IPv6 Readiness Report

telegram.org — telegram.org

Scan to verify

Category: Social Media • Generated: 02 Nov 2026, 03:07 MYT • Last Checked: 08 Aug 2026, 18:20 MYT • Verification ID: 5a2c03c5-f9ba-4336-81e9-6429d9ab92bb
Report generated from National IPv6 Readiness Monitor — https://ipv6.my6.my
Audit trail: https://ipv6.my6.my/audit/5a2c03c5-f9ba-4336-81e9-6429d9ab92bb

⚠

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 - Telegram Messenger Inc, VG	Telegram - Telegram Messenger Inc, VG
Network (CIDR)	2001:67c:4e8::/48	149.154.164.0/22

Web Services (35%) — 7 / 8

#	CHECK	RESULT	DETAIL
1	**AAAA Record**	PASS	2001:67c:4e8:f004::9
2	**Globally Routable IPv6**	PASS	All addresses are globally routable.
3	**HTTP over IPv6**	PASS	HTTP (port 80) responds over IPv6 — 855ms TTFB.
4	**HTTPS over IPv6**	PASS	HTTPS (port 443) responds over IPv6 — 513ms TTFB.
5	**IPv6-Only Reachability**	PASS	Site is fully reachable via IPv6-only.
6	**TLS Certificate Valid (IPv6)**	PASS	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	**Dual-Stack (IPv4 + IPv6)**	PASS	Domain has both A and AAAA records.
8	**HTTP/3 (QUIC)**	FAIL	No HTTP/3 support detected.

DNS & DNSSEC (25%) — 3 / 5

#	CHECK	RESULT	DETAIL
1	**NS Has AAAA Record**	PASS	Nameserver has IPv6 address.
2	**NS Reachable via IPv6**	PASS	Nameserver is reachable via IPv6 on port 53.
3	**NS Answers Queries via IPv6**	PASS	DNS queries answered over IPv6.
4	**DNSSEC Validated**	FAIL	DNSSEC validation failed or zone is unsigned.
5	**Reverse DNS (PTR)**	FAIL	No PTR record found.
6	**DS Record at Parent**	FAIL	No DS record at parent.

#	CHECK	RESULT	DETAIL
7	**RRSIG Valid**	FAIL	No valid RRSIG found.
8	**Signing Algorithm**	INFO	No DNSKEY record found.

Email Services (25%) — 3 / 6

#	CHECK	RESULT	DETAIL
1	**MX Record Exists**	PASS	MX record found.
2	**MX Server Has IPv6**	FAIL	MX server has no IPv6 address.
3	**SMTP Reachable via IPv6**	FAIL	SMTP is not reachable over IPv6.
4	**STARTTLS over IPv6**	FAIL	STARTTLS not available over IPv6.
5	**SPF Record**	PASS	SPF record found.
6	**DKIM Selector**	INFO	DKIM selector found: mail._domainkey
7	**DMARC Record**	PASS	DMARC record found.

IPv4 Baseline (15%) — 3 / 3

#	CHECK	RESULT	DETAIL
1	**A Record**	PASS	149.154.167.99
2	**HTTP over IPv4**	PASS	HTTP (port 80) responds over IPv4 — 859ms TTFB.
3	**HTTPS over IPv4**	PASS	HTTPS (port 443) responds over IPv4 — 505ms TTFB.

Audit Trail & Evidence Record

Verification ID	5a2c03c5-f9ba-4336-81e9-6429d9ab92bb
Domain	telegram.org
Check Mode	Manual
Status	Completed
Started	08 Aug 2026, 18:20:17 MYT
Finished	08 Aug 2026, 18:20:42 MYT
Test Node Profile	dual stack
Engine Version	2.0.0
MGv6C Version	1.0.0
Audit URL	https://ipv6.my6.my/audit/5a2c03c5-f9ba-4336-81e9-6429d9ab92bb

Integrity Verification

✓ **INTEGRITY VERIFIED**

Algorithm	hmac-sha256-v1
Root Hash	4e1b8dfc9d98bb10298591b20a01cccd809f3dc5021ba4a894a697f05317687d
http_headers	074bd91ad3e85b5710127c0d17ae630b02dbfbc8e62701d9dbce9f92bb576205
dns_responses	f407a84fc430de5df1c4cd026482fde9b73aefcc5e3b2b1866ad49803335c682
tls_handshake	2df3da0ca09df34d6d9aab65bedcf79f7125f3728bfbb3eee523481a6e11faa4
connectivity_log	82140807a91d19a0c69c2602038a7cc47ca98d94961af9d34e1f9d31d4154f1f
dns_resolution_times	b832e1cdaa37b16769b47dbc659e80ba81cd30602927f2ff95f827a92ed14165

