

# Measuring 's Public DNS

Geoff Huston

APNIC

### Overview

▶ PageSpeed

▼ **Public DNS**

▶ Getting Started

▶ Technical Information

Discussion Groups and  
Issue Reporting

Flush Cache

FAQ

Privacy

▶ Hosted Libraries

▶ Protocols & Standards

▶ Best Practices

Community



## What is Google Public DNS?

Google Public DNS is a free, global [Domain Name System](#) (DNS) resolution service, that you can use as an alternative to your current DNS provider.

To try it out:

- Configure your network settings to use the IP addresses 8.8.8.8 and 8.8.4.4 as your DNS servers or
- Read our [configuration instructions](#) (IPv6 addresses supported too).

If you decide to try Google Public DNS, your client programs will perform all DNS lookups using Google Public DNS.



## Why does DNS matter?

The DNS protocol is an important part of the web's infrastructure, serving as the Internet's phone book: every time you visit a website, your computer performs a DNS lookup. Complex pages often require multiple DNS lookups before they start loading, so your computer may be performing hundreds of lookups a day.



## Why should you try Google Public DNS?

By using Google Public DNS you can:

- [Speed up your browsing experience.](#)
- [Improve your security.](#)
- [Get the results you expect with absolutely no redirection.](#)

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*Last updated June 24, 2013.*

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Last updated June 24, 2013.

How many of you have done this?

And in the last few months did any of you switch it back off again?

# The Measurement Technique

Three URLs:

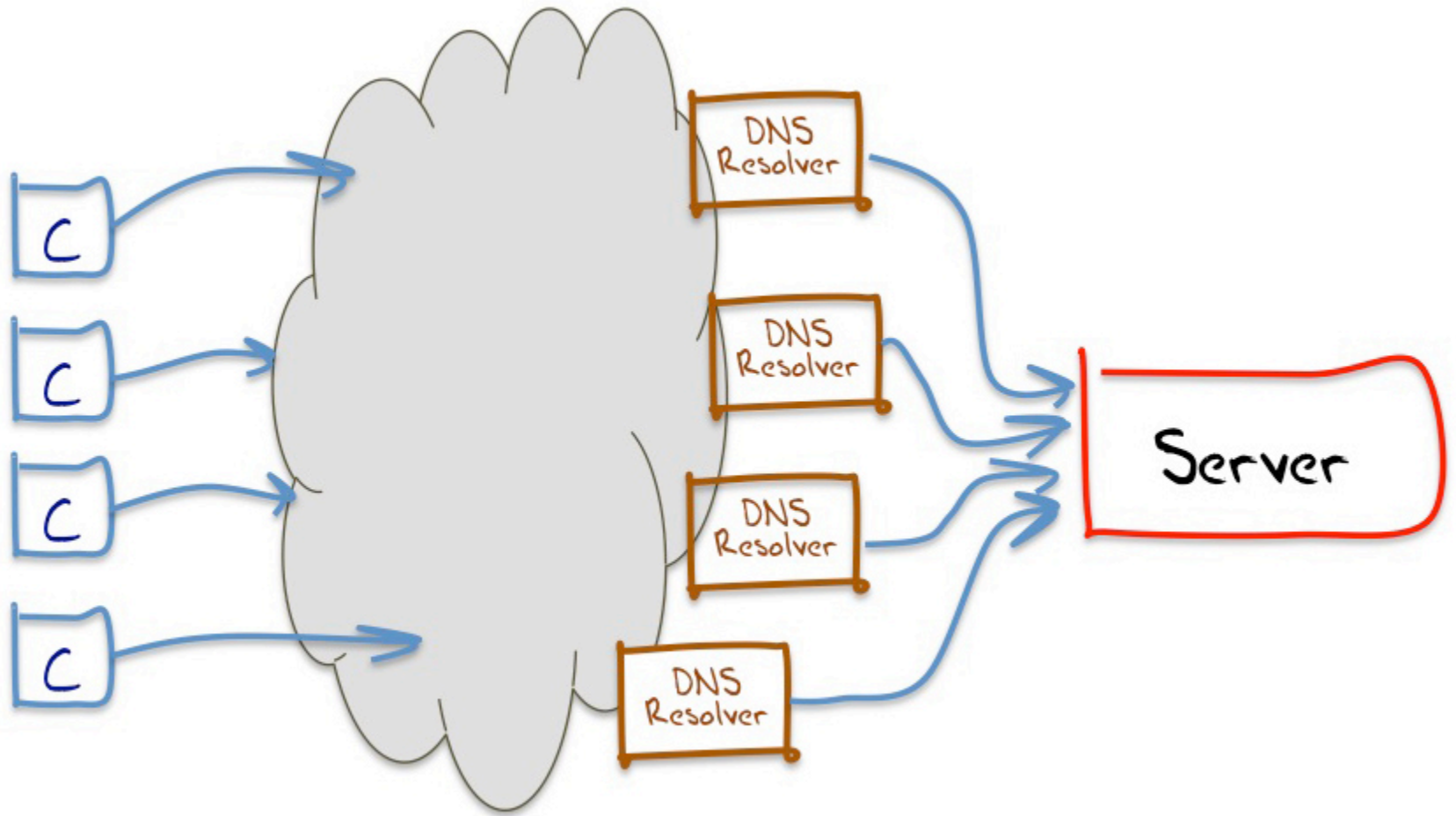
the good (DNSSEC signed)

the bad (invalid DNSSEC signature)

