IEC 62443 certified IGLOS Secure Beacon on Syslogic Railway Computers

Cybersecurity has become a core design principle from the start of product development. The **EU Cyber Resilience Act and IEC 62443** are reshaping how systems are built, tested and maintained.

Open-source Linux ecosystems have earned trust as a transparent, feature-rich foundation powering countless commercial products, enabling early detection of security issues, with the open-source community delivering rapid, high-quality solutions.

Open-source alone does not guarantee the vulnerability management and compliance rigor regulated markets demand. That is where companies like **Linutronix** step in to offer enterprise-grade support, proactive vulnerability management and tailored adaptions of open-source software to meet both product-specific needs and security compliance.

Certified IGLOS Secure Beacon

Known as driving force of PREEMPT-RT, Linutronix was involved in addressing security issues such as Spectre and maintains numerous board support packages for industrial devices. To showcase its expertise in regulated environments, Linutronix developed **IGLOS Secure Beacon**, with a purposefully simple web-based LED control, but coming with a complete set of state-of-the-art security features.

This includes a full **secure boot chain, a nftables firewall, audit logging, secure software update** and many more. It is based on Debian and utilizes systemd and network-manager for service and network control. With this, IGLOS Secure Beacon serves as blueprint for companies seeking a **stable, secure, and adaptable base** for their product. The solution is backed by an **IEC 62443-4-2** certificate, providing assurance that it's security is independently verified.

Syslogic Railway Computer RML-R10

IGLOS on Syslogic Embedded Systems

Linutronix has partnered with **Syslogic**, a specialist in robust and durable embedded computers, to port IGLOS Secure Beacon from an ARM-based device to an x86-64 embedded system.

Following some platform-specific adaptations — primarily in the early stages of the secure boot chain — **IGLOS Secure Beacon now runs on a Syslogic RML10 Series Railway Computer**. In this setup, IGLOS serves as a hardened host system that forms the foundation for security-critical applications. This highlights both the versatility of IGLOS and the suitability of Syslogic's industrial computers for demanding environments with the highest security requirements.

How to use in your application?

Ultimately, hardware and the operating system alone don't define product success. True value comes from the unique functionality of the application. By **collaborating closely on customer-specific adaptions**, Linutronix and Syslogic make sure that the foundation is tailored to your specific requirements. This spans everything from specific hardware features and Linux kernel adaptions to application optimization and deployment, for example with containerization or virtualization.

Established open-source solutions such as Podman, Jailhouse or Xen provide a proven foundation for these needs. Together, we empower you to focus on what matters most: Delivering innovative applications built on a hardened, security-certified foundation, ensuring compliance, resilience and trust for your customers.

IEC 62443-4-2 certified IGLOS Secure Beacon runs on Syslogic Industrial Computers