SecurityScorecard

Cybersecurity Monitoring: A Best Practice - SecurityScorecard

October 12, 2022

Devin Lynch, Senior Policy & Government Affairs Director
Dr. Robert Ames, Staff Threat Researcher

Agenda

Trends in Ransomware for State and Local Governments

New Ransomware Findings Enabled by SSC Tools

Ransomware Findings and Cyber Risk Intelligence-as-a-Service

NACo-SecurityScorecard Partnership

SecurityScorecard

SecurityScorecard

Threat Intelligence Focus: Ransomware Threats to Counties

Trends in Ransomware for SLTT Governments

- Despite speculation that business email compromise (BEC) will supplant ransomware as the major cyber threat to state and local governments, ransomware has tremendous disruptive potential.

- The by-now familiar initial access vectors (phishing, RDP compromise and reuse of breached credentials) remain threats.

- Third-party breaches resulting from ransomware also affect local institutions.
    - The attacks against Illuminate Education and Battelle for Kids both exposed local school districts' data.

- Our platform enables cybersecurity monitoring that can help mitigate these risks for both themselves and their vendors.
    - We detect and report exposed RDP ports, email security misconfigurations that can enable phishing, and breached credentials.

- Our tools have also enabled researchers to develop new hypotheses regarding ransomware TTPs in the course of recent investigations.

SecurityScorecard

Threat Analysis

New Ransomware Findings Enabled by SecurityScorecard Tools

- SecurityScorecard researchers have identified what may be novel methods by which ransomware groups have accessed victim systems by using our different tools and datasets in concert with one another.
    - When investigating a summer attack against a school district by the Vice Society ransomware group, we:
        - First, identified the district's most at-risk IP addresses consulting the district's **digital footprint** and **network security** findings in our **ratings platform**;
        - Then leveraged our **exclusive access to network flow (netflow)** data to collect a sample of traffic to those high-risk IPs from the months leading up to the attack;
        - Finally, used our **Attack Surface Intelligence (ASI)** tool to analyze that traffic.
            - ASI identified additional exposed ports at the school district IPs that our platform does not normally report
            - ASI's **malicious reputation data** linked many of the IP addresses communicating with the school district to attacks specifically targeting the exposed ports ASI identified.
    - Public reporting has not previously linked this particular tactic to Vice Society, but in investigations into more recent attacks, including another claimed by Vice Society, we have seen a similar pattern of traffic to exposed ports of victim IP addresses.
    - ASI may therefore have aided in the identification of a new Vice Society TTP.

Threat Analysis

New Ransomware Findings Enabled by SecurityScorecard Tools

- SecurityScorecard's netflow tool detected considerable traffic that may indicate that a series of possible SSH brute force attacks against the school district took place in June and July.

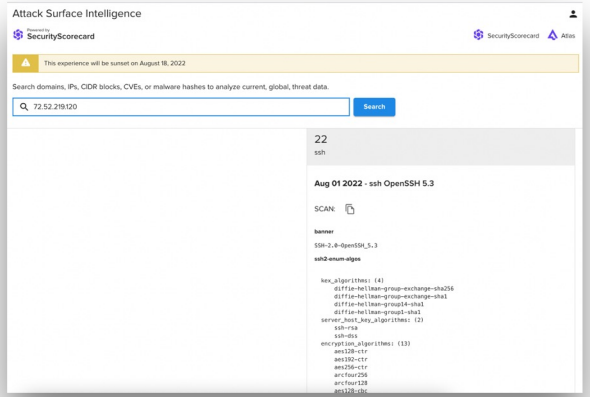
- 3,571 of 8,281 flows used port 22 (the usual port for SSH traffic).
    - We normally see a much higher proportion of traffic using ports 443 and 80 in our netflow data.

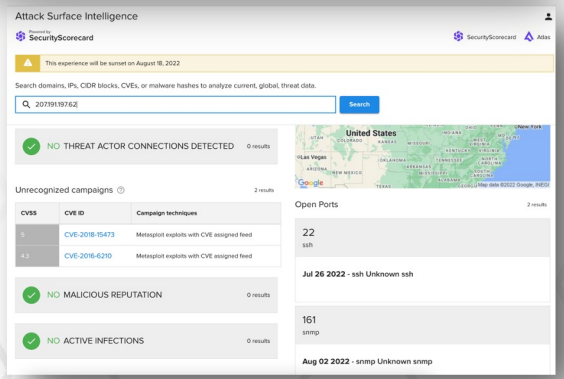
- The dates with the five heaviest concentrations of traffic using port 22 were June 5, June 7, June 19, June 10, and July 1.