Test Node Identity

Os	Linux srv1440888 6.8.0-136-generic #136-Ubuntu SMP PREEMPT_DYNAMIC Wed Jul 1 21:53:05 UTC 2026 x86_64
Hostname	srv1440888
Php Version	8.3.33
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	20.56	22.47	23.72	30.12	+3.2
Google	IPv4	23.22	84.25	36.48	96.74	+13.3
Google	IPv6	23.15	33.05	26.94	90.66	+3.8
Cloudflare	IPv4	25.54	33.3	23.61	33.2	-1.9
Cloudflare	IPv6	28.68	28.7	28.5	29.53	-0.2

DNS Evidence

A

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 37660
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; ANSWER SECTION:
telegram.org.□□700□IN□A□149.154.167.99
```

DS

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 59956
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; AUTHORITY SECTION:
org.□□□3590□IN□SOA□a0.org.afilias-nst.info. hostmaster.donuts.email. 1786183808 7200 900 1209600 3600
```

MX

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 9998
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; ANSWER SECTION:
telegram.org.□□60□IN□MX□10 mx101.telegram.org.
telegram.org.□□60□IN□MX□15 mx110.telegram.org.
```

NS

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 64956
;; flags: qr rd ra; QUERY: 1, ANSWER: 4, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; ANSWER SECTION:
telegram.org.□□21600□IN□NS□ns-cloud-b4.googledomains.com.
telegram.org.□□21600□IN□NS□ns-cloud-b2.googledomains.com.
telegram.org.□□21600□IN□NS□ns-cloud-b1.googledomains.com.
telegram.org.□□21600□IN□NS□ns-cloud-b3.googledomains.com.
```

TXT

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 22978
;; flags: qr rd ra; QUERY: 1, ANSWER: 4, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; ANSWER SECTION:
telegram.org.□□600□IN□TXT□"google-site-verification=hAtj8VzR8lGDcv80yGd0ST-pMHU8WNU0lkswaau3v2w"
telegram.org.□□600□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.□□600□IN□TXT□"google-site-verification=R-3XYX47JUVHva3pnhnyjx5D72PtSnjtLMLj_tymTAc"
telegram.org.□□600□IN□TXT□"yahoo-verification-key=NRNCv6/IcZMkSv28KI97E4zgZVMkk4PejCwNSh8So2k="
```

AAAA

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 12303
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; ANSWER SECTION:
telegram.org.□□120□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: 24670
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; AUTHORITY SECTION:
telegram.org.□□590□IN□SOA□ns-cloud-b1.googledomains.com. dns.jomax.net.telegram.org. 2017053111 28800 7200 604800 600
```

DNSSEC_VALIDATION

```
; unsigned answer
telegram.org.□□590□IN□SOA□ns-cloud-b1.googledomains.com. dns.jomax.net.telegram.org. 2017053111 28800 7200 604800 600
```

