

eQualitie



WEB SECURITY



CAPACITY BUILDING



CENSORSHIP RESISTANCE

We create decentralized internet services in support of a more equal and equitable network. Everyday, they enable freedom of association for millions of people online.

Dmitri Vitaliev

dmitri@equalitie.org

github: equalitie; deflect-ca; censorship-no



ceno



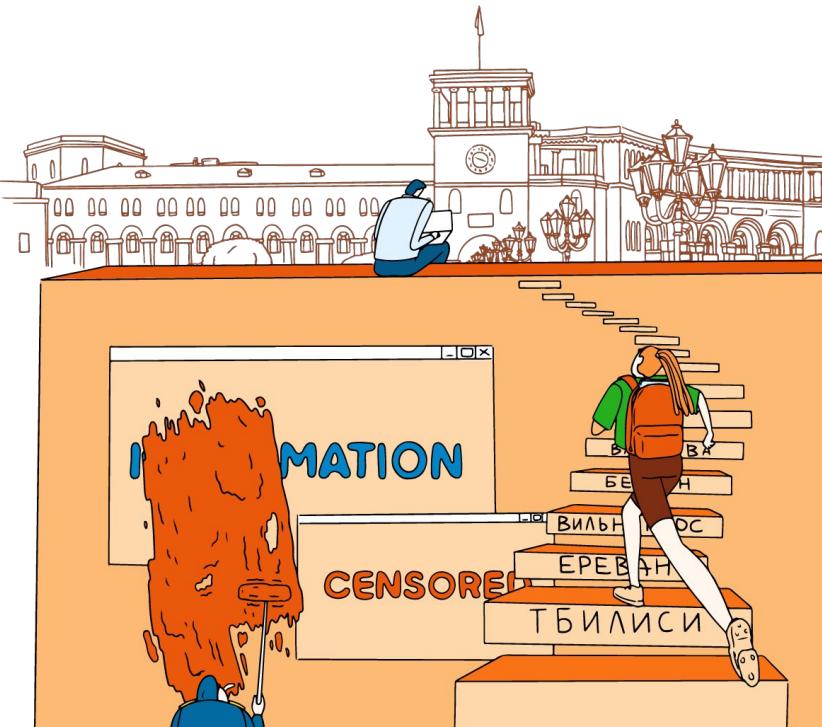
OuiSync



Article 19. Article 20.

In defence of freedom of expression and association online

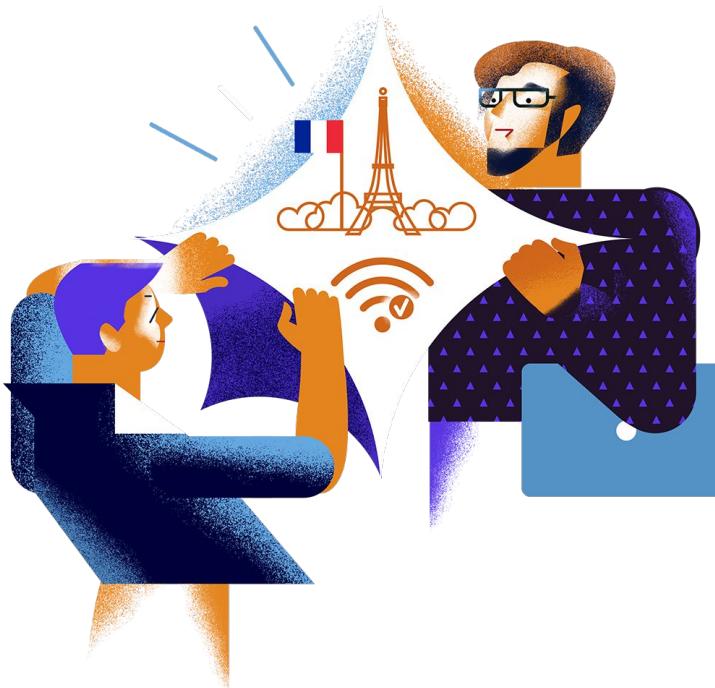
Fighting censorship and shutdowns



Интернет без Границ

- Тбилиси
- Ереван
- Вильнус
- Берлин
- Варшава
- Париж
- Стамбул
- Тель Авив
- Бишкек
- Рига

