



IPFS Camp

Capyloon

IPFS Goes Mobile

Fabrice Desré - <https://capyloon.org>



Capyloon

A user centric mobile Web OS and a vehicle to experiment with dWeb: IPFS, DIDs, UCANs...

Builds available for some Android based devices, and Linux phones.

Desktop simulator for easy front end development.

Explicitly not trying to replicate the model of incumbents mobile OSes!



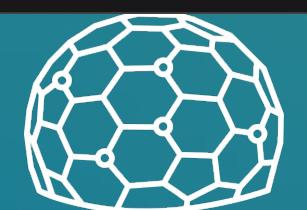
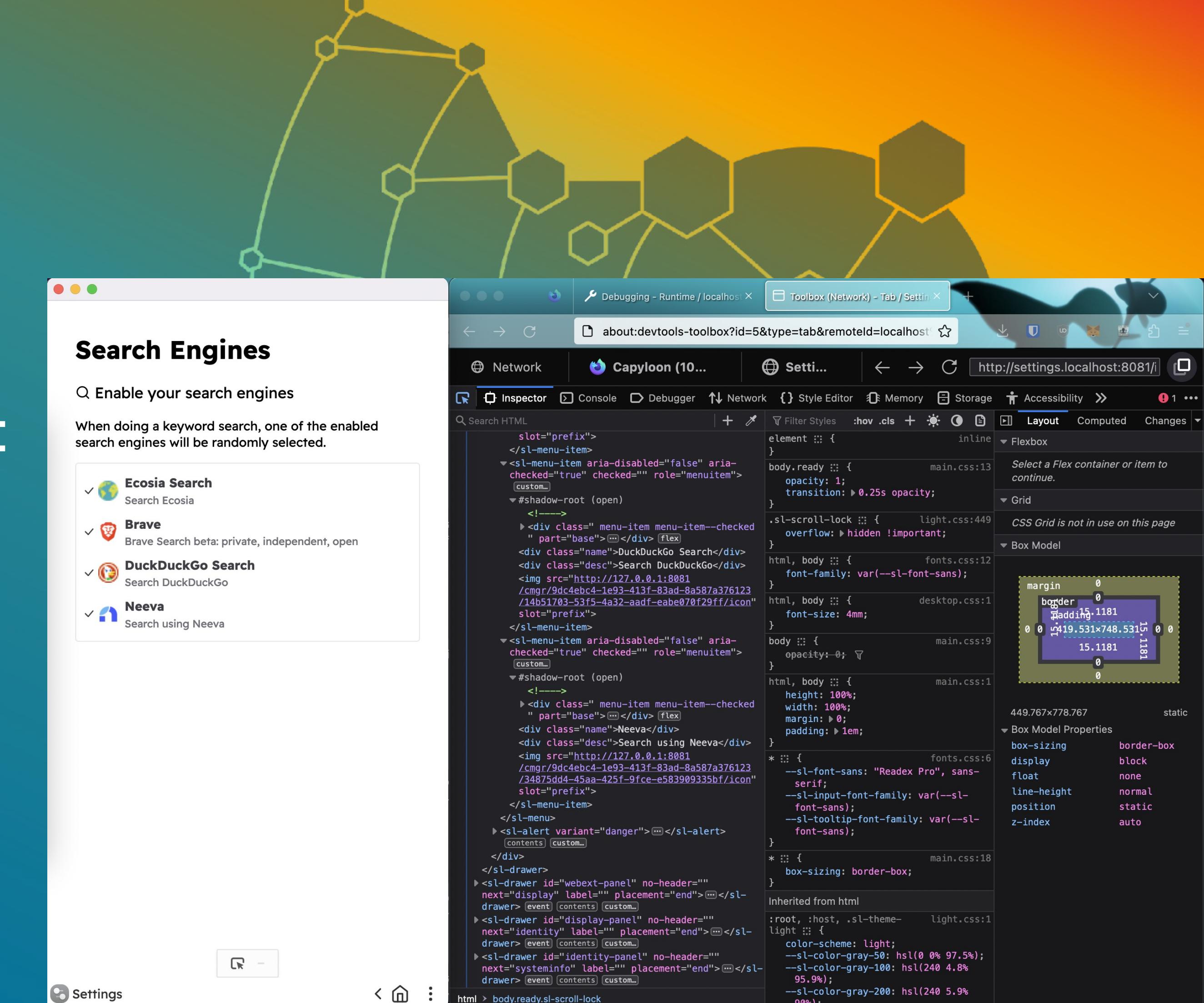
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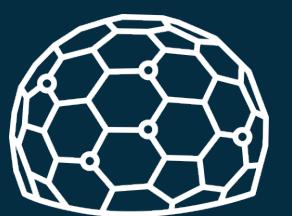
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Issue #1: App Stores Centralization

- iOS/Android app store centric models turned general computing devices into “Minitels in your pocket” :
 - Control over what can run on “your” device → limit innovation.
 - Control over distribution (eg. country based censorship).
 - Control over discovery.
 - Control over payments channels.



