GLOBAL THREATS TO LOCAL BUSINESS: **EMAIL COMPROMISE & RANSOMWARE**

What is the Threat?

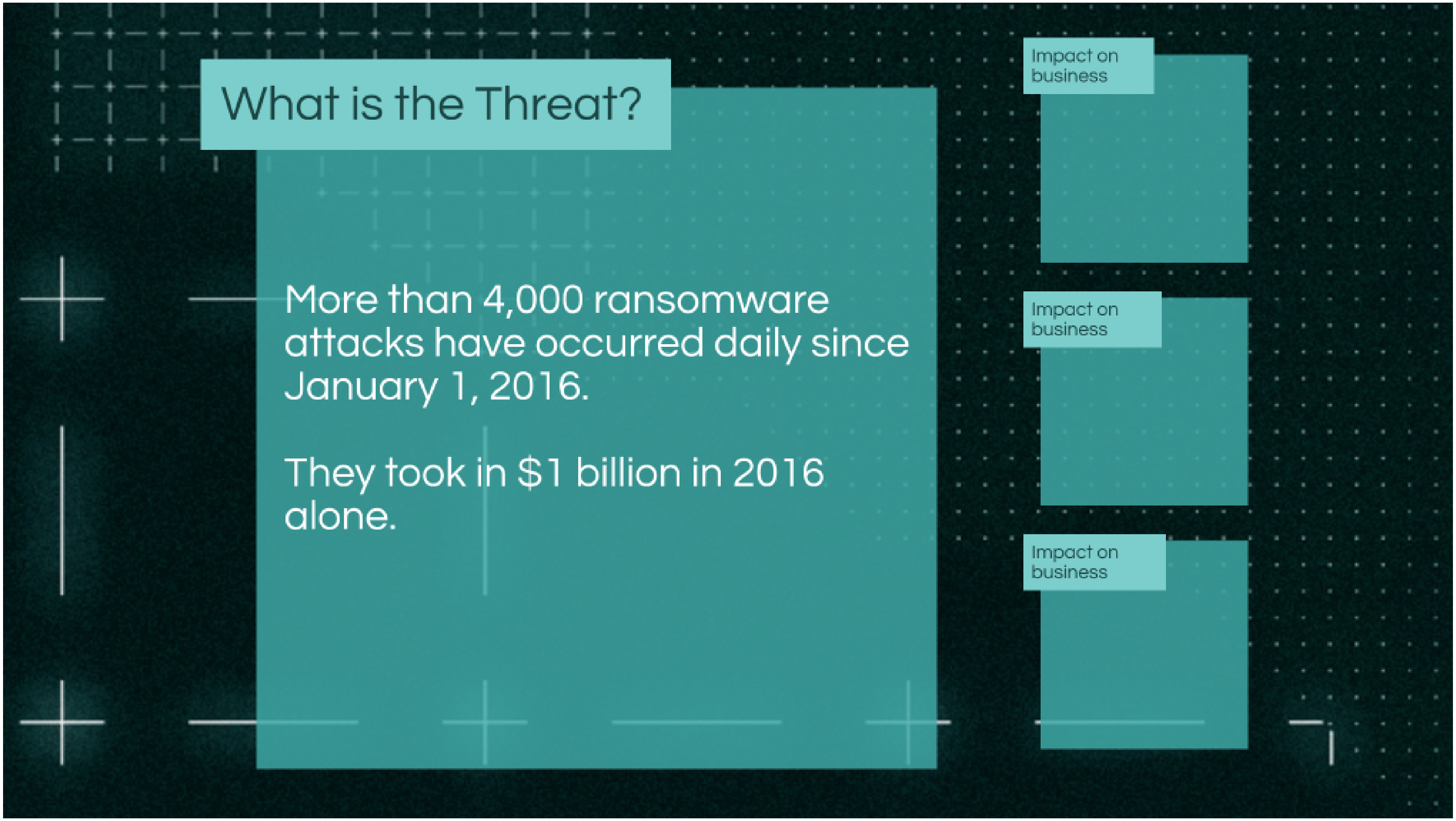
Overview

Business Email Compromise

Ransomware

Conclusion

A public service by
The San Mateo County
District Attorney's Office



What is the Threat?

More than 4,000 ransomware attacks have occurred daily since January 1, 2016.

They took in $1 billion in 2016 alone.

Impact on business

Impact on business

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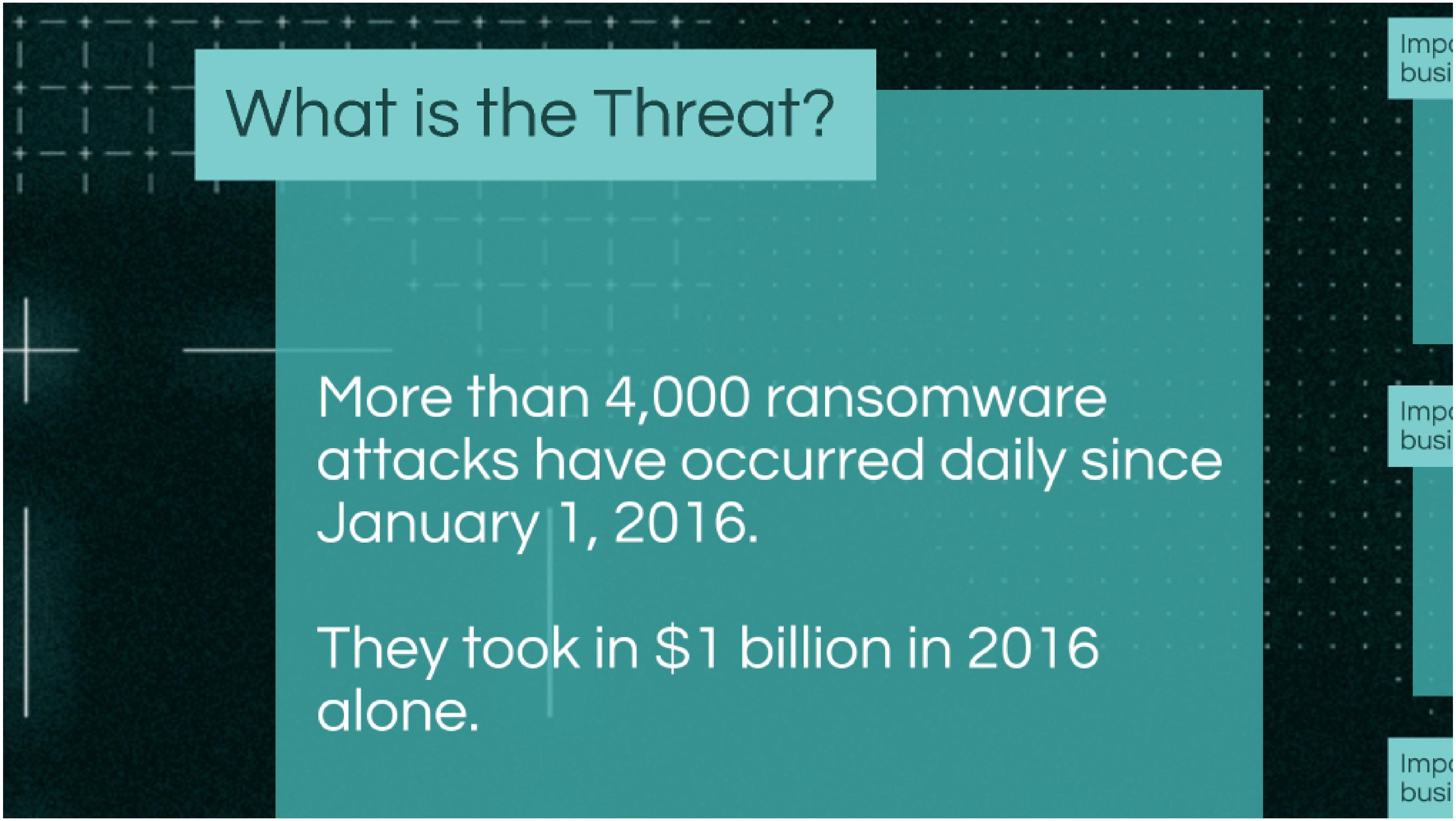

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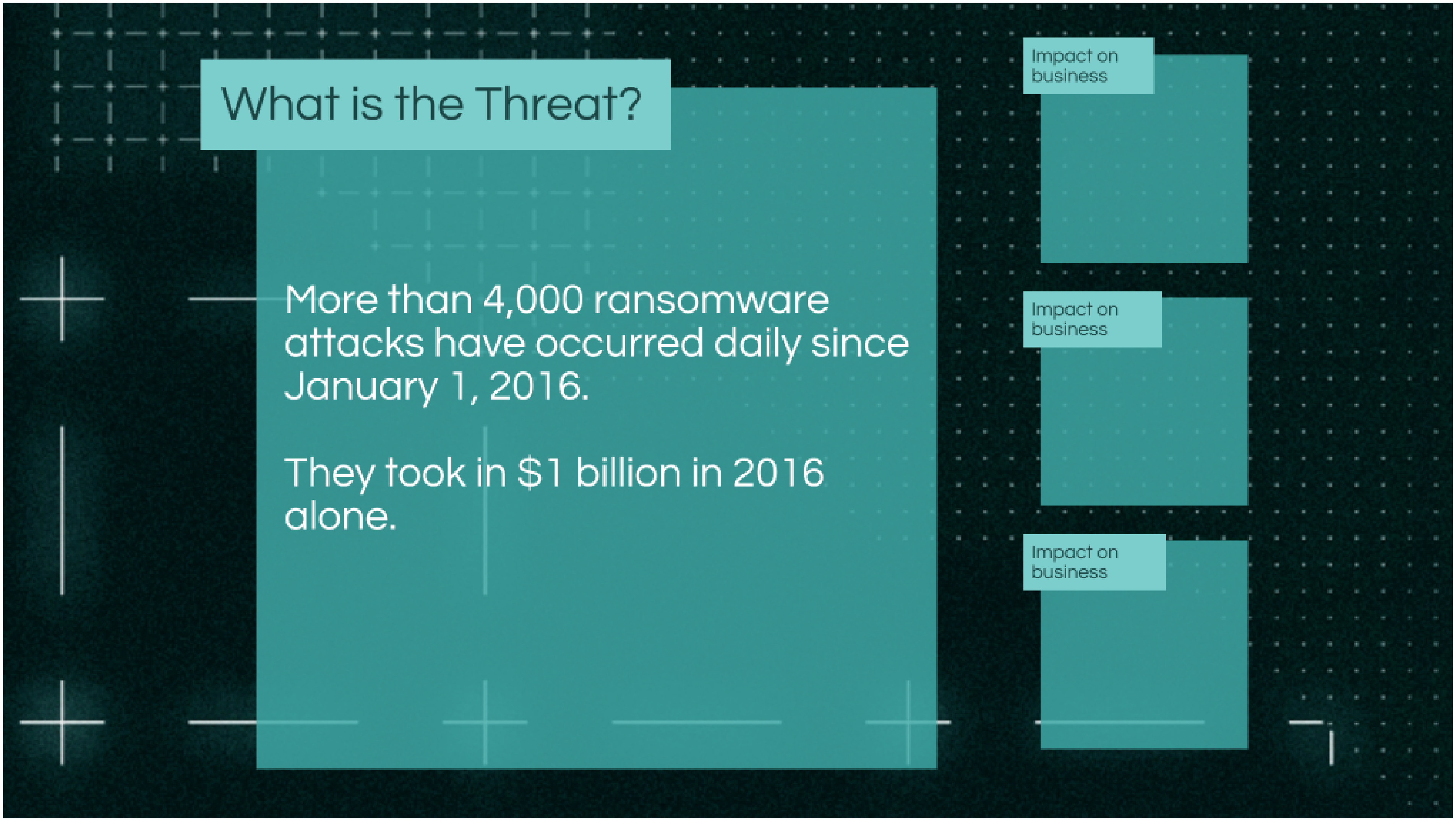

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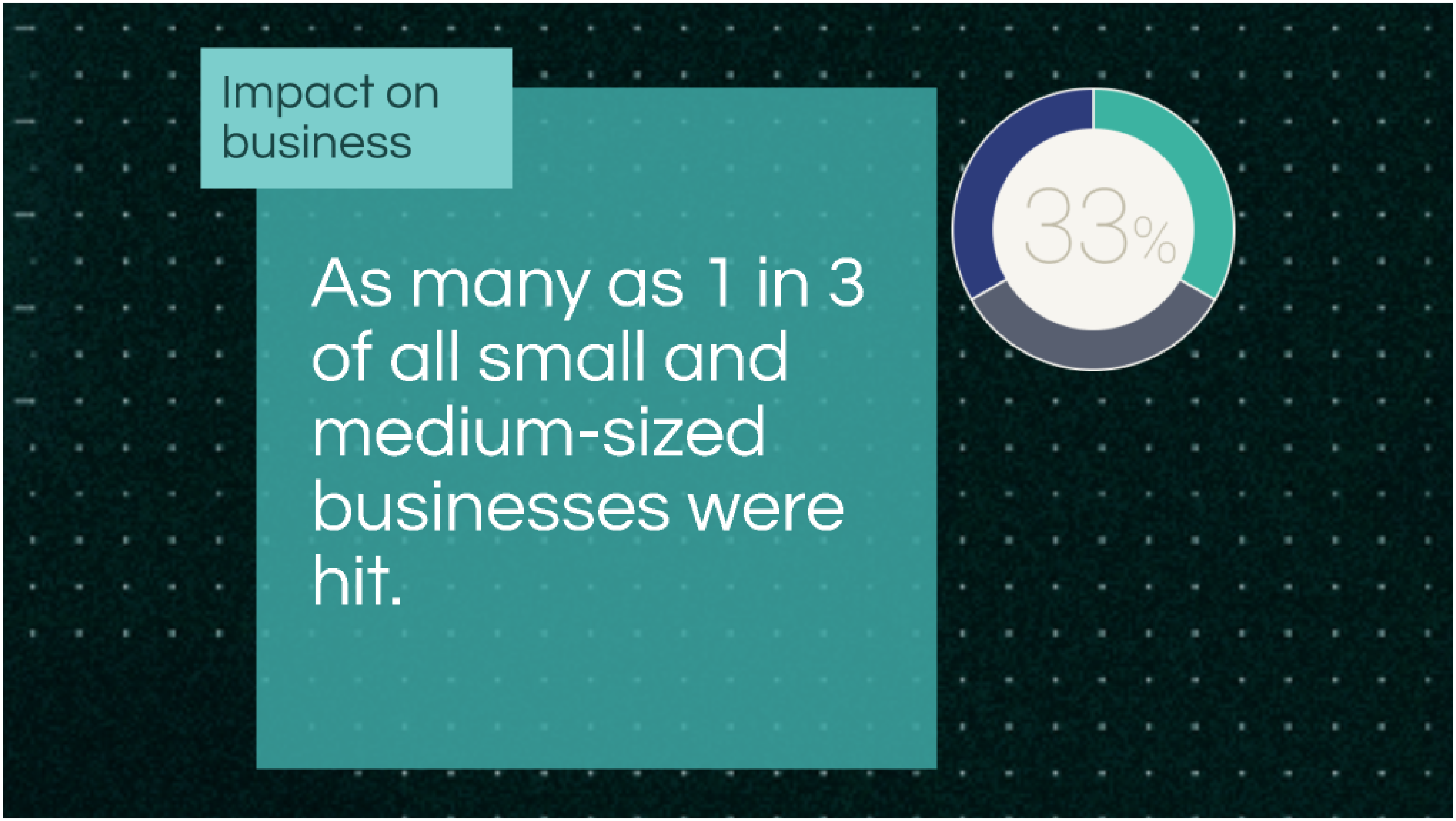
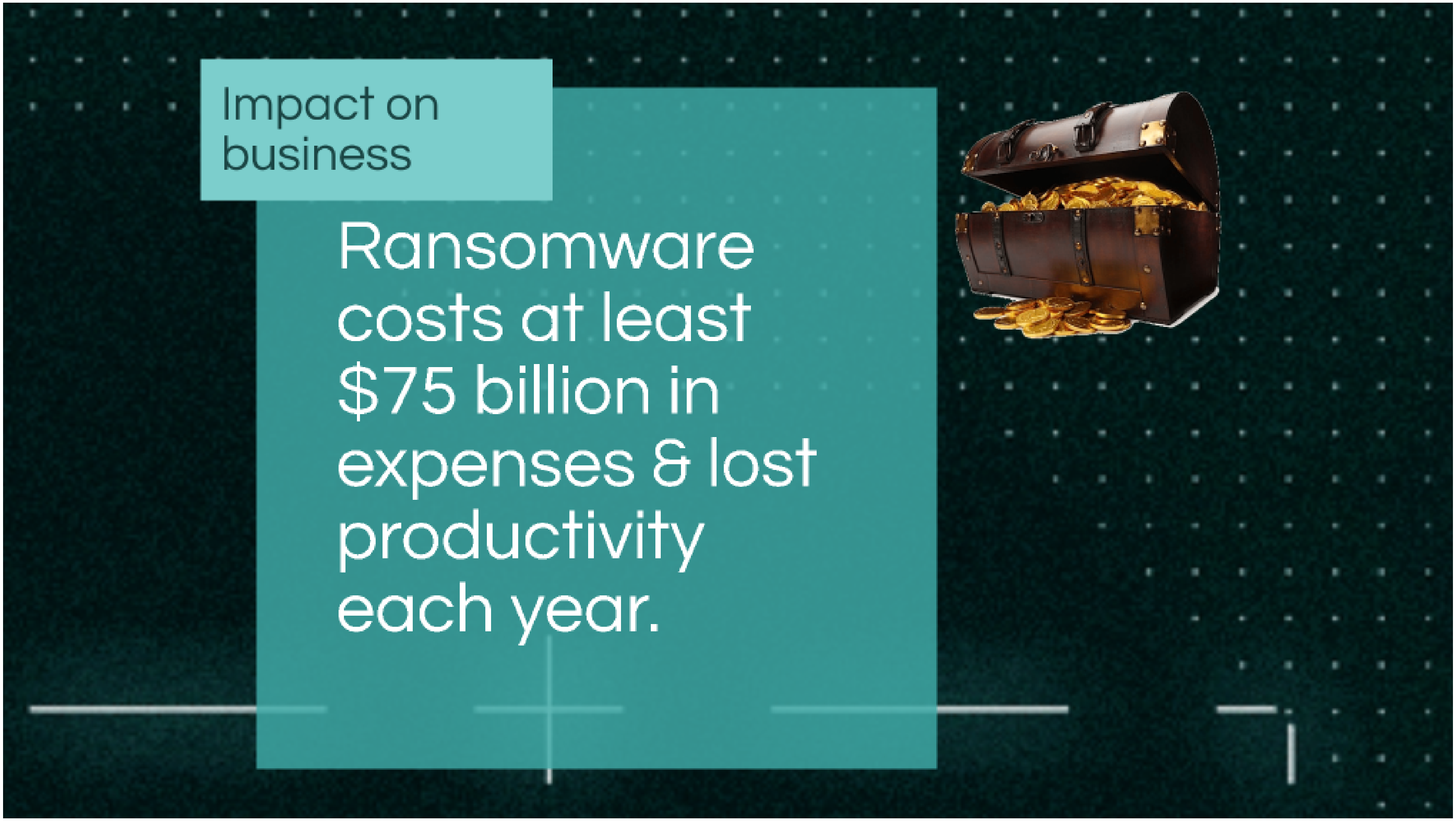


Impact on business

As many as 1 in 3 of all small and medium-sized businesses were hit.

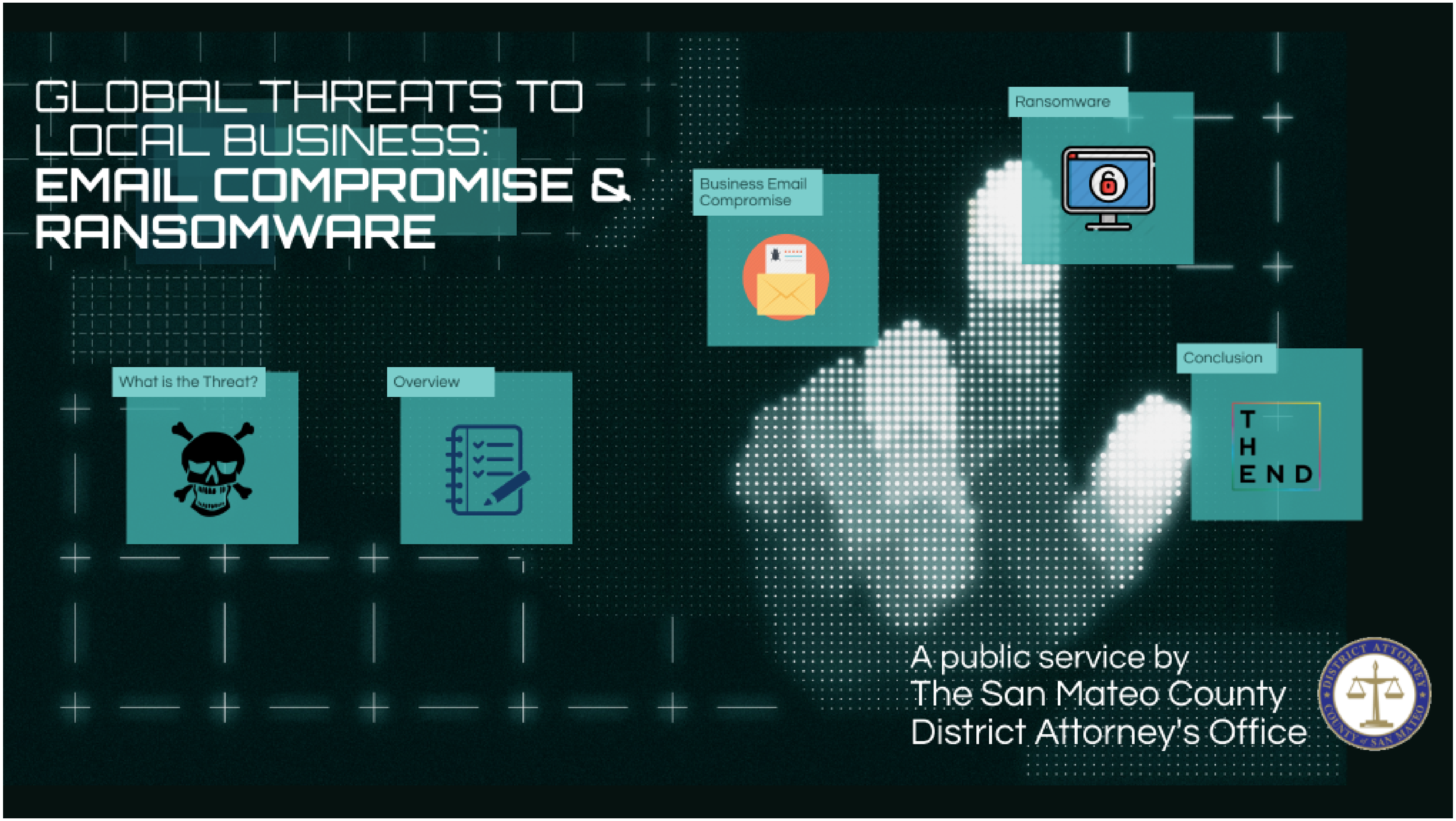
Impact on business

1 in 5 businesses that were hit had to completely shut down operations.



Impact on business

Ransomware costs at least $75 billion in expenses & lost productivity each year.



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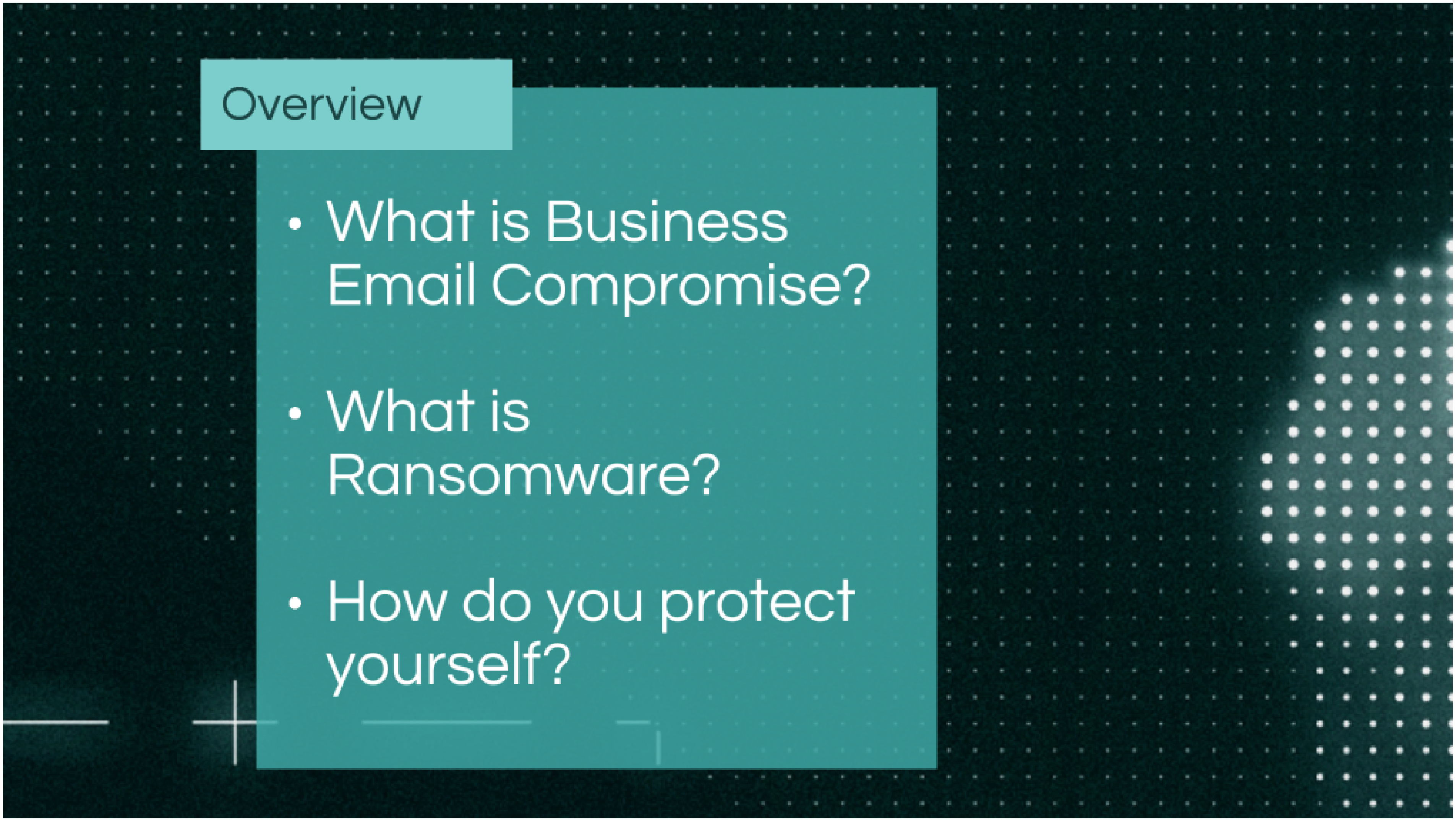

Overview

- What is Business Email Compromise?
- What is Ransomware?
- How do you protect yourself?

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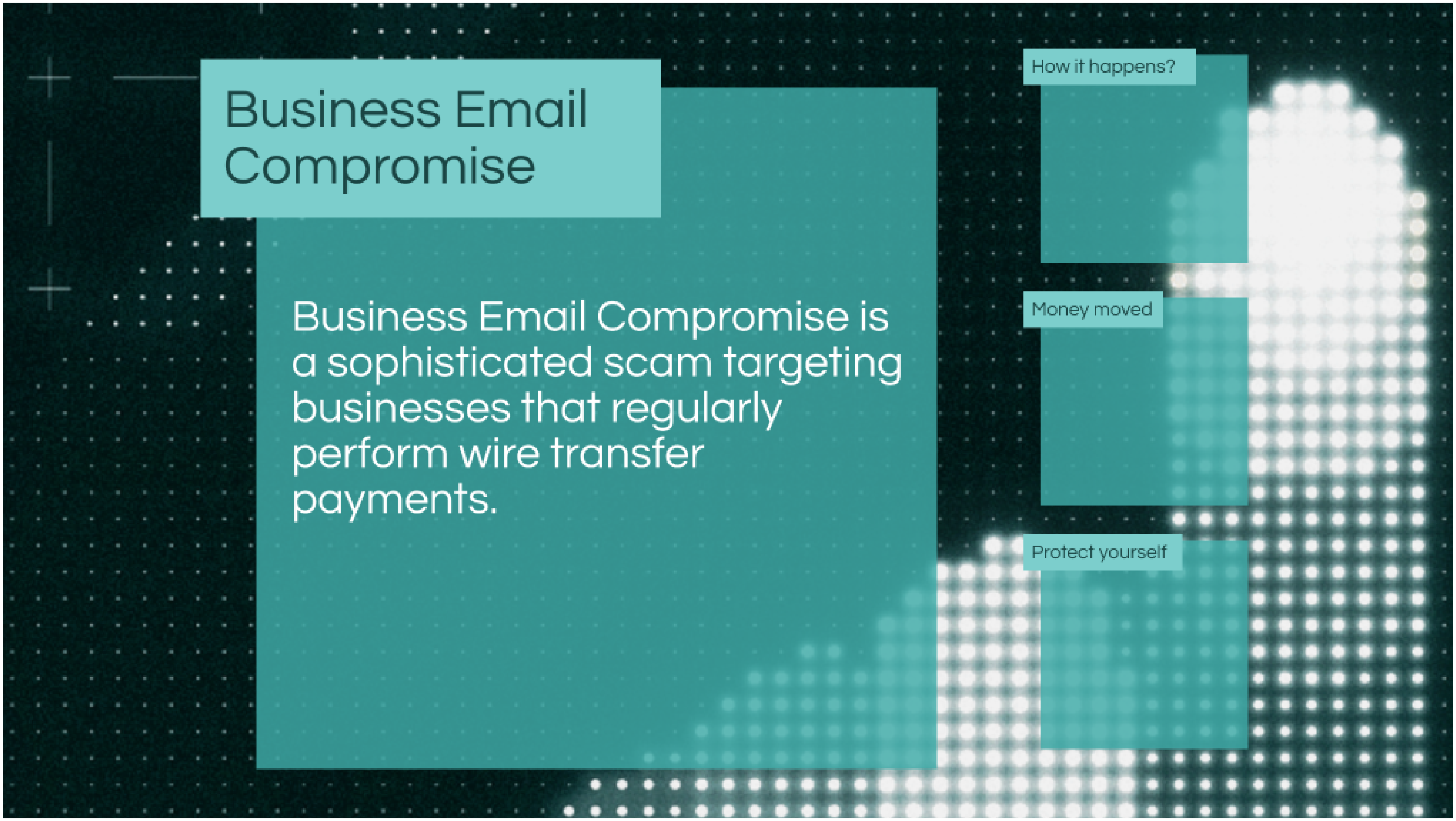


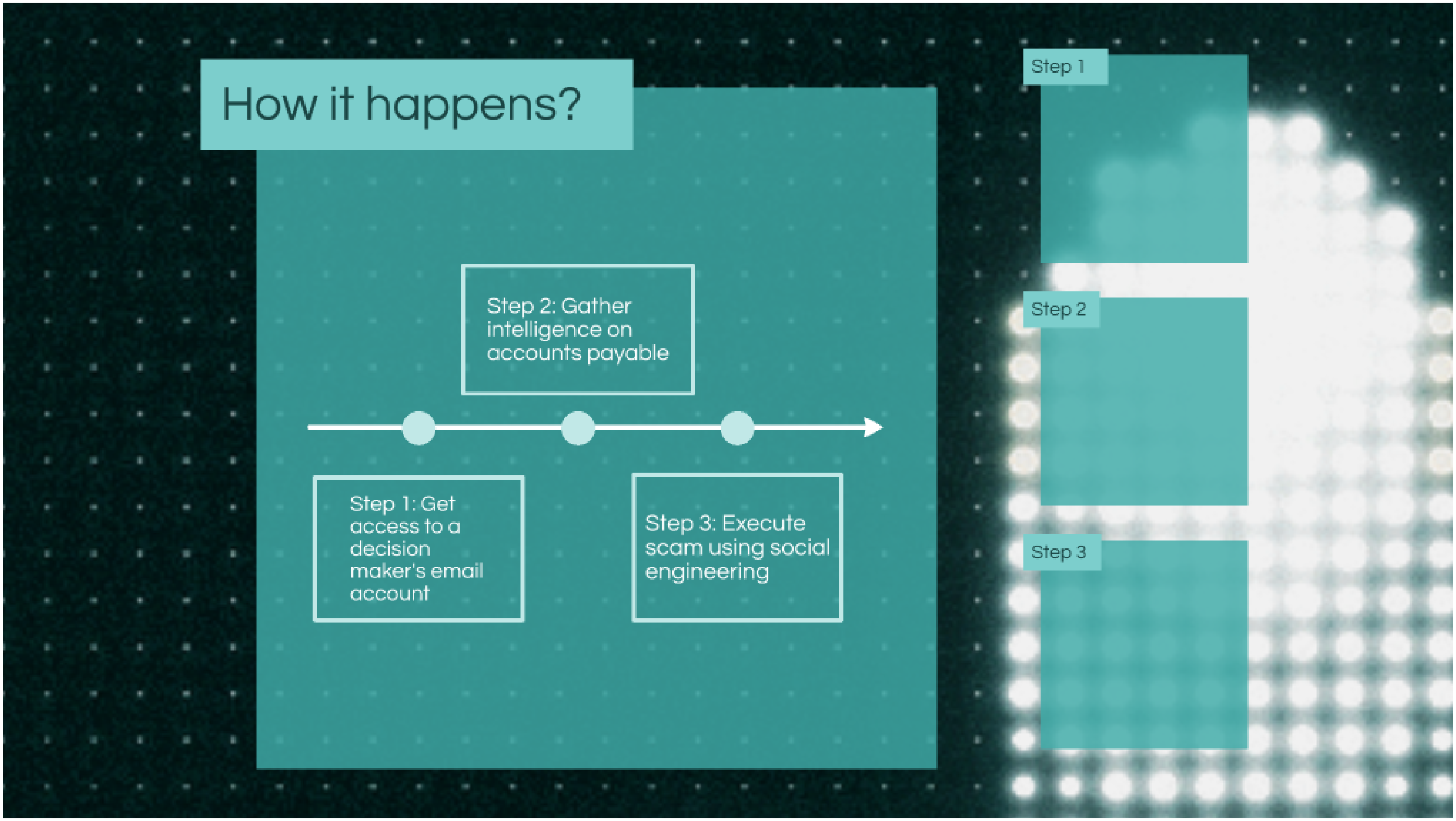
Business Email Compromise

Business Email Compromise is a sophisticated scam targeting businesses that regularly perform wire transfer payments.

