

Rebel.com Improves Server Density 3.8X by Utilizing Virtuozzo 7 in its AWS Environment

“Using Virtuozzo 7 on top of Amazon EC2 instances has allowed us to increase our server density by 3.8X and provide a competitive service offering in the cloud. Oversubscribing resources during periods of light usage while maintaining the ability to easily scale has helped us dramatically cut our costs while still maintaining performance and reliability.”

— Joey Pelletier, Hosting Product Manager at Rebel.com

Virtuozzo Products Used

Virtuozzo 7

Country: Canada

Profile: Founded in 2006, Rebel.com has traditionally been a domain name registrar that offered basic hosting services. It has recently placed a large emphasis on improving its hosting offering by enhancing its existing products, as well as bringing new products to market. Rebel.com operates 100% on top of Amazon Elastic Compute Cloud (EC2) from Amazon Web Services (AWS).



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Executive Summary

Virtual Private Servers (VPS), one of Rebel.com's newest products, required a profound re-thinking of the backend technologies used when compared to the company's existing control panel-based hosting products. Rebel.com tested different solutions, including giving customers access to an entire instance of Amazon Elastic Compute Cloud (EC2) from Amazon Web Services (AWS). Although Amazon EC2 instances are both very powerful and reliable, they're not cost-effective at a larger scale. Virtuozzo 7 enables Rebel.com to provision several VPSs for customers on top of a single EC2 instance. This, in turn, allows Rebel.com to dramatically cut costs, improve server density, oversubscribe resources, and easily manage customers' VPSs. Virtuozzo 7 has allowed Rebel.com to increase its server density by 3.8x and offer a leading-edge VPS solution built on cloud infrastructure for its customers.

The Challenge

Rebel.com was founded in 2006 primarily as a domain name registrar offering basic hosting services. At the time, Rebel.com operated its own data center in Ottawa, Canada. Since then, Rebel.com's portfolio has grown rapidly, and today the company offers an array of other services, including Control Panel, Email, and VPS Hosting. About 6 years ago when realizing that its on-premises data center could not provide the scalability, agility, and cost efficiency needed to support growth, the company decided to migrate to AWS to improve compute capacities and scale without having to take on a significant cost increase. Rebel.com replicated its existing system functionality on Amazon EC2. To avoid having to rewrite applications, it decoupled them from its existing data center and shifted them onto it. Rebel.com now operates 100% on Amazon EC2 and no longer manages its own data center.

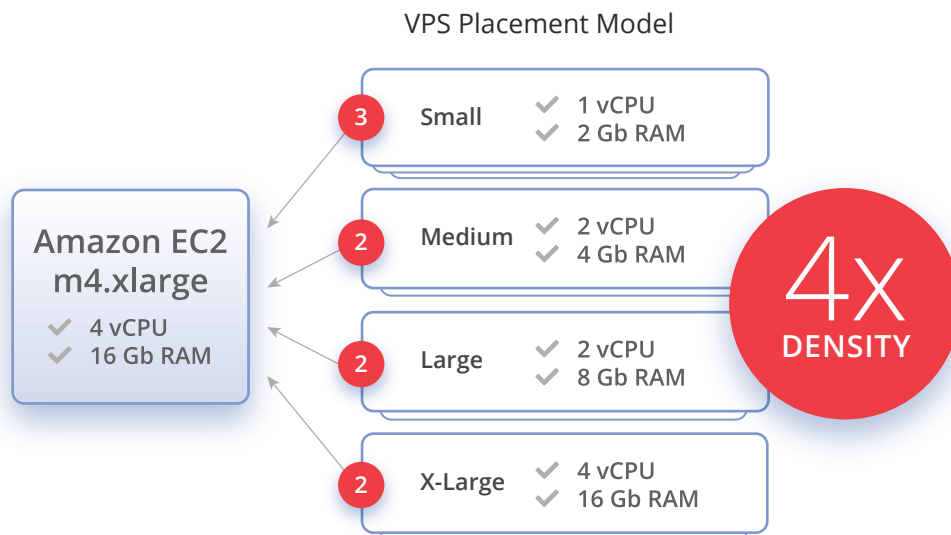
Building a competitive solution and new products on top of Amazon EC2 presented a number of challenges, especially as Rebel.com was looking to expand its product line to offer VPS. Amazon EC2 can present a steep learning curve when deployed and operated on a large scale. To address these challenges, Rebel.com's development and operations teams dedicated time training resources to maintain their new environment. Rebel.com experimented with different solutions for their new VPS product line, one of which was to configure and operate an Amazon EC2 instance for each VPS. This individual instance method proved to be powerful and reliable but also brought to light a cost optimization issue.

By analyzing customer usage data, Rebel.com was able to determine that its customers were using only a fraction of their reserved resources. Rebel.com wanted to leverage the power, resources, and reliability of Amazon EC2 instances but also needed to improve density, optimize costs and build a competitive service offering.

The Solution

Rebel.com solved its need for higher density by deploying Virtuozzo 7 in its Amazon EC2 environment.

Combining Amazon EC2 and Virtuozzo 7 Increased Efficiency



The Results



COMPETITIVE VPS HOSTING OFFERING IN THE CLOUD

Virtuozzo 7 helped Rebel.com overcome the challenge of building a comprehensive service offering in the cloud. The company now is taking advantage of Amazon EC2, rather than perceiving it as a rival. Pelletier explains, "Building a competitive offering on top of Amazon EC2 was a challenge for us, but with Virtuozzo it became possible."



IMPROVED DENSITY

Virtuozzo 7 enabled Rebel.com to maximize resource usage and scale on-demand to get the best return on investment. "With Virtuozzo 7, we can run about 10 customers' VPSs on top of one m4.xlarge server" commented Pelletier. Rebel.com now benefits from elastic scaling by provisioning and de-provisioning resources according to actual demand.



SCALABILITY ON DEMAND FOR HANDLING PEAK WORKLOADS

Virtuozzo 7 provides live migration, ensuring no downtime for customers. Rebel.com can easily migrate customers when scaling up or down to handle peak periods. Servers using Virtuozzo 7 on Amazon EC2 instances can have additional resources allocated in as little as two minutes.



GREATER FLEXIBILITY

Virtuozzo 7 allows Rebel.com to utilize reserved instances without losing flexibility. It is the only nested virtualization technology that helps to slice Amazon EC2 into a set of smaller VPSs with no performance impact. Pelletier explained, "Reserved instances have limited flexibility like a hardware server, so you need virtualization on top of them to allocate and slice resources for your customers. Virtuozzo is the only technology that allows us to do it."



MAXIMIZED COST-EFFICIENCY

Amazon EC2 combined with Virtuozzo 7 helped Rebel.com reduce operational expenses by drastically lowering the number of support engineers required to manage servers and hardware. Additionally, Rebel.com was able to eliminate capital expenses, providing better cost visibility and agility after the move. Utilizing Virtuozzo 7 on top of Amazon EC2 also helped Rebel.com maximize the cost efficiency of its service offering by improving density and scalability.