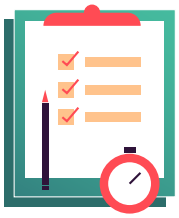
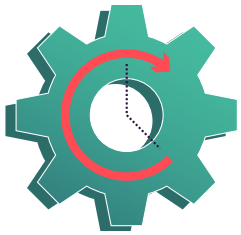


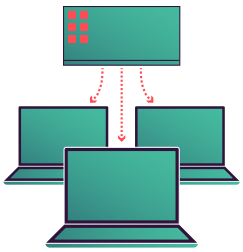
Experience similar hands-on deployment times

for both AMD and Intel processor-powered systems



Complete common management tasks using identical processes

whether the CPU is from AMD or Intel



Use the same deployment method

for both AMD and Intel processor-powered systems

Equal time, equal tools: Measuring PC deployment time in multi-vendor environments

Investigating the experience of simultaneously deploying AMD and Intel processors in a Microsoft-managed environment

The modern workforce isn't confined simply to traditional office buildings, with many industries utilizing remote or hybrid work models that see employees logging in from different locations. While a mobile workforce has its advantages, managing a distributed laptop fleet can present new challenges. IT admins need a straightforward method to deploy new laptops to end users, regardless of their location. Meanwhile, decision-makers may find the best laptop purchase choices feature processors from different vendors. This means that admins need to be able to manage a mixed-CPU fleet with the least fuss possible.

To gauge the complexities of deploying and managing a mixed-CPU fleet, we deployed two pairs of Dell and HP laptops. Each pair included one AMD and one Intel processor. Because different teams may use different Microsoft deployment and management tools, we also utilized both sides of Microsoft Endpoint Manager, with Configuration Manager as a traditional approach and Windows Autopilot as a modern approach. To complete the evaluation, we performed several common management tasks, including system wipes for decommissioning or repurposing.

Our findings will relieve IT administrators managing diverse fleets: there was no difference in the deployment effort due to the processor. Additionally, the processes we used to complete common lifecycle management tasks were identical in both the required hands-on time and the number of steps involved. While we did discover small deployment time discrepancies between the devices themselves, this amounted to no more than a few minutes. Continue reading for more on the impact of our test results.

How we tested

Among the many daily tasks IT teams face when managing large device fleets, deploying operating systems and installing drivers should be among the easiest to perform. A straightforward and repeatable management method across your entire PC fleet, regardless of processor, allows IT admins to dedicate more of their time to tackling complex business challenges and unlocking your organization's full potential.

To understand the overlaps in deployment methods between AMD and Intel processor-powered systems, we conducted our testing using two pairs of laptops with nearly identical configurations except the processor. We used two different AMD processors to further demonstrate how processor selection had no impact on an admin's effort to manage the laptops in our test scenarios.

Dell systems:

- **Dell Pro 14 Plus**
  with an AMD Ryzen AI 7 PRO 350 processor
- **Dell Pro 14 Plus**
  with an Intel Core Ultra 7 processor 268V

HP systems:

- **HP EliteBook X G1a 14 AI**
  with an AMD Ryzen AI 9 HX PRO 375 processor
- **HP EliteBook X G1i 14 AI**
  with an Intel Core Ultra 7 processor 268V

Our testing consisted of two phases. During the first phase, we determined the required time and effort to deploy Windows 11 Pro operating systems and install drivers on both the AMD and Intel processor-powered devices using a traditional approach using:

- Microsoft Configuration Manager
- Microsoft Active Directory

Finally, we connected each laptop to a deployment switch and powered it on, enabling the deployment server to initiate and deliver the OS installation to the target machine.

We also investigated how deployment works with newer cloud-centric management tools from Microsoft, using:

- Windows Autopilot
- Microsoft Entra ID
- Microsoft Intune, which according to Microsoft is a "cloud-based unified endpoint management solution… [that] has become a market leader."[1]

We reset the devices to factory settings and deployed operating systems, added device IDs to Intune, configured organizational settings, and performed user logins on each device.

Consistent evaluation with a multi-year perspective

On top of initiating upgrades across your entire PC fleet, you occasionally need to buy fresh laptops for new hires and replace faulty devices. We've explored deployment in fleets with heterogeneous processors in reports dating back to 2018. Then, we evaluated the image deployment process on Windows 10 on similarly configured AMD and Intel processor-powered devices. We repeated our testing in 2021 and again in 2023, with the 2023 study including an approach using Windows Autopilot.

