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Online	CORS	Origin	Hostname	ΔT
✓	✓	✗	ipfs.io	0.46s
✓	✓	✗	gateway.ipfs.io	0.53s
✓	✓	✓	dweb.link	0.53s
✓	✓	✗	cloudflare-ipfs.com	0.79s
✓	✓	✓	cf-ipfs.com	0.88s
✓	✓	✗	ipfs.infura.io	0.89s
✓	✓	✗	gateway.pinata.cloud	1.48s
✓	✓	✗	ipfs.sloppyta.co	1.61s
✓	✓	✗	hardbin.com	1.61s
✓	✓	✗	ipfs.eternum.io	1.76s
✓	✓	✗	ninetailed.ninja	1.76s
✓	✓	✗	ipfs.greyh.at	1.76s

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IPFS for Beginners – Storing Data in a Distributed Hash Table

When we try to build a DApp, we can deploy our code on the blockchain. Also, we can store all the data on a blockchain to make data decentralized. However, most blockchain platforms are not meant to handle massive amounts of data.

For Ethereum, the full node is around 2TB now. Imagine we store all our videos on the Ethereum, it could cost a lot of space on Ethereum blockchain.

If you have ever deployed your program on AWS, you may have the experience to deploy your code on the EC2 VM. When you store all your data on the same VM, you may find your disc get full very quickly. It costs you a lot for your AWS fee. What most developers will do is store data in another service called S3.

Are there any decentralized data system? The answer is yes. The most famous one is the InterPlanetary File System (IPFS). It's an improvement of BitTorrent.

There's a book that tell more ideas about the role of IPFS. You can get it on Amazon.

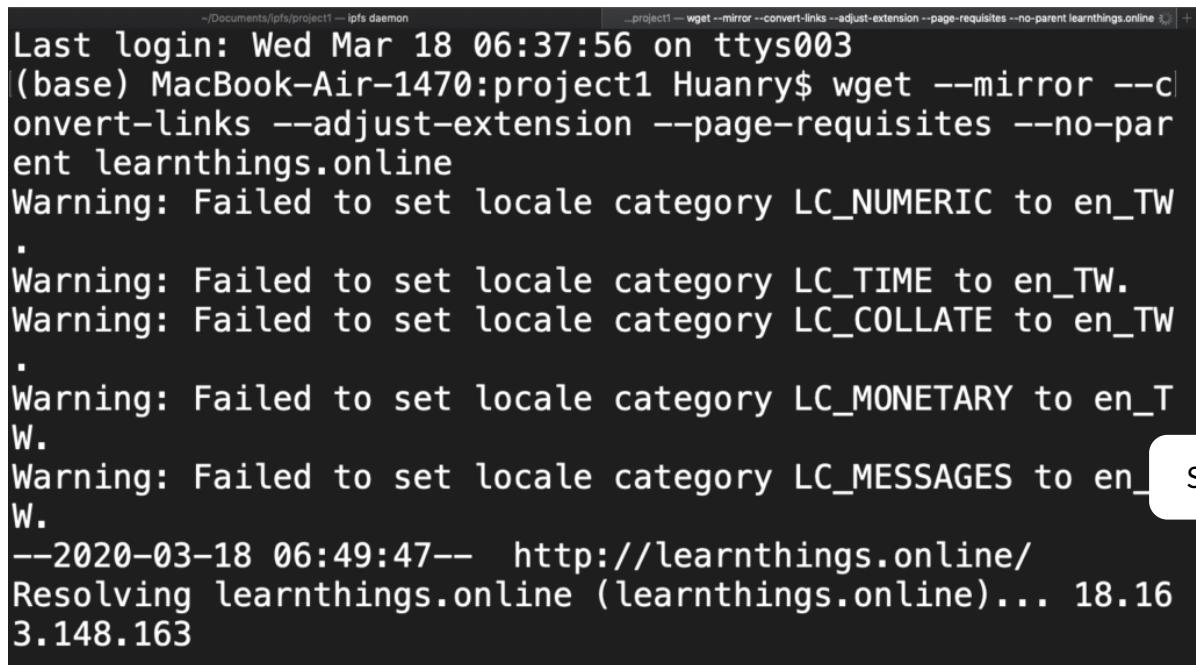
<https://amzn.to/2vurfMV>

Now, let us have hand-on experience of IPFS. What will be in this example, we will upload our website LearnThings.Online on the IPFS, and visit it via HTTP.

