Diode Free Webinar Event 6/30 Tuesday

STARTING SOON...

Website: https://diode.io/ Github: https://github.com/diodechain

Diode Network and Video Streaming Using Raspberry Pi Zero W

Peter Lai | Blockchain Engineer at Diode (https://diode.io/)

Tuesday June 30th, 2020

9:00 PM Taiwan (GMT+8) | 8:00 AM Minneapolis, MN, USA | 3:00 PM Berlin, Germany

Diode's YouTube Channel

Agenda

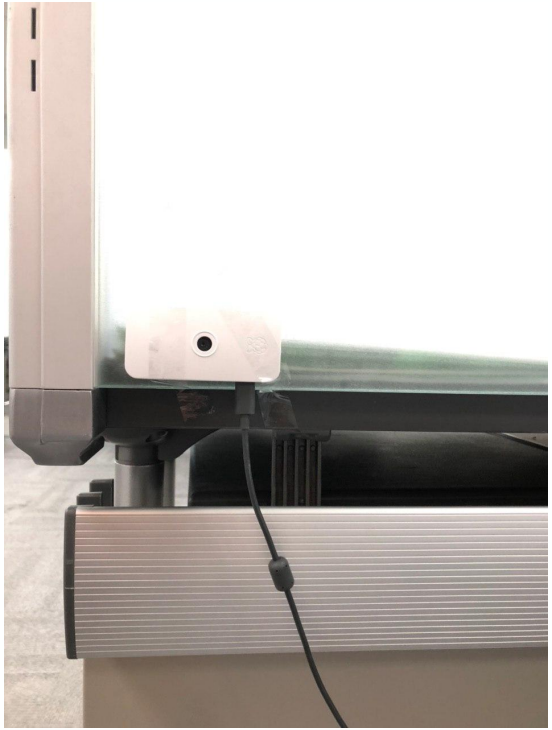
- Introduction
- Demo
- Q&A

About

- Blockchain engineer at Diode
- Editor of Taipei Ethereum Meetup
- Open source contributor
- Love to learn new technology
- Programming languages: JS, GO, PHP, C, PYTHON
- Twitter: @alk03073135 | Github: @sc0vu

Demo

- View video stream
- https://betahaus-berlin.diode.link
- https://pi-taipei.diode.link
- https://dev-sc0vu.diode.link



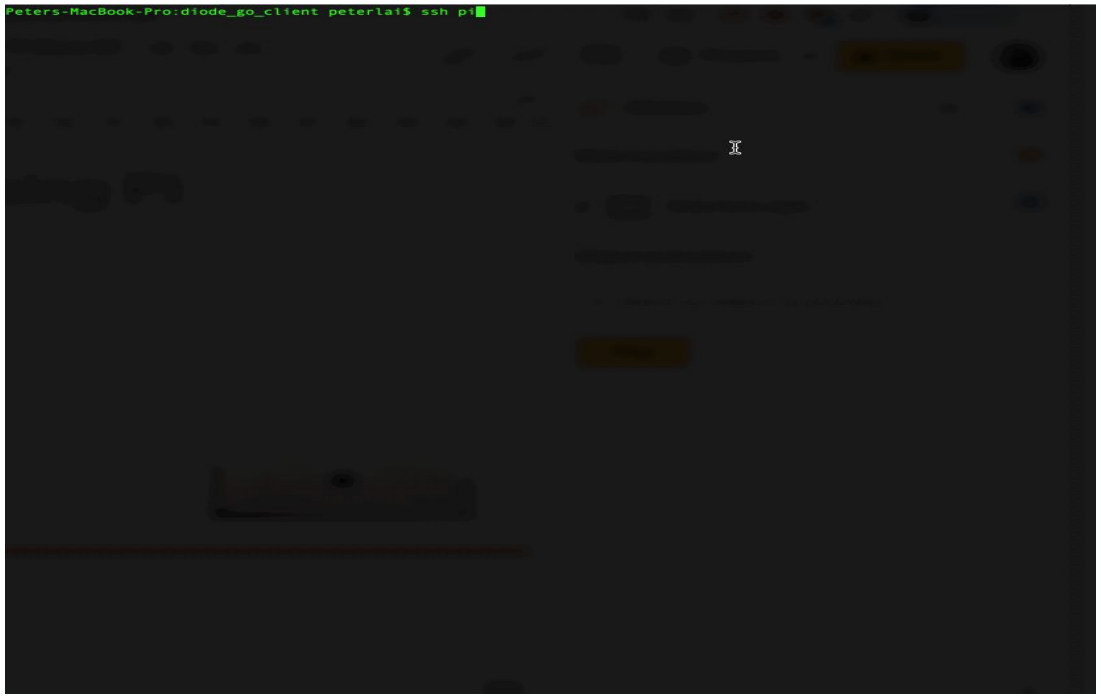
How to stream video using Pi

- Pi camera module
  - enable camera raspi-config
  - raspivid
  - h.264 video stream

