LINUX MINT
STEP BY STEP INSTALL

TUXPAINT
SO GOOD, AN EIGHT YEAR OLD WANTS TO REVIEW IT!

EEE!
WE REVIEW THE ASUS EEE RUNNING XUBUNTU
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Welcome to another issue of Full Circle Magazine.

This month, we have another new feature: each month, we will be printing an interview with a 'MOTU'. These are the men and women known as the 'Masters of the Universe'. Sadly, it has nothing to do with embarassing 80's cartoons, but these good folks keep our repositories up to scratch and deserve to step out of the shadows.

Just after their release, I managed to secure one of those elusive beasts known as the ASUS EEE PC. Suffice to say, it is an amazing piece of kit for the price, and you can read my review of the EEE running Xubuntu on page 15.

One of the things that always puts people off Linux is compiling source code. This month (page 8) we show you how easy it actually is. I personally avoided it like the plague until I recently had no other option but to compile from source. Once you've read this month's primer on compiling source, I'll show you, next month, how I used this technique to get my 6th Generation iPod Classic working perfectly with Amarok.

All the best,
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What is Ubuntu?
Ubuntu is a complete operating system that is perfect for laptops, desktops and servers. Whether at home, school or at work Ubuntu contains all the applications you'll ever need including word processing, email application and web browser.

Ubuntu is and always will be free of charge. You do not pay any licensing fees. You can download, use and share Ubuntu with your friends, family, school or business for absolutely nothing.

Once installed, your system is ready-to-use with a full set of productivity, internet, drawing and graphics applications, and games.

http://url.fullcirclemagazine.org/7e8944
Microsoft Hits New Low

Upon visiting the URL - http://msdn.microsoft.com/events/hero/ the viewer is greeted with a somewhat badly drawn Lego-type scene:

Windows Vista Sensei comes from a long family line of warriors, the “Windows” family.

He is highly thought of as one of the most powerful warriors alive. Although he is still young, Windows Vista Sensei is said to possess different strengths and confidence not known to anyone. He is already beginning to gain such world fame at his young age that folks are writing stories about him.

With his sense of clarity he possesses the things that legends are made of.

Windows Vista Sensei travels from place to place in a quest to help the underprivileged global citizens. He shows up when you least expect him and always when he’s most needed. When it means defending and securing those in need, he’s always ready!

While on one of his many travels he decided to track down the legendary martial arts master and wise shaolin monk, Office Master. He had heard of the mighty Office Master from tales of heroism told to him when he was younger. With growing threat in the world he needed someone to help him in his quest and who better to compliment his strengths and skills than the great Office Master.

After finding Office Master he asked for help with continuing the battle against evil doers around the world. They joined forces and now together they bind to create an unstoppable SOURCE - ready to fight for all who need they’re help.

I think it may be time for Microsoft to start ignoring their marketing team...

Canonical, the company behind Ubuntu, formally added Ubuntu Mobile to its product page and more fully described its capabilities.

To accommodate for touch screens, Canonical retooled the Ubuntu interface to work with taps and gestures. One press on a button launches an application or menu, while swiping a finger on a Web page pans it, and swiping a video, photo, song or thumbnail page acts as “forward” button.

Source: http://news.digitaltrends.com
Hardy Alpha 5 Released

Another Hardy Heron pre-release is available for testing. Alpha 5 is the fifth in a series of six milestone CD images that will be released throughout the Hardy development cycle. Alpha 5 includes several new features that are ready for large-scale testing. Please refer to:
http://www.ubuntu.com/testing/hardy/alpha5

for information on changes in Ubuntu and:
https://wiki.ubuntu.org/HardyHeron/Alpha5/Kubuntu

for changes in Kubuntu. Pre-releases of Hardy are *not* encouraged for anyone needing a stable system or anyone who is not comfortable running into occasional, even frequent breakage.

Source: Ubuntu Weekly News
https://wiki.ubuntu.com/UbuntuWeeklyNewsletter

Hardy to Include Wubi

There is a new installation option for Windows users. Wubi allows users to install and uninstall Ubuntu like any other Windows application. It does not require a dedicated partition, nor does it affect the existing bootloader, yet users can experience a dual-boot setup almost identical to a full installation. Wubi works with a physical CD or in stand-alone mode, by downloading an appropriate ISO to install from. It can be found on the root of the CD as Wubi.exe. A full installation within a dedicated partition is still recommended, but Wubi is a great way to try Ubuntu for a few days and weeks before committing dedicated disk resources.

Source: http://www.ubuntu.com/testing/hardy/alpha5

Dell adds new notebook to Ubuntu lineup

Usually, the North American computer giants introduce their latest and greatest products to the U.S. market first, with Europe an afterthought. Not this time. Dell is bringing its latest Ubuntu-powered laptop, the Inspiron 1525, to the Europeans first. Americans will need to wait until later in February for Dell's newest Ubuntu Linux computer.

Source: http://www.desktoplinux.com

Full Circle Magazine has a small team of developers who are working on an open source application which will help those, like us, who create publications. We are always looking for more developers. If you would like to help, please visit:
http://dev.fullcirlcemagazine.org
When you insert the Linux Mint disk, you are presented with the Linux Mint boot menu. Select 'Start Linux Mint', then watch the beautiful splash screen (below).

Once Mint has loaded, you can play around with it, or you can go directly to the installer. Click the 'Install' icon on the desktop to install Mint. Follow the on screen instructions to install it in the usual way, selecting your language and time zone, followed by your chosen keyboard layout.

The next step allows you to repartition your hard drive. Be careful when selecting how to partition. As long as you select the relevant option, you should be fine. Following partitioning, you need to select a real name, a user name, a password and a hostname (right). Click Forward and move onto the next step.

The final step is just a summary of the options you have chosen in the previous steps. Click finish, and watch it install.

When the installer is complete, click restart, and when prompted, remove the disk.

Upon restart, log in to your new Mint desktop. You will be prompted to choose a couple more options, such as a root password and whether to use the program 'fortune' when you open a terminal.
One is high priority, and has been tested thoroughly, two has been tested slightly less and so on. You can get a full summary by clicking the 'Preferences button' (or see the picture below). You can change the level of updates your computer checks for, to allow you to have a super stable system or have bleeding edge packages.

