Djib

Universal Data Storage Parachain
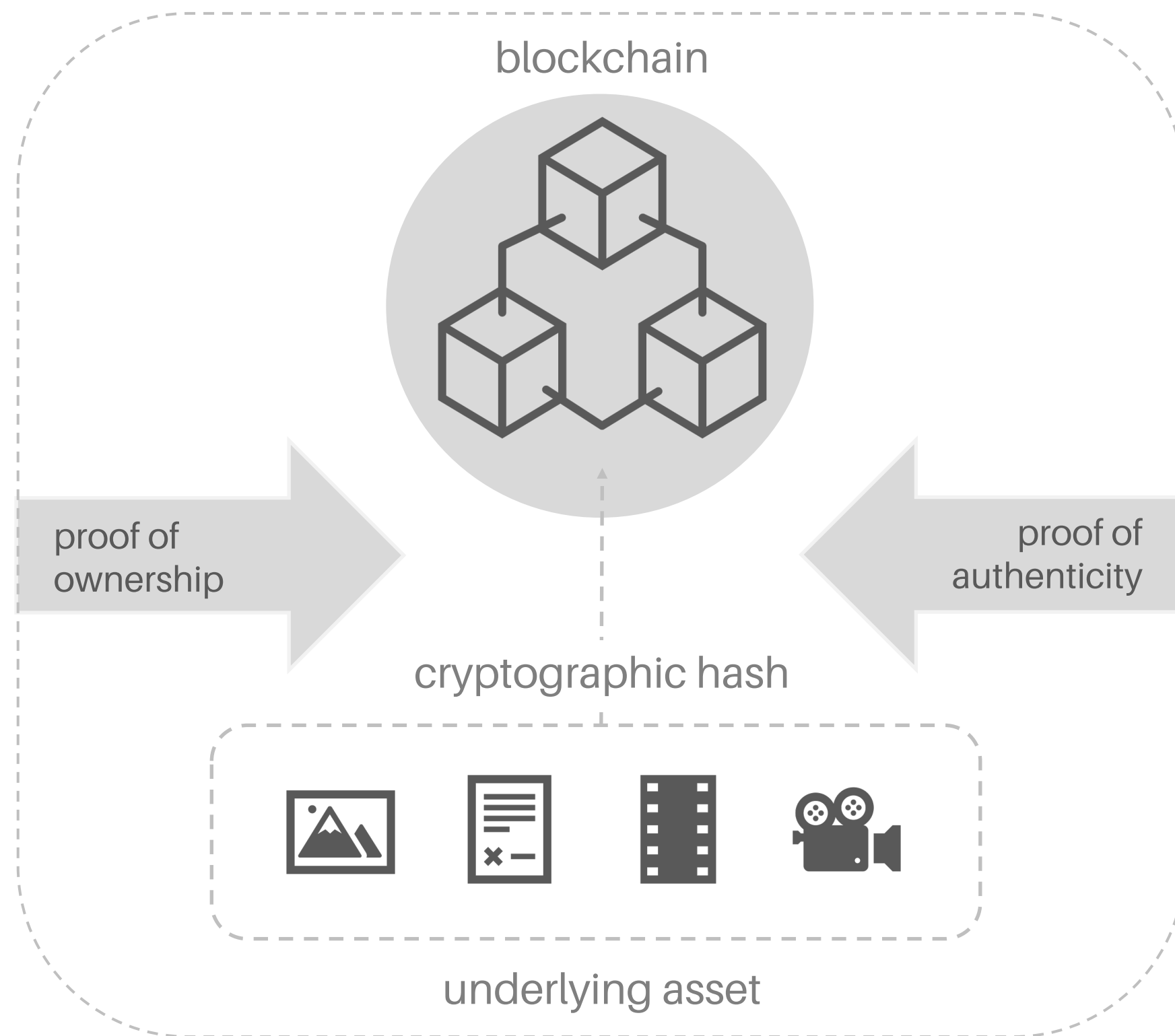
WHITE PAPER

Cambrian Explosion of NFTs

Proliferation of NFTs and NFT-related **tools and infrastructure**

NFTs used as a means of **exchanging digital tokens that link to a digital file**

blockchain

proof of ownership

proof of authenticity

cryptographic hash

underlying asset

Brands are **spending millions** on NFTs

Coca-Cola

PRADA

Ray-Ban

Cartier

GUCCI

NFL

LOUIS VUITTON

BVLGARI

HUBLOT

The NFT Storage Problem

Recent proliferation of NFTs, but most blockchains:

- Lack native file storage for NFTs and rely on external chains

- Do not provide built-in portability of NFTs across blockchains

- Have design flaws that compromise immutability of the underlying files

Case study: Solana

- Solana is fast and one the best networks with high throughput but there is no Solana native file storage project

- Solana NFTs are not immutable and can be modified even when immutable flag set to "TRUE"!

- Usage of Filecoin and Arweave is costly:
  - Split user experience
  - Loss of large amount of the value that could have been captured in the Solana ecosystem, but flows out into other networks

Solution – Djib
Universal File Storage Parachain

Universal blockchain file system parachain, bringing to every blockchain the ability to issue immutable, interoperable NFTs
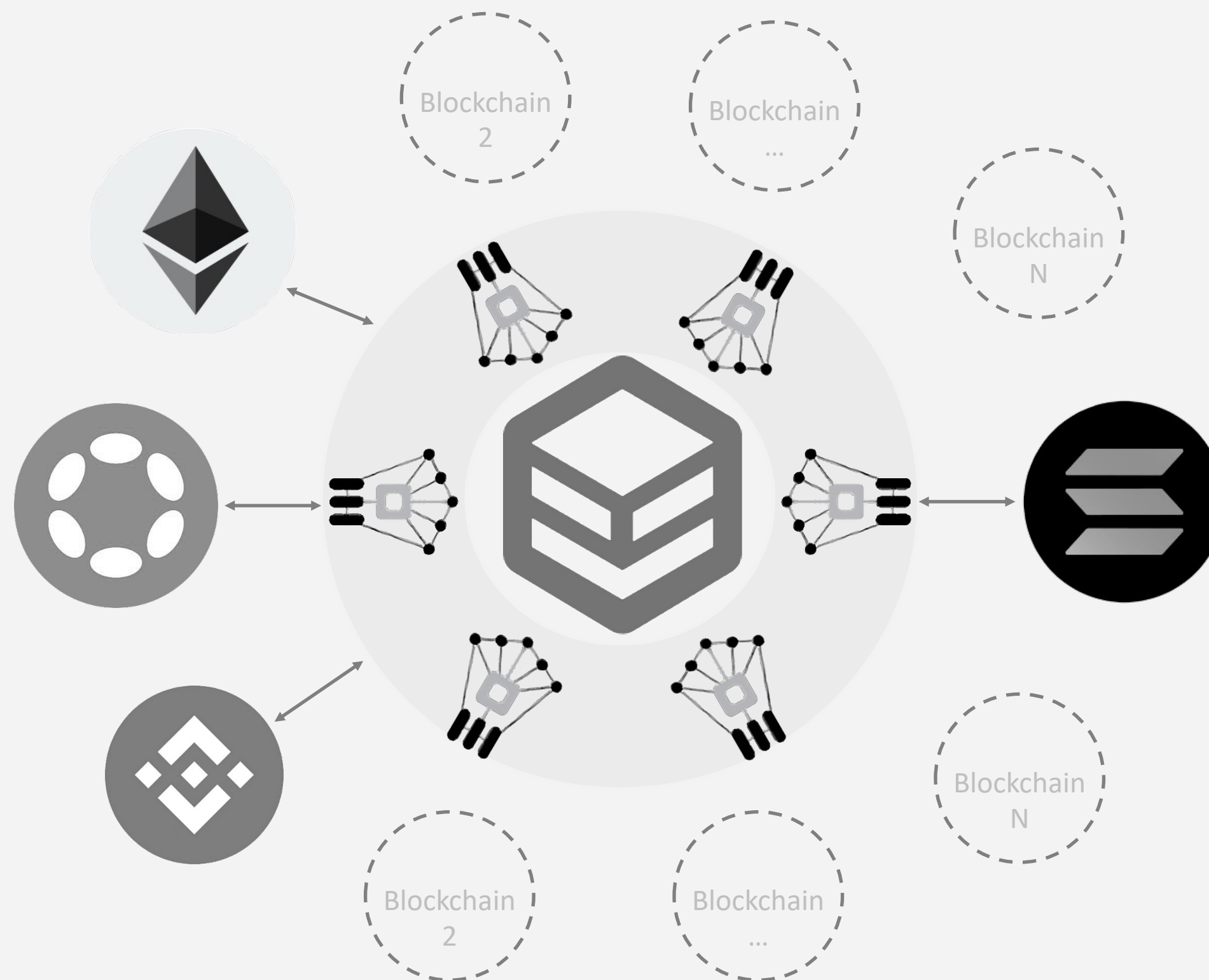
Djib is a utility token for Djib platform in which a lifetime guarantee of the 1GB of file storage for each Djib.

Meaning that privacy and security is all your file is guaranteed and you can upload store and share up to one GB of data on Djib platform

Djib is a decentralized dropbox that can be used by various blockchains

Djib enables the broader adoption of the creation of NFT tokens from almost anything (e.g., not only artwork, but also certificates of good standing by regulatory bodies, notaries , law firms, any other documents).
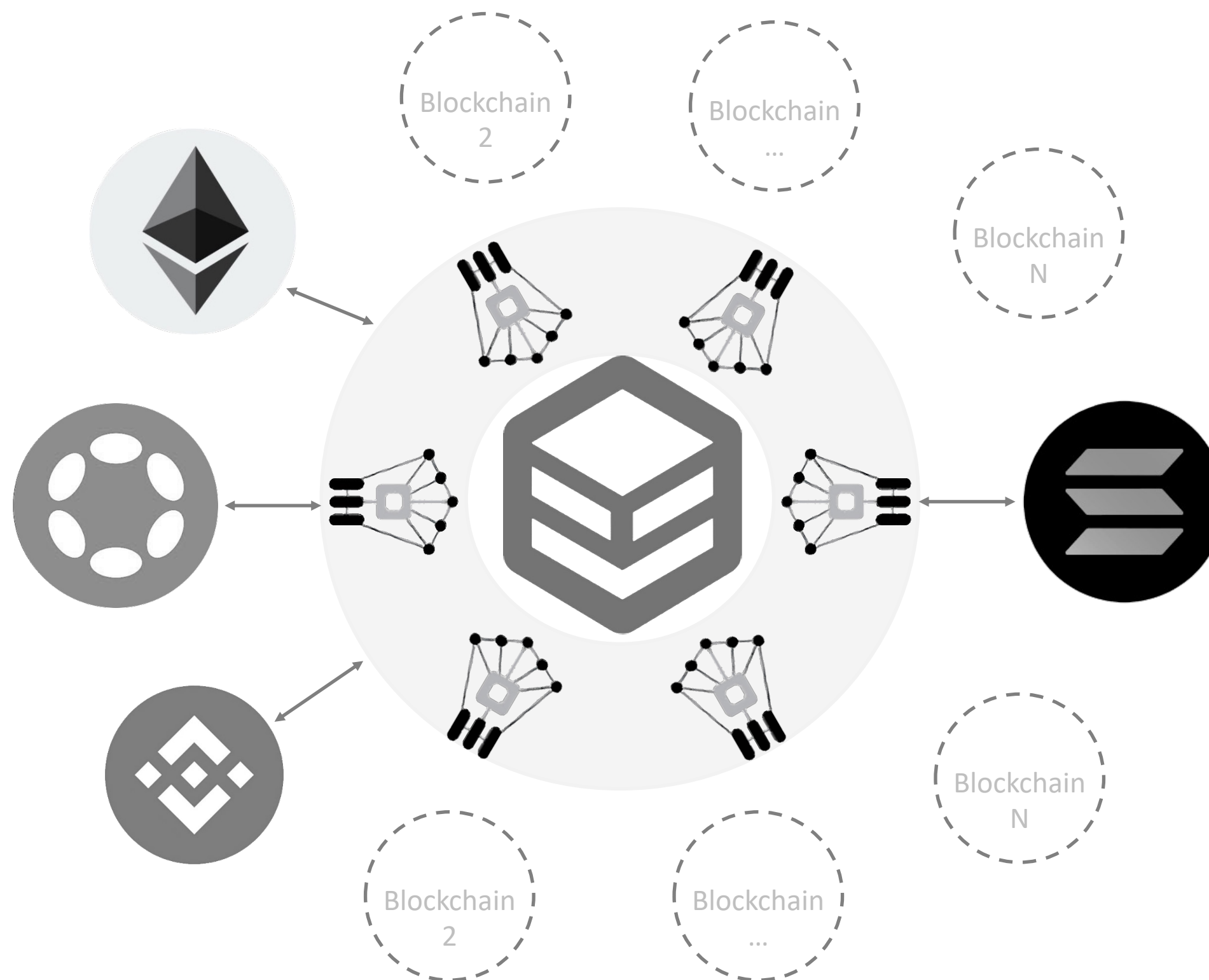
Djib also wants to revolutionize the way that we store data.

