Hacking, Computer Hacking and Security Testing

- Microsoft Defender EASM

Sanna Diana Tomren

Accenture | LinkedIn: Sanna Diana Tomren



Hacking, Computer Hacking and Security Testing

- Definere hacking
- Computer hacking
- Sikkerhetstesting
- Fysisk og digital sikkerhetstesting
- Microsoft Teknologi

Takk til våre sponsorer





glasspaper





























Takk til vår by-sponsor



Sanna Diana Tomren

Associate Manager, Accenture

- Cloud Security Lead
- Kunnskapsdeler
- Microsoft MVP 2022 Security
- Microsoft Security User Group Founder and organizer



Hacking – Life hack



Hacking - benytte verktøy, teknologi og kunnskap



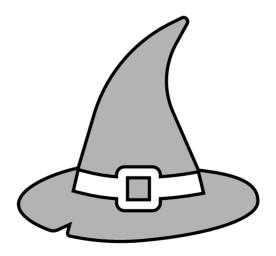
Computer hacking

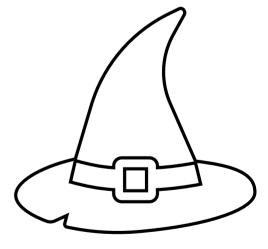
"The act of compromising digital devices and networks through unauthorized access to an account or computer system" - Fortinet



