



Routing Information on Cloudflare Radar

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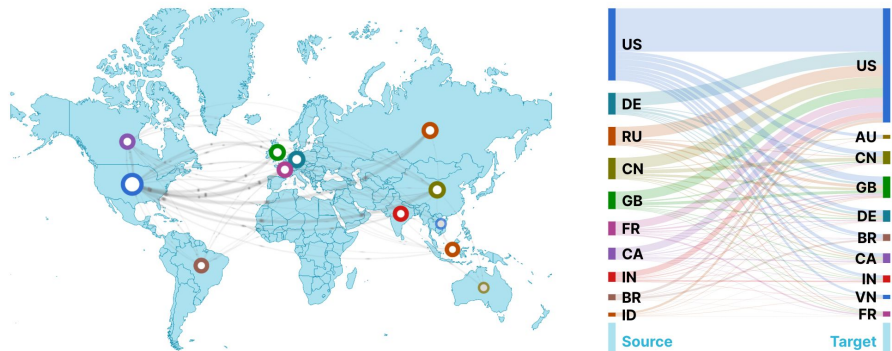
Cloudflare Radar

Cloudflare Radar <https://radar.cloudflare.com/>

- Public Internet “weather station”
 - Internet traffic trends
 - Attacks, anomalies
 - Technologies trends and insights

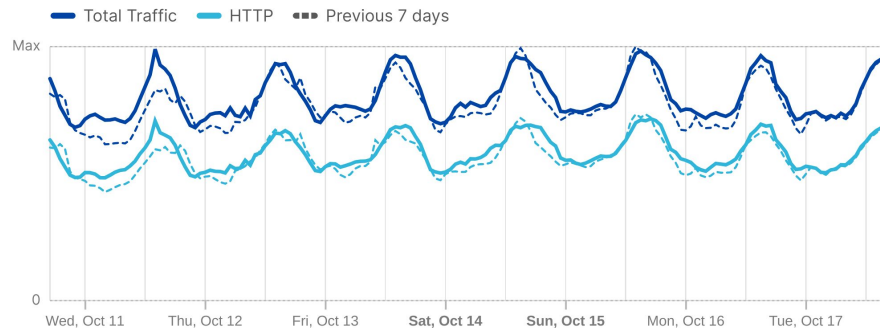
Application layer attack activity (Worldwide)

Top 10 attacks by target or source location



Internet traffic trends (Worldwide)

Traffic volume over the selected time period



All Types of Stats and Comparisons

Traffic and usage trends

- Traffic volume trends
- Mobile vs. desktop
- Bot vs. human
- Per-country, per-ASN breakdowns
- Adoptions
 - IPv4 vs. IPv6
 - HTTP /1 vs. /2 vs. /3
 - HTTP vs. HTTPS
 - TLS 1.2 vs. 1.3 vs. QUIC
- Top browsers and user agents
- ...

Security & attacks

- DDoS attack volume
- UDP vs. TCP
- DDoS vs. WAF
- Sources/destination countries
- Layer-7 attacks
- Distribution of network layer attacks
 - SYN, SSDP, ACK... floods
 - DNS, NTP amplification
- ...

Network Qualities and Outages

- Internet Quality Index (IQI): <https://radar.cloudflare.com/quality>
 - Bandwidth, latency, DNS response time
 - Jitter, upload/download speed
- Outage center: <https://radar.cloudflare.com/outage-center>
 - Curated Internet outages at country/ASN level
 - Automated traffic anomalies

Internet outages

Outages observed over the selected time period. Timestamps are in UTC.

Follow @CloudflareRadar on Twitter for live updates. 

Location	ASN	Type	Scope
Brunei Darussalam	AS10094, AS131467	Nationwide	Multiple regions across the country
Palestine	AS57704, AS199046, AS213207	Network	Gaza Strip related. SpeedClick, JETNET and TechHub.
Palestine	AS42314, AS210974, AS203905, AS60268, AS60353, AS62027	Network	Gaza Strip related. Fusion, AjyalFI, and DCC ASNs.
Ethiopia	—	Regional	Amhara

Traffic anomalies

Anomalies automatically detected over the selected time period. Timestamps are in UTC. 

