



# Ongame Powers High Transaction Online Poker System with MySQL

In the late 1990s, two Swedish students decided to take a break from their university studies. Traveling across North America, they made a living as professional poker players. A couple of years later, upon their return to Sweden, they started an online poker site – PokerRoom.com. Today the site, in which two million hands of poker are played per day, is run by a subsidiary of its parent company, Ongame.

Ongame's PokerRoom.com is one of the largest poker sites online. Ongame has developed a platform offering other gaming portals' customers a place at PokerRoom.com tables. This reflects a trend within the online gaming industry where different gaming services are being aggregated into one virtual location. During peak hours, 12,000 players occupy the poker tables. Since each bet, each played hand and other data are recorded, the database often handles 2,000 transactions per second.

When the founders of PokerRoom.com set up shop in their basement in 1999, they started out with a small budget. The founders had to build the game system with available, low-cost tools and infrastructure software. They chose a classical open source solution with Linux, Apache, MySQL and PHP, known as the LAMP stack, along with applications written in Java.



*"Speed, scale and reliability are everything."*

**Bjorn Melinder**  
CTO  
Ongame



## Gaming is Serious Business

The Ongame poker system consists of a multiplayer game server with MySQL at its core and a Java-based client that runs in any standard browser. About 1 million hands are played at PokerRoom.com each day, sending 100 million queries to a MySQL database. Approximately 20 Gigabytes of data are contained in the database consisting of more than 300 tables. The largest table, which logs played poker hands, contains 30 million rows.

While inexperienced players can play for “points,” more experienced players can join games played for real money, making secure financial transactions critical to the system.

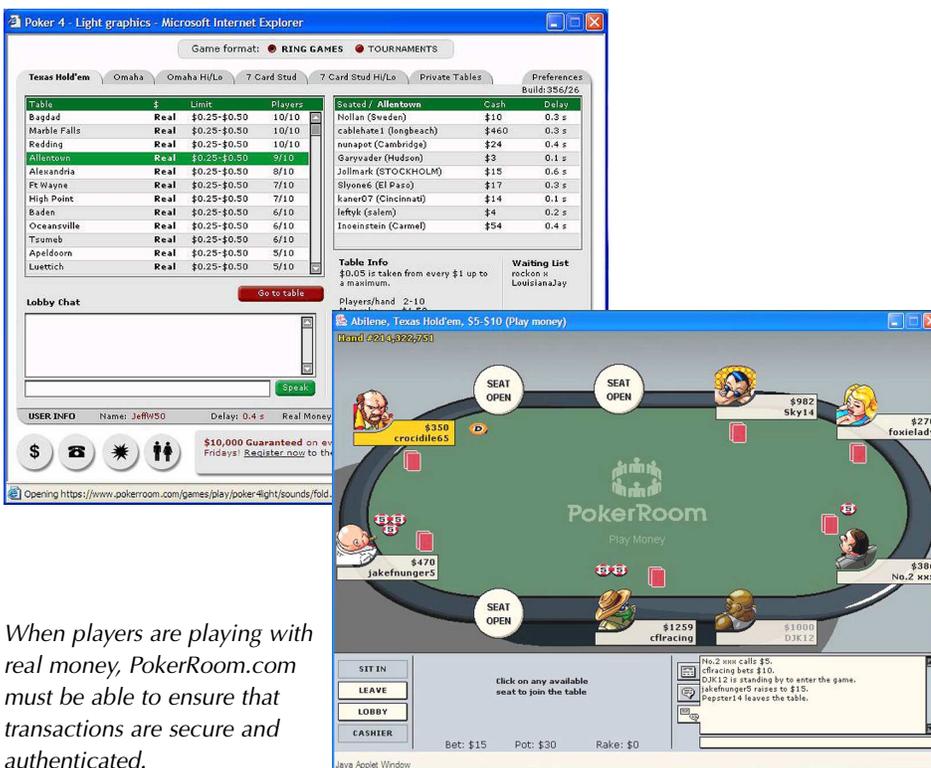
In addition, the system must deal with deliberate attempts to cheat, such as false player identities and credit card frauds. The system must also uncover more sophisticated cheating, such as when two players team up and secretly share information to win from a third player.

To uncover such systematic cheating, Ongame has developed a neural network that constantly monitors ongoing games and player activity, flagging for any anomalies. Any deviations from the norm are handled and flagged within in the MySQL database.

