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Is that a netbook in your pocket?

BOOT UP

Give your old OS the boot and try one of these distributions designed specifically for netbooks. **BY MARCEL GAGNÉ**

Over on the Easy Peasy website [1], it says, “Right a wrong. Why was your awesome netbook shipped with that horrible operating system? Your netbook is not a typical laptop, so why should you use a typical operating system? Easy Peasy is harder, better, faster and stronger than what came with your netbook.”

I sincerely wish they hadn’t used the word “harder” in there, but I understand the sentiment. Netbooks are different enough from what we call notebooks (or even laptops) that they call for something more compact and resource friendly than the OS from Redmond. At least that’s how it was in the beginning.

The first netbook to get the world’s attention in a big way was the Asus Eee

PC. It was particularly exciting for Linux enthusiasts, because it came preinstalled with a specialized version of Linux. With a 7-inch display, 512MB of RAM, and only 4GB of storage in flash memory, this ultraportable notebook was a new class of device. These days, what we call a netbook has certainly pushed the boundaries of what you might call ultraportable.

My Acer Aspire One has a 10-inch screen, 1GB of RAM, a 160GB hard drive, an Intel Atom processor, and a whole lot more. Unlike the 17-inch behemoth I’m writing this article on, my Acer netbook lets me do things I wouldn’t do on my workaday notebook. For one thing, I carry the netbook all over the house because it’s super-slim and light.

And, although it isn’t something I want to write a book on, it’s perfect for light document use and for surfing the Web and chatting online.

Keep in mind that what makes a netbook distribution isn’t necessarily a desire to use as few resources as possible. These little computers have come a long way since they first appeared. Many sport hard drives with several gigabytes of storage, and most have a gigabyte or more of RAM. Consequently, it’s more about real estate than resources. I’m talking about the small screens that run from 7 to 10 inches. I might let you get away with calling it a netbook when it has a 12-inch screen, but when your computer has a 18-inch, 16:9 display and every conceivable add-on imaginable, it’s not a netbook. Because most netbooks don’t come with a CD or DVD drive, you will most likely want to burn your Linux image to a USB key (or thumb drive).

Easy Peasy

Because I borrowed from the Easy Peasy website for this introduction, it seems only fair that I should start there in my investigation of netbook distributions. As it turns out, my new netbook came with what Easy Peasy called “that horrible operating system,” and I desperately wanted to install something better. First stop on the netbook distribution tour: Easy Peasy.

Easy Peasy recommends that you use a little program called *unetbootin* to install the distribution image to a USB key (see Figure 1). This program, and the package by the same name, is available from your Ubuntu repositories, but I recommend that you download the installer from the Easy Peasy site. The version in the repositories isn’t as recent and tends to create more problems than it solves (of course, this could change by the time you read this). As a prerequisite, you also need the *p7zip-full* package, which you can install as follows:

```
sudo aptitude install p7zip-full
```

Windows Bootin’

The UNetBootin helper application is also available as a Windows executable, if you find yourself running a Windows netbook but have no handy Linux system floating around.

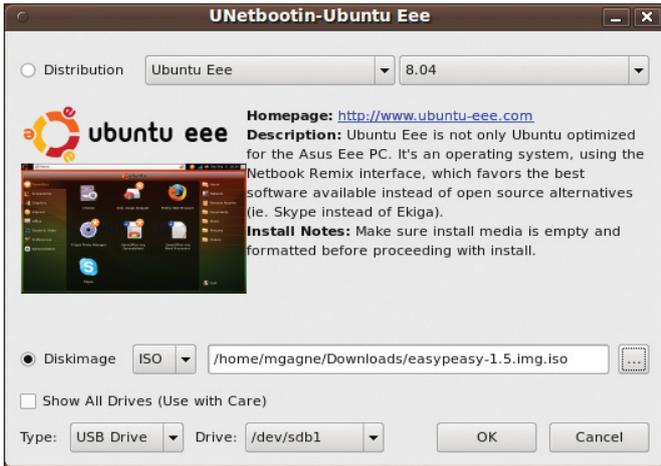


Figure 1: UNetBootin is a little program that a number of netbook distributions use to create a bootable USB key.