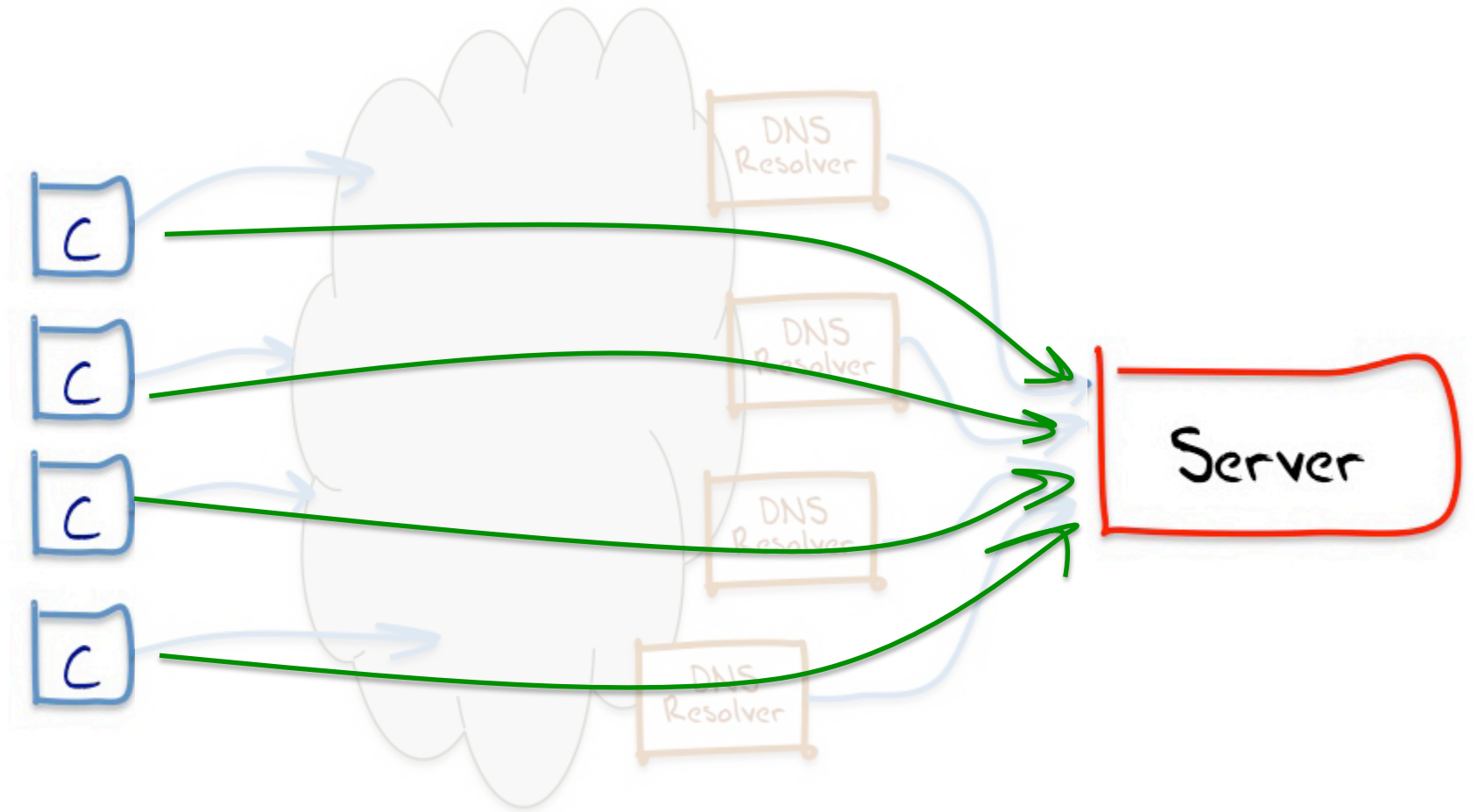
the control (no DNSSEC at all)

And an online ad system to deliver the test to a large pseudo-random set of clients

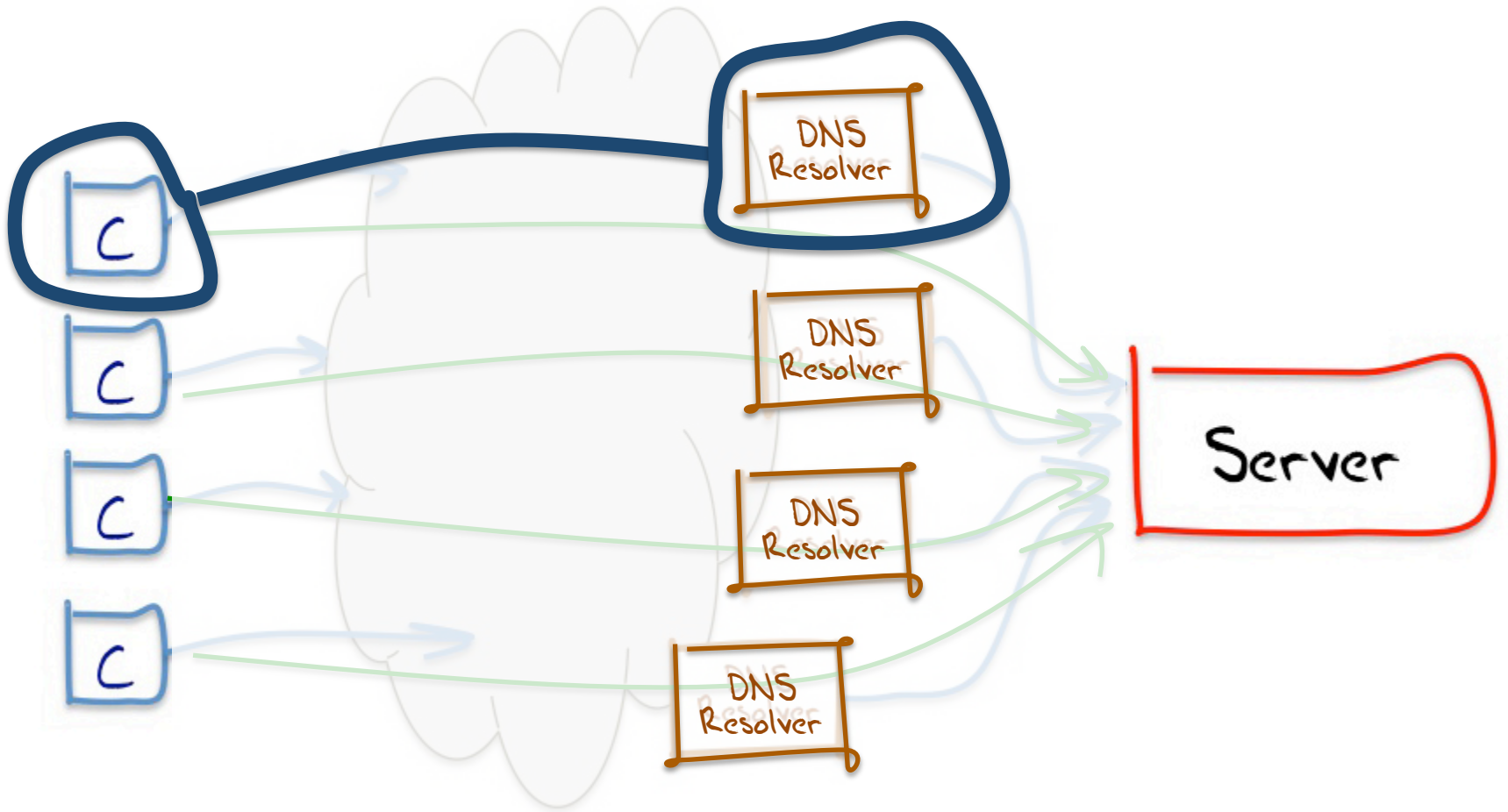
# The DNS Resolver Model



# The Web Fetch Model



# Matching Client to Resolver





# Some Results

Web + DNS query log processing

9 – 26 May 2013

Completed Test Count: 2,498,497

# Who Used Google's Public DNS in May 2013?

Used Google's Public DNS servers: **7.2%**

Used other resolvers: **92.8%**

# Who Used Google's Public DNS in May 2013?

Used Google's Public DNS servers: **7.2%**

What we saw when resolving the badly DNSSEC-signed DNS name was that a number of clients interpreted the SERVFAIL response as a signal to try other configured resolvers.

