



Internet Identity

Lighting the way towards secure,
interoperable, borderless and
sovereign digital identity



DFINITY Foundation, Switzerland

- Emerged from early Ethereum community in 2015
- DFINITY Foundation established October 2016
- Swiss not-for-profit, no corporation is involved
- Research centers in Zurich and San Francisco
- World's largest team cryptographers
- 270+ people globally

1600+

research papers

100 000+

academic citations

250+

technical patents



Crypto People +

Google

IBM

facebook

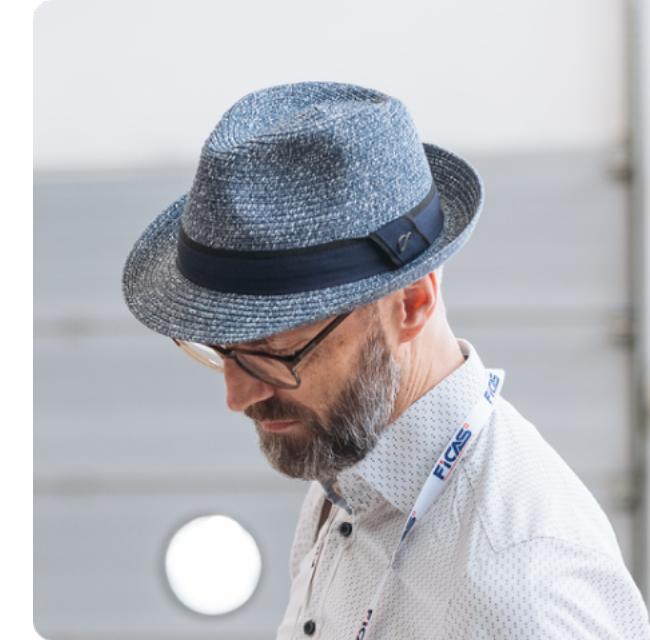


DFINITY is led by influential digital identity researchers

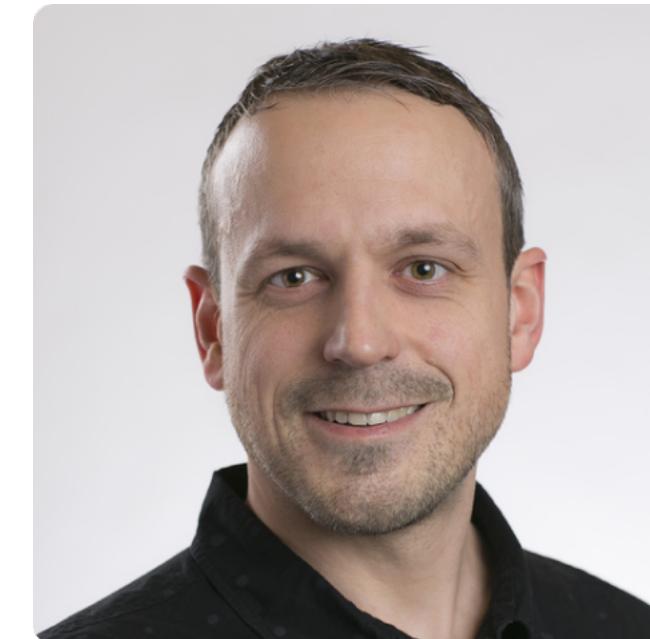
Verifiable Credentials & Attribute Sharing

Privacy-enhancing Authentication

Zero Knowledge Proofs



Jan Camenisch
CTO



Björn Tackmann
Head of Research



Maria Dubovitskaya
Director of Engineering



Jan Camenisch

CTO

- ♦ Worked since 25 years on privacy-preserving identity solution

- ✓ Led a handful of large European projects on that
 - ✓ Influenced GDPR

- ♦ Camenisch-Lysyanskaya Signature scheme, the basis for efficient private credentials

- ♦ Direct anonymous attestation (privacy preserving authentication for TPM)

- ✓ Direct Anonymous Attestation
 - ✓ ISO ISO/IEC 20008-2:2013
 - ✓ FIDO

- ♦ Identity Mixer: privacy-preserving attributes sharing

- ✓ Implemented as identity solution on hyperledger block chain
 - ✓ And hyperledger indy
 - ✓ And sovrin foundation (where Jan is on the technical governance board)
 - ✓ Involved in W3C verifiable credentials effort



Identity theft is a problem

\$43B lost in 2022

More than 1 in 10 people impacted in the US.

the burden falls disproportionately on the economically disadvantaged.



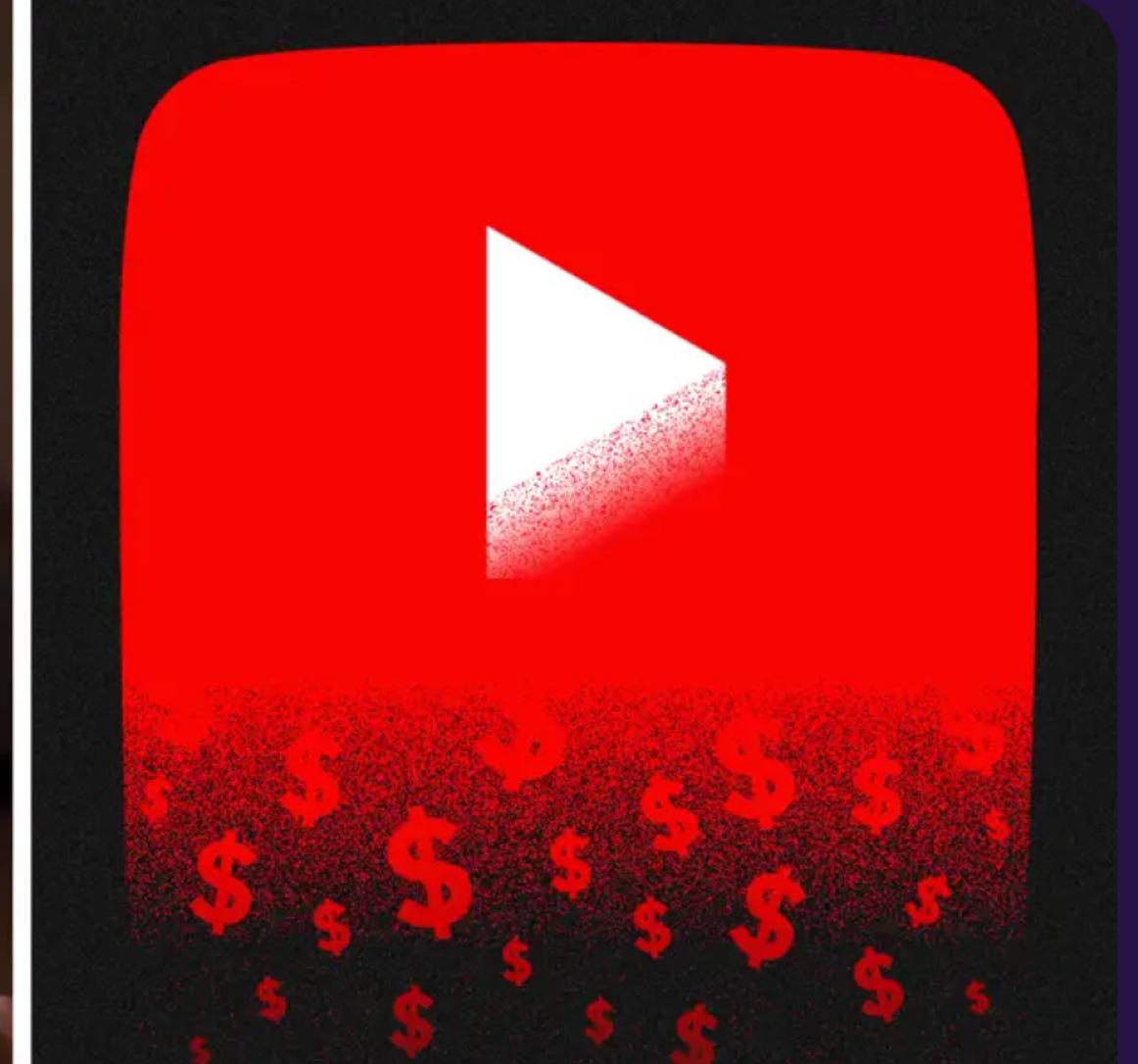
The future of global digital identity?



