

**CUSTOMER:**  
eHealth Nigeria  
ehealthnigeria.org

**IN COLLABORATION WITH:**  
International Computer  
Concepts (ICC)  
www.icc-usa.com

**INDUSTRY**  
Healthcare

**CHALLENGES**

- Limited, intermittent and low-quality electric power
- High demand for virtual servers
- Tight budget and constraints on server space

**SOLUTION**

- Custom-built rack-based servers
- Servers powered by energy-efficient AMD Opteron™ processors

**RESULTS**

- Reliable server access for healthcare professionals
- On-demand virtual machines for critical projects
- Maximum use of available power

**AMD TECHNOLOGY  
AT A GLANCE**

AMD Opteron 6100™ Series  
8-core processors and  
AMD Opteron 4100™ Series  
6-core processors

*"We don't see any shortage of demand, eHealth technology is transformational. We see the results every day, and we are committed to continuing to strive to meet that need."*

Adam Thompson  
Co-Founder, eHealth Nigeria



*AMD helps eHealth Nigeria build a system designed to improve healthcare*

**A Healthcare System without Infrastructure**

eHealth Nigeria is a non-governmental organization (NGO) dedicated to improving health care in developing countries through strengthening health care workers and the systems that support them. They work with Ministries of Health, local governmental organizations, and in-country partners to develop sustainable Health Management Information Systems (HMIS).

Headquartered in Kano, Nigeria and with offices in Santa Ana, California, eHealth Nigeria was founded in 2009 by Adam Thompson. The organization emerged from a research project at the University of California focused on women's rights and women's health campaigns. Thompson and eHealth co-founder Evelyn Castle found during their research that electronic health information systems needed in maternity hospitals to track patient data were almost nonexistent. Their goal was to see that a sustainable system for effective and accurate health services would become universally available to the people of Nigeria.

In this pursuit, they identified a key problem: network and server access was limited throughout the Nigerian healthcare system due to a lack of consistently reliable energy, an essential requirement for operating a data center to manage records and communications.

**A Strategic Solution for Better Medicine**

eHealth Nigeria set out to solve these infrastructural problems by designing a small, yet fully functional data center with its own dedicated power source — a combination of gasoline- and diesel-powered generators. They would be able to physically locate the data center at the office of their partner, Electronic Connections Ltd. But to fully actualize their plan, eHealth Nigeria would need server hardware that could take full advantage of their limited power supply.

Working with International Computer Concepts (ICC), an IT solutions provider based in Lake Zurich, IL, eHealth Nigeria determined that servers based on multi-core AMD Opteron™ 6100 Series and AMD Opteron™ 4100 Series processors would deliver the optimum combination of energy efficiency and processing power for extensive virtualization.

Learn more about AMD Energy Efficiency Technology: [www.amd.com/power](http://www.amd.com/power)



## Power Efficiency Meets Virtualization

ICC built and configured a customized set of four ICC 1012G-MT 1U Rack Servers, an ICC 1012C-T 1U Rack Server, and an ICC 2022G-UE 2U Rack Server. The 1012G-MT servers were each built with an 8-core AMD Opteron™ 6128 processor and the ICC 2022G-UE 2U was equipped with dual AMD Opteron™ 6128 processors. The 1012C-T server was configured with a 6-core AMD Opteron™ 4170 processor. The servers were loaded with open-source Linux® KVM to supply the virtualization architecture.

“We chose AMD Opteron™ 6128 processors because they have eight cores, and therefore can easily spin up eight or more virtual servers, but are rated at only 65 Watts. The AMD Opteron™ 4170 offers six cores and rates an even thriftier 50 Watts. Given the tight restrictions on power and need for virtualization, these processors were a no-brainer,” explained Alex Leites, Marketing Manager, ICC.

Learn more about AMD Opteron™ 6000 Series processors:  
[www.amd.com/opteron](http://www.amd.com/opteron)

## A Flexible, Reliable System that Works

In daily use, eHealth Nigeria's servers employ a provisioning system that allows them to provide servers on demand to clinics and hospitals across the country. “We work with countless organizations that want to undertake healthcare-related projects but can't get them off the ground because they can't get a server. We are able to provide 24/7 availability through a combination of high bandwidth and low power. We even work with telecom providers to provide data access over mobile phones to our server systems,” said Thompson.

**“Given the tight restrictions on power and need for virtualization, these processors were a no-brainer.”**

**Alex Leites**  
Marketing Manager, ICC

Recently, eHealth Nigeria worked with the Population Council, an international organization that focuses on reproductive health. The organization had adequate funding to do their work, but what they didn't have was the technology. Moreover, the organization's funding was going to run out if they couldn't complete their project by the end of the year. eHealth Nigeria's servers and data center were able to complete the Population Council project quickly and gave the organization crucial access to the data online.

## Building on Success and Looking Ahead

Even as eHealth Nigeria can see the impact of their work in the present, they are looking to expand the resources they offer in the near future. One key project will be to expand services to 26 hospitals throughout the area. Virtualization supported by AMD Opteron™ processor-based servers enables growth through virtualization without the penalties in space, power consumption, and cost of adding additional physical servers.

“We don't see any shortage of demand,” Thompson observed. “eHealth technology is transformational. We see the results every day, and we are committed to continuing to strive to meet that need.”

