$2.50

MUUGlines

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This Month's Meeting

Our first meeting this year will be Tuesday, September 10th and will focus on round table discussions. The MUUG Linux SIG meetings have now been combined with the regular meetings.

Please note: The location for the meetings has been moved to ISM, at 400 Ellice Ave. (This is where the SIG meetings were held in the past.) Please try to be in the lobby, and signed in by about 7:15 PM. At 7:30 PM sharp, we are escorted up to the meeting room on the second floor. Don't be late, or you won't get in! (Our thanks to Doug Jackson, of ISM, for hosting these meetings.)

Topics for discussion include (but aren't limited to): future meeting dates and arrangements (e.g. alternating between regular and SIG meetings, SIG only, etc.), Linux and distributions status update, new CD-ROMs (including SSC's new, very cheap LUG/nut 4 CD, described below). Feel free to bring up any other UNIX related topics you'd like discussed at the meeting. Also, remember that everyone is welcome to attend, regardless of membership status; feel free to bring along a fellow UNIX/Linux user.

Nuts over LUG/nuts

Once again MUUG is purchasing a number of copies of the latest LUG/nut CD, SSC's "Do it Yourself Linux for User Groups," which is now at Version 4. The CD contains Red Hat Linux 3.0.3 (Picasso), the Linux 2.0 kernel, and 11 Red Hat upgraded packages for the 2.0 kernel. Included with each CD is a brief Install guide, and 2 cards good for samples of upcoming issues of Linux Journal and WEBsmith magazines.

According to SSC, "LUG/nut is designed as a service and promotional tool for Linux User Groups and is not intended to compete with products from Linux vendors. No technical support is available with LUG/nut, Linux User Groups provide support for their members."

We have just recently placed an order for 10 of these CDs, which we will be offering to paid-up MUUG members, at cost. (We will only know the exact cost once the order clears Canada Customs, where we'll no doubt have to pay duty and GST. Last time we ordered, the cost worked out to $12 CDN per CD.) Orders are first come, first serve and quantities are limited, so act fast! We will have a sign-up sheet at the September meeting for those interested in reserving a copy.

Contact Information

To contact the MUUG board for membership information or anything else, send e-mail to `board@muug.mb.ca`. Don't forget, we have a home page too, found at `http://www.muug.mb.ca/`, where you can find all kinds of information, including details of upcoming and past meetings and presentations, and references of interest related to them.

To contact the newsletter editor (and I know that you want to shower him with article submissions), e-mail `editor@muug.mb.ca`.

The Linux 2.0 Kernel

The following article is extracted from the Changes document that comes with the Linux 2.0 kernel source. As this kernel is significantly different from previous versions of Linux, and as many other packages must be upgraded at the same time as the kernel, we thought this information would be of interest to our Linux users. Please note that this is not the complete Changes document, and that the information provided is likely to be quickly obsolete, as the kernel continues to evolve. Make sure you obtain current information online before you attempt a system upgrade.

This document contains a list of the latest releases of the most important packages for Linux as well as instructions for newcomers to the 2.0.x series of kernels. By glancing through it, you should be able to find out what you need to upgrade in order to successfully run the latest kernels. It was originally based on material from the linux-kernel mailing list, Jared Mauch's web page "Software Victims of the 1.3 Kernel Development" (http://www2.nether.net/~jared/victim.html), and Axel Boldt's (boldt@math.ucsb.edu) Configure.help file, among other sources, and was originally written and maintained by Alessandro Sigala (ssigala@globalnet.it).

There is now a web page based on this material, thanks to John Taylor. Check out http://www.cviog.uga.edu/LinuxBleed.html if you prefer a HTML-ized shopping list.

Last updated: July 29, 1996. Current Author: Chris Ricker (gt1355b@prism.gatech.edu).

