# **Project**: Configuration and Deployment of Sysmon agent in a windows environment & visualization of its logs in Elastic SIEM.

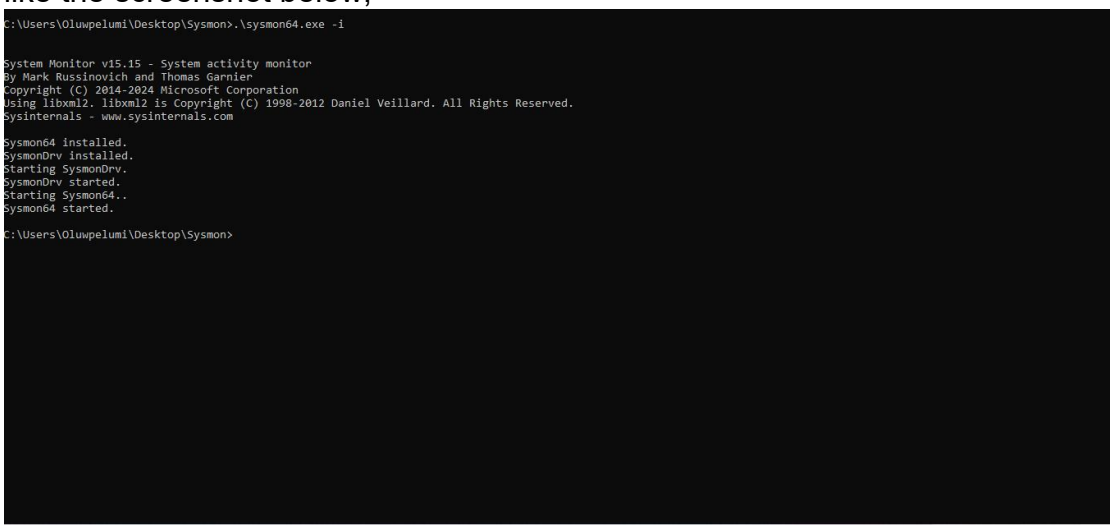
**Overview:** Sysmon (short for System Monitor) is a Windows system service and driver from Microsoft's Sysinternals Suite. It is used for advanced system monitoring and event logging, especially for security investigations and threat detection. These logs will b viewed in the Elastic Security Information Event Management (SIEM)

**TOOLS USED:**

- Sysmon - the zip folder is uploaded in my github
- Winlogbeat - the zip folder is uploaded in my github
- Elasticsearch zip folder - found on the ELK stack website
- Kibana zip folder - found on the ELK stack website

**Steps:**

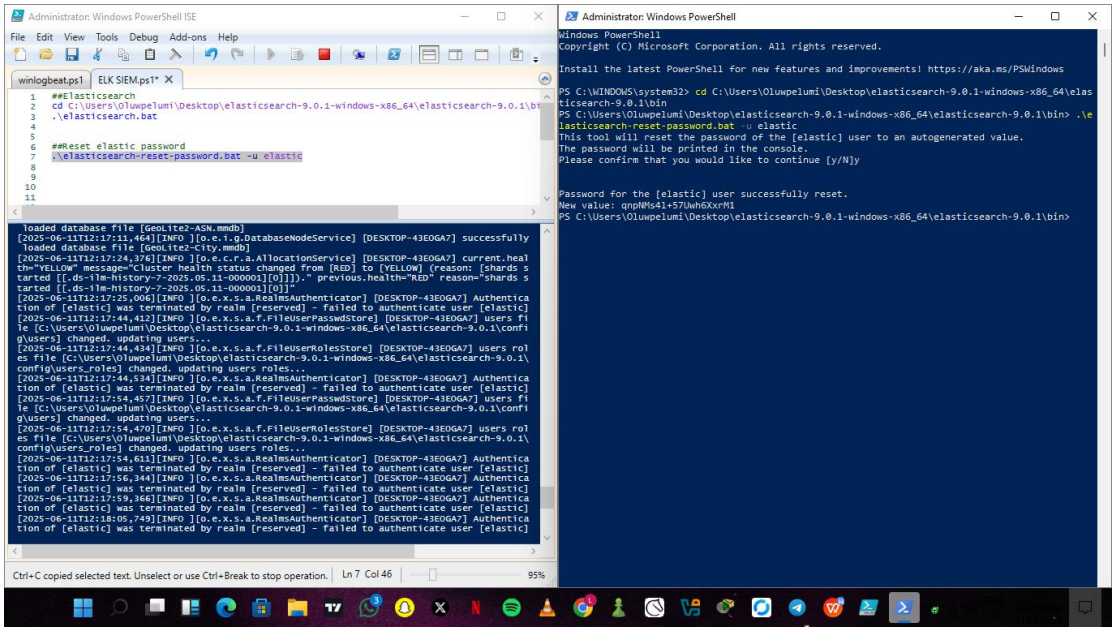
**Step 1:** Installation of sysmon agent, after downloading the zip file, unzip folder on your computer, run command prompt as administrator then install it, like the screenshot below;