How it happens?

Money moved

Protect yourself



How it happens?

Step 2: Gather intelligence on accounts payable

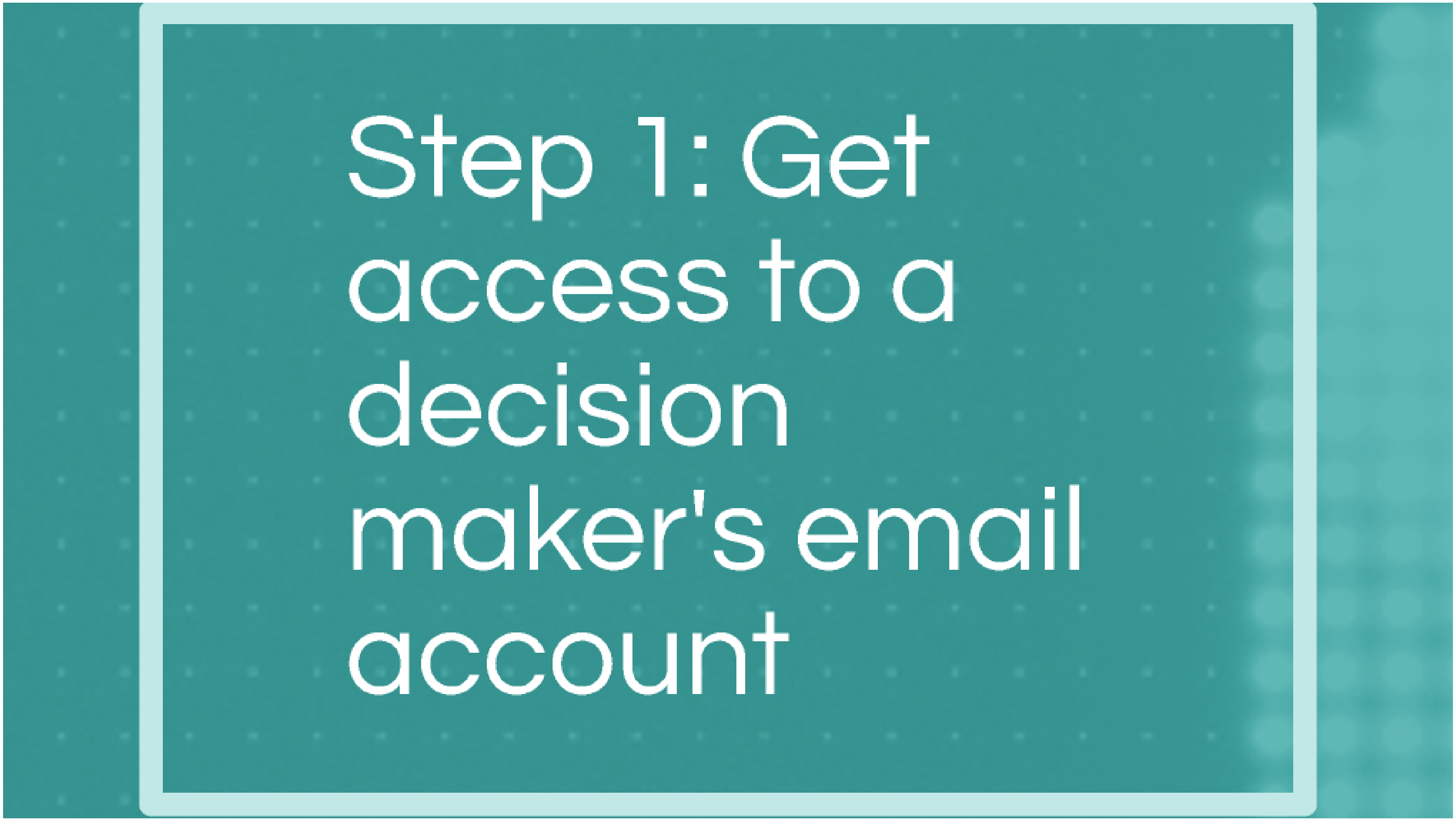
Step 1: Get access to a decision maker's email account

Step 3: Execute scam using social engineering

Step 1

Step 2

Step 3



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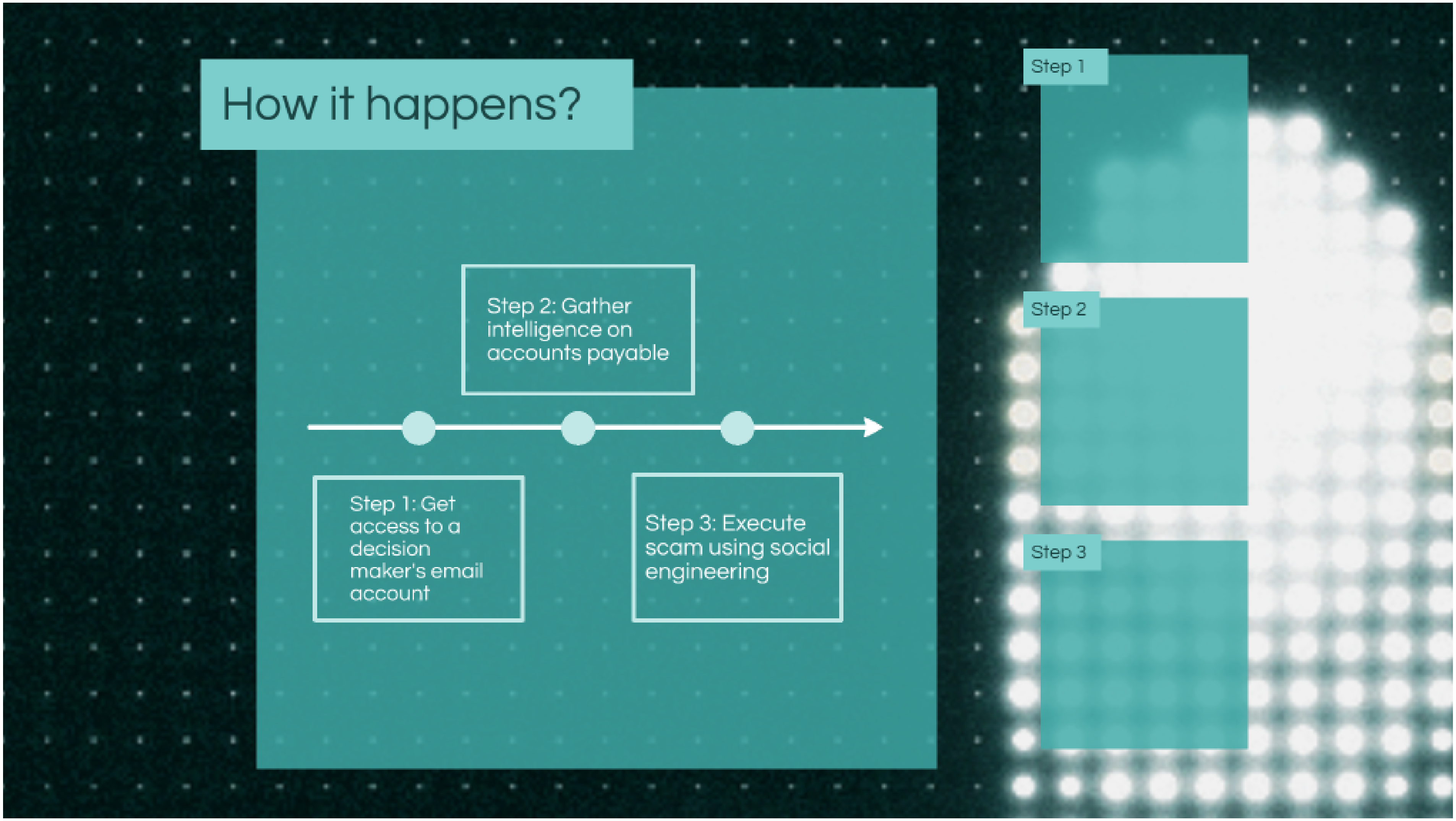

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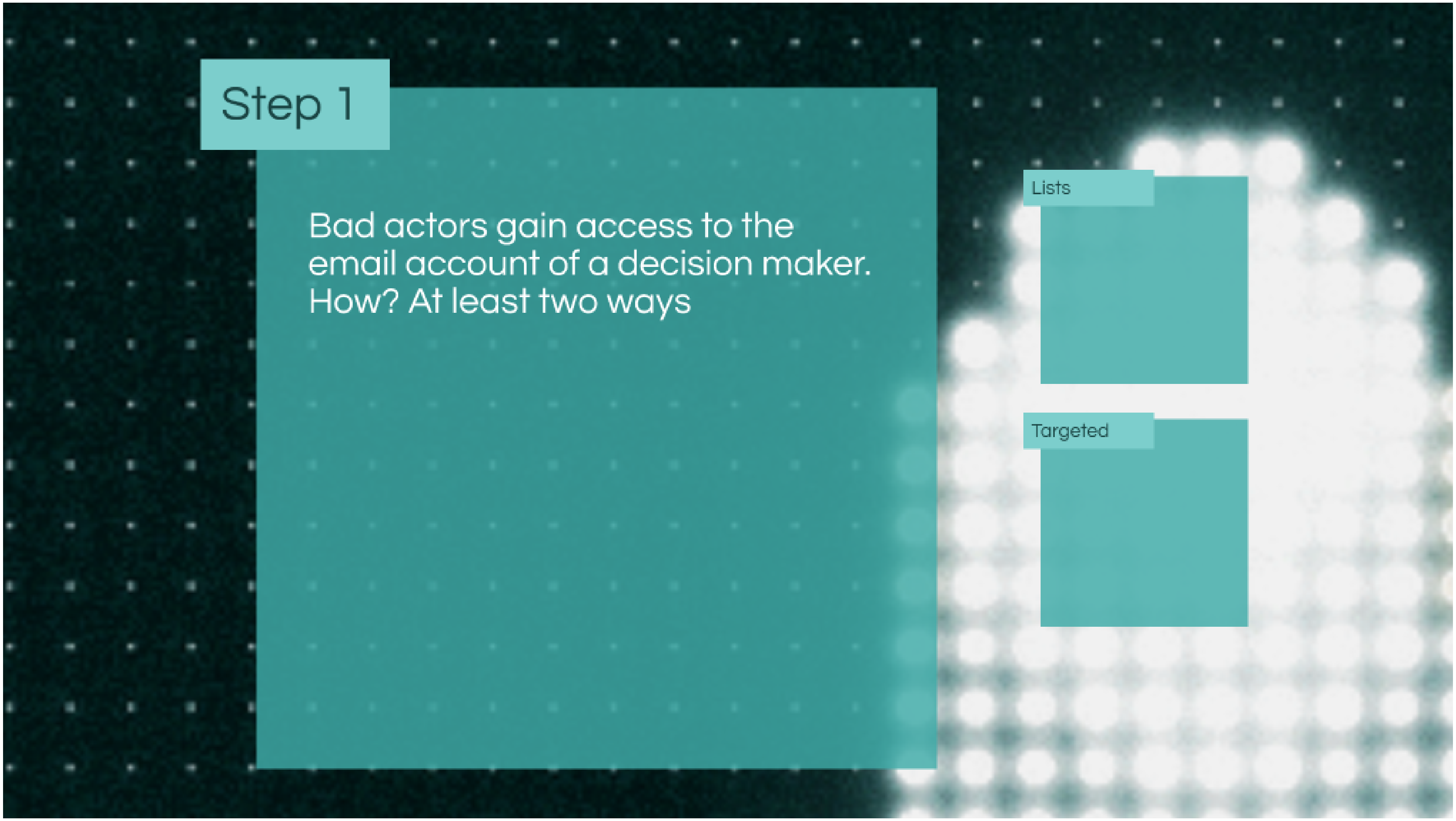
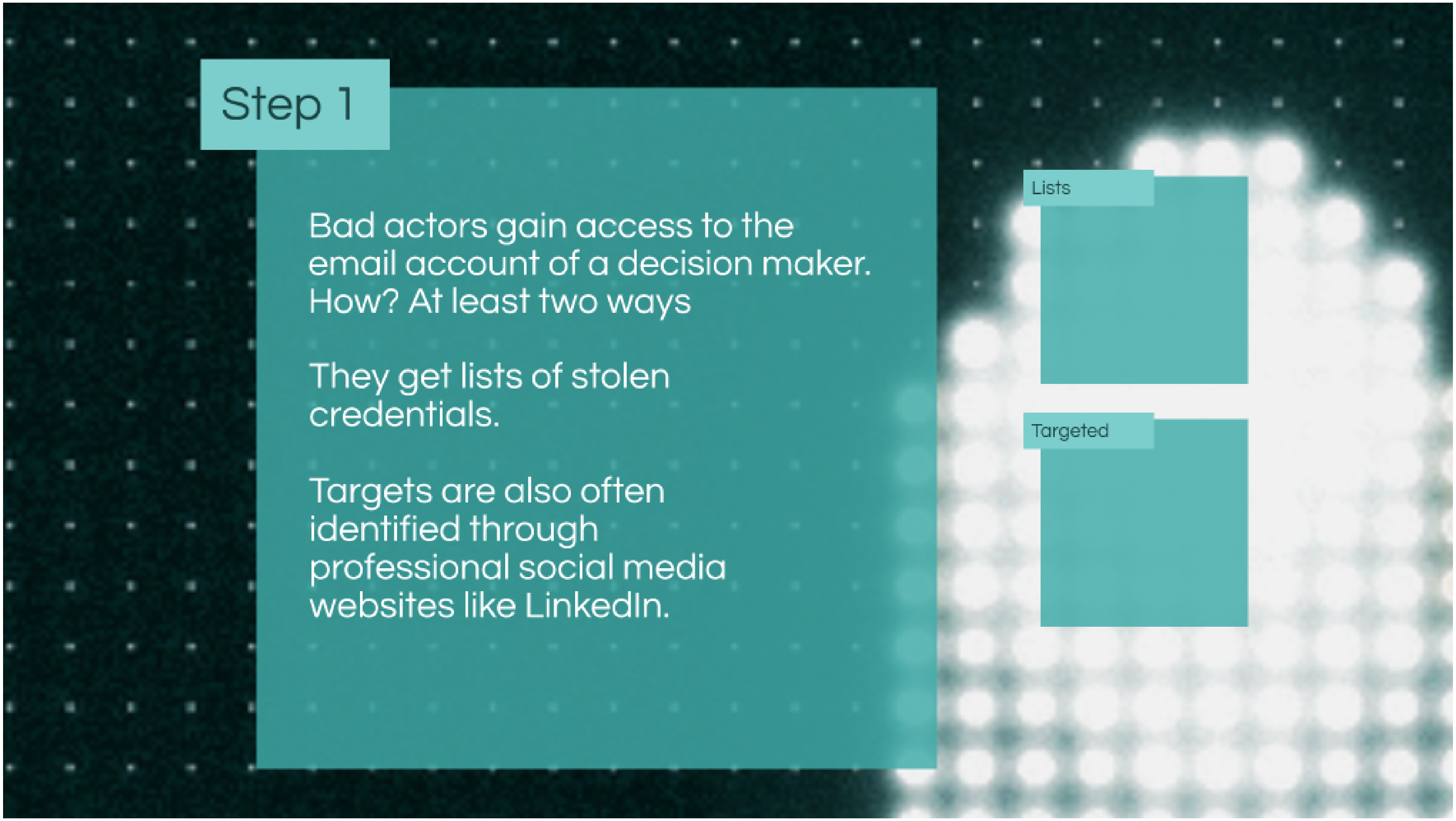


Step 1

Bad actors gain access to the email account of a decision maker. How? At least two ways

Lists

Targeted



Step 1

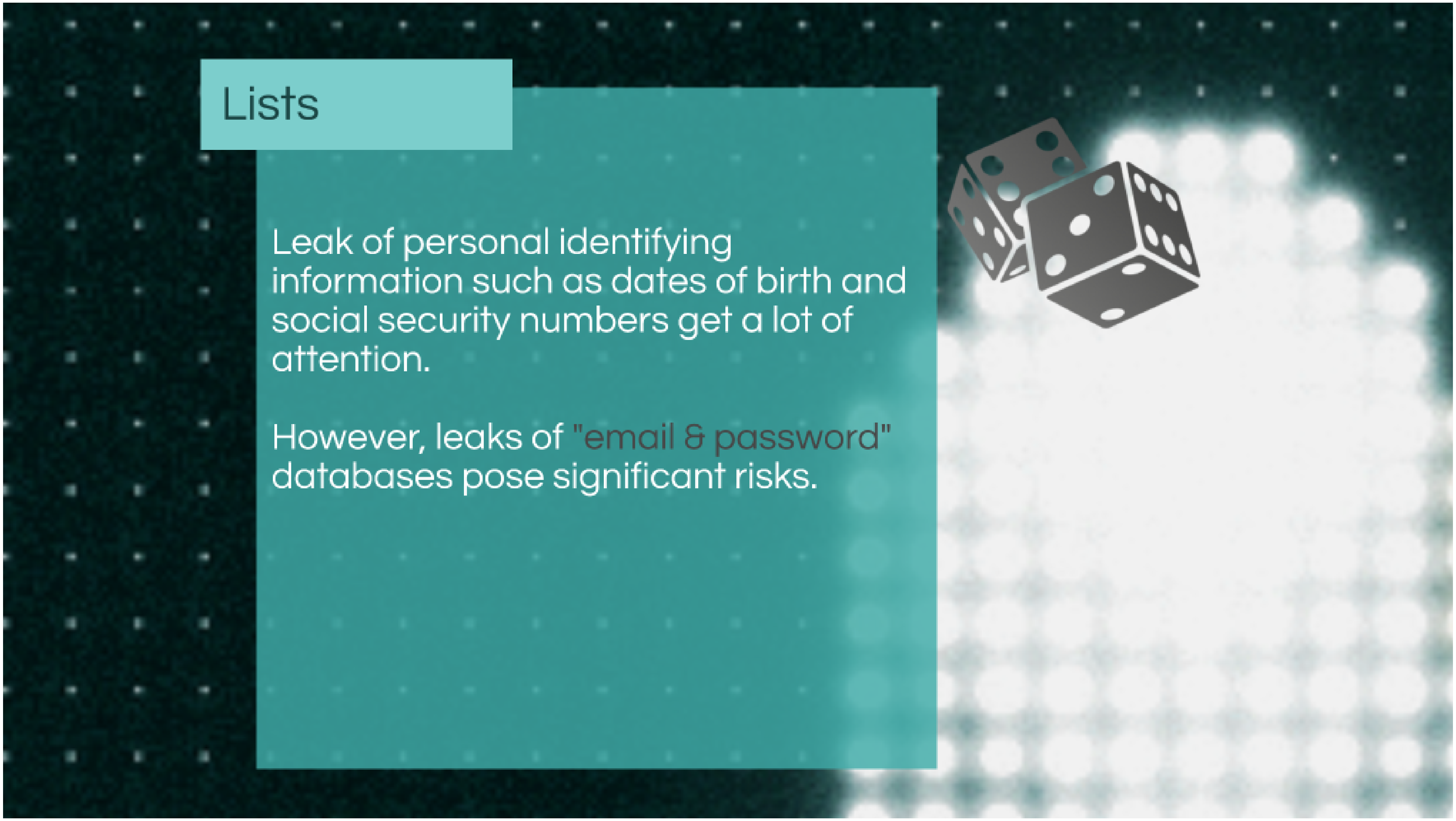
Bad actors gain access to the email account of a decision maker. How? At least two ways

They get lists of stolen credentials.

Targets are also often identified through professional social media websites like LinkedIn.

Lists

Targeted

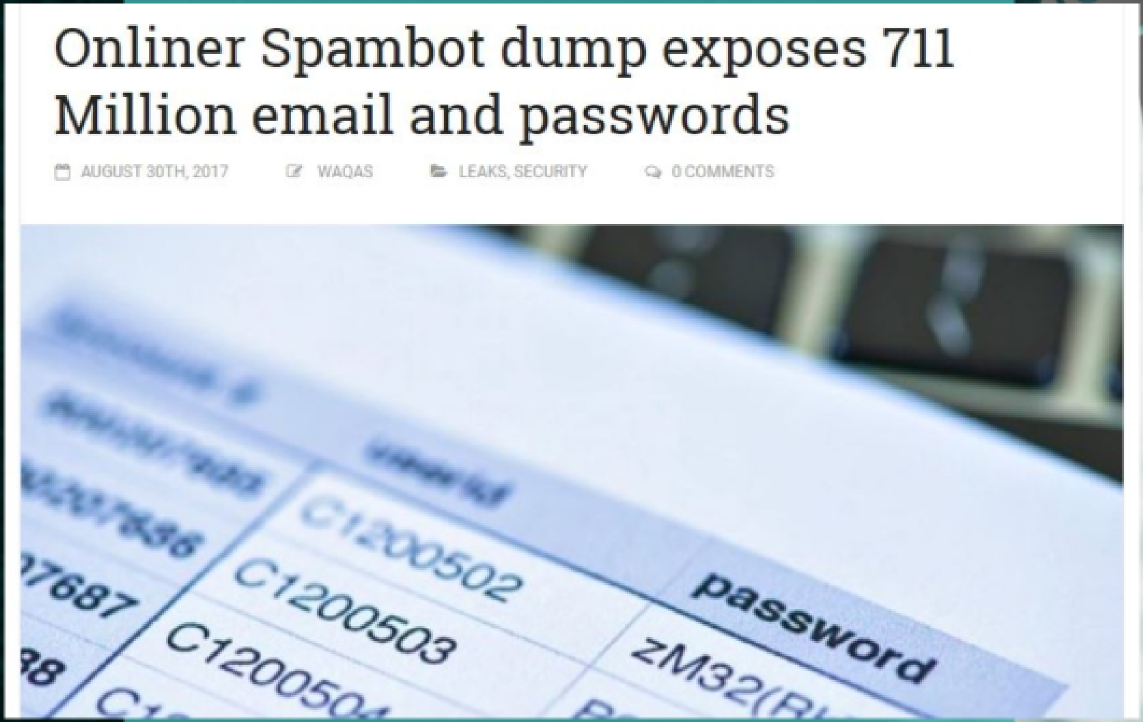


Lists

Leak of personal identifying information such as dates of birth and social security numbers get a lot of attention.

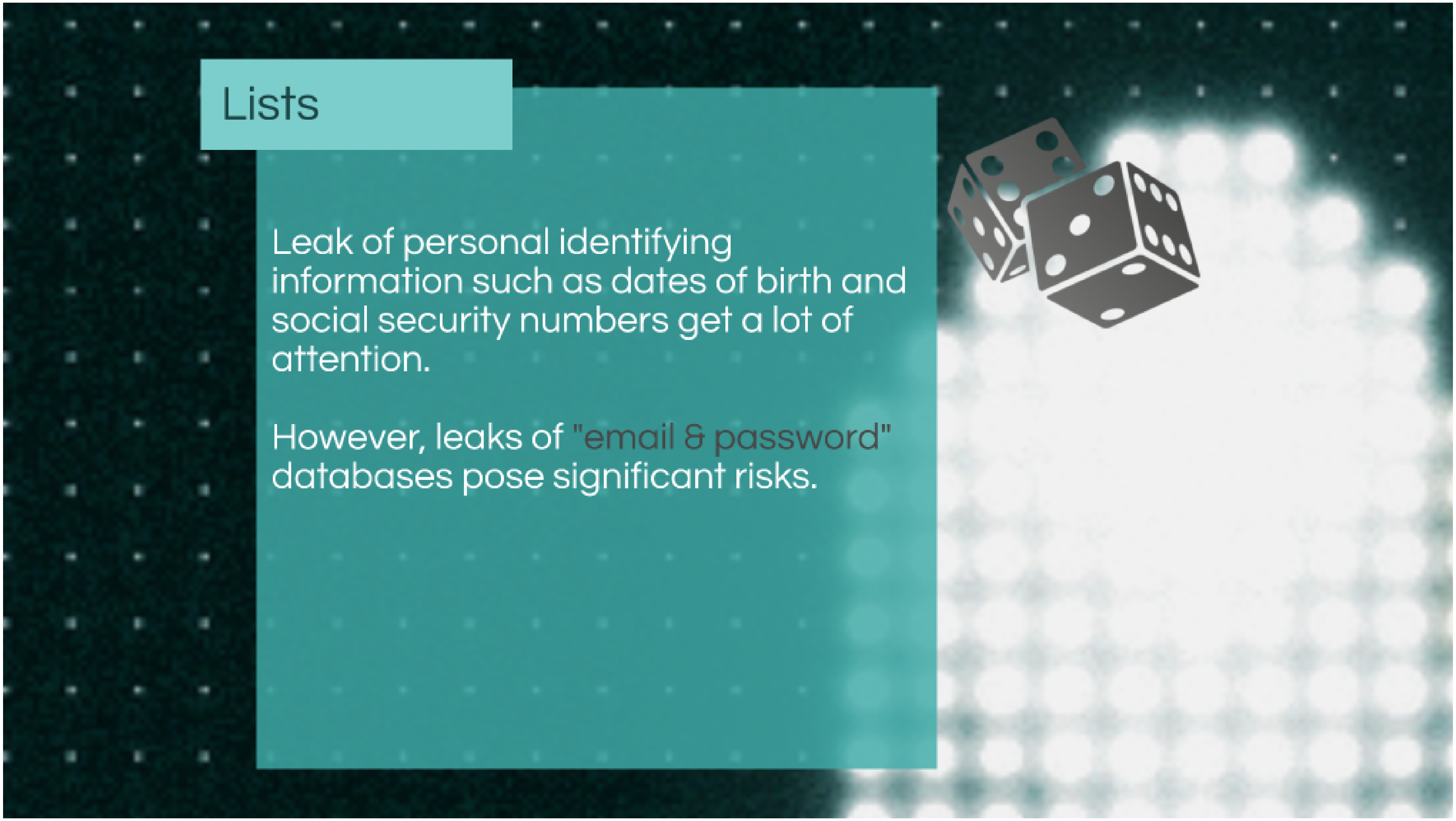
However, leaks of "email & password" databases pose significant risks.

