

# IPv6 Readiness Report

## kln.gov.my — kln.gov.my

Category: Government • Generated: 20 Apr 2026, 21:24 MYT • Last Checked: 07 Mar 2026, 01:04 MYT • Verification ID: 6fad9223-dc26-4804-bd68-18e811a2950e

Report generated from National IPv6 Readiness Monitor — <https://ipv6.my6.my>Audit trail: <https://ipv6.my6.my/audit/6fad9223-dc26-4804-bd68-18e811a2950e>

<b>X</b> <b>Non-Compliant</b> MGv6C-1.0	<b>37%</b> <b>Partial Support</b>	<b>IPv6-ONLY READINESS</b> Website: <b>X Not Ready</b> DNS: <b>X Not Ready</b> Email: <b>X Not Ready</b>
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**IPv4 ADDRESSES**

163.53.153.22

**Network Information (WHOIS / RDAP)**

IPv4 Network	
Organization	GITN Sdn Bhd
Country	MY
ASN	AS17564
ASN Name	GITN-PCN-AS-AP GITN M Sdn. Bhd., MY
Network (CIDR)	163.53.152.0/22

**Web Services** (35%)

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#	CHECK	RESULT	DETAIL
1	<b>AAAA Record</b>	<b>FAIL</b>	No AAAA record found in DNS.
2	<b>Globally Routable IPv6</b>	<b>FAIL</b>	IPv6 address is not globally routable.
3	<b>HTTP over IPv6</b>	<b>FAIL</b>	HTTP is not accessible over IPv6.
4	<b>HTTPS over IPv6</b>	<b>FAIL</b>	HTTPS is not accessible over IPv6.
5	<b>IPv6-Only Reachability</b>	<b>FAIL</b>	Site is not reachable when limited to IPv6-only.
6	<b>TLS Certificate Valid (IPv6)</b>	<b>FAIL</b>	TLS certificate is invalid, expired, or hostname mismatch over IPv6.
7	<b>Dual-Stack (IPv4 + IPv6)</b>	<b>FAIL</b>	Domain is IPv6-only or IPv4-only.
8	<b>HTTP/3 (QUIC)</b>	<b>FAIL</b>	No HTTP/3 support detected.

**DNS & DNSSEC** (25%)

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#	CHECK	RESULT	DETAIL
1	<b>NS Has AAAA Record</b>	<b>PASS</b>	Nameserver has IPv6 address.
2	<b>NS Reachable via IPv6</b>	<b>PASS</b>	Nameserver is reachable via IPv6 on port 53.
3	<b>NS Answers Queries via IPv6</b>	<b>FAIL</b>	Nameserver does not answer queries over IPv6.
4	<b>DNSSEC Validated</b>	<b>PASS</b>	DNSSEC fully validated.
5	<b>Reverse DNS (PTR)</b>	<b>FAIL</b>	No PTR record found.
6	<b>DS Record at Parent</b>	<b>PASS</b>	DS record found at parent zone.
7	<b>RRSIG Valid</b>	<b>PASS</b>	RRSIG signatures are current and valid.
8	<b>Signing Algorithm</b>	<b>INFO</b>	RSASHA256

**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>	No common DKIM selector found.
7	<b>DMARC Record</b>	<b>PASS</b>	DMARC record found.

**IPv4 Baseline** (15%) 1 / 3

#	CHECK	RESULT	DETAIL
1	<b>A Record</b>	<b>PASS</b>	163.53.153.22
2	<b>HTTP over IPv4</b>	<b>FAIL</b>	HTTP is not accessible over IPv4.
3	<b>HTTPS over IPv4</b>	<b>FAIL</b>	HTTPS is not accessible over IPv4.

