

IPFS

and how to distribute
the web

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jsday.it - Verona - 10th May 2018



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Who am I?

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We match the world's greatest developers
with the booming software industry of Stockholm.

What will happen now?

- Quick overview
- Opportunity space - how this may be a better web
- How does it work?
- Couple of use cases



#1 Quick Overview



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Inter Planetary File System



“IPFS is the Distributed Web

A peer-to-peer hypermedia protocol
to make the web faster, safer, and more open.”

- ipfs.io

“InterPlanetary File System (IPFS) is a protocol and eponymous network designed to create a content-addressable, peer-to-peer method of storing and sharing hypermedia in a distributed file system.”

- wikipedia.org

torrents

cryptography

distributed hash tables

git



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#2 Opportunity Spaces



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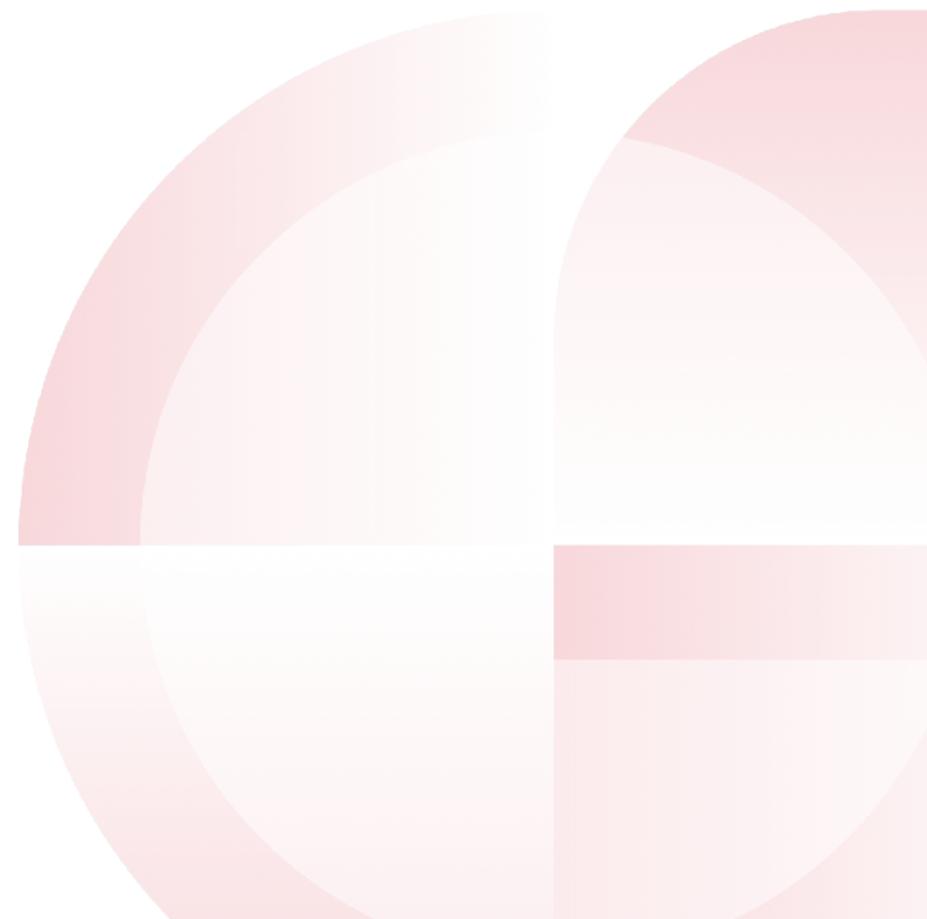
Opportunity #1