NFT Bridge Protocol

Nowadays, more or less all crypto asset are fluid and interchangeable between blockchains.

You can convert USDC from Binance chain to Ethereum to Solana and vice versa, but this is not happening on the NFT market

Marketplaces need to adapt and integrate with different blockchains.

NFTs are not as fully dependent upon the chain that initial mint has happened.

Blockchain 2

Blockchain ...

Blockchain N

Blockchain 2

Blockchain ...

Blockchain N

Pilot Implementation on Solana

Djib is implemented as a decentralized and censorship resistant Dropbox on Solana.

Provides a breakthrough storage technology that uses Solana as financial instrument to incentivise contributors.

Takes NFTs to the next level and allows minting NFTs from almost everything by giving better tooling to developers and the Solana community to mint NFTs.

Ensures immutability of the Solana NFTs.

Enhances the Solana ecosystem to enable harness of value and prevents leakage of value from the Solana network to other networks.
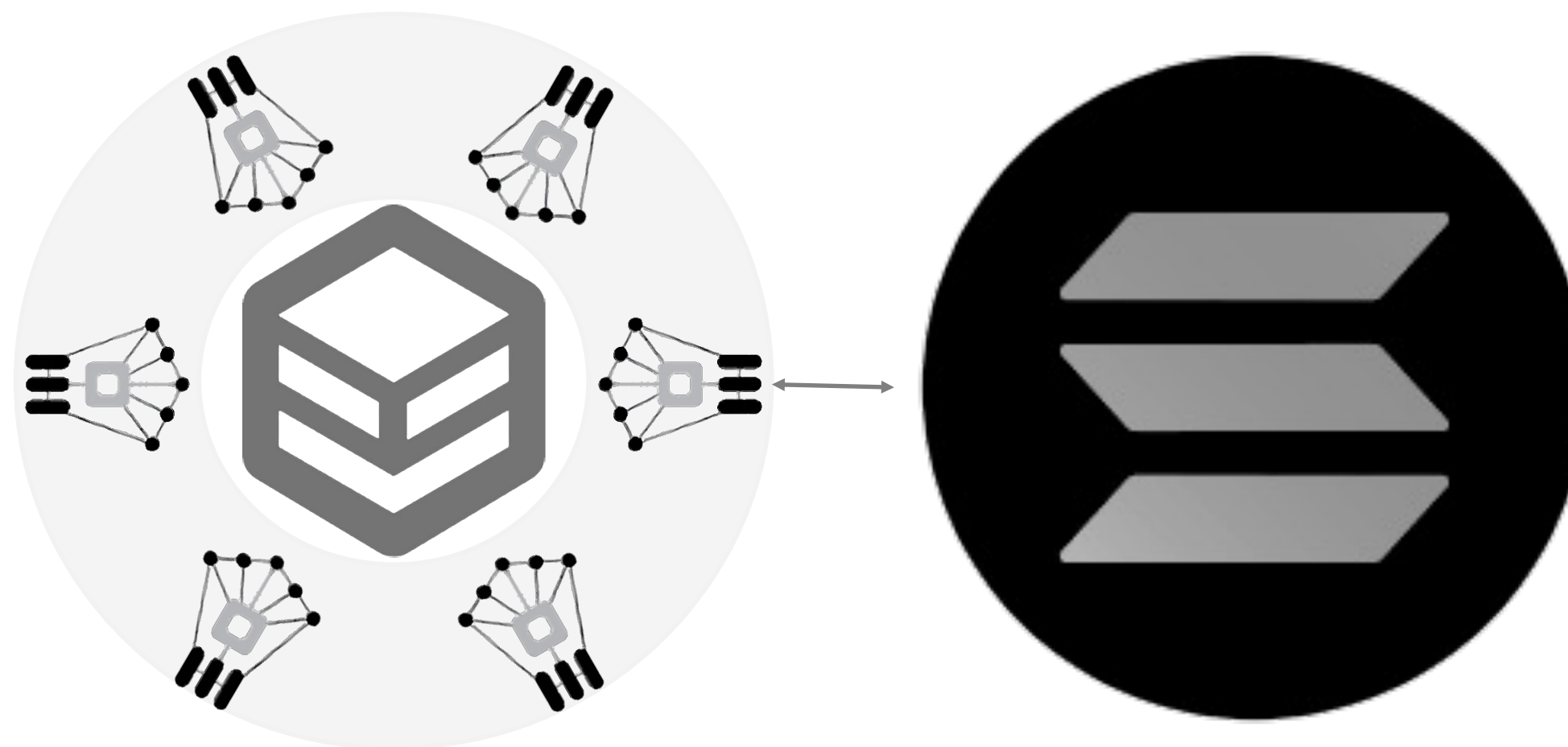
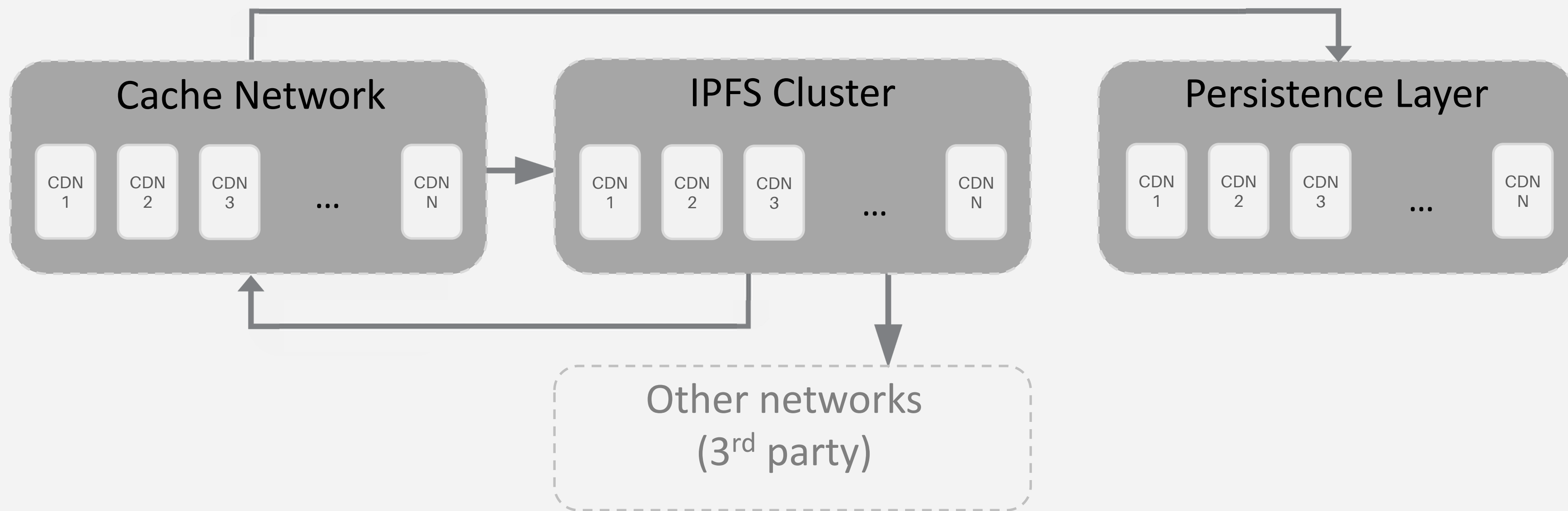**Why Solana?**

Let stand on the shoulders of giants

Solana ease the financial activities within the network with a very low fee

Fast and low cost on transactions

Good to be used on incentivizing

Djib Network Architecture

Cache Network

| CDN 1 | CDN 2 | CDN 3 | ... | CDN N |

IPFS Cluster

| CDN 1 | CDN 2 | CDN 3 | ... | CDN N |

Persistence Layer

| CDN 1 | CDN 2 | CDN 3 | ... | CDN N |

Other networks
(3rd party)

Each network layer is a distributed, peer to peer
network of systems interacting with each other

Network Architecture

Djib uses a distributed content delivery network (CDN) that combines and utilizes currently existing CDNs and our proprietary Service delivery, this layer of our network is installed on top of entire network to serve clients better (multi-CDN, or CDN of CDNs)
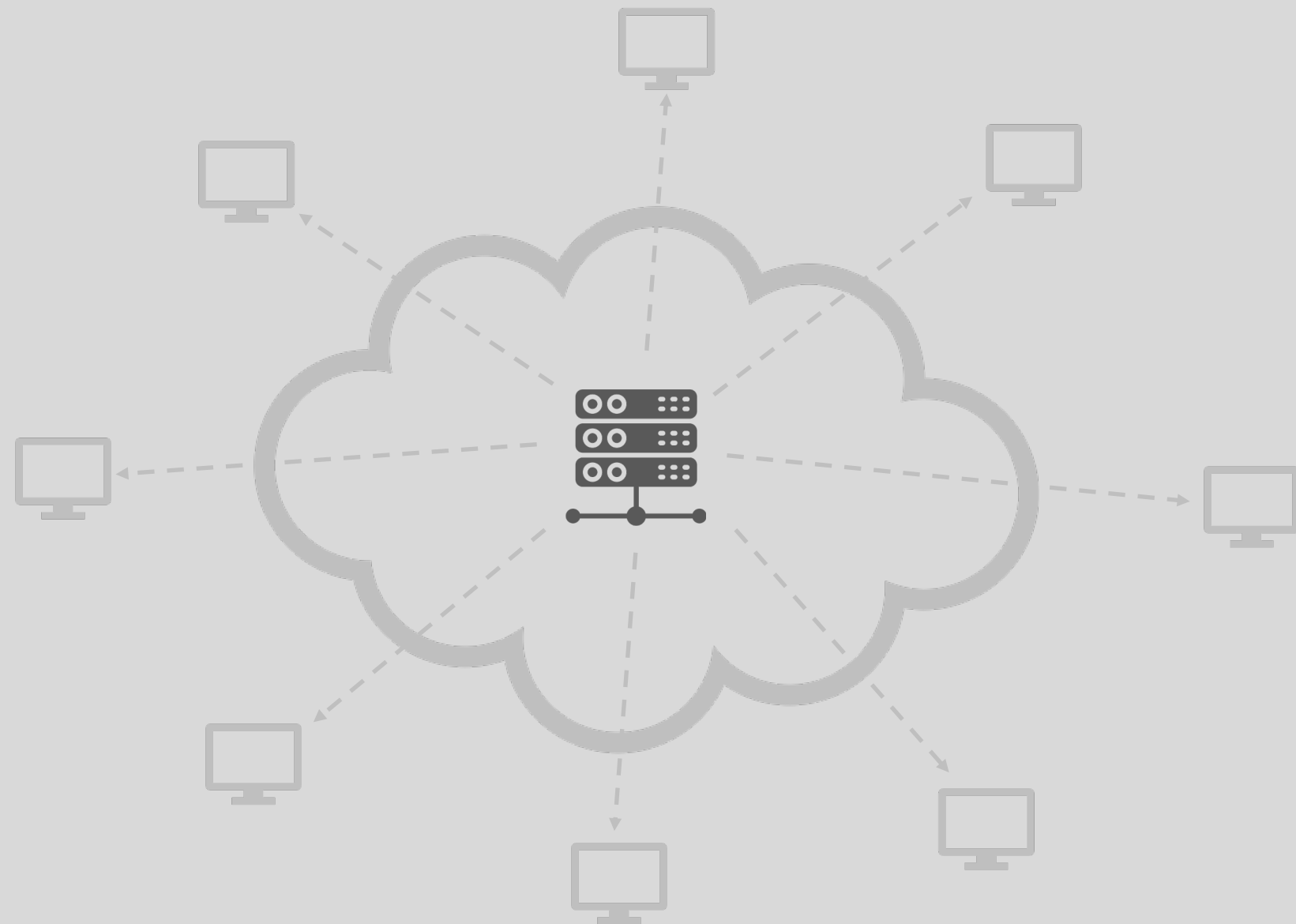
The layer consists of

