

Hands On: Keeping a very old laptop useful with Linux

My Lenovo T400 was already old when I bought it as a refurb four years ago. It's still ticking along nicely with a variety of Linux distributions. Here are the details.



By [J.A. Watson](#) for [Jamie's Mostly Linux Stuff](#) | September 11, 2017 -- 10:01 GMT (03:01 PDT)
| Topic: [Enterprise Software](#)

About four years ago (Nov 2013) I bought a used, [refurbished Lenovo T400](#) laptop computer and docking station. It was already about four years old at that time (most of the original product announcements and hands-on reviews I can find are from 2009), and another four years have gone by now, so I think it would be useful to have another look at it and see how it is holding up.

First, a quick review of the hardware:



- Core2 Duo P8400 2.26GHz CPU
- 4GB memory
- 160GB disk
- Wired Gigabit and wireless AGN networking
- Bluetooth
- DVD RW drive
- Docking station: 4 USB ports, DVI & VGA video

I originally installed the following Linux distributions:

- openSUSE 12.3
- Fedora 19
- Debian 7.0
- Linux Mint 15
- Ubuntu 13.0

Those who are familiar with Linux will probably chuckle over some of those versions. They seem so old now. Most if not all of those could be updated to their current release, but I am interested in seeing how the latest installers work on it, so I am simply going to start over and install each of those and more from scratch.

Just a quick reminder -- this is a Legacy Boot (MBR) system with DOS (not GPT) disk partitioning.

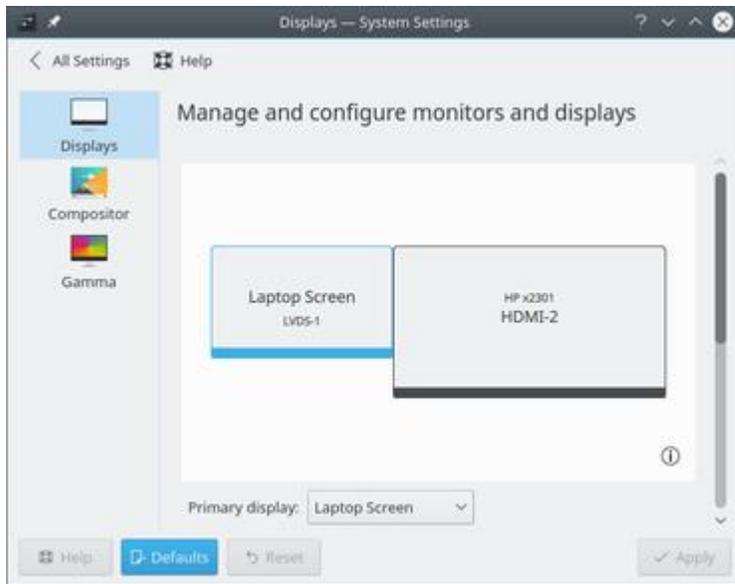
I am going to start with [openSUSE Leap 42.3](#), on the assumption that if you were still trying to use a laptop as old as this, your primary interest would be stability, and you can't get more stable than openSUSE Leap. I could choose one of the lightweight desktops for this older system, but I want to see how it holds up if I make a completely 'normal' installation, so I will try KDE Plasma first.



openSUSE leap 42.3 KDE Plasma / Lenovo Thinkpad T400

Image: J.A. Watson

The entire Leap installation process took less than 20 minutes, from the time that I booted the USB stick to the time that it rebooted to the installed system. I accepted the defaults in all of the installation screens; the only things I actually had to choose were the keyboard layout (because mine isn't US Ascii), and my user account information.