In each of these studies, our results confirmed that IT admins could use an identical deployment method for a Microsoft Windows 10 (or Windows 10 Pro) image with both AMD and Intel processor-based devices. In addition, in 2023, using Windows Autopilot with the AMD processor-powered laptops produced an even speedier deployment process.

For more details, read our 2018 report, our 2021 report, or our 2023 report.

Deploy laptops with equal effort and comparable time, regardless of processor, using traditional Configuration Manager

OS deployment

As your organization grows, so does the value in purchasing devices that deliver the best performance for your increasingly specific business needs. If that includes shifting to a mixed-CPU environment, for example to explore possible processing efficiencies for specialized workloads, you'll want to ensure this won't also introduce new hassles in managing these devices.

Our test results show there's no need to fret. When testing with Configuration Manager, OS deployment required the same number of steps irrespective of processor for all four laptops (see Figure 1). Both the Dell laptops and the HP laptops required 30 total steps: 27 prerequisite steps as a one-time cost for the Windows version and drivers we used for testing, and then just 3 additional steps to complete the deployment through Configuration Manager. The processor vendor had no effect on deployment steps.

The required OS deployment time was also nearly identical among each pair of systems. The difference in required deployment time for the Dell devices was within 5 percent, with the AMD processor-based system slightly slower. The difference between HP laptops was within 2 percent, this time with the AMD processor-powered device taking less time. When we excluded the time the devices were processing on their own and focus just on our admin's hands-on time, the difference between the Dell devices was just 3 seconds, or less than a 3 percent difference. The difference between the HP devices grew to just over 9 percent; however, this represented a difference of only 14 seconds. Altogether, our results show how little of a difference the processor made.

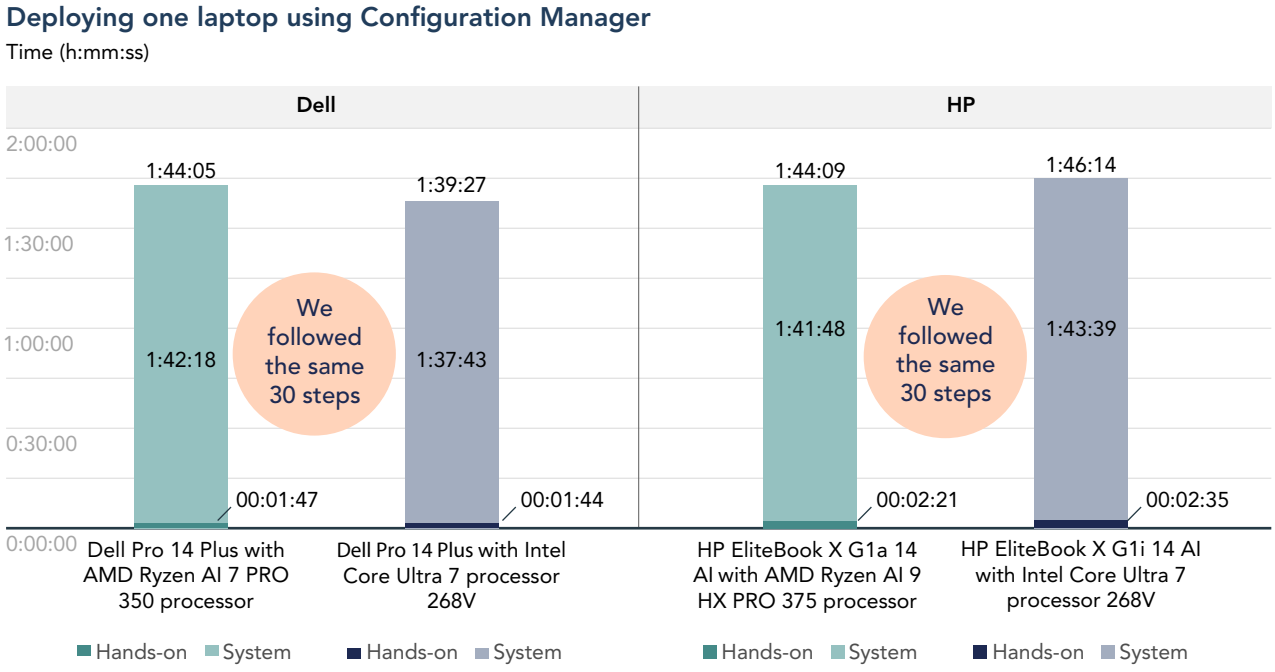


Figure 1: Total time (hh:mm:ss) to deploy one laptop using Configuration Manager. Hands-on time is how long it took us to start the installation process on the target PC, and system time is how long it took our task sequence to install the OS and applications and configure the system. Source: PT.