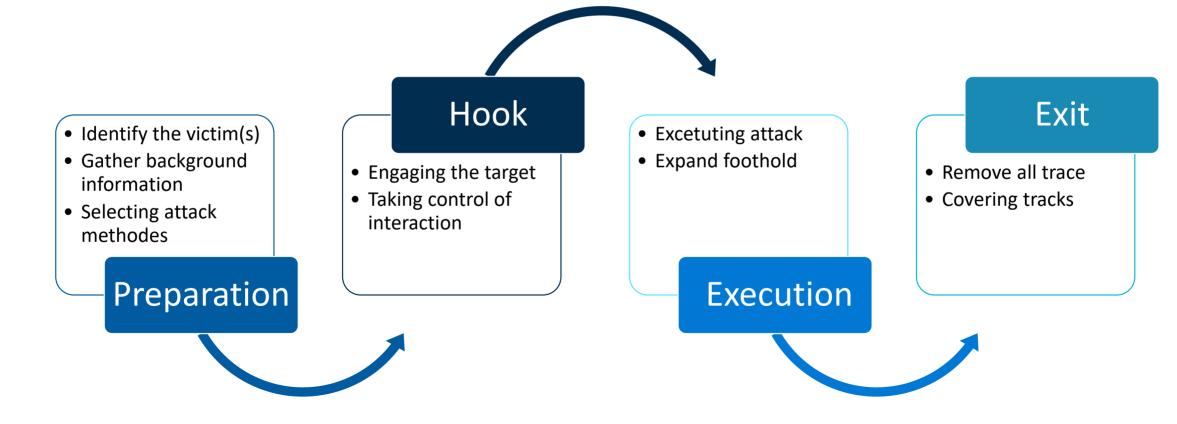
Magikerne







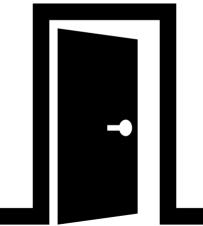
Livssyklus



Fysisk og digital sikkerhetstesting











Mitre Attack rammeverk

Reconnaissance 10 techniques	Resource Development 7 techniques	Initial Access 9 techniques	Execution 12 techniques	Persistence 19 techniques	Privilege Escalation 13 techniques	Defense Evasion 42 techniques	Credential Access 16 techniques	Discovery 30 techniques	Lateral Movement 9 techniques	Collection 17 techniques	Command and Control 16 techniques	Exfiltration 9 techniques	Impact 13 techniques
Active Scanning (3)	Acquire Infrastructure (6)	Drive-by Compromise	Command and Scripting	Account Manipulation (5)	Abuse Elevation Control	Abuse Elevation Control Mechanism ₍₄₎	Adversary-in- the-Middle (3)	Account Discovery (4)	Exploitation of Remote	Adversary-in- the-Middle (3)	Application Layer Protocol (4)	Automated Exfiltration (1)	Account Access Removal
Gather Victim Host Information (4) Gather Victim Identity Information (3)	Compromise Accounts (2)	Exploit Public- Facing Application	Interpreter (8) Container Administration Command	BITS Jobs Boot or Logon Autostart	Mechanism (4) Access Token Manipulation (5)	Access Token Manipulation (5) BITS Jobs	Brute Force (4) Credentials from Password	Application Window Discovery Browser Bookmark Discovery	Services Internal Spearphishing	Archive Collected Data (3)	Communication Through Removable Media	Data Transfer Size Limits Exfiltration	Data Destruction Data Encrypted for Impact
Gather Victim Network Information (6)	Infrastructure (6) Develop	External Remote Services	Deploy Container	Execution (14) Boot or Logon	Boot or Logon Autostart II Execution (14)	Build Image on Host	Stores (5) Exploitation for	Cloud Infrastructure Discovery	Lateral Tool Transfer	Audio Capture Automated	Data Encoding (2)	Over Alternative Protocol (3)	Data Manipulation (3)
Gather Victim Org Information (4)	Capabilities (4)	Hardware Additions	Exploitation for Client Execution	Initialization Scripts (5)	Boot or Logon Initialization	Debugger Evasion Deobfuscate/Decode	Credential Access	Cloud Service Dashboard	Remote Service Session Hijacking (2)	Collection Browser	Data Obfuscation (3)	Exfiltration Over C2	Defacement (2)
Phishing for Information (3)	Accounts (2) Obtain	Phishing (3) Replication	Inter-Process Communication (3)	Browser Extensions	Scripts (5) Create or Modify	Files or Information Deploy Container	Forced Authentication	Cloud Service Discovery Cloud Storage Object	Remote Services (6)	Session Hijacking	Dynamic Resolution (3)	Channel Exfiltration	Disk Wipe (2) Endpoint Denial of
Search Closed Sources (2)	Capabilities (6) Stage Capabilities (5)	Through Removable Media	Native API Scheduled Task/Job (5)	Compromise Client Software Binary	System Process (4) Domain Policy	Direct Volume Access Domain Policy	Forge Web Credentials (2)	Discovery Container and Resource	Replication Through Removable	Data from Cloud Storage Object	Encrypted Channel (2)	Over Other Network Medium (1)	Service (4) Firmware Corruption
Search Open Technical Databases (5)	oupubilities (5)	Supply Chain Compromise (3)	Shared Modules	Create Account (3)	Modification (2) Escape to Host	Modification (2) Execution Guardrails (1)	Capture (4)	Discovery Debugger Evasion	Media Software	Data from Configuration	Fallback Channels	Exfiltration Over Physical Medium (1)	Inhibit System Recovery
Search Open Websites/Domains (2)		Trusted Relationship	Software Deployment Tools	Create or Modify System Process (4)	Event Triggered Execution (15)	Exploitation for Defense Evasion	Authentication Process (5)	Domain Trust Discovery	Deployment Tools	Repository (2) Data from	Ingress Tool Transfer	Exfiltration Over Web	Network Denial of Service (2)
Search Victim-Owned Websites		Valid Accounts (4)	System Services (2) User Execution (3)	Event Triggered Execution (15)	Exploitation for Privilege	File and Directory Permissions	Multi-Factor Authentication Interception	File and Directory Discovery	Taint Shared Content	Information Repositories (3)	Multi-Stage Channels	Scheduled	Resource Hijacking
			Windows Management Instrumentation	External Remote Services	Escalation Hijack Execution	Modification (2) Hide Artifacts (10)	Multi-Factor Authentication Request	Retwork Service Discovery	Use Alternate Authentication Material (4)	Data from Local System	Non-Application Layer Protocol Non-Standard	Transfer Data to Cloud	Service Stop System Shutdown/Reboot
			instrumentation	Hijack Execution Flow (12)	Process Injection (12)	Hijack Execution Flow ₍₁₂₎	Generation Network	Network Share Discovery		Network Shared Drive	Port	Account	Silutuowii/Repoot
				Implant Internal Image	Scheduled Task/Job (5)	Impair Defenses (9)	Sniffing OS Credential	Network Sniffing		Data from Removable Media	Tunneling Proxy (4)		
				Modify Authentication I Process (5)	Valid Accounts (4)	Host (6)	Dumping (8) Steal	Password Policy Discovery		Data Staged (2)	Remote Access Software		
				Office Application		Execution Masquerading (7)	Application Access Token	Peripheral Device Discovery	ı	Email Collection (3)	Traffic Signaling (1)		
				Pre-OS Boot (5)		Modify Authentication Process (5)	Steal or Forge Kerberos Tickets (4)	Permission Groups Discovery (3)		Screen Capture (4)	Web Service (3)		





- Offensive Security
- Ethical Hacking
- Exploiting vulnerabilities
- Penetration Tests
- Black Box Testing
- Social Engineering
- Web App Scanning



- Defensive Security
- Infrastructure protection
- Damage Control
- Incident Response(IR)
- Operational Security
- Threat Hunters
- Digital Forensics







PURPLE TEAM



- Offensive Security
- Ethical Hacking
- Exploiting vulnerabilities
- Penetration Tests
- Black Box Testing
- Social Engineering
- Web App Scanning

- Facilitate improvements in detection and defence
- Sharpened the skills of Blue and Red team members
- Effective for spot-checking systems in larger organizations

- Defensive Security
- Infrastructure protection
- Damage Control
- Incident Response(IR)
- Operational Security
- Threat Hunters
- Digital Forensics

Microsoft Azure

Microsoft Defender

External Attack Surface

Management (Defender

EASM)



Azure Sentinel (SIEM & SOAR)

Microsoft Defender for Cloud (CSPM & CWPP)

