



THE BIG SWITCH

Munich city council has migrated 15,000 workers from Windows to Linux. **Mike Saunders** and **Graham Morrison** visited the city and learned just how upset Steve Ballmer was...

“One of the biggest aims of LiMux was to make the city more independent.”

Hirschgarten, in the west of Munich, is one of Europe's biggest beer gardens, with over 8,000 places to sit. It's a spectacular sight in summer: hundreds of benches as far as the eye can see, trees providing some shelter from the heat, and a vast number of people relaxing and enjoying the city's famous beers.

But while 8,000 is an impressive number, it's not as impressive as 15,000. That's how many people the Munich city council has switched from Windows to Linux over

the last decade. Migrating workers of Germany's third-largest city was no easy task and there were plenty of hurdles along the way, but by and large the project has been a storming success.

We've been following the progress of LiMux (Linux in Munich) for years, and now that the project is effectively complete, we decided to visit the city and talk to the man in charge of it. Read on to discover how it all started, how Microsoft tried to torpedo it, and whether other cities in the world can follow Munich's lead...

Humble beginnings

Cast your mind back to 2001, and the state of Linux at the time. It was well established as a server OS and fairly well known among computing hobbyists, but still a small fish in the desktop pond. Gnome and KDE were still young whippersnappers, while hardware detection needed improvements and top-quality desktop applications were lacking in many areas.

So for an entire city council to even consider moving to a largely unknown platform was a major event. Still, it happened gradually, as Peter Hoffman, the project leader for LiMux, told us in his office:

“Back in 2001, a member of the Munich city council asked: are there any alternatives to using Microsoft software? And based on that question, we put out a tender for a study, which compared five platform options. One was purely Microsoft-based, one was Windows with OpenOffice, one was Linux with OpenOffice, and so forth.”

As the study progressed, two main options emerged as choices for the council: remaining with a purely Microsoft solution, which would involve upgrading existing Windows NT and 2000 systems to XP; and moving to a purely Linux and open source alternative. “If you lay more emphasis on the monetary side, the pure Microsoft alternative would have won, or if you lay the emphasis on the strategic side, the open source alternative was better.”

Doing the maths

That was interesting enough – that staying with Microsoft would have been cheaper. Given the cost of buying licences for Windows and Office, you’d think that sticking with Microsoft would’ve cost far more than switching to Linux. However, the calculations were based on a five-year period, so they mostly covered migration costs (staff, technical support, retraining users etc.) rather than operational costs (buying new hardware, licence fees and so forth). But how did the LiMux team determine that Linux was a better choice strategically?

“With the Linux alternative, we saw that it would be possible to implement the security guidelines we wanted to have. At the time there was a lot of discussion about Windows 2000 and the calling home functionality. If you asked Microsoft at that time, ‘which one of your programs are calling home?’, they said ‘err, yeah, maybe some, or not’. So we didn’t get a clear answer at that time, and we thought there would be a great advantage from a security perspective to using Linux.”

One of the biggest aims of LiMux was to make the city more independent. Germany’s major centre-left political party is the SPD, and its local Munich politicians backed the idea of the city council switching to Linux. They wanted to promote small and medium-sized companies in the area, giving them funding to improve the city’s IT infrastructure, instead of sending the money overseas to a large American corporation. The SPD argued that moving to Linux



Peter Hofmann is the leader of the LiMux project, and explained its ups-and-downs from his office overlooking the Frauenkirche.

would foster the local IT market, as the city would pay local consultants and companies to do the work.

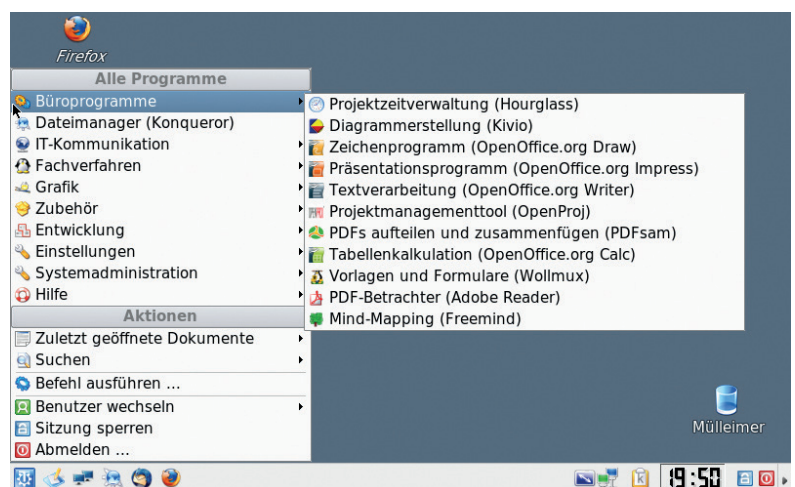
Ballmer marches in

In May 2003, the city council was due to vote on whether to make the big switch to Linux. But Microsoft didn’t stand still: Steve Ballmer, the infamously loud CEO, flew over to speak with Munich’s