Installing drivers

Preparing new devices for end-users typically involves IT installing company-approved drivers and applications after OS deployment. To understand how this process compares across different laptops, we measured the required time and effort to add driver packages to each system. We uploaded the packages to Configuration Manager prior to deploying the OS images, allowing its automated sequence to handle all OS updates and customizations on the devices.

For all four laptops, installing drivers took the same 27 steps, confirming the process was identical regardless of processor or manufacturer. On top of that, the required time to complete driver installation was identical within each pair of laptops. This indicates that IT admins can anticipate a consistent process in both effort and time for not only OS deployment, but driver installation as well.

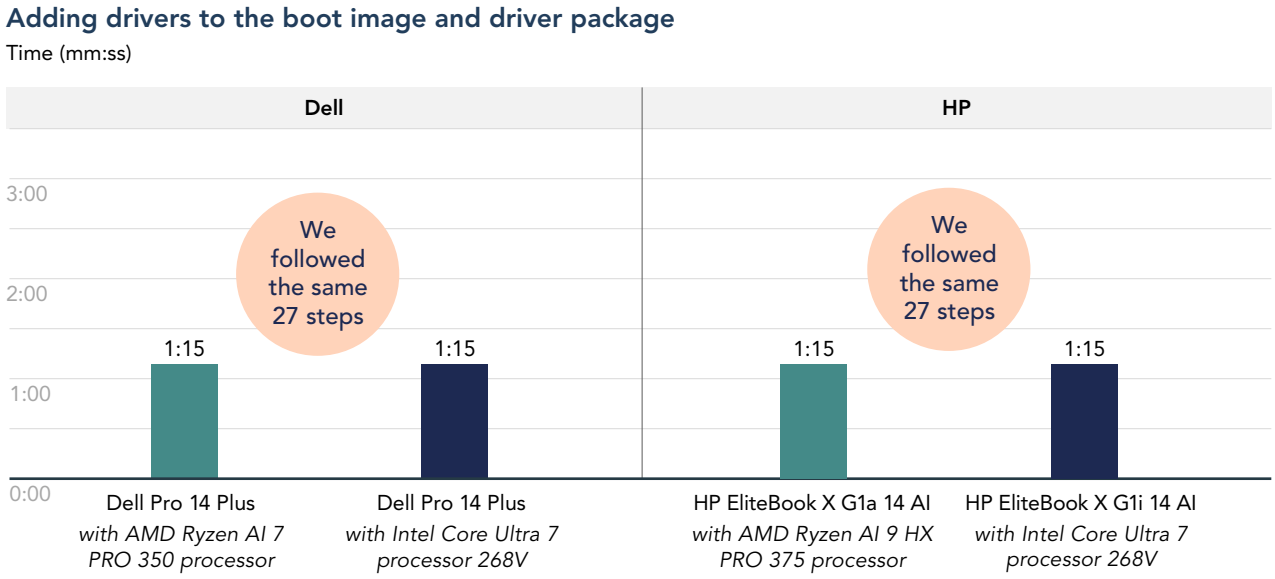


Figure 2: Total hands-on time (mm:ss) when using Configuration Manager to add drivers to the boot image and driver package. Source: PT.

Completing updates

Regularly applying updates across your PC fleet is essential to maintaining security and functionality in today's fast-paced business environment. When the method used to update devices is consistent across your entire fleet and the required time is predictable, IT teams can focus more on high-impact tasks that move your business forward.

We found that update process for all four laptops was identical, each requiring the same 25 steps. Admin time to complete the update was 1 minute 32 seconds for the pair of Dell laptops, and 2 minutes 2 seconds for the pair of HP laptops, confirming the process and hands-on time to update systems was the same for both AMD and Intel devices.