Other things to try out with Mint include its excellent menu system, which allows you to search items and filter them by category - speeding up the time it takes to find an application; and its web based package management system, allowing you to browse packages online.

A padlock will be displayed in the bottom right of your screen, which you can click to install updates. The Mint updater (below) is interesting, because it uses a numbering system to show the priority/trustworthiness of updates.
To build packages, you will need the package build-essential. This can easily be done with:

```
sudo apt-get install build-essential checkinstall
```

Or, if you don’t like apt-get, install `build-essential` and `checkinstall` with a package manager of your choice.

Now, you will need to unpack the archive where the source is located. To do this for a tar.gz file:

```
tar -xvzf example.tar.gz
```

Where `example.tar.gz` is the name of the file. If instead you have a zipped (.zip) archive, do the following:

```
unzip file.zip
```

The folder you are currently in within the terminal is where it will unpack the archive. Now that you have the archive unpacked, `cd` to its main directory using:

```
cd /pathhere
```

And type the following:

```
./configure
```

Afterwards, type:

```
made
```

Finally, type:

```
sudo make install
```

If you wish to compile a Debian (.deb) file, type:

```
sudo checkinstall
```

Then it should give you a handy wizard to install the source similar to what is shown above.

You have now compiled and installed the source. If you have any problems, you can always ask for help in [UbuntuForums.org](https://www.ubuntuforums.org) or on the Ubuntu IRC channel.

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**Using this tutorial as a foundation, next month we’ll build - from source - the latest libgpod to get your new 6th Generation (6G) iPod Classic/Nano working with Amarok.**
Installation

Start 'Synaptic Package Manager' by choosing System > Administration > Synaptic Package Manager. You have to type in your password to install software.

Click the 'Search' button and search for 'tux paint'. The search results come up and they should show 'tuxpaint'. To install you should double-click on the word 'tuxpaint'.

Click the 'Apply' button to finish installing Tux Paint.

Getting Started

After installation, you can start Tux Paint by clicking on Applications > Education > Tux Paint.

'Stamp' button in the Tools Panel you will see the stamps available to you on the right-side panel. 

At the bottom of the window there are color buttons. This Color Panel is like your paint pots in real life. Underneath these colors is a helpful Tux who gives you tips about using each tool.

New, Open and Save

The white bit in the center is the page where you paint. A bit like paper or canvas. The buttons on the left hand side (such as: paint, stamp, lines) are your tools for painting on the paper. These tools are like your pencil on paintbrush in real life. The buttons on the right hand side are the options or settings for the tool you clicked on in the Tools Panel.

For example, if you click on the...
the art gallery where pictures previously saved are stored. The Save button saves a copy of the current picture.

**Note:** Pictures saved in TuxPaint are saved to your home folder, in a hidden folder named '.tuxpaint'. In order to see this hidden folder, you will need to choose View > Show Hidden Files in your File Browser. I feel TuxPaint would be better if the pictures were saved to a non-hidden location for use in other applications.

**Painting**

To begin painting with the paint brush, click the 'Paint' tool in the Tools Panel. After choosing the Paint Tool, the Options buttons on the right display different styles of brushes for painting. After choosing a brush style, you should click on the color you would like to paint with, using the Color Palette at the bottom of the window. Click and drag on the white canvas area in the centre to begin painting. If you make any mistakes you can always click the 'Undo' button on the left Tools Palette.

**Stamps**

The 'Stamp' Tool can be used to create stamps of other pictures onto your page. First, click on the 'Stamp' button on the left side Tools Panel. Next, choose a stamp from the stamp gallery on the right-side Options Panel. For more stamps, click the arrows below the Options Panel. Then, click on the page to stick your stamp on the page.

**Adding Text**

To add text, you click the 'Abc Text' button on the left Tools Panel, then click on the page and start typing.

The great thing about TuxPaint is how much fun it is for kids but at the same time uses much of the same terminology and skills needed for the 'high-end' graphics programs like GIMP and Photoshop. TuxPaint will make the transition to these applications relatively easy.

If only there was a program to make kids think spreadsheets are fun!

Video demonstrations of TuxPaint can be viewed on the TuxPaint homepage at: http://www.tuxpaint.org/videos/
I know very little about compressing video, but I recently purchased a Freecom MediaPlayer which plugs directly in to my television and allows me to view video files and listen to music. However, I also wanted to watch my family videos on my shiny new media player. I have roughly a dozen or so homemade DVDs and each is quite large (3-4 Gb). I wanted to compress these videos to conserve the space on my media player. To compress them, I decided to use AcidRip.

To install AcidRip, click System > Administration > Synaptic Package Manager. From the Synaptic menu bar click, on Settings > Repositories and ensure that there is a tick beside the multiverse repository (Software restricted by copyright or legal issues). Click 'Close' to close the 'Repositories' dialog.

Next, click the 'Reload' button on the Synaptic toolbar to ensure you have the details about all the latest software available.

Now click the 'Search' button on the Synaptic toolbar and search for 'acidrip'. When the results are displayed, you should see AcidRip and you can double-click the 'AcidRip' entry to mark it for installation. Next click the 'Apply'

button on the Synaptic toolbar to install the software.

Starting AcidRip

After installation, you can start AcidRip from Applications > Sound & Video > AcidRip DVD Ripper. After starting AcidRip, the main window is displayed as shown in Figure 1 (left). Initially the options seem overwhelming, but to get started insert your DVD into the DVD tray of your computer, then click the 'Load' button to retrieve the contents of your DVD. As shown below, my DVD title was retrieved as 'xmas2005' with 6 chapters and the duration of the video is just over 59 minutes.

I have manually amended the 'Filename' setting from the default '/home/jonny/%T' to '/media/300/%T' so that my resulting compressed video will be saved as xmas2005.avi on the 300gb drive I mounted
Previously as /media/300. I have also changed the default value of 700 for 'File size' to 460 so my resulting compressed video file will be 460 megabytes (Mb).

**Tip:** After changing the file size, click on another field in the window (e.g. the Track Title field) to ensure the change you made takes effect. If you do not do this, your change may not be noticed by AcidRip - a little bug I think.

This 460Mb size is suitable for my one hour video whereas 700Mb would be suitable for a 90 minute video.

For advanced users, the bitrate can be altered on the Video tab as shown in Figure 2.

To begin the actual encoding process, click on the 'Start' button at the bottom of the AcidRip window. The main AcidRip window will disappear and a progress window will appear as shown below.

