

# BTFS OVERVIEW

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## Abstract

BitTorrent File System (BTFS) is both a protocol and network implementation that provides a content-addressable, peer-to-peer mechanism for storing and sharing digital content in a decentralized file system. BTFS provides a foundational platform for Decentralized Applications, known as DApps. This document covers the goals of BTFS, the solution outline, and project roadmap. It explains why BitTorrent is best suited to champion this vision as well.

## Motivation

Blockchain technology has gained increasing adoption since its inception, resulting in thousands of DApps serving millions of users. Current mainstream public blockchain platforms such as Ethereum, TRON, and EOS focus on computational tasks but lack cost-effective, scalable, and high-performance file storage solution. For example, as reported, storing 1MB of data on EOS may cost more than 150 USD. This results in high development and maintenance costs for DApp developers.

BitTorrent, the largest P2P network in the world, still relies on centralized torrent file distribution. These torrent repositories are prone to security breaches, outages, and censorship. There have been numerous instances of attacks on torrent hosting web servers reducing service reliability. With a decentralized repository of torrent files leveraging the version control properties of BTFS, users can more reliably access torrent files.

Traditional file storage systems have many inherent disadvantages, such as centralized trust, overarching control by a single authority or organization, ability of governments to impose censorship, high cost, lock-in effect, and low fault tolerance. For example, Wikipedia has been blocked in Turkey since mid-2017, but with BTFS, websites can be hosted in decentralized way so that they are censorship-resistant. Furthermore, cloud storage solutions are controlled by vendors and subject to local outage and focused denial of service attacks. Decentralized

storage solutions allow for reliable service, and when coupled with the token economics, incentivize users to share storage and retrieve files.

Proposed decentralized systems like IPFS and Storj are noble attempts to address the aforementioned issues but fall short of widespread adoption. BTFS is purpose designed to address those issues and the integration with BitTorrent and the TRON network will spur widespread adoption.

## Why BitTorrent

Since BitTorrent's inception in 2001, the BitTorrent protocol has revolutionized the content and file sharing field and defined the standard for peer to peer file transfer. BitTorrent has released and continues to develop a wide array of client software for a seamless P2P file sharing experience, including uTorrent and BitTorrent Pro. In mid-2018, TRON's acquisition of BitTorrent paired the world's best performing blockchain network with the largest decentralized user base in the world. To date, TRON has hit every promised milestone To serve the TRON developer community, TRON has launched the TRON Developers Tool suite, created comprehensive API documentation, and launched the TronGrid service. These developments spurred the growth of over 400+ TRON DApps, with a projected growth target to 2,000+ DApps. In early 2019, BitTorrent successfully launched the TRC10 BitTorrent Token (BTT) to incentivize the ecosystem. These growth milestones naturally led to the development of the BTFS vision.

## Solution

BTFS takes advantage of a fork of the IPFS implementation as a start. IPFS was built upon a collection of state of the art technologies such as BitTorrent, distributed hash tables (DHT) etc., and has excellent technical potential. BTFS will incorporate significant improvements as it progresses. BitTorrent and TRON's engineering teams with decades of first hand distributed system experience will improve upon the protocol's efficiency, scalability, predictability, availability, and stability. In leveraging the massive existing infrastructure - close to 100 million BitTorrent user nodes, over 1000 TRON full nodes, 27 Super Representative nodes, and global TronGrid nodes, BTFS will be the largest distributed storage network as well as the world's largest distributed media sharing network.

The BTFS ecosystem will have five components: BTFS network, TRON network, BitTorrent network, TronGrid service, and BTT. The BTFS network is the next generation of decentralized storage systems. TRON network is one of the most important blockchain & DApp platforms in the world. BitTorrent, via the wide array of client products, brings with it the 100 million decentralized user base of the BitTorrent network. TronGrid services one of the most important gateways connecting the components of the ecosystem. Finally, BTT will introduce native token economics into the BTFS ecosystem, ensuring a fair, useful, and efficient system.

These integrations lead to a content addressable, permanent, and distributed web. The roadmap involves building the network, TRON integration, BitTorrent integration, and BTT integration.

## Roadmap

The BTFS roadmap holds many exciting new developments in the future. The Testnet is anticipated to be launched with selected user access by the end of Q2 2019. In Q3 2019, the Mainnet will be launched for public access and power all TRON DApps requiring a decentralized storage network. Preliminary developer tools will be available and a few outstanding popular DApps will be running on the platform. In late 2019, the BTT token will start integrating with the BTFS network as an incentive to create a healthy, fair, and efficient file sharing and storing marketplace. Also, a comprehensive toolset will be launched while the BTFS Accelerator cultivates tens of BTFS DApps, leading the BTFS community to grow into one of the largest and most active in the industry. This integration is expected to finish by 2020. BTFS will also be integrated with BitTorrent to bring the network and its benefits to over 100 million users.

## Conclusion

Decentralized application platforms are poised to disrupt the current, predominant centralized Internet storage and computation platforms. BTFS represents the first truly viable and scalable implementation of a decentralized storage system that can be used by decentralized application developers.

The deployment of a truly scalable decentralized file system has widespread ramifications for future application developers - offering vastly reduced storage costs, combined with superior security and reliability. It also overcomes growing consumer concerns around trust in centralized systems controlled by a single dominant vendor who may abuse trust for commercial gain.

Paired with the robust TronGrid service, TRON DApp ecosystem, and BitTorrent network, the application of BTFS in the form of CDNs and an addressable and permanent web advance the user experience. The TRON roadmap milestones of developer tools, BTFS Accelerator, and BTT integration, will further enhance the ecosystem for the developer community.