Type	Entity	Start
Location	Brunei Darussalam	Tue, 17 Oct 2023 03:45
ASN	AS136907 (HWCLOUDS-AS-AP)	Tue, 17 Oct 2023 01:45
ASN	AS36884 (MAROCCONNECT)	Sun, 15 Oct 2023 12:00
ASN	AS35228 (O2BROADBAND)	Sun, 15 Oct 2023 06:30
Location	Dominica	Sat, 14 Oct 2023 20:15
ASN	AS15706 (Sudatel)	Fri, 13 Oct 2023 12:00
ASN	AS136907 (HWCLOUDS-AS-AP)	Fri, 13 Oct 2023 07:30
ASN	AS136442 (OCEANWAVE-AS-AP)	Thu, 12 Oct 2023 23:30
ASN	AS18004 (WIRELESSNET-ID)	Thu, 12 Oct 2023 18:30
ASN	AS4808 (CHINA169-BJ)	Thu, 12 Oct 2023 17:00

Routing Information Now on Radar Too!

Radarrouting page

<https://radar.cloudflare.com/routing>

Cloudflare Radar Search for locations, autonomous systems, reports, domain and IP address information

Routing Information Worldwide Last 7 days

Routing Statistics
Statistics about relevant global routing table entries

ASes	Prefixes	Routes	RPKI Valid	RPKI Invalid	RPKI Unknown
107.7k	1.2M	1.2M	570.7k (46%)	15.4k (1%)	647.1k (52%)
IPv4: 75,317 IPv6: 32,419	IPv4: 1,008,682 IPv6: 208,513	IPv4: 1,016,862 IPv6: 216,310	IPv4: 460,540 IPv6: 110,158	IPv4: 10,982 IPv6: 4,411	IPv4: 545,340 IPv6: 101,741

RPKI Valid **46%** | RPKI Unknown **52%** | IPv4 **82%** | IPv6 **18%**

Data generated at 2023-10-11T12:00:00 UTC

Routing Anomalies
Internet routing anomalies detected

BGP Route Leaks beta
Detected route leaks originated by any ASN

From	By	To	Start (UTC)	End (UTC)	BGP Messages	Prefixes	Origins	Vantage Points	Actions
AS28329 (BR)	AS61657 (BR)	AS266167 (BR)	2023-10-11 13:29	—	81	1	1	22	
AS29049 (AZ)	AS34170 (AZ)	AS196925 (AZ)	2023-10-11 13:20	—	24	6	1	3	
AS4761 (ID)	AS23679 (ID)	AS136106 (ID)	2023-10-11 13:19	—	18	1	1	13	
AS10396 (PR)	AS11367 (PR)	AS12956 (ES)	2023-10-11 12:19	—	65	1	1	6	
AS8966 (AE)	AS36866 (KE)	AS37662 (MU)	2023-10-11 12:07	—	79	2	1	29	
AS5416 (BH)	AS31452 (BH)	AS35753 (SA)	2023-10-11 11:00	—	3	1	1	2	
AS8641 (RU)	AS39125 (RU)	AS59589 (RU)	2023-10-11 10:16	—	2	2	1	1	
AS3257 (US)	AS50153 (PL)	AS62081 (PL)	2023-10-11 08:13	—	257	4	1	12	
AS24724 (PL)	AS50153 (PL)	AS62081 (PL)	2023-10-11 08:13	—	10	2	1	5	
AS3491 (US)	AS4761 (ID)	AS9002 (GB)	2023-10-11 07:21	—	15	1	1	15	

Cloudflare Radar Search for locations, autonomous systems, reports, domain and IP address information

Routing Information from AS61657 Last 7 days

Routing Statistics
Statistics about relevant global routing table entries

RPKI Valid	RPKI Invalid	RPKI Unknown
0	0	6

Prefixes Announced: All

Prefix	Visibility	RPKI validity
131.100.252.0/22	High (100%)	Unknown
131.100.252.0/23	High (100%)	Unknown
131.100.254.0/23	High (100%)	Unknown
2804:1e80:8000::/32	High (94%)	Unknown
2804:1e80::/32	High (94%)	Unknown
2804:1e80::/33	High (94%)	Unknown

