

# Smart Everything From Silicon to Software





# Fueling the New Era of Smart Everything



Synopsys technology is at the heart of innovations that are changing the way we work and play. Autonomous vehicles. Artificial intelligence. The cloud. 5G. These breakthroughs are ushering in the era of Smart Everything—where devices are getting smarter, everything's connected, and everything must be secure.

Powering this new era of digital innovation are advanced silicon chips and exponentially growing amounts of software content—all working together, smartly and securely. Synopsys is at the forefront of Smart Everything with the world's most advanced technologies for chip design and verification, IP integration, and software security and quality testing. We help our customers innovate from silicon to software so they can deliver Smart Everything.

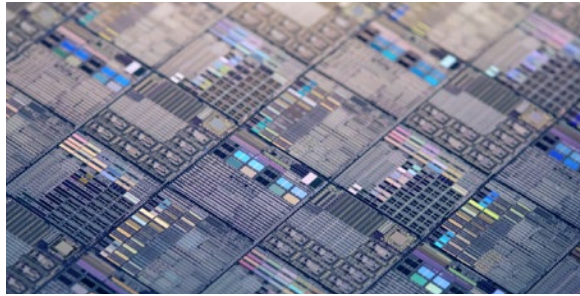




# It's All Powered by Silicon and Software

Emerging and rapidly evolving trends like autonomous vehicles, artificial intelligence (AI), the cloud, and 5G are transforming everything we know about mobility, connectivity, and security—from the way we consume and experience information to how we view data privacy and ensure our personal safety. These innovations are all possible because of complex silicon chips and powerful software code.





## Smart Everything Changes Everything

The future of Smart Everything depends on silicon chips running faster, scaling down to fit into smaller devices, integrating more capabilities, and processing massive amounts of data—all while consuming less power—reliably. A single chip the size of a nickel and no thicker than a fingernail can have 30 billion transistors across 100 different layers operating seamlessly. As complexity rises, companies also need chips customized for autonomous, AI, cloud, and 5G applications.

Advanced silicon chips with raw processing power have enabled a wave of software applications and data sharing never seen before. As the software supply chain changes, code quality is a growing concern. Using open-source code saves time and money, but it can introduce security vulnerabilities and flaws. More than 80% of cyber attacks occur on the application layer and open source can comprise up to 90% of a new application's code.

In any given device, billions of transistors and millions of lines of code must all work together, securely. As the interdependency between hardware and software grows—and with the rise of safety-critical applications—the full benefits of autonomous vehicles, AI, the cloud, and 5G can only be realized if security is designed-in from silicon to software.

To deliver Smart Everything, companies need to start software development earlier, in tandem with hardware design, to properly simulate how a device will work, to verify that the chip won't fail, and to ensure that the code can't be hacked. That's where we come in.



# From Silicon to Software is What We Do

Synopsys technology makes it possible for leading companies to build smarts, security, and safety into their next-generation products. From silicon to software, we help our customers meet new goals for power, speed, connectivity, mobility, and reliability that are critical to the future of Smart Everything.







## Build The Best Chips, Faster

Synopsys is the world's leading provider of solutions for designing and verifying advanced silicon chips, and for designing the next-generation processes and models required to manufacture those chips.

Our design technologies maximize productivity and ensure the best quality of results while optimizing chips for power, performance, and cost. Our verification technologies cut months off project schedules by enabling the verification of complex chips together with software, faster. We help customers find system-level bugs earlier and faster, bring-up software sooner, and validate their entire system.

## Integrate More Capabilities, Faster

Synopsys offers the world's broadest portfolio of silicon IP—pre-designed blocks of logic, memory, interfaces, analog, security, and embedded processors—to help our customers introduce more capabilities and reduce integration risk.

Our interface IP supports the most popular protocols like USB and HDMI. Our processor IP solutions include CPUs and DSP cores, subsystems, and development tools that enable customers to meet the performance and power requirements of their systems-on-chip. Our security IP such as hardware root of trust and cryptography IP helps prevent evolving threats in connected devices. And our IP Accelerated Initiative provides architecture design support, IP subsystems, signal/power integrity analysis, and more so customers can integrate IP that's tuned to their designs.

## Build Secure Software, Faster

Synopsys helps customers build security and quality into the DNA of their software code—at any stage of the software development lifecycle and across the supply chain—to minimize risks while maximizing speed of application development.

Our static analysis, software composition analysis, and dynamic analysis solutions allow customers to find and fix vulnerabilities and defects in proprietary code, open source components, and application behavior with unmatched depth, accuracy, and speed. We help companies test their software early and often, so they can avoid costly product crashes, security breaches, and catastrophic system failures. We also automate the process of securing and managing open source software to ensure license compliance, remediate vulnerabilities, and reduce operational risks.

## Discover more at [synopsys.com](https://synopsys.com)

Our commitment to making technology smarter and more secure, from silicon to software, is transforming the way companies design, manufacture, and market products—and it's transforming the end-user experience. Whether you're an automotive, mobile, financial, government, healthcare, aerospace-defense, or cloud company, we're ready to help you design the future of Smart Everything.

### About Us



**20,000+**  
EMPLOYEES

**35+**

YEARS IN  
BUSINESS



**\$5B+**  
ANNUAL  
REVENUE



**#1 EDA**  
TOOLS & SERVICES

**#1**

INTERFACE, ANALOG,  
EMBEDDED MEMORY  
AND PHYSICAL IP



**Gartner**  
2023 APPSEC  
TESTING LEADER