Cybersecurity Threat Trends

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- As the Federal CTO, lead strategic initiatives & support product direction to aid FCEB, DoD and IC partners in their cyber objectives
- Retired as a CAPT after 26 years in the U. S. Coast Guard, finishing career as the Senior Information Security Officer
  - Developed strategic cybersecurity policies & standards to manage enterprise information security risk and mature the services information security program
- Previously served as the Information System Owner and Program Manager for the Coast Guard's Combat Management System
- Managed Incident Response in Ports of NY/NJ & Delaware Bay
- Del Bay Area Maritime Security Committee's Cyber Subcommittee

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2023 GLOBAL THREAT REPORT

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NOWHERE TO HIDE

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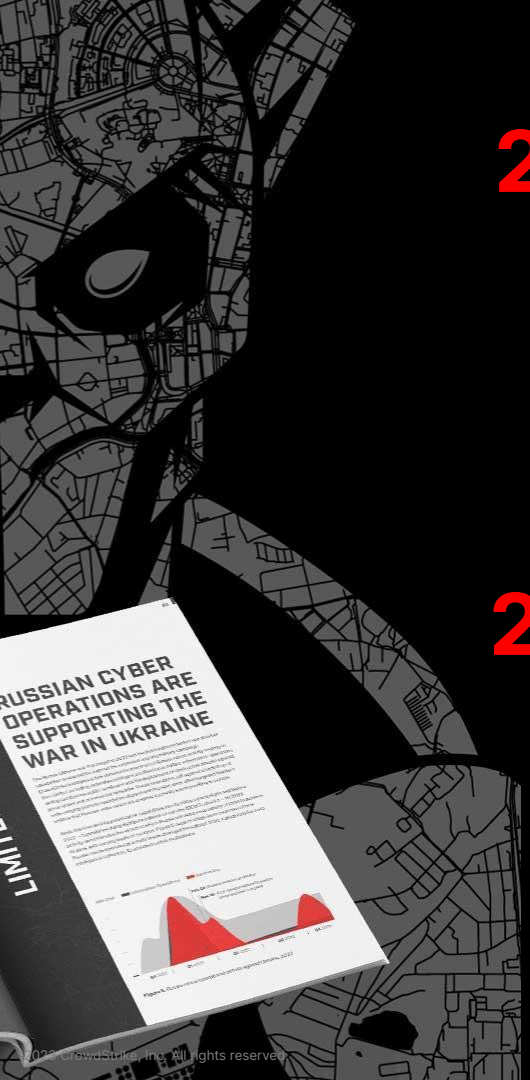
2023 THREAT HUNTING REPORT

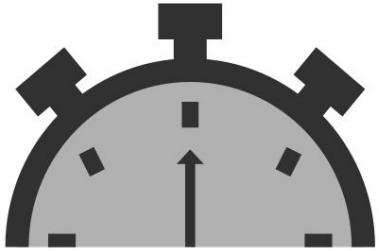


2022 Themes

- eCrime actors gained notoriety for high-profile attacks
- Dominating the espionage landscape: China-nexus adversaries significantly increased 2022 operational scale

2023 Themes

- Identity threats have become mainstream
- Adversaries are getting smarter in the cloud
- eCrime is surging as adversaries become faster



eCRIME BREAKOUT TIME

79'

Every Second Counts

Minimize cost and damage

To contain the threat, defenders must respond within the breakout time

Adversaries are getting faster

Adversaries have gotten 5 minutes faster. Have you?

7 Min fastest breakout time

Are you equipped to face the most proficient adversaries with 7 minutes?