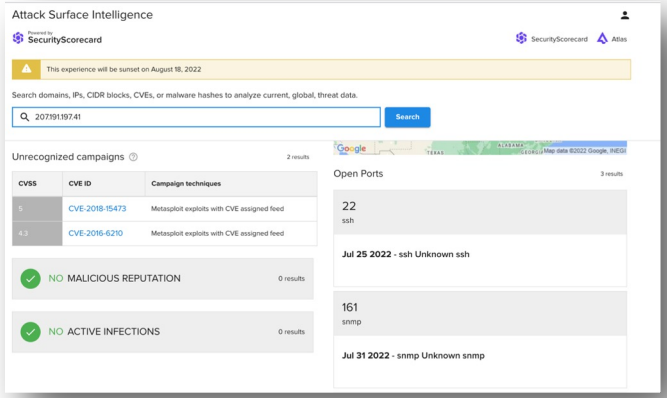
- ASI indicated that port 22 was open and running vulnerable SSH software at the school district IP addresses that experienced this traffic.

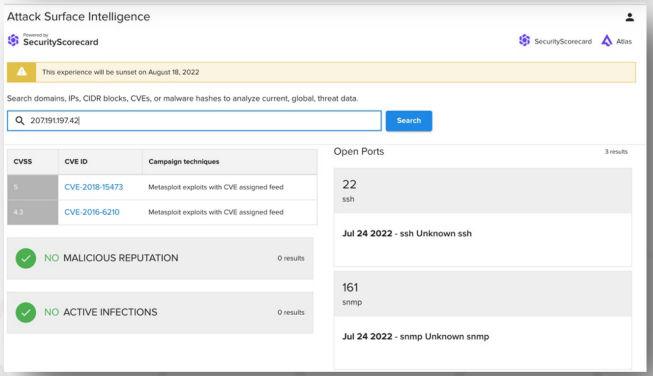
Threat Analysis

New Ransomware Findings Enabled by ASI







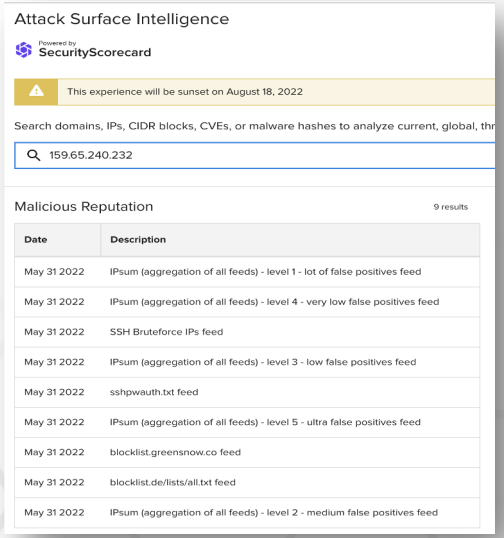


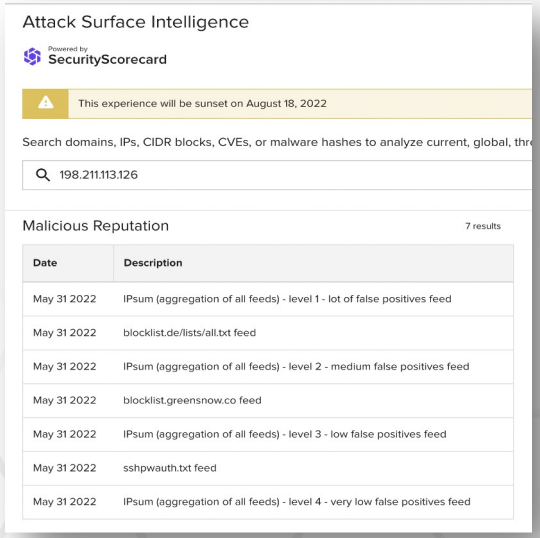
SecurityScorecard

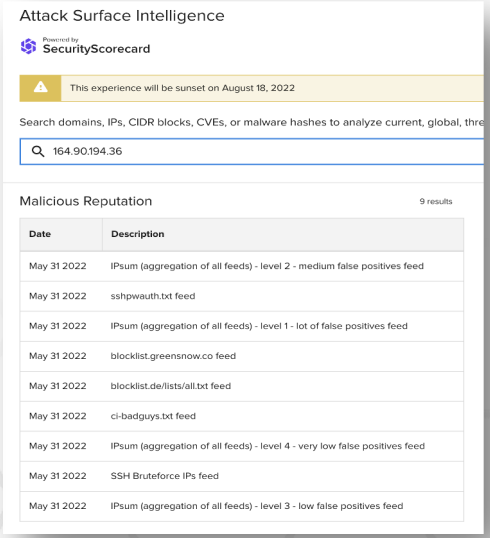
Threat Analysis

New Ransomware Findings Enabled by SecurityScorecard Tools

- Both other vendors and ASI linked most IP addresses involved in the traffic over port 22 to SSH brute force attacks.
- The timing of these possible attacks in June and July may suggest that Vice Society attempted brute force attacks on the school district's SSH services at an earlier stage in its operations, prior to encrypting the district's systems in early August.
- Researchers have not previously linked Vice Society to SSH brute force attempts; this traffic may therefore represent a novel dimension of Vice Society's activity.

