Deploy Windows 10 Pro images using one consistent process, no matter the CPU
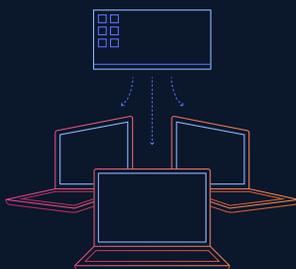
We compared time and steps on AMD Ryzen 5 PRO 4650U and Intel Core i5-10310U vPro processor-based HP EliteBook 800 G7 Series Notebook PCs and Lenovo ThinkPad T14 laptops

Selecting new devices for employees is rarely easy, especially if the laptops you're considering contain a processor from a different manufacturer than the ones already in your fleet. Being able to use the same deployment process across all devices—regardless of processor—makes things easier on your IT staff.

We used an automated task sequence in Microsoft Configuration Manager (formerly SCCM) to deploy a Microsoft Windows 10 Pro image on four enterprise laptops:
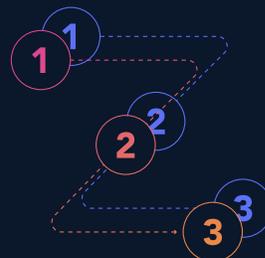
- **Lenovo® ThinkPad® T14 laptop** with an AMD Ryzen™ 5 PRO 4650U processor
- **Lenovo ThinkPad T14 laptop** with an Intel® Core™ i5-10310U vPro® processor
- **HP EliteBook 835 G7 Notebook PC** with an AMD Ryzen 5 PRO 4650U processor
- **HP EliteBook 830 G7 Notebook PC** with an Intel Core i5-10310U vPro processor

When we performed the same six steps on all the devices, each enterprise laptop required a similar amount of hands-on administrator time: between 1 minute and 38 seconds and 1 minute and 49 seconds. The difference in total time required, including system time, was less than 2 minutes across all devices. If you're considering managing a fleet with both AMD and Intel processor-based PCs, deployment time or adaptations to existing Windows 10 Pro image deployment processes shouldn't be a concern.

Schedule the same time

It took a similar amount of time to deploy Microsoft Windows 10 Pro images for AMD and Intel processor-powered laptops

Use the same process

We used the identical Windows 10 Pro image deployment procedure for AMD and Intel processor-based laptops

Keep doing what works

Some admins and organizations have steered away from laptops equipped with AMD processors because they assumed that managing a mixed-CPU Windows 10 environment would be more complex than managing a homogeneous one.

We first compared Windows 10 image deployment processes for equivalent systems equipped with the rival processors in 2018. Then, as now, we found that admins could deploy a Microsoft Windows 10 (or Windows 10 Pro) image to systems equipped with AMD processors without altering processes they developed for Intel-based systems. In fact, in 2018, we found "Windows 10 image deployment to AMD processor-powered laptops and desktops took similar time and the same number of steps as deployment to systems powered by Intel."[1] You can read the 2018 report here.

Have the same experience, regardless of CPU

If your organization is one of the many that have shifted to a more remote workforce, no-touch PC management is likely a high priority. Streamlining OS deployment and driver installation can help give your IT teams more time and brainpower to tackle complex and challenging problems.

We created a Configuration Manager task sequence and used it to deploy a Windows 10 Pro image on all four enterprise laptops. This automated sequence included applying the OS, configuring network settings, adding drivers, and installing Slack and Microsoft 365 applications.

This report pulls together findings from two different PT studies, one focusing on Lenovo and one on HP. We used a Configuration Manager task sequence to deploy a Windows 10 Pro image and necessary drivers to the following business-class laptops:

Lenovo systems

AMD

Lenovo ThinkPad T14 20UD
14-inch laptop featuring an
AMD Ryzen 5 PRO 4650U processor
(8MB cache, up to 2.10GHz)

VS

Intel

Lenovo ThinkPad T14 20S0
14-inch laptop featuring an
Intel Core i5-10310U vPro processor
(6MB cache, up to 1.70GHz)