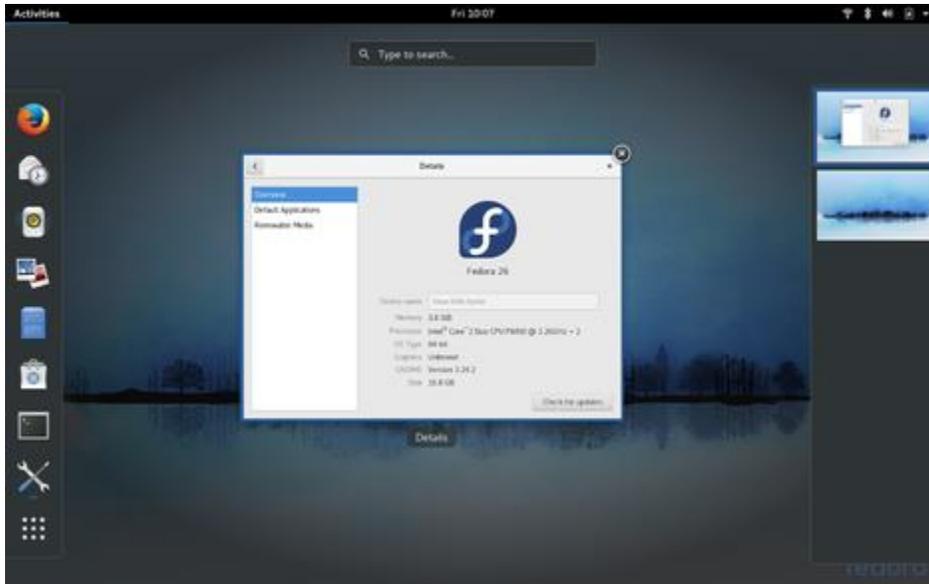
The installed system works perfectly. A quick check of the hardware looks like almost everything is working -- with the exception of Bluetooth. I'm not sure what the problem there might be, it just says that Bluetooth is "disabled", but it won't let me enable it. I'm going to keep an eye on this and check it with the other distributions before getting too involved in it.



The built-in display came up at the correct resolution (1280X800), and when I put the T400 on the docking station and connected an external DVI display, it was automatically recognized and configured at its maximum resolution (1920x1080), and the two displays were laid out as an extended desktop.

Next up is [Fedora 26 Workstation](#). Fedora is pretty much the 'flagship' for Gnome 3, so I will install that version.

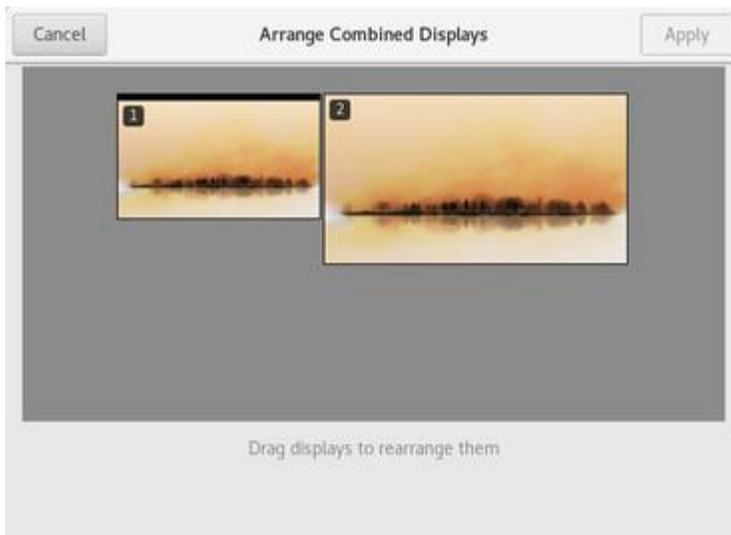
Again, the installation worked perfectly, and this time took less than 15 minutes to complete. Rebooting to the installed system brought up the standard Fedora Gnome 3 desktop:



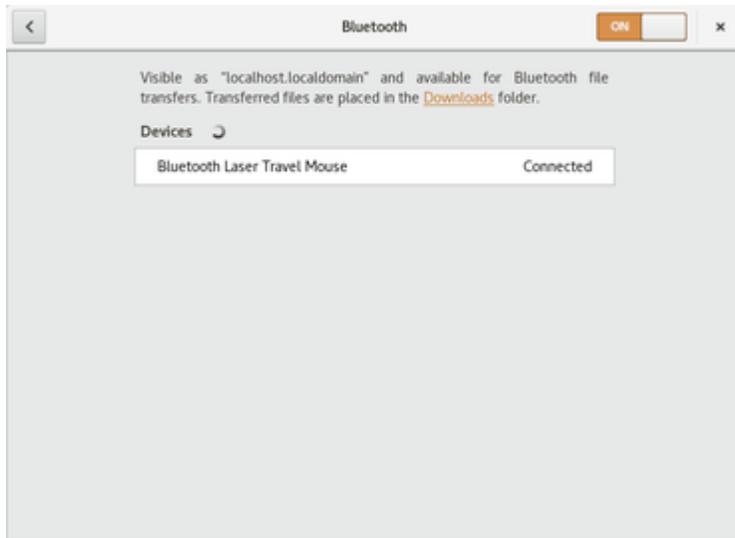
Fedora 26 Gnome 3 / Lenovo Thinkpad T400

Image: J.A. Watson

I am impressed by the response of this old laptop, especially with these first two rather heavy-duty desktops. Boot time is a bit slow, of course, but once it is up and running everything seems quite normal and comfortable, applications and utilities launch quickly, and running programs are very snappy.



