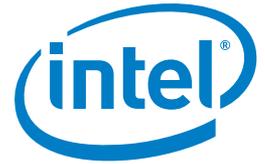


CASE STUDY

Intel® Xeon® processor 5600 and 7500 series
Enterprise Server
Performance for Data-Intensive Computing
Mission Critical



Capitalizing on a robust platform

FXCM Inc. (NYSE:FXCM), a global online provider of foreign exchange trading, refreshes its systems with Intel® Xeon® processors to help ensure rapid execution of trades

In the foreign exchange market, a price change of one-hundredth of a penny can mean the difference between profit and loss for a trader. FXCM helps traders capitalize on these changes, which occur within milliseconds, by using technology that delivers rapid, intelligent trading executions and facilitates direct interactions with financial institutions. The company recently refreshed servers with the Intel® Xeon® processor 5600 and 7500 series to accelerate trades, accommodate periodic usage spikes, and ensure high application availability while controlling data center real estate.



"We do our homework....The performance, memory bandwidth, and energy efficiency of the Intel® Xeon® processor 5600 series made those processors a clear choice for our applications."

*- Ivan Brightly,
Chief Information Officer,
FXCM*

CHALLENGES

- **Accelerate trades.** Help deliver rapid trade execution for customers that trade currency based on market events.
- **Accommodate high peak loads.** Provide the processing capacity to support spikes in usage following the release of key market indicators.
- **Increase reliability.** Help ensure that customers can access FXCM applications around the clock to trade foreign currency.
- **Control power and real estate.** Expand the processing power and capacity of the FXCM infrastructure while controlling the power, cooling, and real estate consumed by servers.

SOLUTION

- **New Dell servers based on Intel® Xeon® processors.** FXCM refreshed servers with Dell PowerEdge* servers based on the Intel Xeon processor 5600 and 7500 series. Servers are equipped with Intel® Gigabit ET Dual- and Multi-Port Server Adapters to keep latency low. Intel® software development tools help FXCM developers optimize application performance for the Intel platform.

IMPACT

- **Increased trading performance.** Compared with previous systems, the new servers have helped accelerate trades and reduce latency.
- **Handled peak loads.** FXCM now has the capacity to deliver outstanding performance even during periodic usage spikes.
- **Improved availability.** The company has experienced 100 percent uptime with systems based on the Intel Xeon processor 7500 series.
- **Controlled real estate.** FXCM expanded capacity and added services without significantly increasing the real estate occupied by new systems.

Technology has helped FXCM quickly become one of the largest online retail foreign exchange providers. Founded in 1999, the company's real-time online trading applications are designed to simplify the buying and selling of foreign currencies. The FXCM No Dealing Desk* execution model uses FXCM technology to provide fast, automated, and fair transactions directly between traders and financial institutions.

FXCM continuously refreshes its servers to deliver the fastest possible trade executions. "Whether customers have implemented automated trading strategies or are placing trades based on particular market events, they need trades to be executed quickly, with minimal latency," says Ivan Brightly, chief information officer at FXCM. "The faster we can execute trades, the more likely we will be able to give customers the price they want, and the more likely we will keep those customers."



Delivering rapid trades with Intel® Xeon® processors

While performance is a top priority, FXCM also needs servers that can deliver the reliability and availability to support 24-hour trading plus the energy efficiency to control operating expenses. "The foreign exchange market operates around the clock. Systems must be available whenever our customers are ready to trade," says Brightly. "At the same time, we are always trying to minimize the power and real estate consumed by our infrastructure so we can continue to expand services without adding significant costs."

Refreshing the infrastructure with Intel® technologies

For a recent server refresh, the FXCM team selected Dell PowerEdge servers with Intel Xeon processors. The company decided to use Dell PowerEdge M610 blade servers equipped with the Intel Xeon processor 5600 series to run proprietary trading applications. "We do our homework. FXCM Labs is constantly testing new technologies that might help us enhance our products," says Brightly. "The performance, memory bandwidth, and energy efficiency of the Intel Xeon processor 5600 series made those processors a clear choice for our applications."

The FXCM team chose Dell PowerEdge R900 and R910 servers with the Intel Xeon processor 7500 series as the standard for running Oracle* databases. "We selected the Intel Xeon processor 7500 series for the reliability, clock speed, and thread counts those processors could deliver for our high-end database servers," says Brightly.

FXCM developers use Intel software development tools, such as Intel® VTune™ Performance Analyzer, the Intel® C/C++ Compiler, and Intel® Threading Building Blocks (Intel® TBB), to help optimize FXCM applications for the Intel® platform.



Intel Gigabit ET Dual- and Multi-Port Server Adapters help keep latency low. "The drivers supplied with the Intel® server adapters are very stable and require fewer patching cycles than competing server adapters," says Brightly. "With larger buffer sizes than adapters from other vendors, we can reduce message loss even under high loads."

Accelerating trading execution

The new Intel® processor-based servers are helping to deliver the execution speed that traders need to succeed in rapidly changing foreign exchange markets. "Compared with previous-generation servers, the new servers have substantially improved trading execution speed," says Brightly. "By using Intel processors in combination with our No Dealing Desk execution model, we can offer customers an exceptionally fast trading experience."

Improving application availability

FXCM is capitalizing on advanced reliability capabilities to help ensure systems are available when customers are ready to place trades. For example, Intel® Machine Check Architecture Recovery, a feature of Intel® Advanced Reliability Technology, allows the operating system to take corrective action and continue running when uncorrected errors are detected. "Some of the resiliency capabilities offered with the Intel processors were previously available only with high-end RISC-based systems," says Brightly. "In the three months since deploying servers based on the Intel Xeon processor 7500 series, we have experienced 100 percent uptime."

Accommodating peak loads

The FXCM systems now have the processing power, memory capacity, and I/O bandwidth to accommodate short-term spikes in trading workloads. "We design our infrastructure to handle peak loads, whenever they might occur," says Brightly. "Using new servers with Intel Xeon processors and Intel Server

SPOTLIGHT ON FXCM INC. (NYSE:FXCM)

FXCM is one of the largest global online providers of foreign exchange trading, catering to both retail and institutional markets. With more than 150,000 active accounts in over 180 countries, the company now executes more than 6,700,000 trades each month, or 310,000 trades every day.

Adapters, we can process large transaction volumes in short periods of time while still keeping latency low."

Controlling energy and real estate

By deploying blade servers based on the energy-efficient Intel Xeon processor 5600 series, FXCM has expanded its server infrastructure while controlling power, cooling, and real estate requirements. "The processors we select must deliver the greatest possible performance for our given power constraints," says Brightly. "With the new Dell servers based on Intel Xeon processors, we can continue to improve execution performance and support a growing number of customers without significantly increasing data center power use or real estate."

Expanding the product line

The new Intel processor-based servers have provided FXCM with a robust foundation for introducing new capabilities for existing products and offering new solutions. "The new server acquisitions have given us the processing power to launch several new processor-intensive products, such as the Dow Jones FXCM Dollar Index Basket* (USDOLLAR)*, our new tradable index basket," says Brightly. "Going forward, we plan to continue to adopt the latest Intel processors to support new product development and enhance the trading experience of our customers."

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