

# Answers

If you are really stuck and the HOWTOs yield no good result, why not write in? Our resident experts will answer even your most complicated problems.

## OUR EXPERTS

Whatever your question is, we can find an expert to answer it. From installation and modem woes to network administrations, we can get the answer for you – just fire off a letter or email and it'll all be taken care of.

LXF Answers guy **David Coulson** is a networking and security guru with plenty of sysadmin experience to boot.



**Nick Veitch** is the editor of the magazine, and answers your easy questions! Or indeed anything to do with *Grub*, *LILO*, *netatalk*, vi...



**Hans Huberland** is Rackspace Managed Hosting's Linux expert. Send any Linux system admin questions to [sysadminqa@rackspace.co.uk](mailto:sysadminqa@rackspace.co.uk)



## ISPs open to Linux

**Q** Have you a list of ISPs that can be accessed from Linux PCs? AOL and BT do not appear to be of any use for a PC running the Linux operating system. No doubt the answer is staring me in the face but I'd be grateful for you to point that out...

*Peter Allen*

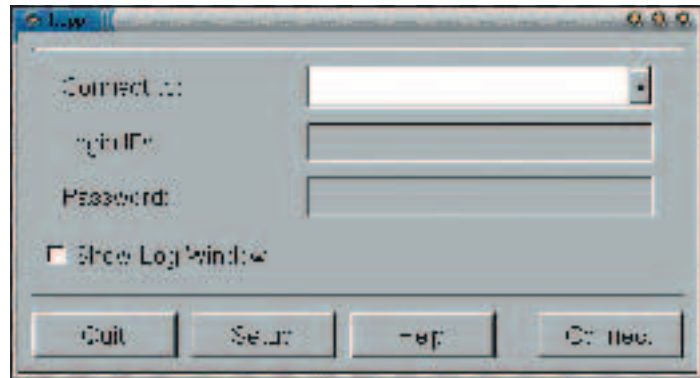
**A** Almost all ISPs that provide PPP-based dial-up will work with Linux, which is just about every one, except for AOL. As AOL uses a non-standard protocol for the connection, you will be unable to get AOL to work; however, BT's service should work without any problems from Linux. BT offers several dial-up options, including BTInternet and BTConnect. They all work using PPP and CHAP for authentication, and will work happily through Linux.

Many ISPs are supporting Linux now as a platform, or at least acknowledge that their service will work with Linux. Some ISPs, such as Demon Internet and UKLinux.net, actively support Linux and will provide information for configuration of their service with Linux.

## Rar rage

**Q** I've installed and set up *BitTorrent* on my Linux box as I just got my broadband connection set up. I downloaded software from a torrent site. One problem: it's a rar file, or rather a directory of rar files. I appear to have a lot of 'parts' – how the heck do I put them together as one whole file that can be installed?

Now, I could go upstairs with my credit card and use my daughter's PC with its bloated junk OS to pay for an overpriced Windows version of rar software and then come and install the resulting file on my Linux box, so that I can then install



**KPPP** can be used to connect to a wide range of PPP-based ISPs, which is just about all of them, except for AOL.

**Windows apps and games to demonstrate to said daughter that Linux is worth considering.**

**In short, how do I convert a rar directory into an RPM?**

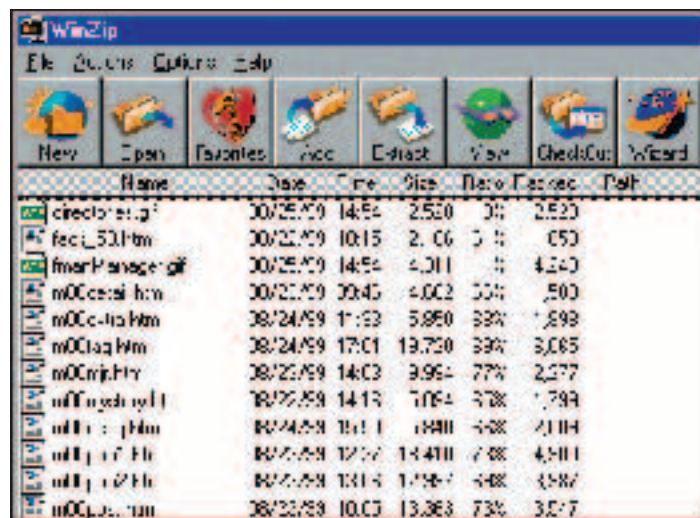
**Oh, and as an aside, why the heck would anyone use rar files? I mean, what a fuss and bother it is!** *from the LXF forums*

**A** The 'rar' file format is popular under Windows, as it allows an archive to be split across multiple files and for those files to be combined once downloaded. You can't convert a rar file into an RPM, as the rar is

simply a package, just like a *tar.gz* or *tar.bz2* file.

But you can unpack it using the 'unrar' program, which will be available from your ISP's FTP service, or on the original installation media.

You will also have to install *Wine* and any other required software to be able to run programs for Windows under Linux, which may be harder work than actually just finding Linux alternatives to the Windows software. Almost everything that can be done in Windows can be performed in Linux using freely available software, including playing many games.



