Lightning network observability
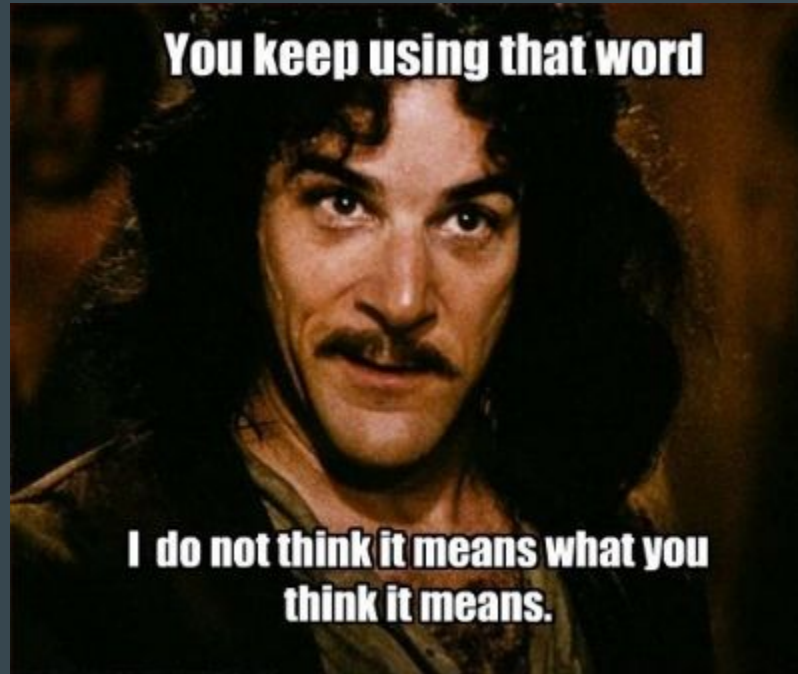
From reckless to professional

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Aljaz Ceru,
bolt.observer 2022

Who am I

Aljaz Ceru

- Co-founder & CEO 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 not & what has changed
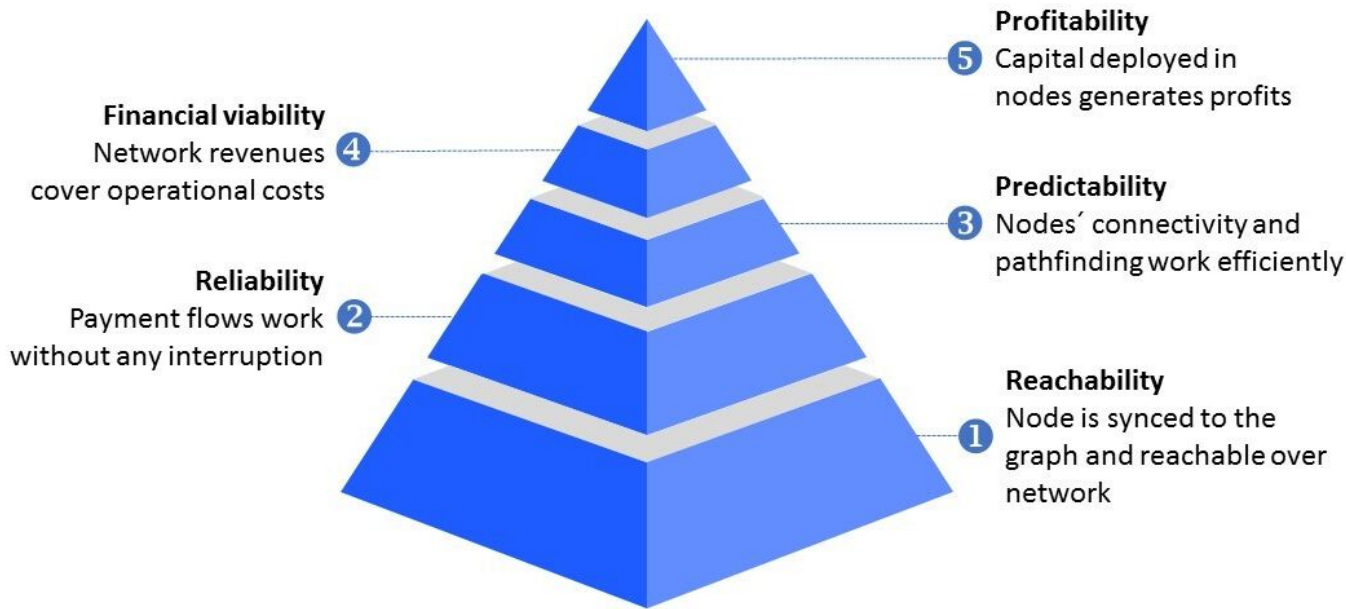
Why observability