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Issue #2: lessons from the HTTP Web

- Not designed to prevent centralization by a few players.
- Not designed to make data portability easy (use APIs!).

But on the bright side...

- Still the best permission-less platform (links!!).
- Solid foundation with a well understood security model (SOP, CSP).



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With a little help from the dWeb...

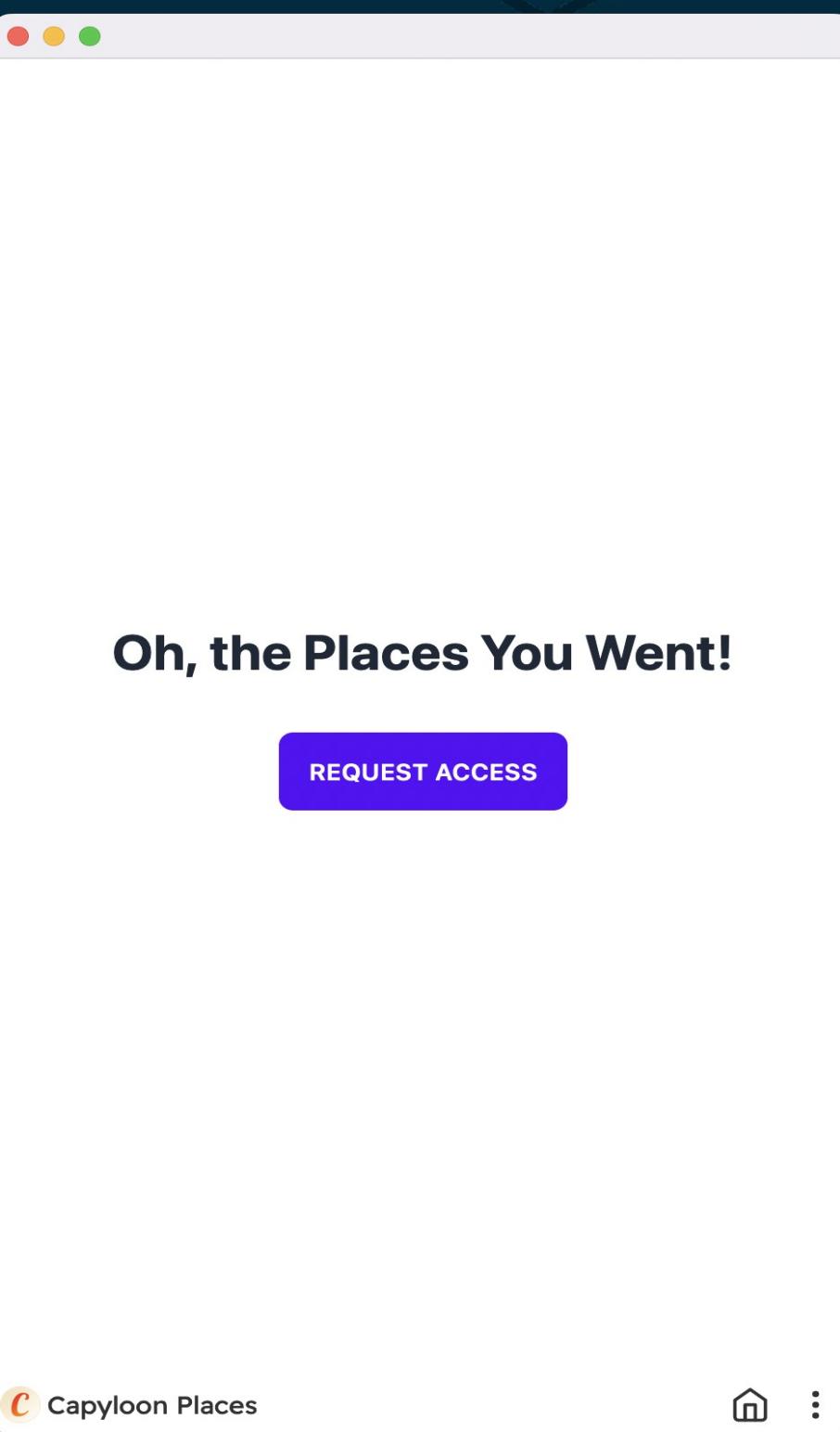
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- Links!