How to stream video using Pi

Enable camera, open a terminal and type:

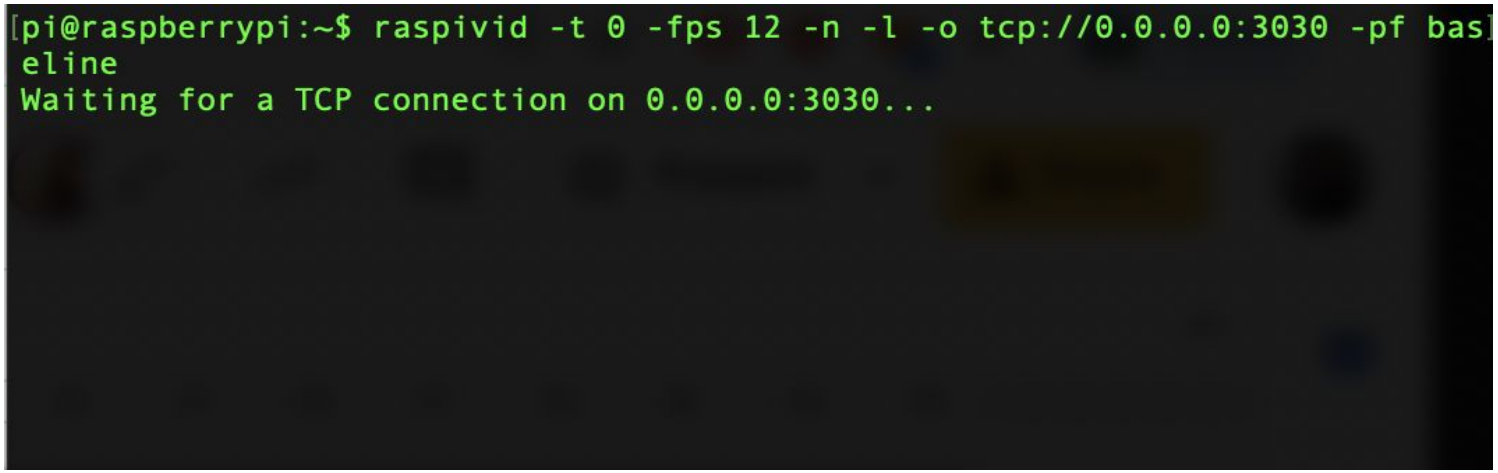
$ sudo raspi-config



How to stream video using Pi

Streaming video with raspvid, open a terminal and type:

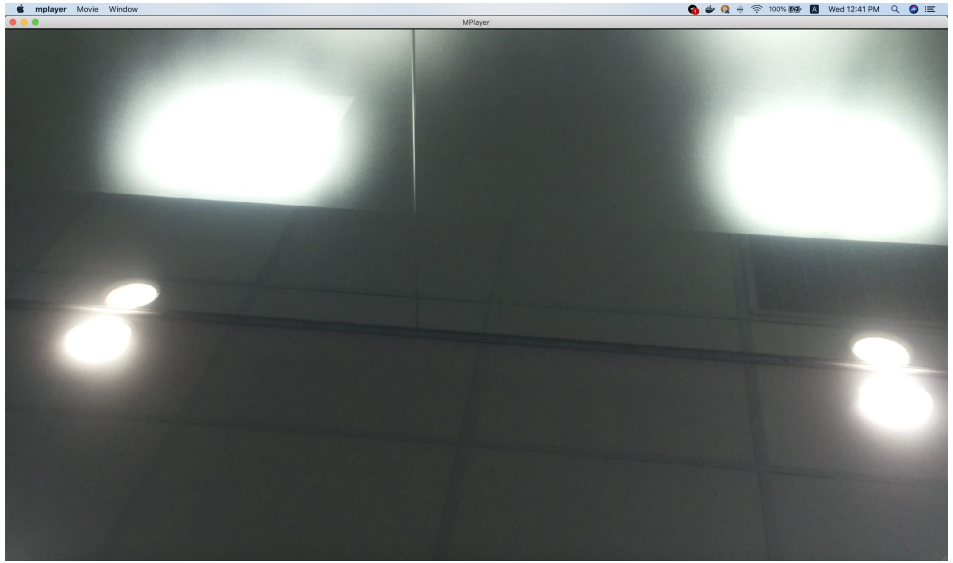
$ raspivid -t 0 -fps 12 -n -l -o tcp://0.0.0.0:3030 -pf baseline