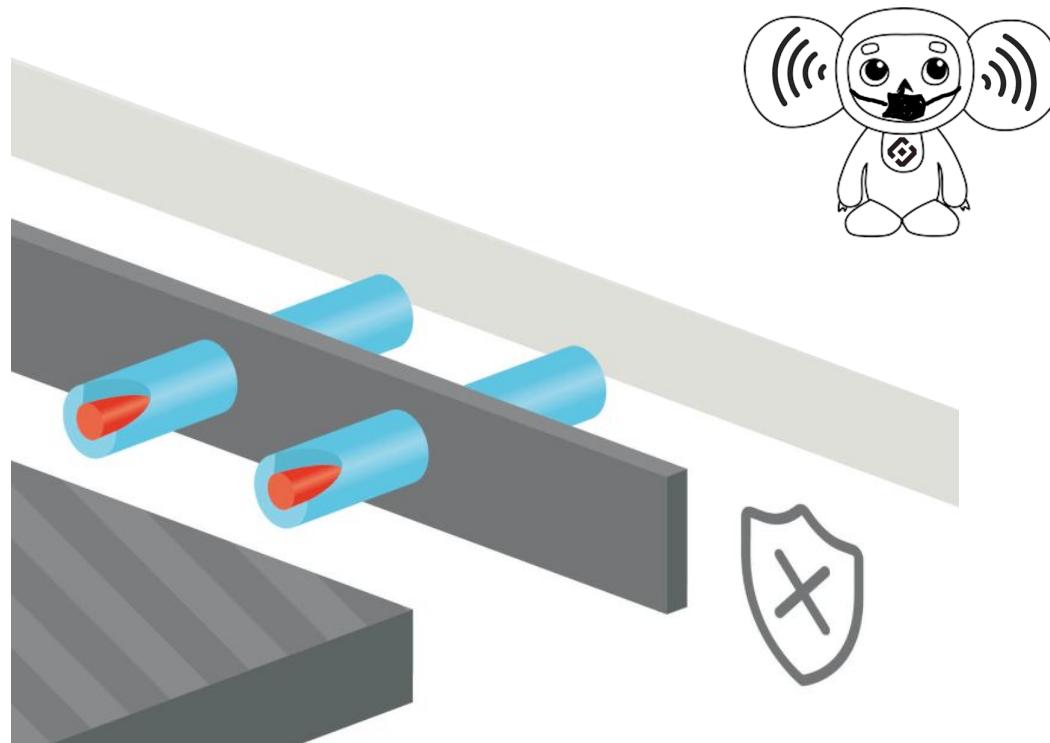
Fighting censorship and shutdowns



Хакатон без Границ

- CENO
- Lantern
- OONI
- AmneziaVPN
- NewNode
- AccessNow

Дорога в чебурнет





facebook

Google Cloud

Azure

OVH.com

Akamai

CLOUDFLARE[®]

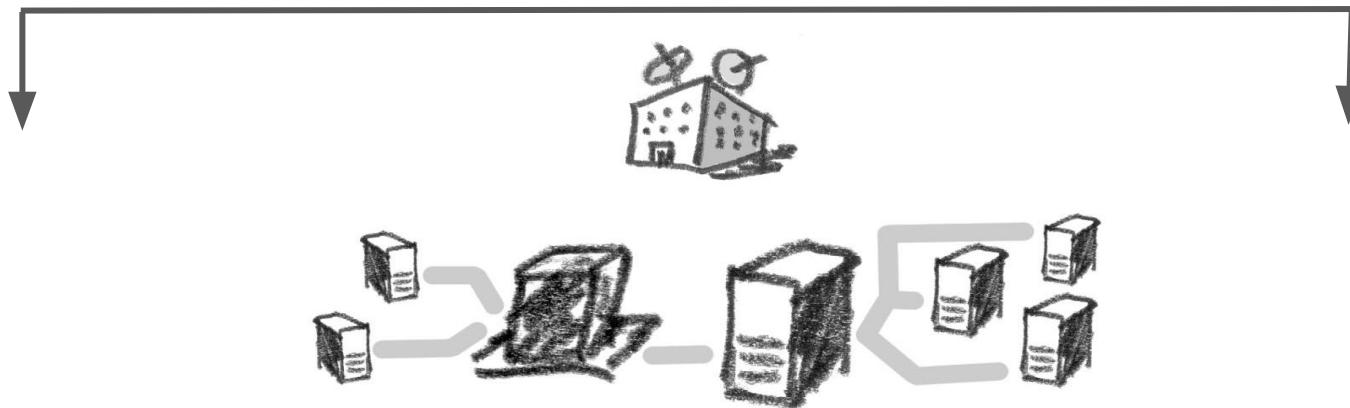
linode

iCloud

TOR



Internet shutdown - scenario #1 Disconnection of popular services



Scenario 1 solution - CENO Browser (Censorship.no)