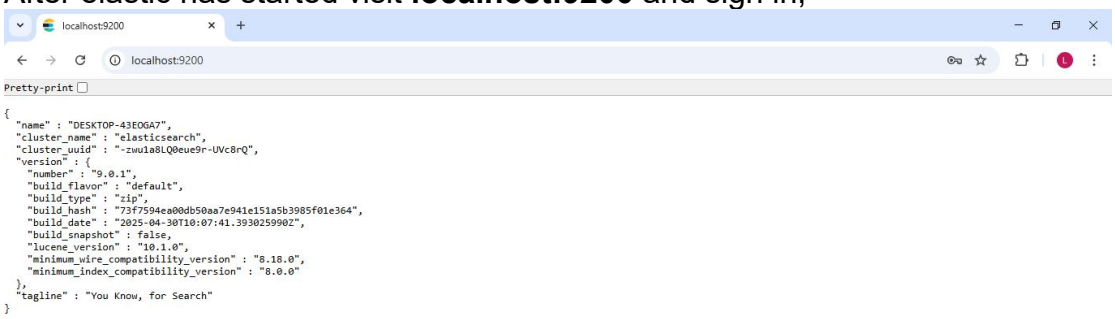

Sysmon has been installed & fully deployed.

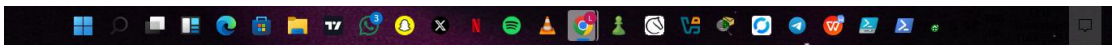
**Step 2:** Setup Elastic SIEM;

After Elastic & Kibana folder has been downloaded, unzip them, install elastic search first and reset password like the screenshot below




After elastic has started visit **localhost:9200** and sign in;



This shows Elastic started successfully

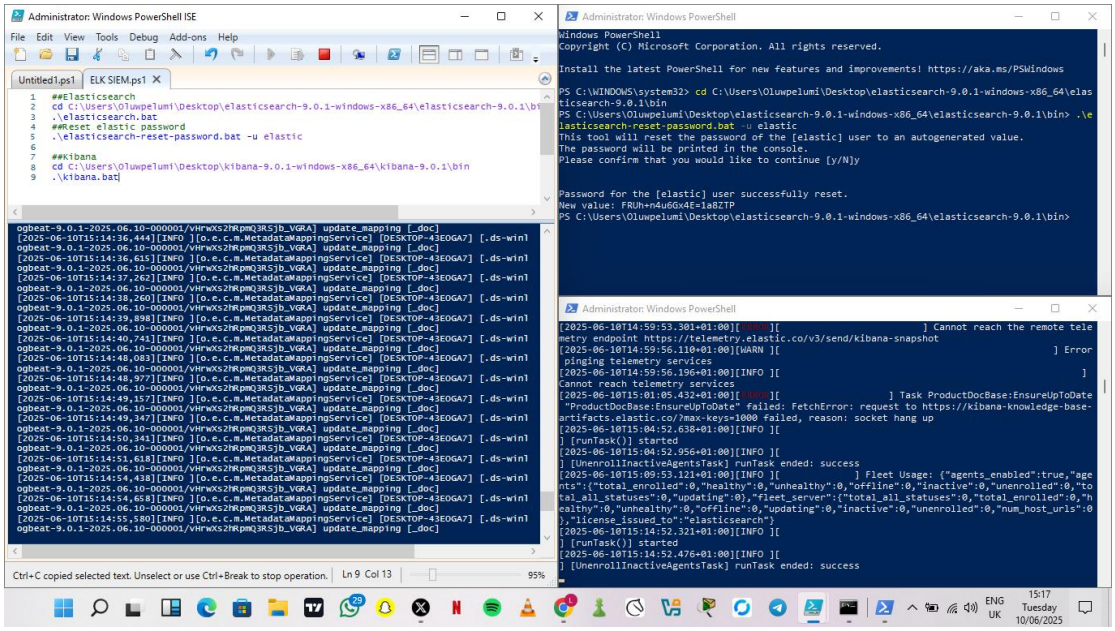
Then proceed to install kibana but before install kibana some changes has to be made in yaml file;

elasticsearch.hosts: ["http://localhost:9200"]
elasticsearch.username: "kibana_system"
elasticsearch.password: "the_password_you_set_for_kibana_system"

