Popcorn uses OrientDB to scale its Social Movie Network

Popcorn is a place where people share, discover and talk about movies. Larry Aasen and Eric Ying recognized that conversations about movies were quickly lost in Facebook and Twitter. That sparked an idea which became Popcorn: a new kind of social network based around movies, designed for short conversations that are different from what you may find elsewhere. Something more like Instagram for movies, and less like IMDB, that connects movie lovers and their conversations.

Movie lovers all around the world are staying socially connected thanks to the OrientDB database. The app is used by professional movie reviewers, enthusiasts and just about anyone who wants to share their thoughts about movies.

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- Larry Aasen, CTO and Cofounder, Popcorn Technologies

Early on during the design of Popcorn, the development team was looking at MySQL, PostgreSQL, Neo4j and OrientDB. Relational databases have been around for some time, but they perform poorly locating relationships. You must put a lot of thought at the start in your design by joining tables through foreign keys. Joins are slow, so the more you have, the slower your performance.

Not only do graph databases link connections but they also allow organizations to analyze and understand vast graphs of connected data. Not only can they find connections between different points of data, but they also can rank the relevance or weight of those relationships. This makes them perfect for social

Industry
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Challenge
Select a database for the Popcorn social network that is dependable, scalable, can be partitioned and low cost to start

Approach
Use OrientDB's graph database to connect movie lovers and their conversations

Solution
Utilised OrientDB's SQL dialect and graph structure to connect users

Result
Movie lover conversations and relationships are linked with easy installation and close to zero downtown in 2 years

networks and recommendation engines. Without joins, applications can benefit from the speed of graph databases.

After reading about the architecture of Facebook, Twitter, LinkedIn, and Instagram and understanding their data requirements, they understood the benefits and importance of using a graph database to represent the social data in a better way than provided by traditional relational databases. They needed to choose a database that avoided table joins, could scale and be partitioned and it also had to be dependable.

MySQL and PostgreSQL are well known and have a strong following, but they were ruled out pretty quickly. The team at Popcorn Technologies desired to use a modern graph database and this became more and more important. That left only two remaining choices: Neo4j and OrientDB. Both vendors offered reasonable technology for a graph database and were well supported by the vendor and communities. Also documentation was easy to understand.

Challenge

Use a graph database to show social relationships such as followers and likes, include saved and watched movies, timeline entries, and any other lists like a user's device list, or list of comments on a post. The nodes (vertices/nouns) would be represented by users, posts, devices, sessions, and any other normal database object. The edges (verbs) would be represented by following, likes, posted, timeline, and others.

Fast and Easy to Get Started

"Getting started with OrientDB is fast and easy. Just download a ZIP file to your computer, unzip the file, and start the server. That's it. I initially learned how to create vertices and edges using the supplied console app, which I found easy to use because of its SQL syntax," said Larry Aasen.

Supports Standard SQL

Some graph database solutions require learning new query languages, such as Neo4j's own query language called Cypher. Training is required to learn a new language. OrientDB's query language is built on SQL and is augmented with a few extensions to manipulate trees and graphs. Considering most developers are familiar with SQL, working with OrientDB is just easier.

"The fact that standard SQL was supported in OrientDB was a big plus. I did not want to learn another query language and I did not want to push a new language on my team."

- Larry Aasen, CTO and Cofounder, Popcorn Technologies

Feature Rich Community Edition

When it comes to databases, many solutions like Neo4j offer limited features in their community versions, with tools necessary to run production environments only available in enterprise editions. Instead, OrientDB Community edition includes scaling, replication and many security capabilities.

Low Total Cost of Ownership

There is absolutely no cost associated with using OrientDB Community Edition. Not only does it eliminate the need for multiple products and multiple licenses, with an Apache 2 license, there are no restrictions when using their open source community edition. Neo4j's licensing model GPL can be limiting as well as costly.

"If we could get by without paying licensing fees for the first million users, I would be happy. Incurring DB license costs later would be more reasonable."

- Larry Aasen, CTO and Cofounder, Popcorn Technologies

OrientDB's Fantastic User Community and Team

Golang was the language of choice for Popcorn, so the team decided on OrientGo, a Go client for the OrientDB database. This Go client was a critical part of the infrastructure and was also important for the success of OrientDB in Popcorn. When issues with OrientGo arose and brought development to a halt, the Popcorn Technologies Team worked with the OrientGo community to solve issues and create integration tests that showed reliable performance from the database while thoroughly verifying all aspects of the servers.

On a few occasions, the development team was not able to resolve problems on their own, but found answers to questions and problems on the OrientDB GitHub account. One issue with a table was resolved using a server-side function suggested by a Github user. They also posted other questions that were answered quickly by the OrientDB team.

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About OrientDB

The native multi-model database combines the connectedness of graphs, the agility of documents and a familiar SQL dialect. Fortune 500 companies, government entities and startups all use the technology to build large-scale innovative applications. Some of their clients include Accenture, Comcast, Ericsson, the United Nations, Verisign, Pitney Bowes, Sky, Diaku, CenturyLink and Sonatype.

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