



Testing Security Effectiveness with the MITRE ATT&CK™ Framework



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01 | Modelling Threat Simulations with the MITRE ATT&CK™ Framework

Why MITRE™?

The MITRE ATT&CK™ framework has been gaining traction globally thanks to its comprehensive mapping of adversary tactics and techniques used to infiltrate a network, compromise systems, move laterally and act on malicious threat actor objectives. Across Mac, PC and other platforms, the framework exhaustively covers the full cyber-attack kill chain, from pre-exploitation to exploitation to post-exploitation tactics, techniques, and procedures (TTPs).

Security analysts, researchers, and incident response teams (SOCs) can leverage the tactics enumerated by the framework to test the effectiveness of their security controls and validate that they are operating as expected. Organizations with mature security programs go as far as building their own threat models and running them in their own environment to assess their potential impact.

Limitations of Traditional Threat Modelling

Until recently, this kind of testing of ATT&CK-based techniques, could only be performed in one of several ways.

First, using manual open-source ATT&CK-based tools, security professionals could manually run a list of commands on a target system or server, and verify whether their controls are blocking the

simulated attack, alerting on it and logging it appropriately. Another option would be to use automated pen testing software or red teaming tools mapped to MITRE ATT&CK™. While the latter would be the most effective, these tools often test only certain attack vectors, while failing to simulate the full attack kill chain to emulate the behavior of a multi-vector cyber-attack, or Advanced Persistent Threat (APT). Additionally, they do not necessarily emulate the very latest threats and techniques.

Simulate the Latest Threats with the MITRE ATT&CK™ Framework

With Cymulate's SaaS-based Breach and Attack Simulation (BAS) module, access the best of all worlds:

- Industry-recognized threat modelling using the blocks of the MITRE ATT&CK™ framework
- Simulations of the very latest techniques utilized by current cyber threats, updated daily
- Full attack kill chain coverage, emulating the logical events flow of a multi-vector APT
- Simple wizard-based templates for customizing attack simulations to your needs
- Automation of ATT&CK-based simulations, so you can run them daily, weekly, or whenever
- Remediation and mitigation guidelines mapped to ATT&CK™ for additional context

Don't Speculate. Cymulate.



Wizard-based
ATT&CK templates



PC or Mac



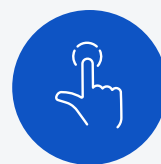
Test security across
the kill chain



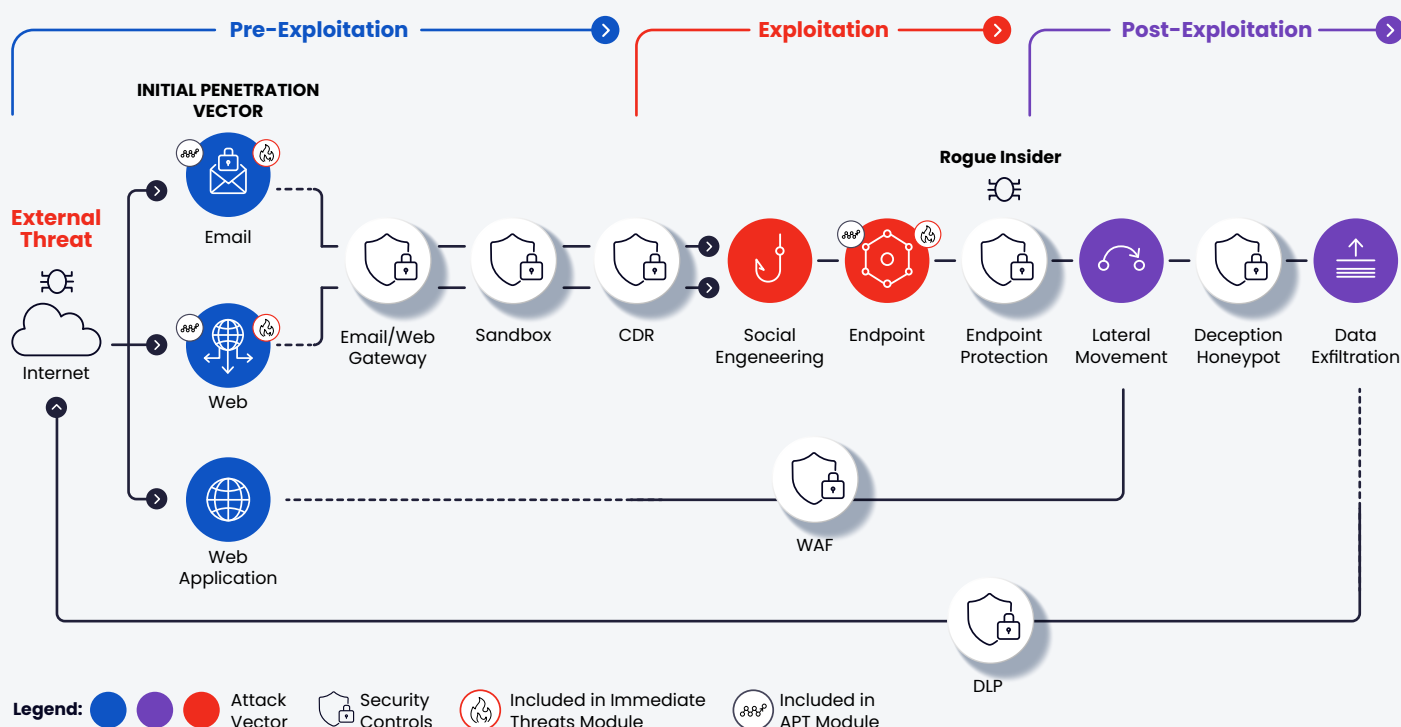
Simulate the very
latest threats



Deploys
seamlessly



Simple to use



Award-Winning Breach and Attack Simulation Technology

Cymulate Extended Security Posture Management approach integrates an award-winning SaaS-based Breach and Attack Simulation (BAS) platform that makes it simple to know and optimize your security posture any time, all the time.

