

Bonus Chapter 1

Using Other Linux Distributions

In This Chapter

- ▶ Reasons for using another type of Linux
 - ▶ Selecting a Linux distribution
 - ▶ Customized versus general purpose distributions
 - ▶ Installation options (Live CDs, SD cards, and USB thumb drives)
 - ▶ Running Linux from a thumb drive
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Some power users find the default version of Xandros Linux that comes installed on the Eee PC just a little too basic. They want a full-featured distribution of the open-source operating system. (Distribution, or *distro*, is what different versions are called. More on that coming up.)

If you want to run a Linux distribution other than Xandros, it's actually not that difficult. Download a free distro from the Internet and then install it (a broadband connection is handy because most distros are designed to fit on a CD-ROM and are at least several hundred megabytes in size).

You don't even need to get rid of the operating system that came with your Eee PC (Xandros or Windows XP) because it's possible to install, boot, and run the Linux distribution on a USB thumb drive or SD card.

If all this sounds intriguing, you've come to the right chapter. In the following pages, I bring you up to speed on different Linux distributions and how to install and run them on your Eee PC.



When you use an alternative version of Linux, you're on your own for support. Community forums and Web sites devoted to the distro can be helpful, but don't expect technical support from ASUS.

Why Use a Different Linux Distribution?

Before I talk about why you'd want to use a different version of Linux, I need to clue you in on distributions, more commonly called *distros* (experienced Linux users, feel free to skip ahead).

A distribution, or distro, consists of Linux operating system components bundled with a collection of programs. The distro comes with everything you need (usually on a CD-ROM) to install and run Linux and selected programs. There are general purpose distros as well as those oriented toward education, security, older computers, entertainment, different user interfaces, and more.

Distros are created by individuals, groups, or companies, and the vast majority of distributions are free and available for download on the Internet. (Commercial ventures make money from distros by offering technical support and other services.)

So if you already have an Eee PC with a version of the Xandros distro that was customized for the mini-laptop, why would you want to run a different distribution? Here are some reasons Eee PC users make the switch.

- ✔ **Familiarity** — If you're already running Linux on your primary desktop PC or laptop, you may want to stick with a distribution you already know.
- ✔ **More packages** — The current version of Xandros that comes installed on the Eee PC is a little weak on available packages compared to other Linux distributions. Other distros give you access to more programs, drivers, and frequent updates.
- ✔ **Easier to customize** — The Linux Eee PC is designed to be a simple-to-use, computing appliance. Although you can tweak the interface and enable Advanced Mode, you risk making your mini-laptop less stable in the process. If you want more of a conventional user interface that's easier to customize, you might consider another Linux distribution.
- ✔ **Better security** — The Eee PC implementation of Xandros doesn't offer as robust of security as other Linux distributions. This isn't a big deal for most users, but if you need a very secure laptop, it's worthwhile considering another distribution.
- ✔ **Specialized programs** — Although you can install additional Linux programs on the Eee PC, some distributions come with a set of programs for a specialized need (for example the Backtrack distribution features an extensive collection of security applications).
- ✔ **Recovery** — Whether you're running Linux or Windows on your mini-laptop (or any other PC for that matter), Linux makes an excellent operating system to perform a system recovery. Just boot from a CD or USB thumb drive (I talk about this later in the chapter), and recover files, get rid of viruses, or fix a corrupted drive.

Ah so, ISO

When you download a Linux distribution, it usually comes in an ISO format file. The ISO is a compressed file that contains an image of a disc (as in CD-ROM or DVD). The file extension gets its name from ISO 9660, an International Standards Organization standard for the file system used with CD-ROM media.

Burn the Linux distro on the ISO to a CD. You don't necessarily need to be running Linux to do this. There are a number of Windows

image-burning programs — one of my favorite free burners is appropriately called ImgBurn (www.imgburn.com).

Be sure you instruct the program to burn the disc image and not just the single, compressed ISO file. A common mistake is to make a simple copy of the ISO file to a CD (or DVD). This doesn't uncompress the ISO file or format the disc so it is bootable.



You can't boot from the Linux operating system recovery DVD that comes with the Eee PC. You can only use the disc to reinstall the operating system. Also, you can't use the recovery disc to install a version of Xandros on a computer other than an Eee PC.