Centralization

Peer-to-peer

Features of centralization

#1 - Control is in one place



Features of centralization

#1 - Control is in one place

#2 - The need for trust

Features of centralization

#1 - Control is in one place

#2 - The need for trust

#3 - Single point of failure

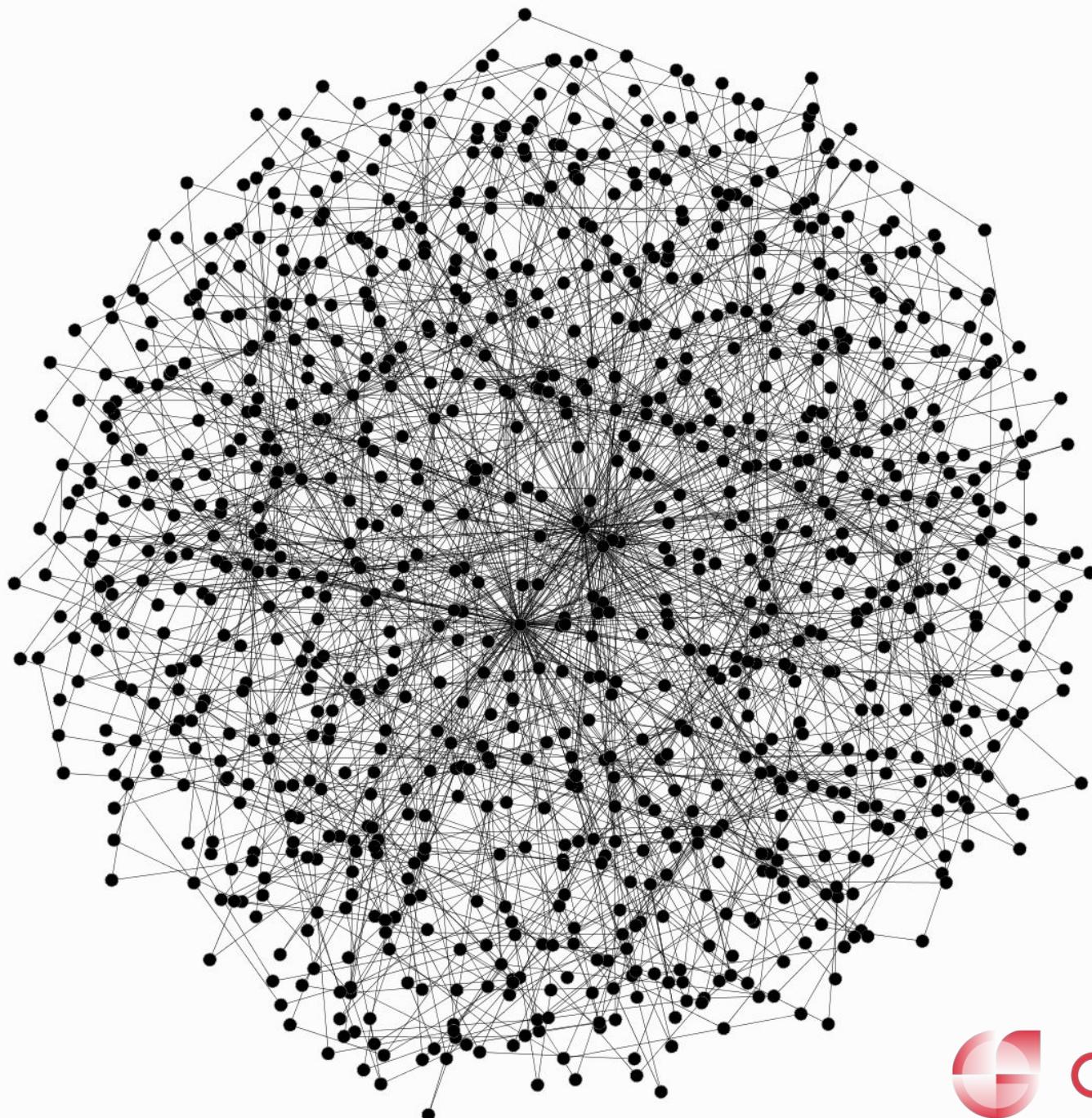


HTTP



IPFS





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Photo credit: Simon Cockell, "Random, scale-free network". Flickr.