TLS Handshake Evidence

IPV4 Connection

IP Used	149.154.167.99
IP Version	4

```
depth=2 C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", CN = Go Daddy Root Certificate Authority - G2
verify return:1
depth=1 C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", OU = http://certs.godaddy.com/repository/, CN = Go Daddy Secure Certificate Authority - G2
verify return:1
depth=0 CN = *.telegram.org
verify return:1
CONNECTED(00000010)
---
Certificate chain
 0 s:CN = *.telegram.org
   i:C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", OU = http://certs.godaddy.com/repository/, CN = Go Daddy Secure Certificate Authority - G2
   a:PKEY: rsaEncryption, 2048 (bit); sigalg: RSA-SHA256
   v:NotBefore: Aug 11 13:36:48 2025 GMT; NotAfter: Sep 12 13:36:48 2026 GMT
-----BEGIN CERTIFICATE-----
MIIGkTCCBXmgAwIBAgIIeU3T8Icp6McwDQYJKoZIhvcNAQELBQAwgbQxCzAJBgNV
BAYTAlVTMRAwDgYDVQQIEwdBcml6b25hMRMwEQYDVQQHEwpTY290dHNkYWxlMRow
GAYDVQQKExFHb0RhZGR5LmNvbSwgSW5jLjEtMCsGA1UECxMkaHR0cDovL2NlcnRz
LmdvZGFkZHkuY29tL3JlcG9zaXRvcnkvMTMwMQYDVQQDEypHbyBEYWRkeSBTZWN1
cmUgQ2VydGlmaWNhdGUgQXV0aG9yaXR5IC0gRzIwHhcNMjUwODExMTMzNjQ4WhcN
MjYwOTEyMTMzNjQ4WjAZMRcwFQYDVQQDDA4qLnRlbGVncmFtLm9yZzCCASIwDQYJ
KoZIhvcNAQEBBQADggEPADCCAQoCggEBAKpIH/5PVT0RqF5iuaLJdPSSPQ/Zv4bb
3vRlAAN99rtR9/diw4JV2QsnVmReHY111XoEjUeKhjuB+ETlh/VGO/NXNPcPn/J2
LCtyMvOM1SDkwAJ2RGzN6Tj1Un9QHdtZ5yQqTk34p/dp4TnjkbcFGdZxNt2fXS68
FmE0j5KqmO4ygBcwymwzJr10750H9o9E/d2Q5q4/9fHEYSyTLJEbiuSb/3QI3Wq8
rjABm/OfINdik3Uo1tcKO3ROEgNEWdP581pBHvqDgCjLfjt6OFDDyrttUHVhIATm
1EsHIhqG5VUbSbLJlsP3PQAnngqbILMw6DyvfLm2sc9vyQXDyZfYBe0CAwEAAaOC
Az8wggM7MAwGA1UdEwEB/wQCMAAwHQYDVR0lBBYwFAYIKwYBBQUHAwEGCCsGAQUF
BwMCMA4GA1UdDwEB/wQEAwIFoDA5BgNVHR8EMjAwMC6gLKAqhihodHRwOi8vY3Js
LmdvZGFkZHkuY29tL2dkaWcyczEtNTgxNDQuY3JsMF0GA1UdIARWMFQwSAYLYIZI
AYb9bQEHFwEwOTA3BggrBgEFBQcCARYraHR0cDovL2NlcnRpZmljYXRlcy5nb2Rh
ZGR5LmNvbS9yZXBvc2l0b3J5LzAIBgZngQwBAgEwdgYIKwYBBQUHAQEEajBoMCQG
CCsGAQUFBzABhhhodHRwOi8vb2NzcC5nb2RhZGR5LmNvbS8wQAYIKwYBBQUHMAKG
NGh0dHA6Ly9jZXJ0aWZpY2F0ZXMuZ29kYWRkeS5jb20vcmVwb3NpdG9yeS9nZGln
Mi5jcnQwHwYDVR0jBBgwFoAUQMK9J47MNIMwojPX+2yz8LQsgM4wJwYDVR0RBCAw
HoIOKi50ZWxlZ3JhbS5vcmeCDHRlbGVncmFtLm9yZzAdBgNVHQ4EFgQUar22wmRJ
b9KW5yDPwx7nWNm1JX4wggF/BgorBgEEAdZ5AgQCBIIBbwSCAWsBaQB3ANdtfRDR
p/V3wsfpX9cAv/mCyTNaZeHQswFzF8DIxWl3AAABmJlZFjgAAAQDAEgwRgIhALkC
/Sr+gAUPG8vj52N7inslQqpwM+G7fl2CZEt0U7zAAiEAvJVZapV/8DSYwxgq9HHz
Y71GmWcvxxDofnoZfiOR1C8AdQCUTkOH+uzB74HzGSQmqBhlAcfTXzgCAT9yZ31V
Ny4Z2AAAAZiZWRdvAAAEAwBGMEQCIC9o3zj8L4rIs3NOI1J6kFkZI5x0NnFWIfJp
E1VbmUGgAiB7zPt40y0A18/ZunpUiM0oXztOtHo7PvSmrnrUCTUQ+QB3AMIxfldF
GaNF7n843rKQQevHwiFaIr9/1bWtdprZDlLNAAABmJlZF/cAAAQDAEgwRgIhAPpl
sYEwoh19lPQ+aAWylxbT9rBv1aJIzu7gYW1CxE3AAiEA0oKEMjcGFL+z5Oa5JCGw
E+A25pWTcTVBQvKqROR4pfIwDQYJKoZIhvcNAQELBQADggEBAAkxooeSdutFS0++
35jlB7O8SL0jU8bLS2rEKBeQQEpv1BBa48m47XxUtmZwmgs0dzg27W6N3BHpOG9H
LdC3oy6Vf3IQmssOnDAbJGq5hTQnwMUBGGh23yj6k49pJwZGcGgfJQpdHkVYC2QT
M5qP9NQ3iie0hTbBqc5u93Pp962c5lxrmLMok1+F7LjKDSDH0sHItiNadR4UQAXi
5wA4Zv+LSPb2YMSo5Ku0NowTWdAcklIyBrhNJTrmeAe1sEd6HL06wwJmsHMUxnIY
MgkEyIjlwOhJxS1S2KKc4Olw39HeSOeMvjQRsHC+zO58444T6n1/riGt1T402A+d
kiuQ6p4=
-----END CERTIFICATE-----
 1 s:C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", OU = http://certs.godaddy.com/repository/, CN = Go Daddy Secure Certificate Authority - G2
