


# IPv6 Readiness Report

youtube.com — youtube.com

Category: Streaming • Generated: 20 Apr 2026, 21:07 MYT • Last Checked: 07 Mar 2026, 01:15 MYT • Verification ID: 4b9d1ecf-4899-4350-9ba7-bbbcf07647e  
Report generated from National IPv6 Readiness Monitor — <https://ipv6.my6.my>  
Audit trail: <https://ipv6.my6.my/audit/4b9d1ecf-4899-4350-9ba7-bbbcf07647e>

  
**Partially Compliant**  
MGv6C-1.0

## 87%

**Partial Support**

**IPv6-ONLY READINESS**

Website: ✓ Ready

DNS: ✓ Ready

Email: ✗ Not Ready

**IPv6 ADDRESSES**

2404:6800:4003:c01::5b  
2404:6800:4003:c01::88  
2404:6800:4003:c01::be  
2404:6800:4003:c01::5d

**IPv4 ADDRESSES**

142.251.223.46

## Network Information (WHOIS / RDAP)

	IPv6 Network	IPv4 Network
Organization	Google International, LLC	Google LLC
Country	AU	US
ASN	AS15169	AS15169
ASN Name	GOOGLE - Google LLC, US	GOOGLE - Google LLC, US
Network (CIDR)	2404:6800::/32	142.250.0.0/15

Web Services (35%) <span style="float: right;">8 / 8</span>			
#	CHECK	RESULT	DETAIL
1	<b>AAAA Record</b>	<span style="color: green;">PASS</span>	2404:6800:4003:c01::5b, 2404:6800:4003:c01::88, 2404:6800:4003:c01::be, 2404:6800:4003:c01::5d
2	<b>Globally Routable IPv6</b>	<span style="color: green;">PASS</span>	All addresses are globally routable.
3	<b>HTTP over IPv6</b>	<span style="color: green;">PASS</span>	HTTP (port 80) responds over IPv6 — 614ms TTFB.
4	<b>HTTPS over IPv6</b>	<span style="color: green;">PASS</span>	HTTPS (port 443) responds over IPv6 — 355ms TTFB.
5	<b>IPv6-Only Reachability</b>	<span style="color: green;">PASS</span>	Site is fully reachable via IPv6-only.
6	<b>TLS Certificate Valid (IPv6)</b>	<span style="color: green;">PASS</span>	Certificate valid — issued by C = US, O = Google Trust Services, CN = WR2, expires Apr 27 08:36:37 2026 GMT
7	<b>Dual-Stack (IPv4 + IPv6)</b>	<span style="color: green;">PASS</span>	Domain has both A and AAAA records.
8	<b>HTTP/3 (QUIC)</b>	<span style="color: green;">PASS</span>	Alt-Svc: h3 header detected.

DNS & DNSSEC (25%) <span style="float: right;">4 / 5</span>			
#	CHECK	RESULT	DETAIL
1	<b>NS Has AAAA Record</b>	<span style="color: green;">PASS</span>	Nameserver has IPv6 address.
2	<b>NS Reachable via IPv6</b>	<span style="color: green;">PASS</span>	Nameserver is reachable via IPv6 on port 53.
3	<b>NS Answers Queries via IPv6</b>	<span style="color: green;">PASS</span>	DNS queries answered over IPv6.
4	<b>DNSSEC Validated</b>	<span style="color: red;">FAIL</span>	DNSSEC validation failed or zone is unsigned.
5	<b>Reverse DNS (PTR)</b>	<span style="color: green;">PASS</span>	PTR record found in ip6.arpa.
6	<b>DS Record at Parent</b>	<span style="color: red;">FAIL</span>	No DS record at parent.

#	CHECK	RESULT	DETAIL
7	<b>RRSIG Valid</b>	<b>FAIL</b>	No valid RRSIG found.
8	<b>Signing Algorithm</b>	<b>INFO</b>	No DNSKEY record found.

**Email Services** (25%) 4 / 6

#	CHECK	RESULT	DETAIL
1	<b>MX Record Exists</b>	<b>PASS</b>	MX record found.
2	<b>MX Server Has IPv6</b>	<b>PASS</b>	MX server has AAAA record.
3	<b>SMTP Reachable via IPv6</b>	<b>FAIL</b>	SMTP is not reachable over IPv6.
4	<b>STARTTLS over IPv6</b>	<b>FAIL</b>	STARTTLS not available over IPv6.
5	<b>SPF Record</b>	<b>PASS</b>	SPF record found.
6	<b>DKIM Selector</b>	<b>INFO</b>	DKIM selector found: selector1_domainkey
7	<b>DMARC Record</b>	<b>PASS</b>	DMARC record found.

