

IPv6 Readiness Report

usm.my — usm.my

Category: Education • Generated: 21 Apr 2026, 18:01 MYT • Last Checked: 07 Mar 2026, 01:10 MYT • Verification ID: 59b2809c-f40d-4020-b305-eaee7b7c4f9

Report generated from National IPv6 Readiness Monitor — <https://ipv6.my6.my>Audit trail: <https://ipv6.my6.my/audit/59b2809c-f40d-4020-b305-eaee7b7c4f9>**X****Non-Compliant**

MGv6C-1.0

23%**No IPv6 Support****IPv6-ONLY READINESS**Website: **X Not Ready**DNS: **X Not Ready**Email: **X Not Ready****IPv4 ADDRESSES**

202.170.56.156

Network Information (WHOIS / RDAP)

IPv4 Network	
Organization	Universiti Sains Malaysia
Country	MY
ASN	AS24090
ASN Name	UNISAINS-AS-AP Universiti Sains Malaysia USM, MY
Network (CIDR)	202.170.48.0/20

Web Services (35%)

0 / 8

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

DNS & DNSSEC (25%)

1 / 5

#	CHECK	RESULT	DETAIL
1	NS Has AAAA Record	PASS	Nameserver has IPv6 address.
2	NS Reachable via IPv6	FAIL	No nameserver is reachable over IPv6.
3	NS Answers Queries via IPv6	FAIL	Nameserver does not answer queries 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.
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: selector1._domainkey
7	DMARC Record	PASS	DMARC record found.

IPv4 Baseline (15%) 1 / 3

#	CHECK	RESULT	DETAIL
1	A Record	PASS	202.170.56.156
2	HTTP over IPv4	FAIL	HTTP is not accessible over IPv4.
3	HTTPS over IPv4	FAIL	HTTPS is not accessible over IPv4.

Audit Trail & Evidence Record

Verification ID	59b2809c-f40d-4020-b305-eeaec7b7c4f9
Domain	usm.my
Check Mode	Manual
Status	Completed
Started	07 Mar 2026, 01:10:21 MYT
Finished	07 Mar 2026, 01:10:29 MYT
Test Node Profile	dual stack
Engine Version	2.0.0
MGv6C Version	1.0.0
Audit URL	https://ipv6.my6.my/audit/59b2809c-f40d-4020-b305-eeaec7b7c4f9

Integrity Verification

<p>✓ INTEGRITY VERIFIED</p>	
Algorithm	hmac-sha256-v1
Root Hash	c30ef6ba29336f4c4c8698606e3de9e36bfebfcc1d28ab5130ebfa0fb1fd947
http_headers	649d998ab8b695f08f906a390a9e18510aca091f3f096768ebdb30dec8e77abf
dns_responses	2e67a93edd839446848dc9628bba0c946e344218885397b25f8642d65bc0de25
tls_handshake	2250a4edcbd6154a20bc09df871b591a98de3f1a50fa9b9ac64a2ee28f56e055
connectivity_log	c571529628ae93d3d5180dec20e307692d772428bf4569b1feeb29b40bc18e78
dns_resolution_times	423719b5a88c38a1388731193a97c1858b1b0e5926b1958aa43537c7dbdbda2c

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	7.83	7.9	6.05	16.01	-1.8
Google	IPv4	24.07	26.02	19.91	24.15	-4.2
Google	IPv6	15.83	26.16	18.3	20.2	+2.5
Cloudflare	IPv4	9.8	9.96	17.04	20.97	+7.2
Cloudflare	IPv6	20.22	31.14	8.96	34.27	-11.3

DNS Evidence

A

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 35474
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
usm.my. 0007870IN0A0202.170.56.156
```

DS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 59813
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; AUTHORITY SECTION:
my. 00018000IN0S0A0a.nic.my. hostmaster.nic.my. 2026018481 1800 900 604800 3600
```

MX

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 41006
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
usm.my. 000150590IN0MX010 majriti.usm.my.
usm.my. 000150590IN0MX010 hytham.usm.my.
```

NS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 27777
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
usm.my. 000216000IN0NS0ns02.usm.my.
usm.my. 000216000IN0NS0ns01.usm.my.
usm.my. 000216000IN0NS0ns03.usm.my.
```

TXT

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 39241
;; flags: qr rd ra; QUERY: 1, ANSWER: 8, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
usm.my. 000216000IN0TXT0"MS=ms73819898"
usm.my. 000216000IN0TXT0"v=spf1 include:spf.protection.outlook.com ip4:202.170.57.213/32 ip4:202.170.57.214/32 ip4:202.170.57.215/32 ?all"
usm.my. 000216000IN0TXT0"ciscocidomainverification=5f49a1c9eab9651ba991f9e8e3bd629f6421686c72352892bcb53b201f2cdf6f"
usm.my. 000216000IN0TXT0"google-site-verification=mFeL0BxVpM_qhmbIqvWmCgaisFUEzCXSS5DmyRTA-rk"
usm.my. 000216000IN0TXT0"have-i-been-pwned-verification=680b96187e9017a7a819037390978fd8"
usm.my. 000216000IN0TXT0"google-site-verification=78xV_NOAfvI8oRoIihHjN_bJw-FrQsBvKx4Ca3AxI8"
usm.my. 000216000IN0TXT0"f4v5Z4afcgwF5GeJtr/GahA9NkjJBzUHF9znggXT1/w0dy1iB0wSZgkw9Hzg3gaZwcD+klxRJ4RtP3C7WEoxiw=="
usm.my. 000216000IN0TXT0"ReleaseWIDNamespace=true"
```

AAAA

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 2270
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; AUTHORITY SECTION:
usm.my. 00018000IN0S0A0ns03.usm.my. nfaizal.usm.my. 2019021331 10800 3600 2419200 3600
```

RRSIG

```
ns03.usm.my. nfaizal.usm.my. 2019021331 10800 3600 2419200 3600
```

DNSKEY

```
;; Got answer:  
;; ->HEADER<<- opcode: QUERY, status: NOERROR, id: 5485  
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1  
  
;; OPT PSEUDOSECTION:  
; EDNS: version: 0, flags:; udp: 512  
;; AUTHORITY SECTION:  
usm.my. 1800 IN SOA ns03.usm.my. nfaizal.usm.my. 2019021331 10800 3600 2419200 3600
```

DNSSEC_VALIDATION

```
; unsigned answer  
usm.my. 21600 IN SOA ns03.usm.my. nfaizal.usm.my. 2019021331 10800 3600 2419200 3600
```

TLS Handshake Evidence

IPv4 Connection

IP Used	202.170.56.156
IP Version	4

```
40C7A817F1780000:error:80000071:system library: BIO_connect: No route to host:../crypto/bio/bio_sock2.c:114:calling connect()
40C7A817F1780000:error:10000067: BIO routines: BIO_connect: connect error:../crypto/bio/bio_sock2.c:116:
connect:errno=113
```

HTTP Response Evidence

IPv4 HTTP (port 80)

HTTP Status	0
Connected IP	
Connect Time	0 ms
TTFB	0 ms
Total Time	10.26 ms
Error	Failed to connect to usm.my port 80 after 10 ms: Couldn't connect to server

IPv4 HTTPS (port 443)

HTTP Status	0
Connected IP	
Connect Time	0 ms
TTFB	0 ms
Total Time	9.74 ms
Error	Failed to connect to usm.my port 443 after 9 ms: Couldn't connect to server

Connectivity Test Evidence

Test	Result
TCP Connect IPv4 → port 80	000 0.000000 0.000000
TCP Connect IPv4 → port 443	000 0.000000 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
```