So perhaps we should split this count into the end users who use Google's P-DNS service **EXCLUSIVELY**, and the end users who have added Google's P-DNS service into the local list of resolvers

# Who Used Google's Public DNS in May 2013?

Used Google's Public DNS servers: **7.2%**

– Exclusively Used Google's P-DNS: 5.3%

– Used a mix of Google P-DNS + others: 1.9%

Used other resolvers: **92.8%**

# Who Used Google's Public DNS in May 2013?

Rank	CC	Count	%_All	%_Some	%_Not	DNSSEC	%_All	%_Some	%_None	Country
1	VN	25784	39.23	2.81	57.97	9890	96.77	2.11	1.11	Vietnam
2	JM	1413	2.46	0.50	72.05	408	91.67	0.25	8.09	Jamaica
3	GT	1720	5.35	11.00	63.55	197	78.17	21.83	0.00	Guatemala
4	BN	410	20.00	36.00	43.90	17	88.24	5.88	5.88	Brunei Darussalam
5	ID	5000	18.97	5.40	75.61	12330	69.55	11.46	18.99	Indonesia
6	LA	2000	18.67	7.30	74.00	22	86.36	9.09	4.55	Lao People's Democratic Republic
7	TR	1000	1.00	1.00	80.01	1000	93.28	3.30	3.42	Turkey
8	HN	1000	1.18	1.18	62.94	750	77.33	22.67	0.00	Honduras
9	AZ	1000	3.31	3.31	50.85	1016	71.26	26.77	1.97	Azerbaijan
10	TZ	1000	6.23	6.23	50.27	10	100.00	0.00	0.00	United Republic of Tanzania
11	RU	1000	3.40	3.40	3.85	111	9.09	0.00	0.00	Russia
12	US	1000	8.11	8.11	7.73	174	57.82	0.00	0.00	United States
13	FR	1000	8.88	8.88	7.00	7	86.47	0.00	0.00	France
14	GB	1000	5.72	5.72	7.00	7	57.72	0.00	0.00	United Kingdom
15	CA	1000	4.06	4.06	7.00	7	40.67	0.00	0.00	Canada
16	IT	76489	13.87	13.87	7.00	3	98.09	0.00	0.00	Italy
17	DZ	7397	13.18	13.18	7.00	3	82.14	0.00	0.00	Algeria
18	BD	712	12.78	12.78	7.00	3	72.00	0.00	0.00	Bangladesh
19	MY	32041	12.07	12.07	7.00	3	91.62	0.00	0.00	Malaysia
20	UA	25124	11.90	11.90	7.00	3	19.55	1.99	78.46	Ukraine
21	AL	5547	11.48	11.48	7.00	3	95.34	4.66	0.00	Albania
22	IQ	5358	11.46	11.46	7.00	3	62.04	21.49	16.48	Iraq
23	FJ	308	11.04	3.25	85.71	3	100.00	0.00	0.00	Fiji
24	HT	255	10.98	13.73	75.29	14	92.86	7.14	0.00	Haiti
25	PK	6239	10.85	7.42	81.73	619	80.78	15.51	3.72	Pakistan
26	KE	1538	10.73	16.78	72.50	70	85.71	14.29	0.00	Kenya
27	PA	1924	10.19	0.62	89.19	145	99.31	0.69	0.00	Panama
28	LY	652	9.97	0.77	89.26	65	95.38	3.08	1.54	Libya
29	CR	1906	9.97	2.68	87.36	94	92.55	3.19	4.26	Costa Rica
30	MV	259	9.65	9.27	81.08	20	60.00	30.00	10.00	Maldives
31	BR	168253	9.44	2.42	88.14	24097	50.13	6.19	43.69	Brazil

*% of clients who appear to use Google's DNS resolvers exclusively*

*% of clients who appear to use Google's DNS Servers and other local resolvers*

*% of clients who appear not to use Google's DNS Servers at all*

# Who Used Google's Public DNS in May 2013?

Rank	CC	Count	%_All	%_Some	%_Not	DNSSEC	%_All	%_Some	%_None	Country
1	VN	25784	39.23	2.81	57.97	9890	96.77	2.11	1.11	Vietnam
2	JM	1413	27.46	0.50	72.05	458	91.67	0.25	8.09	Jamaica
3	GT	1720	25.35	11.10	63.55	197	78.17	21.83	0.00	Guatemala
4	BN	410	20.00	36.10	43.90	17	88.77	5.88	5.34	Brunei Darussalam
5	ID	50935	18.97	5.41	75.00	12330	67.55	11.46	19.00	Indonesia
6	LA	300	18.67	7.33	50.00	22	66.36	9.09	24.55	Lao People's Democratic Republic
7	TR	870	13.51	30.01	62.94	7	93.28	3.30	3.30	Turkey
8	HN	7	0.11	62.94	37.06	7	77.33	22.67	0.00	Honduras
9	AZ	7	0.11	71.26	28.74	6	71.26	26.77	2.00	Azerbaijan
10	TZ	3	0.05	23.57	76.43	3	90.00	0.00	10.00	Tanzania
11	RU	111	1.71	40.12	59.88	111	93.69	0.00	6.31	Russia
12	US	874	13.32	17.22	82.78	174	57.89	0.00	42.11	United States
13	CA	87	1.33	86.47	13.53	7	86.47	0.00	13.53	Canada
14	GB	9	0.14	57.72	42.28	9	57.72	0.00	42.28	Great Britain
15	FR	9	0.14	40.67	59.33	9	40.67	0.00	59.33	France
16	RU	7	0.11	98.09	2.00	8	98.09	0.00	2.00	Russia
17	DZ	7397	13.18	82.14	17.86	174	82.14	0.00	17.86	Algeria
18	BD	712	12.78	72.00	27.99	7	72.00	0.00	27.99	Bangladesh
19	MY	32041	12.07	91.62	8.38	10	91.62	0.00	8.38	Malaysia
20	UA	25124	11.90	19.55	80.45	10	19.55	1.99	78.46	Ukraine
21	AL	5547	11.48	95.34	4.66	0	95.34	4.66	0.00	Albania
22	IQ	5358	11.46	62.04	37.96	0	62.04	21.49	16.48	Iraq
23	FJ	308	11.04	100.00	0.00	0	100.00	0.00	0.00	Fiji
24	HT	255	10.98	92.86	7.14	0	92.86	7.14	0.00	Haiti
25	PK	6239	10.85	80.78	19.22	619	80.78	15.51	3.72	Pakistan
26	KE	1538	10.73	85.71	14.29	70	85.71	14.29	0.00	Kenya
27	PA	1924	10.19	99.31	0.69	145	99.31	0.69	0.00	Panama
28	LY	652	9.97	95.38	4.62	65	95.38	3.08	1.54	Libya
29	CR	1906	9.97	92.55	7.45	94	92.55	3.19	4.26	Costa Rica
30	MV	259	9.65	60.00	40.00	20	60.00	30.00	10.00	Maldives
31	BR	168253	9.44	50.13	49.87	24097	50.13	6.19	43.69	Brazil