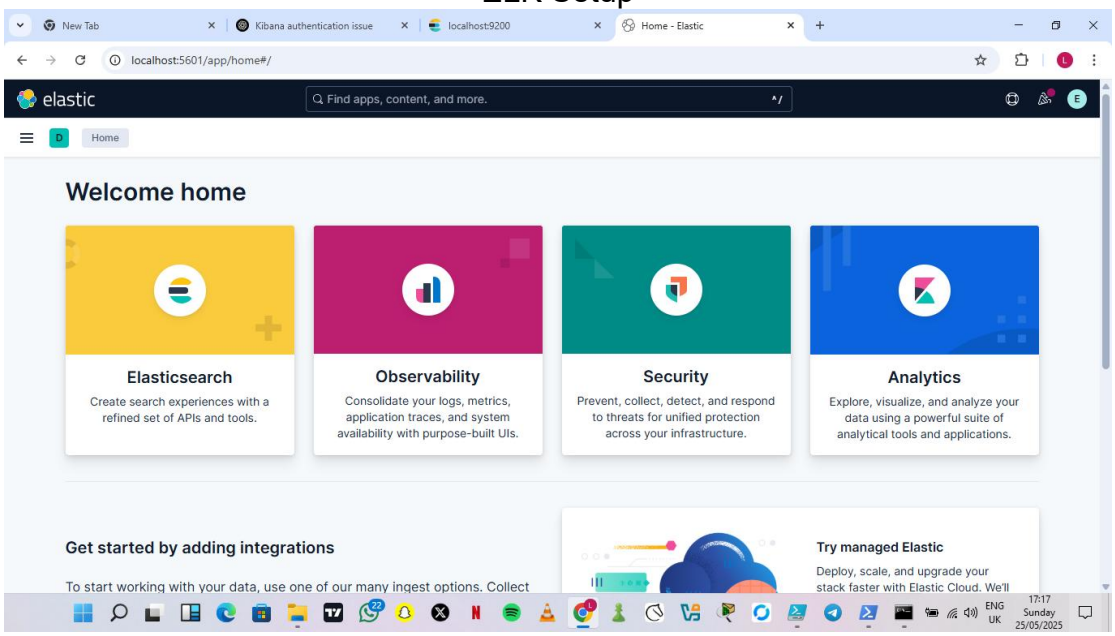
To reset kibana password use;

.\elasticsearch-reset-password.bat -u kibana_system

then save changes and install kibana when it starts proceed to your browser and visit **localhost:5601** and sign in with the elastic password.




ELK Setup

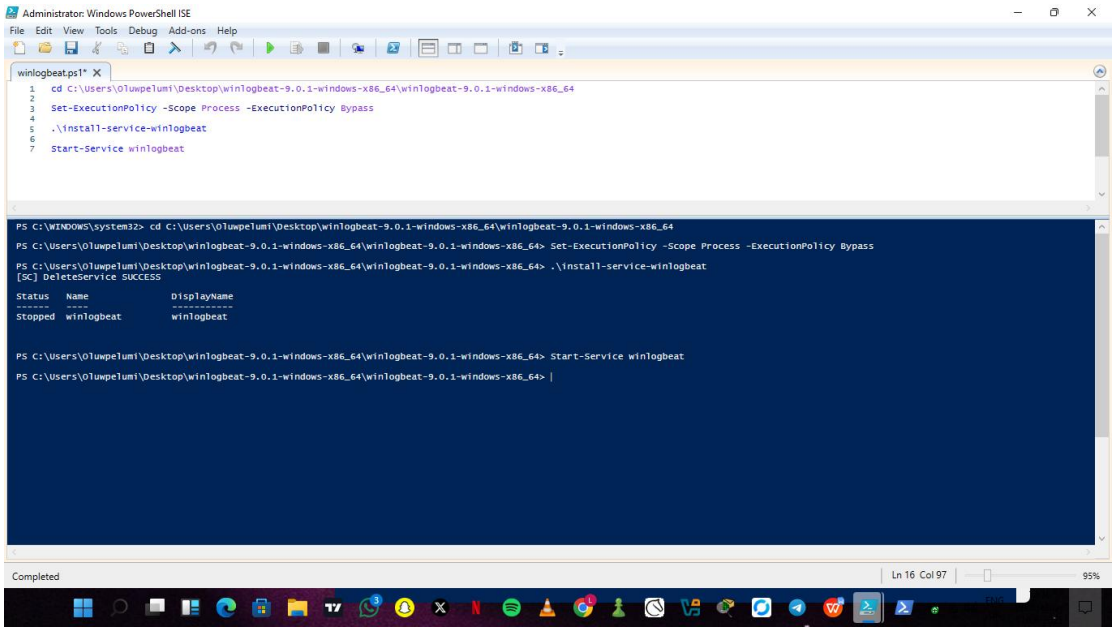



Elasticsearch successfully started

**Step 3:** Configure winlogbeat yaml file to integrate the sysmon logs to the elastic SIEM and install, open the yaml file and make some changes like input kibana password;