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*“When growing at our speed, it’s essential that tools are easy to use, since there simply isn’t time to sit back for three months and carefully make design changes.”*

**Anders Thor**  
DBA  
Ongame



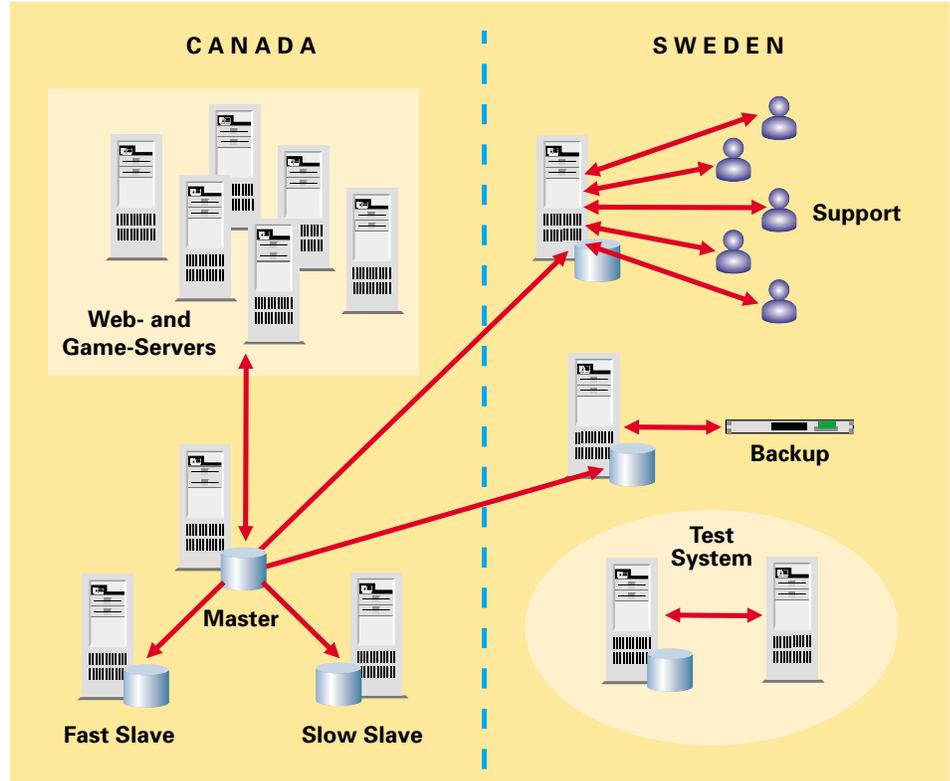
When players are playing with real money, PokerRoom.com must be able to ensure that transactions are secure and authenticated.

## High Transaction Volume

Ongame intends to expand its business using MySQL. "We need to develop software and get it up and running quickly. Speed, scale and reliability are everything", said CTO Bjorn Melinder. "MySQL meets all those criteria."

Ongame's aim is to increase its volume more than twenty-fold within the year, putting extreme demands on the database engine. Consultants from MySQL AB are helping the company to scale the system accordingly.

"Although the big proprietary databases have more features, and developers might miss their pet tool, we never saw a lack of features as being a problem with MySQL," said Melinder. "As long as MySQL keeps up with our scaling, we'll stick to it. We're currently looking at MySQL Cluster to serve our bold expansion plans."



### Technical Environment

The system runs under Red Hat Enterprise Linux with MySQL 4.x. The game server and clients are run from a dozen Dell 2650 machines with two 2.8 GHz Xeon processors each. They feed data to another Dell 2650, acting as database master, with two slaves taking care of less critical information.

These computers are all located in Canada, but the master is replicated onto two machines located at the company's Swedish headquarters. The mean load is 2,000 queries per second with peaks of 4,000 queries per second. Queries are handled by three replicating machines where one is a read/write master and the other two are read-only slaves.

## About MySQL

MySQL AB develops, markets, and supports the MySQL database server, the world's most popular open source database. With over five million active installations, MySQL has quickly become the core of many high-volume, business-critical applications.

Major corporations such as Yahoo!, Sony Pictures Lucent Technologies, Digital Entertainment, HP, Motorola, NASA, Xerox and Cisco rely on the ultra-fast, highly-reliable MySQL database. MySQL is available under the free software/ Open Source GNU general public license (GPL) or a non-GPL commercial license.

For more information about MySQL, please go to **[www.mysql.com](http://www.mysql.com)**.



The World's Most Popular Open Source Database