Splunk Alert Project: Detecting Failed Logins on Windows Server

1. Project Overview

This project demonstrates how to create and trigger a security alert in Splunk Enterprise using data collected from a Windows Server via the Splunk Universal Forwarder. The alert identifies multiple failed login attempts (Event ID 4625), which can be indicative of brute-force attacks or unauthorized access attempts.

2. Architecture & Setup

- Splunk Universal Forwarder installed on Windows Server.
- Splunk Enterprise installed on Host PC.
- Forwarder configured to send Windows Security logs to Splunk Enterprise.
- Data indexed under 'main' index with sourcetype 'WinEventLog:Security'.

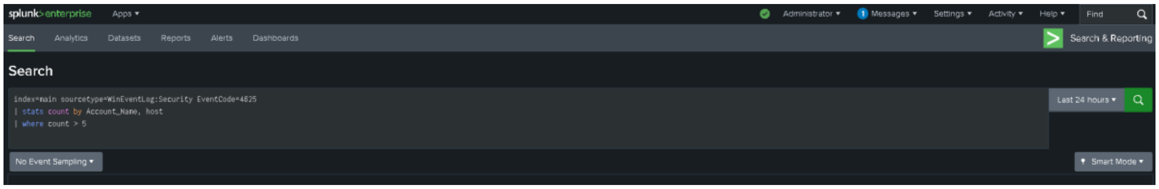
3. Objective

Trigger an alert when more than 5 failed login attempts (EventCode 4625) occur within a 10-minute window.

4. Splunk Search Query

The following SPL query was used to detect failed login attempts:

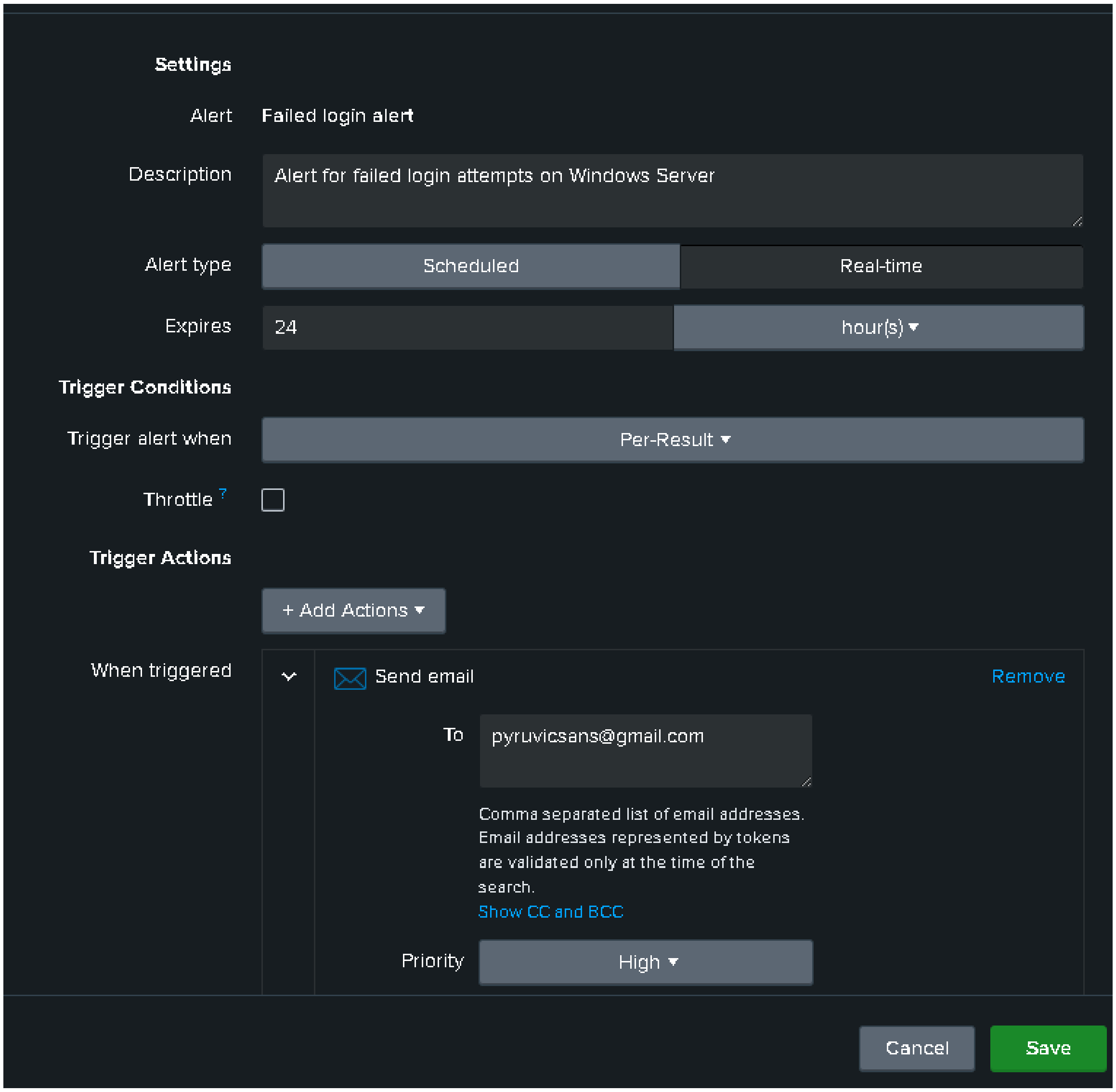
index=main sourcetype=WinEventLog:Security EventCode=4625
| stats count by Account_Name, host
| where count > 5



```
index=main sourcetype=WinEventLog:Security EventCode=4625
| stats count by Account_Name, host
| where count > 5
```

