

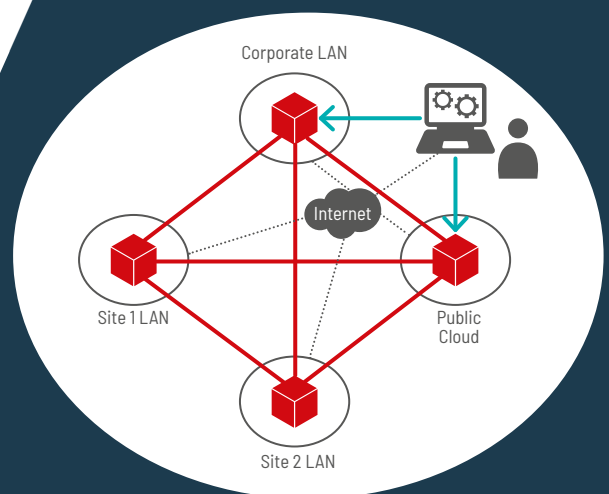
SwarmGuard Industrial

Secure infrastructure access
and network connectivity

Connect your devices easily with a secure overlay network

SwarmGuard redefines industrial networking by **combining remote access with an overlay device network** – the swarm. SwarmGuard builds secure communication links between remote users and industrial devices, as well as among devices themselves. Additionally, SwarmGuard introduces a **hassle-free device onboarding and management** experience that is unparalleled in the industry.

Our solution includes a **lightweight agent software** for your industrial devices, a **user-friendly mobile app** for network setup and monitoring, and a **managed controller** coordinating network management tasks.



SwarmGuard
INDUSTRIAL



Overlay Device
Network



Remote Access

Why SwarmGuard?

- **Access anything from anywhere:**
Securely connect your devices, servers, or networks from any location and access your infrastructure from anywhere even if your infrastructure is behind NAT or firewall barriers.
- **Easy setup:**
Onboarding devices is as easy as scanning their QR code with our mobile app. SwarmGuard automatically handles all the intricate tasks such as spanning the overlay network, distributing access rights, etc.
- **High security standards:**
Your data is safeguarded with cutting-edge cryptographic algorithms and SwarmGuard's unique key distribution method. Only authorized devices are permitted to join your overlay network. Furthermore, your end-to-end encrypted data traffic is routed directly between your devices, bypassing any cloud infrastructure.
- **Swiss excellence.**
As a Swiss-based company, we operate under one of the world's most stringent privacy legislations. Benefit from exceptional quality, unparalleled stability, and utmost discretion.

INALP

Key features



Craft your own swarm:

Assemble up to 64 devices linked in a secure overlay network with direct peer-to-peer communication among all parties. Set up devices effortlessly and enjoy the simplest system available on the market, ensuring swift deployment and hassle-free operation.



Remote access and management:

Employ our SwarmKeeper service to access and manage your devices remotely from anywhere in the world.



Cloud-independent access gateway:

By converting any of your devices into a SwarmKeeper gateway you retain control over your infrastructure, avoiding a centralized cloud solution.



Redundant access gateways:

Convert multiple devices into SwarmKeeper gateways to establish a redundant access network for your swarm. Distribute these gateways globally for enhanced reliability when needed.



Secure and asynchronous key exchange:

SwarmGuard securely distributes essential public keys to every device within your overlay network.



Connect from anywhere:

Say goodbye to the limitations of static public IP addresses, typically required to gain access to your devices. SwarmGuard-enabled devices can be attached to private networks and find each other despite firewalls and NATs.



Scales with your requirements:

Customize the swarm to fit your needs by adding devices to your overlay network at any time. Adjust SwarmKeeper gateways as your need for reliability expands.



Incorporate current devices:

Integrate your existing devices to your swarm without requiring extra gateway hardware. Simply install our SwarmGuard agent on your devices and scan their QR code to connect them to your overlay network.

Industries

- Internet of Things (IoT)
- Building Automation
- Smart City
- Industry Automation
- Smart Energy



SwarmGuard
INDUSTRIAL

Security

- **Key Distribution:**

Ensuring secure connections within the swarm requires each device to possess the public key of all communication counterparts. Addressing this challenge, we developed DRAKE (Distributed, Reliable, Asynchronous Key-Exchange), a patent-pending solution that securely deploys the devices' public keys with the help of a mobile app. This method guarantees that no third party, including ourselves, can infiltrate your swarm and access sensitive data.

- **WireGuard® Security Protocol:**

SwarmGuard leverages WireGuard¹, renowned as one of today's most secure VPN protocols. This fast and reliable protocol ensures robust end-to-end encryption, safeguarding the network from interception by malicious actors.

