

# MUUGlines

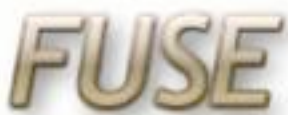
The Manitoba UNIX User Group Newsletter



## March 14, 2006: BrandZ - Running Linux in Solaris 10 Zones

With the release of Solaris 10, two new important features were added to the operating system: zones and dtrace. With zones, multiple instances of the OS can be configured, enabling a virtualized deployment environment.

In this presentation by Sun's Willem Van Schaik, we will look into the next phase, called BrandZ, which allows the installation of non-Solaris operating systems like Linux and BSD into a zone. Linux running in a Solaris Zone opens up new possibilities, like analyzing and debugging Linux programs with DTrace. BrandZ is still under development, but try-out versions are available as part of OpenSolaris and Solaris Express.



## April 11, 2006: FUSE Implementation

FUSE, or Filesystems in USerspace, is a great new method for regular users to create filesystem-like device drivers in userspace, without the need for all those messy kernel compiles. FUSE is now included in the stock Linux kernel as of 2.6.14, and is rapidly being deployed by a large number of people to create device drivers for specialty hardware, or improved filesystem support.

Scott Balneaves will outline what you need to start writing your own filesystem (hint: not much), and some of the cool things you can do with FUSE.

## Where to find the Meeting

Meetings are held at the IBM offices at 400 Ellice Ave. (between Edmonton and Kennedy). When you arrive, you will have to sign in at the reception desk, then wait for someone to take you up (in groups) to the meeting room. Please try to arrive by about 7:15pm, so the meetings can start promptly at 7:30pm. Don't be late or you may not get in.

Limited parking is available for free on the street, or in a lot across Ellice Ave. from IBM, for \$1.00 for the evening. Indoor parking is also available nearby, at Portage Place, for \$3.00 for the evening.

## Presentation Comments?

We would like to hear comments from members about the February presentation. It was a new idea and we would like to get feedback. We would also be interested in volunteers to do similar presentations.

## BSDCan - The Technical BSD Conference

In just two years, BSDCan, a BSD conference held in Ottawa, has quickly established itself as the technical conference for people working on and with 4.BSD based operating systems and related projects. The organizers have found a fantastic formula that appeals to a wide range of people from extreme novices to advanced developers.

BSDCan 2006 will be held on May 12-13 2006 at University of Ottawa. The main activities will be held in the SITE building (lower right of this map). We also have a room map.

There will be related events on the 11th and the 14th (of a social nature, for the most part). Tutorials will be held on May 10 and 11.



### Tux-shaped computer runs Linux

Acme Systems is shipping a Penguin-shaped case for a tiny SBC (single-board computer) powered by an innovative MCM (multi-chip module) that runs Linux. The 6.7-inch tall, 30-Euro "Tux Case" houses the company's "Acme Fox," a 2.6 x 2.8-inch, 100-Euro, RISC-based board with Ethernet and dual-USB interfaces, and surface-mount connectors for other I/O.

Acme is based in Italy, but offers an English translation of its website that explains, "TUX Case is made up of six coloured parts in PVC: pecker, right and left legs are yellow, tummy, face and eyes sockets are made with one white part, front and back half are black."

The Tux Case comprises six pieces of colored plastic. The case offers rear-mounted I/O ports for standard I/O, along with break-out ports for an available

optional serial port, and possibly a planned RJ-11 modem connector.

What's inside Tux?

The Tux Case is designed to house Acme's tiny, RISC processor-based Acme Fox SBC, which was released in late March of last year, along with a Linux software cross-development kit.

The Acme Fox was among the first SBCs based on Axis Communications's Etrax 100LX MCM. The Axis MCM uses "high-density packaging" (HDP) technology that allows "naked dies" -- an SoC, RAM, Flash, and I/O components, for example -- to be combined into a single chip, for reduced footprint and BOM (bill-of-materials). The Etrax 100LX weds a RISC-based SoC (system-on-chip) with 4MB of Flash, 16MB RAM, an Ethernet transceiver, and "various interface components," and requires only 3.3V power and a 20MHz crystal in order to run Linux, Acme says.

The SoC used in the MCM is Axis's Etrax 100LX, based on a 32-bit RISC instruction, and said to deliver 100 MIPS (millions of instructions per second). The SoC integrates on-chip controllers for 10/100 Mbit Ethernet, four high speed serial ports, two USB ports for both host and device, IDE, SCSI, and two IEEE-1284 "fast" parallel ports.

The Acme Fox's I/O connectors include 10/100 Ethernet and two USB ports. Twin surface-mount connectors expose other available I/O.

The board also has a serial port pin header that uses the board's 3.3V signal, but can be turned into a normal serial port with an available "Fox Console" board. The optional Fox Console board can be wired or direct-plugged

On the software side, the Acme Fox comes with a 2.4.31 Linux kernel, but can easily be upgraded to 2.6.12, the company says. Also included is glibc; Linux drivers for USB flash, hard drives, and USB-to-serial converters; servers for http, ftp, telnet, ssh,

ppp; and applications that include wget, vi, easyedit, and busybox shell commands and utilities.

An included Linux software cross-development kit supports C language development on Debian or Red Hat Linux hosts. A free C compiling service is also available on the Web. The Acme Fox also supports PHP development, optionally with the open source SQLite database.

