Distributed serverless architecture

JOpenSpace 2024, Telč 4.-6.10.

Pavel Lahoda, Actiwerks

Got server?
May I see it?

Client - Server

```swift
URLSession(configuration:URLSessionConfiguration.default, delegate: self,
delegateQueue: OperationQueue())
          .dataTask(with: URLRequest(url: URL(string: "https://server.less")!))
{ (data, response, error) -> Void in
    // Handle response...
}
```

Server

Serverless

"There is no cloud.
It's just someone else's computer"
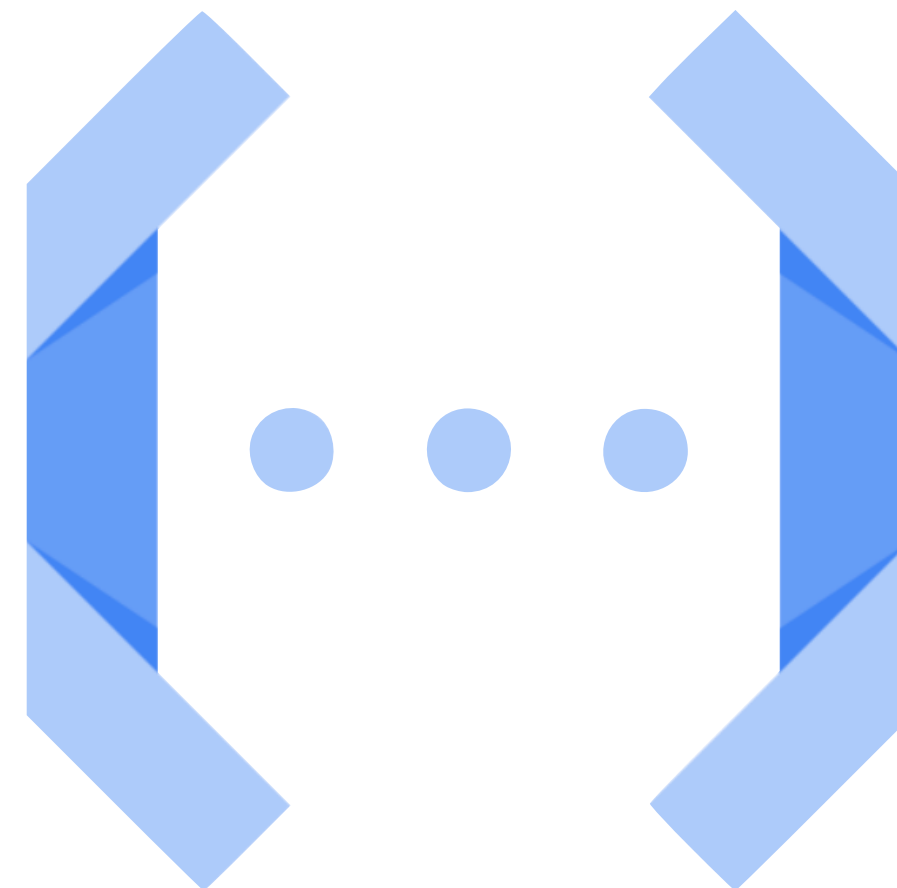
Go with the big boys

AWS Lambda

https://aws.amazon.com/pm/lambda

Google Cloud Functions

https://cloud.google.com/functions

Azure Functions

https://azure.microsoft.com/cs-cz/products/functions/

Distributed

- Scalability
- Resiliency
- Cost sustainability
- Verifiability

Open source solutions

OpenWhisk

https://openwhisk.apache.org

OpenFaaS

https://www.openfaas.com/

Build your own computer cluster

Inspiration

Interplanetary File System

https://ipfs.tech

Server 2.0
JOpenSpace 2016

Ethereum SmartContracts

https://ethereum.org
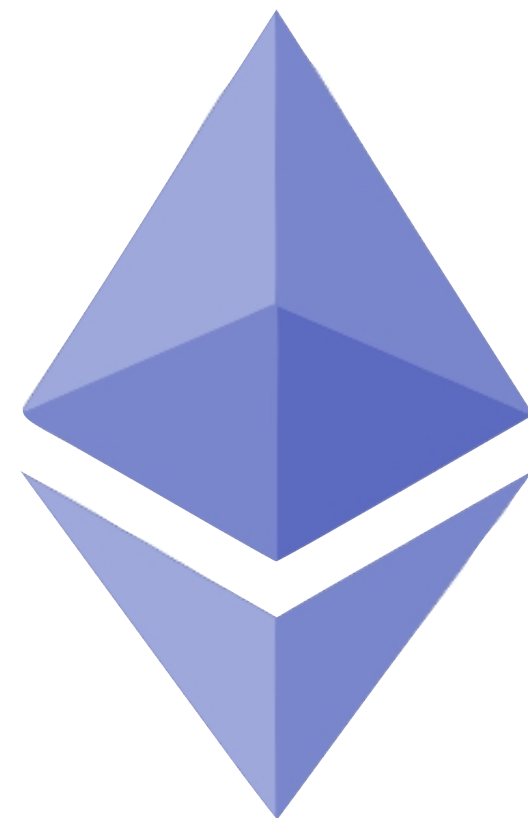
Smart contracts / Solidity
Quite limited

