

SFR

Case Study

The Client

SFR is the second largest telecommunications company in France, turning over nearly €12 billion per annum. Headquartered in Paris, it provides a range of services – such as mobile phone, landline, internet, IP television and mobile internet - to more than 21 million customers which include consumers, large corporations and governmental agencies.

The Challenge

SFR is responsible for managing a national telecommunications network consisting of millions of interconnected components. If just one element of this network fails, it can have a knock-on effect and impact its customers.

As SFR is bound by service level agreements - backed up by financial penalties for unplanned downtime – it needed the ability to predict single points of failure and assess the impact any maintenance work could have. SFR also wanted to analyse the network to see if any mitigating steps could be taken to minimise downtime and disruption to its customers during maintenance work.

The company had a problem, however, in that the network was monitored by 30 different systems which were inflexible and expensive to maintain. Any attempts to enrich data modelling using these systems would prove costly and painful to implement. SFR consequently felt it was necessary to deploy an entirely new solution.

The Solution

SFR sought the advice of OpenCredo and, working with its consultants, resolved to deploy a NoSQL graph database. This solution offered a superior method of modelling a telecommunications network as its 1:1 mapping provides a more natural representation of a network's own physical components. This intuitive system would allow SFR to query the network to detect and assess the impact of any point of failure - without the need to rearrange or de-normalise data.

A Neo4j graph database was selected as it offers the most advanced and established technology in this field. It also has the added advantage of being an open source solution which allows for the rapid development of prototypes to demonstrate the system's potential. The deployment of Neo4j would also allow SFR to build its own database model on top of the platform.

OpenCredo's consultants were brought in to engage with SFR's 10 person internal project team throughout the entire process, from concept to production. By working closely together, SFR also facilitated the transfer of knowledge, in best practice and implementation, from OpenCredo consultants. This would allow SFR to operate independently going forward.

The Benefits

By deploying a Neo4j graph database, SFR created a single source of truth capable of analysing millions of components at a country level. This has enabled SFR to operate in a much more efficient manner with the result of improving customer service and reducing costs. This platform has also provided SFR with a scalable solution which is capable of facilitating future growth in the network.

Efficiency

The graph database has allowed SFR to query the network in a way that would have been impractical, if not impossible, previously. By being able to analyse the impact of a single point of failure, SFR's engineers now has the option to carry out maintenance differently, minimise the impact on the network and curtailed the cost implications.

"Neo4j is an obvious solution to explore for a graph network problem. It manages risk on the client side, and it also makes processes more efficient," - Project Manager, SFR.

Flexibility

As the graph database has provided a model which represents the physical telecommunications network in a more natural way, it is now much easier to make changes to the system. This has provided SFR with the level of flexibility required to build out the system and manage an expanding network without complications.

"Getting the model right allows everything to flow naturally, which is a process that is simple and powerful and works well using Neo4j," - Project Manager, SFR.

Self-reliance

SFR is now far more self-reliant, in regards to its business critical systems, as it is no longer dependent on obsolete systems which are controlled by external vendors. As it now possesses and manages its own system it has greater control of situations which could result in compensation claims.

By working closely with OpenCredo, and engaging in knowledge transfer, SFR now has the internal expertise required to manage the system without the need for ongoing external support.

"Our team wants to use state of the art methods and technology but it is difficult to always have the right knowledge internally - sometimes you need to bring in outside people."

Open Credo

OpenCredo believes great consultancy is founded in deep and broad real-world experience. Our highly capable and experienced people provide applied knowledge of the latest technologies and best practices to all our blue-chip clients. These capabilities stretch across the entire spectrum of the development process from architecture through software engineering to dev ops.

Transparent, objective driven and pragmatic, OpenCredo acts as a trusted advisor to its clients. It is a company founded on excellence in software engineering, and our approach is to lead and support through deed and example - delivering tangible value, not slide decks or fluff.

“Having Open Credo’s consultants shadow working in our office was a very effective way of upskilling our team. It would have been hard to implement the kind of changes if we had tried to achieve this over the phone.”

Challenge

To analyse a national telecommunications network, comprising of millions of interconnected components, and assess the impact of any single point of failure.

Solution

OpenCredo’s consultants worked with SFR to replace 30 inflexible systems with a Neo4j graph database. This has provided a single source of truth that is allowing SFR to interrogate the network using a 1:1 mapping model, which represents the physical network in a more natural way.

Benefits

- SFR is able to predict the impact of a single point of failure on the network and take mitigating steps to minimise the impact on customers. This is improving operational efficiency and delivering cost savings.
- The new system has the flexibility to manage change and scale up as the physical network grows.
- SFR is now more self-reliant as it is no longer dependent on external vendors for its business critical systems.

