INCIDENT RESPONSE REPORT

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TASK 2: SOC ALERT MONITERING & INCIDENT RESPONSE

PROGRAM: FUTURE INTERNS- CYBERSECURITY INTERNSHIP

DATE: OCTOBER 2025

TARGET:SPLUNK SIEM

TASK SUMMARY

This task focused on **monitoring and analyzing system logs using Splunk SIEM** to identify suspicious activities such as failed login attempts, unusual IP addresses, and malware detection alerts. The objective was to simulate real-world **SOC (Security Operations Center) analyst responsibilities** — including monitoring security alerts, analyzing potential threats, and simulating incident response procedures.

TOOLS USED

- **Splunk SIEM (Free Trial)** – For log ingestion, correlation, and analysis.
- **Sample Log File (SOC_Task2_Sample_Logs.txt)** – Dataset containing simulated network events.
- **Manual Filtering and Search Queries** – To identify anomalies and correlate suspicious activities.

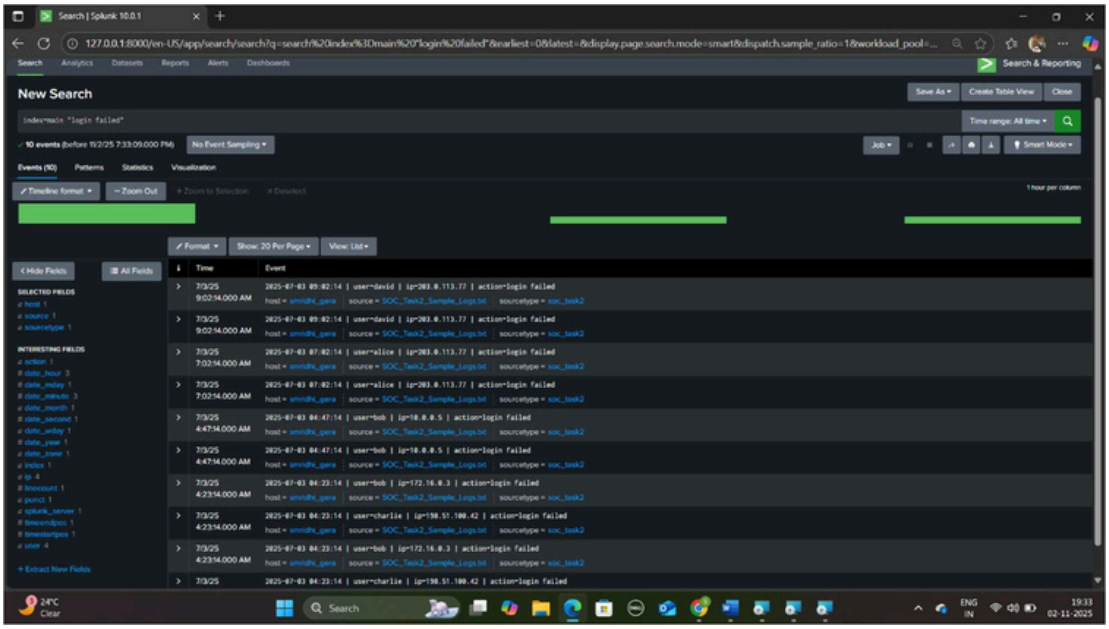
MY FINDINGS FROM THE SYSTEM LOGS

1. Failed Login Attempts

Splunk search queries detected **10 failed login attempts** between **7:33 PM and 9:00 PM before 11/2/25**, involving users **Bob, Alice, David, and Charlie**.
Multiple failed attempts originated from **IP 203.0.113.77**, indicating a possible **brute-force attack** targeting user accounts.

Key Observations:

Repeated login failures within a short time frame.
Common source IP (203.0.113.77).
Targeted accounts: Bob, Alice, David, Charlie.
Evidence: Alert1_FailedLogin.png