Current Releases

• Kernel modules	2.0.0
• PPP daemon	2.2.0f
• Dynamic linker (ld.so)	1.7.14
• GNU CC	2.7.2
• Binutils	2.6.0.14
• Linux C Library	Stable: 5.2.18, Beta: 5.3.12
• Linux C++ Library	2.7.1.4
• Termcap	2.0.8
• Procps	1.01
• Gpm	1.10
• SysVinit	2.64
• Util-linux	2.5
• Mount	2.5k
• Net-tools	1.32-alpha
• Kbd	0.91

Network errors with recent kernels

Many default network scripts are set up to add a route to the localhost at 127.0.0.1 at startup. However, they do this incorrectly. To fix the error, which is now spotted by the kernel (causing many daemons to quit working), look for a line like 'route add -net 127.0.0.1' in your network configuration files and change it to 'route add -net 127.0.0.0'.

This error is present in all Red Hat distributions (and

derivative distributions like Caldera). If you're running one of these, edit /etc/sysconfig/network-scripts/ifup-lo, changing the line 'route add -net $(IPADDR)' to 'route add -net 127.0.0.0' and you should be fine.

Booting Changes

The boot support in 2.0.x (for arch/i386) has been enhanced so that it now can load bigger kernels (bzImage) and that the loaders now can load an initial ramdisk (initrd). For initrd see Documentation/initrd.txt. For building bigger kernels use one of the following make targets: bzImage, bzlilo, bzdisk (equivalent to make targets zImage, zlilo, and zdisk respectively). If you want or need to use the new features you'll need to upgrade your bootloaders. Lilo can be found at ftp://lrcftp.epfl.ch/pub/linux/local/lilo/lilo.19.tar.gz. LOADLIN is at ftp://sunsite.unc.edu/pub/Linux/system/Linux-boot/lodlin16.tgz. If you're using more unusual loaders like SysLinux or etherboot, the latest versions are 1.3 and 2.0, respectively.

Ramdisk support does not work with the latest kernels if ramdisk=0 option is present. Many older distributions (mainly Slackware) have this option in their lilo.config file. Comment it out and re-run lilo if you need ramdisks.

The Linux C Library

The latest stable Linux C Library release is 5.2.18. If you upgrade to this from 5.0.9 or earlier, be sure to read the 'release.libc-5.2.18' file, since GNU make and a few other fairly important utils can be broken by the upgrade.

The current (beta) Linux C Library release is 5.3.12. In this release there are some important changes that may cause troubles to buggy programs (programs that call free() on a pointer not returned by malloc() work with previous libc, but not with this release) so read the 'release.libc-5.3.12' file carefully! In the latest libc releases a dirent bug, which erroneously defined d->reclen to d->namlen if USE_GNU was defined, has been fixed. Unfortunately, some GNU packages depend on this bug. GNU make 3.xx is one of them. To fix that you need to patch and recompile those programs (a patch for make is included in the file 'release.libc-.5.3.9', and the address to obtain a precompiled binary is at the end of this file).

Also, the libc-5.3.x line has a known security hole relating to rlogin. Libc-5.3.12 fixes this, so if you're going to run an experimental libc, be sure to upgrade to 5.3.12.

If you're getting an error message that is something to the effect of

```
fcntl_setlk() called by process 123 with broken flock() emulation
```

then you need to upgrade to at least libc-5.2.18 as well. A proper (in other words, BSD-style ;-) flock system call was added to 2.0.x, and older libc's will now give this error. It doesn't *really* matter, so you can just ignore it. If it really annoys you, upgrade libc (and recompile any static binaries you might have that are linked against the old libc). If you're still running a.out, there's an unofficial libc-4.7.6 release out to which you can upgrade to fix this problem. Libc is available from ftp://sunsite.unc.edu/pub/Linux/GCC/.

Procps utilities

Due to changes in the structure of the /proc filesystem, you need to upgrade procps to the latest release, currently 1.01. Otherwise, you'll get floating point errors with some ps commands or other similar surprises. Grab ftp://sunsite.unc.edu/pub/Linux/system/Status/ps/procps-1.01.tgz.

Kernel Modules

Almost all drivers in 2.0.x can be modules, and kerneld is now incorporated into the kernel. To take advantage of this, you'll need the latest version of the module support apps. These are available at http://www.pi.se/blox/modules/modules-2.0.0.tar.gz. Note: If you try to load a module and get a message like

```
gcc2_compiled, undefined Failed to load module! The symbols from kernel 1.3.foo don't match 1.3.foo
```

where 'foo' is a number for a recent kernel, then it's definitely time to upgrade module utilities.