=



**“I use
Google for
everything”**



A top YouTuber is publicly sparring with the platform after he says 'hundreds' of his fans unfairly lost access to their Google accounts

businessinsider.com



Depend on corporations?

Europe and the World needs tamperproof *open* solutions





Better online identity

magical technical ingredients

Use your device
to sign in



TPM



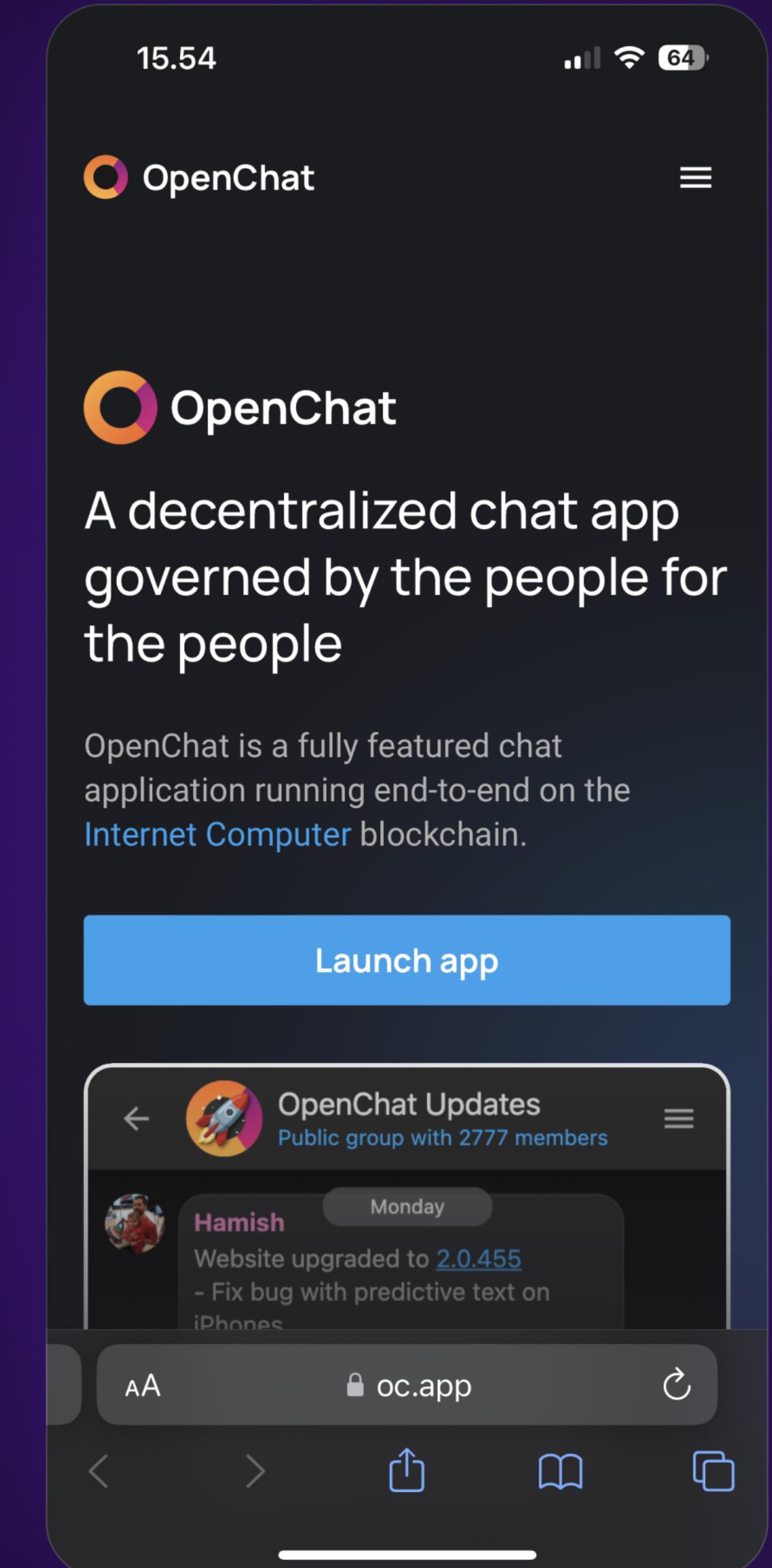
WebAuthn (+ FIDO)



