

UKUUG Linux Developers Conference AT THE DEVELOPERS CONFERENCE

RICHARD IBBOTSON



**Professor Sumner
with early photos
of the UK computer
industry**

David McAllister, a director of Strategic Technologies, was the first of the speakers. He gave a talk on Linux Clusters in the XSP environment. That's big iron to you and me. In spite suffering jet lag, McAllister delivered a sound appraisal of the commercial uses of clusters with XSP. He covered the increased commercial use of the Internet and the greater reliance of business on the Net. He advocated a new approach to deal with this in the shape of integrated hardware and software and networking.

Rob Gautier came along next to chat on brute force clusters. His talk was about Grendel – a Beowulf cluster used at the University of Wales by the Bioinformatics Research Group. Most of the work consists of large database searches. The design and management of the cluster is fairly labour intensive.

The UKUUG Developers Conference was held at UMIST in Manchester this year. A great deal of thought was put into this year's venue and it certainly paid off...

Nick Davis delivered a speech about commercial applications, which IBM is very interested in developing. Davis asserted that IBM are doing their utmost to support GNU/Linux and educate their own employees to work with free and open source software – all of which thoroughly convinced the Conference of IBM's commitment to Linux.

Davis believes that the open-source movement is no longer driven by one company; it's now an industry wide phenomenon, with big companies ordering large Linux networks from IBM. Linux is now a well-established part of the world of e-commerce. IBM is presently investing a "complete government budget" in Linux.

Bo Thorsen's talk about the porting of Linux to 64-bit systems might have been the highlight of the whole three days. Bo works at the SuSE labs and so



should be regarded as an authoritative voice. He asked those present not to "underestimate what's going to happen with 64-bit Linux in the next five years". His excellent presentation was well received by the crowd.

Andrea Arcangeli came along next and gave us his stuff on vsyscalls. Andrea also works at the SuSE labs and his main thing is kernel developing. Having made a conscious decision to port Linux over to the X86 64-bit architecture, the task in hand just now is to get it to work. His talk also gave practical insight into something that is a closed world for most of us. Keep your eyes on www.x86-64.org if you want to know more.

Professor Frank Sumner explained how computers were built and how British attempts to join the technology race were hard to sustain in pre-Internet times. In spite of that, a small team of academics managed to do some amazing things back in the 1950s and 60s. We were then taken over to the Manchester Museum of Science and Industry where The Baby, one of the original computers, was demonstrated.

Friday finished with a trip to the Yang Sing restaurant where pre-dinner drinks were followed by a Chinese banquet – the highlight of the day!

On Saturday morning (when most of us were still suffering from the previous night's overindulgence) Professor David Aspinall delivered the second part of the birth of computing in

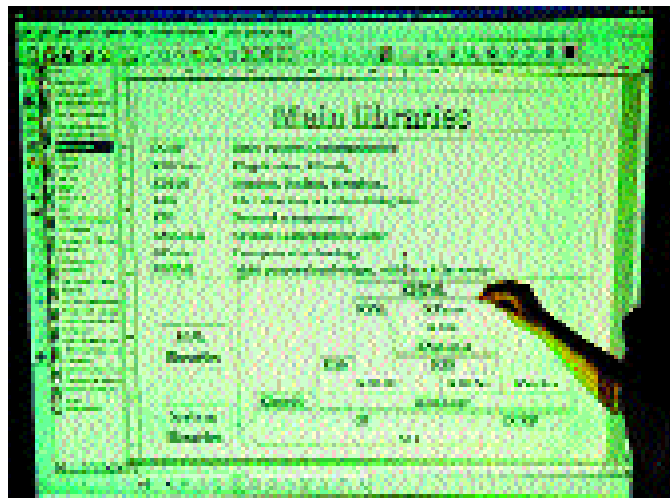
Manchester. This was the kind of thing that would easily make a complete TV series. It was quite an amazing talk – rewarded by deafening applause.

