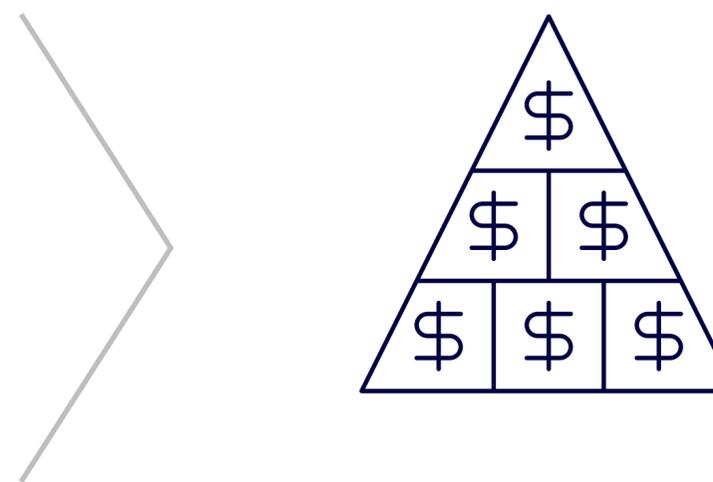




USE CASE

Cloud Mining  
or Ponzi Scheme?

Cloud mining services have gained significant popularity over the past few years, enabling users to earn bitcoin without the hassle of managing their own hardware. However, while these services offer obvious benefits, they also have been known to exhibit suspicious behavior – and it is often difficult for users to know whether a service is a Ponzi scheme or another scam to be avoided. Crystal™ makes this easy. Read on to see how **Crystal** can be used to ensure that you are not a victim of Ponzi scheme services.





# HashOcean Case

One such Ponzi scheme was HashOcean cloud mining, which began its operations on March 8, 2015. From the beginning, HashOcean seemed to provide great conditions for its clients, causing more and more users to sign up.

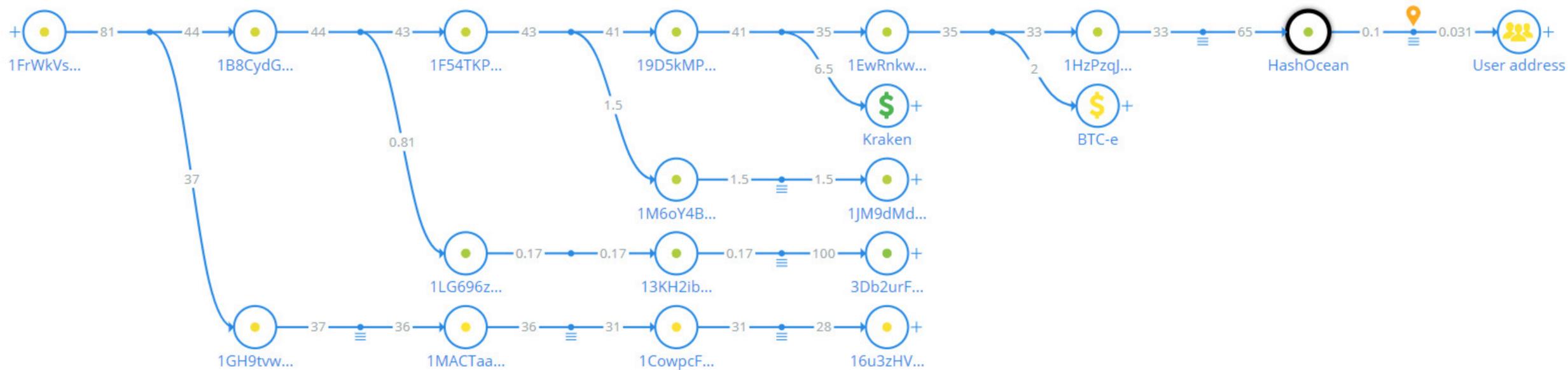
Suddenly, on June 27, 2016, the HashOcean website disappeared and payouts to its clients were suspended.

