

# IPv6 Readiness Report

## telegram.org — telegram.org

Category: Social Media • Generated: 20 Apr 2026, 21:17 MYT • Last Checked: 07 Mar 2026, 01:16 MYT • Verification ID: 6b7e1d1a-6f2c-4bfc-b4cf-60fa475d8687

Report generated from National IPv6 Readiness Monitor — <https://ipv6.my6.my>

Audit trail: <https://ipv6.my6.my/audit/6b7e1d1a-6f2c-4bfc-b4cf-60fa475d8687>



**Partially Compliant**

MGv6C-1.0

**73%**

**Partial Support**

### IPv6-ONLY READINESS

Website: ✓ Ready

DNS: ✓ Ready

Email: ✗ Not Ready

### IPv6 ADDRESSES

2001:67c:4e8:f004::9

### IPv4 ADDRESSES

149.154.167.99

## Network Information (WHOIS / RDAP)

	IPv6 Network	IPv4 Network
Organization	MNT-TELEGRAM	MNT-TELEGRAM
Country	VG	AG
ASN	AS62041	AS62041
ASN Name	TELEGRAM, VG	TELEGRAM, VG
Network (CIDR)	2001:67c:4e8::/48	149.154.164.0/22

## Web Services (35%)

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#	CHECK	RESULT	DETAIL
1	<b>AAAA Record</b>	<span style="color: green;">PASS</span>	2001:67c:4e8:f004::9
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 — 851ms TTFB.
4	<b>HTTPS over IPv6</b>	<span style="color: green;">PASS</span>	HTTPS (port 443) responds over IPv6 — 509ms 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, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", OU = http://certs.godaddy.com/repository/, CN = Go Daddy Secure Certificate Authority - G2, expires Sep 12 13:36:48 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: red;">FAIL</span>	No HTTP/3 support detected.

## DNS & DNSSEC (25%)

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#	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: red;">FAIL</span>	No PTR record found.
6	<b>DS Record at Parent</b>	<span style="color: red;">FAIL</span>	No DS record at parent.
7	<b>RRSIG Valid</b>	<span style="color: red;">FAIL</span>	No valid RRSIG found.

#	CHECK	RESULT	DETAIL
8	<b>Signing Algorithm</b>	<b>INFO</b>	No DNSKEY record found.

**Email Services** (25%) 3 / 6

#	CHECK	RESULT	DETAIL
1	<b>MX Record Exists</b>	<b>PASS</b>	MX record found.
2	<b>MX Server Has IPv6</b>	<b>FAIL</b>	MX server has no IPv6 address.
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: mail_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>	149.154.167.99
2	<b>HTTP over IPv4</b>	<b>PASS</b>	HTTP (port 80) responds over IPv4 — 860ms TTFB.
3	<b>HTTPS over IPv4</b>	<b>PASS</b>	HTTPS (port 443) responds over IPv4 — 517ms TTFB.

### Audit Trail & Evidence Record

Verification ID	6b7e1d1a-6f2c-4bfc-b4cf-60fa475d8687
Domain	telegram.org
Check Mode	Manual
Status	Completed
Started	07 Mar 2026, 01:16:17 MYT
Finished	07 Mar 2026, 01:16:34 MYT
Test Node Profile	dual stack
Engine Version	2.0.0
MGv6C Version	1.0.0
Audit URL	https://ipv6.my6.my/audit/6b7e1d1a-6f2c-4bfc-b4cf-60fa475d8687

### Integrity Verification

✓ <b>INTEGRITY VERIFIED</b>	
Algorithm	hmac-sha256-v1
Root Hash	757a9c0b67c25eb96e4aaa998eee5bf129a5a5487682e2b65ccd0d9c7cc072
http_headers	ea5464645982250690f5bd39a6155881fd01beab0cb97083a142ae4ed9c0c0e
dns_responses	2fc560cbfe9990f26a647d036313f69873cf21c76af712f1fcf37863e83aefea
tls_handshake	92ce2f8ad2892e3e8dce089aceef03b621319f1eed93fa8eac29f565f19f87f9
connectivity_log	e3229a4d11cdd28d9ebc0a77ef55d3affcf9463cb382df66a8010f841125ba66
dns_resolution_times	2a0c2ea7cbcf22802dcb1f710e66bea98c1b48684ba79db0feff70ab14ec77fc

