

IPv6 Readiness Report

msu.edu.my — msu.edu.my



Scan to verify

Category: Education • Generated: 30 Jul 2026, 07:49 MYT • Last Checked: 04 Jul 2026, 03:51 MYT • Verification ID: 89e6b930-c471-43a3-b36c-9916b691ceac
Report generated from National IPv6 Readiness Monitor — <https://ipv6.my6.my>
Audit trail: <https://ipv6.my6.my/audit/89e6b930-c471-43a3-b36c-9916b691ceac>



Partially Compliant

MGv6C-1.0

82%

Partial Support

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

104.26.11.39

104.26.10.39

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 — 45ms TTFB.	
4	HTTPS over IPv6	PASS	HTTPS (port 443) responds over IPv6 — 136ms 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 / 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: selector1_domainkey
7	DMARC Record	PASS	DMARC record found.

IPv4 Baseline (15%)3 / 3

#	CHECK	RESULT	DETAIL
1	A Record	PASS	104.26.11.39, 104.26.10.39, 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 — 188ms TTFB.

Audit Trail & Evidence Record

Verification ID	89e6b930-c471-43a3-b36c-9916b691ceac
Domain	msu.edu.my
Check Mode	Manual
Status	Completed
Started	04 Jul 2026, 03:50:53 MYT
Finished	04 Jul 2026, 03:51:19 MYT
Test Node Profile	dual stack
Engine Version	2.0.0
MGv6C Version	1.0.0
Audit URL	https://ipv6.my6.my/audit/89e6b930-c471-43a3-b36c-9916b691ceac

Integrity Verification

✓ INTEGRITY VERIFIED	
Algorithm	hmac-sha256-v1
Root Hash	9ce5a10b5fd929f399e1c196f9a016dfb34dfb1d761c7b3d3100b07f9f1a1b26
http_headers	8e62e433ed47bdf4041951eadfd249f21159eb1857f40098aa2cfbbebcd8c06b
dns_responses	85a6e10e49d116b8402995fed3e8659ba48031d042ad12c0674190f11293fb4b
tls_handshake	afb8cd8789c203237fd9e3d2fcf4913ea65fbbd12bedc85d21bc5a5b483feee3
connectivity_log	a207ff263803bf9e04b7aa9316119f8f191c8627d6a120b5f12ba9d75eb3ea53
dns_resolution_times	f0c3042db176923a95a4ea428c02b45162ab29814624532eb18957ed764758b5

Test Node Identity

Os	Linux srv1440888 6.8.0-124-generic #124-Ubuntu SMP PREEMPT_DYNAMIC Tue May 26 13:00:45 UTC 2026 x86_64
Hostname	srv1440888
Php Version	8.3.32
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	21.28	23.94	20.39	21.69	-0.9
Google	IPv4	35.22	35.62	33.85	36.58	-1.4
Google	IPv6	22.98	36.92	24.08	30.82	+1.1
Cloudflare	IPv4	9.88	22.35	20.55	21.61	+10.7
Cloudflare	IPv6	21.83	22.63	36.05	36.31	+14.2

DNS Evidence

A

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 14064
;; 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 172.67.70.99
msu.edu.my. 300 IN A 104.26.11.39
msu.edu.my. 300 IN A 104.26.10.39
```

DS

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 13196
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags;; udp: 1232
;; AUTHORITY SECTION:
edu.my. 2921 IN SOA e.nic.my. hostmaster.nic.my. 2026052757 1800 900 604800 3600
```

MX

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 45057
;; 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: 25465
;; 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. 86400 IN NS mario.ns.cloudflare.com.
msu.edu.my. 86400 IN NS gwen.ns.cloudflare.com.
```

TXT

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 31942
;; 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 "autodesk-domain-verification=qfJUzol-gw_Z020Q8_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"
msu.edu.my. 300 IN TXT "adobe-idp-site-verification=87c1f7d3affef1cb7a70ac52c41a9dc9fa23914c3cbcd3f1cf907a2db7b2d62"
```

AAAA

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 31655
;; 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. 2408564015 10000 2400 604800 1800

SOA 13 3 1800 20260704205054 20260702185054 34505 msu.edu.my. crHeCe+xcgDVC4wm8YY3pZXqfJRLPawtrvhXaeb+T6tWuRzf/YLweAAj 4c6x/zwF0QX1TCM2mbfUSWeymvLSNg==

