


IPv6 Readiness Report

um.edu.my — um.edu.my

Category: Education • Generated: 21 Apr 2026, 18:00 MYT • Last Checked: 07 Mar 2026, 01:10 MYT • Verification ID: 1ca040a8-da64-42a6-9767-ec18527cf850

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

Audit trail: <https://ipv6.my6.my/audit/1ca040a8-da64-42a6-9767-ec18527cf850>

 Non-Compliant <small>MGv6C-1.0</small>	47% Partial Support	IPV6-ONLY READINESS Website: X Not Ready DNS: X Not Ready Email: X Not Ready
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IPV4 ADDRESSES 20.212.19.176
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Network Information (WHOIS / RDAP)

IPv4 Network	
Organization	Microsoft Corporation
Country	US
ASN	AS8075
ASN Name	MICROSOFT-CORP-MSN-AS-BLOCK - Microsoft Corporation, US
Network (CIDR)	20.192.0.0/10

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	FAIL	Nameserver does not answer queries over IPv6.
4	DNSSEC Validated	PASS	DNSSEC fully validated.
5	Reverse DNS (PTR)	FAIL	No PTR record found.
6	DS Record at Parent	PASS	DS record found at parent zone.
7	RRSIG Valid	PASS	RRSIG signatures are current and valid.
8	Signing Algorithm	INFO	RSASHA256

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	20.212.19.176
2	HTTP over IPv4	PASS	HTTP (port 80) responds over IPv4 — 110ms TTFB.
3	HTTPS over IPv4	PASS	HTTPS (port 443) responds over IPv4 — 79ms TTFB.

Audit Trail & Evidence Record

Verification ID	1ca040a8-da64-42a6-9767-ec18527cf850
Domain	um.edu.my
Check Mode	Manual
Status	Completed
Started	07 Mar 2026, 01:10:12 MYT
Finished	07 Mar 2026, 01:10:36 MYT
Test Node Profile	dual stack
Engine Version	2.0.0
MGv6C Version	1.0.0
Audit URL	https://ipv6.my6.my/audit/1ca040a8-da64-42a6-9767-ec18527cf850

Integrity Verification

<p>✓ INTEGRITY VERIFIED</p>	
Algorithm	hmac-sha256-v1
Root Hash	5724e7c4bb2cd444805f29284e8fa8e865a8cfe22fd7f6f4805fae485c1741bd
http_headers	cb34ddce31b6d77c36015981e4daf827eed1fc69b472895ba0fa086aca66d750
dns_responses	b1550fa713ca73cc8949b4ee02646067713364359ae24dead1245fc5ae8f6fa6
tls_handshake	31e22aa24e0c926a327e00d717054e60767f5b2d85330257a3cce579991b4b1e
connectivity_log	016df0aa8fecff5279f8e69db7072dcd449becc3028e5d01b0296e6f28370e36
dns_resolution_times	f7bbb76971fb61a7036837258c8b617de1dad03e426f5c966e075293128a0e76

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	17.82	17.85	10.53	16.85	-7.3
Google	IPv4	24.03	29.42	22.34	30.25	-1.7
Google	IPv6	32.02	145.62	20.12	27.69	-11.9
Cloudflare	IPv4	18.89	19.96	8.15	10.06	-10.7
Cloudflare	IPv6	7.83	30.17	18.89	28.21	+11.1

DNS Evidence

A

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 18140
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
um.edu.my. 60 IN A 20.212.19.176
```

DS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 2124
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
um.edu.my. 21600 IN DS 64186 8 2 13131E661822FD18C5DCF784645DB367A44682CB42FB5ECAB78D9B95 09F48C0F
```

MX

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 45964
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 5, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
um.edu.my. 4043 IN MX 2 ALT2.ASPMX.L.GOOGLE.COM.
um.edu.my. 4043 IN MX 30 ASPMX3.GOOGLEMAIL.COM.
um.edu.my. 4043 IN MX 2 ALT1.ASPMX.L.GOOGLE.COM.
um.edu.my. 4043 IN MX 30 ASPMX2.GOOGLEMAIL.COM.
um.edu.my. 4043 IN MX 10 ASPMX.L.GOOGLE.COM.
```

NS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 13054
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 4, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
um.edu.my. 19255 IN NS ns2.um.edu.my.
um.edu.my. 19255 IN NS ns7.um.edu.my.
um.edu.my. 19255 IN NS ns6.um.edu.my.
um.edu.my. 19255 IN NS ns1.um.edu.my.
```

TXT

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 35911
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 5, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
um.edu.my. 3600 IN TXT "google-site-verification=01CnYgh0YeyxctI14_mpq31IiELyUIoCAIQ8TFg_qA"
um.edu.my. 3600 IN TXT "MS=ms24629987"
um.edu.my. 3600 IN TXT "workplace-domain-verification=3unoXNdw3zdwijFhz2c2to1jrbaRJw"
um.edu.my. 3600 IN TXT "v=spf1 mx a:smtp1.um.edu.my a:smtp10.um.edu.my include:_spf.google.com ~all"
um.edu.my. 3600 IN TXT "google-site-verification=G67JdMhJ0_M1mzWl0ei8A7sEL7SfBnIoLe0e062Deuw"
```

AAAA

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 6472
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; AUTHORITY SECTION:
um.edu.my. 1382 IN SOA ns1.um.edu.my. faudzy.um.edu.my. 2026030465 10800 3600 604800 86400
```