   i:C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", CN = Go Daddy Root Certificate Authority - G2
   a:PKEY: rsaEncryption, 2048 (bit); sigalg: RSA-SHA256
   v:NotBefore: May  3 07:00:00 2011 GMT; NotAfter: May  3 07:00:00 2031 GMT
-----BEGIN CERTIFICATE-----
MIIE0DCCA7igAwIBAgIBBzANBgkqhkiG9w0BAQsFADCBgzELMAkGA1UEBhMCVVMx
EDAOBgNVBAgTB0FyaXpvbmExEzARBgNVBAcTClNjb3R0c2RhbGUxGjAYBgNVBAoT
EUdvRGFkZHkuY29tLCBJbmMuMTEwLwYDVQQDEyhHbyBEYWRkeSBSb290IENlcnRp
ZmljYXRlIEF1dGhvcml0eSAtIEcyMB4XDTExMDUwMzA3MDAwMFoXDTMxMDUwMzA3
MDAwMFowgbQxCzAJBgNVBAYTAlVTMRAwDgYDVQQIEwdBcml6b25hMRMwEQYDVQQH
EwpTY290dHNkYWxlMRowGAYDVQQKExFHb0RhZGR5LmNvbSwgSW5jLjEtMCsGA1UE
CxMkaHR0cDovL2NlcnRzLmdvZGFkZHkuY29tL3JlcG9zaXRvcnkvMTMwMQYDVQQD
EypHbyBEYWRkeSBTZWN1cmUgQ2VydGlmaWNhdGUgQXV0aG9yaXR5IC0gRzIwggEi
MA0GCSqGSIb3DQEBAQUAA4IBDwAwggEKAoIBAQC54MsQ1K92vdSTYuswZLiBCGzD
BNliF44v/z5lz4/OYuY8UhzaFkVLVat4a2ODYpDOD2lsmcgaFItMzEUz6ojcnqOv
K/6AYZ15V8TPLvQ/MDxdR/yaFrzDN5ZBUY4RS1T4KL7QjL7wMDge87Am+GZHY23e
cSZHjzhHU9FGHbTj3ADqRay9vHHZqm8A29vNMDp5T19MR/gd71vCxJ1gO7GyQ5HY
pDNO6rPWJ0+tJYqlxvTV0KaudAVkV4i1RFXULSo6Pvi4vekyCgKUZMQWOlDxSq7n
eTOvDCAHf+jfBDnCaQJsY1L6d8EbyHSHyLmTGFBUNUtpTrw700kuH9zB0lL7AgMB
AAGjggEaMIIBFjAPBgNVHRMBAf8EBTADAQH/MA4GA1UdDwEB/wQEAwIBBjAdBgNV
HQ4EFgQUQMK9J47MNIMwojPX+2yz8LQsgM4wHwYDVR0jBBgwFoAUOpqFBxBnKLbv
```

```
9r0FQW4gwZTaD94wNAYIKwYBBQUHAQEEKDAmMCQGCCsGAQUFBzABhhhodHRwOi8v
b2NzcC5nb2RhZGR5LmNvbS8wNQYDVR0fBC4wLDAqoCigJoYkaHR0cDovL2NybC5n
b2RhZGR5LmNvbS9nZHJvb3QtZzIuY3JsMEYGA1UdIAQ/MD0wOwYEVR0gADAzMDEG
CCsGAQUFBwIBFiVodHRwczovL2NlcnRzLmdvZGFkZHkuY29tL3JlcG9zaXRvcnkv
MA0GCSqGSIb3DQEBCwUAA4IBAQAIfmyTEMg4uJapkEv/oV9PBO9sPpyIBslQj6Zz
91cxG7685C/b+LrTW+C05+Z5Yg4MotdqY3MxtfWoSKQ7CC2iXZDXtHwlTxFWMMS2
RJ17LJ3lXubvDGGqv+QqG+6EnriDfcFDzkSnE3ANkR/0yBOtg2DZ2HKocyQetawi
DsoXiWJYRBuriSUBAA/NxBti21G00w9RKpv0vHP8ds42pM3Z2CzqrpvlKrKQ0U11
GIo/ikGQI31bS/6kA1ibRrLDYGCD+H1QQc7CoZDDu+8CL9IVVO5EFdkKrqeKM+2x
LXY2JtwE65/3YR8V3Idv7kaWKK2hJn0KCacuBKONvPi8BDAB
-----END CERTIFICATE-----
 2 s:C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", CN = Go Daddy Root Certificate Authority - G2
   i:C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", CN = Go Daddy Root Certificate Authority - G2
   a:PKEY: rsaEncryption, 2048 (bit); sigalg: RSA-SHA256
   v:NotBefore: Sep  1 00:00:00 2009 GMT; NotAfter: Dec 31 23:59:59 2037 GMT
-----BEGIN CERTIFICATE-----
MIIDxTCCAq2gAwIBAgIBADANBgkqhkiG9w0BAQsFADCBgzELMAkGA1UEBhMCVVMx
EDAOBgNVBAgTB0FyaXpvbmExEzARBgNVBAcTClNjb3R0c2RhbGUxGjAYBgNVBAoT
EUdvRGFkZHkuY29tLCBJbmMuMTEwLwYDVQQDEyhHbyBEYWRkeSBSb290IENlcnRp
ZmljYXRlIEF1dGhvcml0eSAtIEcyMB4XDTA5MDkwMTAwMDAwMFoXDTM3MTIzMTIz
NTk1OVowgYMxCzAJBgNVBAYTAlVTMRAwDgYDVQQIEwdBcml6b25hMRMwEQYDVQQH
EwpTY290dHNkYWxlMRowGAYDVQQKExFHb0RhZGR5LmNvbSwgSW5jLjExMC8GA1UE
AxMoR28gRGFkZHkgUm9vdCBDZXJ0aWZpY2F0ZSBBdXRob3JpdHkgLSBHMjCCASIw
DQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAL9xYgjx+lk09xvJGKP3gElY6SKD
E6bFIEMBO4Tx5oVJnyfq9oQbTqC023CYxzIBsQU+B07u9PpPL1kwIuerGVZr4oAH
/PMWdYA5UXvl+TW2dE6pjYIT5LY/qQOD+qK+ihVqf94Lw7YZFAXK6sOoBJQ7Rnwy
DfMAZiLIjWltNowRGLfTshxgtDj6AozO091GB94KPutdfMh8+7ArU6SSYmlRJQVh
GkSBjCypQ5Yj36w6gZoOKcUcqeldHraenjAKOc7xiID7S13MMuyFYkMlNAJWJwGR
```