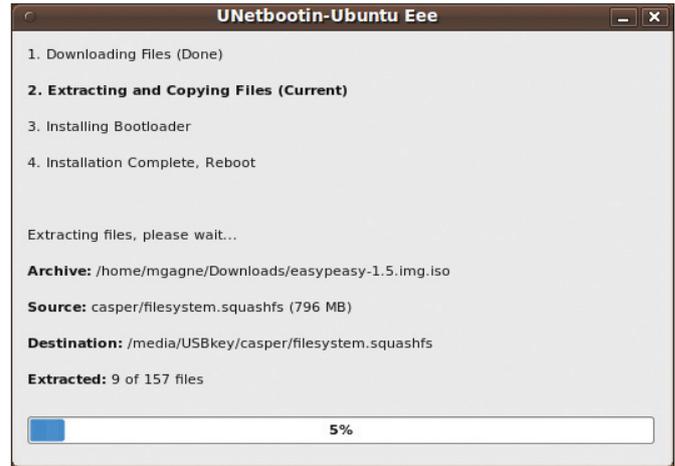


Figure 2: As the Easy Peasy ISO is copied to the USB key, the UNetBootin program keeps you posted on the progress.

To run the downloaded version of the program, change its permissions to executable and run it with administrator privileges. Depending on your distribution and desktop environment, you can either click on the downloaded image from your file manager or enter the following at the command line:

```
chmod +x unetbootin-eeeubuntu-linux-276
sudo ./unetbootin-eeeubuntu-linux-276
```

To use this program to create a variety of Linux distributions on a USB key, including Easy Peasy, click the radio button labeled *Diskimage*, make sure *ISO* is selected in the drop-down selector to the right, then click the ... button to select your ISO image file. In theory, the program should automatically select your USB thumb drive (assuming you only have the one USB drive plugged in), but take a moment to verify, then click *OK*.

The installer will extract the files in the ISO image, write them to the USB

key, and install a bootloader (Figure 2). When the process completes, click the *Exit* button. Do not click the *Reboot Now* button unless you downloaded and created the USB key from your netbook.

To boot from the USB key, you may have to go into your netbook's setup menu (on mine, I press F2 as it's booting) and change the boot order so that it looks at the USB key first. Assuming all this is done, put in the USB key and reboot. The UNetBootin GRUB-like menu appears. Select the default option, and press Enter. Easy Peasy will boot, and you'll see the Ubuntu logo appear while it does so. In a few moments, you'll be looking at the Easy Peasy desktop (see Figure 3).

Running down the right-hand side of the screen is your menu of applications organized in categories. These are essentially the same as you are used to if you already use Ubuntu. Easy Peasy provides a collection of applications that are well suited to a distribution on the go. The organization and layout is also ideally

suited to a smaller screen. To the right is your Places menu – mounted file systems, external drives, and your home and media folders are all easily available.

Looking back to the top left, you'll see an area labeled *Favorites*. Likely, it's empty at the moment, but you can start putting the applications you use on a regular basis here. After all, Easy Peasy comes with hundreds of programs and dozens of applications. If you're like me, you probably use the same handful of applications over and over. Navigate through the menus, find what you like, right-click, and select *Add to Favorites*. Add your Web browser, your IM client, your word processor, and whatever else you need. Don't forget to add something fun, like Cheese, a photobooth package, to take advantage of that built-in webcam (see Figure 4).

Kuki Linux

Kuki Linux [2] (see Figure 5) is another Ubuntu-based netbook distribution (ver-



Figure 3: Easy Peasy comes with a number of useful applications well suited to a distribution on the go.

