



Esper is Intel's trusted ISV for Android

OS Selection Guide

# Android vs. Windows

Which is Better for Intel x86 Dedicated Devices?



Windows has long been the dominant operating system (OS) for all types of computing devices. But times are changing, and there's a new king in town: Android. This ultra-versatile, infinitely customizable OS is quickly becoming the **best choice for dedicated devices like point of sale systems, kiosks, digital signage, rugged phones and tablets** — and everything in between.

## Dedicated device considerations

Given the versatility of Android, it's not surprising that many OEMs (like **Lenovo, Xenial, NCR, and many more**) are choosing it to build the custom experiences they want to offer. Its ability to seamlessly adapt across form factors and processor architectures while offering exceptional performance make it an endlessly appealing choice.

But how does  
Android stack up  
against Windows  
where it matters?



ImageSource: TNW

### Form Factor:

Microsoft Windows is largely designed for desktop and laptop computers, so it has a keyboard-and-mouse-first approach. Android, **on the other hand, is made for a touch-first interface**, but it also works exceptionally well with a keyboard and mouse.

### Processor Architecture:

Windows has long been the champion OS for x86 processors, while Android is commonly built for the more agile and mobile-first ARM chipset. Since **Android is infinitely customizable, however, you can also build it for x86 chipsets**. There's even a growing number of Intel-based systems out there designed around Android now. Many systems no longer supported by Microsoft are also convertible to Android.

### Performance:

This is where the two operating systems seem to converge a bit more unless you're on the extremes. With moderately spec'd systems, both will run well. **Android is the clear choice for streamlined**, low-power systems, while Windows may be the better choice for maximum performance where ample processing power is available.

When choosing between Android and Windows for Intel based dedicated device needs, there are key considerations that will drive the direction you should go in.

## Android

## Windows



### Customizability

Infinitely customizable with AOSP (Android Open Source Project) builds for **both ARM and x86 chipsets**. If you can dream it, it can almost certainly be done with Android.

You get what you get. There's a robust app library to choose from, but the core operating system offers **very little in way of customization**. Windows for ARM is very limited; it's x86-focused.



### Scalability

Since you can build Android to work on a nearly **endless number of device types**, hardware profiles, and form factors, it's equally as scalable. It's perfect for a mixed fleet with various hardware specifications and form factors.

While Windows is widely available, **scaling it quickly is still a challenge**. You'll need to meet the right hardware requirements to effectively utilize this OS, which can be especially challenging on POS systems, kiosks, and digital signage.



### Cost

Android in its rawest form (AOSP) is **free to download, modify, and distribute**. Google charges a fee to manufacturers for offering GMS (Google Mobile Services), which is typically passed down to the customer.

Windows has a relatively **steep per-device licensing fee**. Regardless of whether you buy off-the-shelf hardware already running the OS or add it yourself, this is a cost you'll incur.

## When experiences matter, there's a clear choice

Microsoft Windows is a fantastic operating system in the right environments, like desktop and laptop computers. But the limited interface, steep hardware requirements, and lack of true customizability make it a poor choice for dedicated devices.

With Android's infinite customizability, you can create and **deliver the experiences you've always dreamed of**. Its lean hardware requirements make it the perfect choice for more accessible hardware or even modifying existing hardware (yeah, you may not even need to buy new devices to switch operating systems!), regardless of what operating system they shipped with.



## Esper Foundation for Android is the customizable solution you didn't know existed

Foundation is a custom enterprise solution specifically designed for Android dedicated devices. **Tablets, rugged smartphones, point of sale systems, digital signage,** and any other single-use device are all great candidates for Foundation, regardless of the chipset. Foundation x86 is built from the ground up to run on **Intel-powered hardware both new and existing.**

### So, what makes Foundation so powerful? Glad you asked!



**It runs on bare metal.** Emulation? Nah. Whether you're building on ARM or x86 chipsets, Foundation runs on bare metal. That means it's faster and more efficient.



**Long-term support is the norm.** If you're building a new device, Foundation is in it for the long haul. And if you're upgrading existing hardware to Android, well, Foundation is in it for the long haul. Yep, it's like that.



**Security patches.** On the regular. Security is paramount for dedicated devices. That's why Foundation gets quarterly security patches. And you can schedule them on your time — not ours.



**Truly touchless deployment.** How about turning a device on and letting it do its thing automatically? We're talking about onboarding, connecting to Wi-Fi, installing apps, even setting a custom wallpaper. This is what the future feels like.

If you're looking for a flexible, customizable operating system for dedicated hardware fleet, Esper has you covered with Foundation for Android. Get in touch today to learn how we can supercharge custom device fleet needs.

[Connect with our Android experts](#)