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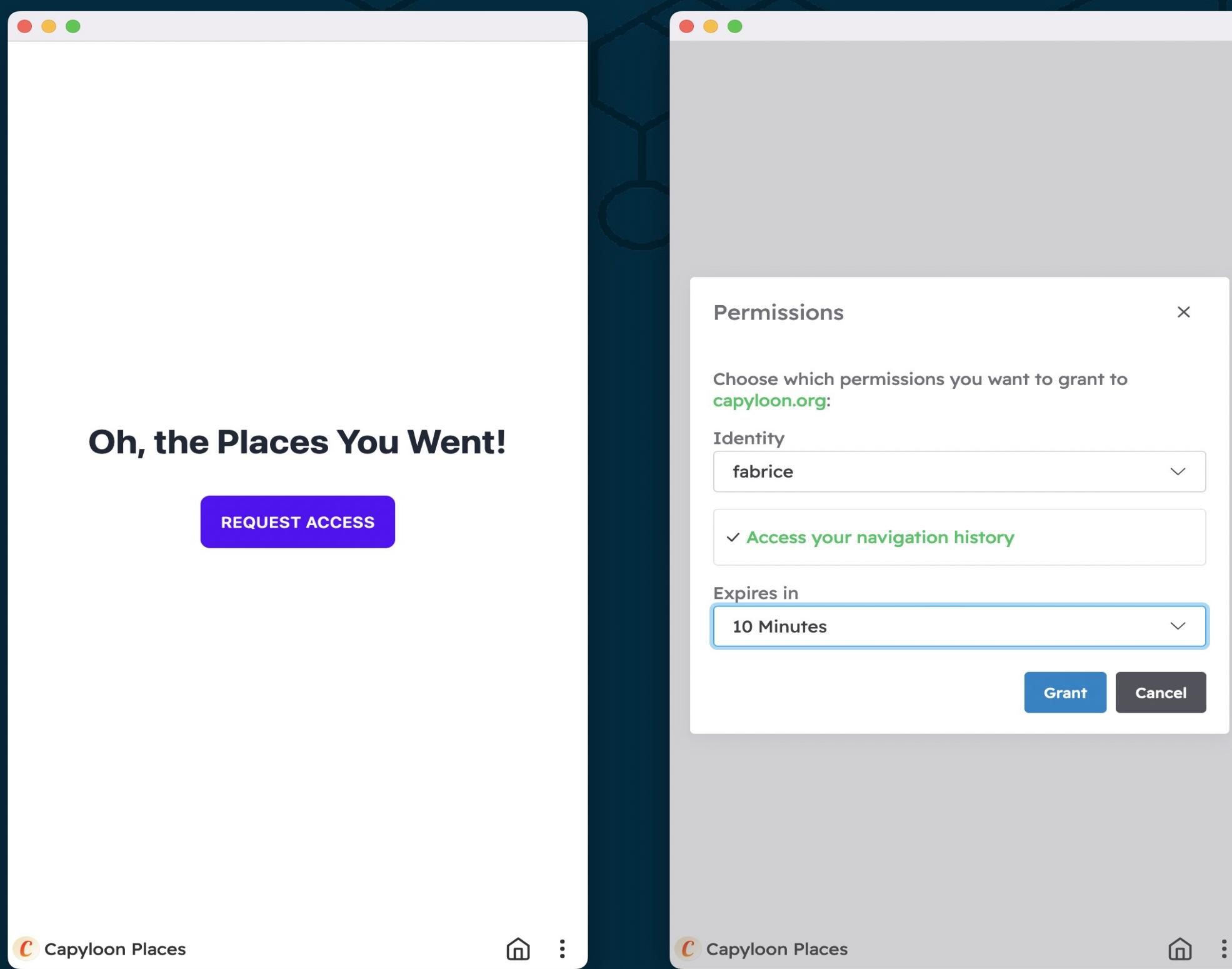
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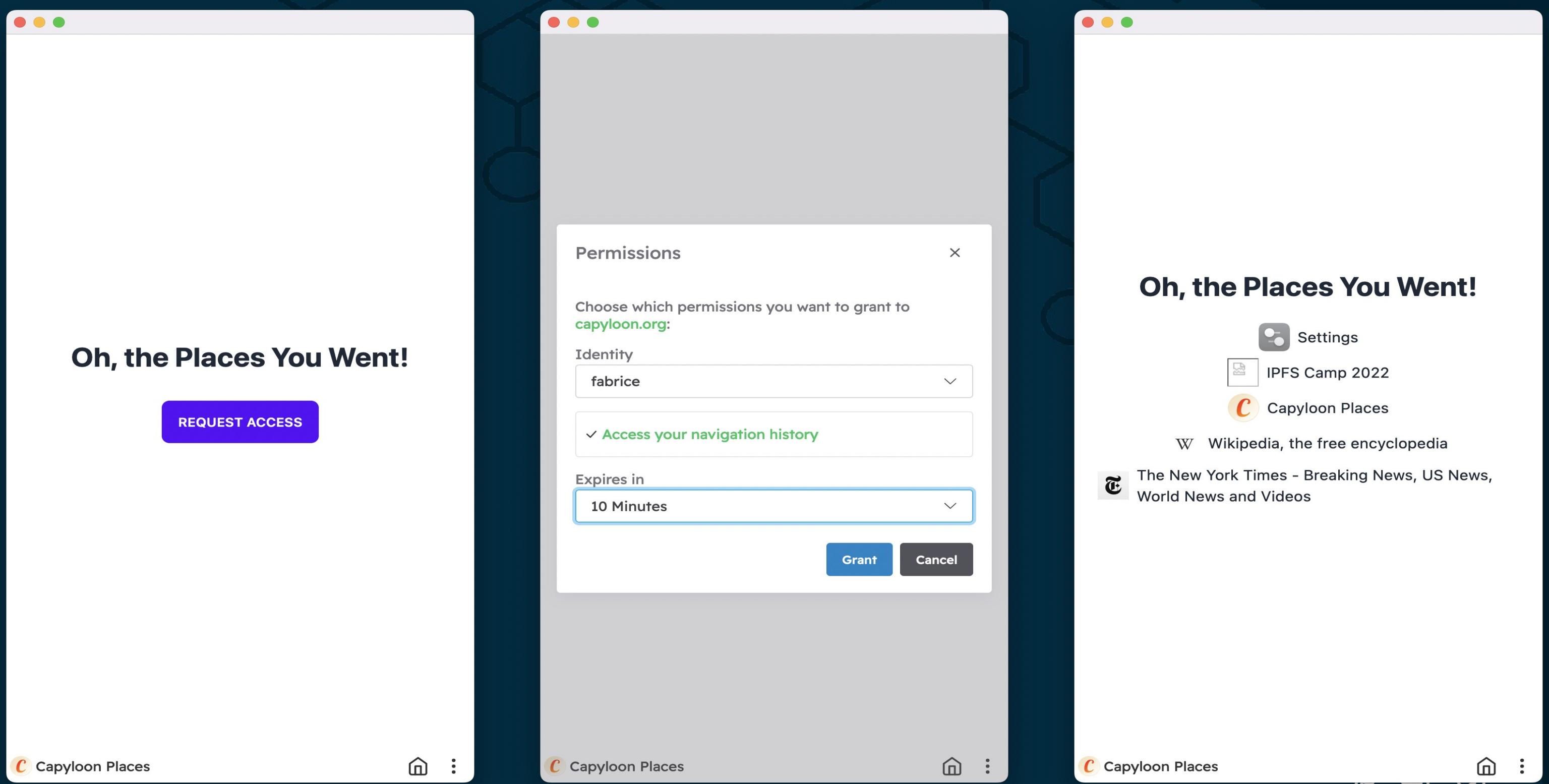
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IPFS in Capyloon : early steps