**WinZIP** is a tool for Windows for decompressing archives, with **WinRAR** being a popular alternative.

## Wireless questions

**Q** I currently use an Alcatel modem (SpeedTouch 330) given to me by my ISP and I simply can't get it to work with Linux (I'm using Gentoo Linux with 2.6.9 kernel).

I decided to build a wireless home network, so I'm planning to buy a D-Link DSL-G604T wireless ADSL router. My first question: is this hardware fully compatible with Linux or do I need to install any drivers as with the Alcatel modem?

I have a notebook, and I want to connect it to the network through a wireless cardbus adapter. I want a card supported natively by a kernel module, something that could work straight out of the box with Knoppix, for example. After some reading I found that it should be a card with the Prism 2/2.5/3 chipset, but I'm confused and don't know how to find a manufacturer/vendor of a popular cheap card with that chipset. So my second question is, can you suggest a good adaptor using the Prism chipset?

Thank you for your help.

David Johns, via email

**A** The wireless router from D-Link will make the connection to your ISP over the DSL circuit, so you will

not need any PPPoE or PPPoA support on the Linux system.

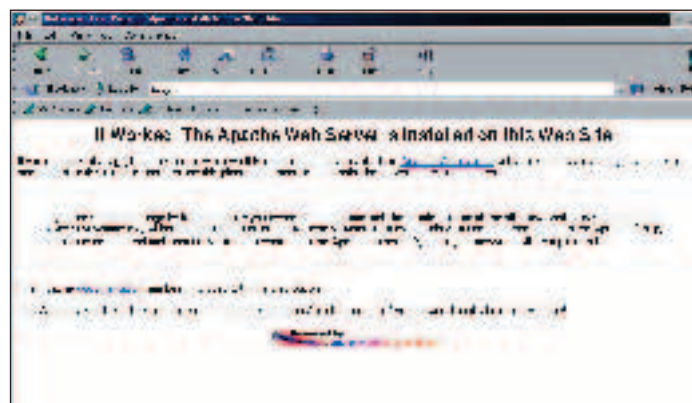
You can connect straight into the router using Ethernet, and DHCP against the router for an internal address. Essentially, everything will be offloaded on to the router, making your Linux system a plain old workstation, rather than a router.

As far as PCMCIA wireless adaptors are concerned, you can check out [www.linux-wlan.org/](http://www.linux-wlan.org/) or [www.prism54.org/](http://www.prism54.org/).

You'll find that Prism54 identifies devices supporting the 802.11g standard as well as 802.11b for faster connectivity. Prism2 and Prism54 cards are identified by Knoppix at boot time, and will enable you to access the internet easily without having to install a large number of supporting packages.

## Into the Abyss

**Q** I'm setting up an old computer to act as a web server internally on my network, to use for my web design business. I'm planning to try Vector Linux 3.2, which I have on disc, for the OS and, after reading LXF57 (page 68), Abyss web server. I would like to run it without a monitor or keyboard, accessing it from my main computer over the network.



Apache is the most popular web server used on the internet, making it especially powerful for customised installations.

Here's my question: once I've installed the software, how do I set it up to log in automatically on booting up so I don't need to see what's happening?

And what user name should I use for logging in? Do I need a user specifically added for the purpose or can I use the same user as my other machines?

Mike Davies

**A** Web servers will generally start through the scripts in /etc/init.d/ at boot time, so it's unnecessary for you to log in as anyone to run the service. When you install the package providing the web server process, it will create any required users

necessary to run the service, so you won't need to do anything. Once installed, web services should start when the system is rebooted, allowing the box to be restarted without any user involvement.

## Talking chatter

**Q** Does anybody at LXF use the chatter program at all? I was looking at the program's man page recently and it appears to be a very interesting utility.

I'm a little surprised that it doesn't seem to get much mention as some of the attribute settings it can create would, on the face of it, appear to be very useful, such as the immutable attribute, switch '-i'. Would that be useful from a security point of view to protect key system programs from being modified (renamed, deleted, overwritten, etc)?

And the '-s' switch looks good, which I take to mean 'sparse', as it apparently zeros a file's blocks, then writes them back to disk on a delete. Would that be a quick solution for people who have posted, inquiring about how to remove a file in total?

The program even has an 'undeletion' attribute, switch '-u', though it should be pointed out that it's not implemented as yet. There will be a total gem if that ever occurs.

In fact chatter seems like a gem of a utility overall. I suppose it could make updating files a bit bothersome, if a person forgot they had set the immutable attribute on a file. But then, it would just be a matter of resetting it as 'root'.

I guess a trojan or the like could do the same if it suspected it may be set. But at least it would force

## A QUICK REFERENCE TO: Links

It's often very useful to be able to quickly access files or programs without having to wade through layers of directories to find what you're looking for. Rather than having easy access directories that are a mess of files and sub-directories, it's much easier to create links from the original file to somewhere a little more convenient.

A link is simply a special type of file that refers to another location on the system, although links can either link to another file name, or to a specific place on a file system, known as an inode. The former, known as symbolic links, link one file to another by use of its filename.

