

# FIVE CONCERNS ABOUT PRODUCTION DATABASES IN THE CLOUD

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# OPTIMIZING VIRTUALIZED SQL SERVER AND SOLID STATE DRIVES FOR MAXIMUM PERFORMANCE

## INTRODUCTION

The cost advantages of moving to the Cloud are well known. But IT management has been slow in transitioning production database server instances (Oracle®, SQL Server®, and Sybase®) to the Cloud. This is due to some apparent risks (security, availability, etc.) associated with transitioning production databases. However, now that Microsoft® and Oracle are providing—and proving—Cloud services, the race is on for companies hoping to take advantage of what Cloud technology has to offer.

Today, IT and database managers are asking more questions about the Cloud. For example, they are asking themselves if their teams are prepared to implement a successful database migration to the Cloud. They want to know about the potential issues and risks, and how their organizations can best respond to any challenges. This paper discusses five key concerns that every company should consider when weighing the costs, benefits, and risks of migrating their production database servers to the Cloud.

## FIVE CLOUD CONCERNS

As with any new technology, there is always some apprehension with early adoption. The Cloud has been around long enough that the early adoption phase has passed, and the idea of migrating workloads to the Cloud is becoming more mainstream.

Mainstream or not, there are legitimate concerns that IT or database managers should have when considering whether the Cloud is the right choice for them. Companies store their most valuable asset, data, inside their databases. Therefore, when considering the Cloud, give particular attention to these five areas:

1. Know your platform
2. Maintain your own data security
3. Understand the real costs
4. Establish a recovery plan
5. Make sure you can analyze application performance and identify issues

## KNOW YOUR PLATFORM

There are numerous Cloud providers. Amazon® and Microsoft are the most notable, but other options include Google®, Oracle, VMware®, and Rackspace®. Each offer Cloud services (IaaS,



PaaS, SaaS), but each are unique in the services they provide. For example, with Microsoft Azure™, customers have replicas of their data for recovery purposes. This service is included in the cost. With Amazon, customers need to manually configure this service.

IT and database managers must strive to select a platform that their teams are able to use with minimal training and oversight after it's implemented. Similar to working with virtualized environments, database administrators will benefit greatly from understanding the Cloud environment and developing relationships with the IT staff most involved in managing it. In time, the traditional role of DBA might be thought of as more of a Cloud DBA. Some Cloud providers, such as Microsoft, offer training opportunities and certification exams for their platforms.

A steep learning curve for a Cloud platform can be a concern for IT managers, but it should not be a permanent roadblock to adoption.

## MAINTAIN YOUR OWN SECURITY

Security in the Cloud is a common concern among database professionals. Some of the initial questions are about the physical location of the data and how it is stored (encrypted or not). Some industries, such as finance and healthcare, are bound by regulations that might limit or even prohibit the use of a Cloud provider to store their data.

In reality, database security is a shared responsibility. Companies cannot hand over all of their data to a 3rd-party and expect that the Cloud service provider's security will be sufficient. No matter which Cloud service you use (IaaS, PaaS, SaaS), the one constant is it's your data and you need to take steps to protect it. This means encryption, data masking, or scrubbing out any personally identifiable information (PII) on your customers and employees. Relying on the Cloud provider to do this for you is risky.

Many Cloud providers are able to provide a list of certifications they have regarding their security methods. The Microsoft Azure Trust Center is one example of a Cloud provider taking the necessary steps to offer a secure service and environment for your data. But that doesn't remove your involvement in maintaining security.

## UNDERSTAND THE REAL COSTS

Cost savings is often touted as one of the main benefits of using a Cloud service provider. However, initial feedback from early adopters is that the cost savings did not come right away, or at all. It's important to learn about all of the costs associated with a Cloud service. For example, in addition to the need for additional training (see above), there are costs involved with the migration process.

The Cloud implementation details are still up to you to manage in your environment. Cloud service providers don't magically take your data or build new applications for you. Migrating to the Cloud is no different in scope than if you were to outsource your data center to a 3rd-party. The only difference is that the servers are hosted by the Cloud service provider instead of located inside your facility. But getting your data there takes time, effort, and money.



The reality is that the cost savings may not be immediate. The true cost savings comes years later as companies see their administrative overhead reduced with regards to patching, maintenance, and purchasing new hardware.