- Public CDN
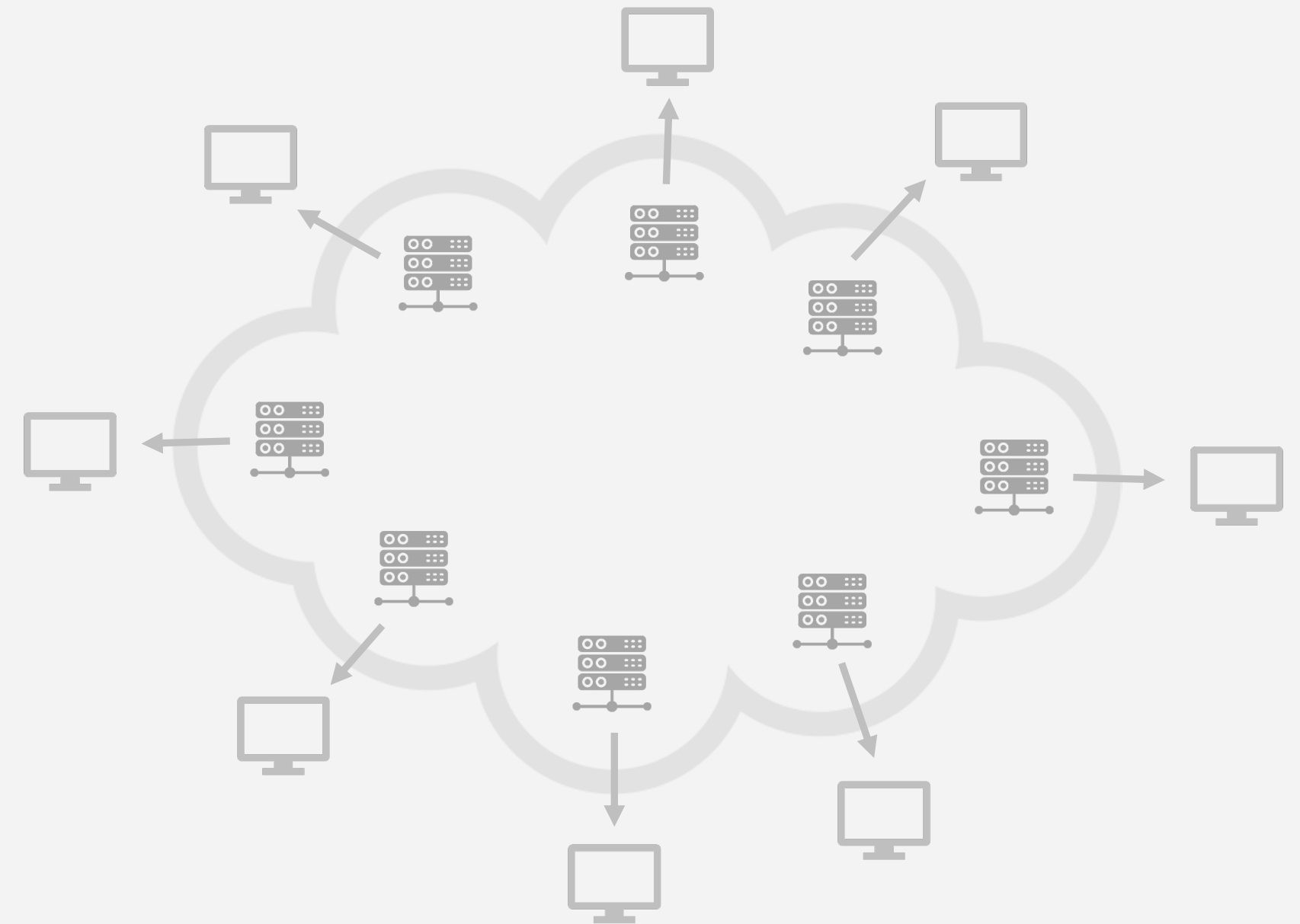- Djib Network

Multi-CDN Cache
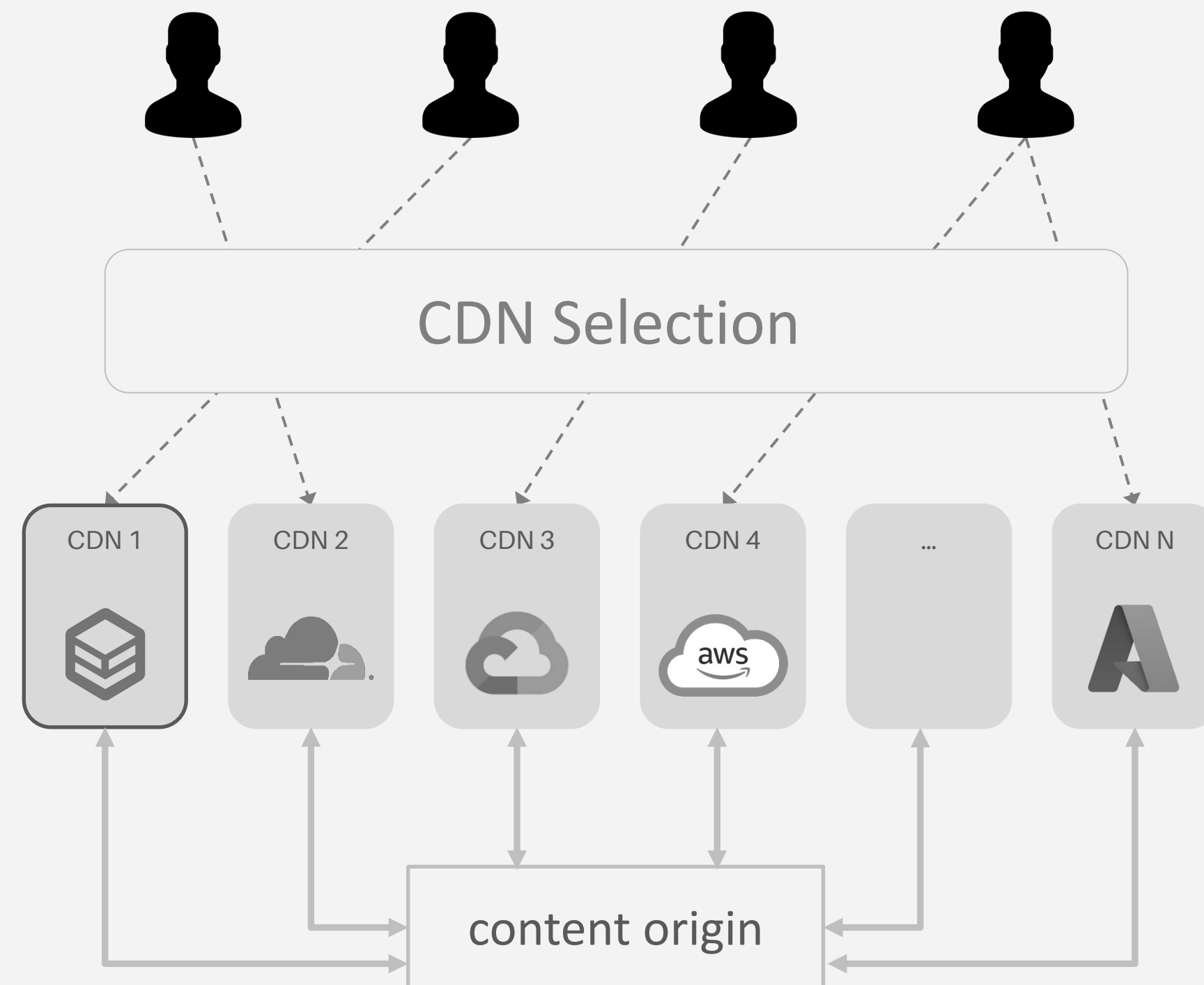
Single Server Distribution
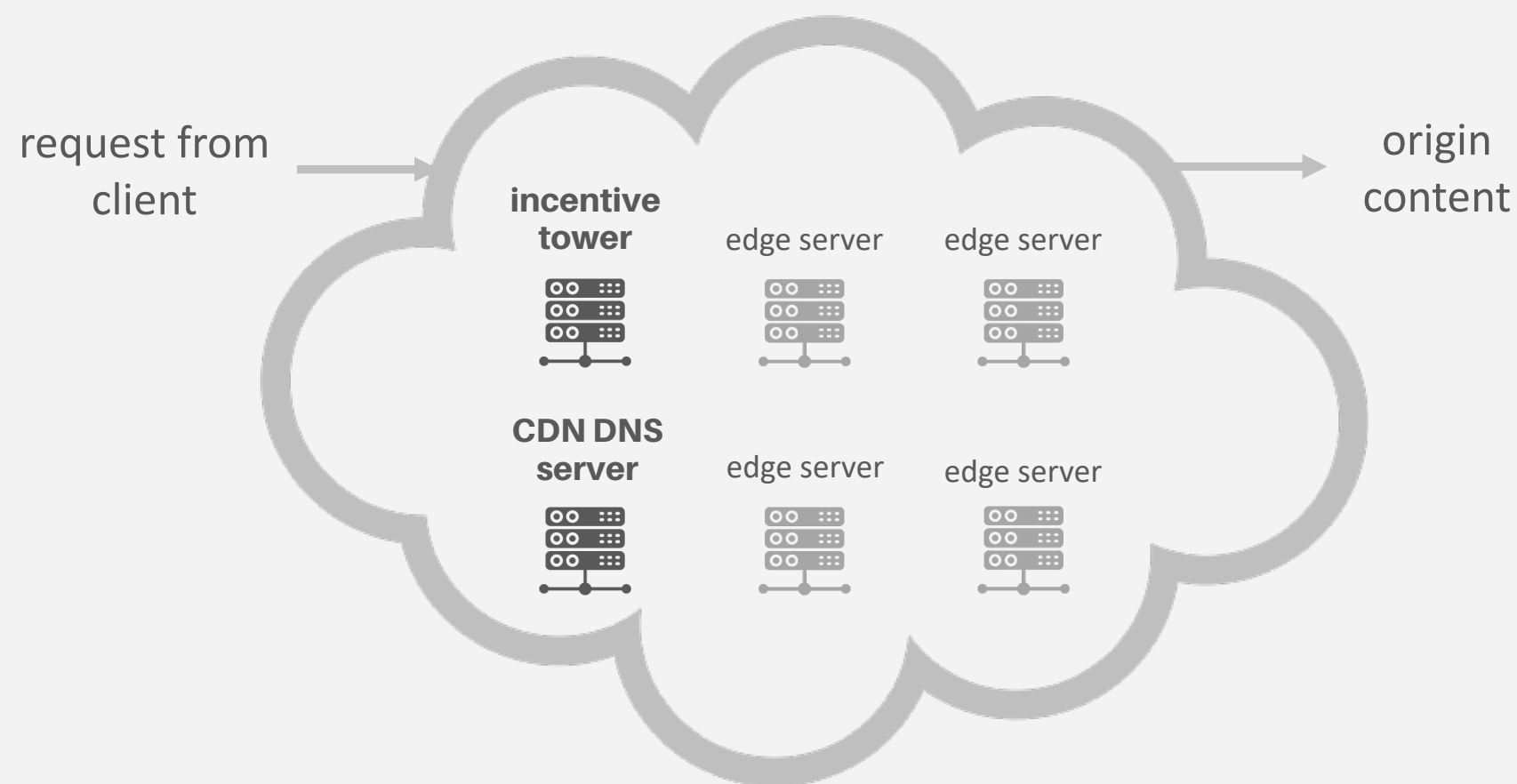
CDN Distribution

