

IPv6 Readiness Report

uthm.edu.my — uthm.edu.my

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Report generated from National IPv6 Readiness Monitor — <https://ipv6.my6.my>Audit trail: <https://ipv6.my6.my/audit/6c8eb7e2-011e-4d21-bc1b-8766cb0c6931>

X Non-Compliant MGv6C-1.0	47% Partial Support	IPv6-ONLY READINESS Website: X Not Ready DNS: ✓ Ready Email: X Not Ready
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IPv4 ADDRESSES

103.233.160.141

Network Information (WHOIS / RDAP)

IPv4 Network	
Organization	MAMPU_PDSA2
Country	MY
ASN	AS141201
ASN Name	JDN-AS-MY Jabatan Digital Negara JDN, MY
Network (CIDR)	103.233.160.192/27

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%)

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.
7	RRSIG Valid	PASS	RRSIG signatures are current and valid.
8	Signing Algorithm	INFO	ECDsap256SHA256

Email Services (25%) 4 / 6

#	CHECK	RESULT	DETAIL
1	MX Record Exists	PASS	MX record found.
2	MX Server Has IPv6	PASS	MX server has AAAA record.
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: google._domainkey
7	DMARC Record	PASS	DMARC record found.

IPv4 Baseline (15%) 3 / 3

#	CHECK	RESULT	DETAIL
1	A Record	PASS	103.233.160.141
2	HTTP over IPv4	PASS	HTTP (port 80) responds over IPv4 — 1440ms TTFB.
3	HTTPS over IPv4	PASS	HTTPS (port 443) responds over IPv4 — 1417ms TTFB.

Audit Trail & Evidence Record

Verification ID	6c8eb7e2-011e-4d21-bc1b-8766cb0c6931
Domain	uthm.edu.my
Check Mode	Manual
Status	Completed
Started	07 Mar 2026, 01:12:39 MYT
Finished	07 Mar 2026, 01:13:10 MYT
Test Node Profile	dual stack
Engine Version	2.0.0
MGv6C Version	1.0.0
Audit URL	https://ipv6.my6.my/audit/6c8eb7e2-011e-4d21-bc1b-8766cb0c6931

Integrity Verification

✓ INTEGRITY VERIFIED	
Algorithm	hmac-sha256-v1
Root Hash	c485399b28dfbcf946fe2c050ce011dc5acca77c7da862d83fcf587a5dd5658d
http_headers	dac3f6999380ea853a35152e1e4646a064ad2a5ecc86afc2a79cb3df55b0b178
dns_responses	dd2dc2e5e015199e7c486caf493a0d2f9c39dfb99bb59587001bb53716c87df6
tls_handshake	5c12b3971025201ff45f2a0b3e215abb9a4c9a32f1759f0a89a04064f29621ea
connectivity_log	ad87720fd9a43e04611852c5a89dfa2922a911e769148a47d8ec5eac49297910
dns_resolution_times	c765114f0c05386fa341f28abda51e6085e37414eafc9df92d00004cce507f04

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	8.17	12.13	6.98	16.19	-1.2
Google	IPv4	23.27	29.9	22.92	24.2	-0.3
Google	IPv6	23.55	43.32	24.25	26.88	+0.7
Cloudflare	IPv4	19.96	20.04	21.03	23.95	+1.1
Cloudflare	IPv6	29.15	30.4	12.26	20.31	-16.9

DNS Evidence

A

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 44801
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
uthm.edu.my. 300 IN A 103.233.160.141
```

DS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 32633
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; AUTHORITY SECTION:
edu.my. 1776 IN SOA b.nic.my. hostmaster.nic.my. 2026018482 1800 900 604800 3600
```

MX

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 50058
;; flags: qr rd ra; QUERY: 1, ANSWER: 6, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
uthm.edu.my. 62 IN MX 1 aspmx.l.google.com.
uthm.edu.my. 62 IN MX 10 alt4.aspmx.l.google.com.
uthm.edu.my. 62 IN MX 10 alt3.aspmx.l.google.com.
uthm.edu.my. 62 IN MX 5 alt1.aspmx.l.google.com.
uthm.edu.my. 62 IN MX 100 uthm-edu-my.mail.protection.outlook.com.
uthm.edu.my. 62 IN MX 5 alt2.aspmx.l.google.com.
```

NS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 57639
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
uthm.edu.my. 21600 IN NS paige.ns.cloudflare.com.
uthm.edu.my. 21600 IN NS anton.ns.cloudflare.com.
```