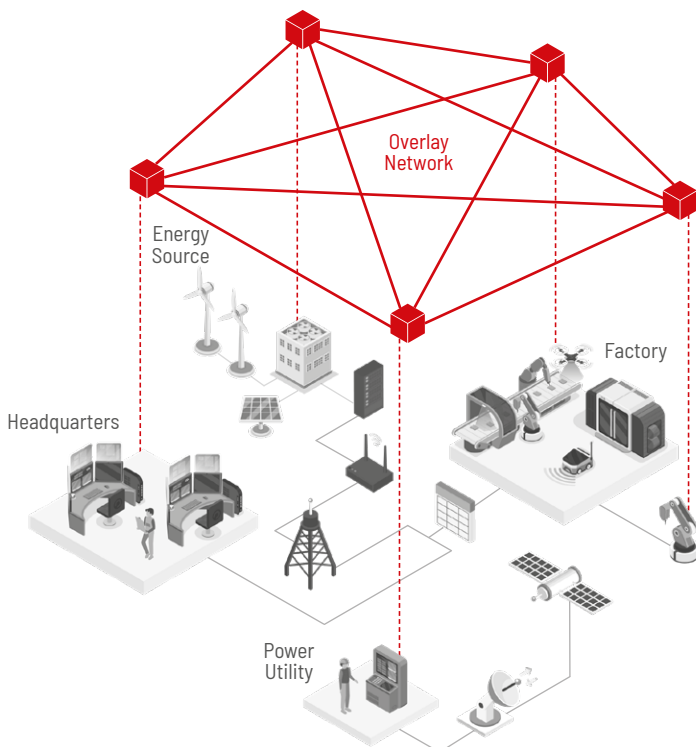
- **Multilevel Security:**

Your swarm is safeguarded against potential threats from malicious attackers through multiple layers of protection. Our entire solution is meticulously engineered with security at its core; WireGuard and DRAKE are just two of many cornerstones. By design, a single successful attack to one part of the system is never enough to breach the defenses of your swarm. We go to great lengths to ensure the security of your private network, even protecting it from ourselves. Rest assured that your data remains protected and private.

Overlay Device Network



Effortlessly connect your industrial facilities with SwarmGuard's secure overlay network. Whether your sites are scattered across the globe, our solution ensures seamless communication, centralized management, and enhanced control.



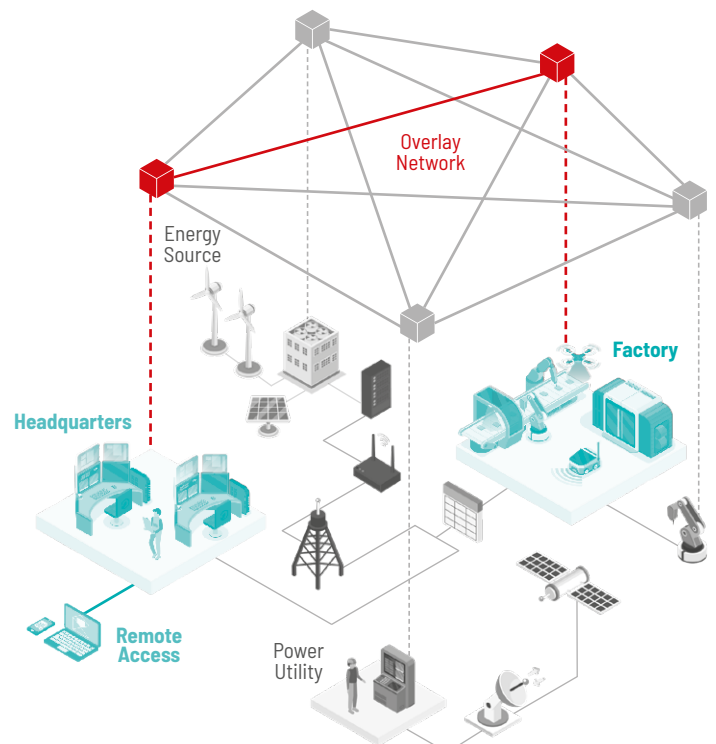
Remote Access



Our Remote Access solution for secure industrial networking enables you to monitor, maintain, and troubleshoot your systems securely from anywhere. Centered around the reliable SwarmKeeper gateway, you gain secure and redundant connections to your distributed industrial devices, putting you in control without external servers.

Access Made Easy: Our SwarmKeeper gateways offer versatile access options.

- **Web-proxy²:** Safely access your devices through a web or REST interface for users and mobile apps.
- **SSH-proxy²:** Enjoy secure command-line access for technical personnel.
- **Layer-4 Gateway:** Communicate securely with support for various protocols.
- **Direct link²:** Establish direct, secure channels between a remote maintenance console and your industrial devices³.



¹ WireGuard is a registered trademark of Jason A. Donenfeld.

² Roadmap feature

³ Compatibility restrictions apply.

Offered Solution

The SwarmGuard solution integrates three core elements:

1. Agent software for industrial devices:

A lightweight binary (swarmd) suitable for various industrial infrastructures:

Supported operating systems	Linux, Windows, Mac OS ⁴
Compatible CPUs	ARM64, ARMv7, AMD64, MIPS64, MIPS ⁴
Disk space requirement	25 MB
Platform	Runs as native OS application or within containers on platforms like Docker, Kubernetes, etc.

COMPATIBILITY

swarmd - SwarmGuard Daemon			
Kubernetes			
Docker	dpkg/opkg/apk		
Linux	Mac	Win	

2. Mobile Application:

Our SwarmGuard Industrial app features an intuitive user interface for network setup, configuration, and monitoring. Available for iOS on the Apple App Store and for Android on Google's Play Store.

3. Controller:

Typically managed by Inalp, the controller coordinates network management tasks, received from the mobile app and propagated to devices running the agent software.

All components offer rebranding (OEM) and on-premise hosting options.

⁴ Ask for more



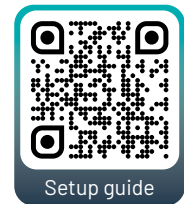
Simplicity is the key

To demonstrate the simplicity of setting up your industrial swarm network, here are the necessary steps:

1. **Sign up** at <https://swarmguard.io/sign-up> and request a sign-up code at support@inalp.com
2. **Download** the SwarmGuard Industrial mobile app from the Google Play Store or Apple App Store.
3. **Install** the SwarmGuard agent (swarmd) on your device or use a device already equipped with SwarmGuard preinstalled.
4. **Register** your first device with the overlay network by scanning the QR code on the device (or printed by swarmd) with the mobile app.
5. **Expand** your network by adding more devices. SwarmGuard will automatically create secure links between all your registered devices.
6. **Optionally**, include one or more redundant SwarmKeeper access gateways for remote access.

For detailed step-by-step instructions, refer to the **Installation Guide:**

swarmguard.com/industrial/setup



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