Implementing Microsoft Sentinel for Real-Time Threat Monitoring and Incident Response

By Frederick Adigun

Documentation

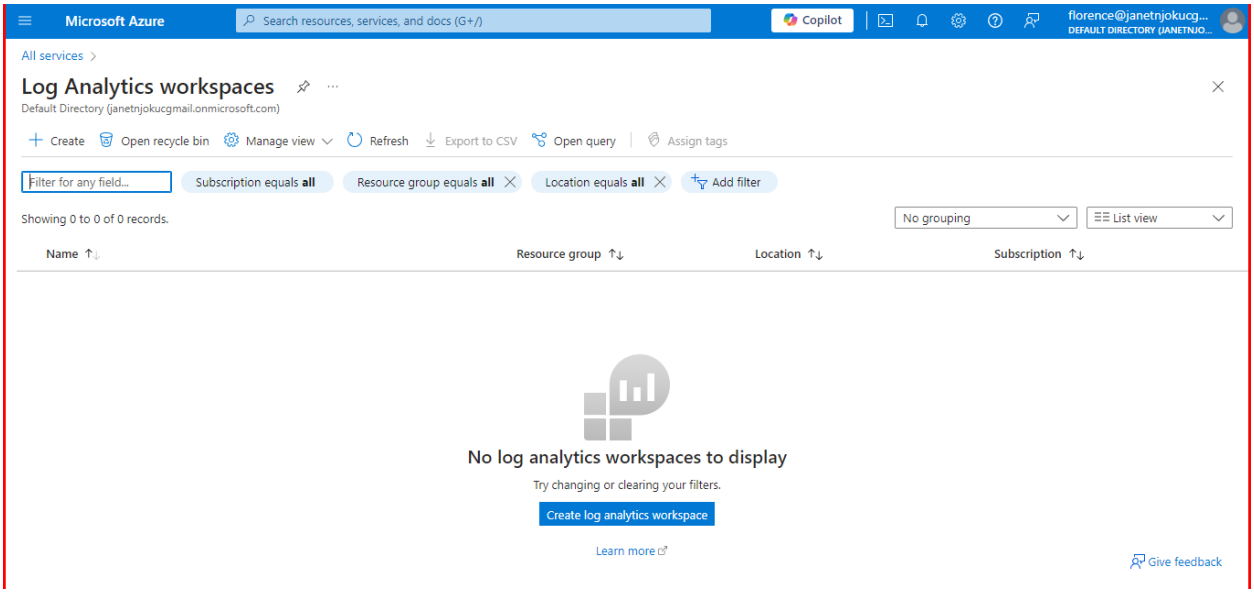
Steps

1. Setup Microsoft Sentinel.
2. Connect Microsoft Entra ID to Sentinel.
3. Configure analytic rules for your simulated attack scenario.
4. Automate Incident Response.

Step 1: Setup Microsoft Sentinel

Task 1: Create a Log Analytics Workspace in Azure

1. In the Azure Portal, search for and select “Log Analytics workspaces”.
2. Navigate to Log Analytics Workspaces
   In the left-hand menu, click on “All services”.
   In the “Categories” section, select “Monitor”.
   Scroll down and click on “Log Analytics workspaces”.



3. Create a new Log Analytics Workspace:

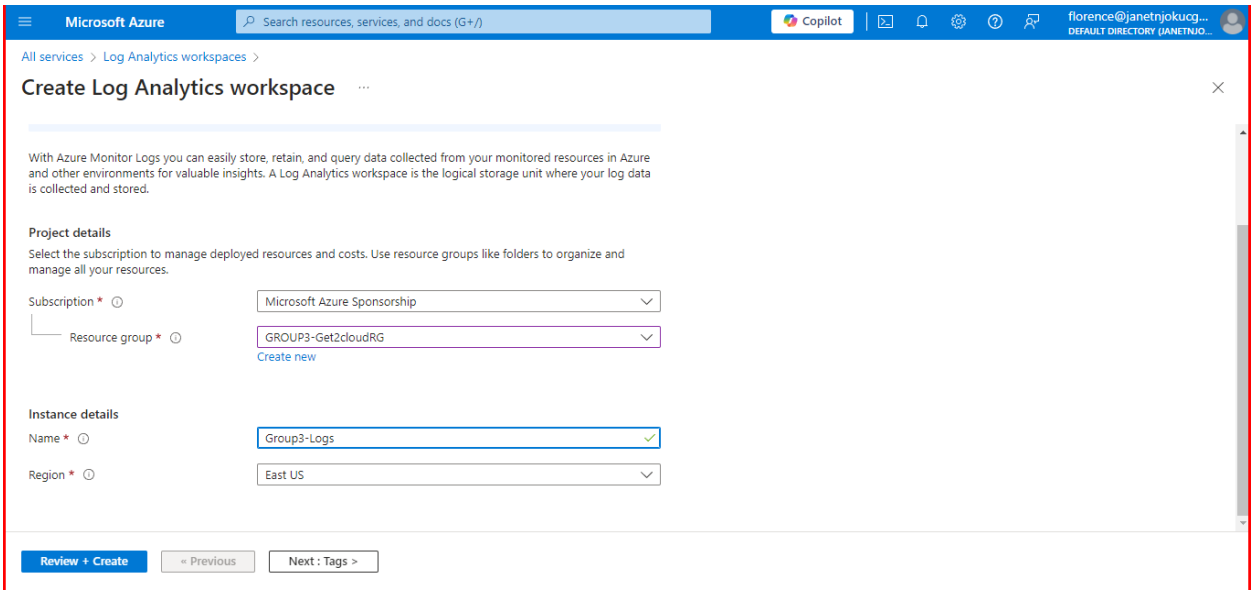
   Click on the “+ Create” button.

   Fill in the required information:

   - Subscription: Select the subscription you want to use.
   - Resource Group: Select an existing resource group or create a new one.
   - Name: Enter a unique name for the workspace.
   - Region: Select the region closest to your resources.

   Click on “Review + create”.

   Review your settings and click on “Create” to deploy the workspace.



Task 2: Enable Sentinel on the created Log Analytics Workspace

1. Navigate to Microsoft Sentinel:

   In the Azure Portal, use the search bar at the top to search for “Microsoft Sentinel”.

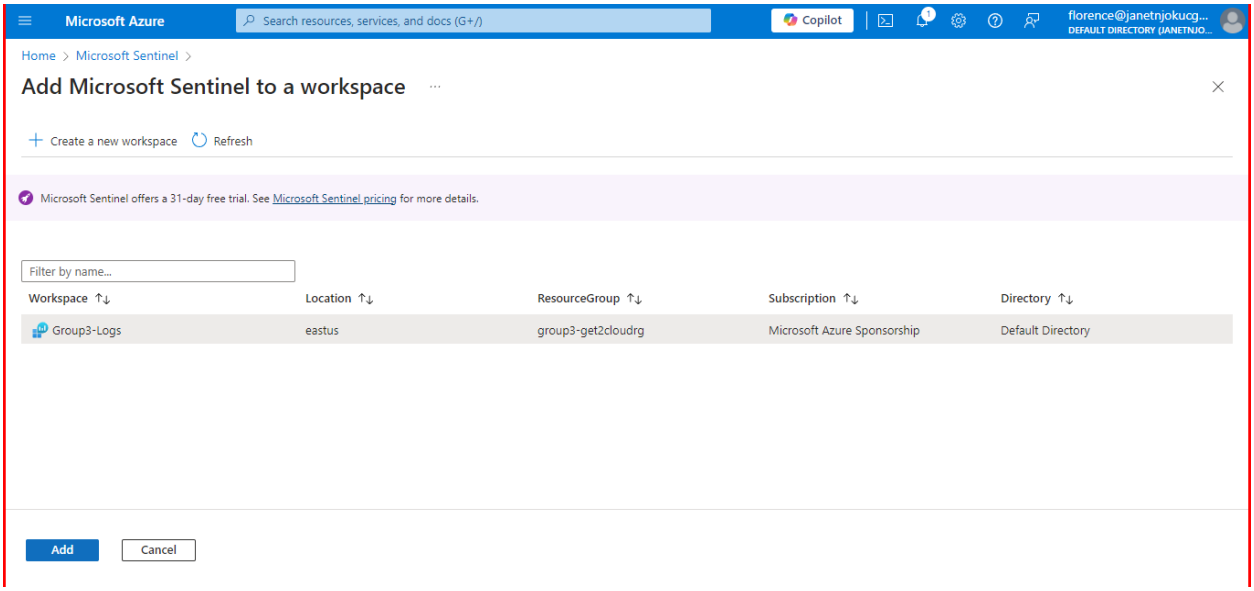
   Click on “Microsoft Sentinel” from the search results.

2. Add Microsoft Sentinel:

   On the Microsoft Sentinel page, click on the “+ Add” button.

   Select the Log Analytics Workspace you created earlier from the list.

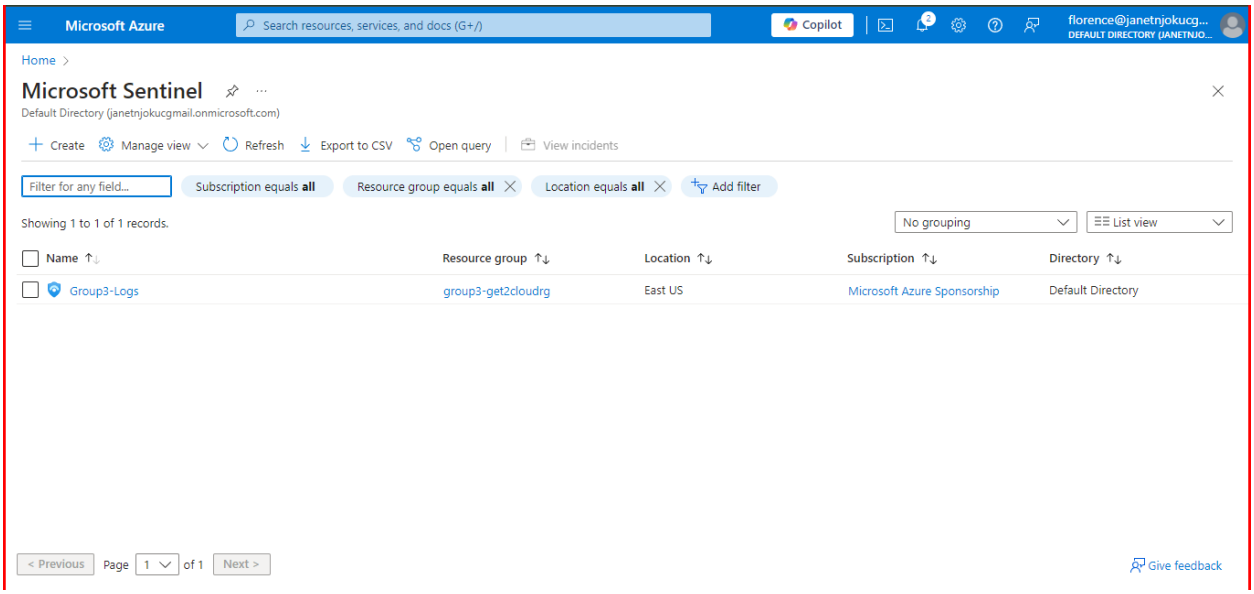
   Click on “Add Microsoft Sentinel”.



3. Verify Sentinel Enablement:

   Once the workspace is added, you should see it listed under the “Microsoft Sentinel” page.

