Censors' Delay in Blocking Circumvention Proxies

David Fifield & Lynn Tsai
University of California, Berkeley

Tor (The Onion Router)

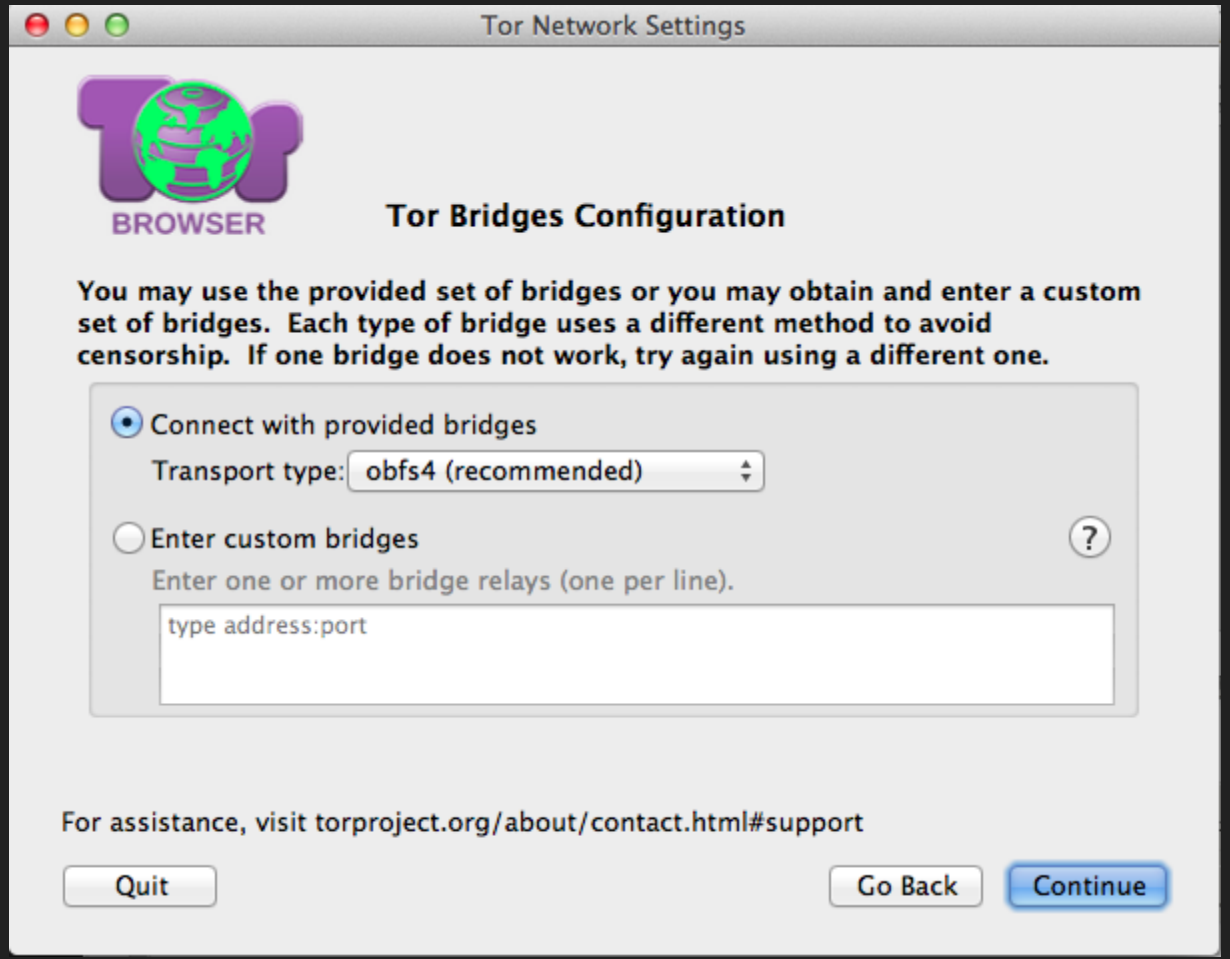
Anonymous network

Poorly suited for censorship circumvention

Including bridges + pluggable transports

- Unlisted nodes that are difficult to discover

Default bridges


Tor Network Settings
BROWSER
Tor Bridges Configuration
You may use the provided set of bridges or you may obtain and enter a custom set of bridges. Each type of bridge uses a different method to avoid censorship. If one bridge does not work, try again using a different one.
Connect with provided bridges
Transport type: obfs4 (recommended)
Enter custom bridges
Enter one or more bridge relays (one per line).
type address:port
For assistance, visit torproject.org/about/contact.html#support
Quit
Go Back
Continue

Internet Censors and Circumvention Proxy Servers

Length of delay

Not intuitive

Methods of discovery

#18071 closed enhancement (fixed)

Opened 7 months ago
Closed 7 months ago
Last modified 7 months ago

Add new obfs4 bridge riemann to Tor Browser

Reported by:	isis	Owned by:	tbb-team
Priority:	Immediate	Milestone:	
Component:	Applications/Tor Browser	Version:	
Severity:	Normal	Keywords:	tbb-bridges TorBrowserTeam201601R, tbb-5.5
Cc:	mikeperry, tor@..., gk, yawning, dcf	Actual Points:	
Parent ID:		Points:	
Reviewer:		Sponsor:	

Description (last modified by isis) Δ

There's a new default obfs4 bridge running on a 100MB/s connection. If possible, we should get it added to TB's default set before 25 January.

