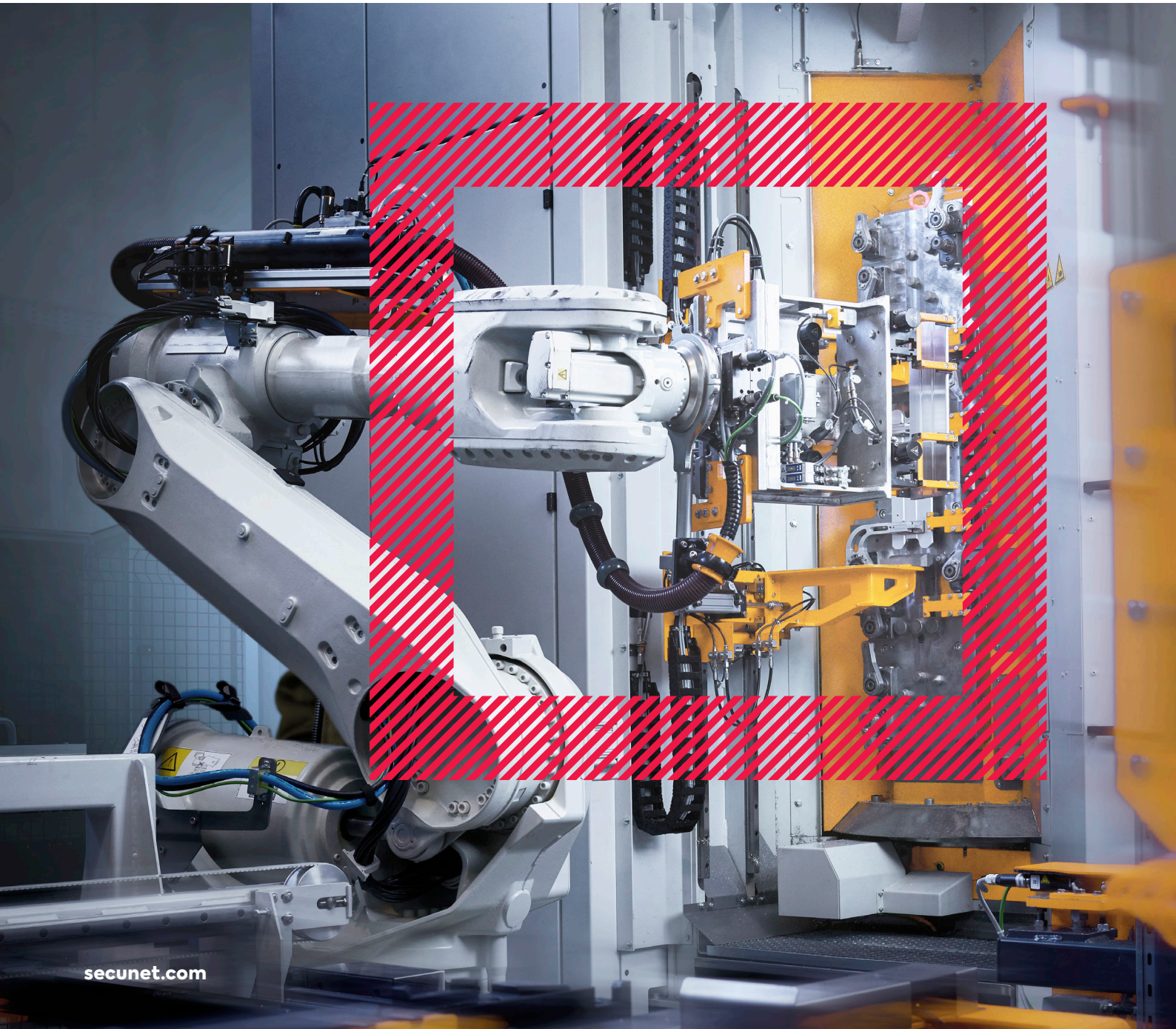