

HP ProCurve

Mentor Graphics deploys 10 Gigabit network to support engineering-driven operations



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Rich Monahan
Director of Global Operations
Mentor Graphics

Summary

Mentor Graphics Corporation offers leading electronic design automation (EDA) solutions for engineers, created by engineers. Design innovation is at the heart of the company, and roughly half of its workforce is dedicated to pushing the boundaries of EDA technologies. To support its engineering and high-performance computing (HPC) needs, Mentor recently implemented a new network infrastructure based on HP ProCurve Networking solutions. From a technical standpoint, the new switching environment offers more bandwidth, less complexity, additional flexibility and easier management compared to the company's former infrastructure systems. From a business standpoint, Mentor is saving both short- and long-term costs while improving the productivity of its workforce.

Supporting a bevy of engineers

To say Mentor Graphics Corporation is an engineering-driven company would be an understatement. A technology leader in electronic design automation (EDA), Mentor provides software and hardware design solutions that enable organizations to develop better electronic products faster and more cost effectively. Its innovative solutions help engineers overcome the design challenges they face in the increasingly complex worlds of board and chip design.

Mentor boasts world-class research and development stemming from its 28 engineering sites worldwide. And roughly half the employees at the company's headquarters in Wilsonville, Oregon, are engineers or those with high-performance computing (HPC) needs.

"Whereas most companies need significant computing power in their data center and some need it in labs or R&D

departments, we need it everywhere," says Rich Monahan, Director of Global Operations for Mentor Graphics. "At any given time, dozens of people are running tests and conducting simulations from their offices."

To support these compute-intensive tasks, Mentor recently decided to split its data center in two. The idea was to use the company's existing data center for business operations, and establish an entirely new data center to buoy engineering operations. What was spurred by a planned building renovation at the company's headquarters quickly spawned additional possibilities.

"The building remodel got us thinking not only about our computing engines, but also our computing conduits," Monahan says. "In addition to a new engineering-focused data center, we wanted two new HPC labs. The necessity of providing high-speed connections between them forced us to re-evaluate our switching environment."

In doing so, Mentor quickly realized its existing networking equipment had reached the limits of its performance, and upgrading the switching environment would deliver several benefits. An effort to overhaul the network infrastructure at Mentor's headquarters was soon underway, and the company identified several technical and business priorities.

"We didn't have any unusual requirements from a technical standpoint," notes Monahan. "In general, we wanted more bandwidth, better scalability and the capacity to implement VoIP [Voice over Internet Protocol]."

Specifically, Mentor wanted 10 Gigabit connections between every switch and Gigabit connectivity at each desktop to

Customer at a Glance

Mentor Graphics Corporation is a world leader in electronic hardware and software design solutions, providing products, consulting services and award-winning support for the world's most successful electronics and semiconductor companies. Mentor Graphics has the broadest industry portfolio of best-in-class products and is the only EDA company with an embedded software solution. Established in 1981, the company employs approximately 4,350 people worldwide. For more information, visit www.mentor.com.

support employees' HPC needs. Power over Ethernet (PoE) was desired for a future VoIP deployment. Reliability and ease-of-management were also priorities.

From a business perspective, Mentor sought to reduce ongoing maintenance and support expenses while keeping the initial acquisition costs as low as possible. "After sending out an RFQ [Request for Quote] to several networking vendors, we received one quote that was significantly lower in price," reveals Case Van Horsen, Lead Network Engineer for Mentor Graphics. "To be honest, I thought there was a mistake and figured they had missed something. I had to look at the quote twice."

The proposal was accurate and all inclusive, and it came from HP ProCurve Networking.

After determining the proposed solution would meet the company's requirements, Mentor implemented a new switching environment featuring approximately 50 ProCurve 5400zl Series switches, 5 ProCurve 3500yl Series switches and roughly 50 (75 currently deployed) ProCurve 2900yl Series switches.

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Mentor Graphics selected Dasher Technologies, an HP ProCurve Elite Partner and HP Platinum Business Partner, to provide the systems as well as

implementation and integration assistance. Dasher specializes in business-critical server, workstation, storage, software, and networking projects.