Another little tip: you can't have both a.out *and* ELF support compiled as modules. Otherwise, you get a nice Catch-22 when you try to run insmod to install a.out/ELF support so you can run insmod ;-). If you have an all-ELF system, but need a.out for the occasional legacy app, then you can do a.out support as a module. Otherwise, you should probably leave it in the kernel, and if you haven't gone ELF yet, you can probably say no to ELF support. Similarly, any partitions that you have to mount at startup have to have their necessary file system and device drivers compiled into the kernel, so don't get grandiose ideas about going completely modular and then forget to compile ext2fs support and ide/SCSI drive support into your kernel ;-).

PPP driver

You need to be running a pppd from ppp-2.2.0.tar.gz or greater. The latest stable release is 2.2.0f and is available at ftp://sunsite.unc.edu/pub/Linux/system/Network/serial/ppp/ppp-2.2.0f.tar.gz.

Named pipes (SysVinit)

Linux's handling of named pipes changed (it now does it The Right Way instead of the SunOS way ;-). This broke some programs that depended on the SunOS behavior, most notably SysVinit. If you're running 2.59 or earlier, you will probably get a weird error on shutdown in which your computer shuts down fine but "INIT: error reading initrequest" or words to that effect scroll across your screen hundreds of times. To fix, upgrade to ftp://sunsite.unc.edu/pub/Linux/system/Daemons/init/sysvinit-2.64.tar.gz.

If you're trying to run NCSA httpd, you might have problems with pre-spawning daemons. Upgrade to the latest release (1.5.2), available from http://hoohoo.ncsa.uiuc.edu/ or check out Apache (http://www.apache.org/).

The new named pipe behavior also causes problems with Hylafax. If you're running the hylafax daemon, it will just keep eating up CPU time until you have no idle time free. To fix this, edit port.h included with the Hylafax distribution and change the line

```
CONFIG_OPENFIFO="O_RDONLY"
```

to

```
CONFIG_OPENFIFO="O_RDWR"
```

A similar method (finding all named pipes opened read-only and changing them to read-write) will fix any program that is broken because of this change.

File Locking (Sendmail)

As of pre2.0.6 (aka 1.99.6), mixed-style file locking is no longer allowed. For example, a file cannot be simultaneously locked with 'flock' and 'fcntl'. See Documentation/locks.txt for all the gory details. Among the programs this has impacted are older sendmails. If you get a message that sendmail cannot lock aliases.dir (or other files), you'll need to upgrade to at least 8.7.x. The latest sendmail is at ftp://ftp.cs.berkeley.edu/ucb/src/sendmail/sendmail.8.7.5.tar.gz.

Uugetty

Older uugettys will not allow use of a bidirectional serial line. To fix this problem, upgrade to ftp://sunsite.unc.edu/pub/Linux/system/Serial/getty_ps-2.0.7i.tar.gz.

Kbd

For those of you needing non-ASCII character/font support, you should upgrade to ftp.funet.fi:/pub/OS/Linux/PEOPLE/Linus/kbd-0.91.tar.gz.

Mount

The mount util is distributed as part of util-linux, which is currently at release 2.5. Some may find, especially when using the loop or xiafs file system, NFS, or automounting, that they need to upgrade to the latest release of mount, available from ftp://ftp.win.tue.nl/pub/linux/util/mount-2.5k.tar.gz.

Console

The Linux console type has changed. If your setup is old enough that you have problems, you'll need to update your termcap. To fix, add linux to one of the types in /etc/termcap or snoop around http://www.ccil.org/~esr/ncurses.html (reputedly the latest universal termcap maintainer). You may also need to update terminfo by running the following as root:

```
ln -s /usr/lib/terminfo/l/linux
/usr/lib/terminfo/c/console
```

Better yet, just get the latest official Linux termcap from ftp://sunsite.unc.edu/pub/Linux/GCC/termcap-2.0.8.tar.gz. If you upgrade to this release read the 'README' file contained into the package to get some important information about the 'tgetent' function changes!