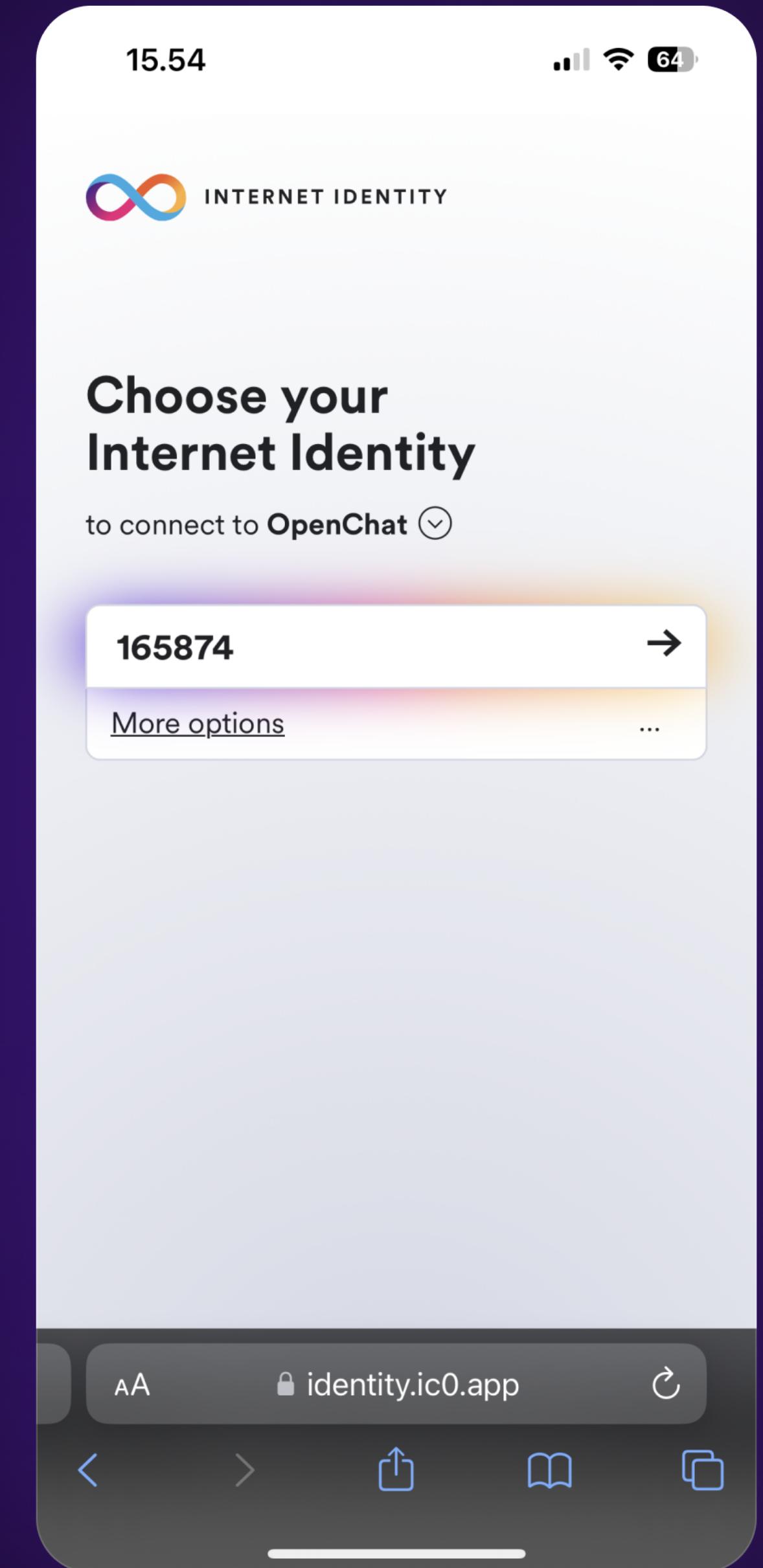
Internet Computer



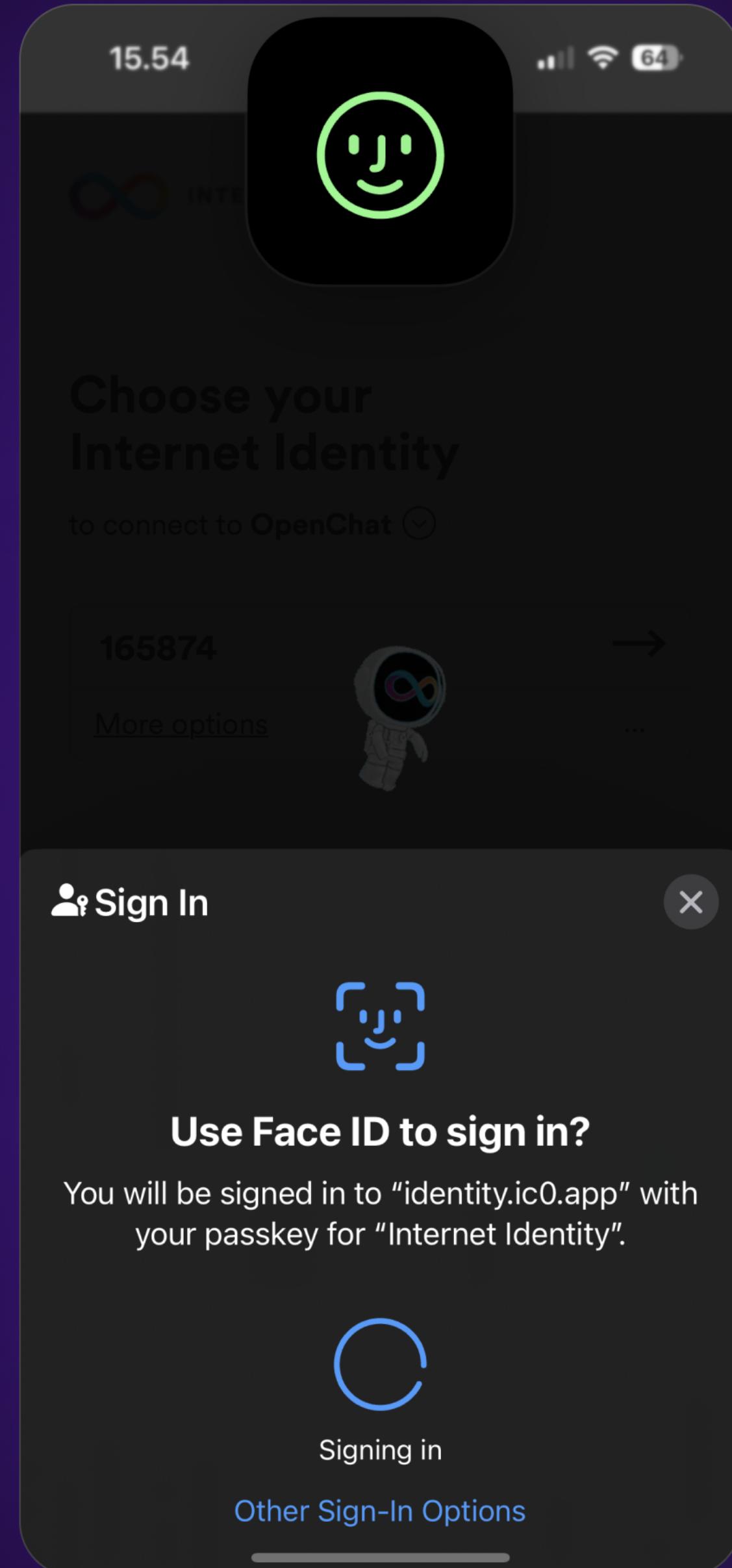
browse to online service...