Lists



Onliner Spambot dump exposes 711 Million email and passwords

AUGUST 30TH, 2017 WAQAS LEAKS, SECURITY 0 COMMENTS



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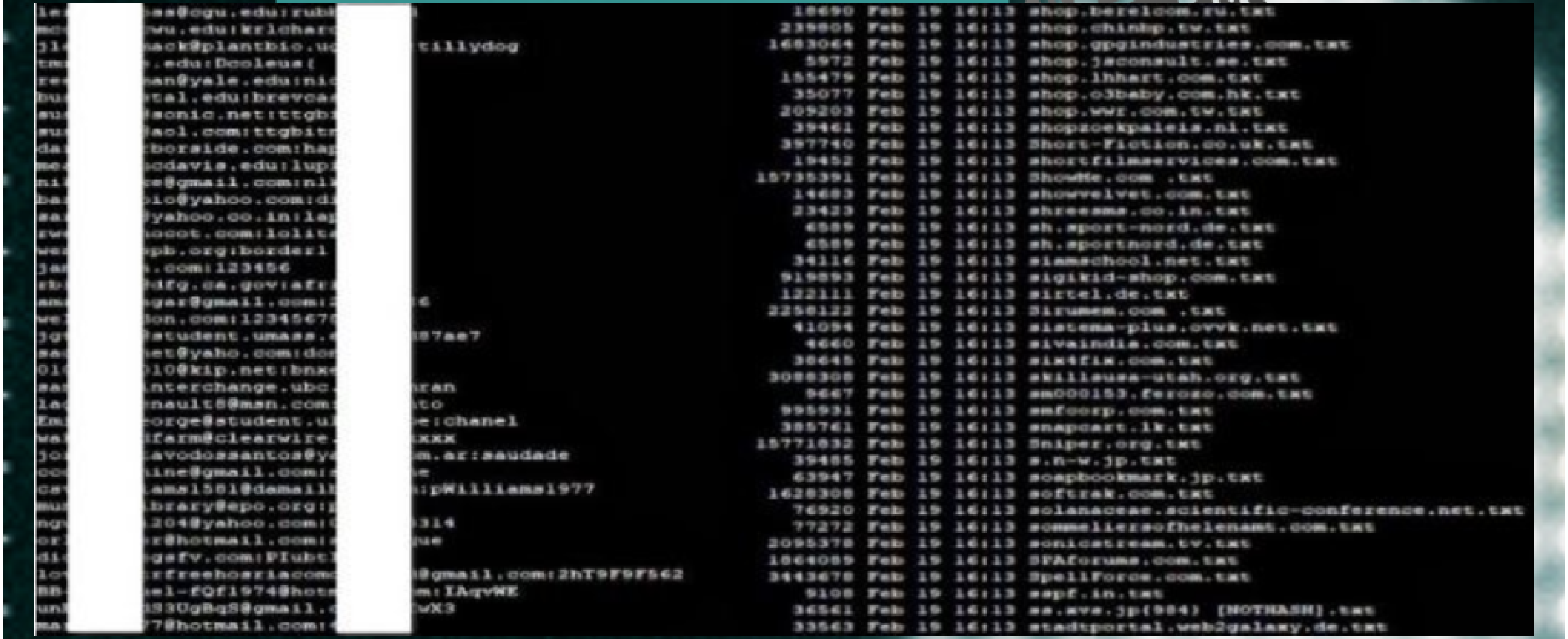

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su[redacted]@aol.com:ttgbit
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me[redacted]cdavis.edu:lup
ni[redacted]e@gmail.com:ni
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 1683064 Feb 19 16:13 shop.gpgindustries.com.txt
    5972 Feb 19 16:13 shop.jaconsult.se.txt
  155479 Feb 19 16:13 shop.lhhart.com.txt
   35077 Feb 19 16:13 shop.o3baby.com.hk.txt
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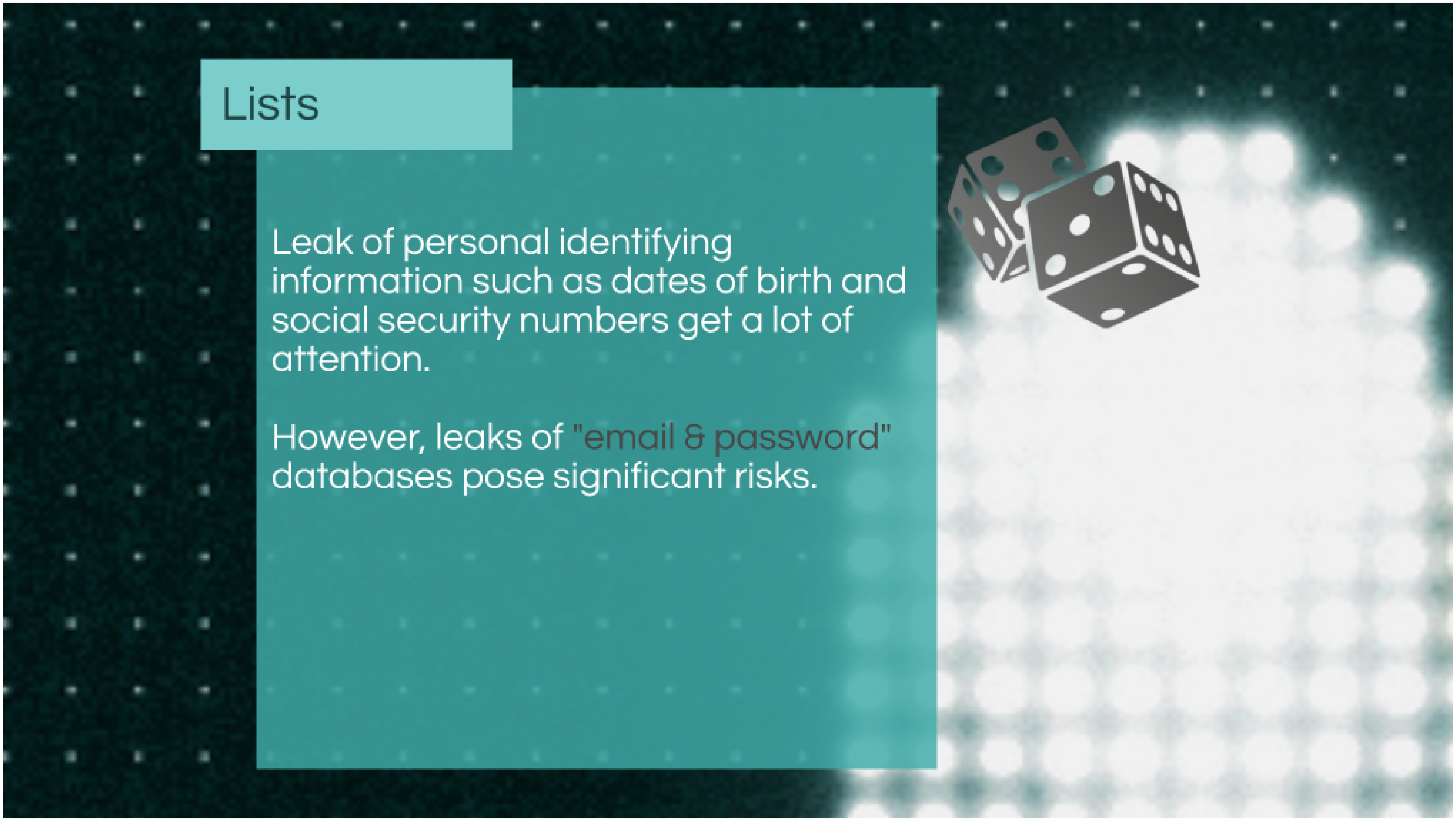

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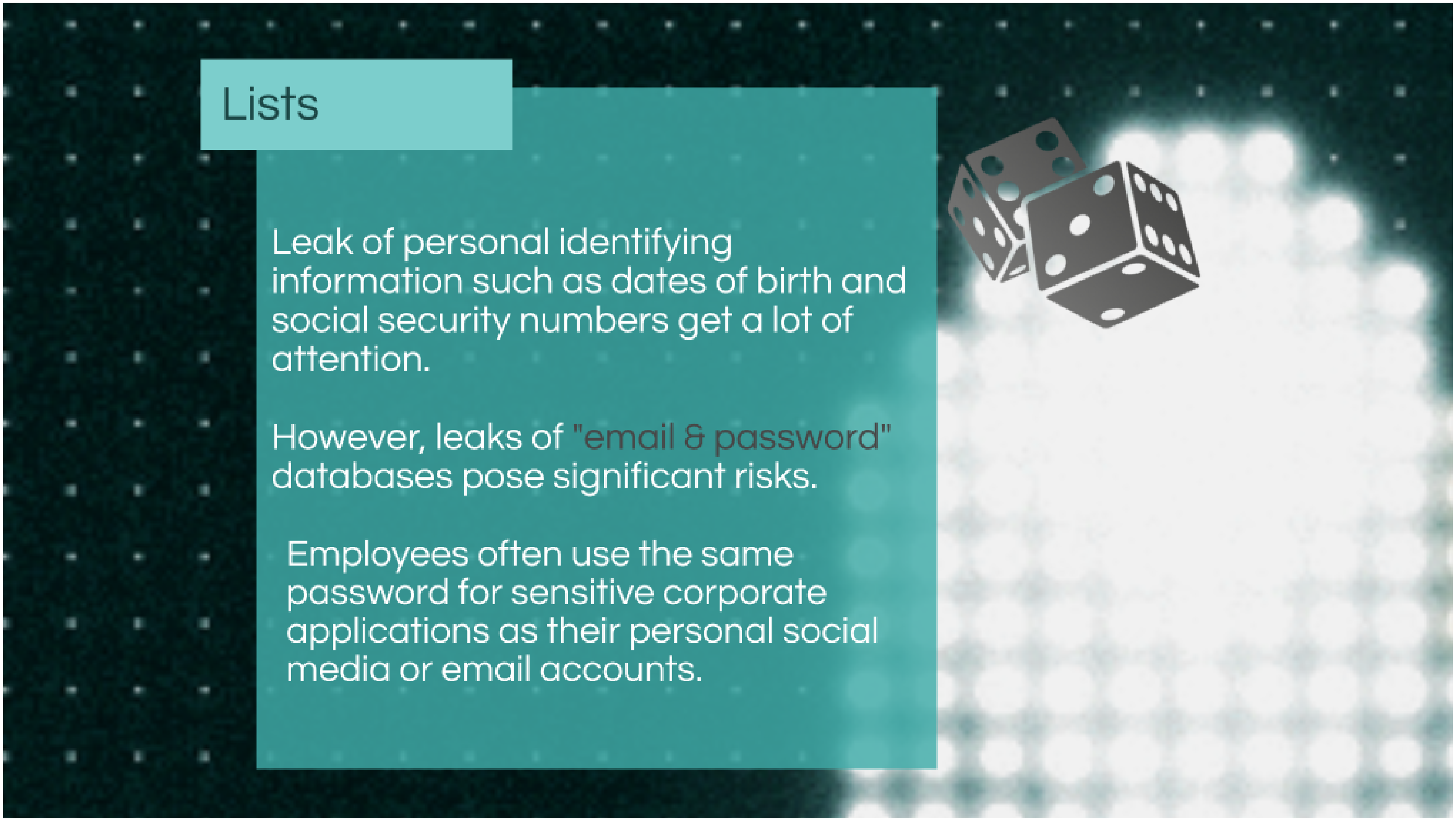

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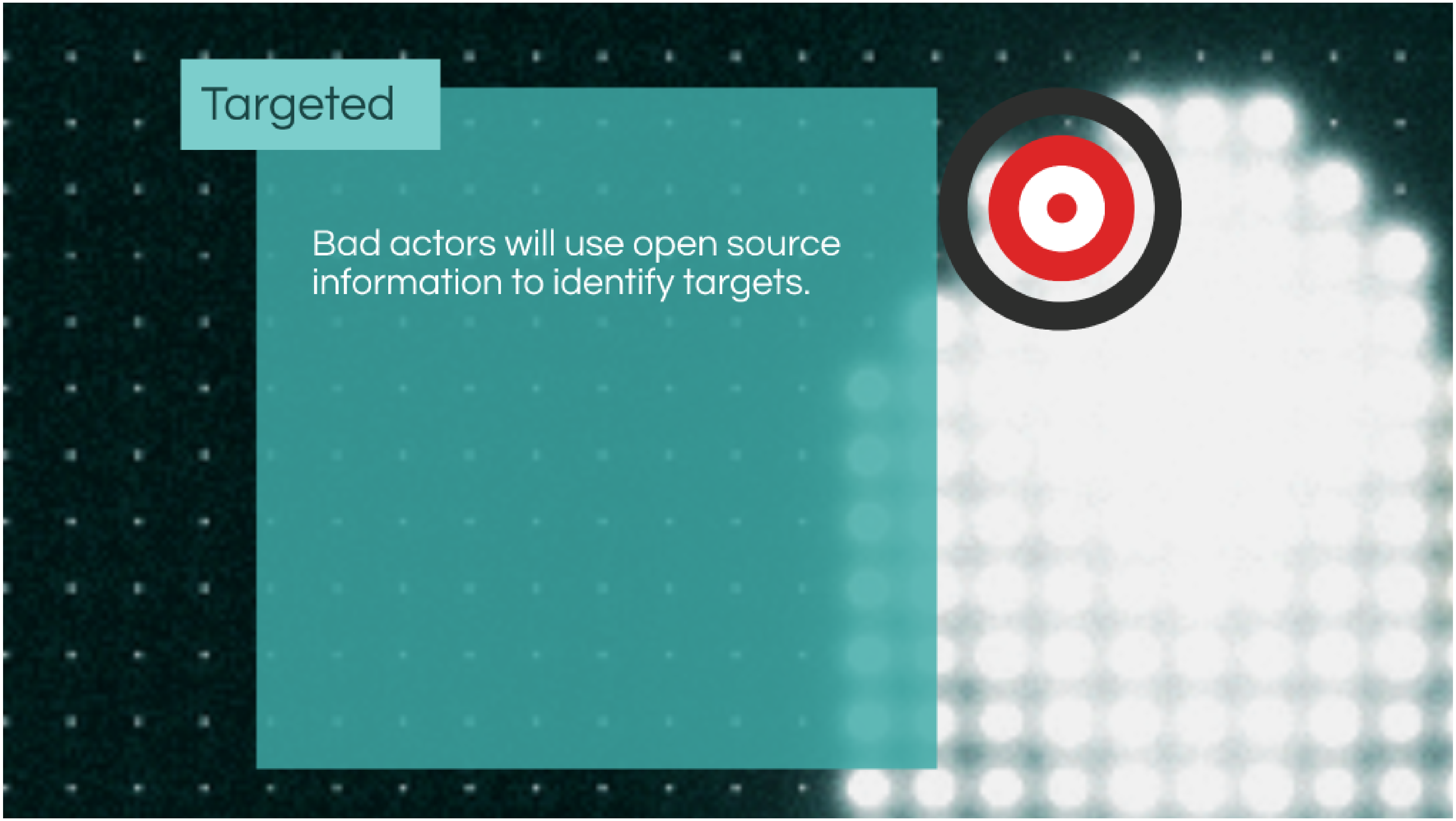
Employees often use the same password for sensitive corporate applications as their personal social media or email accounts.

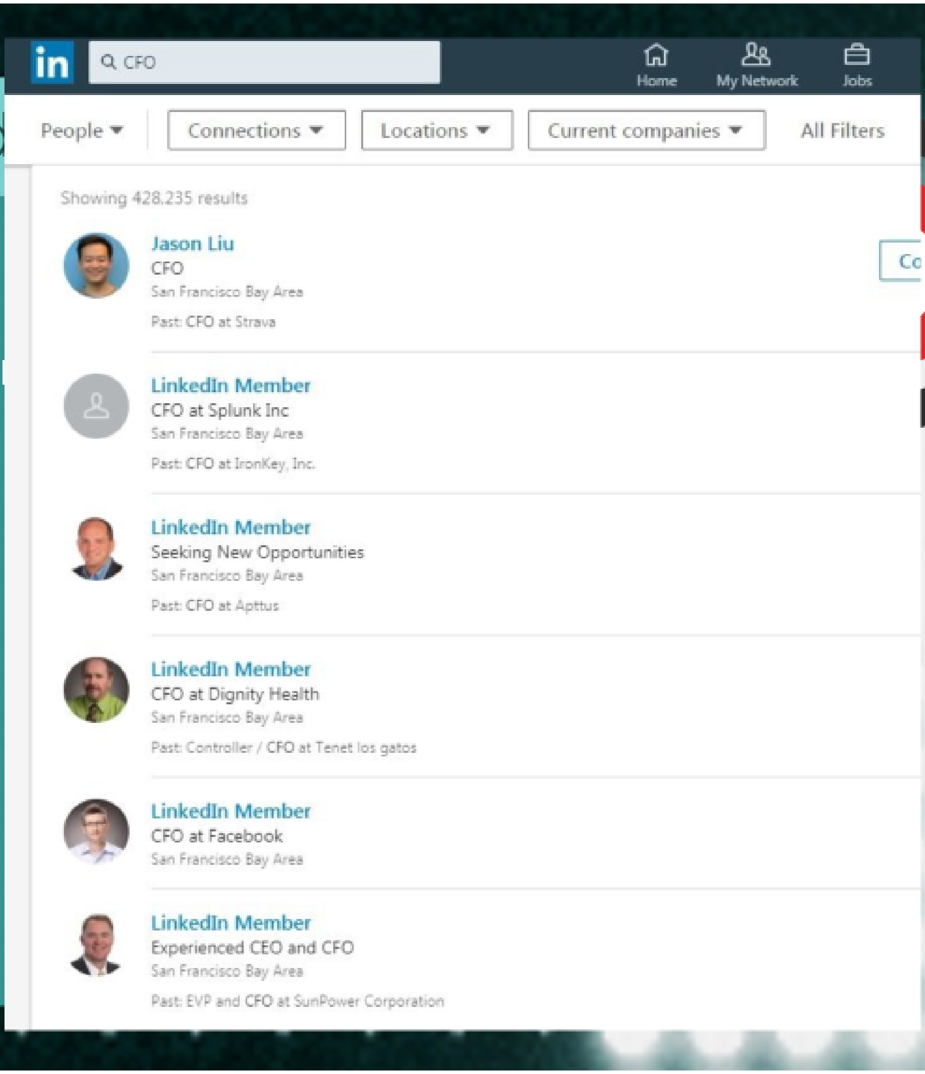


Targeted

Bad actors will use open source information to identify targets.

Targeted

Bad
infor



Showing 428,235 results

Jason Liu
CFO
San Francisco Bay Area
Past: CFO at Strava

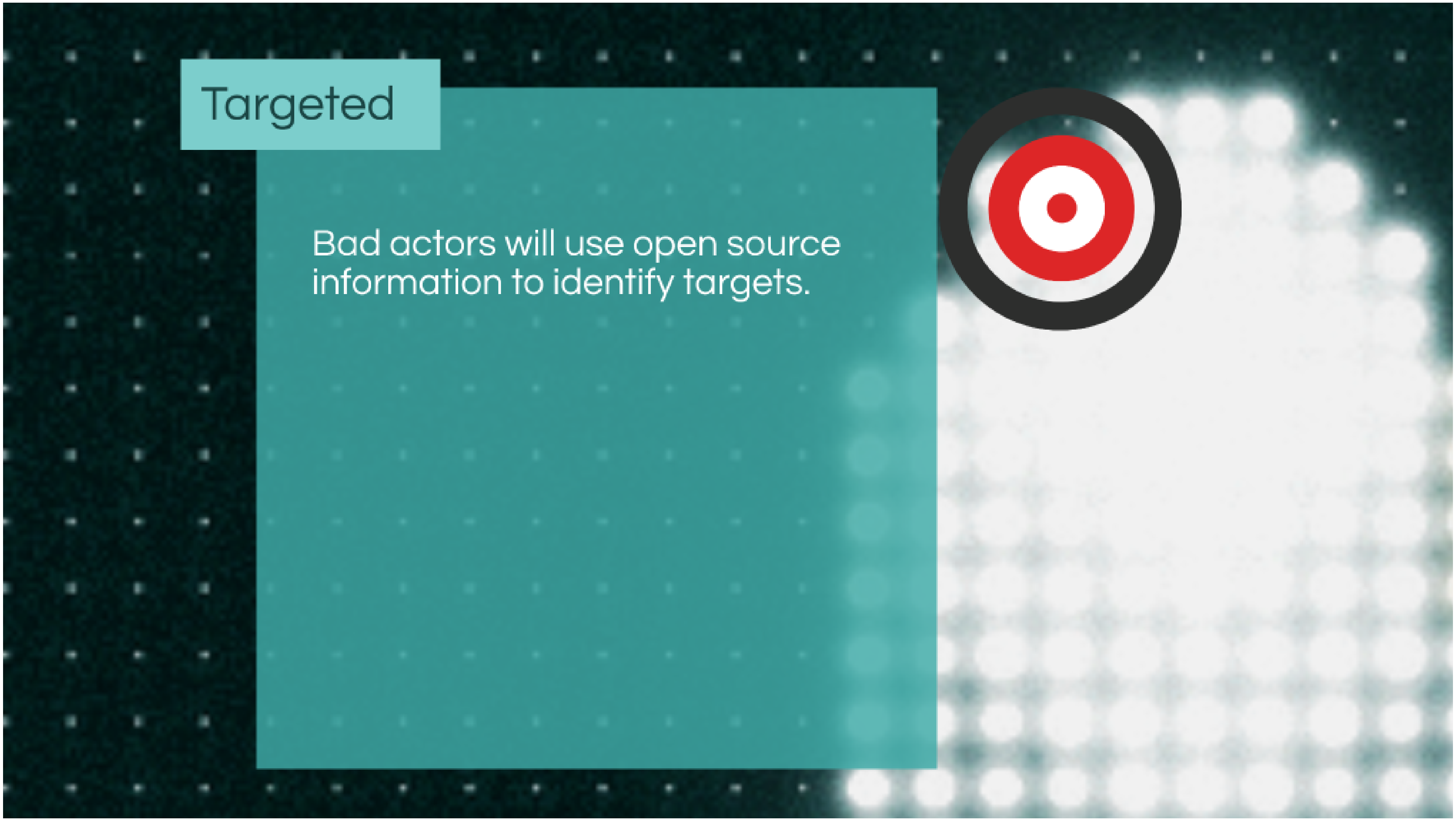
LinkedIn Member
CFO at Splunk Inc
San Francisco Bay Area
Past: CFO at IronKey, Inc.

LinkedIn Member
Seeking New Opportunities
San Francisco Bay Area
Past: CFO at Apttus

LinkedIn Member
CFO at Dignity Health
San Francisco Bay Area
Past: Controller / CFO at Tenet los gatos

LinkedIn Member
CFO at Facebook
San Francisco Bay Area

LinkedIn Member
Experienced CEO and CFO
San Francisco Bay Area
Past: EVP and CFO at SunPower Corporation



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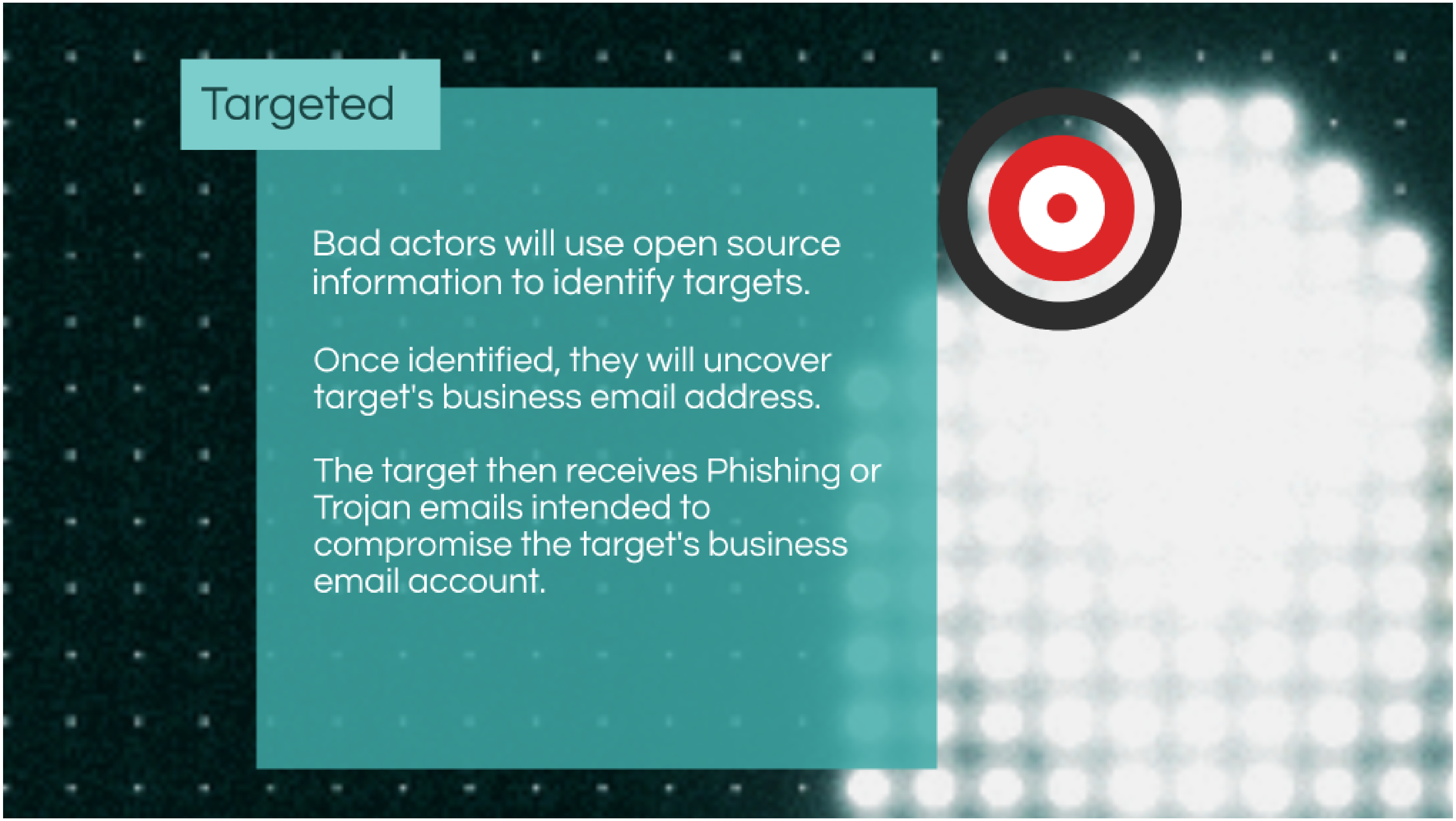
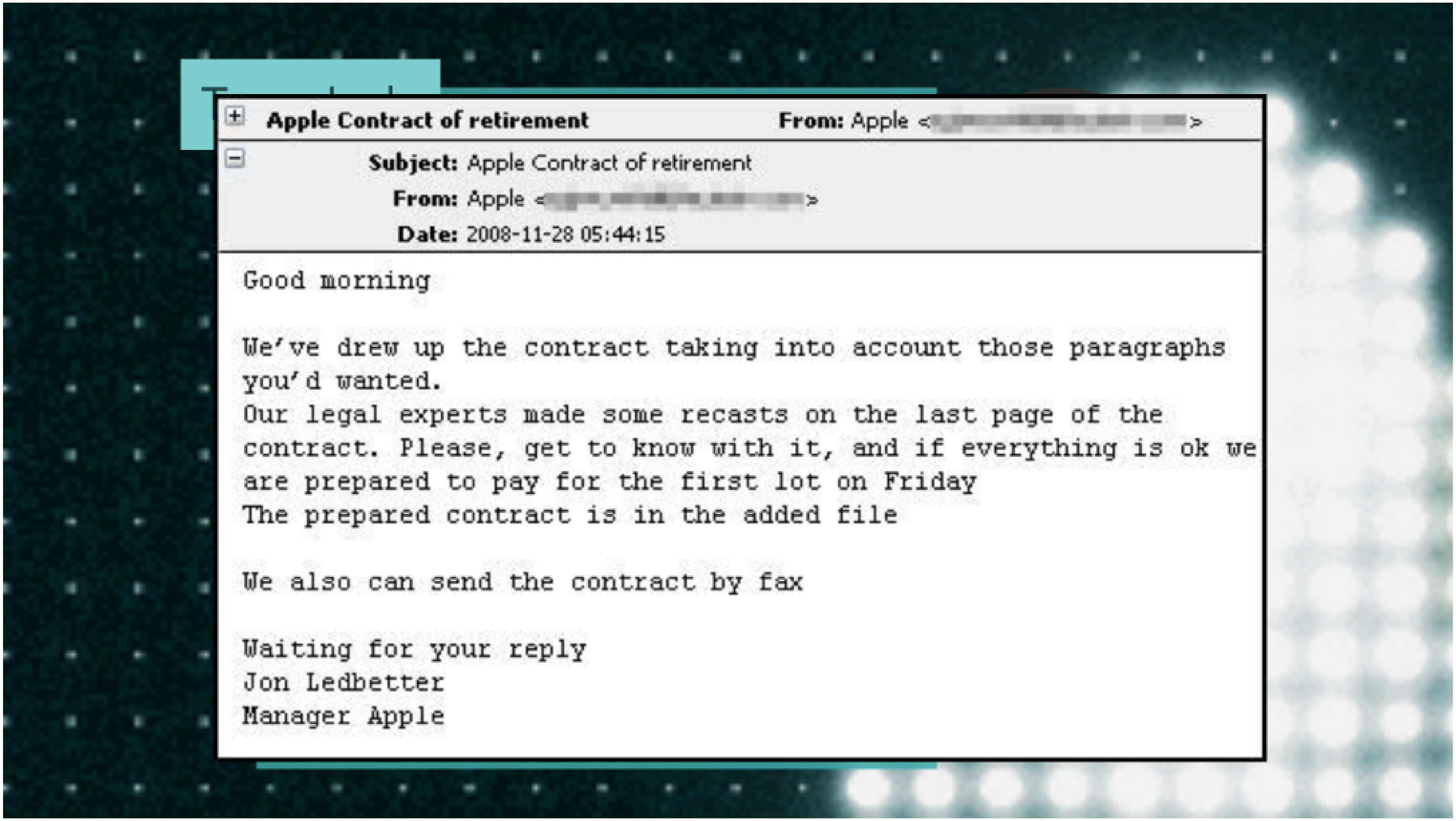


Targeted

Bad actors will use open source information to identify targets.

Once identified, they will uncover target's business email address.

The target then receives Phishing or Trojan emails intended to compromise the target's business email account.



Apple Contract of retirement **From:** Apple <[redacted]>

Subject: Apple Contract of retirement

From: Apple <[redacted]>

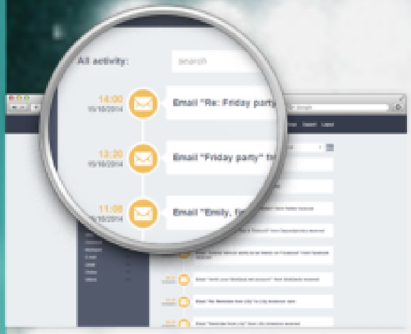
Date: 2008-11-28 05:44:15

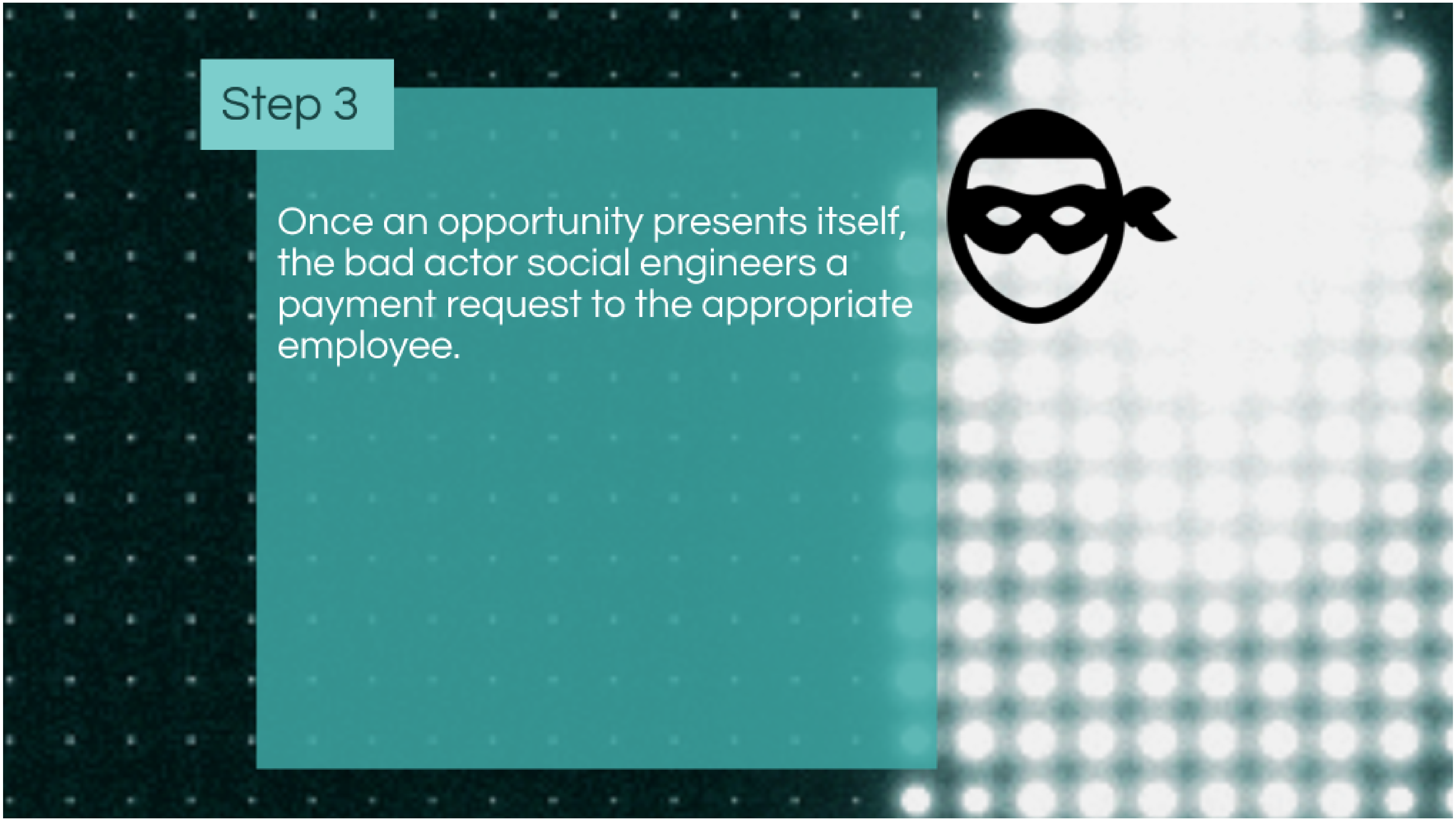
```
Good morning

We’ve drew up the contract taking into account those paragraphs
you’d wanted.
Our legal experts made some recasts on the last page of the
contract. Please, get to know with it, and if everything is ok we
are prepared to pay for the first lot on Friday
The prepared contract is in the added file

We also can send the contract by fax

Waiting for your reply
Jon Ledbetter
Manager Apple
```

Step 2

Once the bad actor has access to email, she will monitor traffic, looking for habit and custom.

