



Microsoft Visit

I had the opportunity to visit the Microsoft office in Reston, Virginia for a day in July, for training on (mostly) the conversion from Windows 10 to Windows 11, but a lot of other content was covered, mostly artificial intelligence.

Windows 11: Why to Upgrade

Some of the claims made by Microsoft, and replayed by Dell and HP, include productivity gains from faster computers. That makes the assumption of new faster hardware, which won't apply to software upgraders. So take that as marketing. But there are a lot of background changes, and a deadline:

- More accessibility features, more ways to adjust Windows for low vision users.
- Live Captions: Real-time closed captions for meetings and videos.
- Paint can now use AI to erase objects in photos.
- Networked mapped drives stay connected. No more red Xs.
- Updates are smaller, with fewer, shorter reboots.
- And the deadline: Windows 10 security updates end October 14, 2025.

Microsoft AI: Copilot

Microsoft's artificial intelligence product is Copilot. There are multiple versions of it. There is an educational AI software already up and running, and it can provide custom tutoring for entire classes of students. Enterprise AI is trained on the best-rated customer service interactions within the same company. And these are the two that will be useful to small offices:

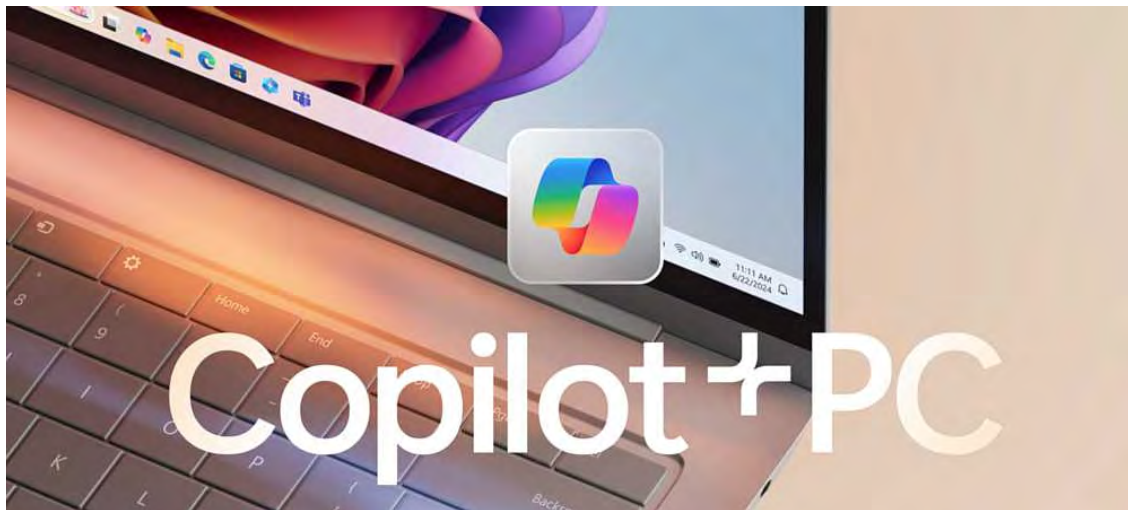
'Copilot' in the bottom-right corner of Windows or the top-right corner of Edge is free, puts results in Edge, and uses anything you paste into it as training materials. It's good for creating small pieces of content from online knowledge, like images or newsletter topics lists (how I use it), or for searching the internet for answers to complex questions that aren't answered by one paragraph on a publisher's page somewhere.

'Copilot for Microsoft 365' is bought as a \$30/month add-on to Microsoft 365 (subscription Office), is private, does not use your pasted content for training the AI, and puts its results into the Office suite, basically directly into Word, Outlook, Excel, and the other suite products. It's useful for summarizing internal business content, or processing data to put into spreadsheets or slideshows.

The usefulness of these products will continue to expand as the technology matures. And there are dozens of other good AI services online now, probably hundreds soon, that are somewhat more specialized. Just about all the major SaaS (software as a service) companies are adding AI features, and some are already very useful.

Microsoft has created a definition for 'Copilot+ PCs' which will have local artificial intelligence. These are systems where the NPU, or Neural Processing Units, are capable of at least 40 trillion AI operations per second. That standard

is called TOPS, for 'Tera Operations per second.' (Tera is the prefix used for trillion.)



AMD AI Processors

AMD expects to be shipping processors with NPUs capable of achieving near or over 40 TOPS later this year for desktops and laptops. The expectation is that these computers will run AI locally, privately, and massively increase productivity for their users. NPUs will be in all new processors soon, for anything more powerful than a tablet.