If we do `$ ln -s docs/howto/links.txt links.txt` whenever links.txt is accessed, the VFS layer will really access docs/howto/links.txt. Symbolic links can be created absolute or relative to their source, so if we move the 'links.txt' symbolic link into a directory known as 'stuff', it will then try to look for 'stuff/docs/howto/links.txt'. To counter this, we can create an

absolute link;  
`$ ln -s ~/docs/howto/links.txt links.txt`

Now, wherever the symbolic link is moved to, it will always refer to the original file correctly. If we rename or delete the original links.txt file, the link will no longer work, and is known as a 'broken link'. When we try to access a broken link, the VFS will return a 'file not found' error, just as if the symbolic link wasn't there at all.

Within a file system, we can also create a hard link. Rather than refer to the file name, which may change, hard links refer to the location of the original file on the file system. Each file system has a finite number of locations from which a file may start – the inodes – and a hard link simply points to this place. A hard link is effectively an alternative name for a file on a filesystem, since we can do whatever we like with the original location.

`$ ln ~/docs/howto/links.txt links.txt`  
We can delete and rename the file,

and the hard link will continue to function properly. When a file has been hard linked there is nothing to differentiate between the original filename and the link, so both must be deleted before the space used by the file data is reused by the filesystem. However, the caveat of hard links is that they may only exist on the same filesystem as the original file, so if /home and / are separate partitions, then we can't create a hard link from /home/david/links.txt to /links.txt.

# FREQUENTLY ASKED QUESTIONS SPAMASSASSIN

## FAQ I'M RECEIVING AN OBSCENE AMOUNT OF SPAM EACH DAY. WHAT'S THE EASIEST WAY TO DEAL WITH IT ALL?

There are two schools of thought when it comes to dealing with spam. One is to implement an opt-in system, where a challenge is sent to mail senders so they can verify that the mail is a conscious entity rather than just a script. Systems such as TMDA (<http://tmda.net/>) are easily integrated via *procmail*, although some see them as an annoyance rather than a useful tool against spam.

On the other hand, we can block nasty looking things and allow the rest through. While this does go against everything from the school of security, it does mean that we won't block things that are supposed to go through and we can intelligently, at least in part, filter out spam. This is where *SpamAssassin* comes in.

## FAQ WHAT IS SPAMASSASSIN AND HOW DOES IT WORK?

*SpamAssassin* is a rather complex set of Perl modules, along with some useful little scripts that check

messages against a set of rules. Each rule has a particular score associated with it, giving either a positive or negative value. Should a rule indicate that a message is more likely to contain spam, then it will have a positive value. However, should something suggest that it is in fact valid mail, or ham, then it will have a negative value.

## FAQ HOW DO I GET STARTED WITH SPAMASSASSIN?

*SpamAssassin* is included with most Linux distributions, although as it's updated fairly frequently, it's wise to get the latest release from [www.spamassassin.org](http://www.spamassassin.org). The rulesets are updated with each release, and there are often rather important bug fixes. When we're dealing with mail it's important that it's not going to blow it all away at a moment's notice.

Debian users can simply 'apt-get install SpamAssassin' to get it all installed, and those using other distros can just install the packages.

## FAQ HOW DO I RUN SPAMASSASSIN?

*SpamAssassin* can be run in one of two ways. One is simply by feeding

everything through 'spamassassin' and having it parse out the config file every time, or we can run the *SpamAssassin* daemon 'spamd' and then use 'spamc' to pipe mail through it.

The former is preferred on smaller installations, as it's much simpler to maintain. We can just point our *procmail* to 'spamassassin' and off it goes, like this:

```
Ofw: spamassassin.lock
* < 256000
| spamassassin
# Mails with a score of 15 or higher are
# almost certainly spam (with 0.05%
# false positives according to rules/
# STATISTICS.txt). Let's put them in a
# different mbox. (This one is optional.)
:0
* ^X-Spam-Level: !!!!!!!
almost-certainly-spam

# All mail tagged as spam (eg. with a
# score higher than the set threshold)
# is moved to "probably-spam".
:0
* ^X-Spam-Status: Yes
probably-spam

# Work around procmail bug: any
# output on stderr will cause the "F" in
# "From"
# to be dropped. This will re-add it.
:0
```

```
* ^^rom[ ]
{
LOG="**** Dropped F off From_ header!
Fixing up. "
:0 fhw
| sed -e '1s/^F/'
}
```

Using 'spamc' is very similar, although we need to have 'spamd' start at boot time via the *init.d* script. Using 'spamd' is usually a good option when building a mail cluster, as one massive box sitting behind the scenes can handle the spam filtering and the little front-end boxes don't have to handle the load.

## FAQ CAN I INSTALL IT SYSTEM-WIDE?

Many mail servers allow *SpamAssassin* to be executed against all incoming mail messages. Qmail users have a variety of options, *qmail-scanner* (<http://qmail-scanner.sourceforge.net>) being one of the best. This can run a variety of spam and virus filters and replicated the qmail queue mechanism.

MailScanner ([www.sng.ecs.soton.ac.uk/mailscanner](http://www.sng.ecs.soton.ac.uk/mailscanner)) is also a particularly popular option, especially for anyone still using *SendMail*.

« the trojan to engage in extra activity and possibly make itself known as a result.

