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MUUGlines

The Manitoba UNIX User Group Newsletter

April 10, 2001: Linux 2.4 Kernel Firewalls: Netfilter

This month, MUUG member Sean Walberg will be discussing the network packet-handling feature of the Linux 2.4 kernel, known as ‘netfilter’. Netfilter replaces the similar feature of the 2.2 kernel, ipchains. Specifically, he’ll cover the differences between netfilter and ipchains, and using netfilter to do basic packet filtering, masquerading, and other fun stuff.

Please note our meeting location: IBM Canada’s offices in the TD Centre, at the corner of Portage and Main. We gather in the lobby on the main floor – please try to be there by about 7:15 PM. Steve Moffat will then take us up to the meeting room just before the meeting starts at 7:30. Don’t be late, or you may not get in.

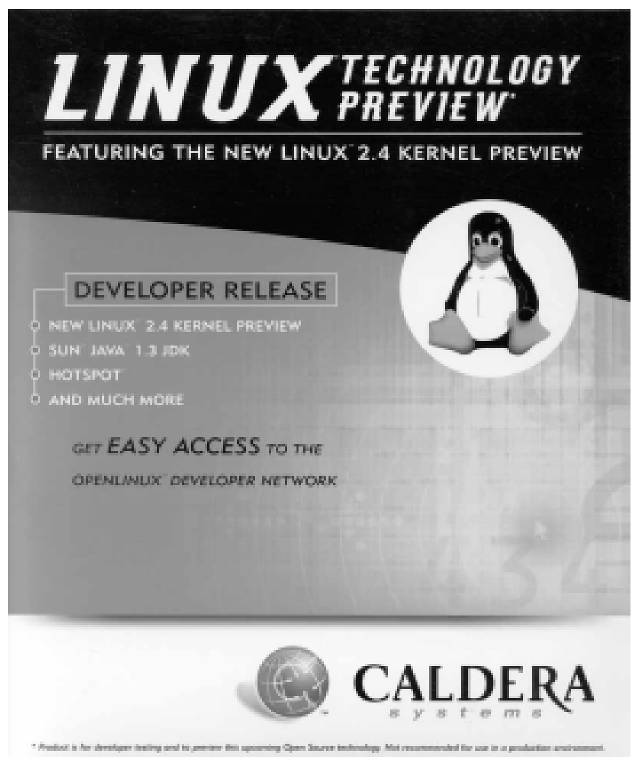
Parking is available either in the parkade behind the TD building, off Albert Street, or in the ground level lot just north of the TD building. Entrance to the lot is from Albert Street, behind the parkade. Either way, parking is a $1.25 flat rate for the evening. You purchase your ticket from a dispenser, so make sure you’ve got exact change – a loonie and a quarter, or 5 quarters.

Exciting New Door Prizes!

We have some new icing for the cake which is our monthly meeting. We also have some classic icing to offer, so don’t miss out by staying home. We have recently received some interesting items from **Ximian** (previously known as ‘Helix Code’). We have copies of the Ximian GNOME 1.2 distribution (Feb 2001 Special LUG edition), Ximian t-shirts, and Ximian ‘beanie baby’-style monkeys complete with little Ximian t-shirts!

We have boxed sets of OpenLinux eDesktop 2.4 and the Linux Technology Preview Developer Release (featuring the 2.4 kernel) from Caldera Systems, *and* both the highly sought-after GNUPro Dev Kit for Linux (IDE for C and C++ with visual debugger) and the Code Fusion C, C++ and Java Linux IDE from Cygnus. You’ll be here, we expect.

OpenLinux eDesktop 2.4 comes as a boxed set with a 500-page User Guide, a boot diskette and four CDs: Binaries, Commercial Packages and Source Code, plus the OMNIS Studio Rapid Application Development tools. Also in the box you’ll find two “Powered by Caldera Systems” stickers for your computer AND a Caldera Systems bumper sticker! The Technology Preview box includes an Installation Guide, plus Installation Disk and a Source Code disk.



Gnome 1.4

In a move that will take free software (also referred to as open source software) to a new level, the GNOME Foundation announced the release of

GNOME 1.4. The release offers a stable, powerful and tightly integrated platform that features the most extensive documentation to date, making the help features very user-friendly. GNOME 1.4 includes Nautilus, the new graphical shell for GNOME that features advanced file and Internet browsing capabilities. Developers will find a set of new and updated tools, making GNOME the ideal programming platform.