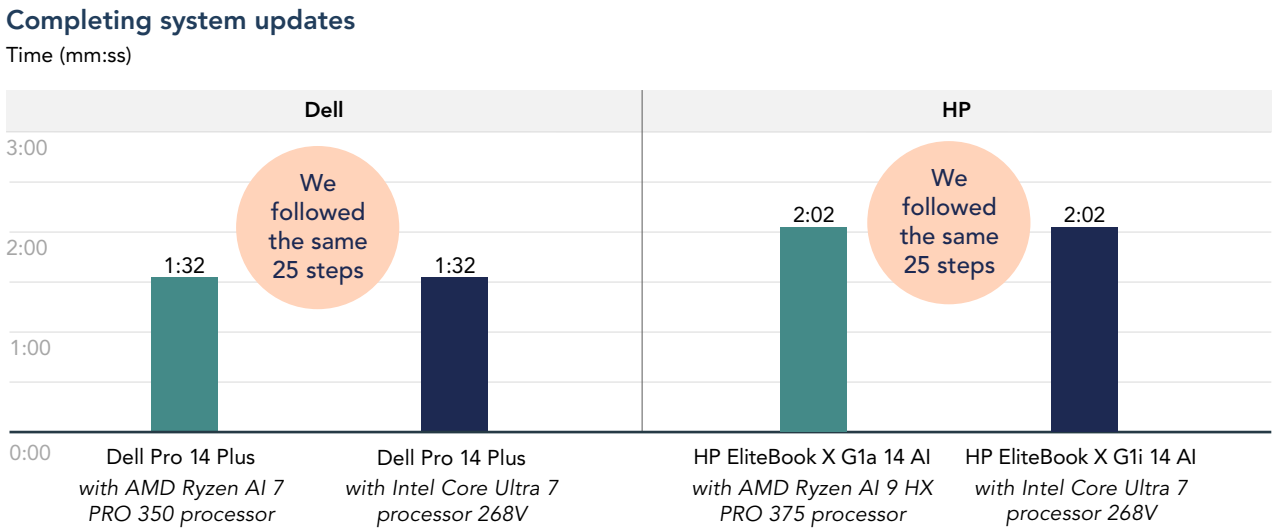


Figure 3: Total hands-on time (mm:ss) when using Configuration Manager to complete system updates. Source: PT.

Reimaging systems

Reimaging systems is an essential part of lifecycle management, ensuring that every new user starts fresh with a clean, secure environment. Efficient completion times and repeatable methods for reimaging help IT administrators reduce operational bottlenecks and improve overall service delivery.

When we evaluated the method and hands-on time required to complete a system reimage, we found that all four laptops followed the same four-step process. The hands-on time required for reimaging ranged from 12 to 33 seconds, with time differences due to varied boot times. This, combined with the identical process across all systems, confirms that administrators can reliably expect a consistent reimaging experience that takes only a small fraction of their workday, whether managing a mixed-CPU fleet or a uniform one.