Changed 7 months ago by gk comment:6

- **Resolution** set to *fixed*
- **Status** changed from *needs_review* to *closed*

This is commit 27ac6800b3171004f3bd9a9114ff72f1ee991a79 on master and commit 5625f1787125f23810c72604b367769900299412 on hardened-builds, thanks.

[tor-qa] Tor Browser 5.5 is ready for testing

Georg Koppen gk at torproject.org
Fri Jan 22 15:23:56 UTC 2016

- Previous message: [tor-qa] [test result: failed] 5.5a6-fe429-Fedora20-x86_64
- Next message: [tor-qa] [test result: failed] 5.5-build1-win32-virustotal
- **Messages sorted by:** [date] [thread] [subject] [author]

Hi,

We are excited to announce Tor Browser 5.5 being ready for testing.
Bundles can be found on:

https://people.torproject.org/~gk/builds/5.5-build1/

This release contains an update to various bundle components: Firefox to
ESR 38.6.0esr, libevent to 2.0.22-stable and NoScript to 2.9.0.2.

Morevover, there are a bunch of new features worth mentioning. Above
all, we provide a defense against font enumeration attacks which we
developed over the last weeks and months. While there is still room for
improvement it closes an important gap in our fingerprinting defenses.

We ship Japanese bundles, start showing local change notes after an
update, isolate Shared Workers to the first-party domain, improved our
keyboard fingerprinting defense and added the onion service URL for the
DuckDuckGo search engine to name a few of the further features and bug
fixes.

Happy testing!



HOME ARCHIVES ABOUT TOR DONATE

Tor Browser 5.5 is released

Posted January 27th, 2016 by gk in tbb, tbb-5.5, tor browser

Tor Browser 5.5, the first stable release in the 5.5 series, is now available from the Tor Browser Project page and also from our distribution directory.

This release features important security updates to Firefox.

On the privacy front we finally provide a defense against font enumeration attacks which we developed over the last weeks and months. While there is still room for improvement, it closes an important gap in our fingerprinting defenses. Additionally, we isolate Shared Workers to the first-party domain now and further improved our keyboard fingerprinting defense.

We made also progress on the usability side. First, by providing Tor Browser in another locale, Japanese. Additionally, by showing the changes in the new Tor Browser version immediately after an update and polishing our about:tor appearance. Last but not least we changed the search bar URL for the DuckDuckGo search engine to its onion URL.

Upcoming events

- Usenix Security and FOCI, Austin

(7 days on Aug 8)

