IPv6 Readiness Report

msu.edu.my — msu.edu.my

Scan to verify

Category: Education • Generated: 02 Nov 2026, 03:07 MYT • Last Checked: 08 Aug 2026, 18:32 MYT • Verification ID: 3758f386-ad49-430b-8b8f-1e6a98eb5815
Report generated from National IPv6 Readiness Monitor — https://ipv6.my6.my
Audit trail: https://ipv6.my6.my/audit/3758f386-ad49-430b-8b8f-1e6a98eb5815

✓
Compliant
MGv6C-1.0

90%
Fully IPv6 Ready

IPV6-ONLY READINESS
Website: ✓ **Ready**
DNS: ✓ **Ready**
Email: ✗ **Not Ready**

IPV6 ADDRESSES
2606:4700:20::ac43:4663
2606:4700:20::681a:b27
2606:4700:20::681a:a27

IPV4 ADDRESSES
104.26.10.39
104.26.11.39
172.67.70.99

Network Information (WHOIS / RDAP)

	IPv6 Network	IPv4 Network
Organization	Cloudflare, Inc.	Cloudflare, Inc.
Country	US	US
ASN	AS13335	AS13335
ASN Name	CLOUDFLARENET - Cloudflare, Inc., US	CLOUDFLARENET - Cloudflare, Inc., US
Network (CIDR)	2606:4700::/32	104.16.0.0/12

Web Services (35%) — 8 / 8

#	CHECK	RESULT	DETAIL
1	**AAAA Record**	PASS	2606:4700:20::ac43:4663, 2606:4700:20::681a:b27, 2606:4700:20::681a:a27
2	**Globally Routable IPv6**	PASS	All addresses are globally routable.
3	**HTTP over IPv6**	PASS	HTTP (port 80) responds over IPv6 — 32ms TTFB.
4	**HTTPS over IPv6**	PASS	HTTPS (port 443) responds over IPv6 — 181ms 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, O = Google Trust Services, CN = WE1, expires Sep 17 08:34:22 2026 GMT
7	**Dual-Stack (IPv4 + IPv6)**	PASS	Domain has both A and AAAA records.
8	**HTTP/3 (QUIC)**	PASS	Alt-Svc: h3 header 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.

#	CHECK	RESULT	DETAIL
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 / 4

#	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: selector1._domainkey
7	**DMARC Record**	PASS	DMARC record found.

IPv4 Baseline (15%) 3 / 3

#	CHECK	RESULT	DETAIL
1	**A Record**	PASS	104.26.10.39, 104.26.11.39, 172.67.70.99
2	**HTTP over IPv4**	PASS	HTTP (port 80) responds over IPv4 — 34ms TTFB.
3	**HTTPS over IPv4**	PASS	HTTPS (port 443) responds over IPv4 — 164ms TTFB.

Audit Trail & Evidence Record

Verification ID	3758f386-ad49-430b-8b8f-1e6a98eb5815
Domain	msu.edu.my
Check Mode	Manual
Status	Completed
Started	08 Aug 2026, 18:31:44 MYT
Finished	08 Aug 2026, 18:32:05 MYT
Test Node Profile	dual stack
Engine Version	2.0.0
MGv6C Version	1.0.0
Audit URL	https://ipv6.my6.my/audit/3758f386-ad49-430b-8b8f-1e6a98eb5815

Integrity Verification

✓ **INTEGRITY VERIFIED**

Algorithm	hmac-sha256-v1
Root Hash	7c95678130e05567d6e356a03fe7956b3495d8788267c311c813aaf14c14a6e3
http_headers	d018fd42d48c6022e55cbd63f91ca7f668f694bb2318fae7dc60f0539078d08f
dns_responses	937febcef16a2d5ed805ccbb8931dcd312dc6c2c8e1a09260cb6e1e6cdbb6766
tls_handshake	84cf9c3be8eaae4f5380e5c8afaf5c0fbf9b5d96a72c8e0c681f011ddb50f933
connectivity_log	4db398941d10e24abe40b864f66b0a0de8d4c2875e73a0b42b44bf6be85788bc
dns_resolution_times	4454247cac871f9a0bf7abce8a29d3408afdc57e491fe59cb4651d98e9d34a2a

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	23.59	26.74	21.99	23.3	-1.6
Google	IPv4	84.98	88.44	85.92	91.77	+0.9
Google	IPv6	87.74	98.82	79.88	95.64	-7.9
Cloudflare	IPv4	21.97	22.19	22.67	24.61	+0.7
Cloudflare	IPv6	24.23	30.05	21.51	23.64	-2.7

DNS Evidence

A

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 58122
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; ANSWER SECTION:
msu.edu.my.□□300□IN□A□104.26.11.39
msu.edu.my.□□300□IN□A□104.26.10.39
msu.edu.my.□□300□IN□A□172.67.70.99
```

DS

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 40138
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; AUTHORITY SECTION:
edu.my.□□□3587□IN□SOA□e.nic.my. hostmaster.nic.my. 2026062857 1800 900 604800 3600
```