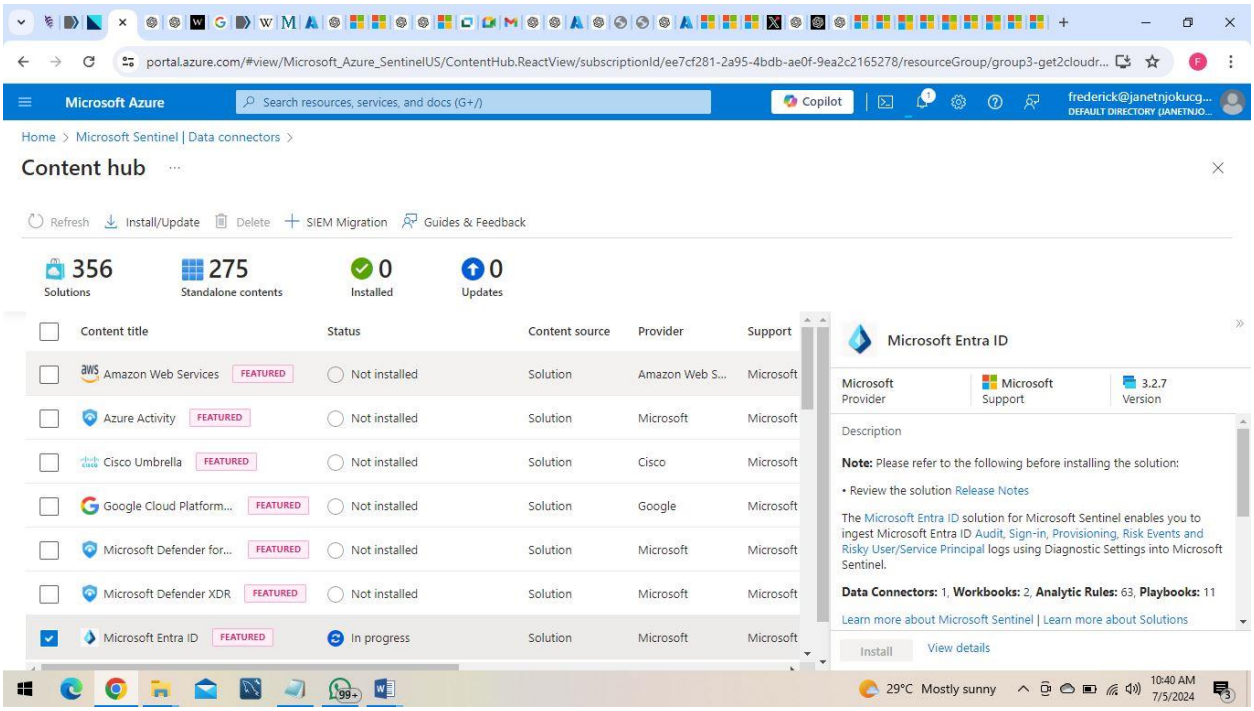
   Click on the workspace name to navigate to the Microsoft Sentinel dashboard.



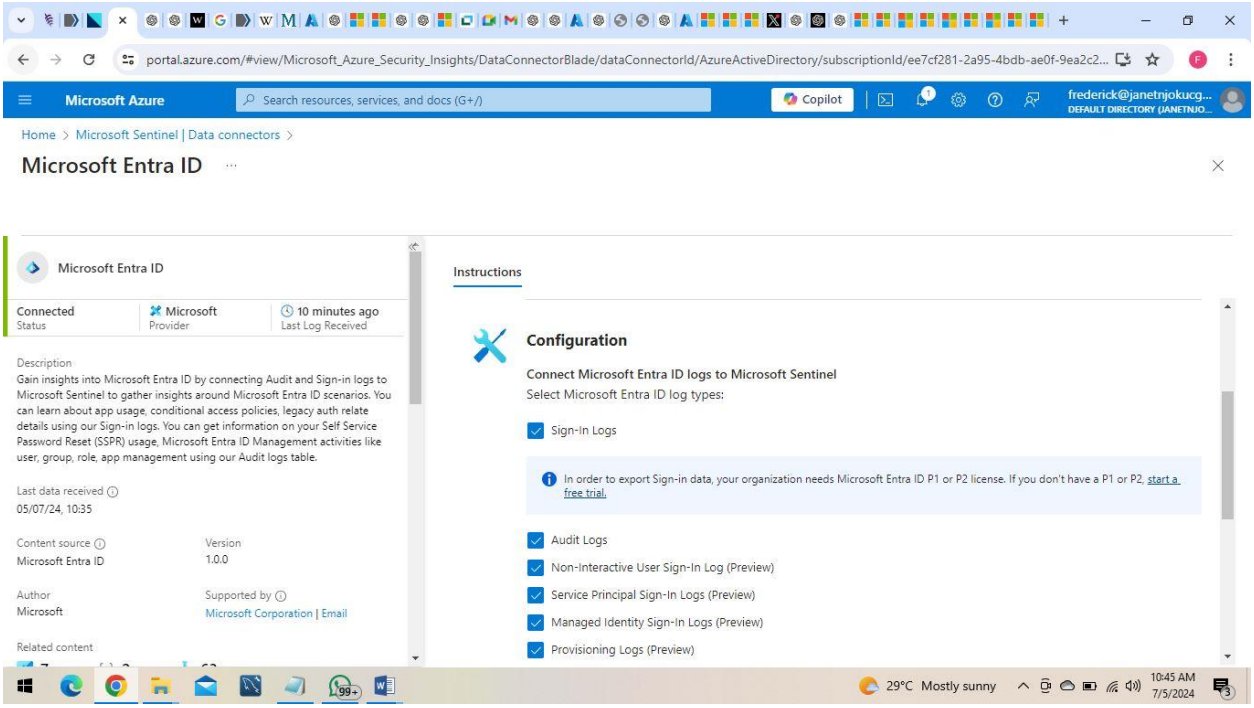
Step 2: Connect Microsoft Entra ID to Sentinel

Task 1: Configure the Microsoft Entra ID Data Connector

1. Navigate to Microsoft Sentinel:
   Open the Azure portal.
   Search for Microsoft Sentinel and select your Sentinel workspace.
2. Add Data Connector:
   In the Microsoft Sentinel workspace, go to Configuration > Data connectors.
   Search for Microsoft Entra ID and select it.



3. Connect Microsoft Entra ID:
   Click on the Open connector page.
   You will see the Prerequisites section. Ensure you have the necessary permissions.
   In the Configuration section, select the Sign-in logs and Audit logs checkboxes to enable these logs.



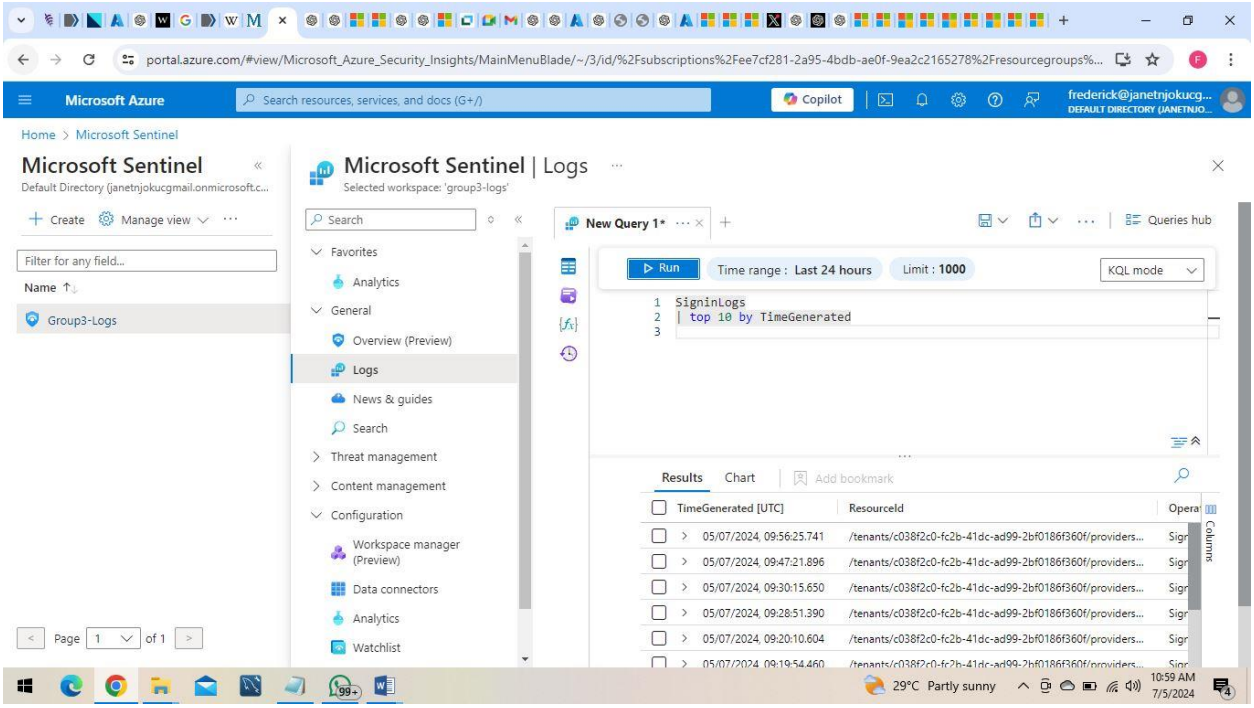
Click on Apply changes to save the configuration.

Task 2: Verify Connection and Ingestion

1. Go to Logs in Microsoft Sentinel:
   In your Microsoft Sentinel workspace, go to Logs under the General section.
2. Run a Basic Query:
   Use the following Kusto Query Language (KQL) query to check if sign-in logs are being ingested:

This query retrieves the top 10 most recent sign-in log entries

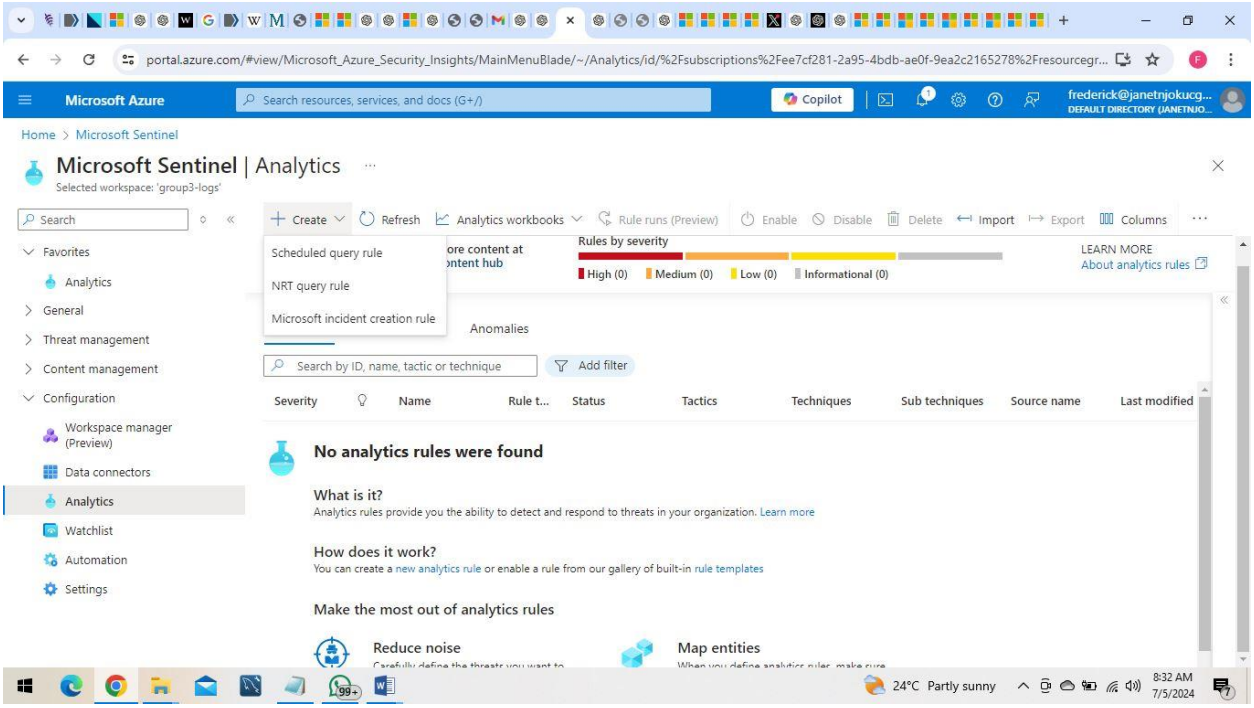
```
SigninLogs
| top 10 by TimeGenerated
```