CrowdStrike Issues Or How Security Software Explodes

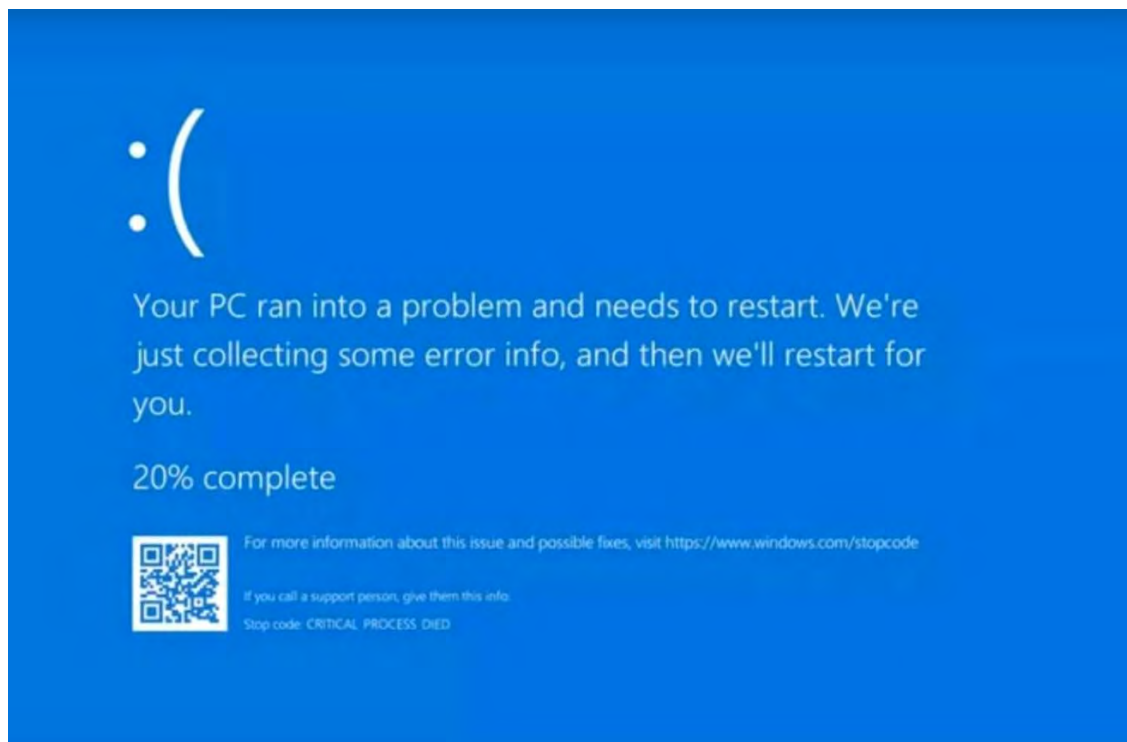
The recent CrowdStrike failure, and the airline computer failures and flight cancellations that followed, were the logical consequence of several factors. They're all a race to the bottom.

- Malware authors are creating more malware than ever, and using AI to make it harder to recognize. The malware business model relies on uneducated computer users clicking on bad links to get past basic 'no rights' admin lockouts.
- Security software known as 'SECaaS' for 'Security as a Service' has to keep up with all of that. CrowdStrike is one of these products, offering antivirus and security management as a bundle, at around \$100/month/

pc, and up.

- The employees at all of the SECaaS vendors have to keep up with all the new malware detections and push out patches and preventions and filters within a few hours of first seeing new threats.
- Testing all this manually is expensive. It's cheaper to ship it with only quick testing and fix it later. Even Microsoft is doing this, but they stagger the deliveries to find issues before they're widespread. CrowdStrike did not stagger delivery of the defective patch.

Additionally, CrowdStrike developer had the brilliant idea to push their technology out as Windows device driver files. That means that they run earlier in the boot process, and can block more malware. It also means that when they break, they break big, mostly what we call blue screens of death.



There are fixes for these issues: Basically, interrupt the boot process by booting from some other device, and delete the bad driver file. That takes around 15 minutes: to get past Windows security and navigate to the file, as long as encryption isn't added into the fix. Now multiply that on-site manual process by 8.5 million Windows computers affected by the bad patch.

My problem with these SECaaS products is that it means concentrating all security decisions into one vendor, which eliminates all redundancy in the security filtering model. Bruce Schneier, a writer on security and technology,

has explained this well. The article is worth a read, and explains the market issues that result in brittle markets. As in likely to fail. It's not technical; the focus is legal and business.

The CrowdStrike Outage and Market-Driven Brittleness

<https://www.schneier.com/blog/archives/2024/07/the-crowdstrike-outage-and-market-driven-brittleness.html>