You can read the Lenovo report at
http://facts.pt/3jUVED0

HP systems

AMD

HP EliteBook 835 G7 Notebook PC
13-inch enterprise PC featuring an
AMD Ryzen 5 PRO 4650U processor
(8MB cache, 2.1GHz)
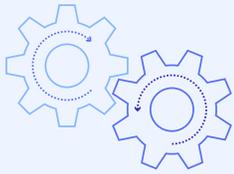
VS

Intel

HP EliteBook 830 G7 Notebook PC
13-inch enterprise PC featuring an
Intel Core i5-10310U vPro processor
(6MB cache, 1.7GHz)

You can read the HP report at
http://facts.pt/3tg4cm7

Supporting a mixed-CPU Windows 10 Pro environment with cloud-based device management

We tested a traditional IT deployment process via Configuration Manager, but there are several alternative options for IT staff seeking a way to deploy a large number of devices. Windows Autopilot, a cloud-based service, sets up devices in the factory and configures them before they reach users, so the systems are ready to use out of the box.[2] This means mixed-CPU Windows 10 Pro environments will not be a problem for traditional or cloud-based deployment tools.

Deploying the OS

There are plenty of challenges associated with getting properly configured devices to new staff members, but OS deployment doesn't have to be one of them. Having a single deployment process for all devices makes it easier for IT to ensure that employees receive their new devices as quickly as possible.

In our testing, it took slightly less time to deploy a Windows 10 Pro image to the AMD Ryzen 5 PRO 4650U processor-based Lenovo ThinkPad 14 laptop than to perform the same process on the Intel Core i5-10310U vPro processor-based Lenovo device. The AMD Ryzen 5 PRO 4650U processor-based HP EliteBook 835 G7 Notebook PC was also slightly faster to deploy than the Intel Core i5-10310U vPro processor-based HP system. We used the same six steps to deploy each of the devices.

Although system time varied slightly between the different models, the hands-on time required from our administrator was similar across all four devices: between 1 minute 38 seconds and 1 minute 49 seconds. The difference in total time required, including system time, was less than 2 minutes across all devices.

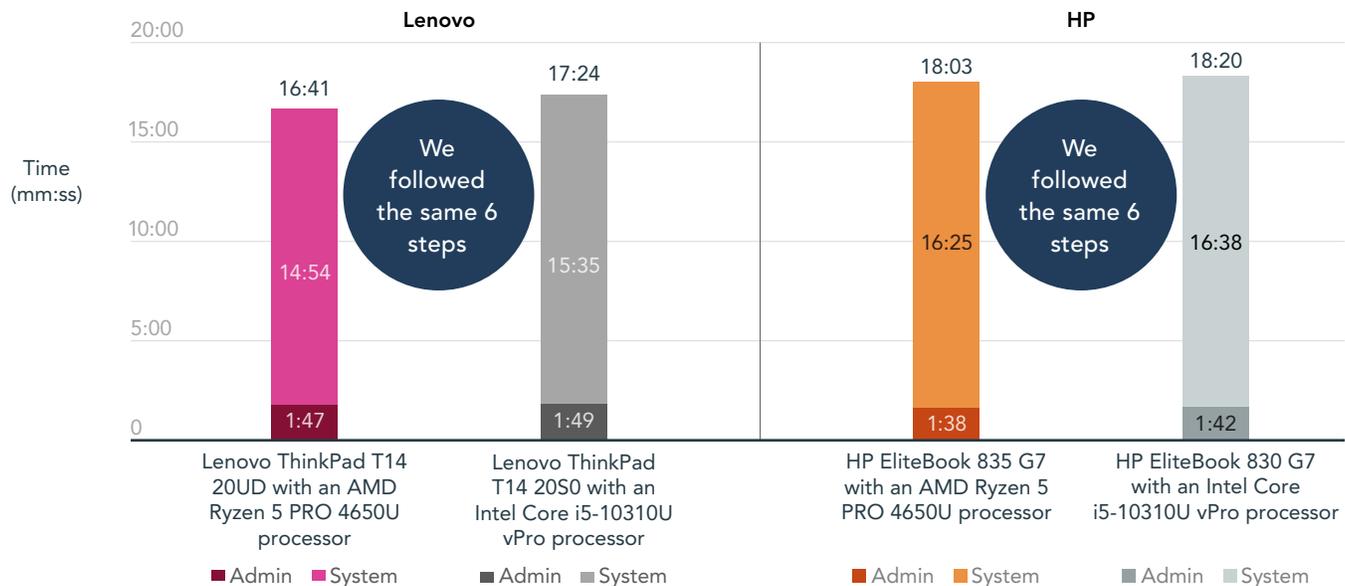## Deploying one laptop using Configuration Manager