![AcidRip Video Settings](image)

**Figure 2 (above): AcidRip Video Settings**

At that point, you will want to open your File Browser (Places > Home) and find your newly compressed video file to enjoy.

**Summary**

There are other alternatives for ripping DVDs including **DVD::rip** (below) which I found a little complicated and **Thoggen**, which I found a little slow, but if you want to get ripping quickly and easily, AcidRip certainly passed my acid test.

![AcidRip Video Settings](image)

After encoding (above) has reached 100% and finished, you will be returned to the AcidRip main window (shown in Figure 1).
After rebooting the PC after the install, login using your chosen user name and password.

The first item to be addressed is configuring of the sources. We will remove the CD repository (which automatically gets added to the sources) and add web based sources.

To do this we will use nano, my personal favorite, if you have a preferred text editor please use that. Type into the command line:

```
sudo nano /etc/apt/sources.list
```

You will need to supply the password you set as your user password as you are running a command as root. Add a hash (#) in front of the CD entry and remove the hashes from the front of the other entries. After completing this step press CTRL+X then press 'Y' or type 'yes' to save changes. **Please note:**

*This will remove the default settings for apt sources.*

After completing this, type:

```
sudo apt-get update
```

This will update the apt sources and apt will then know what software it can get. Now type:

```
sudo apt-get upgrade
```

To install the latest updates to your system. This may take a little while depending on how many updates are needed for your system, you might want to put the kettle on now.

After the updates are finished, restart your machine. Log in and run the same command just in case there are any other updates that were missed, although apt is unlikely to miss any. After this is finished, we issue what will be our last command for this this issue:

```
sudo apt-get install
```

```
xubuntu-desktop
```

Answer 'yes' to: 'Do you want to continue'. Go and read the
rest of this issue, and have a nice cup of tea.

After this has completed, reboot your machine. Once the machine has started up you will be presented with the *Xubuntu* login screen.

Log in using your previously chosen user name and password and you will be presented with the Xubuntu desktop, you now need to run the updates by right clicking on the orange icon in the top right hand corner and click 'Install all updates', then supply your password to allow the updates to run. Alternatively, you can press Ctrl+Alt+F2 and login using your user name and password again and run the updates from the command line.

After this is finished restart your machine. Once logged in, open Firefox and browse to [http://www.webmin.com/](http://www.webmin.com/) (above right) and in the menu on the left, click 'Debian Package'.

When the .deb file has finished downloading, right click on it and choose to open with *gdebi-gtk* and click OK. The 'Package Installer' will then open and you can simply click 'Install Package'. The package manager will also install all the needed dependencies for Webmin.

Once Webmin has installed, go to: [https://localhost:10000](https://localhost:10000) and log in using your user name and password.

**Next month, we will look into configuring Samba shares, printers and folders, DHCP and controlling your system with Webmin.**
Imagine a laptop that is only just larger than a DVD case, twice as thick, runs Linux and would cost just over £200 (~$400). Fantasy? Not at all, it's called the ASUS EEE PC.

The first thing I noticed about the machine is that it is completely silent. Other people usually notice the small screen first. I'm not Einstein but if the screen was larger, then the entire unit would be larger. The whole point of the Eee is to be small! Another thing people have been pointing out is the small keyboard. If you have big hands, then it may well be a problem, but I am typing this article on the Eee without difficulty.

When you first boot the Eee you are presented with a heavily modified version of Xandros (left) which, while excellent for the new user, makes the Eee look too much like a child's toy. Fortunately many geeks make light work and ways have been found to replace Xandros with other Linux distributions.

I tried Ubuntu, I tried Kubuntu. I even tried Puppy Linux. But they all had one problem or another. Ubuntu seemed to think the battery was broken and neither wired nor wireless would work. Kubuntu liked the battery, but again no network or wireless. A few scripts were released which would effectively patch Ubuntu to get most things working, but by that time I had discovered the excellent

Specifications:
CPU Type: 900MHz Intel Celeron Mobile
RAM: 512MB DDR2
Hard Drive Capacity: 4GB S.S.D
Drive Type: Solid-State Disk
Screen Size: 7 inches
Operating System: Linux
Wireless Networking: Yes 802.11 b/g
Ethernet Controller: Yes
USB Ports: Yes, three USB2.0 ports
Battery Life: 3.5 Hours subject to usage
Approx Weight: 0.9 kg (196 lbs)
Dimensions (mm): 22.5x16.4x2.15-3.5CM
Built in Webcam (0.3 Mega Pixel)
Stereo Speakers
SD Card Slot
community at www.eeeuser.com which had created eeeXubuntu which was, as you can imagine, a modified Xubuntu install but with patches applied on install. But not everything went as planned.

Following the instructions on the eeeXubuntu page on the eeeusers.com wiki I created a bootable USB stick which contained the eeeXubuntu Live CD. The install went ahead as normal, I made sure to choose "Manual" when the installer reached the partitioning section since we do not want a swap partition on the Eee. The less writes to the solid state drive the better, now one problem with the installer is that some of the windows are too tall for the small screen. The trick is to hold down the Alt key while left clicking anywhere on window. This lets you move the window round and, if need be, out of the screen, so now I could continue and finish off the install.

From cold boot to log in screen was approximately thirty seconds, slower than the default Xandros install, but worth it in my opinion. Log in to desktop is almost instant. I was then greeted with the message that my battery was possibly broken. Having used, and charged, the Eee several times since, the battery meter seems to work fine, I've no idea why it displays the error message but it seems to be a false alarm.

After booting I popped in a USB stick only to be greeted with a message saying that eeeXubuntu cannot mount the USB drive. After a bit of quick research, it turns out that the eeeXubuntu installer still adds a CD entry to the /etc/fstab file. After commenting out the CD line it accepted the USB stick no problem.

Next port of call was the wireless, this was a big problem with almost all Linux distro's on the Eee, even Ubuntu needs a patch. I'm a Kubuntu user by day so using Xubuntu is a bit alien to me, but after left clicking on the networking icon in the taskbar (below) my wireless was detected, gave it my WEP code and I was off and running!