### 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	12.89	23.83	6	6.04	-6.9
Google	IPv4	17.34	18.18	16.91	24.18	-0.4
Google	IPv6	18.7	33.65	28.21	28.31	+9.5
Cloudflare	IPv4	9.81	20.43	9.6	20.03	-0.2
Cloudflare	IPv6	19.69	20.35	16.72	19.24	-3



## DNS Evidence

### A

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 48294
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
telegram.org. 00667 IN A 149.154.167.99
```

### DS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 33684
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; AUTHORITY SECTION:
org. 00534 IN SOA a0.org.afiliat-nst.info. hostmaster.donuts.email. 1772786851 7200 900 1209600 3600
```

### MX

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 57363
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
telegram.org. 00600 IN MX 10 mx101.telegram.org.
telegram.org. 00600 IN MX 15 mx110.telegram.org.
```

### NS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 55623
;; flags: qr rd ra; QUERY: 1, ANSWER: 4, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
telegram.org. 0021600 IN NS ns-cloud-b2.googledomains.com.
telegram.org. 0021600 IN NS ns-cloud-b4.googledomains.com.
telegram.org. 0021600 IN NS ns-cloud-b1.googledomains.com.
telegram.org. 0021600 IN NS ns-cloud-b3.googledomains.com.
```

### TXT

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 37001
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
telegram.org. 00600 IN TXT "v=spf1 ip4:95.161.64.0/28 ip4:95.161.64.16/30 ip4:149.154.160.0/20 ip4:149.154.162.125/32 ip4:149.154.162.247/32 -all"
telegram.org. 00600 IN TXT "google-site-verification=R-3XYX47JUVHva3pnhnyjx5D72PtSnjtLMLj_tymTAc"
telegram.org. 00600 IN TXT "google-site-verification=hAtj8VzR8LGDcv80yGd0ST-pMHU8WNU0lkswau3v2w"
```

### AAAA

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 31547
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
telegram.org. 00115 IN AAAA 2001:67c:4e8:f004::9
```

### RRSIG

```
ns-cloud-b1.googledomains.com. dns.jomax.net.telegram.org. 2017053111 28800 7200 604800 600
```

**DNSKEY**

```
;; Got answer:  
;; ->HEADER<<- opcode: QUERY, status: NOERROR, id: 44117  
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1  
  
;; OPT PSEUDOSECTION:  
; EDNS: version: 0, flags:; udp: 512  
;; AUTHORITY SECTION:  
telegram.org. IN SOA ns-cloud-b1.googledomains.com. dns.jomax.net.telegram.org. 2017053111 28800 7200 604800 600
```

**DNSSEC\_VALIDATION**

```
; unsigned answer  
telegram.org. IN SOA ns-cloud-b1.googledomains.com. dns.jomax.net.telegram.org. 2017053111 28800 7200 604800 600
```











## HTTP Response Evidence

### IPv4 HTTP (port 80)

HTTP Status	200
Connected IP	149.154.167.99
Connect Time	337.92 ms
TTFB	853.61 ms
Total Time	853.68 ms

#### Response Headers:

```
{
  "0": "HTTP/1.1 302 Found",
  "1": "Server: nginx/1.18.0",
  "2": "Date: Fri, 06 Mar 2026 09:16:31 GMT",
  "3": "Content-Type: text/html; charset=UTF-8",
  "4": "Content-Length: 0",
  "5": "Connection: keep-alive",
  "6": "Pragma: no-cache",
  "7": "Cache-control: no-store",
  "8": "Location: https://telegram.org/",
  "10": "HTTP/2 200",
  "11": "server: nginx/1.18.0",
  "12": "date: Fri, 06 Mar 2026 09:16:31 GMT",
  "13": "content-type: text/html; charset=utf-8",
  "14": "content-length: 19656",
  "15": "set-cookie: ste_lssid=13af9b334c9fe4fdc7_14606583980149830432; expires=Fri, 06 Mar 2026 20:23:11 GMT; path=/; samesite=None; secure; HttpOnly",
  "16": "pragma: no-cache",
  "17": "cache-control: no-store",
  "18": "x-frame-options: SAMEORIGIN",
  "19": "strict-transport-security: max-age=31536000; includeSubDomains; preload"
}
```

