

Captive Portals, Explained

What that Wi-Fi sign-in page is, why it shows up, and what to do when it doesn't.



The short answer

That Wi-Fi sign-in page has a name: a captive portal. It sits between the Wi-Fi and the internet. Until you finish it, almost nothing else loads.

This guide answers three questions. What is that page? Why does it matter to you? And what do you do when it won't show up?

A word on the words

People call it a sign-in page, a login page, a splash page or a captive portal. They all mean the same page. This guide calls it the **sign-in page**.

Other guides in this series

Plane Wi-Fi has its own guide: *Wi-Fi on Planes, Explained*. For a TV stick or game console on the road, see *Travel Routers, Explained*.

What's inside

A gate in front of the internet	3	Stay safe on the sign-in page	11
How your phone notices	5	Devices with no screen	12
When the page doesn't show up	7	Five things people get wrong	13
Why the page comes back	9	Tips for your next trip	14
What the network can see	10	Where these facts come from	15

A gate in front of the internet

Joining the Wi-Fi and reaching the internet are two separate steps. A sign-in page stops you between them.

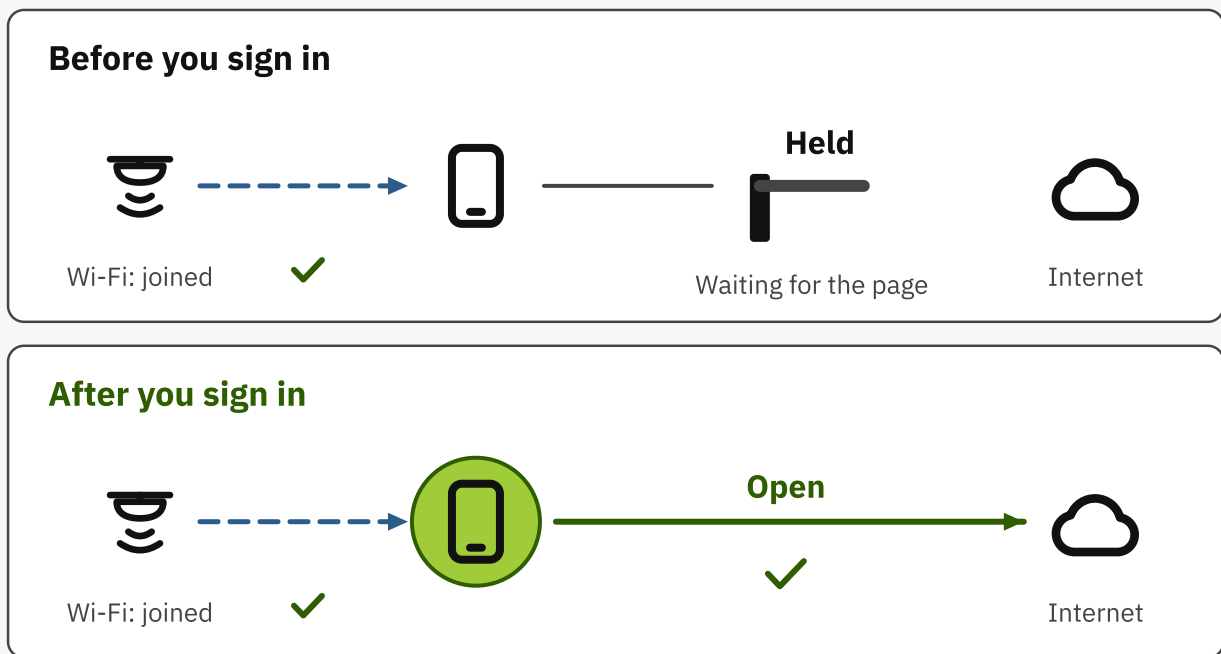


Figure 1. Full bars is only step one. Your phone joins the Wi-Fi first. The road to the internet stays closed until you finish the page.

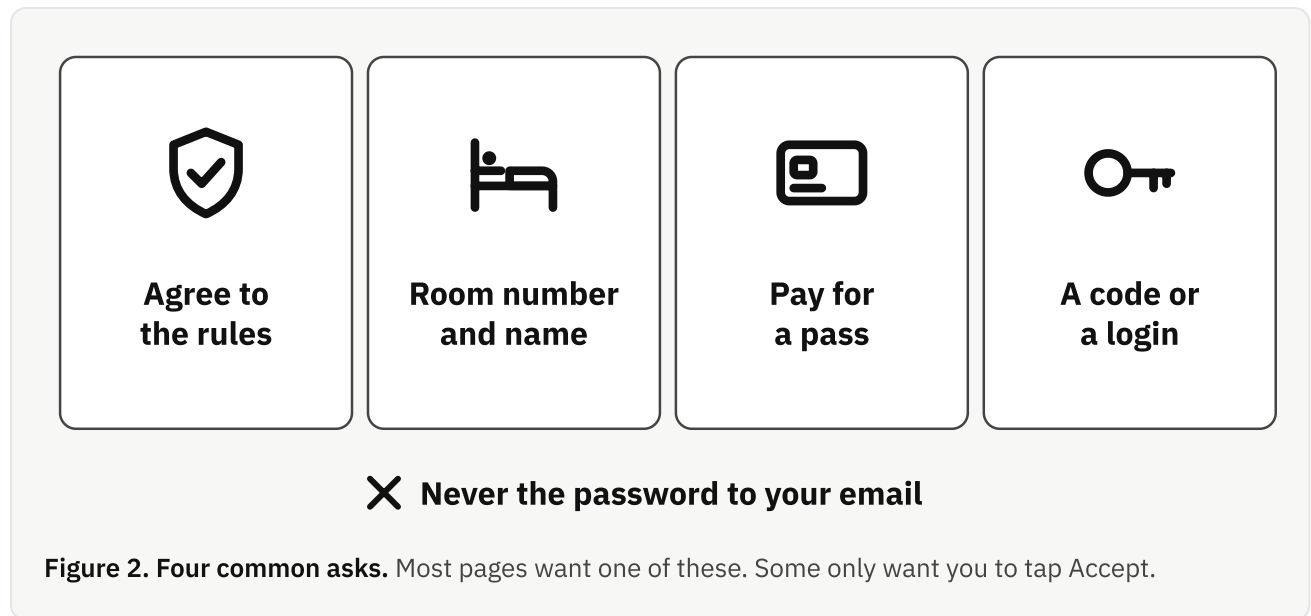
That's why your phone can show full bars and still load nothing. The bars only tell you the Wi-Fi part worked.

