



OECD International Academy for Tax Crime Investigation

*Anti-Money Laundering: Current Trends, Prosecutions,
and the Challenges around Cryptocurrencies*



A Bored Ape NFT Theft

NFTS, CRIME AND A BORED APE

NFT Marketplaces

- A **web interface on a marketplace** is often used to assist users in buying and selling their NFTs.
- Market places mediate the sales transactions.



SuperRare



OpenSea



RARIBLE
NFT Marketplace

NFTs and “Crime”

- **Phishing & Theft**

- Click on a link and get your wallet hacked
- The hacker then transfers your NFT to their wallet

- **Scamming / Fraud / “Rug Pulls”**

- Create a project
- Mint and sell NFTs
- Don't build the promised project
- Disappear with the money

NFTs and Crime

- **Money laundering**
- **Wash trading**
- **Fraudulent fundraisers**

Bored Ape #9410 Theft:

What happened?

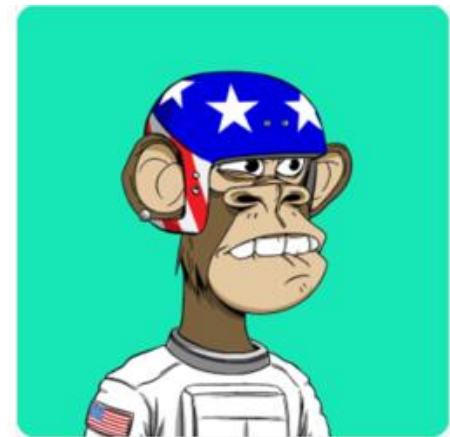
- A number of **Picasso's** Bored Apes and other NFTs were stolen on December 30, 2021.
- **Picasso** tweeted that he lost his collection through a **phishing scam** that gained access to his hot wallet after he clicked on a malicious link.



'Lessons learned. Use a hardware wallet...'

Picasso's Stolen Apes, Mutants, and Clonex

- Ape 2771
- Ape 6416
- Ape 1623
- Ape 1708
- Ape 8214
- Ape 7528
- Ape 9988
- **Ape 9410**
- Mutant 25057
- Mutant 11177
- Mutant 28752
- Mutant 24718
- Mutant 2436
- Mutant 9278
- Mutant 2434
- Clonex 6801



First Question:

Can you freeze an Ape?



Can you freeze Bored Ape NFTs?

- **“OpenSea froze trading on the stolen items”**
- **You can ban NFT sales on a platform, but you can’t necessarily freeze the ability to sell the NFT.**
- **“Code is Law”: Some tokens are programmed so that they may be frozen, even burned.**

OpenSea freezes \$2.2M of stolen Bored Apes

Art gallery owner Todd Kramer had his valuable NFT collection stolen from his hot wallet yesterday, so OpenSea froze the stolen assets worth about \$2.2 million.



OpenSea & Freezing

“We do not have the power to freeze or delist NFTs that exist on these blockchains, however we do disable the ability to use OpenSea to buy or sell stolen items.”

“It’s an article of faith that crypto transactions are irreversible. But there’s nothing inherent in blockchain technology that requires that, and **some crypto projects already allow reversals.**”



OpenSea (<https://opensea.io/>)

- NFT Trading Platform
- “The world’s first and largest NFT Marketplace.”
- Founded in 2017
- Over \$2.7 Billion in revenue in 2021.
- Reports indicate that several million dollars of NFTs have been stolen from OpenSea.
- Law Enforcement friendly.

Each NFT has an Information page

OpenSea

NFT Image

NFT Project/Creator

Price History

Bored Ape Yacht Club #9410

Owned by **CapetainTrippyVault** 63 favorites

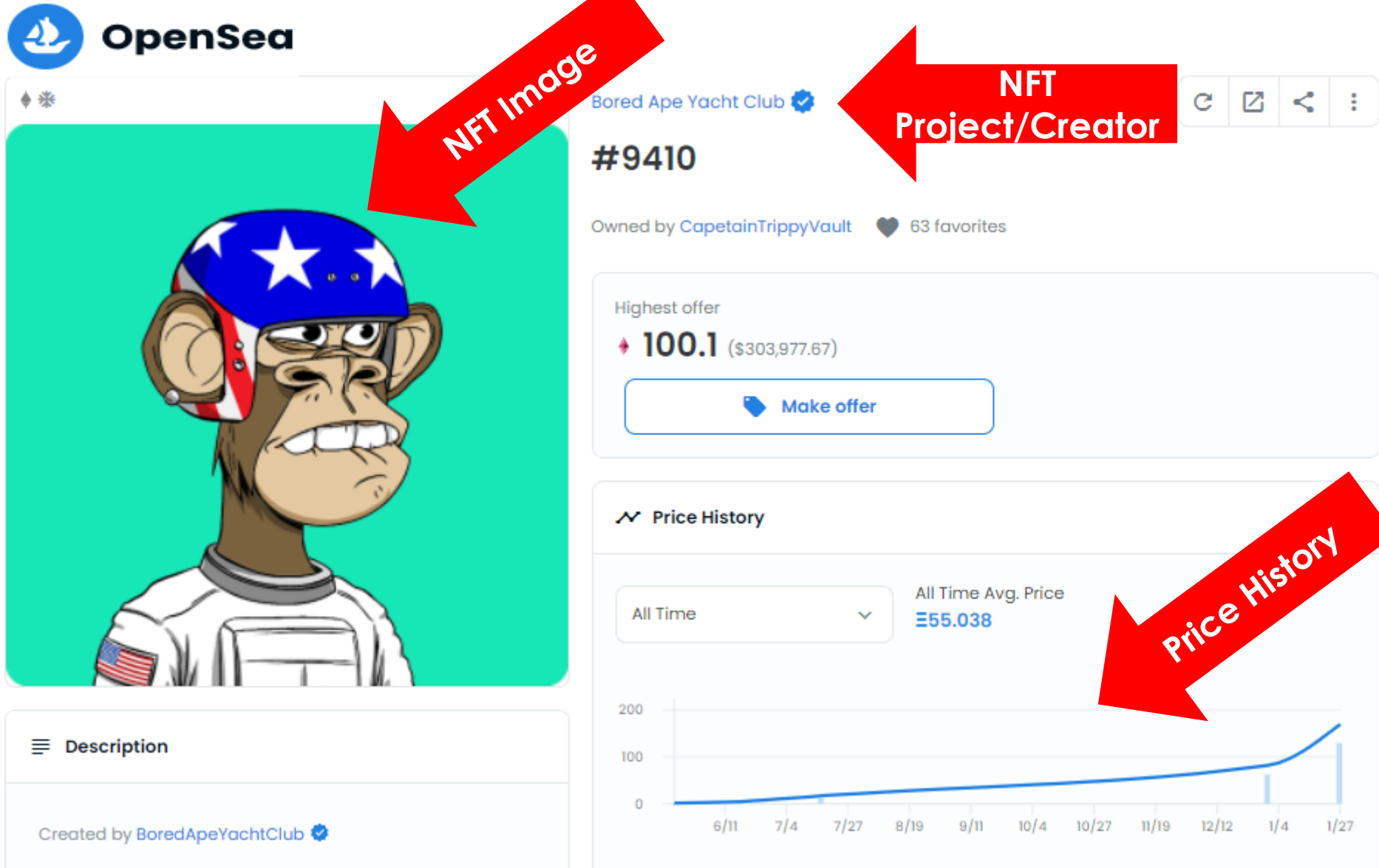
Highest offer
100.1 (\$303,977.67)
Make offer

