

In Praise of ThinkPad

I bought a laptop: ThinkPad E14 Ultra 228V, the best laptop I ever met

TL;DR: I got a ThinkPad laptop (E14 gen7, ultra 228V, 32G RAM, 512G SSD) for 4,900 CNY.

1. Why ThinkPad

Before this, my daily laptop was an [HP ZBook 15 G5](#) (8850H, 64GB RAM, dual M.2 slots plus another 2.5 HDD slot). I purchased this second-hand laptop in 2022 for around 4,600 CNY and had been using it for more than three years.

However, the HP ZBook is marketed as a mobile workstation, and it weighs 2.63 kg. Back then, I was too young and too naive to really know what kind of laptop I needed. By no means am I implying that HP ZBooks are bad. They are extremely easy to maintain: just flip a switch and you can open its back panel to the replace battery, SSD, or RAM. I installed two of 32G RAMs modules on it.

Now I've known better what laptop fits me:

It should be lightweight, ideally light enough to hold with one hand. Battery life should be long enough to last a full workday: preferably until I can't go any longer. Bonus points for ease of maintenance and portability, meaning I don't need a workshop to replace the SSD (the Intel Lunar Lake processor has memory wired to its SoC, which is a trade-off for power efficiency). An Ethernet RJ45 port is a must, in case I need to connect to a server and start debugging immediately. The graphics card is the least of my concerns, as I don't play video games.

One might recommend the MacBook Air, but I'm not a fan of Apple in any form. In fact, I'd be delighted if they sold their laptops as bare-metal machines, stripped of macOS. The freedom to choose which software to install and the ability to fully control the machine are more important to me, even at the cost of reduced efficiency or performance. Additionally, macOS doesn't meet my needs due to its limited network stack.

In the end, after surfing for 2 hours, I decided that it should be [ThinkPad](#). Luckily, there are officially refurbished products (官翻机, items returned within 7 days and resold by Lenovo agents), which saved me 1,000 CNY more.

2. Configuration

I tried [Alpine Linux](#). However their `linux-lts` kernel seems to lack many of the compiling options for modern laptops. No `CONFIG_HID_MULTITOUCH`, no `CONFIG_DRM_ACCEL` ... and my `GXTP5400:00 27C6:0F91` touchpad didn't work. So rather than compiling and updating my own kernel image, I just use Arch.

Alpine is great, and I'm really into their package manager (`apk`) and miss its packaging quality. Setting up an UKI kernel is as simple as it is on Arch. One day I may give it another try.

Here's my consolidated choice:

- Kernel: `linux-zen`
- Boot loader: `systemd-boot`
- Storage: `btrfs` on `LUKS`
- Kernel layout: UKI unsigned
- Shell: `fish`
- Editor: `helix`
- Desktop: [sway](#)
- Terminal emulator: `foot`
- Container: `podman`
- Browser: `firefox`
- Pass manager: `pass`, `pass-otp`
- Email: `neomutt`, `ibsync`, `msmtp`
- RSS: `newsboat`
- AUR package downloader: `paru`

KDE? KDE is great of course. But using a lightweight desktop will help extend battery life even longer.

3. Why Not Panther Lake

Panther Lake is expected to be released in Q2 2026. But as mentioned above, performance is not my primary concern.

Who knows? I expect this laptop to last for the next 10 years. After all, there are stories of old ThinkPad P series laptops still working after 10 years here and there.

“640K ought to be enough for anybody.”

It's astonishing how far we've come since then.

4. User Experience

The following statistics are measured under typical idle-to-light workloads of one active sway instance, tens of firefox tabs open, several tmux sessions, and one mpv instance streaming over a wireguard tunnel with WiFi and bluetooth on:

```
sudo tlp-stat -b
```

```
--- TLP 1.9.0 -----
```

```
+++ Battery Care
```

```
Plugin: thinkpad
```

```
Supported features: charge thresholds, chargeonce, discharge, recalibrate
```

```
Driver usage:
```

```
* naticpi (thinkpad_acpi) = active (charge thresholds, force-discharge)
```

```
Parameter value ranges:
```

```
* START_CHARGE_THRESH_BAT0/1: 0(off)..96(default)..99
```

```
* STOP_CHARGE_THRESH_BAT0/1: 1..100(default)
```

```
+++ ThinkPad Battery Status: BAT0 (Main / Internal)
```

```
/sys/class/power_supply/BAT0/manufacturer = SMP
```

```
/sys/class/power_supply/BAT0/model_name = L24M3PG3
```

```
/sys/class/power_supply/BAT0/cycle_count = 7
```

```
/sys/class/power_supply/BAT0/energy_full_design = 48000 [mWh]
```

```
/sys/class/power_supply/BAT0/energy_full = 48000 [mWh]
```

```
/sys/class/power_supply/BAT0/energy_now = 17330 [mWh]
```

```
/sys/class/power_supply/BAT0/power_now = 4990 [mW]
```

```
/sys/class/power_supply/BAT0/status = Discharging
```

```
/sys/class/power_supply/BAT0/charge_control_start_threshold = 75 [%]
```

```
/sys/class/power_supply/BAT0/charge_control_end_threshold = 85 [%]
```

```
/sys/class/power_supply/BAT0/charge_behaviour = [auto] inhibit-
```

```
charge force-discharge
```

```
Charge = 36.1 [%]
```

```
Capacity = 100.0 [%]
```

And it's actually lower when it's idle, usually 2700 mW.

5. Update

ThinkPad T14 gen 7 has a [reparability of 10/10](#).