

Kaspersky Cyber Immunity®

A key element of secure
next-generation
IT systems



Today's hyper-connected world calls for a rethinking of cybersecurity. This is why Kaspersky has spent several years developing the methodology to create Cyber Immune IT products – with 'innate' protection against cyberthreats.

Why it matters

With each year, the cyberthreat landscape becomes more complex and the capabilities of the attackers improve. Industrial plants, the energy sector, transport infrastructure, and smart city IT systems are all under attack. Conventional approaches to the security of IT systems are ineffective in these circumstances, which is why there is increasing demand for a new way to enhance IT security.

Solution

As a response to the challenges of today and tomorrow, Kaspersky created a fundamentally new approach to creating IT solutions – Kaspersky Cyber Immunity® – and developed its own KasperskyOS operating system, a platform for building Cyber Immune products.

Kaspersky Cyber Immunity can be achieved by using KasperskyOS and following a specific development methodology. To develop a Cyber Immune solution:

- clearly define the security objectives (for example, data confidentiality) and the conditions in which the system will operate;
- separate the solution into isolated security domains, taking into account the functionality and level of trust in each of them;
- control the information flows between these domains, allowing only specified types of interactions.

KasperskyOS provides the interfaces, mechanisms and tools necessary for developing Cyber Immune solutions, including isolating the security domains and controlling the interactions between them.

Areas of application

Kaspersky Cyber Immunity is especially beneficial for industries where IT systems are subject to higher cybersecurity, reliability and predictability requirements, such as manufacturing, the energy sector, transport infrastructure and smart city systems.

We use this approach to create secure-by-design Cyber Immune products: secure gateways, thin clients, mobile platform solutions, secure automotive gateways, etc.

About KasperskyOS

Our microkernel KasperskyOS is the first operating system that supports development of Cyber Immune IT products. It was developed in accordance with proven and extensively documented concepts, with the addition of Kaspersky's own security technologies.

KasperskyOS components are divided into isolated security domains that cannot interact directly with each other. All their interactions go through the microkernel and are checked by the Kaspersky Security System subsystem, which issues security verdicts to each of them. Any action not explicitly permitted by the security policy will be blocked before it is performed.

This means untrusted components with no Cyber Immunity can also be used when developing on KasperskyOS. Even if an untrusted component is compromised, the attacker will be unable to escalate the attack and affect the functioning of the system.

Advantages

Minimization of cyber-risks

The overwhelming majority of attack types are ineffective against a Cyber Immune system and are unable to impact its critical functions. Cyber Immune products are virtually impossible to compromise under ordinary conditions. They minimize the number of potential vulnerabilities.

Reduced costs of purchasing and operating additional IT security products

The Cyber Immune approach as well as the distinctive architecture of KasperskyOS make it possible to create IT products that have built-in protection against most types of cyberattacks. Cyber Immune solutions do not need additional security features — the system already includes all the necessary features.

Reduced cost of developing and supporting secure IT solutions

Even if untrusted third-party code is used, Kaspersky Cyber Immunity delivers a high level of security for the solution. It can cost less to develop a Cyber Immune solution than a similarly security-focused project using special-purpose operating systems of earlier generations.

Flexible configuration to meet individual functionality and security requirements

KasperskyOS-based Cyber Immune IT systems can be flexibly configured by creating security policies for each specific task.

What else?

Cyber Immune IT systems are bringing a more secure and resilient digital world closer, a world where Kaspersky Cyber Immunity is the new norm. And we continue to build strategic technological partnerships based on the Cyber Immune approach.

We have created a paradigm shift in the world of IT, forming a new market of next-generation KasperskyOS-based products with a unique feature — Cyber Immunity — that is recognized all over the world.

More information about Kaspersky Cyber Immunity is available at os.kaspersky.com