DNSKEY

```
;; Got answer:
;; -->HEADER<<- opcode: QUERY, status: NOERROR, id: 15218
;; 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. 3576 IN DNSKEY 257 3 13 mdsswUyr3DPW132m0i8V9xESWE8jTo0dxCjjnopKL+GqJxpVXckHAeF+ KkxLbxILfDLUT0rAK9iUzy1L53eKGQ==
msu.edu.my. 3576 IN DNSKEY 256 3 13 oJMRESz5E4gYzS/q6XDrvU1qMPYIjCWzJa0au8XNEZeqCYKD5ar0IRd8 KqXFXJkqmVfRvMGpM1x8fGAa2XhSA==
```

DNSSEC_VALIDATION

```
;; validating msu.edu.my/SOA: no valid signature found
; unsigned answer
msu.edu.my. 1776 IN SOA gwen.ns.cloudflare.com. dns.cloudflare.com. 2408564015 10000 2400 604800 1800
msu.edu.my. 1776 IN RRSIG SOA 13 3 1800 20260704205054 20260702185054 34505 msu.edu.my. crHeCe+xcgDVC4wm8YY3pZXqfJRLPawtrvhXaeb+T6tWuRzf/YLweAAj
4c6x/zwF0QX1TCM2mbfUSWeymvLSNg==
```