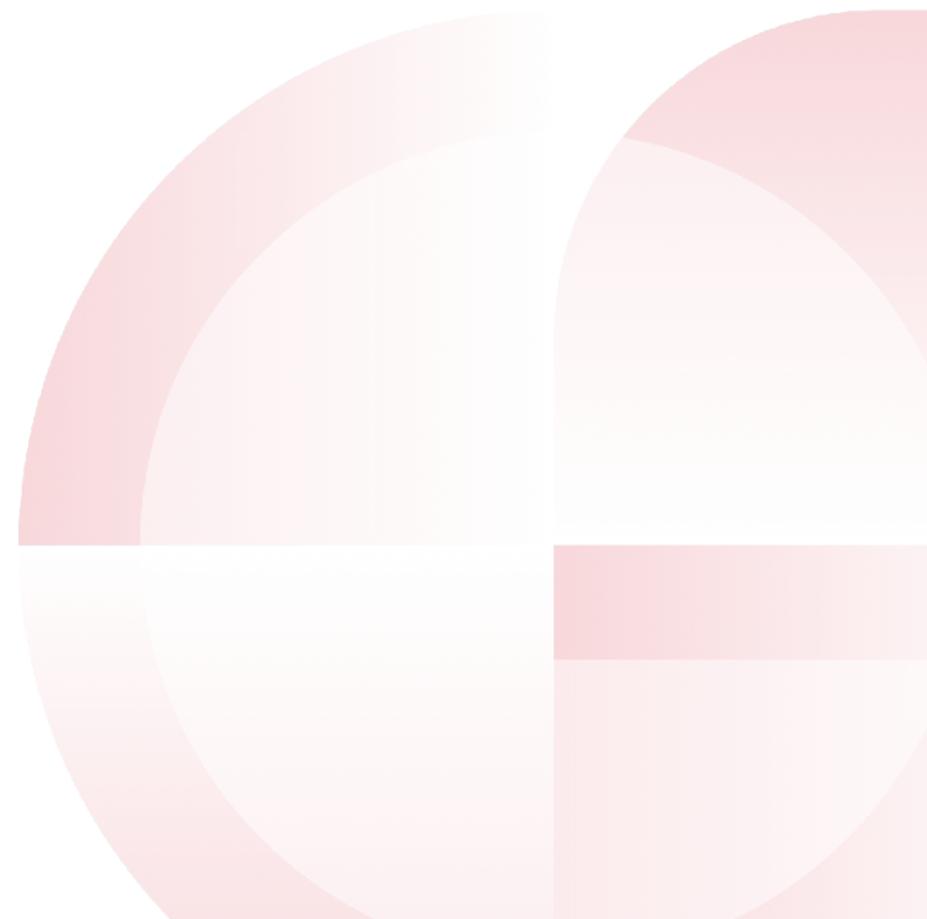
Opportunity #2

Volatile content

The permanent web

Features of content

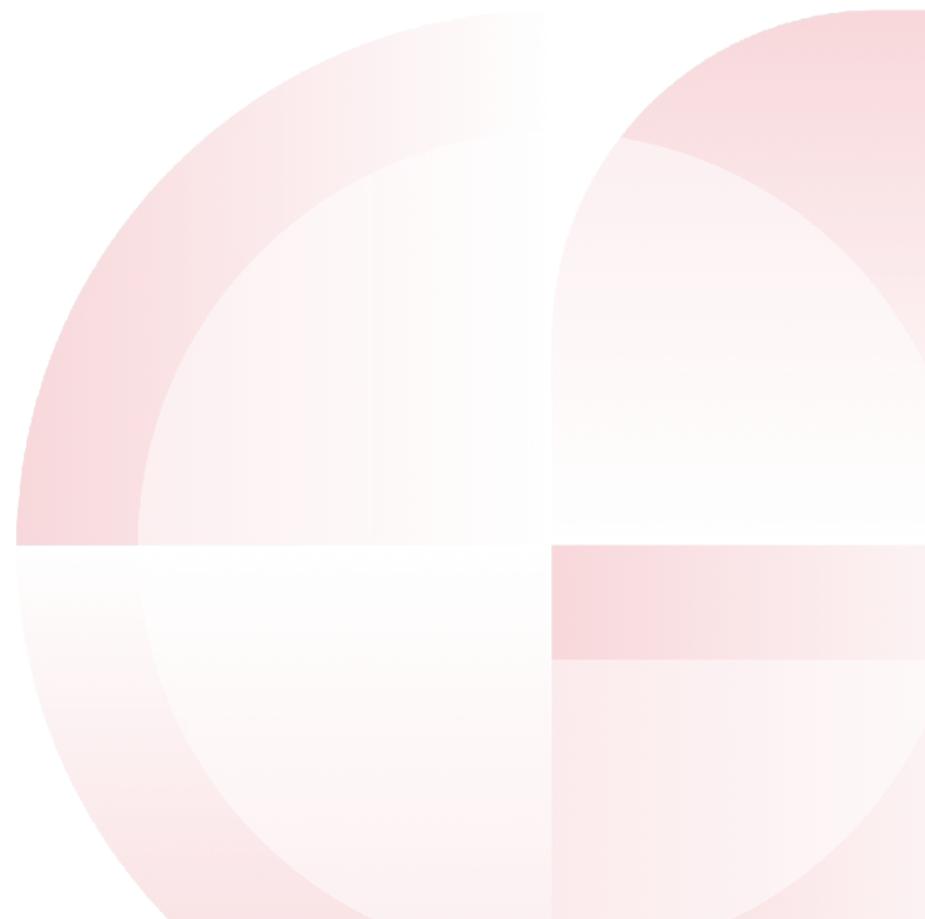
#1 - It changes



Features of content