Connectivity All

ASes connected with AS61657

Upstreams	Downstreams	Peers
2	2	0

ASN	Type	Country	Name
AS28329	Up	BR	OS NETWORKS LTDA
AS264386	Down	BR	MMM E G TELECOMUNICACOES LTDA - I
AS266167	Up	BR	CELERIX TECNOLOGIA DE TELECOMUN
AS269380	Down	BR	UP LINK TELECOM

Routing statistics

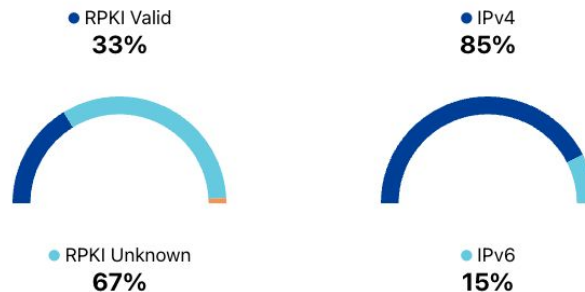
- Count of prefixes
- Count of prefix-origin pairs
- IPv4/v6 prefixes ratio
- RPKI status ratio
 - Valid, invalid, unknown
- Available for
 - Global
 - Country
 - ASN

Routing Statistics

Statistics about relevant global routing table entries

ASes 22.3k IPv4: 17,998 IPv6: 4,297	Prefixes 308.6k IPv4: 264,205 IPv6: 44,388	Routes 313.8k IPv4: 267,859 IPv6: 45,934
RPKI Valid 102.1k (33%) IPv4: 76,779 IPv6: 25,315	RPKI Invalid 3k (1%) IPv4: 1,059 IPv6: 1,918	RPKI Unknown 208.7k (67%) IPv4: 190,021 IPv6: 18,701

Data generated at 2023-10-11T12:00:00 UTC



Routing anomalies

- Multiple types of anomalies
 - Route leaks
 - BGP hijacks
 - RPKI invalid MOASes
- Details page for each detected event

Routing Anomalies

Internet routing anomalies detected

BGP Route Leaks Beta

Recent BGP route leaks originated by or affecting ASNs registered in United States [?](#) [🔊](#)

From	By	To	Start (UTC)	End (UTC)	BGP Messages	Prefixes	Origins	Vantage Points	Actions
AS3257 (US)	AS50153 (PL)	AS62081 (PL)	2023-10-11 08:13	2023-10-11 08:14	257	4	1	12	🔍 🔊
AS3491 (US)	AS4761 (ID)	AS9002 (GB)	2023-10-11 07:21	2023-10-11 07:22	15	1	1	15	🔍 🔊
AS1299 (SE)	AS28509 (MX)	AS32098 (US)	2023-10-11 05:01	2023-10-11 07:44	11	2	2	4	🔍 🔊
AS3356 (US)	AS28509 (MX)	AS32098 (US)	2023-10-11 05:00	2023-10-11 07:46	4	3	2	2	🔍 🔊
AS3356 (US)	AS28554 (MX)	AS32098 (US)	2023-10-11 04:41	2023-10-11 07:44	137	19	5	5	🔍 🔊
AS6939 (US)	AS10352 (US)	AS11796 (US)	2023-10-11 01:02	2023-10-11 01:02	1	1	1	1	🔍 🔊
AS3356 (US)	AS13157 (DE)	AS13237 (DE)	2023-10-11 00:17	2023-10-11 00:49	15	1	1	14	🔍 🔊
AS174 (US)	AS16218 (DE)	AS24785 (NL)	2023-10-10 22:44	2023-10-10 22:44	14	2	2	3	🔍 🔊
AS6939 (US)	AS19518 (US)	AS137409 (AU)	2023-10-10 22:08	2023-10-11 01:02	3	1	1	2	🔍 🔊
AS3491 (US)	AS4761 (ID)	AS9002 (GB)	2023-10-10 20:40	2023-10-10 20:42	31	2	2	13	🔍 🔊