*% of DNSSEC validating clients who appear to use Google's DNS resolvers exclusively*

*% of DNSSEC validating clients who appear to use Google's DNS Servers and other local resolvers*

*% of DNSSEC validating clients who appear not to use Google's DNS Servers at all*

# Who Used Google's Public DNS in May 2013?

Rank	CC	Count	%_All	%_Some%_Not	DNSSEC %_All	%_Some%_None	Country			
1	VN	25784	39.23	2.81	57.97	9890	96.77	2.11	1.11	Vietnam
2	JM	1413	27.46	0.50	72.05	408	91.67	0.25	8.09	Jamaica
3	GT	1720	25.35	11.10	63.55	197	78.17	21.83	0.00	Guatemala
4	BN	410	20.00	36.10	43.90	17	88.24	5.88	5.88	Brunei Darussalam
5	ID	50935	18.97	5.41	75.61	12330	69.55	11.46	18.99	Indonesia
6	LA	300	18.67	7.33	74.00	22	86.36	9.09	4.55	Lao People's Democratic Republic
7	TR	47816	18.35	1.64	80.01	8705	93.28	3.30	3.42	Turkey
8	HN	931	18.15	18.90	62.94	75	77.33	22.67	0.00	Honduras
9	AZ	6970	17.93	31.22	50.85	1016	71.26	26.77	1.97	Azerbaijan
10	TZ	297	16.16	23.57	60.27	10	90.00	10.00	0.00	United Republic of Tanzania
11	NI	992	16.03	40.12	43.85	111	93.69	4.50	1.80	Nicaragua
12	BO	1295	15.98	17.30	66.72	171	57.89	41.52	0.58	Bolivia
13	EG	34719	14.88	4.00	81.12	5137	86.47	9.62	3.91	Egypt
14	GH	912	14.69	6.69	78.62	123	57.72	13.82	28.46	Ghana
15	PS	2779	14.25	38.90	46.85	386	40.67	59.33	0.00	Occupied Palestinian Territory
16	IT	76489	13.87	0.53	85.60	9903	98.09	1.03	0.88	Italy
17	DZ	7397	13.18	24.00	62.82	963	82.14	16.20	1.66	Algeria
18	BD	712	12.78	9.41	77.81	50	72.00	12.00	16.00	Bangladesh
19	MY	32041	12.07	2.13	85.80	3401	91.62	3.41	4.97	Malaysia
20	UA	25124	11.90	2.68	85.42	5520	19.55	1.99	78.46	Ukraine
21	AL	5547	11.48	5.30	83.22	451	95.34	4.66	0.00	Albania
22	IQ	5358	11.46	10.60	77.94	619	62.04	21.49	16.48	Iraq
23	FJ	308	11.04	3.25	85.71	3	100.00	0.00	0.00	Fiji
24	HT	255	10.98	13.73	75.29	14	92.86	7.14	0.00	Haiti
25	PK	6239	10.85	7.42	81.73	619	80.78	15.51	3.72	Pakistan
26	KE	1538	10.73	16.78	72.50	70	85.71	14.29	0.00	Kenya
27	PA	1924	10.19	0.62	89.19	145	99.31	0.69	0.00	Panama
28	LY	652	9.97	0.77	89.26	65	95.38	3.08	1.54	Libya
29	CR	1906	9.97	2.68	87.36	94	92.55	3.19	4.26	Costa Rica
30	MV	259	9.65	9.27	81.08	20	60.00	30.00	10.00	Maldives
31	BR	168253	9.44	2.42	88.14	24097	50.13	6.19	43.69	Brazil

But then we got a little  
concerned about third parties  
sniffing the fumes from our data  
exhaust

All-Google Mixed-Google No-Google

May-13  
June 2013

5.3%

1.9%

92.8%

### Edward Snowden

From Wikipedia, the free encyclopedia

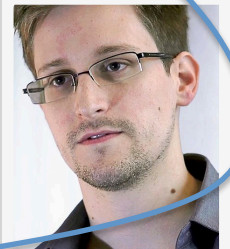
*Further information: 2013 mass surveillance disclosures*

**Edward Joseph "Ed"<sup>[2][3]</sup> Snowden** (born June 21, 1983) is an American computer specialist and a former CIA and NSA employee who intentionally disclosed classified details of several top-secret United States and British government *mass surveillance* programs to the press.<sup>[4][5]</sup> Based on information Snowden leaked to *The Guardian*<sup>[6]</sup> in May 2013 while employed at NSA contractor *Booz Allen Hamilton*, the British newspaper published a *series of exposés* that revealed programs such as the interception of U.S. and European telephone *metadata* and the *PRISM*, *XKeyscore*, and *Tempora* Internet surveillance programs. Snowden's release of NSA material was called the most significant leak in U.S. history by *Pentagon Papers* leaker *Daniel Ellsberg*.<sup>[7][8][9]</sup>

In June 2013, US federal prosecutors charged Snowden with *espionage* and theft of government property.<sup>[10][11][12]</sup> Snowden fled the United States prior to the publication of his disclosures, first to *Hong Kong (China)* and then on to *Moscow (Russia)*, where he was granted *political asylum within Russian borders* by the *government of Russia* at the end of July 2013 and where he now resides at an undisclosed location.