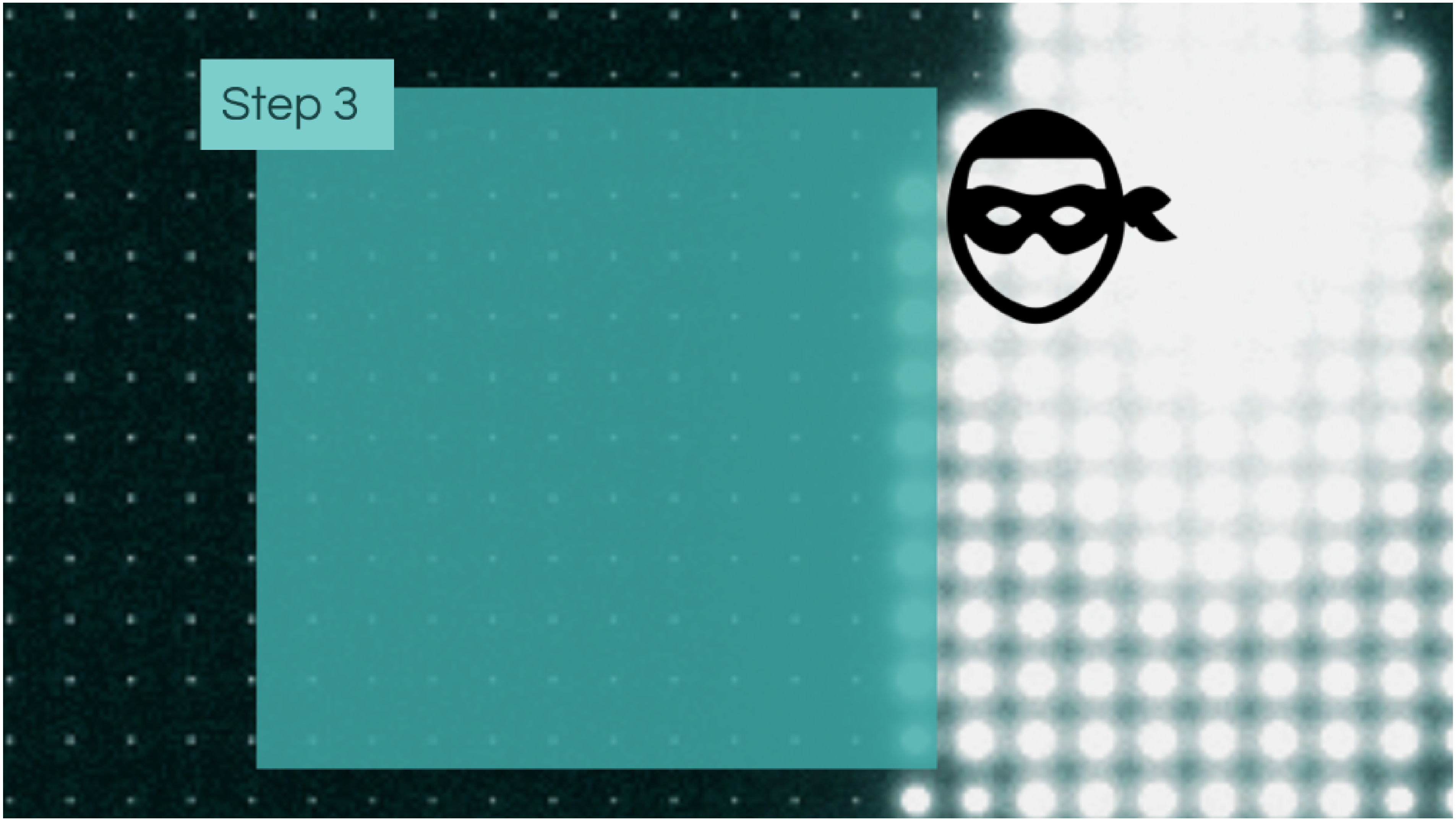
The goal is to learn about accounts payable.





Step 3

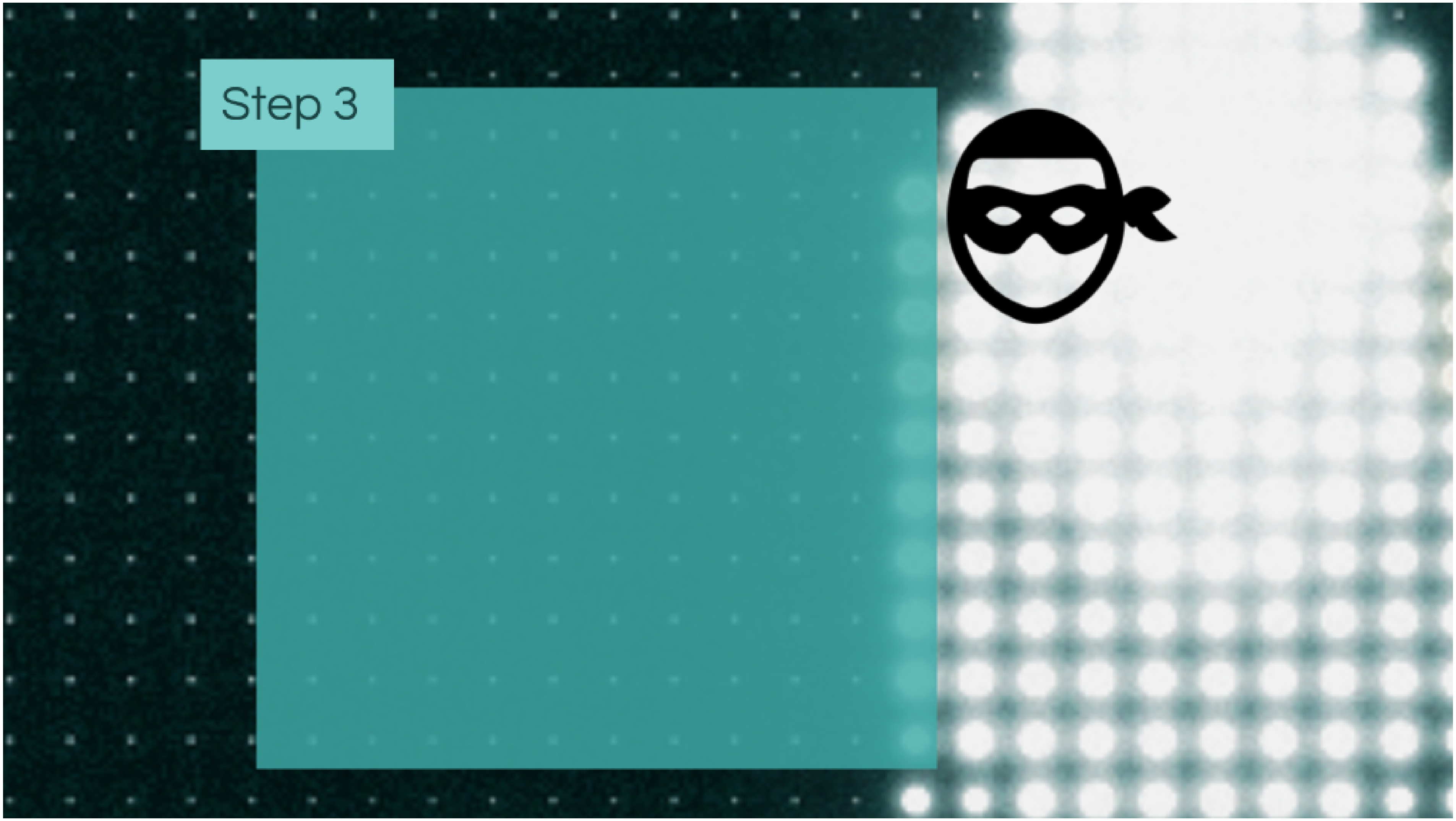
Once an opportunity presents itself, the bad actor social engineers a payment request to the appropriate employee.



Step 3

Step 3

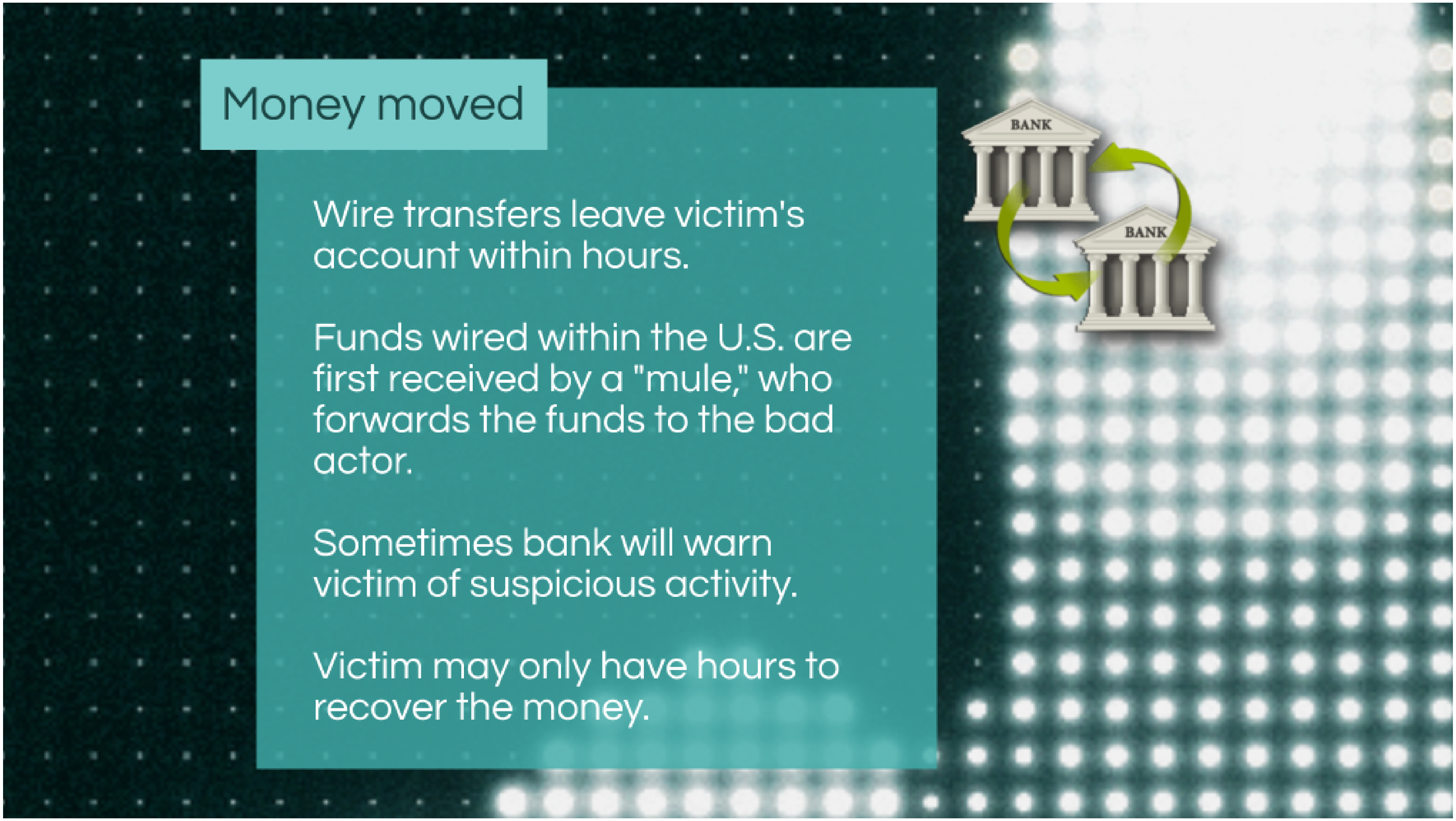
Generally, these requests are made with a sense of urgency, using intelligence gathered during Step 2.



Step 3

Step 3

Payment requests are wire transfers, and can be directed to a U.S. or International bank.



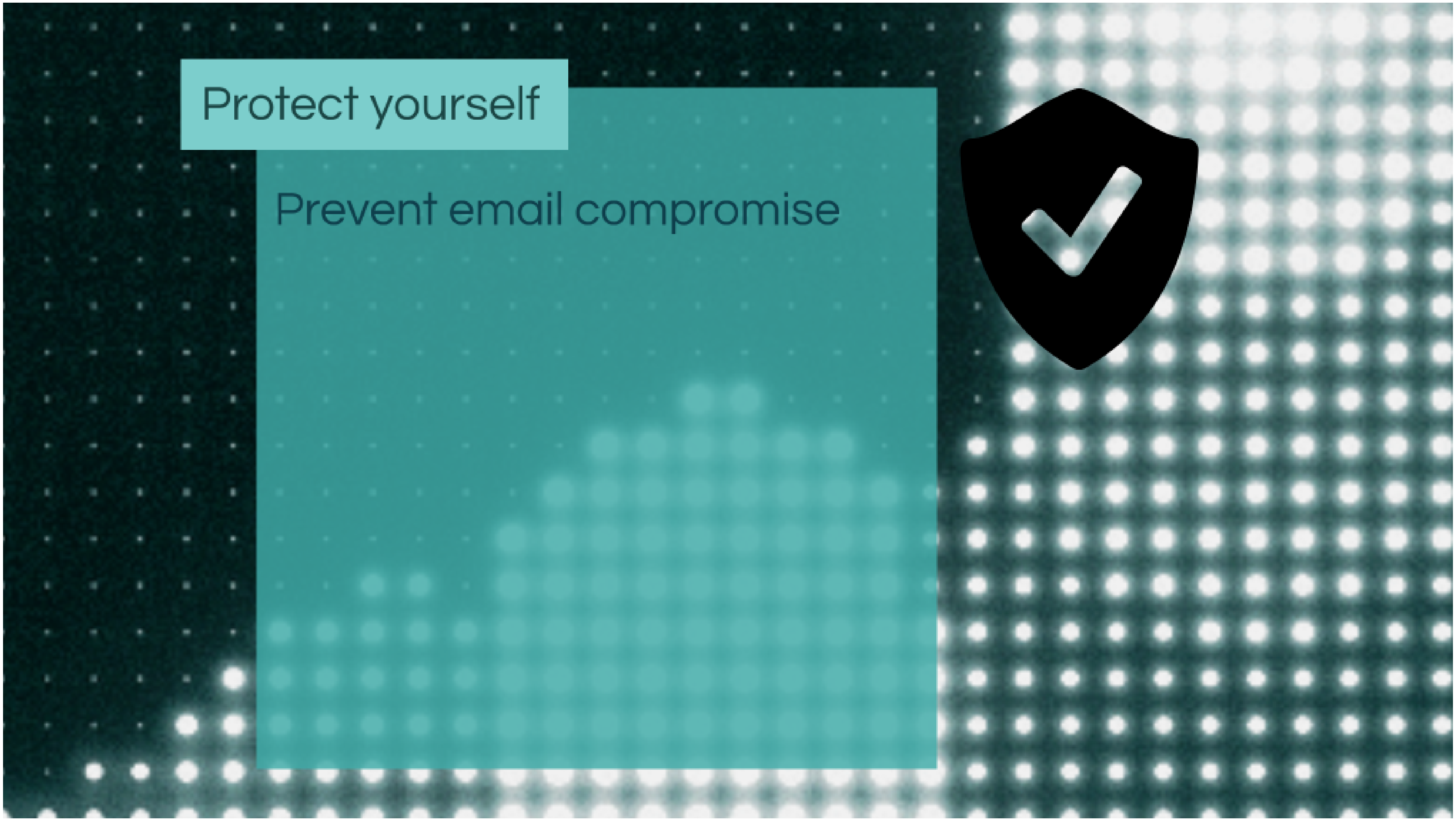
Money moved

Wire transfers leave victim's account within hours.

Funds wired within the U.S. are first received by a "mule," who forwards the funds to the bad actor.

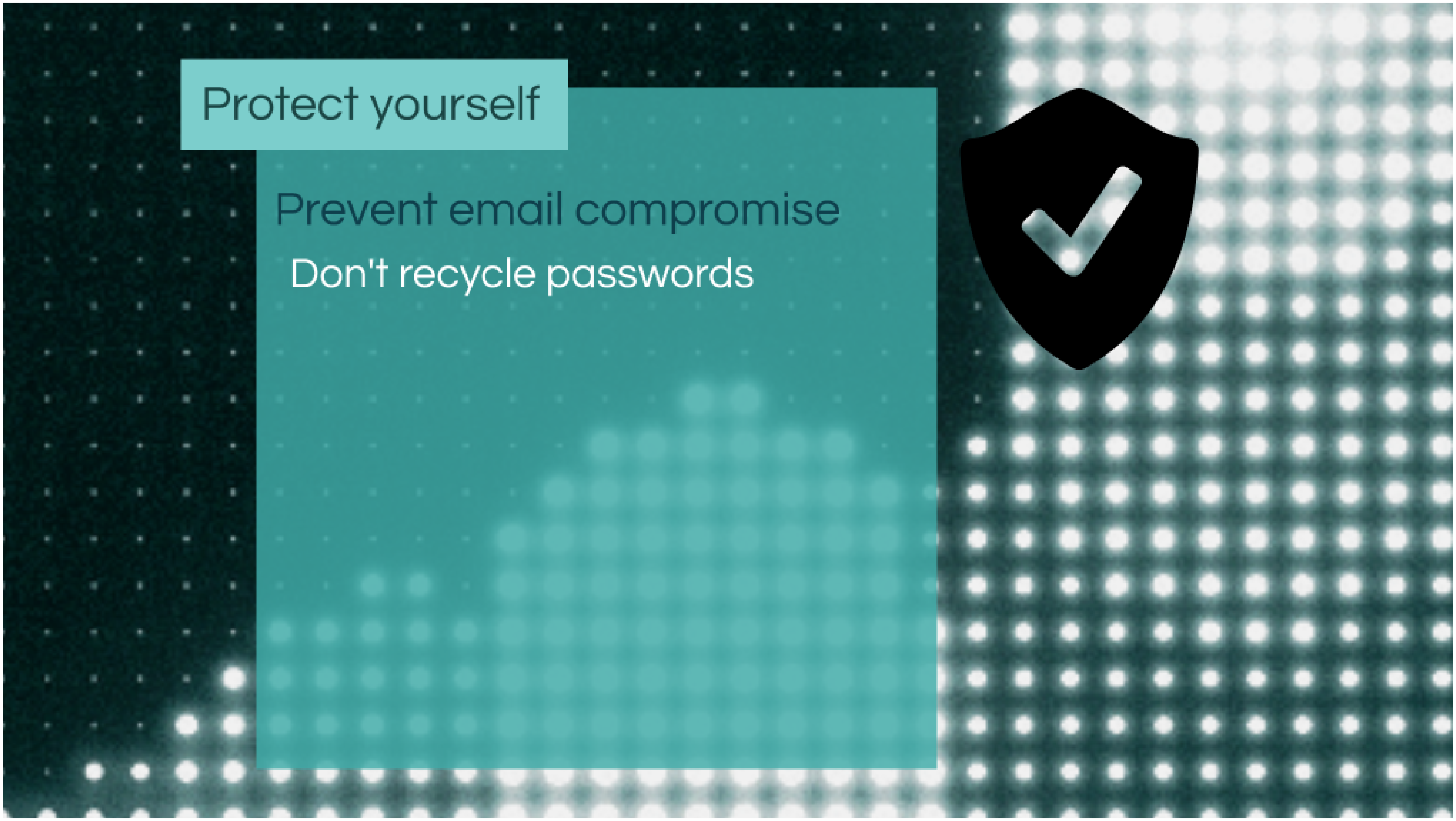
Sometimes bank will warn victim of suspicious activity.

Victim may only have hours to recover the money.



Protect yourself

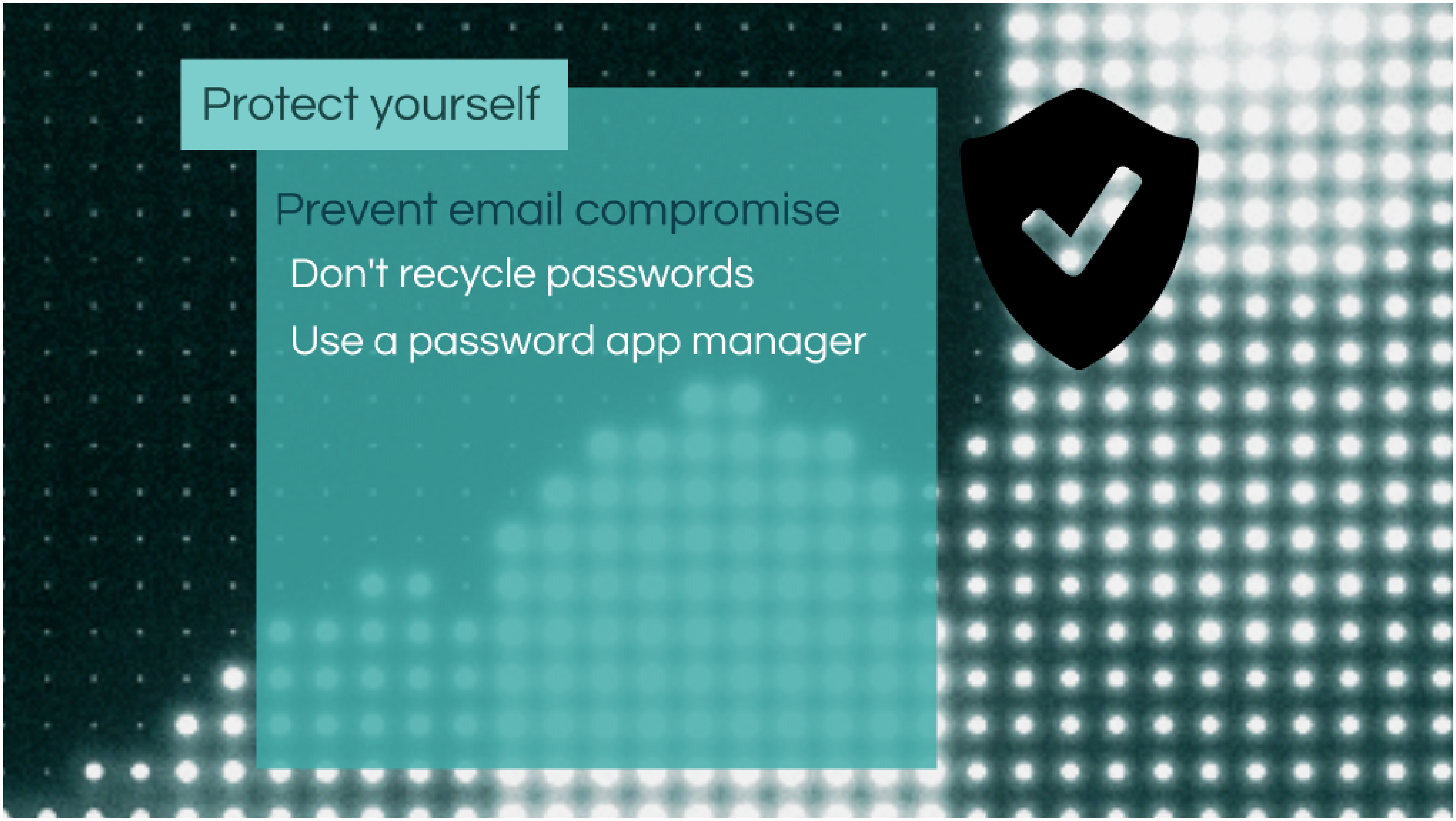
Prevent email compromise



Protect yourself

Prevent email compromise

Don't recycle passwords

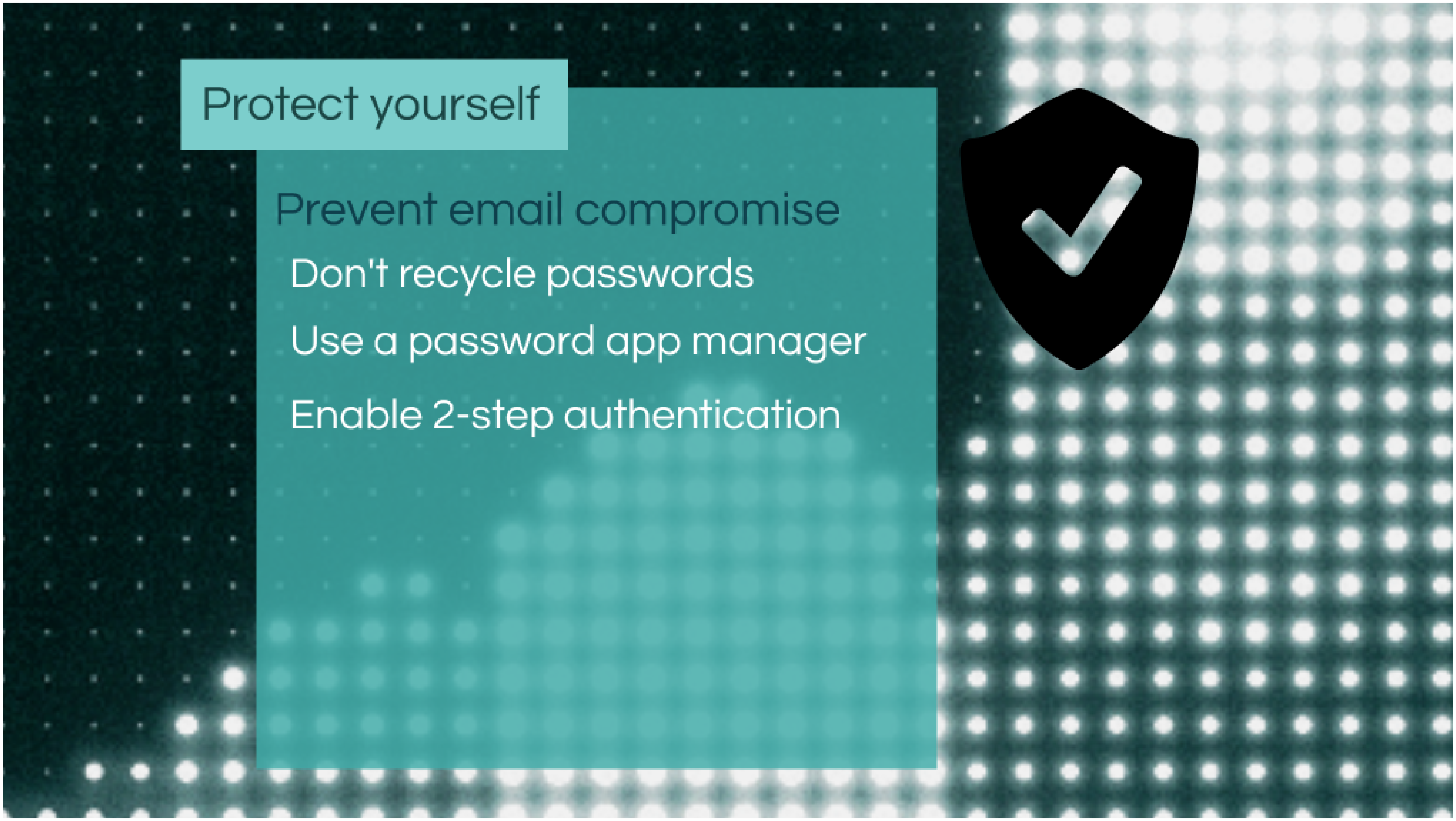


Protect yourself

Prevent email compromise

Don't recycle passwords

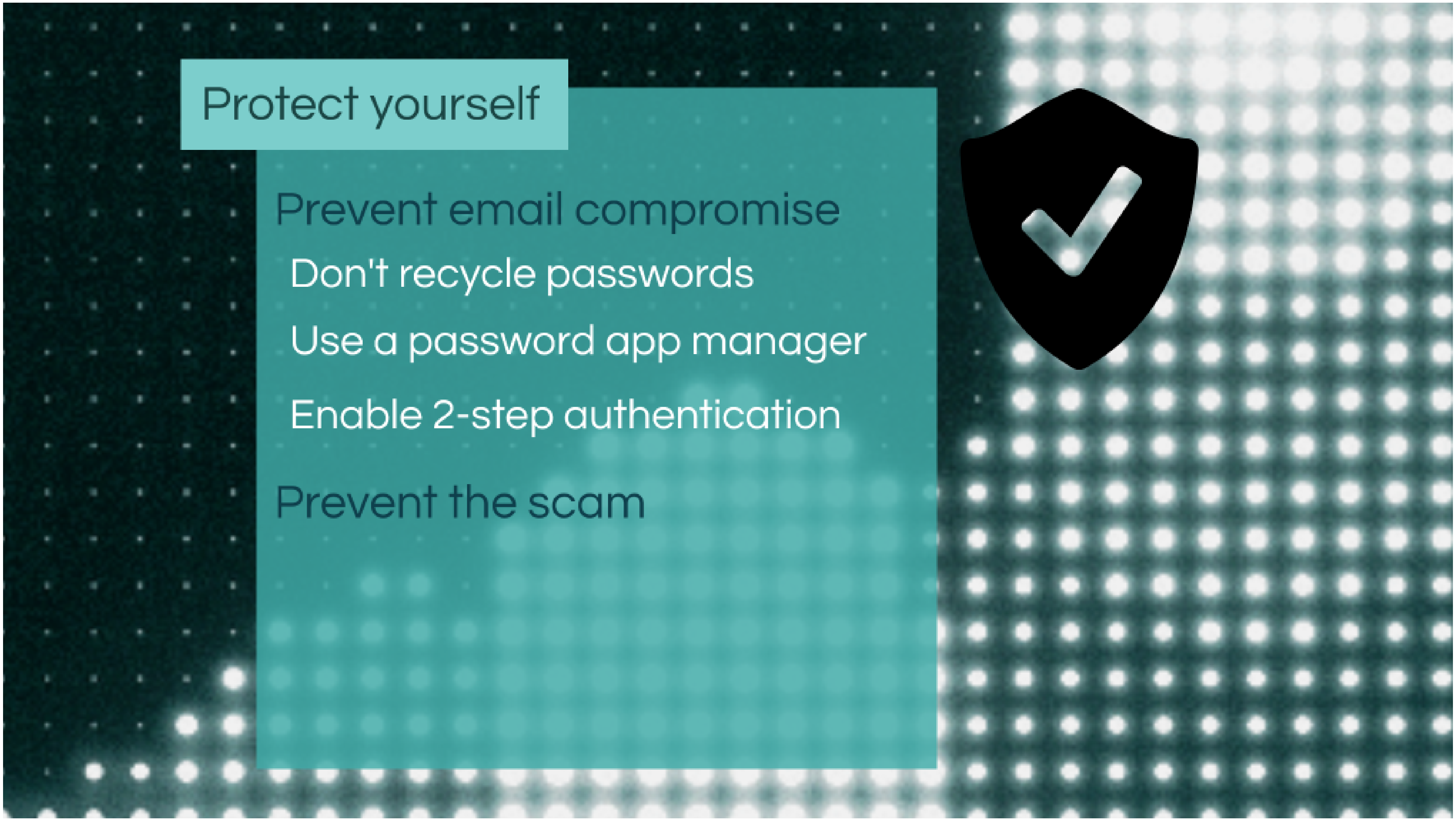
Use a password app manager



Protect yourself

Prevent email compromise

- Don't recycle passwords
- Use a password app manager
- Enable 2-step authentication



