

Lightning network observability



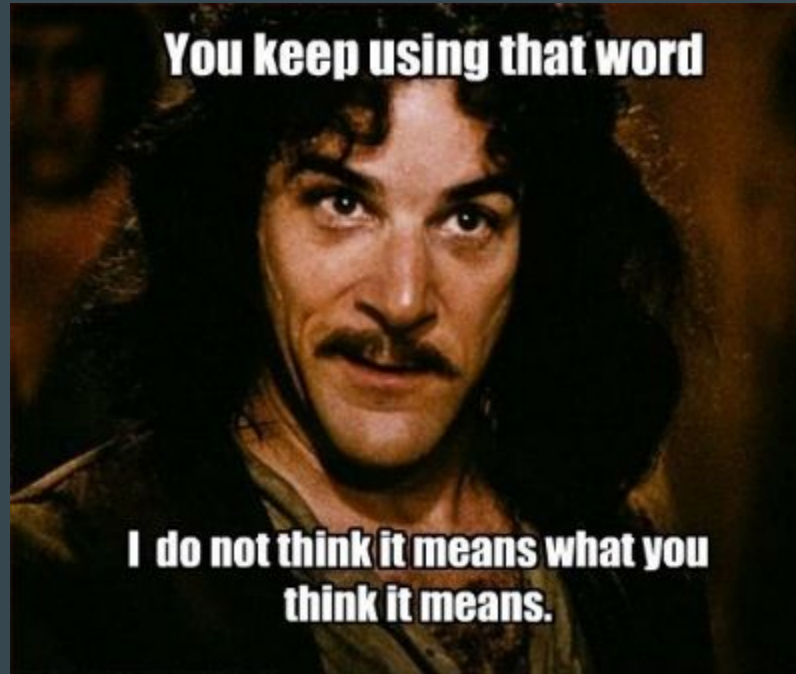
Aljaz Ceru,
bolt.observer 2022

Who am I

Aljaz Ceru

- Co-founder of bolt.observer
- Running lightning nodes since early 2019
- Ex Head of Platform at Bitstamp
- Co-founder of Bitcoin Ljubljana

What is observability



“Observing the state of the system through output measurements”

Measurable outputs in lightning network

- Payments
 - Did payment succeed or fail
 - How long did it take
 - How many paths it had to try before finding one that works
 - How many hops did it take
- Liquidity
 - Do i have enough:
 - Inbound
 - Outbound
 - Is it being deployed productively
- Routing
 - Am i routing anything

Why observability

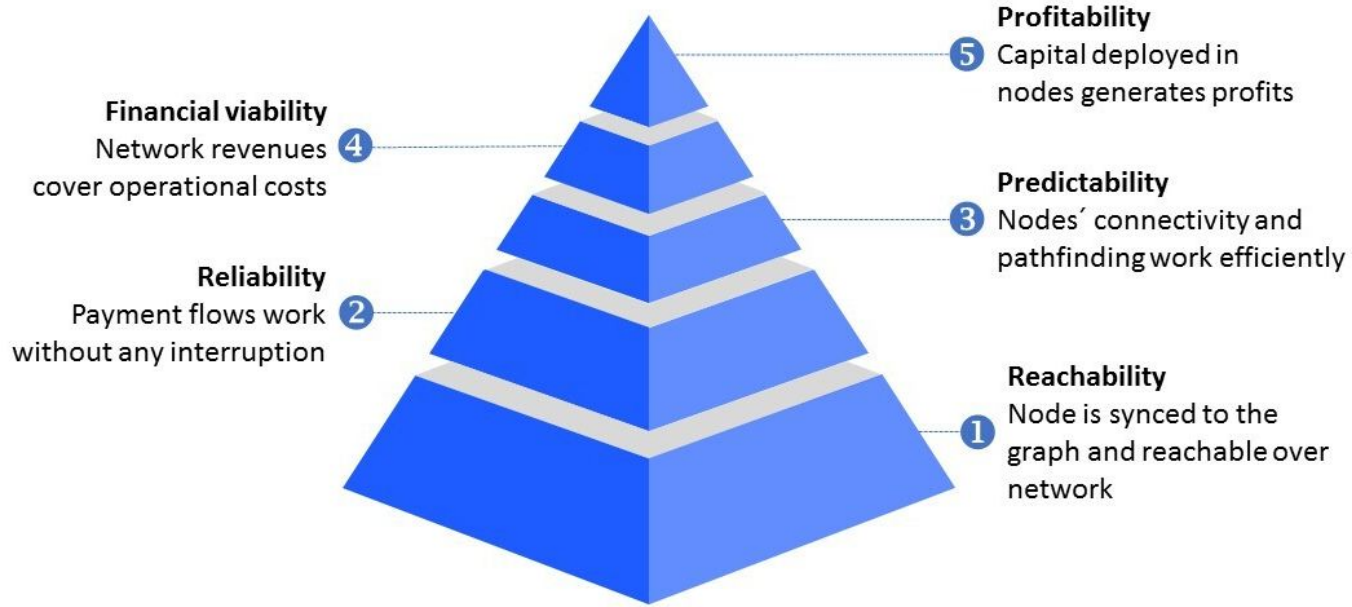
- Visibility
 - Complex systems are hard to understand
- Continuity
 - Lightning network has no business hours
- Prevention
 - Risk mitigation instead of problem solving

What defines a good payment network

Ability to transfer value?



Lightning node Pyramid of Needs



What defines a good payment network

- Reachability
- Reliability
- Predictability
- (and privacy of course)

Different things matter to different nodes

- Merchants
 - Ability to accept customer payments
- LSPs
 - Provide lightning services to users
- Routing nodes
 - Generate yield on bitcoin
- Personal nodes
 - Minimal liquidity to spend sats

Positioning in the graph

- Merchant
 - Being close to the users (and suppliers)
- LSP
 - Having good overall connectivity
- Routing node
 - Deploying capital efficiently -> where it will earn the most
- Personal node
 - Close to where you're spending the most

Your neighbourhood

- What happens around you impacts you
- Your peers' peers matter
- Keep your neighbours close



What to do with this?

- Observability is fun(damental)
- Behaviour in the network depends on objectives
- You should be doing it
- Pay attention to what is happening around you

That's all folks.

- Check out what we are building at <https://bolt.observer>
 - We are building solutions to help lightning network succeed
 - We are hiring
- Reach us @BoltObserver (interesting things) or @aaljaz (shitposting)