DNS Privacy Public Resolvers

The following are services that have been announced by large organisations - they support DNS Privacy on anycast networks.

- DNS-over-TLS (DoT)
- DNS-over-HTTPS (DoH)

A list of experimental DoT test servers (including those run by the Stubby developers) is available on the Test Servers page.

DNS-over-TLS (DoT)

Details are provided in the Stubby config file for users who want to enable them.

<table>
<thead>
<tr>
<th>Hosted by</th>
<th>IP addresses</th>
<th>TLS Ports</th>
<th>Hostname for TLS authentication</th>
<th>Base 64 encoded form of SPKI pin(s) for TLS authentication (RFC7858)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quad9 'secure'</td>
<td>9.9.9.9 2620:fe:fe</td>
<td>853</td>
<td>dns.quad9.net</td>
<td>Quad9 do NOT publish or recommend use of SPKI pins with their servers.</td>
<td>See <a href="https://quad9.net">https://quad9.net</a> and their FAQ for details of privacy, logging and filtering policies on the main and alternative addresses(1). UDP and TCP service are also available on these addresses.</td>
</tr>
<tr>
<td>Quad9 'insecure'</td>
<td>9.9.9.10 2620:fe:10</td>
<td>853</td>
<td>dns.quad9.net</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cloudflare</td>
<td>1.1.1.1 or 1.0.0.1: 2606:4700:4700::1111 or 2606:4700:4700::1001</td>
<td>853</td>
<td>cloudflare-dns.com</td>
<td>Cloudflare DO NOT publish or recommend use of SPKI pins with their servers.</td>
<td>See <a href="https://cloudflare.com">https://cloudflare.com</a> or <a href="https://cloudflare.com/blog">https://cloudflare.com/blog</a> for details of privacy, logging and filtering policies on the main and alternative addresses(1). UDP and TCP service are also available on these addresses.</td>
</tr>
</tbody>
</table>
| Google | 8.8.8.8 or 8.8.4.4 2001:4860:4860::8888 or 2001:4860:4860::8844 | 853 | dns.google | Not published | Google DoT service
Google Privacy policy |
| CleanBrowsing | Various, see the CleanBrowsing website | 853 | Various, see the CleanBrowsing website | Not published | https://cleanbrowsing.org/privacy
This service provides different end points with different filters (security, family, adult) so visit the website to select the end point with the filter you prefer. |
This service provides different end points with different filters (default, family) so visit the website to select the end point with the filter you prefer. |

DNS-over-HTTPS (DoH)

For a more up to date list of available of DoH severs you may want to look at https://github.com/curl/curl/wiki/DNS-over-HTTPS#publicly-available-servers

Details of a few anycast service and privacy policies:
<table>
<thead>
<tr>
<th>Hosted by</th>
<th>URL</th>
<th>Notes</th>
</tr>
</thead>
</table>
PRIVACY POLICY: https://developers.cloudflare.com/1.1.1.1/commitment-to-privacy/privacy-policy/privacy-policy/  
And also see https://labs.apnic.net/?p=1127 for details of the APNIC/Cloudflare agreement as mentioned on the Register. |
| Cloudflare | https://mozilla.cloudflare-dns.com/dns-query | This server is announced as part of the Firefox Nightly shield study,  
It has a different (stronger) privacy policy than the general Cloudflare DoH server above:  
https://developers.cloudflare.com/1.1.1.1/commitment-to-privacy/privacy-policy/firefox/ |
| Google | https://dns.google/dns-query | RFC8484 (GET and POST)  
https://developers.google.com/speed/public-dns/docs/doh/ |
| Quad9 | Various | Please see https://www.quad9.net/doh-quad9-dns-servers/ for details |
| CleanBrowsing | Various, see the CleanBrowsing website | This service provides different end points with different filters (security, family, adult) so visit the website to select the end point with the filter you prefer. |
| Adguard | Various, see https://adguard.com/en/blog/adguard-dns-announcement/ | |
| Comcast | https://doh.xfinity.com/dns-query | NOTE: This is currently a Public Beta trial.  
https://corporate.comcast.com/privacy  

Google also run a DoH endpoint at https://dns.google/resolve? using a proprietary JSON API.