MX

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 57511
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; ANSWER SECTION:
msu.edu.my.□□3600□IN□MX□0 msu-edu-my.mail.protection.outlook.com.
```

NS

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 41768
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; ANSWER SECTION:
msu.edu.my.□□59577□IN□NS□mario.ns.cloudflare.com.
msu.edu.my.□□59577□IN□NS□gwen.ns.cloudflare.com.
```

TXT

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 21870
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; ANSWER SECTION:
msu.edu.my.□□300□IN□TXT□"adobe-idp-site-verification=87c1f7d3affef1cb7a70ac52c41a9dc9fa23914c3cbed3f1c1f907a2db7b2d62"
msu.edu.my.□□300□IN□TXT□"autodesk-domain-verification=qfJUzol-gw_ZO2OQ8_q2"
msu.edu.my.□□300□IN□TXT□"v=spf1 ip4:203.121.83.0/24 ip4:40.92.0.0/15 ip4:40.107.0.0/16 ip4:52.100.0.0/14 ip4:52.238.78.88/32 ip4:104.47.0.0/17 ip4:219.92.5.43/32
include:spf.protection.outlook.com include:mx.msu.edu.my include:transmail.net -all"
```

AAAA

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 20844
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; ANSWER SECTION:
msu.edu.my.□□300□IN□AAAA□2606:4700:20::ac43:4663
msu.edu.my.□□300□IN□AAAA□2606:4700:20::681a:b27
msu.edu.my.□□300□IN□AAAA□2606:4700:20::681a:a27
```

RRSIG

```
gwen.ns.cloudflare.com. dns.cloudflare.com. 2411649225 10000 2400 604800 1800
```

```
SOA 13 3 1800 20260809113144 20260807093144 34505 msu.edu.my. MVseBQ/jQWTUFlO0dpUR+C1LuLd2/WPMa1G00iCPSxbZAXt3InnG16tl YAjhMWz0krm01xDF8H0KMO9eFfE3Rg==
```

DNSKEY

```
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 61392
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1232
;; ANSWER SECTION:
msu.edu.my.□□3581□IN□DNSKEY□256 3 13 oJMRESz5E4gYzS/q6XDrvU1qMPYIjCWzJaOau8XNEZeqCYKD5ar0IRd8 KqXXFJkqmVfRvMGPmM1x8fGAa2XhSA==
msu.edu.my.□□3581□IN□DNSKEY□257 3 13 mdsswUyr3DPW132mOi8V9xESWE8jTo0dxCjjnopKl+GqJxpVXckHAeF+ KkxLbxILfDLUT0rAK9iUzy1L53eKGQ==
```

DNSSEC_VALIDATION

```
;; validating msu.edu.my/SOA: no valid signature found
; unsigned answer
msu.edu.my.□□1781□IN□SOA□gwen.ns.cloudflare.com. dns.cloudflare.com. 2411649225 10000 2400 604800 1800
msu.edu.my.□□1781□IN□RRSIG□SOA 13 3 1800 20260809113144 20260807093144 34505 msu.edu.my. MVseBQ/jQWTUFlO0dpUR+C1LuLd2/WPMa1G00iCPSxbZAXt3InnG16tl
YAjhMWz0krm01xDF8H0KMO9eFfE3Rg==
```

