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case study

Spot.IM

How to handle >1 billion page views a month cost effectively

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- Ishay Green
CTO, Spot.IM

Spot.IM Challenges

- Next generation architecture requires extremely low latencies from primary database, Redis
- Need seamless scalability, high availability and high performance at a low cost

RLEC Flash Benefits

- Seamless scaling, no maintenance worries
- True high availability – no outages, no latency issues
- High throughput and low latencies at up to 70% lower costs compared to pure RAM

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Executive Summary

Spot.IM's next generation community engagement platform is architected for blazing fast responsiveness and incredible scale, in order to power conversations with over 200 million unique users over thousands of websites. The platform handles thousands of requests per second, and processes over one billion page views a month. To achieve this with simplicity and high performance, Spot.IM relies on enterprise-grade, highly available, seamlessly scalable Redis from Redis Labs. With Redis on Flash, using AWS SSD instances, Spot.IM is now able to deliver the same real-time high throughput and extremely low latencies at 70% lower costs compared to a pure RAM solution.

Spot.IM: Cutting Edge Technology for Next Generation Media Experiences

Spot.IM's innovative community engagement platform helps customers turn website visitors into a community. Partners such as Time Inc., Meredith, LittleThings and others in total generate over one billion page views per month. In order to power social conversations on leading entertainment and media websites such as Entertainment Weekly and LittleThings.com, Spot.IM must provide seamless transitions from web page viewing to interactive dialog. It's not surprising that Spot.IM CTO Ishay Green had to re-imagine the company's application and infrastructure architecture to ensure minimal latency and deliver extreme responsiveness.

Ishay built his inventive application platform with an architecture that places all services in memory—achieving incredible scale with impressive simplicity. Using Elixir to parallelize Redis requests and node.js' pre-rendering architecture, Spot.IM's cutting edge application can handle any kind of traffic peak (from 100k to 500k messages/second on AWS), while keeping the CPU on database machines under 5%. This is key, since Spot.IM projects it will get to 7 billion page views by the end of 2016.

Redis Labs Provides the Critical Redis Backbone

Spot.IM chose Redis as its primary database because of its unparalleled performance and versatility at handling every type of data processing scenario with simplicity and low latency. With Redis playing such a critical role in Spot.IM's architecture, high availability, seamless scalability and low operational overhead are critical for its operation.

Redis Labs was chosen to provide this enterprise-grade true high availability and easy noiseless scaling for Redis. Redis Labs also provided the added advantage of completely relieving Spot.IM of any operational effort around managing Redis. Redis Labs delivered stable, linearly scaling high performance, which helped Spot.IM handle 400,000 to one million user requests a day, to and from third-party websites, at sub-millisecond latencies.

“While architecting our system, we decided to take Google’s early approach of placing the whole internet index in memory. It was a bold decision then and it is a bold decision today. The basic idea is that our main database is also our cache system—everything is updated in real time,” says Ishay Green. ”I am yet to encounter limits with Redis Labs’ scalability. It allows me to handle peaks in traffic that grow 2000% without any need to scale my database infrastructure.”

To Infinity and Beyond: Cost Effectively

As Spot.IM scaled out its architecture, the team turned to Redis on Flash in an AWS VPC environment. This helped optimize the costs of running Spot.IM’s highly demanding application without compromising on responsiveness or performance. With Redis on Flash delivered as Redis Labs Enterprise Cluster (RLEC Flash) on AWS SSD instances, Spot.IM can maintain extremely high throughput (up to one billion page requests per month) at 70% lower costs compared to a pure RAM solution.

“Our distributed social network is growing constantly in terms of traffic and content,” says Ishay Green. ”As our data grows, we need to find ways to scale out the storage in a cost effective way, without impacting the quality of the service. RLEC on Flash gets us there by delivering a cost-effective, high performance, in-memory database for our highly responsive platform.”

Results with RLEC

Redis Labs’ Redis delivers the stable high performance, high availability and ease of operation needed for Spot.IM’s massively scalable infrastructure. The technology team at Spot.IM built a state-of-the-art application architecture, with pioneering thinking around database technology. Now they can reap the savings of their original thoughtfulness, and exploit the latest advances in memory technology and RLEC Flash.