Again, a quick check of the hardware showed that everything seemed to be working properly. In fact, after booting with the laptop in the docking station, but with the external display not connected, when I then plugged in the display Fedora recognized it, and added it as an extended desktop without any fuss -- and without a reboot.



This time Bluetooth came up with no problem, and I was able to connect a Logitech V470 Bluetooth Laser Travel Mouse. This leads me to believe that the problem with openSUSE Leap is just that it is using a much older Linux kernel (4.4.84 vs. 4.12.9). In further investigating this, I did find another small problem -- my newer Logitech m590 and m720 mice do not show up in the Bluetooth device selection dialog. This is a hardware problem, though, not a software/driver issue, because the newer mice are Bluetooth 4.x devices, and this very old laptop isn't compatible with that new Bluetooth standard.

The next installation is [Debian GNU/Linux 9.0 \(stretch\)](#). Debian also uses Gnome 3 by default, but it would be pretty boring to do the same as I did with Fedora. So I will take this opportunity to install the MATE desktop.



Debian GNU/Linux 9.1 (stretch) / Lenovo Thinkpad T400

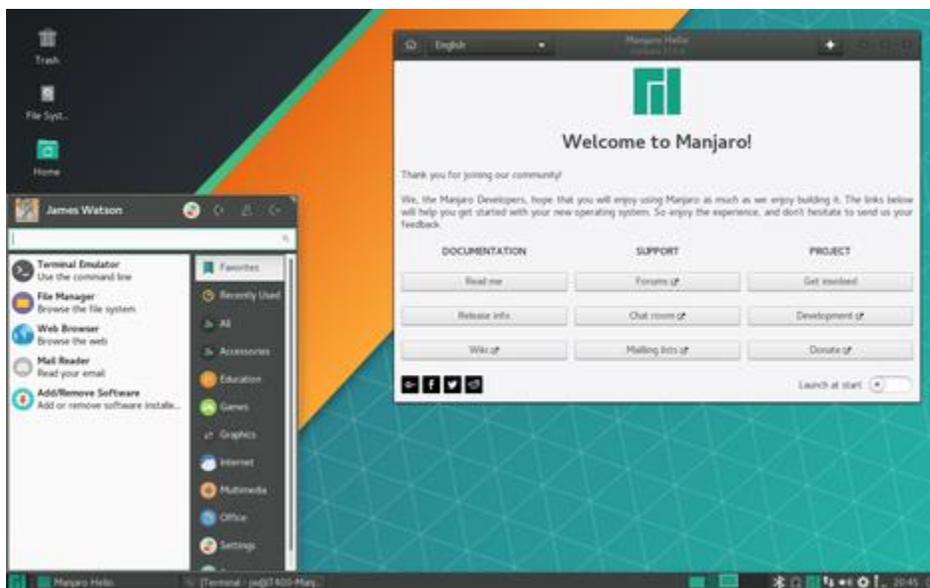
Image: J.A. Watson

Installation was easy and uneventful, as usual. I simply selected MATE rather than Gnome in the software packages section. Because I was using the Debian net install ISO, it had to download all of the necessary packages for installation. The installation took about 30 minutes because of the download time, but the advantage of this is that once the installation is complete, you already have the latest version of everything so there is no need to run updates right away.

I absent-mindedly performed this installation with the Thinkpad still in the dock, and the external monitor connected. That didn't cause any problem with the installation, the dialog still ran on the laptop display normally, and when I booted the installed system it identified and configured the external display automatically.

The one thing that wasn't working after rebooting was wireless networking. Wired worked normally, of course, but no wireless networks were detected. Because this Thinkpad uses an Intel Wi-Fi adapter which requires a non-FOSS driver, and Debian is quite strict about FOSS software, after the installation was complete I had to add the "non-free" repositories to the `apt sources.list` file, and then I had to install the `iwlwifi` firmware package. Once that was done the wireless networking worked normally.