IPV6 Connection

IP Used	2001:67c:4e8:f004::9
IP Version	6

```
depth=2 C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", CN = Go Daddy Root Certificate Authority - G2
verify return:1
depth=1 C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", OU = http://certs.godaddy.com/repository/, CN = Go Daddy Secure Certificate Authority - G2
verify return:1
depth=0 CN = *.telegram.org
verify return:1
CONNECTED(00000010)
---
Certificate chain
 0 s:CN = *.telegram.org
   i:C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", OU = http://certs.godaddy.com/repository/, CN = Go Daddy Secure Certificate Authority - G2
   a:PKEY: rsaEncryption, 2048 (bit); sigalg: RSA-SHA256
   v:NotBefore: Aug 11 13:36:48 2025 GMT; NotAfter: Sep 12 13:36:48 2026 GMT
-----BEGIN CERTIFICATE-----
MIIGkTCCBXmgAwIBAgIIeU3T8Icp6McwDQYJKoZIhvcNAQELBQAwgbQxCzAJBgNV
BAYTAlVTMRAwDgYDVQQIEwdBcml6b25hMRMwEQYDVQQHEwpTY290dHNkYWxlMRow
GAYDVQQKExFHb0RhZGR5LmNvbSwgSW5jLjEtMCsGA1UECxMkaHR0cDovL2NlcnRz
LmdvZGFkZHkuY29tL3JlcG9zaXRvcnkvMTMwMQYDVQQDEypHbyBEYWRkeSBTZWN1
cmUgQ2VydGlmaWNhdGUgQXV0aG9yaXR5IC0gRzIwHhcNMjUwODExMTMzNjQ4WhcN
MjYwOTEyMTMzNjQ4WjAZMRcwFQYDVQQDDA4qLnRlbGVncmFtLm9yZzCCASIwDQYJ
KoZIhvcNAQEBBQADggEPADCCAQoCggEBAKpIH/5PVT0RqF5iuaLJdPSSPQ/Zv4bb
3vRlAAN99rtR9/diw4JV2QsnVmReHY111XoEjUeKhjuB+ETlh/VGO/NXNPcPn/J2
LCtyMvOM1SDkwAJ2RGzN6Tj1Un9QHdtZ5yQqTk34p/dp4TnjkbcFGdZxNt2fXS68
FmE0j5KqmO4ygBcwymwzJr10750H9o9E/d2Q5q4/9fHEYSyTLJEbiuSb/3QI3Wq8
rjABm/OfINdik3UoltcKO3ROEgNEWdP581pBHvqDgCjLfjt6OFDDyrttUHVhIATm
1EsHIhqG5VUbSbLJlsP3PQAnngqbILMw6DyvfLm2sc9vyQXDyZfYBe0CAwEAAaOC
Az8wggM7MAwGA1UdEwEB/wQCMAAwHQYDVR0lBBYwFAYIKwYBBQUHAwEGCCsGAQUF
BwMCMA4GA1UdDwEB/wQEAwIFoDA5BgNVHR8EMjAwMC6gLKAqhihodHRwOi8vY3Js
LmdvZGFkZHkuY29tL2dkaWcyczEtNTgxNDQuY3JsMF0GA1UdIARWMFQwSAYLYIZI
AYb9bQEHFwEwOTA3BggrBgEFBQcCARYraHR0cDovL2NlcnRpZmljYXRlcy5nb2Rh
ZGR5LmNvbS9yZXBvc2l0b3J5LzAIBgZngQwBAgEwdgYIKwYBBQUHAQEEajBoMCQG
CCsGAQUFBzABhhhodHRwOi8vb2NzcC5nb2RhZGR5LmNvbS8wQAYIKwYBBQUHMAKG
NGh0dHA6Ly9jZXJ0aWZpY2F0ZXMuZ29kYWRkeS5jb20vcmVwb3NpdG9yeS9nZGln
Mi5jcnQwHwYDVR0jBBgwFoAUQMK9J47MNIMwojPX+2yz8LQsgM4wJwYDVR0RBCAw
HoIOKi50ZWxlZ3JhbS5vcmeCDHRlbGVncmFtLm9yZzAdBgNVHQ4EFgQUar22wmRJ