A wealth of business and technical benefits

Mentor's new ProCurve network has been a boon on multiple levels, both business and technical.

According to Van Horsen, the transition was faster and easier than expected. Despite a company mandate that limits scheduled, disruptive network outages to one per quarter, the planned three quarter project was completed in half a year.

"There was no downtime to our business environment," Van Horsen says. "And while most companies may have 10 Gigabit links between a couple dozen switches at most, we established 10 Gigabit links between hundreds of switches."

Mentor's new, more powerful network is also less complex than its previous switching infrastructure.

"Other vendors make you weigh a jumble of configuration options, price points and features. With ProCurve, choosing a port isn't a complex equation," Van Horsen explains. "What you see is what you get, and there aren't hidden costs. I wasn't forced to make configuration decisions based on price. They're just solid, high-quality solutions for what we need."

"With our old equipment, each switch required particular cabling, expansion cards and software images. It created a lot of confusion and sometimes hindered potential changes," says Van Horsen.

What Made It Work

Hardware

- ProCurve Switch 5400zl series
- ProCurve Switch 3500yl series
- ProCurve Switch 2900yl series

Software

- ProCurve Manager Plus (PCM+) network management software
- Lifetime warranty on most products*
- Software updates, telephone and email technical support**
- Comprehensive network design and configuration services**

*For as long as you own the product, with next-business-day advance replacement (available in most countries).

The following hardware products and their related family modules have a one-year warranty with extensions available: The ProCurve Routing Switch 9300m Series, ProCurve Switch 8100fl Series, ProCurve Access Control Server 745wl and the ProCurve Network Access Controller 800. Standalone software may have a different warranty duration. For details, refer to the ProCurve Software License, Warranty and Support booklet at:

<http://www.hp.com/rnd/support/warranty/index.htm>.

**For the most up-to-date information, go to www.procurve.com.

"ProCurve products are straightforward and work seamlessly with just about anything, so we've got a lot of options moving forward."

With the aid of ProCurve Manager Plus (PCM+) network management software, network administration is also much easier compared to the company's former environment.

"We used to monitor, maintain and update eight firmware images-now we have two," says Van Horsen. "Also, there is a high degree of consistency between the ProCurve switches, meaning we no longer need to know different commands for each individual switch. All told, the network management burden on our IT staff is now negligible."

There are fewer unplanned network outages to resolve as well, thanks to improved redundancy in Mentor's new ProCurve network infrastructure.

"In the past, a single switch would support the core routing in each building. If that switch failed, the entire building would be offline," Van Horsen says. "Due to the low cost of ProCurve's 10 Gigabit products, we've been able to deploy redundant core switches to each building for full redundancy. We haven't had a hiccup since."

A primary impetus for the network overhaul, delivering more bandwidth to engineers and business users, has been fully realized.

"We did some benchmarking with our engineers, and everything is faster," says Monahan. "Source code checks, for example, used to take five minutes; now they take a minute. Copying large files is also five times faster. Our workforce is more productive and efficient as a result."

Today, Mentor is reaping the benefits of its high-bandwidth, low-cost, fully-redundant, easy-to-manage ProCurve network with PoE. The successful implementation at company headquarters has prompted forthcoming ProCurve deployments in the company's Tokyo, Grenoble and San Jose facilities.

"Our ProCurve network has been fantastic," Van Horsen concludes. "Not only does it meet our technical and business needs, but it comes with a lifetime warranty*. I don't have to spend weeks each year hunting down serial numbers and renewing support contracts. With ProCurve, there's nothing to track. There are no service contracts, maintenance renewals or support costs. It's unbelievable."

Business benefits

- Mentor's new ProCurve network provides 10 Gigabit connectivity between switches and Gigabit connectivity at each desktop, providing an approximate 5x performance improvement compared to its pre-existing environment and enhancing workforce productivity.
- With fewer images, configuration variables and support contracts to maintain and update, Mentor's ProCurve network is less complex and easier to manage than its former infrastructure systems.
- A faster-than-expected deployment and low acquisition costs have saved Mentor considerable short-term expense, while ProCurve's lifetime warranty* and lack of service contracts will deliver huge cost savings over time.