The man page suggests that *chattr*'s designed for the ext2 FS, but it does mention ext3, and talks about a journaling switch 'j'. I'm not sure how much that would limit its broader usability. I would think it would just be one of the many concerns associated with any development project.

I've been wondering what people think of *chattr*, and, if they've used it, if it just caused them too much bother to be bothered. To me, it seems like it's just been hiding down there in '/usr/bin', waiting to be put to work. *ijmac*, from the LXF forums

**A** The *chattr* utility is indeed very useful, as it allows many of the extended POSIX flags for files to be modified easily from the command line. *chattr* should work with many file

systems, although it should be noted that ext2 and ext3 are essentially the same, with the latter being wrapped by the jbd layer in the kernel.

Using *chattr* is very useful in situations where you don't want users to delete files from their home directory, or make modifications to them even when they can run 'chmod' over them.

It can also prove handy when multiple administrators are working on a system and you want to avoid them making changes other admins don't want modifying. While anyone with root access can remove *chattr* settings, it does make them think and hopefully stops people before they make silly mistakes.

It's worth remembering that many file systems now also have extended ACL capabilities configurable from the command line, with the current 2.6 kernel releases, to allow for very granular file access controls.

## Distro fever

**Q** If you have a document in, say, *AbiWord*, or another program, can it simply be read by someone who has another distribution of Linux?

In other words, if soul A writes something in *AbiWord* on their Debian machine, and sends it to soul B, who has SUSE, or to soul C, who wears a Fedora, or soul D, who has a Yellow Dog, can these all simply be read, say by someone who has OOo, but not *AbiWord*?

Further, if I were to have, say, SUSE and Debian, or another distribution, on the same machine, is it simple enough to transfer that file to the Linux on the other hard drive or partition?

This may be a simple question, but I recall reading years ago that information can't necessarily be easily transferred from one Linux

distribution to another. It doesn't make sense to me why this would be the case, but...

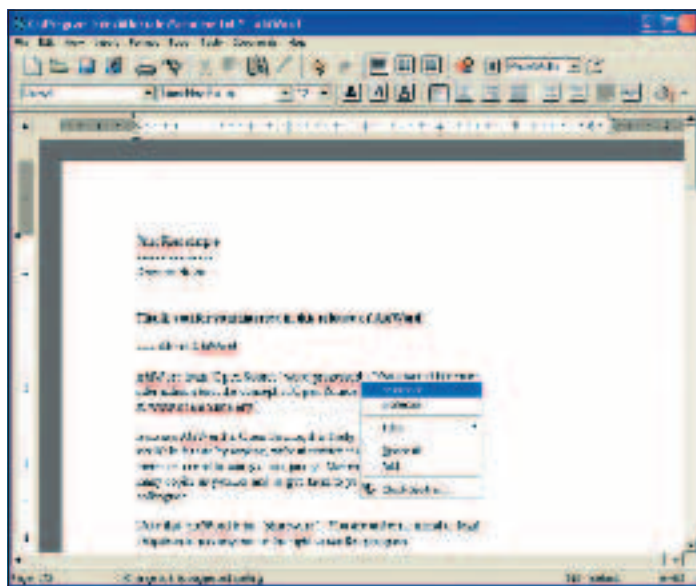
Right now, I'm thinking that I would like to get a machine and put either Mandrake or SUSE on it. Though I'm always reading good things about Debian, too.

I realise that the focus of some of these distributions is different, or at least it is my distinct impression that they are directed toward different purposes.

Any advice?  
from the LXF forums

**A** Every distribution is essentially the same: the Linux kernel with the GNU tools. Debian, Mandrake, Fedora and everything else is pretty much the same thing under the hood, although they have different installers and styles to the installation.

As long as the file format being used is portable across different applications, then the file can be read



**AbiWord** can create files that are portable across a variety of Linux distributions and platforms, including Windows.

on any distribution, or even operating system, without much hassle.

Sharing files between different distributions is done all the time without any problems. Indeed, many people share files between Linux and other platforms, such as BSD, Windows, Solaris and so forth, for remote file access and portability.

## Dual booting SUSE

**Q** I'm guessing that a few readers have tried dual booting SUSE 9.2 and Windows XP. Given the problems with 9.1 (and several other distros, not just SUSE) a few months ago, my question is, does *Grub* get along with the XP boot loader straight out of the box now?

I'm asking because my daughter's boyfriend is coming to stay with us, and he wants me to install SUSE on his laptop for him. The laptop is currently running WinXP, but he's seen my daughter's PC running Linux and wants to begin migrating. Naturally I'm delighted that he's decided to embrace the penguin, but I'd rather not (a) have problems during his stay trying to get a dodgy dual boot to work or (b) make his XP unbootable. (Actually, there might be some pleasure in that, but that's another story...!)

If all is well, then SUSE 9.2 will go on. If there are still problems, I could always do a 9.0 install instead, but I'd really rather give him the benefit of the latest versions of everything.

*Neil Gibson*

**A** When you install SUSE, it will locate the Windows XP file system and automatically add an entry to the *Grub* configuration so that XP will continue to boot. For the most part, distributions are intelligent enough to spot what else is on the discs and will add the appropriate entries to the boot loader so that everything can keep on working.