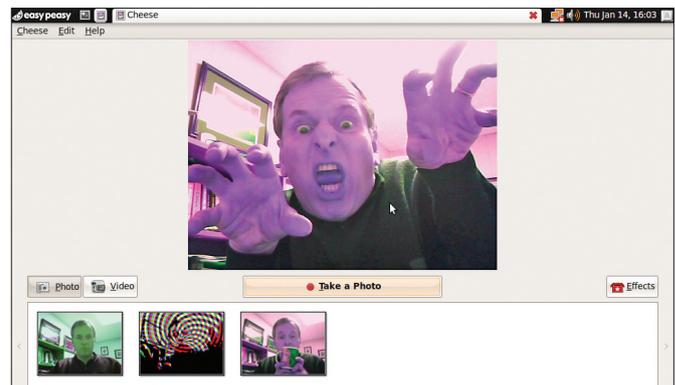


Figure 4: Cheese is a photobooth application with some cool photo effects built in. Easy Peasy makes it easy.

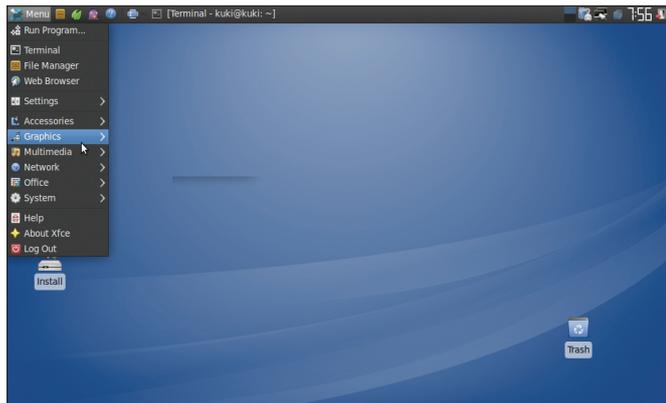


Figure 5: Built using the XFCE 4.6 window manager, Kuki's interface uses a classic look.

sion 9.04 as I write this) that eschews the idea of an alternative layout for a more lightweight window manager. However, the graphical desktop it uses more closely resembles the classic taskbar with application start button that many users are familiar with. Created by João Ferro, Kuki uses Xfce 4.6 and comes with a number of lightweight applications. Its focus is primarily the Acer Aspire One, but that shouldn't stop you from running it on other hardware.

To achieve this minimum footprint goal, Kuki relies not only on the lightweight Xfce window manager, but also on smaller, more nimble applications. One example is the Midori web browser, a surprisingly good and seriously fast ACID3-compliant browser. Firefox is also provided, in case your hardware is reasonably peppy. Claws is for email, Pidgin for instant messaging, and lots more. Questions, suggestions, and kudos for Kuki are welcome in the IRC channel #kukilinux on irc.freenode.net.

CrunchBang

Winning the prize for possibly the geekiest name for a netbook distribution, is CrunchBang [3] (see Figure 6), also spelled #! if you thought the name wasn't sufficiently geeky. This Ubuntu-based distribution (9.04, aka Jaunty Jackalope) uses the Openbox window manager to provide a minimal window manager to go along with this minimal distribution. And yes, you can create your USB key with the UNetBootin program.

The layout is definitely stark. In fact, it opens up in basic black, as if to make a point. Down the right-hand side of the screen, there is a collection of useful in-

formation, starting with system details like uptime, memory use, disk usage, and so on. Below that is a collection of useful shortcut keys you will no doubt memorize as time goes on. Most of these shortcuts are some combination of the so-called Super key (the *ahem* Windows key) and something else. For instance, if you want to start the web browser, press Super and the letter W. Pressing Super and the letter T brings up a terminal (or shell) window. To get a full menu of applications, it's Super and the Space bar.

A good mix of useful applications are chosen not simply for their small footprint and performance but also to provide a balance in terms of general usefulness. You'll find Gwibber, a microblogging client, AbiWord and Gnumeric for your word processing and spreadsheet needs, Pidgin for instant messaging, and other smallish FOSS applications. On the other hand, CrunchBang includes Skype for VoIP communication (see Figure 7). Not all applications are tiny either. Included with CrunchBang is the Inkscape vector drawing program, the PiTiVi and Kino video editors, and so on.