Price History

All Time Avg. Price **£55.038**

Description

Created by **BoredApeYachtClub**



The screenshot displays the OpenSea interface for a specific NFT. On the left, a large image of the NFT is shown, which is a cartoon monkey wearing a blue helmet with white stars and red and white stripes. To the right of the image, the project name 'Bored Ape Yacht Club' is displayed with a verified badge, followed by the token ID '#9410'. Below this, it states 'Owned by CapetainTrippyVault' with a heart icon and '63 favorites'. A section for 'Highest offer' shows '100.1' in blue text, with the equivalent value '(\$303,977.67)' in smaller text, and a 'Make offer' button. Further down is a 'Price History' section featuring a line graph and the text 'All Time Avg. Price £55.038'. The graph shows a steady increase in price over time, with a more significant rise towards the end of the period shown. A 'Description' section at the bottom indicates it was 'Created by BoredApeYachtClub'. Three red arrows are overlaid on the image: one pointing to the NFT image, one pointing to the project/creator name, and one pointing to the price history graph.

<https://opensea.io/assets/0xbc4ca0eda7647a8ab7c2061c2e118a18a936f13d/9410>

Item Activity

Filter

Sales X

Transfers X

Event	Price	From	To	Date
↔ Transfer		C310E7	0x0888_Capital	3 months ago ↗
↔ Transfer		0x0888_Capital	C310E7	3 months ago ↗
🛒 Sale	💎 82	3DD59D !	0x0888_Capital	3 months ago ↗
↔ Transfer		3DD59D !	0x0888_Capital	3 months ago ↗
↔ Transfer		Picasso	3DD59D !	3 months ago ↗

Detailed Sales and Transfer History

🛒 Sale	💎 82	3DD59D !	<div>This account may be compromised</div>
↔ Transfer		3DD59D !	0x0888_Capital
↔ Transfer		Picasso	3DD59D !

Theft transaction

NFT Information: The Theft

- Note that it was a “Transfer”





Date and Time of
Transfer / Theft

Link to the transaction on
Etherscan Blockchain Explorer

 Sale	 82	3DD59D 	0x0888_Capital	3 months ago 
 Transfer		3DD59D 	0x0888_Capital	<div>December 30 2021, 6:06 am</div>
 Transfer		Picasso	3DD59D 	3 months ago 

Rapid sale after theft

Stolen from Picasso

↔ Transfer	3DD59D 	0x0888_Capital	 December 30 2021, 6:06 am
↔ Transfer	Picasso	3DD59D 	3 months ago 

Quickly sold to 0x0888_Capital for 82 ETH


↔ Transfer	0x0888_Capital	C310E7	 December 30 2021, 7:08 am
 Sale	 82	3DD59D 	0x0888_Capital 3 months ago 
↔ Transfer	3DD59D 	0x0888_Capital	3 months ago 



Theft transaction (Bored Ape #9410)

OpenSea links to Etherscan

← → ↻ 🔒 opensea.io/assets/0xbc4ca0eda7647a8ab7c2061c2e118a18a936f13d/9410 🔍 📁 ☆ 🔊 🔌 📺 📶 📶 📶 📶 📶

 **OpenSea**

🔍 Search items, collections, and accounts


Explore Stats Resour

🛒 Sale	82	3DD59D !	0x0888_Capital	4 months ago 🔗
↔️ Transfer		3DD59D !	0x0888_Capital	
↔️ Transfer		Picasso	3DD59D !	4 months ago 🔗

December 30 2021, 6:06 am

OpenSea Links to Etherscan

← → ↻ 🔒 etherscan.io/tx/0xb9defcdd0d07c4c931c406a210d924eb7f3d437b7fdb7f5b6afa1742694184a

 **Etherscan**

All Filters

Eth: \$3,147.48 (+2.54%) | 102 Gwei

<https://etherscan.io/tx/0xb9defcdd0d07c4c931c406a210d924eb7f3d437b7fdb7f5b6afa1742694184a>

Theft transaction details

→ etherscan.io/tx/0xb9defcdd0d07c4c931c406a210d924eb7f3d437b7fdbc7f5b6afa1742694184a



Transaction Details



Buy


Overview Logs (2) State Comments

Transaction Hash: 0xb9defcdd0d07c4c931c406a210d924eb7f3d437b7fdbc7f5b6afa1742694184a

Status: Success

Block: 13905012 724102 Block Confirmations


Timestamp: 112 days 9 hrs ago (Dec-30-2021 06:06:16) Confirmed within 30 s

Transaction Action: Transfer of  BoredApeYach... (BAYC) From 0x9e437b064cfc780180... To 0x3dd59de66e2ad31a7d...
1 of Token ID [9410]