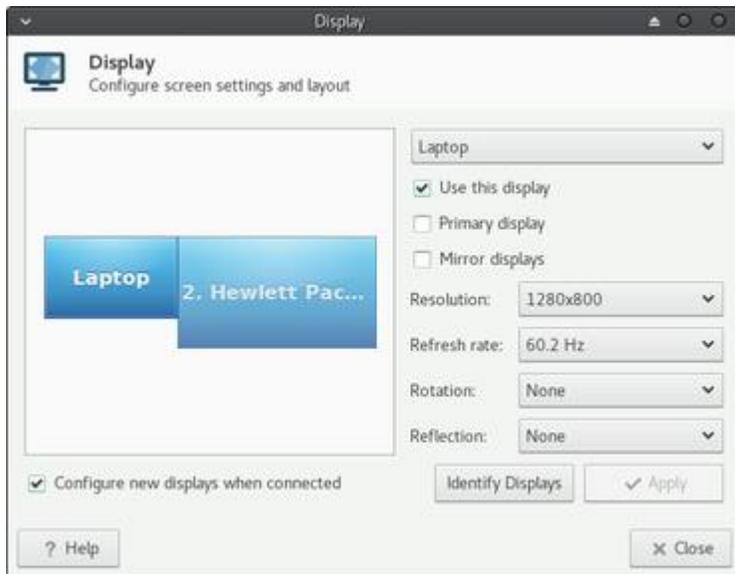
My current favorite distribution, [Manjaro](#), just came out with a new roll-up release, so I will install that next. Manjaro offers both Xfce and KDE versions, but they seem to favor Xfce, and I already have KDE installed with openSUSE, so Xfce it is.



Manjaro 17.0.3 Xfce / Lenovo Thinkpad T400

Image: J.A. Watson

How boring is it for me to say "installation worked with no problem", followed by "after booting to the installed system, everything appears to work", including Bluetooth and multiple displays using the docking station.