### Audit Trail & Evidence Record

Verification ID	6fad9223-dc26-4804-bd68-18e811a2950e
Domain	klm.gov.my
Check Mode	Manual
Status	Completed
Started	07 Mar 2026, 01:03:40 MYT
Finished	07 Mar 2026, 01:04:08 MYT
Test Node Profile	dual stack
Engine Version	2.0.0
MGv6C Version	1.0.0
Audit URL	https://ipv6.my6.my/audit/6fad9223-dc26-4804-bd68-18e811a2950e

### Integrity Verification

✓ <b>INTEGRITY VERIFIED</b>	
Algorithm	hmac-sha256-v1
Root Hash	99fe83975ded645812431a03f1bcb70f5a6dc7d53d8d920e73a0f809a0ece018
http_headers	e1a35d435561dbd4ade169019a335139adec8b4f1019570404b1e2ae978e208f
dns_responses	00299d56f5e644e9a4fc8d0cfc4a17a20d34215400a9b368c521997fd7f84028
tls_handshake	fa06807e736a9d4e80cb257e1fba21740b1bc54ebdb516edb4ecb4c8ef489261
connectivity_log	a068e04a37d0a9750deb4e05eb8f043112470152c8dd8b289a11870b3adad62c
dns_resolution_times	24572dc2d4fbd54de8158fca79802b0e1516b49cac8db13c0d179408c2ec579a

### 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	17.01	18.94	17.99	18.03	+1
Google	IPv4	24.95	32.17	28.78	42.2	+3.8
Google	IPv6	30.8	37.17	34.1	46.92	+3.3
Cloudflare	IPv4	19.97	25.05	9.9	9.96	-10.1
Cloudflare	IPv6	42.67	45.63	20.78	62.62	-21.9



## DNS Evidence

### A

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 26890
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; AUTHORITY SECTION:
kln.gov.my. 0018000IN050A0dns1.gitn.net.my. root.dns1.gitn.net.my. 2026030229 10800 3600 172800 38400
```

### DS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 16568
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
kln.gov.my. 00216000IN05033046 8 1 2A8BC4BA8ECDB2CD42030A71B9C00664FAEF3E41
kln.gov.my. 00216000IN05033046 8 2 1692A73EAA4C22EA9048F5FDB85872E6407A7148034D311289C8B491 52ED4F4
```

### MX

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 54942
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 5, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
kln.gov.my. 003000IN0MX010 alt3.aspmx.l.google.com.
kln.gov.my. 003000IN0MX05 alt1.aspmx.l.google.com.
kln.gov.my. 003000IN0MX01 aspmx.l.google.com.
kln.gov.my. 003000IN0MX010 alt4.aspmx.l.google.com.
kln.gov.my. 003000IN0MX05 alt2.aspmx.l.google.com.
```

### NS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 62444
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
kln.gov.my. 0036000IN0NS0dns1.gitn.net.my.
kln.gov.my. 0036000IN0NS0dns2.gitn.net.my.
```

### TXT

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 63649
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
kln.gov.my. 0036000IN0TXT0"MS=E0F8E18400A7C13FE9E8FB3E68D209B229903979"
kln.gov.my. 0036000IN0TXT0"google-site-verification=PGDEH3aqogsJUvwUWmtsNFR_X3PCITrPjF4nKgunRE"
kln.gov.my. 0036000IN0TXT0"v=spf1 ip4:103.245.89.99 ip4:103.245.89.108 ip4:103.8.147.12/30 ip4:219.92.54.177/32 ip4:103.156.82.32/29 ip4:103.156.83.32/29
include:_spf.google.com ~all"
```

### AAAA

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 26742
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; AUTHORITY SECTION:
kln.gov.my. 0018000IN050A0dns1.gitn.net.my. root.dns1.gitn.net.my. 2026030229 10800 3600 172800 38400
```

RRSIG

```
dns1.gitn.net.my. root.dns1.gitn.net.my. 2026030229 10800 3600 172800 38400
SOA 8 3 3600 20260405081016 20260306071016 35589 kln.gov.my. jNqT12HSlnrmwXy+S5F5Km2/paodTL9bXUtWkTmoW0mkQTchrXGsUq0F
tM2mNMg5H0LwMqH6s13EXHghYTYsZ62gc8FcRdJ4oyLeLJF55YfLeNdQ ZFzAhXyPhTaEV7W09X7ArQoThIqa2xA5wnA1K3ouysDXJWnr2XcoEbj cE8=
```