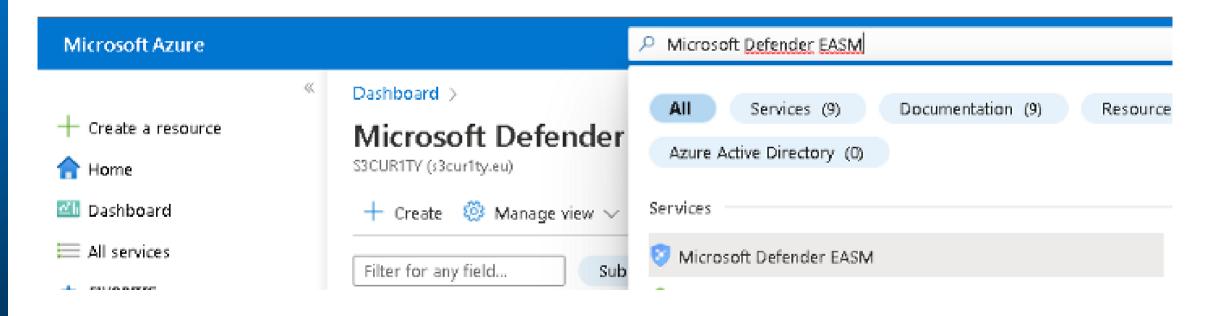
Defender EASM







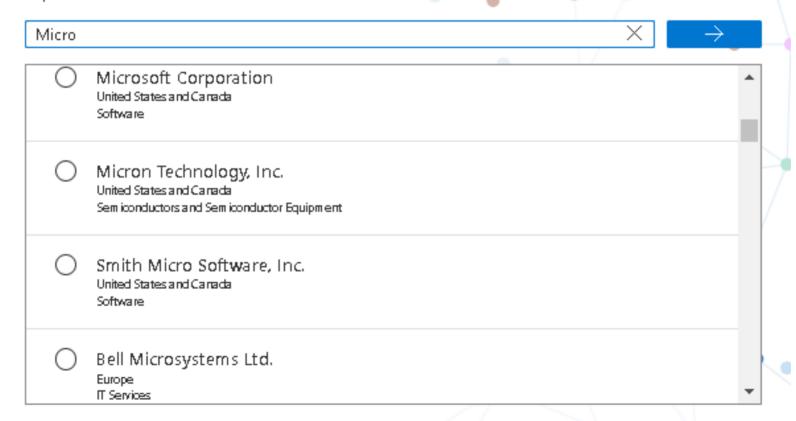




Welcome to Microsoft Defender External Attack Surface Management (EASM)!

Microsoft maintains an inventory of internet-facing devices and services (assets) which can be used to discover an organization's attack surface.

Search from a list of pre-built attack surfaces to understand your organization's internet exposure.