## Dis-mount problems

**Q** I can copy a file from a Linux machine running Mandrake 10.0 to a Windows directory in a partition on the same machine, ie:

```
cp samba_issue.txt /mnt/windows/
This works OK. I can read from,
but cannot copy any files to, a
Windows directory on another
machine mounted using Samba, ie:
cp samba_issue.txt /mnt/pc1_
DOWNLOADS/
cp: cannot create regular file `mnt/
pc1_DOWNLOADS/samba_issue.txt':
Permission denied
```

The same PC re-booted in WindowsMe can copy to the Windows directory on the other machine. The target Windows machine is a Windows 98SE machine and has the directories shared with no password, as I know from past experience that there are issues that I don't understand with encrypted or plain text passwords not working correctly.

The machines are networked together by good old-fashioned Ethernet wires, via a router. The Samba connections were set up

via the Mandrake control centre, and I have checked that I don't have the 'read-only' option for the mount checked.

The Samba packages I have installed are:

```
$ rpm -qa | egrep -i samba
samba-client-3.0.2a-3mdk
samba-winbind-3.0.2a-3mdk
samba-common-3.0.2a-3mdk
samba-doc-3.0.2a-3mdk
samba-server-3.0.2a-3mdk
```

My "fstab" file looks like:

```
/dev/hda5 / ext3 defaults 1 1
none /dev/pts devpts mode=0620 0 0
/dev/hda7 /home ext3 defaults 1 2
/dev/hdc /mnt/cdrom auto umask=0,
user,ioccharset=iso8859-15,codepage
=850,noauto,ro,exec 0 0
none /mnt/floppy supermount dev=/
dev/fd0,fs=ext2:vfat,--,umask=0,ioc
harsset=iso8859-
15,sync,codepage=850 0 0
//pc1/DOWNLOADS /mnt/pc1_
DOWNLOADS smbfs
username=%,defaults 0 0
//pc1/MY\040DOCUMENTS /mnt/
pc1_MY-DOCUMENTS smbfs
username=% 0 0
//pc1/MY\040MUSIC /mnt/pc1_MY-
MUSIC smbfs username=% 0 0
//pc1/RECORDINGS /mnt/pc1_
RECORDINGS smbfs username=% 0 0
/dev/hda1 /mnt/windows vfat umask
=0,ioccharset=iso8859-
15,codepage=850 0 0
none /proc proc defaults 0 0
/dev/hda6 swap swap defaults 0 0
```

I don't really understand the format of this file and have not edited it by hand. I understand that it controls how drives are mapped

on to your machine.

My understanding is that it is the entries in one's *fstab* file that control the mapping of drives on the machine you are running on, and that the */etc/samba/smb.conf* file controls how the machine you are on appears as a Samba server on the network. Is this correct?

Any help from you to get Samba writing from the Linux Mandrake 10.0 machine to the Windows 98SE machine working would be much appreciated.

*from the LXF forums*

**A** A common problem with Samba mounts are permissions. Obviously, Windows lacks the facilities of Unix file permissions, so these are masked by Samba to replicate the sort of file Linux may expect to see. The simplest option is to add the entry 'umask=0' to the mount lines in */etc/fstab* for the Windows mounts, which will allow any user to modify the files.

As a more secure approach, you could create a group who can access Windows files, then use 'umask=007, gid=group', where group is the GID of the group you created. This will enable users within this group to modify files, without their having to worry about everyone else being able to do it too. 'man 5 *fstab*' is a good place to start when trying to figure out the *fstab* file.

*/etc/samba/smb.conf* is purely designed for the *smbd* and *nmdbd* services – modifying anything in there is not going to change the way your mounts behave.



Many distributions will automatically detect existing operating systems installed on a box, allowing *Grub* to boot them.



LXF Sysadmin Answers – in association with RackSpace Managed Hosting

## Heavy load

**Q** I seem to be having some serious problems with *Sendmail*.

Earlier this evening *Sendmail* seemed to be causing my server load to spike up in the 4.0 or greater area. When I ran the top command there were several instances of *Sendmail* going and they were the top processes running. It seemed to be affecting the server for an hour or so. I wish I'd taken a snapshot of the top command at the time.

My first question is, what do I look for in my mail log file? What sort of things should raise flags? One issue I have is that I get a lot of spam. Lots of mail is addressed to users that don't exist on my server,

configured.unknown.al.charter.com [192.168.10.20] (may be forged)

Also, around the time of the problem I found records like this with a strange URL in them:

Nov 12 16:16:13 server1 sendmail[18756]: NOQUEUE: otherdomain.com.br [192.168.10.30] did not issue MAIL/EXPN/VRFY/ETRN during connection to MTA

My second question: when I check my running processes, what sort of *Sendmail* commands should be running? Is there anything odd about this?

20334 ? S 0:00 sendmail: server 27.domain.com [192.168.10.40] child wait

20336 ? S 0:00 sendmail: ./iAE2Ect20336 27.domain.com [192.168.10.40]: DATA

Any thoughts you have on troubleshooting the maillog file would be greatly appreciated.

Thanks in advance.

*from the RackSpace Forums*

**A** I don't believe the service load you are experiencing is due to spam coming into your system (successful or failed), unless it's a targeted attack. A CPU load of 4.0 is really quite high and a mail server, unless under attack or extremely busy, should not use so much resources.