Step 3: Configure analytic rules for your simulated attack scenario

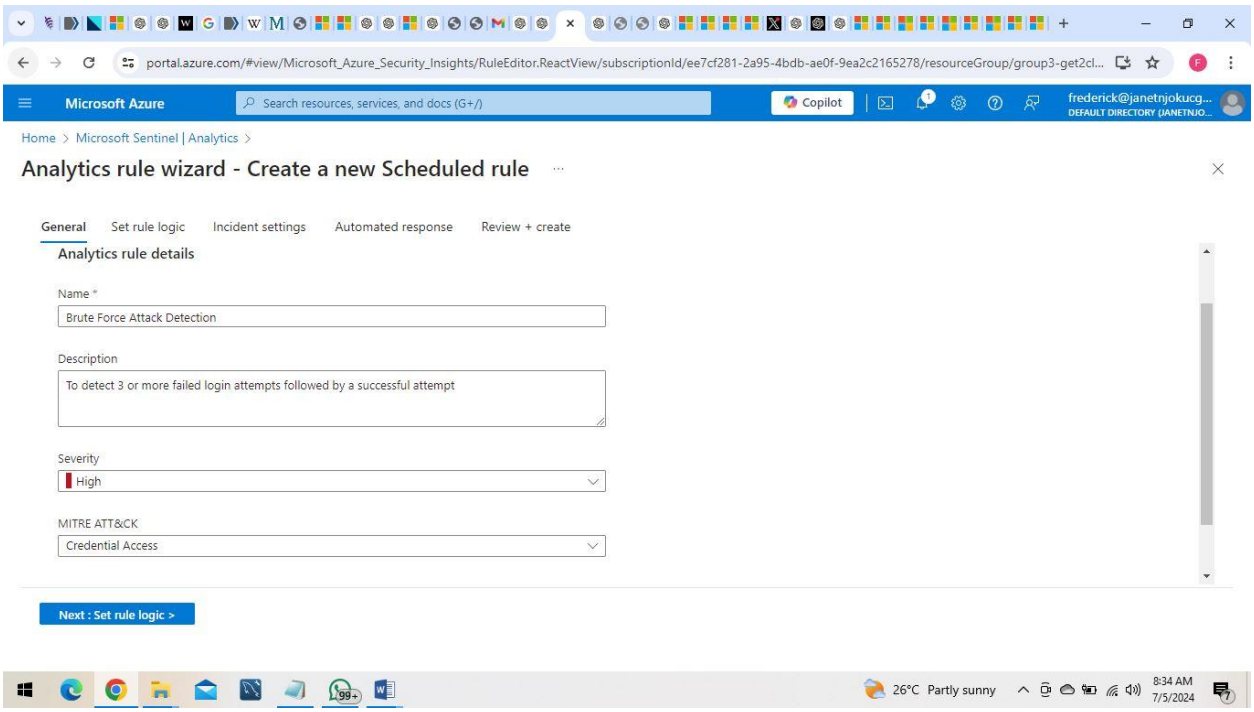
Task 1: Configuring Analytic rule to detect a brute force attack scenario

1. Access Microsoft Sentinel:
   Navigate to the Azure portal.
   In the left-hand menu, select Microsoft Sentinel.
   Choose the Sentinel workspace where you want to create the rule.
2. Go to Analytic Rules:
   In the Sentinel workspace, select Configuration from the left-hand menu.
   Click on Analytics.
3. Create a New Rule:
   Click on + Create and choose Scheduled query rule.



4. General Settings:

   Name: Provide a name for your rule (Brute Force Attack Detection).
   Description: Add a description to explain what the rule does.
   Tactics: Select the MITRE ATT&CK tactics that this rule addresses (Credential access).
   Severity: Choose the severity level (High).



5. Set the Rule Logic:

   Rule Query: Enter or paste the Kusto Query Language (KQL) query that defines the logic for detecting the condition

.

```
let FailedLogins =
SigninLogs
| where ResultType != "0" // ResultType != 0 indicates a failed login
| summarize FailedCount = count() by UserPrincipalName, bin(TimeGenerated, 10m)
| where FailedCount >= 3;
let SuccessfulLogins =
SigninLogs
| where ResultType == "0" // ResultType == 0 indicates a successful login
| project UserPrincipalName, SuccessTime = TimeGenerated;
FailedLogins
| join kind=inner (SuccessfulLogins) on UserPrincipalName
| where SuccessTime between (TimeGenerated .. TimeGenerated + 10m)
| project UserPrincipalName, TimeGenerated, FailedCount, SuccessTime
| order by TimeGenerated desc
```

   Run Query: Click on the button to test your query and see the results.
   Frequency: Set how often the query should run (30 mins) .
   Lookup Period: Define the time range for data the query should analyze (5 hours)

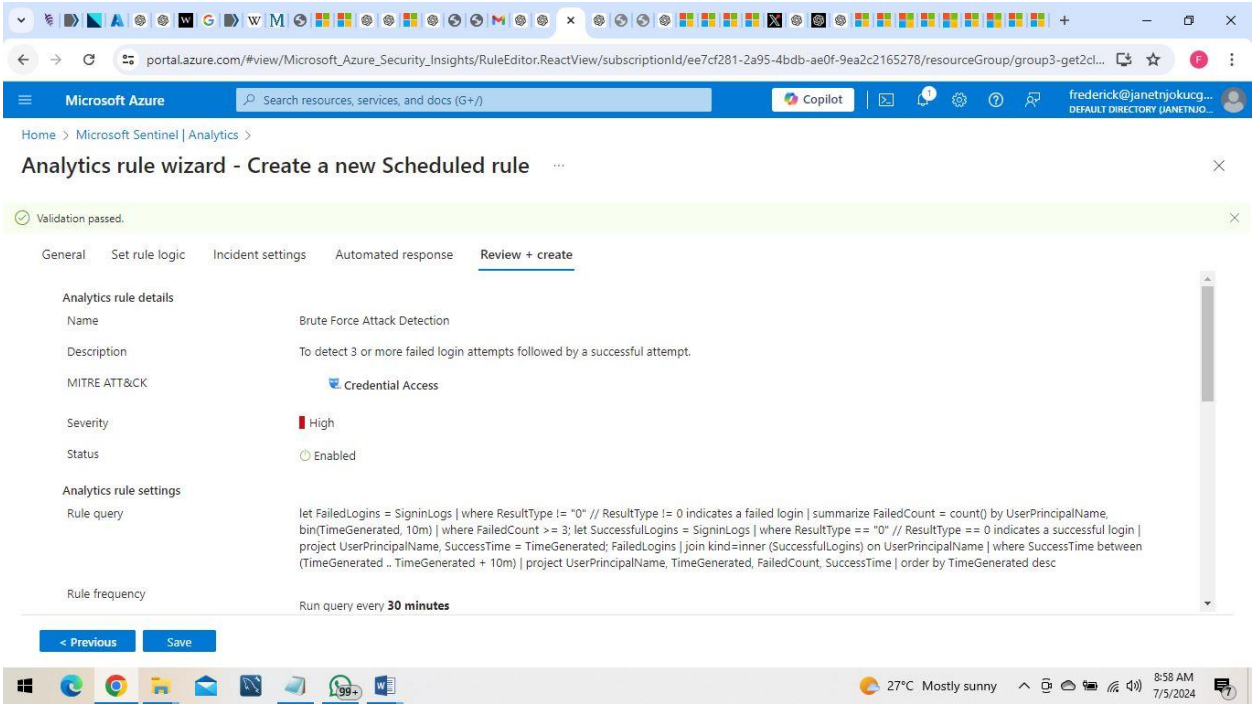
6. Alert Settings:

   Event Grouping: Specify how events should be grouped together into a single incident (e.g., by IP address, account name, etc.).
   Alert Threshold: Set the threshold that determines when an alert should be triggered (Greater than 0).

7. Incident Settings:

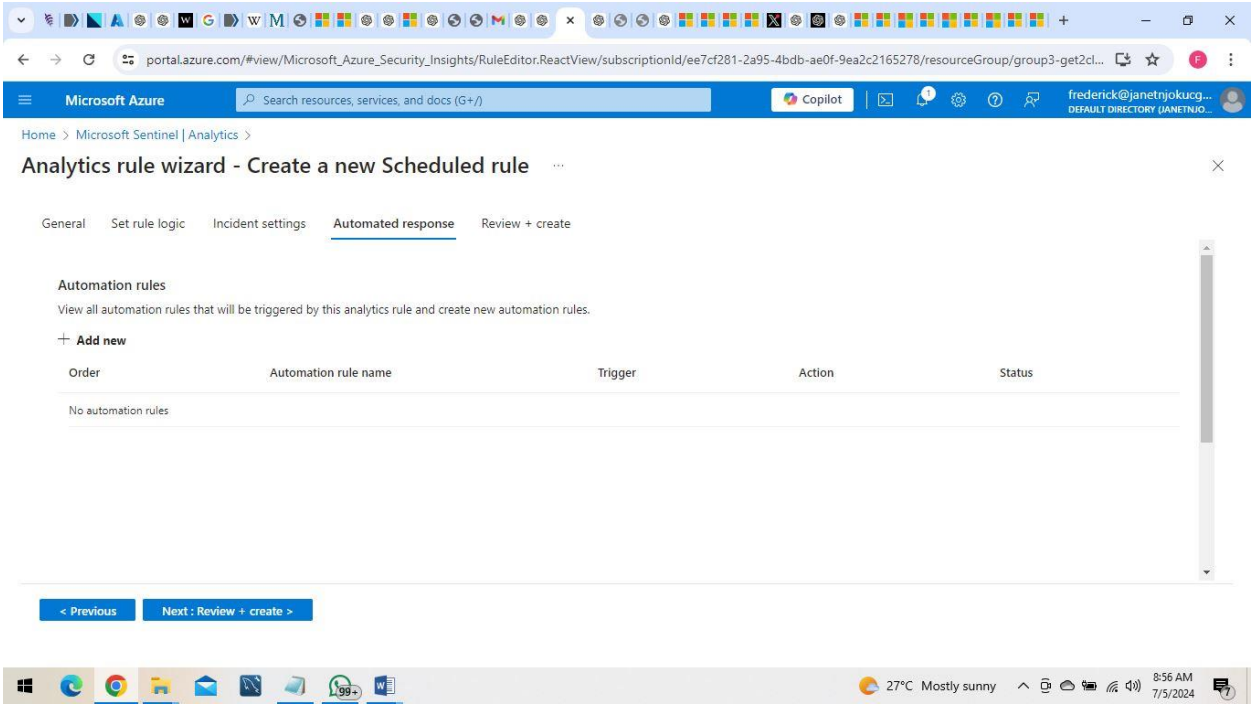
   Create Incident: Enable this option if you want an incident to be created automatically when the rule triggers.