Add discovery group

Review + Create

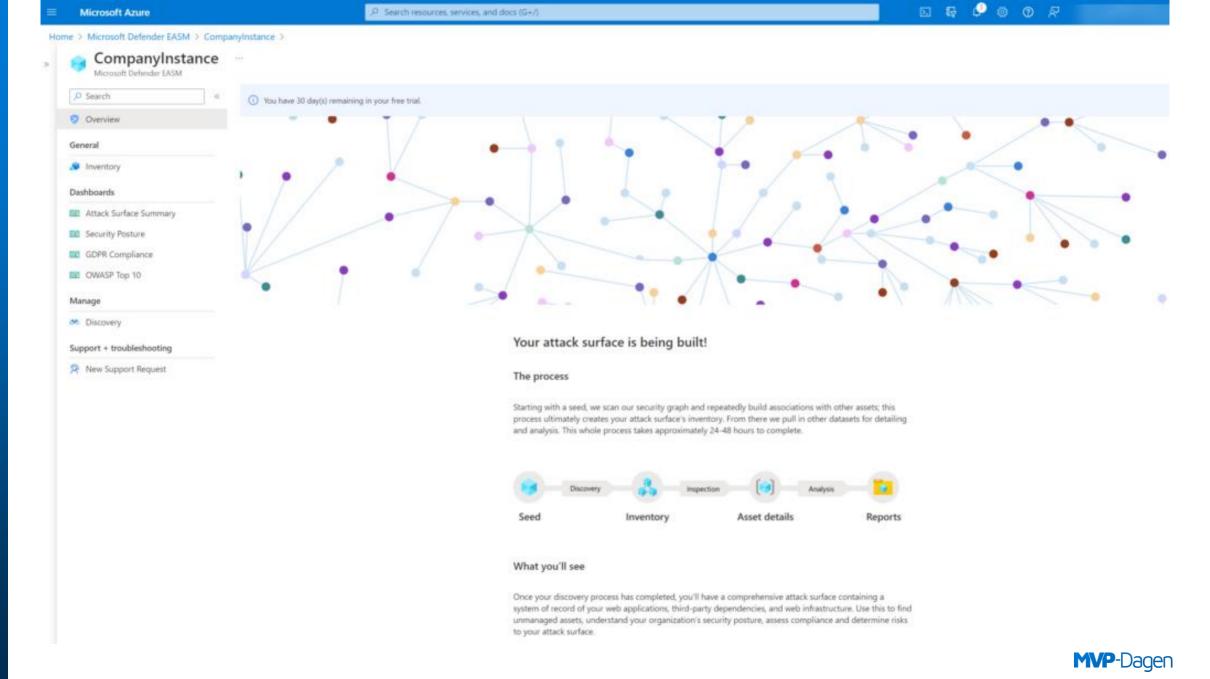
< Previous

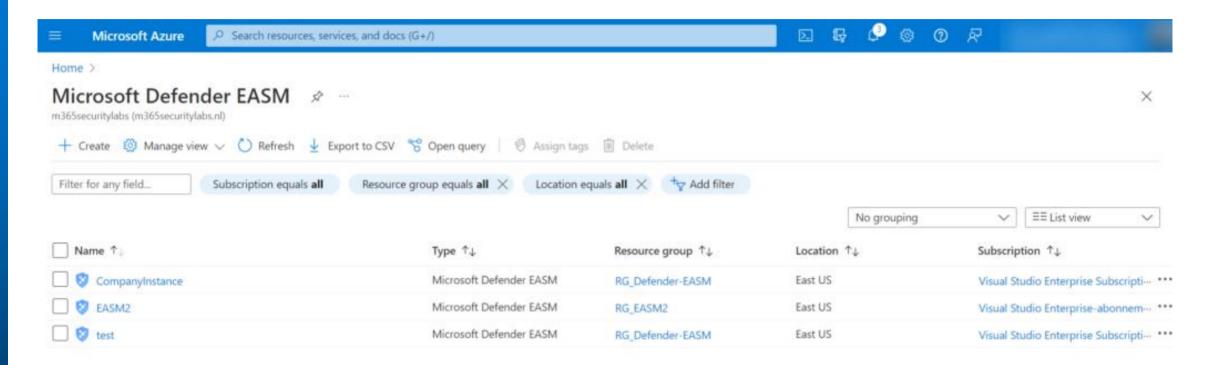
Group Information Seeds Review + Create Tell us what you know Enter what you know about your organization using the seed fields below. Quick Start (optional) Import seeds from an organization Seeds Clear Seeds ∨ Domains (6) Seed Domains for asset discovery ① Domains to exclude from asset discovery (i) adatum.com graphicdesigninstitute.com bellowscollege.com contososuites.com fabrikam.com firstupconsultants.com Example: office.com | One per line. Example: office.com | One per line. ✓ IP Blocks (3) Seed IP Blocks for asset discovery ① IP Blocks to exclude from asset discovery ① 192.168.92.79 172.16.231.12 10.241.92.18 Example: 20.64.0.0/10 | One per line. Example: 20.64.0.0/10 | One per line. > Hosts > Email Contacts

