

Sub-techniques, priorities,  
more open source &  
MITRE ATT&CK® at mobile phone

~by Andrii Bezverkhyi, SOC Prime

twitter @andriinb

# \_whoami

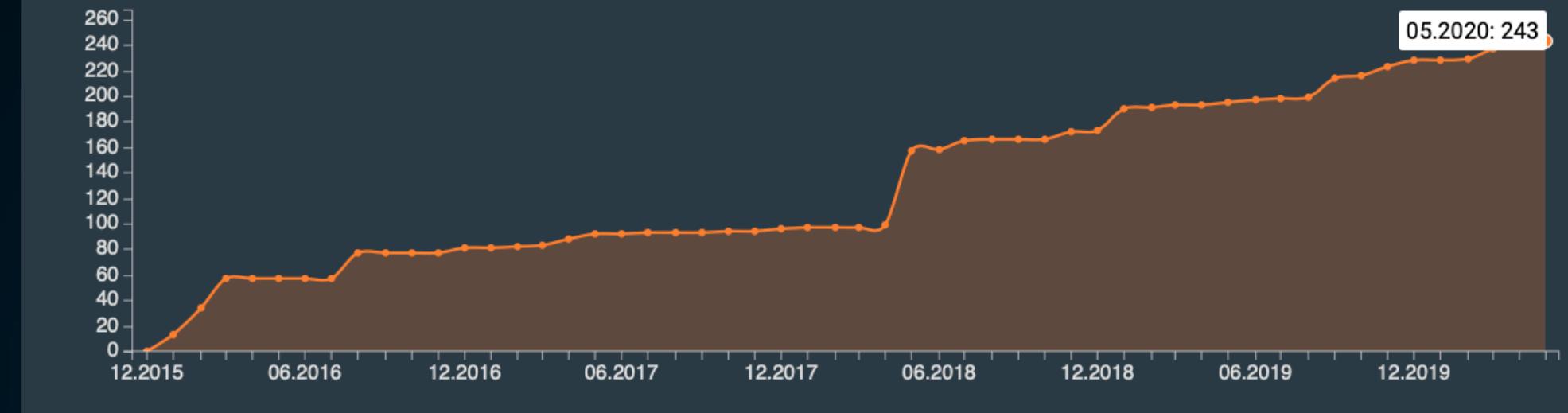
NotPetya attribution using ATT&CK in 5 days, July 2, 2017

Sigma + ATT&CK capability Jan 2018 and acceptance May, 2018

Architect of uncoder.io

THANK YOU

EU ATT&CK & Sigma communities & SOC Prime team,  
for making this possible.

TOP AUTHORS iRelease ▼Filter ▼Year ▼

# Sub-Techniques

[All](#) Phishing TTP Zoom Work From Home Panda APT Bear APT

e.g. APT28, PowerShell



## TACTICS (12)

**Initial Access**  
9 techniques**Execution**  
10 techniques**Persistence**  
18 techniques**Privilege Escalation**  
12 techniques**Defense Evasion**  
34 techniques**Credential Access**  
14 techniques**Discovery**  
23 techniques**Lateral Movement**  
9 techniques**Collection**  
16 techniques**Command and Control**  
16 techniques**Exfiltration**  
9 techniques**Impact**  
13 techniques

## TECHNIQUES (10)

## Command and Scripting Interpreter

Rules Examples Subtechniques  
17 35 6

## Exploitation for Client Execution

Rules Examples Subtechniques  
4 25 0

## Inter-Process Communication

Rules Examples Subtechniques  
0 0 2

## Native API

Rules Examples Subtechniques  
0 21 0

## Scheduled Task/Job

Rules Examples Subtechniques  
9 1 5

## Shared Modules

Rules Examples Subtechniques  
0 4 0

## Command and Scripting Interpreter

Choose subtechnique

Core technique

[Info](#) [Examples](#) [Sigma](#) [Yara](#) [RED Tests](#)ID: Version: Created: CAPEC ID: Contributor  
T1059 2.0 31 May 2017 - -

## DESCRIPTION

Adversaries may abuse command and script interpreters to execute commands, scripts, or binaries. These interfaces and languages provide ways of interacting with computer systems and are a common feature across many different platforms. Most systems come with some built-in command-line interface and scripting capabilities, for example, many Linux distributions include [Bash](#) as a default shell while Windows installations include the [Windows Command Shell](#) and [PowerShell](#).