Also, the console driver is now responsible for keeping track of correspondence between character codes and glyph bitmaps. If you encounter problems, try 'loadunimap def' to get back the default correspondence.

Networking

Some of the /proc/net entries have changed. You'll need to upgrade to the latest net-tools in ftp://ftp.inka.de/pub/comp/Linux/networking/NetTools/, where the latest is currently net-tools-1.32-alpha.tar.gz. See http://www.inka.de/sites/lina/linux/NetTools/index_en.html for more information. Note that there is currently no ipfw (which is part of net-tools) which works with 2.0.x kernels. If you need its functions, learn how to use ipfwadm or patch ipfw to get it to work (ipfw's current maintainer does not currently have time to fix it).

Sound driver

The sound driver was upgraded in the 2.0.x kernels, breaking vplay. To fix this problem, get a new version of the sndkit from ftp://ftp.best.com/pub/front/tasd/snd-util-3.5.tar.gz. Some users report that various other sound utils (cdd2wav-sbpcd, for example) need to be recompiled before they will work with the new kernels.

Tcsh

If tcsh acts funny, get the source from ftp://anise.ee.cornell.edu/pub/tcsh and add #define SYSMALLOC in config_f.h before recompiling tcsh. Binaries can be found in ftp://sunsite.unc.edu/pub/Linux/system/Shells/ and a corrected one will probably wind up there eventually.

Make

If make no longer works, you need to read the release notes for the libc you upgraded to. The latest libc and release notes can be found at ftp://tsx-11.mit.edu/pub/linux/packages/GCC. This is NOT an error due to the kernel, though many people have mistakenly thought it is. When you upgrade to libc-5.3.9, you have to patch make to get it to work. All of this is documented in the release notes with libc. Upgrading libc can also break xterm support. If it does, you need to recompile xterm.

Quota

Quota support has also been added. You need to get quotas-1.55 from ftp://ftp.funet.fi/pub/Linux/kernel/src/subsystems/quota/all.tar.gz. You may need to copy its mntent.h over to /usr/include/mntent.h to get it to compile.

Bdflush and Updated

Bdflush has also been integrated into the new kernels, so those of you using it on older systems no longer need to hunt for the patches to implement it once you upgrade to 2.0.x. You do still need to run the update daemon, however. You should probably upgrade to the latest updated, currently ftp://sunsite.unc.edu/pub/Linux/system/Daemons/updated-1.2.tar.gz. This (and later) versions will not spawn a bdflush daemon, since that is now done by the kernel (kflushd). If you upgrade, be sure to leave update in your init scripts and remove bdflush.

APM support

Advanced Power Management (APM) support has been added to the kernel as well. APM, which is primarily of use in laptops, provides access to battery status information and may help to conserve battery power. The support files can be found in ftp://tsx-11.mit.edu/pub/linux/packages/laptops/apm/apmd-2.4.tar.gz

iBCS and Dosemu

For a version of iBCS that works with 2.0.x kernels, grab ftp://tsx-11.mit.edu/pub/linux/BETA/ibcs2/ibcs-2.0-960610.tar.gz

For a version of Dosemu that works (well, at least as well as DOS ever works ;-), get ftp://tsx-11.mit.edu/pub/linux/ALPHA/dosemu/Development/dosemu-0.63.1.55.tgz or check out http://www.ednet.ns.ca/auto/rddc. Be sure to follow the instructions in README.newkernels about patching your include files, or it will not compile.

Mtools and Fdutils

The floppy ioctl numbering scheme has changed for 2.0.x. For backwards compatibility, the old system was supported through 1.3.x and will generate a warning in 2.0. In 2.1.x, the old scheme will disappear entirely.

To avoid trouble (or at least annoying messages), you'll need to recompile any programs which emit floppy ioctls, including mtools and fdutils. For mtools, get ftp://sunsite.unc.edu/pub/Linux/utils/disk-management/mtools-3.0.src.tar.gz and for fdutils, get ftp://sunsite.unc.edu/pub/Linux/system/Misc/fdutils-4.3.src.tar.gz.