2. Malware Detection Events

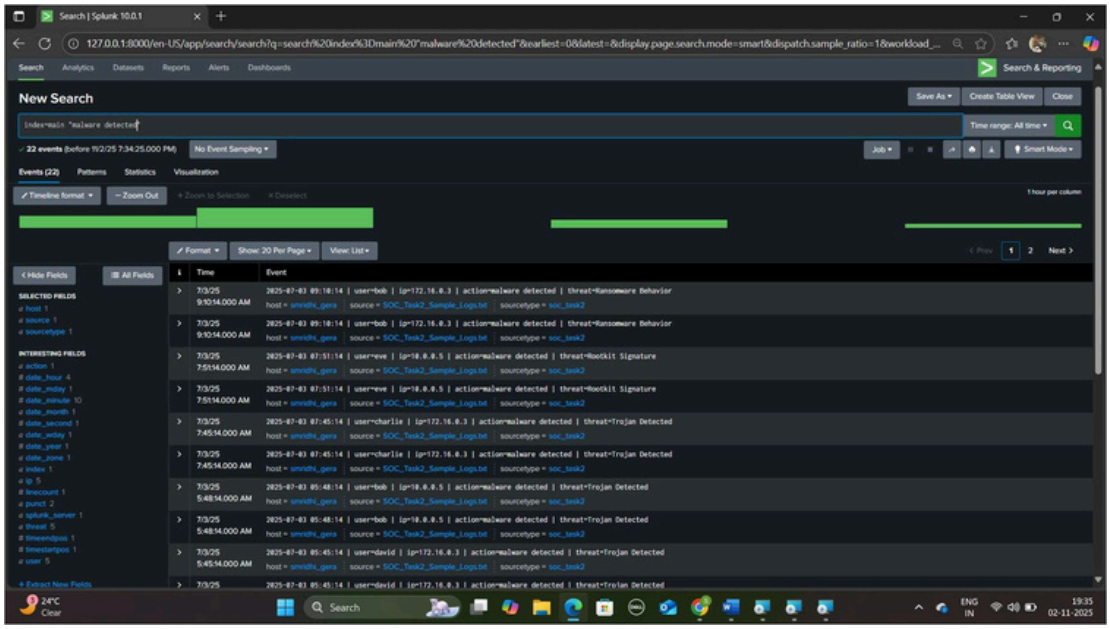
Splunk SIEM analysis revealed **22 malware-related alerts** before 11/2/25.
Detected threats included **Ransomware, Rootkit, Trojan, Worm, and Spyware**, affecting multiple user accounts.

Affected Users: Bob, Eve, Charlie, David, Alice

Involved IPs: 172.16.0.3, 10.0.0.5, 192.168.1.101, 203.0.113.77, 198.51.100.42

Notably, **user Bob** was associated with both **Ransomware and Worm infections**, suggesting a **compromised system actively spreading malware**.

Evidence: Alert2_MalwareDetected.png



3. Suspicious External IP Activity (203.0.113.77)

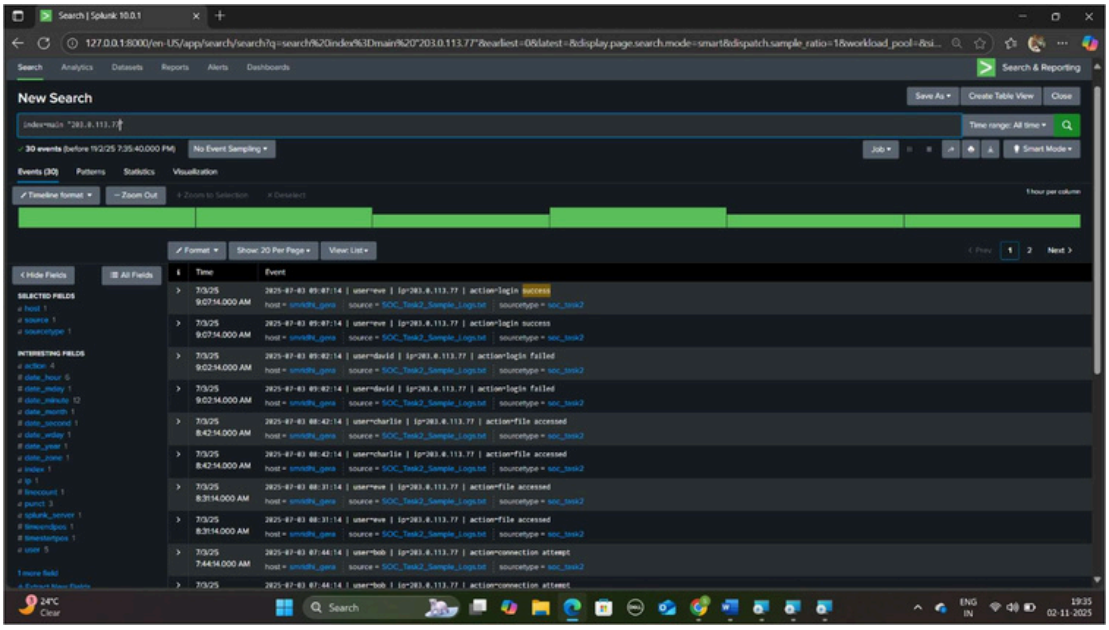
Splunk logs indicated **30 events** involving **externalIP203.0.113.77**, including login attempts, malware detections, and file access activities.

Key Findings:

Login Failures: Users Alice, David
Login Successes: Users Eve, Alice, David
Malware Detected: Trojan and Worm infections (Bob, Eve)
File Access: Bob, Charlie, Eve, David

The simultaneous presence of **failed andsuccessful logins** strongly suggests that **multipleuseraccounts werecompromised** .
The IP **203.0.113.77** is considered a **high-riskexternalthreatsource** involved in multiple attack vectors.