About HP ProCurve Networking

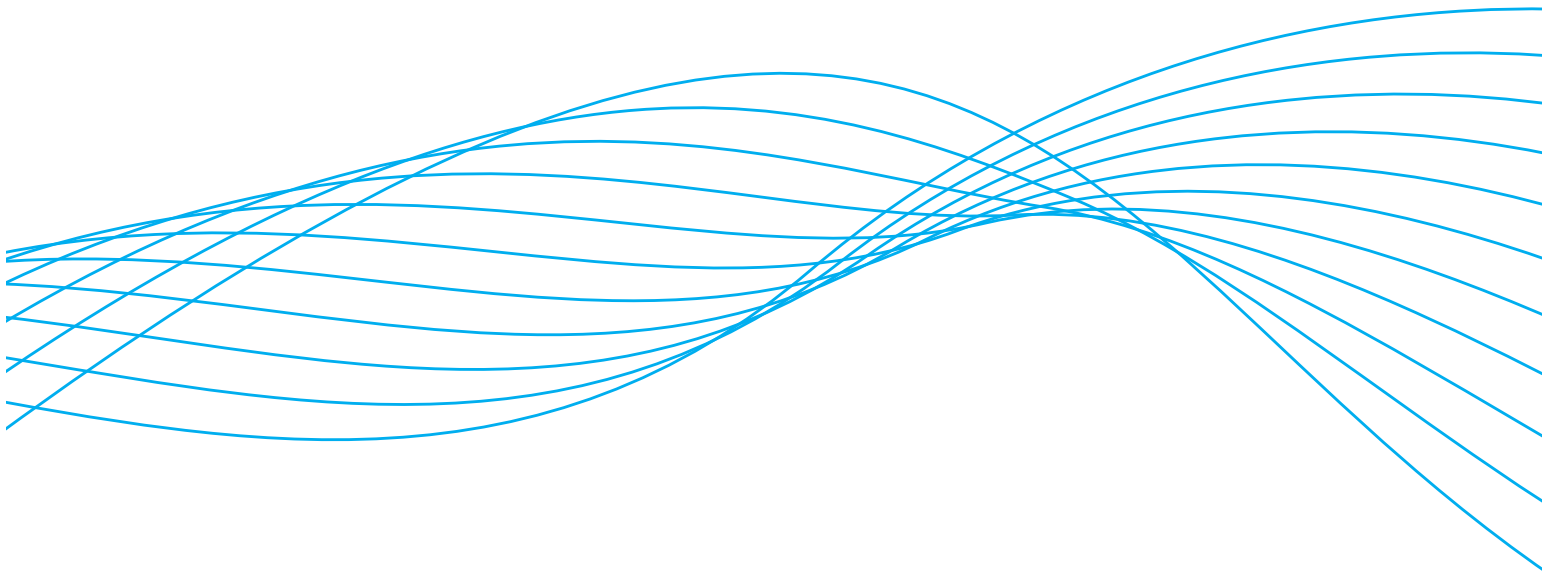
HP ProCurve Networking delivers wired and wireless enterprise networking products, services and solutions. The foundation for ProCurve's business model is the Adaptive Networks strategy in which networks are adaptive to users, applications and an organization's needs.

ProCurve was positioned in the leader quadrant in research and advisory firm Gartner, Inc.'s 2007 Magic Quadrant Report for Global Campus LANs and is the No. 2 networking company worldwide measured in both ports and Ethernet switch market revenue according to Dell'Oro Group.

Further information on ProCurve networking solutions and products is available at www.procurve.com.

About Dasher Technologies

Dasher Technologies provides its customers with the right enterprise IT solutions on time and on budget. The company supplies high quality, HP enterprise solutions and complementary technologies, specializing in Unix, Linux and Windows servers, workstations, ProCurve Networking, software, and SAN/NAS storage solutions. Marriott Hotels, Dreyer's Ice Cream, AMD, Rambus, NEC, Raytheon, KLA-Tencor, and United Airlines are among the 200-plus customers who have trusted Dasher with their business-critical hardware and software projects. For more information, visit www.dashertechnologies.com.



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