HTTP bridge over JSON-RPC API

RADICLE

https://radicle.xyz
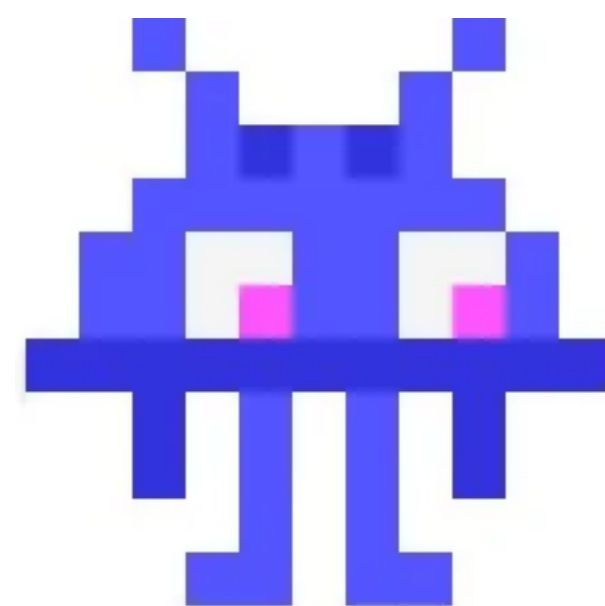
Radicle is a peer-to-peer code collaboration platform ("forge") built on Git. Unlike centralized platforms like GitHub, there is no single entity controlling the network or user data. Repositories are replicated across peers in a decentralized manner. Radicle is an alternative for people and organizations who want full control of their data and user experience, without compromising on the social aspects of collaboration platforms.

Driven by seeding
(Like BitTorrent)

Akash

https://akash.network/

The World's Premier Decentralized Compute Marketplace („AirBnB for Datacenters")

Based on Kubernetes

Internet Computer (DFinity)