b9KW5yDPwx7nWNm1JX4wggF/BgorBgEEAdZ5AgQCBIIBbwSCAWsBaQB3ANdtfRDR
p/V3wsfpX9cAv/mCyTNaZeHQswFzF8DIxWl3AAABmJlZFjgAAAQDAEgwRgIhALkC
/Sr+gAUPG8vj52N7inslQqpwM+G7fl2CZEt0U7zAAiEAvJVZapV/8DSYwxgq9HHz
Y71GmWcvxxDofnoZfiOR1C8AdQCUTkOH+uzB74HzGSQmqBhlAcfTXzgCAT9yZ31V
Ny4Z2AAAAZiZWRdvAAAEAwBGMEQCIC9o3zj8L4rIs3NOI1J6kFkZI5x0NnFWIfJp
E1VbmUGgAiB7zPt40y0A18/ZunpUiM0oXztOtHo7PvSmrnrUCTUQ+QB3AMIxfldF
GaNF7n843rKQQevHwiFaIr9/1bWtdprZDlLNAAABmJlZF/cAAAQDAEgwRgIhAPpl
sYEwoh19lPQ+aAWylxbT9rBv1aJIzu7gYW1CxE3AAiEA0oKEMjcGFL+z5Oa5JCGw
E+A25pWTcTVBQvKqROR4pfIwDQYJKoZIhvcNAQELBQADggEBAAkxooeSdutFS0++
35jlB7O8SL0jU8bLS2rEKBeQQEpv1BBa48m47XxUtmZwmgs0dzg27W6N3BHpOG9H
```

```
LdC3oy6Vf3IQmssOnDAbJGq5hTQnwMUBGGh23yj6k49pJwZGcGgfJQpdHkVYC2QT
M5qP9NQ3iie0hTbBqc5u93Pp962c5lxrmLMok1+F7LjKDSDH0sHItiNadR4UQAXi
5wA4Zv+LSPb2YMSo5Ku0NowTWdAcklIyBrhNJTrmeAe1sEd6HL06wwJmsHMUxnIY
MgkEyIjlwOhJxS1S2KKc4Olw39HeSOeMvjQRsHC+zO58444T6n1/riGt1T402A+d
kiuQ6p4=
-----END CERTIFICATE-----
 1 s:C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", OU = http://certs.godaddy.com/repository/, CN = Go Daddy Secure Certificate Authority - G2
   i:C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", CN = Go Daddy Root Certificate Authority - G2
   a:PKEY: rsaEncryption, 2048 (bit); sigalg: RSA-SHA256
   v:NotBefore: May  3 07:00:00 2011 GMT; NotAfter: May  3 07:00:00 2031 GMT
-----BEGIN CERTIFICATE-----
MIIE0DCCA7igAwIBAgIBBzANBgkqhkiG9w0BAQsFADCBgzELMAkGA1UEBhMCVVMx
EDAOBgNVBAgTB0FyaXpvbmExEzARBgNVBAcTClNjb3R0c2RhbGUxGjAYBgNVBAoT
EUdvRGFkZHkuY29tLCBJbmMuMTEwLwYDVQQDEyhHbyBEYWRkeSBSb290IENlcnRp
ZmljYXRlIEF1dGhvcml0eSAtIEcyMB4XDTExMDUwMzA3MDAwMFoXDTMxMDUwMzA3
MDAwMFowgbQxCzAJBgNVBAYTAlVTMRAwDgYDVQQIEwdBcml6b25hMRMwEQYDVQQH
EwpTY290dHNkYWxlMRowGAYDVQQKExFHb0RhZGR5LmNvbSwgSW5jLjEtMCsGA1UE
CxMkaHR0cDovL2NlcnRzLmdvZGFkZHkuY29tL3JlcG9zaXRvcnkvMTMwMQYDVQQD
EypHbyBEYWRkeSBTZWN1cmUgQ2VydGlmaWNhdGUgQXV0aG9yaXR5IC0gRzIwggEi
MA0GCSqGSIb3DQEBAQUAA4IBDwAwggEKAoIBAQC54MsQ1K92vdSTYuswZLiBCGzD
BNliF44v/z5lz4/OYuY8UhzaFkVLVat4a2ODYpDOD2lsmcgaFItMzEUz6ojcnqOv
K/6AYZ15V8TPLvQ/MDxdR/yaFrzDN5ZBUY4RS1T4KL7QjL7wMDge87Am+GZHY23e
cSZHjzhHU9FGHbTj3ADqRay9vHHZqm8A29vNMDp5T19MR/gd71vCxJ1gO7GyQ5HY