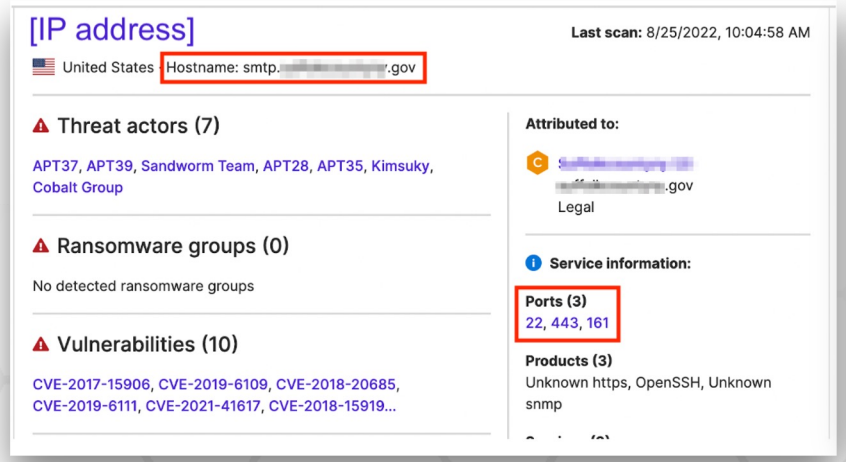


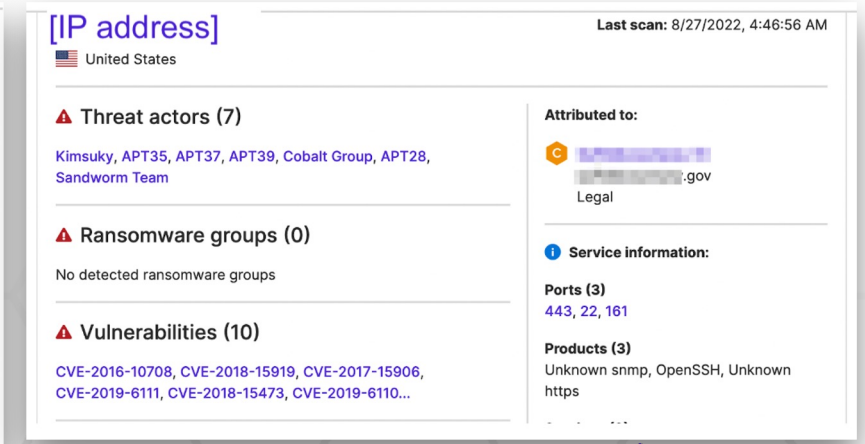




Case Study - County Ransomware Findings

- A recent investigation into **a ransomware attack against a county government** revealed overlaps in TTPs with other recent attacks
    - In these recent investigations used ASI and netflow data to find evidence resembling that observed in the previous school district ransomware case, in which threat actors may have targeted exposed SSH services.
    - Netflow data indicated suspicious traffic to and from four particular county IP addresses, which, among other things, received notable amounts of traffic to port 22 prior to that attack..
    - ASI revealed these IP addresses to have port 22 open and running vulnerable SSH software.