### IPv6 HTTP (port 80)

HTTP Status	200
Connected IP	2001:67c:4e8:f004::9
Connect Time	339.15 ms
TTFB	865.33 ms
Total Time	865.41 ms

#### Response Headers:

```
{
  "0": "HTTP/1.1 302 Found",
  "1": "Server: nginx/1.18.0",
  "2": "Date: Fri, 06 Mar 2026 09:16:28 GMT",
  "3": "Content-Type: text/html; charset=UTF-8",
  "4": "Content-Length: 0",
  "5": "Connection: keep-alive",
  "6": "Pragma: no-cache",
  "7": "Cache-control: no-store",
  "8": "Location: https://telegram.org/",
  "10": "HTTP/2 200",
  "11": "server: nginx/1.18.0",
  "12": "date: Fri, 06 Mar 2026 09:16:28 GMT",
  "13": "content-type: text/html; charset=utf-8",
  "14": "content-length: 19656",
  "15": "set-cookie: ste_lssid=4477eb032dca834eb3_888162192917150382; expires=Fri, 06 Mar 2026 20:23:08 GMT; path=/; samesite=None; secure; HttpOnly",
  "16": "pragma: no-cache",
  "17": "cache-control: no-store",
  "18": "x-frame-options: SAMEORIGIN",
  "19": "strict-transport-security: max-age=31536000; includeSubDomains; preload"
}
```

### IPv4 HTTPS (port 443)

HTTP Status	200
Connected IP	149.154.167.99
Connect Time	169.25 ms

<b>TTFB</b>	516.24 ms
<b>Total Time</b>	516.27 ms

**Response Headers:**

```
[
  "HTTP/2 200",
  "server: nginx/1.18.0",
  "date: Fri, 06 Mar 2026 09:16:32 GMT",
  "content-type: text/html; charset=utf-8",
  "content-length: 19656",
  "set-cookie: stel_ssid=1846029d1cdb0d483a_8287239394043537573; expires=Fri, 06 Mar 2026 20:23:12 GMT; path=/; samesite=None; secure; HttpOnly",
  "pragma: no-cache",
  "cache-control: no-store",
  "x-frame-options: SAMEORIGIN",
  "strict-transport-security: max-age=31536000; includeSubDomains; preload"
]
```

**IPv6 HTTPS (port 443)**

<b>HTTP Status</b>	200
<b>Connected IP</b>	2001:67c:4e8:f004::9
<b>Connect Time</b>	168.81 ms
<b>TTFB</b>	519.93 ms
<b>Total Time</b>	519.97 ms

**Response Headers:**

```
[
  "HTTP/2 200",
  "server: nginx/1.18.0",
  "date: Fri, 06 Mar 2026 09:16:29 GMT",
  "content-type: text/html; charset=utf-8",
  "content-length: 19656",
  "set-cookie: stel_ssid=adf16417e9bb33ad80_3056206851395636741; expires=Fri, 06 Mar 2026 20:23:09 GMT; path=/; samesite=None; secure; HttpOnly",
  "pragma: no-cache",
  "cache-control: no-store",
  "x-frame-options: SAMEORIGIN",
  "strict-transport-security: max-age=31536000; includeSubDomains; preload"
]
```

**Connectivity Test Evidence**

Test	Result
TCP Connect IPv4 → port 80	302 0.170021 0.339820
TCP Connect IPv6 → port 80	302 0.166132 0.334115
TCP Connect IPv4 → port 443	200 0.164944 0.668458
TCP Connect IPv6 → port 443	200 0.165301 0.669524

---

### Test Node Network Evidence

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Node Profile	dual stack
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#### 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
```