TXT

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 16523
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
uthm.edu.my. 300 IN TXT "google-site-verification=9iba2mzkqXDD6X532Ho0HKkfy0PywAKLXzmBPw0eK5A"
uthm.edu.my. 300 IN TXT "google-site-verification=e6m9QdALikhs7xetCuItqMmnSg9LUeFZeCw0Ts2g2Gw"
uthm.edu.my. 300 IN TXT "v=spf1 include:spf.sendinblue.com include:spf.uthm.edu.my include:_spf.google.com include:spf.protection.outlook.com ~all"
```

AAAA

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 23013
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; AUTHORITY SECTION:
uthm.edu.my. 1089 IN SOA anton.ns.cloudflare.com. dns.cloudflare.com. 2398153637 10000 2400 604800 1800
```

RRSIG

```
anton.ns.cloudflare.com. dns.cloudflare.com. 2398153637 10000 2400 604800 1800
```

```
SOA 13 3 1800 20260307101303 20260305081303 34505 uthm.edu.my. c0e1tA/btd6PnA28MlFIXQaJ9LnuX8/JfzNTLdumD3Kq/bJmZCrbzy6A KhzZ6kq86I2da0zbq9FuZqzoaevmIQ==
```

DNSKEY

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 28754
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
uthm.edu.my. 3576 IN DNSKEY 257 3 13 mdsswUyr3DPWl32m0i8V9xE5WE8jTo0dxCj jnopKl+GqJxpVXckHAeF+ KkxLbxILfDLUT0rAK9iUzy1L53eKGQ==
uthm.edu.my. 3576 IN DNSKEY 256 3 13 oJMRESz5E4gYzS/q6XDrvU1qMPYIjCwzJa0au8XNEZeqCYKD5ar0IRd8 KqXXFJkqmVfRvMGpMm1x8fGAa2XhSA==
```

DNSSEC_VALIDATION

```
;; validating uthm.edu.my/SOA: no valid signature found
; unsigned answer
uthm.edu.my. 1800 IN SOA anton.ns.cloudflare.com. dns.cloudflare.com. 2398153637 10000 2400 604800 1800
uthm.edu.my. 1800 IN RRSIG SOA 13 3 1800 20260307101303 20260305081303 34505 uthm.edu.my. c0e1tA/btd6PnA28MlFIXQaJ9LnuX8/JfzNTLdumD3Kq/bJmZCrbzy6A KhzZ6kq86I2da0zbq9FuZqzoaevmIQ==
```