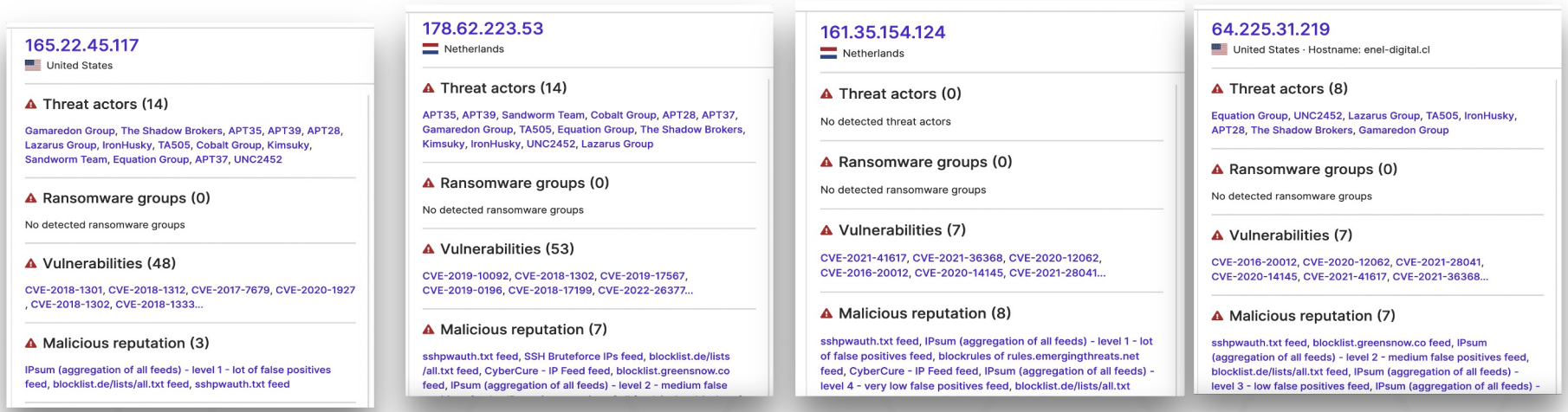




SecurityScorecard

Case Study - County Ransomware Findings

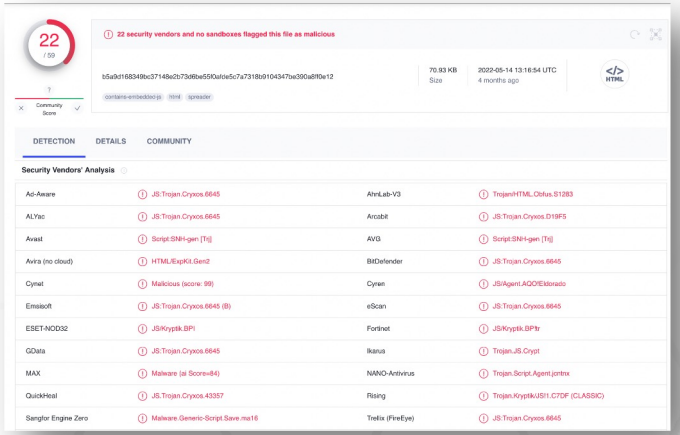
- ASI's malicious reputation data links many of the IP addresses communicating with the vulnerable county government assets to malicious activity, including attacks against SSH services.

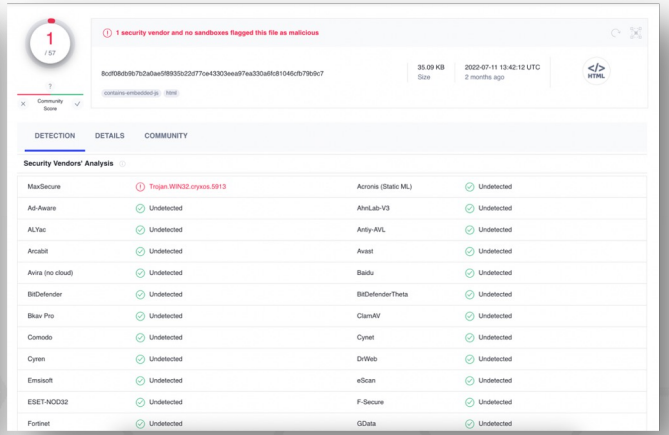


SecurityScorecard

Case Study - County Ransomware Findings

- Beyond internal tools, researchers consulted public resources to identify other data related to the attack.
- VirusTotal revealed files containing victim domains and linked to the Cryxos trojan.
  - Cryxos facilitates tech support scams, some involving the distribution of remote access software
    - Netflow data may reflect the distribution of such software.
  - This access could have led to subsequent compromises culminating in ransomware deployment.
    - We previously observed a collection of Cryxos-linked files containing another ransomware victim's domains; this may suggest that attackers employed similar TTPs in both incidents.





SecurityScorecard

SecurityScorecard

NACo - SecurityScorecard Partnership [and Pilot]

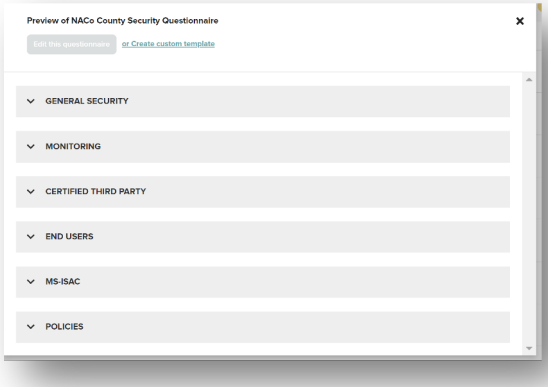
SecurityScorecard - NACo Pilot
(March-May 2022)

In March, NACo and SecurityScorecard initiated a pilot program with 35 counties to evaluate the use-case and efficacy of SSC's security ratings platform for county governments.

Pilot Participants received:

- Specific training on the platform and use cases.
- 7 free slots for vendor risk management.
- Weekly Office Hours with SecurityScorecard to surface and answer questions and troubleshoot solutions.

