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Keeping IT Green

Supermicro's Charles Liang talks about integrating high tech with his Earth-friendly vision.

Keeping IT Green

Supermicro's green computing initiative is the latest in a series that's kept Charles Liang and his team at the forefront of the fiercely competitive high-end server market.

Since Charles Liang founded Supermicro in 1993, the high-end server manufacturer has been known for its cutting-edge products. Today, having grown an average of 36% each year and after completing an IPO in March, the company is turning its attention toward a new goal: green computing.

"Each of our high efficiency servers save our customers up to $100 per year on their electric bill," said Liang, president and CEO. Understandably proud of that achievement, Liang is perhaps even more excited about the products' affect on climate change. "Compared with traditional power supplies, which are 75% to 80% efficient, each of our 90% efficient systems provide a reduction of more than half a ton of carbon dioxide per year," he said.

For example, Supermicro's SuperBlade server can save up to 100 watts over a traditional discrete 1U rack-mount server. "These savings add up quickly when the SuperBlade chassis is fully populated with 10 servers," said Liang. "By eliminating the overhead in 1U discrete servers and using high efficiency (up to 93%) power supplies, SuperBlade can save customers between $700 and $1,000 per year in power, even more when you add in reduced cooling costs. At the same time, you're reducing carbon dioxide emissions by more than 5.5 metric tons—the equivalent of planting 1.7 acres of trees."

This type of achievement is actually par for the course for the company, which is built on a foundation of innovation. In 1996, Supermicro was the first to bring to market a motherboard

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designed to handle Intel's DP Pentium Pro processors. In 2000, it introduced the SuperServer 8050, the highest performing quad server at that time, followed quickly by the world's first socket Xeon motherboard.

Today, the company continues to push the limits of technology, introducing the 1U Twin SuperServer 6015T series, which supports two dual-processor motherboards in one chassis. "This system, introduced in Q4 last year, doubles the density of today's standard systems and ships with a 90% efficiency power supply," said Liang.

In the first quarter of this year, the $500 million company introduced its UIO (Universal I/O) technology, an architecture that supports more I/O bandwidth and more add-on cards per rack-mount server than competitor solutions. For high density computing, the company just introduced its SuperBlade 7U servers, featuring exceptionally efficient power supplies, thermal management, and available bandwidth.

Delighting customers

Of course, basing a company on innovation can be a double-edged sword—let your guard down for even a moment, and you risk letting a competitor be first to market with a product. Liang's answer to this challenge is simple: make sure people are proud of their work.

Liang noted that the company invests more than 50% of its resources in R&D and engineering, stimulating a drive to create products that delight customers. "It's important to let our employees know

why we require such hard work and dedication," he said. "People need a strong reason—for us, that's helping customers. And that equates to helping ourselves."

The company's focus on green computing dovetails flawlessly into that philosophy. Today, engineers are not just developing products that please customers; they're crafting systems that reduce the Earth's carbon dioxide levels along with saving customers money.

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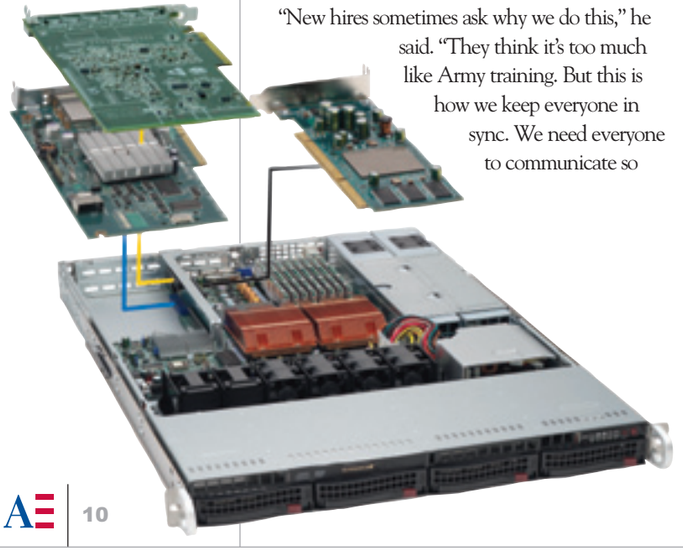
Liang is pleased to report that employees are happier than ever after the company's March IPO, which he said will allow Supermicro to grow even more quickly. "After 13 years of dedicated work, about 18 months ago, I felt our product line was so strong that it was time to grow more quickly to make more money and help more people," he explained.

To make sure everyone stays on the same page when it comes to individual products and overall goals as the company grows, Liang continues his 10-year-long practice of holding a company-wide meeting each day. Liang said the meeting, which includes the company's engineers, project managers, marketing personnel, and salespeople worldwide, lasts 30 to 90 minutes and is part of the company's unique culture.

"New hires sometimes ask why we do this," he said. "They think it's too much like Army training. But this is how we keep everyone in sync. We need everyone to communicate so that we can work harmoniously and effectively. Our industry is very dynamic, so there is always plenty to talk about."



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Beyond word of mouth

Communication will continue to be key as the company heads into 2008 and grows both domestically and abroad. Unlike competitors, the majority of whom moved R&D, production, and logistics to Asia many years ago, Supermicro continues to employ about 85% of its workforce in the US and do final product integration in North America.

However, Liang said the company and the global economy are reaching the point where this strategy is becoming cost prohibitive. "Our headquarters here remains our first priority, and we will continue to grow here," said Liang, noting that the company purchased a building at its San Jose location last fall and another in June. "But we have to make our products more cost competitive. That's why we're expanding our manufacturing and logistical functions in Asia."

The company is also vastly expanding its sales and marketing group, having relied mainly on word-of-mouth advertising of its extremely high quality products. "Limited resources and the fact that products sold themselves because of their quality meant that we did not emphasize sales and marketing," said Liang. "But now, as the company grows, we want customers to know exactly what advantages we provide. Over the next few years, you'll see us become much more aggressive in sales and marketing."

One thing that won't change is the company's relationships with key suppliers in the industry. Liang noted that Supermicro's position as a leader in the industry means suppliers view the company as a launch partner. "Whether it's CPUs or I/O controllers, those companies rely on us to test their quality and make sure their products are ready for the market," he said.

Liang believes these relationships are critical to the company's success. "Being very strong in technology means companies continue to choose us as a partner. That helps us get an edge over the competition, and as we continue to grow, those relationships will remain extremely important."

Poised for growth

Liang said that, currently, his team's biggest challenge is continuing to grow rapidly, especially now that the company is public. "So far, we feel quite comfortable. It's challenging, but it's a happy challenge—at least at this moment," he laughed.

Admitting that one reason the company remained private until now was the need to have the right senior management team in place, Liang said the company as a whole is now ready for rapid growth. "In the past, I was able to personally watch every detail," he said. "Now, the senior managers are responsible for watching every detail, and they have a vested interested in making sure the business grows quickly."

Unsurprisingly, Liang remains hands on when it comes to managing and hiring. After being screened by an HR manager, each potential employee meets personally with Liang, who is known for working 14- and 16-hour days.

Those new hires are joining a company poised to take the next step in the high-end server market, introducing the SuperBlade, featuring high-bandwidth communication and the ability to scale to 160 CPU cores per 7U enclosure, as well as Supermicro Server Manager, a server management application that will enter beta testing early next year.

Unquestionably, Liang and his team are up to the task. "Sharing our vision with our people and with customers is what helps us keep our momentum going," said Liang. "The more products we sell, the more money our customers will make, and the more healthy our Earth will be. This is a positive, clear mission for our people."

—Jill Rose