Ubuntu Netbook Remix

As you are probably starting to see, netbooks have, if nothing else, forced the creators of Linux distributions to rethink what a desktop should look like and how it should deliver applications. You've probably also noticed that all of the distributions I've shown you (and most of the netbook distributions) are based on Ubuntu. What I'm going to do now is show you Ubuntu's own netbook distribution, the Ubuntu Netbook Remix

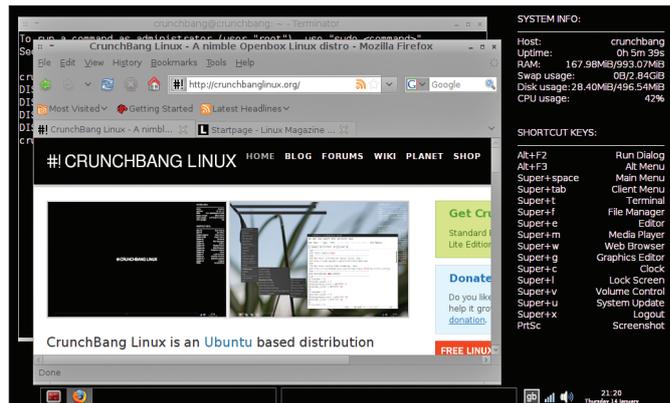


Figure 6: CrunchBang Linux, winner of the geekiest name prize, opts for the minimalist look of Openbox.

[4], followed by the only non-Ubuntu distribution I'll cover today. To wrap it up, I'll show you what happens when Ubuntu remixes its remix with our non-Ubuntu distribution. But first, I'll take a look at the Ubuntu Netbook Remix, based on Ubuntu 9.10.

As you can tell from Figure 8, Ubuntu Netbook Remix is designed to make Ubuntu users feel right at home with the classic brown/orange palette. This desktop is much like the one you saw with Easy Peasy, only more Ubuntu-ish and somewhat more desktop real estate-friendly. The places menu that took up the right-hand side has been folded into the Files & Folders menu category to the left. Favorites comes preloaded with a small handful of programs (e.g., Cheese, Empathy IM, etc.), including an icon for Ubuntu One. To add another icon to your Favorites, simply hover over any program icon in the various categories, and you'll see a little plus sign in the top right-hand corner of the highlighted icon. Just click that plus sign.

Because I made a point of highlighting Ubuntu One, I should probably say something about the service. Ubuntu One is Canonical's cloud-based storage solution. Although you need a Launchpad account to access it, Ubuntu One provides you with storage space in

Security in an Insecure World

I've gotten into the habit of carrying one of these distributions with me on a USB key to use when I don't have my own netbook (or notebook) handy. It makes me feel more secure in a world dominated by computers running an inferior operating system.

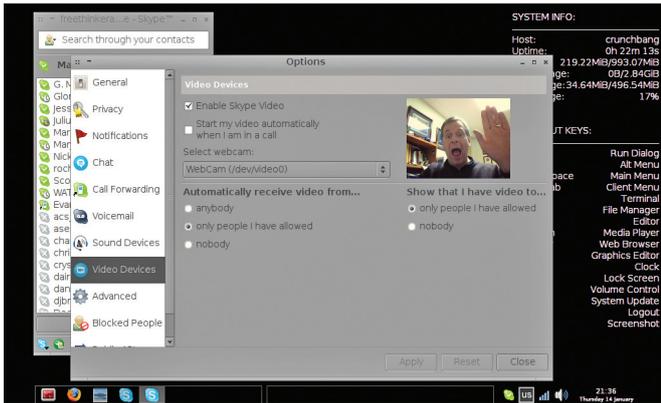


Figure 7: Applications are chosen on the basis of popular user demand. Skype isn't FOSS, but it's part of CrunchBang.