Figure 1: Total time (mm:ss) to deploy one laptop using Configuration Manager. Admin 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 our task sequence to install the OS, install drivers and applications, and configure the system. Lower is better. Source: Principled Technologies.

Installing drivers

When IT prepares new devices for end-users, their standard procedure often includes loading drivers onto a custom image that installs the company-supported OS and deploys company-approved applications. We simulated this scenario in our testing.

On all four devices, we added driver packages to Configuration Manager before deploying the Windows 10 Pro image. This enabled the automated sequence to complete all OS updates and customizations on each laptop.

The process of adding drivers, requiring 11 steps, was the same on each of the four devices. Installing the drivers took a similar amount of time, with the AMD Ryzen 5 PRO 4650U processor-based devices taking from 1 to 4 seconds longer than their Intel Core i5-10310U vPro processor-based counterparts.

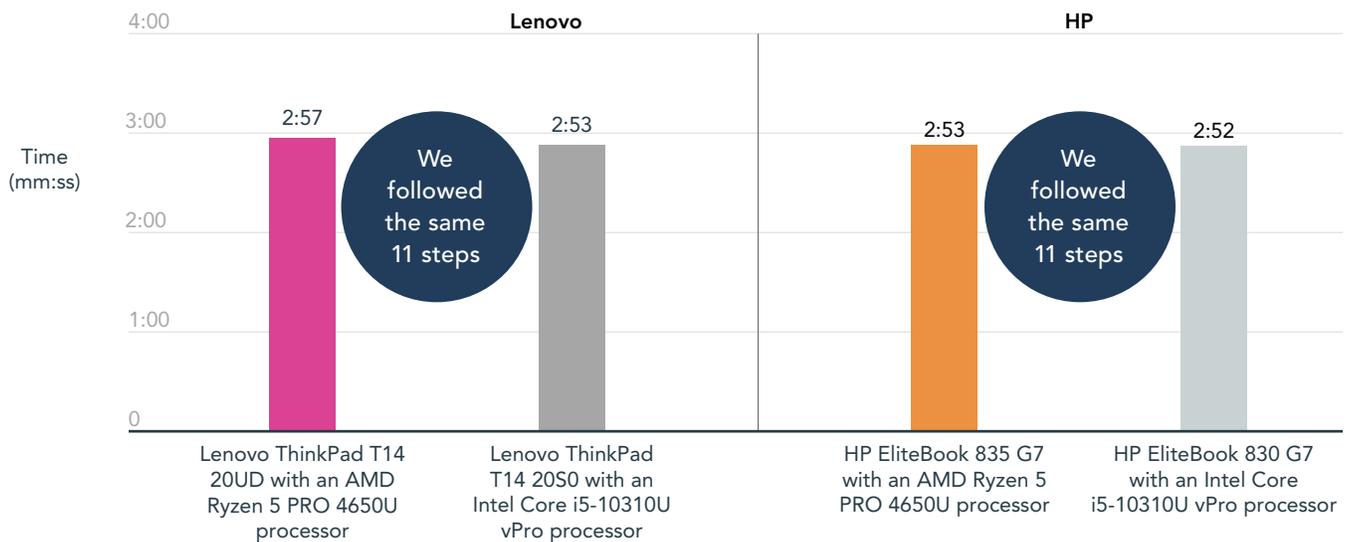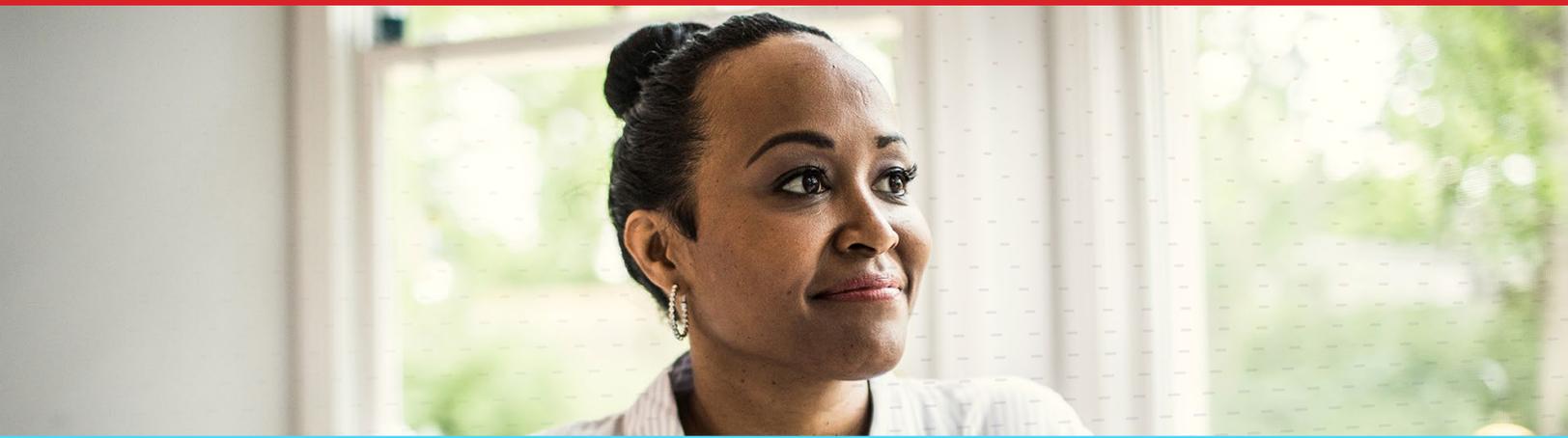## Adding drivers to the boot image and driver package