full calendar

Recent blog posts

- Debian and Tor Services available as Onion Services
- Statement

Internet Censors and Circumvention Proxy Servers

Length of delay

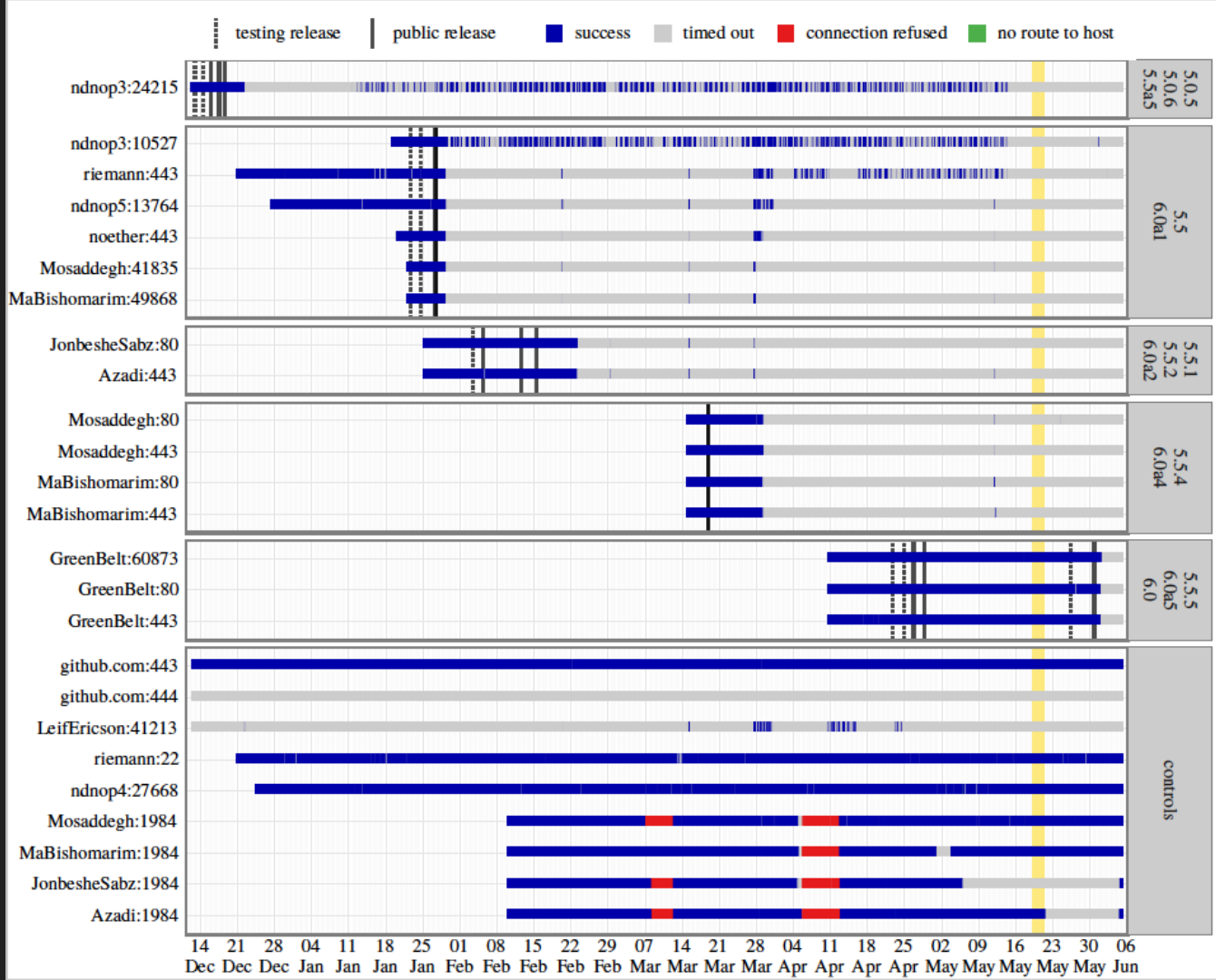
Not intuitive

Methods of discovery

Methodology

Script that probes bridges to test for reachability

China, Iran, US


testing release
public release
success
timed out
connection refused
no route to host
ndnop3:24215
ndnop3:10527
riemann:443
ndnop5:13764
noether:443
Mosaddegh:41835
MaBishomarim:49868
JonbesheSabz:80
Azadi:443
Mosaddegh:80
Mosaddegh:443
MaBishomarim:80
MaBishomarim:443
GreenBelt:60873
GreenBelt:80
GreenBelt:443
github.com:443
github.com:444
LeifEricson:41213
riemann:22
ndnop4:27668
Mosaddegh:1984
MaBishomarim:1984
JonbesheSabz:1984
Azadi:1984
5.0.5
5.0.6
5.5a5
5.5
6.0a1
5.5.1
5.5.2
6.0a2
5.5.4
6.0a4
5.5.5
6.0a5
6.0
controls
14 Dec
21 Dec
28 Dec
04 Jan
11 Jan
18 Jan
25 Jan
01 Feb
08 Feb
15 Feb
22 Feb
29 Feb
07 Mar
14 Mar
21 Mar
28 Mar
04 Apr
11 Apr
18 Apr
25 Apr
02 May
09 May
16 May
23 May
30 May
06 Jun

Results

Number of days it took to block

Orbot

Blocking time of day

Tor Browser 5.5.5/6.0a5/6.0: 3 new bridges

05 Apr	−57 days	**Ticket filed**	GreenBelt:60873, GreenBelt:80, GreenBelt:443
07 Apr	−55 days	**Ticket merged**	GreenBelt:60873, GreenBelt:80, GreenBelt:443
22 Apr	−40 days	**Testing release**	5.5.5 stable
24 Apr	−38 days	**Testing release**	6.0a5 alpha
26 Apr	−36 days	**Public release**	5.5.5 stable
28 Apr	−34 days	**Public release**	6.0a5 alpha
26 May	−6 days	**Testing release**	6.0 stable
30 May	−2 days	**Public release**	6.0 stable
01 Jun	0	**Blocked**	GreenBelt:60873, GreenBelt:80, GreenBelt:443