[How we built this](#) [🔗](#)

BGP Origin Hijacks Beta

Recent potential BGP hijack originated by or affecting ASNs registered in United States [?](#) [🔊](#)

Detected Origin	Expected Origin(s)	Start Time (UTC)	Duration	BGP Messages	Prefixes	Confidence
AS62610 (US)	AS21859 (US)	2023-10-11 13:57	—	1 msg(s) (1 peers)	172.81.127.0/24	Medium
AS33232	RPKI Invalid MOAS by AS3257)/24	Low
Multi-origin prefixes with at least one RPKI invalid origin						
Prefix	Origins	Viability)/24	Low
AS14045	2001668:/29	AS5580 (Invalid) AS3257 (Valid)	Low (7%) High (93%)			
	89.149.170.0/24	AS3257 (Valid) AS5580 (Invalid)	Medium (39%) Low (7%)			
AS20894	2001668:/32	AS3257 (Valid) AS5580 (Invalid)	High (93%) Low (7%))/24	Low
	194.123.164.0/24	AS3257 (Valid) AS20028 (Invalid)	High (99%) Low (1%)			
	2602:fb66:/36	AS3257 (Valid) AS5580 (Invalid)	High (93%) Low (7%)			
	2001:67c:1514:/48	AS5580 (Invalid) AS3257 (Valid)	Low (7%) High (93%)			
	2001:680:/32	AS5580 (Invalid) AS3257 (Valid)	Low (7%) High (93%)			
	156.239.162.0/23	AS3257 (Invalid) AS5580 (Invalid)	Medium (35%) Low (7%)			
	2400:7f50:/32	AS5580 (Invalid) AS3257 (Valid)	Low (7%) High (93%)			
	23.252.78.0/24	AS3257 (Invalid) AS19627 (Valid)	Medium (20%) Medium (70%)			

BGP Origin Hijack - 18913

Hijacker ASN
AS3257 - GTT Communications Inc. (US)

Victim ASNs
AS7018 - AT&T Services, Inc. (US) AS19257 - SUBRIGO CORPORATION (US)

Prefixes
23.252.77.0/24 23.252.78.0/24 94.231.198.0/24

Messages
55

Min hijack ts
2023-10-05T18:49:49.147

Max hijack ts
2023-10-07T04:34:32.099

Peers observed
12%

Confidence
High

Tags
RPKI INVALID
IRR INVALID
IRR UNKNOWN
IRR OLD ORIGIN UNKNOWN
IRR OLD ORIGIN VALID
RPKI OLD ORIGIN VALID

Prefixes and Connectivity

- Announced prefixes
 - With visibility
 - RPKI status
- Connectivity
 - Upstream
 - Downstream
 - Peer

Prefixes Announced All

Prefixes announced by AS3257

RPKI Valid	RPKI Invalid	RPKI Unknown
324	8	640

Prefix	Visibility	RPKI validity
103.111.61.0/24	High (100%)	Unknown
103.232.16.0/22	High (100%)	Valid
103.99.86.0/24	High (100%)	Unknown
104.143.184.0/24	High (100%)	Unknown
104.153.224.0/22	High (100%)	Unknown
104.156.132.0/22	High (100%)	Valid
104.165.105.0/24	High (100%)	Valid
104.165.199.0/24	High (100%)	Valid
104.192.220.0/22	High (100%)	Unknown
104.224.44.0/22	High (100%)	Valid
104.238.251.0/24	High (100%)	Unknown
104.250.252.0/22	High (100%)	Valid
104.251.82.0/24	High (100%)	Valid
104.251.90.0/24	High (100%)	Valid
104.254.120.0/22	High (100%)	Unknown
104.36.216.0/22	High (100%)	Unknown
104.71.142.0/24	High (100%)	Unknown
104.77.142.0/24	High (100%)	Unknown
104.79.11.0/24	High (100%)	Unknown
107.165.128.0/24	High (100%)	Valid