TLS Handshake Evidence

IPV4 Connection

IP Used	104.26.10.39
IP Version	4

```
depth=2 C = US, O = Google Trust Services LLC, CN = GTS Root R4
verify return:1
depth=1 C = US, O = Google Trust Services, CN = WE1
verify return:1
depth=0 CN = msu.edu.my
verify return:1
CONNECTED(00000010)
---
Certificate chain
 0 s:CN = msu.edu.my
   i:C = US, O = Google Trust Services, CN = WE1
   a:PKEY: id-ecPublicKey, 256 (bit); sigalg: ecdsa-with-SHA256
   v:NotBefore: Jun 19 07:34:41 2026 GMT; NotAfter: Sep 17 08:34:22 2026 GMT
-----BEGIN CERTIFICATE-----
MIIDezCCAyGgAwIBAgIRAN6WPjTd6okdDvGUR21L0oMwCgYIKoZIzj0EAwIwOzEL
MAkGA1UEBhMCVVMxHjAcBgNVBAoTFUdvb2dsZSBUcnVzdCBTZXJ2aWNlczEMMAoG
A1UEAxMDV0UxMB4XDTI2MDYxOTA3MzQ0MVoXDTI2MDkxNzA4MzQyMlowFTETMBEG
A1UEAxMKbXN1LmVkdS5teTBZMBMGByqGSM49AgEGCCqGSM49AwEHA0IABIzYTu9C
qKc41Rs6M7LIZF41bbFQp7BRf7LCyTc8hMhvwx+h7iZ83+twb/hCrlN6xwQt2866
Lq+FGFLfJghf5/OjggIqMIICJjAOBgNVHQ8BAf8EBAMCB4AwEwYDVR0lBAwwCgYI
KwYBBQUHAwEwDAYDVR0TAQH/BAIwADAdBgNVHQ4EFgQU5RiwjSpCCOZdmZgKeXCA
Kcmmi6EwHwYDVR0jBBgwFoAUkHeSNWfE/6jMqeZ72YB5e8yT+TgwNQYIKwYBBQUH
AQEEKTAnMCUGCCsGAQUFBzAChhlodHRwOi8vaS5wa2kuZ29vZy93ZTEuY3J0MCMG
A1UdEQQcMBqCCm1zdS5lZHUubXmCDCoubXN1LmVkdS5teTATBgNVHSAEDDAKMAgG
BmeBDAECATA2BgNVHR8ELzAtMCugKaAnhiVodHRwOi8vYy5wa2kuZ29vZy93ZTEv
cmRvWmFQLUNFNkuY3JsMIIBBgYKKwYBBAHWeQIEAgSB9wSB9ADyAHcAlE5Dh/rs
we+B8xkkJqgYZQHH0184AgE/cmd9VTcuGdgAAAGe3wSbfgAABAMASDBGAiEAuWwt
9CXOFeB5QdbyajO4GZapZVUCoeA04cHA/Gul+z4CIQDG2UznmR1BK2D+AlLkV7fZ
J/WSd9c2JeArdgQbuxY0QgB3ANdtfRDRp/V3wsfpX9cAv/mCyTNaZeHQswFzF8DI
xWl3AAABnt8Em3EAAAQDAEgwRgIhAMS9wbJ2Ng75IS8HeZB0jy+92Ndlz63sxi3D
WcFQkX0yAiEAkjzI7fULnYOfzhG7GmCVWKPUD+wppjPq2vscWqgkqz4wCgYIKoZI
zj0EAwIDSAAwRQIhALaqs4opVNlj8MreuwQsgVkG3eNiiRneswqwPJhoxOijAiAE
CiLpJfB7O+eA6yyr1PEGUmYDD4OJDT09Ucio5WEXpw==
-----END CERTIFICATE-----
 1 s:C = US, O = Google Trust Services, CN = WE1
   i:C = US, O = Google Trust Services LLC, CN = GTS Root R4
   a:PKEY: id-ecPublicKey, 256 (bit); sigalg: ecdsa-with-SHA384
   v:NotBefore: Dec 13 09:00:00 2023 GMT; NotAfter: Feb 20 14:00:00 2029 GMT
-----BEGIN CERTIFICATE-----
MIICnzCCAiWgAwIBAgIQf/MZd5csIkp2FV0TttaF4zAKBggqhkjOPQQDAzBHMQsw
CQYDVQQGEwJVUzEiMCAGA1UEChMZR29vZ2xlIFRydXN0IFNlcnZpY2VzIExMQzEU
MBIGA1UEAxMLR1RTIFJvb3QgUjQwHhcNMjMxMjEzMDkwMDAwWhcNMjkwMjIwMTQw
MDAwWjA7MQswCQYDVQQGEwJVUzEeMBwGA1UEChMVR29vZ2xlIFRydXN0IFNlcnZp
Y2VzMQwwCgYDVQQDEwNXRTEwWTATBgcqhkjOPQIBBggqhkjOPQMBBwNCAARvzTr+
Z1dHTCEDhUDCR127WEcPQMFcF4XGGTfn1XzthkubgdnXGhOlCgP4mMTG6J7/EFmP
LCaY9eYmJbsPAvpWo4H+MIH7MA4GA1UdDwEB/wQEAwIBhjAdBgNVHSUEFjAUBggr