Fully automated and customizable, Cymulate's BAS challenges your security controls against the full attack kill chain with thousands of simulated cyber-attacks, both common and novel.

Testing both internal and external defenses, the attack simulations show you exactly where you're exposed and how to fix it—making security fast, continuous, and part of every-day activities. Cymulate's BAS module can be run independently or in combination with either or both the Continuous Automated Red Teaming (CART) and the Advanced Purple Teaming Framework.

This solution brief focuses exclusively on the BAS module.

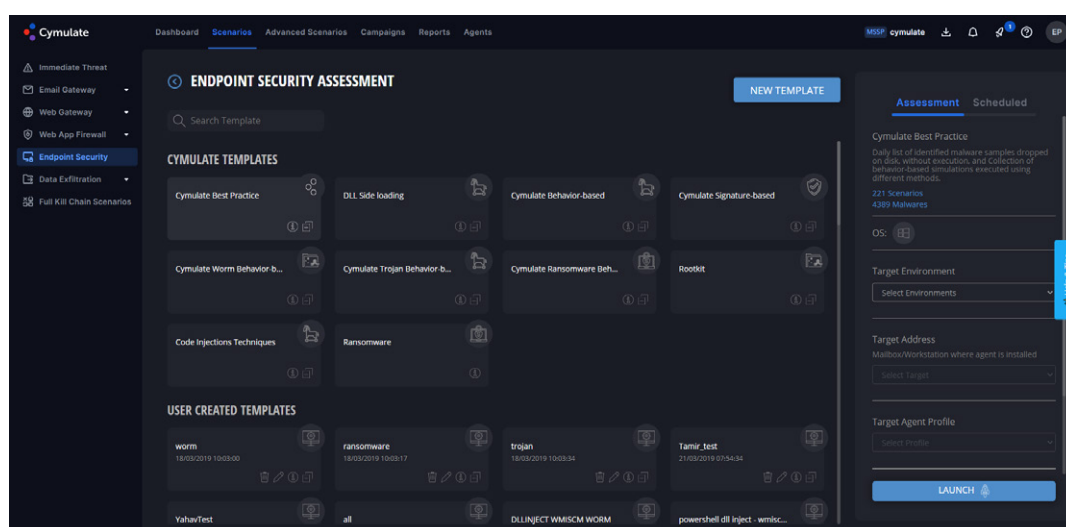
Simulating ATT&CKs™ with Cymulate's BAS Module

Using intuitive wizard-based templates, Cymulate lets you create your own ATT&CKs™-based simulations, by choosing out of over 100 ATT&CK tactics and techniques:

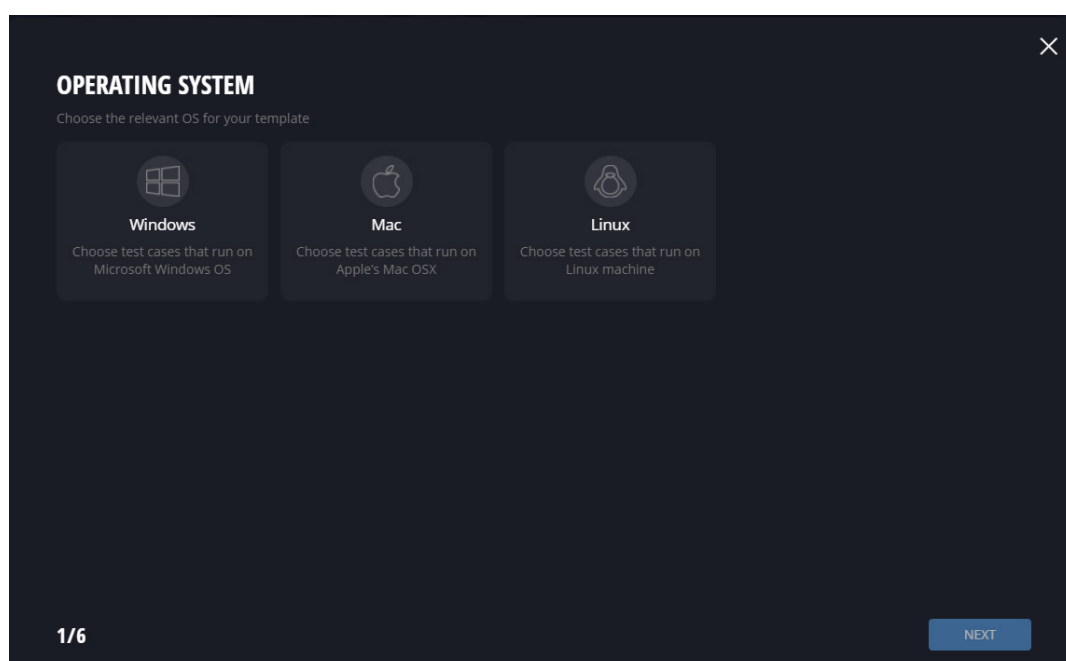
- **Endpoint Security** – Whether on Mac or PC, test the effectiveness of your EPP, EDR, AV and NGAV solutions by crafting your own simulations (see Section 2 below).
- **Email Gateway, Web Gateway, Web App Firewall** – Additional specific module all using similar and easy-to-use flow as the Endpoint Security module described in detail in section 2 below.
- **Full Kill Chain APT** – Emulate the logical flow of a full blown APT by crafting your own ATT&CK-based APT simulation, or by selecting from among APT templates that mimic the modus operandi of well-known APT groups (see section 3 below).
- **Immediate Threats** – Leveraging Cymulate's Research Lab, the latest threats are uploaded to the platform almost daily, letting you test your security controls against the very latest ransomware, malware, phishing, crypto-miners, and other threats detected in the wild. The threat simulation is mapped to MITRE ATT&CK™ techniques, which can be used to build a custom simulation template (see section 4 below).