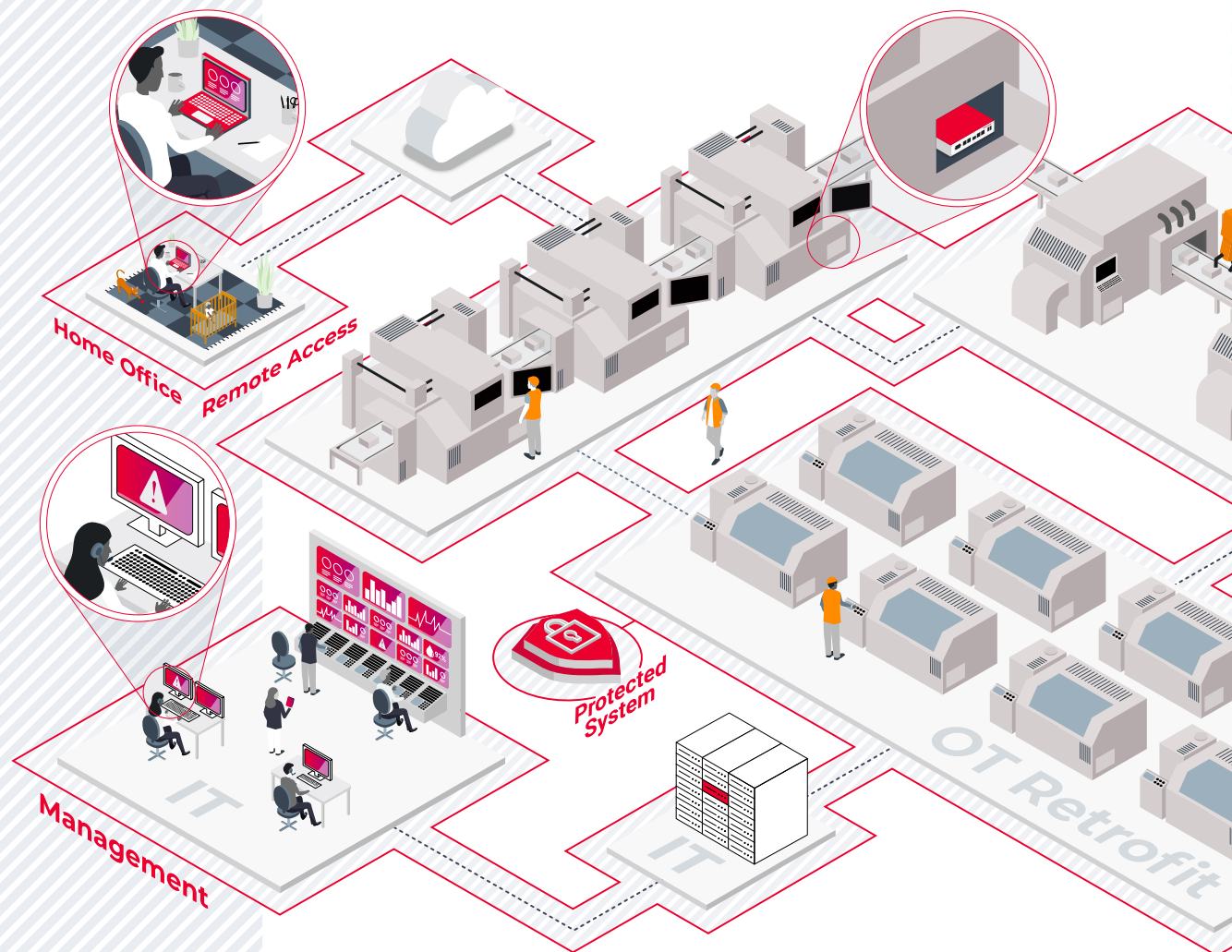# Rethinking production security