"GNOME 1.4 has a wealth of new features, from an updated Sawfish window manager to enhanced support and interoperability with other desktop environments." said Havoc Pennington, GNOME Foundation board chair. "This release represents a major leap forward in the GNOME desktop environment. Users will instantly see an improvement in the usability and power of components like Nautilus. Developers will enjoy the strategic advantages of improvements to the component architecture and streamlined tools for greater internationalization and localization of GNOME-based programs."

New or enhanced features of the GNOME 1.4 desktop environment include:

- Nautilus - a new file manager and desktop environment that allows users to easily manage their files, browse the web and access web-based services through a sophisticated, customizable interface. For example, GNOME users can select any word in a text document and do a Google search on that term or look up the word in an online dictionary.
- Better support and interoperability with KDE and legacy X applications
- New Application Launch Feedback lets the user know when a program is in the process of being loaded.
- Sawfish window manager is now a standard part of GNOME. All aspects of the user interface are customizable through Sawfish, including complete configuration of the look and feel of the desktop.
- Easier to use and more intuitive help browser and help system, boasting extensive documentation covering all aspects of GNOME operations.
- GNOME Fifth Toe, a broad collection of applications that run on GNOME.
- Medusa, the new GNOME searching/indexing package. Medusa is a content and file indexing system that performs quick searches of a user's hard drive.

"The goal of GNOME was to create a program that could be used by anyone." Miguel de Icaza, president of the GNOME Foundation said. "GNOME 1.4 reaches that goal and more. The hundreds of volunteers and paid programmers who have worked on the project have created a program that is powerful, both for the user and the developer."

GNOME 1.4 will also include a number of enhancements for developers, including:

- GNOME-VFS - The GNOME Virtual File System provides an abstraction to common file system operations like reading, writing and copying files, listing directories and so on. GNOME-VFS is extensible and usable from any application on the GNOME desktop.
- Updated Bonobo Component Model - 1.4 will include developments in the interfaces that provide standard component programming and program interoperability in Linux and Unix.
- Xml-i18n-tools - a set of tools for better internationalization and localization of GNOME. Xml-i18n-tools contain some utility scripts for internationalizing various kinds of XML files. In addition, it has a merging feature, which will be extended to handle desktop and MIME files in the future.
- GConf, a sophisticated system for storing configuration information. It provides a notification service so applications can be notified when a configuration setting changes. Gconf also allows for pluggable storage backends (text files, databases, etc.) and gives administrators control over default and mandatory settings.
- Enhanced Language Bindings - facilitating the use of GNOME from a number of programming languages. Language bindings included with GNOME 1.4 for Gtk+ include C, C++, Objective C, Ada, Perl, Python, Guile, TOM, Eiffel, Dylan, JavaScript, Pike, Pascal and Haskell. Many of these languages also have support for GNOME widgets available.

- Enhanced GNOME Display Manager - A re-implementation of the well-known xdm (X Display Manager) program that features X authentication, default and per-display initialization scripts, pre- and post-session scripts, pluggable authentication modules and TCP wrappers for access control.

"Since the GNOME project is a free software project, we were able to incorporate advances from some of the most talented programmers in the world," said Maciej Stachowiak, head of the 1.4 Release Team. "Hundreds of people from every part of the world contributed to this release. The result is a mature, stable, powerful and fun-to-use desktop, with the promise of a host of new killer applications, due to the programming enhancements."

GNOME is a free software project that is developing a complete, easy to use desktop for GNU/ Linux (more commonly known as Linux), BSD and a variety of other Unix and Unix-like operating systems. The GNOME desktop is used by millions of people around the world. More than 500 computer developers, including over 100 full-time, paid developers, contribute their time and effort to the project.

RMS in Brazil

Richard M. Stallman, founder and president of the Free Software Foundation (FSF), addressed the members of the Brazilian Congress recently on the issues of free software, the ethics of copyright, and the dangers of software patents.

Stallman stressed both the ethical and practical importance of free software, which grants other developers the freedom to examine and improve the software. He also discussed issues of copyright and patents, and how they should be interpreted in terms of freedom for software users and programmers. "I find in Brazil considerable awareness that free software is a social and political issue as well as a practical and economic one," Dr. Stallman said. "The programmers and users that I have met here are very receptive to the ideas of freedom that free software represents."