02 | Creating an ATT&CK Based Endpoint Security Scenario Template

In addition to the out-of-the-box Cymulate templates, you can create customized Endpoint Security templates as follows.




- 01 From the Scenarios page, Endpoint Security tab, click the **New Template** button.




- 02 Select the Operating system

PAYLOAD DELIVERY

Choose the desired option to deliver your payload




Drop & Execute From Disk




Use Powershell Stager Downloader

T1104
T1059.001



Use Rundll32 Stager Downloader

T1104
T1218.011




Use Control Panel Stager Downloader

T1104
T1218.002

DEFENSE EVASION

Choose whether to use a defense evasion technique



Software Packing and Obfuscation

Using software packing or obfuscation to bypass AV signature detections or EDR solutions

T1027.002
T1001

2/6


BACK

NEXT

- 03 Select the payload delivery option and, if needed, the defense evasion technique.













SCENARIO BUILDER - EXECUTION METHOD

Choose the execution methods you wish to run with



Select All

Scenarios 0 Selected

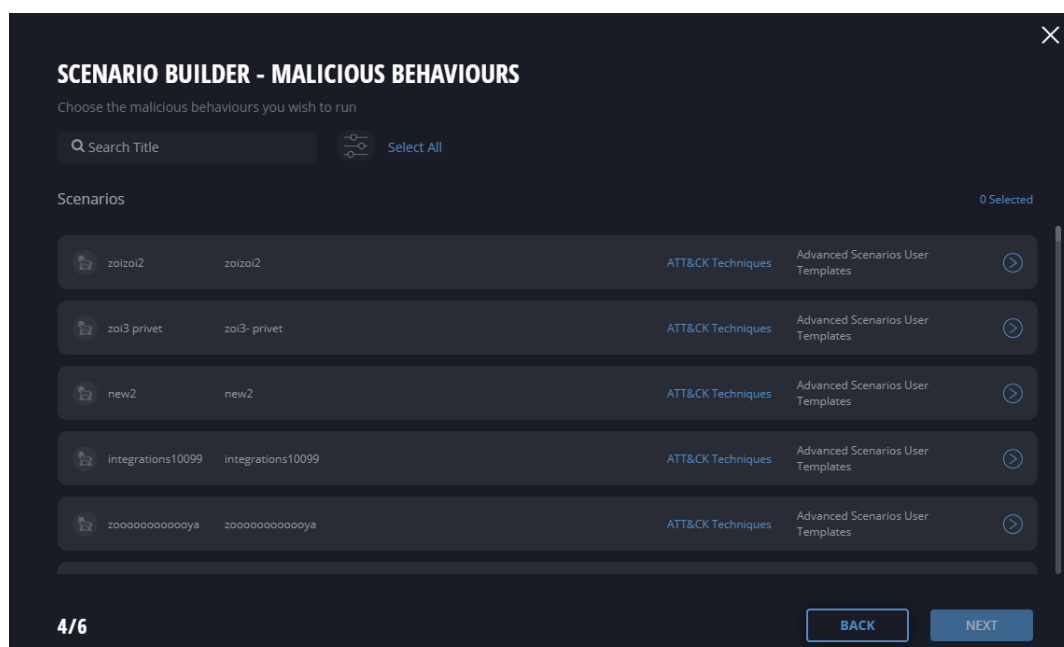
	Stand Alone	this will run alone without execution method		Elevation Not Required	
	DLL Inject	Using a dll injection to execute the payload	ATT&CK Techniques	Elevation Not Required	
	Scheduled Task	Using windows Task Scheduler to create a new task that runs the payload	ATT&CK Techniques	Elevation Not Required	
	PowerShell DLL Inject	Using a powershell based dll injection to execute the payload	ATT&CK Techniques	Elevation Not Required	
	DLL Hijack	Using dll hijacking of an elevated windows program to execute the payload	ATT&CK Techniques	Elevation Required	
	Regsvr32 SCT	Using REGSVR32 utility to execute the payload through .sct file	ATT&CK Techniques	Elevation Not Required	