How to stream video using Pi

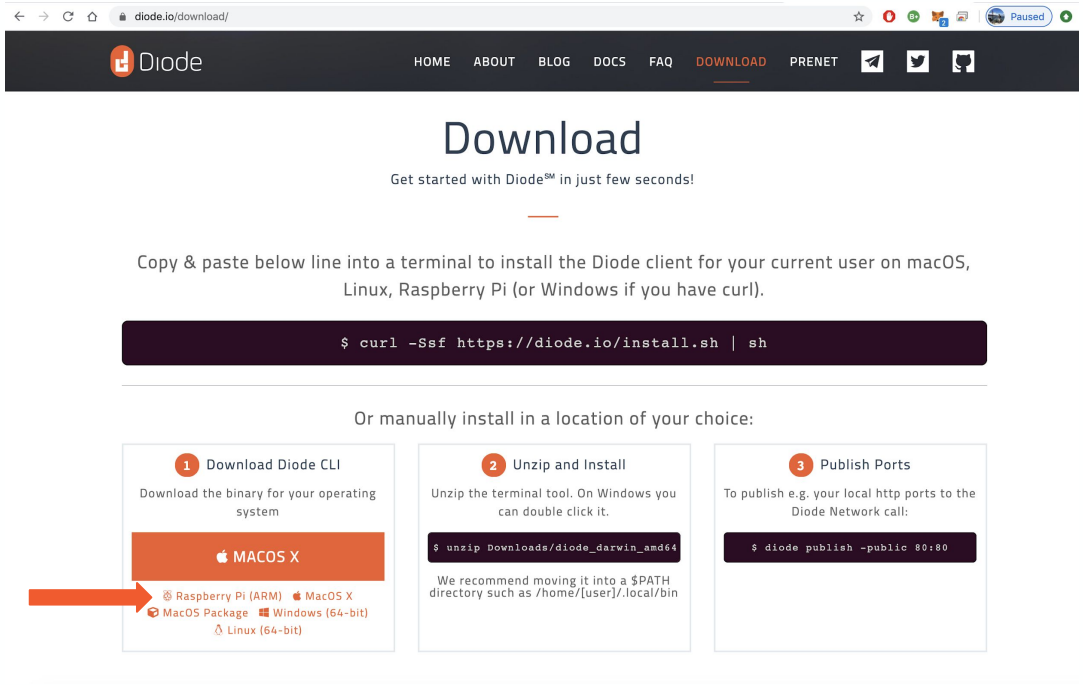
Read video stream on computer, open a terminal and type:

$ nc [pi's ip] 3030 | mplayer -fps 12 -demuxer h264es -cache 1024 -



Publish resource through diode

Download Diode client: https://diode.io/download



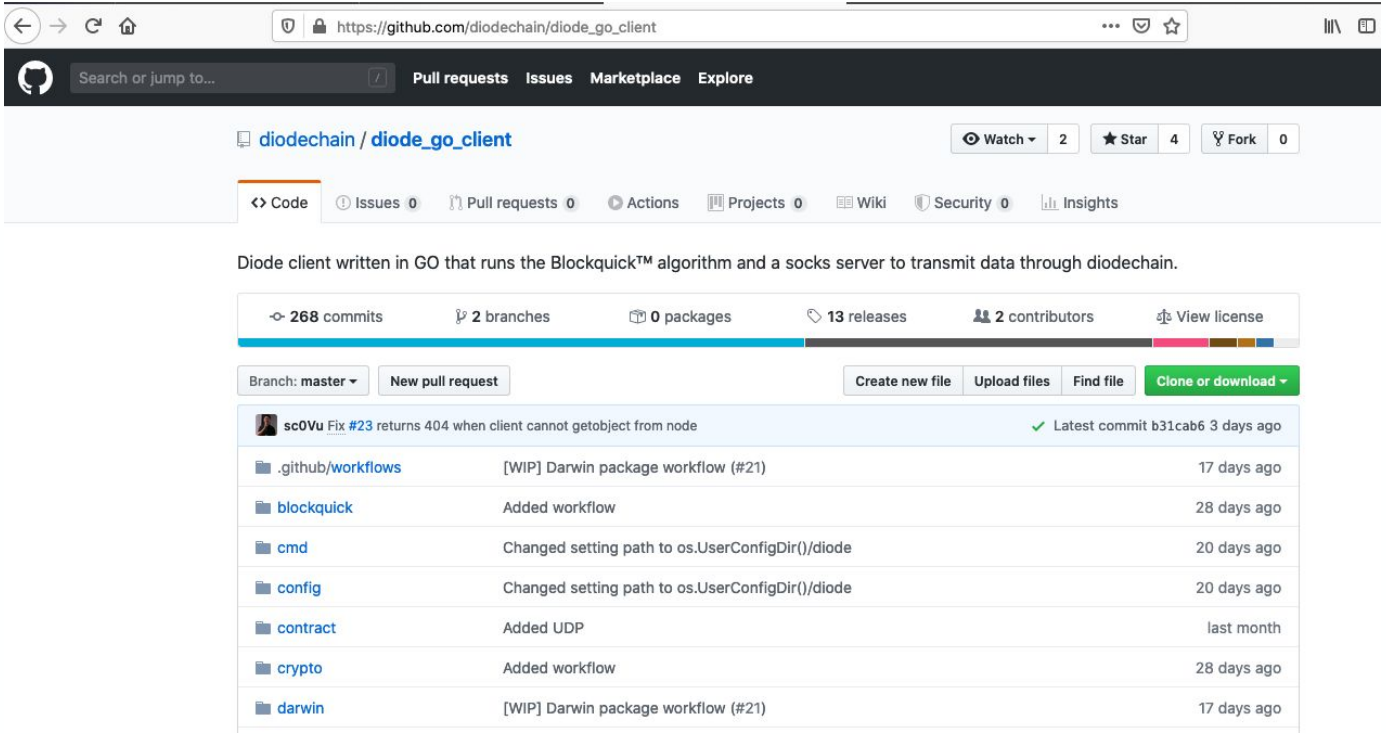
Publish resource through diode

Or open a terminal window and type:

```
$ curl -Ssf https://diode.io/install.sh | sh
```

Publish resource through diode

Or, build from source: https://github.com/diodechain/diode_go_client



Publish resource through diode

Publish your local port to the Diode Network

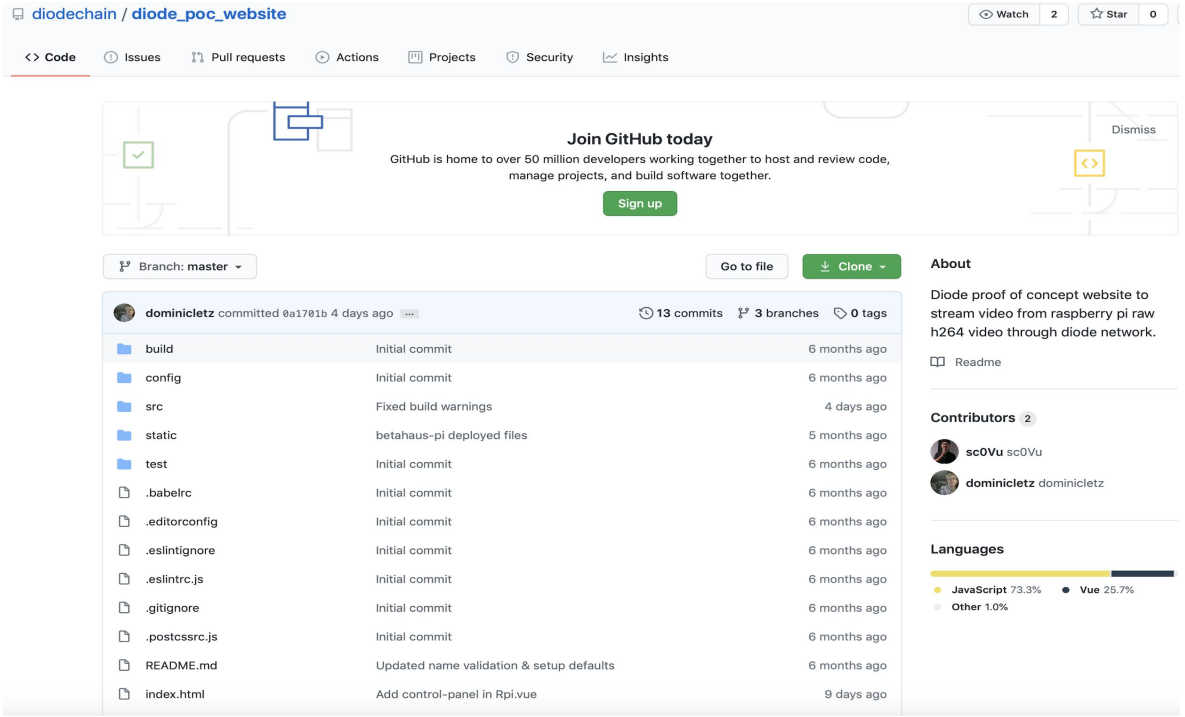
In your terminal window, type:

```
$ diode publish -public 3030:3030
```