The next bone of contention with the Eee is sound. I played a WAV file and it was awful! Crackled like crazy. After some research on Ubuntu Forums I found a neat trick. Using the media player application in eeeXubuntu, turn the volume up as high as it will go. Next open a console and type:

```
alsamixer
```
In your console you will see some sliders. Move the first two sliders up and down (while playing some audio) until you have a decent volume. Now exit alsamixer. Now type:

```
sudo alsactl store 0
```

That will save your settings for next time. It wasn't until later that I realised you can add a volume control panel to the taskbar, which is similar to the alsamixer so try adding the volume control first, it may save you getting your hands dirty in the console. One final problem with eeeXubuntu seems to be the sound in games. I found that enabling the sound in some games caused the game to crash. Disabling the sound left the games fully playable.

One thing I have no real use for on the Eee is the built in webcam. But for the purposes of this review I did have to add a Feisty repository to obtain the ucview application which is what eeeXubuntu needs to start up the webcam. Easy to install but not much use it seems since no matter whether you capture the screen yourself or by using the ucview application, you are still left with a blank image. This seems to be a known problem and I'm sure the boffins will overcome it.

The final thing to test was the function keys. To save having an extra dozen or so keys, some double up. So holding down the Fn key and tapping F3 will dull the screen, Fn + F4 will brighten the screen. These work perfectly well in eeeXubuntu.

The Eee comes with a recovery DVD which, ironically, requires Windows. But I managed to get the rescue disc working fine in WINE running on my desktop Kubuntu machine. The disc allows you to create a bootable USB stick with the default Xandros on it to let you return your Eee to factory default. Suffice to say: I won't be needing the recovery disc. I'm keeping eeeXubuntu installed on my Eee as it has everything that I need fully working. I'm writing this in Abiword (above), editing my photos in GIMP and have Firefox, Thunderbird and Pidgin for my internet needs.

One of the big features of Linux is, of course, Compiz Fusion. Having noticed a few murmerings of Compiz in the eeeusers forum I decided to give it a try, having read through a few posts, step one is to get aiglx working, this is done by:

```
sudo apt-get install libgl1-mesa-dri
```
Now restart X (Ctrl+Alt+Backspace) you now need to open the Synaptic Package Manager and install:

- compiz-core
- compiz-plugins
- compiz-fusion-plugins-main
- compiz-fusion-plugins-extra
- compizconfig-settings-manager

If you prefer Emerald for your window borders then you can select it too in Synaptic. After clicking "Apply" you will have Compiz Fusion installed. But on such a low spec machine, is it even usable?

Absolutely! I can wobble my windows and spin my cube with the best of them!

The one pain with Compiz on the Eee is the Compiz Settings manager. It is just too big for the screen. By default Compiz won't nudge a window out the top of the screen, it doesn't always work well with the Alt+Click+Drag trick which is a shame. The vast majority of the effects work well and smoothly which is surprising for, as I said, such a low spec machine.

And yes, with the appropriate codecs it'll even play all your audio and video files!

So what exactly am I giving five to: eeeXubuntu? The ASUS EEE? Quite frankly I'm giving them both five out of five! The ASUS EEE is an excellent little notebook. Granted it does look a bit like a kids toy but it is so handy that you have to love it. And the community that has altered Xubuntu to suit the EEE also deserve a round of applause as without them my EEE would still have that awful childish looking OS installed on it. Now may be the perfect time to pick up a first generation EEE as ASUS has just recently announced larger versions of the EEE to be released soon.
In the past years, independent (indie) game development went from sitting on dark basement, staring a black and white screen, fiddling cryptic messages to decode the VGA registers in order to achieve the maximum performance to sitting on a dark basement while staring to gorgeous GNOME or KDE screen while tossing the maximum performance from your GPU with no sweat. (Of course, some of us still love that darn pretty black screen)

From these dark ages to current days, Linux game development went from an adventure to some serious play. The tools matured and CG companies took Linux more seriously as a development platform.

This article intends to present the reader with some good options on Linux game development, while analyzing the reasons of this Linux game development takeoff.

The Dark Ages

Picture this: You have a pretty console screen on your machine. What are your gaming options? None, you might answer. You couldn't be more wrong.

Before XServers were commonplace, there were already a struggling game development community. Most of them came from the existent BSD community and saw a good potential with that "fast and lightweight UNIX" that Linux was (today, both Linux and BSD seen to be in the same level) and then we got our share of console games, like dopewars and other console classics.

Developing these games was more challenging than playing. They didn't have the tools available we have today. These dark ages wouldn't last long.

The Golden Age of Unix Graphics Evolution

Since the start of the modern computing industry, UNIX was the de facto standard for serious applications and before the Mac take-over, UNIX was the absolute king for computer graphics.

Then it came. The graphical revolution for the UNIX workstation. First, it was a industry or office thing then, gradually, we got an XServer running on our machines.

But still, coding a game in XLib can lead to suicide. How did we get such great games like Planet Penguin Racer and Super Tux?

The main reason should be two inventions here: OpenGL and SDL.

OpenGL opened a new world in computer graphics. Being mostly a Silicon Graphics thing,
it was for sure a UNIX-friendly thing. After passing the hurdles of getting a X window with OpenGL we could finally get our Quake after a hard workday.

And while OpenGL did great things for 3D graphics, it carried unnecessary weight to 2D Game Development. The developer had two options: use the unaccelerated but closer to other 2D APIs XLib or to go with the (sometimes) accelerated but unnatural OpenGL; Some of them ran to GTK and other toolkits, but most got lost on this. And then came Sam Lantinga to unify our battle cries.

Sam Lantinga had to port a Macintosh emulator to Windows and Linux. Coding a graphical system for every Operating System sounds a crazy thing. And it is. He had a simple but daunting idea: write an abstraction layer, called SDL, and the rest is history. He got Doom ported to SDL in 3 days!

Now we can use SDL in a huge variety of platforms, ranging from mobile devices (more about this below), Video Game Consoles, and lots of mainstream and obscure operating systems.

With SDL, developers could actually go through the "create window for OpenGL" novella in less than 10 lines of code. And binding for other languages spring every month or so. I bet he didn't see that coming.

**The Java Monster**

The hearts of millions of programmers (those include even John Carmack) were touched with this promise: "Now we can write our own AAA game for all platforms". Unfortunately, it took a while for the idea to catch on for real. What the Java applets really were able to do was a little below that. But still, as Sun released their JDK for Linux, it was quickly possible to write Java applets on a Linux box and see them running on Macs and windows boxes.