RRSIG

```
ns1.um.edu.my. faudzy.um.edu.my. 2026030465 10800 3600 604800 86400
SOA 8 3 38400 20260405073515 20260306063515 53883 um.edu.my. Hbvujvvo35esfKB7jJiC0DU4WzhwKBStSIFSVJiBPbNJ5LwTu3T6ik24
yx+17GaN1xyf28dNQ2cvGdGT4cyRLkDzGxDG4kuPbRt3KZXEslDzsb1p HCz2gp/arqYy1bX/Cqqi28LFMiToRmQGw7nKBasW/mCRtwJAC6uSFYEO h/s=
```

DNSKEY

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 31617
;; flags: qr rd ra ad; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 512
;; ANSWER SECTION:
um.edu.my. 21600 IN DNSKEY 256 3 8 AwEAAzIvZ1qTgIaiqRXicS8LJzIre+hAEWPKRjzYZS0a5qsx8D0jK JnVl8zZgXGXKDoRePkxHn8jizI7bmfRgDAnGQ7tMoRfo+A07kYK6zyE0
c5VbWnQvzqr9wqWtVmj52I1hraaROEQK0L8NiCt1onMriqZXH4LEGnI Koj8VlPv
um.edu.my. 21600 IN DNSKEY 257 3 8 AwEAAAdK3hHZTNDnRGt5Ay7XtMd6rV6F8a5S1PEa6kYm/5kvnPmAy9HK uq41rCw8//yoiCeJCSkowSb0gai0hpp1x0gkZkLmGrs6N0eGgS9lpD8
esxv3RR7HZ0cwm++2IHii0feoCwT4v3eM6ZEpLkIbapILYJ6vJBpt/yn +HKszfR2LY0dBliGtWJtxVJAES/M07L0pw7m32XUzjvJ4rqCXRqkyTIS
t0e5NqWBZfLPQl6Hunz03mwXmMUMmJPQ1y0u85k/7wgU8ARDXGlydN/K dLHKAmIm6eaXTC0mMFMjy9ijEA0wPDAHb5S9SgLU9o49xGqc9mH4jE hYuCb0nNwtM=
```

DNSSEC_VALIDATION

```
; fully validated
um.edu.my. 21600 IN SOA ns1.um.edu.my. faudzy.um.edu.my. 2026030465 10800 3600 604800 86400
um.edu.my. 21600 IN RRSIG SOA 8 3 38400 20260405073515 20260306063515 53883 um.edu.my. Hbvujvvo35esfKB7jJiC0DU4WzhwKBStSIFSVJiBPbNJ5LwTu3T6ik24
yx+17GaN1xyf28dNQ2cvGdGT4cyRLkDzGxDG4kuPbRt3KZXEslDzsb1p HCz2gp/arqYy1bX/Cqqi28LFMiToRmQGw7nKBasW/mCRtwJAC6uSFYEO h/s=
```