О проекте Поддержка Новости Сообщество

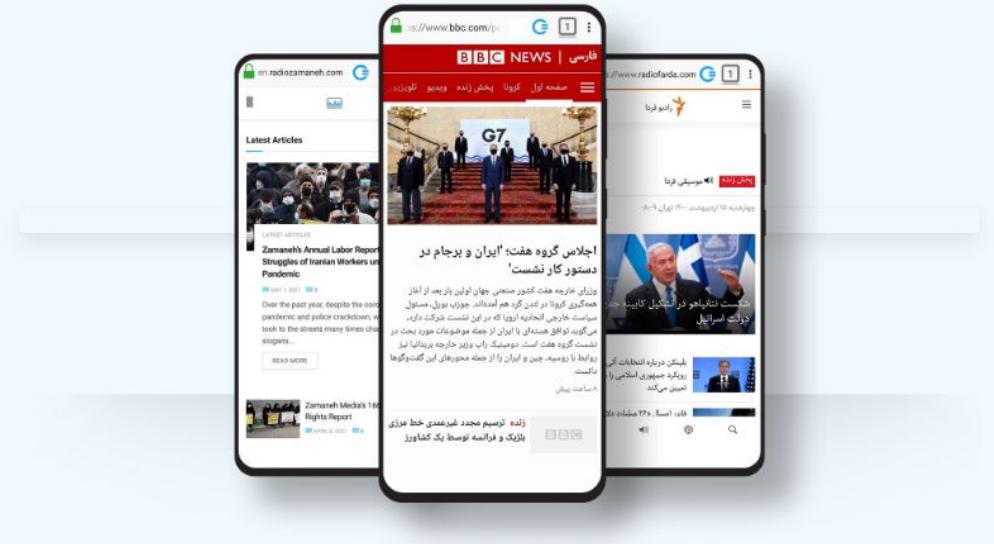
Скачать



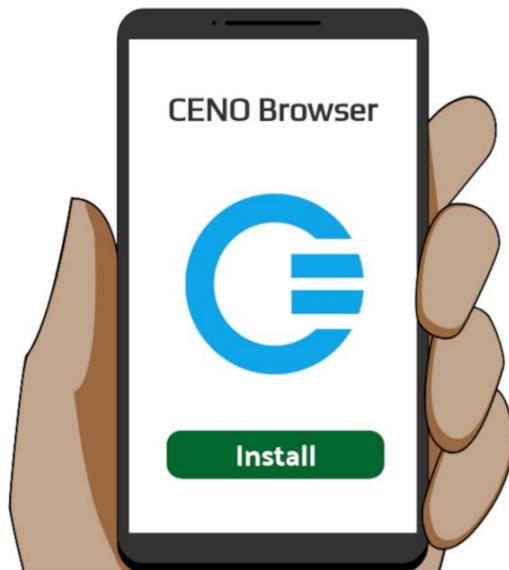
и себе, и людям!

CENO — первый в мире мобильный браузер разработанный для обхода современных методов Интернет-цензуры.

Пиринговый протокол лежащий в его основе позволяет людям получать доступ к контенту и делиться им даже когда связь отсутствует или нарушена.

