



Making the Most of a New Cloud Solution

North Dakota University System sought outside expertise to improve performance and value when moving a core database to the cloud

After the initial rush of a new system deployment is over, IT teams know their work isn't quite done. What comes next is the important work of optimizing the system to deliver the best value for users and the organization. Yet because the system is new, these teams don't always have complete knowledge about what should be done and how to do it.

Until recently, the North Dakota University System (NDUS) relied on several on-premises databases for its operations. Those databases have significant impact on a large number of users. So when NDUS decided to move its databases to the cloud, it took a cautious approach.

NDUS ultimately chose the Oracle Exadata Cloud at Customer solution. The Exadata platform design keeps databases in purpose-built hardware that is installed in the agency's data center, then managed by Oracle staff via the cloud. This design helps public sector organizations benefit from reduced costs and cloud capabilities while continuing to meet requirements for data control. Two factors made the solution appealing.

First was the potential for a significant reduction in software licensing costs for the Oracle database software. The second factor was greater flexibility for database administration.

"Our database administrators like Exadata because it is a hardware platform specifically designed to run Oracle databases," says Rick Anderson, NDUS director of infrastructure and operations.

Because every student and staff login to a university system must go through this database, it required careful implementation and has to meet stringent data storage and security requirements. Additionally, the move to online learning during the COVID-19 pandemic meant students were logging in every class day, which increased demand on the database. Having the Exadata environment helped NDUS maintain database stability during this time of higher load.

Choosing Cloud Management for a Critical Database

After implementation of the Exadata platform, the NDUS team struggled

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Dirk Huggett, Assistant CIO for Administration, North Dakota University System

to understand how the new Oracle environment could better serve their applications and operations.

"Although we have very experienced database administrators, going from one database system to another isn't apples to apples," says Dirk Huggett, NDUS assistant CIO for administration. "We needed someone with more experience in the Exadata environment to help us identify where we could improve system performance."

NDUS turned to Mythics for help with several activities, including:

- **Validation** that the Oracle Exadata hardware, services and associated database environment were configured correctly for NDUS needs

- ▶ **Assistance** with improving the processes around a replica database environment that provides access to reports for campus users
- ▶ **A better understanding** of Oracle processes for updates and patches, with guidance on best practices and efficiencies to adopt
- ▶ **Documentation** on the full Exadata and cloud deployment for NDUS

With help from Mythics, NDUS was able to optimize the system to ensure it will deliver the best value for users and the organization going forward. The Exadata platform now hosts the database behind three critical systems for NDUS operations, including the PeopleSoft Campus Solutions student information system and a document repository and management system. Third is the identity and access management system that serves 50,000 students and 10,000 employees in the 11 higher education institutions supported by NDUS.

Insights from an Outsider's View

IT teams preparing for a move to a cloud-managed database environment can benefit from the perspective gained by NDUS.

“Realize you won’t have all the resources that you’ll need internally, so you’ll need outside expertise,” says Anderson.

He notes that an outside consultant can validate which activities are being

Reducing Transition Challenges

Mythics consulting services have helped IT organizations address other transition challenges such as:

- ▶ Optimizing implementation of separate environments for production, development/testing and disaster recovery
- ▶ Validating all system elements such as hardware, network connections and security measures
- ▶ Adjusting configurations to maintain high availability
- ▶ Defining parameters for scalability of elastic cloud resources
- ▶ Tuning database queries for better performance in the new environment

performed correctly, then provide staff training for tasks that are unfamiliar or need improvement. And because many public sector organizations find it difficult to attract employees with Oracle database expertise, an external consulting firm can address specific shortfalls in skills and knowledge.

Second, consider all demands on the time of the IT team and database administrators.

“Sometimes there are just too many things that need to be done at the same time, and you can’t make a new system move without outside help,” says Huggett. “You can also be more comfortable about

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The Confidence of an Optimized System

Post-implementation confidence is an important factor for successful adoption of a new system. That confidence grows in part as IT teams and users gain experience with new capabilities and processes. But some of that confidence also must come from a system that is optimized for best performance.

By bringing in expert consulting from Mythics, NDUS obtained an improved implementation of its Oracle Exadata Cloud at Customer environment. The organization also gained greater confidence to serve its users through times of rapid and uncertain change.

This piece was developed and written by the Center for Digital Education Content Studio, with information and input from Mythics.

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