8. Review and create



Task 2. Configuring Analytic rule to detect multiple login into an account with different IP addresses within a time interval

1. Access Microsoft Sentinel:
   Navigate to the Azure portal.
   In the left-hand menu, select Microsoft Sentinel.
   Choose the Sentinel workspace where you want to create the rule.
2. Go to Analytic Rules:
   In the Sentinel workspace, select Configuration from the left-hand menu.
   Click on Analytics.
3. Create a New Rule:
   Click on + Create and choose Scheduled query rule.



4. General Settings:

   Name: Provide a name for your rule (Multi login Group 3).

   Description: Add a description to explain what the rule does.

   Tactics: Select the MITRE ATT&CK tactics that this rule addresses (Credential access).

   Severity: Choose the severity level (High).

5. Set the Rule Logic:

   Rule Query: Enter or paste the Kusto Query Language (KQL) query that defines the logic for detecting the condition

```
let timeWindow = 10m; // Set the time window for detection
SigninLogs
| where ResultType == 0 // Filter for successful logins
| summarize IPCount = dcount(IPAddress), IPAddresses = make_set(IPAddress) by UserPrincipalName, bin(TimeGenerated, timeWindow)
| where IPCount > 1
| project UserPrincipalName, IPAddresses, TimeGenerated
```

Run Query: Click on the button to test your query and see the results.

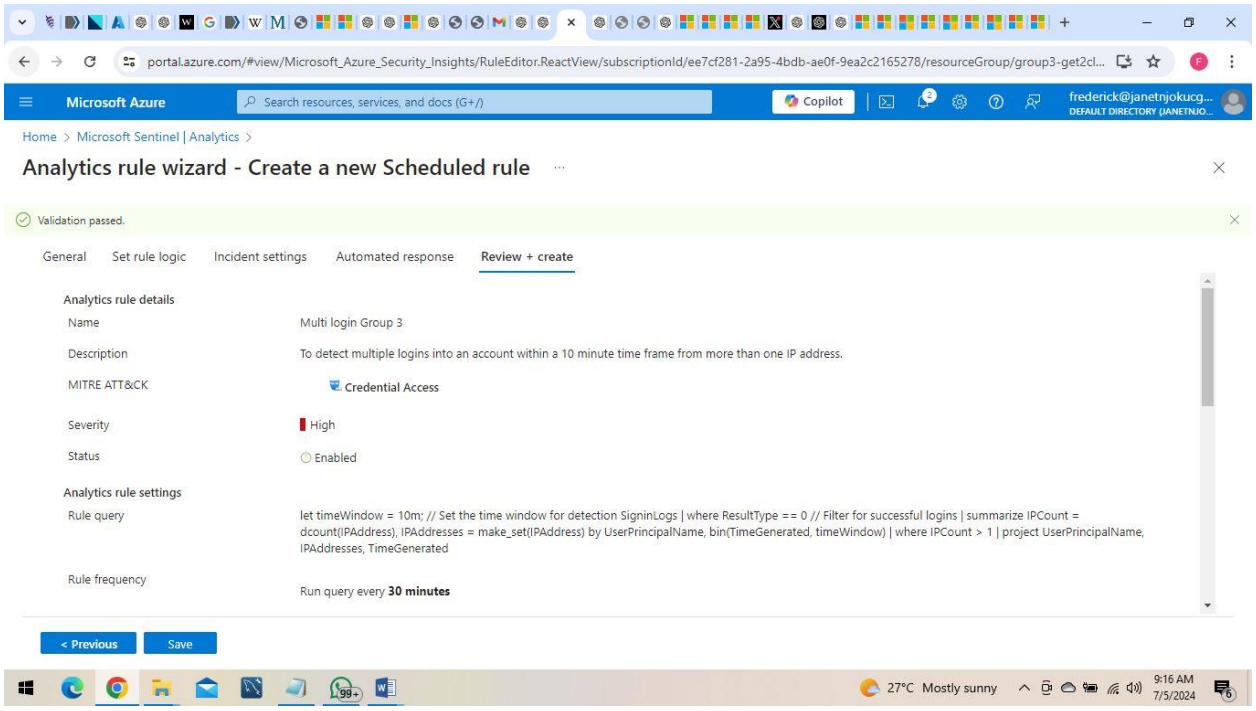
Frequency: Set how often the query should run (30 mins).

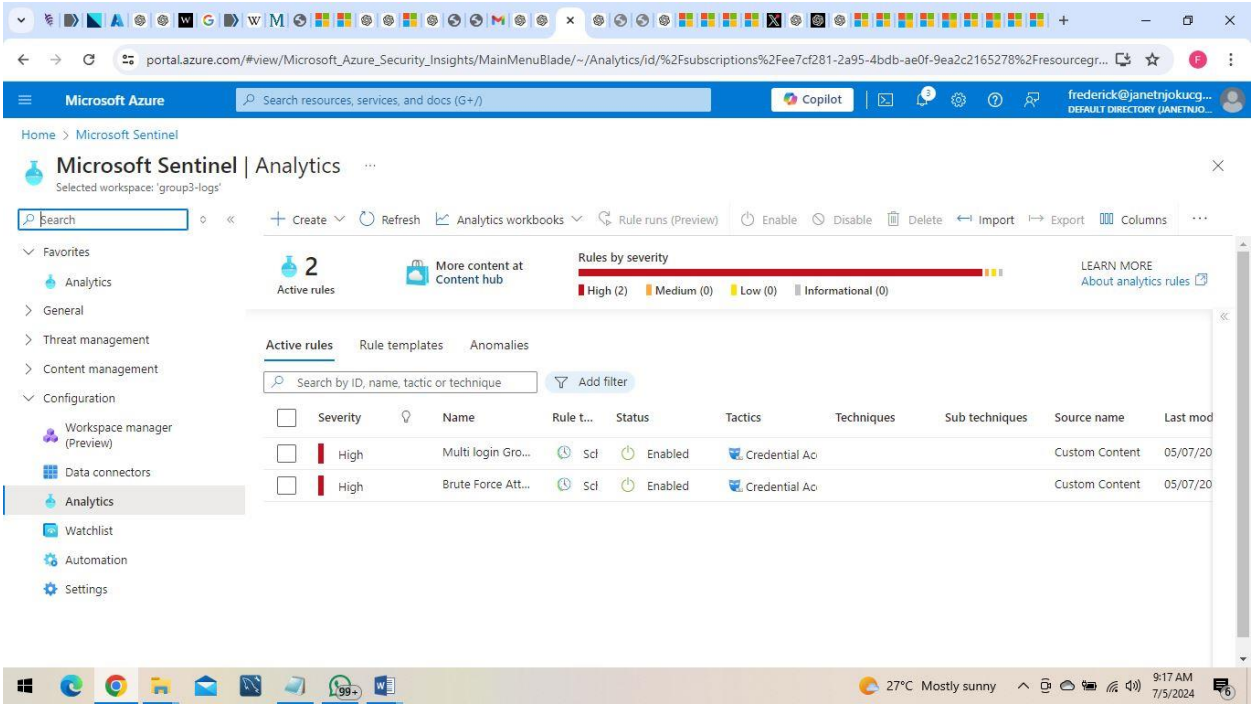
Lookup Period: Define the time range for data the query should analyze (5 hours)

Alert Settings:

Event Grouping: Specify how events should be grouped together into a single incident (e.g., by IP address, account name, etc.).
Alert Threshold: Set the threshold that determines when an alert should be triggered (Greater than 0).

6. Incident Settings:
   Create Incident: Enable this option if you want an incident to be created automatically when the rule triggers.
7. Review and create

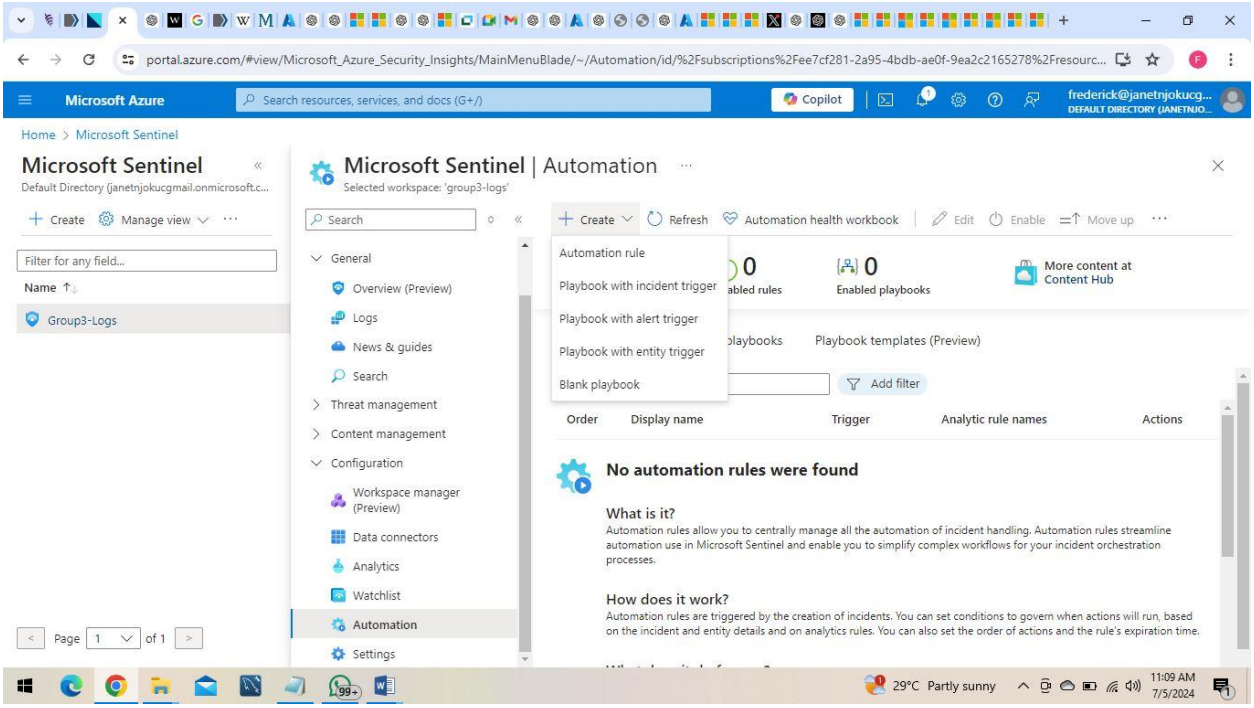




Step 4: Automate Incident Response

Task 1: Create an automation rule to automatically tag and assign incidents based on specific criteria.

1. Access Microsoft Sentinel:
   Log in to the Azure portal.
   Navigate to Microsoft Sentinel from the list of services.
2. Navigate to Automation:
   In the Microsoft Sentinel workspace, go to the "Automation" section in the left-hand menu.
3. Create a New Automation Rule:
   Click on "+ Add new rule" to create a new automation rule.



