Smartphone Experiences Now on Laptops

arm

Solution Brief

Essential Laptop Features

✤ **All-day battery life**

Last all day with no need to charge, for continuous untethered productivity.

✤ **Instant on Turn**

Instantly on from an idle state, so users return almost immediately for maximum productivity.

✤ **Always connected**

Ensure continuous productivity 'on-the-go' via advanced cellular features for the next wave of 5G connectivity.

✤ **Thinner, lighter, cooler**

Light to carry around without generating excessive heat, frequently spinning up, or making a distracting fan noise.

All-day battery life, instant on, and constant connectivity in a thin and lightweight form factor

The rapid rise in the popularity of smartphones is leading to changes in laptop designs and features, and transforming how people want to interact with and use these devices. People now expect their laptops to have all-day battery life, turn instantly on from an idle state, and stay constantly online through LTE connectivity. All of this happening on a thin and lightweight form factor with high thermal efficiency.

Arm Technology Meets Modern Laptop Needs

Arm technology is at the heart of the computing and connectivity revolution that is transforming the way people live and businesses operate. New Arm-based laptops are entering the market, bringing advanced architecture and processor technology that enables mobile features and benefits on these devices.

The Arm family of Cortex CPUs deliver laptop-class performance at best-in-class efficiency. This enables longer battery life, quicker 'wake up' times for users, and thinner, lighter and more modern laptop designs for unrivalled mobility and productivity on-the-go.

The Arm-based SoC designs for laptops use the DynamIQ multicore system design, which combines Arm Cortex-X, 'big' and/or 'LITTLE' CPU cores into a single, fully integrated solution. This provides advanced compute capabilities, faster responsiveness, and increased power savings. Cortex-X CPU cores are designed for ultimate peak performance, 'big' Cortex-A7x CPU cores for the perfect balance of sustained compute performance with best-in-class efficiency, and 'LITTLE' Cortex-A5x CPU cores for maximum power efficiency.

Total Compute Solutions for Arm-Based Laptops

Arm Total Compute solutions offer a full suite of hardware IP (including the Cortex CPUs, Mali GPUs and System IP), physical IP, software, tools, and standards to build the best SoC across different laptop devices. These solutions deliver different configurations for the premium Windows on Arm laptops and Arm-based Chromebook devices.

Windows on Arm Laptops: the highest performance Premium Total Compute solutions feature a 4+4 CPU configuration of 4x Arm Cortex-X and 4x Arm Cortex-A 'big' CPUs, or even an 8x Arm Cortex-X CPU configuration, to deliver ultimate performance.

Arm-based Chromebooks: Performance solutions consist of a 4+4 CPU configuration of the latest 4x Cortex-A 'big' CPUs and 4x Arm Cortex-A 'LITTLE' CPUs alongside a premium or mid-range Mali GPU.

An Expanding Ecosystem

The growing range of Windows on Arm laptops brings many performance and UI benefits to applications targeting these devices. Together with the increasing ease of porting existing x86 applications, this makes Windows on Arm an attractive platform for developers. Arm has a Windows on Arm section on developer.arm.com to support developers during the porting process.

Arm-based Chromebooks offer the advantage of superb native app compatibility with Android apps. This means almost all Android apps already support Arm, providing developers with greater levels of performance and fluidity to save time and costs.

Benefits of Arm technology

- ✦ IP and solutions from a trusted technology company
- ✦ Laptop-class performance with best-in-class efficiency
- ✦ Enables new device features and innovative designs
- ✦ Established and growing ecosystem
- ✦ Designs built for a superior user experience

For more information on Arm's Cortex-A CPUs visit:
https://www.arm.com/products/silicon-ip-cpu

For more information on Arm's Cortex-X CPUs visit:
https://www.arm.com/products/cortex-x

For more information on Total Compute visit:
https://www.arm.com/why-arm/total-compute