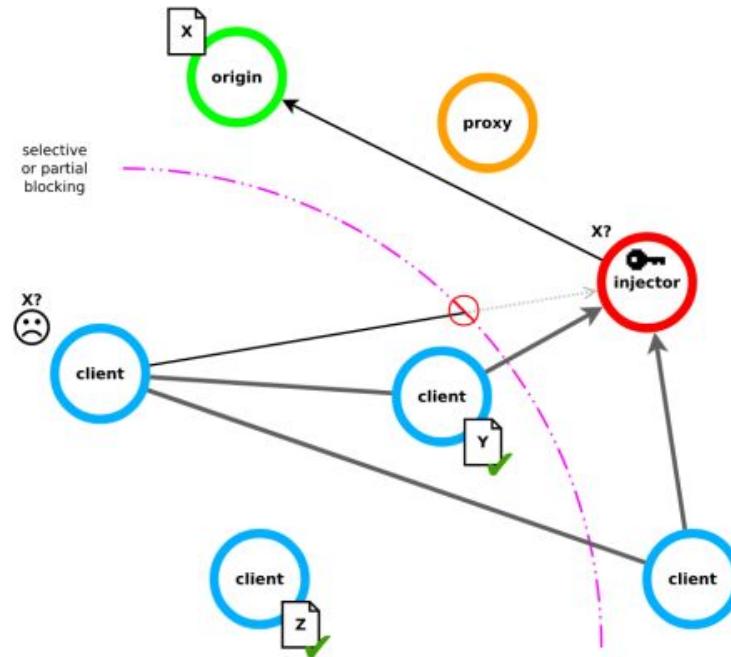


CENO - web browsing via BitTorrent



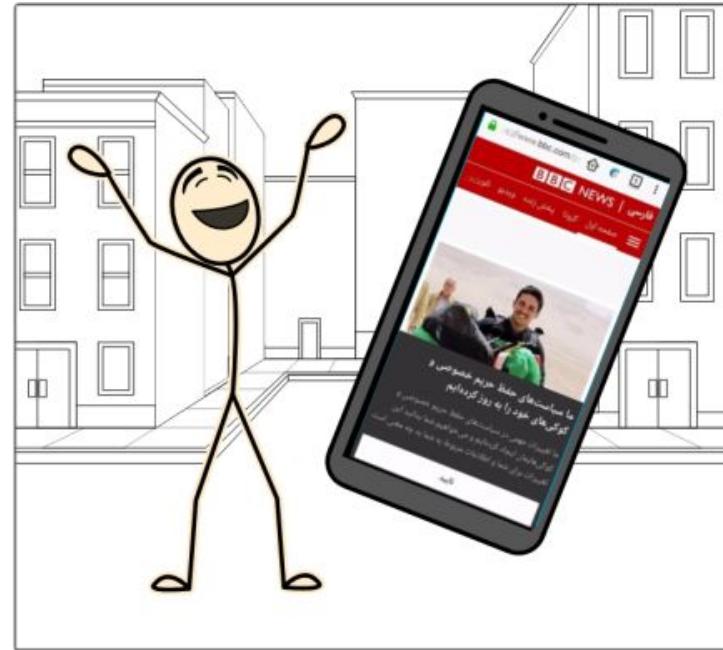
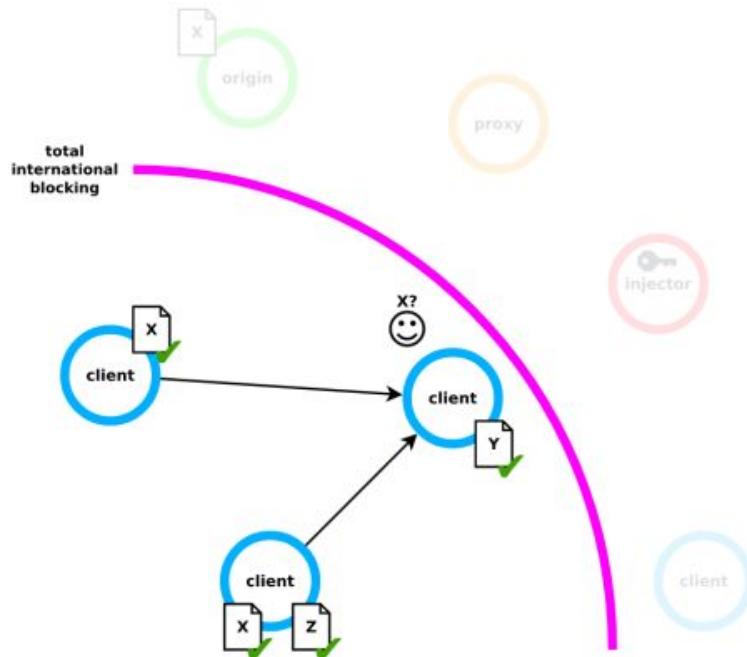
СЕНО – мобильный браузер для хранения и обмена веб-контентом из любой точки мира.