4. Define Rule Name and Description:

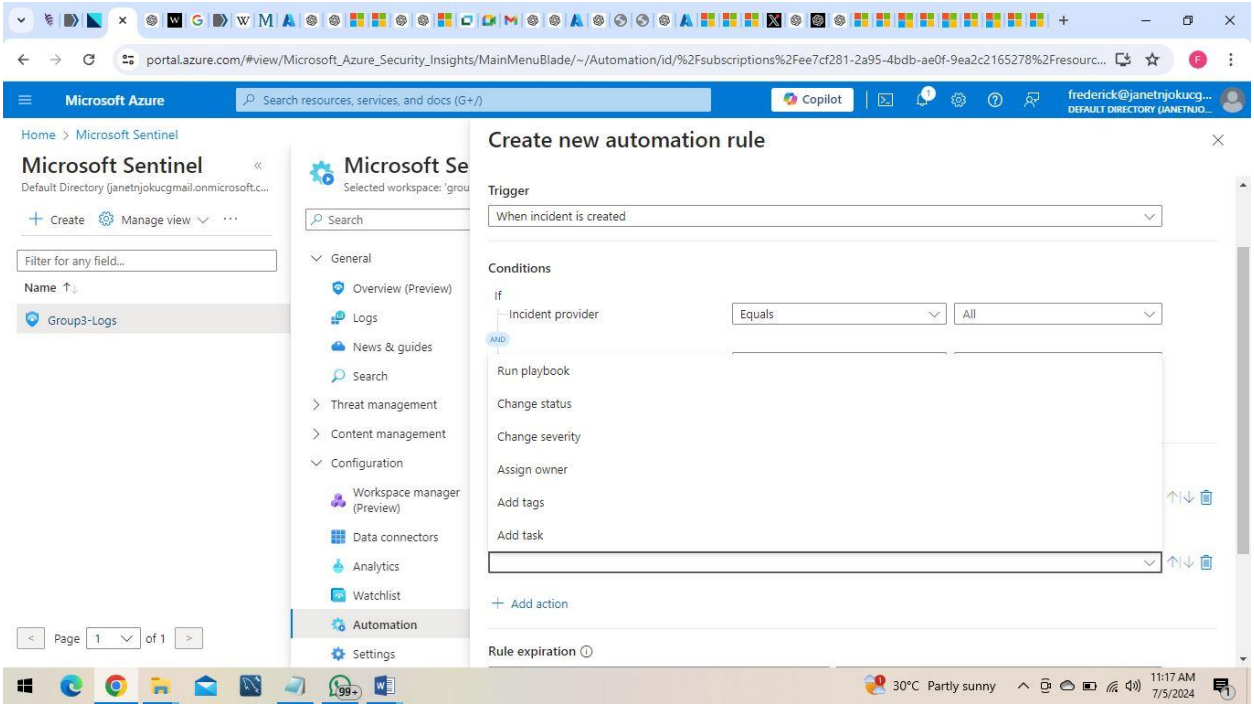
   Provide a name (Group 3 automation rule) and description for the automation rule to identify its purpose.

5. Set Rule Logic:

   Trigger: Specify the trigger condition. For example, you might want to trigger the rule when an incident is created or updated.

   Criteria: Define the criteria for the rule based on various parameters such as severity, incident type, tags, entities, etc.

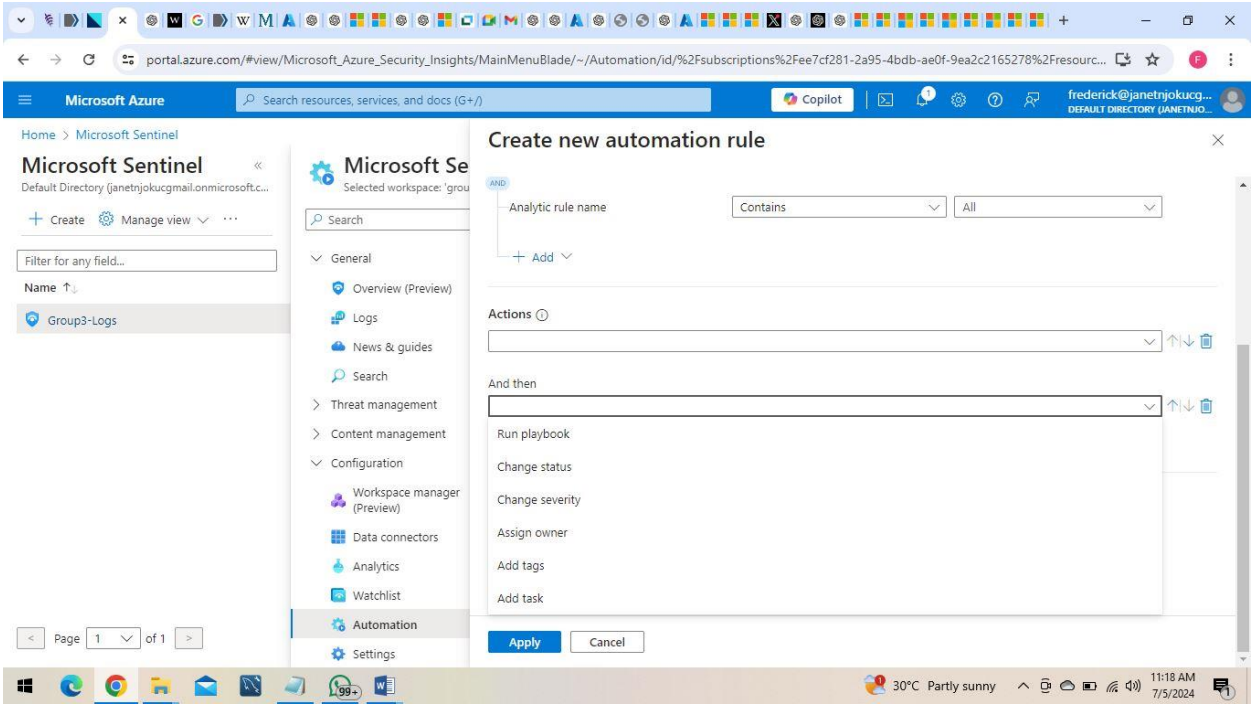
   - Example: If you want to tag and assign incidents with a specific severity level, set the criteria to match incidents with that severity.



6. Add Actions:

   Tag Incident: To automatically tag an incident, use the "Add a tag" action. Specify the tag you want to add.

   Assign Incident: To assign the incident to a specific user or group (Get2cloud group 3), use the "Assign incident" action. Specify the assignee.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Content management
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Analytics
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Automation
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Create new automation rule
AND
Analytic rule name
Contains
All
Add
Actions
And then
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Add tags
Add task
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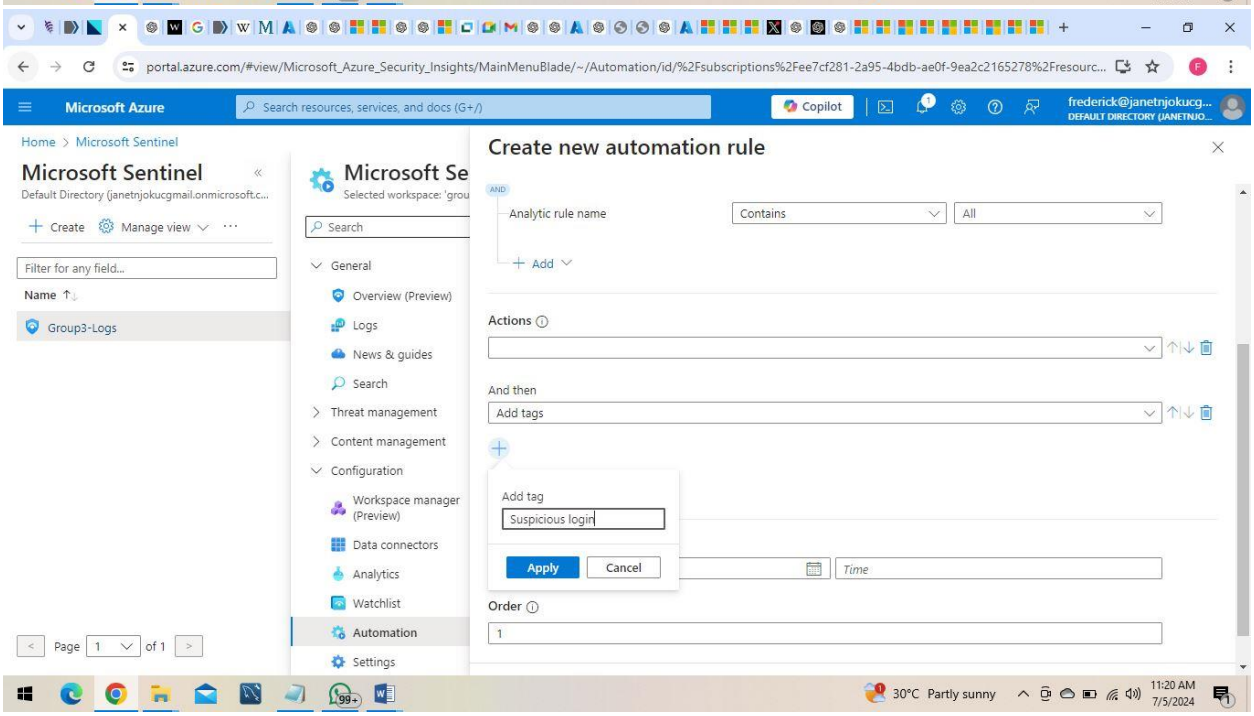
7/5/2024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Overview (Preview)
Logs
News & guides
Search
Threat management
Content management
Configuration
Workspace manager (Preview)
Data connectors
Analytics
Watchlist
Automation
Settings
Create new automation rule
AND
Analytic rule name
Contains
All
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Actions
And then
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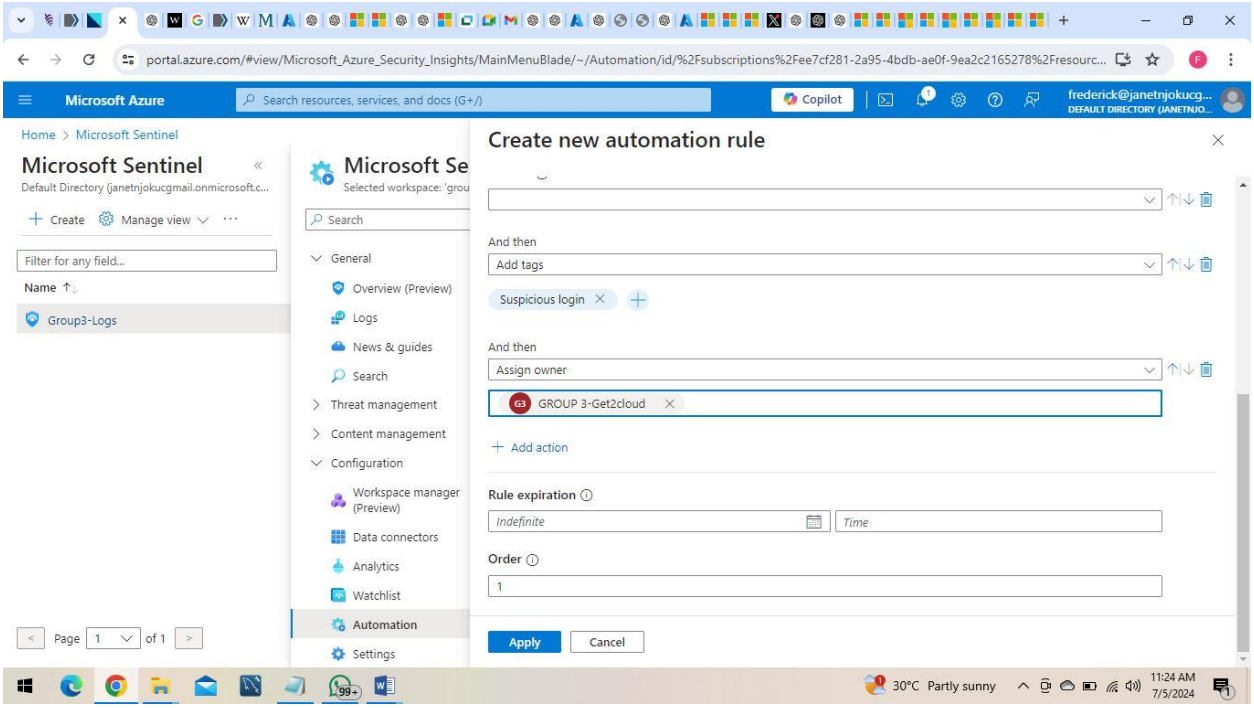
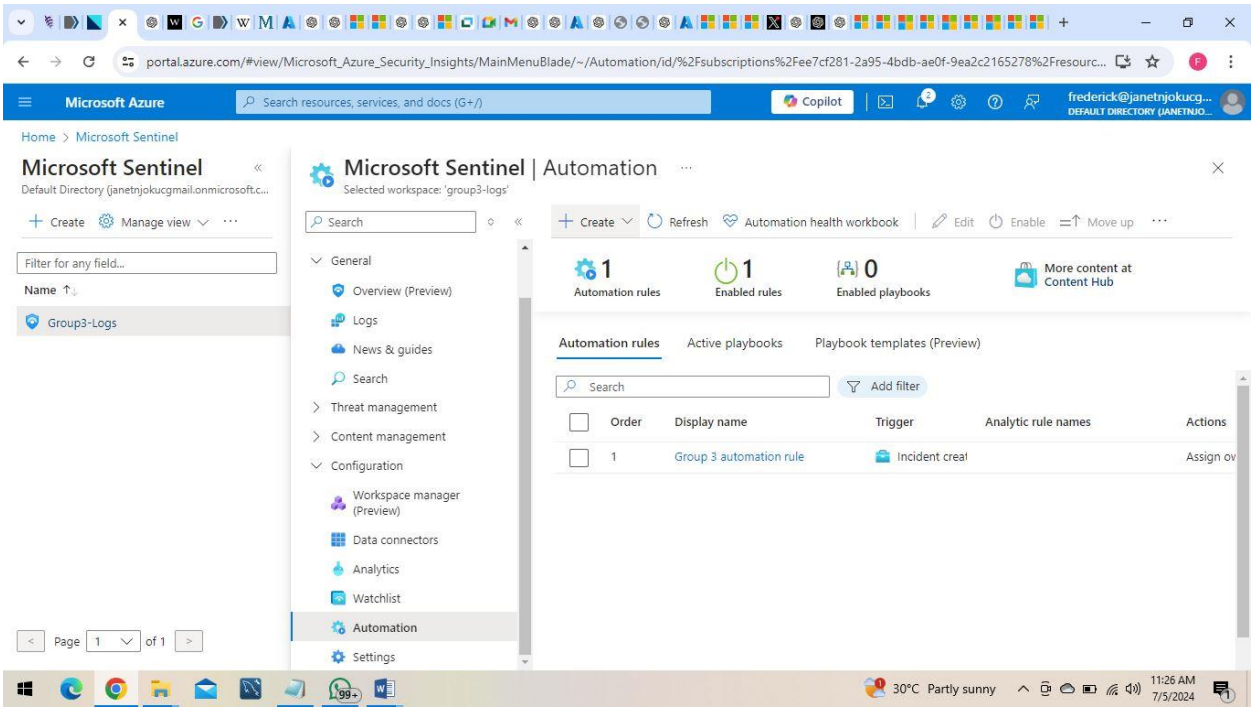
7/5/2024



