Case study
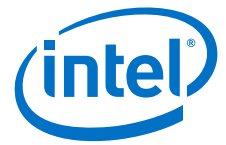
Jingit generates breakthrough performance with HP Moonshot

Innovative solution provider takes brand marketing and consumer engagement to the next level on HP Moonshot System

Industry
Consumer incentive and payment platform

Objective
Test Jingit's high-speed consumer incentive and payment application on low-power, high-density bare metal servers to determine if they perform better and more cost effectively than running virtual machines in the cloud

Approach
Run the Jingit transaction engine on the HP Moonshot System with HP ProLiant m710 Servers and generate simulated workload on HP ProLiant m350 Servers

IT matters
• Improved performance for payment transactions from 100,000 to 220,000 transactions per second

• Reduced cluster crosstalk latency enough to support real-time delivery of incentives to consumers as they shop

• Gained scalable infrastructure that consumes 90% less space than traditional infrastructure

Business matters
• Creates greater opportunities for brands and retailers to develop more ambitious consumer marketing campaigns

• Reduces the price for performance compared to the cloud, supporting higher profitability

• Provides more deployment flexibility to bring the processing power closer to the point of activity to improve the consumer experience

"**Having a system like Moonshot enables Jingit to innovate and deliver linear and reliable scale to create a boundless opportunity for our brands and retailers to innovate and reimagine their campaigns.**"

– Todd Rooke, Co-Founder, Jingit

Innovative solution provider Jingit needs to run its first-of-a-kind transaction platform at incredible speeds to deliver incentives and remit payment rewards for consumers in real time as they shop. In tests running the Jingit platform on HP Moonshot, Jingit increased performance from 100,000 to 220,000 transactions per second while reducing cluster node crosstalk latency, all at lower cost than its current cloud solution. With these results, Jingit has an infrastructure solution that will enable its brand and retail customers to develop more creative marketing campaigns to drive sales and strengthen consumer loyalty.

Jingit is transforming the way brands, retailers, and consumers interact. The company has developed the first-ever transaction platform that merges advertising and payments to incent consumers with instant cash offers for interacting with and/or purchasing particular brand products.

The Jingit platform helps brands reach their target consumers with videos, questionnaires, and personalized offers to influence their store selection and shopping behavior. It also fuels instant purchase decisions by serving consumers offers on their smart phones while in the store, or to their shopping carts when shopping online. And Jingit feeds intelligence on every point of consumer interaction back to the brands and retailers so they can track the return on their marketing investments, as well as continue the conversation to build ongoing loyalty.

To enable all this, Jingit must move merchandising content and money at extremely high velocity. Every time a consumer accepts an offer, Jingit moves money instantly from the brand's account to the consumer's account to eliminate any possibility of going over budget for an individual campaign. This reservation based multi-party transaction process must not only perform in real time, but also scale to handle hundreds of thousands of consumers all responding simultaneously - while protecting the consumers privacy.

Jingit has traditionally run its platform on virtual machines in the cloud, using the VoltDB in-memory operational database to enable real-time transactions. The company can already process many times more transactions per second than traditional payment processors—and it wanted to go even faster. So when Jingit discovered the HP Moonshot System, it saw an opportunity to amp up its performance to a whole new level.

Grant Wood, Jingit's Principal Architect, explains, "We have to run our money system at incredible speeds and latency is a big concern. We wanted to see if moving our platform onto a low-power, high-density bare metal server like Moonshot would perform better than what we're getting in the cloud."

Moonshot exceeds performance expectations

Jingit set up a test environment comprised of an HP Moonshot 1500 Chassis populated with HP ProLiant m710 Servers running the Jingit platform. With its turbo-charged Intel E3 processor, the ProLiant m710 delivered the necessary horsepower to match Jingit's transactional requirements in a compact power-efficient form factor offering breakthrough economics. The company also set up a separate Moonshot System with HP ProLiant m350 Servers to generate simulated workloads for the test environment.

"We pummeled the transaction engine with more than 100 load generators," says Wood. "Jingit executes multi-currency, multi-party transactions and can typically handle about 100,000 transactions per second on our current platform in the cloud. The numbers we got out of Moonshot were on the order of 220,000 transactions per second, which greatly exceeded our expectations."

"The speed with which Jingit executes financial transactions on the HP Moonshot System is groundbreaking. Using production-ready systems, they doubled the performance to over 220,000 transactions per second. Jingit is applying their deep understanding of high-performance computing combined with the capabilities of the HP Moonshot System to redefine high-speed commerce transactions."

– Susan Blocher, HP's Vice President of Moonshot Product Management

Customer at a glance

HP Moonshot System
- HP ProLiant m710 Servers
- HP ProLiant m350 Servers
- HP Moonshot 1500 Chassis

Software
- Ubuntu 14.04
- Jingit Transaction Engine
- VoltDB 4.6.1
- Apache Storm 0.9.3
- Apache Kafka 0.8.1.1
- Apache Zookeeper
- Jingit load Generator Engine

HP Services
- HP Discovery Lab

Our partners support

Moonshot also addressed Jingit's latency concerns. The money system, which is the centerpiece of the Jingit solution, is very sensitive to latency due to complex interactions with numerous other systems at high rates of speed. Running on bare-metal servers in a dense Moonshot System, Jingit's money system has lower latency between the direct nodes, as well as any other systems brought into the Moonshot chassis.

"In our tests, latency on the HP Moonshot System was not only lower than our legacy system, but it was more consistent under load, which is more important to our use case," reports Wood.

Greater flexibility to grow and innovate

With its dense, efficient architecture, HP Moonshot provides Jingit with more flexibility to explore creative deployment options. For example, since HP Moonshot is a compact, integrated system Jingit can distribute its architecture and bring the processing power closer to the point of activity and boosting performance across its transaction platform without displacing a great deal of precious space and power resources.

In its own data center, Moonshot will enable Jingit to grow the infrastructure at the same pace as the business, while keeping its footprint under control.

"Our platform is designed to scale horizontally, and Moonshot makes this very easy," notes Wood. "When we need more performance we can just spin up new instances and elastically add them to the cluster. With the high-density Moonshot chassis I've got servers available when I need them. That makes it very easy to change workloads."

Wood adds that because of the dense Moonshot architecture, Jingit's data center footprint will be a fraction of what it would be using traditional infrastructure. This will also help keep costs in check. "We've found that Moonshot offers a very favorable price for performance compared to the cloud," he says.

Delivering high performance, low latency, seamless scalability, and outstanding economics, HP Moonshot provides Jingit with a powerful solution for driving innovation.

Todd Rooke, Co-Founder of Jingit, says, "Having a system like Moonshot enables Jingit to innovate and deliver linear and reliable scale to create a boundless opportunity for our brands and retailers to innovate and reimagine their campaigns. There's no need to limit creativity. If they can conceive a new idea for driving customer engagement, we're confident Moonshot will enable Jingit to deliver."

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