TLS Handshake Evidence

IPV4 Connection

IP Used	104.26.11.39
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:PKKEY: 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-----
MIIDezCCAYGgAwIBAgIRAN6WPjTd6okDvGUR21L0oMwCgYIKoZIZj0EAwIw0zEL
MakGA1UEBhMCVVMxHjAcBgNVBAoTFUdvd2dsZSBSUcnVzdCBTZXJ2aWNlczEMMAoG
A1UEAxDV0uXzB4XDI2MDYxOTA3MzQ0MVoXDTI2MDkxNzA4MzQyMlowFTETMBEG
A1UEAxMKbXN1LmVkdS5teTBZBMGBYqGSM49AgEGCCqGSM49AwEHA0IABIZyTU9C
qKc4lRs6M7LIZF41bbF0p7BRf7LCyTc8hMhvwX+h7iZ83+twb/hCrLN6xwQt2866
Lq+FGFLfJghf5/0jggIqMIICJjA0BgNVHQ8BAf8EBAMCB4AwEwYDVR0LBAwwCgYI
KwYBBQUHAwEwDAYDVR0TAQH/BAIwADAdBgNVHQ4EFgQU5RiwjSpCC0ZdmZgKeXCA
Kcmmi6EwHwYDVR0jBBgwFoAukHeSNwFE/6jMqeZ72YB5e8yT+TgwNQYIKwYBBQUH
AQEKTAnMCUGCCsGAQUFBzAChhLodHRwOi8vaS5wa2kuZ29vZy93ZTEuY3J0MCMG
A1UdEQQcMBQCCm1zdS5lZHUubXmCDCoubXN1LmVkdS5teTATBgNVHSAEDDAKMAgG
BmeBDAECATA2BgNVHR8ELzAtMCugKaAnhiVodHRwOi8vYy5wa2kuZ29vZy93ZTEv
cmRvbmFQLUNFNfkuY3J3sMIIBBgYKKwYBBAHwQIEAgSB9wSB9ADyAHcAlE5Dh/rs
we+B8xkkJqgYZQH0184AgE/cmd9VTcuGdgAAAGe3wSbfgAABAMASDBGAiEAuwrt
9CX0FeB5Qdbyaj04GZapZVUCoeA04cHA/GuL+z4CIQDG2UzmR1BK2D+AlLkV7fZ
J/W5d9c2JeArdgQbuxY00qGB3AndtFRDRp/V3wsfpX9cAv/mCyTNaZeHQswFzF8DI
xwL3AAABnt8Em3EAAQAQDEgwrGIhAMS9wbJ2Ng75IS8HeZB0jy+92Ndlz63sxi3D
WcFQkX0yAiEAkzjI7fULnY0fzhG7GmCVMKPUD+wppjPq2vscWgqkz4wCgYIKoZI
zj0EAwIDSAARQIhALaqs4opVnIj8MreuwQsgVKG3eNiiRnesqwPJhox0ijAiAE
CiLpJfB70+eA6yyr1PEGUmYDD40JDT09Ucio5WEXpw==
-----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:PKKEY: 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/MZd5csIkp2FV0TttaF4zAKBggqhkJ0PQQDAzBHMQsw
CQYDVQQGEwJVUzEiMCAgA1UEChMZR29vZ2x1IFRydXN0IFNlcnZpY2VzIExMQzEU
MBIGA1UEAxMLR1RTIFJvb3QgUjQwHhcNMjMxMjEzMDkwMDAwHhcNMjMxMjEzMTQw
MDAwWjA7MQswCQYDVQQGEwJVUzEeMBwGA1UEChMVVR29vZ2x1IFRydXN0IFNlcnZp
Y2VzMQwwCgYDVQQDEwNXRTEwTATBgqhkJ0PQIBBggqhkJ0PQMBBwNCAARvzTr+
ZldHTCdhUDCR127wEcPQMFCf4XGGTfnIXzthkubgdnXGh0LCgP4mMTG6J7/EFmP
LCaY9eYmJbsPAvpWo4H+MIH7MA4GA1UdDwEB/wQEAwIBhjAdBgNVHSUEFjAUBGgr
BgEFBQcDAQYIKwYBBQUHAWIwEgYDVR0TAQH/BAgwBgEB/wIBADAdBgNVHQ4EFgQU
kHeSNwFE/6jMqeZ72YB5e8yT+TgwHwYDVR0jBBgwFoAUgEzW63T/STajldj8tT7F
avCUHYwwNAYIKwYBBQUHAQEEDAmMCQGCCsGAQUFBzACChhhdHRwOi8vaS5wa2ku
Z29vZy9yNC5jcnQwKwYDVR0fBCQwIjAgoB6gHIYaaHR0cDovL2MucGtPLmdvdb2cv
ci9yNC5jcmwwEwYDVR0gBAwwCjAIBgZngQwBAGwEwCgYIKoZIZj0EAwMDaAAwZQIx
A0CcQ1HW90VznX+0RGU1cxAQXomvtgM8zITPZCuF08jSBJSjz5keR0v9aYsAm5V
sQIwJonMaAFi54mrhf0FNZEfuNMQS06/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:PKKEY: 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+UwvzMTQ77dghYQST2KGzANBgqhkiG9w0BAQsFADBX
MQswCQYDVQQGEwJCRTEZMBcGA1UEChMQR29vYmF5SU2Lnb1BudilzYTEQMA4GA1UE
CxMHUm9vdCBDQTEbMBkGA1UEAxMSR29vYmF5SU2Lnb1B5b290IENBMb4XDTIzMTEx
NTA2NDMyMVoXDTI4MDEyODAwMDA0MlowRzELMAkGA1UEBhMCVVMxHjAcBgNVBAoT
GUdvd2dsZSBSUcnVzdCBTZXJ2aWNlcyBMTExFbDASBgNVBAMTC0UuYB5b290IFI0
MHYWEAYHKoZIZj0CAQYFK4EEACIDYgAE83Rzp2iLYK5DuDXFgTB7S0md+8Fhzube
Rr1r1WEYNa5A3XP3iZEwWus87oV8okB206nGuEFYKueSkWpz6bFyOZ8pn6KY019e
WIZLD6GEZQbR3IvJx3PIjGov5cSr0R2Ko4H/MIH8MA4GA1UdDwEB/wQEAwIBhjAd
BgNVHSUEFjAUBGgrBgEFBQcDAQYIKwYBBQUHAWIwDwYDVR0TAQH/BAUwAwEB/zAd
BgNVHQ4EFgQUgEzW63T/STajldj8tT7FavCUHYwwHwYDVR0jBBgwFoAUHYtmGKUN
l8qJUC99BM00qP/8/UswwNgYIKwYBBQUHAQEEDjAocMYGCCsGAQUFBzACChpodHRw
Oi8vaS5wa2kuZ29vZy9nc3IuXmNydDAtBgNVHR8EjAkMCKgIKAehhxodHRwOi8v
```



