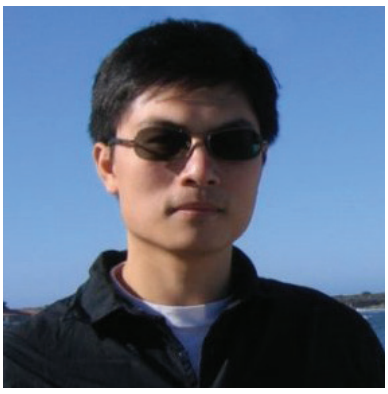
redislabs
home of redis

case study

Delivering Financial Market Data On-Demand with Redis Labs Enterprise Cluster (RLEC)

xignite



"I no longer have to worry about the availability of my Redis layer"

- Qin Yu
Director of Engineering

Xignite Challenges

- Need to avoid downtime
- Minimize operational costs of managing Redis

RLEC Benefits

- High Availability with real-time auto failover for Redis
- Most efficient use of hardware
- Low operational overhead due to automated scaling

Executive Summary

Xignite, Inc. provides cloud-based financial market data APIs to help emerging companies and established enterprises deliver real-time and reference financial market data to their digital assets, such as websites and apps. Redis is a critical technology layer for Xignite, powering high volume market data delivery with extremely low latencies. Xignite used Redis Labs Enterprise Cluster (RLEC) to enhance the availability of its Redis datasets with real-time auto-failover. RLEC also minimized the company's operational costs through automated scaling and more efficient use of its hardware.

Xignite.com: Financial Market Data APIs for Apps in the Cloud

Based in the Silicon Valley, Xignite was recently named one of the ten coolest brands in banking. Xignite's clients include more than 1,000 financial services, media and software companies from disruptive fintech firms, such as Betterment, FutureAdvisor, Motif Investing, Personal Capital, Robinhood, StockTwits, Wealthfront and Yodlee, to leading financial institutions, exchanges and market data vendors including, NASDAQ OMX, SIX Financial Information and BMO.

Qin Yu, Director of Engineering at Xignite.com, was faced with the pressures of delivering a technology architecture that could handle the massive volume of financial market data with sub-millisecond latencies. A thorough understanding of databases and their best use cases was required to curate the best technology solution for Xignite. Open Source Redis was an obvious choice for any data that required fast access, as well as complex computations via in-memory analytics. Qin chose Redis for its versatile data structures, commands and Lua scripting support, which made it the simplest, fastest way to crunch the data delivered by Xignite.

But outages had the potential to wreak havoc and could cost the company dearly. As Xignite's client base grew, it was more important than ever to reduce downtime. Qin had to find a way to reliably scale the business' usage of Redis while mitigating the risk of downtime or data loss.

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Solving for High Availability with Real-Time Failover

Open Source Redis is used at Xignite, in particular to power its market data cloud platform with lightning fast access to requested market data, for complex computations close to the data with Lua scripts, and for powering publisher/subscriber interfaces. Redis needed to be always on and always available.

Xignite evaluated several options to avoid downtime, including open source Redis and alternate Redis services, before testing Redis Labs. With these other approaches, the team found that downtime often required time and effort to resolve, but more importantly, loss of service to clients for up to an hour could really impact their business.

On testing Redis Labs Enterprise Cluster (RLEC), they found it could help them scale their Redis easily on the same server or to multiple instances without performance impact or downtime. Not only could RLEC provide real-time, instantaneous failover, it did so while continuing to support all Redis commands and functionality such as key expiration. Qin said, “We ran RLEC in house, installed it, tried it, and the auto-failover just worked!”

While other services failed to shield Xignite from downtime, Redis Labs easily provides scalability and automatic failover. Also, when using replication with alternate services, Xignite found that it no longer had access to all Redis functionality. Other services were also quite expensive and inefficient in their usage of server capacity. RLEC empowered Xignite to meet its customers’ needs and freed them from the operational costs associated with managing its vital Redis datasets.

Results with RLEC

Redis Labs Enterprise Cluster provides Xignite with several operational benefits – not only is Redis now highly available and protected against outages at different levels, the company also saves on operational resources. With RLEC’s ability to seamlessly scale by creating new shards on the same or any available servers, Xignite is simultaneously assured of the optimum hardware utilization and performance. The low operational hassle associated with RLEC’s automated monitoring and balancing of shards ensures that Qin’s team can focus on development issues and not worry about Redis.

Qin has peace of mind with RLEC. “I no longer have to worry about the availability of my Redis layer – its one less problem to worry about in my IT stack,” he says. “And I save more than I had expected on hardware and operations personnel time!”