There are also additional third-party interpreters, such as [Python](#), that may also be cross-platform.

Tactics: [Execution](#) Permission Required:  
[User](#)

Platforms: [Linux](#), [Windows](#), [macOS](#) Data Sources  
[PowerShell logs](#), [Process command-line parameters](#), [Process monitoring](#), [Windows Registry](#), [Windows event logs](#)

## DETECTION

Command-line and scripting activities can be captured through proper logging of process execution with command-line arguments. This information can be useful in gaining additional insight to adversaries' actions through how they use native processes or custom tools.

13:21



AA

attack.socprime.com



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# Command and Scripting Interpreter

Choose subtechnique

Core technique

[Info](#) [Examples](#) [Sigma](#) [Yara](#) [RED Tests](#)

ID: T1059 Version: 2.0 Created: 31 May 2017

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# Command and Scripting Interpreter

Choose subtechnique

Core technique

[Info](#) [Examples](#) [Sigma](#) [Yara](#) [RED Tests](#)

Sofacy Zebrocy by Florian Roth

DHCP Server Loaded the CallOut DLL by Dimitrios Slamaris

Equation Group Indicators by Florian Roth

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# Command and Scripting Interpreter

Choose subtechnique

Core technique

[Info](#) [Examples](#) [Sigma](#) [Yara](#) [RED Tests](#)

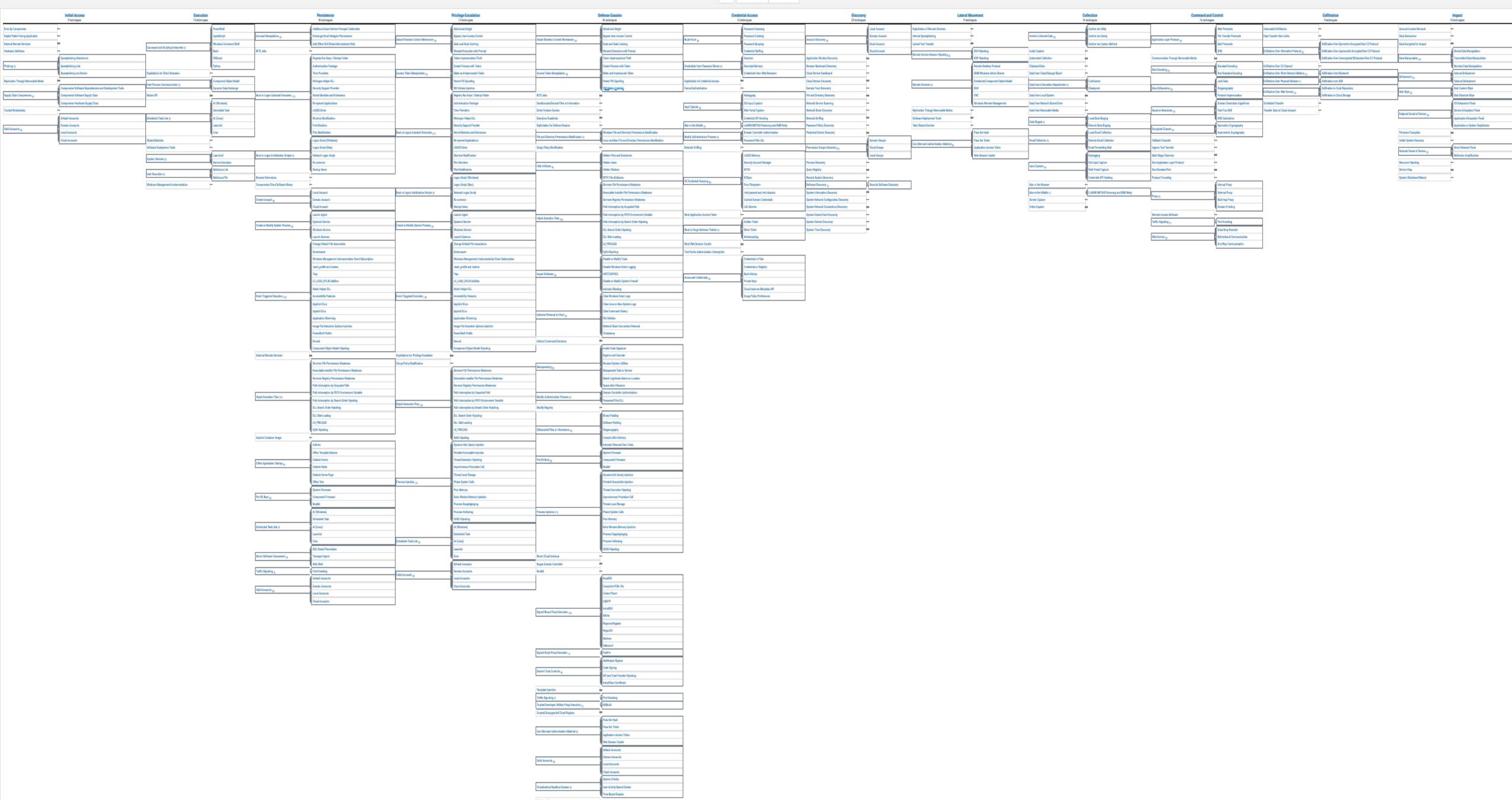
GEN OSX PYAGENT PERSISTENCE by John Lambert