BgEFBQcDAQYIKwYBBQUHAwIwEgYDVR0TAQH/BAgwBgEB/wIBADAdBgNVHQ4EFgQU
kHeSNWfE/6jMqeZ72YB5e8yT+TgwHwYDVR0jBBgwFoAUgEzW63T/STaj1dj8tT7F
avCUHYwwNAYIKwYBBQUHAQEEKDAmMCQGCCsGAQUFBzAChhhodHRwOi8vaS5wa2ku
Z29vZy9yNC5jcnQwKwYDVR0fBCQwIjAgoB6gHIYaaHR0cDovL2MucGtpLmdvb2cv
ci9yNC5jcmwwEwYDVR0gBAwwCjAIBgZngQwBAgEwCgYIKoZIzj0EAwMDaAAwZQIx
AOcCq1HW90OVznX+0RGU1cxAQXomvtgM8zItPZCuFQ8jSBJSjz5keROv9aYsAm5V
sQIwJonMaAFi54mrfhfoFNZEfuNMSQ6/bIBiNLiyoX46FohQvKeIoJ99cx7sUkFN
7uJW
-----END CERTIFICATE-----
 2 s:C = US, O = Google Trust Services LLC, CN = GTS Root R4
   i:C = BE, O = GlobalSign nv-sa, OU = Root CA, CN = GlobalSign Root CA
   a:PKEY: id-ecPublicKey, 384 (bit); sigalg: RSA-SHA256
   v:NotBefore: Nov 15 03:43:21 2023 GMT; NotAfter: Jan 28 00:00:42 2028 GMT
-----BEGIN CERTIFICATE-----
MIIDejCCAmKgAwIBAgIQf+UwvzMTQ77dghYQST2KGzANBgkqhkiG9w0BAQsFADBX
MQswCQYDVQQGEwJCRTEZMBcGA1UEChMQR2xvYmFsU2lnbiBudi1zYTEQMA4GA1UE
CxMHUm9vdCBDQTEbMBkGA1UEAxMSR2xvYmFsU2lnbiBSb290IENBMB4XDTIzMTEx
NTAzNDMyMVoXDTI4MDEyODAwMDA0MlowRzELMAkGA1UEBhMCVVMxIjAgBgNVBAoT
GUdvb2dsZSBUcnVzdCBTZXJ2aWNlcyBMTEMxFDASBgNVBAMTC0dUUyBSb290IFI0
MHYwEAYHKoZIzj0CAQYFK4EEACIDYgAE83Rzp2iLYK5DuDXFgTB7S0md+8Fhzube
Rr1r1WEYNa5A3XP3iZEwWus87oV8okB2O6nGuEfYKueSkWpz6bFyOZ8pn6KY019e
WIZlD6GEZQbR3IvJx3PIjGov5cSr0R2Ko4H/MIH8MA4GA1UdDwEB/wQEAwIBhjAd
BgNVHSUEFjAUBggrBgEFBQcDAQYIKwYBBQUHAwIwDwYDVR0TAQH/BAUwAwEB/zAd
BgNVHQ4EFgQUgEzW63T/STaj1dj8tT7FavCUHYwwHwYDVR0jBBgwFoAUYHtmGkUN
l8qJUC99BM00qP/8/UswNgYIKwYBBQUHAQEEKjAoMCYGCCsGAQUFBzAChhpodHRw
Oi8vaS5wa2kuZ29vZy9nc3IxLmNydDAtBgNVHR8EJjAkMCKgIKAehhxodHRwOi8v
```

```
Yy5wa2kuZ29vZy9yL2dzcjEuY3JsMBMGA1UdIAQMMAowCAYGZ4EMAQIBMA0GCSqG
SIb3DQEBCwUAA4IBAQAYQrsPBtYDh5bjP2OBDwmkoWhIDDkic574y04tfzHpn+cJ
odI2D4SseesQ6bDrarZ7C30ddLibZatoKiws3UL9xnELz4ct92vID24FfVbiI1hY
+SW6FoVHkNeWIP0GCbaM4C6uVdF5dTUsMVs/ZbzNnIdCp5Gxmx5ejvEau8otR/Cs
kGN+hr/W5GvT1tMBjgWKZ1i4//emhA1JG1BbPzoLJQvyEotc03lXjTaCzv8mEbep
8RqZ7a2CPsgRbuvTPBwcOMBBmuFeU88+FSBX6+7iP0il8b4Z0QFqIwwMHfs/L6K1
vepuoxtGzi4CZ68zJpiq1UvSqTbFJjtbD4seiMHl
-----END CERTIFICATE-----
---
Server certificate
subject=CN = msu.edu.my
issuer=C = US, O = Google Trust Services, CN = WE1
---
No client certificate CA names sent
Peer signing digest: SHA256
Peer signature type: ECDSA
Server Temp Key: X25519, 253 bits
---
SSL handshake has read 2783 bytes and written 392 bytes
Verification: OK
---
New, TLSv1.3, Cipher is TLS_AES_256_GCM_SHA384
Server public key is 256 bit
Secure Renegotiation IS NOT supported
Compression: NONE
Expansion: NONE
No ALPN negotiated
Early data was not sent
```