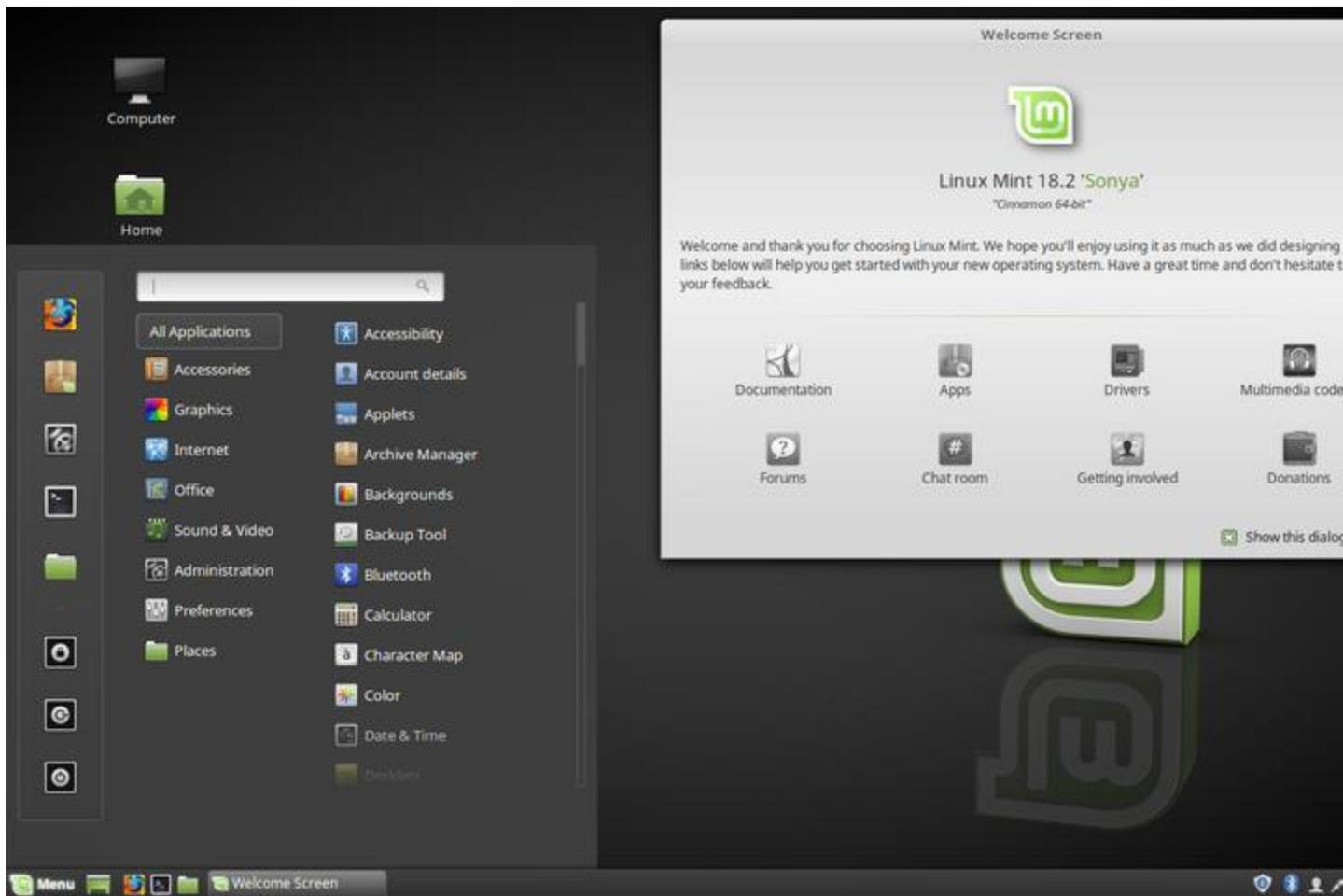


I noticed one curious thing with this installation. When I connected the external display (while the system was running, of course), it was recognized and configured -- but as a *mirror* of the laptop display, rather than as an extended desktop.

This wasn't difficult to change, of course. I just went into the Display utility and un-checked the **Mirror displays** box. When the displays were changed to an extended desktop, it had different wallpaper for each of them as well.

Whoops, I can't forget everyone else's favorite, [Linux Mint 18.2](#). Mint has two of their own desktop versions to choose from -- Cinnamon and MATE. The 'preferred' desktop is Cinnamon, so I will install it now.

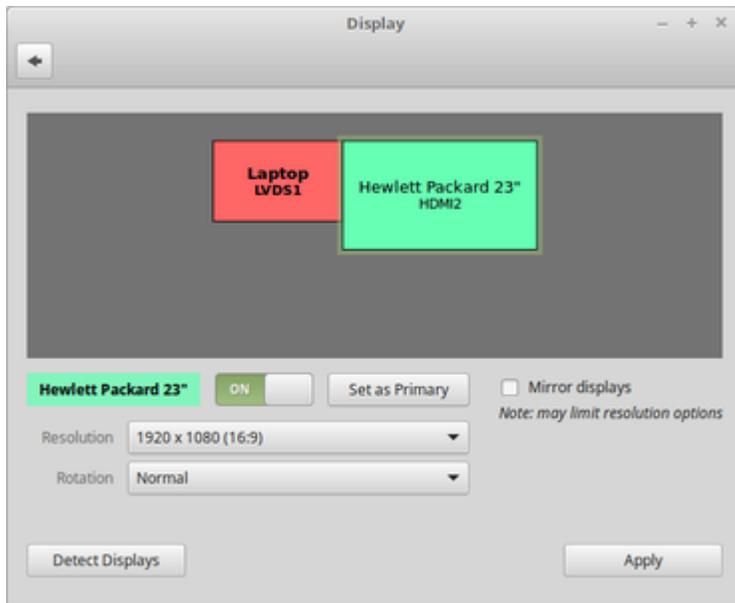
Ho-hum once again -- installation was fast and simple, taking only about 10 minutes.



Linux Mint 18.2 Cinnamon / Lenovo Thinkpad T400

Image: J.A. Watson

This time I remembered to remove the T400 from the dock before installing, so I initially had only the built-in display and ports. I then put it into the dock, still powered up and running, and all of the new hardware was recognized and configured automatically.



The external monitor came up at its highest resolution, and configured with an extended desktop across the two monitors.



Bluetooth works just fine again. Cinnamon has its own Bluetooth control applet, so it looks different than the others I have shown above. The result is the same, though -- the Logitech Bluetooth travel Mouse connected and works nicely.

I could go on with this exercise, and install a variety of other Linux distributions, but I think the bottom line is clear by now. This is an eight-plus year old notebook computer which has basically been abandoned by Windows, but I can install pretty much any current Linux release with very little effort.

The performance when running these Linux distribution is quite good, too. I still have Windows 7 running on it (there was never a Windows 8/8.1/10 for it), and using it with Linux is much faster and more comfortable than with Windows 7.

Of course salvaging old computers is not the only thing Linux is good at, but it is one of the many things that it does very, very well