



# Cardium

Cardium deployed SUSE® Linux Enterprise Server on IBM® System x® and custom-built hardware, and reduced its total number of servers from 25 to just eight by taking advantage of Xen® virtualisation. Both internal and hosted systems benefit from improved performance and reliability.

### Overview

Cardium is an IT services company based in Kista, near Stockholm, providing hosting and consultancy services to businesses in Sweden and the UK. Generating revenues of around 25 million Swedish kroner (€2.7 million) per year, Cardium is a Novell® Gold Partner and the only Novell PartnerNet® Linux Specialist in the region.

### Challenge

Cardium has experienced rapid business growth since its foundation in 2000, and had come to depend on a large number of physical servers to handle both its internal business systems and those it hosts for its larger clients.

“We had around 15 core servers, with another 10 machines for subsidiary systems and to host two client environments—one for an online bank, the other for a travel agency,” said Adrian Bellini, CEO of Cardium.

“Maintaining that many physical machines was becoming a real drain on resources. As we were looking to expand and host systems for another four large companies, we needed to simplify the infrastructure.”

The server management challenge was exacerbated by Cardium’s insistence on the highest levels of security for its clients’ systems. The company could manage its own machines remotely, but its clients were—

understandably—uncomfortable with allowing remote access to their servers. This meant that Cardium administrators had to log in to each physical machine separately, which took a great deal of time and effort.

### Solution

Cardium replaced its 25 existing servers with just eight—a combination of high-end IBM System x and custom-built servers. The company then upgraded to the latest version of SUSE Linux Enterprise Server, which includes XEN virtualisation software, enabling the eight physical servers to run as many Linux® instances as required.

“As Linux specialists, we know a lot about the relative merits of the different distributions,” said Bellini. “I have a personal preference for SUSE Linux Enterprise, and from a business perspective I believe it is the best option. The support from Novell is excellent, and the package includes a range of outstanding business features at no extra cost.

“Heartbeat and OCFS are particularly useful, helping to ensure high availability. They also allow us to provide a test/dev environment for our Oracle® technicians—which is one of the key requirements for Oracle Partners like us—for free! And of course, SUSE Linux Enterprise is the first business-ready Linux distribution to support Xen virtualisation.”

### Cardium at a glance:

Swedish IT services company and Linux specialist

#### ■ Industry:

Hi-Tech

#### ■ Location:

Sweden

#### ■ Solutions:

SUSE Linux Enterprise Server

#### ■ Results:

- Improved responsiveness to client needs through fast delivery of new server environments
- Reduced hardware and software licensing costs through virtualisation
- Achieved 58 percent better efficiency than proprietary virtualisation solutions with Xen paravirtualisation and SUSE Linux Enterprise Server

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#### Adrian Bellini

CEO  
Cardium

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Xen is a paravirtualisation technology which allows guest operating systems to communicate directly with the underlying hardware. The leading proprietary virtualisation solutions require a software layer to emulate hardware resources, which incurs a considerable performance overhead—typically around 40 percent. By contrast, the overhead for Xen is as low as 5 percent.

“One of our customers had a time-sensitive requirement for a Linux development environment,” said Adrian Bellini. “Instead of finding a vendor, buying new hardware and operating system licenses and waiting for everything to be delivered, we simply set up a machine running SUSE Linux Enterprise Server and used Xen to run six instances of Red Hat\* Linux as guest operating systems. It took just six hours to deliver the virtualised environment.”

The other benefit of using Xen virtualisation for development and testing is the ease with which virtual environments can be cloned, migrated and re-started in the event of a crash.

## Results

The consolidation from 25 to eight physical servers is saving Cardium considerable time in maintenance and administration, and also has significant cost benefits.

“Since we need only one SUSE Linux Enterprise licence per physical machine, each of which can run an unlimited number of Linux instances, the cost savings are considerable,” said Bellini. “To give each of

our employees a new testing environment on a separate server would previously have cost more than €20,000 in hardware and software costs; now we can do it at no additional cost.”

The low performance overhead of Xen paravirtualisation delivers excellent price-performance, enabling Cardium to actively use up to 95 percent of the available computing power, rather than the 60 percent typical of the leading proprietary virtualisation solutions.

Most important, the SUSE Linux Enterprise and Xen virtualisation solution helps Cardium deliver the best possible service to its clients.

“Keeping our costs low is important, as it would be for any business,” said Bellini. “But the ability to respond faster, and deliver better performance and higher availability to our clients is invaluable.”

Cardium has even created a script to allow users to create test environments themselves—without waiting for an administrator to set one up for them.

“Automating the creation of test environments will represent yet another way to save time and improve our responsiveness,” said Bellini. “There’s no question about it—SUSE Linux Enterprise with Xen virtualisation helps us respond to our clients’ needs much faster than our competitors can. It’s the ideal Linux environment to support our growing business.”



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