Civil forensic on removing roadblocks to the growth Tor Network from Latin American

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State of art and role of the civil forensics research in the growth of Tor Network participation on the region, particularly on México.
Layers of civil perspective

- Network Architecture / Protocols
- Market policy
- Legal context
- Human Rights
Introduce case: Tor Network in Latin America

- 1.5% of the nodes of the Tor network are in Latin America
- Mexico has 12,000 users
Architecture of the Tor network

- Overlay network (over the top)
- Directory Authorities
- Relays, aka routers or nodes (bridge, guard, middle and exit)

source: distil networks
Directory Authorities

- 171.25.193.9 (maatuska.4711.se)
- 86.59.21.38 (tor.noreply.org)
- 199.58.81.140 (longclaw.riseup.net)
- 194.109.206.212 (tor.dizum.com)
- 204.13.164.118 (bastet.readthefinemanual.net)
- 131.188.40.189 (despari.informatik.uni-erlangen.de)
- 128.31.0.34 (moria.csail.mit.edu)
- 193.23.244.244 (dannenberg.torauth.de)
- 154.35.175.225 (faravahar.redteam.net)
- 66.111.2.131 (serge.torbsd.org)
Technical barriers for installation nodes

- Implementation of Network Address Translation (NAT) for regional Internet service providers
- Telmex (dominant fixed-line phone carrier in Mexico) blocks directory Authorities
Tests by Open Observatory of Network Interference

- 154.35.175.225
- 171.25.193.9
- 193.23.244.244
- 131.188.40.189
- 194.109.206.212
- 86.59.21.38
- 128.31.0.34
- 204.13.164.118
- 199.58.81.140
- 66.111.2.131

- 7 IP addresses are blocked by ISP Telmex
- Blocking is by route
  - Red = blocked
  - Green = ok
Network Address Translation for regional Internet Service Providers

traceroute to 171.25.193.9 (171.25.193.9), 30 hops max, 60 byte packets
1 gateway (192.168.1.1) 3.404 ms 3.376 ms 3.366 ms
2 * * *
3 10.222.86.106 (10.222.86.106) 77.699 ms 81.648 ms 81.669 ms
4 10.14.143.70 (10.14.143.70) 81.666 ms 81.663 ms 81.657 ms
5 10.216.31.121 (10.216.31.121) 81.652 ms 81.645 ms 81.638 ms
6 dfn01.mx.movistar.optele.net (200.76.93.106) 81.636 ms 77.826 ms 77.874 ms
7 dfn01.mx.movistar.optele.net (201.166.129.249) 77.852 ms 47.490 ms 43.503 ms
8 84.16.8.145 (84.16.8.145) 54.886 ms 53.033 ms 54.884 ms
9 84.16.8.144 (84.16.8.144) 67.868 ms 65.815 ms 67.871 ms

171.25.193.9  86.59.21.38  199.58.81.140
194.109.206.212  204.13.164.118  131.188.40.189
128.31.0.34  193.23.244.244  154.35.175.225
128.31.0.39  199.254.238.52

AS7438 for Movistar
Country: MX
Registration Date: 1996-12-12
Registrar: lacnic
Owner: Pegaso PCS, S.A. de C.V., MX

Red = blocked
Green = ok
Market policy

- Telmex ISP does not have public information about this specific policy.
- The terms of service establishes a clause to prohibit the use of the service to offer commercial services.
- But contract has an exception for services that are offered for free.
Legal context

In Mexico, the node operation is legal given the fact that the node is not an ISP, but a free private connection that any user can make use of at the moment they enter the Tor Network. These actions take place in the free exercise of rights and freedoms as: privacy, Internet access, information exchange, freedom of expresión and idea manifestation which are contemplated by the 6º Constitutional Article, and the Article 191-XV of the Federal Telecommunications and Broadcasting Law.
Human Rights

• The policy by Telmex could be a violation of the freedom of expression and Netneutrality article (145) on Telecom Law. But Currently Mexico has not a regulation rules for NetNeutrality
Next steps

- Technical and legal recommendation to the IFT (Federal Telecommunications Institute)
- Trial by Consumer Protection Law
Thanks!

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