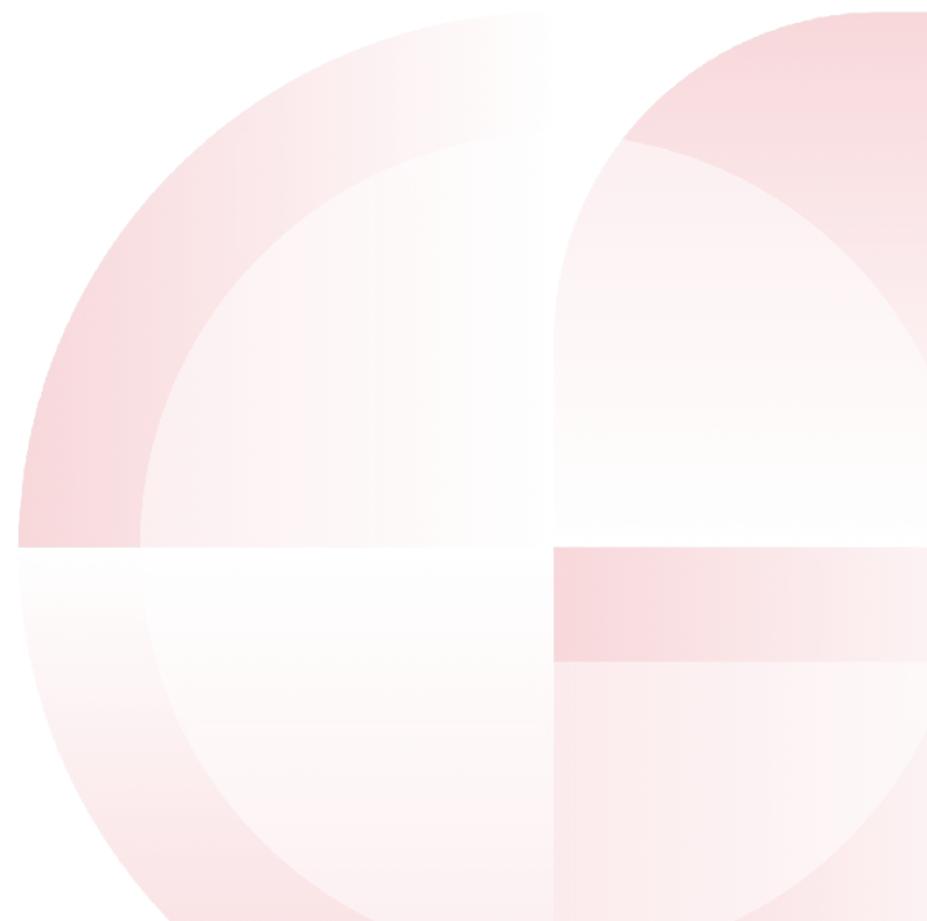
#1 - It changes

#2 - It is rerouted



Features of content

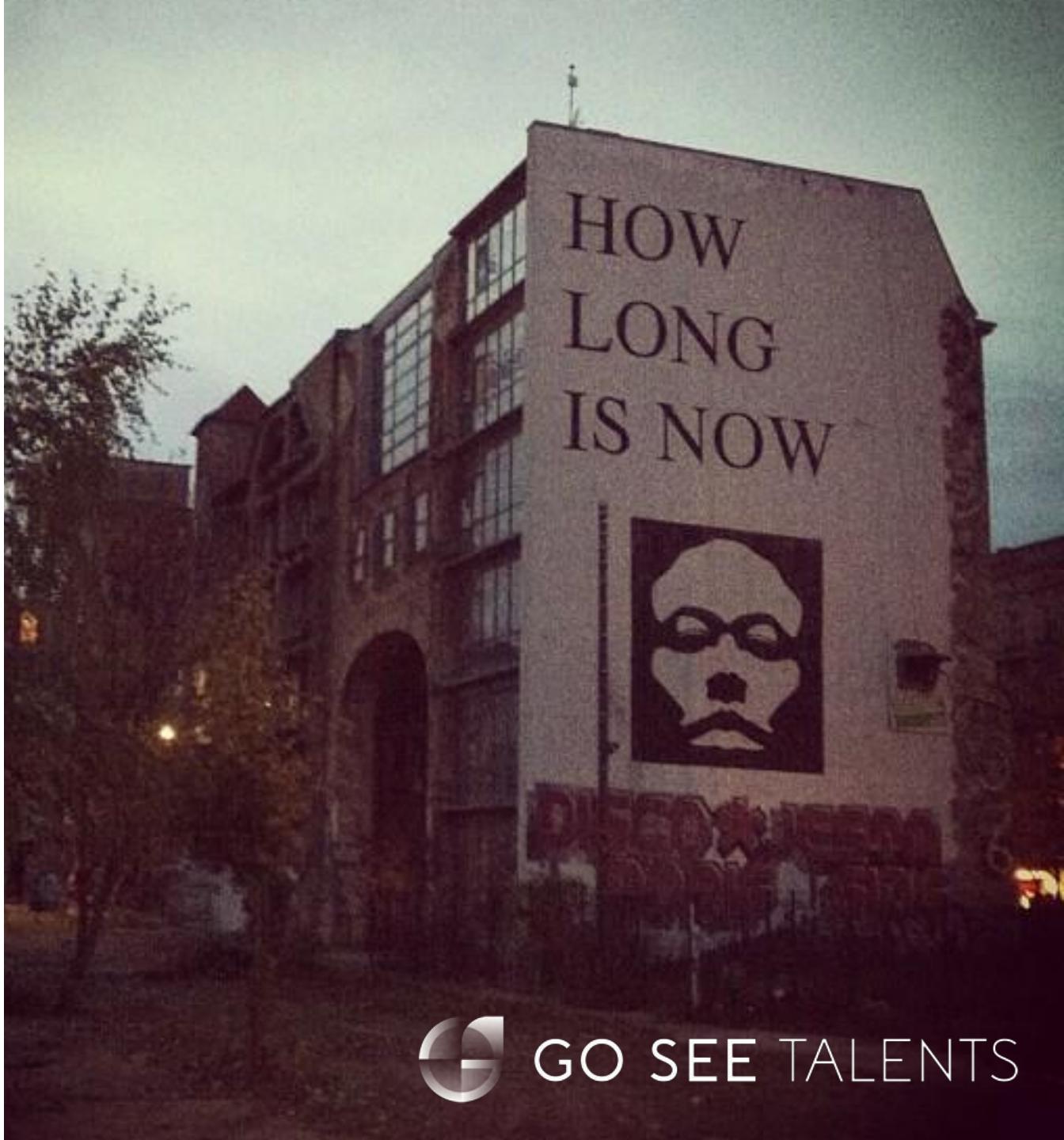
- #1 - It changes
- #2 - It is rerouted
- #3 - It disappears



How long is now?