```

dHRwczovL3d3dy5kaWdpY2VydC5jb20vQ1BTMA0GCS5qGS1b3D0EBCwUAA4IBAQC6
km0KA4sTb2VYpEBm/ul2HL/pZX9B7L/hbJ4NcoBe7V56oCnt7aeIo8sMjCRWTCWZ
D1dY0+2KZOC1dKj8d1VXXAtnjytDDuPPf6/iow0mYQTO/GAg/MLyL6CDm3FzDB8V
tsH/aeMgP6pgD1XQqz+haDnfnJTKBuxhcnx3AdbLeue/QnPf1hHYa8L+Rv8P15U
h4V9FwH0fphdMX0xi140qmsiTbc5c0s9/uukH+YVsuFdwTna6IvW1qh+tEtyH16R
vmi7pkqyZYUL0PMIE7avrLjVVBZuikwARTY8tCVV6Pp9L3VeagBqb2ffgqNJt3C0
TYNYQI+BXG1R1cABloId
-----END CERTIFICATE-----
2 s:C = US, 0 = DigiCert Inc, OU = www.digicert.com, CN = DigiCert Global Root G2
i:C = US, 0 = DigiCert Inc, OU = www.digicert.com, CN = DigiCert Global Root G2
a:PKKEY: rsaEncryption, 2048 (bit); sigalg: RSA-SHA256
v:NotBefore: Aug 1 12:00:00 2013 GMT; NotAfter: Jan 15 12:00:00 2038 GMT
-----BEGIN CERTIFICATE-----
MIIDjjCCAnagAwIBAgIQAzrx5qcRqaC7KGSxH0n65TANBgkqhkiG9w0BAQsFADBh
MQswCQYDVQQGEJUVUzEVMBMGA1UEChMMRGlna0GCS5qGS1b3D0EBCwUAA4IBAQC6
d3cuZGlnaWNLcnQuY29tMSAwHgYDVQOExdEaWdpQ2VydCBHbG9iYWwUm9vdCBH
MjAeFw0xMzA4MDExMjAwMDBaFw0zODAxMTUxMjAwMDBaMGExCzAJBgNVBAYTAUVT
MRUwEwYDVQQKEwxEaWdpQ2VydCBJbmMxGTAXBgNVBAsTEHd3dy5kaWdpY2VydC5j
b20xIDAeBgNVBAMTF0RpZ21kZXJ0IEEdsb2JhbCBSb290IEcyMIIIBjANBgkqhkiG
9w0BAQEFAAOCAQ8AMIIBCgKCAQEaUzfNnN7a8myaJcTsnX/RrohCgiN9RLUyfuI
2/0u8jqkT65qsGGmvPrC3oXgkRKLpimn7Wo6h+4FR1IAWsuLecYxpsMNzaHxmx
1x7e/dfgy5SDN67sH0N03Xss0r0upS/kqbit0tSZLyl6ZtrAGCSYP9PIUkY92eQ
q2EGnI/yuum06ZiYa7XzV+hdG82MHauVBjVJ8zUtluNjbd134/tJ57SsVQepj5Wz
tC07TG1F8PapsPuwTPlMVYwnSlcUfIKdzX0S0xZKBgyMUNGPHgm+F6HmIcr9g+UQ
vI0LcsRnKPzZFBQ9RnbDhxSJITRNrw9FDKZJobq7nMwM4MphQIDAQABo0IwQDAP
BgNVHRMBAf8EBTADAQH/MA4GA1UdDwEB/wQEAwIBhjAdBgNVHQ4EFgOUTiJUIBiv
5uNu5g/6+rK57QYXjzkW0QYJKoZIhvcNAQELBQADggEBAGBnKJRvDkhj6zHd6mcY

```

HTTP Response Evidence

IPv4 HTTP (port 80)

HTTP Status	200
Connected IP	20.212.19.176
Connect Time	16.1 ms
TTFB	78.54 ms
Total Time	78.59 ms

Response Headers:

```
{
  "0": "HTTP/1.1 301 Moved Permanently",
  "1": "Server: nginx/1.20.1",
  "2": "Date: Fri, 06 Mar 2026 09:10:36 GMT",
  "3": "Content-Type: text/html",
  "4": "Content-Length: 169",
  "5": "Connection: keep-alive",
  "6": "Location: https://um.edu.my",
  "8": "HTTP/1.1 200 OK",
  "9": "Server: nginx/1.20.1",
  "10": "Date: Fri, 06 Mar 2026 09:10:36 GMT",
  "11": "Content-Type: text/html; charset=UTF-8",
  "12": "Content-Length: 88720",
  "13": "Connection: keep-alive",
  "14": "Last-Modified: Fri, 06 Mar 2026 03:52:41 GMT",
  "15": "ETag: \"15a90-64c52fc24c96a\"",
  "16": "Accept-Ranges: bytes",
  "17": "Cache-Control: max-age=2592000",
  "18": "Expires: Sun, 05 Apr 2026 09:10:36 GMT",
  "19": "Strict-Transport-Security: max-age=63072000; includeSubdomains;",
  "20": "Public-Key-Pins: pin-sha256=\"kl023nT2ehFDXCfx3eHTDRESMz3asj1mu0+4aIdjiuY=\"; pin-sha256=\"633lt352PKRXb0wf4xSEa1M517scpD3l5f79xMD9r9Q=\"; max-age=2592000; includeSubDomains",
  "21": "X-Frame-Options: SAMEORIGIN"
}
```

IPv4 HTTPS (port 443)

HTTP Status	200
Connected IP	20.212.19.176
Connect Time	8.65 ms
TTFB	64.96 ms
Total Time	64.99 ms

Response Headers:

```
[
  "HTTP/1.1 200 OK",
  "Server: nginx/1.20.1",
  "Date: Fri, 06 Mar 2026 09:10:36 GMT",
  "Content-Type: text/html; charset=UTF-8",
  "Content-Length: 88720",
  "Connection: keep-alive",
  "Last-Modified: Fri, 06 Mar 2026 03:52:41 GMT",
  "ETag: \"15a90-64c52fc24c96a\"",
  "Accept-Ranges: bytes",
  "Cache-Control: max-age=2592000",
  "Expires: Sun, 05 Apr 2026 09:10:36 GMT",
  "Strict-Transport-Security: max-age=63072000; includeSubdomains;",
  "Public-Key-Pins: pin-sha256=\"kl023nT2ehFDXCfx3eHTDRESMz3asj1mu0+4aIdjiuY=\"; pin-sha256=\"633lt352PKRXb0wf4xSEa1M517scpD3l5f79xMD9r9Q=\"; max-age=2592000; includeSubDomains",
  "X-Frame-Options: SAMEORIGIN"
]
```

Connectivity Test Evidence

Test	Result
TCP Connect IPv4 → port 80	301 0.008965 0.018053
TCP Connect IPv4 → port 443	200 0.007744 0.093726

Test Node Network Evidence

Node Profile	dual stack
--------------	------------

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
```