Figure 2: Admin time (mm:ss) to add drivers to the boot image and driver package. Lower is better. Source: Principled Technologies.

Conclusion

In our testing, using Configuration Manager to install drivers and deploy a Windows 10 Pro image was fast and easy on all four enterprise laptops. The two AMD Ryzen 5 PRO 4650U processor-powered devices required the identical steps and a similar amount of hands-on time to deploy as the two Intel Core i5-10310U vPro processor-powered devices. Our recent findings are consistent with our findings in 2018, which indicates that there's no need to develop or alter existing Windows 10 Pro image deployment processes when introducing AMD or Intel processor-based PCs into your environment.

Key takeaways:

- Admins need a similar amount of hands-on time to deploy Microsoft Windows 10 Pro images for AMD and Intel processor-based Lenovo ThinkPad T14 laptops and HP EliteBook 800 G7 Series Notebook PCs .

- Admins can use the same Windows 10 Pro image deployment process for AMD and Intel processor-based Lenovo ThinkPad T14 laptops and HP EliteBook 800 G7 Series Notebook PCs.

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1   Principled Technologies, "Deploy a Microsoft Windows 10 image to AMD Processor-based systems without altering existing processes," accessed January 29, 2021, https://www.principledtechnologies.com/AMD/PRO_processors_image_deployment_competitive_0518.pdf.

2   Microsoft, "Overview of Windows Autopilot," accessed January 29, 2021, https://docs.microsoft.com/en-us/mem/autopilot/windows-autopilot.

Read the science behind this report

| Lenovo comparison testing details: | http://facts.pt/r13DTvg | ▶ |
| HP comparison testing details: | http://facts.pt/dxnv42z | ▶ |

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This project was commissioned by AMD.