UniCLOUD

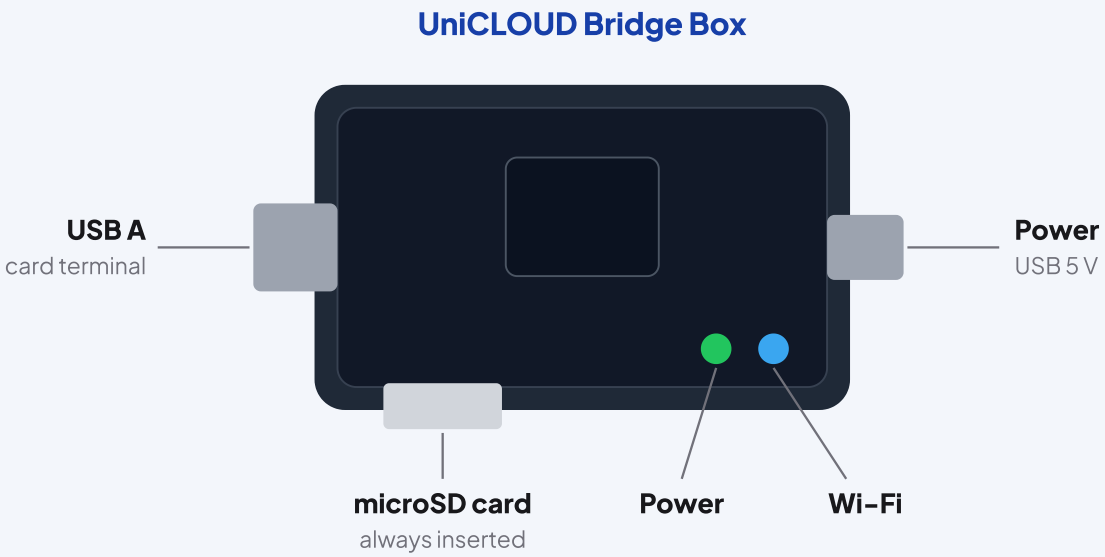
How to connect the Bridge Box

What's in the box, where to place it, how to check that it works, and how to fix common problems.

THE BOX

What the Bridge Box does

The Bridge Box sits in the shop, on the same network as the registers. It reads the registers' reports, sends them to UniCLOUD, and carries programming changes and online orders back to the registers.

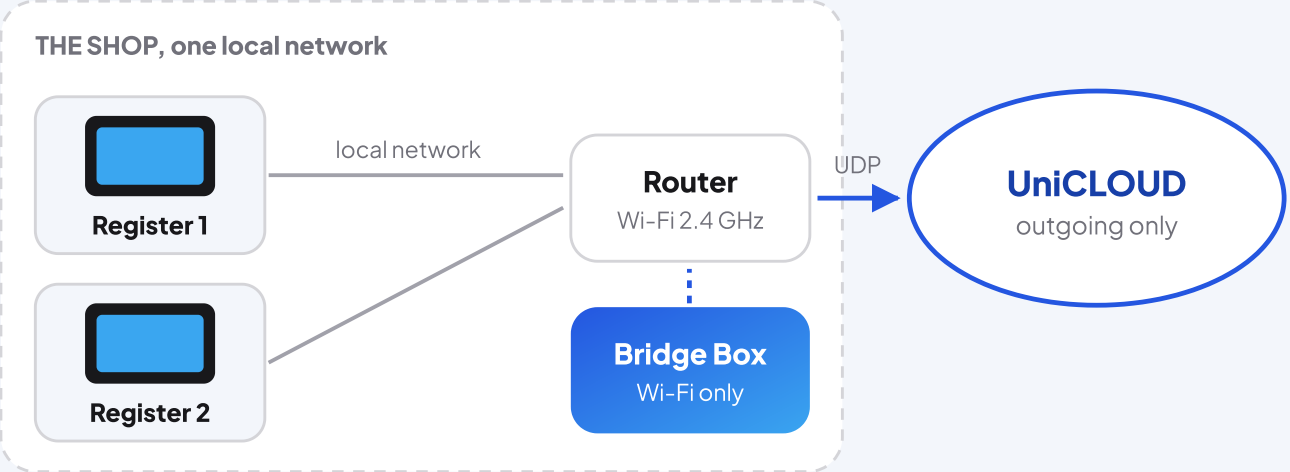


The board	Espressif ESP32-S3-USB-OTG, with the UniCLOUD firmware already installed and the site's Wi-Fi already written in it.
microSD card	Supplied and inserted. It stores reports before sending them: **never remove it**.
Power	USB power supply, 5 V.
Connection	Wi-Fi 2.4 GHz only. The bridge has no network cable and is never cabled to the register.
Updates	Over the air, automatically. No action needed on site.