Basically, this was a time for small arcade clones and advergames. And for several startups funded for advergames, the Linux + Java applets were the killer combo. Most of the technical staff of those came from those tech geeks who had been using Linux since college.

But still, the premier time for smooth Java game development was yet to come, and we will return to this later.

**Take it in your Pocket**

If mobile is the name of the game, you're lucky. Mobile development under UNIX have been strong since the beginning, with J2ME mostly, and now, more recently, with Linux Mobile.

With J2ME, there are plenty of possibilities. Some are more mature, like NetBeans and Sun WTK, and some brand new, like Nokia's WidSi. Linux is being taken seriously by the big players, as most innovations in terms of design comes from freedom fighters, like us. The only possible downside of the approach might be the plethora of proprietary protocols mobile phones use to communicate with
a computer through the data cables. Be sure to purchase a phone that speaks "Mass Storage Device" to the computer.

Recently, we have seen some companies going with Linux for their mobile OS'es. We all gain with that: this mobile Linux is not that different from our desktop machine and most SDKs use technologies broadly available. Its like playing with your childhood friend's child.

One Common point when dealing with mobile game development is the use of Simple DirectMedia Layer. Most mobile distros allow SDL apps to run with privileged speeds. The biggest distros here are: QTopia, from Trolltech (the guys that gave us libqt), EZX (QTopia based), from Motorola (some warnings apply here, as it doesn't run native applications right out-of-the-box), and mostly Maemo (the one your humble writer is most likely to code in day-to-day), from Nokia and finally OpenMoko, that is a joint effort to produce a distro for mobile phones.

Also worth mentioning that Ubuntu Mobile is to become a great mobile OS, incorporating the UI from Maemo. Looks very promising.

The Dawn of the Desktop

As Linux evolved from the last decade, we could stop worrying about or desktop and could concentrate on producing something. This is a byproduct of projects like Ubuntu, that aims to bring more focus to the developers, putting them to do their best were they excel.

There are also smaller efforts on some countries, like Brazil, to use Linux as a medium of knowledge broadcast, creating social projects that called for more average-joe-friendly desktops. Those are fertile field for Linux gaming.

Also, there are other companies using Linux for notebooks (but this distinguish from mobile Linux, as there is a full Linux machine experience), like ASUSTEK with its Eee PC (left) and OLPC (the last one making big bets on educational gaming), each being too big to cover here.

Name Your Monster

Now that you can't wait more to get your hands dirty, I will show you some good options for developing your own games.

Desktop

emacs (or your favorite text editor) + g++ : Thats right! chances are that the exact machine your are using to read this text is capable of game development. Although the experience can be somewhat spartan, its perfectly possible. Except for a few moments I ran for some better tools, I went this way to develop my own 3D mobile game engine (www.sf.net/projects/bzk).
Mobile

If you're going for Java, make sure you take NetBeans, as it have a very strong mobile support. Don't forget your "mobility pack" for the chosen mobile device profile.

If not, you're gearing towards Linux mobile which is good and bad news:

The good: most of your existent desktop code will work out of the box.

The bad: you will, probably (as most mobile devices use ARM processors which are incompatible with our x86 machines) need to recompile it with some esoteric SDK. And this will depend on the target platform. Some are easy, some are not. Make sure to also research what the best settings for your workstation are - sometimes, virtualization can be a viable option.

One piece of good advice might be to use SDL. I can attest this, as I do most of my development on my desktop environment and when I feel the need, I just switch to the mobile SDK (in my case, Maemo SDK under Scratchbox), recompile, generate a Debian ARM package and test it on device (Nokia N770). This can save you valuable debugging time.

Art

With the arts department, the best tools (but not the only ones) are the GIMP and Blender (above) for graphics (with the advantage of running also on Windows for that goofy friend of yours that still uses Windows) and Audacity for sound (GNU Sound being another viable option). Rose Garden is decent if you can get over the JACK nightmare, when producing music (if you can't use Rose Garden, just invite that friend of yours to play their songs, but make sure to turn of the vocal's mic)

Conclusion

With so many options, you have to wonder why are you still reading this instead of producing the next Quake. Get busy!
I'm not a writer, but do things - like all those others out there e.g. run / work / play / have a life / use a computer / have a PDA. I don't hate Windows, but I was frustrated, and took a chance on Linux because of what I mentioned. I took the personal initiative. I had no budget, but always asked, why can't I do this, or that, with all the Microsoft software that I bought, or was handed to me. Oh, I have at one time had one or two large budgets. And, I paid for Microsoft licenses all over the planet. Then the price kept getting higher.

Meanwhile, I started to get frustrated. Lots of things to do and pay for out there. But, no help. Developing a business became a problem. Joining a Linux Forum was amazing. People with the same problems that I had gave me solutions. Noticing why I shifted to Linux?

Here is a great example of Linux. I've always looked to Spell Check my e-mails in multiple languages. The reason is, I have worked Internationally for a good deal of my life and always, always wanted to spell check my e-mails in American English (not the Queen's, but the President's), stay in contact with my son in Germany, and deal with my Hispanic friends. Plus, throw in the occasional French phrase. All spell checked.

Now, as a thinking individual, go try to find a solution with Microsoft. I'll bet you can't. My solution: Evolution (above). Hey that rhymes. Can you imagine after having dealt with the largest, most monopolistic software company on the planet, my multiple phone conversations with their Tech Support? I can now spell check...
in four languages at the same time.

Hey, we have all been there, done that, and have the T-Shirt. C'mon guys - get with the program, it's a small world after all. Wasn't that once a big hit song from a Disney film? I truly think that Microsoft has become too - what would the right word be here? Perhaps too something or other. I don't want to beat them up, but the shift came to me a while back. I had ideas in mind, and wanted to do something. Linux, and all those thousands, and thousands of applications, gave me the solutions.

They don't call it a PC - Personal Computing -- without a reason. I have a PC. It is now all Open Source.

Next, I hated having to buy all those additional programs / applications so that I can create a .pdf, burn a CD, DVD, let alone have a good Office Suite of programs. That's not counting going on the search for a good secure browser, virus scanner, firewall, running disk defragmenters, checking on virii, adware, spyware, malware, root kits. Oh, and the ever popular Microsoft updates. A Linux Distribution gives it to you all for free!