Going through your mail log by hand can be painstaking even if you don't receive very much traffic. *Logwatch* at [www.logwatch.org](http://www.logwatch.org) is able to go through your mail logs and give you summaries of what is happening. You should be able to tell from here if you have one serious culprit causing you trouble. For a more detailed analysis you could also install *Anteater* from [anteater.drzoom.ch](http://anteater.drzoom.ch). Although it can be tricky to set up it can give you some very readable reports.

The entries you've pointed out are more than likely spam but again, so much mail is these days. I'd highly

but I doubt that's unusual.

I also find a lot of records like this one:

Nov 12 17:50:28 server1 sendmail[20948]: iACMoIZ20948: from=<name.deleted@domain.com>, size=0, class=0, nrcpts=0, proto=SMTP, daemon=MTA, relay=abcde@no-reverse-record-

## SYSTEM ADMINISTRATION

Ask an expert



Hans Huberland is RackSpace Managed Hosting's Linux guru. Email all your system administration and network questions and problems for our real-life system administrator to: [sysadminqa@rackspace.co.uk](mailto:sysadminqa@rackspace.co.uk) Every published query on these system admin pages wins a RackSpace T-shirt!

## ALL ABOUT RACKSPACE

When it comes to managed hosting RackSpace is unique. We are the only hosting company to guarantee 100% network uptime and we will even pledge to replace faulty hardware (let's face it, it does happen) within an hour. As you would expect from Red Hat's only Advanced Hosting partner you will receive Fanatical Support™ and instant emergency response from fully qualified level three technicians, available 24 hours a day, 365 days a year. No answering machines, no diversions, no silly on-hold messages. All our customer platforms are housed in state-of-the-art, secure data centres and can be fully customised to meet any requirement. A dedicated account manager is allocated

to you at the outset and will remain on your account. All RackSpace employees are committed to ensuring customer satisfaction, and will not rest until a client problem is resolved. Since RackSpace was established in 1998, it has specialised in managed hosting – nothing else. We're not an ISP, we don't sell domain names, and we won't offer website design – all we do is managed hosting. As a result, we do it very well and 97 per cent of our customers would happily recommend us. For information on how we can improve your web hosting, please contact us at [www.rackspace.co.uk](http://www.rackspace.co.uk) and ask any questions you may have about the ultimate managed hosting service.

recommend setting up some level of spam filtering on your system. At the very least subscribe to some RBLs: *Spamhaus* is a good option.

Your second log excerpt is a connection to your server on the SMTP port that was not used to send a message. This could be a port-scan or if there are many of them it could be a Denial of Service attempt (although not a terribly effective one). The last entry you mention is just *Sendmail* processing a message.

## What's the form?

**Q** First off, let me give you a clear warning. I'm a new convert from the Microsoft camp, so you'll have to go easy on me. Well, new convert isn't entirely accurate: I still use mainly Windows 2000 servers but I'm trying to get as much moved to Linux as possible. It's not been an easy ride but it has been deeply rewarding, both in terms of bettering myself and financially.

On my Windows servers with IIS I can get my forms to send me emails right out of the box. My pages are very simple HTML but it's just the form that's getting me.

I don't mind using something other than *FrontPage* if I need to. Is there a Linux equivalent to *FrontPage* forms?

Alex

**A** Alex, welcome to Linux. I'm sure you'll find that as your confidence and ability grows you will gain even more from the world of Open Source!

Most Linux administrators and developers will tell you to stay away from *FrontPage*'s extensions as they're so proprietary. They won't work on anything but IIS unless you find some unofficial way of supporting them. There is a *FrontPage* Extensions available for Linux but it's not made by or supported by Microsoft, and even then it doesn't work on every platform and every version of Apache. You'll be much better off with native code anyway.

There are two very popular options when it comes to passing data from form to email under Linux with Apache. One is *formmail.pl* ([www.scriptarchive.com/formmail.html](http://www.scriptarchive.com/formmail.html)) and the other is *formmail.php* ([www.dtheatre.com/scripts/formmail.php](http://www.dtheatre.com/scripts/formmail.php)). *formmail.pl* is probably the more widely used and requires Perl. Though its reputation has been slightly tarnished by security issues it's still a good option – just make sure you get the newest version.

The newer *formmail.php* does not need to run as a CGI script as it's PHP and will work just fine from your html document root. Both come with examples so integration should be pretty easy.

## WIN an Archos AV140 Video Recorder WITH RACKSPACE MANAGED HOSTING

[www.rackspace.co.uk](http://www.rackspace.co.uk)

Every month, the best question related to systems administration that a LXF reader sends in wins a prize. This month, you have the chance to win the awesome Archos AV140 Video Recorder.

The AV140 combines a modular MP4 video player and recorder, MP3 music player and recorder, digital camera and camcorder, digital photo wallet and data storage in a compact device that fits in the palm of your hand and is compatible with Linux. Based on a 40GB hard disk that's completely compatible with Linux, Windows and Mac OS, the AV140 is easy to use. All you have to do is connect it to your computer and it

will be mounted as an additional hard disk – on which you can store any type of data. USB 2.0 auto-connection ensures fast data transfer to and from your PC.