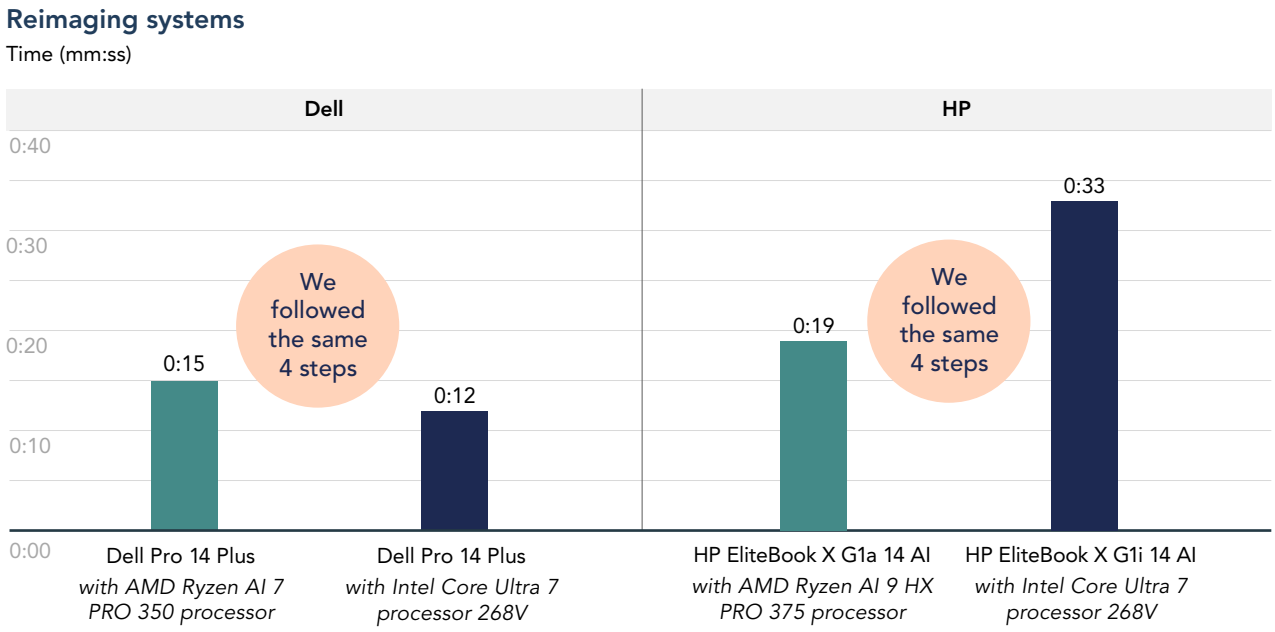


Figure 4: Total hands-on time (mm:ss) when using Configuration Manager to reimage one laptop. Source: PT.

Use an identical deployment method in a similar amount of time with Windows Autopilot, regardless of processor

Deploying the OS and drivers

While Configuration Manager remains a common management and deployment tool, some organizations are shifting to newer solutions such as Windows Autopilot, which offers IT admins the powerful option of deploying devices directly to end-users. Companies making this shift may have management complexity concerns around moving to a mixed-CPU fleet. To ease those concerns, we conducted an identical version of our testing using Windows Autopilot combined with Microsoft Entra ID (formerly Azure Active Directory) and Microsoft Intune. Unlike with our other methods, we did not install drivers separately, since Windows Autopilot installs drivers automatically during OS installation.

Our results confirmed the deployment process was exactly the same for all four laptops and the processor had no effect on the required effort. While there were small differences across the laptops in the system time required, the hands-on time for our engineer was the same for all four devices. When we looked at just the effort and hands-on time to deploy the systems, the processor choice did not impact the result.