Connect. Protect. Compute. Managed.

IIoT & machine security

Convergence of IT with OT. New security mechanisms are required as formerly separate worlds are now merging.

Sample application in the production environment

Shielding, monitoring, remote access, application platform and much more for industrial production.

Your advantages at a glance

Highly secure connectivity
- Secure, controlled and flexible integration of the machine into the network
- Regulated access to the machine and network
- Secure integration into IoT platforms without permanently having to unlock networks

On-the-fly protocol translation in stealth mode (excerpt)
- SMBv3 <–> SMBv1, SMBv2
- sftp/ftps <–> smb/ftp
- ssh <–> telnet

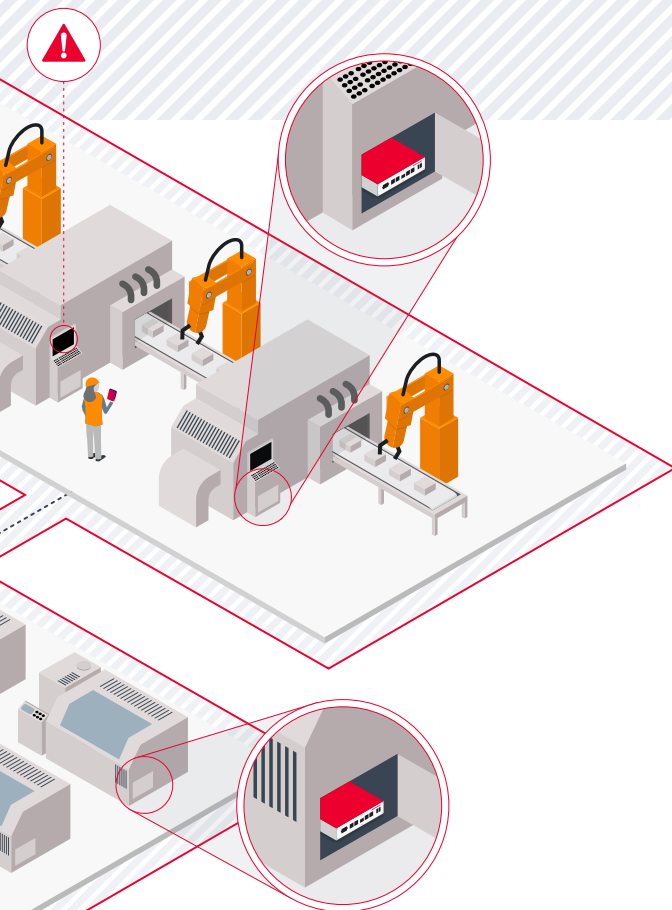### Stealth factory approach or micro segmentation
- **Stealth mode firewall:** The machine to be protected is invisible in the network
- **IP Firewall Mode:** Segmentation of the network

Open, hardened container environment
- APIs for interaction with integrated secunet edge firmware
- Integration of own containers
- Compatible with the most important IoT platforms
- **Future-proof and investment-proof:** modularly expandable for additional applications
- Flexible implementation of your own business models

Management using a central management platform
- Connecting the edges to a central management application
- Create initial configuration in advance for easy commissioning (without DHCP support)
- Scheduled updates and configuration changes
- Local configuration backup for a fast replacement of selected edges

Enabling the connected factory with secunet edge

Sensors, systems and applications: a modern factory is a connected factory. However, many machines are not state of the art and can therefore become a gateway for cyber attacks.

secunet edge isolates machines from the network (**Protect**) and ensures secure communication between facilities (**Connect**), within production networks and the secure connection (Connectivity) of systems to structures or to cloud and IoT services. Companies can also use secunet edge to flexibly integrate its older machines into the network via a retrofit (**Compute**). In a Central Management Application – CMA (**Managed**), several devices can be managed and monitored simultaneously.

secunet edge – 4 in 1 Connect. Protect. Compute. Managed.