Pilots also participated in a security survey



SecurityScorecard - NACo Pilot

(March-May 2022)

County Observations

Able to see what the world can publicly see (including hacking community

Graphs and reports are easier for leadership to understand

Participants

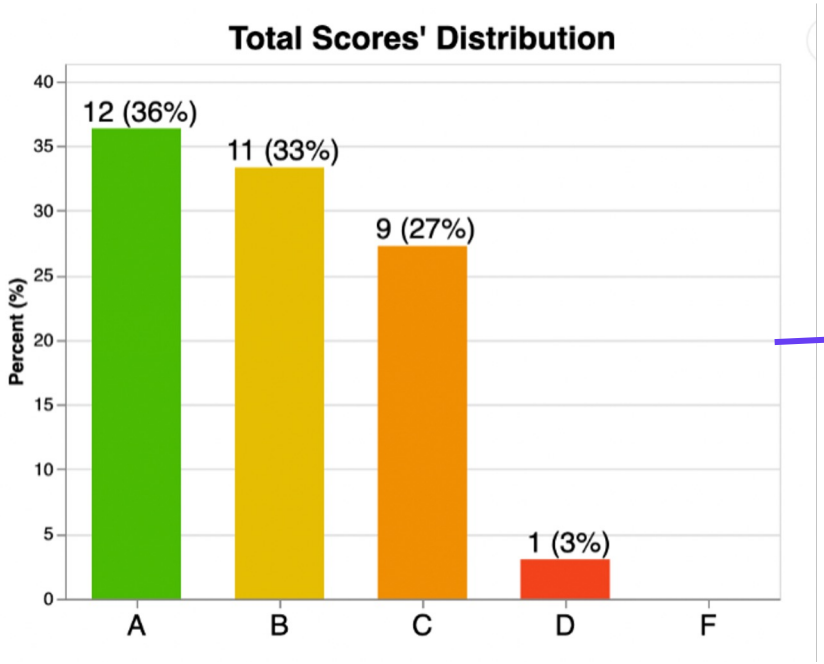
- found the interface to be intuitive and easy to navigate
- found issues that their teams needed to address
- Uncovered linkages that affected the county score (i.e. fire, water, airport infrastructure) and able to correct

Uncovered some subdomain issues that needed cleared up (i.e. subdomain of a state domain)

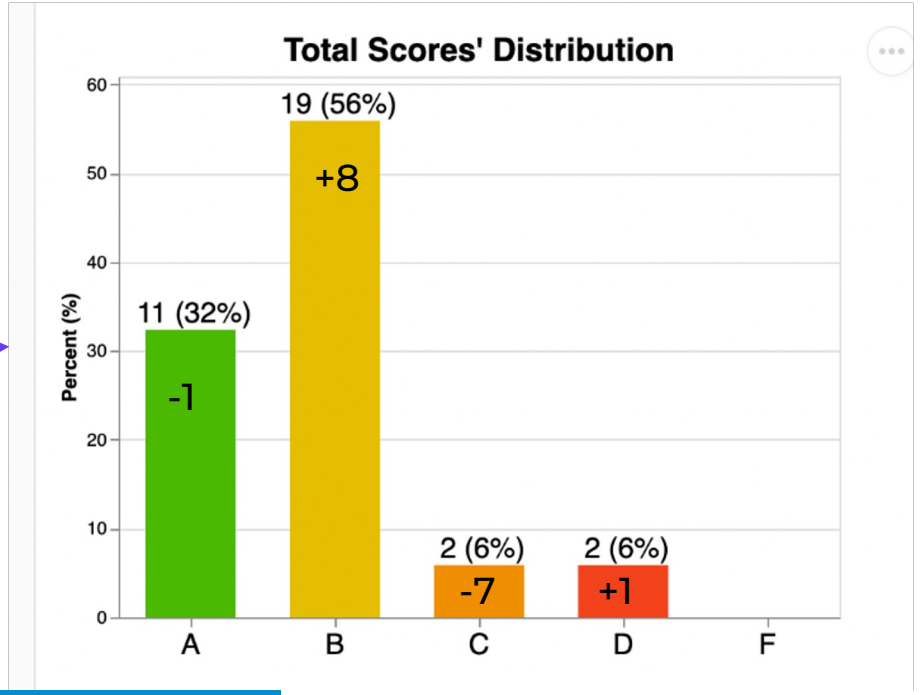
The platform helped improve collaboration within the county

Participants appreciated seeing what the cyber insurers are seeing!