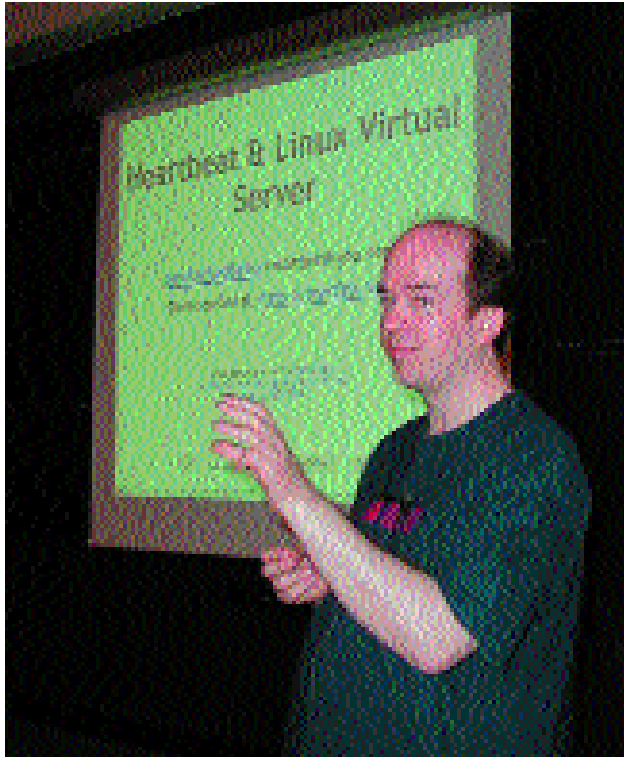
Continuing with the shock 'em dead approach to Saturday morning, Werner Heuser gave us his first presentation of the day, which was about the use of Linux on a laptop. There are quite a few people out there who haven't discovered that Linux can be used on a desktop, so Werner's presentation drew a lot of interest from the crowd.

Luke Leighton got up next and gave us Samba: The Next Generation. Luke says he'd like to get people interested in open source software and the

**Chris Benson
taking questions**

**KDE architecture
by David Faure**





**Reliable services with
Martin Hamilton**

distributed computing environment. He'd like to get them really mad so that they go to their computer and start coding right away. He thinks that open source software is outdated when it comes to DCE and RPC. The crowd in the lecture theatre looked as though they actually agreed with him every bit of the way.

Chris Benson from Treepax covered DCE and why Linux developers should know about it. He gave us a brief history of DCE, the service that it provides and the current availability on Linux. The Open Software Foundation was founded in 1998 as a balance to the UNIX International Consortium, which was set up by Sun and AT&T. One of the strong points of DCE is integration.

At this point the conference split between two different buildings. Some of us went over to the KDE talk by David Faure at Stafford House. Others stayed behind in the Renold Building and listened to Chris Benson talk about distributed computing environment.

David Faure's presentation on KDE architecture and development was well worth taking in. Even some of the KDE developers we have spoken to like to watch him in action. His explanation of how the

whole thing works and how developers collaborate was easy to digest and even those of us who are not developers understood.

At the same time, Martin Hamilton spoke about Heartbeat and the JANET virtual server. He works as a developer on the JANET Web cache service. Martin discussed building scalable and reliable Internet services. Universities don't have much money and any attempt at producing a low cost and reliable Internet service for staff and students is to be welcomed. The Linux Virtual Server project provides for these conditions and, combined with Heartbeat, all of the usual problems to do with traffic handling and load balancing can be quickly eradicated.

Martin was followed by David Woodhouse, who explained the journaling flash file system. David works for Red Hat UK, where he is responsible for kernel drivers for memory technology devices. The journaling flash file system is all about the work that Axis Communications have come up with in the shape of JFSS. The talk was about the limitations of flash technology and how JFSS can be implemented to improve it.

A wander across the road again revealed that Michael Meeks was giving a presentation on the Gnome architecture and development – something that most of us think he should do more of. Christian Egli was also given a chance to explain rapid application development with Gnome and Python. For those of you who haven't yet seen Michael give a public explanation of the way that Gnome and bonobo components work should try to be there for the next one. He's very good at taking an extremely complex piece of technology and explaining in a few simple words how all of it works.

Next, Christian Egli chatted about using Gnome. He created an application called gPizza for the crowd in the room. If you have Glade or Anjuta and Kdevelop it's very difficult to find other tools that are just as flexible with the same range of possibilities. gPizza worked first time without a hitch.