**IPv4 Baseline** (15%) 3 / 3

#	CHECK	RESULT	DETAIL
1	<b>A Record</b>	<b>PASS</b>	142.251.223.46
2	<b>HTTP over IPv4</b>	<b>PASS</b>	HTTP (port 80) responds over IPv4 — 429ms TTFB.
3	<b>HTTPS over IPv4</b>	<b>PASS</b>	HTTPS (port 443) responds over IPv4 — 305ms TTFB.

### Audit Trail & Evidence Record

Verification ID	4b9d1ecf-4899-4350-9ba7-bbcbfc07647e
Domain	youtube.com
Check Mode	Manual
Status	Completed
Started	07 Mar 2026, 01:15:18 MYT
Finished	07 Mar 2026, 01:15:46 MYT
Test Node Profile	dual stack
Engine Version	2.0.0
MGv6C Version	1.0.0
Audit URL	https://ipv6.my6.my/audit/4b9d1ecf-4899-4350-9ba7-bbcbfc07647e

### Integrity Verification

<b>✓ INTEGRITY VERIFIED</b>	
Algorithm	hmac-sha256-v1
Root Hash	6e3635a7467bb8833def18ef4746ec54d54ee7d7a549c56c57e123e47581f7aa
http_headers	9d21c969ea81bb8d0971eea96f25d3a9262f189b13e601164fd7708007a1848a
dns_responses	c44481f21021bd23045d8d1d1bd67c9d6fe0acca549b0e3f64f7e4853797028e
tls_handshake	e88d59e8f949d0049fee89a63527e2381603541bff1b76a4d345a35063ee017c
connectivity_log	a05f3653038893cc57527e029d96ef49fc93cbfd5734440c768021bcb0d925b8
dns_resolution_times	6be0076945ed74305cd587ca96df7b09fee72244f02819f7978a39a55abcfa45

### Test Node Identity

Os	Linux srv1440888 6.8.0-101-generic #101-Ubuntu SMP PREEMPT_DYNAMIC Mon Feb 9 10:15:05 UTC 2026 x86_64
Hostname	srv1440888
Php Version	8.3.30
Server Ipv4	76.13.221.142
Server Ipv6	2a02:4780:5e:2789::1

### DNS Resolution Performance

Comparison of A (IPv4) vs AAAA (IPv6) query times across resolvers and transports. Shows median (p50) and 95th percentile (p95) of 3 samples per tuple.

Resolver	Transport	A p50 (ms)	A p95 (ms)	AAAA p50 (ms)	AAAA p95 (ms)	Delta (ms)
System	Default	5.97	16.66	6.82	8.18	+0.9
Google	IPv4	26.03	26.13	17.98	27.16	-8.1
Google	IPv6	25.48	26.94	30.12	33.72	+4.6
Cloudflare	IPv4	8.86	17.34	17.02	20.62	+8.2
Cloudflare	IPv6	19.93	26.23	14	16.01	-5.9



## DNS Evidence

### A

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 55464
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
youtube.com. 300 IN A 172.217.25.142
```

### DS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 21413
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; AUTHORITY SECTION:
com. 312 IN SOA a.gtld-servers.net. nstld.verisign-grs.com. 1772787931 1800 900 604800 900
```

### MX

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 18971
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
youtube.com. 300 IN MX 0 smtp.google.com.
```

### NS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 15484
;; flags: qr rd ra; QUERY: 1, ANSWER: 4, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
youtube.com. 16392 IN NS ns2.google.com.
youtube.com. 16392 IN NS ns4.google.com.
youtube.com. 16392 IN NS ns3.google.com.
youtube.com. 16392 IN NS ns1.google.com.
```

### TXT

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 41190
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
youtube.com. 3600 IN TXT "google-site-verification=QtQWEwHWM8tHiJ4s-jJwzEQrD_ff3luPnpzNDH-Nw-w"
youtube.com. 3600 IN TXT "v=spf1 include:google.com mx -all"
youtube.com. 3600 IN TXT "facebook-domain-verification=64jdes7le4h7e7lfp122rijygs58j1"
```

### AAAA

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 61424
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
youtube.com. 300 IN AAAA 2404:6800:4001:812::200e
```

### RRSIG

```
ns1.google.com. dns-admin.google.com. 879012124 900 900 1800 60
```

---

**DNSKEY**

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 18861
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; AUTHORITY SECTION:
youtube.com. IN SOA ns1.google.com. dns-admin.google.com. 879012124 900 900 1800 60
```

**DNSSEC\_VALIDATION**