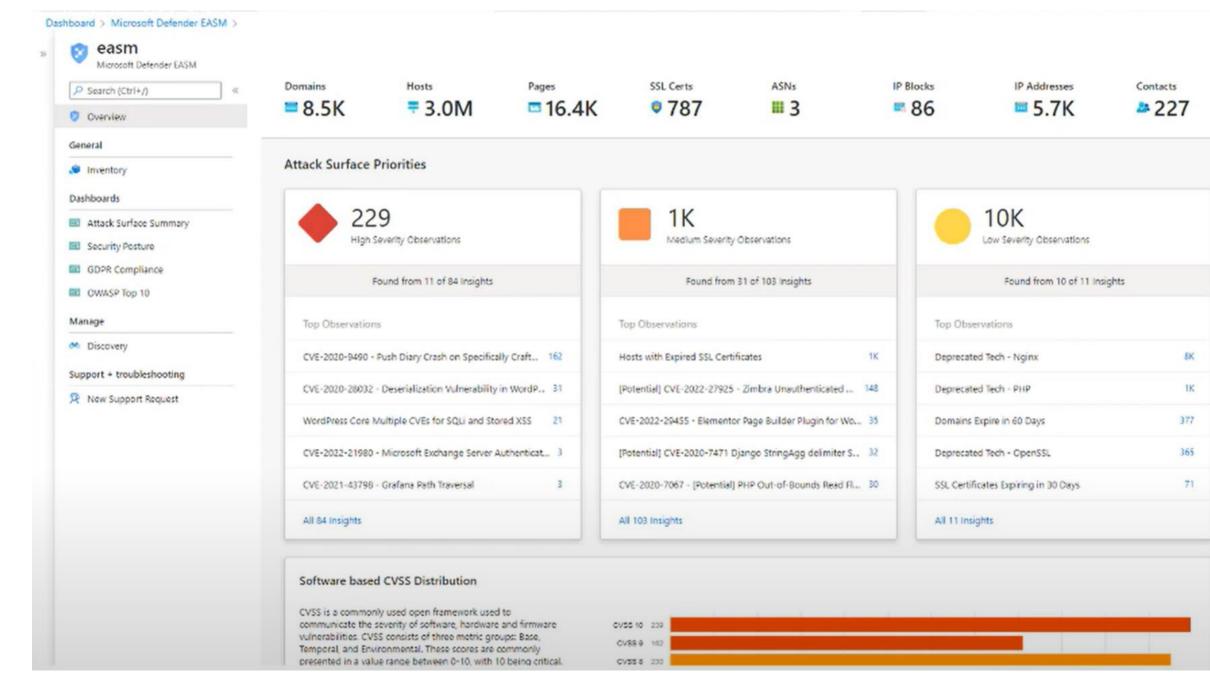
Next : Review + Create >

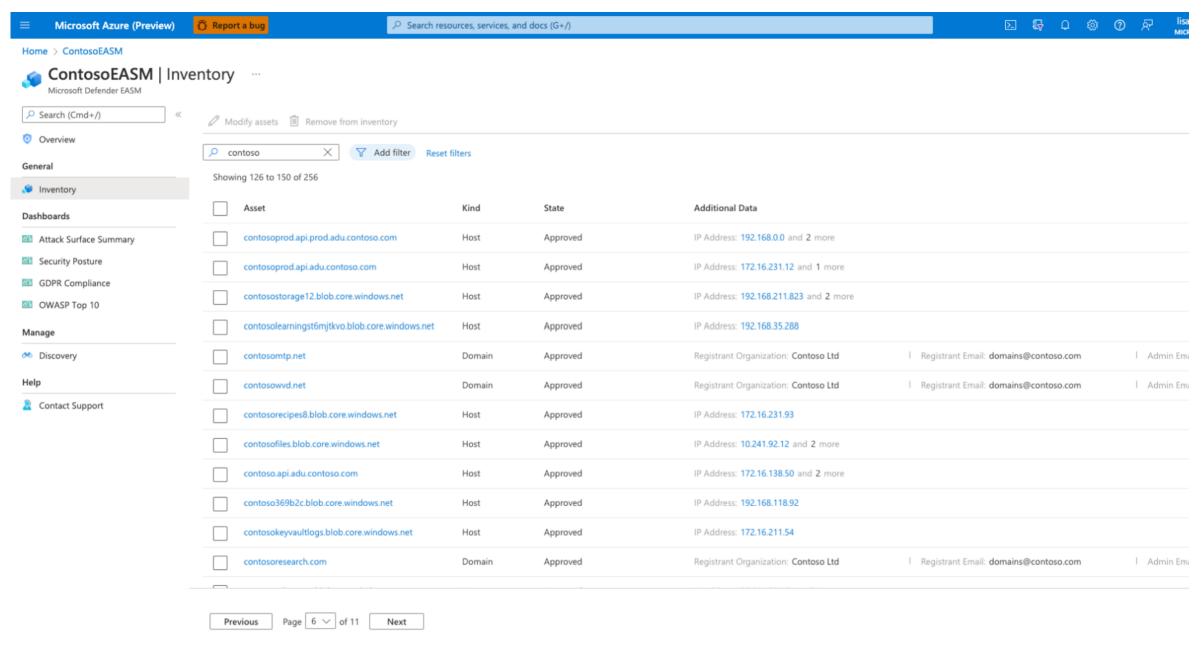














Attack Surface Summary

Security Posture

Dashboards

- GDPR Compliance
- OWASP Top 10

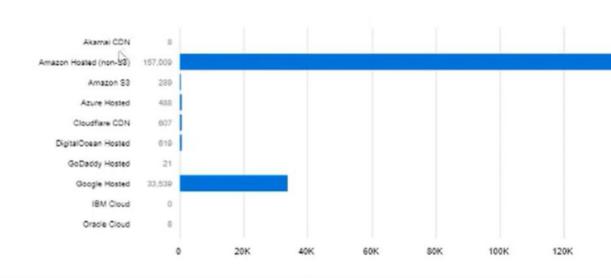
Manage

Discovery

Support + troubleshooting

Rew Support Request

Most organizations adopt the cloud gradually, creating a hybrid environment that can be difficult to manage. Defender EASM is able to understand the usage of specific cloud technologies and providers in order to give you insight into your externally facing Attack Surface. Dashboards, Reports and Insights can all be used to inform your cloud adoption program and ensure it's compliant with your organization's process.