The average lifespan for Ponzi schemes is about six months; HashOcean existed for 18 months. This longer lifespan gave people trust in the organization, which is why so many became victims of its fraud.

Using **Crystal**, we found that within the last few days of the service operation, HashOcean had been receiving 2200 BTC per day and paying out 1900 BTC per day. This means that this Ponzi scheme had earned a significant amount of money before it closed.

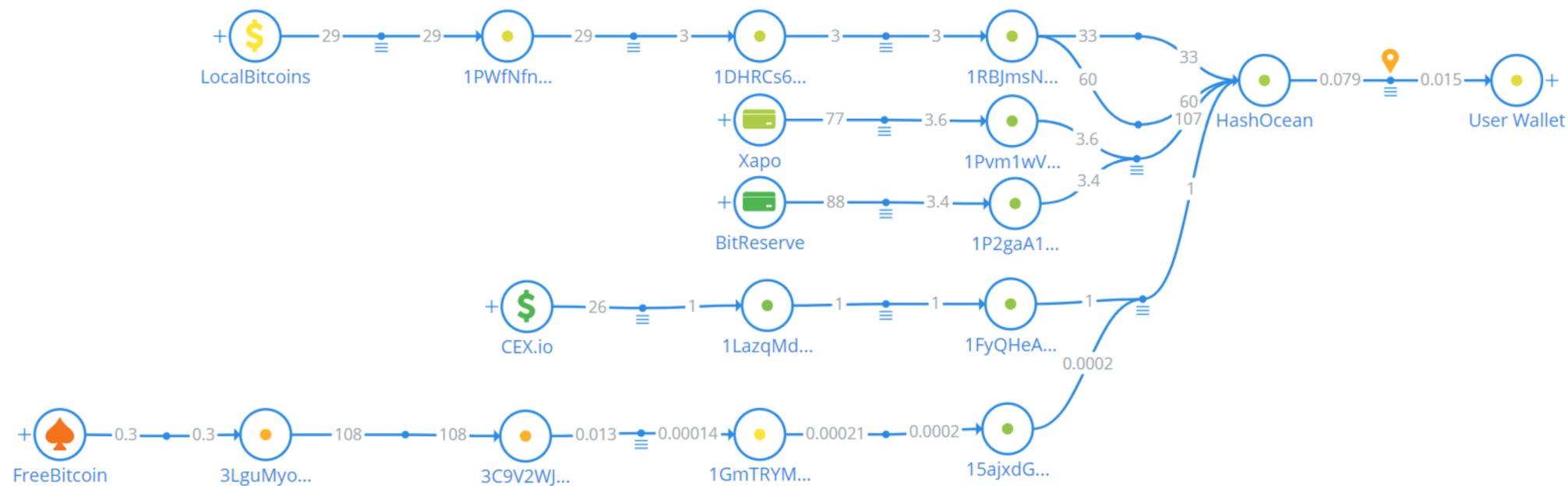
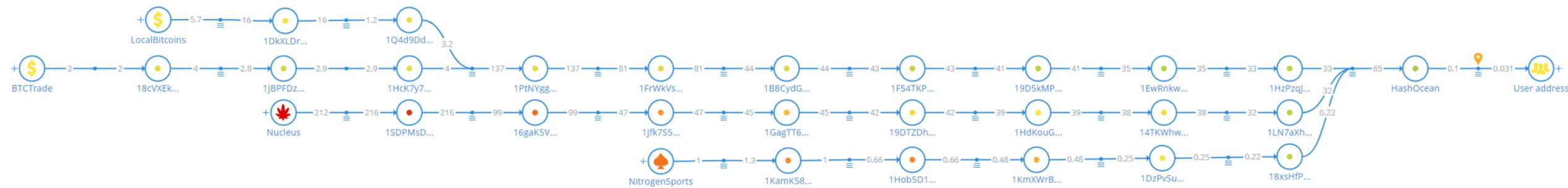
**Crystal** contains a method of research that could have indicated that HashOcean was a Ponzi scheme even before the company closed. Real cloud mining services use recently emitted bitcoins to make payouts to their clients. Using **Crystal**, we examined many of HashOcean's payout transactions, but there were no recently emitted bitcoins in any of them. HashOcean used only bitcoins it had received from other users for their payouts. In the pictures below, you can see that the bitcoins used in payouts came from exchanges, payment processors, gambling and darknet marketplaces.