Content is delivered
from a centralised location

High availability and performance
by distributing the service
spatially relative to end users

9

Djib Multi-CDN Cache

request from
client

**incentive
tower**

**CDN DNS
server**

edge server

edge server

edge server

edge server

origin
content

Benefits of Multi-CDN Approach

A Content Delivery Network (CDN) is **a group of geographically-distributed servers which help you deliver your content faster to users.** However, CDNs can perform differently at different times or in different locations. They can experience outages and slowdowns. With a multi-CDN strategy your content is hosted with more than one CDN provider, enabling you to drive better application performance and in many cases, lower costs.

Individual CDN providers, while they operate large commercial networks, do not have unlimited capacity. Large peaks in traffic may overwhelm your CDN provider. Also, CDNs can experience regional or even global outages. With Multi CDN, in case of a problem you can immediately divert traffic to another CDN which is up and running.

If a CDN is compromised, or taken down by a DDoS attack, it can take out thousands of websites relying on that CDN to deliver content. Having multiple CDN providers reduces this risk, because it's highly unlikely attackers will take out two or more CDN providers at the same time.

Djib Multi-CDN Architecture

Djib CDN is a one of the CDNs in the cache network which this CDN initially will be maintained by Djib, and by 2023 it is planned to be delivered to the community. By providing bandwidth, storage and small computational power each percipient will receive Djib token as incentive, by being an edge server in the network you will get some coins.

Network Architecture

The Interplanetary File System (IPFS) is a **protocol and peer-to-peer network for storing and sharing data in a distributed file system.**

IPFS uses content-addressing to uniquely identify each file in a global namespace connecting all computing devices.

Djib is running a cluster of IPFS which is open to community to join by joining to this cluster node owner will be incentivized

IPFS Cluster
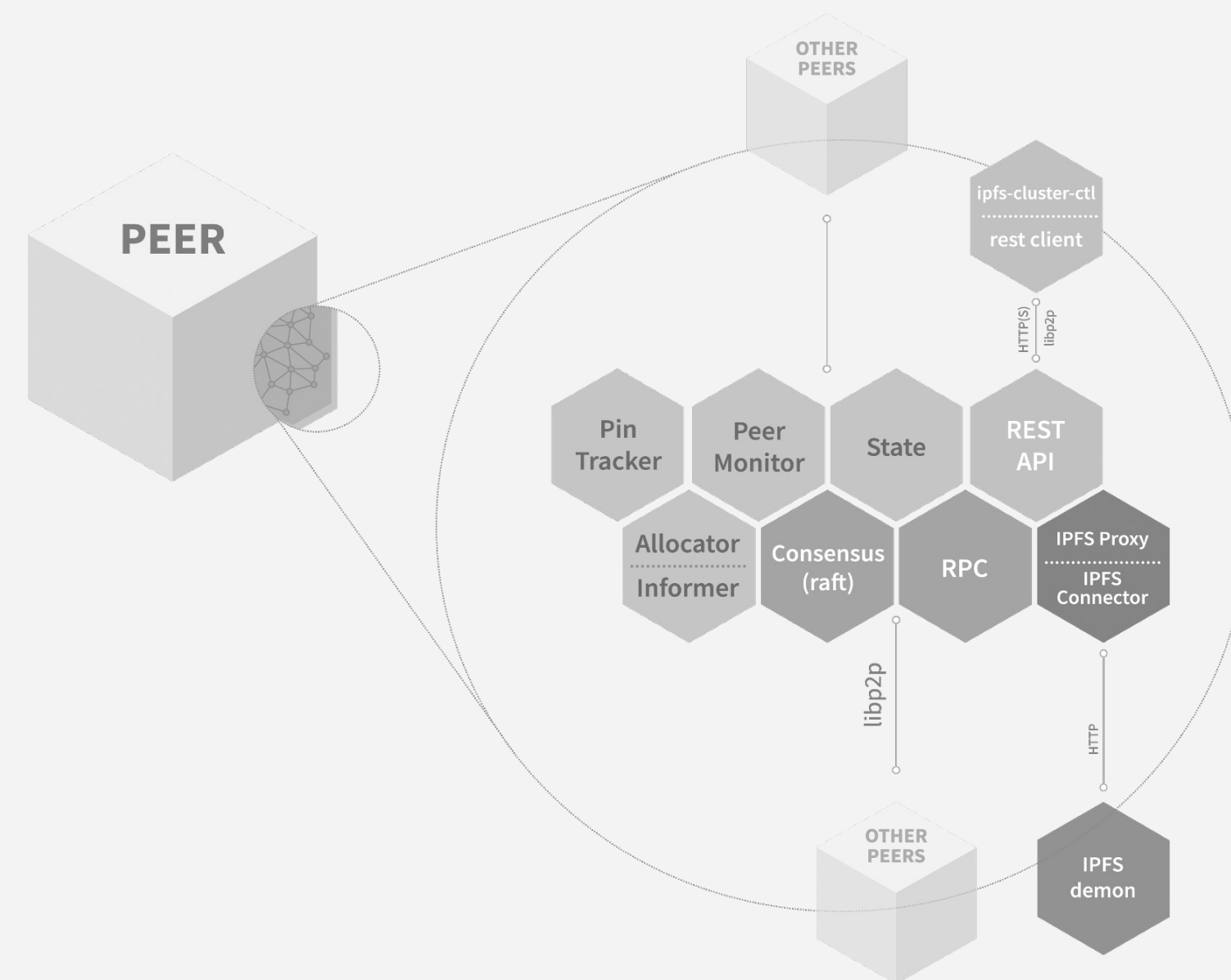
IPFS Cluster Architecture

The IPFS Cluster software consists of three binary files:

- ipfs-cluster-service runs a Cluster peer (similar to ipfs daemon) using a configuration file and by storing some information on disk.
- ipfs-cluster-ctl is used to communicate with a Cluster peer and perform actions such as pinning IPFS CIDs to the Cluster.
- ipfs-cluster-follow runs a follower Cluster peer. It can be used as a substitute for ipfs-cluster-service for this specific use case and mixes some service and ctl features.

The Cluster peer communicates with the IPFS daemon using the HTTP API (localhost:5001). The IPFS daemon must be launched and running separately.

Usually, ipfs-cluster-ctl is used on the same machine or server on which ipfs-cluster-service is running. For example, ipfs-cluster-ctl pin add <hash> will instruct the local Cluster peer to submit a pin to the Cluster. The different peers in the Cluster will then proceed to ask their local IPFS daemons to pin that content. The number of pins across the Cluster will depend on the replication factor set in the Cluster configuration file.

The Cluster swarm

IPFS Cluster is a fully distributed application.

ipfs-cluster-service runs a Cluster peer and all peers are equal. Cluster peers form an separate, isolated libp2p [private] network, which uses the cluster_secret (a 32-bit hex-encoded passphrase present in the configuration of every peer).

This network does not interact with the main IPFS network, nor with other private IPFS networks and is solely used so that Cluster peers can communicate and operate.

The network uses a number of blocks also used by IPFS (DHT, PubSub, Bitswap...) but, unlike IPFS, does not enjoy public bootstrappers.

This means that Cluster peers will normally need their own bootstrappers (it can be any peer in the Cluster), although sometimes they can rely on mDNS discovery.

This also means that Cluster peers operate separately from IPFS with regards to NAT hole punching, ports etc.

The shared state: consensus

All peers in the Cluster maintain a global pinset. Making every peer maintain the same view of the pinset regardless of concurrent pinning operations and on a distributed application layout requires coordination given by what is called a consensus component. Cluster supports two implementations:

- a CRDT-based approach, based on Conflict-Free Replicated Datatypes
- a Raft-based approach, based on a popular log-based consensus algorithm

The relevant details and trade-offs between them are outlined in the Consensus Components section. The choice (which must be performed during initialization and cannot be easily changed), heavily affects the procedures for adding, removing and handling failures in Cluster peers.

The shared state can be inspected with ipfs-cluster-ctl pin ls and is the only piece of information present locally in every peer. Pin status (status) information, or peers information (peers ls) for other than the peer that is running the command, must be obtained at runtime from their respective peers and assembled together.

See: https://cluster.ipfs.io/documentation/deployment/architecture/

Network Architecture

Djib persistence layer is a High-Performance Object Storage. It can handle unstructured data such as photos, videos, log files, backups, and container images with the maximum supported object size of 5TB.

