



CloudLinux Case Study

Cartika

Cartika Inc. Increases Server Density By 5X With CloudLinux

During a server consolidation project, Cartika leveraged CloudLinux to improve density and maximize server performance. They increased density by 5X, consolidated servers on a 5 to 1 ratio and improved uptime by 0.02% - all while improving processing power for their customers.

The Challenge

With state-of-the-art web hosting facilities and intricate knowledge in several best-of-breed open source and commercial applications, Cartika Inc. specializes in clustered hosting solutions for all business types and sizes. Founded in Toronto in 2002, Cartika has established itself as a leader in application hosting and advanced technologies offering shared hosting, Virtual Private Servers, dedicated servers, and high-availability clustered web hosting solutions.

Consistently at the forefront of innovation, Cartika recently launched CartikaCloud, a new premium, elastic and resilient cloud hosting service; its scalable and on-demand capacity delivers self-healing infrastructure, 360-degree scalability, optional load balancing architecture and redundant Cloud Storage solutions. "We are always striving to deliver the newest technology to customers and hosting providers, so they can be more efficient, streamlined, as well as more cost effective," stated Andrew Rouchotas, CEO and Founder of Cartika.

When Cartika embarked on a server consolidation project to deploy the latest server technology across its entire server platform, they sought to increase server density and improve processing power for customers. The challenge was to do all of this without negatively impacting performance for their shared hosting customers.

During the consolidation effort, Cartika would be more susceptible to the Law of One, which states that a single site on the shared server is capable of rendering an entire server inoperable affecting multiple customers at the same time.

In shared hosting environments, a single server can host several hundred or even thousands of web sites with a highly diverse set of configurations, web applications (like blogs, shopping carts, forums), and software. This can set the stage for a single, badly executed site to bring down a whole server. Common causes of these outages can include:

- A single user installs software that uses too much CPU, IO or memory, draining server resources and takes down the server.
- A site is slashdotted and causes a spike in traffic that overwhelms the server, hogging CPU, IO or memory resources.
- A site introduces an improperly functioning or badly written script and causes the server to try to resolve it resulting in resource utilization issues.

If not addressed effectively, these scenarios can impact revenue and churn for the provider. According to Cartika's CEO Andrew Rouchotas, "shared hosting is all a probability model. Each additional account loaded on a server represents a probability that the server will go down. It has nothing to do with capacity or capability, it has everything to do with the amount of risk we are willing to absorb." How was Cartika going to create the stable environment, upgrade hardware technology and maintain consistent performance for customers through the process?

The Solution

Cartika's clustered hosting provides high availability and load balancing using redundant nodes but is still vulnerable to the same unpredictable server outages such as attacks, traffic spikes and hackers.

They realized there were not many comprehensive and effective solutions – until they were introduced to CloudLinux. CloudLinux is an operating system designed specifically for the hosting market – in that it is able to give hosters increased control over their server resources to efficiently and effectively control resources at an individual user level.

CloudLinux was the perfect solution. First, it provided the separation of accounts using Lightweight Virtual Environment™ or LVE technology on a shared server that no other solution or vendor could provide. "Being able to have some kind of separation and control over shared hosting environment, or any hosting environment, was something that has been lacking in our industry for a long, long time," according to Andrew Rouchotas, Cartika CEO.

Second, CloudLinux is a commercially supported operating system. If Cartika needed support during this infrastructure upgrade, they could turn to CloudLinux's experienced support teams and get help integrating new software into their hosting infrastructure.

How CloudLinux Works

CloudLinux is an RPM-based operating system that is interchangeable with Red Hat Enterprise Linux and CentOS. What CloudLinux can do that other OS cannot is give the hosting service provider the ability to control the CPU resources on the server.

- Number 1 clustered hosting provider in the world
- 150,000 domains under management
- Leader in technology innovation and best-of-breed service approach
- Providing clustering and nodes to increase uptime, Cartika has always been ahead of the competition on uptime and service commitments to its customers

"We were very impressed with the CloudLinux product. The deployment across our server platforms has enabled us to consolidate and reduce costs and provide the same level of service or better to our customers."

– Andrew Rouchotas, CEO and Founder of Cartika, Inc.