Evidence: Alert3_SuspiciousIP.png



4. Compromised User Account – (Bob)

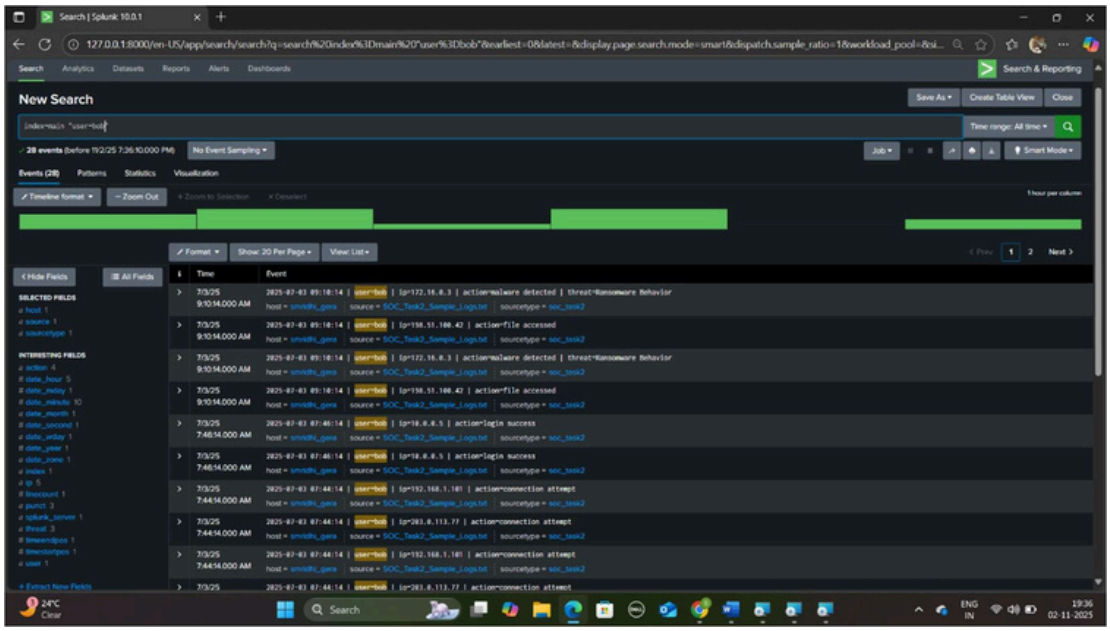
Splunk analysis revealed **28 security events** involving **user Bob**, confirming account compromise and active exploitation.

Key Findings:

Ransomware Attack from IP **172.16.0.3**
Trojan Infection from IP **10.0.0.5**
Worm Activity from IP **203.0.113.77**
Failed Logins: From IPs 10.0.0.5, 172.16.0.3
Successful Logins: From IPs 10.0.0.5, 192.168.1.101, 198.51.100.42
Unauthorized File Access: From IPs 198.51.100.42, 203.0.113.77, 172.16.0.3

These combined events confirm that **Bob's account was actively targeted, infected, and exploited** for lateral movement within the network.

Evidence: Alert4_UserBobCompromised.png



INCIDENT SUMMARY

During the log analysis using Splunk SIEM, multiple **coordinated cyber threats** were identified across the monitored network.

Key Incidents Identified:

- Repeated **failed login attempts** targeting multiple user accounts.
- **Malware infections** (Ransomware, Trojan, Rootkit, Worm, Spyware).
- **Suspicious external IP (203.0.113.77)** involved in login and malware events.
- **Compromised account (Bob)** involved in unauthorized access and malware propagation.

Thesepatterns indicate a **targeted cyber campaign** involving brute-forceattacks, credential compromise, and malware deployment.

IMPACT & RISK ASSESSMENT

Threat	Impacted User(s)	IP(s) Involved	Risk Level	Description
Ransomware	Bob	172.16.0.3	**High**	Could encrypt data, leading to loss of critical information.
Rootkit	Alice, Eve	198.51.100.42, 10.0.0.5	**High**	Enables persistence and privilege escalation.

Threat	Impacted User(s)	IP(s) Involved	Risk Level	Description
Failed Logins	Bob, Alice, David, Charlie	203.0.113.77	**Medium**	Indicates possible brute-force attack.
Suspicious IP	Multiple Users	203.0.113.77	**High**	Involved in multiple malicious events.
Compromised Account (Bob)	Bob	Multiple IPs	**Critical**	Account compromised and used for spreading malware.

RECOMMENDED ACTIONS

1. **Block and isolate affected systems.**
2. **Reset credentials** for compromised and at-risk user accounts.
3. **Enable Multi-Factor Authentication (MFA)** and **account lockout policies.**
4. **Conduct a full forensic analysis** to identify infection sources.
5. **Continuously monitor** for suspicious IP activity and failed logins.

Immediate containment and recovery measures are essential to **prevent further damage and data breaches**.

SIMULATED COMMUNCATION EMAIL TO STAKEHOLDERS

SOCManager
To:
Subject: Security Incident Summary – Task 2

Dear Team,

During ourroutine log analysis using **Splunk SIEM** , several high-risk securityalerts were detected, including **failed login attempts, malware infections, and suspicious external IP activity**.
User **Bob's account appears to be compromised**,showingevidence of **ransomware infection** and **unauthorized access**.

Recommended immediate actions:

Block malicious IP **203.0.113.77**
Isolate affected endpoints
Reset credentials for impacted users

Please review the attached report for details and initiate remediation steps accordingly.

SOCAnalyst–Future Interns Cybersecurity