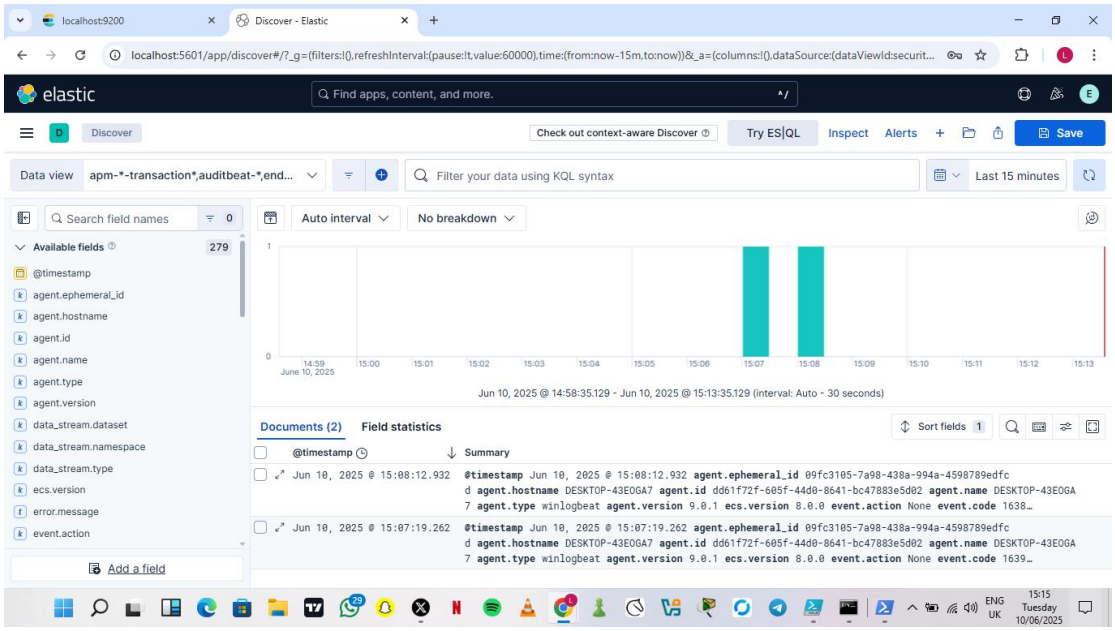
```
output.elasticsearch:
hosts: ["http://localhost:9200"]
username: "elastic"
password: "the elastic password"
```

Save & install the powershell script like the screenshot below;




Sysmon has been integrated successfully

**Step 4:** View sysmon event logs in ELK click on discover In the index pattern, use: winlogbeat-* or logs-* depending on your Winlogbeat config.and it shows the sysmon event on the pc.




Sysmon Event can be viewed on the elasticsearch setup

**What Sysmon does:**
Captures logs that include rich data that's not captured by default Windows logging such as;

| Event ID | What it Logs |
|---|---|
| 1 | Process creation (with command-line, hash, parent, etc.) |
| 2 | File creation time changes |

| Event ID | What it Logs |
|---|---|
| **3** | Network connections |
| **6** | Driver loading |
| **7** | Image (DLL) loading |
| **10** | Process access (used for detecting injection) |
| **11** | File creation |
| **13–15** | Registry key & value creation/modification |
| **22** | DNS queries |
| **23** | File deletion |

**SKILLS LEARNED:**

- **Configuration Management:** Used YAML and XML files to configure Winlogbeat and Sysmon. Customized logging behavior via the sysmonconfig.xml.
- **Log Forwarding & Beats Integration:** Deployed Winlogbeat to ship Windows logs to Elasticsearch.Set up and tested log pipelines between:

  Sysmon → Event Log

  Winlogbeat → Elasticsearch

- **Data Visualization & Analysis:** Viewing the event logs on kibana and ability to understand each event through specific event ID,

**Conclusion:** With this knowledge, I can now:

- Detect malware behavior (e.g., suspicious PowerShell, DLL injection)
- Build your own home lab SIEM
- Investigate security incidents (e.g., lateral movement, persistence)