In the future, fdformat might disappear entirely, so get used to using superformat instead.

Perl

Changes made for the 2.0.x series cause the connect() Perl (both 4 and 5) call to time out while connecting to remote systems. If you need the connect call for your program, use C instead of Perl.

Also, Perl scripts using the readdir call now misbehave if you're using an old version of Perl, due to changes in libc. Upgrade to a more current Perl to avoid any unpleasantness.

Groff

Those of you running Slackware may experience weirdness with man pages due to changes in groff. If your man pages display <AD> for -when present at the end of a line, try setting an appropriate value (many have reported success with "latin1", for example) for the environmental variable LESSCHARSET. Another, and probably better, solution is to edit the file /usr/lib/man.config and change all `-Tlatin1' options to `-Tascii'.

E2fsprogs

e2fsprogs 1.02 will work with the latest kernels, but it cannot be compiled on them. If you need (or want) to compile your own copy, you'll need to get the latest version, currently available at ftp://tsx-11.mit.edu/pub/linux/packages/ext2fs/e2fsprogs-1.04.tar.gz.

Other Info

Please remember that most of these utils are available on your favorite local linux mirror. If you can, please get them from a closer site before checking sunsite.

Also, for those of you running Red Hat (or RPM on a different distribution), most of these are available in RPM format. Check around your favorite Red Hat mirror site before installing the non-RPM version. Remember, you might need to use the -force option to get the upgrade to install. Almost everything you need is available in ftp://ftp.redhat.com/pub/current/i386/updates/2.0-kernel/ and its mirrors.

For others, especially those of you running Slackware 3.0, David Bourgin has put together a Slackware-compatible package of everything necessary to quickly and easily upgrade to 2.0.x. See ftp://ftp.wsc.com/pub/freeware/linux/update.linux/ for more information and the files.

Please send info about any other packages that 2.0.x "broke" or about any new features of 2.0.x that require extra or new packages for use to Chris Ricker (gt1355b@prism.gatech.edu). Chris generates this from a modified texinfo setup, so you don't need to bother generating a diff against the current version before you send the additional information to him.

MUUG Lines Newsletter Deadlines for 1996-1997

		Deadlines			MUUG Monthly
Issue	**Month**	**Articles**	**Final copy**	**Mailing**	**Meeting date**
v09n02	Oct	Sept 14	Sept 21	Sept 28	Oct 8, 1996
v09n03	Nov	Oct 19	Oct 26	Nov 2	Nov 12, 1996
v09n04*	Dec	Nov 16	Nov 23	Nov 30	Dec 10, 1996*
v09n05	Jan	Dec 14	Dec 21	Jan 4	Jan 14, 1997
v09n06	Feb	Jan 18	Jan 25	Feb 1	Feb 11, 1997
v09n07	Mar	Feb 15	Feb 22	Mar 1	Mar 11, 1997
v09n08	Apr	Mar 15	Mar 22	Mar 29	Apr 8, 1997
v09n09	May	Apr 19	Apr 26	May 3	May 13, 1997
v09n10*	June	May 17	May 24	May 31	June 10, 1997*
v10n01	Sept	Aug 16	Aug 23	Aug 30	Sept 9, 1997
v10n02	Oct	Sept 20	Sept 27	Oct 4	Oct 14, 1997

* Newsletter and/or meeting for this month may be cancelled. Check future issues of the newsletter, or the MUUG Web site.

Mailing deadline is always 10 days prior to meeting date, to ensure sufficient advance notice of motions, etc. All copy (ads, columns, meeting notices, etc.) must be submitted by noon on the final copy deadline date, which is one week prior to the mailing deadline. Articles and any other material that isn't time sensitive must be submitted by the articles deadline, which is one week prior to the final copy deadline.

Each issue will be made available, via anonymous FTP on ftp.muug.mb.ca, under the pub/muuglines directory, on or shortly after the mailing deadline. Files are available in PageMaker source form, and in printer-ready PostScript form.