MISP and ATT&CK - an evolving integration

Using ATT&CK as the corner stone for improving the modeling of adversaries in an Open Source TIP

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20190509 - TLP:WHITE

MISP and ATT&CK - a love story

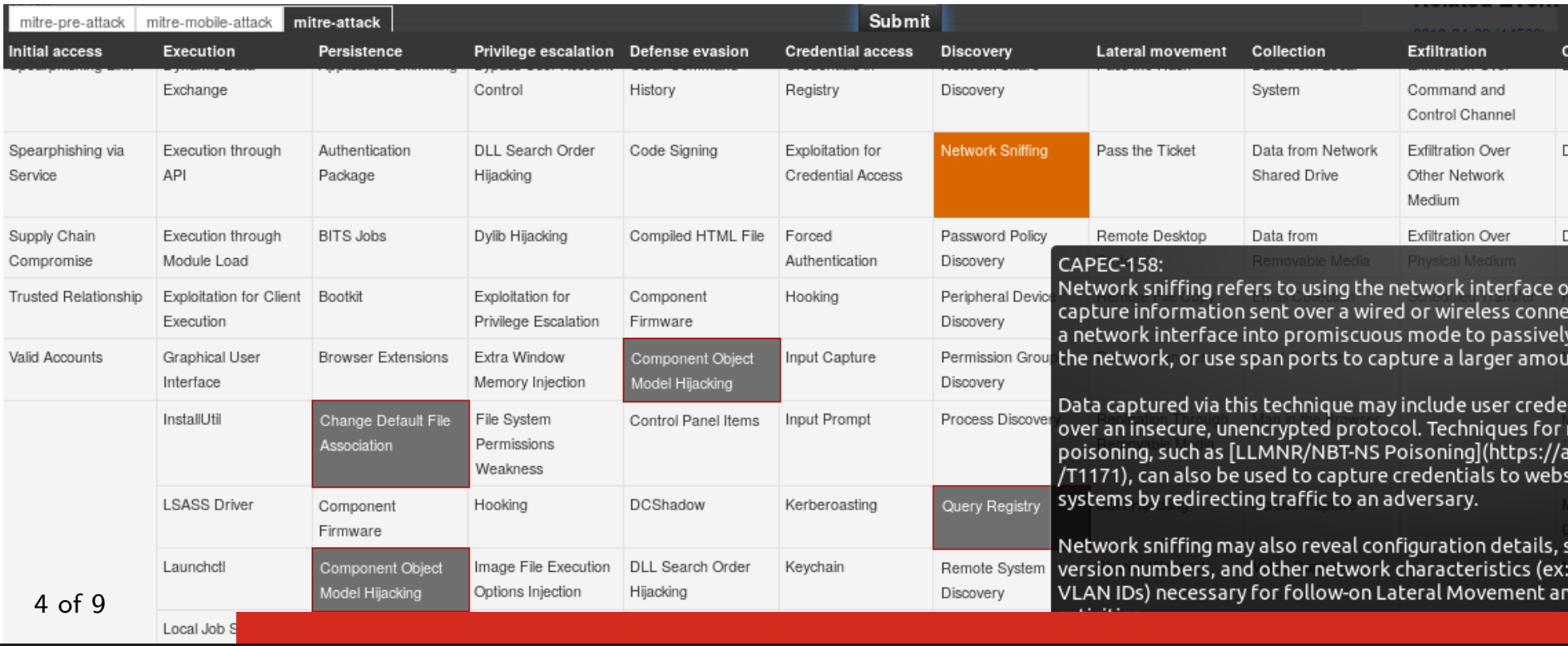
The MISP threat sharing platform is a free and open source software enabling **information sharing, collaboration, automation and modeling of a wide gamut of intelligence**.

Generalised contextualisation model

- MISP already had a system in place allowing users to contextualise data using **a shared library of knowledge base elements called galaxies**.
- The initial implementation (in August 2017) of ATT&CK was a regular galaxy.
- Users could already share and filter by techniques and tactics out-of-the-box using ATT&CK.

Improved UI mimicing ATT&CK navigator

- After the first ATT&CK community workshop in Luxembourg (24-25 May 2018), the release and presentation of **navigator** opened up our eyes.
- Users got to use a familar UI, representing the kill-chain elements in a meaningful way.



