Examining the Asus Eee

SMALL
COMPANION

The much discussed Asus Eee PC miniature computer is lots of laptop for a little price. **BY JAN RÄHM**

I n June 2007, Asus Corporation announced a new generation of tiny, inexpensive laptop computers that would bring Linux to a new generation of end users. With a miniature 7-inch display, the Eee PC is hardly bigger than a PDA, and yet this dainty device functions as a true personal computer, with a full keyboard and modem, wireless, and standard Ethernet connectivity.
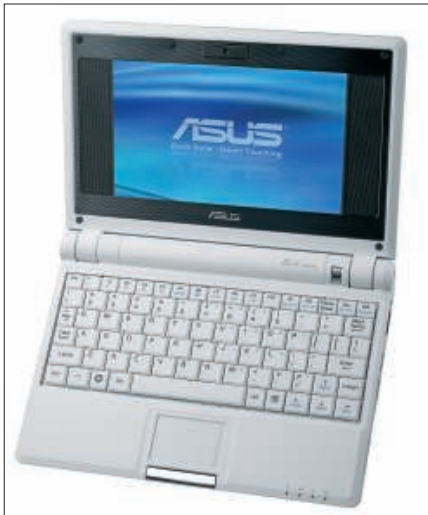

Figure 1: The Eee PC will one day come in six colors, but so far the only choices are black and white.

According to the documentation, the three consecutive "e"s in the curious name represent the vendor's commitment to provide a system that is:

- Easy to learn, work, and play
- Excellent Internet experience
- Excellent mobile computing experience

The mission of the Eee PC is to provide a system that meets these goals and still sells for the very reasonable price of US\$ 400 (300 Euros). I toured a pre-release version of the Eee PC 701 4G to see if this natty notebook has truly earned its "e"s.

The Eee PC box promises a choice of six colors, but only black and white were available for the initial release. (Mine was black.)

The pastel-colored packing includes the tiny notebook, the 5,200 mAh battery, an adapter, the instruction manual – including instructions for installing Windows, and a recovery CD. Unfortunately, the recovery CD installs an even older Linux system than the one already on the machine.

The excellent quality and low weight of the Eee PC (Figure 1) offer a very positive first impression. The system, which

weighs in at just 920 grams (or 2 pounds), is remarkably well made for a notebook of its price. Nothing jams or squeaks, the case has no hard edges and clearance is minimal.

When you unfold the display, you will be surprised at the small size of the Eee PC (Figure 2). The keys on the full keyboard seem almost too small, a first impression confirmed in the lab. But you get used to working in a smaller space, and after a while, your fingers start to the right buttons. Pressing the keys, y

Figure 2: You will be surprised at the small scale.

notice that the keyboard is firm but pleasant on the whole. The Eee PC also comes with a small Synaptics touchpad that supports vertical scrolling.

The case has three USB connectors, two on the right and one on the left. The network, earphones, and microphone adapters are on the left; you can attach a display and an optional Kensington lock on the right, where you will also find the extension slot for SD and MMC cards. The last slot on the rear accommodates a bulky battery.

Autopsy

The *lspci* command shows the hardware deployed by the manufacturer. (You need to be root to run *lspci*.) The Eee PC main board uses Intel's 915 GML chipset; the graphics chip is also by Intel; the GMA 915 and the sound chip are by HDA Audio. The heart of the Eee PC is a slightly older Celeron M processor: a 90nm technology CPU, which explains the comparatively high power consumption of the tiny black box.

The RAM is located under a cover at the back of the machine. Standard RAM is a single 512MB DDR2, which you can easily exchange for a chip with twice the capacity. The Fast Ethernet and WLAN 802.11b/g interfaces give users flexible network access. Both use Atheros chipsets. A Bluetooth chip or UMTS modem are not included. The 56K modem interface was plugged with a blind cap in the model I tested and was not detected by the system.

A super-fast Flash disk, or Solid State Disk (SSD), with 4GB capacity stores the system and user data. Because the system occupies no less than 2.3GB, you may need to start using a USB stick for

Figure 3: The Asus Launcher neatly organizes the applications.

additional storage. The disk is connected to a serial ATA interface, which promises fast access times.

The built-in TFT display offers a resolution of 800x480 pixels, which is low by contemporary standards but still fine for daily use. In normal daily use, the display is clear enough, although the screen is hard to read in direct sunlight – the maximum brightness is still too dark for my liking.

Above the display is a tiny 0.3-megapixel webcam with a resolution of 640x480 pixels. The webcam returned impressive results, with fast response to changing light conditions and good image quality.

The Eee PC typically detects external hardware without any difficulty. However, some external hardware is difficult to use because of the lack of supporting software. Although I had no trouble attaching a Bluetooth stick via USB, I couldn't actually use it.

Because of the lack of developer tools, I was unable to install the required libraries and background applications.

In contrast to this, mass media and cal drives worked fine out of the b

And We're Off!

A mere 15 seconds elapse between pressing the power button and vie fully booted Xandros system. The opers have put some excellent opt tion work into the boot process. A the system starts, an unfamiliar in with six tabs – *Internet*, *Work*, *Lea Play*, *Settings*, and *Favorites* – awa user (Figure 3).

Applications

Below the tabs are starters for the cations; Asus claims to preinstall a 40 applications. In fact, there are f than 40; the PR department obviou counts the links to various online cations in the list.