From:  toddkramer.eth

Interacted With (To): Contract 0xbc4ca0eda7647a8ab7c2061c2e118a1c62f98c127a18c52b1a72bc655c801d318 (Bored Ape Yacht Club: BAYC Token) 

Transaction mediated
by the Bored Ape Yacht
Club smart contract

From 0x9e437b064cfc7... To Fake_Phishing5...
For ERC-721 Token ID [9410]  BoredApeYach... (BAYC)



<https://etherscan.io/tx/0xb9defcdd0d07c4c931c406a210d924eb7f3d437b7fdbc7f5b6afa1742694184a>

EtherScan: Tokens can be looked up

- URL:

Token creation contract + **token numeric identifier**:

<https://etherscan.io/token/contract?a=ID>

<https://etherscan.io/nft/contract/ID>

- **Bored Ape #9410**

- Contract#: 0xBC4CA0EdA7647A8aB7C2061c2E118A18a936f13D
- Ape#: 9410

<https://etherscan.io/token/0xbc4ca0eda7647a8ab7c2061c2e118a18a936f13d?a=9410>

<https://etherscan.io/nft/0xbc4ca0eda7647a8ab7c2061c2e118a18a936f13d/9410>

Token (Bored Ape #9410)

<https://etherscan.io/nft/0xbc4ca0eda7647a8ab7c2061c2e118a18a936f13d/9410>




Etherscan
Eth: \$3,045.32 (+0.68%) | 88 Gwei

All Filters Search by Address / Txn Hash / Block / Token / Ens

Home Blockchain Tokens Resources More Sign In

BoredApeYachtClub #9410

 Bored Ape Yacht Club

Min. Price 0.0000 ETH (\$0.00) Last Sale 113 ETH (\$344,121.16)

Details









- Owner: 0x8691fdd1923e99ec8e43df85c4b969205a96338a
- Contract Address: 0xbc4ca0eda7647a8ab7c2061c2e118a18a936f13d
- Creator: Bored Ape Yacht Club: Deployer
- Token ID: 9410
- Token Standard: ERC-721

[Chat with Owner](#)

Transfer History

Item Activity

A total of 30 records found

Txn Hash	Date Time (UTC)	Action	Price	From	To
 0xfc09adf2b69f80c8f883...	2022-01-26 2:14:44	Transfer		0x1731bdd386e021a774...	0x8691fdd1923e99ec8e...
 0x0a5686246f0877e4ffe...	2022-01-26 2:12:04	Sale	 169.69 ETH (\$516,760.35)	0x9e437b064cfc780180...	0x1731bdd386e021a774...
 0xa82c95a94d738e0204...	2022-01-11 12:20:20	Transfer		0x529a472a3709905ba8...	0x9e437b064cfc780180...
 0x5ab31be7184702a94f...	2022-01-04 4:54:06	Transfer		0xc310e760778ecbca4c...	0x529a472a3709905ba8...
 0xfedc91a7f82a747eb48...	2022-01-04 4:48:25	Transfer		0xf276283475fee0e7262...	0xc310e760778ecbca4c...
 0x718672d5537862a430...	2022-01-04 4:20:51	Transfer		0xc310e760778ecbca4c...	0xf276283475fee0e7262...
 0xd0c96ab2ba3738f88b...	2022-01-04 2:10:53	Transfer		0xc2a59d94b69f7739f77...	0xc310e760778ecbca4c...









Transfer History (Bored Ape #9410)

Transfers Inventory NFT Trades Cont...

A total of 30 transactions

TokenID: 9410

First < Page 1 of 2 > Last




































Txn Hash	Method ⓘ	Date Time (UTC)	From	To	TokenID	Details
 0xfc09adf2b69f80c8f883...	Transfer From	2022-01-26 2:14:44	0x1731bdd386e021a774...	→ 0x8691fdd1923e99ec8e...	9410	View NFT >
 0x0a5686246f0877e4ffe...	Atomic Match_	2022-01-26 2:12:04	↻ toddkramer.eth	→ 0x1731bdd386e021a774...	9410	View NFT >
 0xa82c95a94d738e0204...	Transfer From	2022-01-11 12:20:20	0x529a472a3709905ba8...	→ ↻ toddkramer.eth	9410	View NFT >
 0x5ab31be7184702a94f...	Close Swap Inten...	2022-01-04 4:54:06	NFT Trader: Batch Swap	→ 0x529a472a3709905ba8...	9410	View NFT >
 0xfedc91a7f82a747eb48...	0xc041abb1	2022-01-04 4:48:25	0xf276283475fee0e7262...	→ NFT Trader: Batch Swap	9410	View NFT >
 0x718672d5537862a430...	Close Swap Inten...	2022-01-04 4:20:51	NFT Trader: Batch Swap	→ 0xf276283475fee0e7262...	9410	View NFT >
 0xd0c96ab2ba3738f88b...	0xc041abb1	2022-01-04 2:10:53	↻ 0x0888.eth	→ NFT Trader: Batch Swap	9410	View NFT >
 0x4c0d23f4dc2a4ee30cb...	Cancel Swap Inte...	2022-01-04 2:07:32	NFT Trader: Batch Swap	→ ↻ 0x0888.eth	9410	View NFT >

Thief's Address (0x3dd59d...)