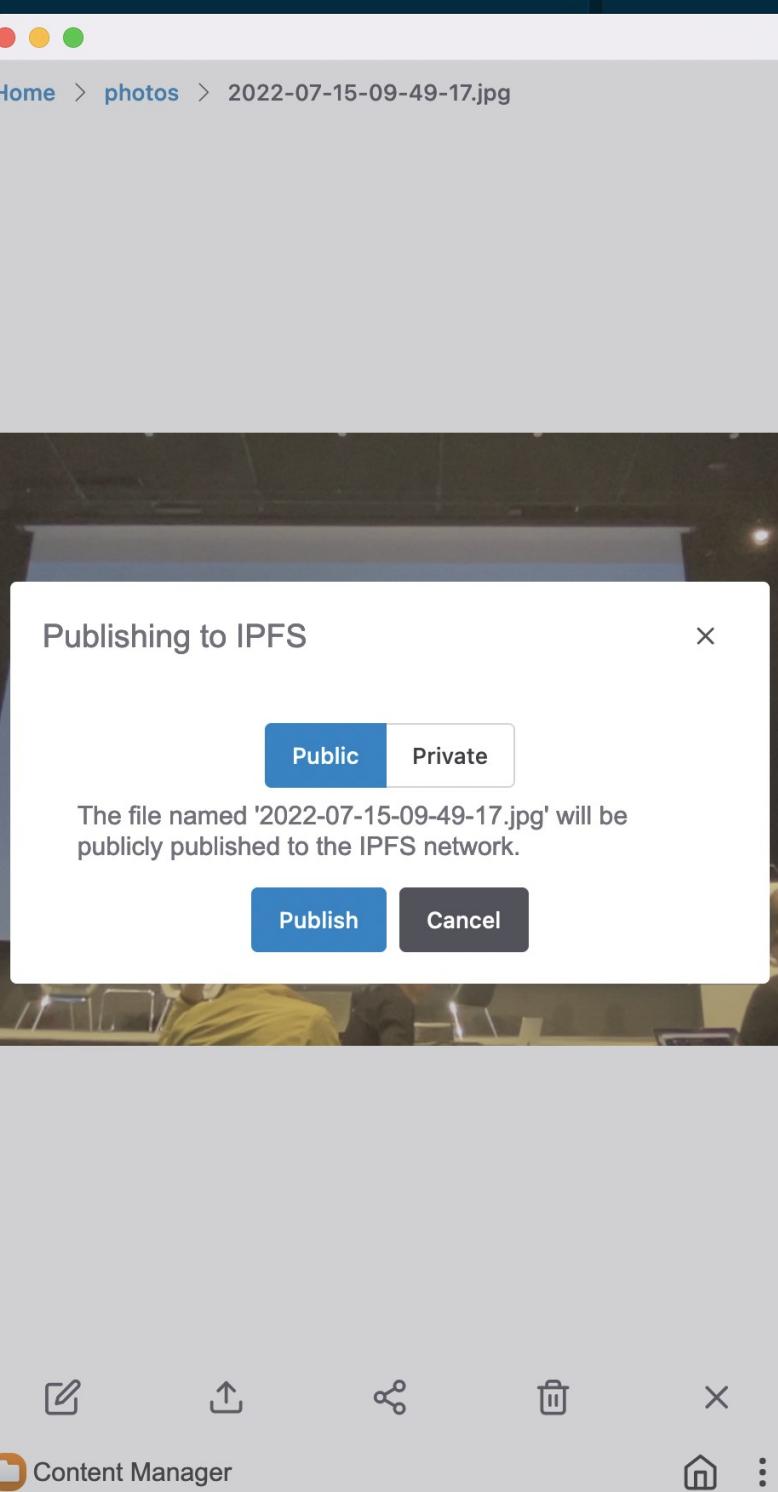
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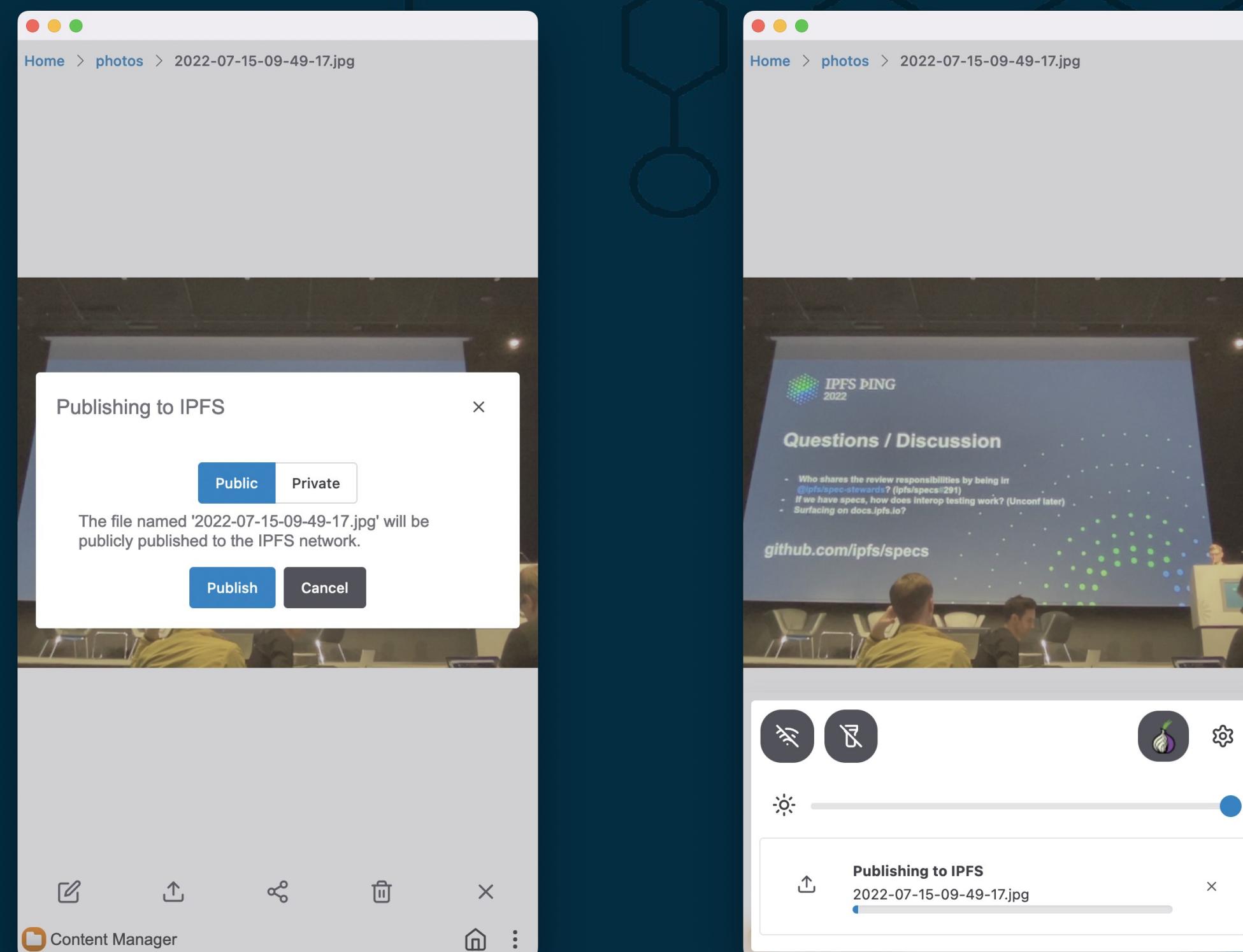
