**What are the NoSQL Databases? How are they different from the relational databases?**

NoSQL databases stands for non-tabular databases. NoSQL databases store data differently than relational databases. NoSQL databases come in a variety of types based on their data model. The main types are document, key-value, wide-column, and graph. They provide flexible schemas and scale easily with large amounts of data and high user loads. On the contrary, relational databases were built during a time that data was mostly structured and clearly defined by their relationships.

**Can you detail a couple of use cases where NoSQL databases might shine compared to relational databases?**

NoSQL allows for high-performance, agile processing of information at massive scale. It stores unstructured data across multiple processing nodes, as well as across multiple servers. As such, the NoSQL distributed database infrastructure has been the solution of choice for some of the largest data warehouses. Thus, NoSQL databases is a better option for internet companies to better manage and analyze datasets.

In addition, NoSQL databases is perfect to record real-time big data. It is used as both the front-end – to store and manage operational data from any source, and to feed data to Hadoop – as well as the back end to receive, store and serve analytic results from Hadoop.

**What are the advantages/disadvantages of deploying NoSQL/Relational databases on-premise versus the cloud (add details relating to IAAS/PAAS options and scalability)?**

**NoSQL/Relational Database**

**Advantages**

* Operate without internet: One of the major upsides to on-premises storage is that it doesn’t require users to have an internet connection to access data.
* Lower monthly internet costs: If your business doesn’t rely on the internet or cloud-based services, you may not need to pay for such a high-speed connection.
* Provide greater security: Unlike cloud-storage, which is more vulnerable to third parties and prying eyes, on-premises storage is completely restricted from anyone other than authorized personnel.
* Offer control over server hardware: Some companies enjoy having dedicated servers within their building to handle all their needs.

**Disadvantage:**

* Require extra IT support: If you decide you want to use on-premises storage, you’ll also need to have IT staff to maintain and manage your servers.
* Adherence to industry compliance:
* Increase maintenance costs: Along with the initial capital investment required to purchase servers and other hardware, you’ll also need to continue to buy hardware, software and licenses to upgrade the system or repair it.
* Require a greater capital investment: When you first set up on-premises storage, you’ll have to invest a significant amount of capital to purchase the servers and other pieces of hardware to get it running.

**Cloud Storage**

**Advantages:**

Cloud storage is a great option for many companies, as it provides cost-saving benefits along with functional ones like regular data backups and the ability to scale easily.

* Reduce IT staff’s responsibilities: As your cloud storage will be managed by another company, your IT staff won’t have to take the time to install new software patches or updates, freeing up their time for other tasks.
* Eliminate capital expenses: While on-premises storage is considered a capital expense, cloud storage is considered an operational expense. Typically, on-premises storage requires a large initial investment to purchase equipment and install it in the office.
* Adjust to your budget: To help companies keep their initial costs low, organizations regularly pay for cloud-storage on a month by month basis. No matter if you’re scaling up or scaling down, most cloud-based storage companies can adjust their prices to meet your budget.

**Disadvantage:**

* Internet determines user experience: When you use cloud storage, a fast and reliable internet connection is a must-have. A redundant Internet connection should also be considered if a majority of the workload will be hosted in the Cloud.
* Costs can balloon with little warning: The rapid scalability of cloud storage, while an advantage listed above, can also be a costly determent if left unmanaged.
* Access is based on connection: A downside of relying on the internet to store your files is that an internet outage can totally knock out your access to important files.

A screenshot of a computer

Description automatically generated with medium confidence

**What is a fully managed Neo4J service in GCP?**

Neo4j for Google Cloud is a tightly integrated, cloud-optimized, fully managed service that makes it simple to use Neo4j in a cloud environment. Neo4j for Google Cloud is native to Google Cloud Platform and specifically engineered on Kubernetes.

**Source:**

<https://neo4j.com/emil/whats-next-for-graphs-neo4j-google-cloud/>

<https://www.mongodb.com/nosql-explained>

<https://www.networkworld.com/article/2999856/10-use-cases-where-nosql-will-outperform-sql.html>

<https://www.morefield.com/blog/on-premises-vs-cloud/>

<https://www.bmc.com/blogs/saas-vs-paas-vs-iaas-whats-the-difference-and-how-to-choose/>