**Installing IPFS, IPFS Commands, MAY BE IPNS AND MAY BE A SMART CONTRACT WITH LINK TO FILE STORED IN IPFS**

This is a continuation of **last article** (PROVIDE A LINK) on IPFS. In previous article I gave a brief history of HTPP, an introduction to IPFS, how IPFS can decentralize files sharing or in general data exchange the on web and its underlying technologies. In this article I will further go deep down into IPFS installation and its commands.

**Install IPFS**

IPFS installation is quick and easy. It available for MAC, Linux and Window operating systems. Within download package a single application file, IPFS.exe has all the commands which are easy to operate. Here is [link](https://docs.ipfs.io/introduction/install/#installing-from-a-prebuilt-package) along with the instructions and they are pretty self-explanatory. In case its already installed on your machine an existing version can be upgraded through this [link](https://docs.ipfs.io/introduction/install/#upgrading-ipfs).

Initialize the node: After install run **ipfs init**. This initializes the node and creates repository in /Users/<current user account>/.ipfs . You should also see something like below

initializing IPFS node at C:\Users\<user account>\.ipfs

generating 2048-bit RSA keypair...done

peer identity: Qme9Uyqn89iWDYsbqoYNrastssYWNDuMzKXacVZDd844RL

to get started, enter:

ipfs cat /ipfs/QmS4ustL54uo8FzR9455qaxZwuMiUhyvMcX9Ba8nUH4uVv/readme

In above peer identity

**Ipfs id** command

IPFS Configuration file

Config file in windows should be located at folder \Users\<user account>\.ipfs folder. Command **ipfs config show** displays the contents of configuration file. Excellent [article](https://medium.com/textileio/tutorial-setting-up-an-ipfs-peer-part-iii-f5f43506874c) describing each component of config file

<https://medium.com/textileio/tutorial-setting-up-an-ipfs-peer-part-iii-f5f43506874c>

<https://medium.com/textileio/how-ipfs-peer-nodes-identify-each-other-on-the-distributed-web-8b5b6476aa5e>

<https://flyingzumwalt.gitbooks.io/decentralized-web-primer/content/install-ipfs/lessons/initialize-repository.html>

One of the above posts also describes how to setup AWS for managing ipfs on a server

Define what is Peer Id

Add a file

In previous article I explained how a file larger than 256 Kb gets divided into sub block of data. Let me show it practically. Here (***Provide a link to PowerPoint***) is a PowerPoint from University of Buffalo on IPFS.

1. Download file to your computer

2. Add a file from command prompt using command **ipfs add** **PPT FILE NAME.**  On successful addition you should see something

1.66 MiB / 1.66 MiB [========================================================================================] 100.00%

added QmQVtHGWaDZoSD6BpNX7diSF5QQyHUiwR6hKSEiskBYf1c IPFSNov5.pptx

1.66 MiB / 1.66 MiB [========================================================================================] 100.00

1. Run command **ipfs ls**. You should see like below. PPT gets divided into multiple sub blocks. 262158 or 165138 are the size of the data blocks. These data blocks get created in folder **\Users\<user account>\.ipfs\blocks** of your machine. In this case Merkle-DAG worked behind the scenes. Root node QmQVtHGWaDZoSD6BpNX7diSF5QQyHUiwR6hKSEiskBYf1c has below sub leaf’s. Command ipfs refs also works in same way except listing hashes of sub leaves without the size
   1. QmenTp3YcbV44jxtxPhvY547wLBqU6mm4F6SFf4ctWErij 262158
   2. QmQTPovnrvMnU47v5yH9UNiSPeHXw59tkrCP9sv6sXfgfM 262158
   3. QmWZ3vb1Qi5yAzgWvz2FhZVcpgeLrgoJ6Z4yS3gvMEmST7 262158
   4. QmVLi9J36VyV8gT3GJazpa1tqKQjm5qiERp2fnft38oAD2 262158
   5. QmQj1UUcJFqGoLN9nFb2TehyuvyQBLx8UNEFTQGL7697mG 262158
   6. QmSk6bfbo9dBNyexypnMrpbZpYg7sxtLN6f7EzCpe6rm4f 262158
   7. QmXDq6XLvpw7WMSfPV7mPsLAGRPt1Y6Xn2ZzcdEfonjmkX 165138
2. Run command Ipfs cat QmQVtHGWaDZoSD6BpNX7diSF5QQyHUiwR6hKSEiskBYf1c > FILENAME.PPTX to download the file

Question: I added the C:\IPFS\IPFSNov5.pptx QmUN6GHj7NoHrX2eycNUJs5QqZBJctGRdUVZWgqTAxausb and tried to access PPT using http://localhost:8080/ipfs/ QmUN6GHj7NoHrX2eycNUJs5QqZBJctGRdUVZWgqTAxausb (Make sure daemon is running). I thought I will get file downloaded to my computer as original PPT file, but instead of zip file with same as CID got downloaded with multiple folders in the shape of XML files within it. Did IPFS convert file into its own storage format and how do I get back original PPT file when I download

The critical thing to understand about IPFS is that the network is not going to store files once you add them. Adding files to IPFS does not upload them anywhere and only means that you add them to the local repository you host on your node. Unless other peers are interested in hosting your content on their nodes, once you shut down your node, files you have added will not be available for others until you are back online. The caching mechanism mitigates that issue as peers that were interested in fetching your content keep it in the cache. Aggressive garbage collector quickly removes unused files. You should not rely on the cache to keep your files online. To reliably share files with other peers and use IPFS e.g. to host a webpage you would like to set up a server and does not rely on your personal device connectivity.