39 transactions

Transactions Internal Txns Erc20 Token Txns Erc721 Token Txns Analytics Comments

Latest 25 from a total of 39 transactions

Txn Hash	Method ⓘ	Block ▼	Date Time (UTC) ▼	From ▼	To ▼	Value	Txn Fee
 0x91911b441021ba5498...	Transfer	13905971	2021-12-30 9:55:19	Fake_Phishing5028	OUT 0x0c4699dc0d169a8f01...	290.798404812147437 Ether	0.0023331615 
 0x8d058bf03ca4c2cdb0c...	Safe Transfer Fr...	13905788	2021-12-30 9:08:07	Fake_Phishing5028	OUT  Bored Ape Yacht Club: B...	0 Ether	0.007619063486 
 0xae14a1d1bbb58300cd...	Safe Transfer Fr...	13905774	2021-12-30 9:05:46	Fake_Phishing5028	OUT  Bored Ape Yacht Club: B...	0 Ether	0.007909471999 
 0x60b8344dfcbcd186e6b...	Safe Transfer Fr...	13905763	2021-12-30 9:04:23	Fake_Phishing5028	OUT  Bored Ape Yacht Club: B...	0 Ether	0.01219324952 
 0xd04cdbf4ff97aeea265...	Safe Transfer Fr...	13905759	2021-12-30 9:02:26	Fake_Phishing5028	OUT  Bored Ape Yacht Club: B...	0 Ether	0.01018081217 
 0x8dd950b4b568b1a6b2...	Safe Transfer Fr...	13905759	2021-12-30 9:02:26	Fake_Phishing5028	OUT  Bored Ape Yacht Club: B...	0 Ether	0.011731968746 
 0xf7e7d8a534c6805df41...	Withdraw	13905335	2021-12-30 7:27:52	Fake_Phishing5028	OUT  Wrapped Ether	0 Ether	0.003985251243 
 0xa24c78f7993240b883...	Atomic Match_	13905318	2021-12-30 7:24:02	Fake_Phishing5028	OUT  OpenSea: Wyvern Exch...	0 Ether	0.025718871962 
 0x07bba6b50b70a86ad2...	Atomic Match_	13905312	2021-12-30 7:23:04	Fake_Phishing5028	OUT  OpenSea: Wyvern Exch...	0 Ether	0.033003725606 
 0x614b63672842d5e59e...	Atomic Match_	13905311	2021-12-30 7:22:11	Fake_Phishing5028	OUT  OpenSea: Wyvern Exch...	0 Ether	0.02670641031 
 0x5b1df3bdc015d8a0e1...	Atomic Match_	13905307	2021-12-30 7:21:34	Fake_Phishing5028	OUT  OpenSea: Wyvern Exch...	0 Ether	0.030426456818 
 0xe97920db2c85ea2fa2...	Atomic Match_	13905307	2021-12-30 7:21:34	Fake_Phishing5028	OUT  OpenSea: Wyvern Exch...	0 Ether	0.031971009977 

Thief's transaction activity

- **Token Contracts**

- Bored Ape Yacht Club
- Mutant Ape Yacht Club
- Clone X Token
- **Wrapped Ether contract**

- **Platforms**

- OpenSea / Wyvern
- **Tornado Cash (Mixer)**

- **Addresses:**

- 0x0c4699dc0d169a8f015351db285f48256690f0e9
- 0xf76179bb0924ba7da8e7b7fc2779495d7a7939d8
- 0x23bc98b530BDF1b2471350159e2C3bb507d8eAFD



Token transfers cost ETH, but have a 0 ETH transfer value

- Following the money is different than following the tokens.
- You need to do both to have a full picture.

From		To	Value	Txn Fee
Fake_Phishing5028	OUT	0x0c4699dc0d169a8f01...	290.798404812147437 Ether	0.0023331815
Fake_Phishing5028	OUT	Bored Ape Yacht Club: B...	0 Ether	0.007619083486
Fake_Phishing5028	OUT	Bored Ape Yacht Club: B...	0 Ether	0.007909471999
Fake_Phishing5028	OUT	Bored Ape Yacht Club: B...	0 Ether	0.01219324952



Follow the Money & **Follow the Tokens**



Theft Transaction

- OpenSea gives the date and time of the theft transaction
- OpenSea links to Etherscan Transaction

Transfer	3DD59D !	0x0888_Capital	December 30 2021, 6:06 am
Transfer	Picasso	3DD59D !	4 months ago

- Find the transaction in Chainalysis using:
 - The transaction hash of the theft as found in Etherscan.
 - Using the date and time of the transaction to narrow in on the theft transaction.

Theft Transaction: Dec 30, 6:06

- 0xb9defcdd0d07c4c931c406a210d924eb7f3d437b7fdbbc7f5b6afa1742694184a

The image displays the Chainalysis interface. On the left is a dark sidebar with the Chainalysis logo and navigation links: "My Graphs" and "Watched Clusters". The main area shows a transaction details panel at the top with the address `0xb9defcdd0d07c4c931c406a210d924eb7f3d437b7fdbbc7f5b6afa1742694184a`. Below this is a table with two rows: "import" and "transaction", both containing the same address and an "ETH +" button. A large red arrow points from the transaction row to a graph visualization below. The graph shows two nodes connected by a horizontal line. The left node is a white circle with a red "x" and a blue "i" icon, labeled `0x9e437B064...`. The right node is a black circle with a yellow border, labeled `boredapeyac...`. A red arrow points to the connecting line (the "Edge") with the text "Click on the 'Edge' for details".

Theft Transaction: Dec 30, 6:06

- Three transactions took place on Dec 30 at 6:06 AM.
- Three apes were stolen at the same time

> 12/30/2021 06:06	0xdadd1f51ad5addc...	0xBC4CA0EdA7647A8...	0.00
> 12/30/2021 06:06	0x906ac4cab171be1...	0xBC4CA0EdA7647A8...	0.00
> 12/30/2021 06:06	0xb9defcdd0d07c4c...	0xBC4CA0EdA7647A8...	0.00



Theft transaction
hash 0xb9def...

Theft of Bored Ape 9410

- Note that the receiving address is the Bored Ape Yacht Club

Theft transaction hash 0xb9def...

12/30/2021 06:06

0xb9defcdd0d07c4c...

0x...4CA0EdA7647A8...

0.00

Hash:

0xb9defcdd0d07c4c931c406a2...

Time:

12/30/2021 6:06 AM

Fee:

0.015631322263547705

Block:

13905012

Initiator:

0x9e437B064CFC7801808c5e47...

Address:

0xBC4CA0EdA7647A8aB7C2061c...

Transaction Type:

Contract call

NFT TRANSFER

BAYC 9410

NFT

Sender: 0x9e437B064CFC7801808c5e476ABfaFA5069aB55B

Receiver: Reported as Stolen Funds 0x3DD5

Collapse advanced view

Transfers

Zero transfers are also visible.

Amount

Asset

Sending Cluster

Sending Address

0.00

ETH

0x9e437B064CFC78...