KEITH'S NOTE

“If a network ever asked you to sign in on a web page, your Wi-Fi already worked.”

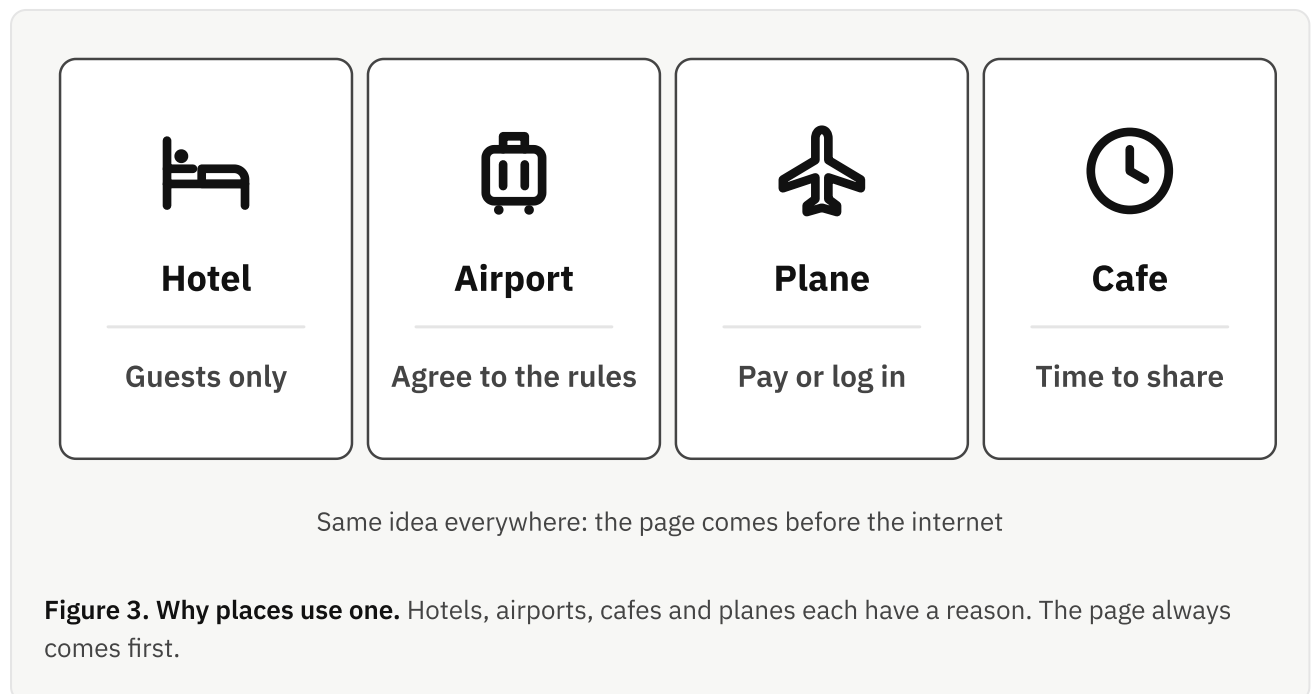
Keith Parsons, *Fix Your Own Wi-Fi*, chapter 6, 2026

What the page asks for



Why places use one

A place with free or paid Wi-Fi wants a say before you go online. It may check that you're a guest, show its rules, or charge for time.



How your phone notices

Your phone checks every new Wi-Fi network. It asks for a small test page it already knows by heart.