HTTP - no one can know for sure

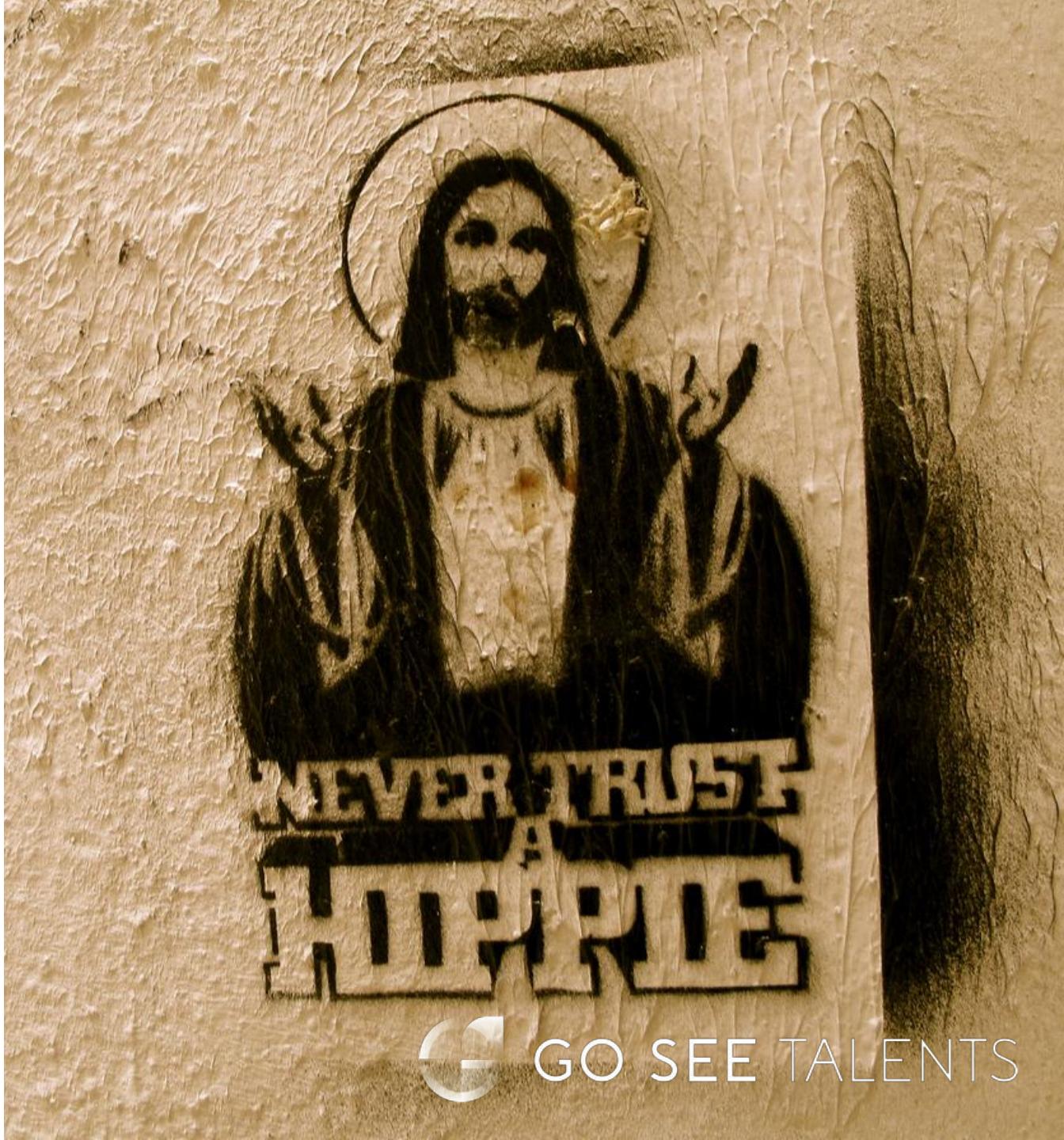
IPFS - it may be forever



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Trust the content?

HTTP - it may be the same,
different or gone
IPFS - it will always be the same



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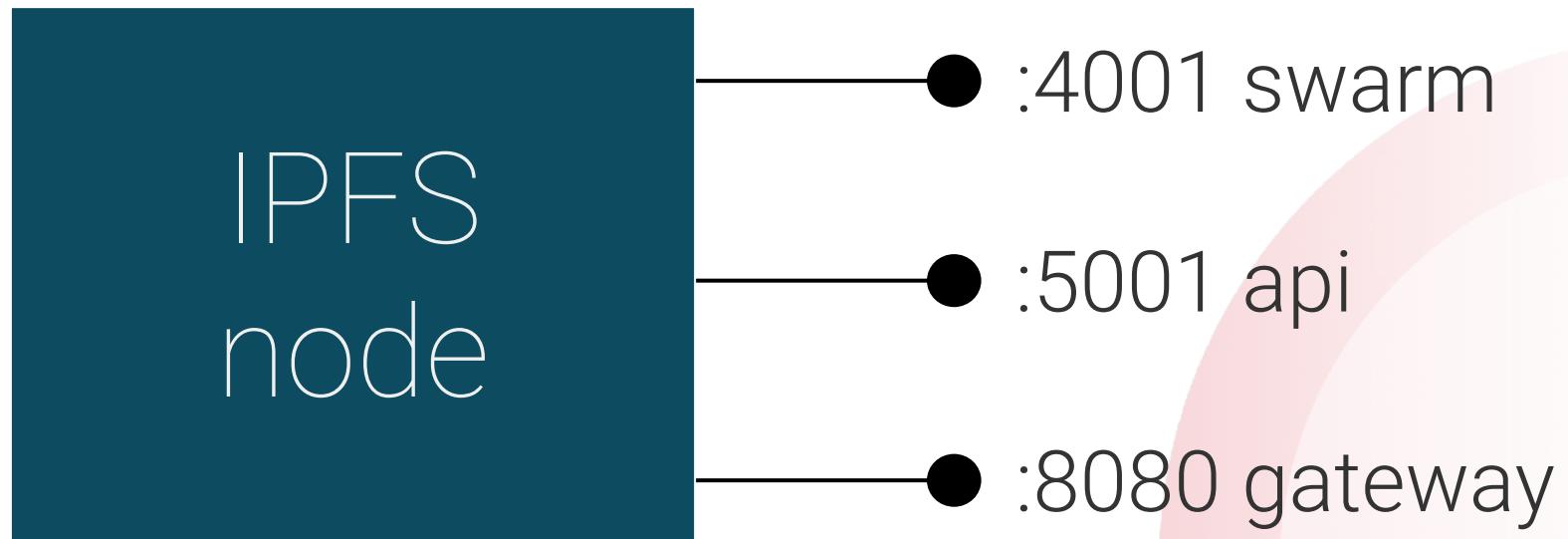