3/6

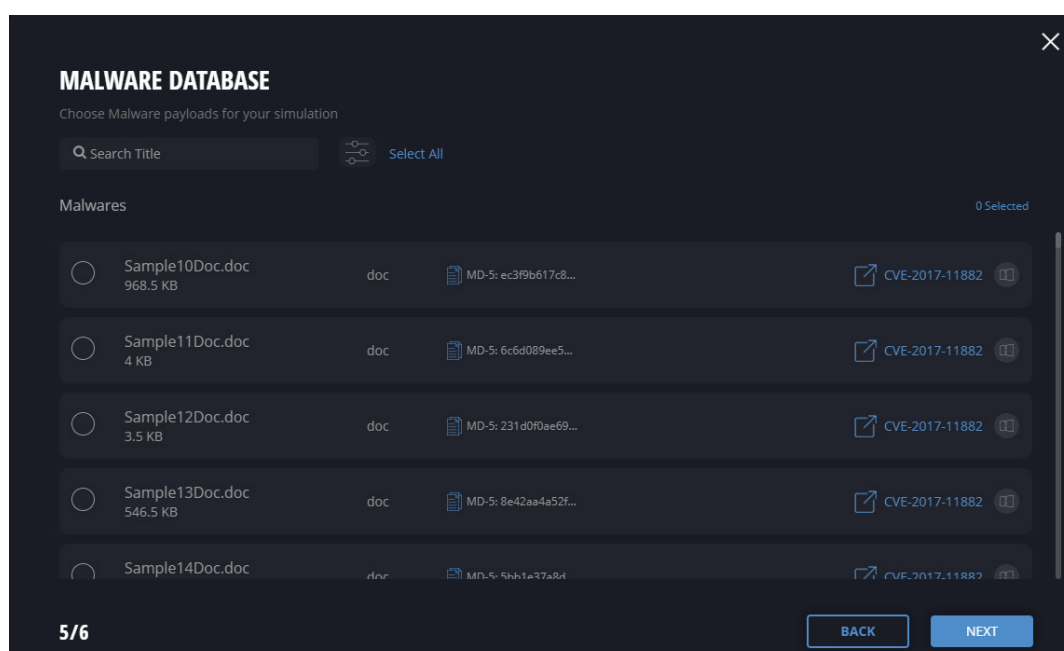
BACK

NEXT

- 04 Select one or more execution methods to run during the assessment.



- 05 Select one or more malicious behaviors to run during the assessment.



- 06 Select one or more malware payloads to simulate.

SUMMARY

Choose a template name

Scenarios3 Scenarios

zoizoi2
Advanced Scenarios User Templates5 Steps

zoizoi2
Advanced Scenarios User Templates5 Steps

new2
Advanced Scenarios User Templates5 Steps

Malwares4 Malwares

Sample10Doc.doc

Sample11Doc.doc

Sample12Doc.doc

Sample13Doc.doc

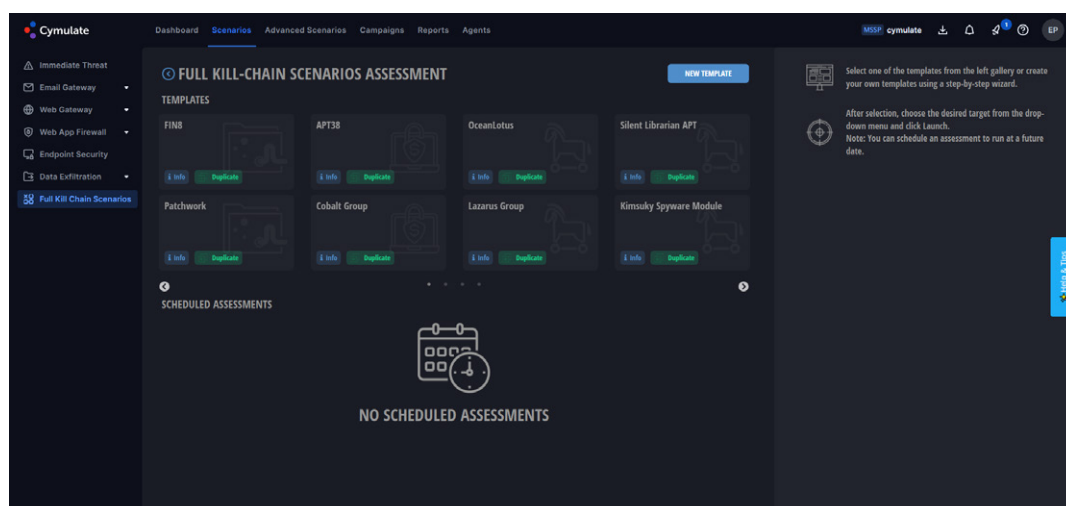
6/6

BACKFINISH

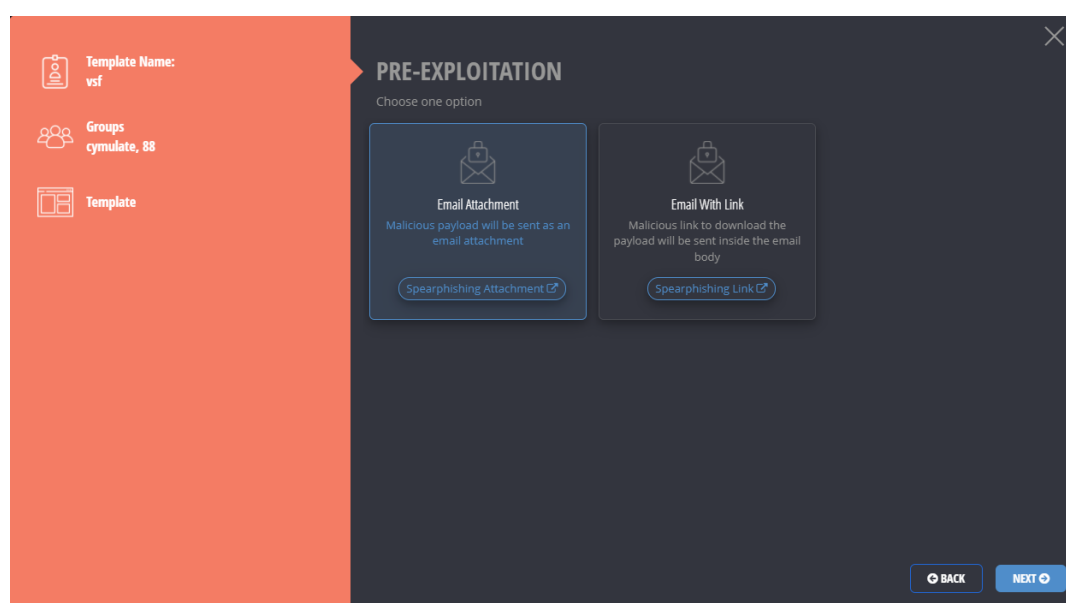
07 Name and save the template.