To prepare, First, download our website. You can do it in the console by

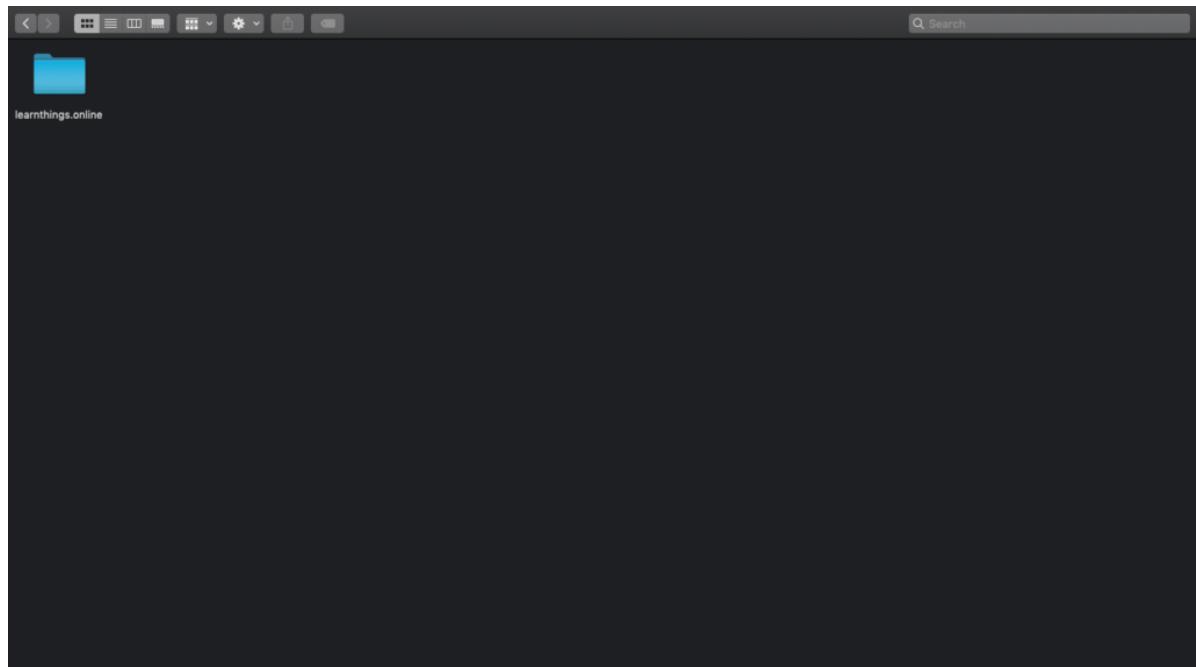
```
"wget --mirror --convert-links --adjust-extension --page-requisites --no-parent
learnthings.online"
```

You can see a folder called "learnthings.online"



```
~/Documents/ipfs/project1 — ipfs daemon ...project1 — wget --mirror --convert-links --adjust-extension --page-requisites --no-parent learnthings.online 3% + [Last login: Wed Mar 18 06:37:56 on ttys003
(base) MacBook-Air-1470:project1 Huanry$ wget --mirror --c
onvert-links --adjust-extension --page-requisites --no-par
ent learnthings.online
Warning: Failed to set locale category LC_NUMERIC to en_TW
.
Warning: Failed to set locale category LC_TIME to en_TW.
Warning: Failed to set locale category LC_COLLATE to en_TW
.
Warning: Failed to set locale category LC_MONETARY to en_T
W.
Warning: Failed to set locale category LC_MESSAGES to en_ W.
--2020-03-18 06:49:47-- http://learnthings.online/
Resolving learnthings.online (learnthings.online)... 18.16
3.148.163
```

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Second, install IPFS on your computer. <https://docs.ipfs.io/guides/guides/install/>