Four solutions in one system
The increasing connectivity of even older machines demands comprehensive protection against external influences while simultaneously enabling enhanced connectivity. secunet edge meets this seemingly paradoxical challenge head-on. Acting like a protective shield, secunet edge envelops the machine, decoupling its lifecycle from that of the IT environment. This ensures IT and OT security without side effects or any impact on machines, systems or production processes.
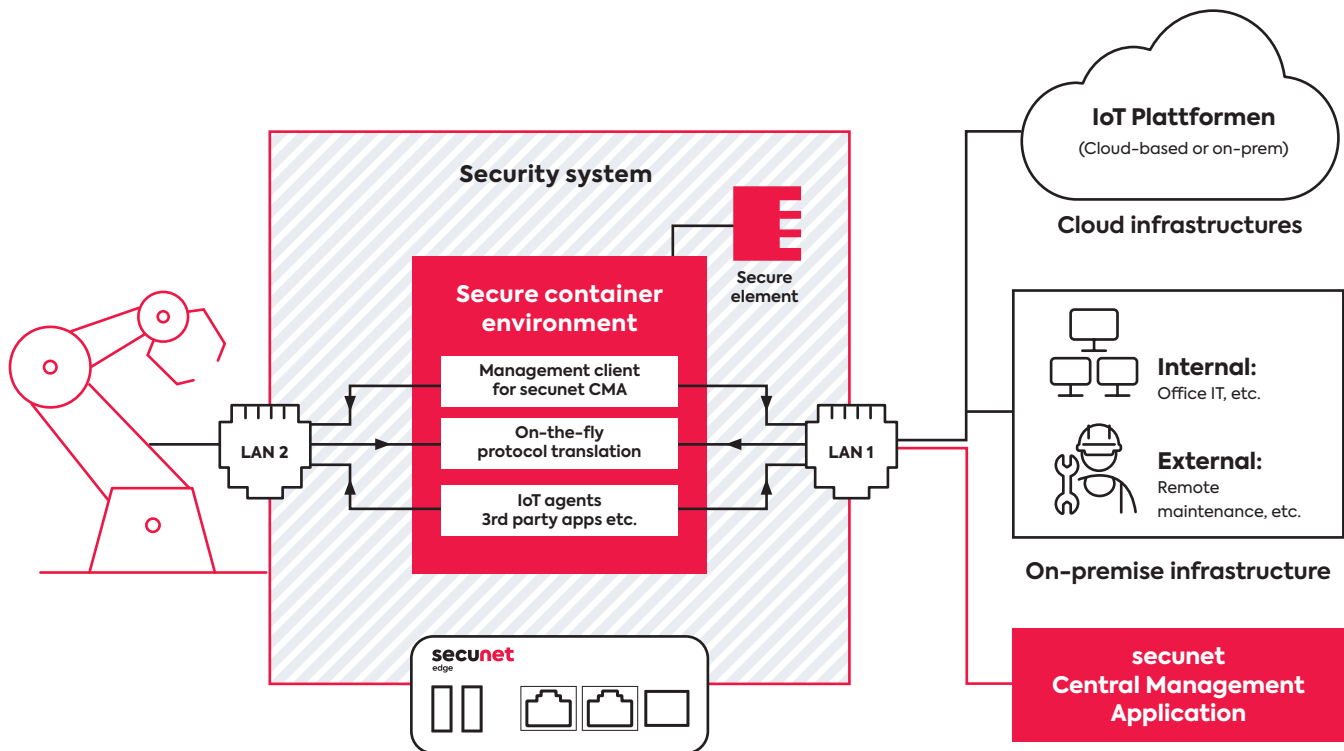
IT/OT security

Connect.
Secure connectivity: Connection to internal and external services.

Ensuring secure communication of facilities with the corporate network and within production networks, as well as securing the basic connectivity of systems to structures, processes, cloud and IoT services.

Security system

Secure container environment

- Management client for secunet CMA
- On-the-fly protocol translation
- IoT agents 3rd party apps etc.

Secure element

LAN 2

LAN 1

secunet edge

IoT Plattformen
(Cloud-based or on-prem)

Cloud infrastructures

Internal: Office IT, etc.

External: Remote maintenance, etc.