- 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?
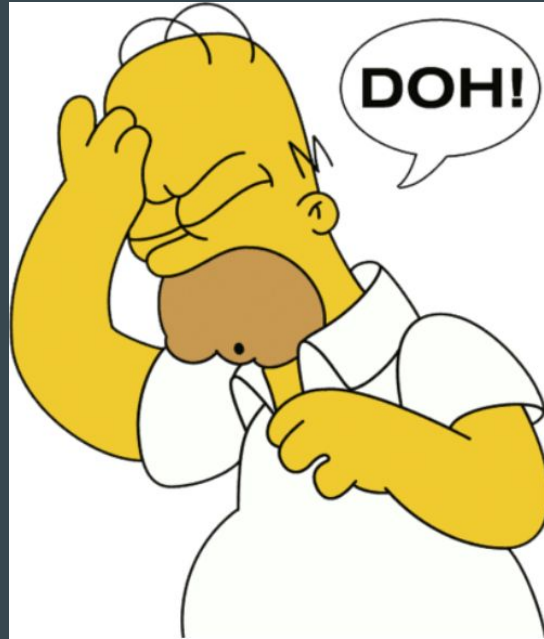
Lightning node Pyramid of Needs

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
    - No inbound = No business
- 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
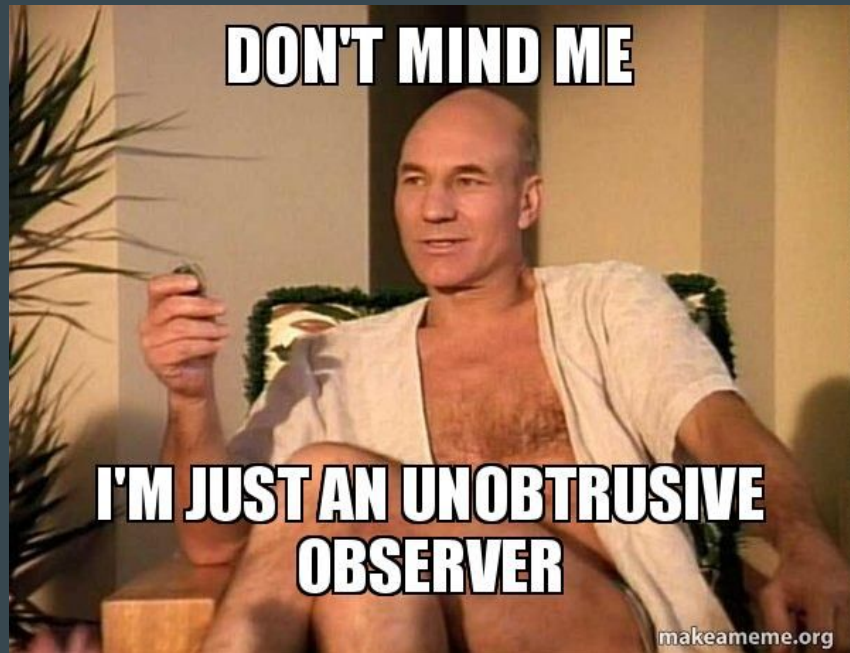- Keep your neighbours close

NEIGHBOURHOOD WATCH

Recap

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

bolt.observer

- Who are we
- What do we do
- What can we help you with

bolt.observer

- Explorer (https://bolt.observer/explorer/)
  - Built from internal needs
  - Point-of-View approach to network exploration
- Reachability
  - Uptime is essential
  - Monitoring improves reliability
- ?

LiquidOps

beta

LiquidOps - idea

- Simplify life for node operators and companies
- Provide comprehensive operational overview
- Support and (later) automate liquidity management
- Improve efficiency of capital(liquidity) deployment

LiquidOps - what it does

- Monitoring and alerting
    - inbound/outbound liquidity per channel
    - open/close channels
    - channel status
    - cumulative inbound/outbound (soon)
        - with fiat alerts (sadly)

LiquidOps - what is coming

- Automated liquidity management
- Integrations with existing tools
- Accounting support and overview
- Liquidity marketplace integrations

That's all folks.

- Check out what we are building at https://bolt.observer
- More at
    - @BoltObserver (interesting things)
    - @aaaljaz (shitposting)