APT MOFANG by Yonathan Klijnsma

APT WILDNEUTRON by Florian Roth

## ACK Matrix for Enterprise

Show sub-techniques Hide sub-techniques



## Periodic table

Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Alkali metals	Alkaline earth metals													Pnictogens	Chalcogens	Halogens	Noble gases
Period	Hydrogen																	Helium
1	1 H 1.008																	2 He 4.0026
2	Lithium 3 Li 6.94	Beryllium 4 Be 9.0122																Neon 10 Ne 20.180
3	Sodium 11 Na 22.990	Magnesium 12 Mg 24.305																Argon 18 Ar 39.95
4	Potassium 19 K 39.098	Calcium 20 Ca 40.078	Scandium 21 Sc 44.956	Titanium 22 Ti 47.867	Vanadium 23 V 50.942	Chromium 24 Cr 51.996	Manganese 25 Mn 54.938	Iron 26 Fe 55.845	Cobalt 27 Co 58.933	Nickel 28 Ni 58.693	Copper 29 Cu 63.546	Zinc 30 Zn 65.38	Gallium 31 Ga 69.723	Germanium 32 Ge 72.630	Phosphorus 33 P 30.974	Sulfur 34 S 32.06	Chlorine 17 Cl 35.45	Krypton 36 Kr 83.798
5	Rubidium 37 Rb 85.468	Strontium 38 Sr 87.62	Yttrium 39 Y 88.906	Zirconium 40 Zr 91.224	Niobium 41 Nb 92.906	Molybdenum 42 Mo 95.95	Technetium 43 Tc [97]	Ruthenium 44 Ru 101.07	Rhodium 45 Rh 102.91	Palladium 46 Pd 106.42	Silver 47 Ag 107.87	Cadmium 48 Cd 112.41	Indium 49 In 114.82	Tin 50 Sn 118.71	Antimony 51 Sb 121.76	Tellurium 52 Te 127.60	Iodine 53 I 126.90	Xenon 54 Xe 131.29
6	Caesium 55 Cs 132.91	Barium 56 Ba 137.33	Lanthanum 57 La 138.91	Hafnium 72 Hf 178.49	Tantalum 73 Ta 180.95	Tungsten 74 W 183.84	Rhenium 75 Re 186.21	Osmium 76 Os 190.23	Iridium 77 Ir 192.22	Platinum 78 Pt 195.08	Gold 79 Au 196.97	Mercury 80 Hg 200.59	Thallium 81 Tl 204.38	Lead 82 Pb 207.2	Bismuth 83 Bi 208.98	Polonium 84 Po [209]	Astatine 85 At [210]	Radon 86 Rn [222]
7	Francium 87 Fr [223]	Radium 88 Ra [226]	Actinium 89 Ac [227]	Rutherfordium 104 Rf [267]	Dubnium 105 Db [268]	Seaborgium 106 Sg [269]	Bohrium 107 Bh [270]	Hassium 108 Hs [269]	Meitnerium 109 Mt [278]	Darmstadtium 110 Ds [281]	Roentgenium 111 Rg [282]	Copernicium 112 Cn [285]	Nihonium 113 Nh [286]	Flerovium 114 Fl [289]	Moscovium 115 Mc [290]	Livermorium 116 Lv [293]	Tennesine 117 Ts [294]	Oganesson 118 Og [294]

1 (red)=Gas    3 (black)=Solid    80 (green)=Liquid    109 (gray)=Unknown    Color of the atomic number shows state of matter (at 0 °C and 1 atm)

Primordial    From decay    Synthetic    Border shows natural occurrence of the element