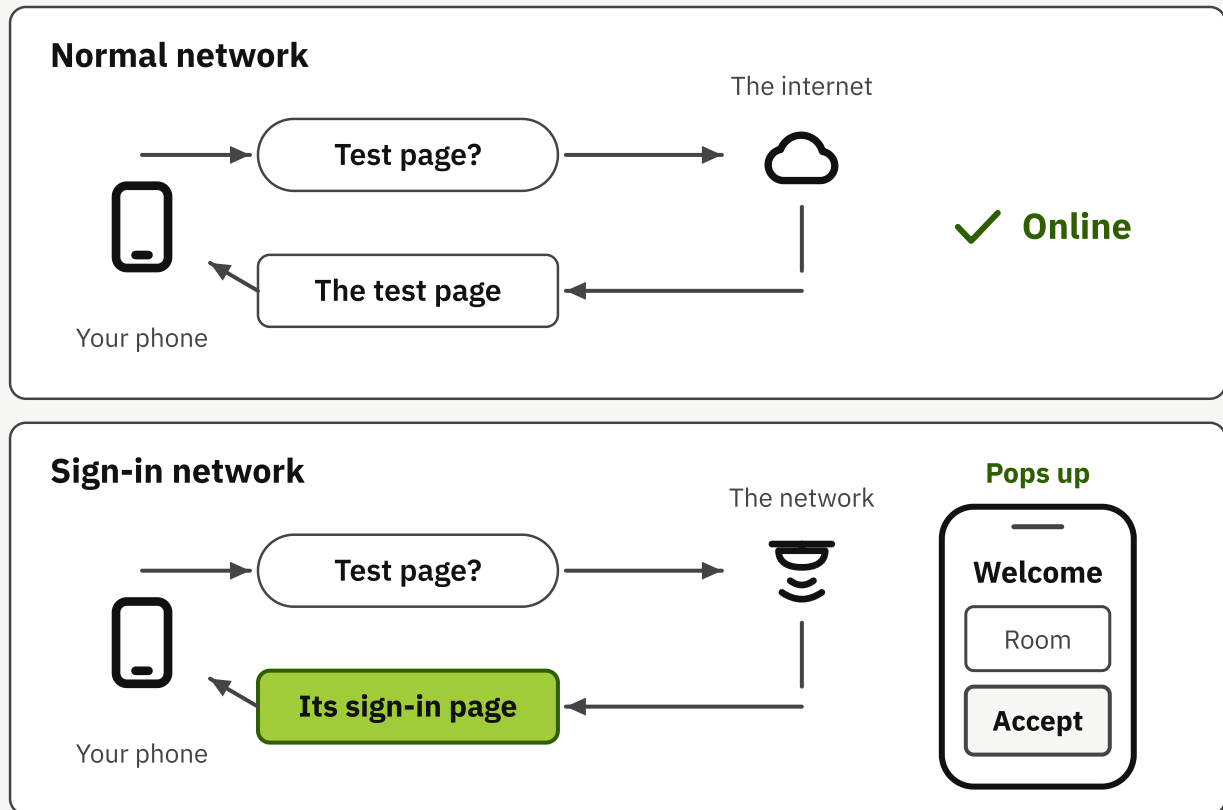
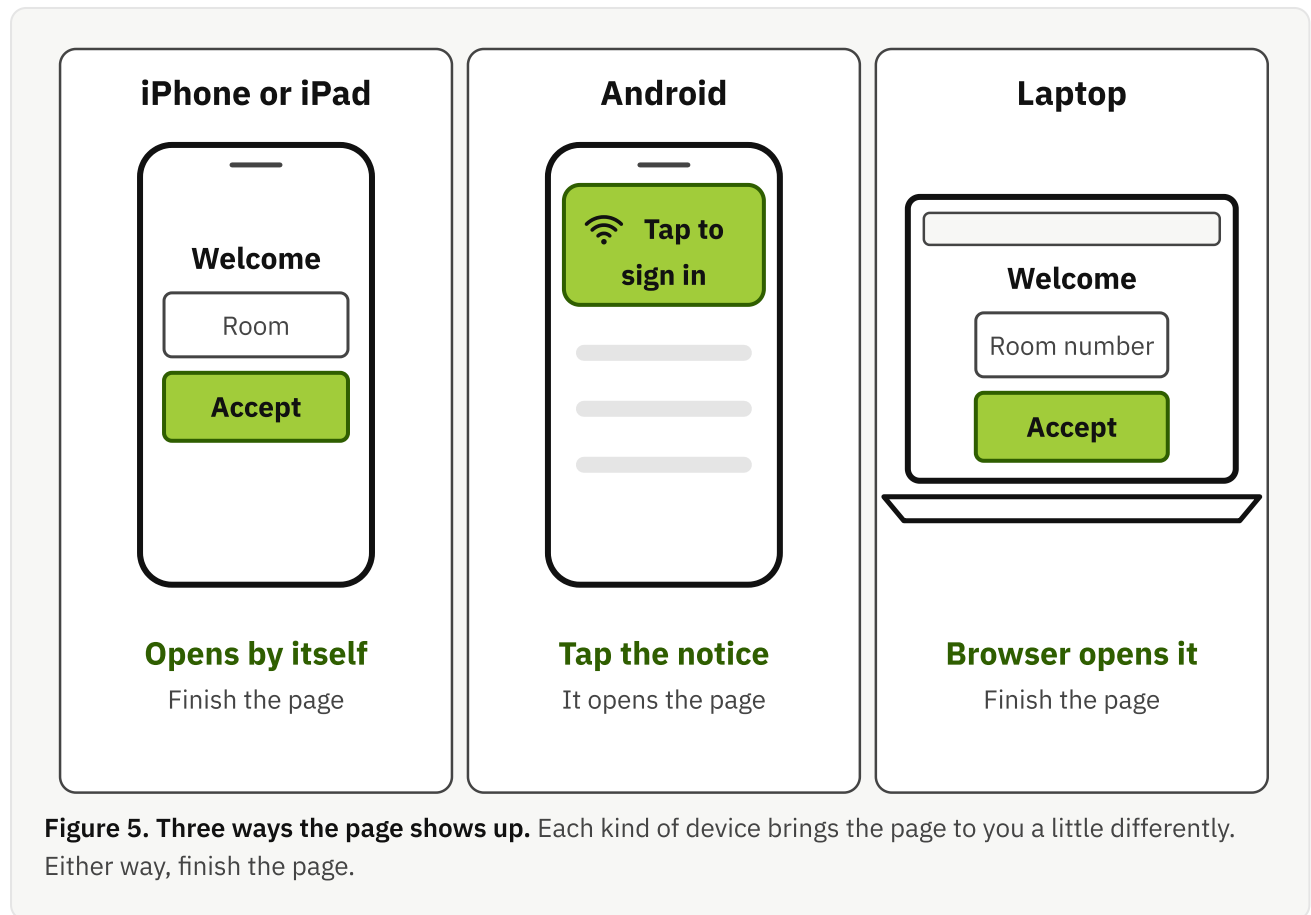


Figure 4. A test with a known answer. A normal network sends the test page back. A sign-in network answers differently, usually by sending you to its own page. Your phone sees the wrong answer and pops the page up for you.

You don't have to do anything for this check. It happens by itself, in a moment.