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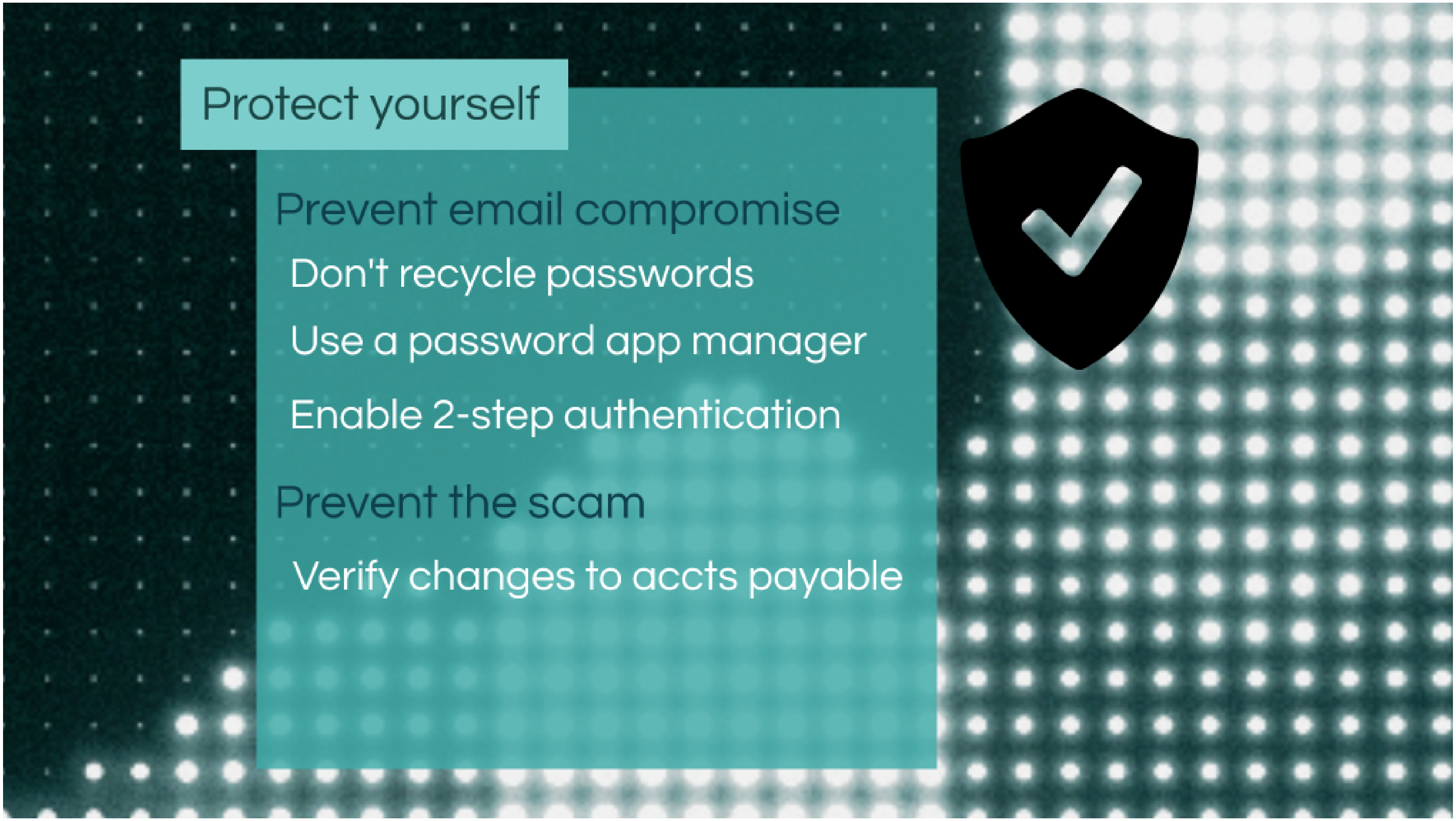
Prevent the scam



Protect yourself

Prevent email compromise

- Don't recycle passwords
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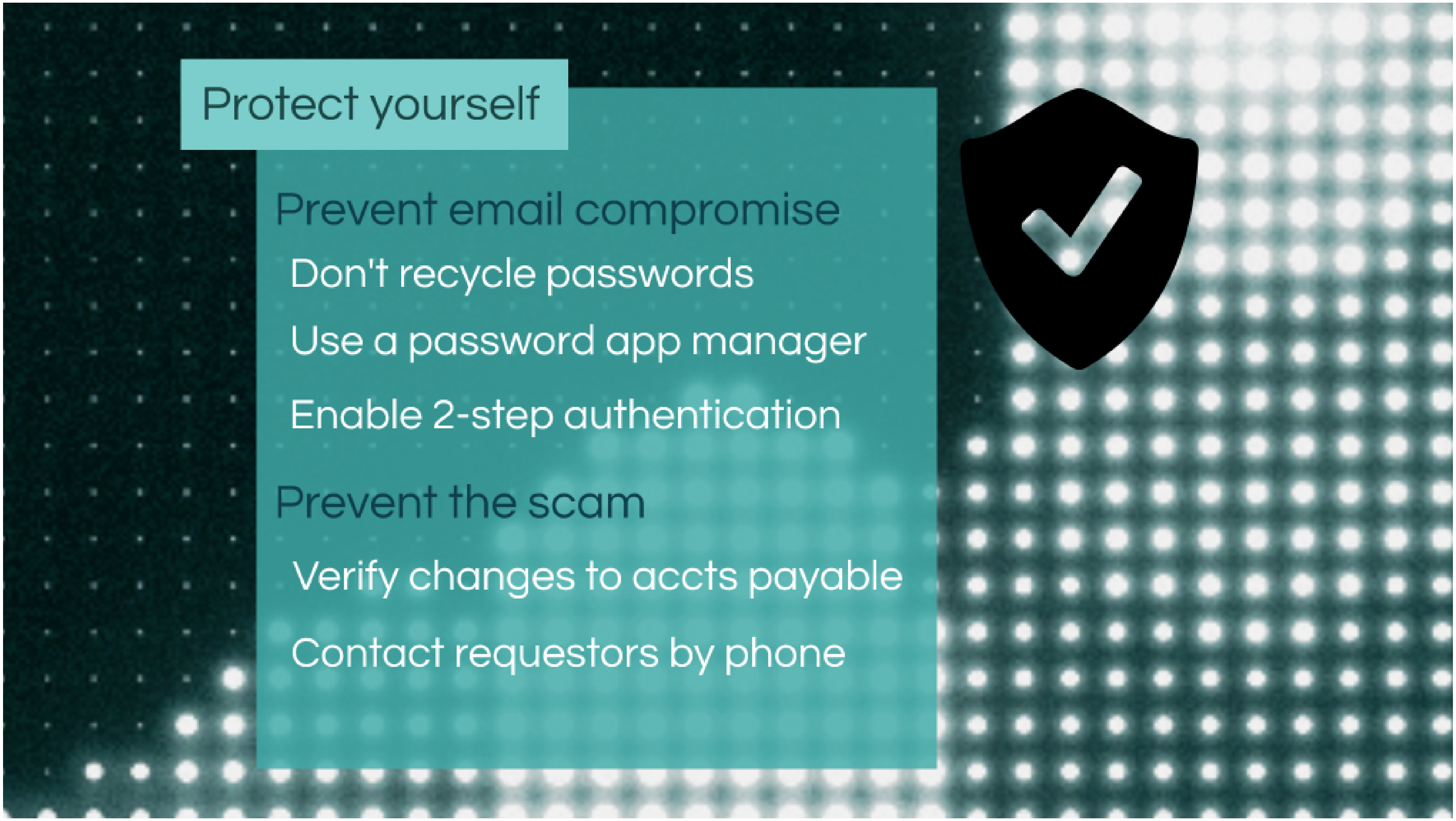
- Enable 2-step authentication

Prevent the scam

- Verify changes to accts payable



Protect yourself

Prevent email compromise

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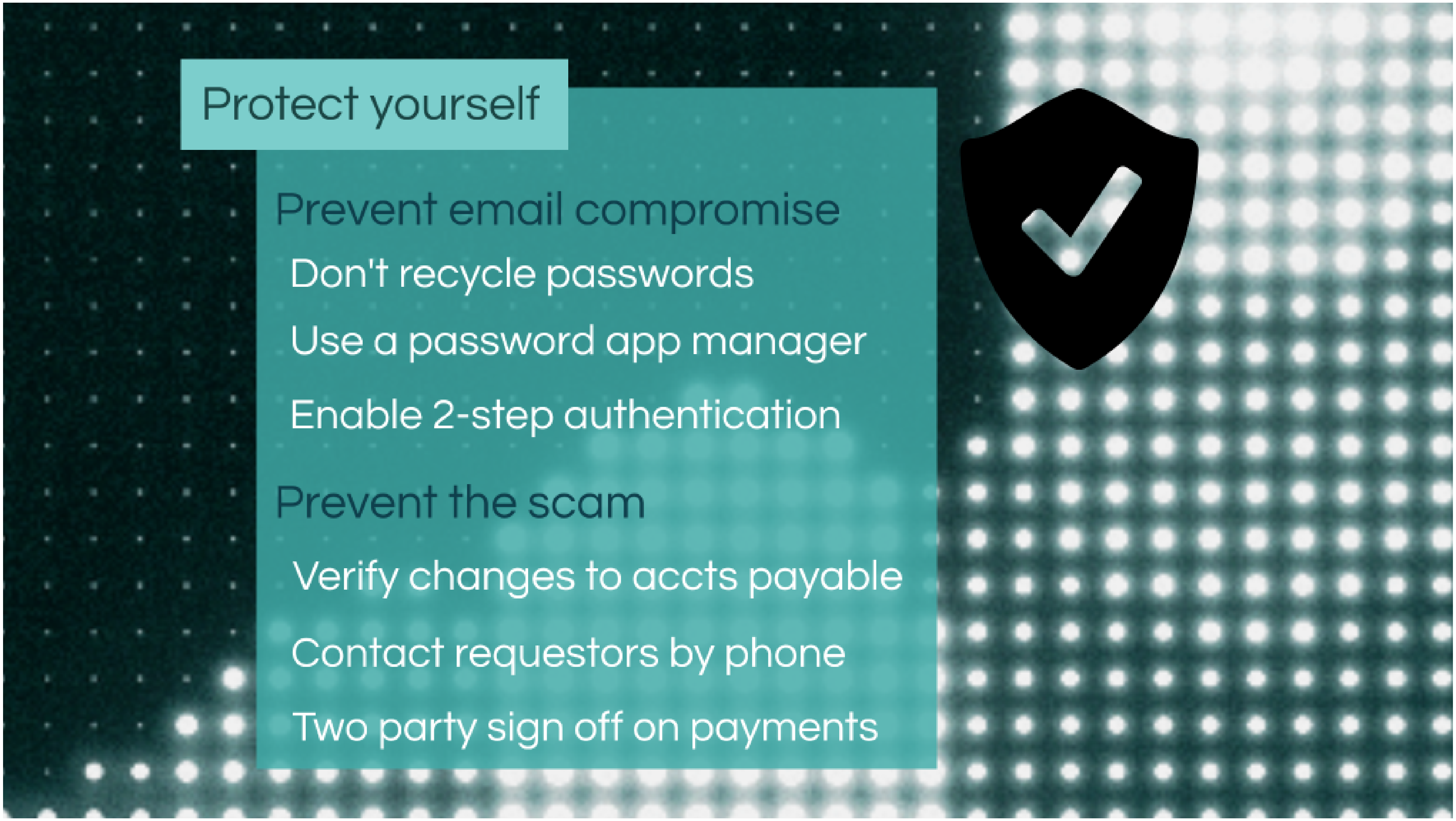
Prevent the scam

- Verify changes to accts payable
- Contact requestors by phone



Protect yourself

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Prevent the scam

- Verify changes to accts payable
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- Two party sign off on payments

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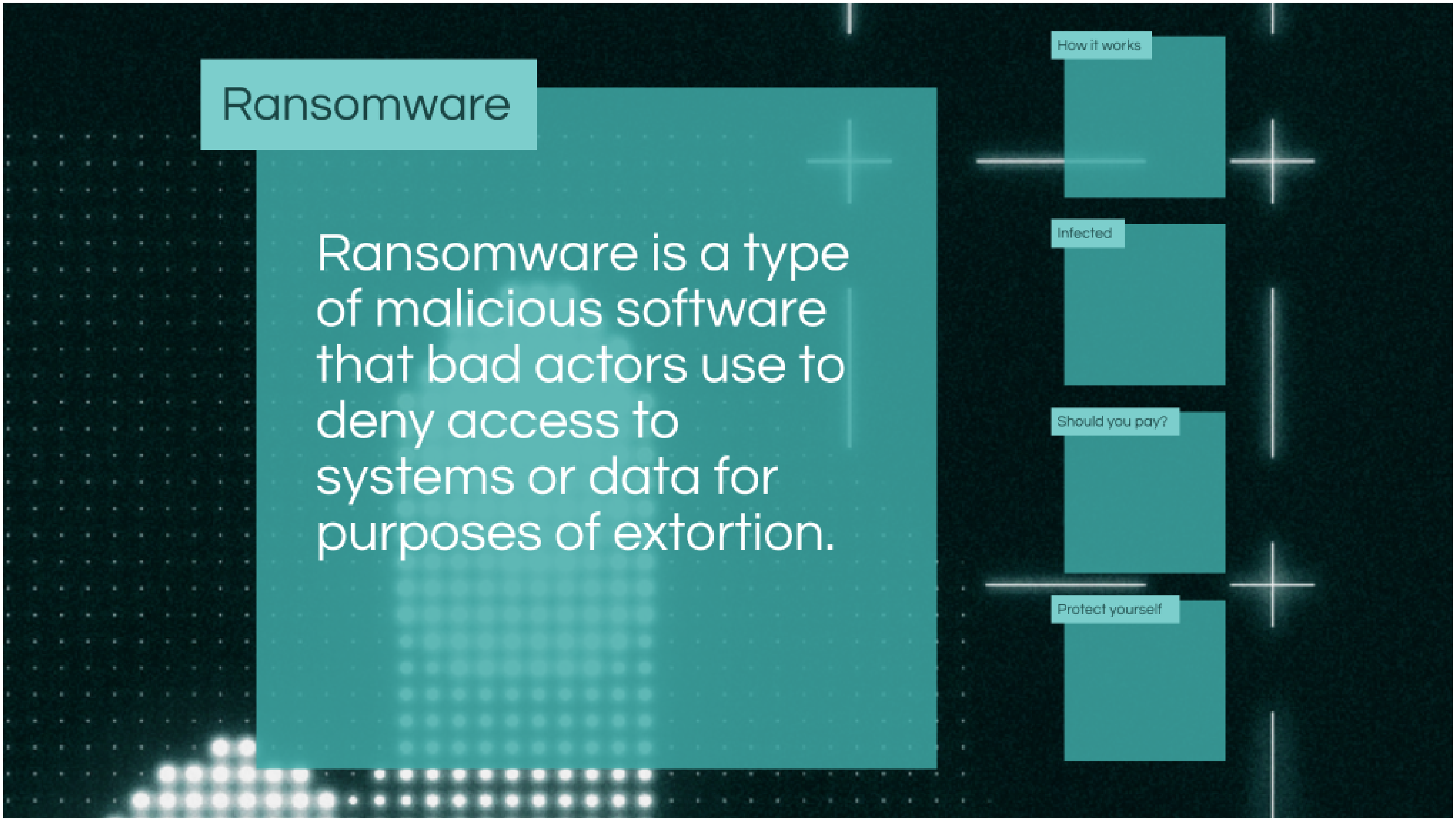


Ransomware

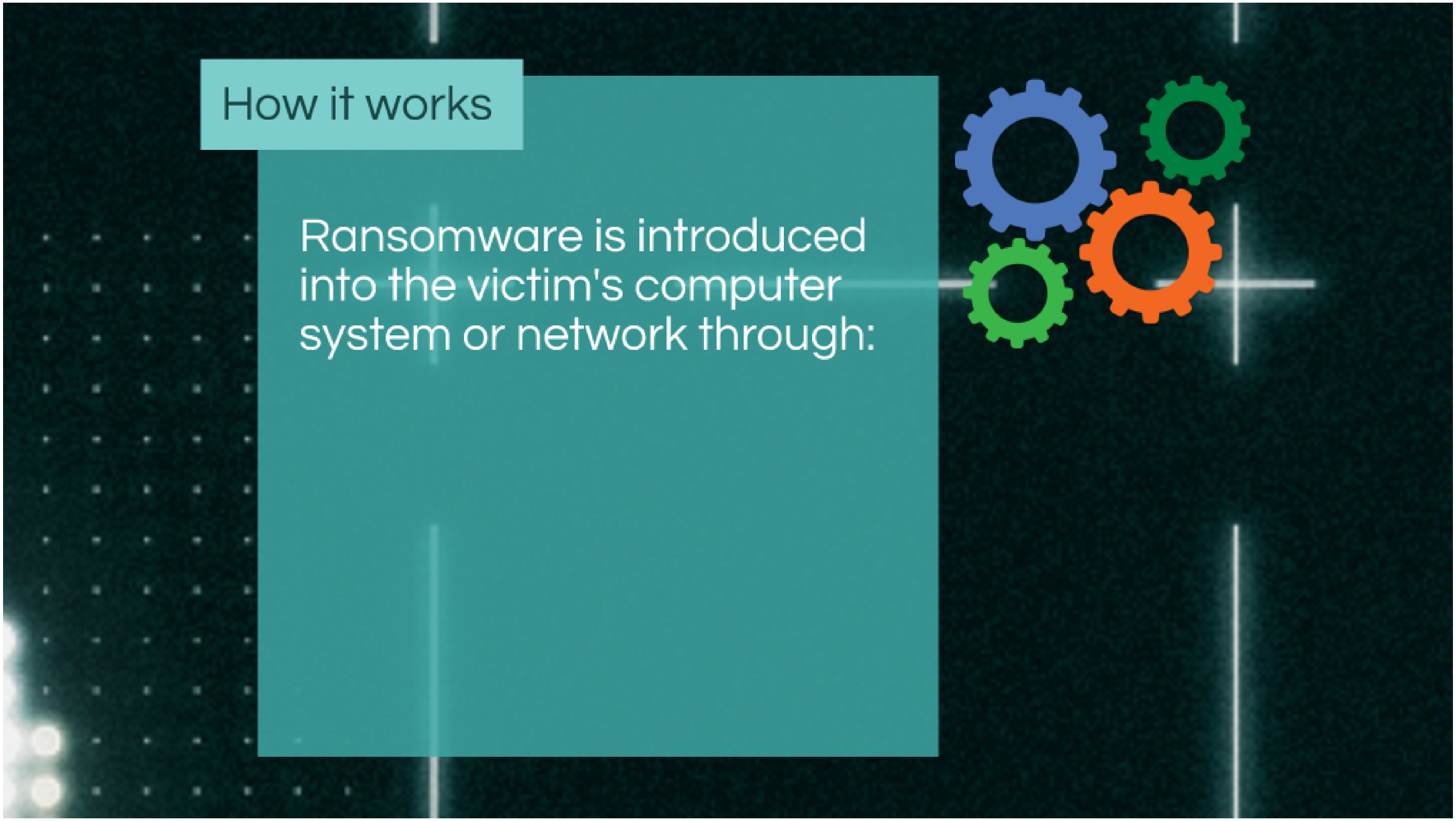
Ransomware is a type of malicious software that bad actors use to deny access to systems or data for purposes of extortion.

How it works

Infected

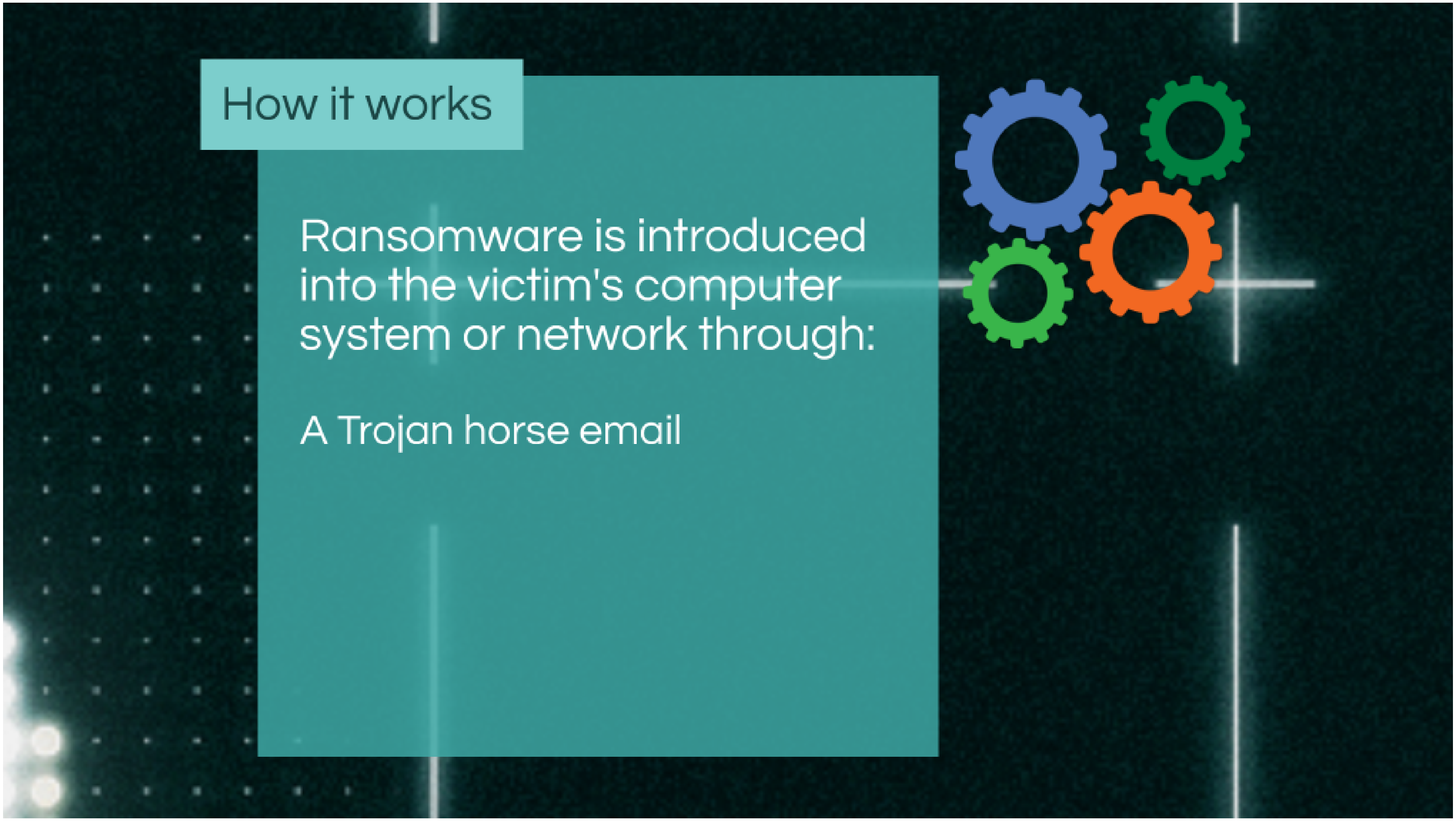
Should you pay?

Protect yourself



How it works

Ransomware is introduced into the victim's computer system or network through:



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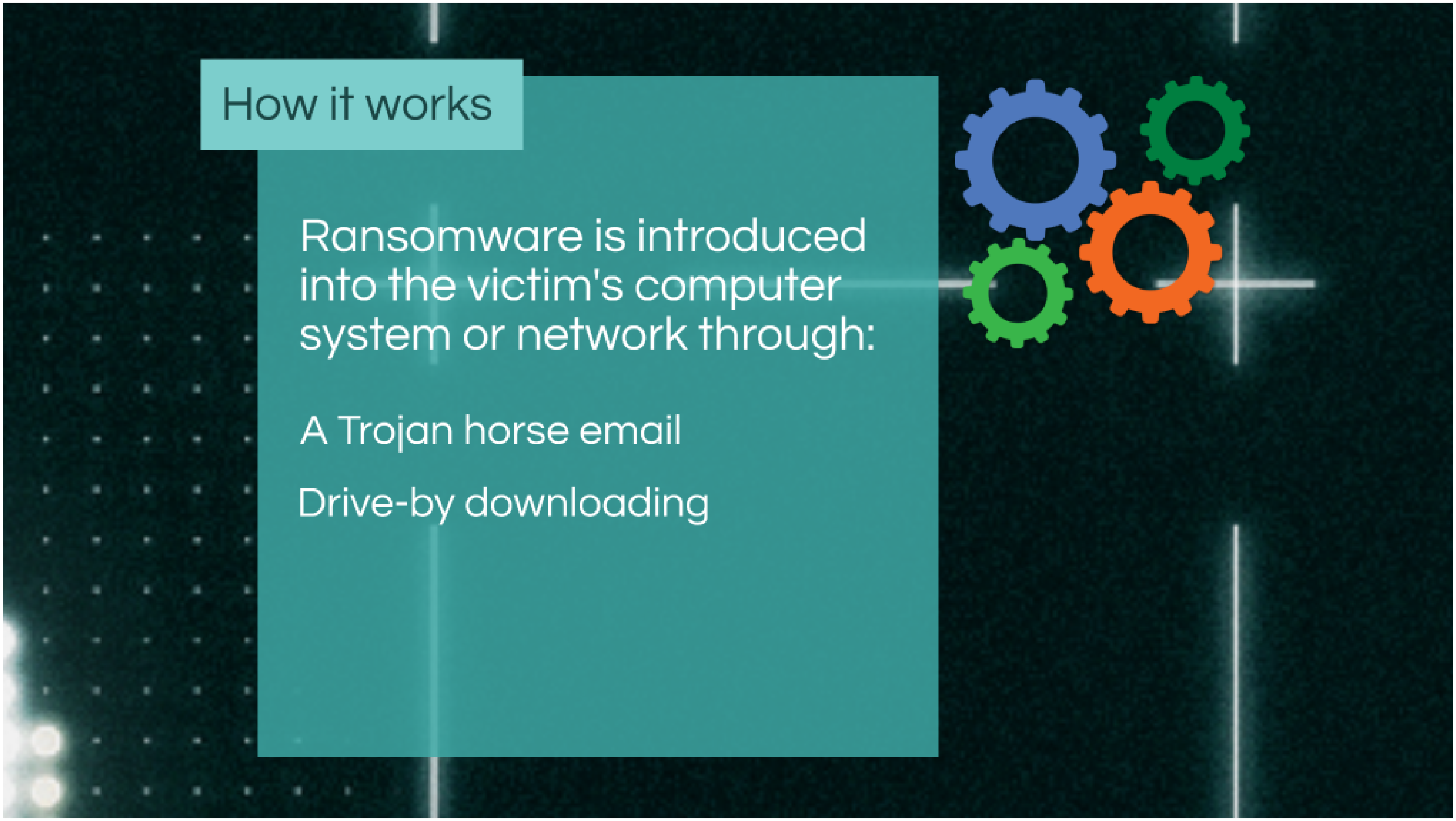
A Trojan horse email



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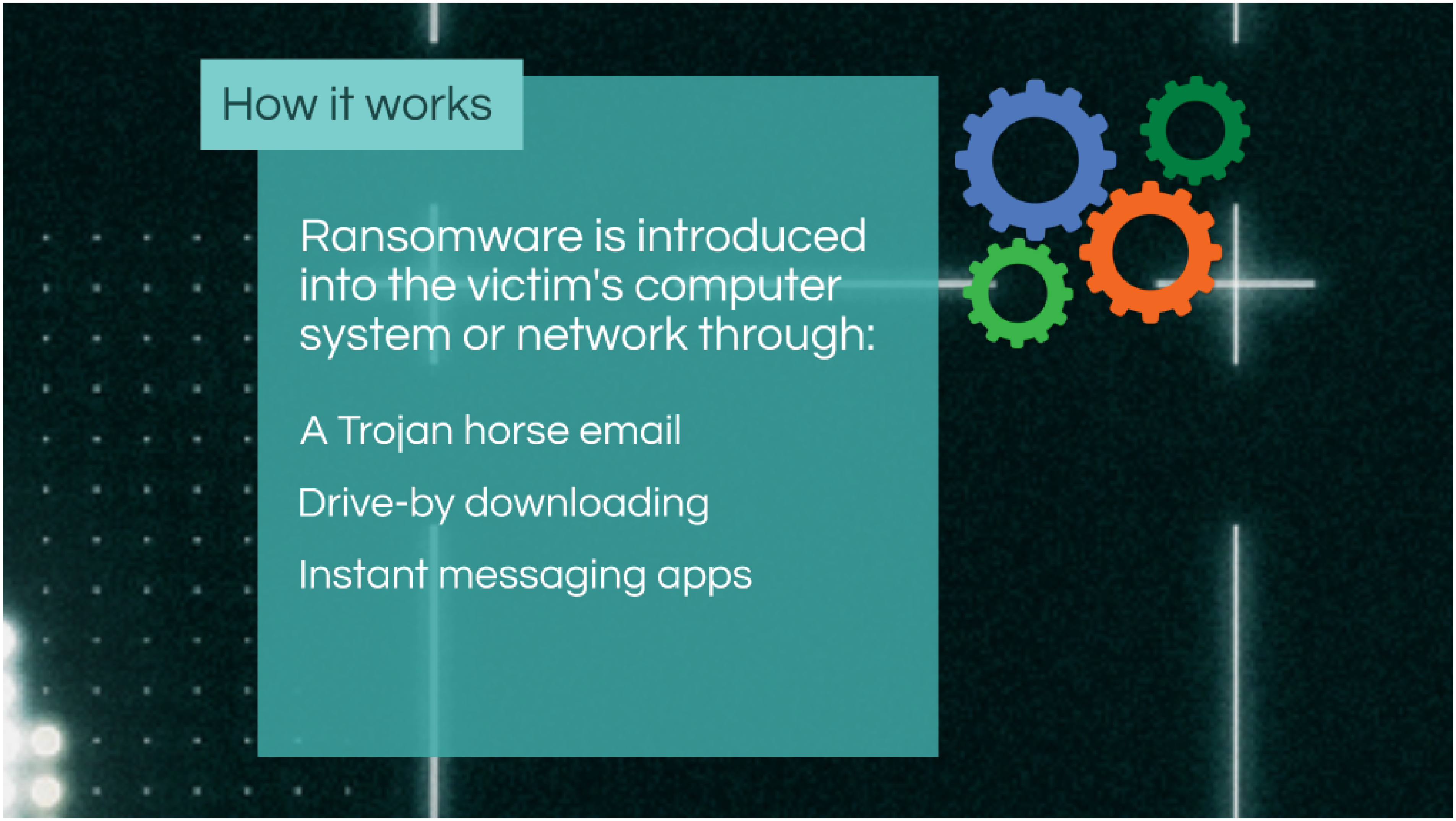