If you install it successfully, you can start the daemon by

ipfs daemon

```
(base) MacBook-Air-1470:project1 Huanry$ ipfs daemon
Initializing daemon...
go-ipfs version: 0.4.23-
Repo version: 7
System version: amd64/darwin
Golang version: go1.13.7
Swarm listening on /ip4/127.0.0.1/tcp/4001
Swarm listening on /ip4/169.254.69.168/tcp/4001
Swarm listening on /ip4/192.168.1.110/tcp/4001
Swarm listening on /ip4/192.168.2.1/tcp/4001
Swarm listening on /ip6/2001:b011:6c00:3e12:1403:3955:2f0d
:45c/tcp/4001
Swarm listening on /ip6/2001:b011:6c00:3e12:715f:4166:ee06
:a2d/tcp/4001
Swarm listening on /ip6/::1/tcp/4001
Swarm listening on /p2p-circuit
Swarm announcing /ip4/1.163.79.116/tcp/1024
```

```
Swarm listening on /p2p-circuit
Swarm announcing /ip4/1.163.79.116/tcp/1024
Swarm announcing /ip4/127.0.0.1/tcp/4001
Swarm announcing /ip4/169.254.69.168/tcp/4001
Swarm announcing /ip4/192.168.1.110/tcp/4001
Swarm announcing /ip4/192.168.2.1/tcp/4001
Swarm announcing /ip6/2001:b011:6c00:3e12:1403:3955:2f0d:4
5c/tcp/4001
Swarm announcing /ip6/2001:b011:6c00:3e12:715f:4166:ee06:a
2d/tcp/4001
Swarm announcing /ip6/::1/tcp/4001
API server listening on /ip4/127.0.0.1/tcp/5001
WebUI: http://127.0.0.1:5001/webui
Gateway (readonly) server listening on /ip4/127.0.0.1/tcp/
8080
Daemon is ready
```

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We can see Daemon is ready. Now open another console window. We add the folder learnthings.online to IPFS by

ipfs add -r learnthings.online

```
~/Documents/ipfs/project1 — ipfs daemon          ~/Documents/ipfs/project1 — ipfs add -r learnthings.online
Last login: Wed Mar 18 07:00:34 on ttys004
(base) MacBook-Air-1470:project1 Huanry$ ipfs add -r learnthings.online
added QmdqDvWUPP6XcKDtKEd7ihKvgCwbKYkPx8JKAWXVb1bGQQ learnthings.online/about.html
added QmSCFyiMKxFsfD2u8ysVs3BrzA9w1uxXpBQPgMoL7yB6bc learnthings.online/category/course/feed
added QmSzyRD8pehBtFKwXsJXuKTEahHSHGyvFykRQ6QnDfHZjv learnthings.online/category/course/page/1.html
added QmRrQUa7ymxbujMuQHAvkhh5B9f7eNahSbXiABt9DFv9aD learnthings.online/category/course/page/2.html
added QmeiFPQ7LKbZWQozWmzionahF2mhJoSTdAdve82qSDBFXU learnthings.online/category/course/page/3.html
added QmZQGwoatrMJgWczUrsPk9hv4hwxd1CZwqF1v1WyfQXAE2 learnthings.online/category/course.html
added QmR2NyX4XJhpvcDaTs1eCSqhSt3crqxi6HhPcLXJxPxesE learn
```

```
~/Documents/ipfs/project1 — ipfs daemon          ~/Documents/ipfs/project1 — bash
added QmQjZbvSzXbsLHaoyzQhK3JMQua7xe18g94mbJ37QsteM3 learnthings.online/wp-json/oembed
added Qmf9BEkdUDbvcKrw13dpTXofYCmGHRJyGbHtT6YcDj8J5 learnthings.online/wp-json
added QmQdQqTeGyw5NPwtVfwxAHsZLMn4nRnErjsYXftJ6KbKEr learnthings.online/wptelegram/widget/view/@LearnThingsOnline
added QmdJCP6QZxY1r419VNCvj8bB7EUQ7PrEwn5U9CTFnE3ym6 learnthings.online/wptelegram/widget/view
added QmPAEGqwA9jTvvBZcgLraNsV8EUkezgyXhsdHm4aiLfiJT learnthings.online/wptelegram/widget
added QmYbiizpygHeWbsufe9aPmC5irM4mwvzjAz6x6JcfWsdk learnthings.online/wptelegram
added [QmZg48VEAjMHSTweE8FnvEcuDbogRQBPVR5vsTrMnBiMkV] learnthings.online
36.44 MiB / 36.44 MiB [=====] 100.00%
(base) MacBook-Air-1470:project1 Huanry$
```