7. Save the Automation Rule:

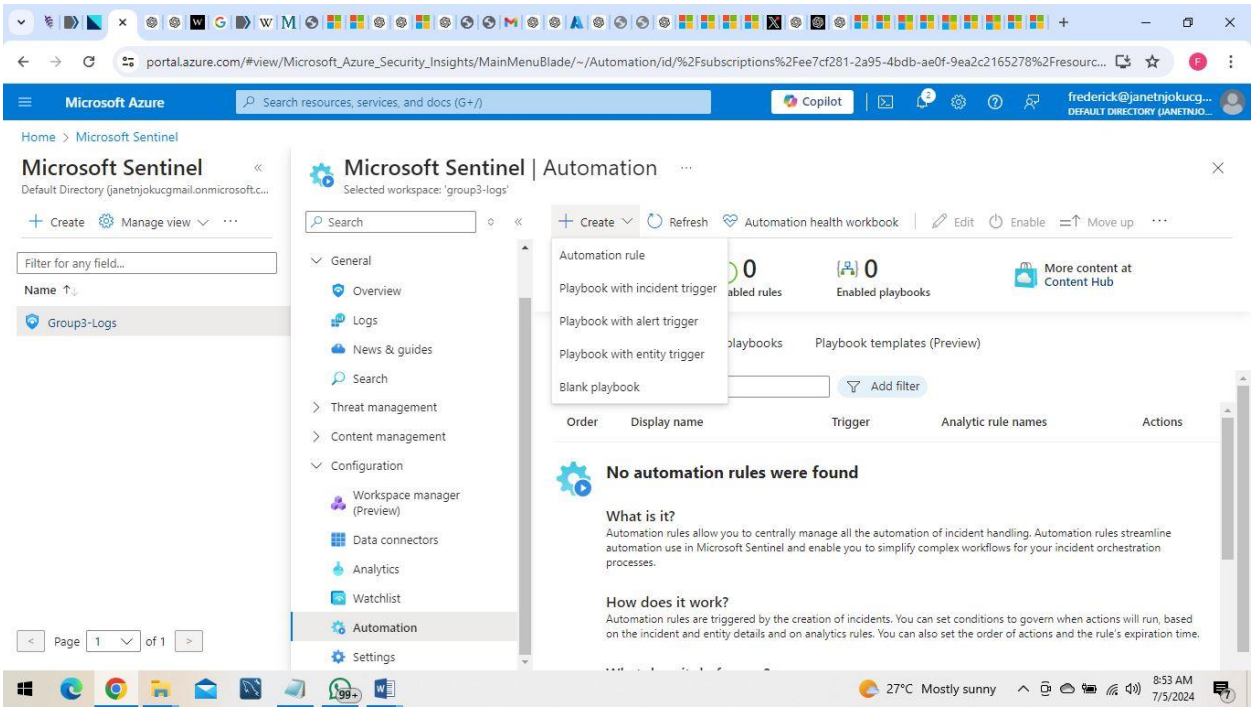
   Review the settings and criteria.

   Click "Save" to create the automation rule.

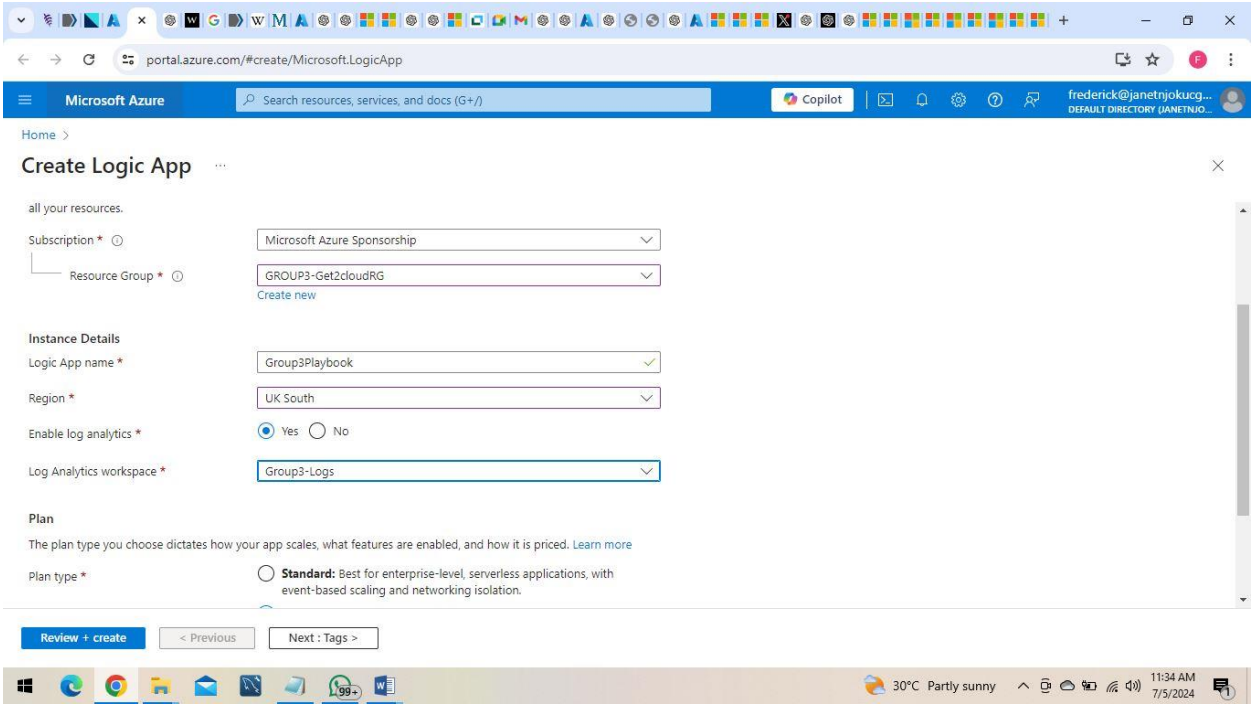


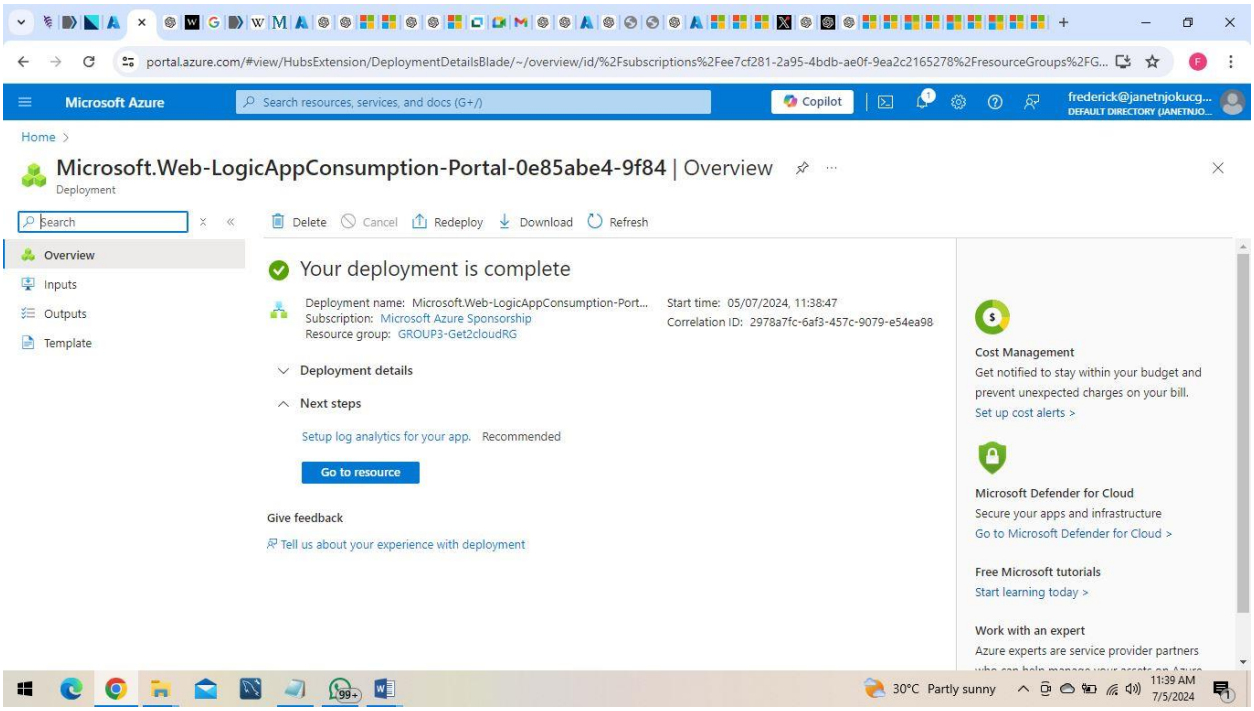
Task 2. Create a playbook to send email alerts to designated recipients when an incident is detected.