03 | Creating a Full Kill Chain Scenario Template

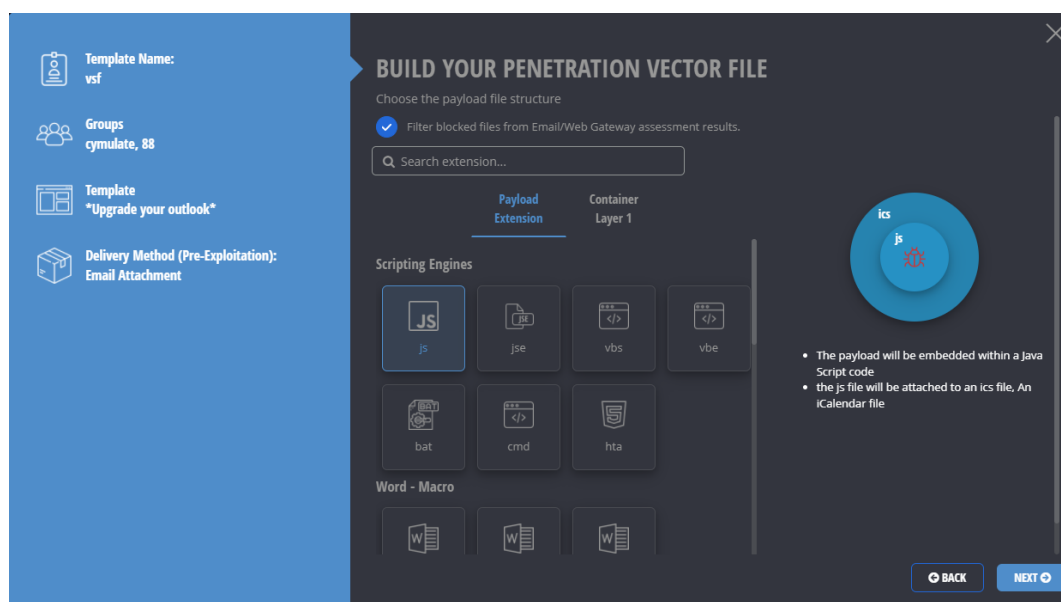
In addition to the out-of-the-box Cymulate templates, you can create customized Full Kill Chain Scenarios templates.



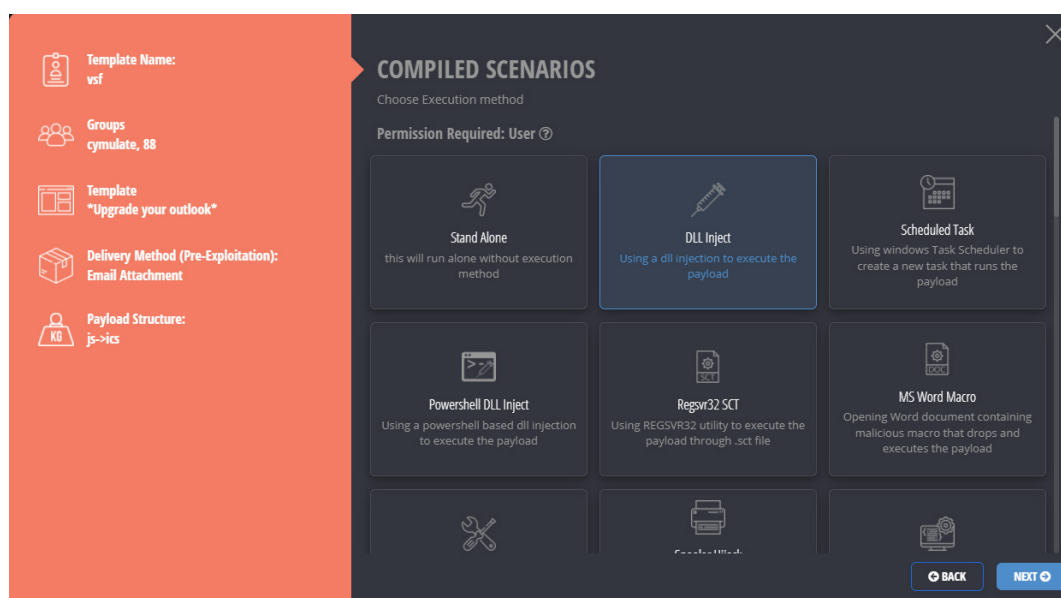
- From the Scenarios page, **Full Kill Chain Scenarios** tab, click the **New Template** button.



