

Scenario

A user reports that their Windows laptop cannot reach internal resources or the Internet. You run `ipconfig /all` and see the following:

IPv4 Address: 169.254.87.23

Subnet Mask: 255.255.0.0

Default Gateway: (blank)

DHCP Enabled: Yes | **DHCP Server:** (blank)

What the APIPA Address Tells You

- **169.254.x.x** = Automatic Private IP Addressing (APIPA)
- Client failed to obtain a lease from a DHCP server
- No valid default gateway → no routing beyond the local link
- Common causes: DHCP server down, cable/Wi-Fi issue, DHCP scope exhausted, firewall blocking DHCP (UDP 67/68)

Exam Tip: APIPA is a strong indicator that the problem is DHCP-related, not a DNS or application-layer issue. Always check Layer 1–3 first.

Step-by-Step Resolution

- 1 Verify physical / link status** – Confirm cable is seated or Wi-Fi is connected and has signal. Check NIC status in Device Manager or `ipconfig (Media State)`.
- 2 Release the current (invalid) lease**
`ipconfig /release`
- 3 Request a new DHCP lease**
`ipconfig /renew`
- 4 Verify the new configuration**
`ipconfig /all` – Confirm you now have a valid IP, subnet mask, default gateway, and DHCP server address.
- 5 Test connectivity**
`ping` the default gateway, then an internal server, then an external host (e.g., 8.8.8.8). If IP works but names fail → investigate DNS next.
- 6 If /renew fails** – Check DHCP server health, switch port, VLAN assignment, or try a static IP temporarily to isolate the issue.

Common Student Mistakes

- Jumping straight to DNS or proxy settings while still holding an APIPA address.
- Forgetting to run `/release` before `/renew` (sometimes required on older clients).
- Assuming the NIC is fine without checking link lights or Wi-Fi association.
- Not documenting the original `ipconfig /all` output before making changes.
- Ignoring that multiple clients with APIPA usually points to a DHCP server or network segment problem.