CENO - cooperative browsing



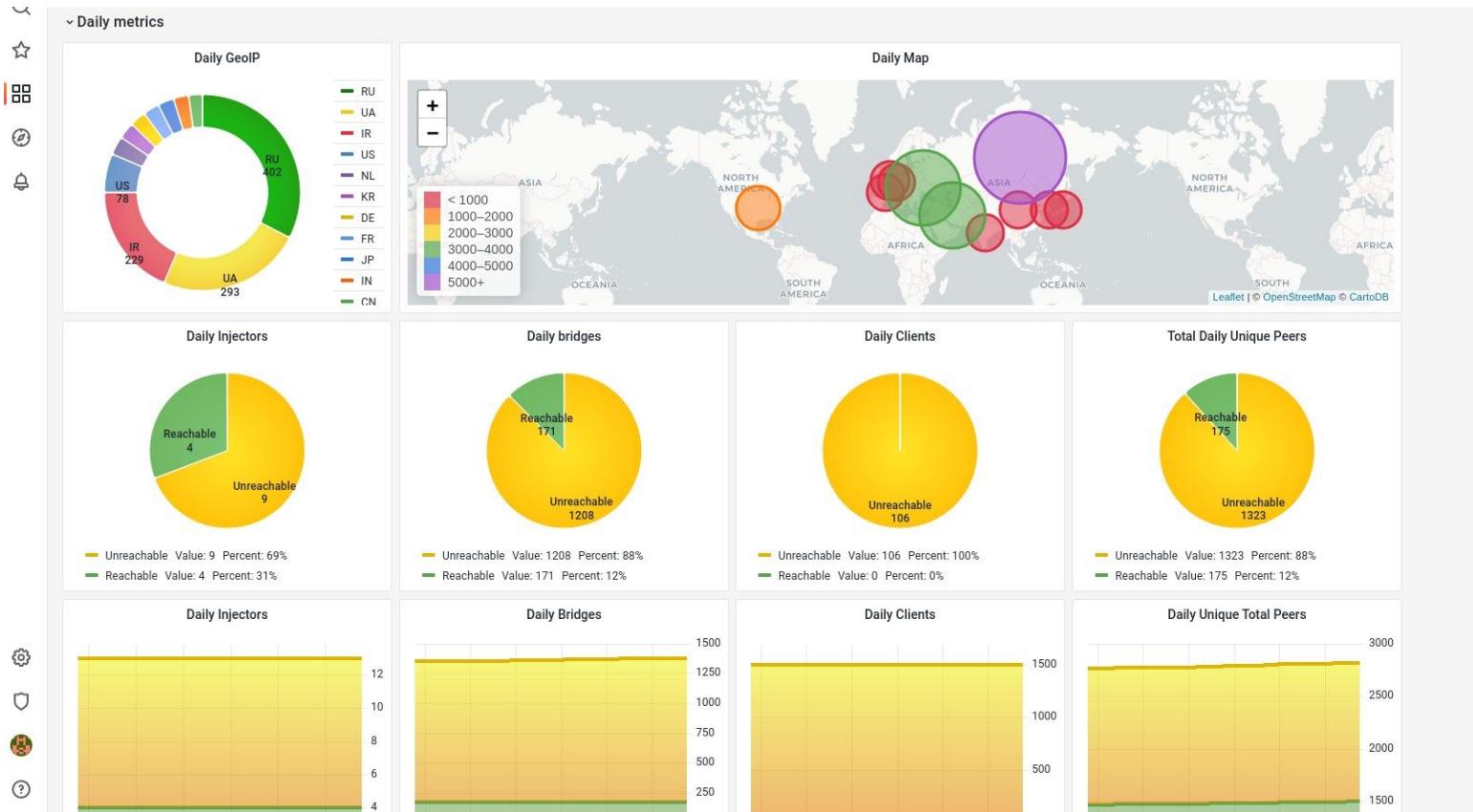
CENO users create small-world networks to connect to each other, and thereafter to a bridge outside the censored zone.

CENO - decentralized caching



Once a website is accessed by a single CENO user, it is stored and shared inside the country peer-to-peer.