Pilot Participants' **Total Scores' Distribution**



March 27, 2022



May 31, 2022

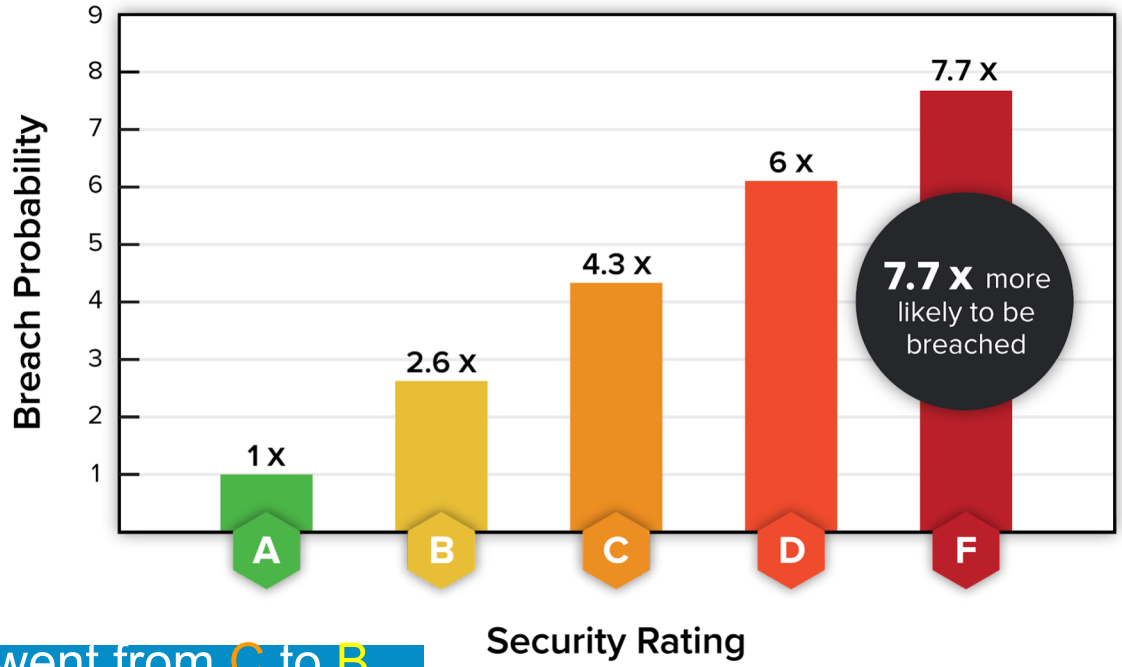
Overall scores of pilot participants improved over our 2-month pilot.

Companies with a Better Security Rating are More Resilient.

Independent analysis of our Security Ratings:

Evaluation Period	3 Years
No. Data Breaches	2,228
No. Organizations	99,076

Organizations with an F have **7.7x higher likelihood** of breach compared to organizations with a grade of A.



The 8 pilot participants who went from C to B reduced their risk of cyber breach by 140%.

County Feedback

Bob Kennedy, CIO

INFORMATION TECHNOLOGY

Lehigh County
Pennsylvania

Thank you.

Email the SSC team - naco@securityscorecard.io
Sign up for your FREE account - https://securityscorecard.com/naco-cel

SecurityScorecard

ATTACK SURFACE INTELLIGENCE (ASI)

IDENTIFY THREATS FASTER WITH A UNIFIED VIEW OF YOUR ATTACK SURFACE

VISUALIZING ATTACK SURFACE RISK CAN BE COMPLEX

According to ESG, nearly a third of all companies only actively monitor 75-85% of their known internet facing assets. Not only that, but more than 43% of companies report that it takes 80 hours to discover assets;, due to lack of resources, this time-intensive process means that security teams can only engage in periodic monitoring, and **aren't able to keep up with the ever-changing attack surface.**

As a result, their lack of up-to-date information to make intelligent decisions leaves their organizations extremely **vulnerable to supply chain attacks.**

INTELLIGENTLY UNCOVER BLINDSPOTS AND SHRINK YOUR ATTACK SURFACE

SecurityScorecard's Attack Surface Intelligence (ASI) is the first scorecard ratings platform to provide a **unified and complete view of risk** across your entire attack surface, including third-party vendors and unknown assets. Risk decisions and vulnerability prioritization has never been more clear when armed with a l**ayered approach, including contextual insights, cyber-attack attribution, and threat intelligence.**

Understand what a hacker sees across your attack surface with billions of up-to-date points data from SecurityScorecard's rich data lake of 12M+ digital footprints, available in the GUI or API. Pinpoint threats and Investigate the source by **domain, IP, IP range, CVE, CDIR, and Malware Hashes.**

SECURITYSCORECARD SOLVES THESE ATTACK SURFACE INTELLIGENCE CHALLENGES

01.
Where are our attack vectors and potential exposures?

02.
Can I automatically search by Domain associated to an IP or be notified of an IP in a Domain?

03.
How do I continuously monitor my entire attack surface, including vendors?

04.
How do I understand the breadth of my attack surface and my third parties?

05.
Can I reduce the number of tools I use and reduce license costs?

06.
Is it possible to get forensic threats to help with security strategy?

BENEFITS THAT MATTER THE MOST

In a single console, **ASI combines threat intelligence, IP scanning, domain attribution, vendor risk management, and CVE/malware trackers** to give your organization more depth to data, along with powerful cyber analytics capabilities.