This binds your local port to a Diode port. We are publishing as “public” so anyone can view it (can also use “protected” or “private”)

Publish resource through diode

Bonus Download and host https://github.com/diodechain/diode_poc_website



Publish resource through diode

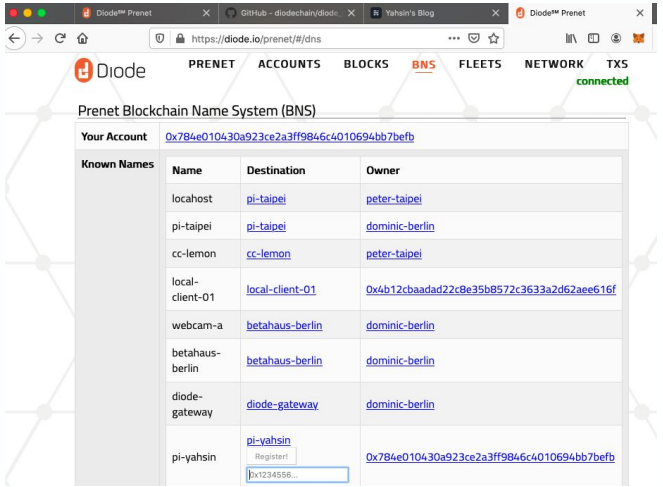
Bonus Configure a domain name

Your website address can use a human readable name.

Register your Blockchain Name System (BNS) custom domain*:

https://diode.io/prenet/#/dns

I chose “dev-sc0vu” for my domain



* Requires Metamask (metamask.io)

Publish resource through diode

Bonus Configure a domain name

Use this command to register your Blockchain Name System (BNS) custom domain:

$ diode bns -register [name]=[address]

I typed

diode bns -register dev-sc0vu=0x13ac4c74416ed3f59bd9d7dfca79326819631093

Questions?

We’d be happy to answer questions!

Hans Rempel, Dominic Letz, Peter Lai, Yahsin Huang

Q: How to compile binary files on a Raspberry Pi in a more efficient way?

Dominic: Cross-Compiling is a common way to compile binaries on your machine and copy them to the Pi. There are tutorials for different languages:

C/C++: https://blog.kitware.com/cross-compiling-for-raspberry-pi/

Go: https://www.thepolyglotdeveloper.com/2017/04/cross-compiling-golang-applications-raspberry-pi/

Rust: https://dev.to/h_ajsf/cross-compiling-rust-for-raspberry-pi-4iai

Q: Is the video streaming content stored on Diode's blockchain network?

Dominic: No, the Diode network is a p2p relay network which transmits the streaming content. In the Pi video example, we were using a shared port to **broadcast** the video data live to all participants. The blockchain miners help duplicating the content and sending it to as many receivers as needed. So the Raspberry Pi only needs to stream to one client, but the video can be sent to thousands of viewers at the same time.

Q: One common way to do Raspberry Pi's video streaming via TCP is to use the "raspivid" command. How is Diode different from this commonly used command?