Snowden has been a subject of controversy: he has been variously called a hero,<sup>[13][14]</sup> a *whistleblower*,<sup>[15][16][17][18]</sup> a *dissident*,<sup>[19]</sup> a *traitor*,<sup>[20][21]</sup> and a *patriot*.<sup>[22][23]</sup> There is confusion on exactly what Snowden's status is, and whether he truly qualifies as a whistleblower, which commonly is understood as a person who exposes wrongdoing. By avoiding labeling Snowden a whistleblower, some members of the media attempt to avoid making a value judgement on his actions. Tom Kent, the standards editor for the *Associated Press*, informed AP staff to refer to Snowden as a "leaker" or a "whistleblower".<sup>[24]</sup> But *David K. Colaninno* of the *National Whistleblower Center* said in June 2013 that Snowden is

Edward Snowden





# Afterward

	All-Google	Mixed-Google	No-Google
<b>May-13</b>	5.3%	1.9%	92.8%
<i>June 2013</i>			
<b>Jul-13</b>	4.6%	2.1%	93.4%
<b>Aug-13</b>	4.4%	2.1%	93.5%
<b>Sep-13</b>	4.7%	2.1%	93.2%

# Who Used Google's Public DNS in September 2013?

Rank	CC	Count	%_All	%_Some%_Not	DNSSEC %_All	%_Some%_None	Country			
1	VN	9140	44.37	2.81	52.82	3573	97.90	1.60	0.50	Vietnam
2	NG	396	31.57	14.14	54.29	26	88.46	11.54	0.00	Nigeria
3	GT	945	24.44	8.47	67.09	121	64.46	14.05	21.49	Guatemala
4	AM	333	23.42	1.80	74.77	69	94.20	2.90	2.90	Armenia
5	AZ	507	21.10	22.88	56.02	95	72.63	8.42	18.95	Azerbaijan
6	BD	1623	20.09	10.35	69.56	135	68.89	24.44	6.67	Bangladesh
7	JM	566	19.96	2.65	77.39	96	95.83	4.17	0.00	Jamaica
8	HN	590	19.83	19.83	60.34	39	92.31	7.69	0.00	Honduras
9	ID	15295	18.69	5.58	75.74	2757	83.90	5.91	10.19	Indonesia
10	DZ	6966	17.73	35.59	46.68	1202	78.62	20.80	0.58	Algeria
11	IQ	982	16.90	12.12	70.98	98	45.92	33.67	20.41	Iraq
12	GH	459	16.56	12.20	71.24	33	96.97	3.03	0.00	Ghana
13	PS	789	14.83	15.59	69.58	176	46.59	31.82	21.59	Occupied Palestinian Territory
14	TZ	305	14.43	20.33	65.25	11	90.91	9.09	0.00	United Republic of Tanzania
15	TR	42456	12.91	1.83	85.26	4671	93.79	3.64	2.57	Turkey
16	MY	18190	12.13	3.02	84.85	1789	90.16	4.36	5.48	Malaysia
17	EG	11876	12.10	4.57	83.33	1161	93.20	6.46	0.34	Egypt
18	CR	522	11.30	2.30	86.40	33	90.91	9.09	0.00	Costa Rica
19	BR	34997	11.14	3.40	85.46	4323	60.33	9.14	30.53	Brazil
20	IT	28909	11.12	0.90	87.98	3609	72.10	1.52	26.38	Italy
21	UA	5808	10.88	2.74	86.38	1364	20.09	2.42	77.49	Ukraine
22	LB	651	9.37	10.29	80.34	72	38.89	27.78	33.33	Lebanon
23	CM	261	8.43	19.54	72.03	37	43.24	40.54	16.22	Cameroon
24	PA	968	8.16	1.55	90.29	68	100.00	0.00	0.00	Panama
25	AL	858	8.16	2.21	89.63	47	95.74	2.13	2.13	Albania
26	KE	817	8.08	11.14	80.78	64	60.94	25.00	14.06	Kenya
27	AR	14981	7.94	3.04	89.02	1066	75.14	10.13	14.73	Argentina
28	CZ	5099	7.92	3.43	88.64	1580	12.03	4.18	83.80	Czech Republic
29	MK	802	7.86	0.50	91.65	41	90.24	0.00	9.76	The former Yugoslav Republic of Macedonia
30	UG	324	7.72	8.64	83.64	22	77.27	22.73	0.00	Uganda
31	KZ	653	7.35	5.21	87.44	41	68.29	31.71	0.00	Kazakhstan

# Who Turned Google OFF?

Rank	CC	Delta OFF	MAY%	SEP %	Country
1	NI	37.77%	56.15%	18.38%	Nicaragua
2	PS	22.73%	53.15%	30.42%	Occupied Palestinian Territory
3	BO	21.54%	33.28%	11.74%	Bolivia
4	BN	10.27%	56.10%	45.83%	Brunei Darussalam
5	KE	8.28%	27.50%	19.22%	Kenya
6	AL	6.41%	16.78%	10.37%	Albania
7	LA	6.36%	26.00%	19.64%	Lao People's Democratic Republic
8	MZ	6.33%	17.54%	11.21%	Mozambique
9	PK	6.18%	18.27%	12.09%	Pakistan
10	JM	5.34%	27.95%	22.61%	Jamaica
11	TR	5.25%	19.99%	14.74%	Turkey
12	AZ	5.17%	49.15%	43.98%	Azerbaijan
13	TZ	4.98%	39.73%	34.75%	United Republic of Tanzania
14	GT	3.54%	36.45%	32.91%	Guatemala
15	BA	3.17%	9.05%	5.88%	Bosnia and Herzegovina
16	SR	2.59%	5.09%	2.50%	Suriname
17	IT	2.38%	14.40%	12.02%	Italy
18	EG	2.21%	18.88%	16.67%	Egypt
19	UG	2.11%	18.47%	16.36%	Uganda
20	AF	2.10%	50.25%	48.15%	Afghanistan
21	AO	1.93%	27.86%	25.93%	Angola
22	JO	1.92%	5.37%	3.45%	Jordan
23	SI	1.82%	6.25%	4.43%	Slovenia
24	LY	1.65%	10.74%	9.09%	Libya
25	JP	1.56%	3.74%	2.18%	Japan
26	KG	1.33%	8.91%	7.58%	Kyrgyzstan
27	PR	1.25%	11.61%	10.36%	Puerto Rico
28	PA	1.10%	10.81%	9.71%	Panama
29	TW	1.07%	6.35%	5.28%	Taiwan
30	FJ	0.99%	14.29%	13.30%	Fiji

% of users per country  
who reduced their use of  
Google's Public DNS:  
May to September