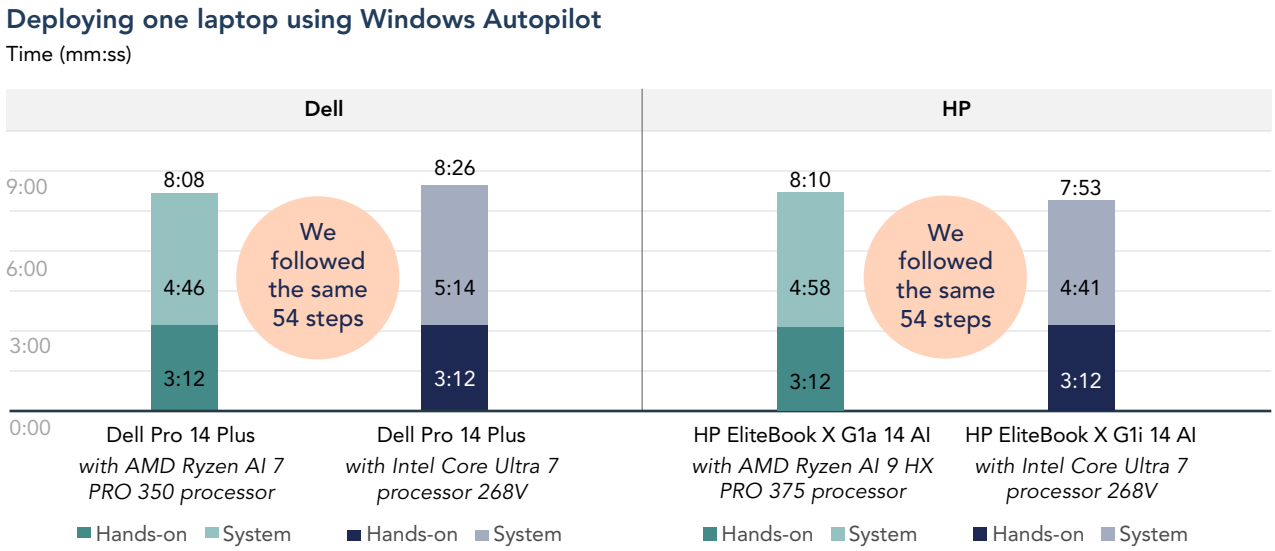


Figure 5: Total time (mm:ss) to deploy one laptop using Microsoft Entra ID, Microsoft Intune, and Windows Autopilot. Hands-on time refers to the time it took us to start the installation process on the target PC, and system time refers to the time it took for the Autopilot Provisioning process to complete. Source: PT.

Completing updates

When we evaluated process of updating devices through Intune, the trend continued—the process for all four laptops was identical, each requiring the same 11 steps to complete the update. All the laptops we tested also required the same 27 seconds of hands-on time to complete the update. This confirms that, as was the case with every other management task we investigated, the processor in the device had no effect on the required effort or time to update the laptop.

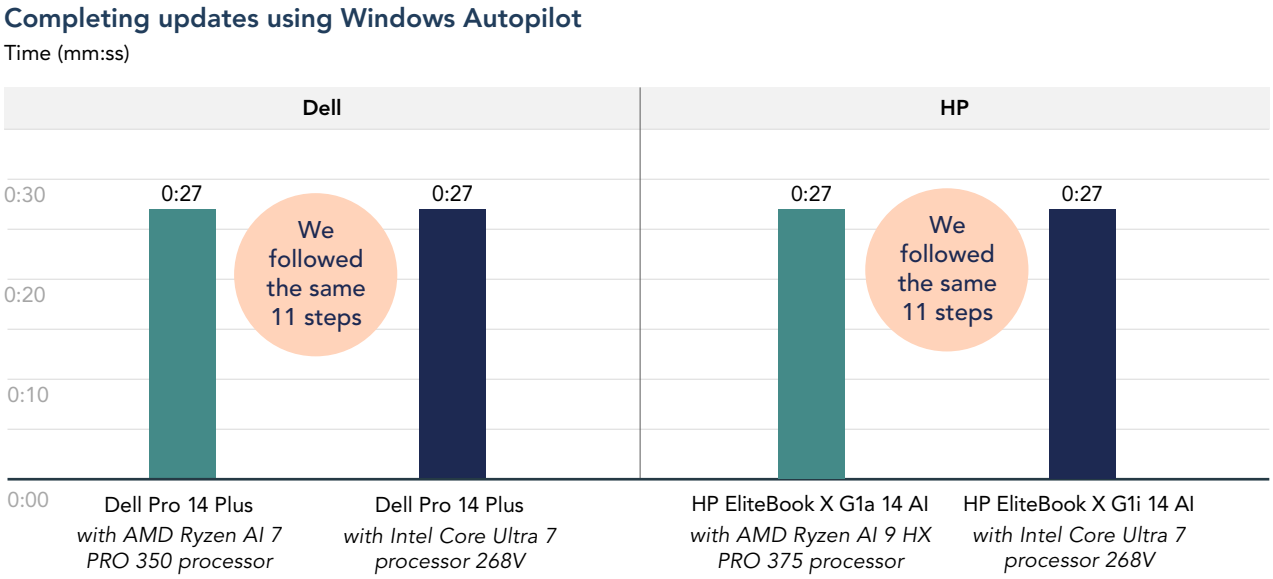


Figure 6: Total hands-on time (mm:ss) when using Windows Autopilot to deploy one laptop. Source: PT.

Wiping systems

IT administrators regularly need to wipe and reimage systems as part of routine device lifecycle management, whether to prepare laptops for new users, resolve persistent issues, or maintain security standards. When this process is consistent and quick across different devices, it can reduce operational bottlenecks and allow IT teams to efficiently improve performance, remove malware, and set up new users without unnecessary delays.

When we tested the process of wiping devices through Intune, we discovered all the laptops required the same four-step process to complete the wipe. Plus, each system took the same 20 seconds to complete the process, providing yet another example of the identical management process when overseeing a mixed-CPU fleet.

