

# QARNOT

## COMPUTING

### **Qarnot heats buildings for free with computations wasted heat.**

The heat generated by all the data centers in the world could already heat half of European households. Today, data centers consume 3% of the world's electricity, and it doubles every 5 years. At Qarnot, we heat people for free and ecologically with computations' wasted heat. Qarnot designed the Q.rad, the first computing heater embedding microprocessors as a heat source. And to operate this distributed cloud made of computing heaters, we built the Q.ware, the software platform designed for an optimum distribution of computing tasks according to heat demand of each of the Q.rads.

### **Qarnot is a green distributed cloud for computing-hungry applications of companies.**

Qarnot provides cloud computing through a totally disruptive and distributed infrastructure where computing power is deployed no longer in concentrated data centers, but split throughout the city in the form of heating infrastructure made of Q.rads computing heaters or computing boilers. With this approach, the carbon footprint of computations is significantly lower than in a traditional model. Today Qarnot computes for banks, 3D animation studios and research labs, with a IaaS/PaaS/SaaS approach, powering a variety of software applications including V-Ray or Mathworks.

### **Qarnot is the brain of your smart building.**

Qarnot provides hardware and software solutions to make buildings smarter. Q.rads process locally data from sensors and trigger intelligent actions. They bring comfort, security and intelligence into every room : energy and air quality monitoring, intrusion detection, Internet connection via Wi-Fi can be completed by sector-specific applications. Today, Qarnot addresses the B2B real estate and building markets, focusing on residential and commercial buildings, in partnership with estate developers, local authorities, engineering companies, architects and building owners.

### **Qarnot also developed the first crypto-heater mining crypto-currencies and designed for consumers.**

### **About Qarnot**

Operating the first cloud distributed throughout cities in the form of heaters, Qarnot opens the way to a disruptive digital infrastructure at the crossroad between Cloud Computing and Smart Buildings.

Since 2014, more than 100 households in Paris, as well as offices and bank agencies, are heated for free with Q.rads, computing remotely for major banks, 3D animation studios and research labs.

Created in 2010, based in Montrouge (South of Paris), Qarnot's team counts 30 people. The company has recently announced international development in the Netherlands and in China.

## ARTICLES

- [PCGamer](#) (US) : “AMD's Ryzen Pro is doing double duty as a processor and house heater” (9/14/17)
- [HPCWire](#) (US) : “Asperitas, Qarnot Announce Partnership on Green Edge Computing” (7/31/17)
- [Horizon](#) (EU Research Magazine) : “Radiators powered by excess computing energy are heating homes for free” (6/7/17)
- [Engadget](#) (US) : “Qarnot's smart space heater has learned some new tricks” (1/3/17)
- [TechRepublic](#) (US): “Q.rad uses servers to warm homes and offices instead of wasting energy to cool data centers” (5/27/16)
- [Popular Mechanics](#) (US): “CES 2016: Popular Mechanics Editors' Choice Awards” (1/8/15)
- [Engadget](#) (US): “The Q.rad warms your home with microprocessor waste heat” (1/8/15)
- [Data Center Dynamics](#): “Bordeaux buys distributed cloud heaters” (12/8/15)
- [Green Film Shooting](#): “Support for sustainable solutions” (COP21 Special issue)
- [OpenSource.com](#): “Heat your home with your neighbor's computing power” (11/19/15)
- [Hindu Business Times](#) (IN): “Qarnot computing, recycle to heat for free” (11/17/15)
- [Handelsblatt](#) (DE): “Recyceln zum kostenlosen Heizen” (11/17/15)
- [Diario Financiero](#) (CO): “Qarnot Computing, reciclar para calefacción gratuita” (11/17/15)
- [BBC](#) (UK): “Heating buildings using computers” (10/08/14)
- [London Times](#) (UK): “Heat from computers could cut energy bills for wired households” (2/7/15)
- [La Stampa](#) (IT) “I computer nella nuvola che vendono calcoli e regalano riscaldamento” (9/20/14)