The lucky winner will enjoy 160 hours of near-DVD quality MP4 video with MP3 sound wherever they are. You can record and playback to your TV, VCR or camcorder directly in MP4 format. Playback is an AVI format file with MPEG4-SP VHS quality video and MP3 stereo sound, with the ability to record up to 2,000 hours of voice audio.

For more specs, check out the info at [www.archos.com/products/prw\\_500432\\_specs.html](http://www.archos.com/products/prw_500432_specs.html).



## ★ Star Question – AV140 winner!

This issue's lucky winner is **Huw** – your new portable multimedia player/recorder will be with you shortly!

### Receiving visitors

**Q** I wrote an article a few months back that got mentioned on Slashdot, and, because I hosted the site myself, my humble server got pounded by thousands of visitors in just a few hours. Back then I used Apache 1.3 with MySQL 3.23. I've now got another article ready to upload that I think will also be a big hit, but this time I want to be prepared – what can I do to ensure maximum throughput for my server?

Since the first article, I have upgraded to Apache 2 and MySQL 4 (both compiled by hand), plus PHP 4.3, and am now using a dual 2.0GHz box with 1GB of RAM. The rest of the system is a pretty basic CentOS (the freebie Red Hat Enterprise) install. If possible I would rather not upgrade the hardware further!

**Huw**

**A** Slashdot can be difficult to prepare for without some sort of testing. Much of the advice I'll give depends on the type of content you're hosting. Obviously the more

static you make your page the more hits your server will be able to handle. You may even want to create a separate low-bandwidth version for the Slashdot crowd.

Mounting your file system (especially if it's ext3) with the noatime option will minimise disk overhead as your system will not be updating the `last accessed` time for the page every time it's opened:

```
/dev/sda5 /var/www/html ext3 defaults,noatime 1 1
```

In Apache itself it's well worth turning keepalives off. That will reduce the amount of simultaneous open connection but will introduce some latency into the page loading, especially if there are many images in your page. This is a tradeoff you will have to test but usually turning keepalives off is beneficial.

You mentioned that you have a custom-compiled version of Apache. Be sure to turn your MaxClients variable up quite a bit. By default it's hard-coded to 256 in the Apache source and you'll probably need something substantially higher.

Still in Apache, you could try an Apache module like mod\_gzip. This is only really useful if the bottleneck is your bandwidth (as opposed to

your CPU or system). It will compress outgoing data with a hit on CPU utilisation.

From the kernel you could modify the net.ipv4.tcp\_keepalive\_time and net.ipv4.tcp\_fin\_timeout to something more suitable. I've had good results with setting fin\_timeout to 30 seconds and keepalive to 20 minutes. You can modify these using the sysctl command.

You could consider using bdflush, especially if you're using a 2.4 kernel. There are many options here to optimise your memory (and page file) usage.

Given the specs of the server you've mentioned I doubt you're using IDE hard drives but if you are, make sure that DMA is turned on. Check your IDE drives performance out by running:

```
hdparm -Tt /dev/had
```

An acceptable speed is about 400MB/sec for cached reads and 20-30MB/sec for disk reads.

I've seen a similar configuration on similar hardware managing 200,000 unique connections per hour serve around 300k each time so with a little planning you should be successful. Good luck!



Be prepared for heavy traffic if you have links appear on Slashdot.org.

## Slow pages

**Q** Now that my broadband connection is working under Linux (SUSE 9.0 and a Netgear DG834 modem/router), I have noticed that when loading web pages (using *Mozilla 1.7*) a message usually appears at the bottom of the *Mozilla* screen saying 'Resolving Host XXXXXXXX' where XXXXXX is the web address being loaded. This causes a 5 to 10 second delay in the page appearing. Using *Mozilla* or *IE6* under XP this does not occur, and pages load almost instantly.

Do you know the reason for this, and can I speed up the display of web pages in any way?

from the *LXF* forums

**A** *Mozilla* will use IPv6 for DNS lookups, which you probably won't need, and will slow down web access while it times out trying to access hosts. Disable this in `/etc/modules.conf` by modifying the 'net-pf-13' line, which loads the ipv6 support module, and replacing 'ipv6' with 'off'. This stops IPv6 support loading and will allow *Mozilla* to purely use IPv4 to access the DNS services for faster lookups.

## Adobe hiccup

**Q** I've just installed Mandrake 10.1 CE off the coverdisc (*LXF60*) and have also just downloaded *Adobe Reader for Linux* from the Adobe website for a bit of

practice at installing something (I'm a newbie).

I opened a terminal window and logged in as root (using `su`) and unzipped the file, etc. I then ran the install file (`./INSTALL`), and selected the default installation directory (`/usr/local/Adobe5`). The installer began to copy the files but I was then hit with the following error:

```
Installing platform dependent files ... Done
./INSTALL: line 219: ed: command not found
ERROR installing /usr/local/Adobe5/bin/acroread
```

I have repeated the procedure a number of times, and have downloaded the software from the Adobe site on several occasions.

Can you shed some light on this one? Thanks.

Peter

**A** It looks like you're missing the 'ed' utility, which will be available on the installation media or via the FTP services provided by Mandrake. Of course, one could also use 'xpdf' or *OpenOffice.org* to view PDFs without having to resort to *Acrobat*.