Because the Asus Launcher inte uses the IceWM window manager which supports programs from bo KDE and Gnome worlds, the Eee F a colorful mixture of Gnome and K applications.
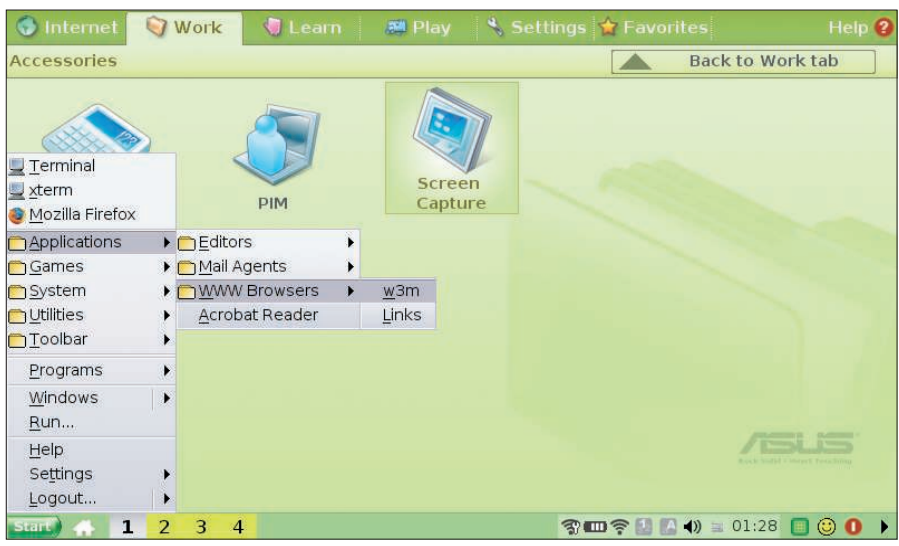
Figure 4: The IceWM window manager lets you convert the Asus Launcher to a full-fledged desktop with four work spaces and a start menu.

OpenOffice 2.0.4, which is on board for standard office tasks such as word processing, spreadsheets, and presentations, launches very quickly on the Eee PC. The file manager, which is reminiscent of a stripped down Konqueror, was specially adapted by Asus.

Pidgin is used as the messenger application, and VoIP is handled by Skype. With just a little effort and the current beta of the proprietary Skype application, the Eee PC will even support video communications.

Learn takes the user to a collection of educational applications. The *Science* submenu has an application dedicated to the periodic table of the elements. You'll also find an astronomy application called "Desktop Planetarium" (a variant of Kstars), a keyboard trainer, a vocabulary trainer, web educational programs, and many other educational tools.

The *Play* menu takes you to a collection of multimedia entertainment software. For example, you'll find the Amarok music manager, the Gwenview photo manager, and a customized variant of Mplayer called SMPlayer for video output. The *Settings* tab includes utilities that help users customize the Eee PC – although the tools are fairly rudimentary. The antivirus solution by Xandros

was a surprise: maybe ex-Windows users need a feeling of security to help them make the change.

The *Favorites* tab allow the user to create links to preferred applications. The list simply offers a selection of applications that are already listed in other menus.

New Applications – No Deal!

Users who want to add new software are in for a shock. The package manager below *Settings* only lets users remove a couple of applications and to install updates. If you don't mind the effort, and if you have some experience with console-based system administration on Linux, you can at least install a couple of additional applications.

Eee PC runs a Xandros version modified by Asus. Because this distribution is Debian based, you should be able to run apt-get or Aptitude to install new programs.

Both Xandros and Asus warn against installing Debian packages. Xandros has modified its Debian derivative to a great extent – and accessing Xandros packages is difficult for non-Xandros users.

Xandros repositories are more or less exclusively available to paying users of

Customizing the GUI

The Eee PC graphical user interface is easy to customize. If you are prepared experiment, you can add a start menu by creating a folder called *.icewm*, cop ing the */etc/X11/icewm/preferences* file to the folder, and modifying the file. Changing the *TaskBarShowStartMenu* setting from *0* to *1* gives you a rudimen tary menu (Figure 4), which you can modify by editing the *.icewm/menu* file A value of *1* for the *TaskBarShowWork spaces* setting in the *.icewm/preferenc* file displays the four workspaces, whic are not otherwise used.

Also, you can display a full-fledged graphical KDE desktop after installing the *kicker* and *ksmserver* packages via *apg-get install*; this adds a *Full Desktop* item to the shutdown menu. Selecting the item and restarting the X server displays the alternative desktop, which gives you access to more graphical applications.

the commercial distribution. Free pro grams are out there [1][2], but there a no guarantees that these packages wi work on the Eee PC. In the lab, I at lea managed to install the latest beta vers of Skype (see the box titled "Installing Third-Party Software").

Conclusions

The Eee PC is a very neat, high-qualit device that is well worth the asking p of US$ 400 or EUR 300.

With a few tricks and a few steps o the command line, you can at least partly customize the machine to refle your needs.

But even without these extra mea sures, the Eee PC has almost everythi you will need to process office docu ments and browse the Internet. If Asu were to add support for Bluetooth or mobile Internet connections, the Eee would be strong competition for far more expensive portables. ∎

Installing Third-Party Software

Skype serves as an example of how to install software on the Eee PC. After downloading the packages [3], change to the console by pressing the keyboard shortcut Ctrl+Alt+T. Then type *sudo su -* to assume superuser privileges, and replace the current Skype version with the latest beta by typing *dpkg -i /home/user/directory_name/skype-debian_2.0.0.X_i386.deb*.

INFO

[1] Eee PC Software Repository: *http://update.eeepc.asus.com/p701/ pool/*

[2] More software for the Eee PC: *http://forum.eeeuser.com/viewtopic. php?id=875*

[3] Skype beta download: *http://skype.com/intl/en/download/ skype/linux/beta/*