



## Ubuntu enables advanced computer research into killer diseases

Delivering training courses to researchers in developing countries – Ubuntu was the first choice for The Wellcome Trust Sanger Institute.



### Background

The Wellcome Trust Sanger Institute is charity at the forefront of research into the study of the genomes of the world's major killer diseases such as malaria, typhoid fever and the 'superbug' MRSA. The Trust aims to offer workshops for free to countries in the developing world. Giving their researchers up-to-date training in the fast-moving arena of analysis, and providing them with the mechanisms to keep up with new developments.

In June 2006, the Trust ran the first of their workshop project in Uruguay. The course provided an introduction to the bioinformatics tools freely available on the Internet. It focused primarily on The Human Genome data and gave students hands-on training in the use of public databases, and web-based sequence analysis tools. In addition to training researchers from all over South America the Wellcome Trust donated high-powered computers, essential for analysing the genomes, to the Instituto de Higiene, Uruguay.

### Issue

The Instituto de Higiene set up a permanent training room to house the computers, and act as a centre for workshops in South America. The Institutes Informatics Systems Group needed to ensure that it was possible to install the training room computers, and networks, anywhere in the world that offers reliable electrical power and a connection to the Internet. That's where Ubuntu came in.

### Solution

The Systems Group integrated Ubuntu into a flexible, self-contained training room that was straightforward enough for local staff to administer. Ubuntu is installed on workstations automatically from the server across the network. Andrew Flint, Senior Systems Engineer said "For the training centres, we chose Ubuntu because it builds on the software package management strengths of Debian, which is used at the Sanger Institute. And because it has out-of-the-box support for a wider range of hardware and local languages."

He continues, "Ubuntu runs the open source software the courses are based on, runs out-of-the-box on a wider range of hardware than other Linux flavours. It also allows me to automate routine tasks such as updating software, which means the staff on site can concentrate on science and teaching rather than system administration."

### Result

The training gateway computer, with two interfaces, creates a private network connected to the wider public network using the Smoothwall Express gateway/firewall software. Training course user accounts, software and data are stored on two training servers, one Ubuntu and one Microsoft. Windows. Users log in to a set of dual boot Linux/Windows workstations.

Following the workshops in Uruguay, the Wellcome Trust has installed Ubuntu in its training room and installed it in Kilifi, Kenya in November 2006. Further sites in Vietnam, Thailand and Malawi will follow in due course.

*"The Ubuntu philosophy of bringing the benefits of open source software technology to all parts of the globe echoes the Wellcome Trust's aim of sharing scientific knowledge with developing countries."*

*Andrew Flint,  
Senior Systems Engineer*