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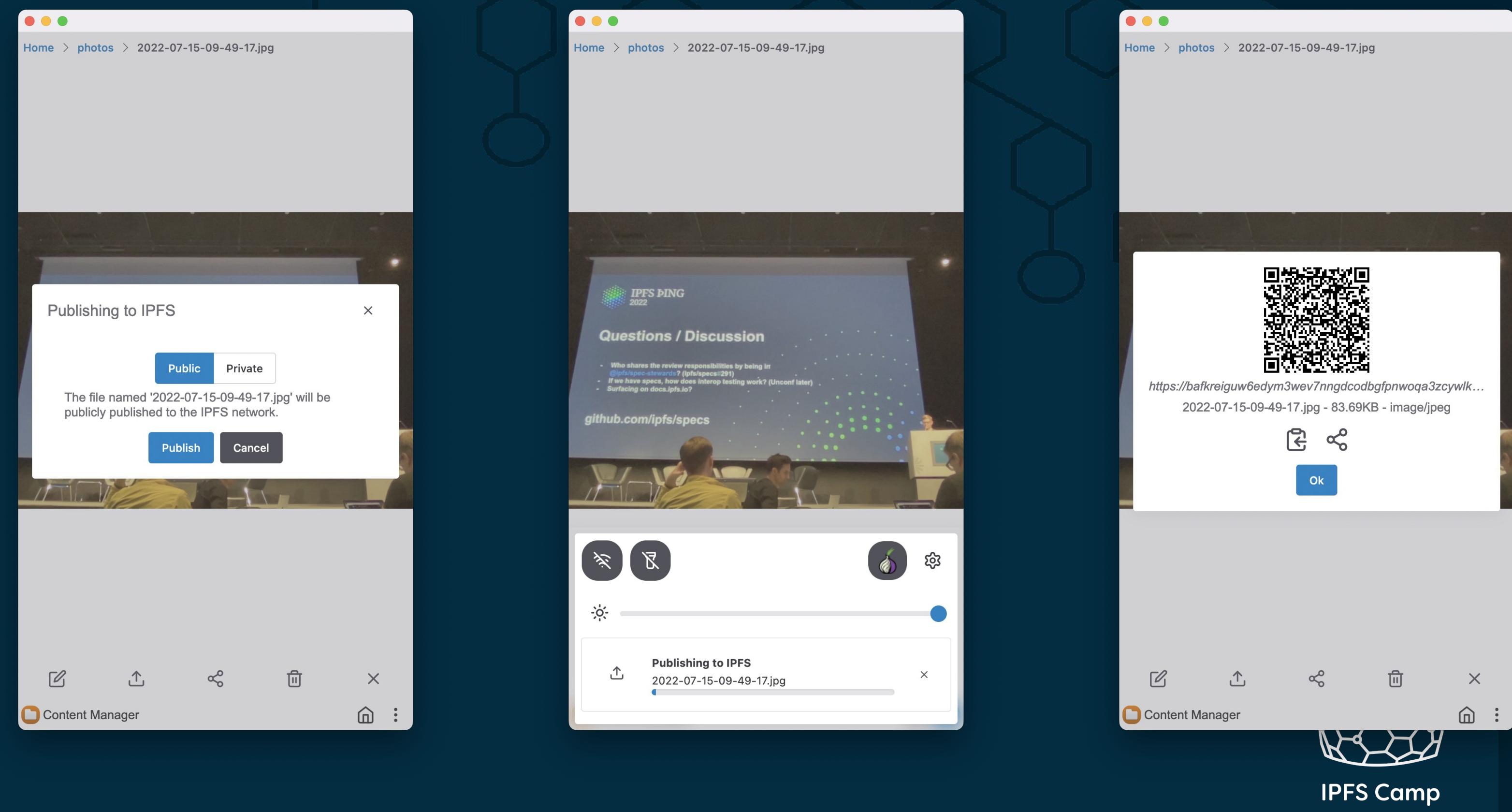
