**Cloud Landscape Review for Application Developers**

Part 1: Online Cloud Resources

**Amazon Web Services (AWS)**

[The 17 Ways to Run Containers on AWS - Last Week in AWS Blog](https://www.lastweekinaws.com/blog/the-17-ways-to-run-containers-on-aws/)

This article covers 12 ways to run web application containers on AWS. These tools simplify working with AWS, almost entirely automate migrations to the cloud, or host a web service. AWS Lambda, Elastic Beanstalk, Fargate, ECS, EKS, EC2, Lightsail, Lightsail Containers, App Runner, and Proton can run and host while tools like AWS Copilot and App2Container simplify configuring and deploying existing applications. This is a reputable source but can be hard to understand for those unfamiliar with the industry.

[Aurora vs. RDS: An Engineer's Guide to Choosing a Database - LWIA Blog (lastweekinaws.com)](https://www.lastweekinaws.com/blog/aurora-vs-rds-an-engineers-guide-to-choosing-a-database/)

AWS provides all the standard database systems and supports all major database engines with RDS. However, they also include their custom engine, known as Aurora. RDS delivers all the same features as the classic on-premises database. Aurora has a cloud-first architecture, enabling AWS to optimize throughput, resiliency, and size. At first, Aurora may seem superior in all ways, but there are limitations. For example, it only supports MySQL and PostgreSQL dialects, and its pricing model makes cost harder to cost. Additionally, it isn't ever free, even with AWS free tier. This is a decent source, but can be hard to understand for those unfamiliar with the industry.

[What is NoSQL? | Nonrelational Databases, Flexible Schema Data Models | AWS (amazon.com)](https://aws.amazon.com/nosql/)

AWS has several services to support alternate database paradigms. It touts high-performance NoSQL databases, enabling developers to leverage data that benefits from a NoSQL data model. Key services include Neptune and DynamoDB. This is a high-quality source.

[AWS Serverless Application Model - Amazon Web Services](https://aws.amazon.com/serverless/sam/)

AWS provides serverless functions and is a powerful tool for developing serverless applications. AWS Serverless Application Model (SAM) is a complete framework for modeling applications that run on serverless infrastructure. This includes local development and debugging, a supported IDE (Cloud9), Continuous Integration and Continuous Deployment, and an open-source community. This is a high-quality source.

[Cloud Storage on AWS (amazon.com)](https://aws.amazon.com/products/storage/)

AWS provides many cloud storage services. These include migrations, file and object storage, and backup services. S3 is a simple and popular way of storing objects, such as icons. This is a high-quality source.

**Microsoft Azure**

[Azure Containers—Services and Management | Microsoft Azure](https://azure.microsoft.com/en-us/product-categories/containers/)

Microsoft Azure provides an excellent table describing each container service's use cases. It includes managed container orchestration services such as Azure Kubernetes Service and Azure Red Hat OpenShift, serverless cloud functions with Azure Functions, and various deployment methods. Azure is notable for its descriptive naming of services. This is a high-quality source.

[Azure Cosmos DB – NoSQL Database | Microsoft Azure](https://azure.microsoft.com/en-us/services/cosmos-db/#documentation)

Cosmos DB is Azure's flagship NoSQL database service. They integrate several NoSQL APIs to be as developer-friendly as possible. It also touts high performance and virtually unlimited storage (if you've got the funds). They also extensively advertise their free features. This is a high-quality source.

[Azure Cloud Storage Solutions and Services | Microsoft Azure](https://azure.microsoft.com/en-us/product-categories/storage/)

This resource is an excellent table describing use cases for various Azure storage solutions. These include Azure Disk, Blob, Data Lake, Files, NetApp, Box, and secure Ledger solutions. Blob storage is notable as it integrates analytics, machine learning, and archiving. It's their flagship data storage product. This is a high-quality source.

[Azure SQL | Microsoft Azure](https://azure.microsoft.com/en-us/products/azure-sql/)

Azure SQL is the suite of SQL products and services offered. It includes migrations, managed database instances, or fully customizable database VMs. Azure supports SQL Server, MariaDB, MySQL, and PostgreSQL for SQL databases. \*Note that there are no Azure "Custom" databases, like AWS Aurora. This is a high-quality source.

[Azure Serverless | Microsoft Azure](https://azure.microsoft.com/en-us/solutions/serverless/#solutions)

Azure provides serverless services in several domains, from functions, serverless apps, AI and machine learning, databases, storage, monitoring, and analytics. They make it possible for a completely serverless architecture built on Azure infrastructure. They also include developer tools for serverless environments. This is a high-quality source.

**Google Cloud Platform (GCP)**

[Top 3 ways to run your containers on Google Cloud - YouTube](https://www.youtube.com/watch?v=jh0fPT-AWwM)

GCP provides three primary ways of deploying containers to the cloud. These include Google Kubernetes Engine for managed Kubernetes, Cloud Run for serverless containers, and compute engines optimized for running containers. These three simple options provide a wide range of flexibility. CI/CD is easy to set up through Google Container Registry. GCP even has a button to deploy containers from the registry using these three options. Additionally, GCP offers Anthos, a container cluster orchestrator that works in a hybrid-cloud environment. This is a high-quality source.

[Cloud SQL for PostgreSQL, MySQL, and SQL Server](https://cloud.google.com/sql)

Google advertises that Gartner named them an industry leader for cloud database management systems. They support managed MySQL, PostgreSQL, and SQL Server engines. Additionally, GCP databases easily integrate with other GCP services. This is a high-quality source.

[Datastore  |  Google Cloud](https://cloud.google.com/datastore), [Firestore: NoSQL document database  |  Google Cloud](https://cloud.google.com/firestore)

Datastore is GCP’s flagship product for NoSQL databases. They advertise SQL-like queries, indices, and even ACID transactions in a NoSQL context. Building on this, GCP built Firestore, a serverless document database. Firestore is also paired up with software developer kits in the most popular languages. This is a high-quality source.

[Cloud Storage  |  Google Cloud](https://cloud.google.com/storage)

GCP provides a several versions of storage, including “hot storage” that often serve data to applications and then varying degrees of archiving.

**Firebase**

**IBM Cloud**

**Alibaba Cloud**

**Tencent Cloud**

Part 2: Cloud Provider Summaries

**Amazon Web Services**

**Microsoft Azure**

**Google Cloud Platform**

**Firebase**

**IBM Cloud**

**Alibaba Cloud**

**Tencent Cloud**

Part 3: Cloud Provider Comparisons