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Github: equalitie; deflect-ca; censorship-no
Article 19. Article 20.

In defence of freedom of expression and association online
Since 2011, **Deflect** has specialized in defending high-profile human rights and independent news groups from hacking, denial of service and cyber offensive efforts lead by state sponsored adversaries.
Get Protected. Stay Connected.

DEFLECT NETWORK

Get Protected. Stay Connected.

Protection  Performance  Principles  Philanthropy
Website defenses, hosting, analytics and more...

Our defense in-depth solution

- Fast and secure DNS
- Load balancing
- Over 20 data centres worldwide

- Machine learning and bot detection
- Wordpress hosting
- Deflect control panel
- Web caching
- Logs and analytics
- Human support
Serving a million people everyday

$0.002
Monthly cost to serve a unique client

75M
Annual readers on the Deflect network

99.995%
Network up-time on our SLA

11
Years in frontline DDoS mitigation
Deflect.ca protects your web assets from...
Log ingestion and predictions pipeline
Using machine learning (anomaly detection) to distinguish between normal and abnormal traffic.

- 2 minute sliding window (adjustable)
- Adapts to any web traffic
- Provides a prediction and a score for every IP
- Private by design - no user data travels on the network
- Flexible deployment options
- Mitigation module for verifying and blocking anomalous traffic

Baskerville provides predictions on IP behaviour

99.95% Bot identification accuracy
40M+ Daily records processed and predictions returned
35+ Behavioural features modelled
100% Canadian-built machine learning
Baskerville in action on the Deflect network

151,010 99% 1,097

Challenged (past 24 hours)  Precision (past 24 hours)  Passed Challenge (past 24 hours)
Deflect.ca - attacks on zhitomir.info

33,361,764
Count

106,847
Unique count of client_ip

http://dashboards.aptly.io/11
Filtering, censorship and shutdowns
Internet shutdown - scenario #1
Disconnection of popular services
Scenario 1 solution - CENO Browser (Censorship.no)

Share the web!

CENO (short for censorship.no) is the world’s first mobile browser that side-steps current Internet censorship methods. Its peer-to-peer backbone allows people to access and share web information in and across regions where connectivity has been interrupted or compromised.
CENO - web browsing via Bitorrent

CENO is a mobile web browser for storing and sharing web content anywhere.
CENO - cooperative browsing

CENO users create small-world networks to connect to each other, and thereafter to a bridge outside the censored zone.
CENO - decentralized caching

Once a website is accessed by a single CENO user, it is stored and shared inside the country peer-to-peer.
Internet shutdown - scenario #2
Disconnection of external connectivity
Internet 1 + 2 = 3
Scenario 2 solution - decentralized communications

Alternative communication methods during censorship, interruptions, and restrictions on the Internet

You are currently connected to the Kyiv server

OTHER SERVERS: Kyiv, Odessa, Kharkiv, Lviv, Lviv 2, Rivne, Kherson, Mykolayiv, Poltava, Khmelnytskyi
Scenario 2 solution - decentralized communications
OuiCrawl - It’s all about the cache

+ OuiCrawl
## SERVICES ANALYSIS REPORT

### Global PID's
- TS packets: 115,844, PID's: 3 (clear: 3, scrambled: 0)

<table>
<thead>
<tr>
<th>PID Usage</th>
<th>Access</th>
<th>Bitrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Global PID's ..........</td>
<td>C</td>
<td>21,929 b/s</td>
</tr>
<tr>
<td>Subt. Global PSI/SI PID's (0x00-0x1F)</td>
<td>C</td>
<td>18,143 b/s</td>
</tr>
<tr>
<td>0x0000 PAT ...................</td>
<td>C</td>
<td>15,136 b/s</td>
</tr>
<tr>
<td>0x0011 SDT/BAT ...............</td>
<td>C</td>
<td>3,006 b/s</td>
</tr>
<tr>
<td>0x1FFF Stuffing ............</td>
<td>C</td>
<td>3,785 b/s</td>
</tr>
</tbody>
</table>

### Service: 0x0001 (1), TS: 0x0001 (1), Original Netw: 0xFF01 (65281)
- Service name: TooshehTV, provider: Toosheh
- Service type: 0x01 (Digital television service)
- TS packets: 36,862,639, PID's: 4 (clear: 4, scrambled: 0)
- PMT PID: 0x1000 (4096), PCR PID: 0x03E9 (1001)

<table>
<thead>
<tr>
<th>PID Usage</th>
<th>Access</th>
<th>Bitrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Digital television service ..........</td>
<td>C</td>
<td>6,978,069 b/s</td>
</tr>
<tr>
<td>0x03E9 MPEG-2 Video (720x576p, @25 Hz, 16:9, 4:2:0)</td>
<td>C</td>
<td>256,160 b/s</td>
</tr>
<tr>
<td>0x03EA MPEG-1 Audio (Audio layer II, 384 kb/s, @44,1</td>
<td>C</td>
<td>403,016 b/s</td>
</tr>
<tr>
<td>0x03EB AC-3 Audio ...............</td>
<td>C</td>
<td>6,303,755 b/s</td>
</tr>
<tr>
<td>0x1000 PMT ...................</td>
<td>C</td>
<td>15,136 b/s</td>
</tr>
</tbody>
</table>

(C=Clear, S=Scrambled, +=Shared)
Resistance to shutdowns - cache and deliver

OuiSync + OuiCrawl
Deliver and propagate

Satellite Internet

- Just a few injection nodes
- Near border coverage

Satellite TV

- Pay for upstream / broadcast $$$
- Donated time from TV show
- Donated null packets

Propagation

- Ouinet
- Web caching standard
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nadiyno.org

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