Dominic: Diode adds to the "raspivid" command three superpowers:

1) Global reachability under any http://<name>.diode.link domain
2) Broadcast to hundreds or thousands of video watchers
3) Access control using Ethereum ids (public, protected or private stream)

Q: I’m a podcast host. Is it possible to publish my podcast to Diode?

Dominic: Yes, you can certainly publish your podcast with Diode. A major difference between Spotify and Diode is that when uploading content to Spotify, the Spotify company owns your content; therefore, they can easily sell ads, and get profits out of your content. But if you do it with Diode, you still have the ownership of your content. Diode doesn’t own your content, hence can’t make money from your content. However, in order to publish your podcast with Diode, you have to first put the podcast on a Diode-enabled host (see our post on Ghost). In order to make that easier in the future, we would like to invite application developers to create applications like this that leverage Diode’s decentralized publisher-first network!

What is more interesting is if you do a live program, for instance, a live broadcast episode with Diode, I would recommend: 1) Live broadcast your podcast via Diode; 2) After broadcast, upload it to Spotify / etc. for people to listen to it later

Q: For Raspberry Pi users, why would you want to use Diode network when you can easily use “ssh” over a local network?

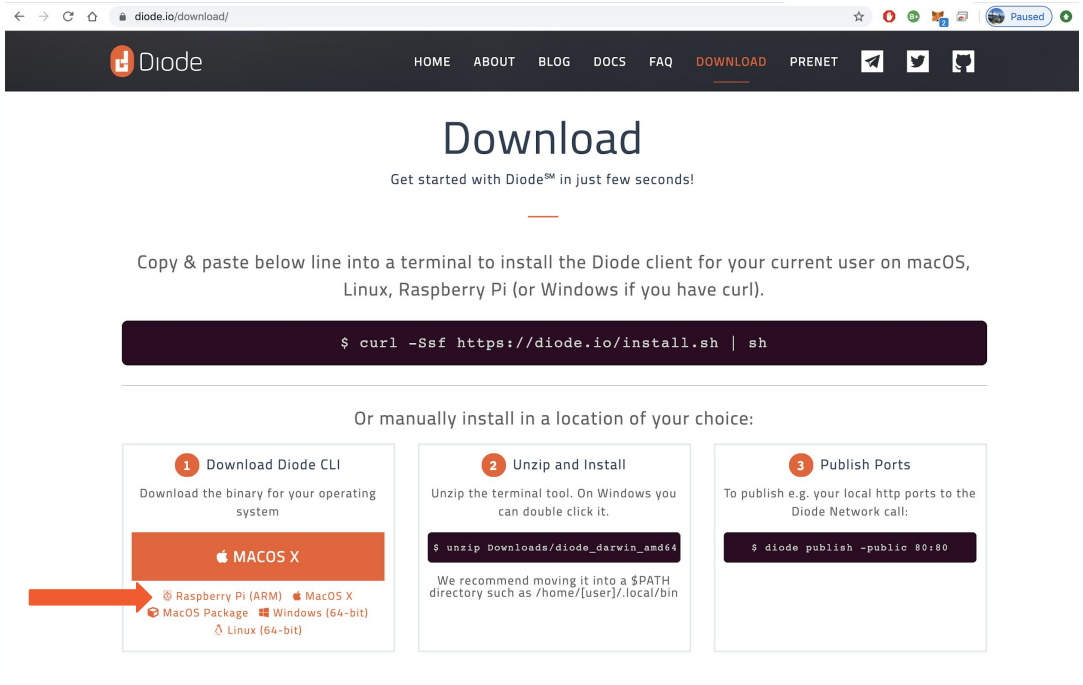
Dominic: With Diode, the user can “ssh” to the Raspberry Pi from anywhere in the world. I’m doing this now regularly to debug our Raspberry Pis in Taipei, Berlin and at home. By using Diode, I can easily login to any of our Pis from anywhere on the planet.

Diode’s upcoming meetup events

- 7/29 Wednesday Diode CTO Dominic Letz will be speaking at Thailand’s Bangkok Blockchain Enterprise Meetup
- Web3 meetup in mid August (an event co-organized with a few blockchain companies in the US and in Japan)

Publish resource through diode

Download Diode client: https://diode.io/download



Diode

Join the Web3 movement


https://diode.io


https://t.me/diode_chain


https://twitter.com/diode_chain


https://www.linkedin.com/company/diode-chain