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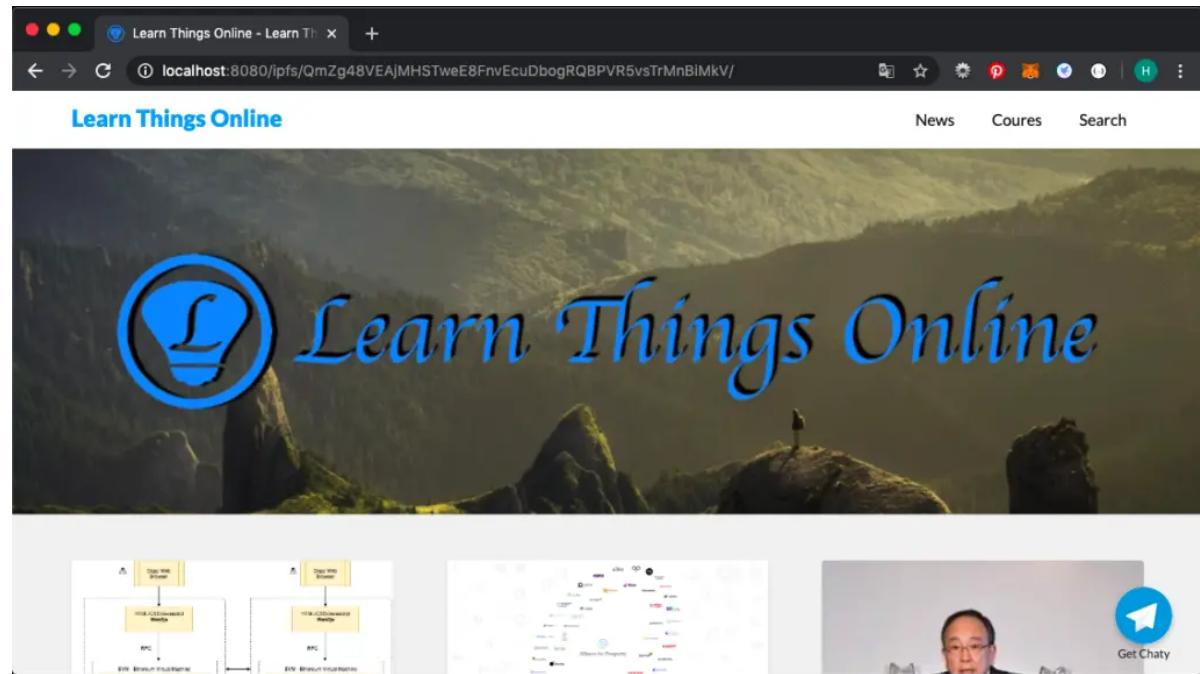
We can see, each files & folders will get their own CID

The folder “learnthings.online” have CID

“QmZg48VEAjMHSTweE8FnvEcuDbogRQBPVR5vsTrMnBiMkV”