- ✓ **Taste testing** — A lot of cool Linux distributions are out there. (In following sections, I list some that are well suited for use with the Eee PC.) If you want to sample one or two, it's easy to install and run on an SD card or USB thumb drive without overwriting your current operating system — whether it's Windows or Linux.



The customized version of Xandros that is installed on the Eee PC meets most users' needs. Don't feel compelled to use another Linux distribution, especially if you're not that technically inclined. Personally, I've tried a number of different distros, and find myself using the default version of Easy Mode Xandros because of its stability and performance.

Selecting a Linux Distribution

If you're new to Linux, it's pretty easy to become overwhelmed with all the free distros that are available — dozens are out there. To help out, in this section, I list a variety of distributions that people are using with the Eee PC. I describe two types of distributions:

- ✓ **Customized for the Eee PC** — These distros are based on popular Linux distributions, but have been modified so they work better with the Eee PC — taking into account the small screen and drive size, as well as hardware components.



✓ **General purpose** — These popular distributions are designed to run on a variety of PC platforms. You may have to tweak various system settings to get these distros working with your Eee PC.

To learn about Linux distributions that currently available and keep up with updates, check out the Distro Watch Web site at <http://distrowatch.com>.

Customized for the Eee PC

Thanks to the popularity of the Eee PC, technically oriented groups of enthusiasts have customized a variety of Linux distributions to work with the mini-laptop. Getting wireless and the Web cam to work properly, taking the small screen size into account, and coaxing the function keys to function correctly are just some of the technical hurdles in producing a distro that runs smoothly on the Eee PC.

If you're interested in trying out a different version of Linux on your Eee PC, here are some distributions (listed in alphabetical order) to consider.

EeeDora

EeeDora is an Eee PC distro based on Fedora 8 (Fedora is the current incarnation of Red Hat Linux, one of the first popular distributions). It uses Xfce, a slimmed-down window manager, as its desktop interface — as shown in Figure B1-1.

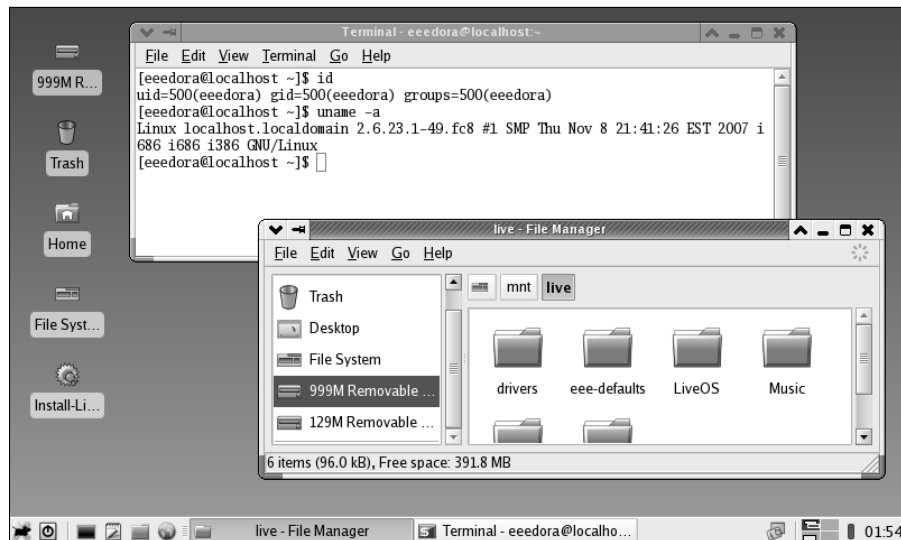


Figure B1-1:
The
EeeDora
desktop
interface.

For more information on EeeDora (including screenshots) and to download the distro, visit <http://eedora.complexvalues.com>.

EeePCLinuxOS

This distro is an Eee PC variation of PCLinuxOS (sometimes abbreviated as PCLOS). Based on an early version of Linux known as Mandrake (now Mandriva), this distribution prides itself on ease of use — a screenshot is shown in Figure B1-2).



Figure B1-2:
The EeePC
LinuxOS
desktop
interface.

To learn more about the distribution, visit www.eeepclinuxos.com.

EeeXubuntu

Xubuntu (www.xubuntu.org) is a lightweight version of the popular Ubuntu, designed to work well on older computers with slower processors. It uses Xfce as its window manager to provide a friendly and fast user interface (an example is shown in Figure B1-3).

