

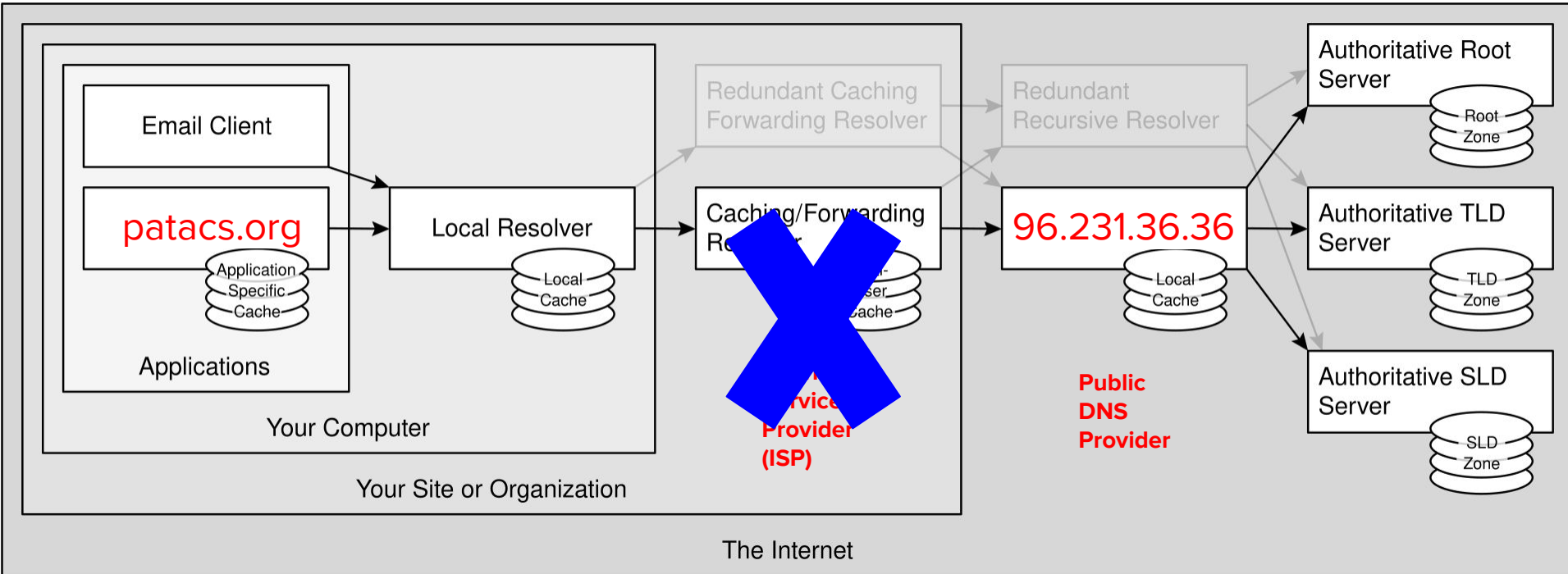
DNS Privacy

Geof Goodrum, OPCUG+PATACS Meeting, 15 August 2026

Outline

- The Domain Name System (DNS)
- Why / Why Not use a Public DNS
- Popular Free Public DNS providers
- Example DNS configurations
- My Advice
- References

Domain Name System (DNS) aka Internet “Phonebook”



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<https://commons.wikimedia.org/w/index.php?curid=109489449>

Why / Why Not use a Public DNS provider

Why

- Quicker connections
- Better privacy and security with encryption
 - Hide network behavior
 - Hide applications used
- Blocklists
 - Malware
 - Tracking
 - Advertising
 - Social Media
 - Adult Content

Why Not

- Public WiFi hotspots may not work
 - Manages your network access
 - Terms & Conditions for use

Popular Free Public DNS Providers

Provider	Encrypted	Blocklist	Note
Google	✓		
Cloudflare/1.1.1.1	✓	Optional	Optional app. Malware and adult site blocking options
Quad9	✓	Optional	Swiss non-profit. App for Android, profile for iOS.
ControlD	✓	Optional	App for iOS, Android. Highly configurable blocklists.