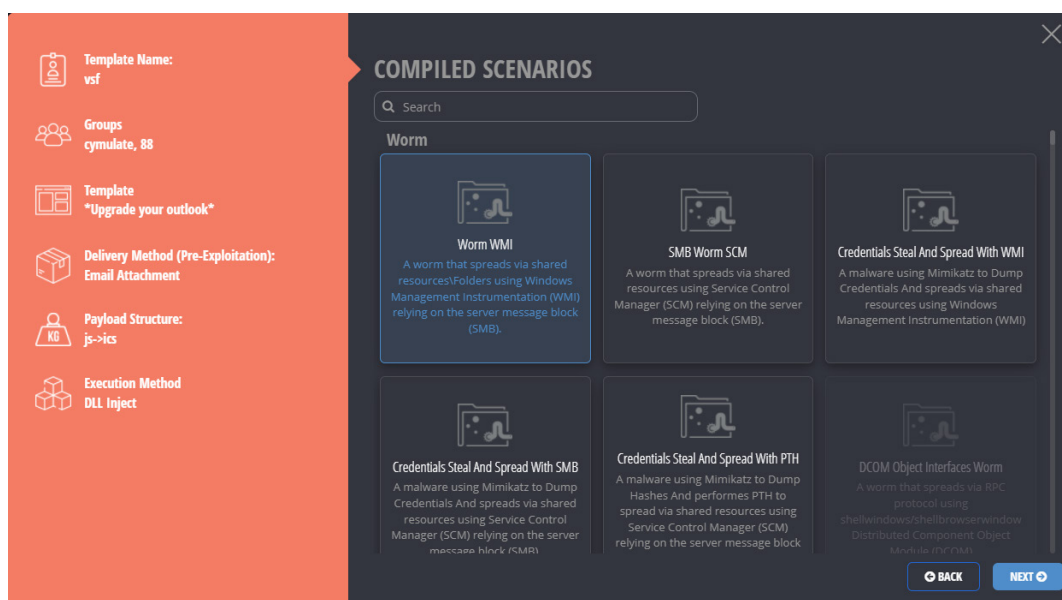
- After naming the template, select a pre-exploitation payload delivery option.



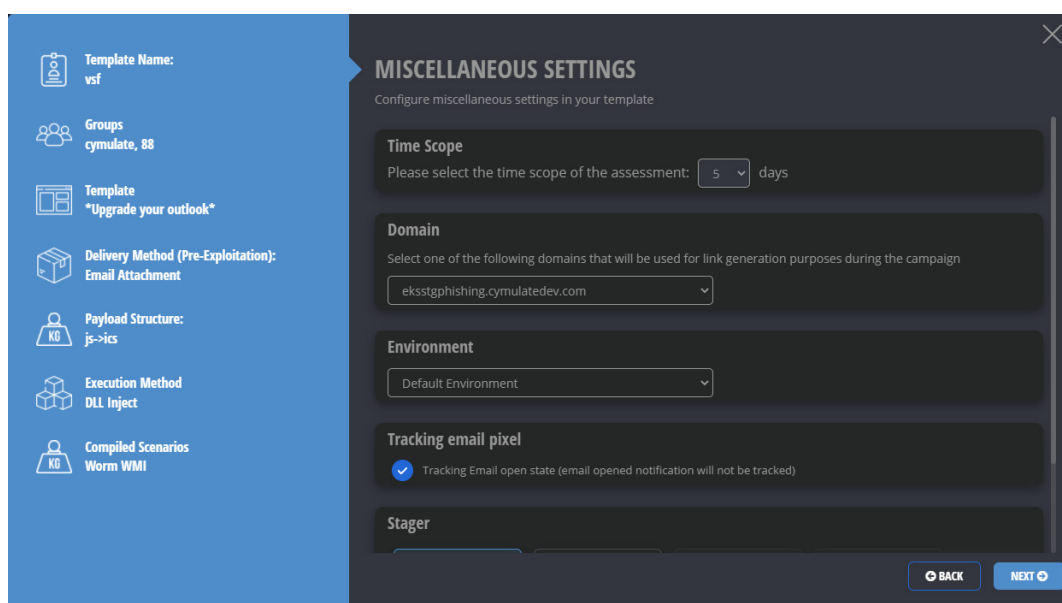
- 03** Build the penetration vector file (select the payload extension type and define layered containers to further embed the payload).



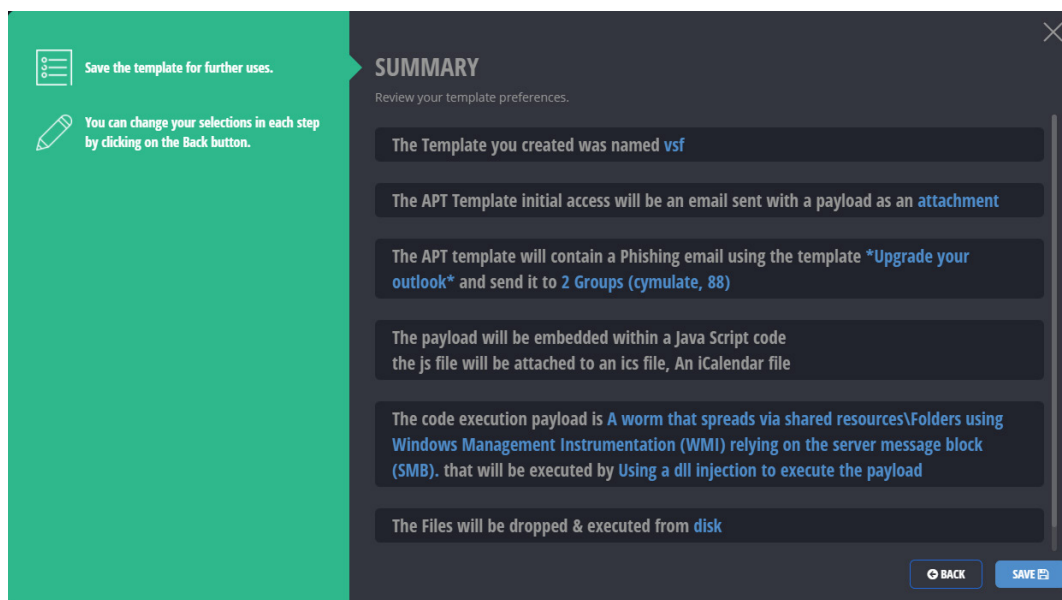
- 04** Select an execution method (user or administrator level.)