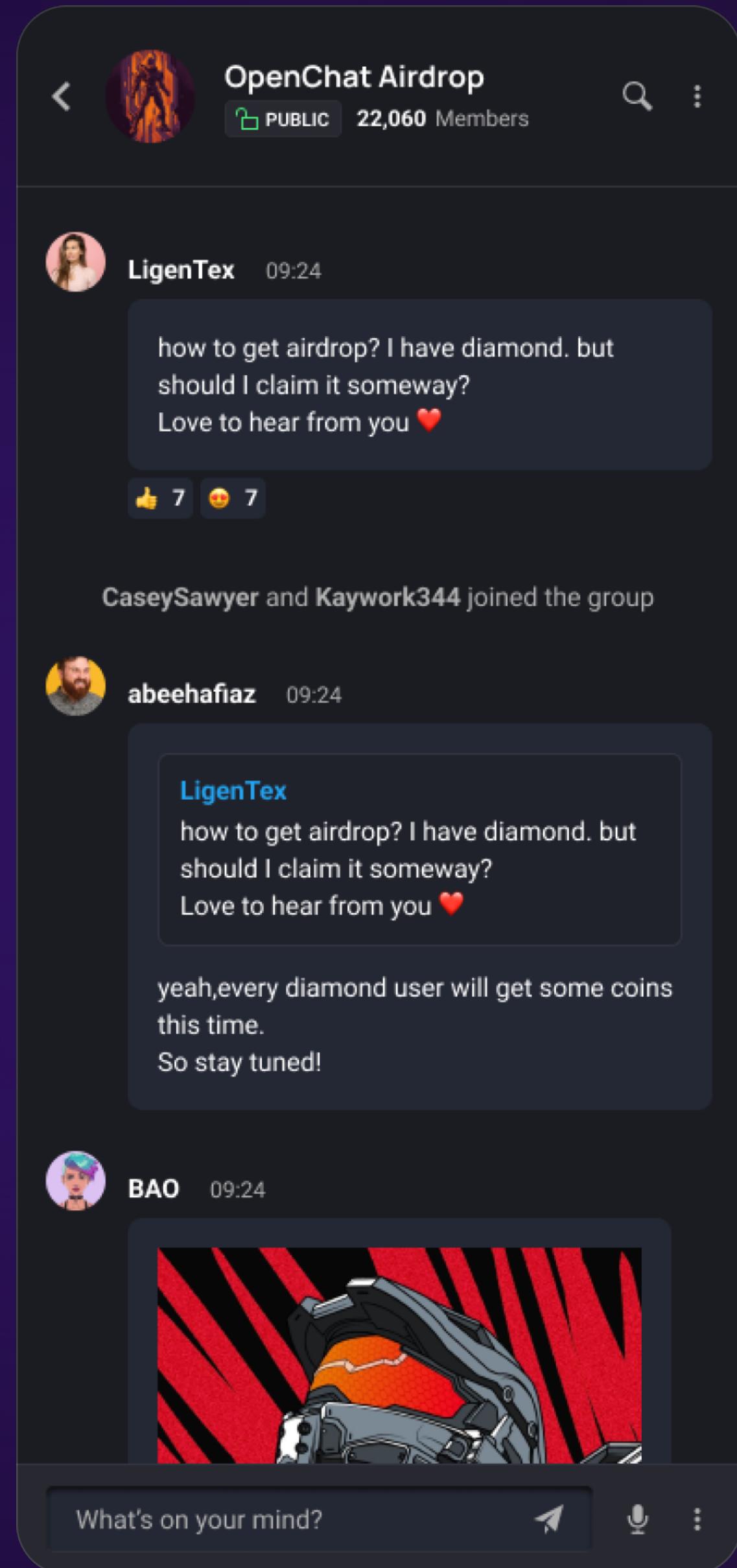
select Internet Identity



authorize session using device passkey

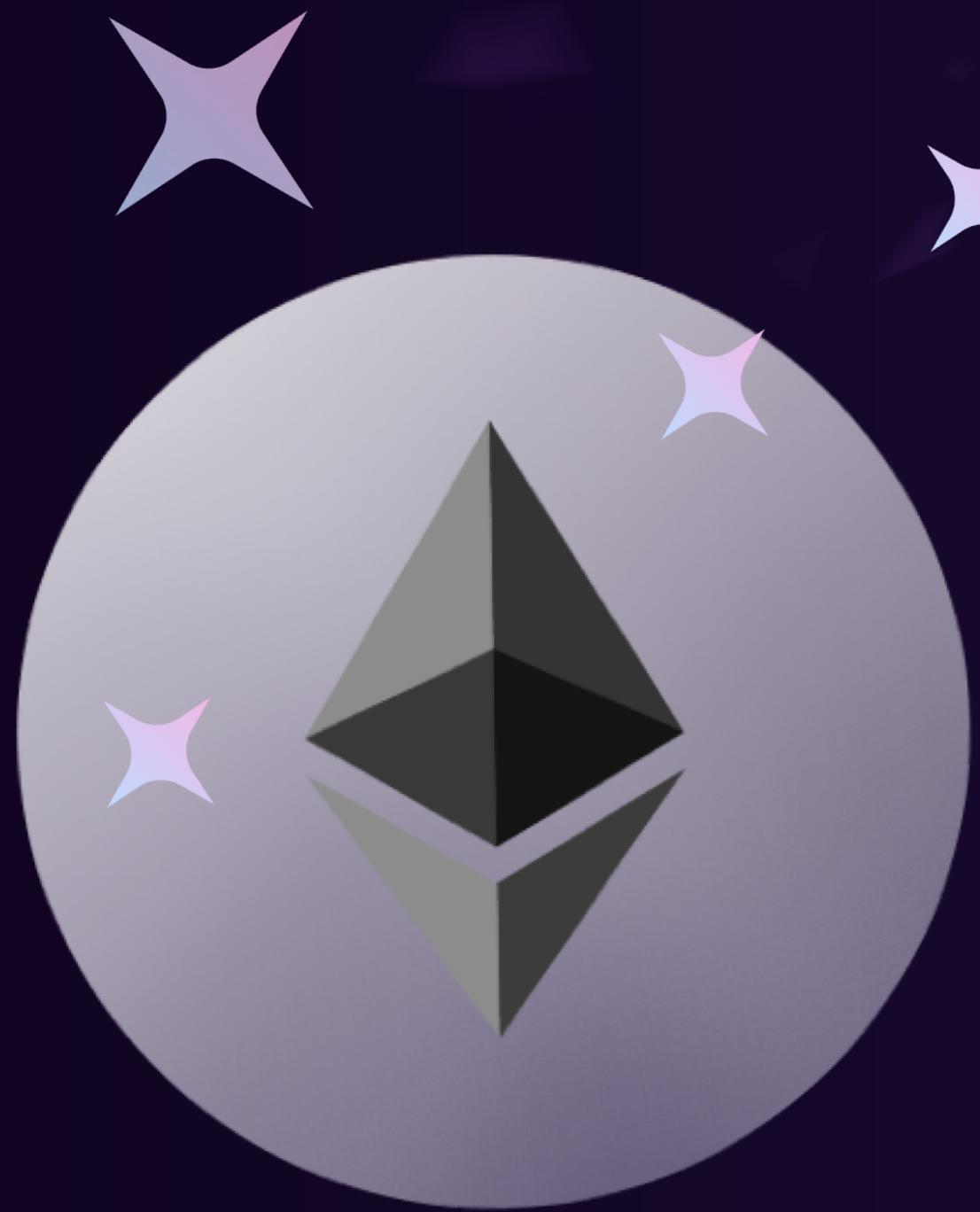


instant secure interaction enabled



What is the
Internet Computer?