```

KwYBBQUHAWEGCCsGAQUFBwMCMBSGA1UdIAQUMBIwBgYEVR0gADAIgZngQwBAGew
VAYDVR0fBE0wSzBjOeEgRYZDaHR0cDovL2NybC5zZWNOaWdvLmNvbS9TZWNOaWdv
UHVibGljU2VydmVyQXV0aGVudGljYXRpb255b290UjQ2LmNybDcBhAYIKwYBBQUH
AQEEeDB2ME8GCCsGAQUFBzACHkNodHRwOi8vY3J0LnNlY3RpZ28uY29tL1NlY3Rp
Z290dWJsaWNTZXJ2ZXJkdXR0ZW50aW50aW50aW50aW50aW50aW50aW50aW50aW50
BzABhdodHRwOi8vbn2ncC5zZWNOaWdvLmNvbTANBgkqhkiG9w0BAQwFAAOCAGEA
YtOC9Fy+TqECFw40IospI92kLggoSZGPOSQXMBqmsGWZUQ7rux7cjl1du6d9rD6C8
ze1B2e0jkrGkIL/0F1s7vSmgYVafsRoZd/IHUrkoQvX8FZwUsmPu7amgBfaY3g+d
q1x0jNGKb6I6Bzd16LgMD9qxp+3i7GQ0nd9J8LFSietY6Z4jUBzVo0oz8iAU840F
h2HhAuiPw1ai0VnY38RTI+8kepGWVfGxfBWzW9uIjeoIeaosVFvE8cmYUB4TSH
5dUyD0jHct2+8ceKEtIoFU/FfHq/mDaVnvcDCZxtIgitdMFQdMzAVehmObyhRdDD
4NQCs0gaI9AAgfj4L90tkARzhQLNyRf87Kln+YU0lgCGr9HLg3rG08q+Y4pplSod
unQZ6zPNGIf0ApbPVf5hCe58EZwiWdHIMn9LPP6+F40y8NNugbQixBber+x536
WrZhfZLjEkhp7fFXf9r32rNPFb74X/U90Bdy4Lzpz+X1ukh1BuMxA/EEhDoTOS3L
7ABvc7BYSQubQ24900cdkIzUh3ZwDrakMvrbaTxUM2p24N6dB+ns2zptWCva6jzW
r8IWKIMxzxLPv5Kt3ePKcUdvkBU/smqjSczTzzSjIoR5QqQA6lN1ZRsnuHIWcvh
JELtKYNtAH41QJ6SAW066GrrUESwN/cgZzL4JLEqz1Y=
-----END CERTIFICATE-----
2 s:C = GB, 0 = Sectigo Limited, CN = Sectigo Public Server Authentication CA DV R36
i:C = GB, 0 = Sectigo Limited, CN = Sectigo Public Server Authentication Root R46
a:PKKEY: rsaEncryption, 3072 (bit); sigalg: RSA-SHA384
v:NotBefore: Mar 22 00:00:00 2021 GMT; NotAfter: Mar 21 23:59:59 2036 GMT
-----BEGIN CERTIFICATE-----
MIIGTDCCBDSgAwIBAgIQ0XpmzCdWni4NqofKbqvjSTANBgkqhkiG9w0BAQwFADBf
MQswCQYDVQQGEwJHQjEYMBYGA1UEChMPU2VjdGlnbyBMaWIpZGVkMTYwNAVDVQQD
Ey1TZWN0aWdvIFB1YmxpYyBTZXJ2ZXIgaXV0aGVudGljYXRpb24gUm9vdCBSNDYw
HhcNMjEwMDAwMDAwWWhcNMzYwMzIxMjM1OTU5WjBGMQswCQYDVQQGEwJHQjEY

```


HTTP Response Evidence

IPv4 HTTP (port 80)

HTTP Status	200
Connected IP	103.233.160.141
Connect Time	16.78 ms
TTFB	1426.68 ms
Total Time	1426.83 ms

Response Headers:

```
{
  "0": "HTTP/1.1 302 Found",
  "1": "Date: Fri, 06 Mar 2026 09:13:05 GMT",
  "2": "Server: Apache",
  "3": "Location: https://uthm.edu.my/",
  "4": "Content-Type: text/html; charset=iso-8859-1",
  "6": "HTTP/2 301",
  "7": "x-frame-options: SAMEORIGIN",
  "8": "strict-transport-security: max-age=31536000",
  "9": "referrer-policy: unsafe-url",
  "10": "location: https://www.uthm.edu.my/",
  "11": "cache-control: max-age=0",
  "12": "expires: Fri, 06 Mar 2026 09:13:05 GMT",
  "13": "content-type: text/html; charset=iso-8859-1",
  "14": "date: Fri, 06 Mar 2026 09:13:05 GMT",
  "15": "server: Apache",
  "17": "HTTP/2 301",
  "18": "x-frame-options: SAMEORIGIN",
  "19": "referrer-policy: unsafe-url",
  "20": "cross-origin-opener-policy: same-origin",
  "21": "strict-transport-security: max-age=31536000",
  "22": "content-security-policy: frame-ancestors 'self'",
  "23": "cache-control: no-store, no-cache, must-revalidate, post-check=0, pre-check=0",
  "24": "expires: Wed, 17 Aug 2005 00:00:00 GMT",
  "25": "pragma: no-cache",
  "26": "set-cookie: 2ffbcl4d05a087270646fe05e1dae7e0=rrtp6tn7o86t959k1fr9qm833g; path=/; secure; HttpOnly",
  "27": "location: https://www.uthm.edu.my/en/",
  "28": "last-modified: Fri, 06 Mar 2026 09:13:05 GMT",
  "29": "x-content-type-options: nosniff",
  "30": "x-xss-protection: 1; mode=block",
  "31": "cache-control: no-transform",
  "32": "content-type: text/html; charset=utf-8",
  "33": "date: Fri, 06 Mar 2026 09:13:05 GMT",
  "34": "server: Apache",
  "36": "HTTP/2 200",
  "37": "x-frame-options: SAMEORIGIN",
  "38": "referrer-policy: unsafe-url",
  "39": "cross-origin-opener-policy: same-origin",
  "40": "strict-transport-security: max-age=31536000",
  "41": "content-security-policy: frame-ancestors 'self'",
  "42": "expires: Wed, 17 Aug 2005 00:00:00 GMT",
  "43": "cache-control: no-store, no-cache, must-revalidate, post-check=0, pre-check=0",
  "44": "pragma: no-cache",
  "45": "set-cookie: 2ffbcl4d05a087270646fe05e1dae7e0=9qqlog7k4hlmcde8qfbavtuem; path=/; secure; HttpOnly",
  "46": "last-modified: Fri, 06 Mar 2026 09:13:07 GMT",
  "47": "vary: Accept-Encoding",
  "48": "x-content-type-options: nosniff",
  "49": "x-xss-protection: 1; mode=block",
  "50": "cache-control: no-transform",
  "51": "content-type: text/html; charset=utf-8",
  "52": "date: Fri, 06 Mar 2026 09:13:05 GMT",
  "53": "server: Apache"
}
```

IPv4 HTTPS (port 443)

HTTP Status	200
Connected IP	103.233.160.141
Connect Time	13.15 ms
TTFB	1485.91 ms
Total Time	1486.01 ms

Response Headers:

```
{
  "0": "HTTP/2 301",
  "1": "x-frame-options: SAMEORIGIN",
  "2": "strict-transport-security: max-age=31536000",
  "3": "referrer-policy: unsafe-url",
  "4": "location: https://www.uthm.edu.my/",
  "5": "cache-control: max-age=0",
  "6": "expires: Fri, 06 Mar 2026 09:13:08 GMT",
  "7": "content-type: text/html; charset=iso-8859-1",
  "8": "date: Fri, 06 Mar 2026 09:13:08 GMT",
  "9": "server: Apache",
  "11": "HTTP/2 301",
  "12": "x-frame-options: SAMEORIGIN",
  "13": "referrer-policy: unsafe-url",
  "14": "cross-origin-opener-policy: same-origin",
  "15": "strict-transport-security: max-age=31536000",
  "16": "content-security-policy: frame-ancestors 'self'",
  "17": "cache-control: no-store, no-cache, must-revalidate, post-check=0, pre-check=0",
  "18": "expires: Wed, 17 Aug 2005 00:00:00 GMT",
  "19": "pragma: no-cache",
  "20": "set-cookie: 2ffbc14d05a087270646fe05e1dae7e0=ofhqk909jugef385h4bc740m; path=/; secure; HttpOnly",
  "21": "location: https://www.uthm.edu.my/en/",
  "22": "last-modified: Fri, 06 Mar 2026 09:13:08 GMT",
  "23": "x-content-type-options: nosniff",
  "24": "x-xss-protection: 1; mode=block",
  "25": "cache-control: no-transform",
  "26": "content-type: text/html; charset=utf-8",
  "27": "date: Fri, 06 Mar 2026 09:13:08 GMT",
  "28": "server: Apache",
  "30": "HTTP/2 200",
  "31": "x-frame-options: SAMEORIGIN",
  "32": "referrer-policy: unsafe-url",
  "33": "cross-origin-opener-policy: same-origin",
  "34": "strict-transport-security: max-age=31536000",
  "35": "content-security-policy: frame-ancestors 'self'",
  "36": "expires: Wed, 17 Aug 2005 00:00:00 GMT",
  "37": "cache-control: no-store, no-cache, must-revalidate, post-check=0, pre-check=0",
  "38": "pragma: no-cache",
  "39": "set-cookie: 2ffbc14d05a087270646fe05e1dae7e0=rgtvjljq00l88o601jb3nsqt0u; path=/; secure; HttpOnly",
  "40": "last-modified: Fri, 06 Mar 2026 09:13:09 GMT",
  "41": "vary: Accept-Encoding",
  "42": "x-content-type-options: nosniff",
  "43": "x-xss-protection: 1; mode=block",
  "44": "cache-control: no-transform",
  "45": "content-type: text/html; charset=utf-8",
  "46": "date: Fri, 06 Mar 2026 09:13:08 GMT",
  "47": "server: Apache"
}
```

Connectivity Test Evidence

Test	Result
TCP Connect IPv4 → port 80	302 0.008530 0.017821
TCP Connect IPv4 → port 443	301 0.009540 0.042596

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
--------------------------------	---

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
```