```
Yy5wa2kuZ29vZy9yL2dzcjEuY3JsMBMGA1UdIAQMMAowCAYGZ4EMAQIBMA0GCsQg
S1b3DQEBcwAA4IBAQAQYQrsPBtYDh5bjP20BDwmkoWhIDDkic574y04tfzHpn+cJ
odID2d4SseesQ6bDrarZ7C30ddLibZatoKivs3UL9xnELz4ct92vID24FfVbiIhY
+SW6FoVHkNeWIP0GCbaM4C6uVdF5dTUsMVs/ZbzNnIdCp5Gxm5ejvEau8otR/Cs
kn+hR/W5GvT1tMBjgWkZ1i4//emhA1JG1BbPzoLJQvyEotc03lXjTaCzv8mEbeb
8RqZ7a2CPsgRbuVTPBwc0MBBmuFeU88+FSBX6+7iP0i18b4Z0QFqIwwMHfs/L6K1
vepuoxTGzi4CZ68z3piq1UvSqTbFJjtbD4seiMHL
-----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
MAkGA1UEBhMCVVMxHjAcBgNVBAoTFUdvb2dsZSBSUcnVzdCBTZXJ2aWNlczEMMAoG
A1UEAxMDV0xMB4XDTI2MDYxOTA3MzQ0MVoXDTI2MDkxNzA4MzQyMlowFTETMBEG
A1UEAxMKbXN1LmVkdS5teTBZMBMGBYqGSM49AgEGCCqGSM49AwEHA0IABizYTU9C
qKc41Rs6M7LIZF41bbFQp7BRf7LCyTc8hMhvwX+h7iZ83+twb/hCrLN6xwQt2866
Lq+FGFLfJghf5/0jggIqMIICJjA0BgNVHQ8BAf8EBAMCB4AwEwYDVR0LBAwwCgYI
KwYBBQUHAwEwDAYDVR0TAQH/BAIwADAdBgNVHQ4EFgQU5RiwjSpCC0ZdmZgKeXCA
Kcmmi6EwHwYDVR0jBBgwFoAukHeSNWfE/6jMqeZ7YB5e8yT+TgwNQYIKwYBBQUH
AQEKTAnMCUGCCsGAQFbZAChhLodHRwOi8vaS5wa2kuZ29vZy93ZTEuY3J0MCMG
A1UdEQQCMBqCCm1zdS5lZHUubXmCDoXN1LmVkdS5teTATBgNVHSAEDDAKMAgE
BmeBDAECATA2BgNVHR8ELzAtMCugKaAnhiVodHRwOi8vYy5wa2kuZ29vZy93ZTEv
cmRvbmFQLUNFNfKuY3JsMIIBBgYKKwYBBAHWeQIEAgSB9wSB9ADyAHcA1LESdh/rs
we+B8xkkJqgYZQH0184AgE/cmd9VTcuGduAAAGe3wSbfGAAABAMASDBGAiEAuWwt
9CX0FeB5Qdbyaj04GZapZVUCoeA04cHA/GuL+z4CIQDG2UznmR1BK2D+ALLkv7fZ
J/WsD9c2JeaRdgQbuxY0qGB3ANDtFRDRp/V3wsfpX9cAv/mCyTNaZeHqswFzF8DI
xWL3AAABnt8Em3EAAQDAEgwRgIhAMS9wbJ2Ng75IS8HeZB0jy+92NdLz63sxi3D
WcF0kX0yAiEAKjzI7fULnY0fzhG7GmCVMKPUD+wppjPq2vscWgqkqz4wCgYIKoZI
zj0EAwIDSAAwRQIhALaqs4opVNLj8MreuWQsgVYkG3eNiiRneswqWpJhox01jAiAE
CiLpJfB70+eA6yyr1PEGUmYDD0JDT09Ucio5WEXpw==
-----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-----
MIICnzCCAiwAwIBAgIQf/MZd5csIkp2FV0TttaF4zAKBggqhkJOPQQDAzBHMQsw
CQYDVQQGEwJVUzEiMCAgA1UEChMZMR29vZ2x1IFRydXN0IFNlcnZpY2VzIEtMQzEU
MBIGA1UEAxMLR1RTIFJvb3QgUjQwHhcNMjMxMjE5MDk0MDAwWWhcNMjkwMjEwMTQw
MDAwWjA7MQswCQYDVQQGEwJVUzEeMBwGA1UEChMVVR29vZ2x1IFRydXN0IFNlcnZp
Y2VzMQwwCgYDVQQDEwNXRTEwTATBgqhkJOPQIBBggqhkJOPQMBBwNCAARvzTr+
Z1dHTCEDhUDCR127WecPQMFcF4XGGTfn1XzthkubgdXGh0lCgP4mMTG6J7/EFmP
```