On-premise infrastructure

secunet Central Management Application

Multi-functional

Flexible and modular
- Designed for OT and machine-level use
- Flexible for individual customer requirements
- Easy to integrate into corporate structures
- Local analysis and pre-processing of machine-generated data

Easy and secure integration of machines
- Secure, controlled and flexible integration of machines into networks
- Communication to and from the machines can be controlled
- Bridging the gap between legacy machines and state-of-the-art IT infrastructure
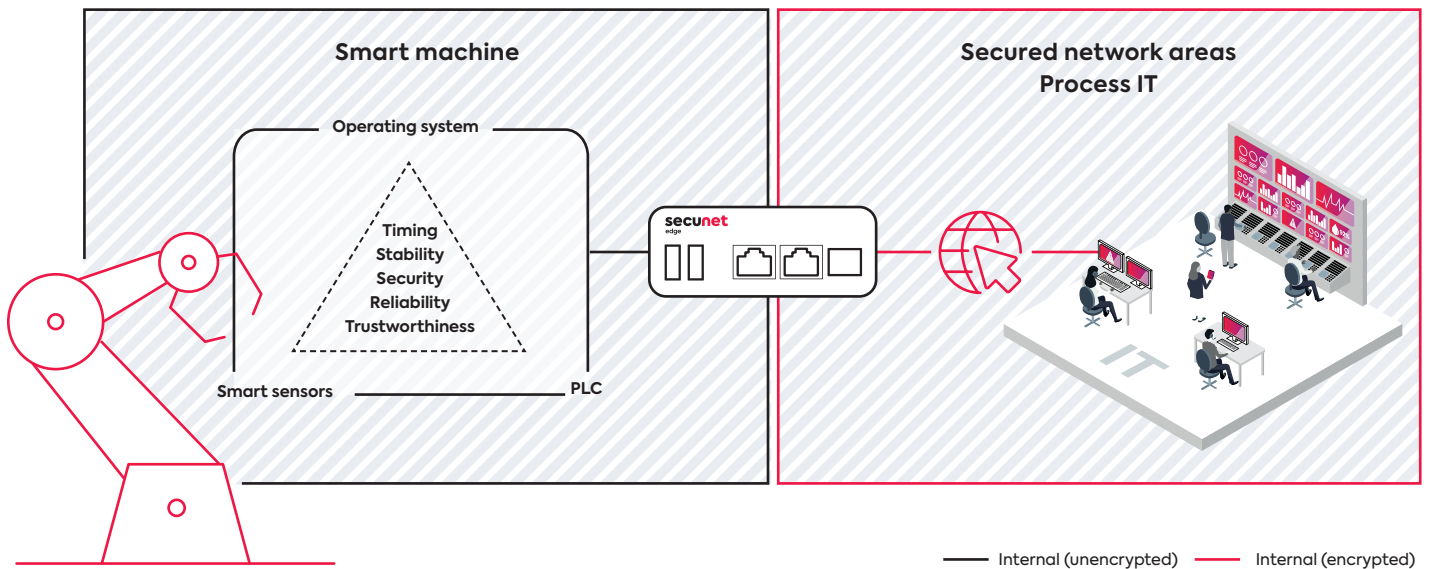
Network security

🔒 **Protect.**
Protection for machines and networks.

Machines are insulated from the network. Data flows are controlled between defined segments, aligned with the protection requirements of the zones.

Smart machine

Operating system

Timing
Stability
Security
Reliability
Trustworthiness

Smart sensors ——— PLC

secunet edge

**Secured network areas
Process IT**

IT

—— Internal (unencrypted)   —— Internal (encrypted)

Secure Edge Platform
Security
- Trusted Platform Modul (TPM)
- Industrial firewall also for app containers
- Patented on-the-fly protocol translation

Stealth factory approach or micro segmentation
- **Stealth mode firewall:** Machines are protected by an invisible firewall
- **IP firewall mode:** Insulation of a machine through fine-grained network segmentation and on-the-fly protocol translation