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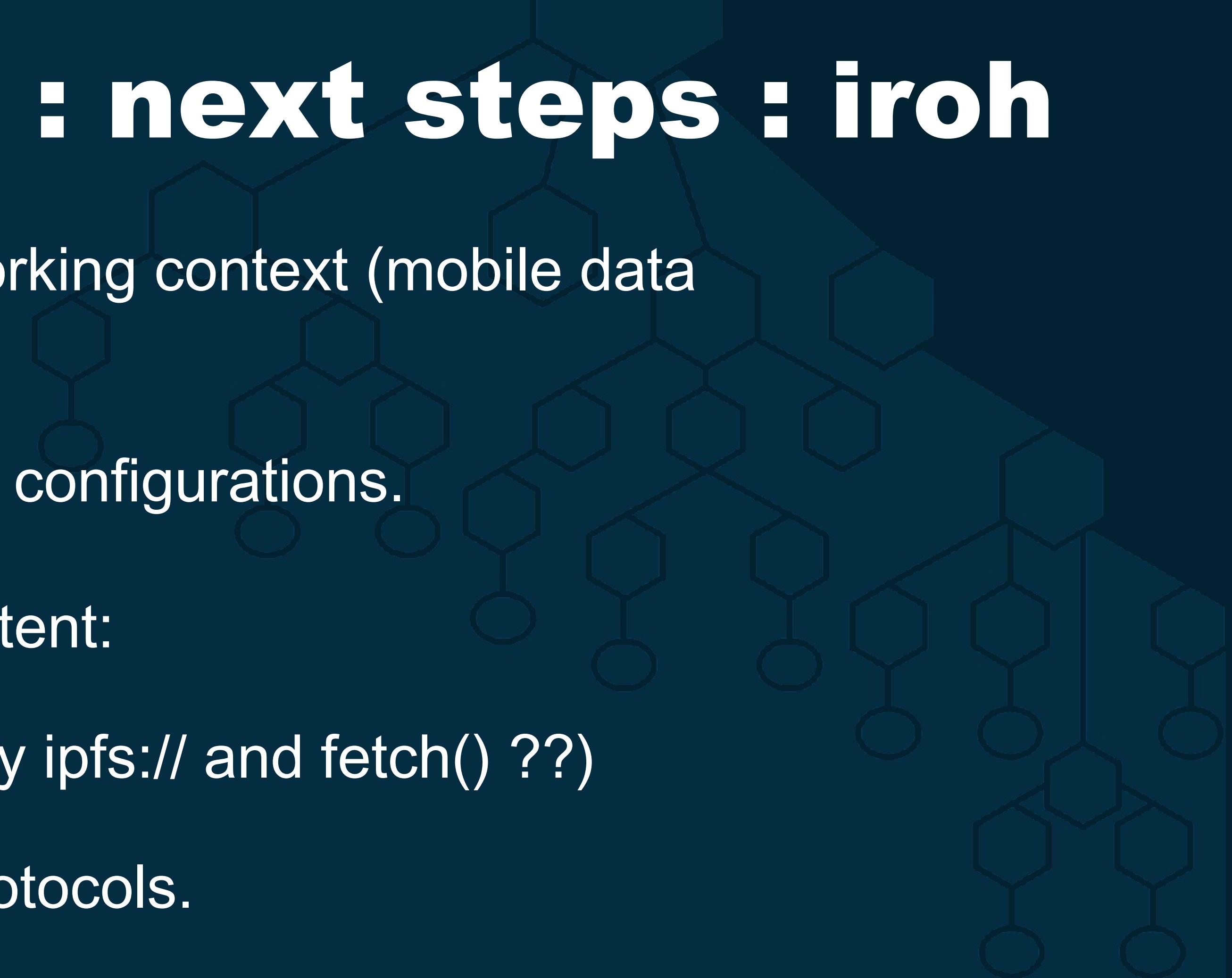
IPFS in Capyloon : current status