Tamperproof software began with Ethereum



2015 smart contracts

tamperproof

no firewall or security team necessary

tokenization

hold, process & transmit value like data

unstoppable

nuke proof, no servers or failing over

composable

trustless dynamic collaborative building

autonomous

can remove human control & backdoors

borderless

code/services have no geography



The Internet Computer evolves this paradigm



2021 canister smart contracts
add powerful capabilities that enable tamperproof cloud...

multi-chain

code natively interacts with other chains

low cost

compute costs approach trad. IT

scalable

can service millions of users

Speed

run at web speed not blockchain speed

efficient

reduce IT carbon footprints

Web

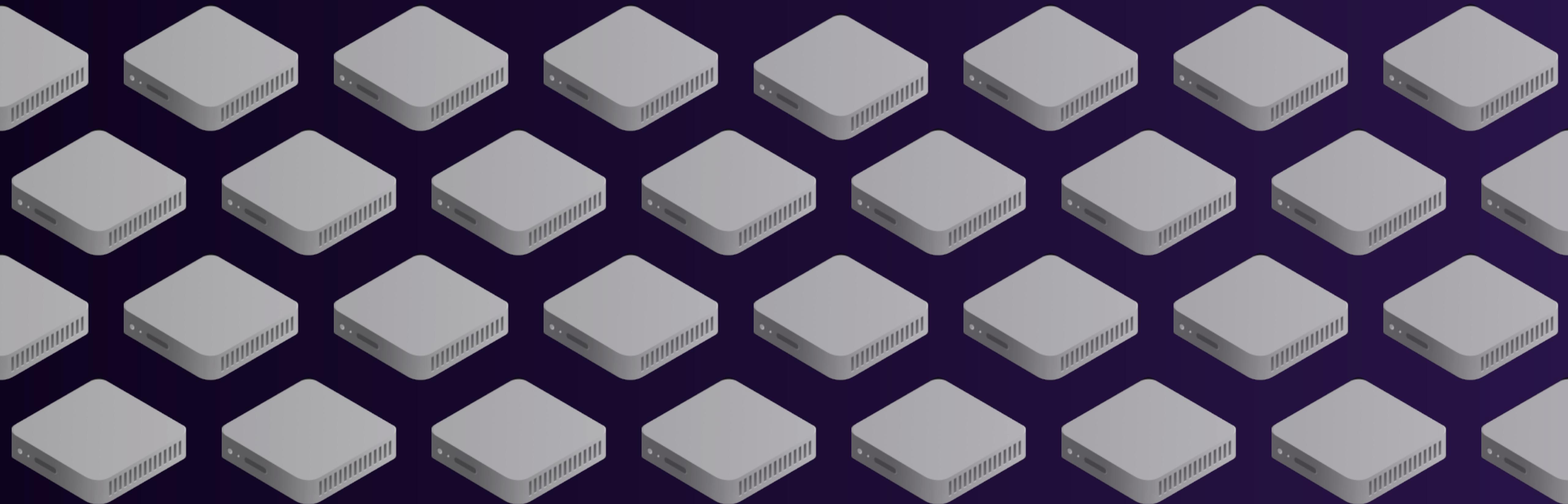
crypto speaks web (http) directly



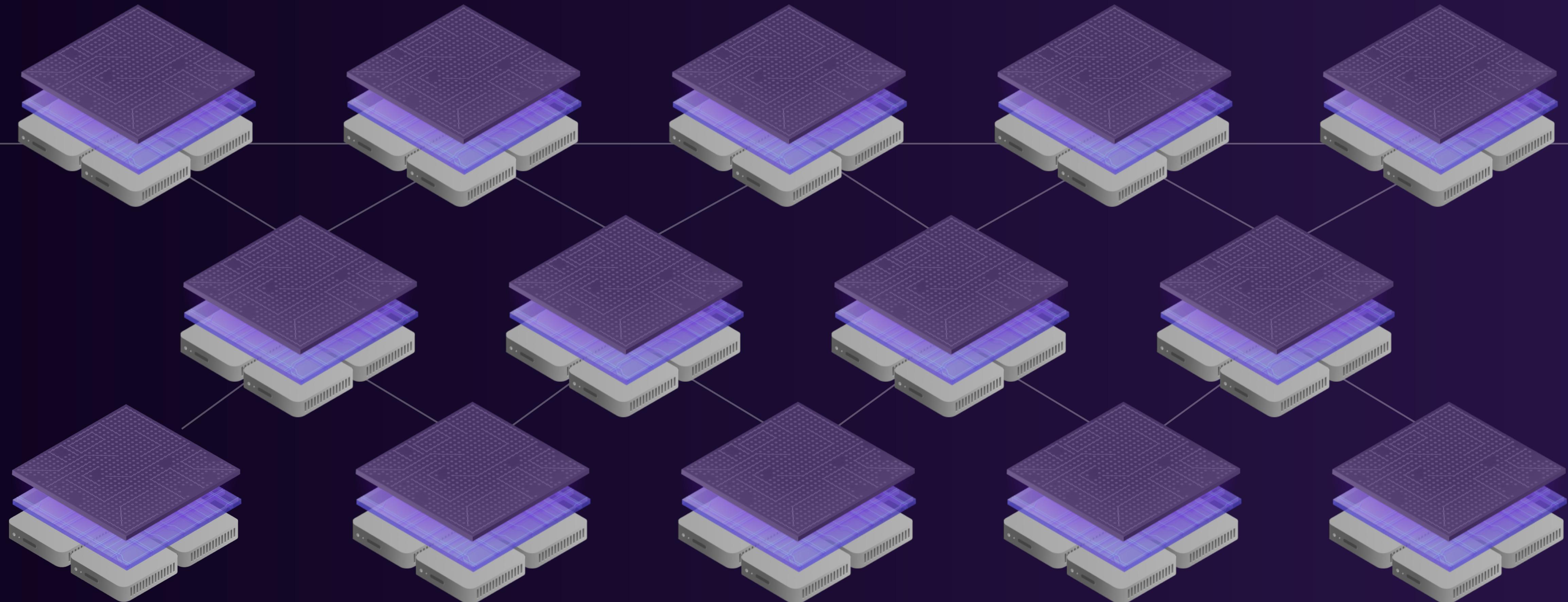
the Internet Computer advances the internet from being a network that connects everyone and everything, to also being a tamperproof public cloud that the world builds on...