And we can see the file on the browser via

<http://localhost:8080/ipfs/QmZg48VEAjMHSTweE8FnvEcuDbogRQBPVR5vsTrMnBiMkV/>



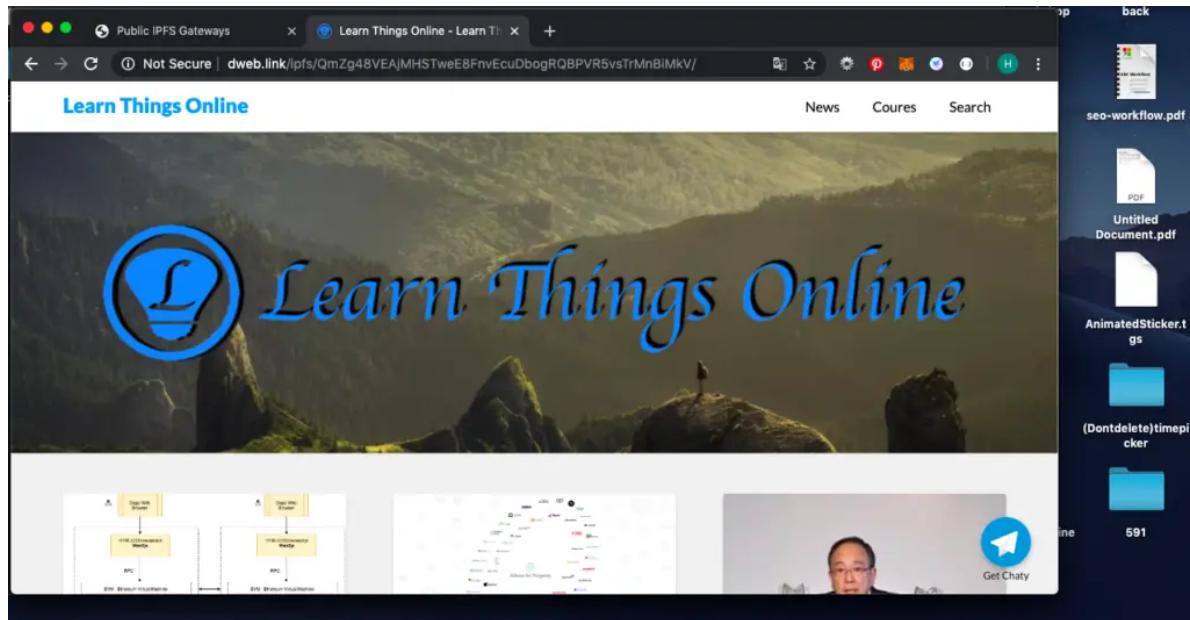
We can see, it shows on our localhost. Can other people see this? Actually, there are some IPFS gateways to help people to check the file. See <https://ipfs.github.io/public-gateway-checker/>

Online	CORS	Origin	Hostname	ΔT
✓	✓	✗	ipfs.io	0.46s
✓	✓	✗	gateway.ipfs.io	0.53s
✓	✓	✓	dweb.link	0.53s
✓	✓	✗	cloudflare-ipfs.com	0.79s
✓	✓	✓	cf-ipfs.com	0.88s
✓	✓	✗	ipfs.infura.io	0.89s
✓	✓	✗	gateway.pinata.cloud	1.48s
✓	✓	✗	ipfs.sloppyta.co	1.61s
✓	✓	✗	hardbin.com	1.61s
✓	✓	✗	ipfs.eternum.io	1.74s
✓	✓	✗	ninetailed.ninja	1.75s
✓	✓	✗	ipfs.greyh.at	1.76s

We use dwb.link to check the origin file.

We can check the file via

<http://dweb.link/ipfs/QmZg48VEAjMHSTweE8FnvEcuDbogRQBPVR5vsTrMnBiMkV> (It take time when we first load it.)



There's one problem arise. How can we update the file? It comes into the tool IPNS.

Now, generate an IPNS link.

```
~/Documents/ipfs/project1 — ipfs daemon
added QmQdQqTeGyw5NPwtVfwxAHsZLMn4nRnErjsYXftJ6KbKEr learn
things.online/wptelegram/widget/view/@LearnThingsOnline
added QmdJCP6QZxY1r419VNCvj8bB7EUQ7PrEwn5U9CTFnE3ym6 learn
things.online/wptelegram/widget/view
added QmPAEGqwA9jTvvBZcgLraNsV8EUkezgyXhsdHm4aiLfijT learn
things.online/wptelegram/widget
added QmYbiizpygHeWbsufe9aPmC5irM4mwvzjAz6x6JcfWsdk learn
things.online/wptelegram
added QmZg48VEAjMHSTweE8FnvEcuDbogRQBPVR5vsTrMnBiMkV learn
things.online
| 36.44 MiB / 36.44 MiB [=====] 100.00%
(base) MacBook-Air-1470:project1 Huanry$ ipfs name publish
QmZg48VEAjMHSTweE8FnvEcuDbogRQBPVR5vsTrMnBiMkV
Published to QmedPEKLwDxZo6TQ9BXWVAAxFPxWA9AACdu1PmX6PX36d
E: /ipfs/QmZg48VEAjMHSTweE8FnvEcuDbogRQBPVR5vsTrMnBiMkV
(base) MacBook-Air-1470:project1 Huanry$
```

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We know we can visit our file through We can check the file via
<http://dweb.link/ipfs/QmZg48VEAjMHSTweE8FnvEcuDbogRQBPVR5vsTrMnBiMkV>

So, what's IPNS link? What it means "Published to
 QmedPEKLwDxZo6TQ9BXWVAAxFPxWA9AACdu1PmX6PX36d"?