pDNO6rPWJ0+tJYqlxvTV0KaudAVkV4i1RFXULSo6Pvi4vekyCgKUZMQWOlDxSq7n
eTOvDCAHf+jfBDnCaQJsY1L6d8EbyHSHyLmTGFBUNUtpTrw700kuH9zB0lL7AgMB
AAGjggEaMIIBFjAPBgNVHRMBAf8EBTADAQH/MA4GA1UdDwEB/wQEAwIBBjAdBgNV
HQ4EFgQUQMK9J47MNIMwojPX+2yz8LQsgM4wHwYDVR0jBBgwFoAUOpqFBxBnKLbv
9r0FQW4gwZTaD94wNAYIKwYBBQUHAQEEKDAmMCQGCCsGAQUFBzABhhhodHRwOi8v
b2NzcC5nb2RhZGR5LmNvbS8wNQYDVR0fBC4wLDAqoCigJoYkaHR0cDovL2NybC5n
b2RhZGR5LmNvbS9nZHJvb3QtZzIuY3JsMEYGA1UdIAQ/MD0wOwYEVR0gADAzMDEG
CCsGAQUFBwIBFiVodHRwczovL2NlcnRzLmdvZGFkZHkuY29tL3JlcG9zaXRvcnkv
MA0GCSqGSIb3DQEBCwUAA4IBAQAIfmyTEMg4uJapkEv/oV9PBO9sPpyIBslQj6Zz
91cxG7685C/b+LrTW+C05+Z5Yg4MotdqY3MxtfWoSKQ7CC2iXZDXtHwlTxFWMMS2
RJ17LJ3lXubvDGGqv+QqG+6EnriDfcFDzkSnE3ANkR/0yBOtg2DZ2HKocyQetawi
DsoXiWJYRBuriSUBAA/NxBti21G00w9RKpv0vHP8ds42pM3Z2CzqrpvlKrKQ0U11
GIo/ikGQI31bS/6kA1ibRrLDYGCD+H1QQc7CoZDDu+8CL9IVVO5EFdkKrqeKM+2x
LXY2JtwE65/3YR8V3Idv7kaWKK2hJn0KCacuBKONvPi8BDAB
-----END CERTIFICATE-----
 2 s:C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", CN = Go Daddy Root Certificate Authority - G2
   i:C = US, ST = Arizona, L = Scottsdale, O = "GoDaddy.com, Inc.", CN = Go Daddy Root Certificate Authority - G2
   a:PKEY: rsaEncryption, 2048 (bit); sigalg: RSA-SHA256
   v:NotBefore: Sep  1 00:00:00 2009 GMT; NotAfter: Dec 31 23:59:59 2037 GMT
-----BEGIN CERTIFICATE-----
MIIDxTCCAq2gAwIBAgIBADANBgkqhkiG9w0BAQsFADCBgzELMAkGA1UEBhMCVVMx
EDAOBgNVBAgTB0FyaXpvbmExEzARBgNVBAcTClNjb3R0c2RhbGUxGjAYBgNVBAoT
EUdvRGFkZHkuY29tLCBJbmMuMTEwLwYDVQQDEyhHbyBEYWRkeSBSb290IENlcnRp
ZmljYXRlIEF1dGhvcml0eSAtIEcyMB4XDTA5MDkwMTAwMDAwMFoXDTM3MTIzMTIz
NTk1OVowgYMxCzAJBgNVBAYTAlVTMRAwDgYDVQQIEwdBcml6b25hMRMwEQYDVQQH
EwpTY290dHNkYWxlMRowGAYDVQQKExFHb0RhZGR5LmNvbSwgSW5jLjExMC8GA1UE
AxMoR28gRGFkZHkgUm9vdCBDZXJ0aWZpY2F0ZSBBdXRob3JpdHkgLSBHMjCCASIw
DQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAL9xYgjx+lk09xvJGKP3gElY6SKD
E6bFIEMBO4Tx5oVJnyfq9oQbTqC023CYxzIBsQU+B07u9PpPL1kwIuerGVZr4oAH
/PMWdYA5UXvl+TW2dE6pjYIT5LY/qQOD+qK+ihVqf94Lw7YZFAXK6sOoBJQ7Rnwy
DfMAZiLIjWltNowRGLfTshxgtDj6AozO091GB94KPutdfMh8+7ArU6SSYmlRJQVh
GkSBjCypQ5Yj36w6gZoOKcUcqeldHraenjAKOc7xiID7S13MMuyFYkMlNAJWJwGR
```