CENO - decentralized analytics





Internet shutdown - scenario #2 Disconnection of external connectivity



Internet $1 + 2 = 3$



Scenario 2 solution - OuiCrawl (it's all about the cache)



+
OuiCrawl



Scenario 2 solution - CENO2Web

The screenshot shows a web browser window with the URL <https://verstka.media.ceno.life>. The page has a header with the word 'Вёрстка' and a navigation menu with links to 'Интервью', 'Статьи', 'Новости', 'Нолонки', 'О нас', and 'Поиск'. Below the header are two large news cards. The left card features a black and white photograph of a long line of people in dark uniforms standing outdoors. The text reads: «Папа, ты уже тысячу дней не едешь». Как многодетная мать пытается вернуть домой мобилизованного мужа, страдающего хроническим заболеванием». The right card features a black and white photograph of a crowd of people, some holding flags, with green silhouettes overlaid. The text reads: «В отрядах националистов на украинском фронте оказались «личный палач» Басаева и соратник Гелаева. Украину «освобождают» несколько террористов начала нулевых, в том числе участник захвата заложников в больнице Будённовска». At the bottom, there are three smaller news cards: one about recruitment in Russian colonies, one about Naminadze's arrest, and one about Wagner's captive.

В российских колониях началась вторая волна вербовки на войну

08 декабря, 2022

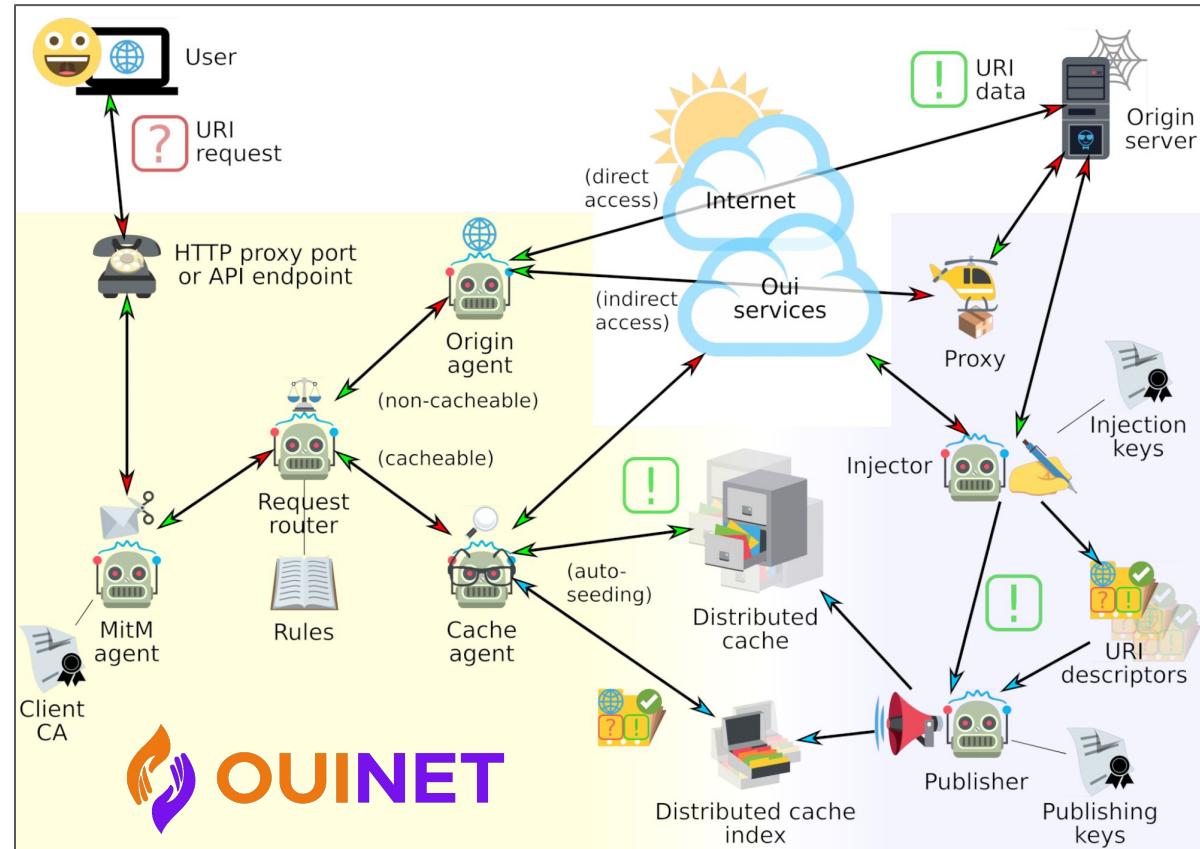
Блогера Намина и обявили в розыск в России