What you'll see



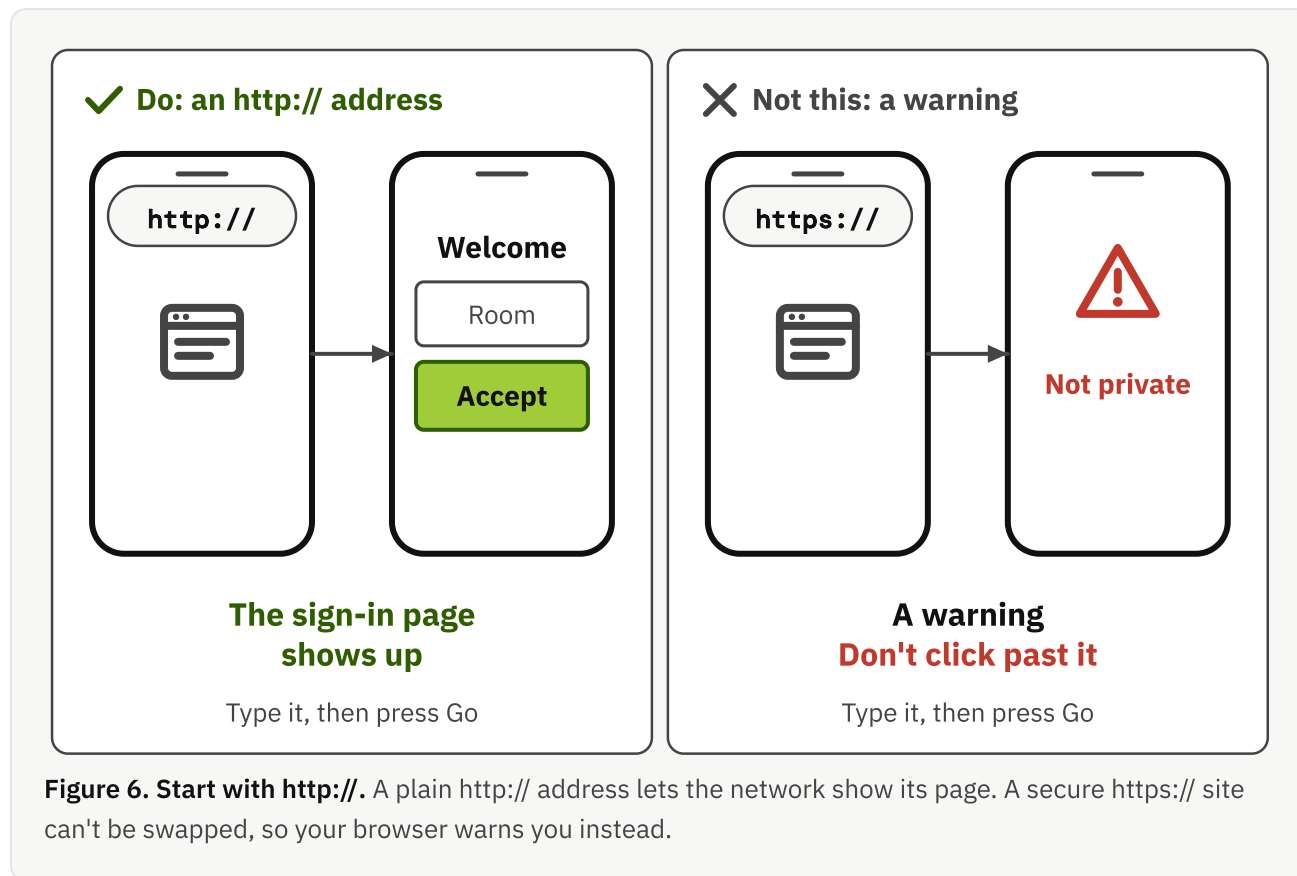
On an iPhone, tapping Cancel on the sign-in window takes you off the network. Finish the page first. If you cancel by mistake, just join again.

Email, messages and Wi-Fi Calling over that Wi-Fi wait for the page too. Regular calls over the cell network may still work.

When the page doesn't show up

Sometimes the page never pops up. You're on the Wi-Fi, but nothing loads. Try these, in order.

- 1 **Give it a moment.** The page can take a few seconds to appear.
- 2 **Open your web browser and type an address that starts with `http://`,** such as `http://example.com`. The network can then show you its page.
- 3 **Forget the network, then join it again.** Your phone checks again from the start.
- 4 **Turn off your own VPN for a moment.** Turn it back on once you're signed in. For a work or school VPN, ask your IT team.
- 5 **Still stuck? Ask the front desk or the staff.**
- 6 **Need the internet right now?** Turn Wi-Fi off and use cell data, if your plan allows it.



WHAT TO DO

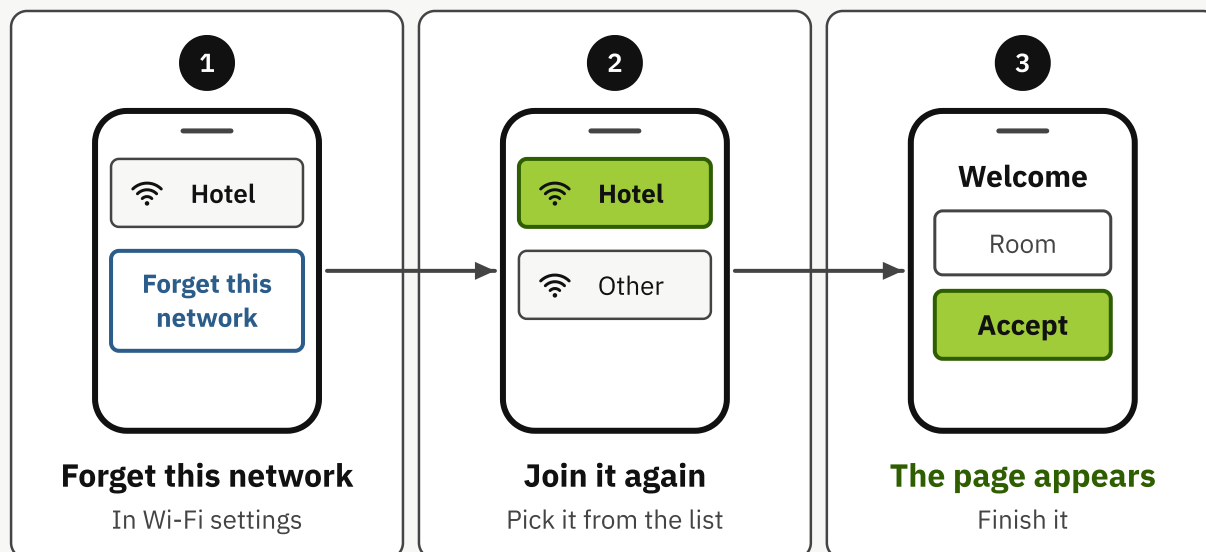


Figure 7. Forget, then join again. This makes your phone check the network from the start.