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Connectivity All

ASes connected with AS3257

Upstreams	Downstreams	Peers
0	2258	483

ASN	Type	Country	Name
AS12	Down	US	NYU-DOMAIN
AS42	Down	US	WOODYNET-1
AS57	Down	US	NL-GIGAPOP
AS62	Down	US	CONE
AS97	Down	US	NTTA-97
AS174	Peer	US	COGENT-174
AS237	Down	US	MERIT-AS-14
AS260	Down	US	GTT-DXB
AS286	Down	US	KPN GTT Communications Inc.
AS288	Down	DE	ESA European Space Agency (ESA)
AS376	Down	CA	RISQ-AS
AS559	Down	CH	SWITCH SWITCH
AS577	Down	CA	BACOM
AS701	Peer	US	UUNET
AS702	Down	US	UUNET
AS703	Down	US	UUNET
AS852	Down	CA	TELUS Communications
AS855	Down	CA	CANET-ASN-4
AS906	Down	US	DMIT
AS917	Peer	US	MISAKA

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Country page

- Routing statistics
- ASes registered
 - Searchable by ASN or name
- Routing anomalies for AS registered in a given country

ASes Registered in United States

ASes ranked by the number of prefixes announced to the global routing table.

ASN	Country	Name	Prefix Count
AS16509	US	AMAZON-02	13360
AS22773	US	ASN-CXA-ALL-CCI-22773-RDC	5107
AS174	US	COGENT-174	4739
AS11492	US	CABLEONE	4548
AS7155	US	VIASAT-SP-BACKBONE	4185
AS20115	US	CHARTER-20115	3534
AS13335	US	CLOUDFLARENET	3289
AS30036	US	MEDIACOM-ENTERPRISE-BUSINESS	3183
AS749	US	DNIC-AS-00749	3163
AS16625	US	AKAMAI-AS	3158
AS367	US	DNIC-ASBLK-00306-00371	3034
AS6167	US	CELLCO-PART	3009
AS396982	US	GOOGLE-CLOUD-PLATFORM	2782
AS7018	US	ATT-INTERNET4	2555
AS209	US	CENTURYLINK-US-LEGACY-QWEST	2180
AS5650	US	FRONTIER-FRTR	1969
AS36183	US	AKAMAI-AS	1954
AS18566	US	MEGAPATH5-	1852
AS7029	US	WINDSTREAM	1838
AS11776	US	ATLANTICBB-JOHNSTOWN	1836

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Data generated at 2023-10-11T12:00:00 UTC

**Accessible via
Website, APIs, and
Notifications**

Free for All, API Available

- Radar website is built entirely on publicly available APIs
 - Freely accessible for all Cloudflare registered accounts
 - Not need to be paying customer
 - <https://developers.cloudflare.com/api>
- EVERYTHING on Cloudflare Radar website is under creative commons license
 - Images/embeds CC BY 4.0
 - API access or data downloads → CC BY-NC 4.0
 - Details about licensing at <https://radar.cloudflare.com/about>

Radar BGP	>
Radar Connection Tampering	>
Radar DNS	>
Radar Datasets	>
Radar Email Security	>
Radar Entities	>
Radar Http	>
Radar Netflows	>
Radar Quality	>
Radar Ranking	>
Radar Search	>
Radar Traffic Anomalies	>
Radar Verified Bots	>

(NEW) Notifications



- Look for this icon
- You can subscribe to feed of detected anomalies and outages
 - Emails
 - Webhook (integrating to Slack for example)



**Now available:
Radar notifications**



Notifications test APP 10:30 AM

Slack Radar notification integration

Title of Alert: Traffic anomaly in Dominica

Link: <https://radar.cloudflare.com/DM?dateStart=2023-09-14&dateEnd=2023-09-15>

Time detected: 2023-09-14T12:45:00Z

Affected Locations: [DM]

Affected ASNs: []

Cloudflare | Today at 10:30 AM

radar.cloudflare.com

Feedback: radar@cloudflare.com