How to test whether a port is open on your camera system

Whether you just set up a port forward or want to confirm nothing is exposed, the test has to come from outside your network. Here is how to do it properly and how to read the result.

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There are two reasons to test a port: you forwarded one and it is not working, or you want to be sure nothing on your camera system is reachable from the internet. Both need the same thing, a test from **outside** your network aimed at your **public** IP address.

> **Test from outside, or the result means nothing**
> From inside the building, connecting to your own public IP depends on a router feature called NAT loopback (or hairpin NAT) that many routers do not support. A test from inside can fail when the forward is fine, or succeed against the local device when outside access is broken.

Basic test

1. **Find your public IP**
   Visit any 'what is my IP' site from a computer on the camera network, or read the router's WAN/Internet address. If the two differ, or the router's WAN address starts with 10., 192.168., 172.16-31. or 100.64-100.127, you are behind another NAT layer and inbound connections will not reach you. Stop here and see the CGNAT note below.

2. **Know which port and protocol to test**
   Read the current port values on the recorder (see the default ports table in how to set up port forwarding). Most online checkers test TCP only; UDP ports cannot be reliably checked this way.

3. **Run an external port check**
   Use an online open-port checker (Amcrest's own guide uses canyouseeme.org). Enter the port; most tools test the IP you are browsing from, so run it from a computer on the camera network. 'Open' or 'success' means something answered on that port from the internet.

4. **Confirm with the real app on cellular**
   Turn Wi-Fi off on a phone and connect with the camera app using your public IP or DDNS hostname and the forwarded port. This tests the full path, including the app's protocol, not just whether the port answers.

Command-line tests (from a machine outside the network)

```
Windows PowerShell:
  Test-NetConnection 203.0.113.10 -Port 8000
  (look for TcpTestSucceeded : True)

macOS / Linux:
  nc -vz 203.0.113.10 8000

nmap (scan only addresses you own or manage):
  nmap -Pn -p 80,443,554,8000,9000,37777 203.0.113.10
```

Replace 203.0.113.10 with your public IP or DDNS hostname and use your actual ports.

Run these from a laptop tethered to a phone on cellular, or from a computer at another site. The nmap example is a quick way to confirm that **none** of the common camera ports are open when you are checking exposure.

Reading the result

Result	What it usually means	What to check
Open / succeeded	The forward works and something answers	If you did not intend this, remove the forward and check UPnP
Closed / refused	The router passed the connection, but nothing answered at the internal address	Recorder's internal IP changed, wrong internal port, or the service is disabled on the device
Timed out / filtered	Nothing came back	No forward rule, wrong protocol, ISP blocking the port, firewall on the router, or carrier-grade NAT
Works on Wi-Fi at the site, fails on cellular	You were testing locally	Retest from outside; check NAT loopback is not giving a false pass

Common causes of a failed test

- **Carrier-grade NAT (CGNAT).** Common on cellular and some fixed-wireless and fiber services. Port forwarding cannot work; ask the ISP for a public IP or use P2P, a hosted VPN, or an outbound-connecting device. See P2P cloud vs port forwarding vs VPN.
- **Double NAT.** An ISP modem-router in front of your own router. Either put the ISP device in bridge mode or forward on both devices.
- **Internal IP changed.** Fix it with a DHCP reservation.
- **ISP blocks the port.** Some residential ISPs block common inbound ports such as 80. Use a different external port mapped to the same internal port.
- **Public IP changed.** Use DDNS.

> **Tip**
> Run the exposure check once a year even if you never set up port forwarding. UPnP can open ports without anyone noticing. See how to secure a camera system.

Frequently asked questions

Can I test a UDP port?

Not reliably with online checkers, because UDP has no handshake and a silent port looks the same as a blocked one. Test the full path with the vendor's app on cellular instead.

Is it legal to scan with nmap?

Scan only addresses you own or are authorised to manage. Scanning someone else's network can break their acceptable-use terms or local law.

Related guides

- How to set up port forwarding for a camera or NVR — vuepointsecure.com/support/how-to-set-up-port-forwarding-for-a-camera-recorder
- How to set up DDNS for a camera recorder — vuepointsecure.com/support/how-to-set-up-ddns-for-a-camera-recorder
- How to secure a camera system — vuepointsecure.com/support/how-to-secure-a-camera-system-passwords-firmware-and-exposure
- All support articles — vuepointsecure.com/support

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