First things first – OpenOffice. There are haters out there that complain about Excel spreadsheet conversions, but I've often enough been stuck with Excel - as an application itself. If someone can't convert a Word .doc, they never had the slightest clue what they were doing in the first place.

Ever tried talking to Microsoft about trying to do something with Outlook like trying to do a mass e-mail to send the latest news letter to clients? You can do that with Mail Merge in Word, but not with Outlook. Buy another application, plus keep getting hit with security warnings, and updates. I'd become my own Microsoft System Engineer!

My newest friend is the Open Source Community. Funny word there. Lots of great support. My other friend is Google. A long time ago, people were stuck with issues, but now we can do a “Google”. This time around everyone can do it and save themselves a good deal of time, effort and frustration dealing without Microsoft. Non-frustrating = Linux.

I'm known as “Adler” in about 3 - 4,000 posts. Adler means “Eagle” in German, which I speak fluently. But, we all speak Linux – globally.

Dell has started shipping their Desktops, and Notebooks with Linux installed instead of Microsoft. Noticing a larger level of frustration? Go Linux, go!

Consider me a citizen of the world – the Open Source world, that is. We like to get things done, and can do it ourselves. I do it with Linux Mint Cassandra .

Ask the next time that you buy a PC from Dell, IBM, COMPAQ, HP, SONY, Toshiba, etc. if they ship their systems with Linux and not Microsoft.
Steve is a MOTU, Ubuntu Core Developer and Debian Developer amongst other things.

Age: 26
Location: Sydney, Australia
IRC Nick: stevenk

**How long have you used Linux and what was your first distro?**

I started using Linux in late November, 1998, and started with an install of RedHat 5.0 that I later upgraded all the way until 6.2, until I heard about reports of RedHat 7.0 (which was in RC at the time) being very bad, even for a RedHat .0 release, and decided to switch to Debian, and installed Slink (2.1).

**How long have you been using Ubuntu?**

I decided to finally look at Ubuntu just after Breezy was released. I’d kept a vague eye on it, being a Debian Developer, but didn’t pay much notice. After Breezy came out, I downloaded a Live CD, and gave it a try. And liked it so much that I left it running on my machine for two days, at which point I thought I should install it.

**How long have you been a MOTU and how long did it take to become one?**

I became a MOTU on January the 16th, 2006. I think I had been working on Ubuntu for about two months at that point.

**Favorite packages?**

I will always have a soft spot for xringd, since it’s the first package I maintained in Debian. Also: quodlibet and crack-attack

**Favorite part of being a MOTU?**

The community — when I first joined #ubuntu-motu, I was collared by two regulars and set to work after a little bit of a chat.

But the real answer is just that, the wonderful and clueful people out there that, like me, are working to make Universe in Ubuntu better.

**Any advice for people wanting to help with MOTU?**

Jump in, the water’s fine. If you’re interested in helping out,
there are plenty of people who are happy to answer your questions on the mailing list or #ubuntu-motu IRC channel.

**Can you briefly compare the development styles of Ubuntu and Debian?**

Quite different — Debian is very centered around the idea of “Here is one guy, and the packages he looks after. If you need to do anything, file a bug, and wait for him.” Ubuntu on the other hand is a small team of people working together to solve problems in Universe. We may have people that ‘maintain’ a package in Ubuntu, but only because they know it better, or have a relationship with upstream.

**Any Plans for Hardy Heron?**

At this point, my only plan is getting a better about window in place, one that doesn’t use yelp.

**Favorite quote?**

“It’s not a bug, it’s a feature.” — it’s quite fun to apply this to random packages.

**What do you do to relax after a long day of development work?**

I am employed as a developer, so to relax after a long day at work, I work on Ubuntu. I guess that doesn’t answer your question.

I’ll read a book, listen to music, or play crack-attack, or WoW.

**Screenshot/Pic of work area?**

My screenshot is very boring - the default Gnome settings don’t get my way, so I don’t change them. A bunch of terminals in tabs, Firefox, Wanderlust/Thunderbird for reading mail, and Quod Libet playing music on the other workspace.

As you can see from the photo (below), I’m a big fan of the mentality that a messy desk is a sign of a sane mind. Sound system, machine, laptop, lots of paper - all fairly normal.
The challenge with change is knowing where to start. In this five-part series we will look at the process of how the Ubuntu Women team is making change happen. Topics will include: goal setting, action items, areas of responsibility, evaluation and volunteer retention.

The first step in accomplishing change is to have a vision of the future. To create this vision: ask your group what the future will look like. Allow each person to shape the vision they have for the group — having each voice represented will help to keep volunteers motivated. Include as many details as possible to describe your dream for the future. Encourage creative thinking.

From this vision pull out a list of things that are different from what is happening today. These will be your goals. Goals are broad statements which describe the ideal future for your community or project. Post the list of goals on your project Web site for everyone to read. Ideally this document will be in a community-editable format, such as a Wiki, so that no one person controls the vision for the group.

The Ubuntu Women team started this process by creating a Road Map.

In this document we outline what the Ubuntu community will look like in the future. In each part of the vision we are trying to include a measurable goal. For example under the Role Models section we have included the goal to have, “at least three visibly active women in all core Ubuntu projects.”

There are no time lines within this document. You can see the draft version of our Road Map at: http://wiki.ubuntu-women.org/RoadMap

Get started on your list of dreams and check back next month for the next step in making change happen.
Chances are that if you are reading this, you are a student, which means that every weekday you come home with at least an hour's worth of homework. Unfortunately, at the time of writing, there does not yet exist a homework solver in the Ubuntu repositories.

There are, however a few programs that I use on a regular basis to help me with my own homework. In this article I will list a few apps that just might help you as you go about your studies.

**Abakus** - Probably the best calculator there is. It is easy to use, but it also has advanced features such as trigonometric, logarithmic, and exponential functions. CLI junkies may like bc, which is essential Abakus, but older and with no GUI. To get abakus, install the 'abakus' package. bc comes preinstalled on Ubuntu.

**KOffice** - I wasn't going to include an office suite in this, but KOffice is unique. It comes with the KOffice Workspace, where you can create anything - spreadsheets, presentations, graphics - all from one main window!

All your documents are on nice little tabs at the bottom of the screen. So if you have a big project coming up, you can be working on the paper on one tab, making a chart on another and creating a slideshow on another tab! It also includes a fancy "Function Editor" for those of you in advanced maths.