The Acme Fox, Fox Console, and Tux Case are all available now. Acme says it produced 1,000 Tux cases initially, and the company's direct sales page includes a decrementing counter ([http://store.acmesystems.it/index.php?main\\_page=product\\_info&products\\_id=1](http://store.acmesystems.it/index.php?main_page=product_info&products_id=1)).

## Japan unveils fastest supercomputer

TSUKUBA, Japan, March 1 (UPI) -- Japan's fastest supercomputer system, running 59 trillion calculations per second, began operations Wednesday.

The supercomputer, consisting of two systems -- Hitachi's multipurpose supercomputer with a peak performance of 2.15 terra flops and IBM Japan's Blue Gene Solution with a peak performance of 57.3 terra flops -- is capable of making about 59 trillion calculations per second, the Mainichi Shimbun reported Wednesday.

The supercomputer will be used at the High Energy Accelerator Research Organization in Ibaraki prefecture for studies on high-energy accelerator science such as elementary particle physics and nuclear physics.

The institute will ask the public to propose specific themes of research activities using the supercomputer system.

It will pay about \$30 million to the two companies for a five-year lease.

## VMware Announces Ultimate Virtual Appliance Challenge

Contest to Spur Developer Efforts to Innovate with Virtual Appliances

PALO ALTO, Calif., February 27, 2006 VMware, Inc., the global leader in virtual infrastructure software for industry-standard systems, today announced the Ultimate Virtual Appliance Challenge contest with prizes totaling \$200,000 to foster continued innovation in developing virtual appliances. Virtual appliances are pre-built, pre-configured and ready-to-run software applications, all packaged within virtual machines. They can be run using VMware virtualization products, including VMware Player and VMware Server which are both available for free download at [www.vmware.com/download/](http://www.vmware.com/download/).

"Virtual appliances are a better way to distribute and maintain complex software environments. With the introduction of VMware Player and VMware Server, we have seen a tremendous embracing of VMware virtual appliances across the industry. For example, the Browser Appliance, which allows users to securely browse the Internet from within a virtual machine, has been downloaded more than 200,000 times," said Dr. Mendel Rosenblum, co-founder and chief scientist at VMware and chair of the Ultimate Virtual Appliance Challenge judging panel. "The Appliance Challenge gives us a chance to recognize and reward innovation from the community and promote turnkey software experiences through virtualization."

The Ultimate Virtual Appliance Challenge is open to participants worldwide with the first prize of \$100,000, second prize of \$50,000 and third prize of \$25,000. Best Collegiate Appliance, Best Consumer Appliance, Best Developer Appliance, Best Server Appliance and VMTN Community Choice Appliance awards will be given with each winner receiving \$5000.

The Ultimate Virtual Appliance Challenge judging panel will be led by Dr. Mendel Rosenblum and consist of the following distinguished judges: Jason Brooks, senior analyst at eWeek; Stephen Elliot, research manager of enterprise systems management software at IDC; Roger Howorth, enterprise editor at IT Week; Tim O'Reilly, founder of O'Reilly Media; Dave Parsons, vice president of engineering at ALG Software; and Mark Shuttleworth, founder of Ubuntu Linux.

The Ultimate Virtual Appliance Challenge details and registration information are available at [www.vmware.com/challenge](http://www.vmware.com/challenge). VMware plans to announce the winners on August 14, 2006 at Linux-World.

There are currently more than 50 virtual appliances that have been developed by leading software vendors and open source projects, including major software vendors such as BEA Systems, IBM Software, Oracle, PortWise and Zeus and open source communities such as Apache, Asterisk, Debian, FreeBSD, M0n0wall, MySQL, Novell SuSE Linux, OpenBSD, Red Hat Linux, Sguil, Ubuntu Linux and Zimbra, that are available from the VMware Technology Network (VMTN). Users can download any of these virtual appliances from VMTN at [www.vmware.com/vmtn/appliances/](http://www.vmware.com/vmtn/appliances/) and run them on VMware virtualization products.

### **NexentaOS alpha 3 released**

NexentaOS is a complete GNU-based open source operating system built on top of the OpenSolaris kernel and runtime.

It was a result of the inspiration and desire to build a great system based on the best existing software: SunOS kernel and GNU software. They use Debian to glue the numerous pieces together. At the moment, Nexenta is not part of the Debian Project. Their packages are not present in the Debian database. They are hoping that in the future this will change and their packages will get Debian's "upstream acceptance".

NexentaOS is completely open source and free of any charge. It contains Apache, MySQL, Perl/Python/PHP, Firefox, Evolution, software update manager, Synaptic package manager, Gaim Instant Messenger, abiword, administration & development utilities, editors, graphics, GNOME, interpreters, libraries and many others. All of this is running on the state-of-the-art SunOS kernel.

<http://www.gnusolaris.org>

### **Sending Us E-Mail?**

Due to the amount of e-mail MUUG receives, we've set up an auto-reply to give you immediate feedback, and redirect some of the e-mail to the appropriate places. Why not look at <http://www.muug.mb.ca/about.html#contacts> first?

### **Share Your Thoughts**

E-mail us with your comments on the newsletter, whether it's criticisms or commendations, and continue to send in articles or ideas for the same. Specifically, what sort of material you would rather see: Announcements, technical articles, new products, or...?

If you have a How-To or other idea, and aren't ready to give a presentation at MUUG, an article is a great alternative! If you can write better than the editor, that's terrific; if you can't, submit it anyway and we'll get it into shape for publication. We know that many of you have some great ideas and lots of knowledge. Why not share? Send Mail to: [editor@muug.mb.ca](mailto:editor@muug.mb.ca).