Figure 8: Ah, the classic brown (orange?) Ubuntu look. Making netbook users feel right at home.

Ubuntu's cloud. You can back up your data, sync your files, and even share those files and folders with others via email invitations. The service offers 2GB of free storage. If that isn't enough for you, you can increase that to 50GB for a paltry US\$ 10 per month. In any case, this is a great service and one that's particularly interesting for a mobile device like your netbook.

Installation of Ubuntu Netbook Remix is a little different from others I've mentioned. Once you've downloaded the image for the Ubuntu Netbook Remix, you'll want to install a little program called *usb-creator* (`sudo aptitude install usb-creator`). This package comes with two versions of the program: *usb-creator-gtk* and *usb-creator-kde*. Select the one for your preferred desktop environment. Figure 9 shows the Gtk version of the program. Your USB key should be plugged in, at which point the *usb-creator* program will automatically detect it.

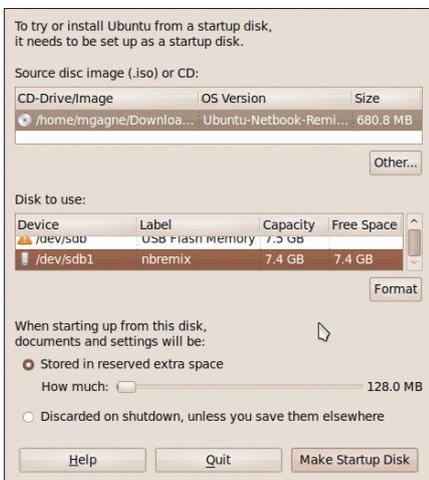


Figure 9: This is the Gtk version of the *usb-creator* program used to create an Ubuntu Netbook Remix USB key.

You can then select the location of the ISO image, identify your USB key's main partition, click *Format*, then click on *Make Startup Disk*.

A progress window will appear with a percent completion bar keeping you up to date on the process. When creation is complete, put the key into your netbook and reboot. You can either install from the boot menu or run it without installing – you can always install it later from the main menu; yes, it is one of the Favorites.

Moblin

The penultimate netbook distribution I want to look at is Moblin. Moblin [5], created by Intel (and hosted by the Linux Foundation), is designed for a variety of mobile Internet devices (aka MID) based on the Atom processor. That said, your netbook is the prime environment for this unusual distribution. I use the word "unusual" because of all the netbook distributions I looked at, Moblin is the standout in terms of out-right looks. The look and feel of the desktop environment is entirely differ-

ent, with the end result being that the experience is different. Its focus is on the social and media-rich aspects of modern mobile computing. We chat, tweet, share photos, watch videos, and otherwise consume and share media in many forms. As such, even some of the basic applications, like the web browser, look and feel different.

To install Moblin or just plain take it for a spin, visit their website [5] and download the latest image. To create your bootable USB key with Moblin, make sure you also download the image-creator program, a single Python script that simplifies the whole creation process.

When you've downloaded image-writer, change its permission to make it executable, then call it from the command line using `sudo` (the script needs administrator privileges). The only thing you need to pass is the path to the Moblin image you downloaded:

```
chmod +x image-writer
sudo ./image-writer \
    moblin-2.1-final-20091103-002.img
```

Listing 1: You Have Been Warned!

```
01 Warning: The USB drive (/dev/sdb) will be completely erased!
02 Do you want to continue anyway? (y/n) y
03 Source: /home/mgagne/Downloads/moblin-2.1-final-20091103-002.img
04 Size: 754 MB
05 Destination: /dev/sdb
06 Writing image (Est. 2min 30sec)... 100%
07 193024+0 records in
08 193024+0 records out
09 790626304 bytes (791 MB) copied, 69.8089 s, 11.3 MB/s
10
11 The image was successfully written to the USB drive
12 You may now boot your mobile device with this USB drive
```



Figure 10: Image files (as opposed to ISO images) can use a tool like Ubuntu ImageWriter.