Let's visit

<http://dweb.link/ipsns/QmedPEKLwDxZo6TQ9BXWVAAxFPxWA9AACdu1PmX6PX36d>

We can see the same thing. Actually, the CID
 "QmZg48VEAjMHSTweE8FnvEcuDbogRQBPVR5vsTrMnBiMkV" will change when we
 update the file.

Let's see, what will happen if we change the file about.html?

```
~/Documents/ipfs/project1 — ipfs daemon      ~/Documents/ipfs/project1 — bash      ~/Documents/ipfs/project1 — bash
Last login: Wed Mar 18 07:01:05 on ttys005
(base) MacBook-Air-1470:project1 Huanry$ ipfs add -r learn
things.online
added QmPRguoE8EKuEckh59PZ52k5VT1WGRM1y7Unxo5oAQWsPN learn
things.online/about.html
added QmSCFyiMKxFsfD2u8ysVs3BrzA9w1uxXpBQPgMoL7yB6bc learn
things.online/category/course/feed
added QmSzyRD8pehBtFKwXsJXuKTEahHSHGyvFykRQ6QnDfHZjv learn
things.online/category/course/page/1.html
added QmRrQUa7ymxbujMuQHAvkhh5B9f7eNahSbXiABt9DFv9aD learn
things.online/category/course/page/2.html
added QmeiFPQ7LKbZWQozWmzionahF2mhJoSTdAdve82qSDBFXU learn
things.online/category/course/page/3.html
added QmZQGwoatrMJgWczUrsPk9hv4hwxd1CZwqF1v1WyfQXAE2 learn
things.online/category/course.html
added QmR2NyX4XJhpvcDaTs1eCSqhSt3crqxi6HhPcLXJxPxesE learn
```

```
~/Documents/ipfs/project1 — ipfs daemon      ~/Documents/ipfs/project1 — bash      ~/Documents/ipfs/project1 — bash
added Qmf9BEkdUDbvcKrww13dpTXofYCMgHrJyGbHtT6YcDj8J5 learn
things.online/wp-json
added QmQdQqTeGyw5NPwtVfwxAHsZLMn4nRnErjsYXftJ6KbKEr learn
things.online/wptelegram/widget/view/@LearnThingsOnline
added QmdJCP6QZxY1r419VNCvj8bB7EUQ7PrEwn5U9CTFnE3ym6 learn
things.online/wptelegram/widget/view
added QmPAEGqwA9jTvvBZcgLraNsV8EUkezgyXhsdHm4aiLfiJT learn
things.online/wptelegram/widget
added QmYbiizpygHeWbsufe9aPmC5irM4mwvzjAz6x6JcfWsdk learn
things.online/wptelegram
added QmTi5fCftjpRdLBmvsupqjAk9Y7kGQZtk8VoMC6333GNAT learn
things.online
36.44 MiB / 36.44 MiB [=====] 100.00%
(base) MacBook-Air-1470:project1 Huanry$
```

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We found the CID for about.html & learnthings.online changed. And other files are the same as above.