IDENTIFY AND RESPOND TO THREATS **FASTER**

SCALE YOUR TEAM AND UNITE KEY STAKEHOLDERS

SAVE TIME WITH CLEAR VULNERABILITY PRIORITIZATION

REDUCE FINANCIAL IMPACT FROM THREATS WITH POWERFUL INSIGHTS

KEY FEATURES

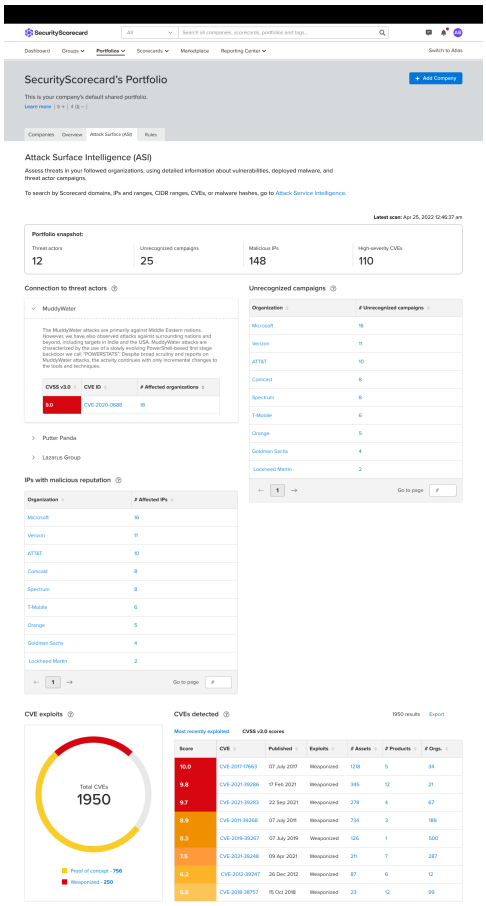
01. **CONTINUOUS MONITORING AND SMART ALERTS**
Early detection, attribution, and notifications to monitor security posture and third-party vendors.

02. **SEARCHABLE DATABASE**
Easily search historical and current data by domain, IP, IP range, CIDR, CVEs, and malware hashes right at your fingertips.

03. **THREAT FORENSICS MADE EASY**
Understand when an attack starts, identify who owns and controls the assets, and share threat information internally and externally to prevent further breaches.

04. **DIGESTIBLE THREAT INTELLIGENCE REPORTING**
Make informed decisions faster with actionable reporting that maps your attack surface, and identifies weaknesses, patterns, and trends to determine the full breadth of potential threats.

05. **INTEGRATION FOR GREATER VISIBILITY**
Create automated workflows and connect threat intelligence data with your SIEM, ticketing system, and vulnerability management tools.



One Powerful Platform for Different Stakeholders

MONITOR THREATS AND VULNERABILITIES

Threat hunters
Cyber threat researchers
Data Data scientist
Managed security service providers
IT operations analysts
Digital forensics

UNDERSTAND CYBER RISK WITHOUT TECHNICAL KNOWLEDGE

Compliance
Procurement
Accountants
Lawyers
Chief Risk Officers

SECURITYSCORECARD'S PROMISE

We empower our customers with the ability to easily quantify cyber risk, deeply understand and reduce risk within your ecosystem, and explore deeper cyber analytics today and in the future.

TAKE CONTROL OF ATTACK SURFACE

Talk to a SecurityScorecard representative today to learn how Attack Surface Intelligence enables you to scale higher.