Dr. Stallman visited the Brazilian Congress as a guest of Congressperson Walter Pinheiro. Dr. Stallman's visit is indicative of the rising interest in free software in Brazil, which represents the largest growing market for hardware and software in Latin America. Werner Koch, author of GNU Privacy Guard, also addressed the assembly. Mr. Koch spoke about free software in relation to issues of computer privacy.

Playstation 2 Tools

Metrowerks unveiled a host of new development tools technology at the recent Game Developers Conference aimed at expanding opportunities for game developers and shortening time to market.

At the Game Developers Conference (GDC), Metrowerks announced the availability of a new Analysis Tools Kit (ATtaCK) and demonstrated a new Linux version of its CodeWarrior for PlayStation2 tools. The company also announced today plans to work with Motorola, Ericsson and Siemens to deliver development tools for a new Universal Mobile Games Platform.

Metrowerks is porting its CodeWarrior for PlayStation2 tools to the Linux operating system, and showed an alpha version of the tools at GDC. The tools, which are expected to ship by mid-year 2001, provide game developers with another option for host platform development.

More On Mainframes

To complement last meeting's discussion of IBM mainframes and Linux, we found the following information.

New reports from technology analysts Hurwitz Group and Matterhorn Group recommend the IBM eServer z900, the reinvented mainframe, running Linux, as an effective energy saving alternative to server farms.

The need to conserve energy and space in computer data centres has taken on new urgency with recent power shortages in California and pending plans for energy deregulation across the nation. The analysts, looking for alternatives to energy-guzzling server farms, found that one z900 could do the job of hundreds of other servers combined.

"The zSeries offers significant energy cost advantages over traditional UNIX server farms," Hurwitz Group concludes in their report, "zSeries: Economic e-business Server." The report goes on to say that in a comparison between a Sun server farm and a zSeries-based implementation for an Internet Service Provider "it is clear that the zSeries enjoys an advantage."

What makes the IBM eServer an energy-efficient alternative is its ability to run thousands of virtual Linux servers within one box. Application service providers, Internet service providers and Web-hosting companies that in the past required a large number of individual servers and a huge investment in real estate can now save by using one z900 to do the same job.

While a typical configuration of 750 Sun servers costs approximately $620/day in electricity to run, a single z900 — running the same workload — costs only $32/day, a power saving ratio of nearly 20-1. The savings are even more dramatic when floor space requirements of a server farm are considered. The average server farm requires some 10,000 square feet of floor space compared with only 400 square feet for a single IBM z900. At an average of 100 Watts per square foot, the savings can be significant.

"Power efficiency should prove to be an added strength, certainly during the current electricity crunch and for the longer term, since these power problems won't be totally solved during the next few years," says Matterhorn Group in the report, "IBM's Secret Competitive Advantage." "Beyond mainframe efficiencies, we have evidence that IBM systems in general are more power efficient than their competitors on a kilowatt-hours per unit of performance scale across the board."

Project 42

Caldera Systems Inc. announced that its new OpenLinux server product, code named "Project 42," is entering open beta and is available for download from http://www.calderasystems.com/products/beta/.

Based on the new Linux 2.4 kernel and targeted to OEMs and VARs, Project 42 incorporates a secure Web server, a file and print server, and a set of network infrastructure servers, including DHCP, DNS, and firewall. Because it supports UNIX and Samba file and print servers, Project 42 can run either alone or on top of UnixWare with Linux Kernel Personality technology.

"Project 42 is our latest generation Linux-based server product and will be the base for future Linux and UNIX integration products," said Drew Spencer, chief technology officer for Caldera Systems.

"Caldera's new server will enable Blue Chip Computer Systems to save time when setting up servers for our clients and make money by providing our customers an excellent quality product," said Ron Herman, president of Blue Chip Computer Systems, beta-site for Project 42. "Its install was straightforward, and it's incredibly easy to manage."

Project 42 has additional key features, including extensive security enhancements, Java SDK version 1.3, and a Caldera Volution deployment agent.

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. We will try to personally respond to your e-mail promptly, but please note that our group has a very small board of directors, consisting of a few very overworked volunteers. Please make sure you have used the right address, and are requesting information that is not found on our web site (www.muug.mb.ca).

For a full list and description of the addresses, see http://www.muug.mb.ca/pub/muuglines/pdf/muug0004.pdf.

We Like To Hear From You

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