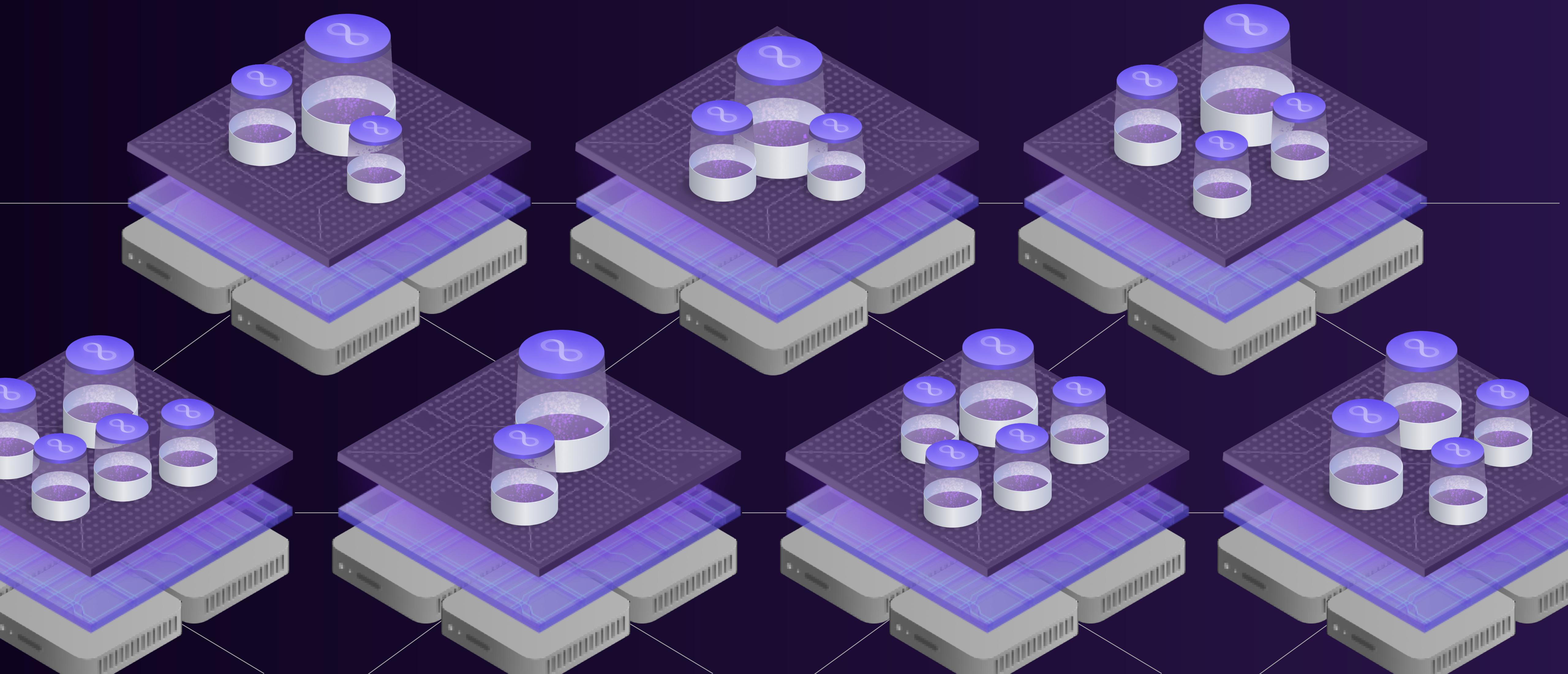
Internet Computer Protocol is a crypto protocol that combines
node machine devices run by independent node providers



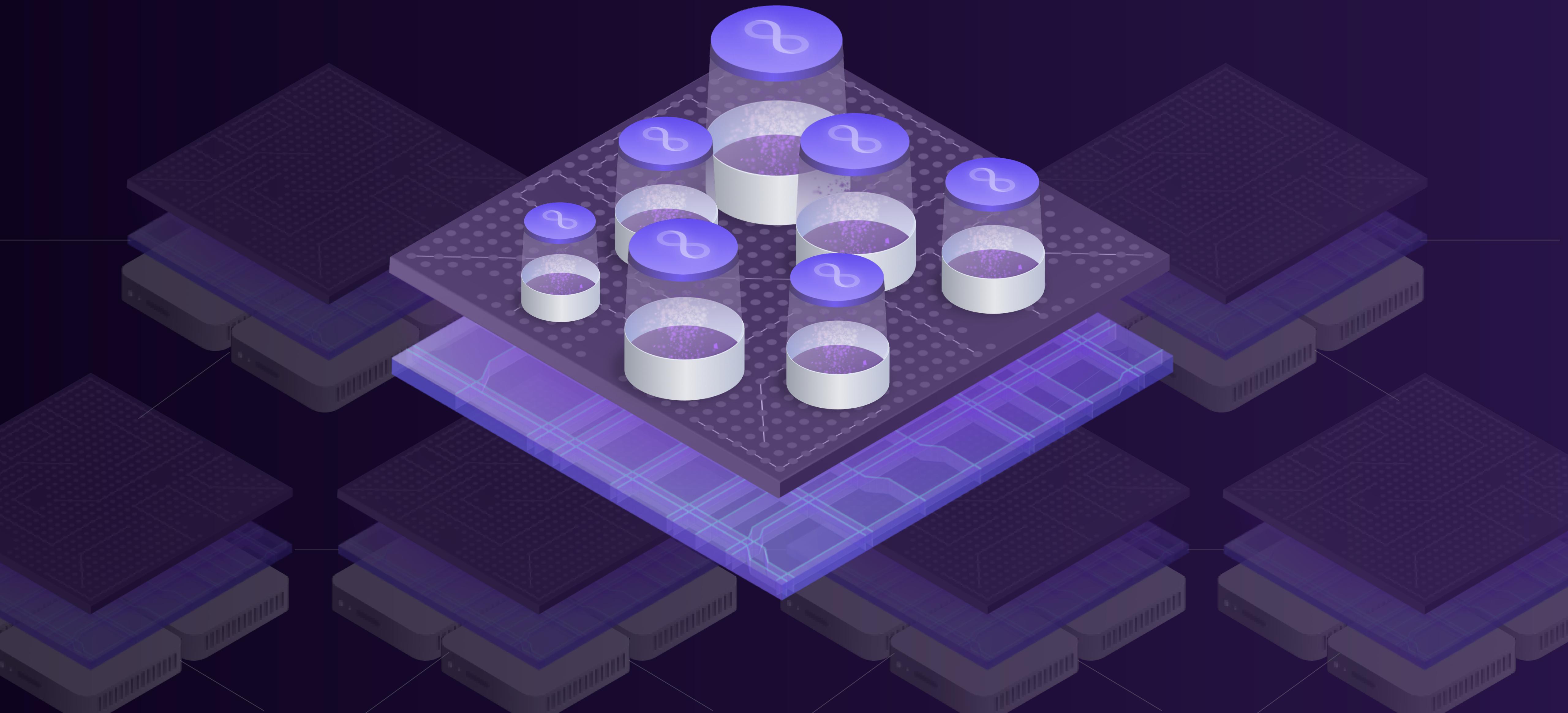
nodes are combined to create *subnet blockchains* ...



