InterPlanetary File System

■ 19 languages ∨

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(Redirected from Ipfs)

> ⚠ This article's lead section **may be too short to adequately summarize** the key points. Please consider expanding the lead to provide an accessible overview of all important aspects of the article. *(April 2022)*

The **InterPlanetary File System** (**IPFS**) is a protocol, hypermedia and file sharing 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 IPFS hosts.[4]

IPFS can among others replace the location based hypermedia server protocols http and https to distribute the World Wide Web.[4][5][6]

Design   [edit]

> 🔶 This section **needs expansion**. You can help by adding to it. *(June 2020)*

IPFS allows users to host and receive content in a manner similar to BitTorrent. As opposed to a centrally located server, IPFS is built around a decentralized system[7] of user-operators who hold a portion of the overall data, creating a resilient system of file storage and sharing. Any user in the network can serve a file by its content address, and other peers in the network can find and request that content from any node who has it using a distributed hash table (DHT).

In contrast to BitTorrent, IPFS aims to create a single global network. This means that if two users publish a block of data with the same hash, the peers downloading the content from "user 1" will also exchange data with the ones downloading it from "user 2".[8] IPFS aims to replace protocols used for static webpage delivery by using gateways which are accessible with HTTP.[9] Users may choose not to install an IPFS client on their device and instead use a public gateway. A list of these gateways is maintained on the IPFS GitHub page.[10]

History   [edit]

> 🔶 This section **needs expansion**. You can help by adding to it. *(June 2020)*

IPFS was created by Juan Benet, who later founded Protocol Labs in May 2014.[4][11]

IPFS was launched in an alpha version in February 2015, and by October of the same year was described by TechCrunch as "quickly spreading by word of mouth."[1]

Applications   [edit]

- Filecoin is an IPFS-based cooperative storage cloud.[12]
- Cloudflare runs a distributed web gateway to simplify, speed up, and secure access to IPFS without needing a local node.[13]
- Microsoft's self-sovereign identity system, Microsoft ION, builds on the Bitcoin blockchain and IPFS through a Sidetree-based DID network.[14]
- The shadow libraries Anna's Archive and Library Genesis also deliver books via IPFS,[15][16][17] enabling the largest human library of books to be more resilient.
- Brave uses Origin Protocol and IPFS to host its decentralized merchandise store[18] and, in 2021, added support into their browser.[19]
- Opera for Android has default support for IPFS, allowing mobile users to browse `ipfs://` links to access data on the IPFS network.[20]
- Superhighway84 ☍ is an IPFS-based Usenet like discussion system
- Filebase ☍ is a geo-redundant IPFS Pinning Service that pins each file to the IPFS network with 3 redundant copies stored across diverse geographic locations.[21]

Anti censorship

- The Catalan independence referendum, taking place in September–October 2017, was deemed illegal by the Constitutional Court of Spain and many related websites were blocked. Subsequently, the Catalan Pirate Party mirrored the website on IPFS to bypass the High Court of Justice of Catalonia order of blocking.[22][23]
- During the block of Wikipedia in Turkey, IPFS was used to create a mirror of Wikipedia, which allowed access to archived static Wikipedia content despite the ban.[24] The mirror has now been expanded to more languages, such as English, Ukrainian, Russian, Arabic, and Chinese. A collection of the mirrors can be viewed at https://ipfs.kiwix.org/ ☍ or by using its CID at an IPFS Gateway ☍.

Malware

Phishing attacks have also been distributed through Cloudflare's IPFS gateway since July 2018. The phishing scam HTML is stored on IPFS, and displayed via Cloudflare's gateway. The connection shows as secure via a Cloudflare SSL certificate.[25]

The IPStorm botnet, first detected in June 2019, uses IPFS so it can hide its command-and-control amongst the flow of legitimate data on the IPFS network.[26] Security researchers had worked out previously the theoretical possibility of using IPFS as a botnet command-and-control system.[27][28]

See also   [edit]

- Design and Evaluation of IPFS: A Storage Layer for the Decentralized Web ☍
- Content-addressable storage
- Dat (software)
- Distributed file system
- Freenet
- GNUnet
- Mnet (peer-to-peer network) aka MojoNation
- ZeroNet

Infobox:

InterPlanetary File System

IPFS

Original author(s)	Juan Benet and Protocol Labs[1]
Developer(s)	Protocol Labs
Initial release	February 2015[1]
Stable release	0.16.0 / 2022-10-04[2]
Repository	github.com/ipfs/ipfs ☍
Written in	**Protocol implementations:** Go (reference implementation), JavaScript, C,[3] Python **Client libraries:** Go, Java, JavaScript, Python, Scala, Haskell, Swift, Common Lisp, Rust, Ruby, PHP, C#, Erlang
Available in	Go, JavaScript, Python
Type	Protocol, distributed file system, content delivery network
License	MIT license, Apache license 2.0
Website	ipfs.tech ☍

Part of a series on
File sharing

File Hosts
Dropbox · Google Drive · iCloud · Mediafire · Mega (service) · OneDrive
Video sharing sites
123Movies · Dailymotion · PeerTube · Putlocker · YouTube
BitTorrent sites
1337x · Demonoid · ExtraTorrent · EZTV · FitGirl Repacks · KickassTorrents · Nyaa Torrents · RARBG · Tamil Rockers · The Pirate Bay · YIFY
Media Servers
Kodi · Plex · Jellyfin
Technologies
File hosting services · Media server · Online video platform · Peer-to-peer file sharing · Peer-to-peer web hosting · Usenet · WebRTC · XDCC
File sharing networks
BitTorrent · Direct Connect · eDonkey · Gnutella · Gnutella2 · **InterPlanetary File System** · List of P2P protocols
Academic
Academic Torrents · Anna's Archive · #ICanHazPDF · Internet Archive · Library Genesis · Sci-Hub · Z-Library
P2P clients
BitComet · DC++ · Deluge · eMule · µTorrent · qBittorrent · Shareaza · Soulseek · Transmission · Tribler · Vuze
Anonymous file sharing
Anonymous P2P · Darknet · Freenet · Friend-to-friend · I2P · Private P2P · Proxy server · Seedbox · Tor · VPN
History and societal aspects
Timeline · Legality · BitTorrent issues
By country or region
Canada · Japan · Singapore · UK · US
Comparisons
Comparison of BitTorrent clients
Comparison of BitTorrent sites
Comparison of eDonkey software
Comparison of Internet Relay Chat clients
Comparison of Usenet newsreaders

v · t · e

Free and open-source software portal

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External links   [edit]

- Official website ☍
- Cloudflare public IPFS gateway ☍

v·t·e	File systems	[show]
v·t·e	Peer-to-peer file sharing	[show]
v·t·e	Internet censorship circumvention technologies	[show]

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