**XChat** - That's right. An IRC client. Freenode is probably my tech support for life. There are thousands of smart people on IRC every day, many of them willing to help his neighbor. Just make sure that when you ask, ask once and wait for an answer. Also be sure to ask in the right place, don't go to ##python asking how the French Revolution affected the rest of Europe! And please, for the love of all that is good, never speak in 1337 5p3@k (leet speak). It's annoying, inconsiderate, and no one will want to help you.

I hope you find these programs as useful as I do. If you have any more suggestions for apps that are useful in an academic setting, please provide feedback! We love to hear from you!
On Feb 2, 2008 I attended the linux.conf.au open day at the University of Melbourne in my native Australia. The open day was a fitting way to cap off a successful conference week which included various talks ranging from Microkernels to Rockets. I didn't have the privilege of going to the actual conference like many others, but if you are like me and want to have a look at what was discussed, there are several videos which can be found online [1].

The Open Day saw a lot of Linux distributions and corporate representation from the likes of Ubuntu, Fedora/Red Hat, Gentoo, CentOS, HP, and Google. There was representation from the Linux Users of Victoria, the Administrators Guild of Australia, MythTV and Wikimedia among others. There were other interesting demos such as the open source dance mat, Frets on Fire, the XO laptop, the Asus EEE PC, and to cap it off; using Second Life as a power switch to any device incorporated with Infrared technology (they used a fan to demonstrate, but the hack could be used to control the flow of any power source).

I was also given a lot of freebies such as a Google Notebook, a SAGE pen, magnets, stickers and even a "Cable Management System". I really enjoyed the Open Day. Next year the annual conference will be hosted at the University of Tasmania in Hobart, so I appeal to all Linux nerds out there: let's all march down South to the Island State next January!

And don't forget! Full Circle Podcast #1 will be coming out soon. If you are available to come onto the show as a panelist, please email me at podcast@fullcirclemagazine.org. You need Skype to participate. The recording is quite laid back, not too geeky, and is (we hope) enjoyable. Your contribution will be greatly appreciated.

I have just started playing with Ubuntu, although Windows still pays my bills, I just discovered Full Circle and I'm enjoying it. The hints and tips will come in very handy, the pictures are cool too.

Would it be possible to add some kind of direct download link for each issue or maybe an ftp link? Having to open each issue in a browser is a bit tedious.

I'm having a problem printing the issues, my printer takes forever to print. I also noticed that before printing, Acrobat reader 'flattens' the pages. Any suggestions?

Stacey Katz

Ed: I'm told the reason the PDF opens in the web browser is because you have Adobe Acrobat Reader installed. We don't link directly to the PDF files as we use a download counter.

I read your article about CNR in Full Circle Magazine issue 8 and I really disagree with your conclusion. I have tested CNR myself and there were so many issues and bugs that I really would give only one star out of five. And this star would only be for the idea itself.

CNR could be the future of package installation but currently it's so buggy that you can't use it properly with another packaging system. Here are some problems:

• package installation without root password (possible security risk).
• not usable without the Internet (it must download a deb from the CNR repo).
• no check for previously installed software from Ubuntu (will overwrite any package, even if newer), update-manager of Ubuntu will report that there are newer packages and overwrite the old from CNR.

• mixing of dependencies from Ubuntu and CNR repo.
• no comment that further packages will be installed.
• no possibility do uninstall as dependency installed packages from CNR.
• no check for other running package managers, apt-install will fail with a wrong message.
• does not lock package management system after start.
• no possibility to stop an installation, you can close the install window with the "X" button but it still runs in background.
• no reuse of packages already stored in /var/cache/cnr/client/pool.

So I really could not understand your test or agree with your conclusion.

Dominik Wagenfuehr
First of all thanks for a great magazine. I just read the news section of issue 9. In the article 'Linux Development More Like Social Network Says Torvalds' there is the very unfortunate sentence: ".. who has written approximately 2% of the Linux code since creating the operating system in 1990"

Now Linus Torvalds has not created an operating system, he made the kernel for it, and the kernel is the one that is named Linux. I know that you guys have a source for this article, but you still have to be critical of the content to avoid passing on erroneous information like this in the future.

Kenneth Nielsen

Ed: I understand your concern Kenneth but for me to make corrections on an excerpt (ie: someone else's article) would be unacceptable. I would rather print the story and give the source, that way you know who's mistake it really is.

Kubuntu bundles a package called gtk-qt-engine by default (re: GNOME apps in KDE). This package ensures that GTK+ applications look like Qt applications on KDE. As this engine is written for Qt 3.x, it seems to not work for Qt 4 which KDE 4 uses.

Chandra Sekar.S

Ed: I'm told that kde-apps.org has gtk-kde4 which fixes the 'Windows95 look'.

I just read the latest issue and as a happy OpenTTD user I couldn't help but notice that the installation method can be even easier by using AutoPackage. OpenTTD is one the programs using AutoPackage and it is the easiest way to install OpenTTD in my opinion - it even downloads the data files automatically. You can find AutoPackage here:

http://www.autopackage.org

Thomas R. N. Jansson

Ed: Having never used AutoPackage I can't speak for it's usefulness but one can only hope it's better than

Click 'n' Run (see Letter of the Month on page 30). It certainly sounds better.

Dear Editor and enemy of all things printed.

Did you actually have a look at the generated PDF and consider printing as a licence-permitted action by readers? Try it in Acrobat Reader 8 and enjoy being unable to postprocess the generated postscript. You cannot scale or rotate it properly.

Furthermore, many of the URLs have embedded spaces. Try copying them - more often than not, you'll find the URL plus a slew of blanks added in arbitrary places.

Peter Jakobi

Ed: Such a nice man. I don't restrict the printing of the PDF in any way. The 'URL with spaces' is either due to the PDF viewer or the PDF generated by Scribus, again, not something I can fix. I can only suggest you try a different PDF viewer.
**Q&A**
Written by Robert Clipsham

If you have an Ubuntu related question which needs answering, email it to us here at questions@fullcirclemagazine.org, and we’ll pass them to Robert for answering in a future issue. Please include as much information as you can about your problem.

---

**Q** Is it possible to have a sidebar in Ubuntu like on Windows Vista?

**A** Yes it is. You can use an application called 'Screenlets' which can be downloaded from http://downloads.sourceforge.net/screenlets (get the .deb file). For a list of requirements, see http://www.screenlets.org/index.php/FAQ.