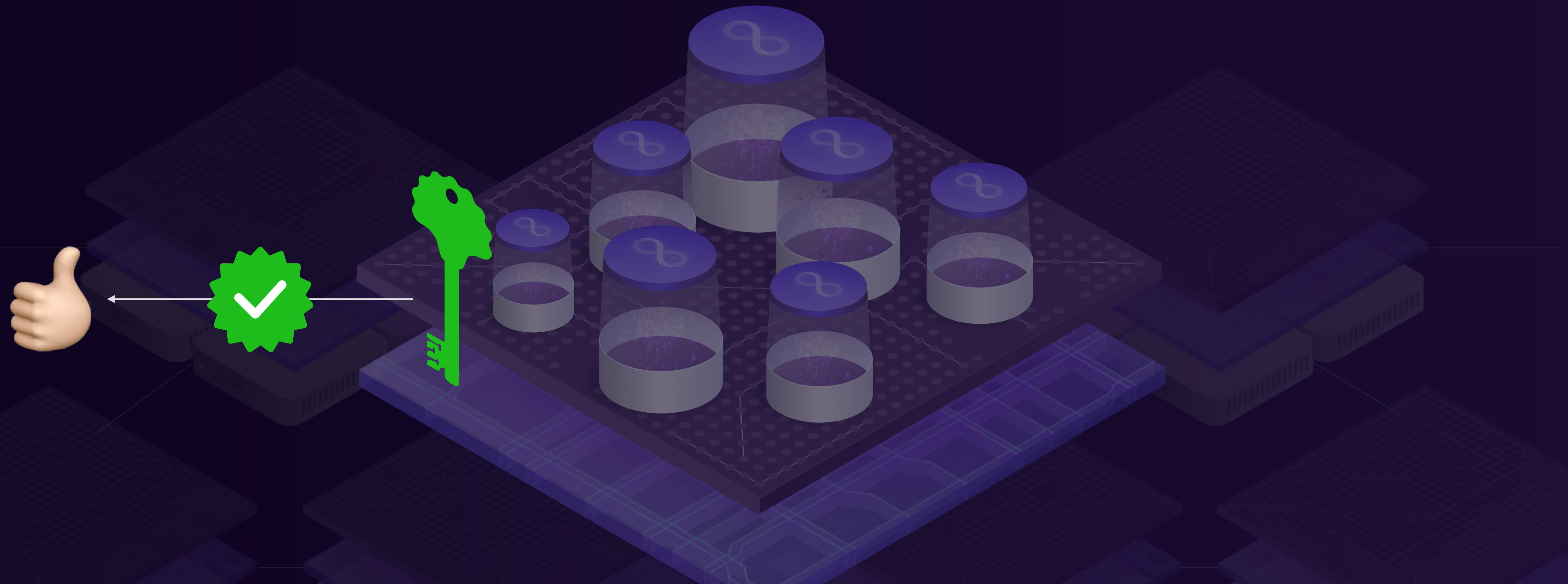
... subnets replicate and run canister smart contracts ...



... that together form a planet-scale virtual super computer ...



... interactions verifiable using the network's master chain key



chain key protocol cryptography is game changing

Build absolutely anything directly on the internet

The screenshot shows a web-based trading platform for the ICDEX (An Orderbook DEX). The main interface includes a navigation bar with tabs for Trade, Market, Competitions, and Mining. The Trade tab is active, displaying a candlestick chart for the CHAT/ICP pair. The chart shows price action from March 27, 2023, to April 20, 2023. The current price is 0.07388 ICP. Below the chart, there are sections for Market Trades and a form for placing LMT (Limit) orders. The Market Trades section lists recent trade history. The LMT order form allows users to specify Price, Quantity, and Total for buying or selling CHAT. To the right of the chart, there is a sidebar showing a list of pending orders for the CHAT/ICP pair.

Market Data:

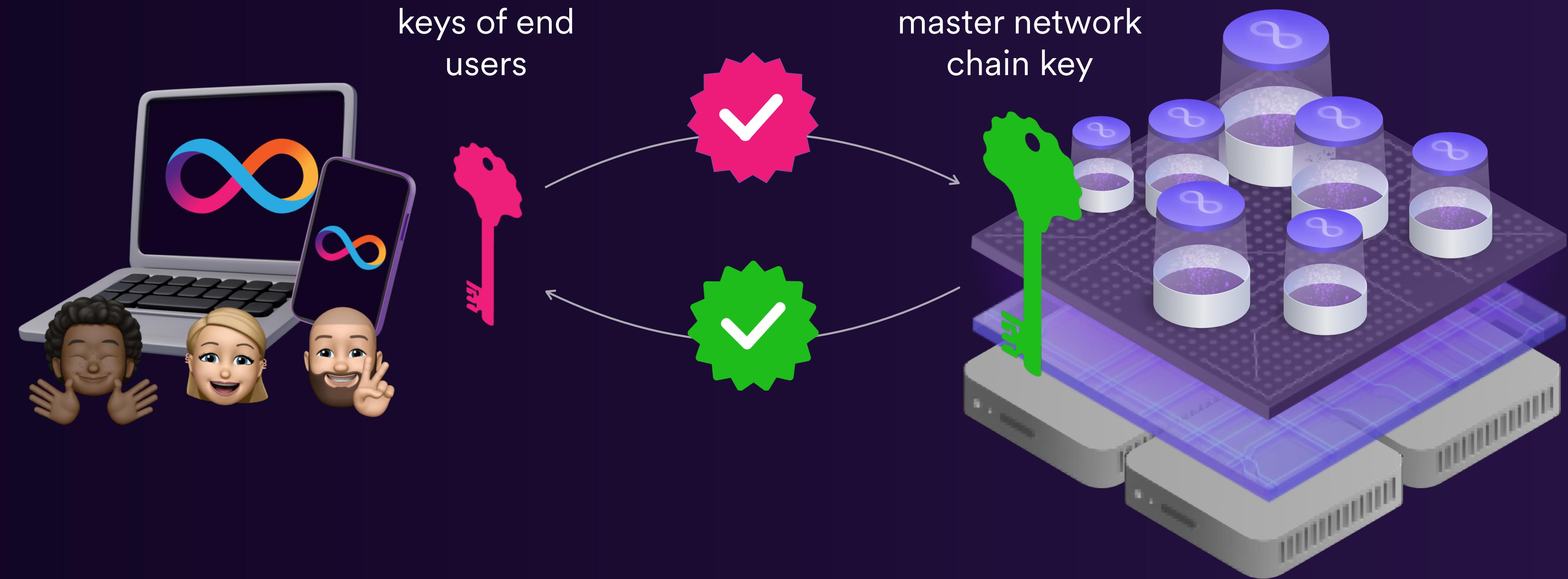
Pair	Price	Vol(24h/total)
CHAT/ICP	0.07388 -0.32%	136.78 506,261.37
SNS1/ICP	39.272 -0.68%	201.75 1,112,157.46
ckBTC/ICP	6189 24.93%	1.53 119,381.6
icBTC/ICP	5510 0.00%	0 77,698.29
OT/ICP	0.00023987 59.06%	0 127,084.59
OGY/ICP	0.001999 42.64%	0.09 63,829.39
OGY/ICP (Old)	0.002 0.00%	0 39,316.32
ITest/DTest	4.5 1025.00%	576.45 159,575.16