```
LCaY9eYmJbsPAvpWo4H+MIH7MA4GA1UdDwEB/wQEAwIBhjAdBgNVHSUEFjAUBggr
BgEFBQcDAQYIKwYBBQUHAWIwEgYDVVR0TAQH/BAgwBgEB/wIBADAdBgNVHQ4EFgQU
kHeSNwfe/6jMqeZ72YB5e8yT+TgwHwYDVR0jBBgwFoAUgEzW63T/STaj1dj8tT7F
avCUHYwNAYIKwYBBQUHAQEEDAmMCQGCCsGAQUFBzAChhodHRwOi8vaS5wa2ku
Z29vZy9yNC5jcnQwKwYDVR0fBCQwIjAgoB6gHIYaaHR0cDovL2MucGtpLmdvb2cv
ci9yNC5jcmwwEwYDVR0gBAwwCjAIBgZngQwBAGewCgYIKoZIZj0EAwMDaAAwZQIX
A0cCq1HW90VznX+0RGUJLcxAQXomvtgM8zITPZCuF08jSBJSjz5keR0v9aYsAm5V
sQIwJonMaAF154mrhf0FNZEfuNwMSQ6/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:KEY: 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
MQswCQYDVQQGEwJCRTEZMBcGA1UEChMQR2xvYmFsU2lnbiBudilzYTEQMA4GA1UE
CxMHUm9vdCBDQTEbMBkGA1UEAxMSR2xvYmFsU2lnbiBSb290IENBMBA4XDTIzMTEEx
NTAzNDMyMVoXDTI4MDEyODAwMDA0MlowRzELMAkGA1UEBhMCVVMxIjAgBgNVBAoT
Gldvb2dsZSBucnVzdCBTZXJ2aWNlcyBMTExFDASBgNVBAMTC0duUyBSb290IFI0
MHYwEAYHKoZIzj0CAQYFK4EEACIDYgAE83Rzp2iLYK5DuDXfGTB7S0md+8Fhzube
Rr1r1WEYNa5A3XP3iZEwWus87oV8okB206nGuEfyKueSkWpz6bFy0Z8pn6KY019e
WIZLD6GEZQbR3IvJx3PIjGov5cSr0R2Ko4H/MIH8MA4GA1UdDwEB/wQEAwIBhjAd
BgNVHSUEFjAUBggrBgEFBQcDAQYIKwYBBQUHAWIwDwYDVR0TAQH/BAUwAwEB/zAd
BgNVHQ4EFgQUgEzW63T/STaj1dj8tT7FavCUHYwHwYDVR0jBBgwFoAUyHtmGKUN
l8qJUC99BM00qP/8/UswnGyIKwYBBQUHAQEEDjAoMCYGCCsGAQUFBzAChhpodHRw
O18vaS5wa2kuZ29vZy9nc3IxLmNydAtBgNVHR8EJjAKMCKgIKAehhxodHRwOi8v
Yy5wa2kuZ29vZy9yL2dzcjEuY3JsMBMGAlUdIAQMMAowCAYGZ4EMAQIBMA0GCsQG
SIb3DQEBChUA4IBAQAQYQrsPBtYDh5bjP20BDwmk0WhIDDkic574y04tfzHpn+cJ
odID2D4SseesQ6bDrarZ7C30ddLibZatoKiws3UL9xnELz4ct92vID24FfVbiI1hY
+SW6FoVHkNeWIP0GCbaM4C6uVdF5dTuMVs/ZbzNnIdCp5GxmX5ejvEau8otR/Cs
kGN+hr/W5GvT1tMBjgWKZ1i4//emhA1JG1BbPzoLJQvyEotc03lXjTaCzv8mEbep
8RqZ7a2CPsgRbuVTPBwcOMBmuFeU88+FSBX6+7iP0i18b4Z0QFqIwwMHfs/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
```


IPv4 HTTP (port 80)

HTTP Status	403
Connected IP	104.26.11.39
Connect Time	8.54 ms
TTFB	20.03 ms
Total Time	20.08 ms

```
[
  "HTTP/1.1 403 Forbidden",
  "Date: Fri, 03 Jul 2026 19:51:19 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=8gft30U52iPA8HXq9voTPD0IeECXhsSU3GjdZ5m2Bp6K7%2B0t7MRjqIHCr6ib%2B5Dxs%2FcshFv\\",
  "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: a1586c9abd4bfd07-SIN",
  "alt-svc: h3=\\":443\\"; ma=86400"
]
```

HTTP Status	403
Connected IP	2606:4700:20::ac43:4663
Connect Time	7.48 ms
TTFB	33.52 ms
Total Time	33.57 ms