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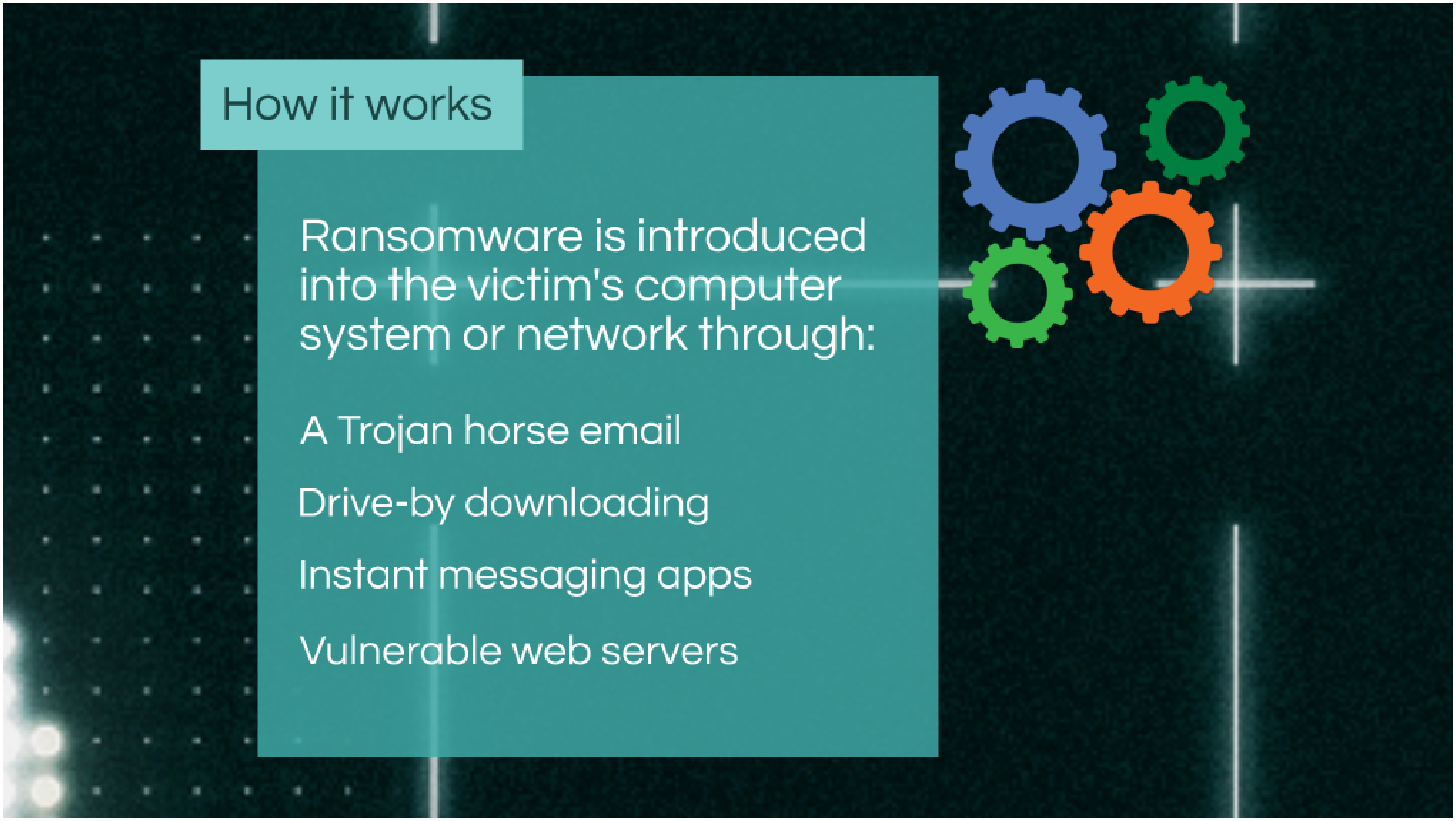

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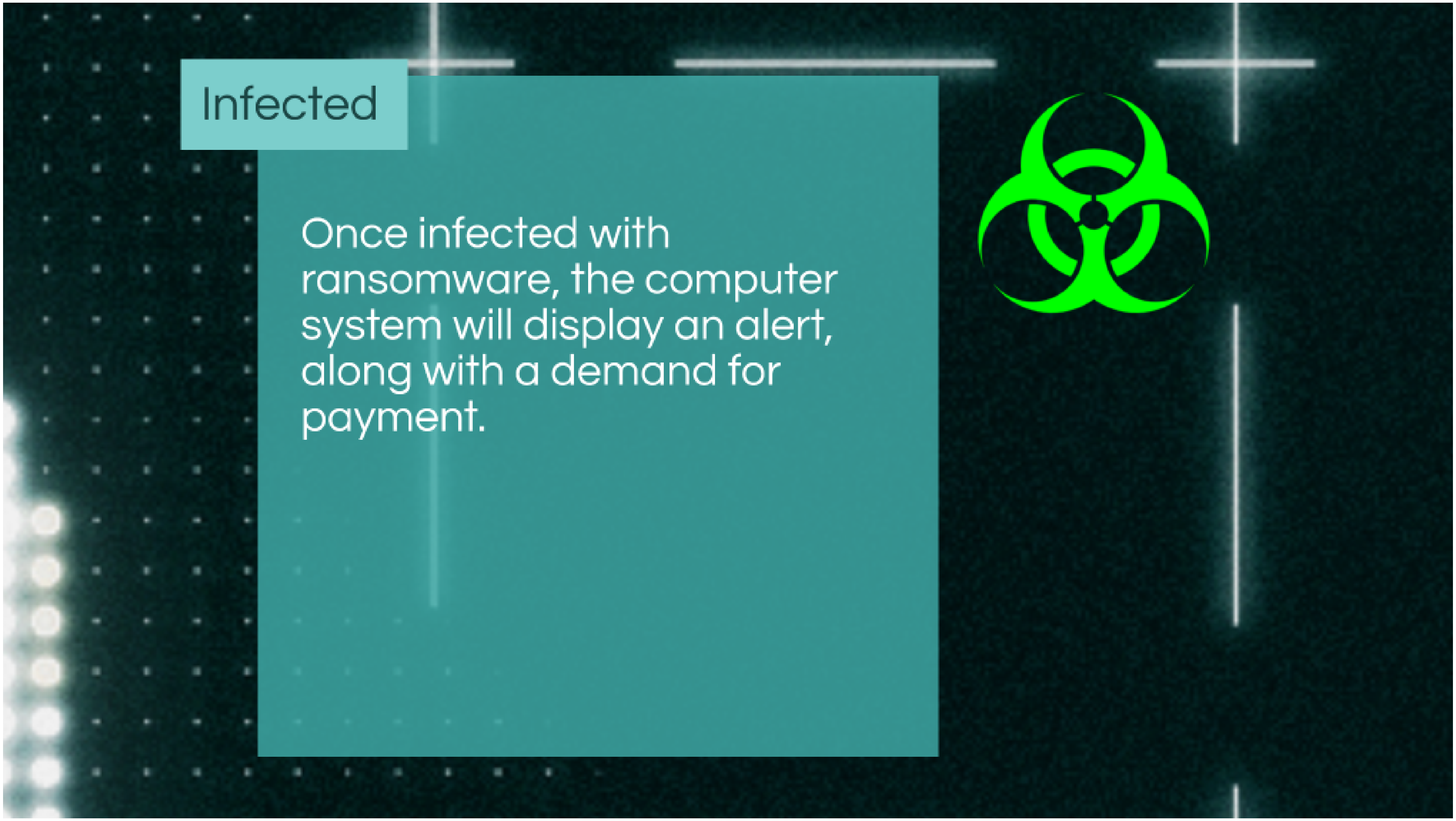
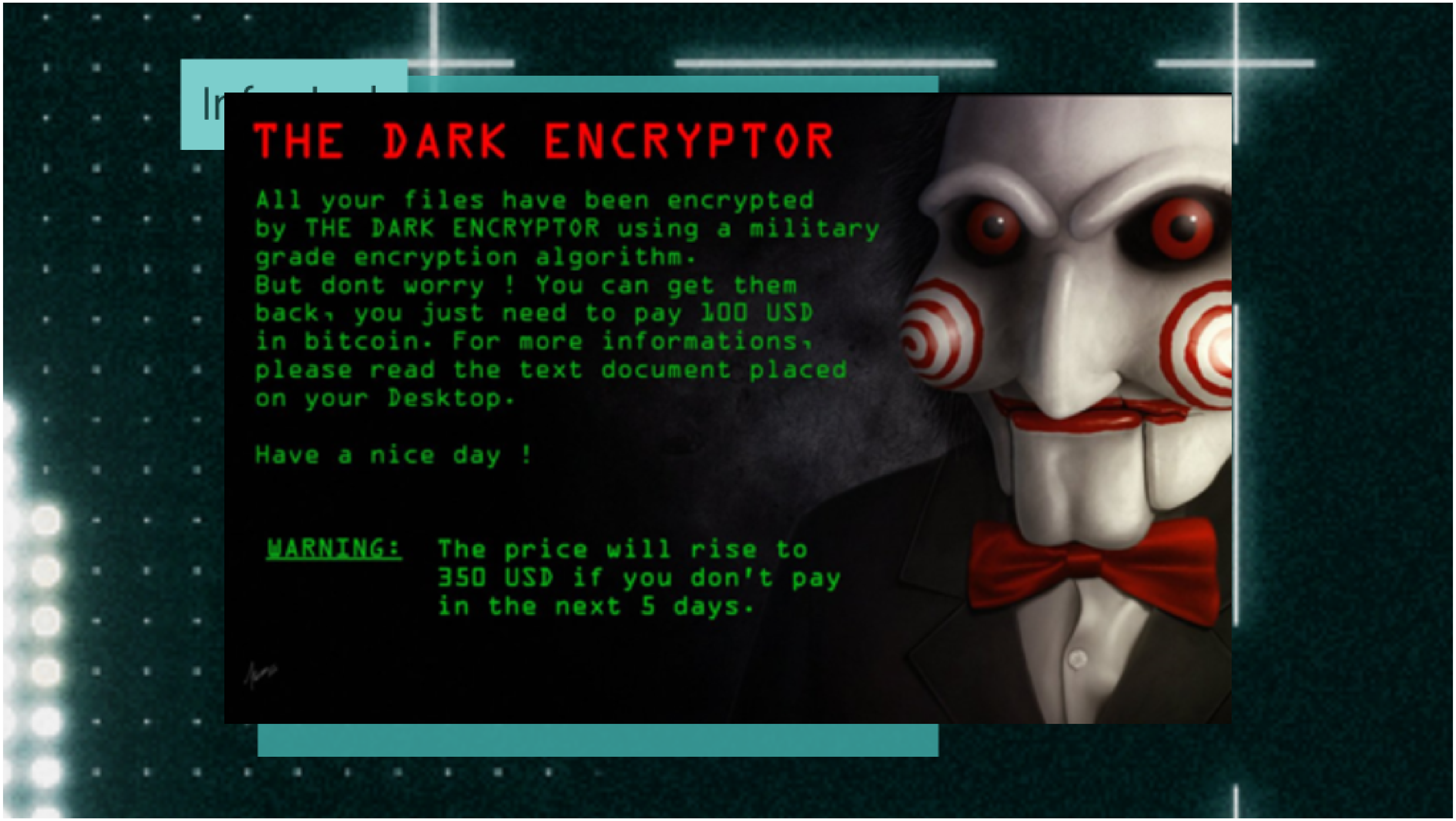
Vulnerable web servers



Infected

Once infected with ransomware, the computer system will display an alert, along with a demand for payment.

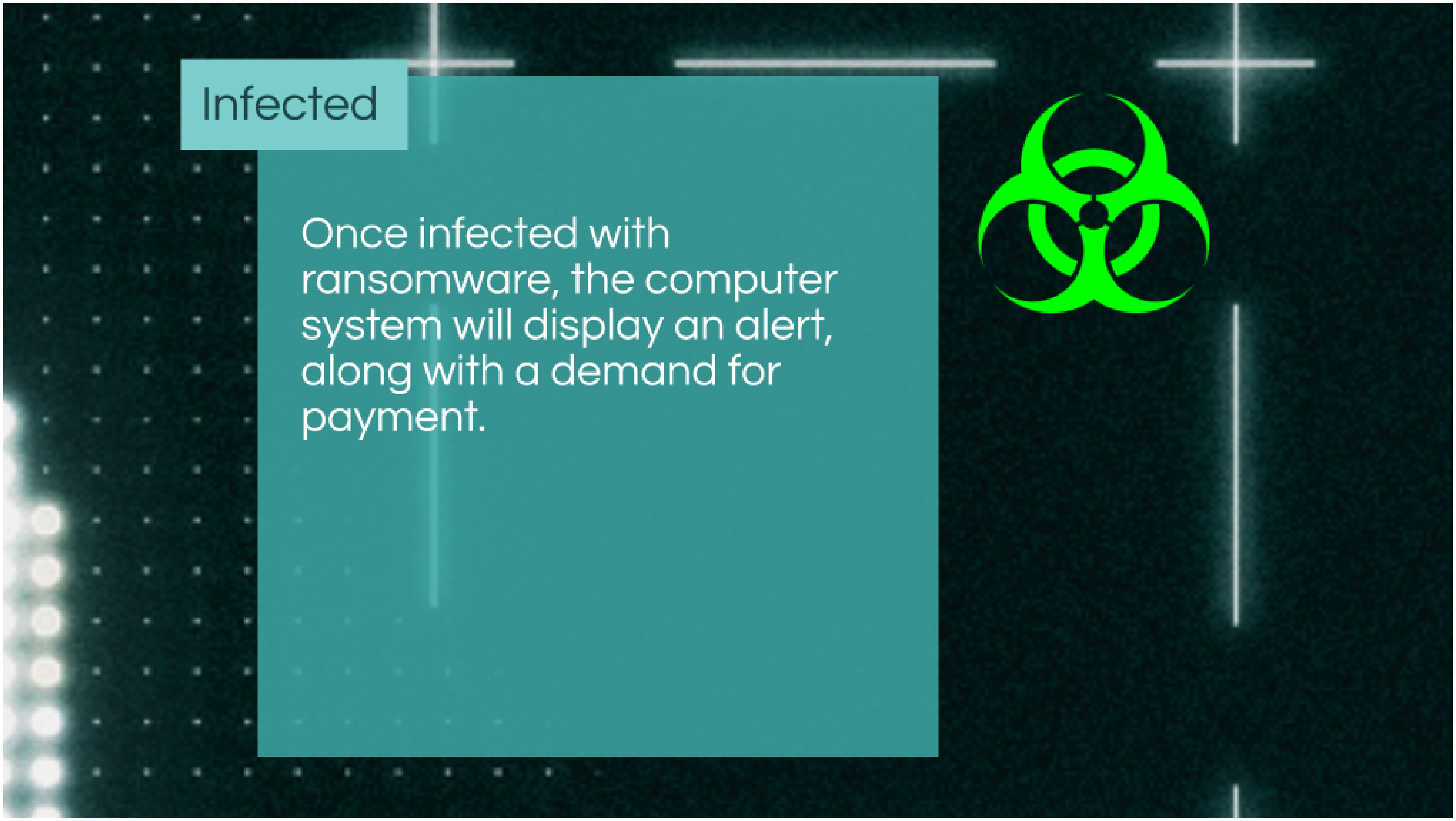


THE DARK ENCRYPTOR

All your files have been encrypted by THE DARK ENCRYPTOR using a military grade encryption algorithm.
But dont worry ! You can get them back, you just need to pay 100 USD in bitcoin. For more informations, please read the text document placed on your Desktop.

Have a nice day !

WARNING: The price will rise to 350 USD if you don't pay in the next 5 days.



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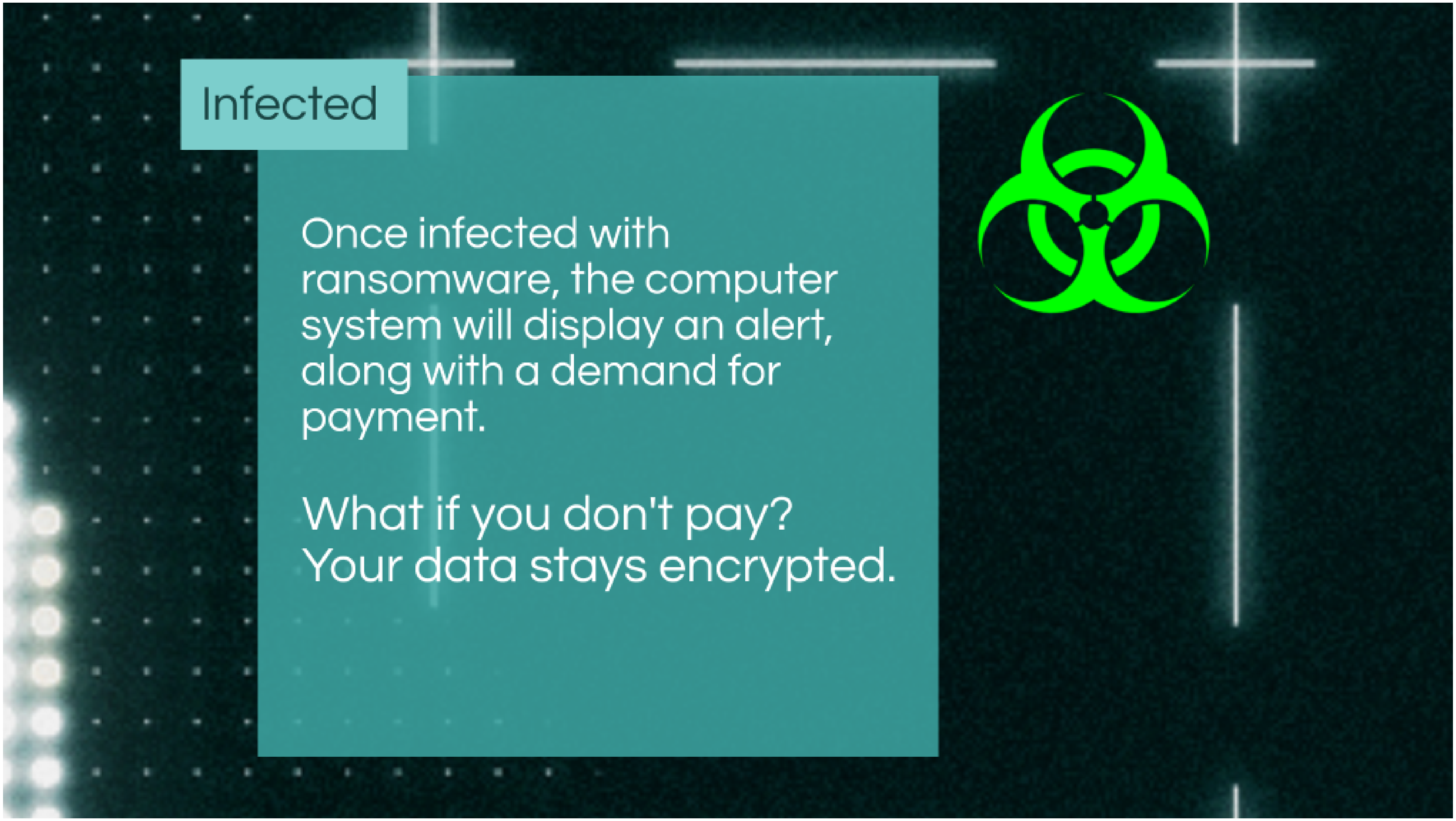

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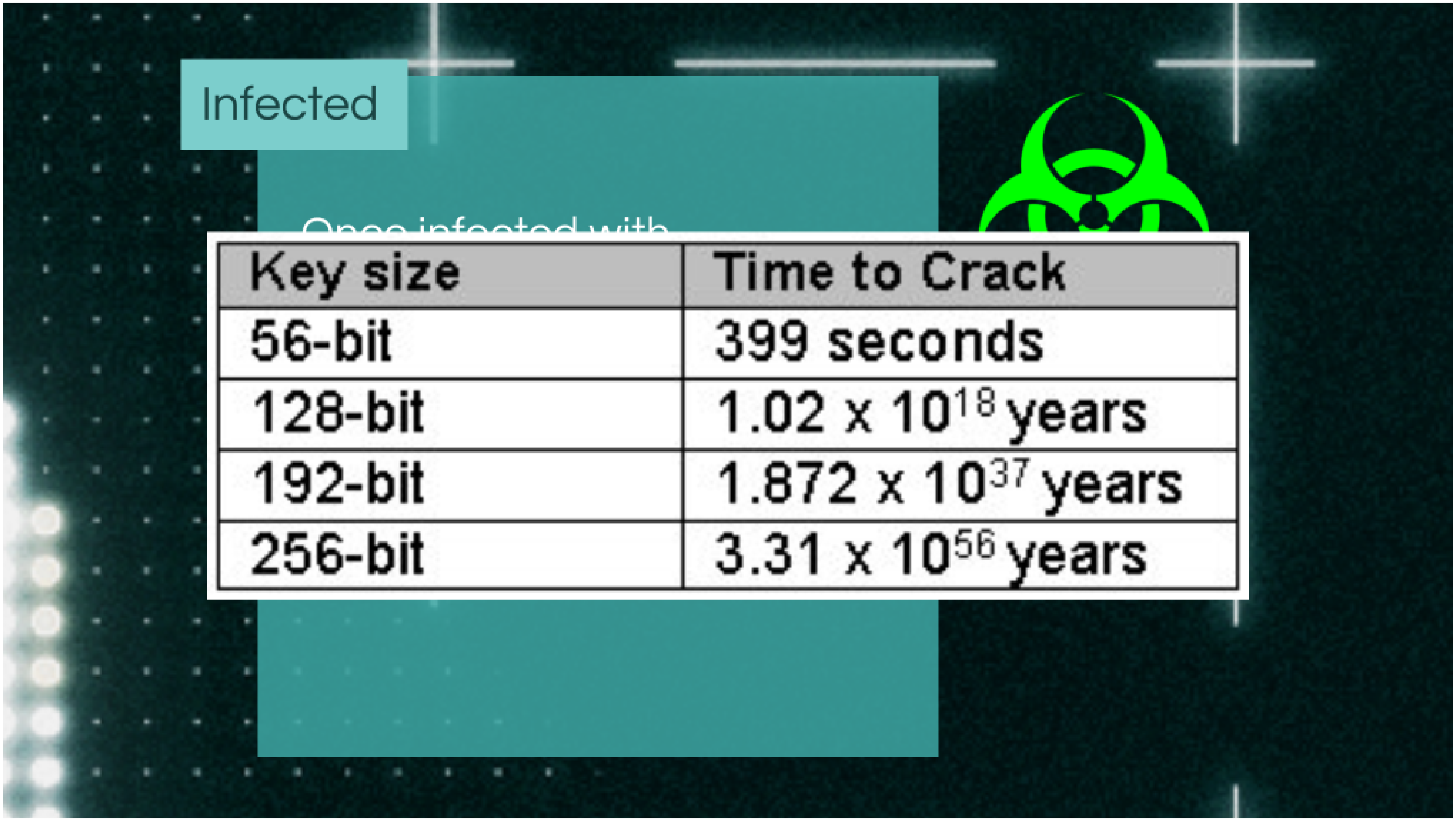
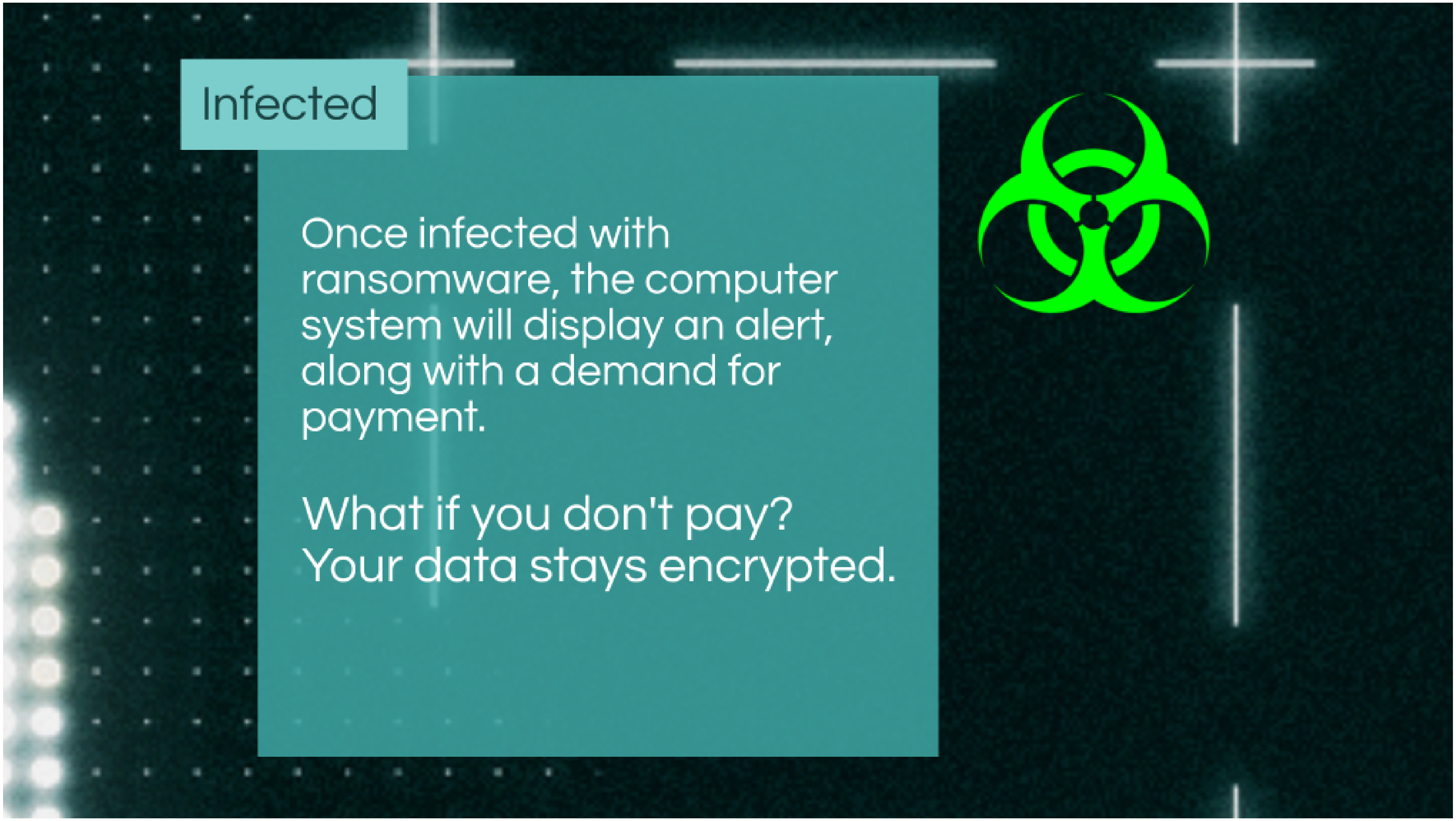
What if you don't pay? Your data stays encrypted.



