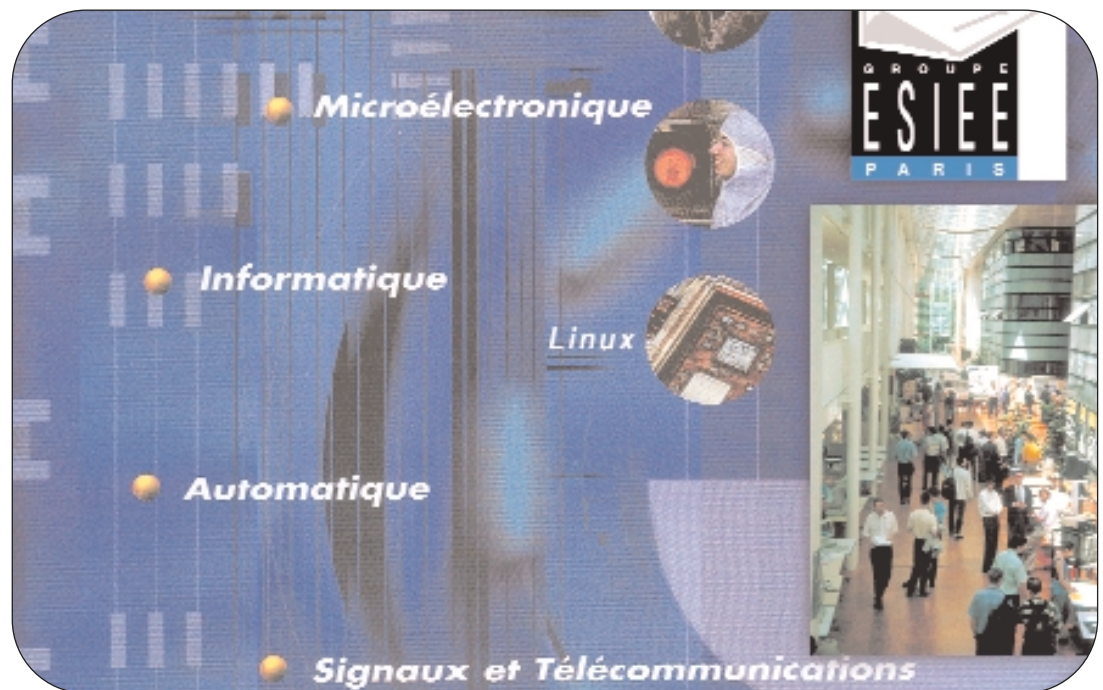




teaching
&
research



Based on its experience with the PA-RISC platform, the ESIEE has acquired considerable competence experience with Linux and the 64-bit Intel® Itanium™ 2 processor

The work undertaken by the ESIEE has placed the school in the international vanguard of skillfully handling the Linux environment on an Itanium 2 platform.

Created in 1904, the ESIEE is an advanced engineering school that prepares students for information technology careers: telecommunications, information technology, electronics, automation and multimedia.

The ESIEE, a school of the CCIP, offers a diploma recognized by the Commission of Engineering Titles and is part of the "Conference des Grandes Ecoles françaises" (Conference of Advanced French Institutes). For its engineering program, the ESIEE also represents:

- 650 students,
- 150 graduates every year,
- 90 permanent professors,
- 30,000 m² of premises,
- 2,000 m² of research laboratories, and more.

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experience acquired around PA-RISC

Information technology has become the core of economic and industrial activity and is now the basic tool of the engineer. The ESIEE has made computer science one of the key subjects of its teaching program in order to ensure its total mastery. First-year students start with C++ programming before the second step of learning the operation and programming of system environments (Unix, Linux, etc.). To this end, the school benefits from resources consistent with its objectives: more than 700 networked PCs and 40 workstations (for CAD), almost all hardware being Hewlett-Packard.

Thierry Simonnet joined the staff in 1998 as Manager of the General IT Resources Service (GIRS) of the ESIEE group and with solid experience using HP platforms. In December 1999, he decided to start projects for students in order to favor their inclusion in school life. The first project involved setting up Linux on HP PA-RISC workstations, a case study conducted in parallel by HP Laboratories with Americans at Fort Collins, Colorado. "This upgrade required a number of resources (data, hardware, support) that HP immediately provided to the school in its role of preferred partner," Thierry Simonnet explained. The involvement of HP has enabled ESIEE students to rapidly acquire skills and credibility in the eyes of the American students. One year was sufficient to successfully conclude the project. In February 2001 and thanks to HP, ESIEE students presented the results of their work at Linux Expo (Paris) before participating several months later in the "Rencontres Mondiales du Logiciel Libre" (World Meetings on Freeware) and the "Debian 1 Conference" (Bordeaux, France) to show that Linux – in its Debian distribution – worked perfectly on the HP PA-RISC workstation.