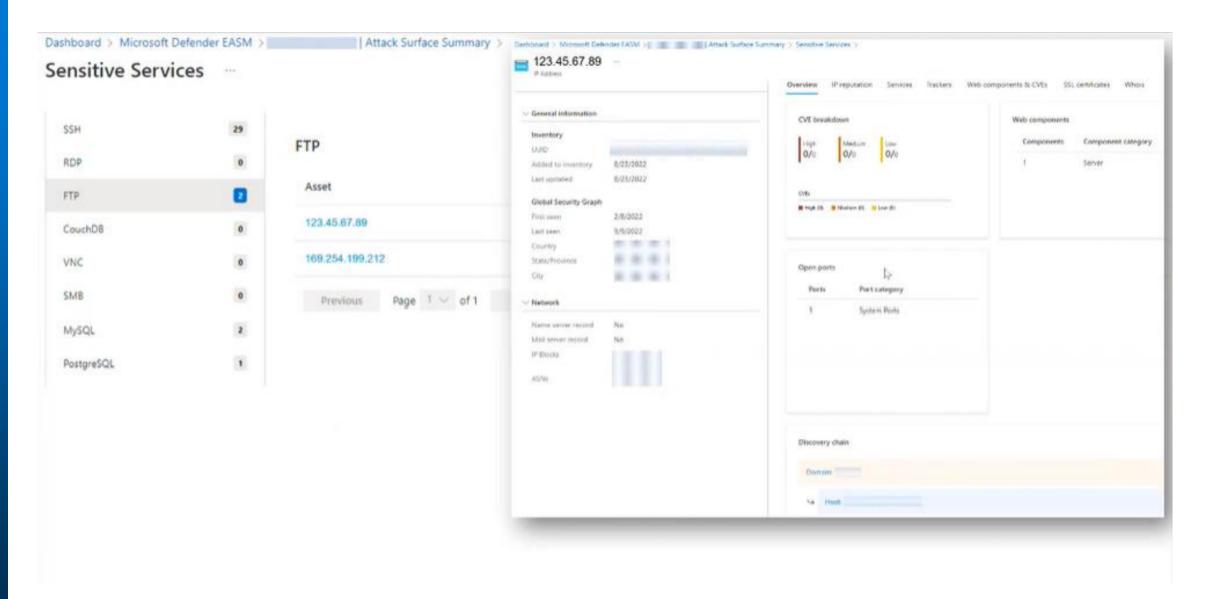


Sensitive Services

These services have been detected in the last 30 days on assets included in this attack surface. While useful, these services have historically proved vulnerable to attack or to be common vectors of information leakage to malicious actors. Drilling down will provide a list of the assets on which the service selected has been observed.







Open Ports

Ephemeral Forts	2
System Ports	168
Remote Access	0
Registered Ports	22
Web Servers	377
Database Severs	1
Networking Equipment	53
Internet Of Tryings	

Remote Access

The security posture related to the management of an organization's IP space is determined through observations of active open ports found in the IP space of an organization's digital footprint. Attackers commonly scan ports across the internet to look for known exploits related to known service. vulnerabilities or misconfigurations. Defender EASM identifies these ports as a compliment to vulnerability assessment tools so flagged observations can be reviewed by the organization's information technology team to ensure they are under management and restricted from direct access to the open internet. Defender EASM undertakes basic TCP SYN/ACK mass. scanning of Open Ports on all addresses in the IPv4 space. Our infrastructure scans 114 ports on a weekly basis. Defender EASM matches those IPs with an observed Open Port against an organisation's IP Blocks.

Why it matters

Annomalous open ports can be indicators of many things such as misconfigurations, non-adherance to deployment standards, even potential malicious activity. Regardless of the cause, exposure of sensetive ports can reveal potential ingress or egress of threats and exfiltration. At a minimum, certain open ports affract unwanted attention by affackers mass. scanning the internet.

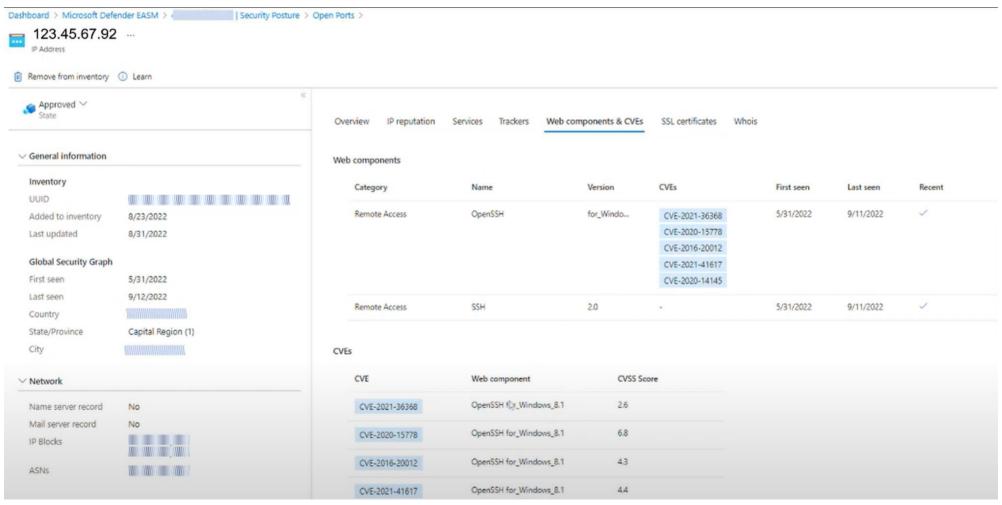
How to remediate

Practice least priviledge in your attack surface deployment by only the exposing the minimal services needed. Review assets with exposed ports with an eye towards finding out why it was exposed in the first place; default (mis)configuration, human error, deployment script, etc. Work with other organizational stakeholders to find gaps in processes and guidlines that will eventually prevent errant exposures as much as possible.