```
; unsigned answer
youtube.com. IN SOA ns1.google.com. dns-admin.google.com. 879012124 900 900 1800 60
```



TLS Handshake Evidence

IPV4 Connection

IP Used	142.251.223.46
IP Version	4

```

depth=2 C = US, O = Google Trust Services LLC, CN = GTS Root R1
verify return:1
depth=1 C = US, O = Google Trust Services, CN = WR2
verify return:1
depth=0 CN = *.google.com
verify return:1
CONNECTED(00000010)
...
Certificate chain
0 s:CN = *.google.com
i:C = US, O = Google Trust Services, CN = WR2
a:PKKEY: id-ecPublicKey, 256 (bit); sigalg: RSA-SHA256
v:NotBefore: Feb 2 08:36:38 2026 GMT; NotAfter: Apr 27 08:36:37 2026 GMT
-----BEGIN CERTIFICATE-----
MIIONTCDR2gAwIBAgIRALJP+TqZdfpnCkKwE86zGUWdQYJKoZIhvcNAQELBQAw
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```















```

"5": "cache-control: private, max-age=31536000",
"6": "location: https://www.youtube.com/",
"7": "content-length: 0",
"8": "x-frame-options: SAMEORIGIN",
"9": "strict-transport-security: max-age=31536000; includeSubDomains; preload",
"10": "content-security-policy-report-only: report-uri https://csp.withgoogle.com/csp/youtube_main/strict;base-uri 'self';object-src 'none';script-src 'report-sample' 'nonce-E0undjD6WZT2zdEGJ00J8w' 'unsafe-inline' 'strict-dynamic' https: http: 'unsafe-eval'",
"11": "permissions-policy: ch-ua-arch=*, ch-ua-bitness=*, ch-ua-full-version=*, ch-ua-full-version-list=*, ch-ua-model=*, ch-ua-wow64=*, ch-ua-form-factors=*, ch-ua-platform=*, ch-ua-platform-version=*",
"12": "cross-origin-opener-policy: same-origin-allow-popups; report-to=\"youtube_main\"",
"13": "origin-trial:
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"14": "origin-trial:
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"15": "report-to: {\"group\": \"youtube_main\", \"max_age\": 2592000, \"endpoints\": [{\"url\": \"https://csp.withgoogle.com/csp/report-to/youtube_main\"}]}",
"16": "content-security-policy: require-trusted-types-for 'script'",
"17": "accept-ch: Sec-CH-Viewport-Width, Sec-CH-DPR, Device-Memory",
"18": "vary: Sec-CH-Viewport-Width, Sec-CH-DPR, Device-Memory",
"19": "server: ESF",
"20": "x-xss-protection: 0",
"21": "alt-svc: h3=\":443\"; ma=2592000, h3-29=\":443\"; ma=2592000",
"23": "HTTP/2 200",
"24": "content-type: text/html; charset=utf-8",
"25": "x-content-type-options: nosniff",
"26": "cache-control: no-cache, no-store, max-age=0, must-revalidate",
"27": "pragma: no-cache",
"28": "expires: Mon, 01 Jan 1990 00:00:00 GMT",
"29": "date: Fri, 06 Mar 2026 09:15:44 GMT",
"30": "content-length: 0",
"31": "x-frame-options: SAMEORIGIN",
"32": "strict-transport-security: max-age=31536000",
"33": "cross-origin-opener-policy: same-origin-allow-popups; report-to=\"youtube_main\"",
"34": "permissions-policy: ch-ua-arch=*, ch-ua-bitness=*, ch-ua-full-version=*, ch-ua-full-version-list=*, ch-ua-model=*, ch-ua-wow64=*, ch-ua-form-factors=*, ch-ua-platform=*, ch-ua-platform-version=*",
"35": "content-security-policy: require-trusted-types-for 'script'",
"36": "content-security-policy-report-only: report-uri https://csp.withgoogle.com/csp/youtube_main/strict;base-uri 'self';object-src 'none';script-src 'report-sample' 'nonce-bYFDhi8UPuy9-YA8w5gDNw' 'unsafe-inline' 'strict-dynamic' https: http: 'unsafe-eval'",
"37": "accept-ch: Sec-CH-Viewport-Width, Sec-CH-DPR, Device-Memory",
