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> — Dwayn Matthies, Senior Platform Engineer, Super Evil Megacorp

Leveling up Mobile Gaming

Delivering a consistently engaging player experience that can scale quickly and cost-effectively

Super Evil Megacorp has a simple mission: to build the best core gaming experiences for the touch screen generation and thereby the most played games in the world. The company's Vainglory title is a perfect example of how it just might succeed. Designed for today's mobile and tablet devices, this multiplayer online battle arena (MOBA) is a battle between two teams (3 players vs. 3 players), where people play with and against each other in real time. Each player controls a single hero, and the goal is to shatter a giant crystal called the Vain in the center of the enemy team's base. To deliver a responsive and uninterrupted top-tier player experience on mobile devices as the number of players grows, the company requires a robust data platform.

The Challenge: Stay ahead of the competition by captivating players

"Above all, we want to make sure all our players have a completely engaging, low-latency experience," says Dwayn Matthies, Senior Platform Engineer at Super Evil Megacorp. "Our players need to react in real time to what's going on around them. If their experience is poor, or if there is any significant lag, players will go search out another game to fill that hole in their time."

Naturally, Super Evil Megacorp depends on its data platform to deliver a consistently great gaming experience. When the company's existing platform began to struggle, it began to explore other options. "Keeping our players happy and engaged in our game is key for our success," says Matthies. "We want to eliminate any concern about data durability and consistency to ensure players stay happy."

Scaling was also difficult. "We were reaching 100 percent workload and had nowhere to go," says Matthies. "And we have to make sure to avoid downtime to keep our players playing."

The Solution: Making the switch to Couchbase to ensure the best player experience

As Matthies and his team began to evaluate NoSQL data platforms, they gravitated toward Couchbase. "In my opinion, Couchbase has the right fundamental design. For example,

To stay ahead of the competition, Super Evil Megacorp needs a data platform that can:

- Deliver exceptional low-latency performance, enabling players to have an immersive gaming experience

- Scale quickly and cost-effectively so the company can continue to register new players and expand into new geographic regions while controlling costs

- Help ensure high availability, avoiding the downtime that can ruin the gaming experience and drive players to other games

the way it uses virtual buckets to organize and efficiently distribute information just makes sense," says Matthies. "We saw a fundamentally sound system that could scale and provide low latency."

Couchbase also offered an opportunity to reduce hardware requirements. "We knew Couchbase would run—and run well—on commodity hardware," says Matthies. "Because Couchbase supports multi-threaded applications and uses disks along with memory, we knew we wouldn't have to run any huge nodes. And with Multi-Dimensional Scaling, we could easily grow the parts of the infrastructure in way that best fits our needs."

To test Couchbase, Matthies and his team ran a proof of concept. "We demonstrated that the response time of Couchbase was comparable to our previous solution," says Matthies. "With Couchbase, we could achieve sub-millisecond latency while getting back more data than before. It was clear that Couchbase would work well for us."

Super Evil Megacorp deployed Couchbase on AWS. The company currently uses r3.2xlarge nodes, each with 8 vCPUs and 61 GB of memory.

Migration went smoothly across multiple geographic regions. The team began with the game's guild module, then moved to other game modules, and ultimately migrated the core player accounts, which involves tens of millions of players across the globe. "By conducting hot migrations, we were able to avoid downtime and provide a seamless experience to players," says Matthies.

The Result: Maintaining an immersive player experience that is ready to scale

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Delivering engaging, responsive gameplay on mobile devices

For any gaming company, providing an immersive, low-latency gaming experience is a top priority. "I can't do business if I can't provide a great player experience," says Matthies. "Couchbase gives us sub-millisecond latency that keeps players engaged and in the moment. We can deliver the exciting, real-time interactions that millions of players crave."

Supporting tremendous scalability for customer growth

Super Evil Megacorp now has the scalability to accommodate large-scale player growth. That scalability is critical as the company expands into new regions. "With Couchbase, we know we can scale to accommodate even 10x growth. To scale Couchbase, we can just add nodes—we don't have to pay to use larger ones. As a result, we can expand our business without our technology slowing us down."

Staying focused on innovation

Migrating to Couchbase should help the Super Evil Megacorp team spend less time dealing with crises and more time on innovation. "We have a small team handling both our platform engineering work and our live ops," says Matthies. "In the past, a large issue could require our team's attention for several days. With Couchbase, we anticipate having more time to work on improving the game's code."

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Dramatically reducing database costs

By moving to Couchbase, Super Evil Megacorp also expects to realize huge savings. Instead of using large, costly nodes, the company can use smaller nodes along with cost-effective disks for running Couchbase. With seven clusters spread across the globe, the savings will add up fast. "When we complete our migration to Couchbase, we could save 60 to 70 percent of our monthly database spending," says Matthies.

Looking Ahead: Reducing round-trip time for authentication

The Super Evil Megacorp team is considering implementing Couchbase Cross Data Center Replication (XDCR) in the future to help minimize latency during authentication. "Currently, when a player in Brazil logs in, the credentials need to be validated on a server in Oregon," says Matthies. "By using XDCR, we might be able to avoid having to send data half way around the globe and back to complete the authentication process."

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Visit couchbase.com to learn more about the world's most powerful NoSQL data platform.