

Security and the Internet of Things (IoT)

Deliver a sustainable IoT security initiative that provides continuous and comprehensive security risk identification and mitigation

Overview

The Internet of Things (IoT) is transforming entire industries, creating tremendous benefits but also introducing new risks. The security risks surrounding IoT software and applications are snowballing as organizations rush to get devices to the marketplace or into use within the enterprise as soon as possible.

To ensure the safe and reliable operation of billions of IoT-connected devices, organizations must implement IoT security solutions.

With over 20 years as a leader in software security, Synopsys is uniquely positioned to adapt and apply software security best practices to your IoT development initiative, or to help you assess your risk exposure to IoT products within your business.

Why hackers are breaking into IoT devices

Many IoT devices are connected to otherwise secure networks (such as those at large businesses) without the organization fully understanding the scope of the security issue these devices create. This knowledge gap is dangerous because

- What makes IoT devices smart and able to interoperate with other devices is software.
- If the software on a device was not designed to be secure, it will contain vulnerabilities that attackers can exploit to gain access to the device.
- If attackers infiltrate a device, not only can they access data on that device, but they can also pivot to reach other connected targets on the network, including the back-end application server.

Same context, different rules

More and more industries are building IoT devices. But many organizations don't know how to make the software on those devices secure. Fortunately, the fundamentals of software security are the same no matter where the software lives. The experts at Synopsys know how to adapt these security fundamentals to the unique features of the IoT ecosystem to help you get up to speed quickly and achieve a greater maturity level.

Steps to a successful IoT security solution

Our goal is to help you deliver a sustainable IoT security initiative that provides continuous and comprehensive security risk identification and mitigation. We do this by empowering you to integrate security into every step of your SDLC.

- Educate your developers
- Implement penetration testing
- Perform threat modeling

We have the expertise, tools, and services you need to build security in

Our approach is grounded in the fundamentals of technology risk management, which include both tools and services.

- **Fuzz testing:** Tools such as Defensics® can uncover failures, crashes, and zero-day exploits in the software stack
- **Static application security testing:** Tools such as Coverity® can quickly scan and find vulnerabilities at code level
- **Design services:** Services include system architecture review and assessment, and process analysis and design
- **Testing services:** Services include critical security assessment, and hardware and embedded penetration testing
- **Training and custom security workshops:** Training includes interactive courseware to help development teams learn and implement best practices for securing code

Synopsys provides comprehensive solutions for IoT and embedded security, as well as industry experts that understand the constraints faced by organizations in industries including healthcare, financial services, automotive, energy, gaming, and more.

The Synopsys difference

Synopsys helps development teams build secure, high-quality software, minimizing risks while maximizing speed and productivity. Synopsys, a recognized leader in application security, provides static analysis, software composition analysis, and dynamic analysis solutions that enable teams to quickly find and fix vulnerabilities and defects in proprietary code, open source components, and application behavior.

For more information about the Synopsys Software Integrity Group, visit us online at www.synopsys.com/software.

Synopsys, Inc.
690 E Middlefield Road
Mountain View, CA 94043 USA

U.S. Sales: 800.873.8193
International Sales: +1 415.321.5237
Email: sig-info@synopsys.com

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