Asset	Kind	Status
	IP Address	Approved
111	IP Address	Approved
	IP Address	Approved
	IP Address	Approved
111	IP Address	Approved
	IP Address	Approved
111	IP Address	Approved
	IP Address	Approved
111	IP Address	Approved
111	IP Address	Approved
	IP Address	Approved
	IP Address	Approved

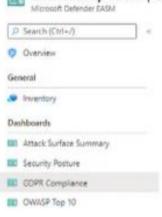


Remote Access Port – IP associated – W8.1 - Unpatched





easmCompetitor | GDPR Compliance

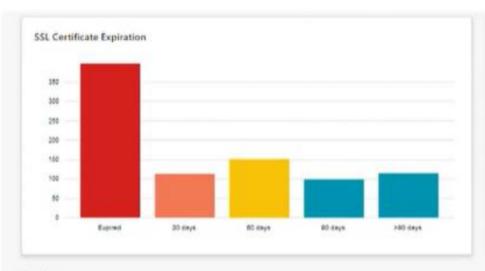


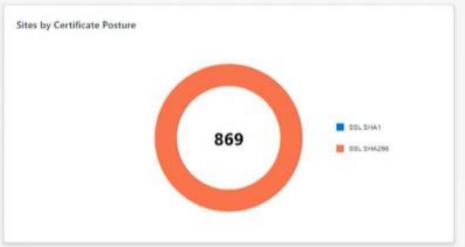


M Discovery

Support + troubleshooting

P New Support Request.



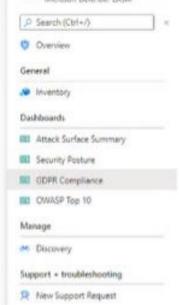


Pil Posture

A PII candidate website is one which accepts user input that can identify an individual. Examples of PII include input data such as Name, Address, Date of Birth, and Email Address. Candidacy for PII websites is extended to those with iharms and pop-up windows that populate during a browser session and accept data. Defender EASM has identified these pages by referencing the Document Object Model (DOM) of a page within your digital footprint and searching for forms that include login credentials or other types of PII. This method of discovery is language agnostic and is fully automated.

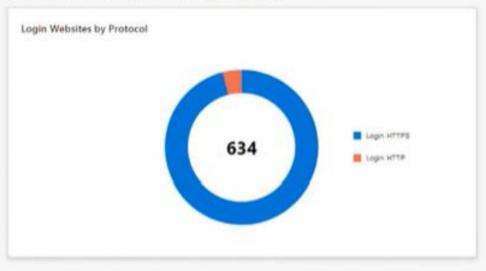






Login Posture

A login page is a page on a website where a user has the option to enter a Username and Password to gain access to services hosted on that site. Defender EASM identifies login pages by referencing the DOM of the actual page to search for code that correlates to a login. This process is fully automated and language agnostic.





Cookie Posture

A cookie is information in the form of a very small test file that is placed on the hand drive of the computer running a web browser when browser when browser sends the website of your previous activity. Defender EASM can detect websites which are in violation of the EU Cookie legislation. Crawlers are sent to each of the websites in the attack surface footprint from an EU proxy checking if a Cookie consent message is displayed. If a Cookie consent message is not displayed and a Cookie is present then each Cookie is checked for the following:

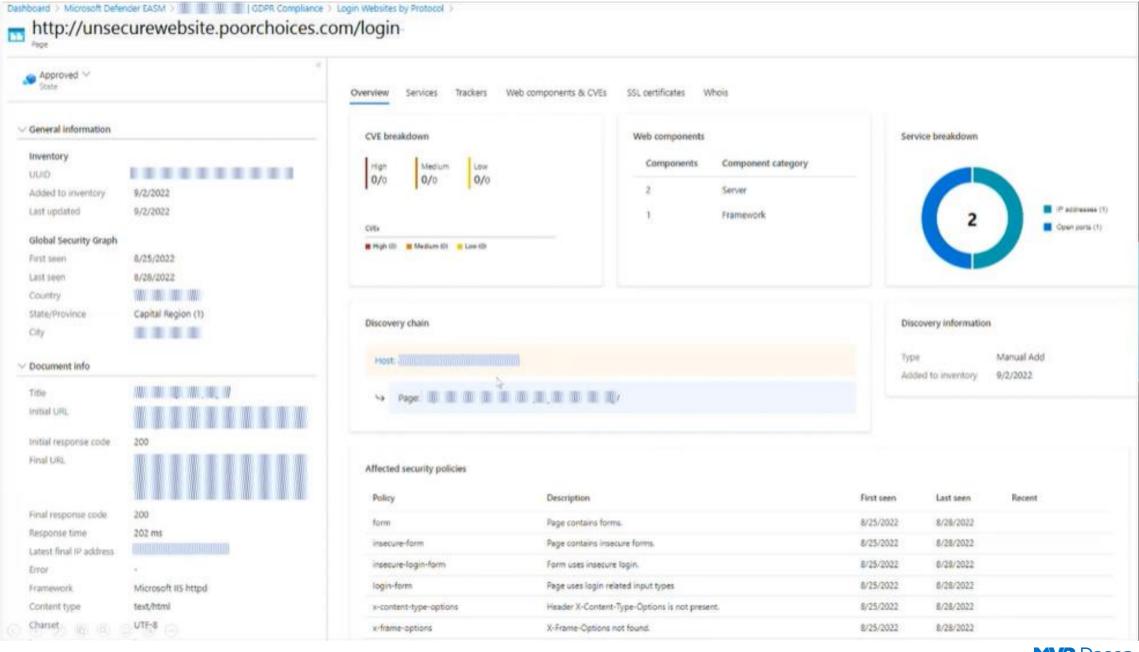
- . First Party Cookie should not have an expiry of longer than a year
- . Third party session or pensistent cookie exists With regards to CDPR, the above-mentioned attributes have been observed from crawling EU egress proxies by Google Chrome & IET1 browsers.