This is the supporting and foundation of the entire system, Djib constantly will add nodes to this layer every gigabyte capacity added to this layer emits release of one DJIB token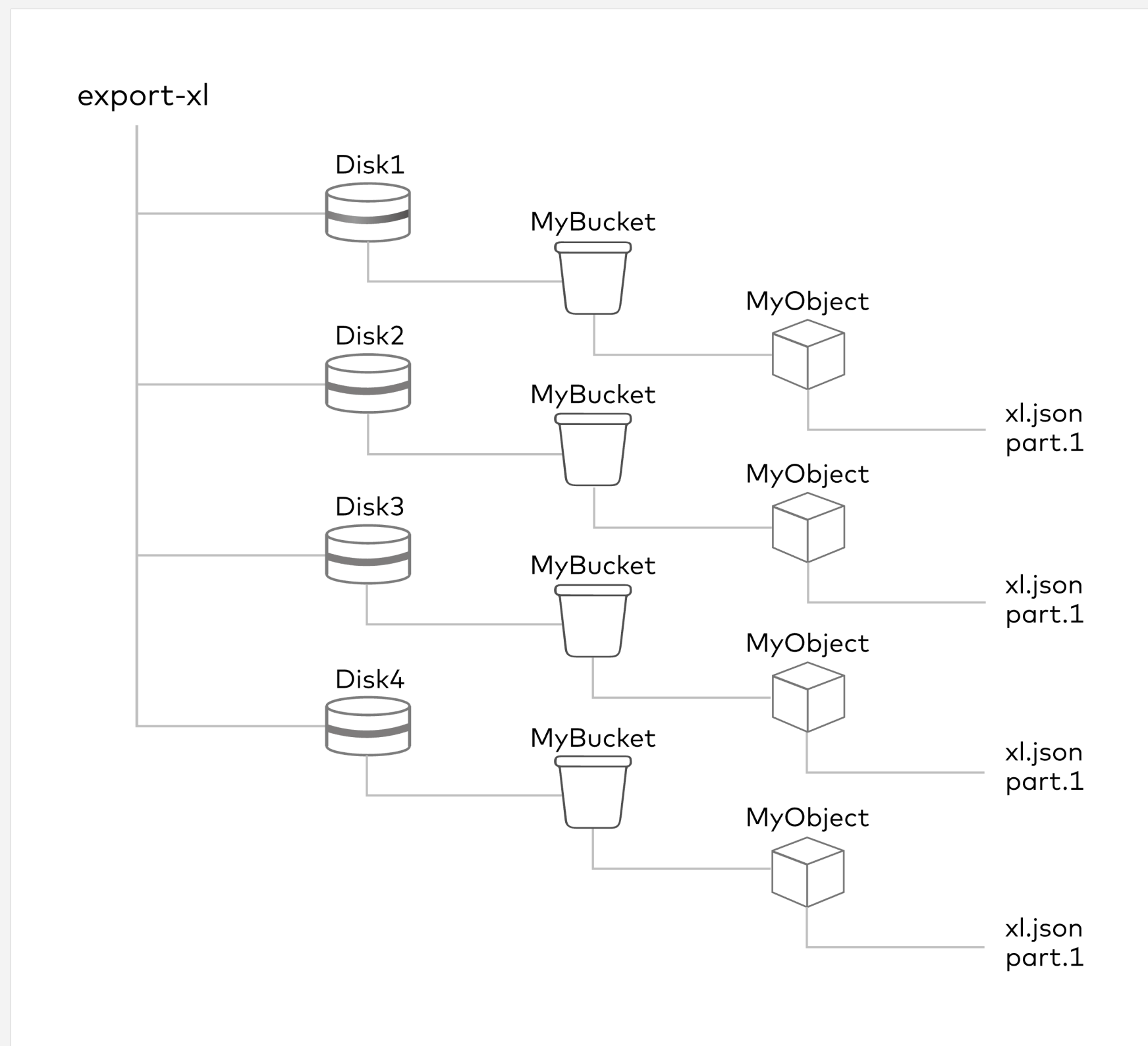. This is going to happen for next 60 years. Djib will be compatible with other cloud storage such as S3, azure blob storage, etc, it also provides json rpc endpoint for developers to make use of this technology
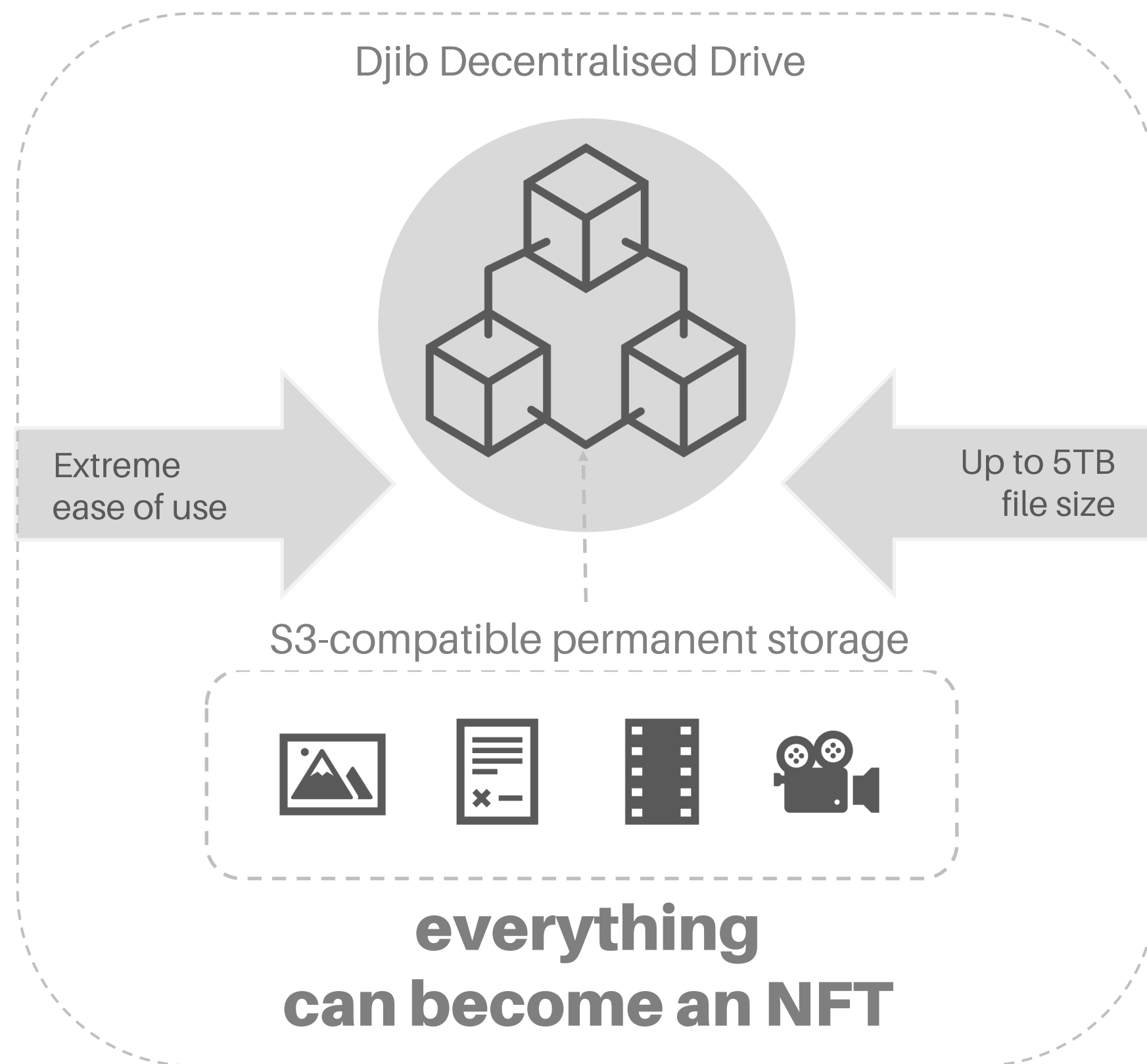
Persistence Layer
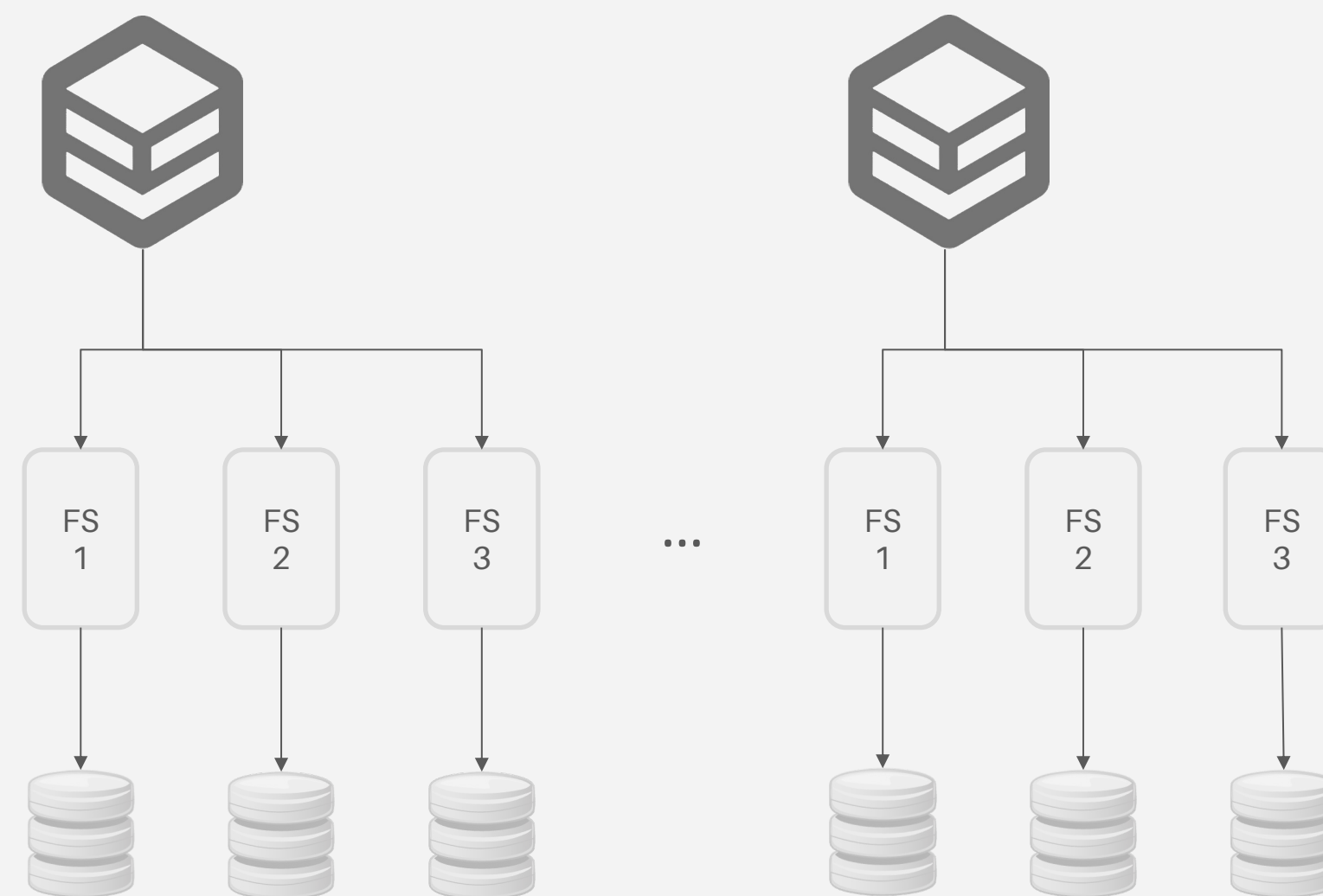
Djib Persistence Layer - Structure

Djib Changes Everything

By combining secure NFT data storage with extreme ease of use

Djib makes possible the myriad imagined NFT uses for **enterprise applications**

Djib Decentralised Drive

Extreme ease of use

Up to 5TB file size

S3-compatible permanent storage

everything can become an NFT

Users can save and share any file as multi-chain NFT and add **custom business logic** or **templated smart contracts** to it.