08 декабря, 2022

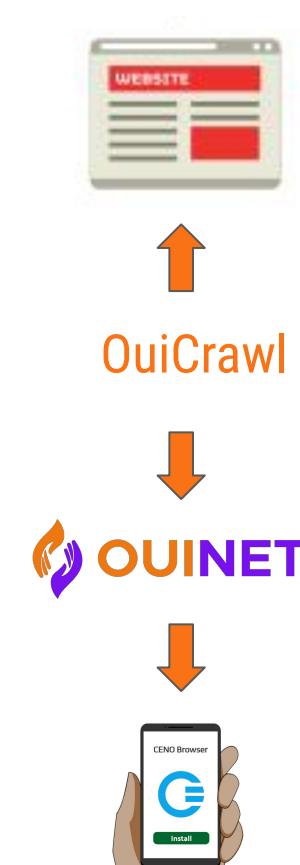
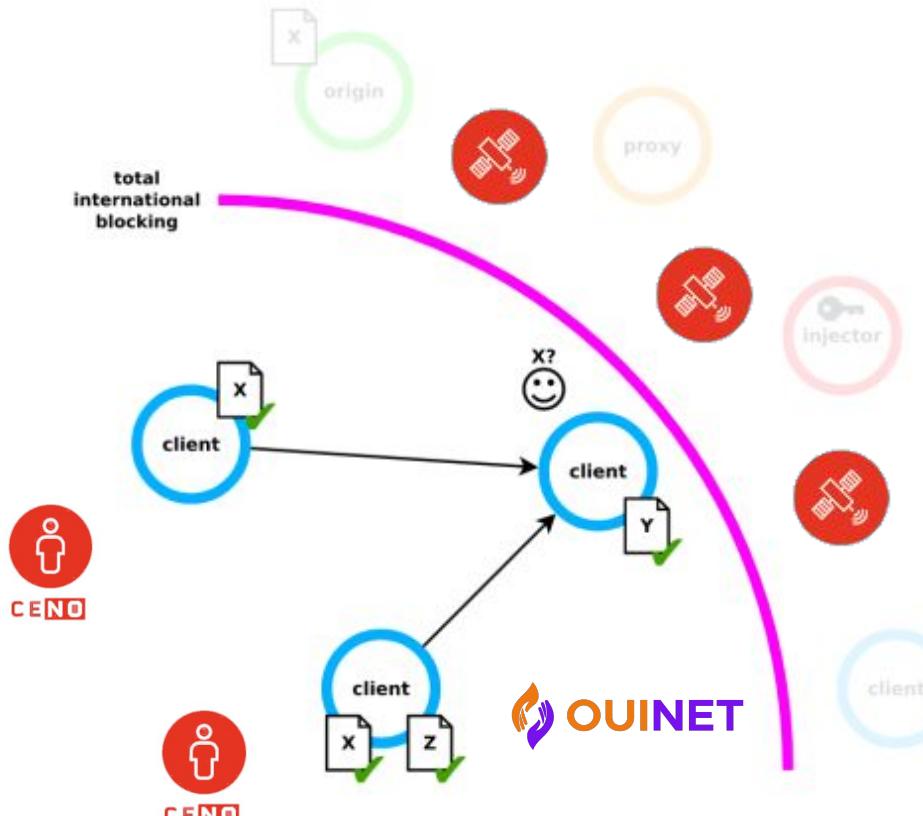
«Не надо обмена, меня убьют». В Украине попал в плен заключенный из ЧВК Вагнера

