

What's on the Horizon for Big Data and Real-Time Drilling Data Management?

Q&A with David Johnson, Vice President of Product Management & Innovation, Petrolink.

What is a Private Cloud?

The volumes of data that we are receiving from real-time sensors continues to grow exponentially. In addition, the ways in which we want to use that information continues to expand. The growth in data and the demand for processing is causing an enormous increase in the amount of horsepower it takes to process the flood of information.

The industry has begun examining how Big Data principles can be applied to both acquisition, storage and analytical processing for drilling activities. Because this information is the lifeblood of an operation company, it needs to be treated as if it were intellectual property and thus handled as highly sensitive and confidential. New systems are combining Big Data capabilities with industry-leading security protocols which result in the equivalent of a Private Cloud.

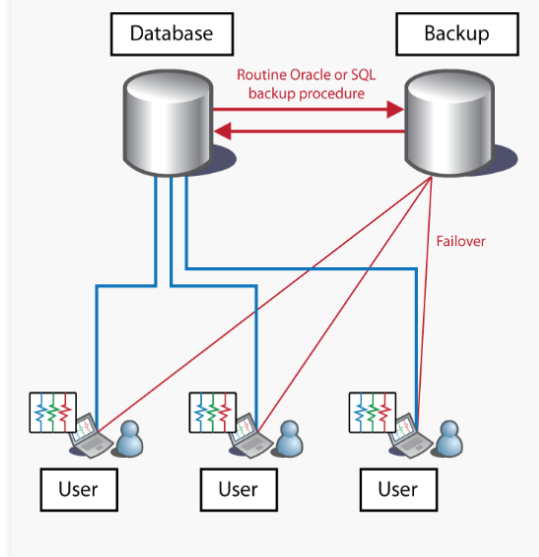


How does a Private Cloud infrastructure differ from a classic infrastructure?

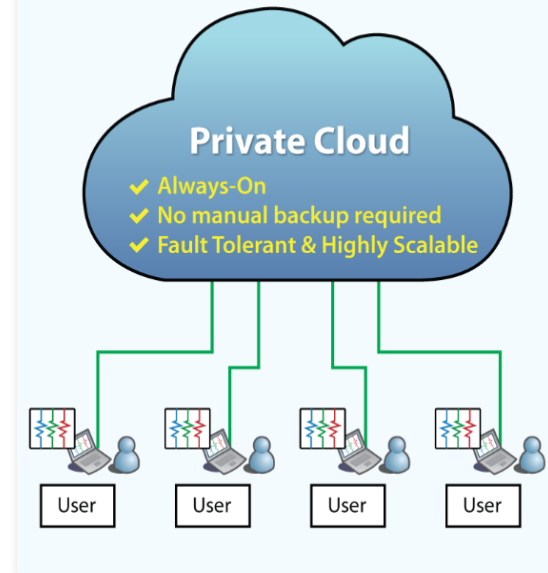
As the amount of data and users of that data increase, a classic infrastructure is no longer sufficient. Unless they are designed for scale, systems' performance and their ability to respond degrade as the capacity and data density increases.

Traditional infrastructures and the databases they are built on are designed and optimized for searching through the relationships inherent in the data. That's why they are deployed on relational database engines. However, when we consider Big Data and the challenges therein, we must optimize for data usage and mining based on a variety of indexes and key values. Therefore, most Big Data systems act by taking advantage of multi-threaded indexes and dispersed data concepts.

“Classic” Infrastructure



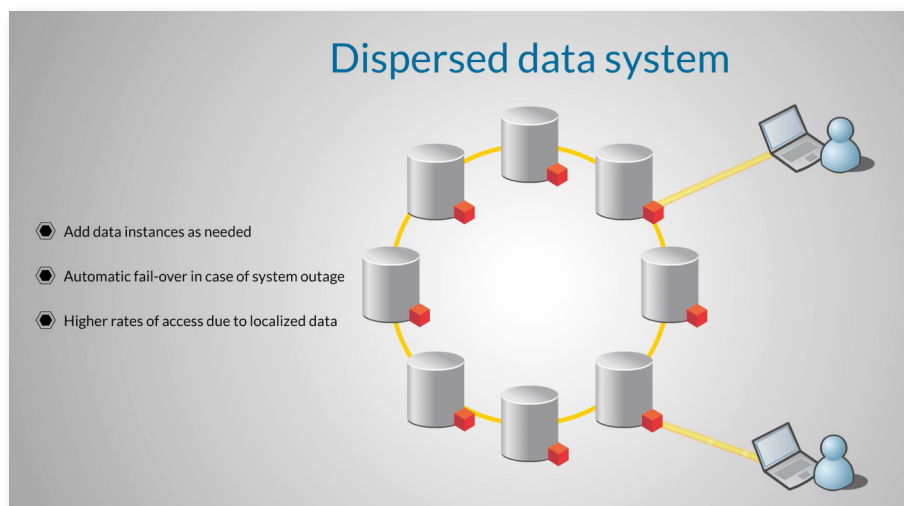
Big Data Infrastructure



What are the advantages of a Private Cloud infrastructure?

The advantages of Big Data systems are that they allow you to have the data and the analytical use of the data distributed closer to the problem. This results in a much more responsive system that can grow to handle extremely large amounts of information and still process effectively.

As the amount of data grows you can't effectively do nightly backups. You must be performing backups continuously which results in systems that are redundant so if you ever lose a portion of the data infrastructure there is no loss of information or processing capability. One of the key aspects of any Big Data system must be built-in redundancy.



How do companies derive value from their Big Data?

Next generation software and technology is being designed to work with high volumes of data in high density. This ensures that the analytical processes and answers you're trying to derive are based on all of the information, all of the time rather than selected pieces of data. Without this functionality, you run the risk of missing the critical point the raw data is trying to tell you.

Prediction through analysis

- Analysis of existing wells help us predict what to expect
- Using hundreds of wells predicts behavior
- These patterns are a dynamic model for future wells