0x9e437B064CFC7801808c...

Receiving Cluster

Receiving Address

boredapeyachtclub...

0xBC4CA0EdA7647A8aB7C...

Look to Etherscan to identify the token recipient

- Use the theft **Transaction ID**
- Look at the **Tokens Transferred** information
- Find the recipient's address
- **Enter the thief's address into Chainalysis**



🔍 Tokens Transferred:

Contract [0x0bc4ca0e0a7b47a8ad7c20b1c2e116a18a9413d](#) (Bored Ape Yacht Club)

[0x3dd59de68e2ad31a7d883df977ddd6e5f2a5f8b8](#)

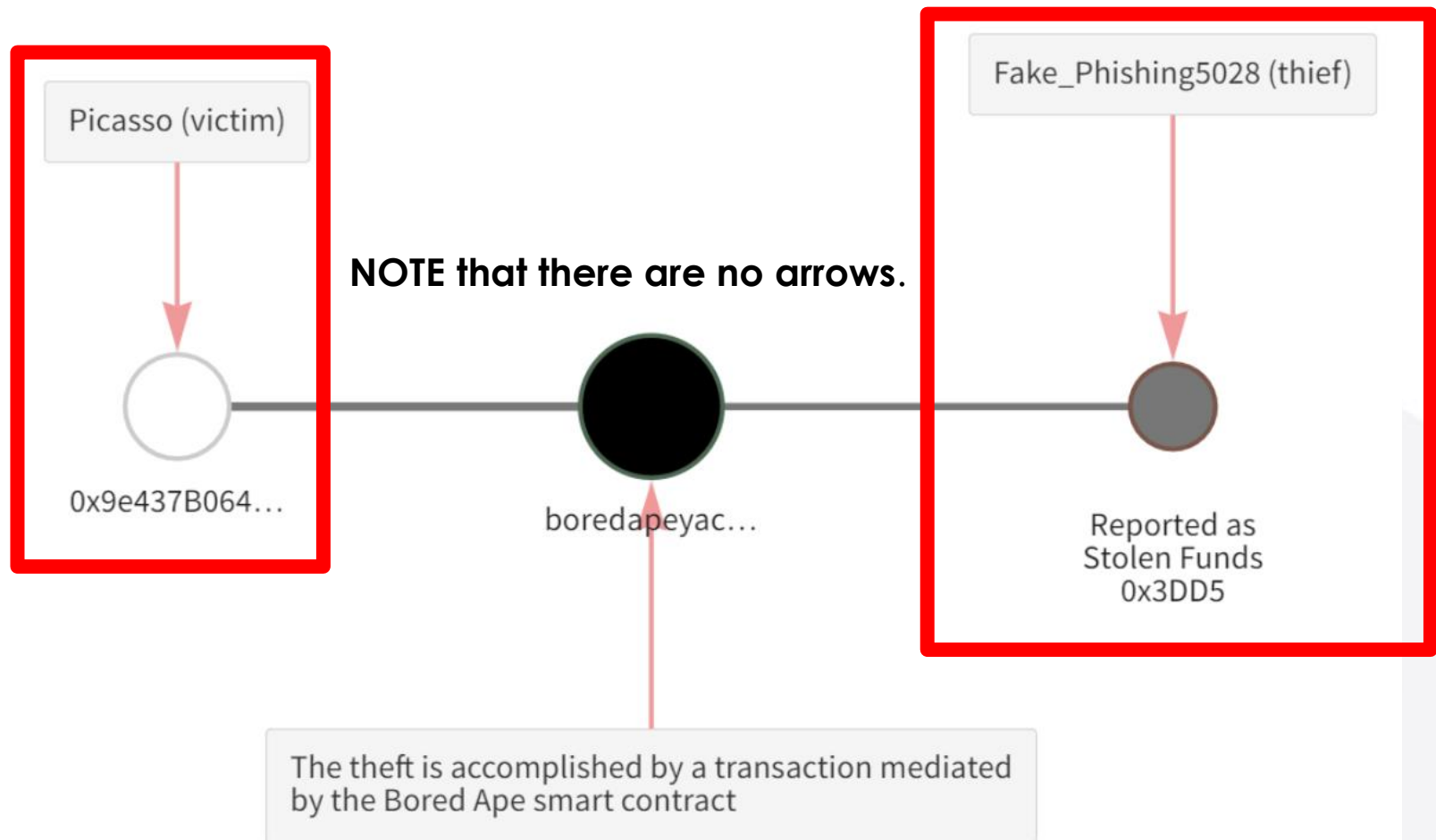
From [0x9e437b064cfc7...](#) To [Fake_Phishing5...](#)

For ERC-721 Token ID [9410] • [BoredApeYach... \(BAYC\)](#)