- Integration of iroh as a mobile IPFS node.
 - ipfs:// and ipns:// are now served using http over UDS by the local node, which is trusted.
 - All apps share a single node and its block store, peer discovery etc. → better resource usage.

NAME	PID	PPID	CPU(s)	megabytes				RSS	SWAP	VSIZE	PRIORITY	USER
				NICE	USS	PSS						
b2g	2787	1	3710.0	0	220.6	249.0	343.1	0.0	6227.9	default	root	
ipfsd	1247	1	1871.1	0	19.8	20.1	22.7	0.0	336.9	unknown	root	
api-daemon	2784	1	558.0	0	21.9	22.3	27.1	0.0	1771.0	unknown	root	
forkserver	2984	2787	1.3	0	1.8	19.1	68.4	0.0	2286.4	unknown	root	
keyboard	3075	2984	15.7	0	18.0	29.6	110.5	0.0	4888.7	unknown	u0_a3575	
homescreen	3137	2984	20.7	0	30.5	44.0	127.1	0.0	4921.4	unknown	u0_a3637	
WebExtensions	3350	2984	70.8	0	44.8	55.5	132.5	0.0	21571.3	unknown	u0_a3850	
WebExtensions	3414	2984	305.9	0	67.0	77.3	152.8	0.0	4946.9	unknown	u0_a3914	
WebExtensions	3422	2984	195.4	0	84.1	95.9	176.3	0.0	5062.7	unknown	u0_a3922	
wikipedia.org	3771	2984	5.0	0	37.8	50.1	132.3	0.0	4965.4	unknown	u0_a4271	
Web Content	5762	2984	0.6	0	6.8	14.4	75.6	0.0	4620.4	unknown	u0_a6262	