Selecting a Public DNS Provider

- Features
 - Encryption
 - Blocklists
- Performance and Uptime
 - GRC DNS Benchmark Utility (\$)
 - <https://www.grc.com/dns/benchmark.htm>
 - Web-based DNS performance tests
 - <https://dnsspeedtest.online/>
 - <https://www.dnsperf.com/#!dns-resolvers>
- Caveats
 - Virtual Private Network (VPN) clients have their own Custom DNS settings
 - iCloud Private Relay does not allow changing DNS settings
 - iOS DNS settings are per WiFi connection or import profile/use app

My Advice

- Use Public DNS with a Malware Blocklist on all your devices
- Add Public DNS settings to your router first
 - Connected home network devices use the router DNS settings by default
- Apply Public DNS settings to devices that don't always use the home network
- Verify DNS settings periodically to ensure they are not reset to default
- Use a Public DNS app or VPN client for maximum privacy
 - Encrypts all network connections, not just DNS
 - Test first; may cause connection/performance issues
- Use Tor network/Tails OS for private web browsing/email
 - <https://tails.net/index.en.html>

Example IPv4 router configuration (TP-Link, Quad9)

The screenshot shows the TP-Link ArcherAX1500 router's web interface. The top navigation bar is blue with the TP-Link logo and router model. Below it are icons for Network Map, Internet, Wireless, and Advanced (selected). A left sidebar contains a menu with options like Quick Setup, Network (selected), Status, Internet, LAN, IPTV/VLAN, DHCP Server, Dynamic DNS, Routing, TP-Link ID, Wireless, NAT Forwarding, Parental Controls, and QoS. The main content area displays IPv4 settings: Default Gateway (71.200.184.1), Primary DNS (9.9.9.9), and Secondary DNS (149.112.112.112). There are buttons for RENEW and RELEASE. Below these are expandable sections for Advanced Settings, which include fields for DNS Address (set to 'Use the Following DNS Address'), Primary DNS, Secondary DNS, MTU Size (1500 bytes), and Host Name (ArcherAX1500). A checkbox for 'Get IP using Unicast DHCP' is also present. At the bottom right, there are links for SUPPORT and BACK TO TOP.

tp-link | AX1500 Wi-Fi 6 Router

Search TP-Link ID Log Out

Network Map Internet Wireless **Advanced**

Quick Setup

Network

Status

• Internet

LAN

IPTV/VLAN

DHCP Server

Dynamic DNS

Routing

TP-Link ID

Wireless

NAT Forwarding

Parental Controls

QoS

Default Gateway: 71.200.184.1

Primary DNS: 9.9.9.9

Secondary DNS: 149.112.112.112

RENEW

RELEASE

▼ Advanced Settings

DNS Address: Use the Following DNS Address ▼

Primary DNS: 9.9.9.9

Secondary DNS: 149.112.112.112 (Optional)

MTU Size: 1500 bytes

(Do not change unless necessary.)

Host Name: ArcherAX1500

☐ Get IP using Unicast DHCP

SUPPORT BACK TO TOP

Example IPv6 router configuration (TP-Link, Quad9)

The screenshot displays the TP-Link AX1500 Wi-Fi 6 Router web interface. The top navigation bar is teal with the TP-Link logo and router model. Below it, a secondary bar contains icons for Network Map, Internet, Wireless, and Advanced (selected). A left sidebar lists various settings, with IPv6 highlighted. The main content area shows IPv6 configuration options, including DNS settings and address acquisition methods.

tp-link | AX1500 Wi-Fi 6 Router

Search TP-Link ID Log Out

Network Map Internet Wireless **Advanced**

IPv6 Forwarding
Parental Controls
QoS
Security
VPN Server
IPv6
Smart Life Assistant
EasyMesh
System