## VIDEOS

- [Qarnot Render : make computing green !](#) At SIGGRAPH 2017, Qarnot presents its new Qarnot Render website as well as its infrastructure
- [Discover the render farm that heats people](#). This short teaser originally made for the SIGGRAPH 2016 presents Qarnot's render farm
- [Studio Supamonks' user testimony](#). Supamonks is a French 3D animation studio working with Qarnot. In this video made for Qarnot's participation in the SIGGRAPH 2016 in Anaheim, CA, they explain why they chose us (6/21/16)
- [Short presentation video](#) of Qarnot by BNP Paribas (a client of Qarnot's) (1/13/16)
- [TV News Report](#) by New York channel NY1 about Qarnot's award at the World Cloud Innovation Cup, in the Smart Home category (7/9/15)

- "[Cosmos Laundromat](#)" the last open movie from the Blender Foundation. The film's 3D renderings, made on Qarnot's heaters, represent the equivalent of one year of free heating for around 20 households. As rendering partner, Qarnot was the film's [main sponsor](#) (2015)
- [Documentary](#) by French-German TV channel ARTE, "Jugaad Innovation: Do Better With Less" with economist Navi Radjou & Qarnot (3/12/14)

## PRESS RELEASES

- [Press release](#) by Dutch cleantech company Asperitas announcing partnership with Qarnot on green edge computing (7/31/17)
- [Press release](#) by European data center specialist Data4 announcing their strategic partnership with Qarnot (1/29/16)
- [Press release](#) by French and European bank BNP Paribas, client of Qarnot computing (05/19/15)
- [Press release](#) (in French) by Business France announcing the 20 startups selected on 130 applicants to participate in the CES (Consumer Electronics Show) in Las Vegas with the French Tech delegation (10/20/15)
- [Press release](#) (in French) by HP announcing the 22 startups selected for its program "Promo Startup" (5/31/15)

## AWARDS

- 2018 Winner - [CES® Eureka Park Climate Change Innovators](#)
- 2017 Winner - [Engie Big Pitch competition](#)
- 2016 Winner - [Popular Mechanics' Editors' Choice Award](#)
- 2016 1st Prize - [Smart Home Challenge by French bank Credit Agricole](#)
- 2016 Special Prize "Open Innov" (awarded by ENGIE's employees) - [Startup of the Year contest by ENGIE](#), one of the main French energy providers
- 2016 Finalist - [Social Entrepreneur Award, Boston Consulting Group](#) (BCG)
- 2015 Winner - [Cloud Innovation World Cup](#), Smart Living category
- 2015 Winner - [Raise / Lieu du Design prize](#) for Design
- 2014 Finalist - Regional "[Charmes de l'Innovation Responsable](#)" award for Sustainability
- 2014 Winner - National "[Prize for Digital Technologies](#)"

- 2013 Winner - [Telecom ParisTech Alumni Innovation Day](#)
- 2013 Winner for France - [European Climate-KIC Venture Competition](#)

#### **OTHER SOURCES AND DOCUMENTS**

- Data centers' energy consumption and carbon footprint : Greenpeace reports [2017](#), [2016](#), [2015](#) and [2012](#)
- [Third Industrial Revolution Master Plan](#) by Jeremy Rifkin for the Nord-Pas-de-Calais region (Qarnot mentioned p27) 2013
- [“Transition Through Innovation” report](#), by Arnold Schwarzenegger’s NGO R20, handed out to the COP21 organizers. Page 84-85, the report mentions that with 2000 000 Qarnot Q.rad heaters, 5 million tons of CO2 per year can be saved.

#### **PRESS CONTACT**

Eloise Emptoz  
+33 (0)6 74 26 67 38  
[eloise@qarnot.com](mailto:eloise@qarnot.com)

#### **QARNOT ONLINE**

[www.qarnot.com](http://www.qarnot.com)

Twitter: [@qarnot](#)  
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