IPV6 Connection

IP Used	2606:4700:20::ac43:4663
IP Version	6

```
depth=2 C = US, O = Google Trust Services LLC, CN = GTS Root R4
verify return:1
depth=1 C = US, O = Google Trust Services, CN = WE1
verify return:1
depth=0 CN = msu.edu.my
verify return:1
CONNECTED(00000010)
---
Certificate chain
 0 s:CN = msu.edu.my
   i:C = US, O = Google Trust Services, CN = WE1
   a:PKEY: id-ecPublicKey, 256 (bit); sigalg: ecdsa-with-SHA256
   v:NotBefore: Jun 19 07:34:41 2026 GMT; NotAfter: Sep 17 08:34:22 2026 GMT
-----BEGIN CERTIFICATE-----
MIIDezCCAyGgAwIBAgIRAN6WPjTd6okdDvGUR21L0oMwCgYIKoZIzj0EAwIwOzEL
MAkGA1UEBhMCVVMxHjAcBgNVBAoTFUdvb2dsZSBUcnVzdCBTZXJ2aWNlczEMMAoG
A1UEAxMDV0UxMB4XDTI2MDYxOTA3MzQ0MVoXDTI2MDkxNzA4MzQyMlowFTETMBEG
A1UEAxMKbXN1LmVkdS5teTBZMBMGByqGSM49AgEGCCqGSM49AwEHA0IABIzYTu9C
qKc41Rs6M7LIZF41bbFQp7BRf7LCyTc8hMhvwx+h7iZ83+twb/hCrlN6xwQt2866
Lq+FGFLfJghf5/OjggIqMIICJjAOBgNVHQ8BAf8EBAMCB4AwEwYDVR0lBAwwCgYI
KwYBBQUHAwEwDAYDVR0TAQH/BAIwADAdBgNVHQ4EFgQU5RiwjSpCCOZdmZgKeXCA
Kcmmi6EwHwYDVR0jBBgwFoAUkHeSNWfE/6jMqeZ72YB5e8yT+TgwNQYIKwYBBQUH
AQEEKTAnMCUGCCsGAQUFBzAChhlodHRwOi8vaS5wa2kuZ29vZy93ZTEuY3J0MCMG
A1UdEQQcMBqCCm1zdS5lZHUubXmCDCoubXN1LmVkdS5teTATBgNVHSAEDDAKMAgG
BmeBDAECATA2BgNVHR8ELzAtMCugKaAnhiVodHRwOi8vYy5wa2kuZ29vZy93ZTEv
cmRvWmFQLUNFNFkuY3JsMIIBBgYKKwYBBAHWeQIEAgSB9wSB9ADyAHcAlE5Dh/rs
we+B8xkkJqgYZQHH0184AgE/cmd9VTcuGdgAAAGe3wSbfgAABAMASDBGAiEAuWwt
9CXOFeB5QdbyajO4GZapZVUCoeA04cHA/Gul+z4CIQDG2UznmR1BK2D+AlLkV7fZ
J/WSd9c2JeArdgQbuxY0QgB3ANdtfRDRp/V3wsfpX9cAv/mCyTNaZeHQswFzF8DI
xWl3AAABnt8Em3EAAAQDAEgwRgIhAMS9wbJ2Ng75IS8HeZB0jy+92Ndlz63sxi3D
WcFQkX0yAiEAkjzI7fULnYOfzhG7GmCVWKPUD+wppjPq2vscWqgkqz4wCgYIKoZI
zj0EAwIDSAAwRQIhALaqs4opVNlj8MreuwQsgVkG3eNiiRneswqwPJhoxOijAiAE
CiLpJfB7O+eA6yyr1PEGUmYDD4OJDT09Ucio5WEXpw==
-----END CERTIFICATE-----
 1 s:C = US, O = Google Trust Services, CN = WE1
   i:C = US, O = Google Trust Services LLC, CN = GTS Root R4
   a:PKEY: id-ecPublicKey, 256 (bit); sigalg: ecdsa-with-SHA384
   v:NotBefore: Dec 13 09:00:00 2023 GMT; NotAfter: Feb 20 14:00:00 2029 GMT
-----BEGIN CERTIFICATE-----
MIICnzCCAiWgAwIBAgIQf/MZd5csIkp2FV0TttaF4zAKBggqhkjOPQQDAzBHMQsw
CQYDVQQGEwJVUzEiMCAGA1UEChMZR29vZ2xlIFRydXN0IFNlcnZpY2VzIExMQzEU
MBIGA1UEAxMLR1RTIFJvb3QgUjQwHhcNMjMxMjEzMDkwMDAwWhcNMjkwMjIwMTQw
MDAwWjA7MQswCQYDVQQGEwJVUzEeMBwGA1UEChMVR29vZ2xlIFRydXN0IFNlcnZp
Y2VzMQwwCgYDVQQDEwNXRTEwHTATBgcqhkjOPQIBBggqhkjOPQMBBwNCAARvzTr+
Z1dHTCEDhUDCR127WEcPQMFcF4XGGTfn1XzthkubgdnXGhOlCgP4mMTG6J7/EFmP
```

```
LCaY9eYmJbsPAvpWo4H+MIH7MA4GA1UdDwEB/wQEAwIBhjAdBgNVHSUEFjAUBggr