1. Create a Playbook (Group3playbook):
   Navigate to Microsoft Sentinel > Automation > Playbooks > "+ Create".
   Click on blank playbook. This takes you to a page where you create a Logic app.
   Fill in the necessary details (Subscription, Resource Group, Logic App Name , Region) and click "Review + create" and then "Create"



2. Design the Logic App Workflow:
   Once the Logic App is created, go to the Logic App Designer.

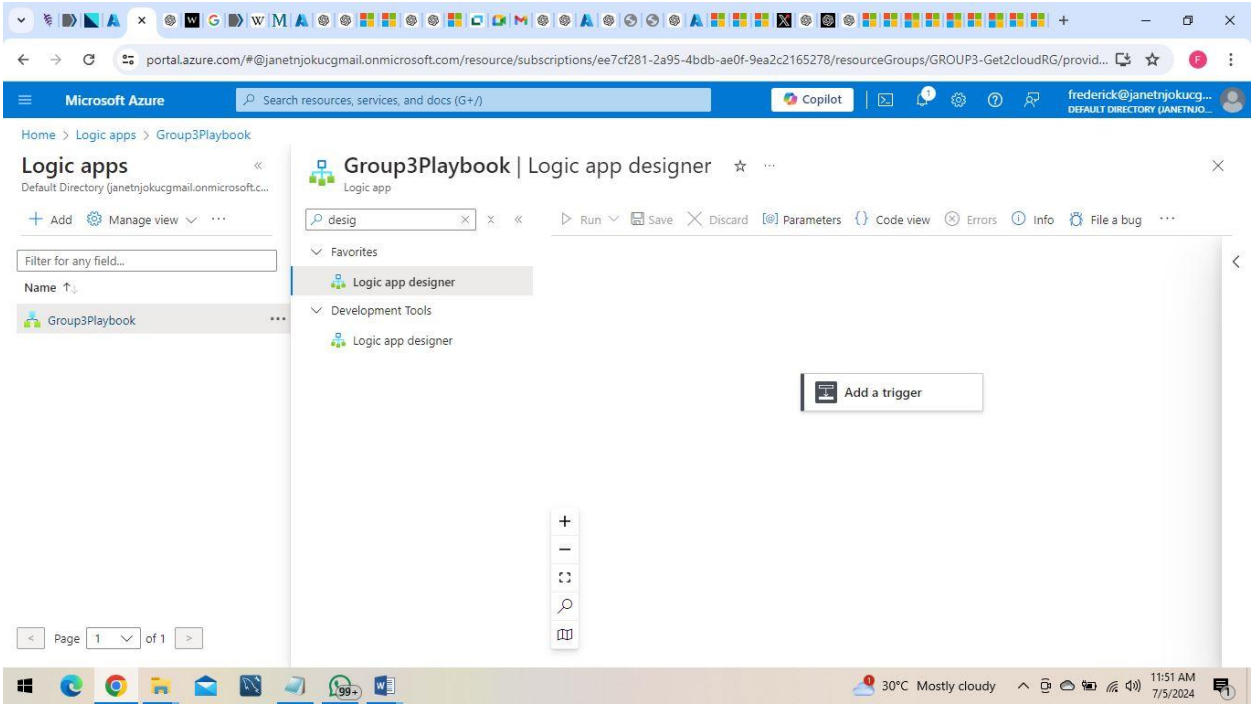




3. Add a Trigger:

   In the designer, click "Add a trigger".

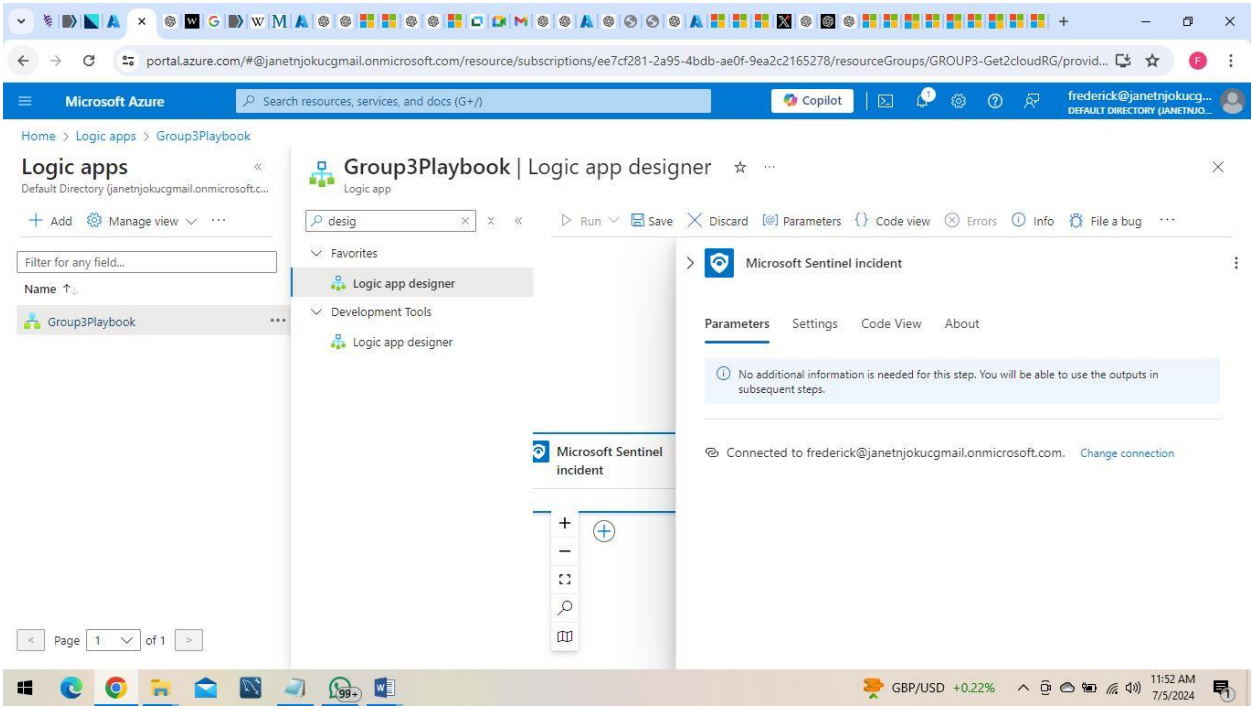
   Search for "Microsoft Sentinel" and choose "Microsoft Sentinel incident trigger"



4. Configure the Trigger:

   Select the appropriate Azure Sentinel instance.

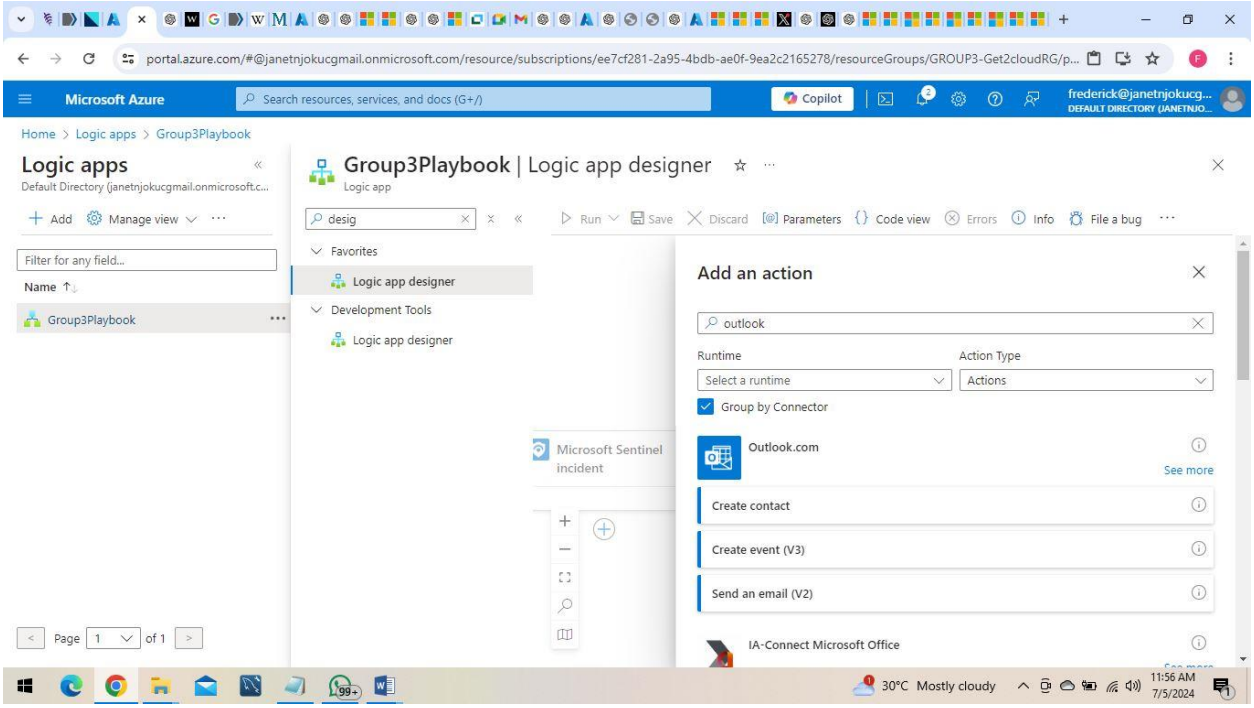
   Configure the trigger with the relevant criteria for the incidents you want to act upon