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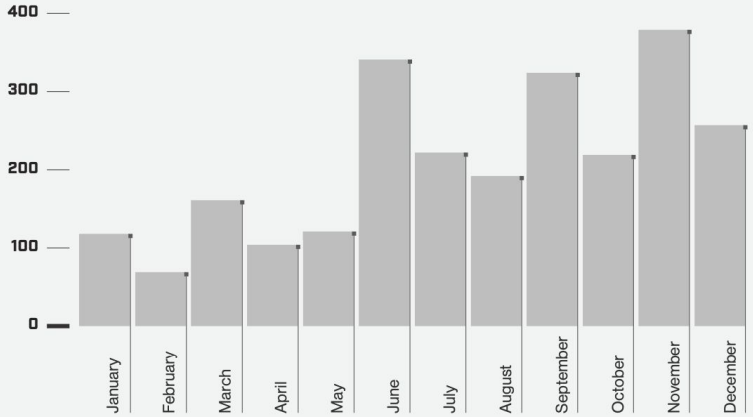
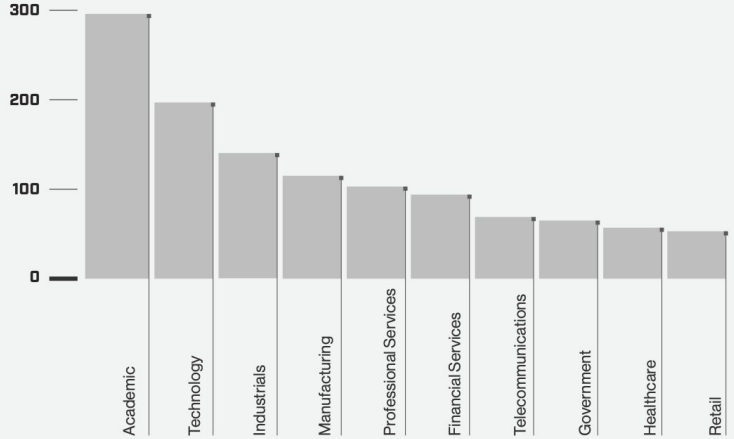
ACCESS BROKER ADVERTISEMENTS BY MONTH, 2022



TOP 10 SECTORS ADVERTISED BY ACCESS BROKERS, 2022



Access Broker Boom

Acceleration of demand

Popularity of services increasing with more than 2,500 advertisements –
In 2022, there was a 112% increase from 2021
In 2023, there that number rose to 147%.

Buy a la carte or in bulk

Several brokers will sell in bulk as others will use a “one-access, one-auction” technique.

Access methods remain consistent

Abuse of compromised credentials obtained by information stealers or purchased in log shops on the dark web

“80% of all breaches use compromised identities and 50% of organizations have experienced an Active Directory (AD) attack in the last two years.”

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Adversaries Continued to Move Beyond Malware to Gain Initial Access and Persistence

There was a continued shift away from malware use, with malware-free activity accounting for 71% of all detections in 2022 (up from 62% in 2021). This was partly related to adversaries' prolific abuse of valid credentials to facilitate access and persistence in victim environments. Another contributing factor was the rate at which new vulnerabilities were disclosed and the speed with which adversaries were able to operationalize exploits.

ADVERSARY TACTICS — Malware-Free

71%	**2022**
62%	2021
51%	2020
40%	2019
39%	2018

BEYOND USERNAMES AND PASSWORDS

- Username and password or PIN
- Smart card and PIN
- Valid account and Active Directory certificates
- APIs and secret keys
- Identity providers and protocols such as SAML and OAuth
- Session-based authentication, cookie-based authentication and JSON Web Tokens (JWT)
- Kerberos and Kerberos tickets
- Biometrics such as facial recognition, voice recognition, fingerprint recognition
- Hardware and software tokens or time-based one-time password (TOTP)

Identity threats have become mainstream

Doubling down on identity intrusions

583% increase in Kerberoasting, a growing identity-based attack technique

62% of interactive intrusions involved stolen credentials

Beyond usernames and passwords

Common methods include smart card/PIN, valid accounts/Active Directory certificates, and APIs/secret keys

Boom in access broker advertisements

147% increase on the dark web, most notable by PROPHET SPIDER

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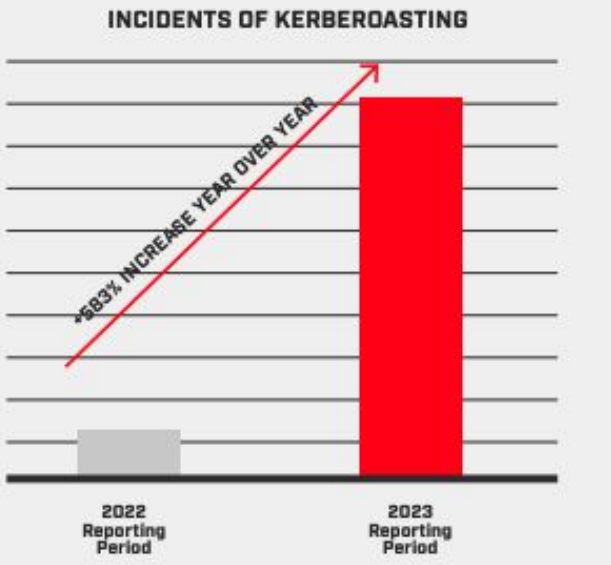
583%

Increase in Kerberoasting, a growing identity-based attack technique



Kerberoasting Identity Attacks Skyrocketed

Proving an adversary favorite

Due to increased availability of tooling and guidance, Kerberoasting has increased drastically in popularity among eCrime adversaries