EeeXubuntu is a version of the distro tweaked and tuned for the Eee PC. To find out more about eeeXubuntu, go to <http://wiki.eeeuser.com/ubuntu:eeexubuntu:home>.



Figure B1-3:
The Xubuntu
desktop
interface.

PupEee

Puppy Linux (www.puppylinux.com) is a popular, small distribution that's very friendly (who doesn't like cute puppies?). It's designed to run well on older computers that don't have as much horsepower (memory, processor speed, and drive space) as newer PCs. PupEee is a "puplet" derivation intended for the Eee PC (the desktop interface is shown in Figure B1-4).



Figure B1-4:
The PupEee
desktop
interface.

On an Eee PC, PupEee is blazingly fast. If you choose it to replace the default Xandros Linux, the friendly hound only takes up about 140MB of drive space, leaving the rest for data and other programs. To learn more about PupEee, visit this link: <http://tmxxine.com/wik/wikka.php?wakka=EeePC>.

Ubuntu-eee

Ubuntu-eee is an Eee PC distro based on Ubuntu (the most recent 8.0 Hardy Heron release). A lot of momentum and development work is currently going on with this distribution, including an implementation of Netbook Remix (which I talk about in an upcoming section). For more information, check out the project's community site at www.ubuntu-eee.com or Jon Ramvi's blog (the originator of the distribution) at <http://jonramvi.ubuntu-eee.com>.

XEPC

XEPC isn't really a distribution *per se*, but an enhanced version of the recovery DVD that comes with the mini-laptop. Updated versions of preinstalled programs as well as system updates are included on the downloadable disc. You install XEPC over the default Xandros Linux distribution (remember to back up your files first), which updates the operating system and selected programs — XEPC retains the Eee PC's F9 system restore feature. You can get XEPC from <https://sourceforge.net/projects/xepc/>.



A number of other Linux distros are customized for the Eee PC. To view a complete list, go to http://wiki.eeeuser.com/#custom_eee_linux_distros.

General purpose distributions

Because of its Intel X86 processor architecture, most general purpose Linux distributions can run on the Eee PC. However it may take a fair amount of tweaking and fiddling, and — depending on the distro — some features such as the Web cam or function keys still might not work correctly.

Because of the popularity of the Eee PC, just about every major Linux distribution has ongoing projects to improve compatibility with the mini-laptop. This ranges from FAQs on how to install and configure, to reprogramming installers and packages so a distro installs and runs perfectly on the mini-laptop with no additional configuration. If you have a favorite distribution, try Googling for its name and *eee pc* to find out about current compatibility.

If you start counting all the available Linux distributions, you quickly run out of fingers and toes (and in this book's case, pages). However I do want to mention several general purpose Linux distros of note that may be of interest to Eee PC users.

Ubuntu

Ubuntu (www.ubuntu.com) is currently the most popular Linux distribution. It's easy to use, stable, well supported, and works with a large number of programs. Unfortunately, at the present, it has a number of issues that don't allow it to work as seamlessly with the Eee PC as many other desktops and laptops. A team is currently identifying and addressing problem areas so future versions of Ubuntu will have greater out-of-the-box compatibility with the Eee PC. (I'm guessing by the time you read this, many of the problems will be ironed out.)

In the meantime, if you're a Ubuntu user who wants to run the distro on your Eee PC (without using one of the customized distros I mentioned earlier), there's extensive installation and configuration documentation for the mini-laptop at <https://help.ubuntu.com/community/EeePC>.



You may have read about Netbook Remix, a version of Ubuntu specifically designed for mini-laptops like the Eee PC. This isn't a new distro, but a series of modules added to Ubuntu that provide a desktop interface suited for small screens — an example is shown in Figure B1-5. As I write this, early versions of the interface show a great deal of promise — perhaps evolving into a widely used standard.