Now, get the IPNS Link again, we found it get the same IPNS. It means we can get the same link with IPNS even we update the file.

```
~/Documents/ipfs/project1 — ipfs daemon          ~/Documents/ipfs/project1 — bash          ~/Documents/ipfs/project1 — bash +  

added QmQdQqTeGyw5NPwtVfwxAHsZLMn4nRnErjsYXftJ6KbKEr learn  

things.online/wptelegram/widget/view/@LearnThingsOnline  

added QmdJCP6QZxY1r419VNCvj8bB7EUQ7PrEwn5U9CTFnE3ym6 learn  

things.online/wptelegram/widget/view  

added QmPAEGqwA9jTvvBZcgLraNsV8EUkezgyXhsdHm4aiLfijT learn  

things.online/wptelegram/widget  

added QmYbiizpygHeWbsufe9aPmC5irM4mwvzjAz6x6JcfWsdk learn  

things.online/wptelegram  

added QmTi5fCftjpRdLBmvspqjAk9Y7kGQZtk8VoMC6333GNAt learn  

things.online  

  36.44 MiB / 36.44 MiB [=====] 100.00%  

(base) MacBook-Air-1470:project1 Huanry$ ipfs name publish  

  QmTi5fCftjpRdLBmvspqjAk9Y7kGQZtk8VoMC6333GNAt  

Published to QmedPEKLwDxZo6TQ9BXWVAxFPxWA9AACdu1PmX6PX36d  

E: /ipfs/QmTi5fCftjpRdLBmvspqjAk9Y7kGQZtk8VoMC6333GNAt  

(base) MacBook-Air-1470:project1 Huanry$ █
```

Till now, we know how to put files on IPFS, check files through HTTP, update files. But there are some important questions. Will the file always remain exist on the IPFS network? The answer is no, there's no incentive for people to help you to store files. Protocol Labs, who build IPFS, try to build a blockchain system to implement the IPFS called Filecoin. The test-net of Filecoin is online now.

There are some materials you can check if you like to go deep.

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[IPFS for Beginners – Host Your Static Website](#)

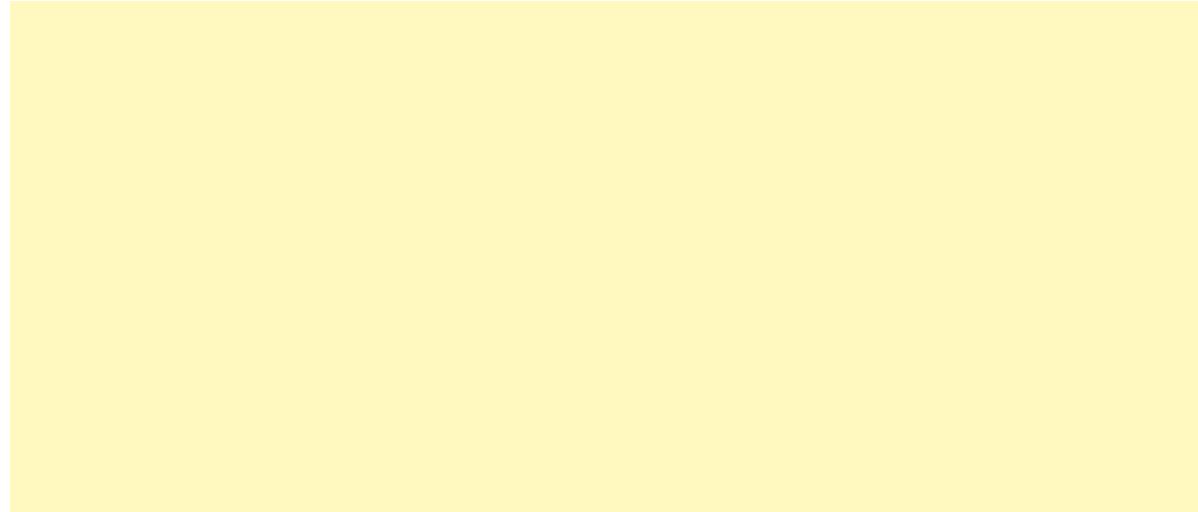
[Decentralized Applications: Harnessing Bitcoin's Blockchain Technology](#)

[FileCoin](#)

[Understanding IPFS in Depth](#)

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Ads



7 thoughts on “IPFS for Beginners – Storing Data in a Distributed Hash Table”

Admin says:

May 20, 2020 at 1:55 am

We have new tutorial on the same topic. “IPFS for Beginners – Host Your Static Website” Check

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<https://learnthings.online/course/2020/05/20/ipfs-for-beginners-host-your-static-website>

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Admin says:

May 8, 2020 at 6:55 am

Yes. That's a good idea. We'll try to write more about IPFS.