If you use a VPN or private DNS

A VPN (virtual private network) is an app that wraps up everything your phone sends. That can keep the sign-in page from reaching you. On Android, if Private DNS is set to a provider hostname, switch it to Automatic while you sign in. On an iPhone, a Private Relay message means you can turn it off for that one network.

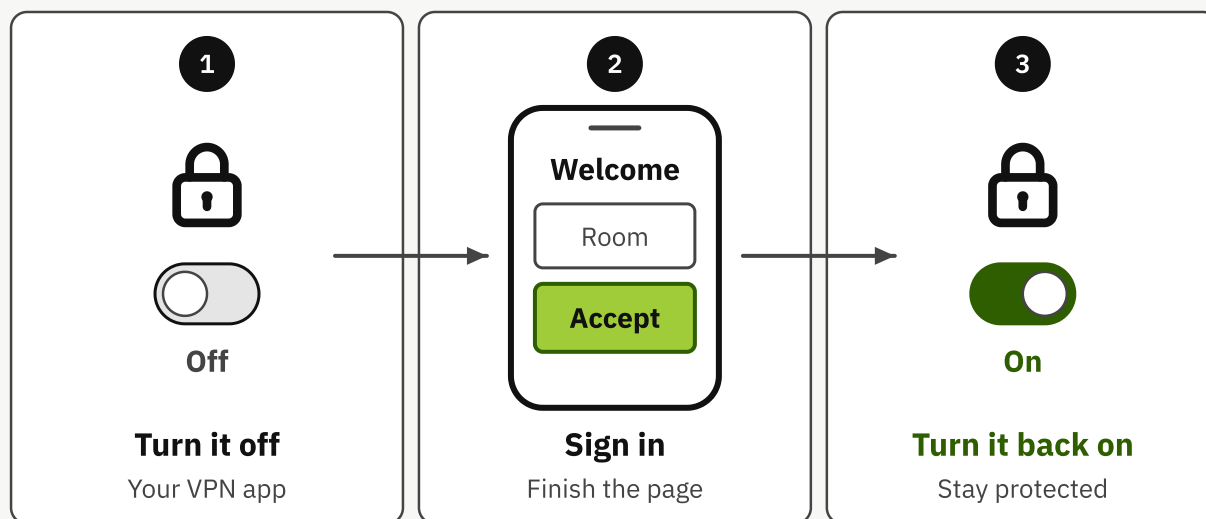
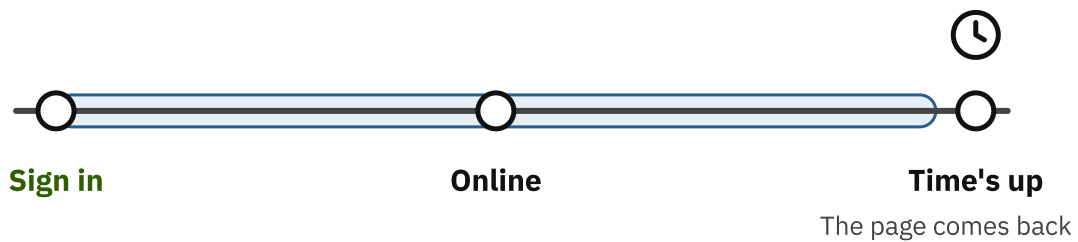


Figure 8. Off for a moment, then back on. Switch the VPN off only long enough to finish the page, then turn it back on.

Why the page comes back

You signed in yesterday, and today the page is back. That's normal.

Your time runs out



Your phone looks new

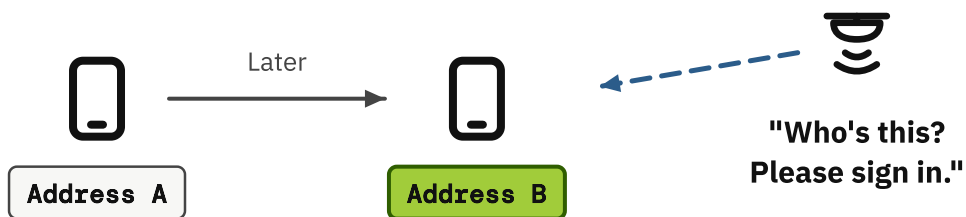
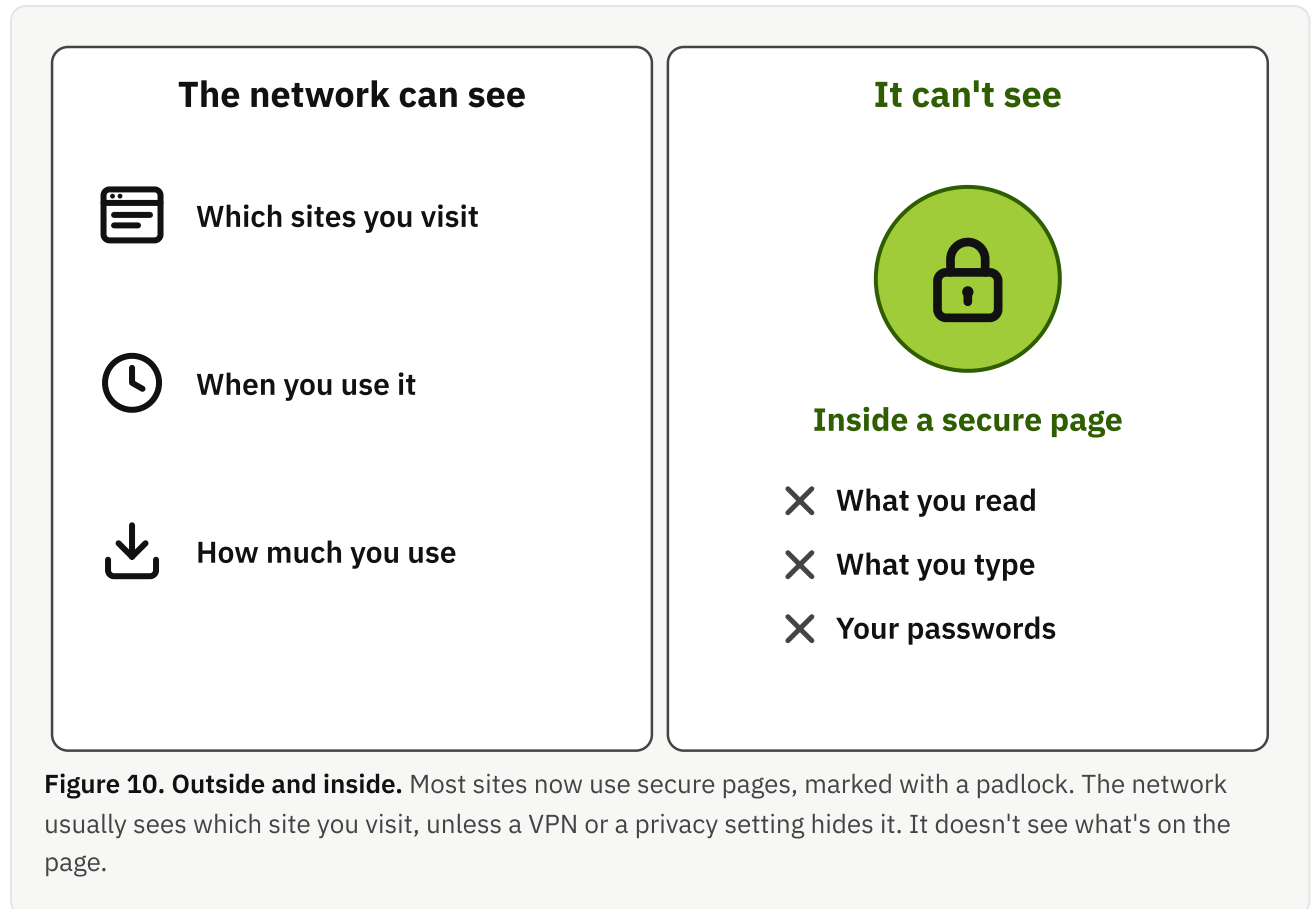