Significant threat to organizations

Adversaries do not need elevated privileges to execute this attack

VICE SPIDER

Responsible for 27% of all intrusions that involved the Kerberoasting technique

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eCrime is surging as adversaries become faster

Rampant abuse of remote management tools

Illustrates adversaries' attempts to use administrative tooling to blend into enterprise noise and avoid detection

Opportunistic turns tailored TTPs

INDRIK SPIDER fluidly transitions from opportunistic initial access activity to tailored follow-on TTPs upon identifying lucrative victims

Exploit vulnerabilities for initial access

20% of all interactive intrusions involved exploitation of public-facing applications

300+%

INCREASE IN ADVERSARY USE OF RMM TOOLS YEAR OVER YEAR

147%

INCREASE IN ACCESS BROKER ADVERTISEMENTS IN CRIMINAL OR UNDERGROUND COMMUNITIES[16]

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DOMINATING THE ESPIONAGE LANDSCAPE

China-nexus adversaries significantly increased 2022 operational scale

Exploits to gain initial access

China-Nexus Adversaries continued shifting toward exploitation of web-facing services

Increase in use of zero-day exploits

Enterprise software continued to be a high-priority target. Additional zero-day exploits include weaponized MSFT Office documents.

Target Taiwan

Adversaries growing more confident leveraging traditional endpoints to pivot to cloud – and vice-versa

Zero-day exploits were most commonly observed in intrusions targeting North American organizations in 2022; China-nexus adversaries used zero-day exploits to compromise entities in the aerospace, legal and academic sectors.

"China-nexus adversaries were observed targeting nearly all 39 global industry sectors and 20 geographic regions CrowdStrike Intelligence tracks."

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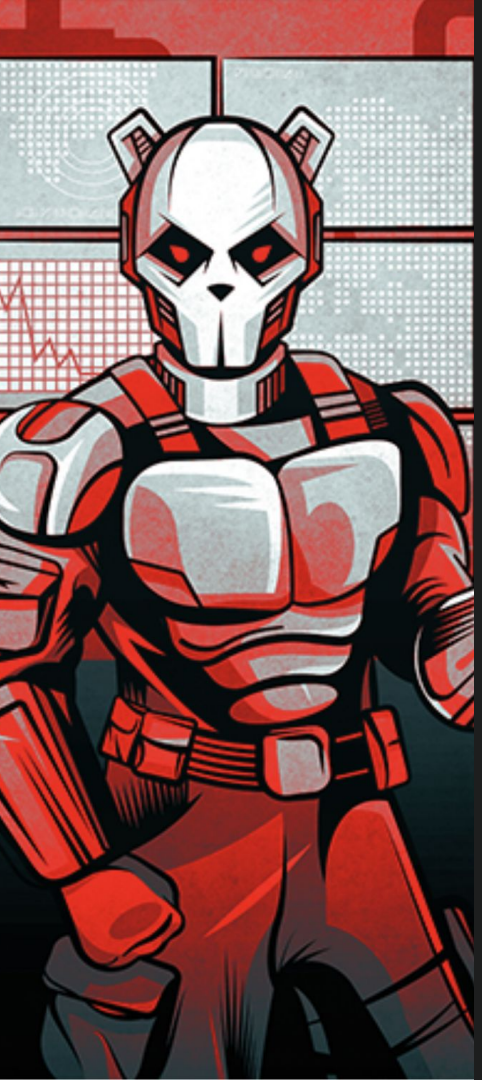

Maritime Threats

- Advancing modernization in maritime operations increases attack surface
- Adversary **exploitation of identities** continues to grow
- Access brokers gain access via **compromised credentials** & brute-force
- Big Game Hunting (BGH) ops continue to rely on ransomware & data theft
- Internet-facing networks are ripe targets for BGH ransomware campaigns
  - Also leveraged by APTs such as China-Nexus adversaries
  - GTR case study on CrowdStrike thwarting an Ethereal Panda attack by Web Service
- > **59 Cybersecurity Reports** in US maritime sector in 2022; **13 ransomware**
- Thetius, CyberOwl & HFW research shows avg ransom payment - **$3.2M**

Energy Threats

- **Ransomware & data extortion** ops still lucrative for eCrime adversaries
  - BITWISE SPIDER's LockBit RaaS - most prolific BGH operation in 2022
  - BITWISE SPIDER's LockBit 3.0 - most energy ransomware ops MAR22-MAR23.
- MAR22-MAR23 CRWD Intel ID'd **68 ransomware** energy sector incidents; > 25 US
- **$4.82M** - 2022 avg critical infrastructure data breach - Ponemon Institute & IBM Security
  - 14SEP22, the U.S. government levied sanctions against individuals & orgs associated w/ NEMESIS KITTEN for data extortion & ransomware
    - **2 critical infrastructure orgs**, regional electric utility companies (MS & IN)
- Access brokers advertised for energy sector entities
- Espionage: China-nexus adversaries most likely threat
- eCrime: (BGH) operations likely to remain the most significant threat