Order Book (CHAT/ICP):

Price (ICP)	Quantity (CHAT)	Total
0.0780000	250.0	19.5000
0.0775000	154.4	11.9660
0.0770000	250.0	19.2500
0.0765000	250.0	19.1250
0.0760000	250.0	19.0000
0.0755000	153.9	11.6195
0.0750000	250.0	18.7500
0.0745000	200.3	14.9224
0.0743500	179.9	13.3756
0.0740000	250.0	18.5000
0.07388 ≈ \$0.3929	-0.32%	
0.0730000	217.4	15.8702
0.0725000	100.0	7.2500
0.0720000	100.0	7.2000
0.0715000	100.0	7.1500
0.0710000	100.0	7.1000
0.0705000	250.0	17.6250
0.0700000	281.9	19.7330
0.0695000	250.0	17.3750
0.0690000	250.0	17.2500
0.0685000	250.0	17.1250



web browser cryptography transparently verifies interactions



services are tamperproof, and Internet Identity makes sessions secure too

Internet Identity

The Internet Computer's identity layer



Easy to use



Interoperable



Open source



Self-sovereign



Highly secure



No tracking



Where we are now

2.2M+

identities created

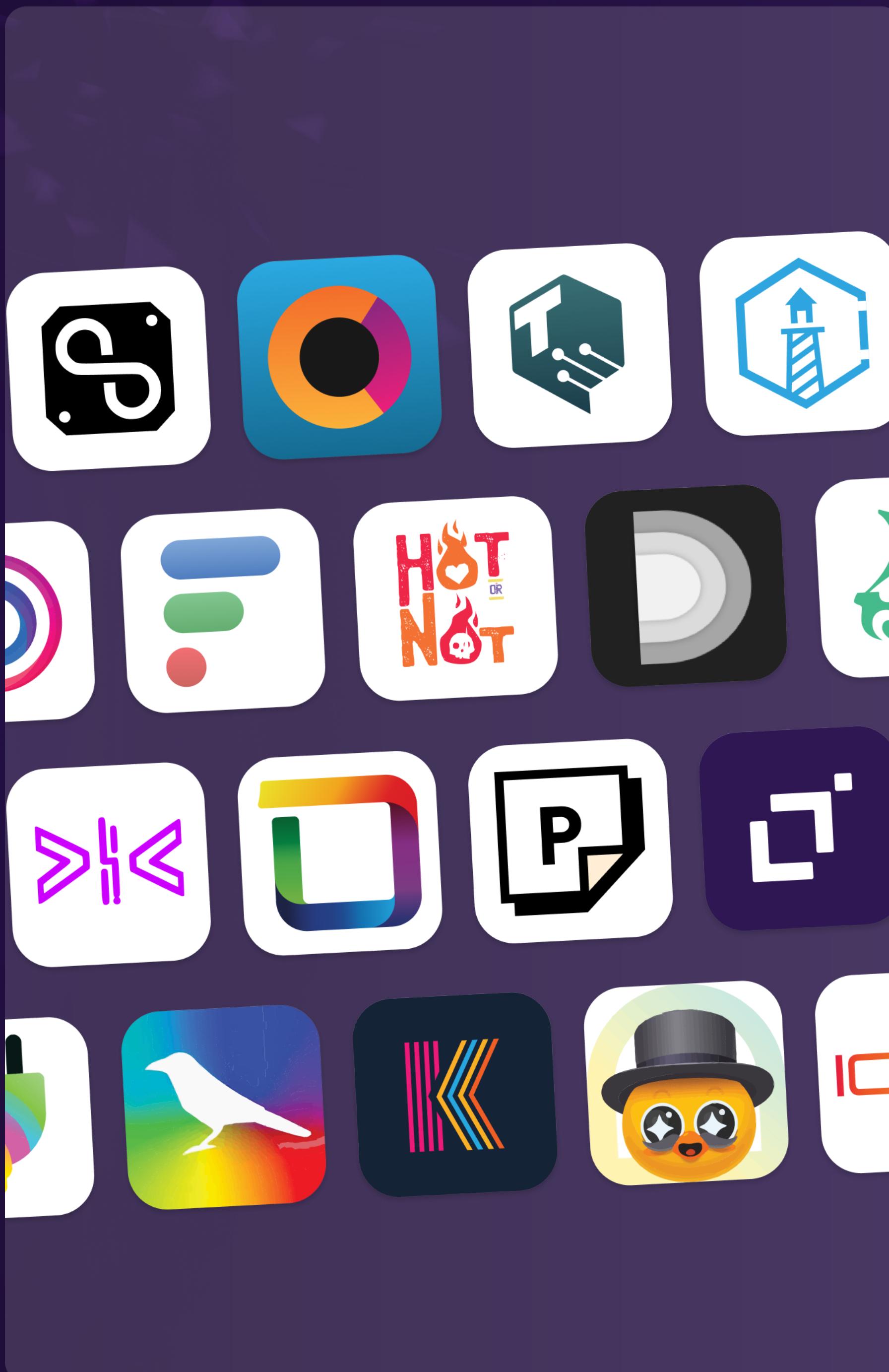
50K+

monthly authentications

100+

dapps using II for authentication

Support for relying parties and
identity providers coming in 2023...





next phase: identity properties



The problem – the bouncer gets the girl's PII



The solution – courtesy of zero knowledge proofs



Did we miss anything?

Tell us about your
problems that you are
looking to solve



Try it now!

Create your first
Internet Identity



Let's collaborate!

Come and meet
us at the both



Save a contact for future reference
comms@dfinity.org