Figure 9. Two reasons the page returns. Your time or pass ran out. Or your phone now shows the network a new Wi-Fi address, so it looks like a new guest.

Some phones change their Wi-Fi address from time to time. It makes you harder to follow from place to place. When the address changes, the network may not know you, so you sign in again.

What the network can see

Any Wi-Fi network can see some of what you do on it. A network with a sign-in page is no different.



A real sign-in page is a gate, not a window into your secure pages. Still, type only what the place needs.

WATCH OUT

Stay safe on the sign-in page

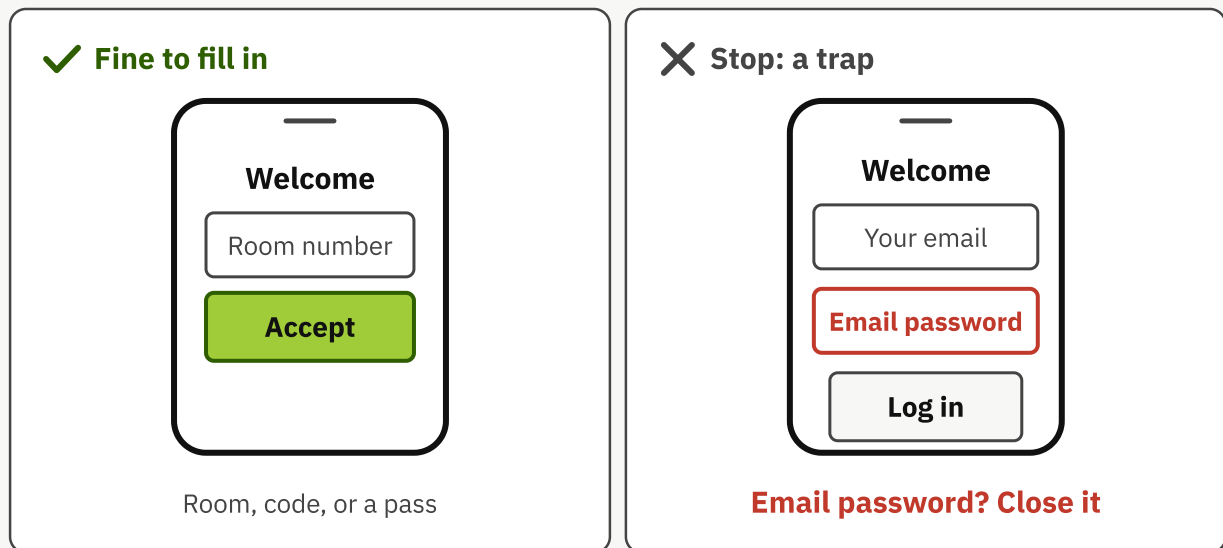


Figure 11. A real page, and a trap. A real page asks for a room number, a code, a login the place gave you, or a pass. A trap asks for the password to your email.

⚠ STOP

Never type your email password into a sign-in page.

A hotel or cafe doesn't need it. Fake networks use fake sign-in pages to catch passwords.