BEFORE THE VISIT

Prepare the bridge before the visit

1. **Send the shop's Wi-Fi name and password** to the UniCLOUD administrator. They are written into the bridge when it is prepared, because the bridge has no settings screen.
2. **Check the Wi-Fi is 2.4 GHz** (WPA2 or open) where the bridge will sit. Hidden networks work; a 5 GHz-only network does not.
3. **Check the registers have a fixed IP address.** The bridge and the registers must be on the same local network.
4. **If there are several Wi-Fi networks**, up to 16 can be stored. The bridge tries the last one that worked first.



No port to open on the router. The bridge only makes outgoing connections. The full list for the shop's IT provider is on the next page.

FOR THE IT PROVIDER

Network requirements

Wi-Fi	2.4 GHz, WPA2-PSK or open; DHCP is fine
Outgoing UDP 51820	The bridge's secure tunnel to UniCLOUD (keep-alive every 25 s)
Outgoing UDP 123	Time synchronization (NTP). A wrong clock prevents the tunnel from opening.
DNS	Name resolution
Outgoing TCP 80 and 443	Status messages to UniCLOUD
Packet size (MTU)	At least 1420 bytes on the internet path. Below that, large transfers fail even though the bridge appears online.
Incoming	Nothing. No port forwarding.

Inside the shop

Bridge → register	FTP (TCP 21) and HTTP (TCP 80) to each register's fixed IP address
Register → bridge	FTP (TCP 21): the register pushes its reports to the bridge
Bridge IP address	Kept stable by UniCLOUD: the registers send their reports to that address. If it changes, UniCLOUD sends the new address to the registers, which apply it at their next restart.

ON SITE

Connect the bridge in four steps

1. **Place the bridge** near the registers, in good Wi-Fi range, away from metal cabinets and ovens. Don't hide it in a closed drawer.
2. **Plug in the power supply.** The **power light** comes on straight away.
3. **Wait for the Wi-Fi light.** It comes on once the bridge has an address on the network, usually within a minute.
4. **Check in UniCLOUD.** In the administration console, the bridge appears **online**. Then run the set-up wizard (see the Configuration Guide).

The lights

Power light steady	The bridge is running
Power light blinking	A transfer is in progress. It blinks faster as the transfer speeds up. **Don't unplug.**
Wi-Fi light on	Connected to the shop network
Wi-Fi light off	Not connected (see Troubleshooting)

CHECK

Check that everything works

1. **The bridge is online** in the administration console.
2. **The registers are online** in UniCLOUD: the bridge checks every register every 30 seconds.
3. **The return-channel test passes** during the set-up wizard: a test report run on the register reaches UniCLOUD.
4. **The first end-of-day report arrives** in the evening, and the dashboard fills up the next morning.
5. If QR Code Ordering is active: **a test order** placed with the site's test account prints in the kitchen.

> Sales reach UniCLOUD with the register's reports (the end-of-day report). Programming changes and online orders go to the register immediately.

TROUBLESHOOTING

Common problems and fixes

Wi-Fi light off	Wrong Wi-Fi name or password, 5 GHz-only network, or bridge out of range. The administrator can send new Wi-Fi settings to the bridge remotely as soon as it reaches any known network; a bad setting is rolled back automatically after two minutes.
Wi-Fi light on, bridge offline in UniCLOUD	Outgoing UDP 51820 or NTP (UDP 123) blocked by the router or firewall.
Bridge online, transfers fail	Internet path with too small a packet size (MTU below 1420). Ask the IT provider.
No end-of-day report	microSD card removed or faulty; register not restarted after a configuration change; register's IP address changed.
Register offline in UniCLOUD	Register switched off, IP address changed, or not on the same network as the bridge.
Bridge completely unresponsive	Unplug for ten seconds and plug back in. If it doesn't come back, contact the UniCLOUD administrator: a service tool can read and repair the bridge over USB.

Never remove the microSD card, and never unplug the bridge while the power light is blinking.