Technical whitepaper 1.0

Secure Peer to Peer Decentralized Network Protocol

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What is the backbone of the internet?

"TCP/IP provides end-to-end connectivity specifying how data should be formatted, addressed, transmitted, routed and received at the destination. It has four abstraction layers which are used to sort all Internet protocols according to the scope of networking involved. From lowest to highest, the layers are:

1. The link layer contains communication technologies for a local network.
2. The internet layer (IP) connects local networks, thus establishing internetworking.
3. The transport layer handles host-to-host communication.
4. The application layer contains all protocols for specific data communications services on a process-to-process level. For example, HTTP specifies the web browser communication with a web server. " - Wikipedia

The internet has a problem...

It can be vulnerable to the following:

1. terrorist attacks
2. espionage
3. natural disasters
4. server-outages
5. censorship
6. corporate monopolies

It is centralized in nature. When you request a web-page in your browser:

1. your computer uses the TCP/P protocol to connect to your Internet Service Provider.
2. your ISP connects to the DNS network, and converts www.domain.com to an IP address.
3. your ISP connects and forwards the webpage-request data to the IP address of the server, and re-routes the replied data back to your computer, displayed by your browser.

This process requires the DNS network to be functional. It works on a client-server model. Authoritative DNS servers publish information to all other domain name servers, and they must subordinate to it. This centralized domain resolution authorization has drawbacks, and security risks. Unencrypted TCP/IP data transmission through Internet Service Providers can also be another concern. Not all websites support encryption, and those that do, can still be vulnerable to SSL/TLS attacks.

Solutions do exist...

Tor is one of the most popular projects. "It is free software and an open network that helps you defend against a form of network surveillance that threatens personal freedom and privacy, confidential business activities and relationships, and state security known as traffic analysis"

Other P2P software is available, some have limitations, lack of support, or ceased development.

We're creating a solution...

Our approach is different than existing solutions. Our network does not bounce traffic through nodes to hide the requesting client's IP. Our network protocol doesn't depend on central name servers to resolve data requests by client peers. We're creating a protocol for global internet users to communicate privately, and directly, not “anonymously”. It will include many unique features that will protect freedom and privacy. With the ability to share legal files, pictures, videos, news, anything! An encrypted transmission protocol will exchange data between network peers. We do not intend for this to be used for copyright violation or distribution of illegal material, this is an internet protocol built by the people who use it, literally. Peers sharing data between peers, deciding themselves what content is available on the network itself. No centralized node on the network exists to exploit or compromise.

SPPDNP Technical summary:

Users connect to the network by running the client software on their computers, or accessing web-based client software. These users become 'peer-nodes' on the network and help to build databases of other users online. By connecting peers directly together and sharing peer addresses, and files shared... The network organically builds by itself. No central server is required to keep track of all nodes on the network. All peers effectively become “name servers” by maintaining databases of other peer addresses. Clients with static IP addresses, will be listed as priority peers on the network protocol. Peers with dynamic IP address must connect to priority peers to update databases before they become fully connected to all nodes on the network after going offline. They must then wait for all other peers to synchronize with priority peers to be accessible by all other nodes. The more static peers that are online at a given time, the faster the peer-refresh rate becomes.

Software will be built using Visual Basic 6 for Microsoft Windows and the QT framework for Linux and Mac OS. PHP5 & HTML5 versions for web-based clients connecting with their Iphone, Tablets, Android, other. This will be launched as an open source project, under creative commons licensing. Anyone can use and distribute this work with attribution. No download or usage fees will be charged for the software, support, updates or documentation. Donations are welcome! More technical information will be released alongside Alpha/Beta versions in the near future.

Inappropriate, illegal, unethical material will automatically be dealt with by the network itself. We want to build a moderated system where the users decide what content shouldn't be distributed by all peers on the network. This digital “peer-police” policy, allows users to collectively ban unwanted content, thus removing the need for a central administrator. If more peers ban certain material from circulating, then the malicious user's content will never reach all the peers on the network. Blocked material would only be rebroadcast throughout the network by those who remove it from their block-lists. Without a central server: no single entity has the power to control the network as a whole, its contents, spy and capture data, or maliciously take control over it. A true digital democracy is possible, without facilitating “terrorism” and respecting the right to privacy.

The network will also include a marketplace that will enable selling music, video, pictures, documents and software using crypto-currencies (Bitcoin/Litecoin/etc). All media sold on the digital marketplace will be automatically unavailable for download. Protected (for sale) files will be visible but not accessible without payment authorization from the copyright owner or authorized resellers. This will create a digital peer to peer based economy, a true free-marketplace. “Human knowledge belongs to the world”