DNSKEY

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 26965
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
kln.gov.my. 002512 IN DNSKEY 257 3 8 AwEAAAdHDEQkUL2nwyJfCeqiNnjXuMEN08Wyu13N0kSoBTKUthg0YwF/E wUzT6ILy9LLP5Z0Gn5vVqFtPIhAhc70E7RMjE0+4Bw0u8FKsLt30Mgyc
OPfPRI4MrfjyGPJ7xm5RhIZuLPWCqn01uAAxWjQq9aINi0zWxk+1319 gH3wsoEJ0sV+nWuH6yMX670sQ0Q6V3if0SaDMdnAsrR/7SP1yUeYpBiB
9/d2AMzQg/KiZc+bQl2x43BYjSylUgJ39blm03nlaIf0hoPs6+qxrB5b 7xL0Rj69y7gAKeiDyaGyms0Z8uiD0T3yGsxpAynM/cCNoLf4fe8dIX9t JxCGiHnnc38=
kln.gov.my. 002512 IN DNSKEY 256 3 8 AwEAAAZ2+A6SU22JCVL2Q3MhVyvp/ofA/cZyaSURnreqcqCBT7zPWRfgu N4UR77PCuYRNdb1/0hzrY0L7wFg3udq07mD9kwY/eVbHZpZPcULDMZgb
7I/peSKm/sz7qIXWLc+c0qd5PYfa0ziNyW4Weajofp5HoByHLTZMI5qR 28MTep7p
```

DNSSEC\_VALIDATION

```
; fully validated
kln.gov.my. 003600 IN SOA dns1.gitn.net.my. root.dns1.gitn.net.my. 2026030229 10800 3600 172800 38400
kln.gov.my. 003600 IN RRSIG SOA 8 3 3600 20260405081016 20260306071016 35589 kln.gov.my. jNqT12HSlnrmwXy+S5F5Km2/paodTL9bXUtWkTmoW0mkQTchrXGsUq0F
tM2mNMg5H0LwMqH6s13EXHghYTYsZ62gc8FcRdJ4oyLeLJF55YfLeNdQ ZFzAhXyPhTaEV7W09X7ArQoThIqa2xA5wnA1K3ouysDXJWnr2XcoEbj cE8=
```

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## TLS Handshake Evidence

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### IPv4 Connection

IP Used	163.53.153.22
IP Version	4

```
40C7E4CDA57C0000:error:0A000126:SSL routines:ssl3_read_n:unexpected eof while reading:../ssl/record/rec_layer_s3.c:316:
CONNECTED(00000010)
---
no peer certificate available
---
No client certificate CA names sent
---
SSL handshake has read 0 bytes and written 319 bytes
Verification: OK
---
New, (NONE), Cipher is (NONE)
Secure Renegotiation IS NOT supported
Compression: NONE
Expansion: NONE
No ALPN negotiated
Early data was not sent
Verify return code: 0 (ok)
---
```

## HTTP Response Evidence

### IPv4 HTTP (port 80)

HTTP Status	0
Connected IP	163.53.153.22
Connect Time	6.29 ms
TTFB	13.77 ms
Total Time	13.78 ms
Error	Empty reply from server

### IPv4 HTTPS (port 443)

HTTP Status	0
Connected IP	163.53.153.22
Connect Time	5.77 ms
TTFB	0 ms
Total Time	12.33 ms
Error	OpenSSL SSL_connect: SSL_ERROR_SYSCALL in connection to kln.gov.my:443

## Connectivity Test Evidence

Test	Result
TCP Connect IPv4 → port 80	000 0.006009 0.011939
TCP Connect IPv4 → port 443	000 0.021219 0.000000

## Test Node Network Evidence

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
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### 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
```