



For standard deployments, ACE IoT uses an x86 processor-powered industrial PC with dual ethernet connectivity as our gateway — SkyHook.

SkyHook has the following design specifications:



CPU	Intel Celeron J4125 2.0 - 2.7GHz Quad Core 4 Cores / 4 Threads 10W TDP, 4MB L2 Cache, 64-bit
Memory	8GB x 204-pin DDR3L SODIMM
Storage	256GB mSATA SSD
Connectivity	2x Intel i211-AT GbE 10/100/1000 Intel Wireless 802.11 b/g/n/ac (Optional Addon) Bluetooth 4.0 (Optional Addon)
Expansion Slots	LTE capable Mini PCI-E Slot
Physical Interfaces	2x RJ45 Ethernet 1x RS232/422/485 4x USB 3.0 1x 12V Locking DC-IN
Case Dimensions	116mm x 110mm x 49mm 4.6" x 4.3" x 1.9"
Mounting	Wall/VESA/DIN Rail Bracket

SOFTWARE

All software is running on Ubuntu 20.04 LTS as the operating system, with regular patches and updates applied remotely. System images are hardened in accordance with CIS Benchmark Guidelines.

SkyHook ships with the following network configuration:

Network security is provided by:

- HTTPS TLS 1.3 security for provisioning and control
- Zero-Trust overlay network, provided using Tailscale software which is based on Wireguard. The VPN overlay enforces a zero trust, deny-by-default, encrypted, point-to-point communications between the edge computer and the cloud infrastructure. All data are encrypted with the Noise protocol. (additional reading here: <https://www.wireguard.com/protocol/>)
- Outbound NAT traversal compatible with most firewall infrastructures, occasionally granular rules are required to allow outbound-only access for edge-to-cloud communications.

Network traffic from the edge computer is protected within a secure overlay network. To establish the overlay, the ACE IoT SkyHook:

- Uses an outbound (HTTPS TLS 1.3 protected) connection to a coordination server.
- Deposits its public key and its public IP address with the coordination server.
- Polls the coordination server for the public key, the public IP addresses for the monitoring, and the data processing servers.
- Accesses the monitoring and data processing servers, using the overlay protected by the ephemeral public keys.