## Wiki for backpackers

**Q** I run a backpackers website and I would like my users to be able to post their own news and photo albums for their family or friends without the need for webmaster interventions and without interfering with each other.

What I have in mind is providing a zone/webpage system. I use *PostNuke* but I would like my (limited) number of users to have the possibility of creating their own homepage, visible to others or for their private use. Unfortunately, I have no idea what such a system is called... not a CMS (content management system) I suppose?

Reup

**A** The system you're looking for is known as a Wiki and allows users to log in and dynamically change pages available to them with ease. There is a Wiki in almost every language imaginable, and even a few no one has heard of, so there is quite a choice.

Taking a look at [sourceforge.net](http://sourceforge.net) and [freshmeat.net](http://freshmeat.net) will give you a list of popular Wiki installations, as well as comments from users as to which work best for them. Each Wiki will have a variety of capabilities, including authentication, privileges and so forth, and installing a few and trying them all out is usually the best way to make sure everything works and that they do all you need them to.

## Thumb sucks

**Q** I was copying files to my thumb drive during my lunch when I realised I was late for work.

Without regard for my thumb drive, I unplugged it mid-transfer and ran out. The thumb drive suffered the consequences, and now is not being detected by either my Linux OS or Windows XP.

I fear that the drive is probably done for, since an OS has to detect it to reformat it, but I thought I would tap the community brain just in case. Any help would be appreciated.

from the *LXF* forums

**A** If you don't see anything in 'dmesg' when you plug the device in, we would recommend returning it to the place of purchase and obtaining a new one. Possibly removing the card while it was active caused a short, or otherwise obliterated the electronics on the device.

While USB is 'Plug and Play', it does require filesystems to be unmounted cleanly and for any processes accessing files on the device to be shutdown. Unfortunately, even Linux isn't smart enough to sync all data in the buffers to disk the instant you start to yank it out of the back of the PC.

## Broadband link

**Q** I have loaded Mandrake 9.2 on to a second hard drive (with Windows ME running on the other) and have bought an Ethernet card to run my NTL broadband connection. Broadband runs fine on Windows now, but how do I get it running on Mandrake? Someone suggested I run 'ifconfig' but I don't know what all this DHCP stuff is. I can get 'configure network cards' up in Mandrake's configure but what do I do from here? If you can help I would be really grateful.

Gareth

**A** Cable modems generally work via DHCP, so you can simply configure the Ethernet interface in Mandrake to obtain the address automatically from the network and let it work everything out. You can also test it from the command line using the 'dhcpcd' utility, which will request a DHCP lease from the NTL server and allow you to access the internet.

Using 'ifconfig' is only really helpful if you have a static IP assignment, for example, on an internal network, so DHCP is the way to go with cable and DSL services. [LXF](http://LXF)

## Submission advice

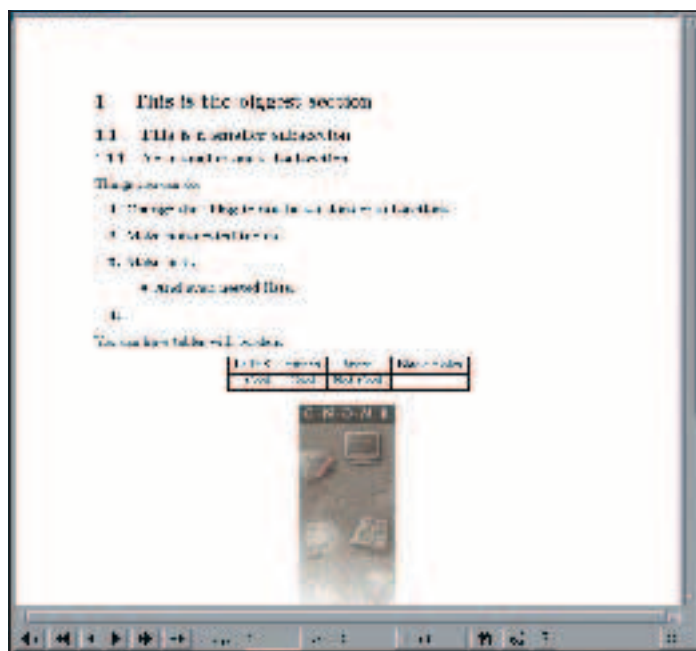
We are happy to answer all sorts of Linux related questions. If we don't know the answer, we'll find out for you! But in order to give you the best service, it helps a lot if you read the following submission advice.

- Please be sure to include any relevant details of your system. "I can't get X to work" doesn't really mean anything to us if we don't know things like what version of X you are trying to run or what hardware you are running on.
- Be specific about your problem. Things like 'it doesn't work' or 'I get an error' aren't all that helpful. In what way does something not work? What were you expecting to happen? What does the error message actually say?
- Please remember that the people who write this magazine are NOT the authors or developers of Linux, any particular package or distro. Sometimes the people responsible for software have more information available on websites etc. Try reading the documentation!

We will try to answer all questions. If we don't answer yours specifically, you'll probably find we've answered one just like it. We can't really give personal replies to all your questions.

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