Results

Number of days it took to block

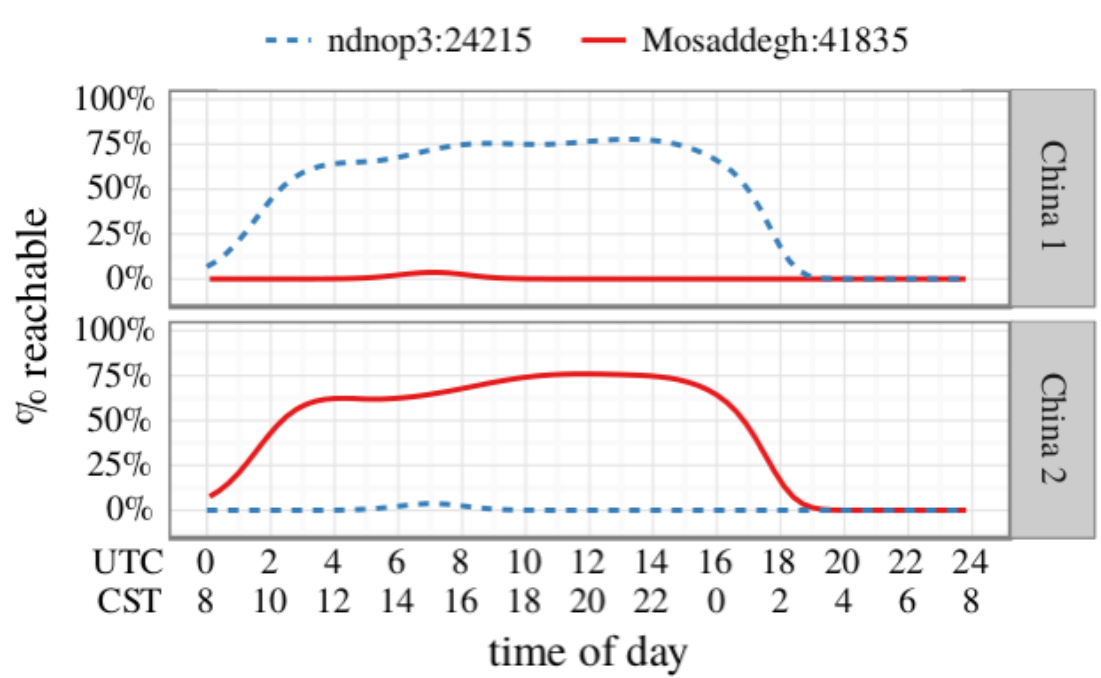
Orbot

Blocking time of day

Blocking Time of Day Graph

Batch	Date	Day	Time
5.0.5/5.0.6/5.5a5	22 Dec	Tue	09:00 UTC / 17:00 CST
5.5/6.0a1	29 Jan	Fri	06:00 UTC / 14:00 CST
5.5.1/5.5.2/6.0a2	23 Feb	Tue	02:40 UTC / 10:40 CST
5.5.4/6.0a4	29 Mar	Tue	06:00 UTC / 14:00 CST
5.5.5/6.0a5/6.0	01 Jun	Wed	02:40 UTC / 10:40 CST

Rates of Reachability Graph



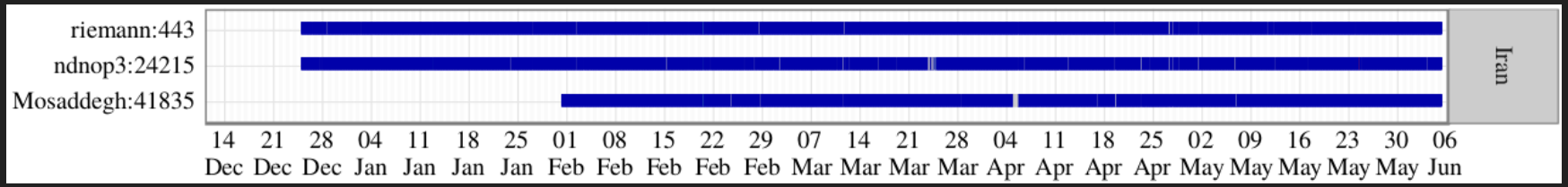
Further Questions and Steps

Bridge address discovery

Blocking delay is on the order of days

Traceroutes

Other countries


riemann:443
ndnop3:24215
Mosaddegh:41835
Iran
14 Dec
21 Dec
28 Dec
04 Jan
11 Jan
18 Jan
25 Jan
01 Feb
08 Feb
15 Feb
22 Feb
29 Feb
07 Mar
14 Mar
21 Mar
28 Mar
04 Apr
11 Apr
18 Apr
25 Apr
02 May
09 May
16 May
23 May
30 May
06 Jun

Further Questions and Steps

Bridge address discovery

Blocking delay is on the order of days

Traceroutes

Other countries

https://www.bamsoftware.com/proxy-probe/

Thanks!

Percy Alpha

Nima Fatemi

Linus Nordberg

Henry de Valence

&

Others who choose to stay anonymous