Infected

Once infected with

Key size	Time to Crack
56-bit	399 seconds
128-bit	1.02 x 10^{18} years
192-bit	1.872 x 10^{37} years
256-bit	3.31 x 10^{56} years



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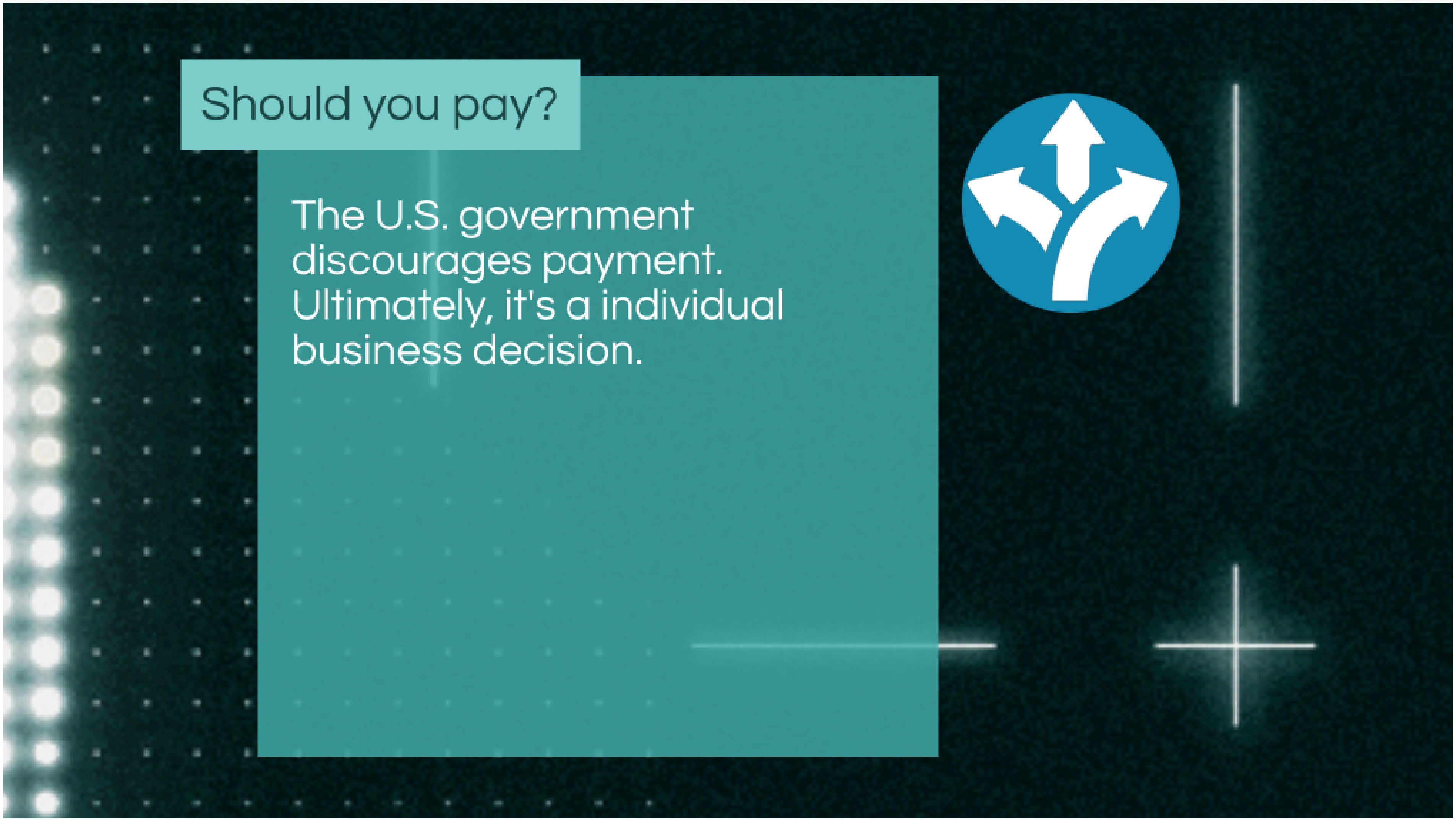
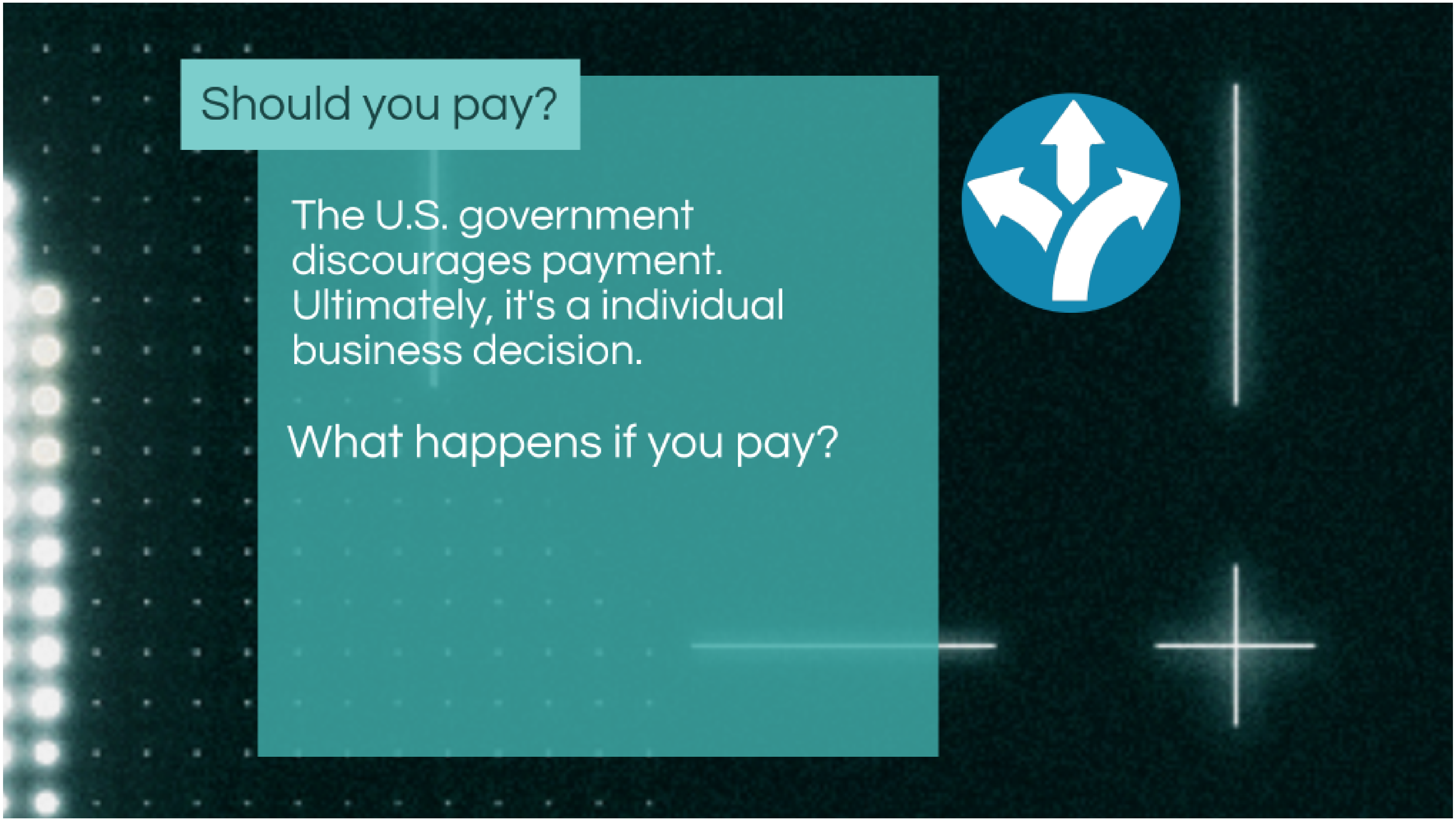


Should you pay?

The U.S. government discourages payment. Ultimately, it's a individual business decision.



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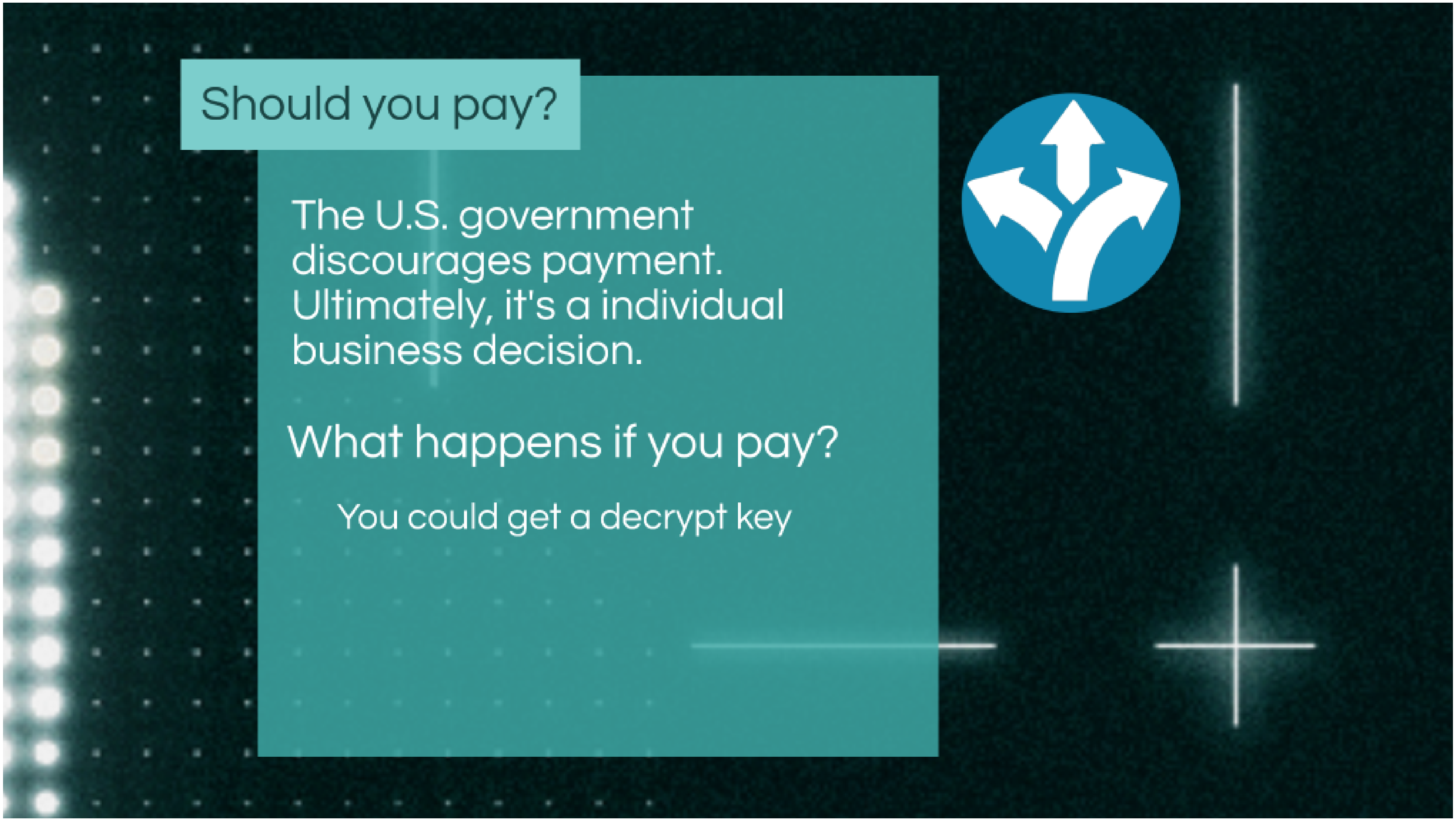

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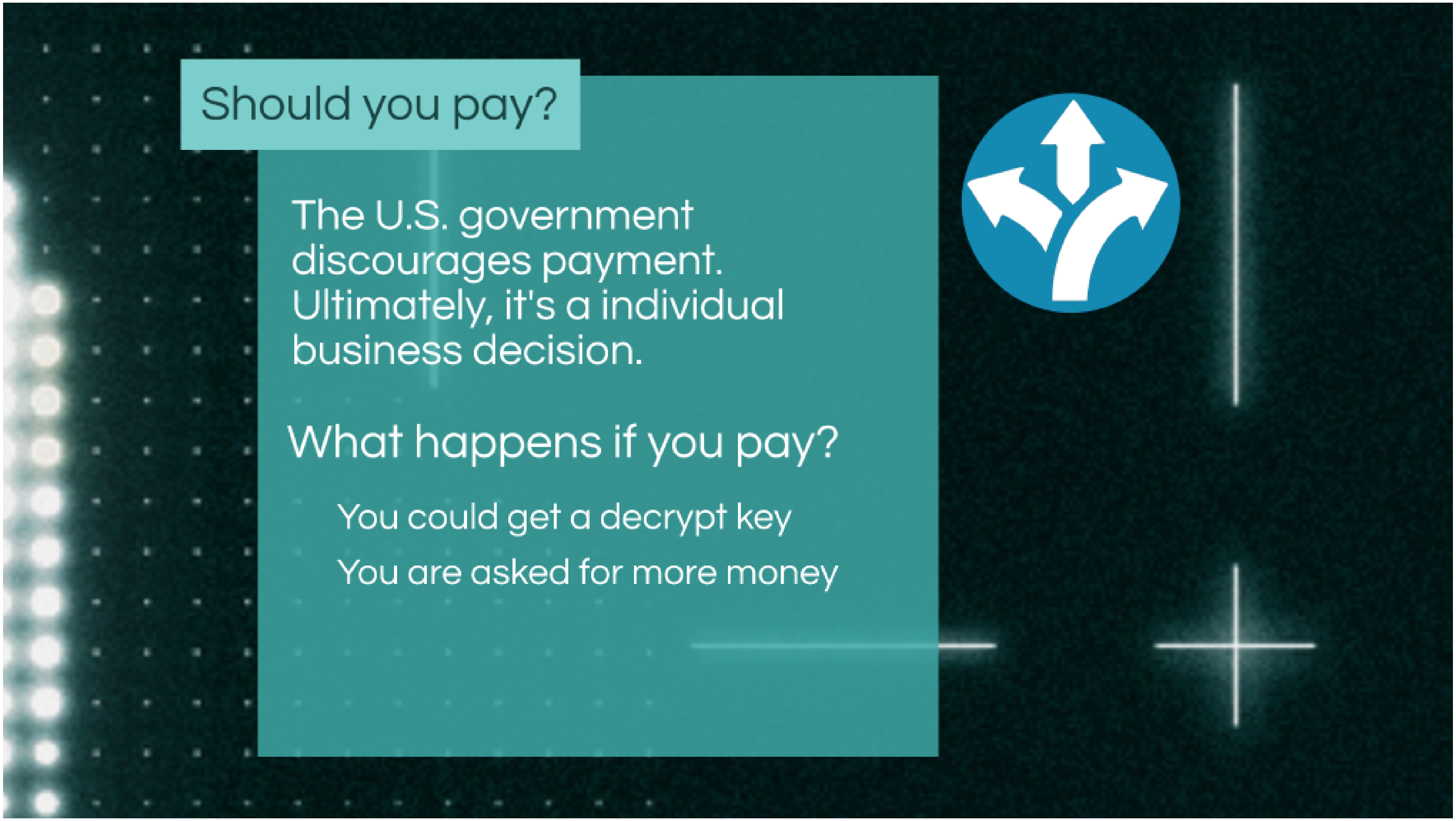
You could get a decrypt key



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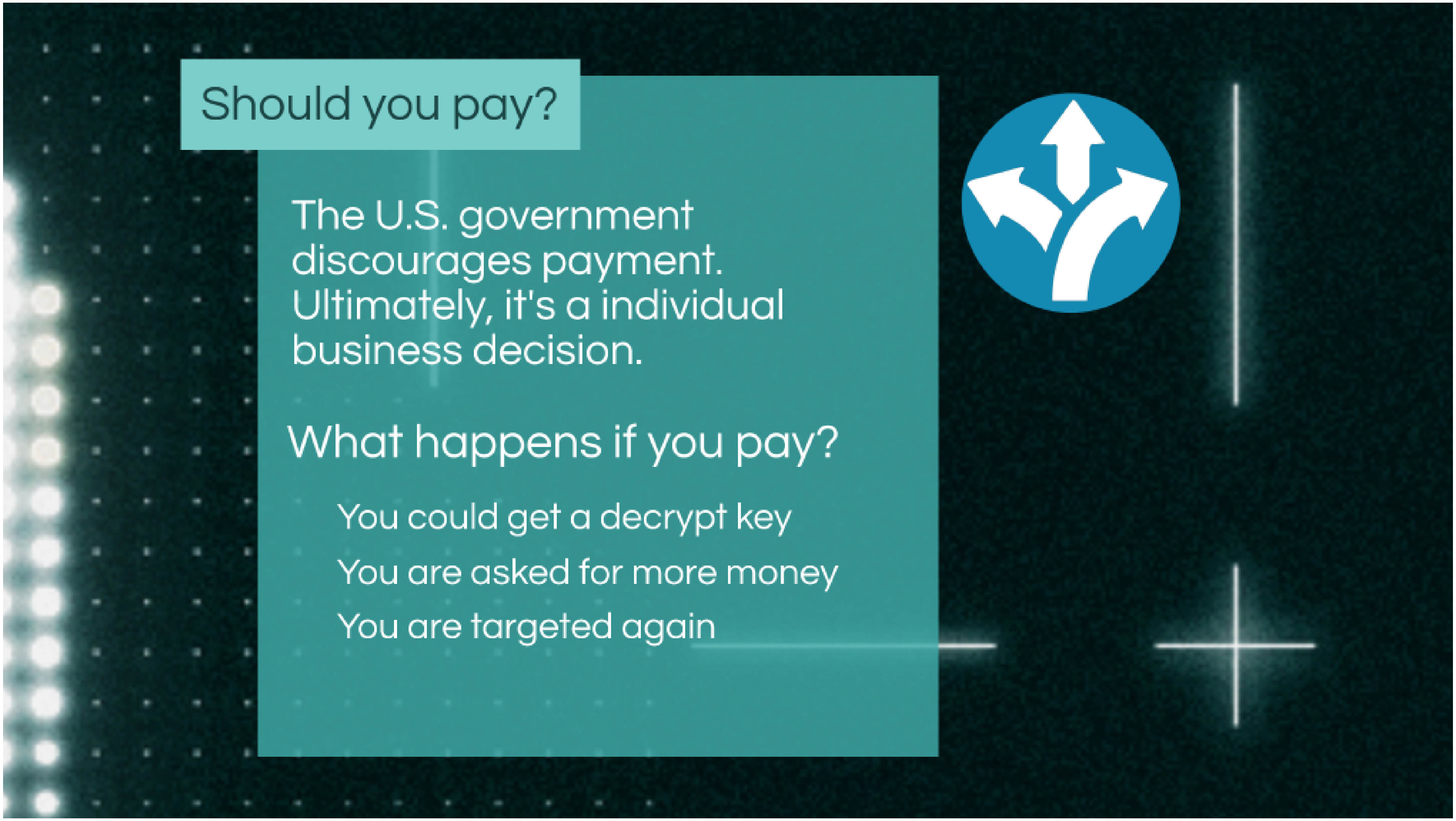
- You could get a decrypt key
- You are asked for more money



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- You could get a decrypt key
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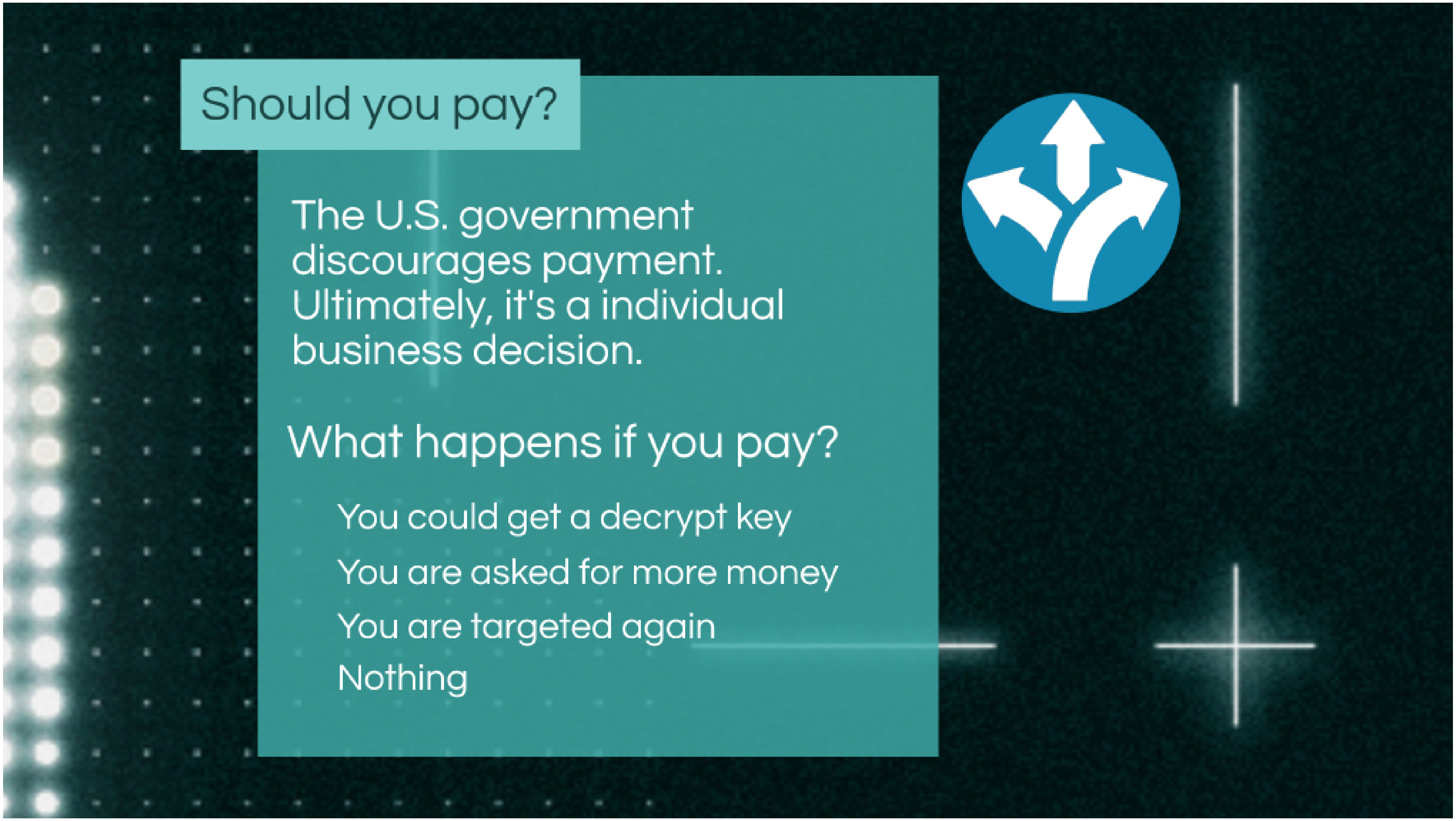


Should you pay?

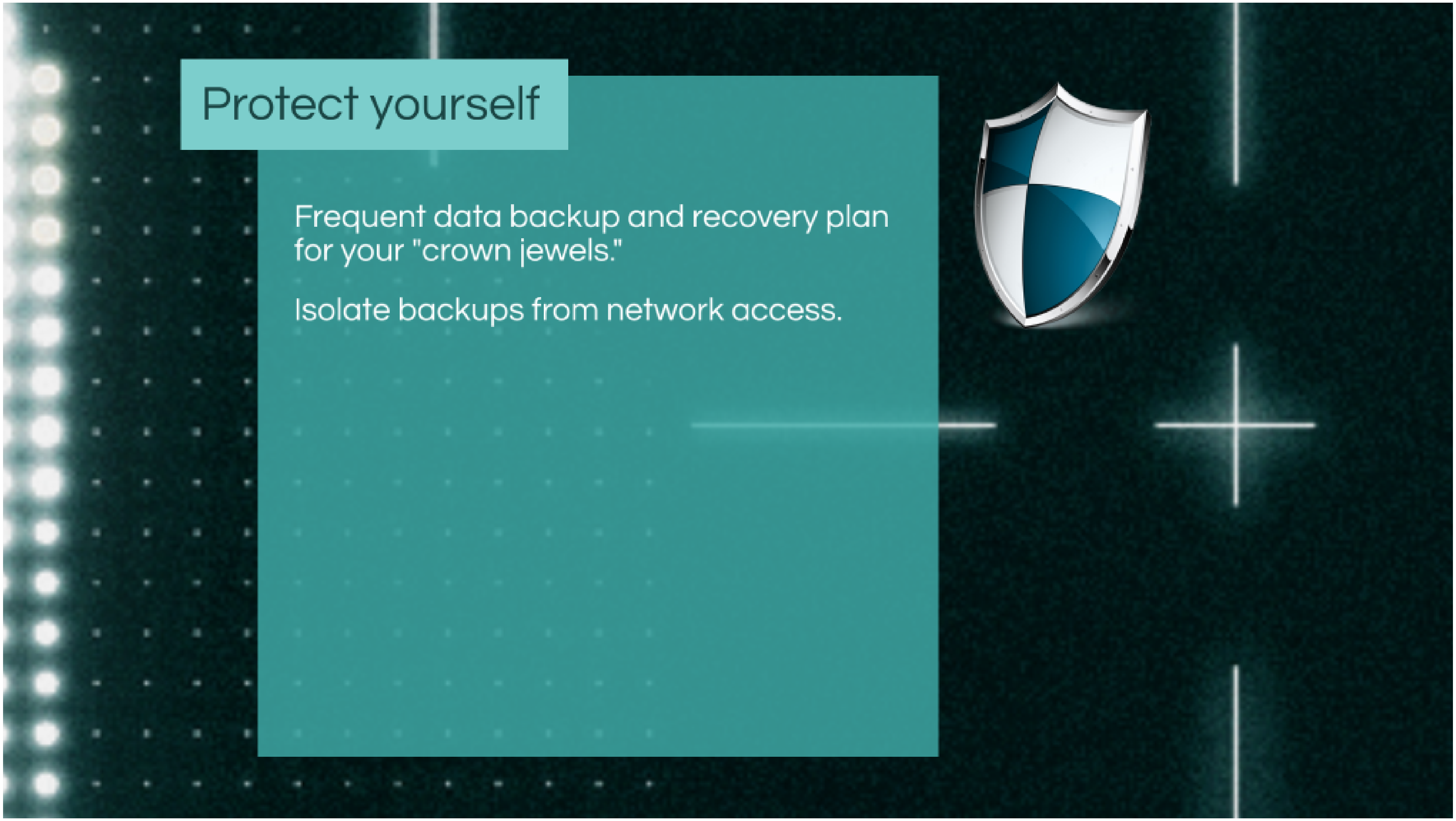
The U.S. government discourages payment. Ultimately, it's a individual business decision.

What happens if you pay?

- You could get a decrypt key
- You are asked for more money
- You are targeted again
- Nothing

Protect yourself

Frequent data backup and recovery plan for your "crown jewels."



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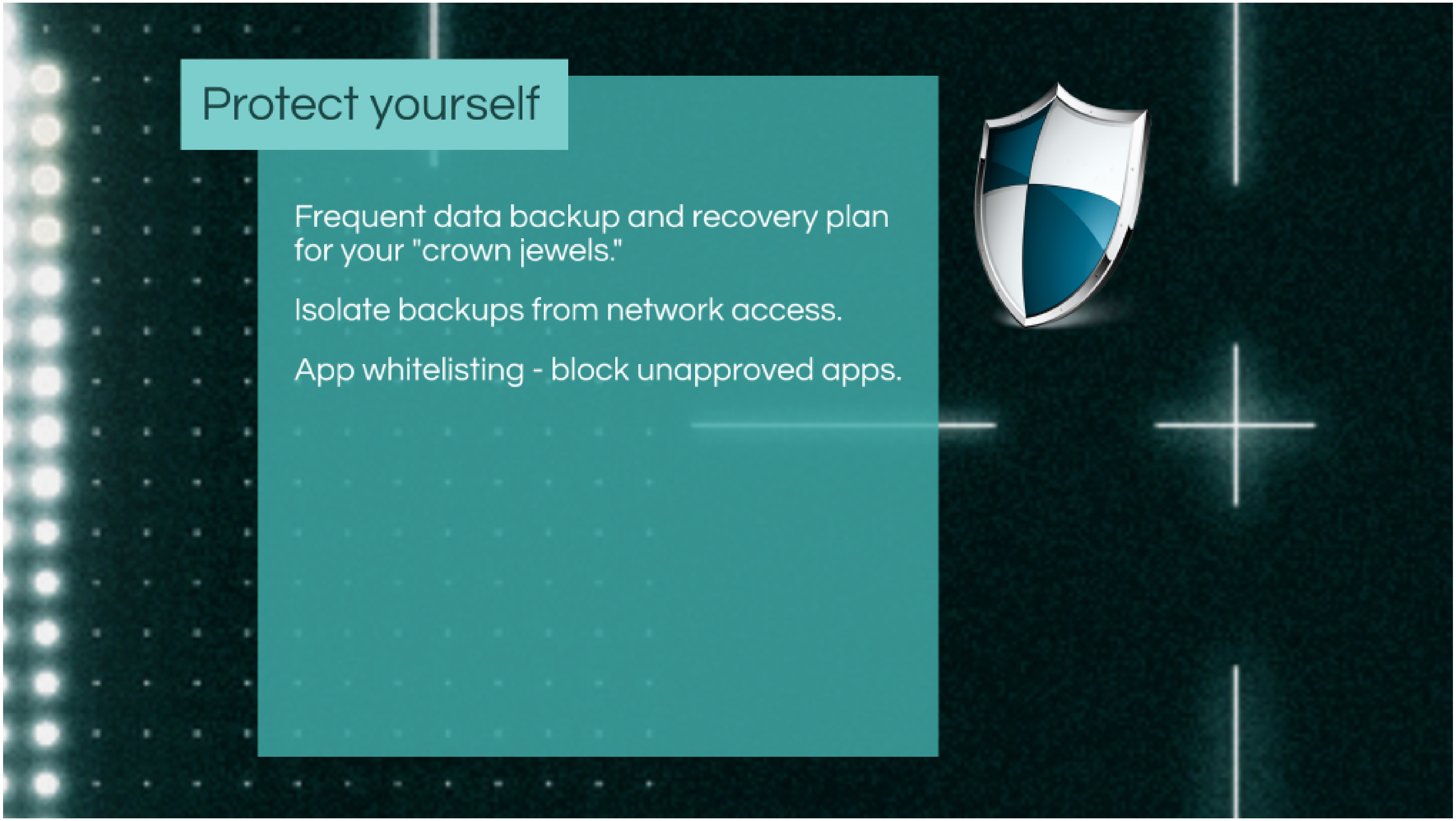
Isolate backups from network access.



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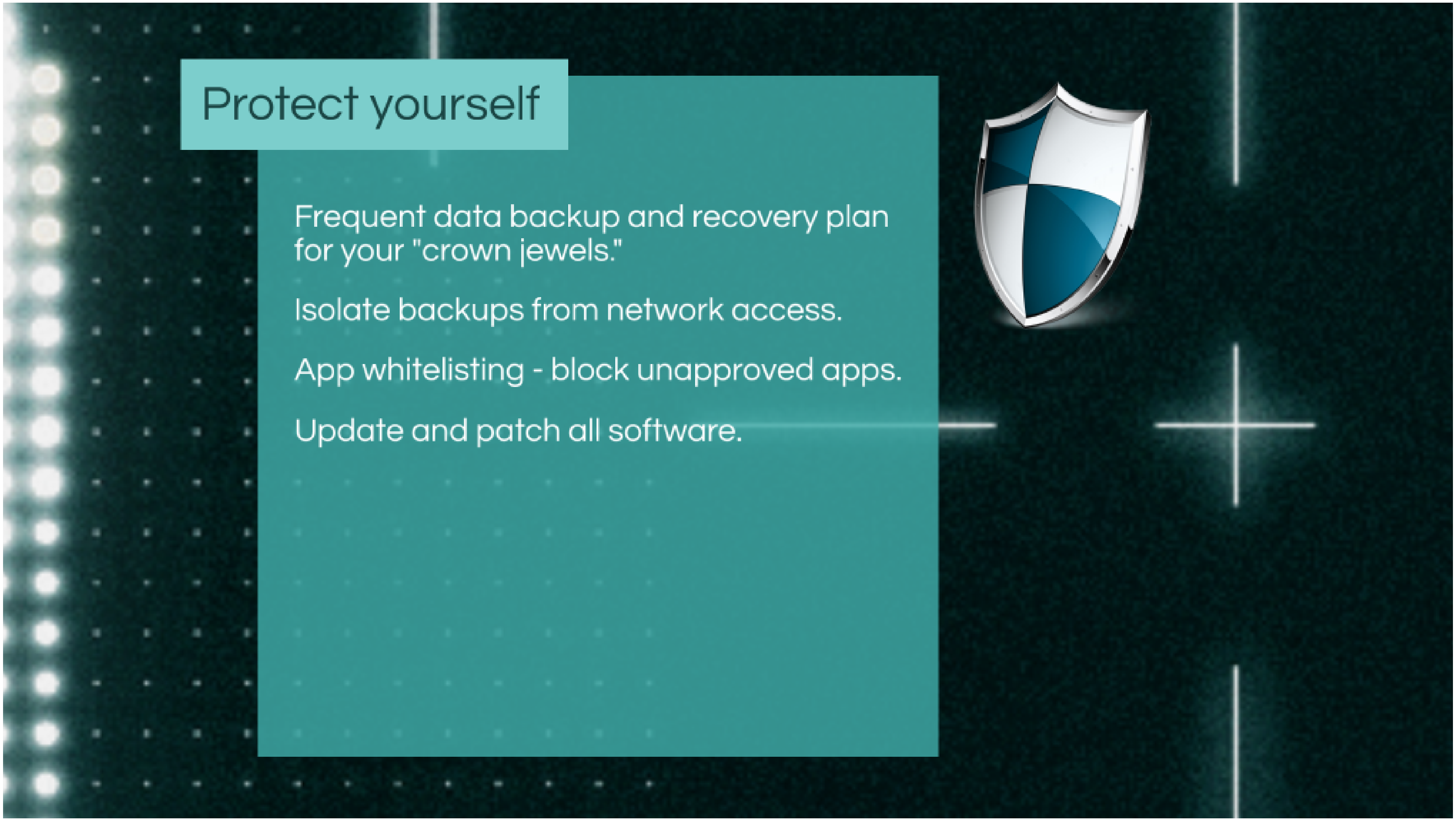
App whitelisting - block unapproved apps.



