

## Visiting Linux4Afrika in Tanzania

## GNU COUNTRY

Linux4Afrika collects used hardware in Germany to equip African schools. Linux Magazine editor Markus Feilner went to Dar es Salaam, Zanzibar, and other places in Tanzania to hunt down Linux machines.

TEXT AND PHOTOS BY MARKUS FEILNER

Finally a vacation, but a different one this time – I’m on a mission to one of the poorest countries in the world, Tanzania, in East Africa, where the Linux4Afrika project [1] is starting to equip schools with computer networks. My fellow travelers and I will be visiting schools all over the country and reviewing the current project status with Paul Koyi from Agumba Computers, the local technology partner.

### Karibu, Welcome!

Dar es Salaam, the capital city, is visited by 1.5 million tourists every year, and the numbers are growing. The lines for visas wind past tiled staircases and through musty, gray corridors. Tanzania is a melting pot of cultures: Indians, Arabs, Germans, English, and Chinese have been here. Dar is permanently on the boil – a nexus on the Indian Ocean. Our passports and the dollar bills for the visas are inspected by no fewer than seven people before somebody finally stamps them with green ink.

Tanzania hasn’t had a civil war since the war of independence in 1961, no tribal disputes, and no armed conflict in a country inhabited by more than 120

different groups like the Sukuma, Nyakusa, Nyamwezi, and Chagga. Along with the Masai, Europeans, and Asians, some 35 million people live here, and half of them are children. 80 percent of the population over the age of 15 can read and write, very unusual for Africa.

One major reason for the high standards of education is displayed on posters all over the country: at the customs desk, in restaurants, hotels, and in the multitude of tiny shops that sell produce and clothes. The portrait shows Julius Nyerere, “Baba wa Taifa,” the father of the nation who was the elected State President of the country for more than 30 years. As the “Nelson Mandela of Tanzania,” Nyerere coined a sense of national identity that the Tanzanians accept and place above their tribal links. And today, 94 percent of all children attend a primary school. Good conditions for an educational project [2].

### Bare Necessities

Karatu sits at the end of the tarmac road to the great national parks like the Ngorongoro crater and the Serengeti. The powdery red dust on the ground creeps in everywhere; only the main road is paved. Women in bright clothes effortlessly balance bowls of coffee, fruit, and vegetables on their heads.

We visit an Internet café that has Windows 2000 run-

ning on all three machines. I ask the proprietor whether he’s heard of Linux, and he has, but nobody for miles around knows how to use it. The connection gets up to modem speed from time to time, but every other request throws an error – a bad day, says the guy behind the counter, but at least we had power. The hardware shop next door was a big surprise, too (Figure 1).

Power, Internet, know-how, and hardware – this is just a short list of the wants with which the Linux4Afrika project (L4A) must contend. Computer lessons at school don’t rely on an Internet connection, but do require power. The L4A terminal server includes a web and mail server, content management, a wiki, and educational software such as Moodle, and it gives the students a local



Figure 2: Primary school in Mto wa Mbu. Banana leaves as walls, no electricity, no Internet.

project page [1]. The diskless client PCs boot Edubuntu from the LTSP server; they are decommissioned Pentium III systems with at least 128MB RAM, a typical standard in Tanzanian companies.

The foundation Freioss e.V. collects such used machines, checks and repairs them, and gets them ready for service in African classrooms. The organizers fund terminal servers and the cost of transportation to Africa from donations.

### Lessons under Leaves

Mto wa Mbu – the name means “Mosquito River” – we visited a banana plantation in the center of town (Figure 2). Even though this school may not be a candidate for the Linux4Afrika project, the students here are incredibly motivated and willing to learn.

