

Brave browser adds peer-to-peer IPFS protocol to combat censorship

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In what might be the first salvo against the decades-long dominance of the HTTP protocol for internet data retrieval, an open source web browser devoted to privacy has introduced an option that allows for direct peer-to-peer transfers. This means that instead of relying on a

massive network in which data are stored on dedicated servers, information can now rest on and be accessed from numerous nodes dispersed globally.

The browser Brave this week issued an update that relies on IPFS—InterPlanetary File System—to collect data from a decentralized network.

The protocol offers several advantages over HTTP, a protocol unveiled in 1989 by Tim Berners-Lee, considered the father of the internet. Utilizing widely dispersed server nodes means users can retrieve data faster. It will also lower costs for [content providers](#) who will not depend as much, or at all, on web-hosting services.

Most significantly—and potentially most troublesome—is the fact that [web content](#) will be more secure from digital attacks, governmental censorship and other efforts to block [information](#).

"Today, Web users across the world are unable to access restricted content," said IPFS project lead Molly Mackinlay. "Now anyone with an [internet connection](#) can access this critical information through IPFS on the Brave browser."

She cited recent examples of interference such as Turkey's censorship of 100,000 websites, restrictions on blocks of Wikipedia pages in Thailand, and limited COVID-19 information on Chinese web sites.

IPFS is not new, it was introduced in 2015. The first web site to implement the peer-to-peer protocol was NeoCities, a secure, free web hosting service that was born out of the ashes of the once popular GeoCities. Millions of users enjoyed the free service of GeoCities—it was the third most popular site at the turn of the century. But in 2009, Yahoo shut the operation down, with much of 15 years worth of pages

lost forever.

That episode was a motivating factor for Kyle Drake, the founder of NeoCities.

"It was a crushing day for me when GeoCities shut down," Drake said. That prompted him to begin development of a system that would allow users to "build web sites that persist forever."

"Building an information network that will stay up forever is as modern as it gets," he said. IPFS "will pull the internet out of the Dark Ages of fast information destruction, and move us from a short-term tech culture into a tech civilization, maintaining distributed libraries of information that could continue to persist for hundreds or even thousands of years," he said.

AN IPSF blog explains that the protocol moves retrieval from a system of location addressing to content addressing. Files are referenced by cryptographic fingerprinting of their content, enabling the information to remain secure and available on multiple sites, which would thwart efforts at censorship typically aimed at individual sites. If one site is censored, content will remain available elsewhere.

And if a government or malicious actor targets all visible targets, the information can be continually republished on new nodes.

While the protocol is promising for movements struggling against repressive regimes, it represents a problem for legitimate agencies targeting troublesome web sites promoting criminal activity such as drug trade, sex trafficking, or violence.

Parler, a U.S.-based social networking service originally intended for conservative political discourse has become a hotbed of misinformation,

Nazi propaganda and racial hatred. Apple removed the app from its store following the rightwing Jan. 6 uprising in Washington, D.C. The IPFS protocol could allow Parler to reclaim many users who could thrive on unimpeded peer-to-peer data sharing.

IPFS founder Juan Benet maintains that IPFS implementation is comparable to cryptocurrency. "In a sense," Benet said, "we're doing to websites...what Bitcoin did to money."

He fears the extent of centralization of the Internet, warning it is vulnerable to bad actors. Internet sites, he says, could "disappear at any moment, bringing down all the data with them— or at least breaking all the links."

Speaking of the promise of a more secure web using IPFS, NeoCities founder Drake invoked the notorious destruction by Julius Caesar of the Alexandria Library in 48 B.C. "The science says it's possible, so we're building it. And then let's see the f - - - - - try to burn down this Library of Alexandria."

More information: brave.com/ipfs-support/

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