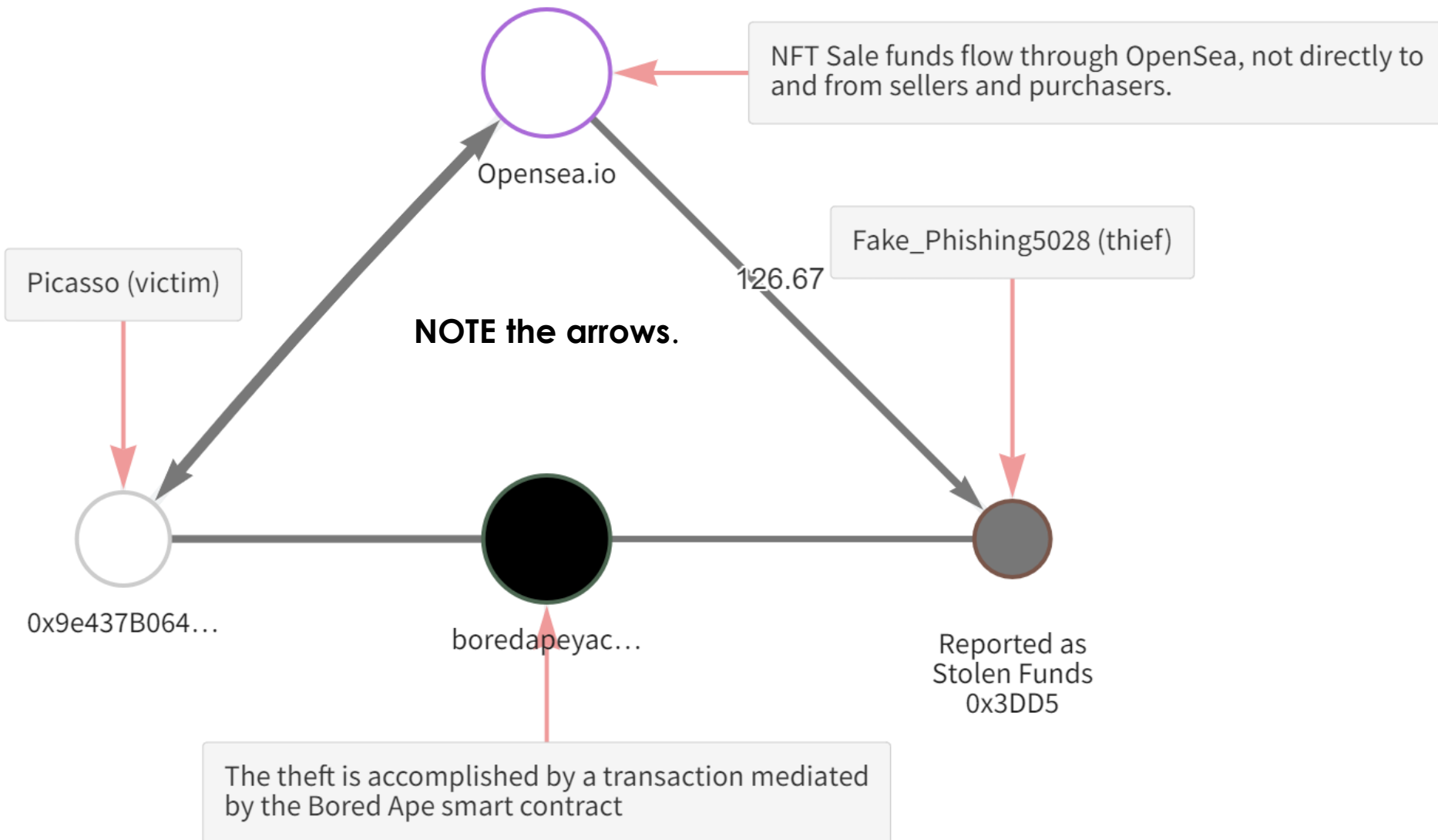


Token Transfer

is mediated by the token contract

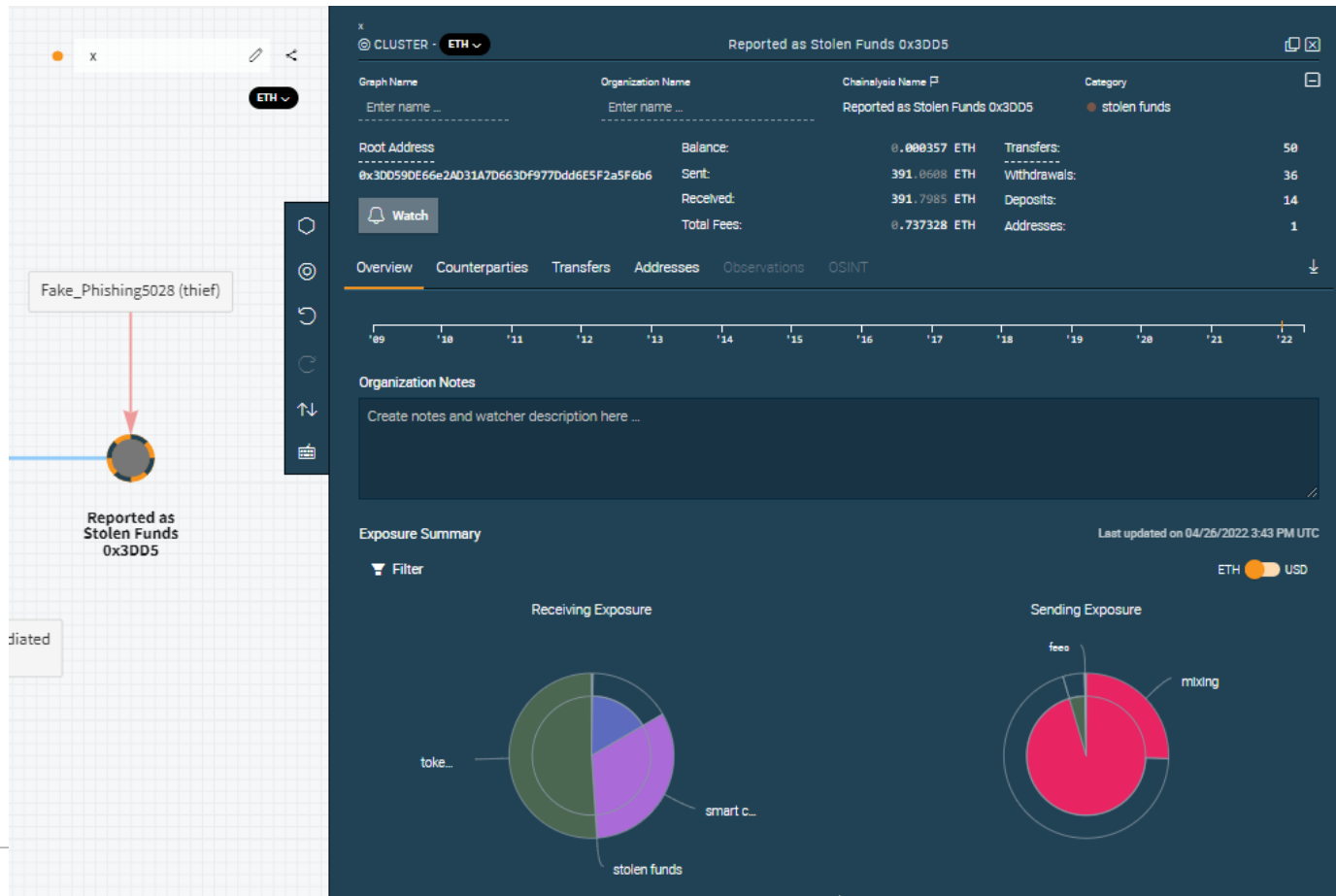


Money (ETH) goes through OpenSea




















Graph and analyze the thief's address activities

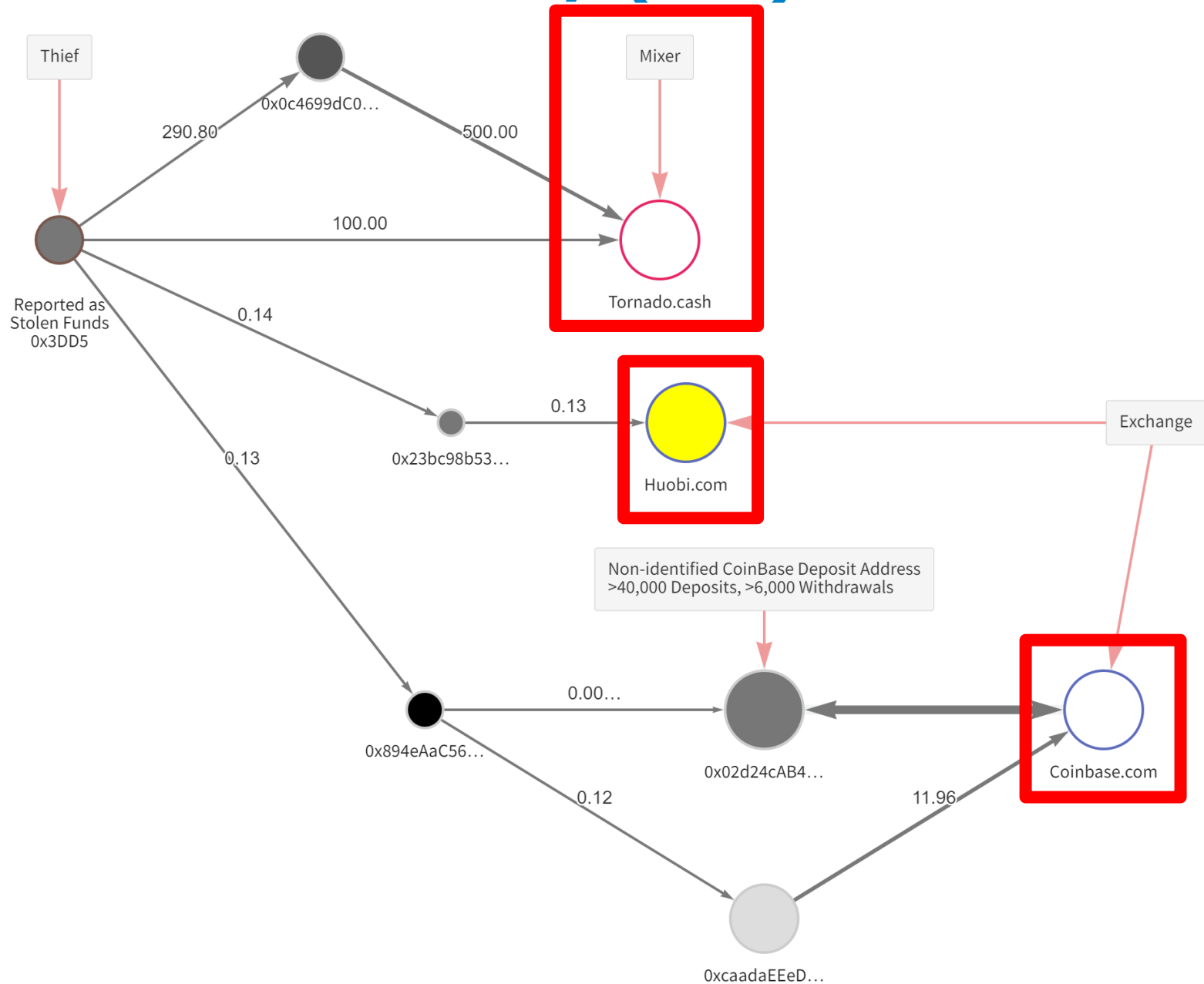
0x3DD59DE66e2AD31A7D663Df977Ddd6E5F2a5F6b6



Thief's Transactions

Counterparty	Transfers	Sent	Received	12/21	12/21
<input type="checkbox"/>  Opensea.io	 21	0.00	126.6725		
<input type="checkbox"/>  Wrapped Ether Contract	 11	0.00	199.7874		
<input checked="" type="checkbox"/>  boredapeyachtclub.com	 8	0.00	0.00		
<input type="checkbox"/>  Mutant Ape Yacht Club	 1	0.00	0.00		
<input type="checkbox"/>  Sandbox.game	 1	0.00	0.00		
<input type="checkbox"/>  0x29aDaa4bBef7F689F5e4Ab2c645F12...	 1	0.00	65.00		
<input type="checkbox"/>  0x0c4699dC0d169a8f015351Db285f48...	1	290.7984	0.00		
<input type="checkbox"/>  0x23bc98b530BDF1b2471350159e2C3b...	1	0.136586	0.00		
<input type="checkbox"/>  0x894eAaC56862C9aD4F182A6Eba6051...	1	0.125885	0.00		
<input type="checkbox"/>  collectvox.com v2 (Mirandus)	 1	0.00	0.00		
<input type="checkbox"/>  Tornado.cash	 1	100.00	0.00		
<input type="checkbox"/>  CloneX Token	 1	0.00	0.00		
<input type="checkbox"/>  Reported NFT theft 0xA81db3	 1	0.00	0.338662		