**#3 How does
it work?**



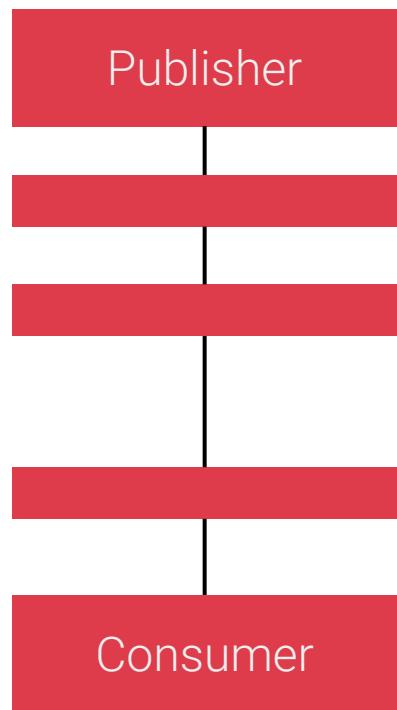
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Running a node

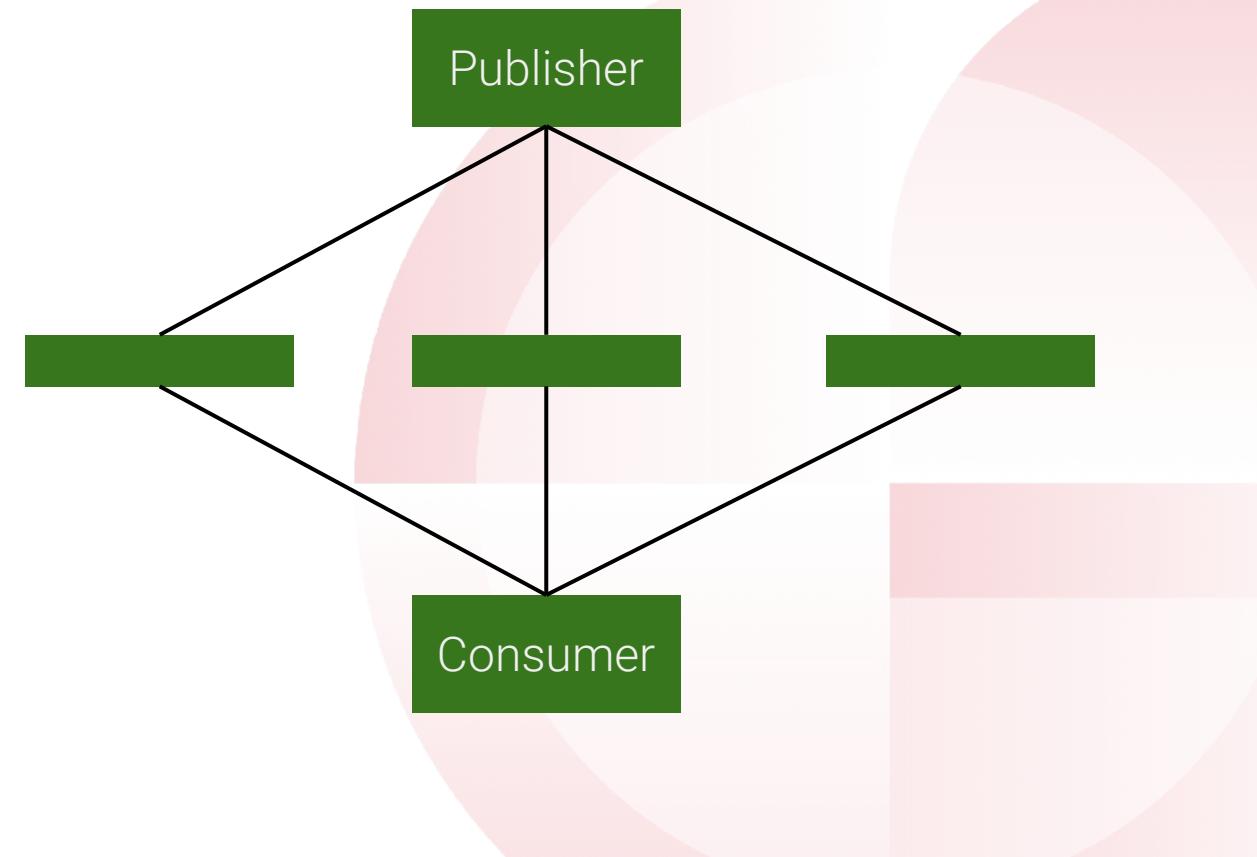


A distributed file system

HTTP



IPFS



Unique names

QmY6wjDg4gyU
84zTC64pssvB
jYfYst1GsTes
zaV9in4kXi

Implementations



Servers in Go
and
Javascript



Clients in all
the langs

A dramatic photograph of a space shuttle launching vertically upwards through a dense cloud of white smoke and orange fire. The shuttle's white external fuel tank is visible at the top, with two solid rocket boosters attached to its sides. The main engine at the base is fully ignited, creating a massive, bright orange-yellow flame and smoke plume.

**#4 A couple of
use cases**

Wikipedia

A static snapshot of wikipedia:

[/ipfs/QmXoypizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/](https://ipfs/QmXoypizjW3WknFiJnKLwHCnL72vedxjQkDDP1mXWo6uco/wiki/)

Blockchain

The cost of storage on the chain is high.
A reference to IPFS is cheaper and will not change.

