install cost-effective. Compared to serverless clients, customers of the dedicated deployment choice will have more leeway regarding database versions, which extends to scheduling of system updates to support the lifecycle of an organization's most important applications.

While there are significant differences between the new dedicated deployment choice and the original serverless offering, there are a number of common threads, including the following:

- deployment on Oracle Exadata and Oracle RAC clustering infrastructure
- database high-availability and backup features
- online independent elastic scaling of the database for both compute and storage
- external security measures such as prohibiting root or system DBA access (preventing installation or modification of software on the system), native database encryption, protection from operations users accessing user data through the use of Oracle Database Vault and access via Virtual Cloud Network
- service API and user experience at the database level – organizations that want to use the service API to integrate with continuous integration and delivery pipelines and other solution tooling can work with both choices
- access to customers who are currently running their Oracle enterprise applications such as e-Business Suite, JD Edwards, PeopleSoft, third-party, or home-grown applications on Microsoft Azure, thanks to the recently announced partnership adding direct, high-speed links between the two public clouds.

The next step should be Cloud at Customer

There is little question that enterprises are looking to cloud deployment for mission-critical systems. The original advantages of budgetary and deployment flexibility are supplemented with *managed* cloud services that deliver the full promise of operational simplification that has been attributed to the cloud. Autonomous databases take simplification even further by having software rather than DBAs perform much of the routine housekeeping and optimization.

But we do not expect that 100% of all enterprises will necessarily migrate all of their applications or databases to the cloud. They may contend with a mix of regulatory concerns and internal policies that either limit or prohibit storage of data outside the data center. We believe that some concerns, such as those about security, will ultimately be addressed as the realization surfaces that cloud providers (whose business is maintaining IT infrastructure) will be better prepared to deal with the evolving nature of cyberthreats compared to internal IT departments.

For some organizations, serverless deployment has been a showstopper. Oracle's release of the Autonomous Transaction Processing dedicated deployment choice directly addresses this concern. Admittedly, dedicated does not provide the same economies of scale that serverless deployment offers, but for organizations that are not allowed to comingle storage of data in a public cloud on common infrastructure, or for those that have extreme performance consistency needs that require avoiding "noisy neighbors," the dedicated solution is justified. The next logical step for Oracle is to extend this offering to Cloud at Customer, which will allow the benefits of autonomous databases to reach customers with a need to keep data on-premises. We expect Oracle to offer this soon; as it does so, we urge Oracle to make it seamless so that the customer can have the option to shift or burst workloads to the public cloud ATP-D service.

Appendix

Futher reading

"Oracle Exadata X8 extends analytic query footprint into Hadoop and Spark territory," INT002-000226 (June 2019)

"Oracle extends Autonomous Database to transaction processing," INT002-000155 (August 2018)

Oracle's Autonomous Database 18c: An Initial Assessment, INT002-000011 (November 2017)

2019 Trends to Watch: Big Data, INT002-000201 (December 2018)

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