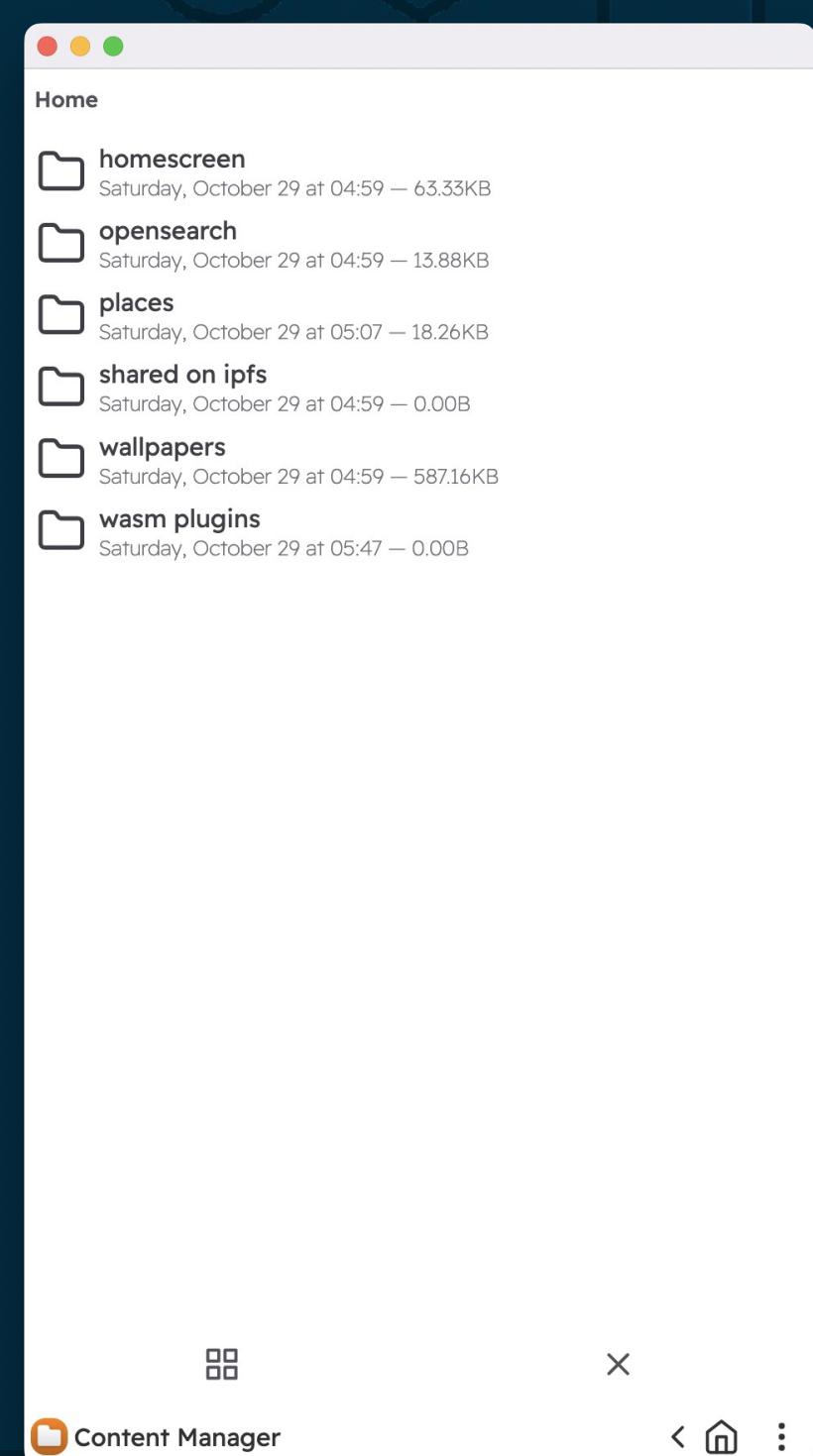
IPFS in Capyloon : next steps : iroh

- Adapt behavior depending on networking context (mobile data vs. wifi vs. “well know wifi”).
 - Experiment with p2p topologies and configurations.
 - Expose new dWeb APIs to web content:
 - get / post content (mostly covered by ipfs:// and fetch() ??)
 - Peers discovery & custom libp2p protocols.
 - Others ?
- **Looking for inputs from app developers!**



IPFS in Capyloon : next steps : WNFS

- Web Native File System is a “better unixfs”: public & private trees, metadata, versioning, etc.
- Store Capyloon user data in WNFS: media, contacts, etc..
- Integration with iroh’s block store.



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Future Work

- Explore “device convergence” using the IPFS stack.
 - Laptop + phone + media center as a single virtual device : seamless, private, “just works”.
 - Guest access with UCANs.

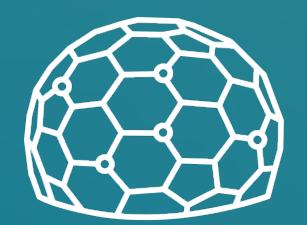


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Thank you!

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