Notable Maritime Incidents

5 Steps To Be Prepared

1. Gain visibility into your security gaps
2. Prioritize identity protection
3. Prioritize cloud protection
4. Know your adversary
5. Practice makes perfect

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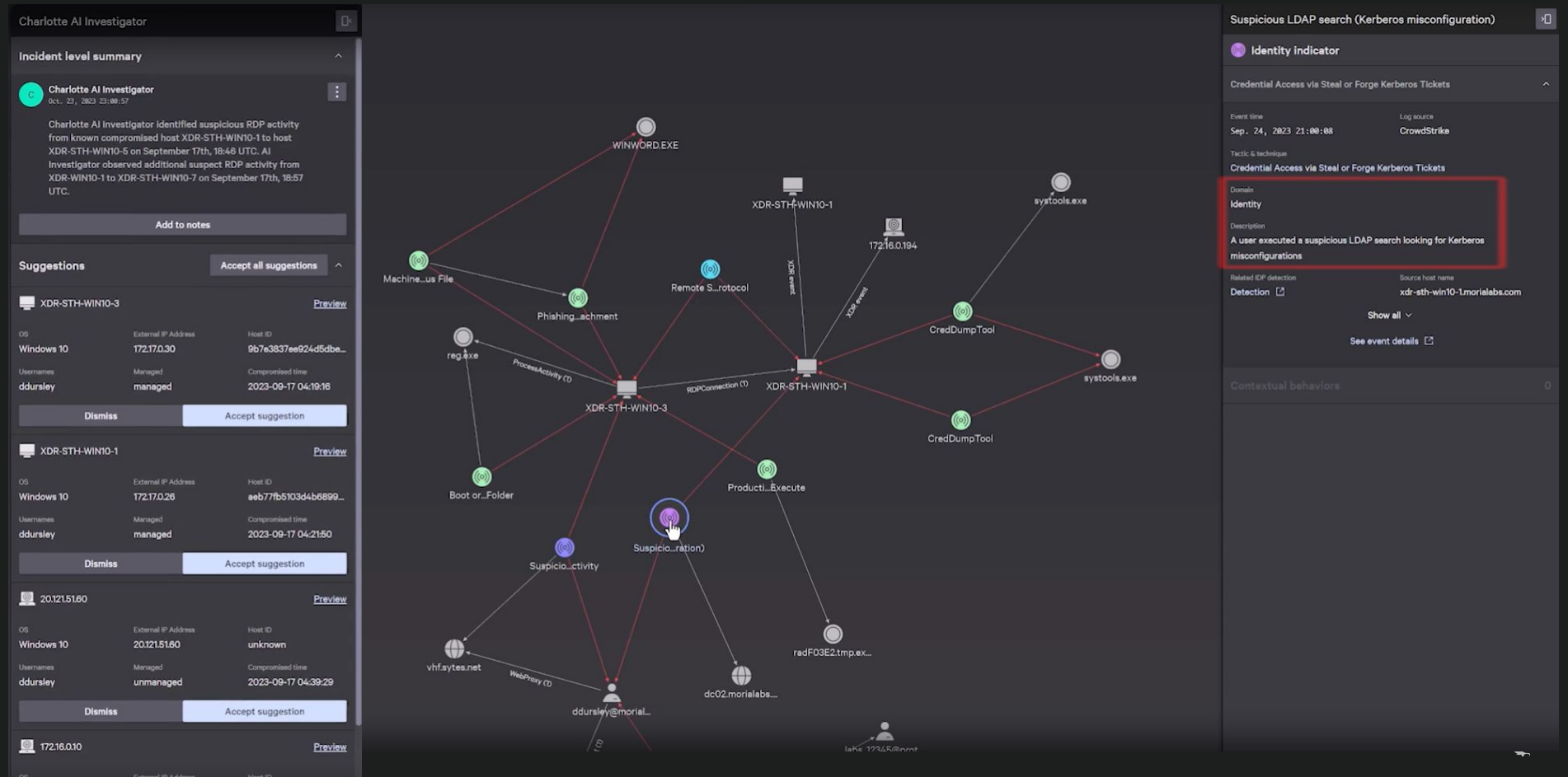
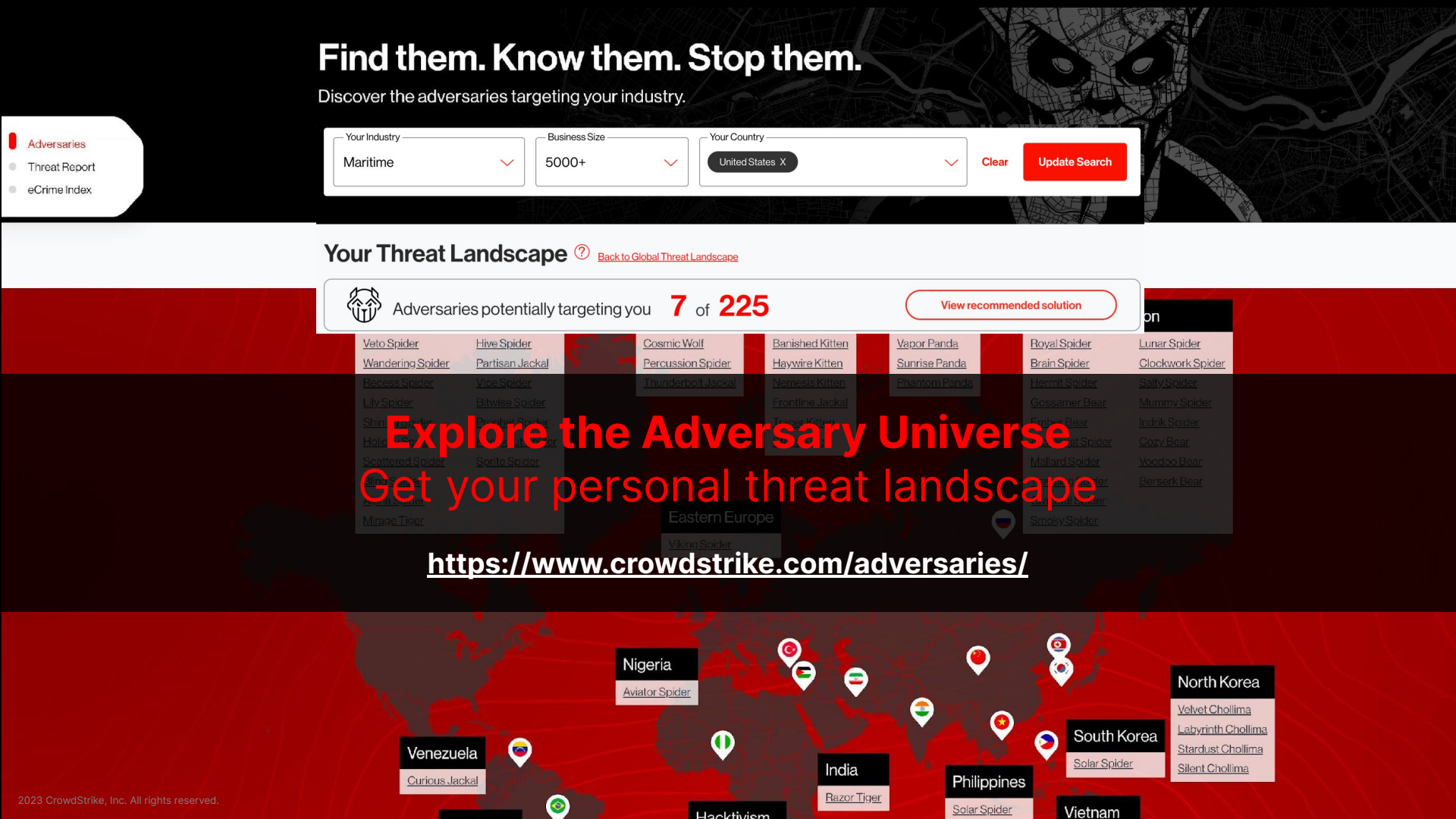
Identity Protection Example & AI Summary





Resources

- 2023 Global Threat Report - https://www.crowdstrike.com/global-threat-report/
- 2023 Threat Hunting Report - https://www.crowdstrike.com/resources/reports/threat-hunting-report/
- Adversary Universe - https://www.crowdstrike.com/adversaries/
- Adversary Universe Podcast - https://www.crowdstrike.com/resources/adversary-universe-podcast/
- Port Security Grant Program - https://www.fema.gov/grants/preparedness/port-security
- CrowdStrike Detects and prevents Labyrinth Chollima Supply Chain Attack - Link
- Identity Protection against Kerberoasting attacks & Charlotte AI incident summary - Link (video)
- Attack and Defend Demo using Identity Threat Protection - Link (video)


Questions?