AMD | STORIES

DISTRIBUTE A GREENER CLOUD

Qarnot provides cloud services through a distributed infrastructure in which computing power is split throughout the city, allowing waste heat to be applied to warming office and residential buildings.

TECHNOLOGY PARTNER

QARNOT COMPUTING

INDUSTRY

Cloud Services provider leveraging Smart building solutions

CHALLENGES

Reducing the carbon footprint of datacenters by decentralising compute power to smart buildings

SOLUTION

AMD Ryzen™ PRO processors with exceptional multithreaded performance, and processor-level security features

RESULTS

Qarnot will be equiping a new building with about 1,000 AMD Ryzen™ processors, with a total of 8,000 cores, energizing about 300 smart heaters.

AMD TECHNOLOGY AT A GLANCE

AMD Ryzen PRO processor

Most enterprises treat the heat created by their computers as a waste product to be dissipated. But the innovative engineers at Qarnot Computing use this energy to warm local buildings rather than throwing it away, reducing both space-heating and IT cooling costs.

"At Qarnot, we really believe that the future of building, what we call smart building, will need computing power embedded inside the building to provide individual services to the occupants," observed Paul Benoit,
CEO and founder of Qarnot Computing. "So what could be more efficient than using the heat these processors create to reduce space-heating costs?"

Qarnot's Q.rad product is a space heater that uses internal CPUs as its heat source. It allows Qarnot to provides cloud computing through a distributed infrastructure where computing power is no longer deployed in concentrated data centers but split throughout the city in the form of heaters and boilers. This imaginative system of co-generation –creating both computing power and warmth– has won Qarnot several awards including the 2015 Cloud Innovation World Cup and 2018 CES Eureka Park Climate Change Innovators award.

DISTRIBUTE A GREENER CLOUD IN SMARTER BUILDINGS

Qarnot's customers are mostly in the finance and 3D animation industries, two sectors that use a lot of computing power today and will need still more in the future. Benoit said that Qarnot chose the powerful AMD Ryzen PRO processor to support these future-ready enterprise-class computing requirements because of its exceptional processing performance.

"With the eight-core Ryzen PRO, we can provide our customers with more cores and more performance for the same price. Next year we will deploy a full 300 heaters, which translates into about 8,000 AMD Ryzen cores."

Paul Benoit, CEO & Founder, Qarnot

As the first CPU to offer up to eight cores and 16 threads for commercial-grade PCs, the AMD Ryzen PRO processor represents a quantum leap in generational performance. Its exceptional multitasking, machine intelligence, and processor-level security will let Qarnot's engineers deploy more compute power in fewer chips, with the no-compromise reliability and manageability needed in cloud computing systems deployed in smart buildings throughout a city rather than in a centralized data center.

"With the eight-core Ryzen PRO we can provide our customers with more cores for the same price," Benoit said. "We expect to deploy 2,500 processors in the next year. Today we use the heat from these computers to warm six buildings in the Paris area, and next year we will deploy a full building in

Bordeaux with more than three hundred heaters, which translates into about 8 to 10,000 AMD Ryzen processors in the single building."

But more than just delivering up to eight cores in each processor, Qarnot CTO, Clement Pellegrini, reported that the Ryzen PRO's performance far outpaced its competitors.

"We did some comparisons using the Blender open source benchmark, a popular test in the rendering industry," he said.

"The results were very, very impressive, with the AMD Ryzen PRO running thirty-five to forty-five times faster than the Intel i7 that we also use."

"Other features of the Ryzen PRO are very interesting for us, like Transparent Secure Memory Encryption, which allows OS- and software-independent encryption, and the DASH feature, which lets us control and manage decentralized CPUs," Pellegrini added.

Qarnot: Project of smart building in Bordeaux which will be using AMD Ryzen PRO processors (left). Qarnot Q.Rad microprocessor-based heater (right)

ABOUT QARNOT

Qarnot designed and operates the Q.rad, the first computing heater using internal microprocessors as heat source. Totally silent, it gets computing instructions through the Internet. The heat produced by computing then provides free and efficient heating for residential, office, and public buildings. Qarnot offers a cloud computing service through a fully distributed infrastructure where computing power is deployed no longer in concentrated data centers, but split throughout the city in the form of Q.rads. Qarnot has won several awards including the 2015 Cloud Innovation World Cup Award. For more information about Qarnot, visit www.qarnot.com.

ABOUT AMD

For more than 45 years AMD has driven innovation in high-performance computing, graphics and visualization technologies — the building blocks for gaming, immersive platforms and the datacenter. Hundreds of millions of consumers, leading Fortune 500 businesses and cutting-edge scientific research facilities around the world rely on AMD technology daily to improve how they live, work and play. AMD employees around the world are focused on building great products that push the boundaries of what is possible. For more information about how AMD is enabling today and inspiring tomorrow, visit the AMD (NASDAQ: AMD) www.amd.com website.