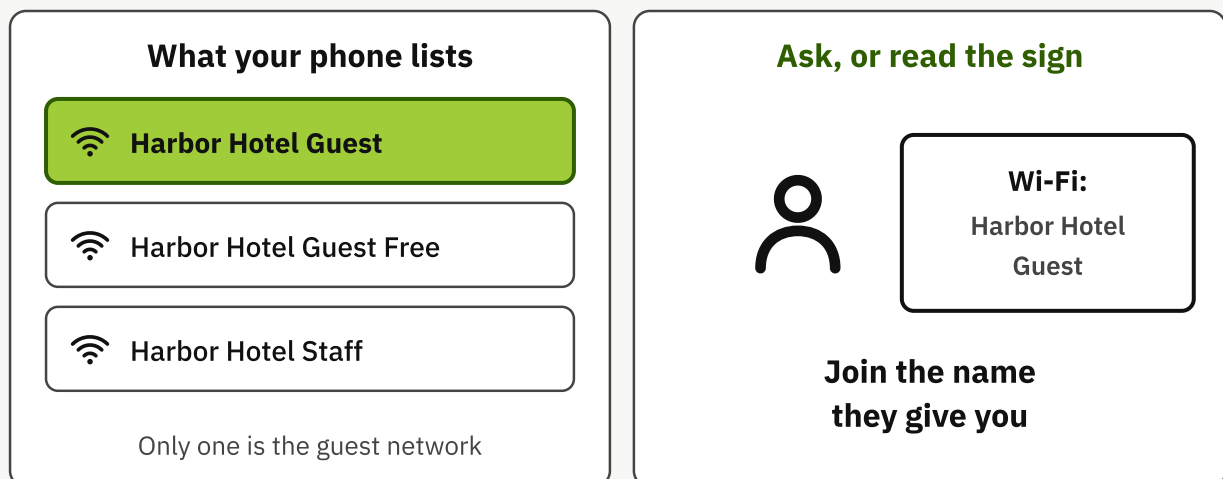


Figure 12. Check the network name. A look-alike name can be a trap. Join the one the staff or the sign names.

Devices with no screen

A TV stick, a game console or a smart speaker can join Wi-Fi. But many can't show you a sign-in page.

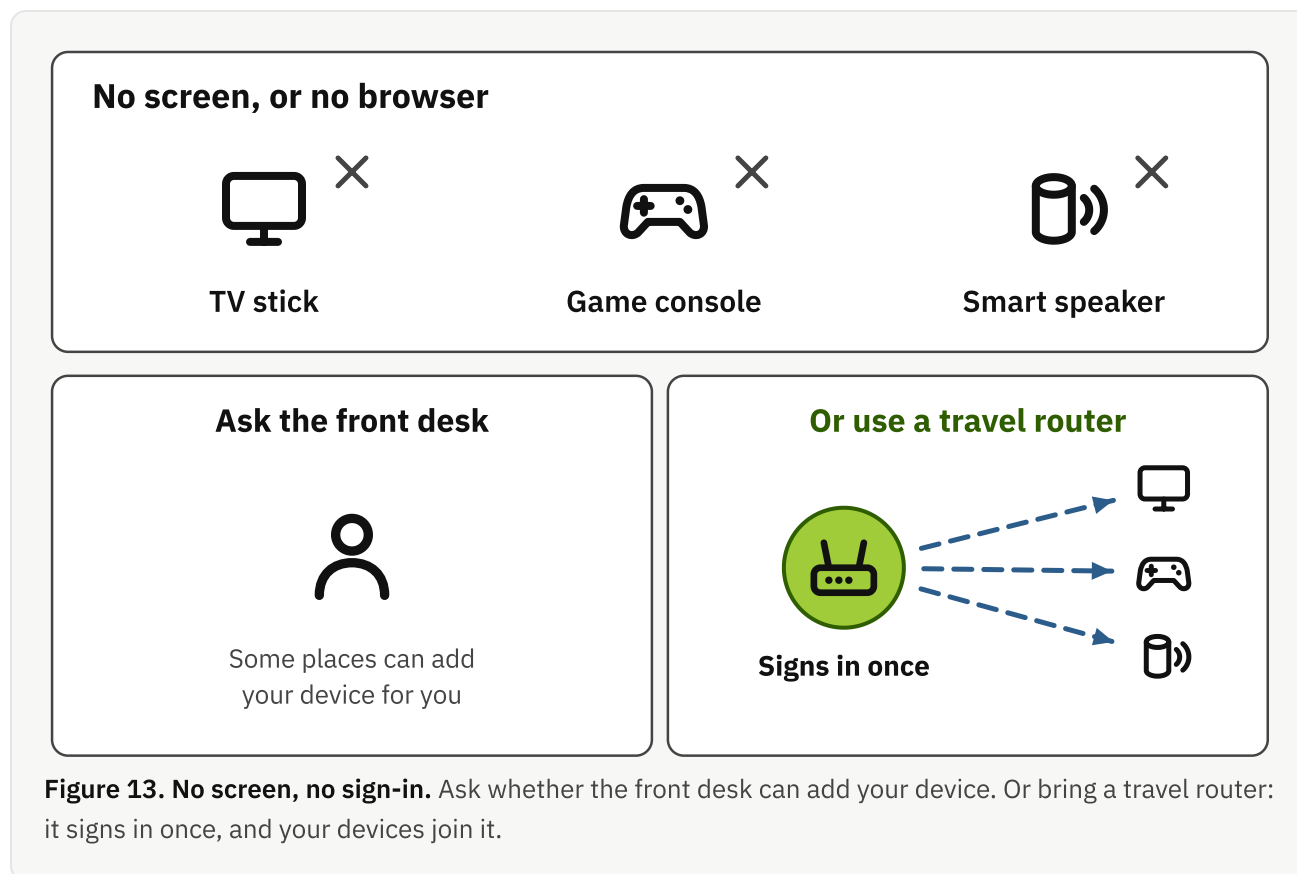


Figure 13. No screen, no sign-in. Ask whether the front desk can add your device. Or bring a travel router: it signs in once, and your devices join it.

Some TV sticks let you finish the page on your phone instead. Check the device's help pages before you travel.

Travel routers have their own guide: *Travel Routers, Explained*.

Five things people get wrong

MYTH Full bars means I'm online.

FACT The bars only show the Wi-Fi part. A sign-in page can still be holding back the internet.

MYTH The page broke, so the Wi-Fi is broken.

FACT The page reached you over the Wi-Fi, so the Wi-Fi works. Open a browser to bring the page back.

MYTH The sign-in page can read everything I do.

FACT On secure pages, the network sees the site's name, not what you read or type.

MYTH Once I sign in, I'm set for the whole trip.

FACT Time limits and a new Wi-Fi address can bring the page back. Just sign in again.

MYTH A network with a sign-in page is a safe network.

FACT The page is about who gets in, not about keeping you safe. Check the network name. A padlock means the link is private, not that the site is honest.