Primary DNS: 2620:FE::FE
Secondary DNS: 2620:FE::9

RENEW
RELEASE

▼ Advanced Settings

Get IPv6 Address: ☐ Auto
☐ SLAAC
☒ DHCPv6
☐ Non-Address

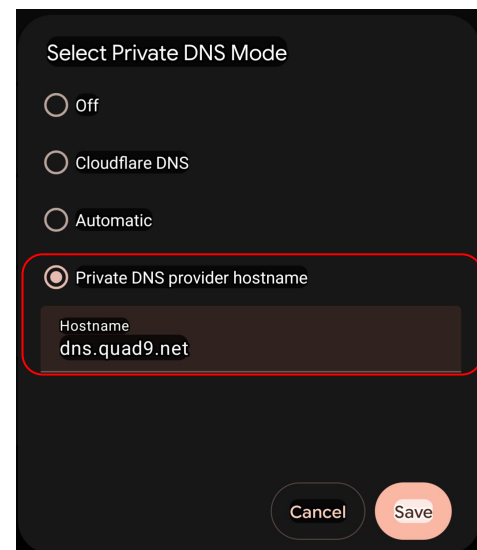
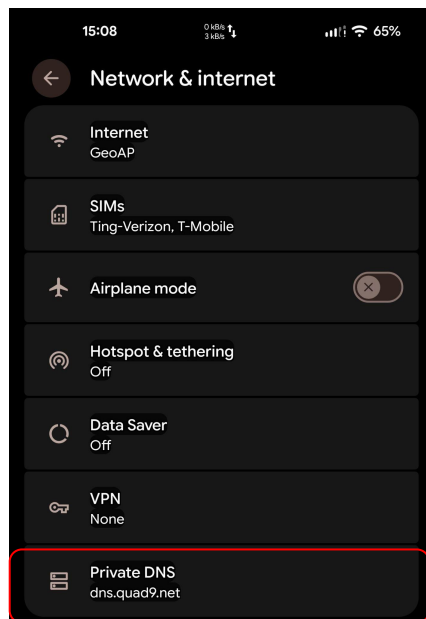
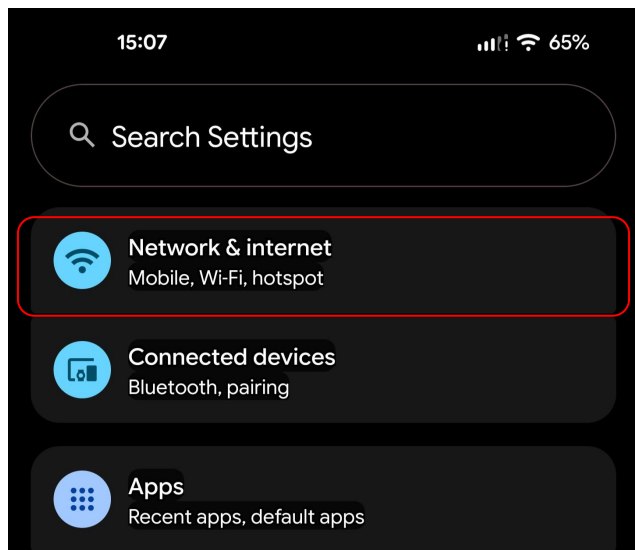
Prefix Delegation: ☒ Enable
☐ Disable

DNS Address: ☐ Get Dynamically from ISP
☒ Use the Following DNS Addresses

Primary DNS:
Secondary DNS:

SUPPORT BACK TO TOP

Example Android 16 configuration (LineageOS, Quad9)



References

- Article: The Best DNS Servers for Secure Browsing
 - <https://www.howtogeek.com/874773/the-best-dns-servers-for-secure-browsing/>
- Wikipedia: Domain Name System
 - https://en.wikipedia.org/wiki/Domain_Name_System