Standard atomic weight  $A_{r,\text{std}}(E)$ <sup>[4]</sup>: Ca: 40.078 — Formal short value, rounded (no uncertainty)<sup>[5]</sup>

Po: [209] — mass number of the most stable isotope

Background color shows subcategory in the metal–metalloid–nonmetal trend:

Metal					Metalloid	Nonmetal		Unknown chemical properties
Alkali metal	Alkaline earth metal	Lanthanide	Actinide	Transition metal	Post-transition metal	Reactive nonmetal	Noble gas	

# Transpose the matrix, Tactics move to horizontal

12x32



## Terms used consistently, Tactics cropped from Technique names

# Discovery: idea on sub-techniques

Host Parameters		User Data	Network Specifics
Software	Accounts	Browser Bookmark	Domain Trust
System Information	File and Directory	Application Window	Password Policy
System Network Configuration	Peripheral Device	System Owner / User	Network Sniffing
System Services	Permission Groups		Remote System
System Time	Process Listing		
System Network Connections	Query Registry		

# Credential Access: idea on sub-techniques

Clear Text Credentials		Credential Extraction							
Unsecured Credentials		OS Credential Dumping	LSASS Memory	NTDS	DCSync	Proc Filesystem	/etc/passwd and /etc/shadow	Cached Domain Credentials	LSA Secrets
Network Sniffing		Credentials from Password Stores	Keychain	Securityd Memory	Credentials from Web Browsers				

## MITRE | ATT&amp;CK

Filter result

Platform: Sigma

Sigma Type: Threat Hunting Sigma

Clear Filter

 Blue Team Red Team Purple Team Other

Table

Kill Chain

Flat

Tools: 21 / 21

Actors: 24 / 24

Techniques: 6 / 6

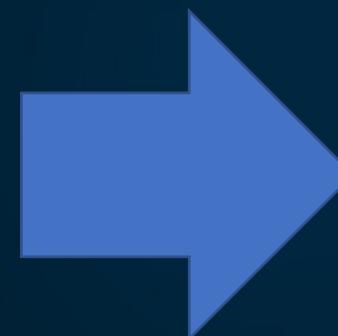
T1190	Initial Access	Ex: 5
	Exploit Public-Facing Application	
Rules: 56		May 14, 2020
T1203	Execution	Ex: 26
	Exploitation for Client Execution	
Rules: 13		May 05, 2020
T1068	Privilege Escalation	Ex: 15
	Exploitation for Privilege Escalation	
Rules: 15		May 14, 2020
T1211	Defense Evasion	Ex: 1
	Exploitation for Defense Evasion	
Rules: 6		May 15, 2020
T1212	Credential Access	Ex: 0
	Exploitation for Credential Access	
Rules: 4		May 14, 2020
T1210	Lateral Movement	Ex: 8
	Exploitation of Remote Services	
Rules: 10		May 14, 2020

6 Tactics

6 Techniques, #5 has 0 examples

55 examples

104 Sigma rules on behavior



Tactics	Techniques	Examples	Sigma
6	6	55	104

Exploit code = 6-6-55-104

Ex

Exploit

6-6-55-104

# Phantom techniques



T1153	Execution	Ex: 0
	Source	
Rules: 0		
T1019	Persistence	Ex: 3
	System Firmware	
Rules: 0		
T1157	Privilege Escalation	Ex: 0
	Dylib Hijacking	
Rules: 0		
T1480	Defense Evasion	Ex: 2
	Execution Guardrails	
Rules: 0		
T1111	Credential Access	Ex: 1
	Two-Factor Authentication Interception	
Rules: 0		
T1538	Discovery	Ex: 0
	Cloud Service Dashboard	
Rules: 0		
T1184	Lateral Movement	Ex: 1
	SSH Hijacking	
Rules: 0		
T1052	Exfiltration	Ex: 5
	Exfiltration Over Physical Medium	
Rules: 0		
T1529	Impact	Ex: 6
	System Shutdown/Reboot	
Rules: 0		
T1162	Persistence	Ex: 1
	Login Item	
Rules: 0		
T1514	Privilege Escalation	Ex: 1
	Elevated Execution with Prompt	
Rules: 0		
T1109	Defense Evasion	Ex: 1
	Component Firmware	
Rules: 0		
T1167	Credential Access	Ex: 1
	Securityd Memory	
Rules: 0		
T1534	Lateral Movement	Ex: 0
	Internal Spearphishing	
Rules: 0		
T1537	Exfiltration	Ex: 0
	Transfer Data to Cloud Account	
Rules: 0		
T1502	Privilege Escalation	Ex: 1
	Parent PID Spoofing	
Rules: 0		
T1502	Defense Evasion	Ex: 1
	Parent PID Spoofing	
Rules: 0		
T1522	Credential Access	Ex: 0
	Cloud Instance Metadata API	
Rules: 0		
T1506	Lateral Movement	Ex: 0
	Web Session Cookie	
Rules: 0		
T1525	Persistence	Ex: 0
	Implant Container Image	
Rules: 0		
T1519	Privilege Escalation	Ex: 0
	Emond	
Rules: 0		
T1109	Persistence	Ex: 1
	Component Firmware	
Rules: 0		
T1536	Defense Evasion	Ex: 0
	Revert Cloud Instance	
Rules: 0		
T1519	Persistence	Ex: 0
	Emond	
Rules: 0		
T1535	Defense Evasion	Ex: 0
	Unused/Unsupported Cloud Regions	
Rules: 0		
T1506	Defense Evasion	Ex: 0
	Web Session Cookie	
Rules: 0		