```
[
  "HTTP/1.1 403 Forbidden",
  "Date: Fri, 03 Jul 2026 19:51:19 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: {\n\"group\":\"\n\"cf-
nel\", \"max_age\":604800, \"endpoints\": [{\n\"url\": \"https://a.nel.cloudflare.com/report/v4?s=Ms13N7UbFDpHmftY6FVwVqK4jpYc0iacJAh5mB2DAE4Z5pPljd0Jx8w%2BbFbU0%2F9Qmou6wL7qq
\"Nel: {\n\"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: a1586c999a4ac211-SIN\",
  \"alt-svc: h3=\":443\"; ma=86400"
```

HTTP Status	200
Connected IP	104.26.11.39
Connect Time	17.96 ms
TTFB	178.79 ms
Total Time	178.87 ms

Response Headers:

```
{
  "0": "HTTP/2 301",
  "1": "date: Fri, 03 Jul 2026 19:51:19 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: {\n\"group\":\n\"cf-nel\", \"max_age\":604800, \"endpoints\": [{\n\"url\":\n\"https://a.nel.cloudflare.com/report/v4?s=cAjM0RHrWCHXvWBQuzL3miAtS0hRDagRh3LxRY83Vj0gJl0LprkfM9mCysmfWw8aKZHHcZQ6B0Cza16BJSStqL0\n\"6\": \"nel: {\n\"report_to\":\n\"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: a1586c9af8d781ef-SIN\",
  \"14\": \"alt-svc: h3=\":443\"; ma=86400\",
  \"16\": \"HTTP/2 200\",
  \"17\": \"date: Fri, 03 Jul 2026 19:51:19 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=h0aeikm3tipovjm7mtvbfok5rf; 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: {\n\"group\":\n\"cf-nel\", \"max_age\":604800, \"endpoints\": [{\n\"url\":\n\"https://a.nel.cloudflare.com/report/v4?s=v12BojxzSYWY29wfEVKa%2Bw0DBfBAeRVIMtbH9vK8rjuWNOYLJUi9hfLikaFbce0f45hr93PJ9Wb93DgFHK6\n\"30\": \"nel: {\n\"report_to\":\n\"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: a1586c9b3cb46ba2-SIN\",
  \"36\": \"alt-svc: h3=\":443\"; ma=86400\"
}
```

IPv6 HTTPS (port 443)

HTTP Status	200
Connected IP	2606:4700:20::681a:b27
Connect Time	16.95 ms
TTFB	145.44 ms
Total Time	145.54 ms

Response Headers:

```
{
  "0": "HTTP/2 301",
  "1": "date: Fri, 03 Jul 2026 19:51:19 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: {\n\"group\":\n\"cf-nel\", \"max_age\":604800, \"endpoints\": [{\n\"url\":\n\"https://a.nel.cloudflare.com/report/v4?s=qr%2FHAkvv8Ql4%2B52KCSEwTUhJre%2BcBMd86%2FLhIP7vndn4Ee0xYp1tJ8J1TjAgDrQfUgTLU2s60ZXg0G\n\"6\": \"nel: {\n\"report_to\":\n\"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: a1586c99ea95ce6a-SIN",
    "14": "alt-svc: h3=\":443\"; ma=86400",
    "16": "HTTP/2 200",
    "17": "date: Fri, 03 Jul 2026 19:51:19 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=srfho2g260js963autclj5g35k; 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=cw4PtUeUulgHc5ZTand404g45jrM72v5nEu3Wt0quWrQ6Hsm%2FimmpT4Cvap8vt3DvHoLCrEgm1VoBkcHSWFo\", \"success_fraction\": 0.0, \"max_age\": 604800}]",
    "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: a1586c9a2fab243f-SIN",
    "36": "alt-svc: h3=\":443\"; ma=86400"
  }
}
```

Connectivity Test Evidence

Test	Result
TCP Connect IPv4 → port 80	301 0.008531 0.040164
TCP Connect IPv6 → port 80	301 0.007629 0.030148
TCP Connect IPv4 → port 443	301 0.007591 0.037264
TCP Connect IPv6 → port 443	301 0.007805 0.040427

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
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