Using **Crystal**, it is easy to see there were no recently emitted bitcoins used in the payout transactions—as shown in the diagram above. **Crystal** enables a deeper look into the past, allowing us to see from which sources the HashOcean address received its bitcoins. As we will see in the pictures below, HashOcean’s bitcoins appeared to come from exchanges, gambling services or even dark marketplaces—not from mining.

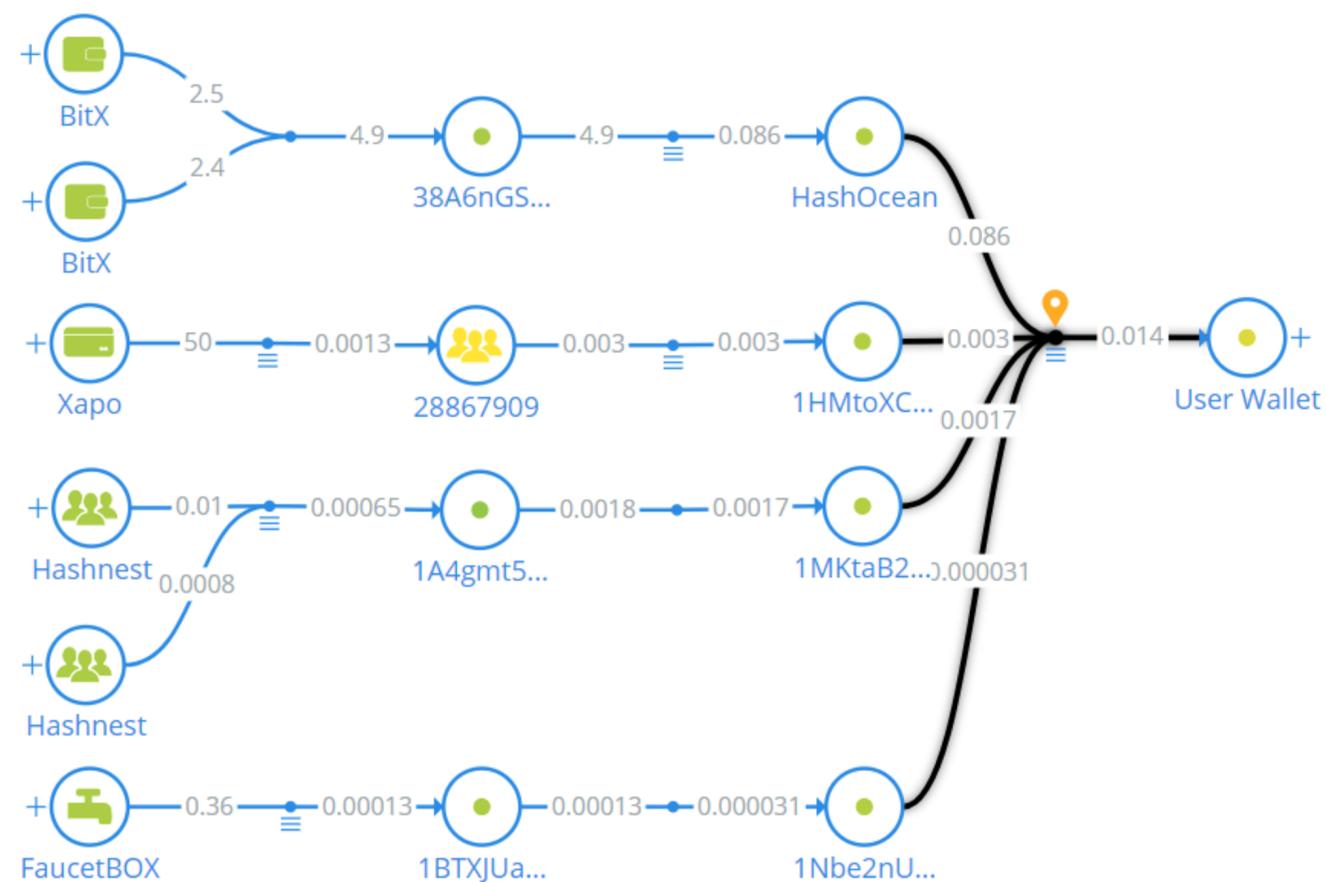




There are no recently emitted bitcoins in previous transactions. Instead, we can see payment processors, exchanges and gambling.



In the picture below **Crystal** shows that, for payouts, HashOcean used bitcoins that had been received from another cloud mining service—Hashnest.





# Summary

Considering the sources of the bitcoins that were paid by HashOcean to their clients, we can conclude that this 'mining service' did not actually earn these bitcoins by mining them, but by receiving them from other users. The outgoing flow of bitcoins (payments to clients) was significantly lower than the incoming flow of bitcoins, which was taken as 'earnings' by the HashOcean owners. This is typical behavior for Ponzi schemes.

If HashOcean was a really mining service, there would have been a prevalence of recently emitted bitcoins in payments to users. The **Crystal** tool enabled us to determine the origin of HashOcean's bitcoin payouts, clearly showing that this was indeed a Ponzi scheme designed to steal users' money. With **Crystal**, future cases of fraud could be minimized or prevented by revealing the scam early on. As more and more people put their trust in cloud mining services, the **Crystal** tool is essential to protect them against cases like HashOcean.





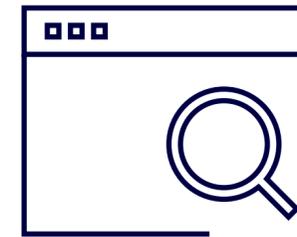
# About Crystal

**Crystal** is the all-in-one blockchain investigative tool for law enforcement. As public blockchains and cryptocurrencies become more widely used, a broader set of tools is needed to track criminal behavior. Powered by the expertise of the Bitfury Group, **Crystal** can:

- ▼ Help investigators identify and track criminal activities, like ransomware payments.
