

Lustrum, the oldest relays of the Tor network and their ISP's : more data.

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Abstract

A quantitative approach to a historical problem. Sister publication to “*Fearless, 1000 days and still running : the ‘most resilient’ exit nodes of the Tor network*”.

Keywords : Tor; network resilience; network diversity; ISP; metrics.

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1 Methodology

We looked this time at the oldest relays within the Tor network.

Here *all* relays were considered : whether exit nodes, entry guards, or else.¹

Our criteria were : age (5 years, or 1825 days, of minimum existence) and present status ('running').

Using the Tor metrics database, still, our search query was thus :

```
running:true first_seen_days:1825-10000
```

With 556 matching relays as result.

Further criteria brought this number down to 100.

We limited our search, as previously, to nodes above a certain bandwidth to avoid the (relative) fluctuations of smaller servers. We picked here 5 MiB/s as threshold (for reasons explained in further detail just below).

In addition to the already mentioned considerations that come with a choice of a 'proxy' (i.e. approximation), and to give the reader some more insights into the conditions in which this research took place :

- Fluctuations in bandwidth, small, occurred at least in two occasions we think.
- Two servers went offline in the middle of our research : one relay with an advertised bandwidth of 2 MiB/s, followed by another of 4.75 MiB/s (ISP : "DigitalOcean, LLC").

2 Results

ISP	number of relays amongst 'oldest'	bandwidth
Online	7	143 MiB/s
Hetzner	13	135 MiB/s
OVH	10	84 MiB/s
XS4ALL	2	40 MiB/s
Bahnhof	1	38 MiB/s
myLoc	2	26 MiB/s

Table 1: 'oldest' Tor relays and commercial ISP's.

Alternatives to mainstream ISP's have come out of this research, in addition to their occurrences in our previous one : *XS4ALL*, a dutch ISP with a history of activism and defense of the Internet (similar to Swedish *Bahnhof*), hoster of two of the largest 'oldest' relays in the Tor network, and *myLoc*² - to name a few.

¹There were two bridges, *ndnop2* and *ndnop0* among results.

²<https://trac.torproject.org/projects/tor/wiki/doc/ISPCorrespondence>

Relay `calyx07` merits further comment : it is the only hosted by the Calyx Institute in Europe (amongst those registered here at least), where they chose *XS4ALL* for ISP.

Relay `marcuse1` and `marcuse2` belong to previously encountered association *Nos oignons*.

University / group	relays amongst ‘oldest’	bandwidth
University of Waterloo	<code>gurgle</code>	40 MiB/s
MIT (CSAIL)	<code>csailmitnoexit</code>	18 MiB/s
Stanford	<code>everfailed</code>	12 MiB/s
University of Washington	<code>UWashingtonCSE</code>	6 MiB/s
Boston University	<code>BostonUCompSci</code>	5 MiB/s
UNC	<code>ibibUNCO</code>	5 MiB/s
CMU	<code>cmutornode</code>	3 MiB/s

Table 2: universities and ‘oldest’ Tor relays.

One massive fact, recorded here, as previously, is the large, if not complete absence of European universities.

Where, in the Queen’s name, are Cambridge and Oxford? Edinburgh? And, where ETHZ? And, all the rest? Such questions only fine gentlemen and gentlewomen can answer.

Social courage appears to not be – including geographically – unequally distributed.

(We do note however the presence of SUNET, the Swedish University Computer Network.)

3 Addition : most resilient exit nodes

To complement our previous research we provide the following additional data, results :

University / group	exit nodes amongst ‘most resilient’	bandwidth
University of Waterloo	<code>gurgle</code>	40 MiB/s
Boston University	<code>BostonUCompSci</code>	5 MiB/s
UNC	<code>ibibUNCO</code>	5 MiB/s
CMU	<code>cmutornode</code>	3 MiB/s

Table 3: universities and ‘most resilient’ Tor exit nodes.

4 Addition : decade old and still running

Finally, we look at the very oldest, still running relays within the Tor network : those with a minimum recorded existence of 10 years.

Search query :

`running:true first_seen_days:3650-10000`

Relay	ISP	First Seen
<code>che</code>	Bahnhof AB	2007-10-27
<code>RazorsEdge</code>	Satellite Management Services, Inc.	2007-10-27
<code>dao</code>	dao Consulting, LLC	2007-11-23
<code>OxbadcOffe</code>	Deutsche Telekom AG	2008-02-17
<code>moses</code>	Linode, LLC	2008-05-15
<code>DieYouRebelScum1</code>	Croatian Academic and Research Network	2008-05-18
<code>Pasquino</code>	eStructure Data Centers Inc.	2008-07-03
<code>DigitalBrains</code>	Xs4all Internet BV	2008-07-13
<code>Hermes</code>	MCI Communications Services ...	2008-10-06

Table 4: Still running Tor relays with a recorded existence of a decade or more.