Introducing ATT&CK statistics

- A global and per-event ATT&CK visualisation to quickly grasp the techniques and tactics used.

mitre-pre-attack | mitre-mobile-attack | **mitre-attack**

Initial access	Execution	Persistence	Privilege escalation	Defense evasion	Credential access	Discovery	Lateral m
Drive-by Compromise	AppleScript	.bash_profile and .bashrc	Access Token Manipulation	Access Token Manipulation	Account Manipulation	Account Discovery	AppleScr
Exploit Public-Facing Application	CMSTP	Accessibility Features	Accessibility Features	BITS Jobs	Bash History	Application Window Discovery	Applicatio Software
Hardware Additions	Command-Line Interface	Account Manipulation	AppCert DLLs	Binary Padding	Brute Force	Browser Bookmark Discovery	Distribute Model
Replication Through Removable Media	Compiled HTML File	AppCert DLLs	AppInit DLLs	Bypass User Account Control	Credential Dumping	File and Directory Discovery	Exploitati Services
Spearphishing Attachment	Control Panel Items	AppInit DLLs	Application Shimming	CMSTP	Credentials in Files	Network Service Scanning	Logon Sc
Spearphishing Link	Dynamic Data Exchange	Application Shimming	Bypass User Account Control	Clear Command History	Credentials in Registry	Network Share Discovery	Pass the
Spearphishing via Service	Execution through API	Authentication Package	DLL Search Order Hijacking	Code Signing	Exploitation for Credential Access	Network Sniffing	Pass the
Supply Chain Compromise	Execution through Module Load	BITS Jobs	Dylib Hijacking	Compiled HTML File	Forced Authentication	Password Policy Discovery	Remote
Trusted Relationship	Exploitation for Client Execution	Bootkit	Exploitation for Privilege Escalation	Component Firmware	Hooking	Peripheral Device Discovery	Remote
Valid Accounts	Graphical User Interface	Browser Extensions	Extra Window Memory Injection	Component Object Model Hijacking	Input Capture	Permission Groups Discovery	Remote
	InstallUtil	Change Default File Association	File System Permissions Weakness	Control Panel Items	Input Prompt	Process Discovery	Replicatio Removal
	LSASS Driver	Component Firmware	Hooking	DCShadow	Kerberoasting	Query Registry	SSH Hija
	Launchctl	Component Object Model	Image File Execution Options	DLL Search Order Hijacking	Keychain	Remote System Discovery	Shared W

Pivoting from any galaxy such as threat actors, sectors, tools, ...

threat-actor: Lazarus Group

Cluster ID	108651
Name	Lazarus Group
Parent Galaxy	Threat Actor
Description	Since 2009, HIDDEN COBRA actors have leveraged their capabilities to target and compromise a range of victims; some intrusions have resulted in the exfiltration of data while others have been disruptive in nature. Commercial reporting has referred to this activity as Lazarus Group and Guardians of Peace. Tools and capabilities used by HIDDEN COBRA actors include DDoS botnets, keyloggers, remote access tools (RATs), and wiper malware. Variants of malware and tools used by HIDDEN COBRA actors include Destover, Duuzer, and Hangman.
UUID	68391641-859f-4a9a-9a1e-3e5cf71ec376
Collection UUID	7cdff317-a673-4474-84ec-4f1754947823
Source	MISP Project
Authors	Alexandre Dulaunoy, Florian Roth, Thomas Schreck, Timo Steffens, Various
Connector tag	misp-galaxy:threat-actor="Lazarus Group"
Events	50 event(s)

Toggle ATT&CK Matrix

mitre-pre-attack | mitre-mobile-attack | **mitre-attack**

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Spearphishing via Service	Execution through API	Authentication Package	DLL Search Order Hijacking	Code Signing	Exploitation for Credential	Network Sniffing	Pass the
Supply C							

Community extension for ATT&CK-like galaxies

- Seeing an interest into **modeling other concerns similarly to the ATT&CK model**, MISP added an option to create your own ATT&CK-like matrices.

Election guidelines

example-of-threats

Setup | party/candidate registration	Setup | electoral rolls	Campaign | campaign IT	All phases | governement IT
DoS or overload of party/campaign registration, causing them to miss the deadline	Deleting or tampering with voter data	Hacking campaign websites (defacement, DoS)	DoS or overload of government websites
Fabricated signatures from sponsor	DoS or overload of voter registration system, suppressing voters	Hacking candidate laptops or email accounts	Hacking campaign websites, spreading misinformation on the election process, registered parties/candidates, or results
Tampering with registrations	Identity fraud during voter registration	Hacking candidate laptops or email accounts	Hacking/misconfiguration of government servers, communication networks, or endpoints

fraud-tactics

Initiation	Target Compromise	Perform Fraud	Obtain Fraudulent Assets
ATM Shimming	ATM Black Box Attack	Business Email Compromise	Compromised Account Credentials
ATM skimming	Account-Checking Services	CxO Fraud	Compromised Intellectual Property (IP)
POS Skimming	Account-Checking Services	Insider Trading	Compromised Payment Cards
Phishing	Malware	Scam	Compromised Personally Identifiable Information (PII)

Future

- We saw **an increase of ATT&CK contextualisation** in different information sharing communities relying on MISP.
- **Sighting and the sharing of metrics** among information sharing communities is becoming a requirement.
- Introducing CAR in MISP is the logical next step pending the evolution of CAR.

Contact

- Getting started with information sharing, want to provide feedback about MISP or discover open source tooling, don't hesitate to contact us:
- Contact: info@circl.lu
- `https://www.circl.lu/`
- `https://github.com/MISP` - `https://twitter.com/MISPProject`
- `https://github.com/CIRCL` - `https://www.misp-project.org/galaxy.html`