---

**Q** What is the best alternative to Dreamweaver on Ubuntu?

**A** If you must have the WYSIWYG editor, KompoZer is available in the repositories, and should do everything you need. If it is not for you, you could try Quanta Plus, which also has a WYSIWYG editor plus thousands of other powerful features and is quite similar to Dreamweaver. For syntax highlighting text editors see gEdit (Ubuntu) and Kate (Kubuntu).

---

**Q** Which version of Ubuntu will be the next LTS release?

**A** The next long term service release of Ubuntu will be 8.04 Hardy Heron, due for release in April this year. Note that Kubuntu 8.04 will NOT be an LTS.

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**Q** How do I use multiple monitors in Ubuntu?

**A** To set up multiple monitors on Ubuntu, look at the thread below. As there are several ways of doing it (depending on your graphics card etc), you'll need to see which is right for your set up. An important step no matter which you do, is to back up your /etc/X11/xorg.conf by doing:

```bash
sudo cp /etc/X11/xorg.conf /etc/X11/xorg.conf_backup
```

in a terminal.

http://ubuntuforums.org/showthread.php?t=221174

**Q** How do I get one of those system monitors everyone has on their desktops?

**A** The program you want is called Conky. It is available through the universe repositories. For a guide to configure it, see the link below.

http://ubuntuforums.org/showthread.php?t=205865
At the moment I am using Ubuntu 7.10 with an Intel Pentium dual-core 1.8GHz, 1GB RAM, 256MB Intel GMA 950 and a 160GB HDD. 

In my install I use Compiz Fusion. I have a personalized desktop created by installing "Mac4Lin_GTK_Aqua_v0.3" and the icon package "nuoveTX.2.2" and the font UnDotum (all are available at www.gnome-look.org). To supplement it, I installed "Avant Window Navigator" (AWN), something similar to ObjectDock on Windows. I find nothing wrong with the default Ubuntu wallpaper so I have not changed it.

Jonathan Rivas

I wanted to learn Linux this summer and I had heard that Ubuntu was excellent. I also chose Ubuntu because the CD was easy to get.

Since then I have been using this system. Mostly I use it to program and it has always worked well. I also use Ubuntu Studio. If you look at my desktop you will then understand how excited I am!

Fang Ji
**Knights**


An oldish (but still wonderful) program, Knights is probably the most fully featured of all the programs listed. Begun back in 2001, Knights sports a nice KDE interface with support for additional (30+) themes. You can play single player against almost all the chess engines available for Linux (including BabyChess, Cilian, Crafty, Deep Sjeng, Faile, GNUChess, KnightCap, Pepito, Phalanx, Sjeng, and Yace), or play online at the FICS, the Internet Chess Club, the Global Chess Server, or Chess.net. There's also advanced features such as printing notation.

To install Knights, simply grab the **knights** package in the universe repository.

**Brutal Chess**


Brutal Chess is a very cool 3D chess game. Although it has almost no configuration options, this powerful SDL game runs on both Windows and Linux and is probably the best looking chess game on this list. Board panning (using the right mouse button), reflections, and shadows are all a part of this stunningly beautiful chess game. Now if only the developers would add FICS support, Brutal Chess would be IMHO complete (unfortunately, it looks like Brutal Chess is currently dead).

To install Brutal Chess, just get the **brutalchess** package from the universe repository.
DreamChess

Homepage: http://www.dreamchess.org/

Another game more focused on looks than power, DreamChess is an OpenGL game that is slightly more advanced than Brutal Chess. It includes both single and (local) multiplayer game types, and what makes it even better than Brutal Chess is that you can configure the AI level (the Dreamer engine, although you can add other engines). Dreamchess and Knights are also the only games that let you save and load.

You can get the official package (dreamchess) from the universe repository. Unfortunately, although the latest version of DreamChess is 0.2, the version in the repository is 0.1. Luckily, GetDeb.net has the newer version. Get it at http://www.getdeb.net/app/DreamChess.

pouetChess

Homepage: http://pouetchess.sourceforge.net/

Another resource hungry 3D chess game, pouetChess (built with SDL and OpenGL) is a powerful interface to the Faile chess engine. It's got AI configuration (ranging from "Newbie" to "I'm Kasparov" and using the Faile engine), English and French languages, and multiplayer (locally). Like Brutal Chess, it also lets you pan the board with your right mouse button. It's not extremely powerful and you shouldn't expect a lot of customization, but if you disliked DreamChess or Brutal Chess, pouetChess is a good alternative.

To install pouetChess, use the pouet chess package from the universe repository.

eboard

Homepage: http://www.bergo.eng.br/eboard/

If you're sick of all those fancy 3D games that don't do much besides play against one AI opponent, give eboard a try. Although the graphics are only 2D, it works with FICS (and any other FICS-compliant server), has multiplayer (over the internet!), includes PGN saving support, and works out of the box with the GNU Chess, Crafty, and Sjeng engines (and works with others with a little tinkering). And for power users, it has a nice console to work with.

To install eboard use the eboard package in the universe repos.
HOW TO CONTRIBUTE

We are always looking for new articles to include in Full Circle. For article guidelines, ideas, and for issue translation, please see our wiki: http://wiki.ubuntu.com/UbuntuMagazine

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Send your comments or Linux experiences to: letters@fullcirclemagazine.org

Hardware/software reviews should be sent to: reviews@fullcirclemagazine.org

Questions for future interviews should go to: questions@fullcirclemagazine.org

Lists and desktop/PC photos should be emailed to: misc@fullcirclemagazine.org

If you have questions, you can visit our forum: www.fullcirclemagazine.org

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And our thanks go out to Canonical, the Ubuntu Marketing Team and the many translation teams around the world.

HAVE YOUR SAY

If you want to have your say in how Full Circle develops, please attend our monthly IRC meeting.

You can find our next Agenda at: http://url.fullcirclemagazine.org/f2ba08

We want the input of you, the reader, to help us make decisions that affect the magazine.

Next general, all welcome, meeting: Sat. 08th March.

Meetings take place in the IRC channel #fullcirclemagazine, which is on the irc.freenode.net server. Or you can use our webIRC page which is at http://irc.fullcirclemagazine.org and it will allow you to interact with our IRC channel from within your web browser.

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