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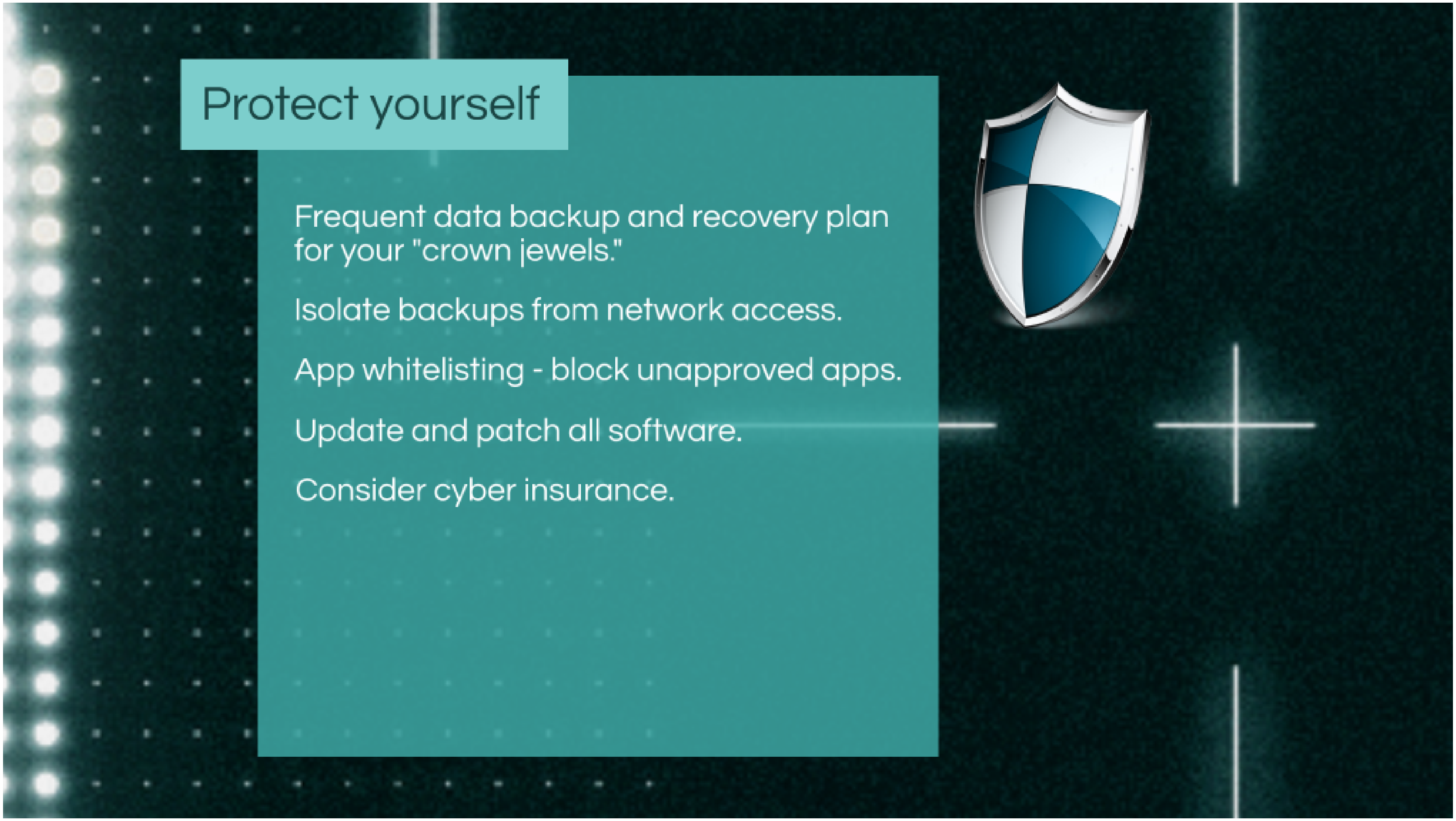
Update and patch all software.



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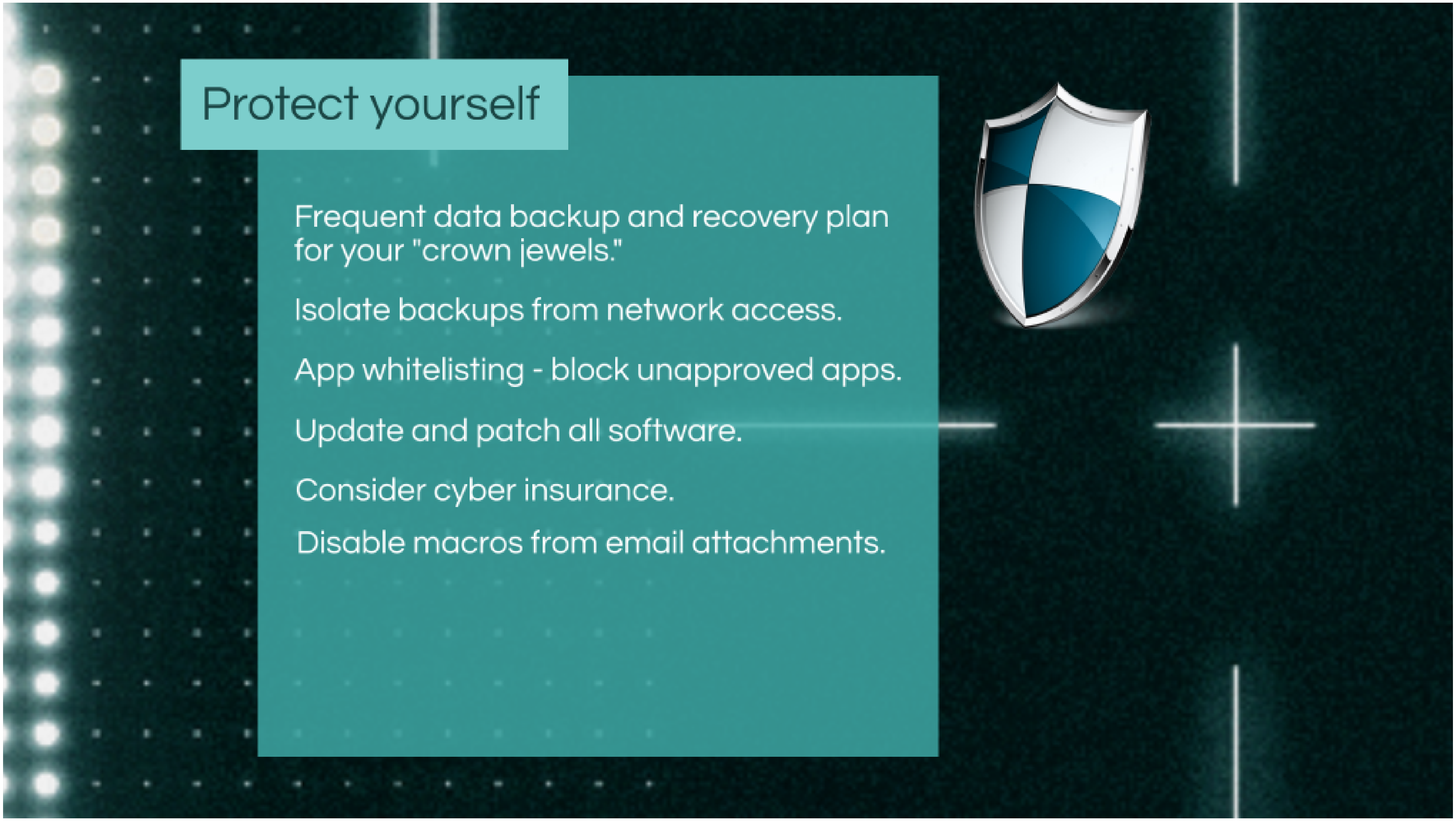

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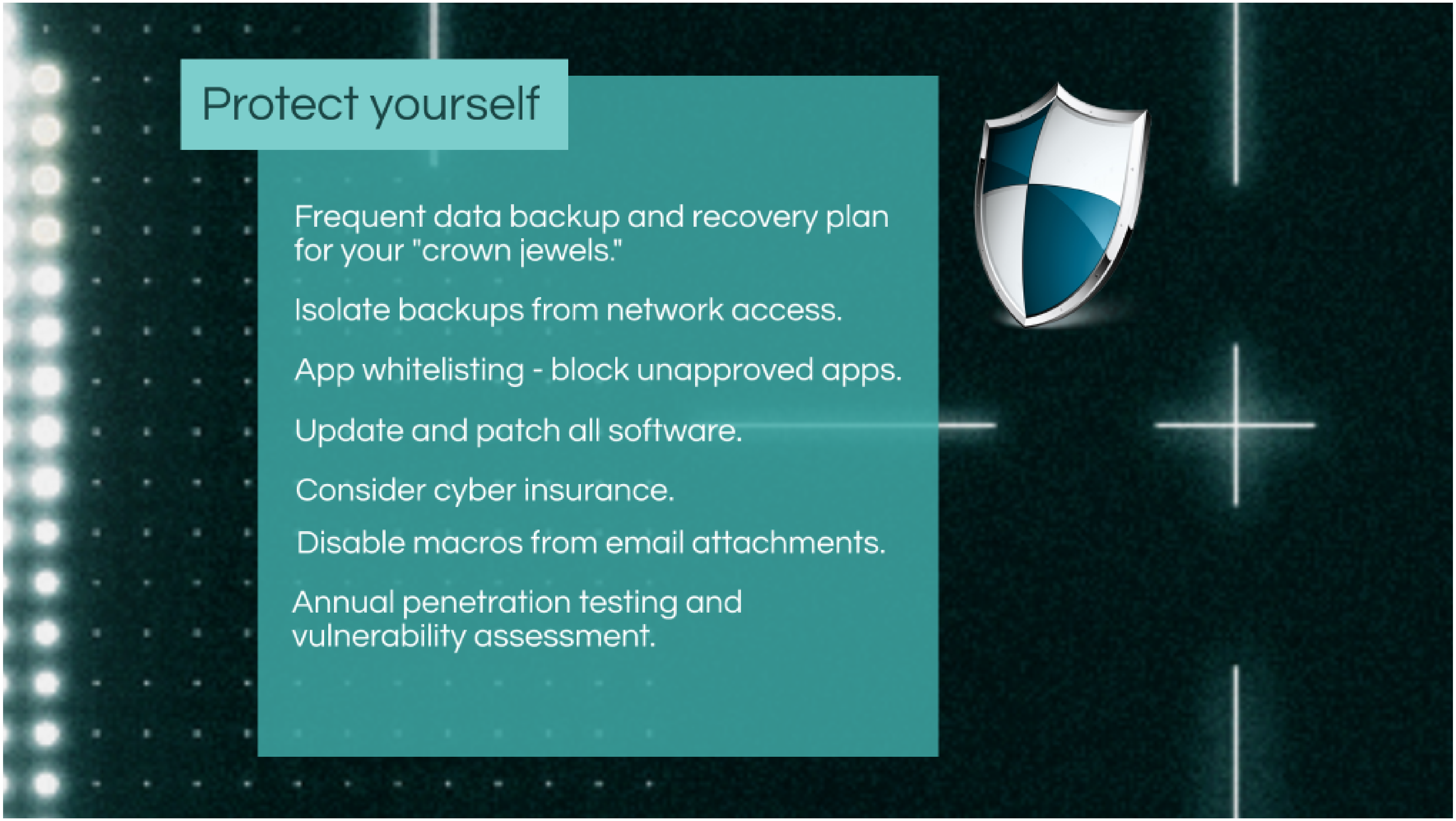

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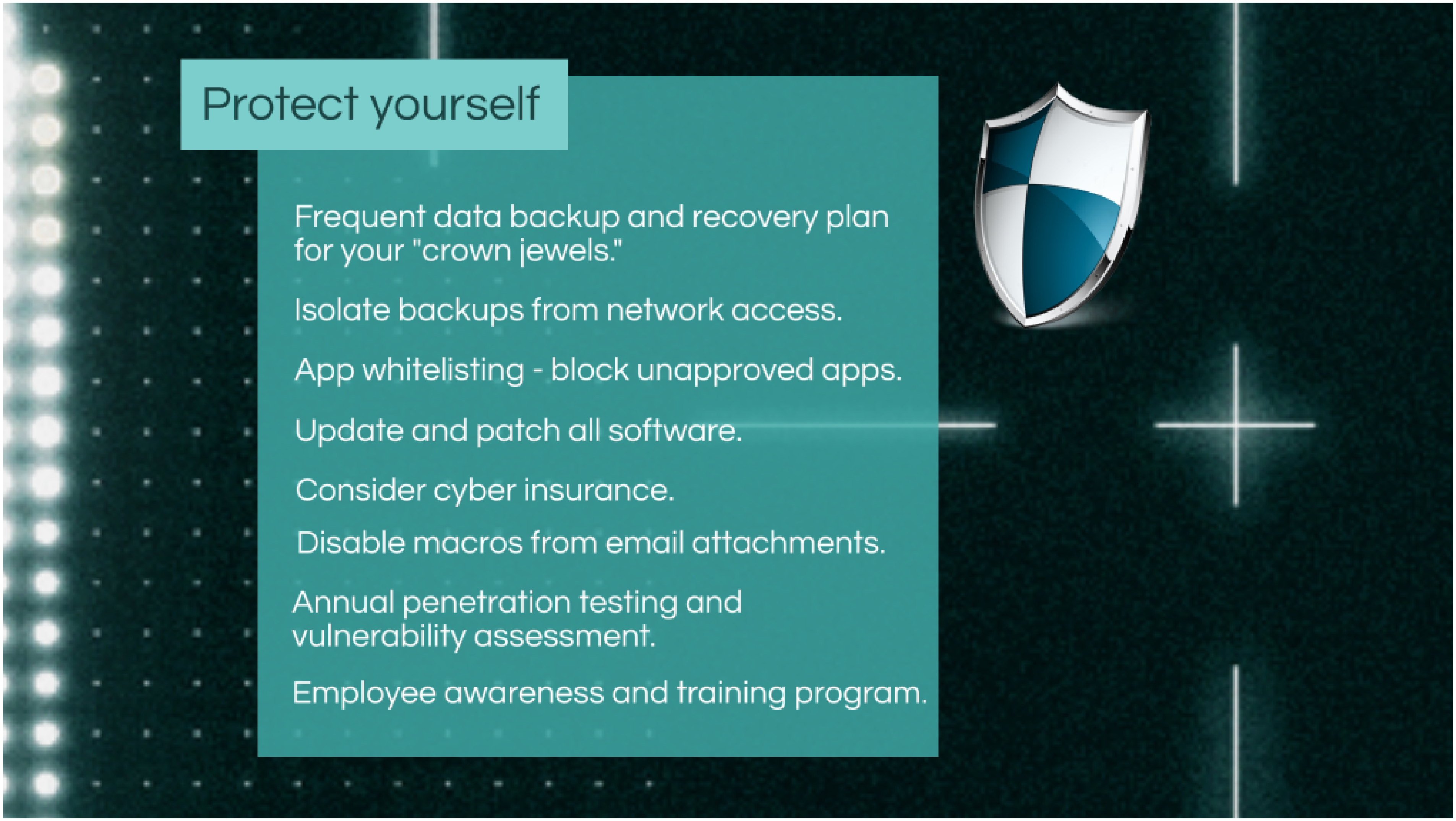

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Employee awareness and training program.

GLOBAL THREATS TO LOCAL BUSINESS: EMAIL COMPROMISE & RANSOMWARE

What is the Threat?

Overview

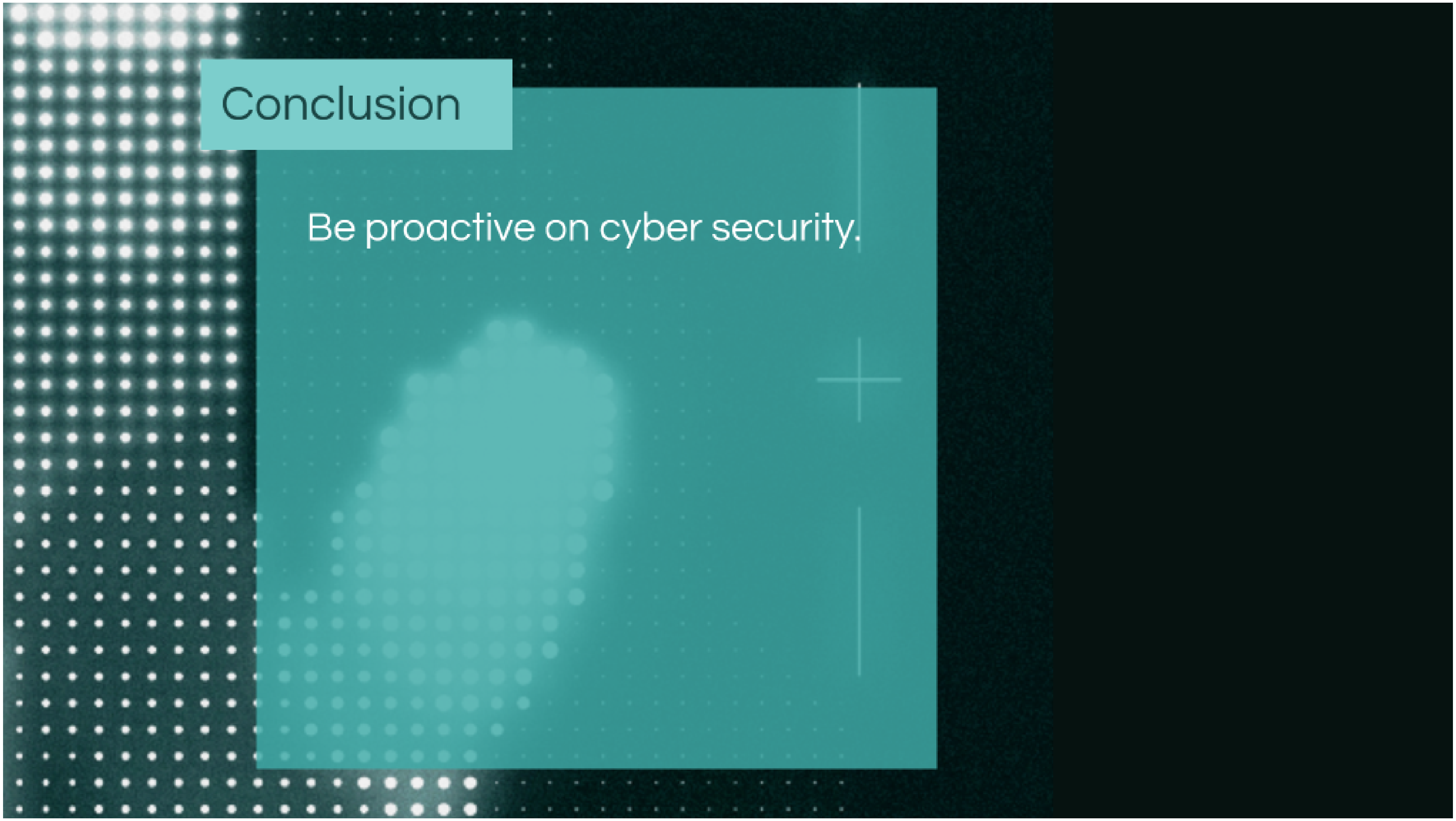
Business Email Compromise

Ransomware

Conclusion

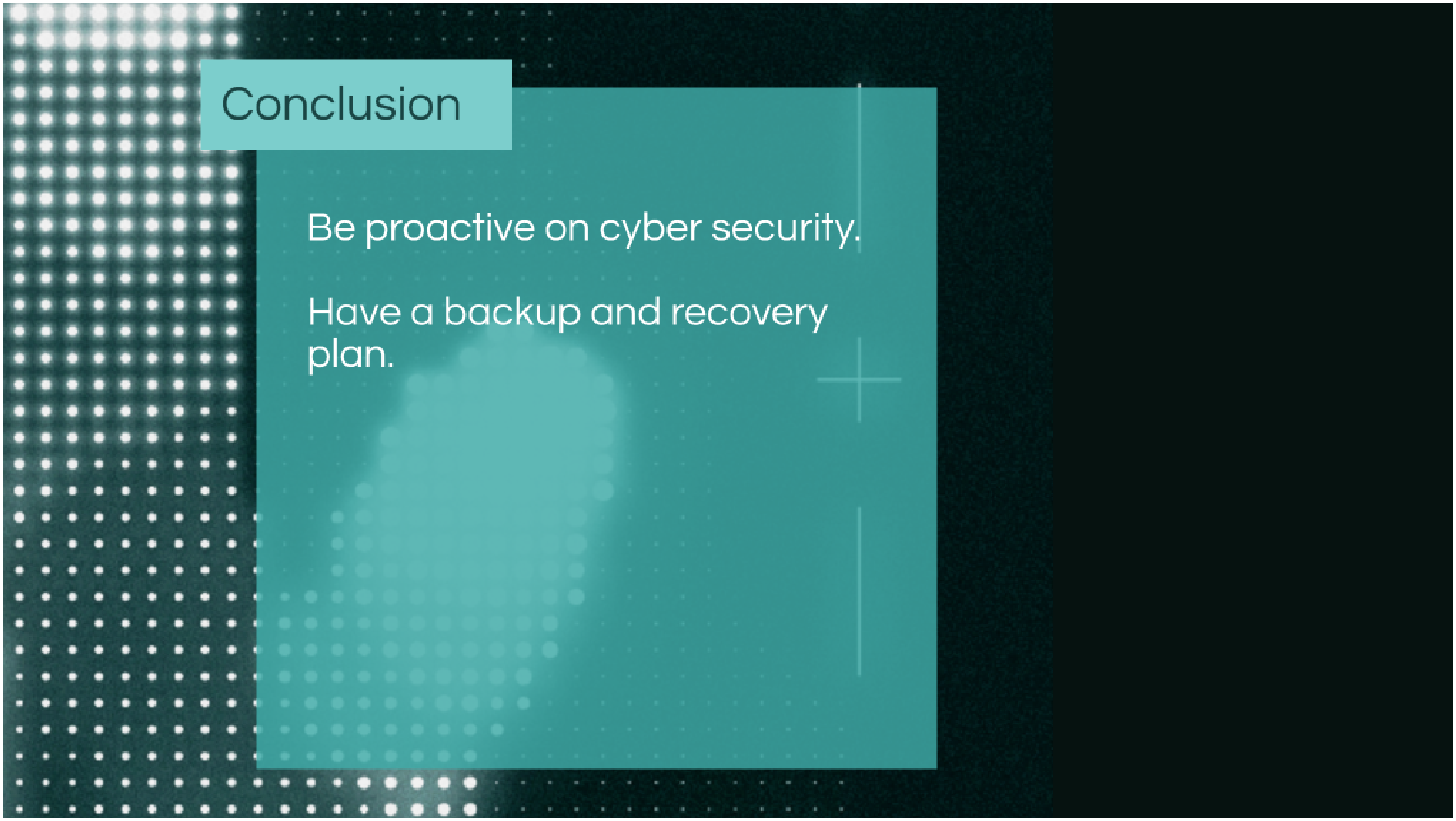
THE END

A public service by
The San Mateo County
District Attorney's Office



Conclusion

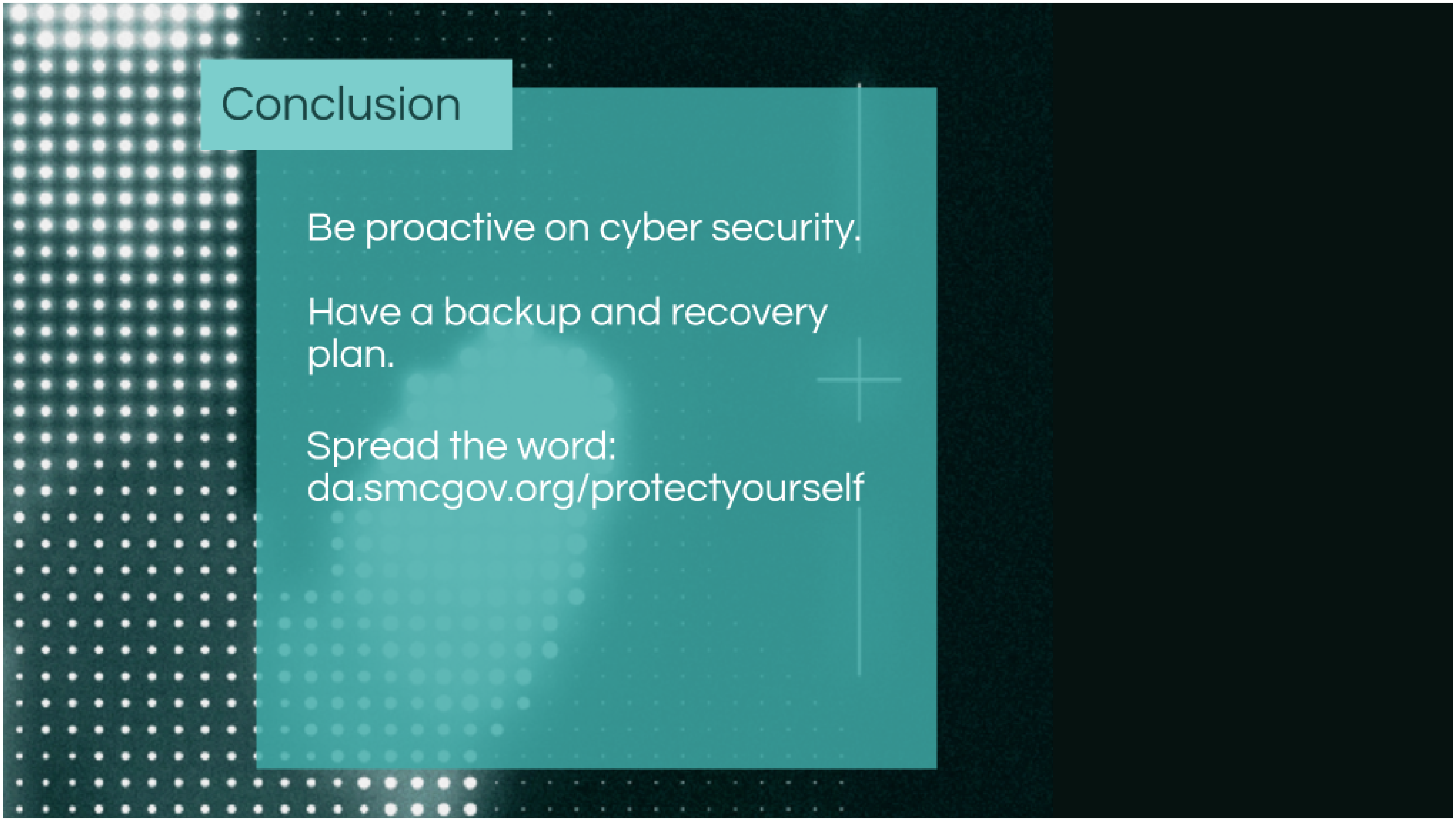
Be proactive on cyber security.



Conclusion

Be proactive on cyber security.

Have a backup and recovery plan.

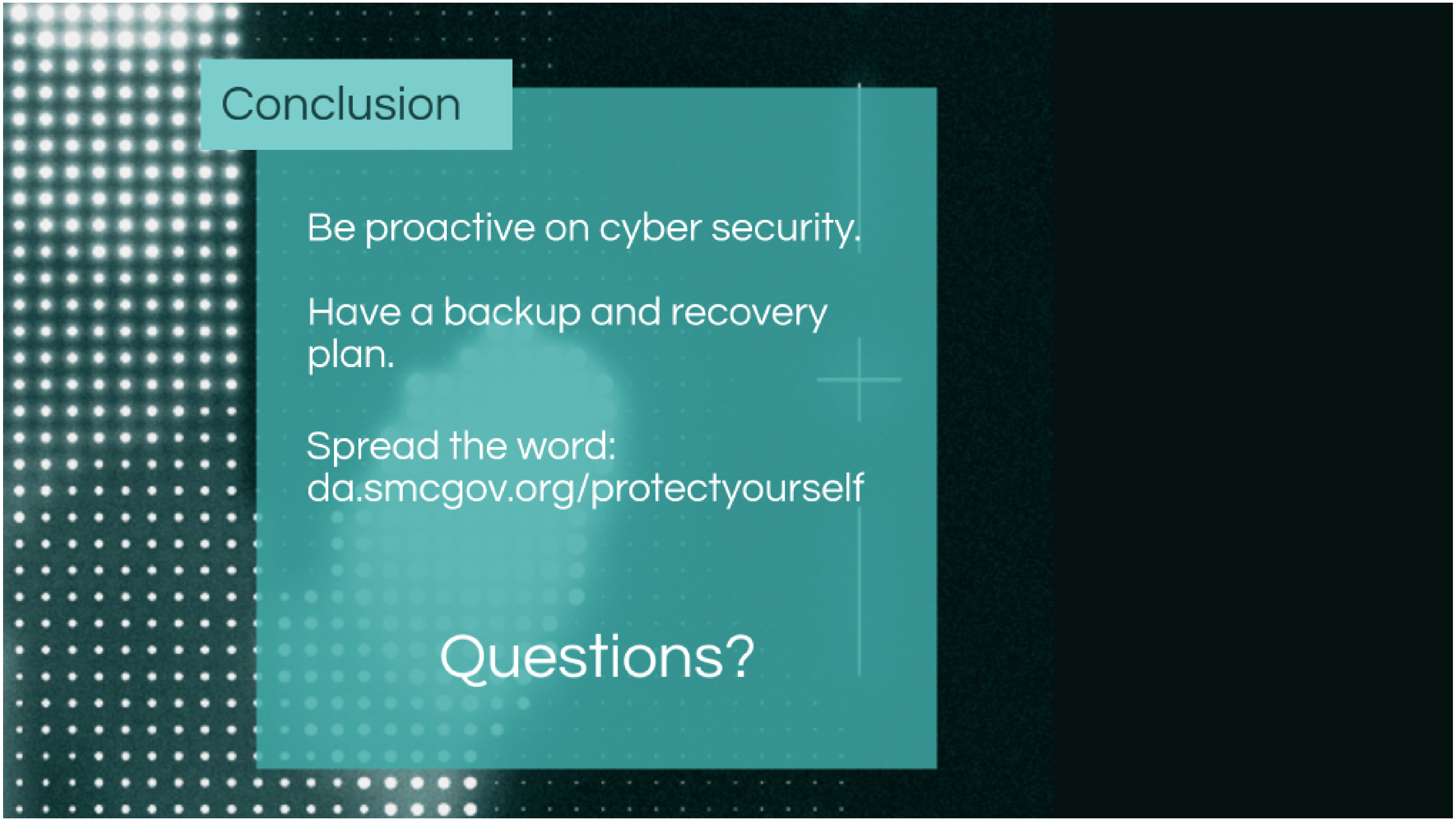


Conclusion

Be proactive on cyber security.

Have a backup and recovery plan.

Spread the word: da.smcgov.org/protectyourself



Conclusion

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Questions?

GLOBAL THREATS TO LOCAL BUSINESS: **EMAIL COMPROMISE & RANSOMWARE**

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