21 total, 23 examples, 0 sigma

Ph



Phantom



9-21-23-0

10 techniques

Command and  
Scripting  
Interpreter (6)

- PowerShell
- AppleScript
- Windows Command Shell
- Bash
- VBScript
- Python

C#  
.NET

# Command Interpreter

1 Tactic

1 Technique

285 examples

280 Sigma rules,

CI

1-2-285-280

Command  
Interpreter

# CyberElements

Ex

6-6-55-104

Cl

1-2-285-280

Ph

9-21-23-0

# Prioritized by Sightings, Examples and Sigma count



# Automating Mapping to ATT&CK: The Threat Report ATT&CK Mapper (TRAM) Tool



Sarah Yoder Following  
Dec 20, 2019 · 7 min read



*TRAM is a web-based tool that automates the extraction of adversary behaviors for the purpose of mapping them to ATT&CK.*



# Building an ATT&CK Sightings Ecosystem



John Wunder Follow  
Feb 28, 2019 · 3 min read



People love that ATT&CK is driven by real data. It's not a theoretical set of possible things adversaries **could** do, it's a compendium of things adversaries have **actually** done.



Do not exclude.  
Prioritize.

/Be safe

twitter @andriinb



# Sigma @ ATT&CK for Cloud

Filter result

Platform: Sigma

Cloud: AWS Azure Azure AD GCP Office 365 SaaS

Sigma Type: Threat Hunting Sigma Compliance

111 Rules

111 Sigma Rules

20 Log Sources

3 Tools

10 Actors

36 Techniques

101  
 10  
 111

Recommended



Possible SCAM/SPAM or Phishing via Calendar (via gsuite)

★★★★★ | 95 16 0

by: SOC Prime Team    Type: Rule    Released: 22 Oct 2019  
Updated: 9 Apr 2020

Details

View

Context

10 Jun 2019 #threatintel

17 Jun 2019 Media

Severity (via gsuite)	Rule	
Interactive Logon to Server Systems	Rule	1
GCP Service Account Created (via gcpaudit)	Rule	1
Possible PowerUpSQL module usage (via cmdline)	Rule	1
AWS Root Credentials	Rule	1
Network Successful login with Built-in Accounts	Rule	1
Azure AD Failed Logins	Rule	1
Multiple Failed Logins with Different Accounts from Single Source System	Rule	1
Remote access to SSH, FTP, SFTP applications	Rule	1

T1192	Initial Access	Ex: 21
	Spearphishing Link	
Rules: 20		May 18, 2020
T1136	Persistence	Ex: 16
	Create Account	
Rules: 9		Apr 16, 2020
T1189	Initial Access	Ex: 16
	Drive-by Compromise	
Rules: 5		Apr 01, 2020
T1098	Persistence	Ex: 7
	Account Manipulation	
Rules: 37		Apr 30, 2020
T1190	Initial Access	Ex: 5
	Exploit Public-Facing Application	
Rules: 56		May 18, 2020
T1108	Persistence	Ex: 8
	Redundant Access	
Rules: 3		May 14, 2020

T1108	Defense Evasion
	Redundant Access
Rules: 3	
T1527	Defense Evasion
	Application Abuse
Rules: 4	
T1536	Defense Evasion
	Revert Cloud
Rules: 0	