Back over at the Reynolds building, Andrea Arcangeli of SuSE gave us an excellent talk on NUMA. "What is NUMA?" I hear you say. Well, it's a technology that opens a new class of optimisations so that the full power of a machine can be utilised. Andrea showed us the optimisations that are available on wildfire alpha boxes. He also showed us Zerocopy O_DIRECT. This is something that does massive I/O stuff to storage devices in the filesystem.

Steve Whitehouse came along from Sistina software and gave us Zerocopy. Steve is the DecNet kernel code maintainer and recently completed a PhD on error-resilient image compression. He runs his own consulting company – ChyGwyn Limited, as well as the European Sistina office. Steve explained the recent improvements made in the GNU/Linux

Useful URLs

<i>Linux Virtual Server:</i>	http://www.lvsp.org/
<i>Robert Gautier:</i>	http://www.ateb.co.uk/packages/farmer
<i>Bo Thorsen:</i>	http://www.x86-64.org
<i>Andrea Arcangeli, SuSE Labs:</i>	http://www.suse.com
<i>David Faure:</i>	http://www.kde.org
<i>Tom Rathbone:</i>	http://www.aceldama.com/~tomr/papers/2001/web-gimp/

kernel under the 2.4.x kernel releases.

Another trip to the Stafford building found Tom Rathbone giving an explanation about fractal generation using GIMP MathMap. MathMap is the scientific end of image manipulation. The bit that happens before photographers and commercial artists get to use GIMP. It's a GIMP plugin that allows a user to describe image transforms and combinations. It's very fast and only requires a reasonably good understanding of maths. It's also a work in progress.

Luke Leighton turned up in good humour and gave us his Pymmetry – Python Trust Metrics presentation. As presented in Linux Magazine Issue 9.

Saturday closed with Werner Heuser displaying GNU/Linux on PDAs. This pulled in quite a crowd at the Renold building. The other presentations in the Stafford building had finished and people preferred to stay and watch Werner rather than go home. This was followed by a friendly question and answer session where everyone discussed the events of the day and possible future events.

Sunday turned out to be a typical sleepy British Sunday. The rail lines over the Pennines had been removed for maintenance and this made things even more sleepy. A few of us arrived by bus.

Randy Appleton started the day in the Renold building with benchmarking the GNU/Linux kernel. Three students and a professor spent a complete term benchmarking nineteen different versions of the Linux kernel from 2.01 to 2.4. The results show that many functions did improve in speed. Randy showed that some improvements were in fact a step backwards and also that the total number of lines of code has now tripled on an exponential growth curve.

Next, Dave Jones from the SuSE Labs attempted to break us out of our slumber by tuning the Linux kernel with Powertweak. Powertweak is the first performance-enhancing tool for GNU/Linux.

Back over in the Stafford building, Stephan

Richter started his talk about Zope – an open source Web application server. There is a very steep learning curve before a user can understand Zope but the end results justify the initial confusion. Stephan discussed Zope's ability to be scalable and reliable at all times.

Tom Rathbone explained how to simplify dynamic websites with mod_perl and GIMP. This was one of the highlights of the three days for those of us who like graphics rather than darkened rooms and sober people. He described a template system for mod_perl, which is part of the Apache application that is used on most of the servers around the world.

Richard Moore arrived in the Renold building in a great rush explaining that he'd only just got back from Boston where he had been for about an hour. He gave his talk on dynamic probes for user and kernel space. Dprobes, as he calls it, is a generic and pervasive debugging system that can operate under the most extreme conditions with minimal system disruption.

He followed on with a talk about GKHI, which is a generalised kernel hooks interface. This allows for many enhancements that otherwise would not be possible. Richard's presentation contained many aspects of kernel design and use that most people don't get to see at all.

Alex Perry gave us the Flight Gear flight simulator. This was a kind of a cross between a top class joystick game and a flight simulator for 747s or commercial aircraft. A virtually real instrument display closely mimics the real instruments that are to be found on commercial aircraft. The question and answer session at the end was fairly intense but also witty and humorous. Alex kindly gave us a demo of the flight simulator at the end of his talk.

After a general discussion about past and future events we trooped off downstairs to lunch where a large pile of sandwiches was consumed in just a few minutes. ■

1/4 a

**Ad wrong shape.
It should be THIS
shape**