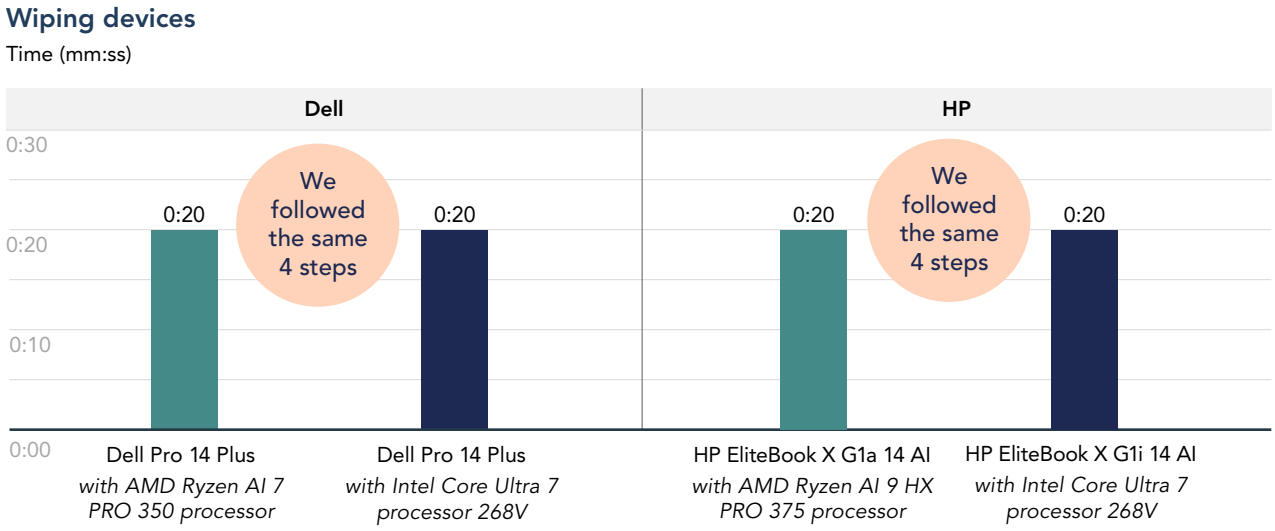


Figure 7: Total hands-on time (mm:ss) when using Windows Autopilot to wipe one laptop. Source: PT.

Free up vital IT time with Windows Autopilot

Many OEMs provide solutions, such as Windows Autopilot, that offer IT administrators the convenience of shipping devices directly to end users. This allows IT to skip the time-consuming process of configuring individual systems. In a previous study, we evaluated the process of ordering and provisioning devices with Windows Autopilot and discovered that it can allow vendors to send laptops directly to end users, who can then complete provisioning on their own by performing a few simple steps after first boot. Conversely, the traditional hands-on method requires the device to first ship to IT, who will need to provision the device and then ship it to the end user.

In an organization employing many remote workers, locking IT time to a hands-on provisioning process could become a major bottleneck. To learn more about our test results, read the report.

Conclusion

OS deployment and device management is complex at any scale and can limit IT's focus on high-impact work. We conducted a suite of tests to explore whether OS deployment and system management becomes more complicated when overseeing a mixed-processor fleet. When we measured mixed-CPU PC deployment and management time and effort using two different Microsoft endpoint management toolkits, our experiences were comparable, regardless of processor. The deployment processes also took nearly the same amount of time within each approach, with slight variance between the required hands-on admin time across laptops being the only distinction. When we investigated the process of installing drivers as well as updating, wiping, and reimaging devices, we found that all four tasks required the same number of steps across all tested devices, confirming that administrators can expect a consistent management experience in those areas regardless of the processors in their device fleets.

With an equivalent process to deploy, update, wipe, and reimage devices, and nearly the same amount of required hands-on time regardless of processor, our test results demonstrate that concerns about managing a mixed-processor fleet with two separate deployment processes can become a thing of the past. Consistent methods allow IT administrators to spend less time learning new processes and more time supporting your organizations' growth through improved user support, robust security measures, and innovative technology projects.

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1. Michael Wallent, "Introducing the Microsoft Intune product family," accessed July 8, 2025, https://techcommunity.microsoft.com/t5/microsoft-intune-blog/introducing-the-microsoft-intune-product-family/ba-p/3650769

Read the science behind this report at https://facts.pt/YK179ct ▶

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