Censors’ Delay in Blocking Circumvention Proxies

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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 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

[Buttons: Quit, Go Back, Continue]
Internet Censors and Circumvention Proxy Servers

Length of delay

Not intuitive

Methods of discovery
**Add new obfs4 bridge riemann to Tor Browser**

- **Reported by:** isis
- **Priority:** Immediate
- **Component:** Applications/Tor Browser
- **Severity:** Normal
- **Cc:** mikeperry, tor@..., gk, yawning, dcf

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

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

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

Moreover, 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!
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 FOCl, 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
Results

Number of days it took to block

Orbot

Blocking time of day
<table>
<thead>
<tr>
<th>Date</th>
<th>Days</th>
<th>Status</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>05 Apr</td>
<td>-57</td>
<td>Ticket filed</td>
<td>GreenBelt:60873, GreenBelt:80, GreenBelt:443</td>
</tr>
<tr>
<td>07 Apr</td>
<td>-55</td>
<td>Ticket merged</td>
<td>GreenBelt:60873, GreenBelt:80, GreenBelt:443</td>
</tr>
<tr>
<td>22 Apr</td>
<td>-40</td>
<td>Testing release</td>
<td>5.5.5 stable</td>
</tr>
<tr>
<td>24 Apr</td>
<td>-38</td>
<td>Testing release</td>
<td>6.0a5 alpha</td>
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<tr>
<td>26 Apr</td>
<td>-36</td>
<td>Public release</td>
<td>5.5.5 stable</td>
</tr>
<tr>
<td>28 Apr</td>
<td>-34</td>
<td>Public release</td>
<td>6.0a5 alpha</td>
</tr>
<tr>
<td>26 May</td>
<td>-6</td>
<td>Testing release</td>
<td>6.0 stable</td>
</tr>
<tr>
<td>30 May</td>
<td>-2</td>
<td>Public release</td>
<td>6.0 stable</td>
</tr>
<tr>
<td>01 Jun</td>
<td>0</td>
<td>Blocked</td>
<td>GreenBelt:60873, GreenBelt:80, GreenBelt:443</td>
</tr>
</tbody>
</table>
Results

Number of days it took to block

Orbot

Blocking time of day
# Blocking Time of Day Graph

<table>
<thead>
<tr>
<th>Batch</th>
<th>Date</th>
<th>Day</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0.5/5.0.6/5.5a5</td>
<td>22 Dec</td>
<td>Tue</td>
<td>09:00 UTC / 17:00 CST</td>
</tr>
<tr>
<td>5.5/6.0a1</td>
<td>29 Jan</td>
<td>Fri</td>
<td>06:00 UTC / 14:00 CST</td>
</tr>
<tr>
<td>5.5.1/5.5.2/6.0a2</td>
<td>23 Feb</td>
<td>Tue</td>
<td>02:40 UTC / 10:40 CST</td>
</tr>
<tr>
<td>5.5.4/6.0a4</td>
<td>29 Mar</td>
<td>Tue</td>
<td>06:00 UTC / 14:00 CST</td>
</tr>
<tr>
<td>5.5.5/6.0a5/6.0</td>
<td>01 Jun</td>
<td>Wed</td>
<td>02:40 UTC / 10:40 CST</td>
</tr>
</tbody>
</table>
Rates of Reachability Graph
Further Questions and Steps

Bridge address discovery

Blocking delay is on the order of days

Traceroutes

Other countries
Further Questions and Steps

Bridge address discovery

Blocking delay is on the order of days

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

Percy Alpha

Nima Fatemi

Linus Nordberg

Henry de Valence

&

Others who choose to stay anonymous