



Heinz Ulm, founder of Heinz Ulm Internetworking, (standing) with students (from left to right) Panagiotis Kontogiannis, a native of Greece who works in the United Kingdom; and Richard Lee, who is from South Africa and also works in the U.K.

By Kristin Kunz – Denver Business Journal

May 28, 2006 **Updated** May 25, 2006, 2:14pm MDT

Math for geeks? It all adds up

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Math for geeks? It all adds up

Kristin Kunz

Quick: What's 8 times 32? How many times does 16 go into 128?

And don't even think about picking up that calculator.

Impossible? Don't worry, you're not in the minority -- at least not in the United States -- according to Heinz Ulm, founder of Heinz Ulm Internetworking, a company that offers "boot camp" training to IT professionals around the world who seek Cisco Certified Internetworking Expert (CCIE) certification.

The company originally was based in Thierhaupten, Germany, and last year opened a second headquarters in Lakewood.

"I have the *crème de la crème* of IT people in my classes, and they still have mathematics problems," Ulm said. "At first I was surprised when I would ask, 'Is 186 a multiple of 16, yes or no?' and the students would need a calculator. European students do it without a pencil and paper."

Ulm pays more attention now to the trouble North American students have doing math in their heads and assigns more exercises based on simple arithmetic.

And assigning more homework isn't the only thing he's changed: Ulm said his American students are uncomfortable doing work on the white board at the front of the classroom, so he's learned to tone down criticism when they make a mistake.

"I have to put criticism in a more diplomatic way," he said. "I'm tougher to Europeans, but I found that Americans are so polite to each other and don't criticize each other, so I'm softer with my criticism to them."

Still, he's tough, and it's needed, Ulm said. The CCIE certification is the hardest IT distinction to earn, he said. Only 3 percent of those who start the training process make it to the CCIE level, he explained, and 80 percent fail the exam their first time. Ulm is one of 300 CCIEs in the world who have been certified for more than 10 years, he said.

Ulm's boot camps meet from 8 a.m. to 6 p.m. Monday through Friday for three weeks, and he said most students take advantage of "down time" -- evenings, weekends, the middle of the night -- to study more.

"This week, three of the students have been studying until 2 in the morning," Ulm said.

Craig Essex, a network architect for Denver-based insurance company Great West Life, went through Ulm's boot camp in 2002 in Germany. Essex said he found Ulm through an Internet search, which revealed Ulm had the kind of reputation Essex sought.

"He had one of the best records of passing [students]," Essex said. "And he prepares you for the pressure, the psychological part of the [exam], as well."