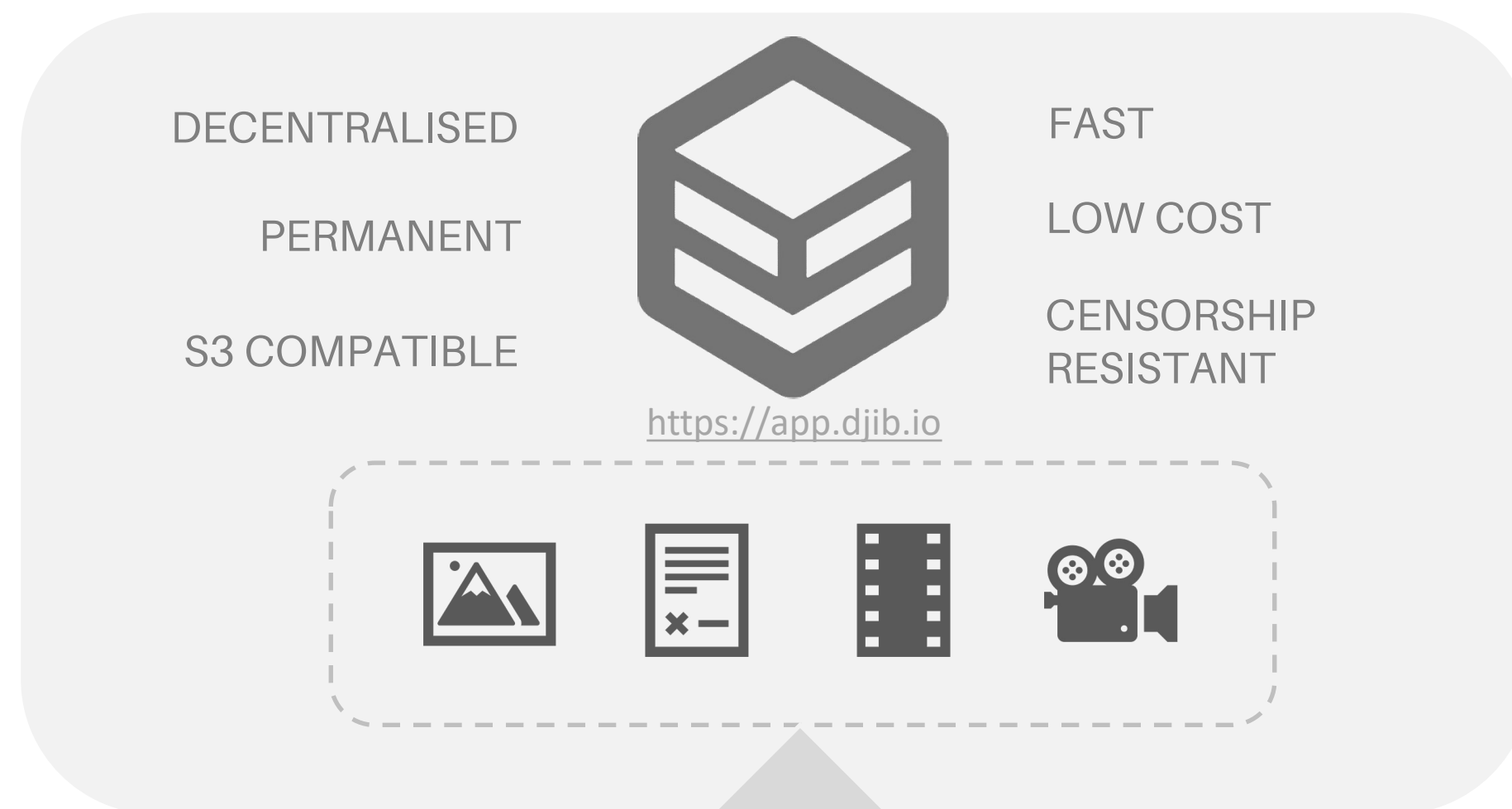NFTs can store up to 5TB of data and are portable across blockchains

Enterprise Ready

Storage

Unlimited Storage Drive

Live

DECENTRALISED

PERMANENT

S3 COMPATIBLE

FAST

LOW COST

CENSORSHIP RESISTANT
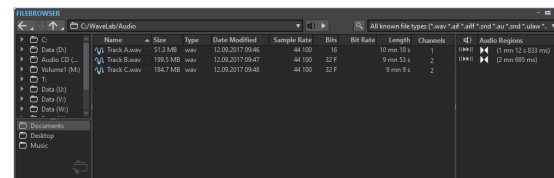
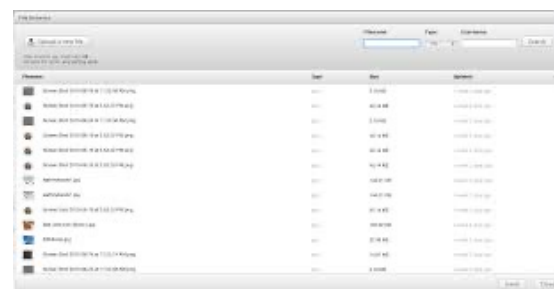https://app.djib.io

Upload any file
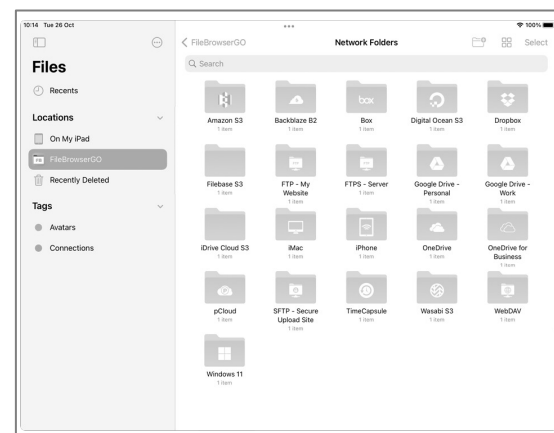
Enterprise Ready

Open

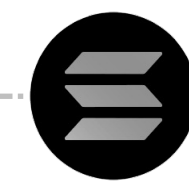# Build Your Own Interface

Live

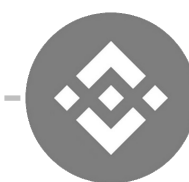Company A Interface

Company B Interface

Company C Interface

The Djib Drive is S-3 compatible and allows business users to create their own interfaces

https://public.djib.io
https://testnet.djib.io
https://devnet.djib.io
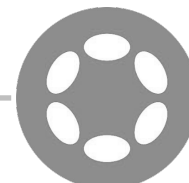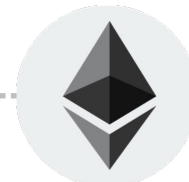
Enterprise Ready

Minting

Everyone Can Publish an NFT From Any File

Publish NFTs that are
multichain ready by design
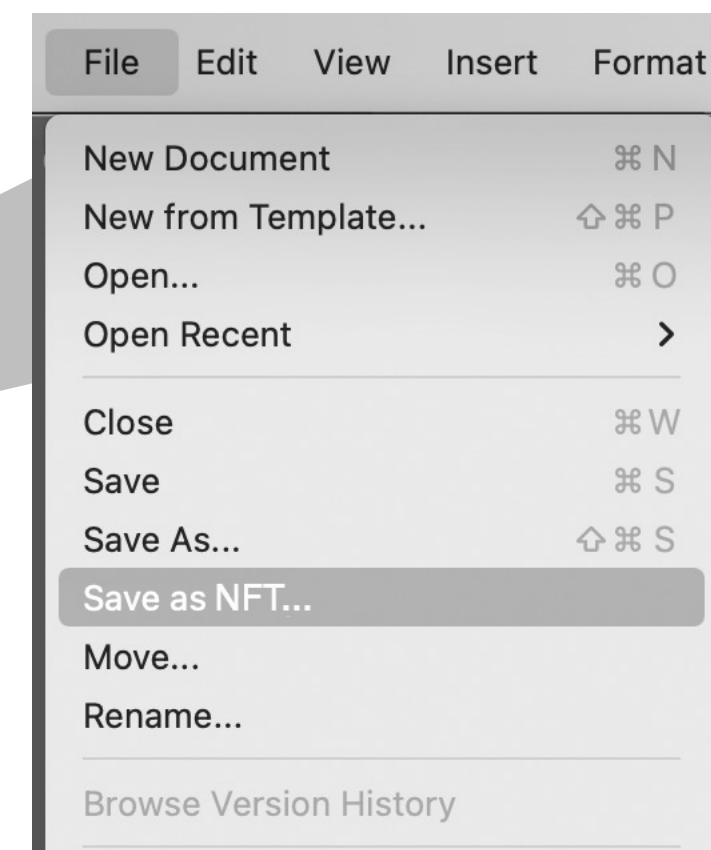
*Change of paradigm:
"**Save as**" instead of a
complex "minting" process.*

As easy as that!

Enterprise Ready

Business Logic

Templated Business Logic in Every Document
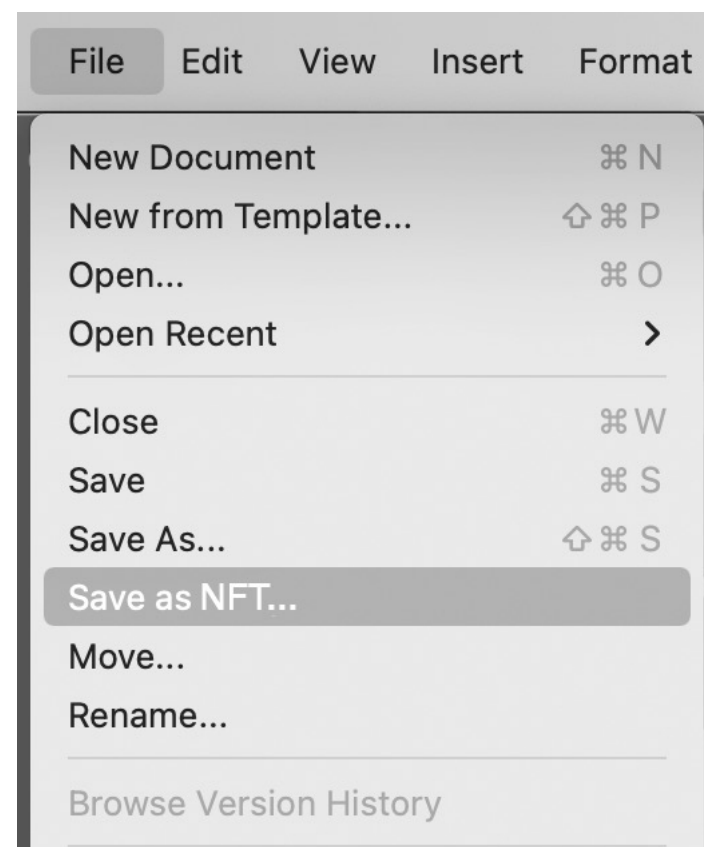
Attach
custom business logic
during the
"Save as" process
or add pre-existing
smart contract templates
(e.g. for licensing
rights, validity
expiration, and so on)