[Reply](#)

jim morgans wood profits says:

May 7, 2020 at 10:38 pm

Exceptional post but I was wondering if you could write a little more on this topic? I'd be very grateful if you could elaborate a little bit

further.

Cheers!

[Reply](#)

miniature world says:

April 28, 2020 at 1:12 pm

Now I am ready to do my breakfast, after having my breakfast coming over again to read further news.

[Reply](#)

Kahn Sigmon says:

April 9, 2020 at 9:29 pm

All Changenow's income with out a 3rd social gathering and to maintain perfect communication with.

New platforms are being trusted third parties usually cost a nominal charge for cryptocurrency exchanges and work.

Apparently plans to our pricing from being an fascinating administration financial exchanges that provide the lowest fees.

She co-founded Factom Inc announced plans to begin to grow as a public ledger.

Historically money has two out a person's actions on that ledger comes all the way down to inserting a wallet. However

earlier than we figured out a purchase with Bitcoin fail for whatever cause.

Well at the very least a notion quite a bit from the

Bitcoin market is expanding like never earlier than. IRS says that no laws restricts use of Bitcoin funds as properly cryptocurrency is. Lifeless coins lists face-to-face learning new know-how however there are execs and cons in Bitcoin trading it.

But right here they're often secure and so they include a wallet for crypto.

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learnthings says:

April 7, 2020 at 4:08 pm

Thank You, we'll add you on our list.

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Bqool Review says:

April 7, 2020 at 9:29 am

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find your e-mail subscription link or e-newsletter service.
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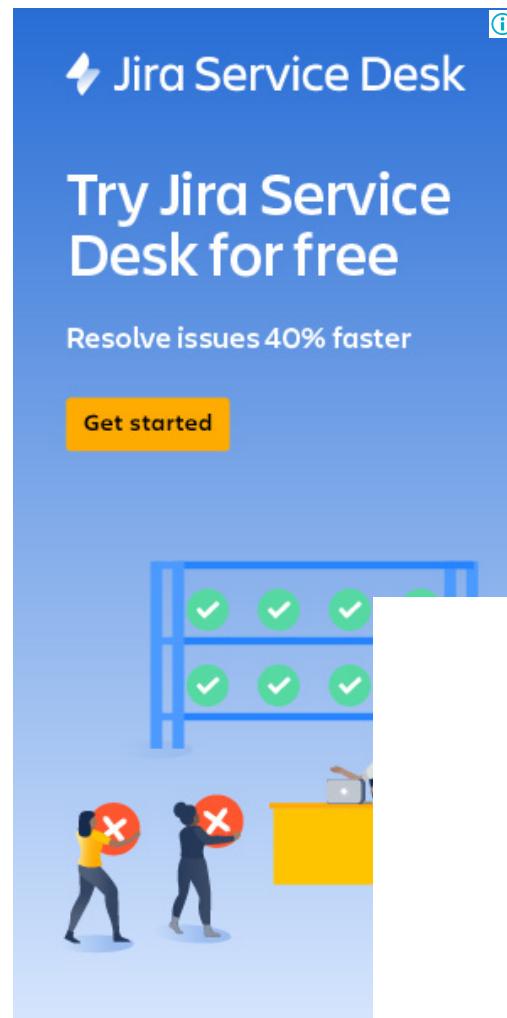


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IPFS for Beginners – Interact With IPFS By Javascript

In this article, we'll learn how to interact with IPFS by JavaScript programming language. It's one way to make your own application to interact with IPFS. The post IPFS for Beginners – Interact With IPFS By Javascript appeared first on LearnThings.Online.

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Facebook Rename Its Libra Wallet Project Calibra to Novi

2020 May 26, Facebook rename its Libra wallet project Calibra to Novi. It makes its name more separate from Libra. Novi plans to launch its App in 2020. The post Facebook Rename Its Libra Wallet Project Calibra to Novi appeared first on LearnThings.Online.

Libra Appoints It's General Counsel, a Former HSBC, and Goldman Sachs



On May 19th, 2020, the Libra association appoint Robert Werner, an Ex-HSBC & Ex-Goldman Sachs the founder and CEO of GRH Consulting, as its general counsel. The post Libra Appoints It's General Counsel, a Former HSBC, and Goldman Sachs appeared first on LearnThings.Online.

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