



Intel Gigabit  
Case Study  
Centre Hospitalier  
Courbevoie - Neuilly-sur-Seine  
(Gigabit Ethernet in a Hospital  
network)

## Gigabit Ethernet in the Centre Hospitalier Courbevoie - Neuilly-sur-Seine network gives staff reliable 24-hour access to critical online resources

By implementing Gigabit Ethernet in the network at its main site, Centre Hospitalier Courbevoie - Neuilly-sur-Seine has enabled markedly improved response times at client workstations, providing fast and reliable access to intranet resources and enabling efficient internet-based medical research.

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**Profiled Organisation:** Centre Hospitalier Courbevoie - Neuilly-sur-Seine, France

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**The Challenge:** Improve network performance for users at client workstations, so that they can reliably access online resources and use the internet for medical research at any time of the day or night.

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**The Solution:** Upgrade the network to 1Gbps, and install Intel® PRO/1000 server adapters in all 50 servers on the network. In six of the busiest servers, install dual port server adapters to provide load balancing. Install Intel PRO/1000 desktop adapters in a number of heavily used client workstations.

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**Benefits:** Significantly faster data transfer speeds and improved response times at client workstations. Trouble-free access to resources held on the intranet and internet, including laboratory results, training and sources for medical research. Reduced burden of complaint-handling for the IT department.

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Centre Hospitalier Courbevoie-Neuilly-sur-Seine, just outside Paris, is a mid-sized hospital with a total of 500 beds split across three sites. It provides an excellent level of general medical and medical-technical services in a green and peaceful setting.

The hospital staff rely on having 24-hour access to the intranet and internet for critical information and medical research. To meet their needs for faster data transfer and improved response times at their workstations, the IT Director upgraded the network, servers and key workstations at the main Neuilly sur Seine site from 100Mbps to Gigabit Ethernet capability.

Thanks to careful planning beforehand, and the ease of installation of the Intel PRO/1000 server and desktop adapters, the upgrade was completed in just one week with minimum disruption to users. For both the IT department and the network's 200 PC users and 360 users of thin clients, Gigabit Ethernet has proved to be a complete success, providing fast, reliable access to online resources and significantly reducing the volume of network-related problems.

## Challenge

### Provide fast, reliable access to critical resources on the intranet and internet

For the 560 staff at the largest of the three Centre Hospitalier Courbevoie-Neuilly-sur-Seine and Puteaux sites, fast and reliable access to the intranet and internet 24 hours a day is crucial. Laboratory results are made available over the hospital's intranet, and the internet provides valuable resources for medical research.

The 100Mbps network at the site was unable to provide the data transfer speeds required, and response times at workstations were becoming unacceptable and leading to delays in vital medical activities. The hospital also wanted to introduce further online applications, including training, but they knew the 100Mbps network could not cope with the extra traffic.

## Process

### Implement Gigabit Ethernet capability in all servers and upgrade network cabling and switches

For the hospital's IT Director, Frédéric Gressier, it was clear a solution was needed that would improve the data flow around the network and enable staff to use critical intranet- and internet-based resources as efficiently as possible. "We chose to implement Gigabit Ethernet, as it would deliver the improvements we needed with very little change to our overall networking environment," explains Gressier.

The network connects users over seven floors including the basement, and includes 14 switches, two on each floor, and 50 servers of different makes, including ASUS, NEC, Fujitsu, Hewlett-Packard and Bell. Before upgrading the servers with Intel PRO/1000 adapters, Gressier replaced the network cabling and 11 of the switches to ensure support for the Gigabit Ethernet solution.

For Gressier, there was never any doubt that he would choose Intel components for his Gigabit Ethernet solution. Having experienced problems in the past with other manufacturers' components, he now always insists on Intel for ease of use and reliability – be it processors, motherboards or networking cards. **"I have never had to replace an Intel card," he reports. "They are extremely robust, and can be relied on even in less-than-ideal environments, where it's hot, or dusty, or badly ventilated."** Gressier is also impressed with the advanced software control parameters included on the server adapters, that enables him to optimise the use he makes of the cards.

Installing the Intel PRO/1000 server adapters was a quick and painless procedure, taking Gressier and a colleague no more than a week, and causing very little disruption to users. In six of the servers that are used very intensively, Intel PRO/1000 dual port server adapters were implemented to provide load balancing and so remove the risk of bottlenecks. Gressier also added a dozen new servers to the network, all equipped with Intel PRO/1000 server adapters, and added Intel PRO/1000 desktop adapters to 25 key workstations.

## Solution

### Improved data flow and faster response times

The hospital's Gigabit Ethernet solution has been in place since April 2005, and has proved a total success with users, whose access to the intranet and internet is now much faster and more reliable. The servers distribute data onto the backbone network at 1 Gbps, and it travels over the main network arteries at the same speed. The data is then repeated by the switches on each floor of the building to users' workstations at 100Mbps (or 1Gbps for the 25 workstations with Intel PRO/1000 desktop adapters).

"By implementing Gigabit Ethernet, we have significantly accelerated the speed at which data flows around the network," comments Gressier. "Our users are completely satisfied, as they are no longer experiencing unacceptable response times (particularly when using images from medical scanners and MRI). This has considerably reduced the volume of complaints and problems my department has to handle. Furthermore, if we hadn't upgraded our network in this way, we would not have been able to launch other intranet applications such as online training."

## Future

### Extend the benefits of Gigabit Ethernet to a second site

Following the success of the Gigabit Ethernet implementation at the Neuilly sur Seine site, Gressier is now planning to install it at the second largest of the hospital's three sites, Courbevoie, most likely in 2007. He is confident that careful planning and specification against requirements, and use of Intel server adapters, will ensure that users at the Courbevoie site experience the same degree of performance enhancements from Gigabit Ethernet as the users at Neuilly sur Seine.