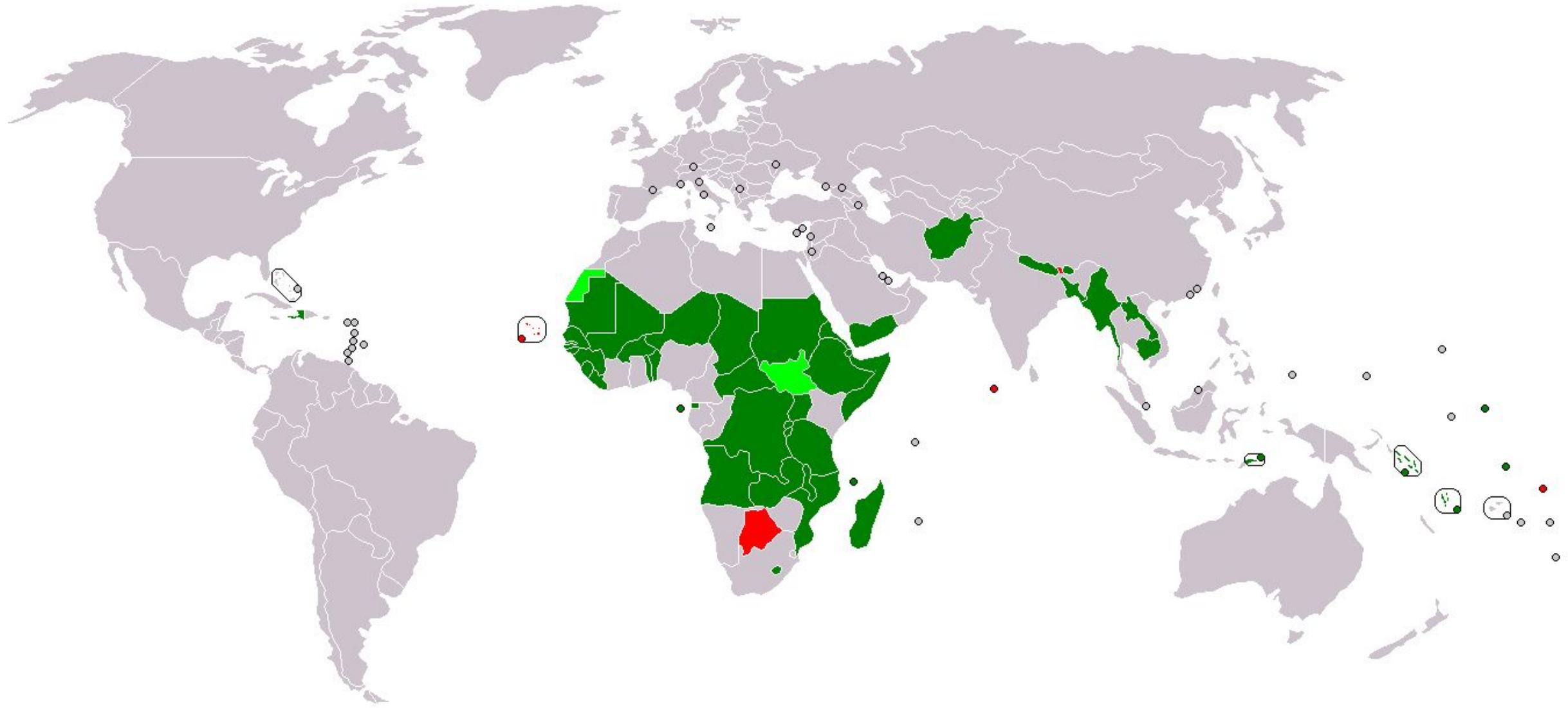
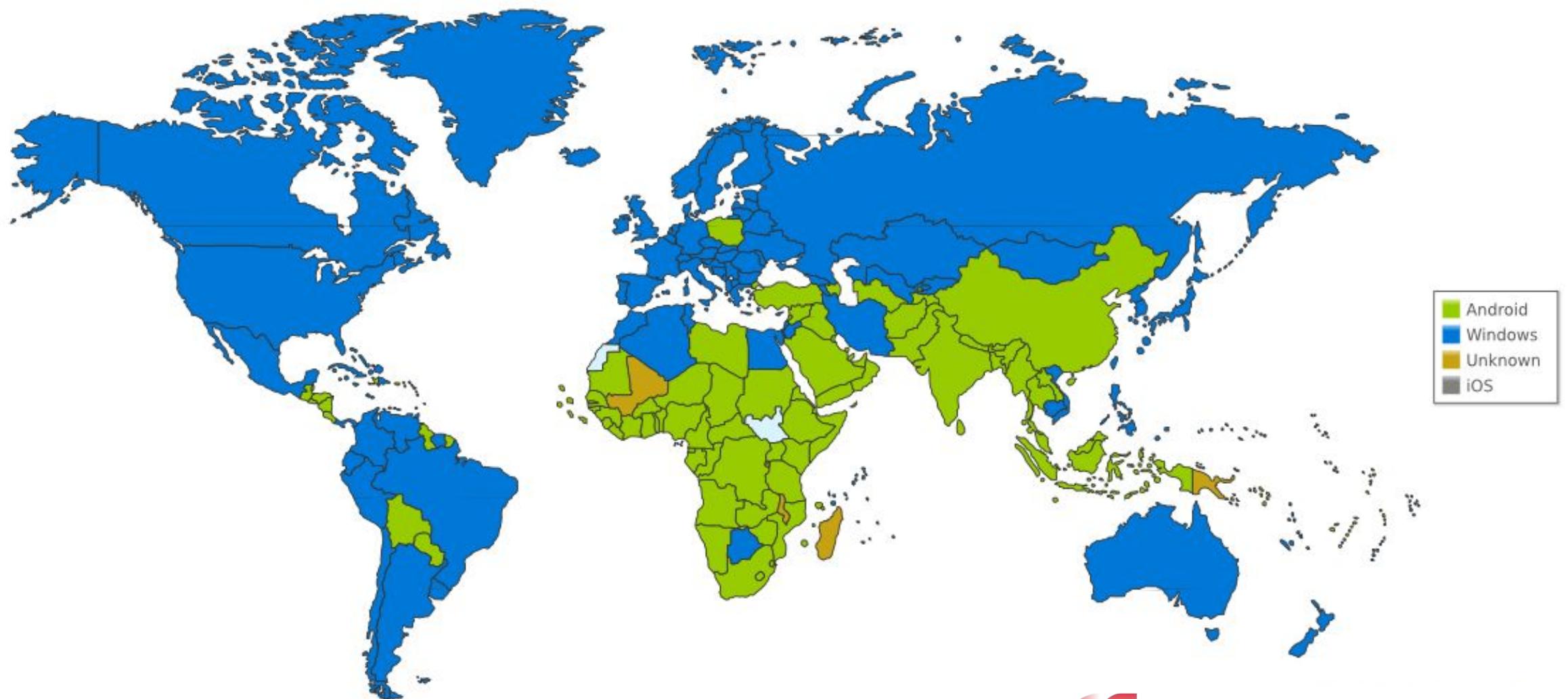