- ▼ Link pseudonymous bitcoin payments to real-world entities, including exchanges, individuals and mixer services and reveal the real-world names of those entities in a user-friendly format.
- ▼ Identify ownership of bitcoin wallets and the interaction of different Blockchain entities.
- ▼ Provide substantial evidence for legal pursuance of charges.

**Crystal** is available as a web application, but can also be deployed on internal servers for added privacy.

You can find more information on **Crystal** at: [crystalblockchain.com](https://crystalblockchain.com)





# The Bitfury Group



**Crystal** is the result of two years of development by the Bitfury Group's software team, consisting of world-class blockchain analysts, award-winning mathematicians and professional software developers—united by the idea of leveraging blockchain technology to build a better, safer future. We have been turning this idea into a reality, designing best-in-class blockchain solutions for people all around the world.

Founded in 2011, the Bitfury Group is the leading full service blockchain technology company and one of the largest private infrastructure providers in the blockchain ecosystem. The Bitfury Group develops and delivers both the software and the hardware solutions necessary for businesses,

governments, organizations and individuals to securely move an asset across the blockchain. The expertise of the Bitfury Group ensures successful, easy, fast, secure and cost-effective connectivity to the blockchain. The Bitfury Group is a global team of experts in technology, business, communications, security and civil society.

The Bitfury Group believes the blockchain can and will open new doors for global economic opportunity and prosperity, and its mission is to create and advance blockchain applications that will further promote innovation and the advancement of the peer-to-peer economy.

Company's website: [bitfury.com](https://bitfury.com)

You can find us on Twitter: [@BitfuryGroup](https://twitter.com/BitfuryGroup)