# Who Turned Google ON?

Rank	CC	Delta ON	MAY%	SEP%	Country
1	KH	21.74%	9.51%	31.25%	Cambodia
2	TN	18.71%	4.32%	23.03%	Tunisia
3	EU	17.03%	8.23%	25.26%	European Union
4	DZ	16.14%	37.18%	53.32%	Algeria
5	NG	15.78%	29.93%	45.71%	Nigeria
6	AM	15.15%	10.08%	25.23%	Armenia
7	MW	14.40%	24.75%	39.15%	Malawi
8	AW	9.13%	2.84%	11.97%	Aruba
9	BD	8.25%	22.19%	30.44%	Bangladesh
10	LK	8.21%	3.75%	11.96%	Sri Lanka
11	ZW	7.63%	22.15%	29.78%	Zimbabwe
12	GH	7.38%	21.38%	28.76%	Ghana
13	IQ	6.96%	22.06%	29.02%	Iraq
14	MV	6.59%	18.92%	25.51%	Maldives
15	BH	5.63%	7.97%	13.60%	Bahrain
16	MM	5.52%	11.44%	16.96%	Myanmar
17	PH	5.25%	7.01%	12.26%	Philippines
18	VN	5.15%	42.03%	47.18%	Vietnam
19	DO	4.35%	5.31%	9.66%	Dominican Republic
20	AR	4.03%	6.95%	10.98%	Argentina
21	SV	4.02%	4.59%	8.61%	El Salvador
22	KZ	3.85%	8.71%	12.56%	Kazakhstan
23	ET	3.11%	7.66%	10.77%	Ethiopia
24	BW	3.09%	1.75%	4.84%	Botswana
25	BR	2.68%	11.86%	14.54%	Brazil
26	HN	2.60%	37.06%	39.66%	Honduras
27	MD	2.59%	3.10%	5.69%	Republic of Moldova
28	TT	2.57%	2.35%	4.92%	Trinidad and Tobago
29	PY	2.48%	5.54%	8.02%	Paraguay
30	TH	2.47%	10.40%	12.87%	Thailand

% of users per country  
who increased their use  
of Google's Public DNS:  
May to September

"It's not me - it's my ISP!"

So lets look at the data again by origin AS rather than by country

Which ISPs send most of their customer's DNS queries to Google's Public DNS?

# "It's not me - it's my ISP!"

May 2013

Rank	AS	Count	%All	%Some	%Not	DNSSEC	%All	%Some	%None	ASName
1	197830	255	99.22	0.39	0.39	1	100.00	0.00	0.00	BAKCELL-AS "Bakcell LTD" LLC,AZ,Azerbaijan
2	198471	691	97.25	0.58	2.17	666	99.85	0.15	0.00	LINKEM-AS Linkem spa,IT,Italy
3	33576	423	85.82	1.42	12.77	357	99.72	0.28	0.00	DIGICEL ASN-Digicel,JM,Jamaica
4	15169	255	80.78	17.65	1.57	3	100.00	0.00	0.00	GOOGLE - Google Inc.,US,United States of America
5	28615	317	73.82	7.26	18.93	188	99.47	0.53	0.00	Televisao Cidade S/A,BR,Brazil
6	35328	324	69.75	4.01	26.23	7	71.43	14.29	14.29	SK-DSIDATA DSi data s.r.o.,SK,Slovakia
7	35378	307	64.50	6.19	29.32	37	94.59	5.41	0.00	SATFILM-AS Sat Film Sp. z o.o. i Wspolnicy Sp. k.,PL,Poland
8	34977	359	60.72	37.60	1.67	46	95.65	4.35	0.00	PROCONO-AS PROCONO S.A.,ES,Spain
9	59458	314	60.51	5.41	34.08	192	96.35	3.65	0.00	PURELINE Pure Line Co.,IQ, Iraq
10	7049	287	48.43	10.45	41.11	94	94.68	1.06	4.26	Silica Networks Argentina S.A.,AR,Argentina
11	45899	13840	47.06	1.95	50.99	6373	97.85	1.05	1.10	VNPT-AS-VN VNPT Corp,VN,Vietnam
12	17754	479	43.22	32.78	24.01	15	100.00	0.00	0.00	EXCELL-AS Excellmedia,IN,India
13	28512	984	38.62	50.30	11.08	11	81.82	9.09	9.09	Cablemas Telecomunicaciones SA de CV,MX,Mexico
14	45543	287	38.33	10.80	50.87	101	98.02	1.98	0.00	SCTV-AS-VN SaiGon Tourist cable Television Company,VN,Vietnam
15	26611	615	37.56	49.59	12.85	118	63.56	36.44	0.00	COMCEL S.A.,CO,Colombia
16	7552	3592	36.92	2.70	60.38	1291	96.90	2.32	0.77	VIETEL-AS-AP Vietel Corporation,VN,Vietnam
17	51407	412	36.17	40.05	23.79	91	63.74	36.26	0.00	MADA-AS Mada Alarab AS,PS,Occupied Palestinian Territory
18	16960	1667	35.09	9.60	55.31	516	41.67	4.07	54.26	Cablevision Red, S.A de C.V.,MX,Mexico
19	14868	440	33.18	17.73	49.09	133	75.94	19.55	4.51	COPEL Telecom S.A.,BR,Brazil
20	20299	299	32.78	37.79	29.43	19	89.47	10.53	0.00	Newcom Limited,GT,Guatemala
21	34296	709	32.44	39.21	28.35	146	96.58	3.42	0.00	MILLENICOM-AS MILLENI.COM,DE,Germany
22	41496	383	32.38	4.70	62.92	17	88.24	11.76	0.00	RO-TVSAT-AS TV SAT 2002 SRL,RO,Romania
23	4230	1204	32.06	10.22	57.72	462	60.82	12.55	26.62	EMBRATEL-EMPRESA BRASILEIRA DE TELECOMUNICACAOES SA,BR,Brazil
24	29119	825	30.91	7.27	61.82	214	98.60	1.40	0.00	SERVIHOSTING-AS ServiHosting Networks S.L.,ES,Spain
25	28015	289	30.80	13.49	55.71	42	97.62	2.38	0.00	MERCO COMUNICACIONES,AR,Argentina
26	28555	1020	30.59	51.47	17.94	4	100.00	0.00	0.00	Cablemas Telecomunicaciones SA de CV,MX,Mexico
27	34170	1094	29.52	62.07	8.41	377	71.09	27.85	1.06	AZTELEKOM Azerbaijan Telecommunication ISP,AZ,Azerbaijan
28	10834	361	29.09	9.97	60.94	73	94.52	2.74	2.74	Telefonica de Argentina,AR,Argentina
29	16735	595	28.40	8.57	63.03	132	84.09	9.09	6.82	COMPANHIA DE TELECOMUNICACOES DO BRASIL CENTRAL,BR,Brazil
30	29049	888	27.25	24.44	48.31	202	66.34	31.68	1.98	DELTA-TELECOM-AS Delta Telecom LTD.,AZ,Azerbaijan