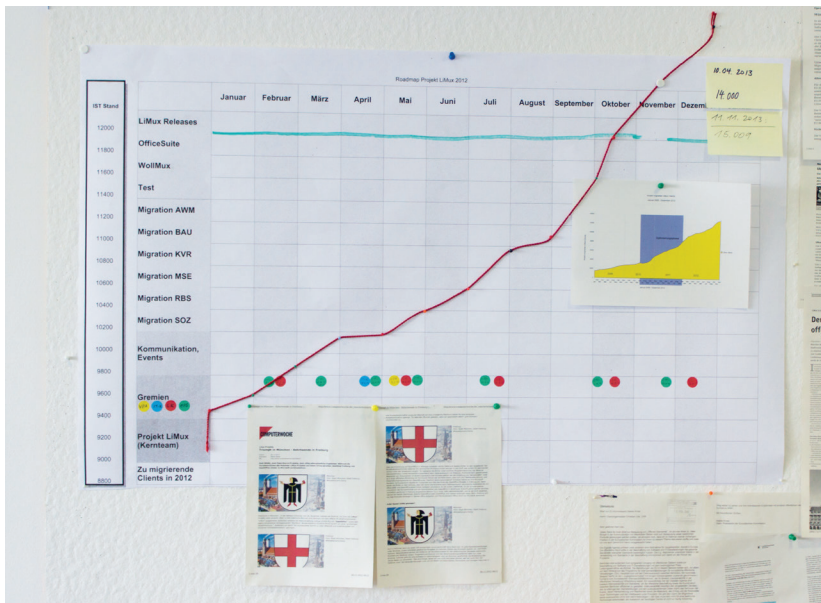
What is the LiMux Client?

Put simply, it’s a customised version of Kubuntu. We had a chance to explore it in Peter’s office, and it’s very much what you’d expect from an older Kubuntu release: a Start menu in the bottom-left, various office and productivity applications installed, and a generic theme. There’s a bit of LiMux theming in the wallpaper, but otherwise

it looks rather plain. A new version of the LiMux Client is due this year; it will be based on Kubuntu 12.04, an LTS (Long-Term Support) release. With this, LiMux users across the city will make the transition to KDE 4, and experience something rather more polished than the KDE 3 desktop they’ve been used to.



It’s not pretty or bleeding-edge, but LiMux has done a fine job of replacing old Windows NT and 2000 installations.



This chart shows the migration path in 2012: from 9,000 desktops at the start of the year to 14,000 by the end.

mayor, Christian Ude. But this had an adverse effect, as Peter explains:

"Steve Ballmer tried to convince our mayor that it would be a bad decision to switch to open source, because it's not something an administration can rely on. But some members of the city council said: what are we, if one member of a big company simply comes here, and he thinks he can just switch our opinions?"

And it just got worse for Microsoft's boss. "Our mayor was preparing for a meeting with Steve Ballmer, and because English is not his native language, he asked his interpreter: 'What shall I say if I don't have the right words?' And the interpreter replied:

'Stay calm, think and say: What else can you offer?'

Later on during the meeting, our mayor was quickly at the point where he had nothing to say to Ballmer, except for

'What else can you offer?' several times. Years later, he heard that Ballmer was deeply impressed by how hard he was in negotiations!"

"LiMux has been a success, and has shown how flexible and effective Free Software is."

Alea Iacta Est

So Steve Ballmer flew back to Microsoft HQ, the Munich city council voted, and it voted in favour of Linux. History had been made. GNU/Linux and Free Software users around the world were pleasantly surprised by the decision – especially as it had been made in Munich and Bavaria, one of the more conservative areas of Europe. Something big was going to happen, but it needed time to take root, as Peter explains:

"We could not to start the migration next day, but wanted to do a proof of concept first. In 2004, we started to take preliminary steps for the migration, and one of them was to put out a tender for a Linux-based solution. Ten companies approached us trying to sell their solutions, and a consortium of two small

companies, Gonicus and Softcon, won the tender with a solution based on Debian."