HTTP Response Evidence

IPv4 HTTP (port 80)

HTTP Status	200
Connected IP	149.154.167.99
Connect Time	335.12 ms
TTFB	843.21 ms
Total Time	843.31 ms

Response Headers:


```
{
    "0": "HTTP/1.1 302 Found",
    "1": "Server: nginx/1.30.1",
    "2": "Date: Sat, 08 Aug 2026 10:20:39 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/1.30.1",
    "12": "date: Sat, 08 Aug 2026 10:20:40 GMT",
    "13": "content-type: text/html; charset=utf-8",
    "14": "content-length: 19990",
    "15": "set-cookie: stel_ssid=724b19c835e3515822_15547152825295356640; expires=Sat, 08 Aug 2026 21:27:20 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	333.36 ms
TTFB	843.63 ms
Total Time	843.76 ms

Response Headers:


```
{
    "0": "HTTP/1.1 302 Found",
    "1": "Server: nginx/1.30.1",
    "2": "Date: Sat, 08 Aug 2026 10:20:38 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/1.30.1",
    "12": "date: Sat, 08 Aug 2026 10:20:38 GMT",
    "13": "content-type: text/html; charset=utf-8",
    "14": "content-length: 19990",
    "15": "set-cookie: stel_ssid=12d9e8d00d7ba98c4d_6373305510368567865; expires=Sat, 08 Aug 2026 21:27:18 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	164.07 ms

TTFB	498.71 ms
Total Time	498.75 ms

Response Headers:


```
[
    "HTTP/2 200",
    "server: nginx/1.30.1",
    "date: Sat, 08 Aug 2026 10:20:40 GMT",
    "content-type: text/html; charset=utf-8",
    "content-length: 19990",
    "set-cookie: stel_ssid=9dc056dcdd57f93ff2_12926615824058550389; expires=Sat, 08 Aug 2026 21:27:20 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)

HTTP Status	200
Connected IP	2001:67c:4e8:f004::9
Connect Time	165.34 ms
TTFB	501.86 ms
Total Time	501.9 ms

Response Headers:


```
[
    "HTTP/2 200",
    "server: nginx/1.30.1",
    "date: Sat, 08 Aug 2026 10:20:39 GMT",
    "content-type: text/html; charset=utf-8",
    "content-length: 19990",
    "set-cookie: stel_ssid=8f914922eb565e027d_8260393621838598180; expires=Sat, 08 Aug 2026 21:27:19 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 0.167907 0.336964
TCP Connect IPv6 → port 80	302 0.166065 0.334463
TCP Connect IPv4 → port 443	200 0.164186 0.665043
TCP Connect IPv6 → port 443	200 0.164458 0.671329

Test Node Network Evidence

Node Profile	dual stack

Egress Connectivity

IPv4 Egress	76.13.221.142
IPv6 Egress	unreachable

Sysctl IPv6 Flags

net.ipv6.conf.all.disable_ipv6	0

IPv6 Routes

```
2a02:4780:5e::/48 dev eth0 proto kernel metric 256 pref medium
fd7a:115c:a1e0::1136:5807 dev tailscale0 proto kernel metric 256 pref medium
fe80::/64 dev eth0 proto kernel metric 256 pref medium
fe80::/64 dev tailscale0 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
10.6.101.0/24 dev wg0 scope link
10.6.102.0/24 dev wg0 scope link
76.13.221.0/24 dev eth0 proto kernel scope link src 76.13.221.142
172.29.0.0/24 dev wg0 scope link
```