



Surviving a Phishing Attack

In Cosmos-based Chains



Agenda

- What is phishing and how to avoid it
- Story
- Scripts
- Infrastructure
- Summary

What is a phishing attack?

- link to a fake site
 - e.g. of your Bank or an online crypto wallet*
- site looks exactly like the real one
 - URL as well !
- logging in reveals your password to the attacker
 - you are redirected to the real site
 - you think you just mistyped a character

* Never use online wallets!

How to avoid a phishing attack? (1/2)

- you need to look the URL carefully
 - the website will be identical
 - the URL cannot be!
- sub-domain
 - kraken.wallet.com
 - kraken.secured.com
- mistyped domain
 - kraaken.com
 - krakenn.com
 - krakken.com

How to avoid a phishing attack? (2/2)

- domains with similar letters
 - b1nance.com
 - bínance.com
 - BINANCE.COM
- when a link is presented to you via email
 - or another site
 - ignore it
- pre-bookmark all important sites
 - if you need them, use your bookmarks
 - or just type the URL yourself

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 - fake Luna online wallet
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- who would grab the funds first?

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 - more later...

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- contacted people in Terra's Discord
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 - more later...
- we investigated further
 - validators will go for the first transaction they see
 - blocks are created every ~6 seconds

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- initial plan

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 - thus they needed the private keys...
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 - how legitimate was their request?
- We declined their offer

The Plan

- A script (or two)
 - monitor the address and continuously attempt to send the funds
- Executing the scripts
 - as many as possible validators had to see our tx first
 - carefully choose where to run our scripts from

Creating the Scripts (1/2)

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- The script was doing two calls instead of one
- After doing some tests...
 - considerably faster if only the 2nd call was used
 - also we found that in similar cases the hacker was doing only the 2nd call!
 - however, if the amount is smaller the tx would be ignored

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- Ended up with:
 - script 1
 - script 2, variation 1: asking the full amount directly
 - script 2, variation 2: asking smaller amounts directly

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- QuickNodes service
 - spawn 10 nodes
 - private LCD nodes
 - for servicing our scripts

Executing the Scripts (2/2)

- Azure
 - 2 instances running full nodes (South Korea, USA)
 - milliseconds now!
 - 10 orchestrated scripts (pm2) each
 - some calling full node locally (all script variations)
 - some calling QuickNode instances and public instances (all script variations)

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- AWS VMs (~10)
 - Singapore, South Korea, Switzerland, etc.
 - timed and tested all script variations
 - some calling public endpoints with script 1
 - some calling QuickNode instances with script 2, variations 1&2
 - some calling our Azure full nodes with script 2, variations 1&2

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 - too many scripts creating bandwidth / DoS issues?
- We claimed them back with a manual transaction :-)

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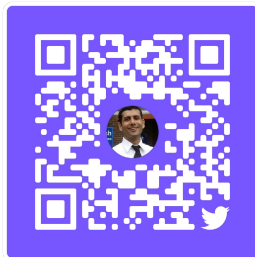
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- ...
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- ...
- ...
- ...
- ... just a week before the Terra Luna/UST collapse occurred ...

Thank You

 @kkarasavvas



Python Bitcoin Library (FOSS)

<https://github.com/karask/python-bitcoin-utils>



Bitcoin Programming Book (CC)

<https://github.com/karask/bitcoin-textbook>



Thessaloniki's Bitcoin and
Blockchain Tech Meetup

<https://www.meetup.com/BlockchainGreece-1/>

@Thess_Bitcoin