# "It's not me - it's my ISP!"

September 2013

Rank	AS	Count	%All	%Some	%Not	DNSSEC	%All	%Some	%None	ASName
1	15169	333	79.88	20.12	0.00	0	0.00	0.00	0.00	GOOGLE - Google Inc.,US,United States of America
2	45899	4449	51.47	2.09	46.44	2060	97.82	1.36	0.83	VNPT-AS-VN VNPT Corp,VN,Vietnam
3	7552	1597	38.63	1.82	59.55	526	99.24	0.57	0.19	VIETEL-AS-AP Vietel Corporation,VN,Vietnam
4	18403	2560	35.94	1.17	62.89	818	98.90	1.10	0.00	FPT-AS-AP TFinancing & Promoting Technology,VN,Vietnam
5	4230	505	29.11	11.49	59.41	148	53.38	17.57	29.05	EMBRATEL-EMPRESA BRASILEIRA DE TELECOMUNICA??ES SA,BR,Brazil
6	34296	440	26.14	46.59	27.27	52	98.08	1.92	0.00	MILLENICOM-AS MILLENI.COM,DE,Germany
7	17762	315	26.03	22.86	51.11	31	96.77	3.23	0.00	HTIL-TTML-IN-AP Tata Teleservices Maharashtra Ltd,IN,India
8	17974	7162	25.12	5.47	69.41	1680	95.24	4.46	0.30	TELKOMNET-AS2-AP PT Telekomunikasi Indonesia,ID,Indonesia
9	3549	529	22.50	6.43	71.08	79	78.48	13.92	7.59	GBLX Global Crossing Ltd.,US,United States of America
10	131090	583	19.90	15.61	64.49	88	81.82	10.23	7.95	CAT-IDC-4BYTENET-AS-AP ,TH,Thailand
11	131222	577	19.76	24.96	55.29	4	75.00	25.00	0.00	MTS-INDIA-IN 334,Udyog Vihar,IN,India
12	8452	6612	19.31	6.56	74.12	1051	94.29	5.71	0.00	TE-AS TE-AS,EG,Egypt
13	8517	452	19.25	8.85	71.90	27	37.04	18.52	44.44	ULAKNET National Academic Network and Information Center,TR,Turkey
14	174	596	19.13	3.86	77.01	61	88.52	6.56	4.92	COGENT Cogent/PSI,US,United States of America
15	55824	558	18.64	14.87	66.49	41	82.93	17.07	0.00	RSMANI-NKN-AS-AP National Knowledge Network,IN,India
16	17451	455	18.46	4.84	76.70	66	87.88	12.12	0.00	BIZNET-AS-AP BIZNET NETWORKS,ID,Indonesia
17	9387	280	17.86	37.14	45.00	9	22.22	11.11	66.67	AUGERE-PK AUGERE-Pakistan,PK,Pakistan
18	36947	6806	17.73	36.28	45.99	1184	78.89	21.11	0.00	ALGTEL-AS,DZ,Algeria
19	14754	981	17.33	5.40	77.27	78	65.38	1.28	33.33	Telgua,GT,Guatemala
20	18101	1009	16.95	6.54	76.51	67	91.04	7.46	1.49	RELIANCE-COMMUNICATIONS-IN Reliance Communications.DAKC MUMBAI,IN,India
21	20960	269	16.36	6.69	76.95	30	93.33	0.00	6.67	TKTELEKOM-AS TK Telekom sp. z o.o.,PL,Poland
22	11992	417	15.11	18.94	65.95	9	44.44	55.56	0.00	CENTENNIAL-PR - Centennial de Puerto Rico,PR,Puerto Rico
23	9930	524	15.08	10.50	74.43	42	66.67	33.33	0.00	TTNET-MY TIME dotCom Berhad,MY,Malaysia
24	20207	285	14.74	4.21	81.05	42	85.71	14.29	0.00	Gigared S.A.,AR,Argentina
25	12978	1591	14.52	0.31	85.17	219	98.63	1.37	0.00	DOGAN-ONLINE DOGAN TV DIGITAL PLATFORM ISLETMECILIGI A.S.,TR,Turkey
26	36925	589	14.09	12.73	73.17	479	11.48	5.22	83.30	ASMedi,MA,Morocco
27	9498	1083	13.30	6.74	79.96	78	75.64	20.51	3.85	BBIL-AP BHARTI Airtel Ltd.,IN,India
28	18881	6346	13.22	2.88	83.90	652	88.96	7.52	3.53	Global Village Telecom,BR,Brazil
29	4788	13190	13.12	2.02	84.85	1460	93.77	3.08	3.15	TMNET-AS-AP TM Net, Internet Service Provider,MY,Malaysia
30	9121	25856	13.11	1.44	85.44	2922	95.48	4.28	0.24	TTNET Turk Telekomunikasyon Anonim Sirketi,TR,Turkey