Photo credit: Wikimedia Commons.

StatCounter Global Stats
Operating System Market Share Worldwide, Apr 2017



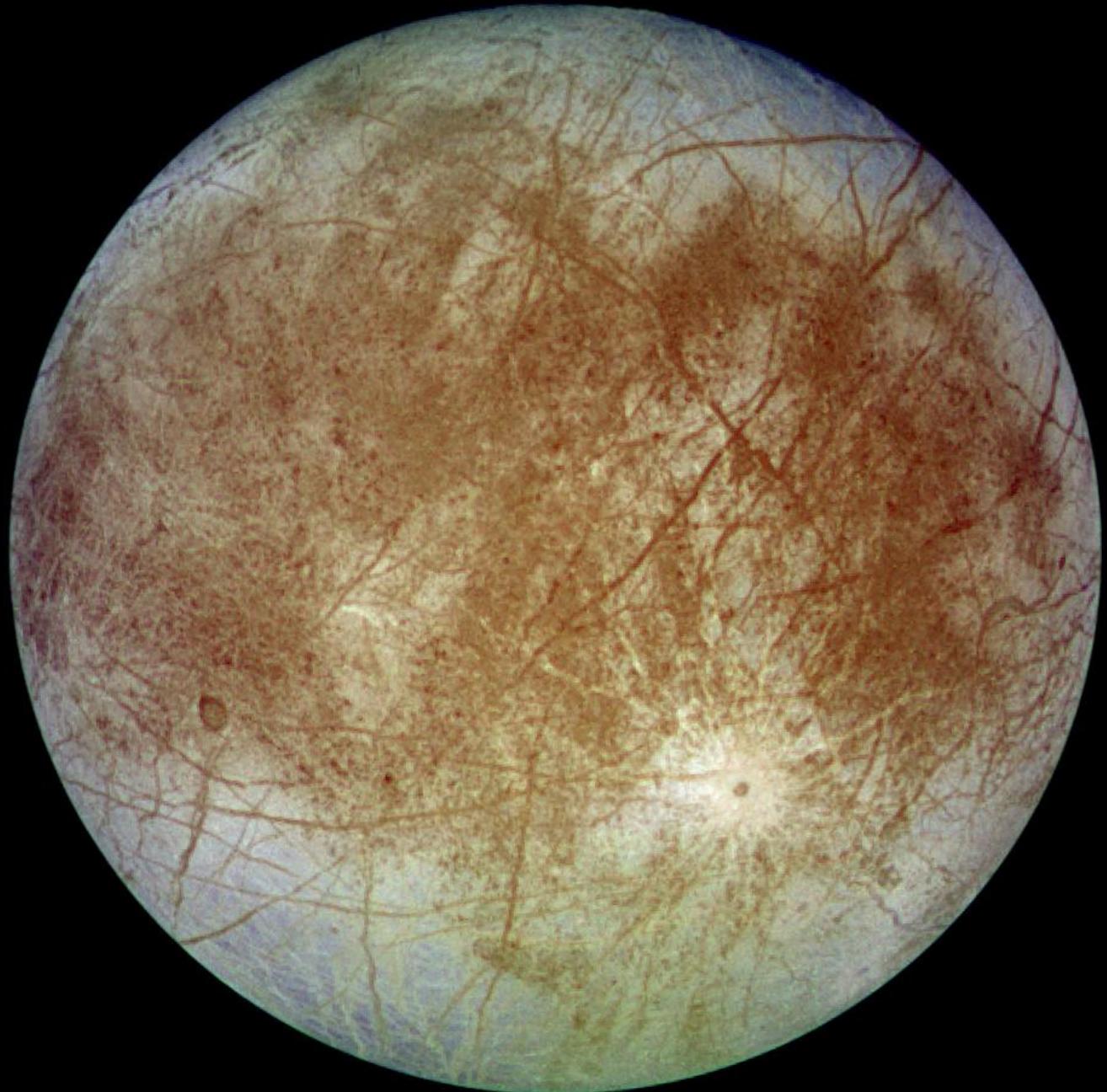


Photo credit: NASA/JPL/DLR [Public domain], via Wikimedia Commons.

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So is IPFS the
future?



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 This way
to Happiness



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