Enterprise Ready

Applications

Everything Becomes an NFT
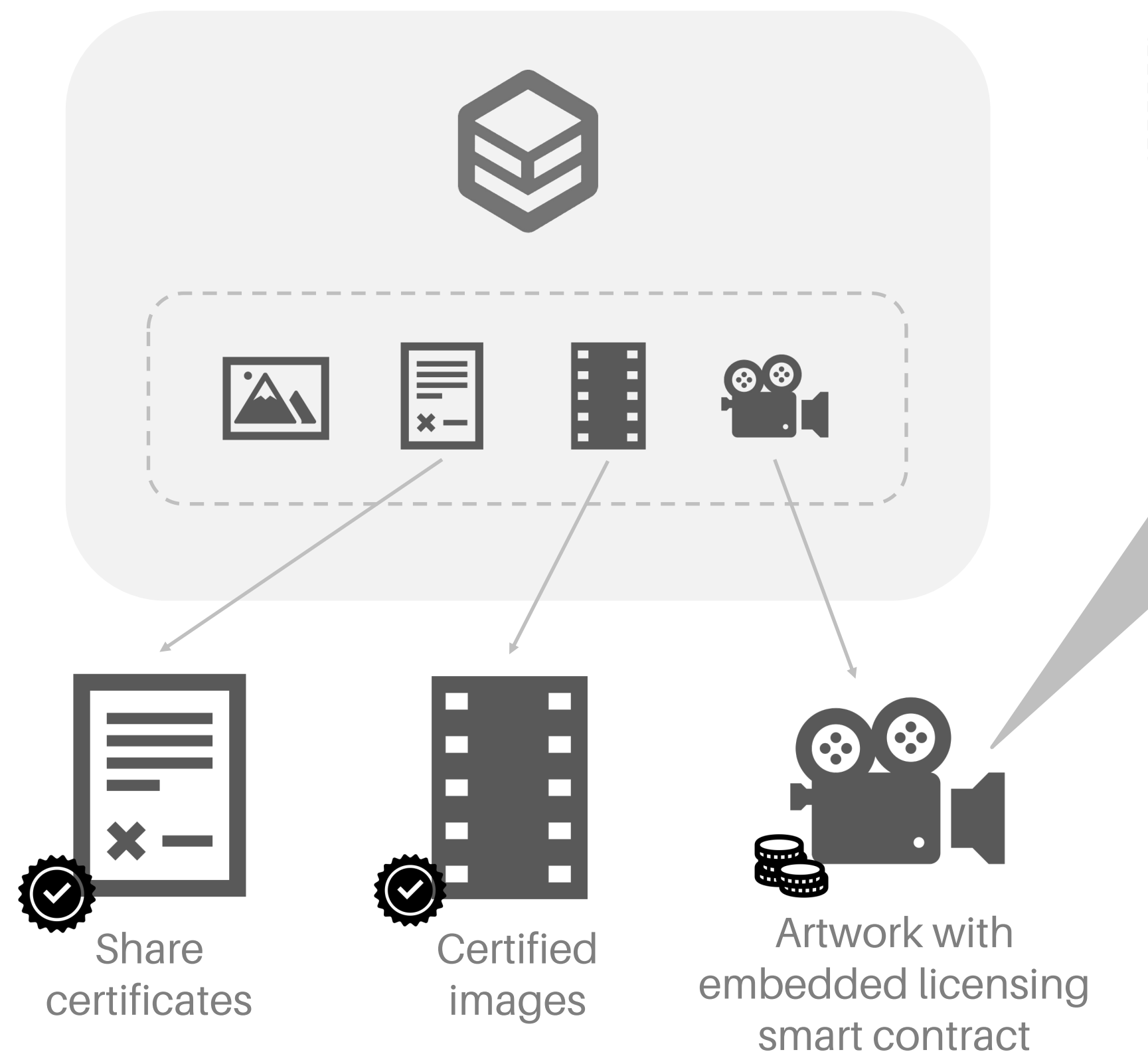
Djib Demo NFT

Complete Bitcoin repository

Djib Pilot Application

Share certificates

Certified images

Artwork with embedded licensing smart contract

Publish as NFT
plugin
for Adobe
Creative Suite
(26 million
paid users)

In Development

Tokenomics

- 4% private round, 1-year weekly vesting, for sale at:
  - Tranche 1 (1%) at $0.15 ($150,000)
  - Tranche 2 (2%) at $0.20 ($400,000)
  - Tranche 3 (2%) at $0.25 ($500,000)
- 1% airdrop and adoption
- 5% IDO at $0.60-$1.00
- 10% community fund to support adoption; over 4 years
- 70% peers network distributed over 20 years
- 5% exchange liquidity; over 5 years
- 5% founders, team, advisers over 5 years (first year at the end of year and from second year every quarter)

TOKEN ALLOCATION

Legend:
- Network incentives
- Private round
- Community fund
- Founders and team
- Exchange liquidity
- IDO
- Airdrop and adoption

Chart segments: 5%, 1%, 5%, 5%, 10%, 4%, 70%
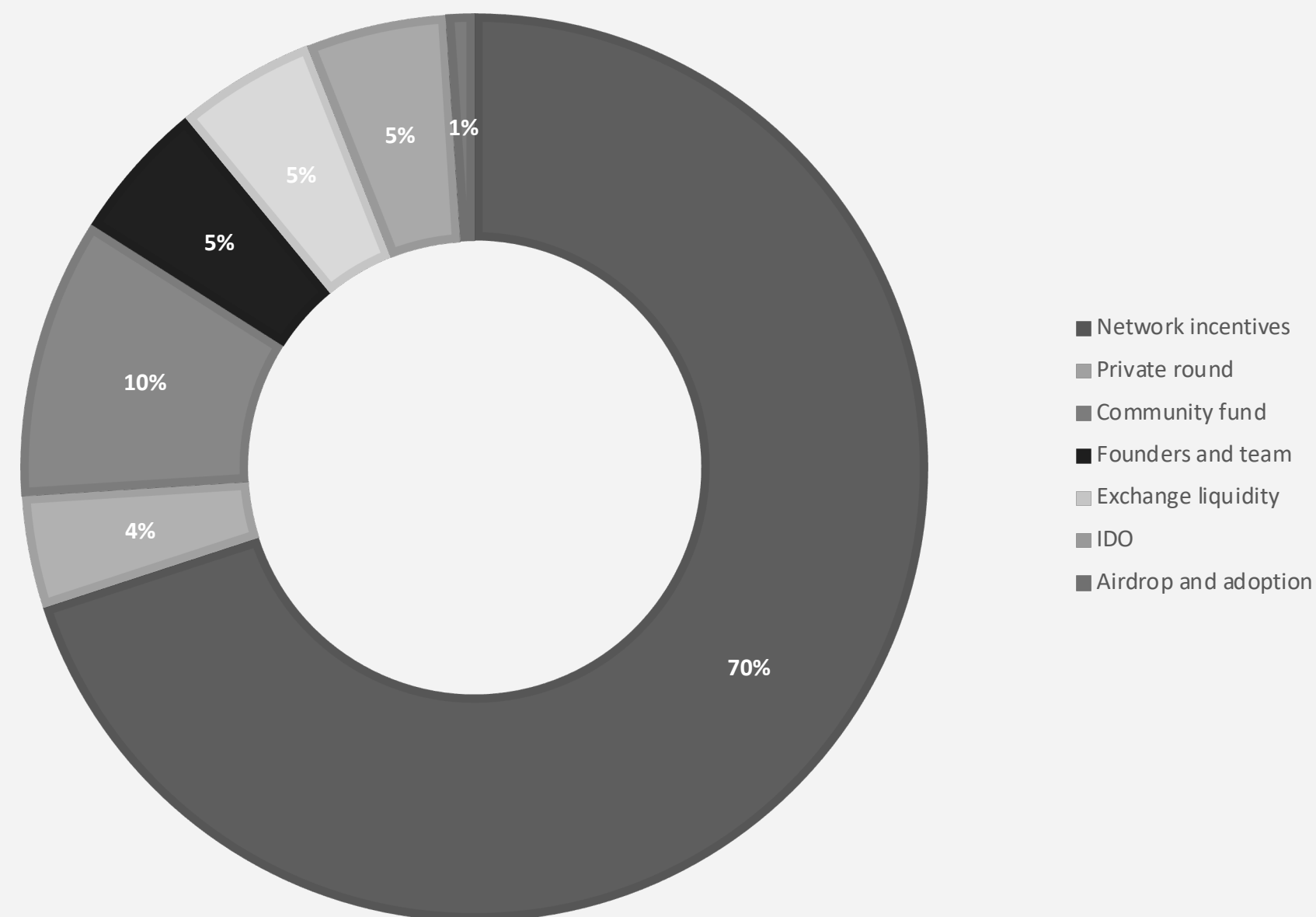
Token supply: 100,000,000 tokens

Economix

How the coin appreciates

Every coin is guaranteed to provide a lifetime 1GB cloud storage with the supply method over 60 year this give enough time to market adaption and also value appreciation of the token.
Every year from the pool almost two million coins get release and will become available in the market. And this release should be entangled to the fact that Djib adds approx.1 peta byte storage.

Lifetime value of 1TB of data

What is the lifetime value of 1TB data with the current pricing in the market => (60 years)
Cloud:
Amazon => approximately 12,000 USD
Azure= > approximately 22,000 USD
Google => 14,760
Blockchains: Arweave 9000 USD
Storage like Dropbox: 8000

Price of Djib

For the first year and given the volume available in the market, token price starting point we believe token is highly undervalued but by adding more to our offering we believe the token price can be stabilized around 6.5 to 8.5. Slow emission of the token and being backed by a service and minimum 1 Gb also contributes on token value appreciation

Initial approach

During the first year we can use the economic models of S3, and S3-like technologies, Dropbox and others like them. But in 2 year period and becoming market standard of networking CDN we expect token price to appreciate too. What opportunities Cache network will provide is that it can be used almost in any web technology and in itself is potential to provide service for enterprises. Exposing API on the Djib persistence layer and integration with cloud service would also attract more enterprise level customers.

Djib Token Supply and Demand

NFT CREATORS AND NFT MARKETPLACES

Pay in Djib for storing their assets on the Djib Network

NFT OWNERS

Pay in Djib for transferring NFTs to other chains

CLOUD STORAGE USERS

Pay in Djib token for their private cloud storage

WEBSITES AND WEB APPLICATIONS

Pay for Djib for the use of the Multi-CDN Network

DJIB POOL

DJIB NODES

Receive rewards for providing nodes and storage

Djib Token Rewards Flow

Watchdog
node

pass collected
telemetry to the
calculation unit

Calculation Unit
(calculates the
reward based
on provided GB,
uptime and
network traffic

orders to be
executed are sent
to the pool

pass collected
telemetry to the
calculation unit

Watchdog
node

DJIB POOL

provide
telemetry
data

provide
telemetry
data

provide
telemetry
data

provide
telemetry
data

provide
telemetry
data

receive
rewards

Node 1

receive
rewards

Node 2

receive
rewards

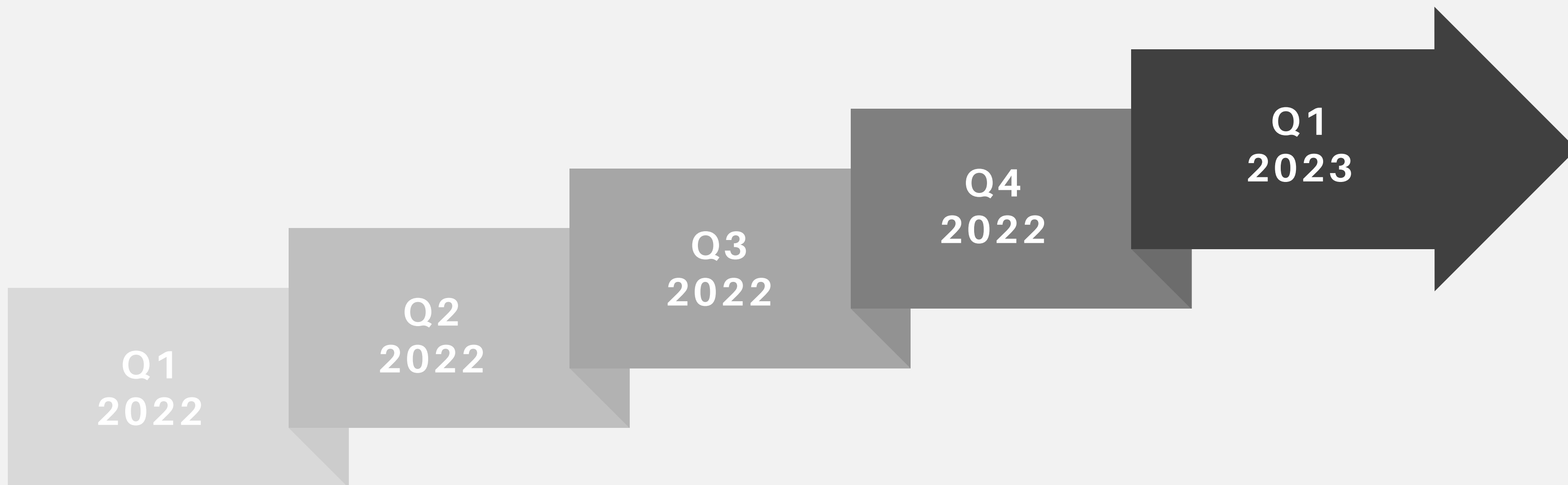Node 3

receive
rewards

Node 4

Roadmap

- Djib Vanila (beta)
- Djib Drive (beta)
- White Paper

- Mint token
- Beta launch
- Metaplex integration

- Djib Dashboard and Expanded Services

- Decentralised file storage
- Cloud service compatibility for enterprise clients