BgEFBQcDAQYIKwYBBQUHAwIwEgYDVR0TAQH/BAgwBgEB/wIBADAdBgNVHQ4EFgQU
kHeSNWfE/6jMqeZ72YB5e8yT+TgwHwYDVR0jBBgwFoAUgEzW63T/STaj1dj8tT7F
avCUHYwwNAYIKwYBBQUHAQEEKDAmMCQGCCsGAQUFBzAChhhodHRwOi8vaS5wa2ku
Z29vZy9yNC5jcnQwKwYDVR0fBCQwIjAgoB6gHIYaaHR0cDovL2MucGtpLmdvb2cv
ci9yNC5jcmwwEwYDVR0gBAwwCjAIBgZngQwBAgEwCgYIKoZIzj0EAwMDaAAwZQIx
AOcCq1HW90OVznX+0RGU1cxAQXomvtgM8zItPZCuFQ8jSBJSjz5keROv9aYsAm5V
sQIwJonMaAFi54mrfhfoFNZEfuNMSQ6/bIBiNLiyoX46FohQvKeIoJ99cx7sUkFN
7uJW
-----END CERTIFICATE-----
 2 s:C = US, O = Google Trust Services LLC, CN = GTS Root R4
   i:C = BE, O = GlobalSign nv-sa, OU = Root CA, CN = GlobalSign Root CA
   a:PKEY: id-ecPublicKey, 384 (bit); sigalg: RSA-SHA256
   v:NotBefore: Nov 15 03:43:21 2023 GMT; NotAfter: Jan 28 00:00:42 2028 GMT
-----BEGIN CERTIFICATE-----
MIIDejCCAmKgAwIBAgIQf+UwvzMTQ77dghYQST2KGzANBgkqhkiG9w0BAQsFADBX
MQswCQYDVQQGEwJCRTEZMBcGA1UEChMQR2xvYmFsU2lnbiBudi1zYTEQMA4GA1UE
CxMHUm9vdCBDQTEbMBkGA1UEAxMSR2xvYmFsU2lnbiBSb290IENBMB4XDTIzMTEx
NTAzNDMyMVoXDTI4MDEyODAwMDA0MlowRzELMAkGA1UEBhMCVVMxIjAgBgNVBAoT
GUdvb2dsZSBUcnVzdCBTZXJ2aWNlcyBMTEMxFDASBgNVBAMTC0dUUyBSb290IFI0
MHYwEAYHKoZIzj0CAQYFK4EEACIDYgAE83Rzp2iLYK5DuDXFgTB7S0md+8Fhzube
Rr1r1WEYNa5A3XP3iZEwWus87oV8okB2O6nGuEfYKueSkWpz6bFyOZ8pn6KY019e
WIZlD6GEZQbR3IvJx3PIjGov5cSr0R2Ko4H/MIH8MA4GA1UdDwEB/wQEAwIBhjAd
BgNVHSUEFjAUBggrBgEFBQcDAQYIKwYBBQUHAwIwDwYDVR0TAQH/BAUwAwEB/zAd
BgNVHQ4EFgQUgEzW63T/STaj1dj8tT7FavCUHYwwHwYDVR0jBBgwFoAUYHtmGkUN
l8qJUC99BM00qP/8/UswNgYIKwYBBQUHAQEEKjAoMCYGCCsGAQUFBzAChhpodHRw
Oi8vaS5wa2kuZ29vZy9nc3IxLmNydDAtBgNVHR8EJjAkMCKgIKAehhxodHRwOi8v
Yy5wa2kuZ29vZy9yL2dzcjEuY3JsMBMGA1UdIAQMMAowCAYGZ4EMAQIBMA0GCSqG
SIb3DQEBCwUAA4IBAQAYQrsPBtYDh5bjP2OBDwmkoWhIDDkic574y04tfzHpn+cJ
odI2D4SseesQ6bDrarZ7C30ddLibZatoKiws3UL9xnELz4ct92vID24FfVbiI1hY
+SW6FoVHkNeWIP0GCbaM4C6uVdF5dTUsMVs/ZbzNnIdCp5Gxmx5ejvEau8otR/Cs
kGN+hr/W5GvT1tMBjgWKZ1i4//emhA1JG1BbPzoLJQvyEotc03lXjTaCzv8mEbep
8RqZ7a2CPsgRbuvTPBwcOMBBmuFeU88+FSBX6+7iP0il8b4Z0QFqIwwMHfs/L6K1
vepuoxtGzi4CZ68zJpiq1UvSqTbFJjtbD4seiMHl
-----END CERTIFICATE-----
---
Server certificate
subject=CN = msu.edu.my
issuer=C = US, O = Google Trust Services, CN = WE1
---
No client certificate CA names sent
Peer signing digest: SHA256
Peer signature type: ECDSA
Server Temp Key: X25519, 253 bits
---
SSL handshake has read 2783 bytes and written 392 bytes
Verification: OK
---
New, TLSv1.3, Cipher is TLS_AES_256_GCM_SHA384
Server public key is 256 bit
Secure Renegotiation IS NOT supported
Compression: NONE
Expansion: NONE
No ALPN negotiated
Early data was not sent
```