# Who turned Google OFF?

Rank	AS	Delta	May	Sep	AS Name
1	17754	62.49%	75.99%	13.50%	EXCELL-AS Excellmedia,IN,India
2	15975	46.99%	57.96%	10.97%	HADARA-AS Hadara Technologies Private Shareholding Company,PS,Occupied Palestinian Territory
3	14754	14.73%	37.46%	22.73%	Telgua,GT,Guatemala
4	38547	14.21%	38.97%	24.76%	WITRIBE-AS-AP WITRIBE PAKISTAN LIMITED,PK,Pakistan
5	10620	13.20%	16.22%	3.02%	Telmex Colombia S.A.,CO,Colombia
6	45609	10.70%	12.45%	1.75%	BHARTI-MOBILITY-AS-AP Bharti Airtel Ltd. AS for GPRS Service,IN,India
7	36423	7.68%	18.05%	10.37%	SAN-JUAN-CABLE - San Juan Cable, LLC,PR,Puerto Rico
8	45595	7.43%	14.29%	6.86%	PKTELECOM-AS-PK Pakistan Telecom Company Limited,PK,Pakistan
9	34984	6.93%	20.41%	13.48%	TELLCOM-AS TELLCOM ILETISIM HIZMETLERI A.S.,TR,Turkey
10	47524	6.87%	19.35%	12.48%	TURKSAT-AS Turksat Uydu Haberlesme ve Kablo TV Isletme A.S.,TR,Turkey
11	12978	6.86%	21.69%	14.83%	DOGAN-ONLINE DOGAN TV DIGITAL PLATFORM ISLETMECILIGI A.S.,TR,Turkey
12	4780	6.39%	21.50%	15.11%	SEEDNET Digital United Inc.,TW,Taiwan
13	34569	6.21%	6.21%	0.00%	NETWORX-BG Networx-Bulgaria Ltd.,BG,Bulgaria
14	44957	5.58%	15.99%	10.41%	OPITEL Vodafone Omnitel N.V.,IT,Italy
15	131090	5.49%	41.00%	35.51%	CAT-IDC-4BYTENET-AS-AP ,TH,Thailand
16	47331	5.35%	18.65%	13.30%	TTNET TNet A.S.,TR,Turkey
17	8612	5.17%	14.28%	9.11%	TISCALI-IT Tiscali Italia S.P.A.,IT,Italy
18	9498	4.71%	24.75%	20.04%	BBIL-AP BHARTI Airtel Ltd.,IN,India
19	9121	4.70%	19.26%	14.56%	TTNET Turk Telekomunikasyon Anonim Sirketi,TR,Turkey
20	8452	4.47%	30.35%	25.88%	TE-AS TE-AS,EG,Egypt
21	29614	4.29%	19.94%	15.65%	GHANATEL-AS,GH,Ghana
22	8386	4.23%	18.39%	14.16%	KOCNET VODAFONE NET ILETISIM HIZMETLERI A.S,TR,Turkey
23	4812	3.14%	6.81%	3.67%	CHINANET-SH-AP China Telecom (Group),CN,China
24	4436	2.96%	6.65%	3.69%	AS-NLAYER - nLayer Communications, Inc.,US,United States of America
25	1267	2.91%	13.77%	10.86%	ASN-INFOSTRADA WIND Telecomunicazioni S.p.A.,IT,Italy
26	31452	2.70%	2.70%	0.00%	MTC-VB-AS MTC-Vodafone Bahrain,BH,Bahrain
27	3269	2.62%	15.01%	12.39%	ASN-IBSNAZ Telecom Italia S.p.a.,IT,Italy
28	45960	2.39%	15.71%	13.32%	YTLCOMMS-AS-AP YTL COMMUNICATIONS SDN BHD,MY,Malaysia
29	9506	2.31%	6.62%	4.31%	MAGIX-SG-AP Magix Broadband Network,SG,Singapore
30	36992	2.24%	6.57%	4.33%	ETISALAT-MISR,EG,Egypt

% of users per Origin AS  
who decreased their use  
of Google's Public DNS:  
May to September



# Who turned Google ON?

Rank	AS	Delta	May	Sep	AS Name
1	45356	64.72%	0.22%	64.94%	MOBITEL-LK IS Group, No:108, W A D Ramanayake Mawatha,,LK,Sri Lanka
2	2609	24.74%	5.40%	30.14%	TN-BB-AS Tunisia BackBone AS,TN,Tunisia
3	6648	18.68%	26.88%	45.56%	BAYAN-TELECOMMUNICATIONS Bayan Telecommunications, Inc.,PH,Philippines
4	36947	17.34%	36.67%	54.01%	ALGTEL-AS,DZ,Algeria
5	131222	13.80%	30.91%	44.71%	MTS-INDIA-IN 334,Udyog Vihar,IN,India
6	16637	11.21%	6.29%	17.50%	MTNNS-AS,ZA,South Africa
7	18403	9.00%	28.11%	37.11%	FPT-AS-AP The Corporation for Financing & Promoting Technology,VN,Vietnam
8	12066	7.86%	2.70%	10.56%	TRICOM,DO,Dominican Republic
9	10029	7.82%	7.87%	15.69%	CITYCOMNETWORKS-AS CITYCOM NETWORKS PVT LTD,IN,India
10	11664	6.95%	12.71%	19.66%	Techtel LMDS Comunicaciones Interactivas S.A.,AR,Argentina
11	10139	6.04%	1.40%	7.44%	SMARTBRO-PH-AP Smart Broadband, Inc.,PH,Philippines
12	6939	5.89%	5.63%	11.52%	HURRICANE - Hurricane Electric, Inc.,US,United States of America
13	8997	5.73%	8.77%	14.50%	ASN-SPBNIT OJSC Rostelecom,RU,Russian Federation
14	4755	5.25%	14.13%	19.38%	TATACOMM-AS TATA Communications formerly VSNL is Leading ISP,IN,India
15	55824	5.04%	28.47%	33.51%	RSMANI-NKN-AS-AP National Knowledge Network,IN,India
16	45899	4.55%	49.01%	53.56%	VNPT-AS-VN VNPT Corp,VN,Vietnam
17	6503	4.19%	4.41%	8.60%	Axtel, S.A.B. de C.V.,MX,Mexico
18	10292	4.15%	2.55%	6.70%	CWJAM ASN-CWJAMAICA,JM,Jamaica
19	7303	4.00%	5.59%	9.59%	Telecom Argentina S.A.,AR,Argentina
20	9829	3.98%	4.47%	8.45%	BSNL-NIB National Internet Backbone,IN,India
21	3549	3.90%	25.02%	28.92%	GBLX Global Crossing Ltd.,US,United States of America
22	17552	3.79%	5.63%	9.42%	TRUE-AS-AP True Internet Co.,Ltd.,TH,Thailand
23	12252	3.72%	3.94%	7.66%	America Movil Peru S.A.C.,PE,Peru
24	9930	3.71%	21.86%	25.57%	TTNET-MY TIME dotCom Berhad,MY,Malaysia
25	22833	3.61%	5.20%	8.81%	CTE S.A. de C.V.,SV,El Salvador
26	17465	3.57%	3.42%	6.99%	ASIANET Cable ISP in India,IN,India
27	22566	3.56%	3.09%	6.65%	Maxcom Telecomunicaciones, S.A.B. de C.V.,MX,Mexico
28	18004	3.37%	3.76%	7.13%	WIRELESSNET-ID-AP WIRELESSNET AS,ID,Indonesia
29	10481	3.30%	2.62%	5.92%	Prima S.A.,AR,Argentina
30	6400	3.27%	3.08%	6.35%	Compa??a Dominicana de Tel?fonos, C. por A. - CODETEL,DO,Dominican Republic

% of users per Origin AS  
who increased their use  
of Google's Public DNS:  
May to September

Thanks!