100% security made in Germany
- Hardened and minimized Linux operating system

secunet security applications as containers
- Data Gateway - Secure processing and encrypted transfer of information
- Secure transfer of user data from the machine to backend or external services
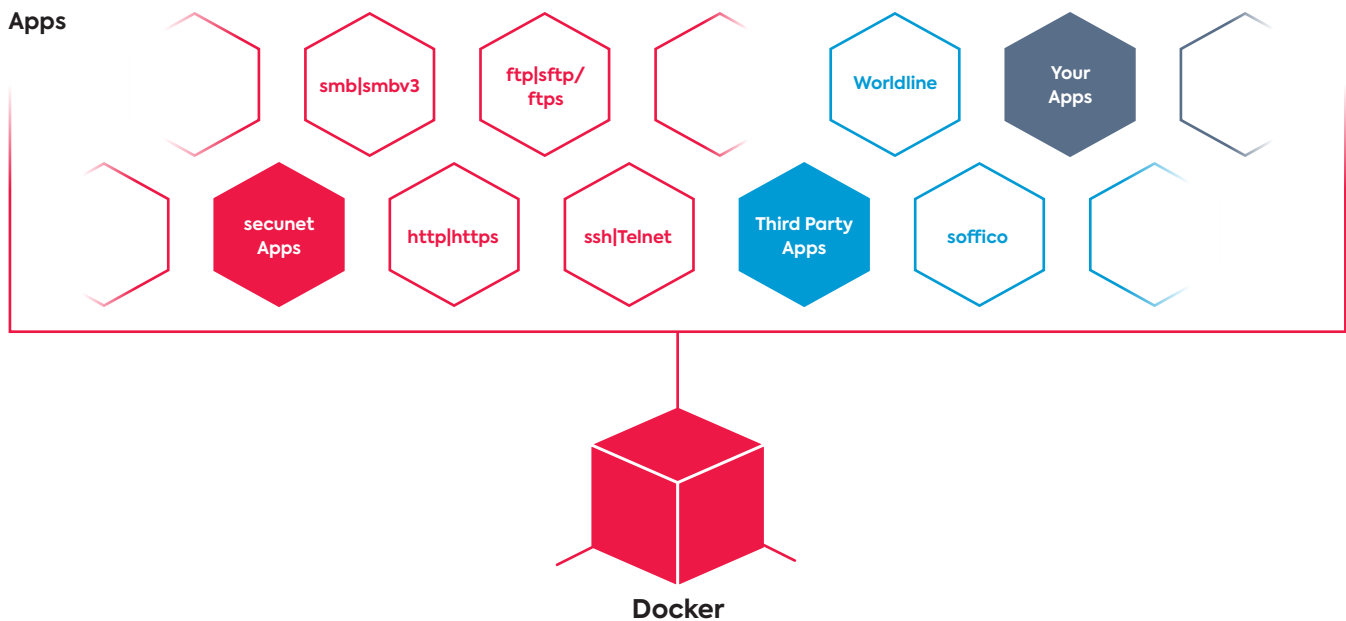- Protocol translation: from non-secure to secure and vice versa

Flexibility and future-proofing

Compute.

High-performance and secure edge computing platform based on flexible container environment.

With the integrated container runtime, secured by a hardened operating system, individual applications and containers — including your own — can be easily installed and operated.

Apps

- smb|smbv3
- ftp|sftp/ftps
- Worldline
- Your Apps
- secunet Apps
- http|https
- ssh|Telnet
- Third Party Apps
- soffico

Docker

Edge computing

- ■ OCI compliant container environment

Partners and customers

- ■ Designed for app container development
- ■ APIs for easy interaction
- ■ Compatible with the most important IoT platforms