In 2001, Jean-Pol Taffin (General Secretary of the ESIEE group) and Jacques Misselis (HP Education-Research Director) decided to position the ESIEE among the most important national teaching establishments for the use of Linux and Open Source in France. The "Gelato" Open Source program supported by the ESIEE (gateway) and HP Research in Palo Alto confirmed these intentions.

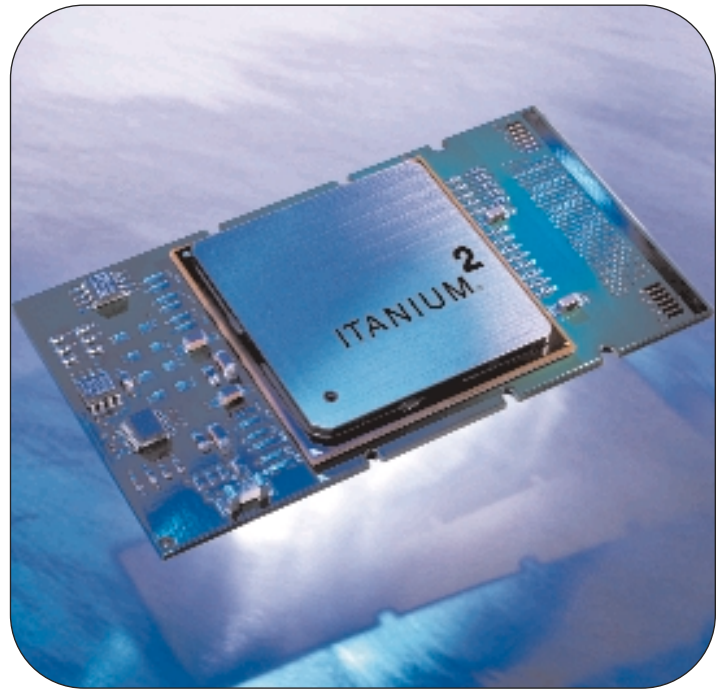
Itanium steps onto center stage...

In August 2001 in the framework of an HP-Intel partnership, HP proposed to the ESIEE a contest subject involving the Intel Itanium processor (IA 64 bit architecture). Selected from application dossiers, the school received the first I2000 machines designed by HP around the Itanium processor one month later. "We tried our Debian distribution, which was immediately operational. We encountered no major difficulties with the machine, that behaved like a large server but with extended functions," commented Thierry Simonnet.

In parallel, the HP entity responsible for relations with Universities decided to create a federation (GELATO) to promote Linux on the IA-64 platform. The federation included ESIEE representing Europe. "The ESIEE group decided to become a logistic member of the Federation and orient its action towards projects based on the Linux/Itanium couple, whereas the other Universities concentrated essentially on research (kernel, distribution, etc.)," noted Thierry Simonnet. The aim was to offer a gateway co-developed with the NCSA (National Center for Supercomputing Applications) in order to combine skills and ensure the packaging of a Linux distribution so that each member could access the same platform level. The gateway has been operational since November 15, 2002 on an Itanium platform (HP rx4610 quadri-processors).

Itanium 2: increased performance

At the end of September, the ESIEE was the first HP customer to receive the new machine with the Intel Itanium 2 processor, an HP rx2600, with which the GIRS immediately started working. Among the different research themes proposed on the Itanium, performance analysis became a focal point of the ESIEE. While developments were in-house, the school also addressed Stephane Eranian (HP Laboratories) who created software to detect time and system resource bottlenecks in an application. "As a result of this application and the driver designed by Stephane Eranian to pilot the Itanium 2 logic unit, we acquired considerable understanding of the Intel processor," remarked



Mathieu Delahaye, former ESIEE student and now computer project engineer at the school.

"The machine operates wonderfully with high performance," said Thierry Simonnet. "After living through the first PA-RISC machines in a corporate environment, the HP machine with Itanium 2 offers a comparable quality of service. In addition, the processor architecture is better designed and more open than that of its predecessor."

Encouraged by these very promising results, the ESIEE is now waiting for software publishers to follow this lead by providing applications that maximally benefit from the new Intel processor. The ESIEE will thus have a complete platform to produce its different applications projects. HP has clearly shown by its substantial involvement alongside the ESIEE, its desire to become the leading manufacturer of computers built around the Intel Itanium 2 chip.

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With an architecture
similar to that of PA-
RISC, the Itanium 2
processor tested
under Linux offers
remarkable
performance
//



www.intel.fr/ebusiness

www.hp.com/fr/references-clients

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Gelato, the Linux community

Created by HP and seven other world leaders in research, the Gelato Foundation is a community of developers working around Open Source. The ESIEE is an active member of Gelato and provides its permanent experience on the Linux/Itanium platform. The gateway provides access to substantial quantities of data as well as freeware downloading.

www.gelato.org