References

- . 2019. “Fearless, 1000 days and still running : the ‘most resilient’ exit nodes of the Tor network and their ISP’s – a quantitative approach.”

Ordered by most bandwidth to least* :

(*as in our previous research)

--- 50 MiB/s

Lule	SUNET SUNET Swedish University Network
gurgle	University of Waterloo
che	Bahnhof AB
fluxe4	Verein zur Foerderung eines Deutschen Forschungsnetzes e.V.
Multivac	Online S.a.s.
regar42	Online S.a.s.
hviv104	SURFnet bv
Logforme	Telenor Norge AS
3cce3a91f6a625	T-Mobile Thuis BV
BlickWinkel	Xs4all Internet BV

--- 30 MiB/s

DFRI0	Foreningen for digitala fri- och rattigheter
Libero	Specialized Bulletin Board Systems
torex42	Baytems Holdings Oy
DFRI3	Foreningen for digitala fri- och rattigheter
ndnop2	! na [NB. these are bridges]
ndnop0	! na [NB. these are bridges]
Jans	Init7 (Switzerland) Ltd.
SEC6xFreeBSD64	SURFnet bv
dexter	Magyar Telekom plc.

--- 20 MiB/s

hsjeufh24h6	myLoc managed IT AG
Truie	OVH SAS
Fastnet	Hetzner Online GmbH
TorMachine	Hetzner Online GmbH
csailmitnoexit	Massachusetts Institute of Technology
storm	Hetzner Online GmbH
AsiaArgento	Online S.a.s.
ndnr1	UNINETT AS
Totonicapanp2	Online S.a.s.
Cicolina	VNET a.s.
rehm	IP-Only Networks AB
bauruine203	Online S.a.s.
bauruine204	Online S.a.s.
TangeNLV	Fiberby ApS
DFRI1	Foreningen for digitala fri- och rattigheter
DFRI4	Foreningen for digitala fri- och rattigheter
birnenpfeffimitzimt	D-hosting die Rackspace & Connectivity GmbH
fluxe3	Hetzner Online GmbH
tortillero	Orange Espagne SA
everfailed	Stanford University
puertasecreta	PlusServer GmbH
informationalley	Hetzner Online GmbH
Finisterre	Hetzner Online GmbH
VERITAS	Massachusetts Institute of Technology
SweRaspiTor3	Telenor Norge AS
multisec2	Broadnet AS
lewwerDuarUesSlaav	ServerAstra Kft.
nij01	Online S.a.s.
CalyxInstitute07	Xs4all Internet BV
multisec4	Broadnet AS

Bazinga	Host Europe GmbH
multisec3	Broadnet AS

10 MiB/s	
SECxFreeBSD64	SURFnet bv
jceaovh2	OVH SAS
JPsi2	Host Europe GmbH
TorVXNDbhs2	OVH SAS
rgiad	RGnet, LLC
vlima	Greek Research and Technology Network S.A
freeSentsov	Net By Net Holding LLC
Unnamed	OVH SAS
TerokNor	LeaseWeb Netherlands B.V.
serotonin	Hetzner Online GmbH
CalyxInstitute06	The Calyx Institute
ratni	OVH SAS
Hermes	MCI Communications Services, Inc. d/b/a Verizon Business
CalyxInstitute09	The Calyx Institute
Islay	OVH SAS
CalyxInstitute08	The Calyx Institute
CalyxInstitute05	The Calyx Institute
marcuse2	Ielo-liazo Services SAS
marcuse1	Ielo-liazo Services SAS
AquaRayTerminus	Aqua Ray SAS
UWashingtonCSE	University of Washington
CalyxInstitute03	The Calyx Institute
v0ld	VimpelCom
CalyxInstitute01	The Calyx Institute
2propstor	Consolidated Communications, Inc.
CalyxInstitute04	The Calyx Institute
Applejack	Hetzner Online GmbH
EvilMoe	OVH SAS
torpidsDEmyloc3	myLoc managed IT AG
dao	dao Consulting, LLC
Yahta4ee	Hetzner Online GmbH
BostonUCompSci	Boston University
UV74S7mjxRcYVrGsAMw	OVH SAS
bmwanon4	Hetzner Online GmbH
bmwanon3	Hetzner Online GmbH
torpidsFRovh	OVH SAS
IWillKeepYouSafe	Broadnet AS
h4x0rs	Hetzner Online GmbH
BigBang	Level 3 Parent, LLC
ibibUNC0	University of North Carolina at Chapel Hill
nxltor	NEXCUS TECHNOLOGIES LLC
Unnamed	Hurricane Electric LLC
Ranlvor	Hetzner Online GmbH
Geoff	EVANZO e-commerce GmbH
Unnamed	I.C.S. Trabia-Network S.R.L.
Unnamed	OVH SAS
hacksenkessel	Host Europe GmbH

5 MiB/s	
...	
cmutornode	Carnegie Mellon University