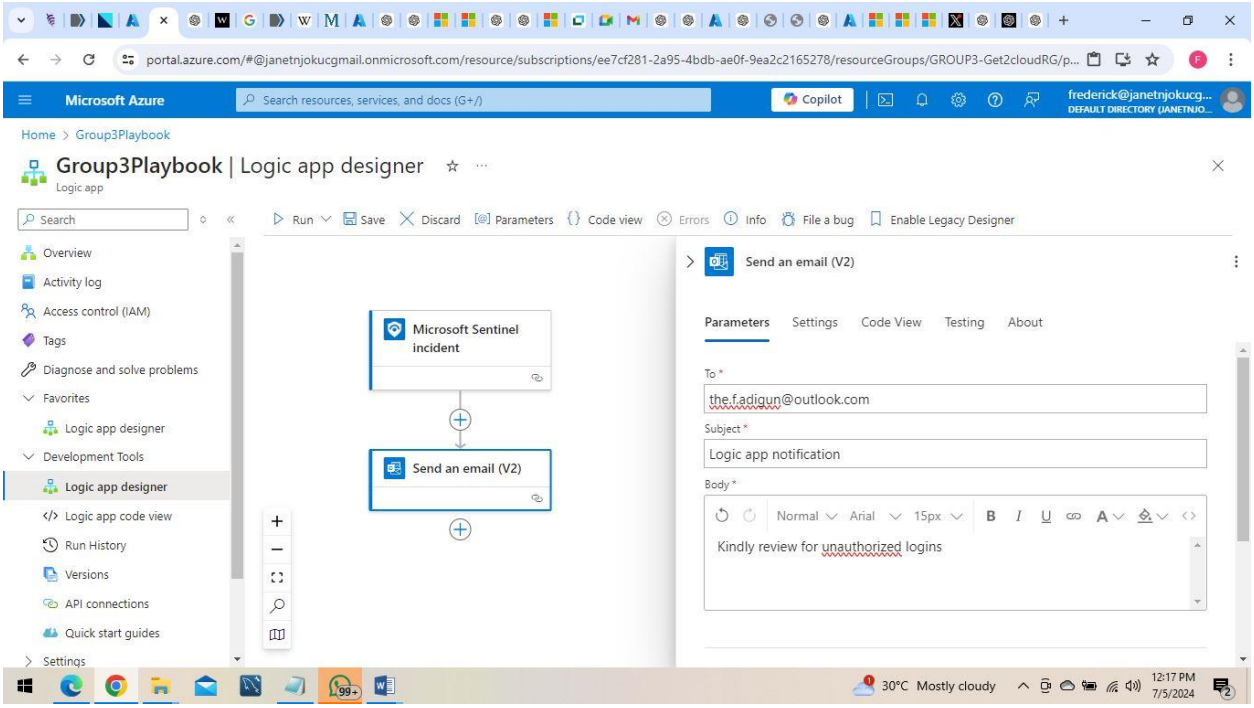
5. Add an Action for Email:

   After the trigger, add a new step by clicking on "New step".

Search for and select an email connector (e.g., Office 365 Outlook, SMTP, SendGrid).
Choose the action "Send an email (V2)" for Office 365 Outlook or a similar action for other email services.



6. Configure the Email Action:
   Fill in the necessary details such as:
   To: Specify the email addresses of the recipients.
   Subject: Provide a subject for the email, you can use dynamic content from the incident.
   Body: Write the email body and use dynamic content to include details from the Sentinel incident.



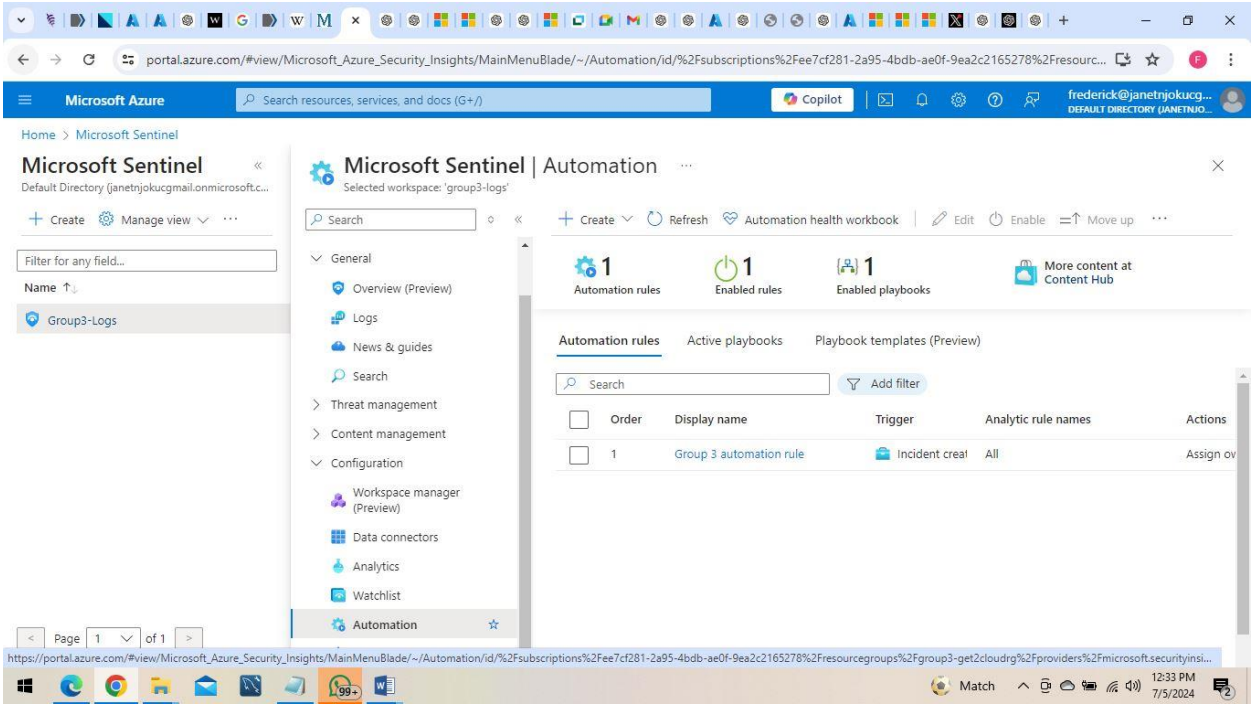
7. Save the Logic App: Click on "Save" to save your logic app

8. Link Playbook to Automation Rule:

   In your automation rule earlier created (Group 3 automation rule), add an action to the rule and select “Run playbook” to run the Playbook you created (Group 3 Playbook).

   Click on “apply” to effect the configuration

   Go back to the Automation Tab to confirm the Playbook has been enabled.



9. Test the Workflow:

Create a test incident (e.g., Brute force attack) in Azure Sentinel to see if the Logic App triggers and sends an email as expected.

Check the run history in the Logic App to debug any issues if the email is not sent.

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Home > Microsoft Sentinel

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Group3-Logs

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Microsoft Sentinel | Incidents
Selected workspace: 'group3-logs'

Search

- Logs
- News & guides
- Search
- Threat management
  - Incidents
  - Workbooks
  - Hunting
  - Notebooks
  - Entity behavior
  - Threat intelligence
  - MITRE ATT&CK (Preview)
  - SOC optimization
- Content management
- Configuration

+ Create incident (Preview) | Refresh | Last 24 hours | Actions | Delete

30 Open incidents | 30 New incidents | 0 Active incidents

Open incidents by severity: High (30) Medium (0) Low (0) Informational (0)

Search by ID, title, tags, owner or product | Severity : All | Status : 2 selected | More (3)

Auto-refresh incidents

Severity	Incident number	Title	Alerts	Incident provider n
High	210	Brute Force Attack ...	1	Azure Sentinel
High	209	Brute Force Attack ...	1	Azure Sentinel
High	208	Multi login Group 3	1	Azure Sentinel
High	207	Brute Force Attack ...	1	Azure Sentinel
High	206	Multi login Group 3	1	Azure Sentinel
High	205	Brute Force Attack ...	1	Azure Sentinel

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Name

Group3-Logs

Page 1 of 1

Microsoft Sentinel | Incidents
Selected workspace: 'group3-logs'

Search

- Logs
- News & guides
- Search
- Threat management
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  - Threat intelligence
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+ Create incident (Preview) | Refresh | Last 24 hours | Actions | Delete

30 Open incidents | 30 New incidents | 0 Active incidents

Open incidents by severity: High (30) Medium (0) Low (0) Informational (0)

Search by ID, title, tags, owner or product | Severity : All | Status : 2 selected | More (3)

Auto-refresh incidents

time	Last update time	Owner	Status	Tags
24, 23:45	05/07/24, 23:45	GROUP 3-Get2cloud	New	Suspicious login
24, 21:30	05/07/24, 21:30	GROUP 3-Get2cloud	New	Suspicious login
24, 21:15	05/07/24, 21:15	GROUP 3-Get2cloud	New	Suspicious login
24, 21:00	05/07/24, 21:00	GROUP 3-Get2cloud	New	Suspicious login
24, 20:45	05/07/24, 20:45	GROUP 3-Get2cloud	New	Suspicious login

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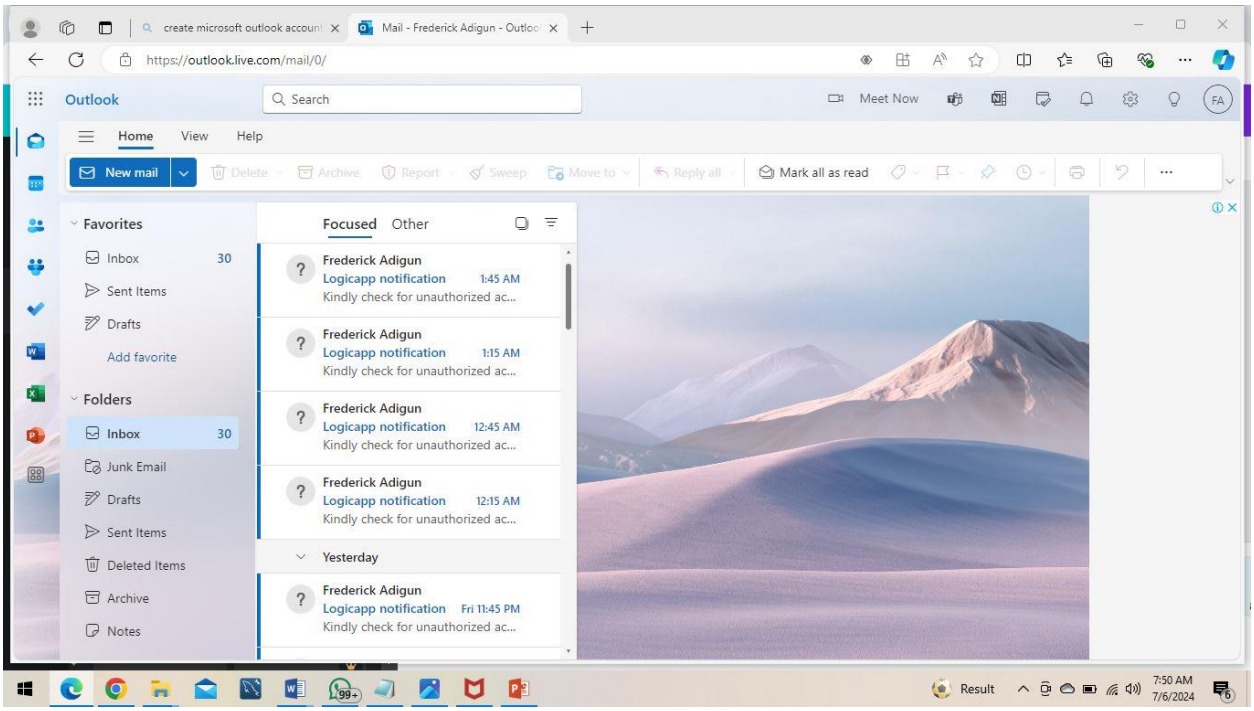

Here are the detailed steps for implementing Microsoft Sentinel to enable real-time threat monitoring and incident response. I hope you find them useful.