- 05 Select an attack method from the listed methods (i.e., Ransomware, Worms, Trojans, Lateral Movement, or user- created templates)



- 06 Define the miscellaneous settings.

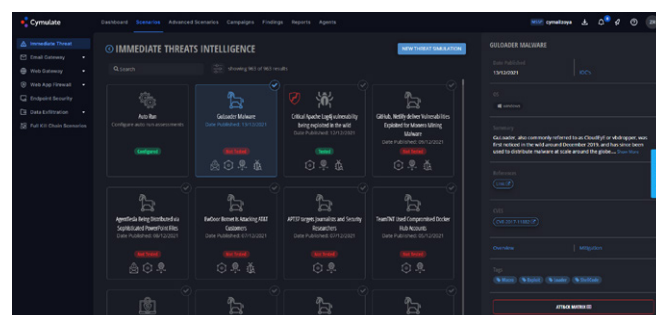


- 07 Review the template summary and save it. The newly created template is available, editable, deletable and duplicatable in the Full Kill Chain Scenarios page.

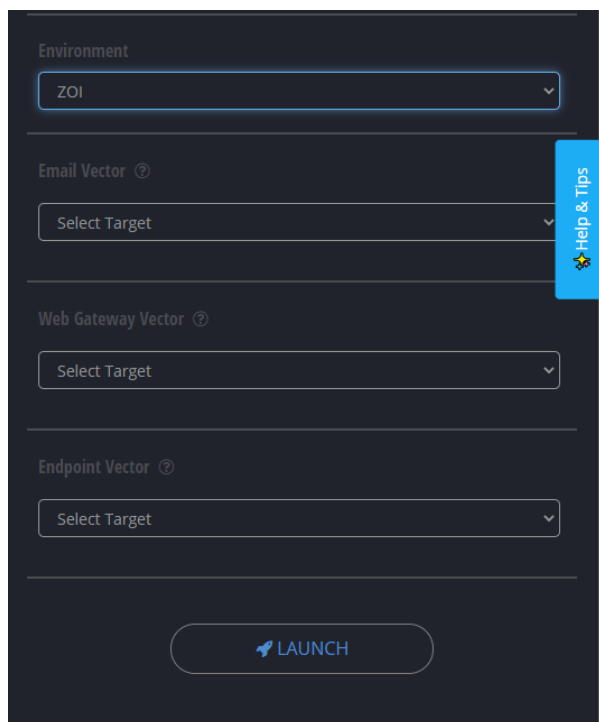
04 | Launching Immediate Threats Assessment

You can easily check how resilient to a specific immediate threat your infrastructure at any time, simply by launching the corresponding Immediate Threat Intelligence vector.

Or you can let the Immediate Threat Intelligence module run automatically at all times.



- 01 In the Scenarios page, go to Immediate Threat and select the **Immediate Threat** for testing.



Environment

ZOI

Email Vector ?

Select Target

Web Gateway Vector ?

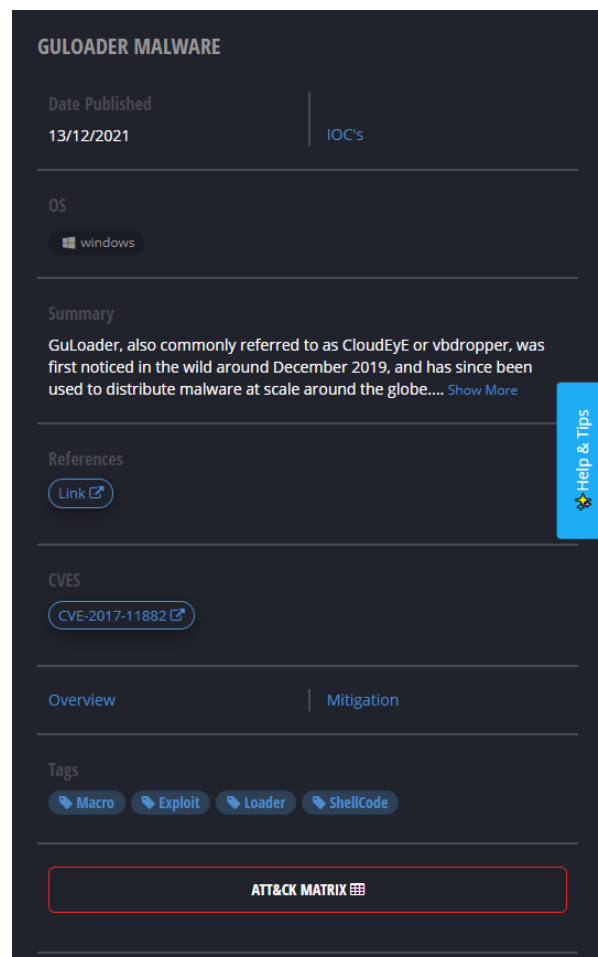
Select Target

Endpoint Vector ?