Contact Cartika

For more information about Cartika, call 1-866-472-1835 or go to www.cartika.com

CloudLinux has its own kernel and Apache modules. The Apache modules talk to the kernel to make sure that the user's dynamic scripts are executed within limits set by the Lightweight Virtual Environment or LVE of that user. LVE is transparent to the system administrator and the end-user, as well as lightweight. With CloudLinux, there are no configuration demands and no changes needed to the Apache setting or the control panel.

Once installed, LVE works transparently to manage resources that the hosting provider sets for the accounts on the server. It gives the technical engineers command line control to manage the CPU resources and number of connections for each account on the server that has CloudLinux installed.

Cartika started by launching a new, shared server and allocated accounts. They set generic levels within CloudLinux so that each LVE would have a max capacity of 25-35% of the overall server resources. "When we reached our normal density of accounts, we saw right away that one account did not affect any other on the server," says Andrew Rouchotas, Cartika CEO.

With ability to manage CPU resources, Cartika began consolidating older servers onto the new server. They took five legacy servers and put the tenants onto one server running CloudLinux, upgrading from single CPU to 16-core processors. They left capacity on the server so if one or two accounts were hit at the same time, no other tenants were impacted.

Once the first CloudLinux server demonstrated it could increase server density significantly without incidents, they consolidated servers on a ratio of 5 to 1 - reducing their hardware footprint, decreasing electrical and cooling costs and increasing the number of accounts each server could host by 5X.

"CloudLinux enabled us to turn the probability angle in our favor. Before we would only load a certain number of accounts onto the server - even if we had the resources. Now we use our resources better and give customers more processing power. We load significantly more customers to a given node without accruing the additional risks that were native in this type of environment," says Cartika CEO Andrew Rouchotas.

With CloudLinux, they also realized front line technicians could quickly identify which domain was causing problems. This resulted in time saved for their senior engineers, allowing them to spend time on other projects for the business. "Even on a server with a single account, we set the container size for 95% or 96% of the total available," commented Andrew. "When something happens on that server, we have 3%-4% capacity that we call 'management capacity' so that staff can go in without hard rebooting the server." This saves critical time in identifying and addressing technical issues.

"By using CloudLinux, Cartika was able to increase server density 5x and deliver better performance to our customers."

- Andrew Rouchotas, CEO and Founder of Cartika, Inc.

Cloud Linux Inc.

CloudLinux is the only operating system built specifically for the hosting market. Founded in Princeton, NJ, Cloud Linux Inc. is a privately funded company that combines unique expertise in the service provider business with in-depth technical knowledge of hosting, kernel development and open source.

CloudLinux provides hosting companies and datacenters with the only commercially supported Linux operating system (OS) optimized for their needs. The new technology behind CloudLinux has been proven to increase density, stability and performance, helping customers realize reduced operating costs and increased profitability.

Results

By deploying CloudLinux, Cartika maximized their hardware consolidation efforts and improved server density and stability. CloudLinux increased the number of accounts hosted on one server and improved the consolidation efforts – and no one account could take down the entire server. Server stability improved by allowing Cartika to set resource limits on their shared hosting customers without sacrificing uptime or performance. In addition, the Cartika hardware upgrade gave their customers more processing power.

Benefits of Deploying CloudLinux

Cartika realized significant benefits deploying CloudLinux including increased density, improved performance and better stability. They also experienced a reduction in their hardware footprint and costs while optimizing staff resources and improving their commitment to green initiatives.

Increased Density

- Increased density by 5X while improving uptime & processing power
- Reduced overall hardware footprint
- Consolidated servers on a 5 to 1 ratio

Improved Performance

- Improved customer processing power
- Increased uptime from 99.93% to 99.95%
- Significantly improved ROI so they could further leverage new hardware available for shared hosting

Increased Stability

- Improved tenant-to-tenant security
- Reduced the risk of unpredictable events taking down an entire server

Support Staff Optimization

Cartika front line technicians were empowered to find and diagnose problems, which saved time for senior engineers to focus on other business priorities. CloudLinux's experienced engineering team ensured a smooth deployment and on-going support.

Reduction in Power Consumption & Increased Green Capabilities

Cartika was able to reduce their 100 web servers down to 20. Not only did that dramatically reduce the power and cooling consumption within their datacenter, it also freed up power slots for new revenue growth.

Competitive Advantages

Cartika now has a real advantage over other web hosts in that they are able to deliver the same or better service with greater uptime. They also consume less electricity, use less hardware and are able to identify problems faster. Overall Cartika can now provide a more stable environment for the complex solutions that they host for customers.



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