



Cloud Solutions

RDX offers a wide range of cloud services for both Infrastructure as a Service (IaaS) and Database Platform as a Service (DBPaaS) Architectures. Learn how RDX helps you to fully maximize the benefits of cloud DBMS systems.

Do Cloud With Confidence.

Cloud Architectures

Databases in the Cloud

Technology leaders are being inundated with a flood of new cloud architectures, strategies and products – all guaranteed to solve all of our database challenges. This seemingly endless array of public cloud DBMS offerings can quickly become bewildering.

IaaS and DBPaaS Defined

Infrastructure as a Service (IaaS) and Database Platform as a Service (DBPaaS) are "pay as you go" cloud computing architectures that provide customers with on-demand access to a shared pool of computer processing and data storage resources. Depending on the vendor and architecture chosen, the system will vary in degrees of scalability, elasticity and administrative self service. Let's review 2 key terms:

Elasticity – The ability of a system to dynamically increase or decrease computing resources based on current, real-time workload changes. An elastic system is able to automatically provision computing resources to meet the current workload demands placed upon it.

Scalability – The ability of a system to be easily scaled to meet forecasted future demands .

Infrastructure as a Service (IaaS)

The vendor provides compute and storage infrastructure components and may offer some level of system maintenance activities. Customers have direct access to the server and storage, much like on-premises systems, but are able to leverage the inherent advantages provided by cloud environments. The customer maintains ownership of their software stack's administration, including the operating system and database.

Database Platform as a Service (DBPaaS)

DBPaaS significantly raises provider control over the customer's environment. DBPaaS providers assume ownership of the operating system and database software. DBPaaS customers perform little to no operating system and database software administration activities. Most DBPaaS vendors offer subscription-based licensing that is driven by processing and storage consumption.

Hybrid DBMS Clouds

Hybrid DBMS clouds are the DBMS vendors' attempts to overcome a lack of consistency between public and private implementations.

Many database vendors' on-premises database offerings differ from their public cloud counterparts. In addition, public cloud implementations also differ from each other. Oracle, Amazon, and Google all offer cloud versions of MySQL and, although very much alike in many areas, they also have key differences.

The environments often differ in database features and functionality, data access mechanisms, administrative processes and interfaces, maintenance utilities, monitoring, security controls, backup/recovery, disaster recovery and tuning and performance.

A utopian hybrid DBMS cloud would be an environment that has a combination of public and private cloud DBMS architectures that are totally transparent and seamless to administrators and developers.

For developers, it would be an environment that allows 100% code compatibility between private and public clouds.

For DBAs, it would be an environment that is monitored and administered exactly the same way, regardless of whether that system is running on a server in the shop's data center or in the public cloud.

Cloud DBMS - Attractive, Cost Effective Alternatives to On-Premises Systems

The rapid growth of cloud DBMS offerings are providing organizations with cost-effective alternatives to on-premises systems. When calculating TCO and return on their database investment, savvy decision makers are now considering cloud DBMS architectures as attractive alternatives to more traditional on-premises database data stores.

RDX Recommendations

Evaluate Architectures - Not Products

In order to thoroughly evaluate public cloud based DBMS offerings, IT professionals must examine their architectures, not just DB products. This includes the vendor's costing models, provisioning mechanisms, interfaces, server hardware, storage architecture, operating system, database, security controls and edge technologies and products. The cloud DBMS vendor's architecture must be evaluated and compared to competing offerings.

Understand Vendor Lock In

Customers are often required to tailor their database deployments to the vendor's cloud based architecture. The amount of tailoring performed is directly proportional to the level of complexity and effort required to switch providers.

Choose Your Vendor Wisely

With most on-premises systems, your organization is able to control the entire environment – hardware, software and ongoing administration and maintenance procedures. With public DBMS cloud implementations, your system's availability, performance and security is also dependent upon a third-party cloud services provider. You will no longer be in control of your own destiny, so choose your vendor wisely.

Don't Expect Personnel to Become Experts Overnight

It will take time for your personnel to learn cloud based database systems. Depending on the vendor, their architectures can range from simple to complex. Any new architecture, including DBMS cloud implementations will require training time. Most vendor offerings have interfaces that allow customers to configure their cloud environment. Depending on the vendor, these interfaces can range from rudimentary to rocket science.

Staffing Changes May Be Required

Cloud DBMS architectures may require changes to your support team's organizational infrastructure. Database and application architects play an important role in the selection, configuration and implementation of cloud based DBMS platforms. The vendors also provide interfaces that allow users to administer the cloud DBMS system. There is a significant learning curve that must be overcome.

No Database is an Island

Most database systems are not stand alone. They take data feeds from other systems and may generate and refine data that is ingested by other applications. Performance becomes an issue when large files need to be transferred to the cloud database for ingestion or the cloud database sends data to other systems for processing. When selecting databases for cloud implementation, evaluate its interaction with other systems. If you don't, you may be spending time wrestling with the tasks of getting data into and out of the cloud database.

Expect Policy and Procedure Changes to Occur

Cloud DBMS systems are monitored and administered differently than their on-premises counterparts. New policies and procedures will need to be created and changes to existing documentation will be required.

Impact on Existing Toolsets

Application development, monitoring, administration and security tools that are standards for your shop may, or may not, work with the cloud architecture. You will need to evaluate the impact that the new cloud based environments have on your in-house toolsets.

Be Aware of Feature Mismatch

Cloud DBMS users can be affected by the consistency problems previously described in this paper. They find out that not all of the database features their applications rely upon are available in the cloud, or the access mechanisms they use don't work the same way. Personnel are then required to spend additional time reducing the negative impact of issues generated by the lack of consistency between public and private cloud DBMS architectures.

Security is Still an Issue

Is the data you are storing in the cloud regulated by internal or external security policies or protection laws? You are sharing the responsibility of securing your data with a third-party provider and are relying upon the quality of their security controls. This sharing of security does not mean that you turn the responsibility of securing your data over to the vendor. Shops choosing to implement cloud systems need to increase their level of scrutiny.