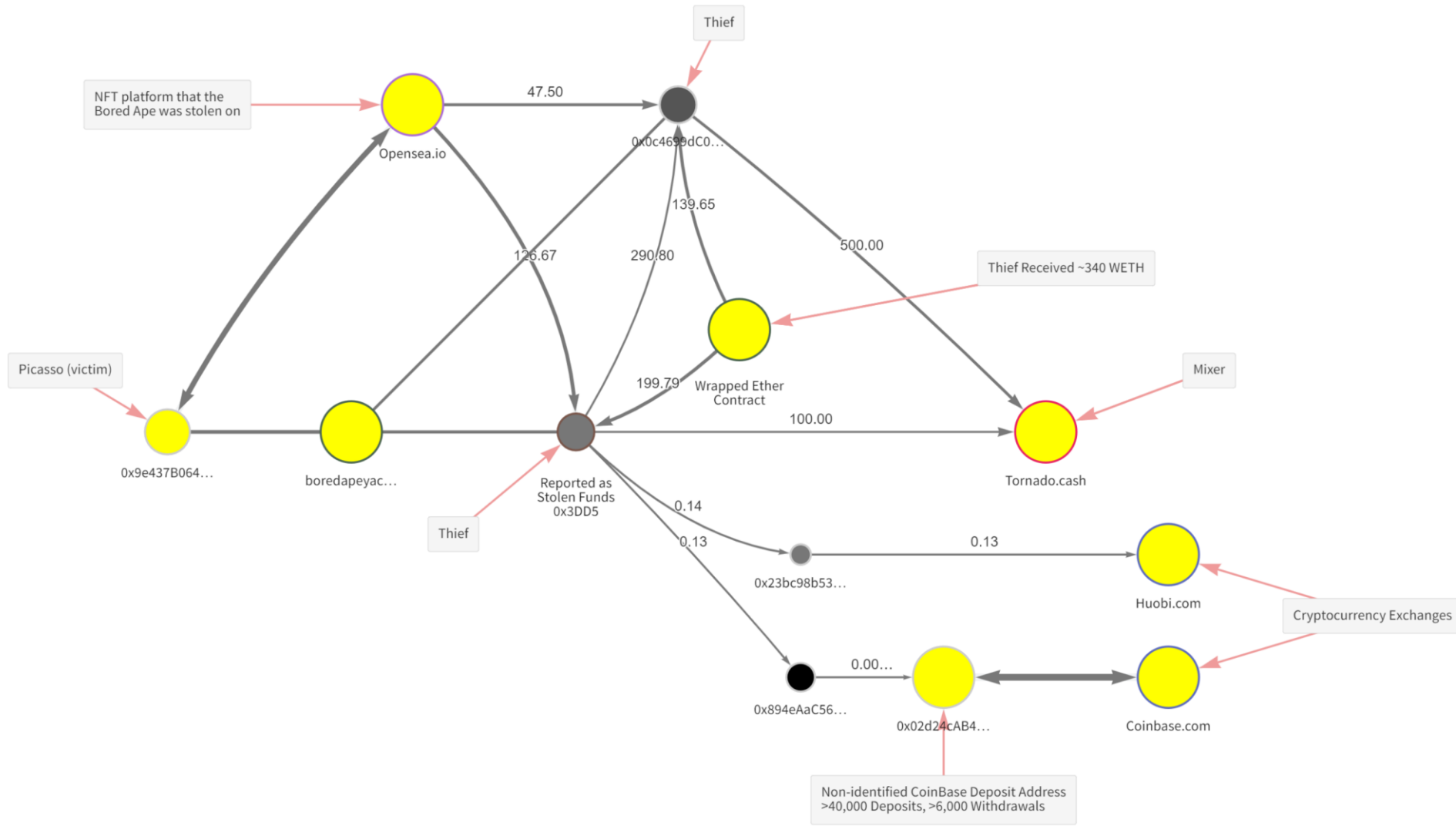
Follow the Money (ETH)



Follow the money

- **Exchanges?**
 - KYC information from Huobi?
 - KYC information from Coinbase?
- **Attempt to trace through Tornado Cash?**
 - **TRM Labs offers some ability to trace through Tornado Cash.**
 - **Other suspect addresses may have crypto flowing into them from Tornado Cash** (these might match up with the thief's outflows to Tornado Cash)
 - If these addresses connect to Exchanges, you can use production orders for KYC

Token interactions with smart contracts + ETH flow = Big Picture



Investigation Tips

- **Follow the money.** Who benefits?
- **Crypto flows are becoming more sophisticated:** interaction with smart contracts, different tokens, mixing, cross-chain swaps.
- Check for any the **other tokens that were held by the same address.**
- **TornadoCash trace-through** is getting better; some tools may be helpful, new techniques are being developed.

Investigation Tips

- **Some wallets gather IP addresses and other transaction info (e.g. MetaMask) and are LE friendly.**
- **NFT platforms gather a lot of information.**
- **VPN connections sometimes drop** and real IPs get revealed.
- **OSINT is a huge source of data:** Twitter (e.g. Rugpullfinder), Facebook, Reddit, Discord, etc.

Everyone makes mistakes somewhere...

POSTSCRIPT

Bored Ape #9410 was returned to Picasso with the assistance of community members.

Transaction	From	To
Transfer (Theft)	Picasso	3DD59D
Transfer	3DD59D	0x0888_Capital
Sale (82 WETH)	3DD59D	0x0888_Capital
Transfer	0x0888_Capital	C310E7
Transfer	C310E7	0x0888_Capital
Transfer	0x0888_Capital	C310E7
Transfer	C310E7	0x0888_Capital
Transfer	0x0888_Capital	C310E7
Transfer	C310E7	0x0888_Capital
Transfer	0x0888_Capital	C310E7
Transfer	C310E7	0x0888_Capital
Transfer	0x0888_Capital	C310E7
Transfer	C310E7	F27628
Transfer	F27628	C310E7
Transfer (Return)	C310E7	<u>Picasso is back</u>
Transfer	<u>Picasso is back</u>	<u>Picasso</u>
Transfer	<u>Picasso</u>	<u>capetaintrippy</u>
Sale (169.69 ETH)	<u>Picasso</u>	<u>capetaintrippy</u>
Transfer	<u>capetaintrippy</u>	<u>CapetainTrippyVault</u>

And then more apes were stolen...

Crime

Hackers Broke Into Bored Ape Yacht Club's Official Instagram and Made Off With Nearly \$3 Million Worth of Stolen NFTs

It's not the first time hackers have targeted apes.

Eileen Kinsella, April 28, 2022