Nyerere successfully taught the Tanzanians that the only way for Africa to achieve genuine independence is

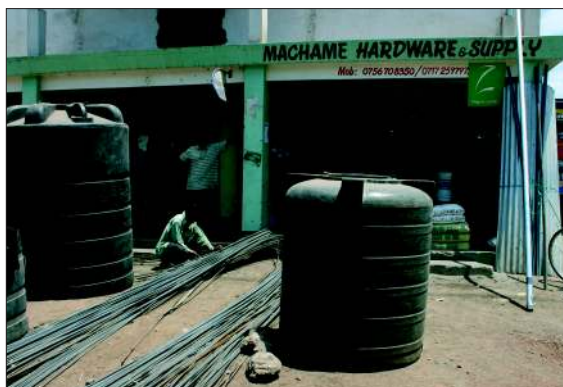


Figure 1: Hardware, African style. Getting spares is tricky.

through education. From the Masai school in the northern grasslands (Figures 3 and 4), to the Koran school on the semi-autonomous island of Zanzibar, the quality, equipment, and appearance of the 20,000 Tanzanian schools [2] is as varied as the buildings that house them. L4A takes this into account and requires that two basic conditions are fulfilled: power and a secure server room.

Next stop, Zanzibar. The island of spices and fruits should be rich, but reality is a different matter. The houses built by Arabic and Victorian visitors are decaying and moldy.

The Al-Latif Nursery School in the center of Stonetown (Figure 5) was founded by the initiative of local residents and relies entirely on donations; most students do not have tables and chairs. The population of Zanzibar is demoralized. The people responsible for the planned new school building tell you tales of problems and obstacles the government puts in their way. Linux is almost unthinkable; more fundamental needs take priority.

### Dar es Salaam: Agumba

Back to Dar es Salaam, where the humidity, heat, and exhaust fumes make it difficult to breath. The Ushika TFC Building in the center of Dar obviously dates back to the 1970s when the country was a socialist state. Street traders sell T-shirts, taxis jockey for position.

Paul Koyi founded Agumba in the 1990s, and now some 27 employees share space in five cramped offices on the fourth floor. This is where networks and servers for the German embassy, the government, and the World Bank are designed [3].

In the afternoon, Paul takes us to the warehouse. Mid-September, customs finally released the container

with the computers donated by German users. Agumba unloaded the computers and stored them in Koyi's old house.

Walls two meters high with metal barbs surround the single-story white building with barred windows and a palm tree in the garden (Figure 6). Four employees guard the warehouse. Koyi answers his phone and then tells me, "That was the school we're visiting tomorrow."

### Dr. Didas Secondary School

The drive to Dr. Didas Secondary School takes us through the suburbs of the rapidly growing Dar. Pugu school is on the left of the road and is where Julius Nyer-

ere once taught. "Baba" would have liked the idea of open source.

Just a few kilometers further on, in the open land, Koyi turns right. Red, white, and beige buildings huddle around a courtyard in the shade of Acacias. Abdallah Henku, the headmaster, greets us. Like almost half of the secondary schools in Tanzania, Dr. Didas boarding school is a commercially run, private institution and already has a computer room. Nevertheless, Linux4Afrika's decision to equip this school is understandable. The teachers have experience with PCs, and the LTSP Edubuntu systems can utilize the existing infrastructure. Agumba's support is close at hand, whereas computers are of no use to schools like those in Zanzibar or Mto wa Mbu.

### Kwaheri, Farewell!

Our plane leaves in three hours and our route takes us through the daily traffic jams in Dar. Paul tells me that he hopes for more help from the Linux community – for example, from people like Marc Shuttleworth, the founder of Ubuntu – so that he can organize more training. He drops us off at the airport and we promise to organize more support. Then we merge into the line at the Mwalimu Julius K. Nyerere International Airport. Kwaheri, Tanzania, Kwaheri Paul! ■



Figure 3: David, a Masai (left), has heard of Linux at school ...



Figure 4: ... but his family hasn't. .



Figure 5: World cultural heritage. Buildings in Stonetown, the old town of Zanzibar.



Figure 6: Monitors donated by Germany at the Linux4Afrika warehouse in Dar.

### INFO

- [1] Linux4Afrika project: <http://www.linux4afrika.de/index.php?id=60&L=0>
- [2] Statistical annual report, Tanzania: [http://www.nbs.go.tz/TZ\\_FIGURES/TZ\\_FIG\\_2006.pdf](http://www.nbs.go.tz/TZ_FIGURES/TZ_FIG_2006.pdf)
- [3] Agumba Computers, Dar es Salaam: <http://www.agumba.biz>
- [4] Freiburger Open Source Software Network: <http://www.freioss.net>