- Community CDN node release
- Solana Integration

Q1 2022

Q2 2022

Q3 2022

Q4 2022

Q1 2023

Find us on the Solana Metaplex

https://solana.com/ecosystem/djib

Contact us

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moe@djib.io
https://djib.io
https://dosc.djib.io
https://solana.com/ecosystem/djib

Annex 1 – Availability Zones (1/4)

Africa

Algiers, Algeria - (ALG)

Antananarivo, Madagascar - (TNR)

Cape Town, South Africa - (CPT)

Casablanca, Morocco - (CMN)

Dakar, Senegal - (DKR)

Dar Es Salaam, Tanzania - (DAR)

Djibouti City, Djibouti - (JIB)

Durban, South Africa - (DUR)

Harare, Zimbabwe - (HRE)

Johannesburg, South Africa - (JNB)

Kigali, Rwanda - (KGL)

Lagos, Nigeria - (LOS)

Luanda, Angola - (LAD)

Maputo, Mozambique - (MPM)

Mombasa, Kenya - (MBA)

Monrovia, Liberia - (ROB)

Nairobi, Kenya - (NBO)

Port Louis, Mauritius - (MRU)

Réunion, France - (RUN)

Tunis, Tunisia - (TUN)

Asia

Almaty, Kazakhstan - (ALA)

Anqing, China - (AQG)

Bangalore, India - (BLR)

Bangkok, Thailand - (BKK)

Bandar Seri Begawan, Brunei - (BWN)

Baoji, China - (XIY)

Cebu, Philippines - (CEB)

Changde, China - (CGD)

Changsha, China - (CSX)

Changzhou, China - (CZX)

Chengdu, China - (CTU)

Chennai, India - (MAA)

Chittagong, Bangladesh - (CGP)

Colombo, Sri Lanka - (CMB)

Dalian, China - (DLC)

Dhaka, Bangladesh - (DAC)

Foshan, China - (FUO)

Fuzhou, China - (FOC)

Guangzhou, China - (CAN)

Guiyang, China - (KWE)

Haikou, China - (HAK)

Hanoi, Vietnam - (HAN)

Hengshui, China - (SJW)

Ho Chi Minh City, Vietnam - (SGN)

Hohhot, China - (HET)

Hong Kong - (HKG)

Huainan, China - (HFE)

Hyderabad, India - (HYD)

Islamabad, Pakistan - (ISB)

Jakarta, Indonesia - (CGK)

Jashore, Bangladesh - (JSR)

Jinan, China - (TNA)

Jinhua, China - (HGH)

Johor Bahru, Malaysia - (JHB)

Karachi, Pakistan - (KHI)

Kathmandu, Nepal - (KTM)

Kolkata, India - (CCU)

Krasnoyarsk, Russia - (KJA)

Kuala Lumpur, Malaysia - (KUL)

Lahore, Pakistan - (LHE)

Langfang, China - (PKX)

Lanzhou, China - (LHW)

Luoyang, China - (LYA)

Macau - (MFM)

Annex 1 – Availability Zones (2/4)

Malé, Maldives - (MLE)

Manila, Philippines - (MNL)

Mumbai, India - (BOM)

Nagpur, India - (NAG)

New Delhi, India - (DEL)

Osaka, Japan - (KIX)

Patna, India - (PAT)

Phnom Penh, Cambodia - (PNH)

Qingdao, China - (TAO)

Qinhuangdao, China - (BPE)

Quanzhou, China - (JJN)

Quzhou, China - (JUZ)

Seoul, South Korea - (ICN)

Shanghai, China - (SHA)

Shiyan, China - (WDS)

Singapore, Singapore - (SIN)

Surat Thani, Thailand - (URT)

Suqian, China - (NKG)

Taipei - (TPE)

Taizhou, China - (HYN)

Thimphu, Bhutan - (PBH)

Tianjin, China - (TSN)

Tokyo, Japan - (NRT)

Ulaanbaatar, Mongolia - (ULN)

Vientiane, Laos - (VTE)

Wuxi, China - (WUX)

Xining, China - (XNN)

Xinyu, China - (KHN)

Yangon, Myanmar - (RGN)

Yerevan, Armenia - (EVN)

Yichang, China - (YIH)

Zhengzhou, China - (CGO)

Europe

Amsterdam, NL - (AMS)

Athens, Greece - (ATH)

Barcelona, Spain - (BCN)

Belgrade, Serbia - (BEG)

Berlin, Germany - (TXL)

Brussels, Belgium - (BRU)

Bucharest, Romania - (OTP)

Budapest, Hungary - (BUD)

Chișinău, Moldova - (KIV)

Copenhagen, Denmark - (CPH)

Cork, Ireland - (ORK)

Dublin, Ireland - (DUB)

Düsseldorf, Germany - (DUS)

Edinburgh, United Kingdom - (EDI)

Frankfurt, Germany - (FRA)

Geneva, Switzerland - (GVA)

Gothenburg, Sweden - (GOT)

Hamburg, Germany - (HAM)

Helsinki, Finland - (HEL)

Istanbul, Turkey - (IST)

Kyiv, Ukraine - (KBP)

Lisbon, Portugal - (LIS)

London, United Kingdom - (LHR)

Luxembourg City, Luxembourg - (LUX)

Madrid, Spain - (MAD)

Manchester, United Kingdom - (MAN)

Marseille, France - (MRS)

Milan, Italy - (MXP)

Minsk, Belarus - (MSQ)

Moscow, Russia - (DME)

Munich, Germany - (MUC)

Nicosia, Cyprus - (LCA)

Annex 1 – Availability Zones (3/4)

Oslo, Norway - (OSL)

Palermo, Italy - (PMO)

Paris, France - (CDG)

Prague, Czech Republic - (PRG)

Reykjavík, Iceland - (KEF)

Riga, Latvia - (RIX)

Rome, Italy - (FCO)

Saint Petersburg, Russia - (LED)

Sofia, Bulgaria - (SOF)

Stockholm, Sweden - (ARN)

Tallinn, Estonia - (TLL)

Tbilisi, Georgia - (TBS)

Thessaloniki, Greece - (SKG)

Vienna, Austria - (VIE)

Vilnius, Lithuania - (VNO)

Warsaw, Poland - (WAW)

Yekaterinburg, Russia - (SVX)

Zagreb, Croatia - (ZAG)

Zürich, Switzerland - (ZRH)

Latin America & the Caribbean

Americana, Brazil - (QWJ)

Arica, Chile - (ARI)

Asunción, Paraguay - (ASU)

Belém, Brazil - (BEL)

Belo Horizonte, Brazil - (CNF)

Blumenau, Brazil - (BNU)

Bogotá, Colombia - (BOG)

Brasilia, Brazil - (BSB)

Buenos Aires, Argentina - (EZE)

Caçador, Brazil - (CFC)

Campinas, Brazil - (VCP)

Curitiba, Brazil - (CWB)

Florianopolis, Brazil - (FLN)

Fortaleza, Brazil - (FOR)

Goiânia, Brazil - (GYN)

Guatemala City, Guatemala - (GUA)

Guayaquil, Ecuador - (GYE)

Itajaí, Brazil - (ITJ)

Lima, Peru - (LIM)

Manaus, Brazil - (MAO)

Medellín, Colombia - (MDE)

Panama City, Panama - (PTY)

Paramaribo, Suriname - (PBM)

Porto Alegre, Brazil - (POA)

Port-Au-Prince, Haiti - (PAP)

Quito, Ecuador - (UIO)

Ribeirao Preto, Brazil - (RAO)

Rio de Janeiro, Brazil - (GIG)

Salvador, Brazil - (SSA)

San José, Costa Rica - (SJO)

Santiago, Chile - (SCL)

São José do Rio Preto, Brazil - (SJP)

São Paulo, Brazil - (GRU)

Sorocaba, Brazil - (SOD)

St. George's, Grenada - (GND)

Tegucigalpa, Honduras - (TGU)

Willemstad, Curaçao - (CUR)

Middle East

Amman, Jordan - (AMM)

Baghdad, Iraq - (BGW)

Baku, Azerbaijan - (GYD)

Beirut, Lebanon - (BEY)

Dammam, Saudi Arabia - (DMM)

Doha, Qatar - (DOH)

Dubai, UAE (DXB)

Annex 1 – Availability Zones (4/4)

Kuwait City, Kuwait - (KWI)

Manama, Bahrain - (BAH)

Muscat, Oman - (MCT)

Ramallah - (ZDM)

Riyadh, Saudi Arabia - (RUH)

Tel Aviv, Israel - (TLV)

North America

Ashburn, VA, USA - (IAD)

Atlanta, GA, USA - (ATL)

Boston, MA, USA - (BOS)

Buffalo, NY, USA - (BUF)

Calgary, AB, Canada - (YYC)

Charlotte, NC, USA - (CLT)

Chicago, IL, USA - (ORD)

Columbus, OH, USA - (CMH)

Dallas, TX, USA - (DFW)

Denver, CO, USA - (DEN)

Detroit, MI, USA - (DTW)

Honolulu, HI, USA - (HNL)

Houston, TX, USA - (IAH)

Indianapolis, IN, USA - (IND)

Jacksonville, FL, USA - (JAX)

Kansas City, MO, USA - (MCI)

Las Vegas, NV, USA - (LAS)

Los Angeles, CA, USA - (LAX)

McAllen, TX, USA - (MFE)

Memphis, TN, USA - (MEM)

Mexico City, Mexico - (MEX)

Miami, FL, USA - (MIA)

Minneapolis, MN, USA - (MSP)

Montgomery, AL, USA - (MGM)

Montréal, QC, Canada - (YUL)

Nashville, TN, USA - (BNA)

Newark, NJ, USA - (EWR)

Norfolk, VA, USA - (ORF)

Omaha, NE, USA - (OMA)

Philadelphia, USA - (PHL)

Phoenix, AZ, USA - (PHX)

Pittsburgh, PA, USA - (PIT)

Portland, OR, USA - (PDX)

Queretaro, MX, Mexico - (QRO)

Richmond, VA, USA - (RIC)

Sacramento, CA, USA - (SMF)

Salt Lake City, UT, USA - (SLC)

San Diego, CA, USA - (SAN)

San Jose, CA, USA - (SJC)

Saskatoon, SK, Canada - (YXE)

Seattle, WA, USA - (SEA)

St. Louis, MO, USA - (STL)

Tallahassee, FL, USA - (TLH)

Tampa, FL, USA - (TPA)

Toronto, ON, Canada - (YYZ)

Vancouver, BC, Canada - (YVR)

Winnipeg, MB, Canada - (YWG)

Oceania

Adelaide, SA, Australia - (ADL)

Auckland, New Zealand - (AKL)

Brisbane, QLD, Australia - (BNE)

Canberra, ACT, Australia - (CBR)

Melbourne, VIC, Australia - (MEL)

Noumea, New Caledonia - (NOU)

Perth, WA, Australia - (PER)

Sydney, NSW, Australia - (SYD)