Select Target

LAUNCH

Help & Tips



GULOADER MALWARE

Date Published
13/12/2021

IOC's

OS
windows

Summary
GuLoader, also commonly referred to as CloudEye or vbdropper, was first noticed in the wild around December 2019, and has since been used to distribute malware at scale around the globe.... [Show More](#)

References
[Link](#)

CVEs
[CVE-2017-11882](#)

Overview | Mitigation

Tags
Macro Exploit Loader ShellCode

ATT&CK MATRIX

Help & Tips

02 From the right pane, you can review:

- A. Date Published** – Date that the threat was published.
- B. IOCs** – Click to view the IOCs for the threat.
- C. OS** – Relevant operating system for the threat.
- D. Summary** – Summary of the threat.
- E. References** – Links to reference articles.
- F. Overview** – Click to view a more detailed overview about the threat.
- G. Mitigation** – Click to view mitigation suggestions to protect against the threat.
- H. ATT&CK Matrix** – Click to view the MITRE & ATT&CK matrix for the threat.

03 Select the targets for the relevant vectors and the integrations and launch the assessment.

Cymulate Dashboard Scenarios Advanced Scenarios Campaigns Findings **Reports** Agents

MSDP cymalzoza

FULL KILL-CHAIN SCENARIOS ASSESSMENTS

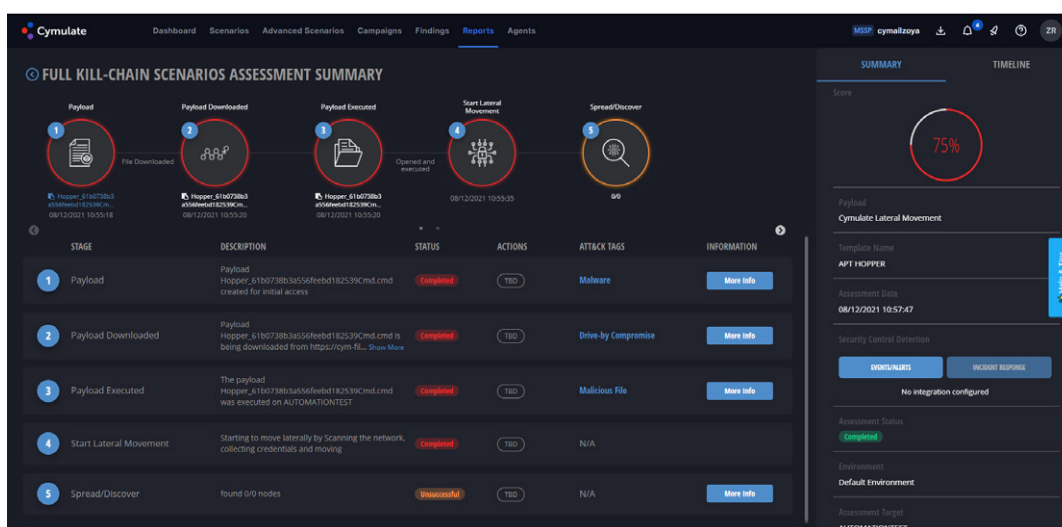
Search Template...

EXPORT TO CSV

DATE LAUNCHED	TARGET	SCORE	TEMPLATE	ENVIRONMENT	STATUS	ACTION
08/12/2021 10:57:47	AUTOMATIONTEST	75/100	APT HOPPER	Default Environment	Completed	GENERATE
02/12/2021 17:31:24	LAPTOP-2IFSSETG	100/100	Silent Librarian APT	Default Environment	Completed	GENERATE
02/12/2021 12:21:21	LAPTOP-2IFSSETG	15/100	Lazarus Group	Default Environment	Completed	GENERATE
01/12/2021 18:22:50	LAPTOP-2IFSSETG	13/100	FIN8	Default Environment	Completed	GENERATE
30/11/2021 10:22:00	LAPTOP-2IFSSETG	100/100	Silent Librarian APT	Default Environment	Completed	GENERATE
28/11/2021 16:41:00	LAPTOP-2IFSSETG	69/100	Lazarus Group	Default Environment	Completed	GENERATE
28/11/2021 13:39:00	LAPTOP-2IFSSETG	100/100	Silent Librarian APT	Default Environment	Completed	GENERATE
24/11/2021 10:21:07	LAPTOP-2IFSSETG	100/100	Cobalt Group	Default Environment	Completed	GENERATE

[Help & Tips](#)

04 The launched assessment and its progress will be listed under the reports tab.



05 Access detailed information by clicking the relevant assessment.

05 | Additional Benefits of Security Testing

Security effectiveness testing and attack simulation tools not only deliver immediate visibility into potentially damaging security gaps, they also provide critical insights for strengthening the organization's overall security posture.

They give your security team control over testing so they can make the most informed decisions for tailoring defenses to the organization's most pressing needs.

Additional benefits include:



Security posture at a glance

Get immediate visibility into your cyber-stance across the digital estate—on-demand or continuously without waiting for reports.



Executive and technical stakeholder buy-in

Effectively communicate quantifiable security gaps to the board, executive team, IT staff, and users.



Continuous Optimization

Complement or replace manual and homegrown testing methods with fully automated, repeatable sets of tests that can be run across your infrastructure at any time.



Test effectiveness

Measure the impact of policy changes, software updates, and new or prospective technology purchases to avoid creating vulnerability or opening a gap.



Rationalize security investments

Use objective metrics to benchmark and compare the effectiveness of different security solutions. Prioritize budget allocation and spending based on risk metrics and potential impact.



Validate compliance

Quickly and easily ensure that your organization remains compliant by assessing potential exposure across your infrastructure—without having to wait days or weeks for assessment reports.



KPI metrics

Gain quantifiable benchmarks for an immediate, objective understanding of vulnerabilities and exposure levels. Metrics also provide a way to measure security control performance over time and compare your organization to others in your industry.

[Start Your Free Trial](#)

Contact us for a live demo, or get started with a free trial

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