## ESTABLISH A RECOVERY PLAN

What do you do if your Cloud provider goes offline? That has **happened before**. Service outages are rare, and most shops are used to occasional service interruptions even when they are self-hosted. When it comes to using Cloud services, it seems that most IT managers like to be informed about issues and how they are being resolved. They still prefer to actually see people working on a problem. This same support and resolution awareness applies to IT performance in general.

For example, IT and database managers depend on the ability to contact someone to troubleshoot and repair a slow-running application server. They would likely rather see a person frantically pulling cables out of the back of a server or router in an effort to remedy a performance issue than just be told that a technician is “working on it.” With the Cloud, IT managers see only the outcomes, not the effort.

Another major area of concern about support has to do with disaster recovery. Can your Cloud provider help you recover lost data? That should be the one question you need to have a definitive answer to before moving to any Cloud provider. If you can’t recover, you can’t stay in business.

## MAKE SURE YOU CAN ANALYZE PERFORMANCE AND IDENTIFY ISSUES

Another concern about moving to the Cloud is the ability to monitor end-to-end application performance. For companies with inadequate infrastructures, the idea of trying to run production workloads on an overloaded network is not a viable option.

For everyone else, other Cloud performance concerns will remain. For example, database managers need to understand the basics of how their billing is being calculated. It is crucial to understand how your dollars are being spent. Cloud customers are going to want to know how much one server, one database, or even one specific query costs them each day, month, and year.

Databases are often blamed when an application is performing poorly, even in the Cloud. If an application is running slowly, it will be up to the IT staff to quickly find the root cause. They will want to know if the issue is something they can fix or if it is something they need the Cloud provider to help them fix.

This is where the role of Cloud DBA becomes more valuable. Any data professional that has the knowledge and the tools to analyze the root cause and remedy database performance issues in the Cloud will be in high demand for many years.

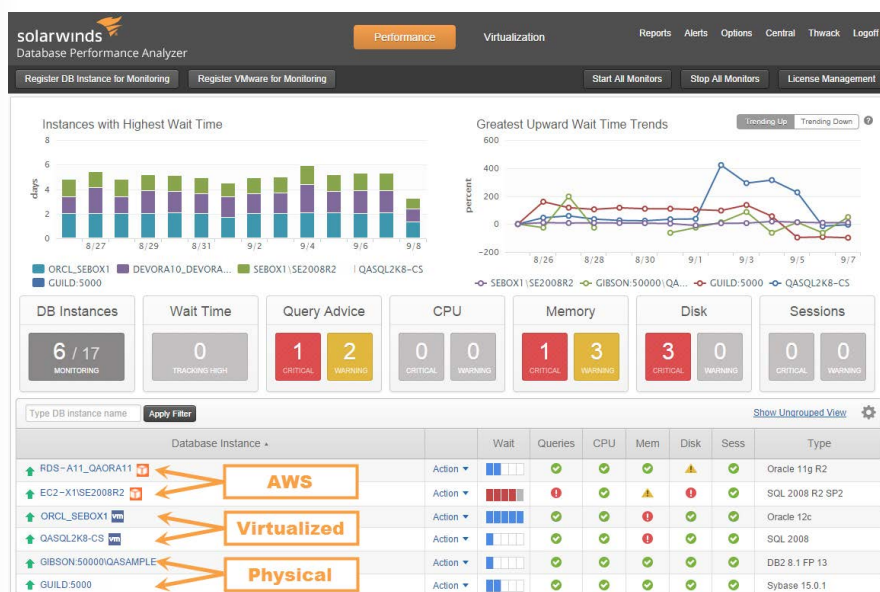


## SUMMARY

Moving databases to the Cloud does have long-term benefits, but getting there is not always easy. Any IT manager thinking about moving databases to the Cloud needs to weigh all the costs, benefits, and risks associated with such a move. SolarWinds has many products available to help alleviate performance concerns for workloads that are hosted by any Cloud provider.

## HOW CAN DATABASE PERFORMANCE ANALYZER HELP?

Database Performance Analyzer (DPA) from SolarWinds (NYSE: SWI) provides the fastest way to identify and resolve database performance issues. DPA is part of the SolarWinds family of powerful and affordable IT solutions that eliminate the complexity in IT management software. DPA's unique Multi-dimensional Database Performance Analysis enables you to quickly get to the root of database problems that impact application performance with continuous monitoring of SQL Server, Oracle, SAP ASE and DB2 databases on physical, Cloud-based and VMware servers.



For additional information, please contact SolarWinds at 866.530.8100 or e-mail [sales@solarwinds.com](mailto:sales@solarwinds.com).