Containers provided by secunet

- ■ SFTP/FTPS   <->   FTP
- ■ SMBv3   <->   SMBv1, SMBv2
- ■ ssh   <->   Telnet
- ■ https   <->   http/https
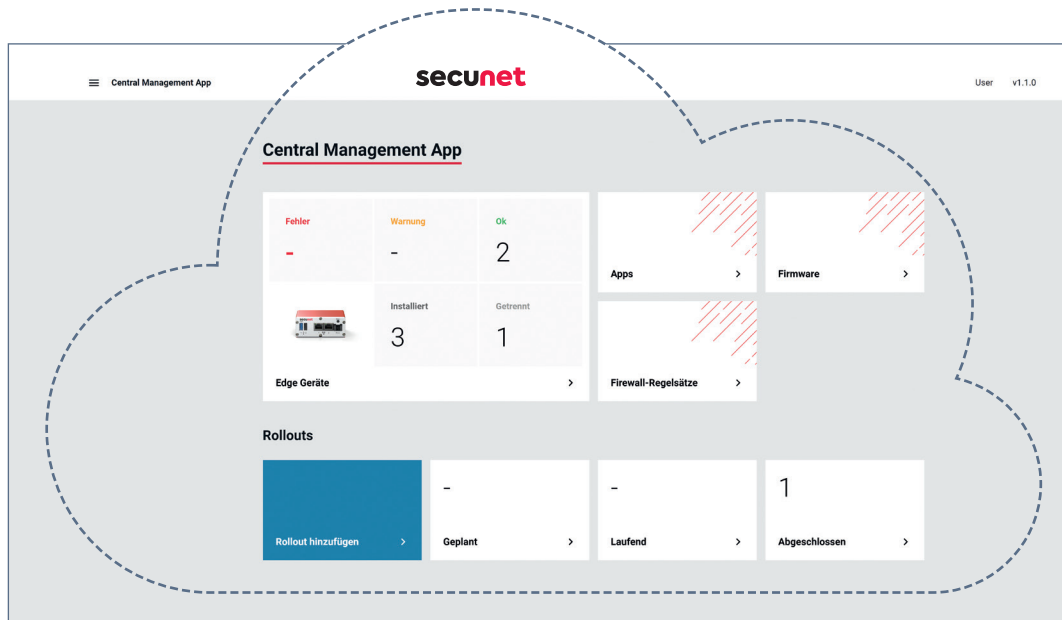
<-> = translation in both directions

Easy operation with centralized management

Managed.
Configuration and management of all important settings using a central management application.

The central management application, running on a modern Kubernetes infrastructure, enables the configuration of network settings, applications such as firewalls and protocol translation.

Specific functions for OT
- Adjustable time windows for updates/patches and configuration changes
- Provisioning via prepared USB sticks
- Configuration backup on protected USB drive – easy and fast exchange of secunet edge appliances

Management features
- Monitoring of secunet edge appliances
- Configuration of secunet edge appliances (firewall, applications, network configuration)
- Creation of provisioning sticks with network configuration, CMA connection for rollout
- Storage of the configurations of all secunet edge appliances centralized in the CMA
- Planning of content and time windows for updates
- Secure user management (different user profiles)

Installation
- On-prem (also air-gapped)
- Cloud installations possible
- Based on Kubernetes

Secure management
- Secure connection of the secunet edge appliances to the management
- Secure authentication
- Different authorizations (role concepts)

secunet – protecting digital infrastructures

secunet is Germany's leading cybersecurity company. In an increasingly connected world, the company's combination of products and consulting assures resilient digital infrastructures and the utmost protection for data, applications and digital identities. secunet specializes in areas with unique security requirements – such as cloud, IIoT, eGovernment and eHealth. With security solutions from secunet, companies can maintain the highest security standards in digitisation projects and advance their digital transformation.

Over 1,000 experts strengthen the digital sovereignty of governments, businesses and society. secunet's customers include federal ministries, more than 20 DAX-listed corporations as well as other national and international organisations. The company was established in 1997, is listed at the German Stock Exchange and generated revenues of approximately 407 million euros in 2024 (preliminary business results as at January 27th, 2025).

secunet is an IT security partner to the Federal Republic of Germany and a partner of the German Alliance for Cyber Security.

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