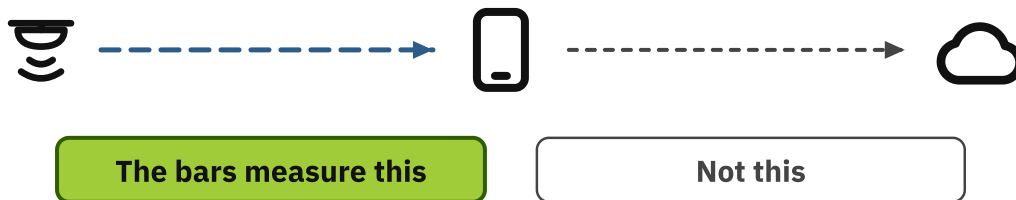
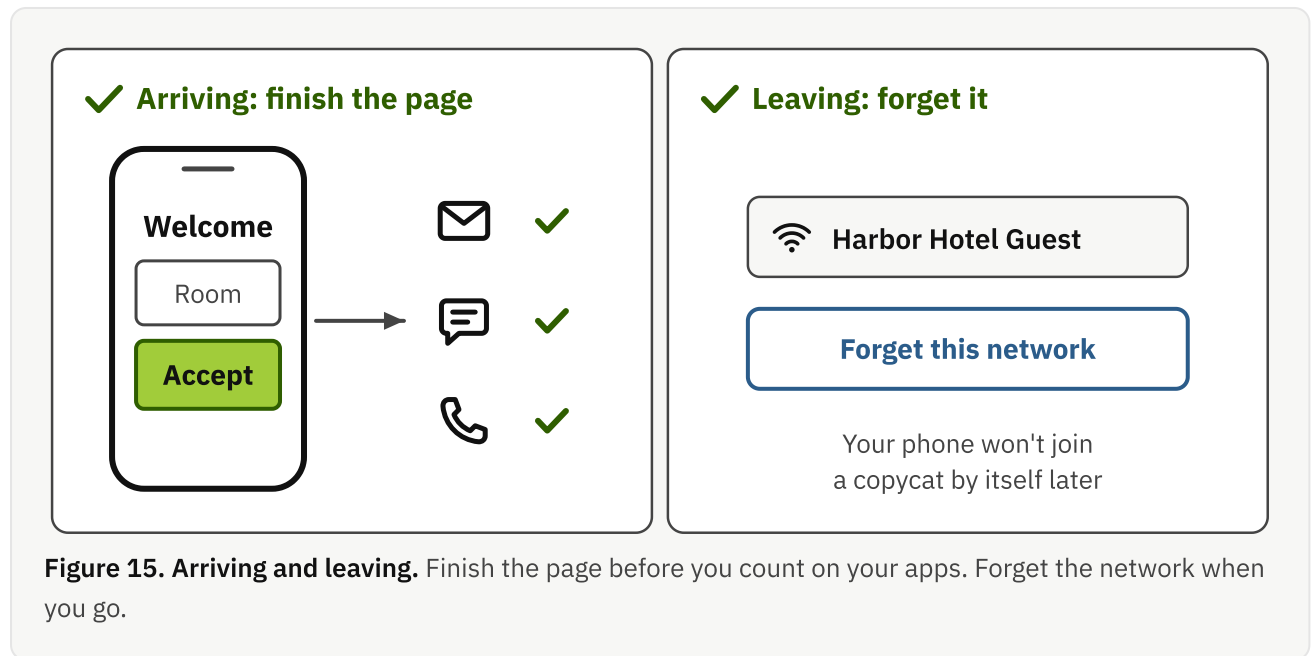


Figure 14. What the bars measure. Full bars say you hear the Wi-Fi well. They say nothing about the internet.

Tips for your next trip



- 1 Get the network name from the staff or a sign. Don't guess from the list.
- 2 Join, and give the page a moment. It usually pops up by itself.
- 3 Finish the page before you count on email, messages or calls.
- 4 No page? Open a browser and type an `http://` address.
- 5 Never give your email password to a sign-in page.
- 6 When you leave, forget the network.

SOURCES

Where these facts come from

Checked on 28 September 2026. Menus change with updates, so look for the same words nearby.

- Apple Support, "Use captive Wi-Fi networks on your iPhone or iPad", 23 April 2026
- Apple Developer, "How to modernize your captive network," 22 June 2020
- Apple Support, "About iCloud Private Relay"
- Google, Pixel Phone Help, "How to fix Wi-Fi connection problems"
- Google, Chrome Help, "Fix connection errors"
- Google, Pixel Phone Help, "Control airplane mode, private DNS & other network settings"
- Apple Support, "Manage iCloud Private Relay for specific websites, networks, or system settings", 15 September 2025
- Apple Support, "Use private Wi-Fi addresses on Apple devices", 5 December 2025
- Android Open Source Project, "MAC randomization behavior" and "Implement MAC randomization"
- Microsoft Learn, "An Internet Explorer or Edge window opens when your computer connects to a corporate network or a public network," 12 February 2026
- Microsoft Learn, "Network Connectivity Status Indicator FAQ for Windows," 6 February 2025
- US Federal Trade Commission, "Are Public Wi-Fi Networks Safe? What You Need To Know," February 2023
- US Cybersecurity and Infrastructure Security Agency (CISA), "Securing Wireless Networks," 1 February 2021
- CISA, Eviction Strategies Tool, "Evil Twin," 15 April 2025
- Government of Canada, Get Cyber Safe, "Public Wi-Fi," 27 October 2021
- Electronic Frontier Foundation, Surveillance Self-Defense, "What Should I Know About Encryption?", reviewed 2025
- Roku Support, "How do I use Hotel & Dorm Connect to connect to the internet?", 13 February 2026
- TP-Link, FAQ 4087, 23 June 2026
- Keith Parsons, *Fix Your Own Wi-Fi*, chapter 6, 2026

About this guide

This guide is independent. It isn't affiliated with or endorsed by any hotel, airline, phone maker or government agency. Companies are named here only as sources.

About the author

Keith Parsons, CWNE #3, has designed and fixed Wi-Fi for over 25 years. He runs Wireless LAN Professionals and the WLPC conferences.