SecurityScorecard

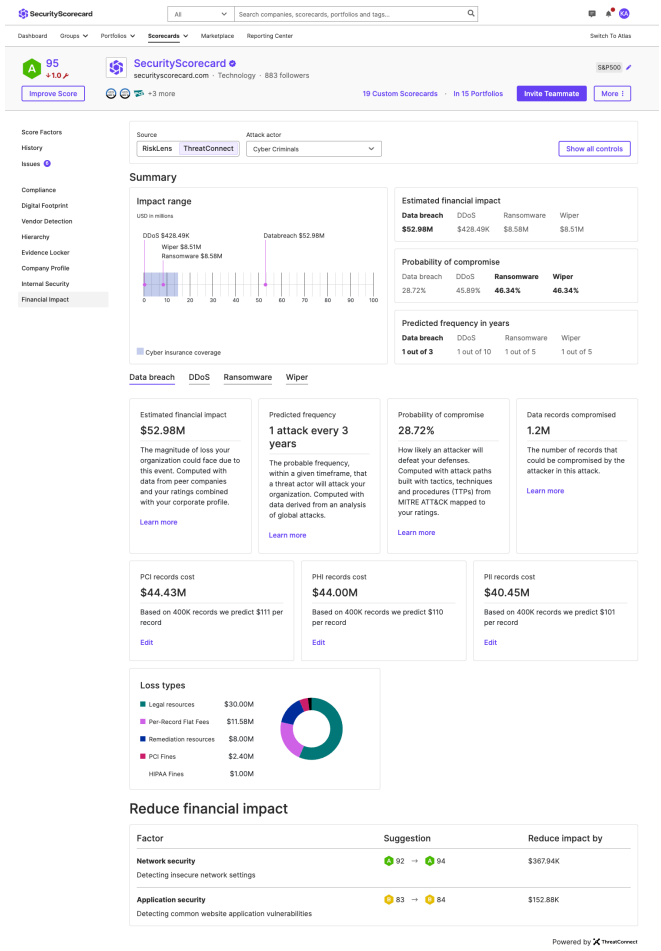
SecurityScorecard

HOW TO OPTIMIZE CYBER RISK MANAGEMENT INVESTMENTS

INCREASE THE RETURN ON INVESTMENT OF YOUR SECURITY PROGRAM

Executives struggle to connect security budgets to business outcomes, hindering a CISO's ability to justify their cybersecurity budgets and often leading to a tension for budget allocation. Simply allocating a percentage of the company's total budget doesn't guarantee strong security performance.

SecuirtyScorecard's risk quantification capabilities translates cyber risk into monetary values, assisting you in a cost-benefit analysis of different cyber investment options.



01. LOWER YOUR CYBER RISK

Reduce the impact of cyber incidents by prioritizing security investments towards the most likely or damaging loss scenarios.

02. STRENGTHEN THE BALANCE SHEET

Direct capital towards the security enhancements that are most closely aligned with business goals and financial performance.

03. IMPROVE COMMUNICATION AND COLLABORATION

Simplify the way cyber risVk is discussed with your peers by defining it in an universally understood metric.

QUANTIFY CYBER RISK AT SCALE

12 MILLION+
COMPANIES CONTINUOUSLY RATED

54 BILLION+
SECURITY ISSUES DISCOVERED WEEKLY

2
RISK QUANTIFICATION FRAMEWORKS SUPPORTED

SecurityScorecard

SECURITYSCORECARD ENABLES YOU TO

01. IDENTIFY THE BIGGEST THREATS

Confirm whether ransomware, data breaches, denial of service or some other attack mode is your main concern.

02. DETERMINE THE DRIVERS OF LOSS

Understand how much capital is lost to expenses like remediation costs and legal fees when an incident occurs.

03. ESTIMATE THE LIKELIHOOD OF INCIDENTS

Gain insight into the probability of incidents happening in a given year and their rate of success.

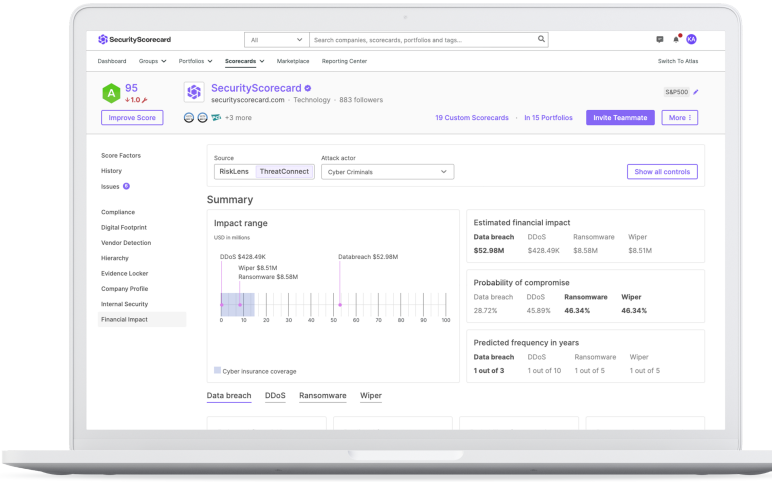
04. MEASURE THE IMPACT OF INVESTMENTS

Quantify the reduction in expected losses if issues like open ports, outdated websites, or weak endpoints are resolved.

CONTEXT, SCALE, AND RELEVANCE

Our unique combination of security ratings and risk quantification frameworks enables data-driven decisions with the speed and accuracy needed to face the ever evolving cyber threats.

SecurityScorecards allow you to implement a repeatable and trustworthy model for quantifying cyber risk instead of relying on labor intensive assessments that take weeks to complete and are based on outdated snapshots of the business.



STOP ARBITRARILY THROWING MONEY AT THE PROBLEM

Talk to a SecurityScorecard representative today to learn how to optimize your cyber risk management investment decisions

CONTACT US TO LEARN MORE

Request a demo today.

SecurityScorecard