HTTP Response Evidence

IPv4 HTTP (port 80)

HTTP Status	403
Connected IP	104.26.10.39
Connect Time	7.57 ms
TTFB	33.23 ms
Total Time	33.29 ms

Response Headers:


```
[
    "HTTP/1.1 403 Forbidden",
    "Date: Sat, 08 Aug 2026 10:32:05 GMT",
    "Content-Type: text/html; charset=UTF-8",
    "Connection: keep-alive",
    "Cache-Control: private, max-age=0, no-store, no-cache, must-revalidate, post-check=0, pre-check=0",
    "Expires: Thu, 01 Jan 1970 00:00:01 GMT",
    "referrer-policy: same-origin",
    "x-frame-options: SAMEORIGIN",
    "Speculation-Rules: \"/cdn-cgi/speculation\"",
    "Report-To: {\"group\":\"cf-
nel\",\"max_age\":604800,\"endpoints\":[{\"url\":\"https://a.nel.cloudflare.com/report/v4?s=ORNBHmXTlIR6UM1%2F86hVPSmTUewMhtQeZnsZfya%2F%2F4ayWMkeJg5B4YaB7MfLKqx5SQPrOwq3VK3Fxr4V8
    "Nel: {\"report_to\":\"cf-nel\",\"success_fraction\":0.0,\"max_age\":604800}",
    "expect-ct: max-age=86400, enforce",
    "x-content-type-options: nosniff",
    "x-xss-protection: 1; mode=block",
    "Server: cloudflare",
    "CF-RAY: a27ddaea6817ff7f-SIN",
    "alt-svc: h3=\":443\"; ma=86400"
]
```


IPv6 HTTP (port 80)

HTTP Status	403
Connected IP	2606:4700:20::ac43:4663
Connect Time	7.27 ms
TTFB	67.48 ms
Total Time	67.56 ms

Response Headers:


```
[
    "HTTP/1.1 403 Forbidden",
    "Date: Sat, 08 Aug 2026 10:32:05 GMT",
    "Content-Type: text/html; charset=UTF-8",
    "Connection: keep-alive",
    "Cache-Control: private, max-age=0, no-store, no-cache, must-revalidate, post-check=0, pre-check=0",
    "Expires: Thu, 01 Jan 1970 00:00:01 GMT",
    "referrer-policy: same-origin",
    "x-frame-options: SAMEORIGIN",
    "Speculation-Rules: \"/cdn-cgi/speculation\"",
    "Report-To: {\"group\":\"cf-
nel\",\"max_age\":604800,\"endpoints\":[{\"url\":\"https://a.nel.cloudflare.com/report/v4?s=GOwUGG%2BG7c86ZTM3QG8k0Px7lRHHtOS98r%2Fu4ncanBc0fPlq%2FOoJTBXvzLGd1oUAVytrTONQh6HG2uAO
    "Nel: {\"report_to\":\"cf-nel\",\"success_fraction\":0.0,\"max_age\":604800}",
    "expect-ct: max-age=86400, enforce",
    "x-content-type-options: nosniff",
    "x-xss-protection: 1; mode=block",
    "Server: cloudflare",
    "CF-RAY: a27ddae92cd644bb-SIN",
    "alt-svc: h3=\":443\"; ma=86400"
]
```


IPv4 HTTPS (port 443)

HTTP Status	200
Connected IP	104.26.10.39
Connect Time	18.18 ms
TTFB	130.06 ms
Total Time	130.19 ms

Response Headers:


```
{
    "0": "HTTP/2 301",
    "1": "date: Sat, 08 Aug 2026 10:32:05 GMT",
    "2": "content-type: text/html; charset=UTF-8",
    "3": "location: https://www.msu.edu.my/",
    "4": "speculation-rules: \"/cdn-cgi/speculation\"",
    "5": "report-to: {\"group\":\"cf-
nel\",\"max_age\":604800,\"endpoints\":[{\"url\":\"https://a.nel.cloudflare.com/report/v4?s=JfohAwnsKJLeR4zF43ZoEOa7WHcDGqPSgje8B8x%2BF7gCWtCJPrnYXcBAQI0GTP6yMNIhQtzjDq3OYoer2nyVK
    "6": "nel: {\"report_to\":\"cf-nel\",\"success_fraction\":0.0,\"max_age\":604800}",
    "7": "expect-ct: max-age=86400, enforce",
    "8": "referrer-policy: same-origin",
    "9": "x-content-type-options: nosniff",
    "10": "x-frame-options: SAMEORIGIN",
    "11": "x-xss-protection: 1; mode=block",
    "12": "server: cloudflare",
    "13": "cf-ray: a27ddaeabaf6cef4-SIN",
    "14": "alt-svc: h3=\":443\"; ma=86400",
    "16": "HTTP/2 200",
    "17": "date: Sat, 08 Aug 2026 10:32:05 GMT",
    "18": "content-type: text/html; charset=UTF-8",
    "19": "server: cloudflare",
    "20": "vary: Accept-Encoding",
    "21": "expires: Thu, 19 Nov 1981 08:52:00 GMT",
    "22": "cache-control: no-store, no-cache, must-revalidate",
    "23": "pragma: no-cache",
    "24": "set-cookie: PHPSESSID=77tgt0468l3efdg360i86qs1um; path=/; SameSite=Lax",
    "25": "strict-transport-security: max-age=15768000",
    "26": "x-xss-protection: 1; mode=block",
    "27": "cf-cache-status: BYPASS",
    "28": "speculation-rules: \"/cdn-cgi/speculation\"",
    "29": "report-to: {\"group\":\"cf-
nel\",\"max_age\":604800,\"endpoints\":[{\"url\":\"https://a.nel.cloudflare.com/report/v4?s=UNzo6bTZGAXtkjtXW1MfUvblazDSeOmiZFbKh24OcdHm%2FrDRp4t5NJQX93SLLFkyRg44pJ7dsfTEoCbaRKiR5
    "30": "nel: {\"report_to\":\"cf-nel\",\"success_fraction\":0.0,\"max_age\":604800}",
    "31": "expect-ct: max-age=86400, enforce",
    "32": "referrer-policy: same-origin",
    "33": "x-content-type-options: nosniff",
    "34": "x-frame-options: SAMEORIGIN",
    "35": "cf-ray: a27ddaeae8bffde6-SIN",
    "36": "alt-svc: h3=\":443\"; ma=86400"
}
```