First Party Cookie Violations

O

Third Party Cookie Violations

93



OWASP top 10 dashboard

The OWASP Top 10 dashboard is designed to provide insight on the most critical security recommendations as designated by OWASP, a reputable open-source foundation for web application security. This list is globally recognized as a critical resource for developers who want to ensure their code is secure. OWASP provides key information about their top 10 security risks, as well as guidance on how to avoid or remediate the issue. This Defender EASM dashboard looks for evidence of these security risks within your Attack Surface and surfaces them, listing any applicable assets and how to remediate the risk.

Microsoft Acces (Previous) of Stand releases, belong inching the ContosoEASM | OWASP Top 10 Managed Company 1889 OWASP Top 10 Broken Access Control E Diamona Bridge Brown | Strike Record derived entitates policy said high care connect and substitute from the property of the same Engineeric School · bearing Why it matters Name of **Subbigsite** To Barker Supposedly result for suppose the desired in the enrugations than become Mak Sulfan brimes Description of Stranger madification, to destruct or at all page or performing a bachers back on autode the user's below ME. Security hostors Stocker by William and Japanes Stock MI. (s)MI Comprises How to remediate SHOWING AND SHAREST SANS. III SWAND THE RE being for price workers, drip to refer? Stand Root on a 4 Authorities. Maringe Insuring allow comments poors and and more from the upon it the provides including to setting boson (ingo-Software day have been paying that... Rose, eta: (Paring (COR): Longe Made access controls about a basic state score denseting out as the amount of the control make make points in order Execut happen Seine Side Regard Respec-My wine.

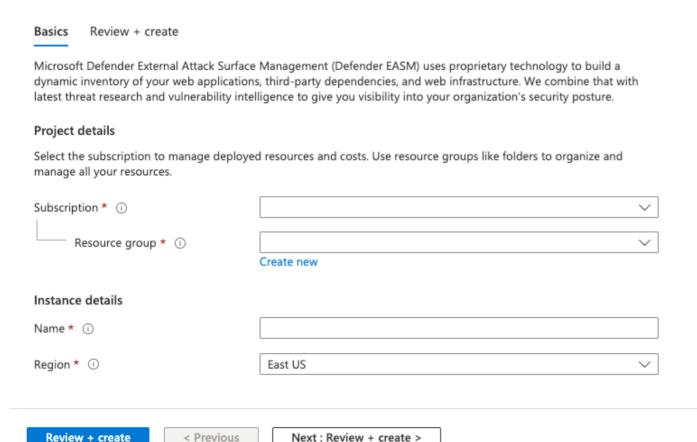


The current OWASP Top 10 Critical Securities list includes:

- 1. Broken access control: the failure of access control infrastructure that enforces policies such that users cannot act outside of their intended permissions.
- 2. Cryptographic failure: failures related to cryptography (or lack thereof) which often lead to the exposure of sensitive data.
- 3. Injection: applications vulnerable to injection attacks due to improper handling of data and other compliancerelated issues.
- 4. Insecure design: missing or ineffective security measures that result in weaknesses to your application.
- 5. Security misconfiguration: missing or incorrect security configurations that are often the result of insufficiently defined configuration process.
- 6. Vulnerable and outdated components: outdated components that run the risk of added exposures in comparison to up-to-date software.
- 7. Identification and authentication failures: failure to properly confirm a user's identity, authentication or session management to protect against authentication-related attacks.
- 8. Software and data integrity failures: code and infrastructure that does not protect against integrity violations, such as plugins from untrusted sources.
- 9. Security logging and monitoring: lack of proper security logging and alerting, or related misconfigurations, that can impact an organization's visibility and subsequent accountability over their security posture.
- 10. Server-side request forgery: web applications that fetch a remote resource without validating the user-supplied URL.

Nødvendig for å komme i gang

Create Microsoft Defender EASM workspace



- Azure Subscription
- Resource Group
- Tilgjengelige regioner PT.
 - southcentralus
 - westus3
 - eastus
 - eastasia
 - swedencental
 - Australieast
 - japaneast

Kilder

https://msandbu.org/getting-started-with-microsoft-defender-easm-external-attack-surface-management/

https://learn.microsoft.com/en-us/azure/external-attack-surface-management/

https://derkvanderwoude.medium.com/introduction-into-microsoft-defender-easm-external-attack-surface-management-3fdee6ccf256

https://jeffreyappel.nl/how-to-use-microsoft-defender-easm-external-attack-surface-management/



Tusen takk! MP-Dagen