https://dfinity.org

WebAssembly „canisters" with HTTP bridge

HTTP Gateway with API in Candid specification language

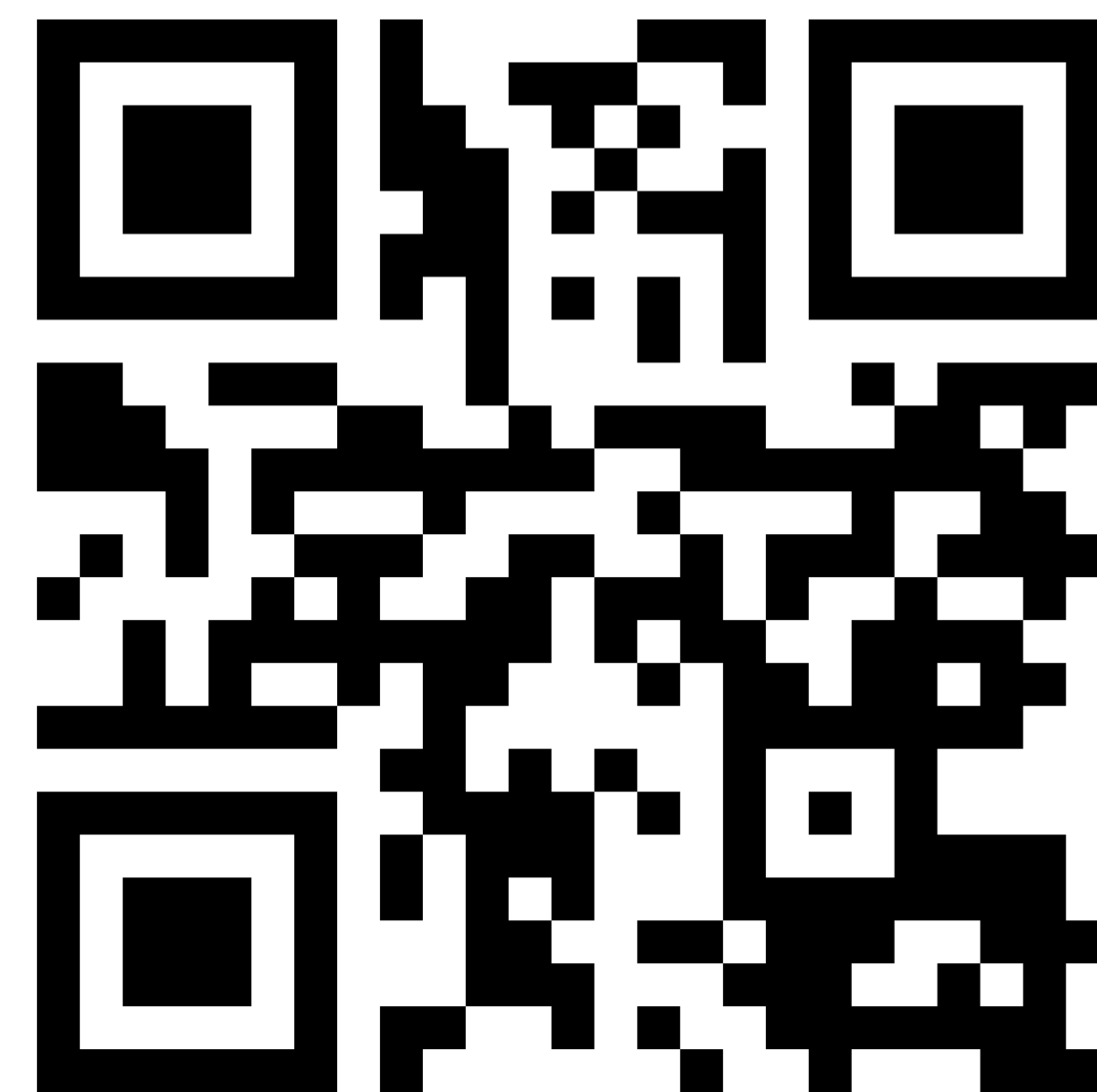2 MB size limit for request / response
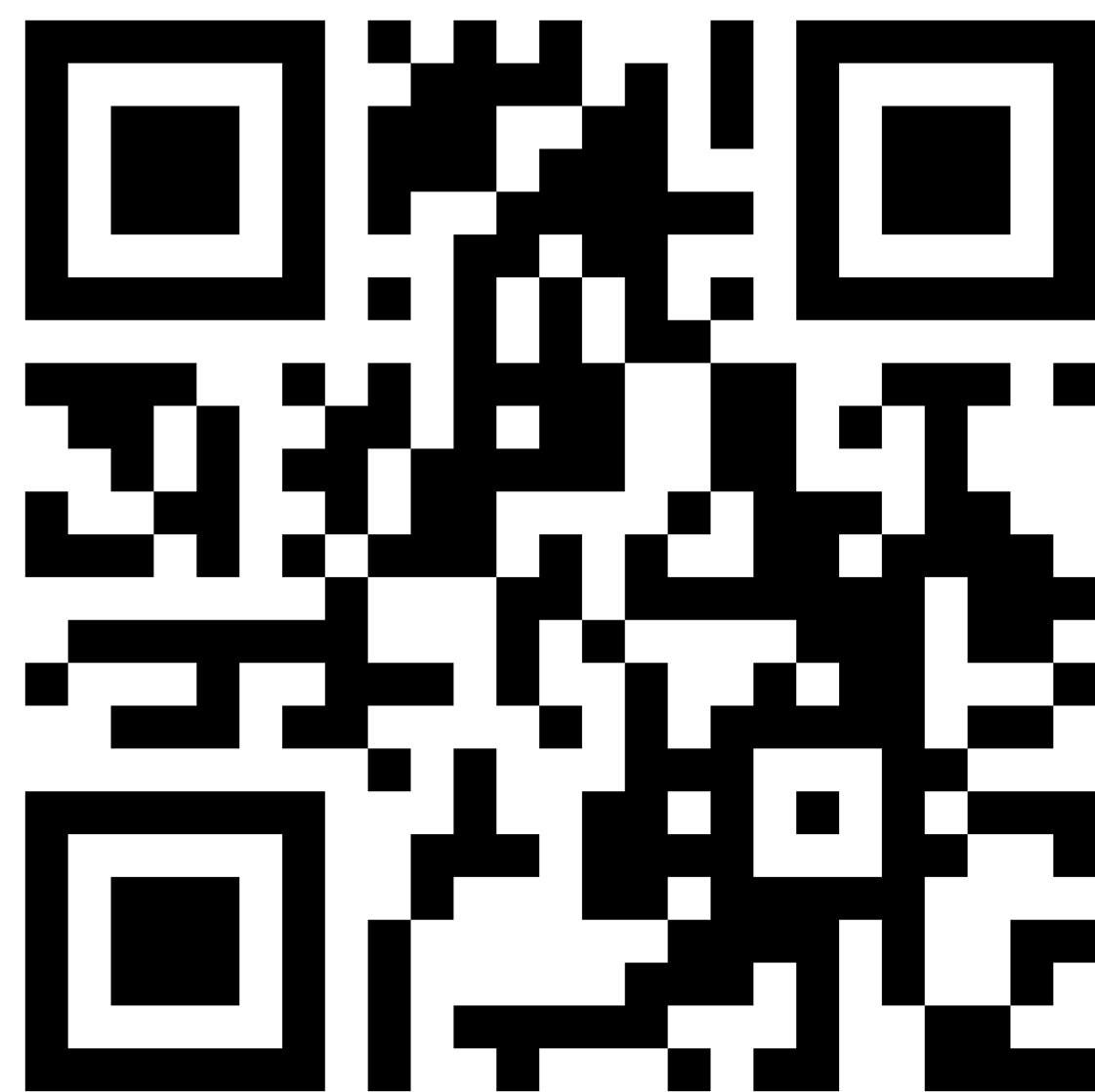Streaming option since 9/2024

Demo: Open chat

https://oc.app/communities

Reverse&A™

Thank You

PAVEL@ACTIWERKS.COM

@LAHODA.BSKY.SOCIAL

HTTPS://GITHUB.COM/ACTIWERKS