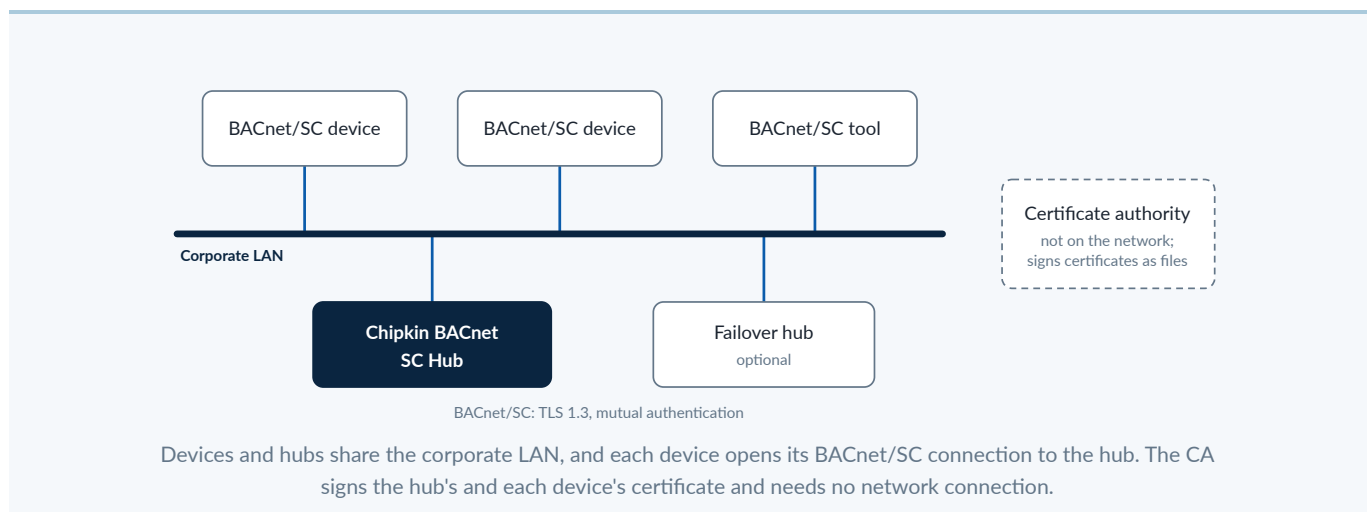


Chipkin BACnet SC Hub

DESCRIPTION

The Chipkin BACnet SC Hub is a BACnet Secure Connect (BACnet/SC) hub for Windows and Linux. It implements the BACnet/SC Hub (B-SCHUB) device profile and relays BACnet traffic between the BACnet/SC devices on your network.

On a BACnet/SC network, each device opens a Transport Layer Security (TLS) 1.3 WebSocket connection to the hub, and the hub relays traffic between the devices. The hub and every device present a certificate signed by a certificate authority (CA) the site trusts.



FEATURES

- **All BACnet traffic is encrypted.** Every connection uses TLS 1.3 with mutual certificate authentication.
- **Certificates signed by your CA.** The hub makes its own private key and certificate request, and your CA signs it. Signing authority stays with your CA.
- **Remote certificate management.** Replace the hub's certificate or add a second trusted issuer over BACnet. Each new certificate is checked before it is used. One that fails is refused, and the hub keeps its current certificates.
- **Simple configuration.** Configure the hub with a configuration file, command-line options, or an interactive set-up guide in your browser.
- **Live connection diagnostics.** The set-up guide shows why a device's connection attempt failed and what to change.

AT A GLANCE

Device profile	BACnet/SC Hub (B-SCHUB)
Protocol revision	30
Transport	TLS 1.3 WebSocket
Platforms	Windows 11, Linux x64
Certificate files	CAR format (Annex AA.2)
Runs as	Console or Windows service

SECURITY

- TLS 1.3 with mutual certificate authentication; WebSocket subprotocol `hub.bsc.bacnet.org`.
- Certificate files in the Certificate Authority Requirements Interchange (CARI) format (ANSI/ASHRAE Standard 135-2024, Annex AA.2). Works with the Chipkin BACnet SC Certificate Authority or any CARI-compatible CA.
- Certificate management over BACnet (clause 19.8.3): replace the hub's certificate or add a second trusted issuer remotely. New certificates are validated before they are used.
- Optional certificate revocation lists (CRLs). Revoked devices are refused without restarting the hub, and checking fails closed.
- Connection rate limiting per source address and in total, applied before the TLS handshake.
- Audit trail in the log: each connection and disconnection, with the device's address, certificate subject, virtual MAC address (VMAC), and device UUID.

OPERATIONS

- Status page with a health checklist. Each check reports pass, warning, or fail, with what to do next.
- `/health` (working or degraded) and `/metrics` (counters) over HTTP or HTTPS, for monitoring tools. Bound to 127.0.0.1 by default.
- Optional hub connector out to another BACnet/SC hub, with a failover hub address.
- Rotating log files, a configuration file, and a per-site device name and network number.
- Windows installer (code-signed), Debian or Ubuntu package, and Linux archive, with SHA-256 checksums for every download.
- Software bill of materials (CycloneDX) with every release. Security fixes for five years from each major version's first release.

SPECIFICATIONS

BACnet device profile	BACnet/SC Hub (B-SCHUB), ANSI/ASHRAE Standard 135-2024, Annex L
BIBBs	NM-SCH-B, DS-RP-B, DS-RPM-B, DM-DDB-B, DM-DOB-B, DM-DCC-B
Protocol revision	30
Data link	BACnet/SC (Annex AB) hub function, with an optional hub connector and failover hub address
Services executed	ReadProperty, ReadPropertyMultiple, Who-Is, Who-Has, DeviceCommunicationControl, AtomicReadFile, AtomicWriteFile, WriteProperty (certificate procedures only), ReinitializeDevice
Objects	Device, Analog Input, Network Port, File (4 certificate files)

SYSTEM REQUIREMENTS

Operating system	Windows 11 or later (x64), or Linux x64 with the C library (glibc) of the current Ubuntu LTS release or newer
Network	TCP port 4443 open inbound for BACnet/SC devices. TCP port 8080 for the status page and set-up guide, on this computer only by default. Both ports can be changed.
Certificate authority	A CA that signs CARI requests, such as the Chipkin BACnet SC Certificate Authority (CAS-1000-22)
Web browser	A current web browser, for the status page and the set-up guide

SALES AND CUSTOMER SERVICE

Chipkin is proud to provide support for our products. For technical support, sales, and customer service, please [contact us](#).

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