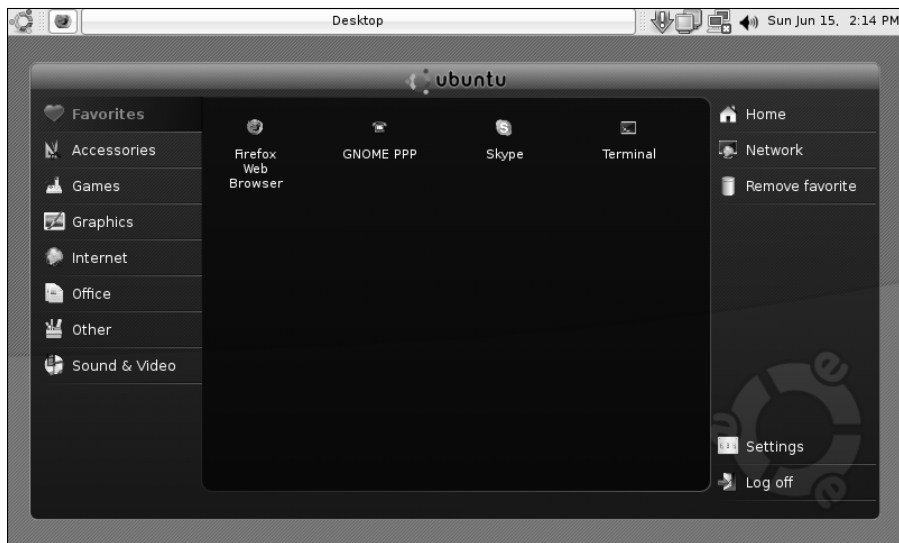


Figure B1-5:
Ubuntu
Netbook
Remix on an
Eee PC.

Debian

The Debian distribution goes way back in history to 1993. It's the basis of many other Linux distros including Ubuntu, Knoppix, Linspire, and even the Eee PC's Xandros. Debian is a staunch open-source distribution; only including software with no licensing restrictions (for example Debian's Iceweasel is a rebranded version of the popular Firefox browser, without trademark restrictions). At the present, there's a lot of work going on to make Debian fully compatible with the Eee PC. Find out more at <http://wiki.debian.org/DebianEeePC>.

Mandriva

Mandriva's Spring 2008 release is the first major Linux distro that's built to work out-of-the-box with the Eee PC. That means after you install the distribution, all of the mini-laptop's hardware works without any tweaking. Mandriva has also recently announced a new distro specifically designed to work with many different types of mini-laptops. For more information on Mandriva and to download the distro, visit www.mandriva.com.

Backtrack

Backtrack (www.remote-exploit.org/backtrack.html) is a Linux distro specifically designed for computer security practitioners (or hackers, I hope, of the white hat variety). It comes with just about every Linux security tool and utility you can think of. With its small size and built-in hardware, the Eee PC makes an excellent computer for performing security audits. I've got a 4GB SD card with Backtrack installed on it that does security work like a champ. Here's a link to a thorough tutorial with detailed steps for installing Backtrack on an SD card, USB thumb drive, or Eee PC internal drive: www.i-hacked.com/content/view/260/42/.



If you're interested in trying out a Linux distribution, or need some assistance with one you installed, the EeeUser.com forums (<http://forum.seeuser.com>) and wiki (<http://wiki.seeuser.com>) have extensive information on installing and running many different Linux distros.

Installation Options

After you've selected a Linux distro to use on your Eee PC, you have several choices for installing and running the operating system. These include



- ✔ **Drive installation** — This is the traditional way of installing an operating system on a PC. You reformat the Eee PC's drive and then install a Linux distribution using a disc you downloaded. Your old operating system gets replaced by the new Linux distro — always check the space requirements of the distro to ensure it will fit on your drive. If you don't like the distro or run into problems, perform a system restore with the recovery DVD as I discuss in Chapter 18.

It's certainly possible to configure the Eee PC as a dual-boot computer, giving you the option of running one or another operating system at start-up. For example, you could choose Windows or Linux or perhaps have two different Linux distros installed. This is a challenge on Eee PC's with smaller hard drives, just because of the limited amount of space. If you're thinking about a Windows/Linux dual-boot setup, there's a great tutorial at this site: www.pcmag.com/article2/0,1895,2319615,00.asp.



The F9 system restore option only works with the default, preinstalled version of Xandros. If you installed a different version of Linux on the drive or are running Windows, F9 won't work. Use the recovery DVD that came with your mini-laptop to reinstall the default operating system.