IPv6 HTTPS (port 443)

HTTP Status	200
Connected IP	2606:4700:20::681a:b27
Connect Time	16.66 ms
TTFB	129.48 ms
Total Time	129.58 ms

Response Headers:


```
{
    "0": "HTTP/2 301",
    "1": "date: Sat, 08 Aug 2026 10:32:05 GMT",
    "2": "content-type: text/html; charset=UTF-8",
    "3": "location: https://www.msu.edu.my/",
    "4": "speculation-rules: \"/cdn-cgi/speculation\"",
    "5": "report-to: {\"group\":\"cf-
nel\",\"max_age\":604800,\"endpoints\":[{\"url\":\"https://a.nel.cloudflare.com/report/v4?s=rIQMHPevzjL5dUU%2BQxDiZTNa%2FTswLcc2LeIxh9IaprOyviErzSRL8ixG9s7AsnsUQYNuiEklOpyfI2BHBEc
    "6": "nel: {\"report_to\":\"cf-nel\",\"success_fraction\":0.0,\"max_age\":604800}",
    "7": "expect-ct: max-age=86400, enforce",
    "8": "referrer-policy: same-origin",
    "9": "x-content-type-options: nosniff",
    "10": "x-frame-options: SAMEORIGIN",
    "11": "x-xss-protection: 1; mode=block",
```

```
    "12": "server: cloudflare",
    "13": "cf-ray: a27ddae9ad7cd439-SIN",
    "14": "alt-svc: h3=\":443\"; ma=86400",
    "16": "HTTP/2 200",
    "17": "date: Sat, 08 Aug 2026 10:32:05 GMT",
    "18": "content-type: text/html; charset=UTF-8",
    "19": "server: cloudflare",
    "20": "vary: Accept-Encoding",
    "21": "expires: Thu, 19 Nov 1981 08:52:00 GMT",
    "22": "cache-control: no-store, no-cache, must-revalidate",
    "23": "pragma: no-cache",
    "24": "set-cookie: PHPSESSID=hchanls8q15cqgia2kpnrm7bek; path=/; SameSite=Lax",
    "25": "strict-transport-security: max-age=15768000",
    "26": "x-xss-protection: 1; mode=block",
    "27": "cf-cache-status: BYPASS",
    "28": "speculation-rules: \"/cdn-cgi/speculation\"",
    "29": "report-to: {\"group\":\"cf-
nel\",\"max_age\":604800,\"endpoints\":[{\"url\":\"https://a.nel.cloudflare.com/report/v4?s=6Te5K0eY69zcJA98j6yqhXpRSAGK1%2F7k7Cb%2BmLPLhgNLRQGbIx%2FBlzFY27Eqs5P0577%2F9oCPJ1VZ7o7
    "30": "nel: {\"report_to\":\"cf-nel\",\"success_fraction\":0.0,\"max_age\":604800}",
    "31": "expect-ct: max-age=86400, enforce",
    "32": "referrer-policy: same-origin",
    "33": "x-content-type-options: nosniff",
    "34": "x-frame-options: SAMEORIGIN",
    "35": "cf-ray: a27ddae9e90097a7-SIN",
    "36": "alt-svc: h3=\":443\"; ma=86400"
}
```


Connectivity Test Evidence

Test	Result
TCP Connect IPv4 → port 80	301 0.006653 0.037985
TCP Connect IPv6 → port 80	301 0.007556 0.032898
TCP Connect IPv4 → port 443	301 0.008466 0.042789
TCP Connect IPv6 → port 443	301 0.006963 0.040921

Test Node Network Evidence

Node Profile	dual stack

Egress Connectivity

IPv4 Egress	unreachable
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
```