5. Alert Configuration

- Title: Failed Logins Alert
- Type: Scheduled Alert (Every 10 minutes)
- Time Range: Last 10 minutes
- Trigger Condition: Number of results > 0
- Trigger Actions: Send Email (Configured via SMTP in Splunk Settings)



Settings

Alert: Failed login alert

Description: Alert for failed login attempts on Windows Server

Alert type: Scheduled | Real-time

Expires: 24 hour(s)

Trigger Conditions

Trigger alert when: Per-Result

Throttle: □

Trigger Actions

When triggered: Send email

To: pyruvicsans@gmail.com

Comma separated list of email addresses. Email addresses represented by tokens are validated only at the time of the search.

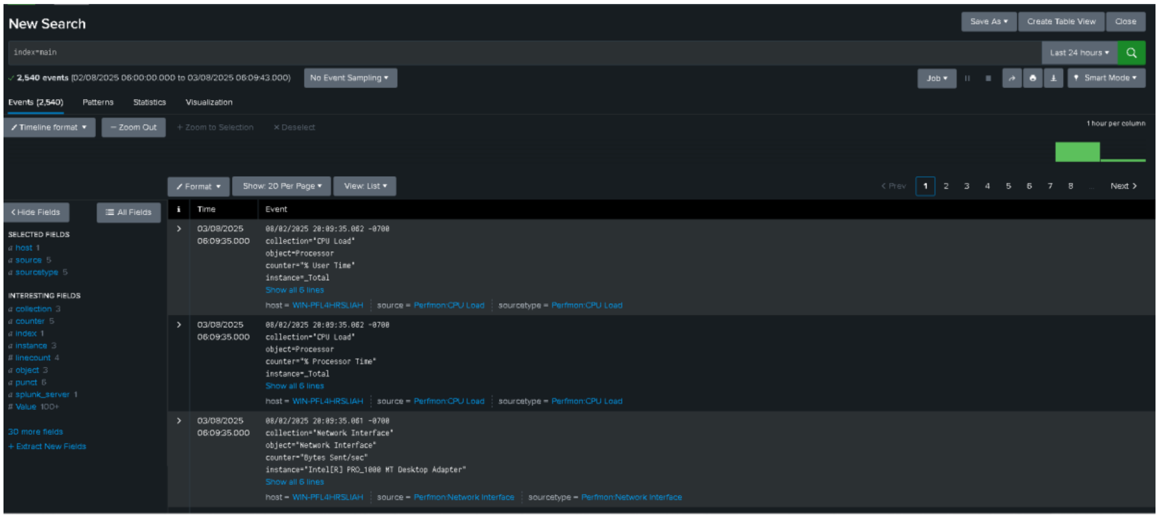
Priority: High

6. Simulating the Alert

To simulate real-world conditions, failed login attempts were manually triggered on the Windows Server using the `runas` command with incorrect credentials. This ensured multiple Event ID 4625 logs were generated and forwarded to Splunk for processing.

7. Validation & Output

The alert was successfully triggered after 6 failed login attempts. It appeared in the 'Triggered Alerts' section of Splunk and an email notification was received, confirming successful detection and response.



```
index=main
```

✓ 2,540 events (02/08/2025 06:00:00.000 to 03/08/2025 06:09:43.000)

SELECTED FIELDS
a host 1
a source 5
a sourcetype 5

INTERESTING FIELDS
a collection 3
a counter 5
a index 1
a instance 3
# linecount 4
a object 3
a punct 6
a splunk_server 1
Value 100+

30 more fields
+ Extract New Fields

i	Time	Event

›	03/08/2025
	06:09:35.000
		08/02/2025 20:09:35.062 -0700
		collection="CPU Load"
		object=Processor
		counter="% User Time"
		instance=_Total
		Show all 6 lines
		host = WIN-PFL4HRSLIAH │ source = Perfmon:CPU Load │ sourcetype = Perfmon:CPU Load

›	03/08/2025
	06:09:35.000
		08/02/2025 20:09:35.062 -0700
		collection="CPU Load"
		object=Processor
		counter="% Processor Time"
		instance=_Total
		Show all 6 lines
		host = WIN-PFL4HRSLIAH │ source = Perfmon:CPU Load │ sourcetype = Perfmon:CPU Load

›	03/08/2025
	06:09:35.000
		08/02/2025 20:09:35.061 -0700
		collection="Network Interface"
		object="Network Interface"
		counter="Bytes Sent/sec"
		instance="Intel[R] PRO_1000 MT Desktop Adapter"
		Show all 6 lines
		host = WIN-PFL4HRSLIAH │ source = Perfmon:Network Interface │ sourcetype = Perfmon:Network Interface

8. Conclusion

This project demonstrates the practical use of Splunk for real-time log monitoring and alerting.