- ✔ **Live CD** — A Live CD (also called LiveCD or CD Live Distro) is when Linux is run at boot time without being installed on a hard drive (or SSD in the Eee PC's case). When you boot from the distro CD-ROM, many distributions have an option to either install Linux or to load and run the operating system without overwriting the current operating system. This is a cool way to check out the features of a Linux distro, or use its programs, without getting rid of the operating system your Eee PC came with. After the Live CD version of Linux is loaded, you can fully access all your files on the internal drive.
- ✔ **USB thumb drive/SD card** — Many computers, including the Eee PC, can boot from a USB thumb drive or SD card at start-up. The popularity of thumb drives (and to a lesser extent built-in SD card readers), has prompted many distro providers to supply instructions for running their distributions from thumb drives and SD cards. This is especially convenient with the Eee PC because you don't need to purchase an external CD/DVD player to use a Live CD. Most distros easily fit on an inexpensive 1 or 2GB card or drive.



When you run Linux from a Live CD (or a bootable SD card or USB thumb drive), system changes typically aren't saved between sessions. For example, you must reenter network settings to connect to a secure wireless access point each time your Eee PC starts up. This is because the operating system is booting from a read-only media. Some distros offer instructions for enabling *persistence* or *persistent settings* on writeable media.

Running Linux from a Thumb Drive

If the idea of using a USB thumb drive (or SD card) to run a version of Linux on your Eee PC sounds appealing, here is what you need to do:

1. Download and install a Linux distro on a USB thumb drive or SD card.

I've given you lots of choices earlier in the chapter. Follow the installation directions on the distro's Web site.

2. Insert the thumb drive or SD card with the distro into the Eee PC and turn on the mini-laptop.

3. When the Eee PC start-up screen is displayed, immediately press and hold the Esc key.

This displays the boot device window. You can now choose to boot from the internal drive or the USB thumb drive (or SD card) you have plugged in. If you've downloaded a Live CD and have a compatible CD/DVD player plugged in, it will also appear as a boot option.

4. Wait for Linux to load and start using the distro.

Don't expect the blazing fast start-up speed you get with the default version of Linux on the Eee PC's internal drive. Depending on the distro, boot up can take just as long as it would on a conventional desktop or laptop PC, or even longer.

Some users install a Linux distro on an SD card and permanently leave it in their Eee PC as the primary operating system. (This is also handy if you've got kids in the house that you share the mini-laptop with. Just pop out the SD card with the "adult" operating system, and the Xandos Easy Mode starts right up at boot.)

Always remember to press ESC and select the SD card to boot; but if you're the forgetful type, here's how to change a few BIOS settings so the Eee PC automatically boots from the SD card first.

1. Turn on the Eee PC and when the start-up screen appears, press F2.

This runs the BIOS setup program.

2. Use the right-arrow to navigate to the Boot menu.

3. Select Boot Device Priority and press Enter.

4. Select 1st Boot Device and press Enter.

A list of boot device options is displayed.

5. Choose Removable Dev. and press Enter.

6. Select 2nd Boot Device and press Enter.

7. Choose HDD and press Enter.

HDD refers to the internal drive. The drive model name used in your Eee PC is shown after HDD for example, HDD:SM-SILICONMOTION SM223AC.

8. Select 3rd Boot Device and press Enter.

9. Choose ATAPI CD-ROM and press Enter.

ATAPI CD-ROM refers to an external CD/DVD drive.

What you just did was to set the Eee PC's boot priority so the mini-laptop first tries to boot from an SD card. If a card isn't inserted it boots from the internal drive. And if for some reason it can't boot from the drive, it tries an external CD/DVD player (if one is connected.)

You're not done yet, however; A couple more steps are left.

1. Press Esc to return to the main BIOS setup window.

2. In the Boot tab, select Hard Disk Drives.

If Hard Disk Drives doesn't appear, you likely have an older version of the BIOS. I suggest upgrading the BIOS as I describe in Chapter 12.

3. Select 1st Drive and press Enter.

4. Choose the card reader option (for example, USB:USB2.0 CardReader SDO) and press Enter.

5. Select 2nd Drive and press Enter.

6. Choose the hard drive option (for example, HDD:SM-SILICONMOTION SM223AC) and press Enter.

7. Press F10 to save your settings and exit the BIOS setup.

Your Eee PC now automatically boots from a Linux distro on an SD card if it's inserted in the reader when you turn the mini-laptop on.



For general information (with detailed instructions and download links) on installing and running popular Linux distros on USB thumb drives, check out www.pendrivelinux.com.