"38": "vary: Sec-CH-Viewport-Width, Sec-CH-DPR, Device-Memory",
"39": "report-to: {\"group\": \"youtube_main\", \"max_age\": 2592000, \"endpoints\": [{\"url\": \"https://csp.withgoogle.com/csp/report-to/youtube_main\"}]}",
"40": "origin-trial:
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"41": "origin-trial:
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"42": "reporting-endpoints: default=\":/web-reports?context=eJwNymTmJXEAgHGvZ9J61Tnv-78wUmYy2LHpC_aymg0pc0yE4suaKVjdU7KQrbIbZSY-20zksuGzbSWyXgrEZUtzWjllotcxlnLuP98Nvz5QmrGrHjd6ERs6jYWDW1xFjYUWrsT_EbPy76jwVnfmPJq4AxGFvMZEWXGUxvy40z7hXdy8euGN68MoyKz2FkzTApmPslWoyMG55uMrk9iWt5psmb_tM4g0j6M8Ip-V40Gs_hnPOqFEHGkwjQHEN_I5i6KI34VZ5uLEHhezjroY3eaiJcZN6Bo3nSfdvPnpZrWvBBvcSrT4m22Rdp6i8pKi2rH_AMW9xotIq9biG6Lcf0WH4IWHyfa9KbY_Eu15cuy6fPZJ63SeqmddpMyZoEzp5k8YpuDJBKIFnnhBCKkg;wsEXyQeITXCLZcEnBVKHdH80CpIKVhcPir4M9vQcZ0SxiCJMvWV7r1LH8uGSb466j-4zk-jnJiwuSLkF5VUnuQ8ngE0Lxu6TphWTgpaShR7KxV-Lrk9R_kZwepLigFZPGKDoiFaVTFHHTFd9mKto9ivNexfxLioNiQoKRYvj8i7FjB0K44gi75hi8WnFpluKocKcFbF82eKQ12KvKfTa0evYsM7Re2Qy9PRFuvhRymelRo2kM00z2Nd8dupcmL1GS01yRHaUM1uyboKmafypmro0TWi6z7cZnIe5zA_eDRrSnwhfwB3LYzfn53jWlfiK_Z784jxPbkmBvyB3bVF2nDdurne2d06sNyF706z_xX3IfA\"",
"43": "document-policy: include-js-call-stacks-in-crash-reports",
"44": "p3p: CP=\":This is not a P3P policy! See http://support.google.com/accounts/answer/151657?hl=ms for more info.\"",
"45": "server: ESF",
"46": "x-xss-protection: 0",
"47": "set-cookie: GPS=1; Domain=.youtube.com; Expires=Fri, 06-Mar-2026 09:45:44 GMT; Path=/; Secure; HttpOnly",
"48": "set-cookie: YSC=VqsIiI_7HI; Domain=.youtube.com; Path=/; Secure; HttpOnly; SameSite=none",
"49": "set-cookie: __Secure-ROLLOUT_TOKEN=CMTDhK_Sy_uB9gEQlSnF_eKkwMYLsnF_eKkwM%3D; Domain=youtube.com; Expires=Wed, 02-Sep-2026 09:15:44 GMT; Path=/; Secure; HttpOnly; SameSite=none; Partitioned",
"50": "set-cookie: __Secure-YEC=; Domain=.youtube.com; Expires=Sat, 10-Jun-2023 09:15:44 GMT; Path=/; Secure; HttpOnly; SameSite=lax",
"51": "set-cookie: VISITOR_INFO01_LIVE=w_MWBv8k4U; Domain=.youtube.com; Expires=Wed, 02-Sep-2026 09:15:44 GMT; Path=/; Secure; HttpOnly; SameSite=none",
"52": "set-cookie: VISITOR_PRIVACY_METADATA=CgJNWRIEGgAg0A%3D; Domain=.youtube.com; Expires=Wed, 02-Sep-2026 09:15:44 GMT; Path=/; Secure; HttpOnly; SameSite=none",
"53": "alt-svc: h3=\":443\"; ma=2592000, h3-29=\":443\"; ma=2592000"
}

```

Connectivity Test Evidence

Test	Result
TCP Connect IPv4 → port 80	301 0.001124 0.018616
TCP Connect IPv6 → port 80	301 0.012576 0.069824
TCP Connect IPv4 → port 443	301 0.002542 0.078274
TCP Connect IPv6 → port 443	301 0.009906 0.088872

---

### Test Node Network Evidence

---

Node Profile	dual stack
--------------	------------

### Egress Connectivity

IPv4 Egress	76.13.221.142
IPv6 Egress	2a02:4780:5e:2789::1

### Sysctl IPv6 Flags

net.ipv6.conf.all.disable_ipv6	0
--------------------------------	---

### IPv6 Routes

```
2a02:4780:5e::/48 dev eth0 proto kernel metric 256 pref medium
fe80::/64 dev eth0 proto kernel metric 256 pref medium
default via 2a02:4780:5e::1 dev eth0 proto static metric 1024 pref medium
```

### IPv4 Routes

```
default via 76.13.221.254 dev eth0 proto static
76.13.221.0/24 dev eth0 proto kernel scope link src 76.13.221.142
```