04 декабря, 2022

Scenario 2 solution - decentralized content distribution



Resistance to shutdowns - cache and deliver



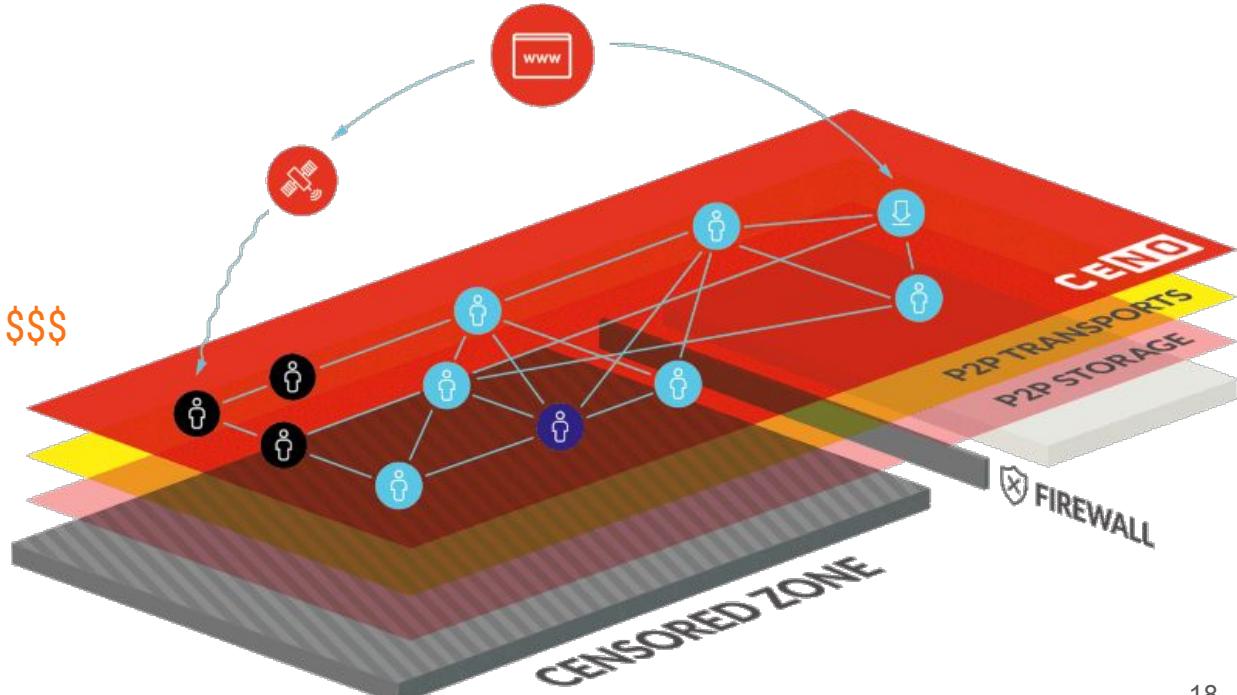
Deliver and propagate

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

Scenario 2 solution - decentralized communications in UA

The screenshot shows a web application interface for 'dComms'. At the top left is the logo 'dComms' with a red gear icon. At the top right are links for 'ABOUT' and a language dropdown set to 'English'. The main title 'Alternative communication methods during censorship, interruptions, and restrictions on the Internet' is centered in large, bold, black and red text. Below the title is a green rounded rectangle containing a green checkmark and the text 'You are currently connected to the **Kyiv** server'. At the bottom, there's a row of buttons labeled 'OTHER SERVERS:' followed by 'Kyiv', 'Odessa', 'Kharkiv', 'Lviv', 'Lviv 2', 'Rivne', 'Kherson', 'Mykolayiv', 'Poltava', and 'Khmelnytskyi'.

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 in UA



SAFE MESSENGERS

ENCrypted FEDERATED CHAT

Element

SMARTPHONE APP:

Cepsep: <matrix.kyiv.dcomm.net.ua>

Instructions: [HTML](#) [PDF](#)

Downloads: [Locally](#) [Element.io](#)

CONNECTING FROM A DESKTOP COMPUTER:

Web chat [Kyiv Web chat](#)

Instructions: [HTML](#) [PDF](#)

SOCIAL

INDEPENDENT SOCIAL NETWORK

Mastodon

SMARTPHONE APP:

Server [Kyiv server](#)

Instructions: [Link](#)

CONNECTING FROM A DESKTOP COMPUTER:

Server [Kyiv server](#)

Instructions: [Link](#)

Scenario 2 solution - decentralized communications in RU

2.1 chatv3.ru

- Multiple locations
- Easy reproducibility
- Technical maintenance
- Requires moderation



2.2 Civic cloud

- Robust infrastructure
- Technical administration
- Access management
- Centralizing activism



2.3 Personal cloud

- Serverless solutions
- Home cloud
- Encrypted sync
- Centralizing activism





equalit.ie/wsf22
deflect.ca
censorship.no
dcomm.net.ua
ouinet.work

@equalitie
dmitri@equalitie.org