

THE VOICE OF BIG DATA

THE CHANGING ROLE OF THE DBA IN THE NEW CLOUD ERA

AS ORGANIZATIONS INCREASINGLY MOVE THEIR DATA AND APPLICATIONS FROM ON-PREMISE DEPLOYMENTS TO THE CLOUD, THE ROLE OF THE DBA IS ALSO SHIFTING. ACCORDING TO PENNY AVRIL, VICE PRESIDENT OF PRODUCT MANAGEMENT, ORACLE DATABASE, THE TRANSITION MEANS THAT DBAs HAVE THE OPPORTUNITY TO MOVE FROM BEING DATA CUSTODIANS AND KEEPERS TO TAKING ON A MORE STRATEGIC ROLE IN THEIR ORGANIZATIONS. BUT, SHE SAYS, THE TIME TO PREPARE FOR THE NEW CLOUD REALITY IS NOW.

—Joyce Wells

Do DBAs have specific concerns with the growing acceptance of cloud in the enterprise?

For many DBAs, the biggest concern is that cloud vendors will eventually take over the basic maintenance work that they are currently doing. There's definitely an element of change in the air, and some people will naturally see that as unsettling. However, I believe that there is a lot of opportunity for DBAs with this shift in approach.

Are their jobs becoming easier or more difficult? How so?

The good thing is that a lot of the mundane, repetitive tasks of a DBA are going away, including most tasks that require DBAs to be on call 24/7. Day-to-day activities such as provisioning database access for dev/test and managing are now easier because of the cloud. As a result, database availability is no longer their responsibility, which ultimately makes their job a bit easier and certainly more manageable from a work-life balance perspective.

What is changing in terms of their responsibilities?

DBAs are being asked to understand what businesses do with data rather than just the mechanics of keeping the database healthy and running. This is where the opportunity lies. Their job is no longer in the background simply keeping databases alive and running. They are now responsible for data modeling, data security, and performance monitoring in a hybrid system—all elements of the job that are more visible to the business and will continue to grow in importance.

What does this mean about the DBA role?

One way we look at this change is to think about the title without the "B" in DBA—moving them to a "DA" (data administrator or a data architect). A data administrator isn't just keeping data



Penny Avril, Vice President of Product Management, Oracle Database

in a database, but understands the importance of that data to key business stakeholders and in driving the business forward.

What should DBAs do to prepare for the new cloud reality?

DBAs need to speak to their business analysts and understand what they hope to gain from the cloud. There's a tactical side of moving to the cloud as well. DBAs need to help organizations understand what to consider when choosing which applications to move to the cloud. They can help analyze workloads and define technical requirements, and map out that data to help business users with a migration plan.

The beauty of the cloud is that companies no longer need to wait years for updates. New features can be added incrementally, or with an entirely new release. Just like the iPhone, users will see new functionalities and often these functionalities will arrive in the background without necessarily knowing about it.

For example, we recently introduced support for JSON and now the Oracle Database can easily ingest and analyze JSON. There is also a new capability for property graphing, which is used to analyze social media and fraud analysis.

To fully understand how to take advantage of new functionalities, organizations and individuals alike should be gleaned information from blogs, social media, and DBA communities.

In what ways does cloud put DBAs in a better position than they were before?

Digital disruption is happening all around and with it more data is being divulged—from data sharing services and social media to new IoT applications. This information has enormous value and its own capital worth. The importance and the value of DBAs aren't going away, but they really need to embrace the changing role they can play in realizing the



value of increasing amounts of data that they're being asked to manage. For example, DBAs may not become data scientists, but they make the data scientist role much more valuable and can increase the return on investment of data scientists by getting data quickly and efficiently, and understanding different data sources.

So, the focus is more on data delivery?

Yes, as DBAs focus on data and data modeling, and making data available to their business users, their significance radically increases. The DBA role is changing, so it's more about managing data, new sources, and new volumes of data and moving away from the mechanics of keeping data alive.

How long do DBAs have to make this transition?

For many organizations, it will still be a long transition to the cloud. For example, many organizations that have moved to a cloud-based infrastructure still have their databases primarily managed by their DBAs. But when new cloud applications need a new database, those will likely be moved to fully managed cloud database services. Ultimately, the end game DBAs can expect is that most of their database farms will transition from an on-premises maintenance model to a more flexible cloud model. Again, this is the next growth opportunity for DBAs, the ability to help the business get more value out of their data in the cloud.

Have DBAs seen change like this before?

Over time we have seen several instances of major change. When virtualization was introduced, system administrator jobs did not become obsolete. Instead, that role evolved from the management of hardware and operating systems to the management of the myriad number of virtual machines and workloads introduced as virtualization enabled better use of existing resources. Specific to the database, when Oracle automated many DBA tasks—such as automated storage management, automatic workflow repository, and several others—DBAs initially thought, “Now what am I supposed to do?” They worried that these automations would cost them their jobs. However, it didn't and in fact, it enabled them to do higher value work.

On the flipside, when Oracle introduced flashback, DBAs loved it. They said, “Now I don't have to go through all this pain of restoring data because Oracle has given me a button to do it.” More recently, many DBAs have made changes to their roles in companies that use engineered systems. Engineered Systems such as Exadata and Oracle Database Appliance are pre-configured and pre-provisioned so a DBA doesn't have to worry about a lot of the configuration details. These types of disruptions have been happening over the years as the role of the DBA has evolved along with them.

What about security?

Security concerns don't go away in this new model. DBAs still have to worry about data security as they expand access to new forms and sources of data. As recent breaches have shown us—most any data is fair game to hackers.

To give a specific example, when a customer uses an Oracle Database in the Oracle Cloud, we encrypt it and don't see the data. This means that someone on the customer side needs to understand and classify data and understand what privilege model they have for who accesses that data. The DBA needs to continue to be responsible for this.

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What steps should the DBA be taking to help them through the cloud transition, and are there resources available to DBAs to help them make the adjustment?

The roles of data modeling, performance management, and security configuration are key elements of DBA value in the cloud era. Taking steps to refresh those skills and expand on them in the context of new data management techniques—including JSON collection modeling, data modeling for sharded deployments, data encryption, and key management—is important for increasing the demand for their data administrator skills. Understanding new areas previously dealt with by systems administrators is also a good idea, because in the cloud, automation and self-service drive a lot of the system configuration back to the data administrator.

What else?

Learning about virtual private network [VPN] setup, extending VPN to your corporate data center, and storage allocation and configuration are new cloud essentials for data administrators. Finally, RESTful API scripting skills and orchestration of complete development, test, and production system configurations will make a data administrator invaluable to the development organization and strengthen their role in delivering business systems. Coming up-to-speed in the cloud era is really just the click of a button away. Today, rich media online courses and tutorials are available to help the data administrator self-educate in these important areas, and free trials from various cloud providers can also be used to test out the new skills they have learned.