Gonicus provided consultants, and the city council recruited new technicians – eventually there was a team of 13 working on the LiMux project. They started creating a custom version of Debian and by 2006 the roll-out was beginning. But the choice of Debian caused them some minor headaches further down the line:

"In 2008 we saw that Debian was clearly stable, a good thing, but not the best if you want to use new hardware. They are always a few years behind. We also wanted to have a clear timetable for when new versions would be available. In Debian, when it's ready it's ready, so you can't base a release plan on it. Those two things were the basis for switching from Debian to Ubuntu."

From Debian to Ubuntu

Another reason for using Ubuntu was the KDE desktop. It was clear to the LiMux team that some users would fight back against the change – especially if they regarded the current system as good enough, and the new one as something forced on them by politicians. So KDE was chosen as it could provide an interface very similar to that of Windows NT and 2000, as used by the various departments of the city at the time. How did people respond?

"There are different levels of users. Some would say: 'This button was green before, and it isn't green now, so I cannot work like this!' And the others say: 'Just give me something, I have to work, and I'll get used to it'. We had that kind of range of users, but most were the first type."

Peter and his team worked to ease the migration process by organising meetings and roadshows around the city where people could come and see Linux in action. They had Q&A sessions and even a Microsoft-free zone set up with Linux computers to play with. The goal was that users would get a preview of what they'd be using a year or two down the line.

"Some people came to us and said: 'Can I use a mouse? I thought Linux was only command line based'. One person came with a floppy disk and said 'My most important documents are on this. Is it still possible to work with them?' So we showed that it was possible to open them on Linux. We were always trying to give information to the users: what was happening, and why it was happening."

While LiMux was the central project in charge of the operating system, the roll-out and migration was handled by individual departments. There was no specific deadline: departments would choose by themselves when to handle the transition, and the LiMux team would provide the technical know-how to perform the migration.

Not every public sector employee moved to Linux though. Education was one area in which LiMux couldn't get involved, because the decisions about

Who's next?

Surprisingly, the success of LiMux hasn't resulted in a flood of similar projects across Europe, although we all know how slow things move in politics. Peter has been talking to other administrations around Germany – but whether anything will come from them remains to be seen. A similar project, Wienux, aimed to move the city of Vienna over to Linux, but hit stumbling blocks in 2008.

Peter's reasoning for this: Wienux didn't have proper political backing. You need more than just a couple of technically minded councillors to make such a big project a success – you need to know that you have the support of the majority.

It all has to start somewhere, though, so maybe if we all write to our local councillors, point out the success of LiMux and ask them to consider a similar plan, there'll be a lot more FOSS in our towns and cities in 10 years' time...

educational software are made at a national level in Germany. In addition, a few systems with very esoteric requirements are still running Windows, although Peter tried Wine:

"We have a very limited Wine installation, because there's always the need to save the configuration of Wine together with the application. They're deeply dependent. If you change the version of Wine, you have to do something with the application, and vice-versa. We saw that we'd have to use 10 or 15 different configurations of Wine on the same machine in some cases."

Some software vendors won't support their programs if they're running on Wine rather than a native Windows installation, so in the end the LiMux team only deployed two Wine installations.

While the LiMux version of Kubuntu was fairly standardised across the different departments in the city, it took a lot of work to provide the same functionality as the myriad Windows setups previously out there. Peter and his team counted over 50 different configurations of Windows in use, so even when the transition had gone well for one department, the requirements of the next one were often completely different.

Today, the IT infrastructure is a lot more centralised, with the LiMux developers issuing new releases and giving support. It's much easier to fix problems and help people when you have roughly the same operating system on each PC, rather than non-standard custom setups with different service packs, patches and so forth.

Money talks

While the initial aim of the project wasn't to save money, it's still what a lot of people talk about. Today, over a decade down the line, has LiMux been a good idea in terms of finances?

"Yes, it has, depending on the calculation. We did a calculation and we made it publicly available on our information system for the city council. We have the exact same parameters for staying with Windows as



with the migration to the Linux platform. Based on those parameters, Linux has saved us €10m."

A respectable sum indeed – but some companies weren't happy with it. HP compiled a study which concluded that no, actually, switching to Linux had cost the city €60m. Had Munich stayed with Microsoft and moved to Windows XP and Office 2003, it would only have cost €17m. What did Peter and his team make of this?

"We contacted HP and said: 'Nice numbers, how did you calculate them?' And they said 'Uh, um, that was an internal paper and not supposed to be published...' They published a summary, but it was not clear for anyone to see how they calculated."

As a major partner of Microsoft, it's not surprising that HP would try to put a different spin on the project. But the proof is in the pudding: LiMux has been a success, has shown how flexible and effective free software is, and will hopefully inspire many other cities to follow its lead in the future. 🐧

Yes, there are cuddly penguins in the LiMux offices. All is good in the world.