You'll see a warning about erasing potentially valuable data and be asked whether you want to continue (Listing 1). If you choose *y*, the program will provide you with feedback as the USB key is created.

Alternatively, you can install the graphical ImageWriter tool (Figure 10). You'll need to install the `usb-imagewriter` package (`sudo aptitude install usb-imagewriter`) and run it with administrator privileges (`sudo imagewriter`). Once the program starts, click on the *Write Image* button and select the location of your image file. Then click on the *to* button to select your USB key. All that's left is to click *Write to Device*. You'll be warned that you're about to overwrite whatever might have been on the USB key. If you're OK with that, then proceed. A progress bar will keep you updated on the process.

When the process is complete, plug your USB key into your netbook and reboot. The Moblin boot menu gives you the option of booting from the USB key, installing, or booting from whatever OS is already on your hard drive. Select the first option to boot directly into Moblin.

When you start Moblin, you'll be looking at what's referred to as Myzone, a

dynamic start page that remembers what you were doing, what you were listening to, and where you were surfing. It also shows you updates from your Twitter or Last.fm feed on the right, and it lets you know whether you have appointments or to-dos in your calendar. At the bottom of the left-hand pane, there's a small set of icons. These are, you guessed it, your Favorites.

Along the top, you'll find a menubar that gives you access to the various functions that Moblin feels are the most important. Myzone is the starting point. Next to that is where you update your status. After that you have a list of the people you regularly connect to, followed by your web browser, access to media, and so on. Additionally, there's a link to a number of preinstalled applications, among which is the Moblin application installer.

If you want or need the GIMP, F-Spot, Songbird, or a number of popular open source applications, then look here. To add these and other icons to your Favorites, click the *Applications* link from the top menu and mouse over the application you'd like to add. A little pushpin icon appears in the top right-hand corner of the selected app. Click, and it's now a Favorite.

Ubuntu Moblin Remix

If you enjoy the Moblin experience, but you'd like a shot of Ubuntu with that distribution, Dell sells its Mini 10v with Ubuntu Moblin Remix Developer Edition [6]. Dell cautions that this device is "exclusively for Linux enthusiasts, developers, and early adopters." You can download a copy of the image file and install it using Ubuntu Imagewriter, but be forewarned that although it might work just



Figure 11: Moblin is, by far, the most interesting and innovative of the netbook distributions.

fine for your netbook, this image is not a "try Live and install later" distribution but an auto-installer. If you feel really brave and you'd like to see where the future of Ubuntu on netbooks might be going, then check it out. For those with a little more patience, or who might not be quite as adventurous, there's an Ubuntu project working to remix Ubuntu Karmic Koala with the latest Moblin.

Wrapping Up

To wrap up this exploration of Ubuntu on netbooks, I want to leave you with a comment that I hope won't sound too much like a warning. Some of the distributions I mentioned (e.g., Easy Peasy) were created to support a specific model of netbook. That doesn't mean it won't work with your hardware, but there may be issues you need to work through if you want to use it.

For instance, I found a few distributions that didn't support my wireless card out of the box. However, if I plugged a physical network cable into my router, then I could connect, download the appropriate driver, and continue on without issue. Strangely enough, everything I tried supported my webcam without issue. So the news isn't always bad.

Explore. Have some fun. Until next time ... ■

THE AUTHOR

Marcel's an award-winning columnist, book author, public speaker, radio and television personality, and a well-known voice in the Linux and open source universe. He's also a published science fiction author and editor and a private pilot, and he was once a Top 40 disc jockey.

INFO

- [1] Easy Peasy: <http://www.geteasypeasy.com>
- [2] Kuki Linux: <http://www.kuki.me>
- [3] CrunchBang Linux: <http://crunchbanglinux.org>
- [4] Ubuntu Netbook Remix: <http://www.ubuntu.com/getubuntu/download-netbook>
- [5] Moblin: <http://moblin.org>
- [6] Ubuntu Moblin Netbook Remix: <http://www.ubuntu.com/getubuntu/download-netbook>